GW - 35

GENERAL CORRESPONDENCE

YEAR(S):

1996 - 1990

Kathy A. Kanocz
Environmental Engineer
Safety & Environmental Services
Natural Gas & Gas Products

Conoco Inc.
P.O. Box 2197, HU 3086
Houston, TX 77525
(713) 293-4067

Certified Mail - Return Receipt Requested
P 365 728 031

July 19, 1996

Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: Approval of Discharge Plan GW- 035
Renewal "San Juan" Gas Plant
San Juan County, New Mexico

Dear Mr. LeMay:

Please find attached Conoco's acceptance of the conditions of approval for the San Juan Gas Plant Discharge Permit.

If you have any questions, please contact me.

Kathy Kanocz

Kathy A. Kanocz

Attachment

RECEIVED
JUL 25 1996
Environmental Bureau
Oil Conservation Division

ATTACHMENT TO DISCHARGE PLAN GW-035 RENEWAL
Conoco - "San Juan" Gas Plant
DISCHARGE PLAN REQUIREMENTS
(July 8, 1996)

1. **Conoco Commitments:** Conoco will abide by the commitments and conditions made in the following: The renewal application dated May 15, 1996 from Conoco, the discharge plan approval letter from OCD dated October 11, 1991, the discharge plan modification approval letter from OCD dated January 7, 1993, the inspection report from OCD dated June 27, 1996, and this renewal approval with conditions from OCD dated July 8, 1996.

2. **Drum Storage**: All drums containing materials other than fresh water must be stored on an impermeable pad and curb type containment. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets should also be stored on an impermeable pad and curb type containment.

All drums and chemical containers shall be clearly labeled to identify their contents and other emergency information necessary if they were to rupture, spill, or ignite.

3. **Process Areas**: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

4. **Above Ground Tanks**: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad.

5. **Above Ground Saddle Tanks**: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

6. **Tank Labeling**: All tanks should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

7. **Below Grade Tanks/Sumps**: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and

leak-detection into the design. All pre-existing sumps and below-grade tanks that do not have secondary containment and leak detection must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks /or sumps.

8. **Underground Process/Wastewater Lines**: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years there after. Companies may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing so that an OCD representative may witness the testing.

9. **Housekeeping**: All systems designed for spill collection/prevention should be inspected to ensure proper operation and to prevent overtopping or system failure.

Any contaminated soils that are collected at the facility will be tested for hazardous constituents, and after receiving OCD approval, will be disposed of at an OCD approved site.

10. **Spill Reporting**: All spills/releases shall be reported pursuant to OCD Rule 116 and WQCC 1203 to the OCD District Office at (505)-334-6178.

11. **Transfer of Discharge Plan:** The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

12. **New Mexico Oil Conservation Division Inspections:** Additional requirements may be placed on the facility based upon results from New Mexico Oil Conservation Division inspections.

13. **Closure:** The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

14. **Conditions accepted by**: Terry L. Gilliam 7-17-96
Company Representative Date

Environmental Director
Title

Submit 4 Copies
to Appropriate
District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

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JUL 24 1996
Environmental Bureau
Oil Conservation Division
Permit No. GW-035
(For Division Use Only)

APPLICATION FOR EXCEPTION TO DIVISION ORDER R-8952
FOR PROTECTION OF MIGRATORY BIRDS Rule 8(b), Rule 105(b), Rule 312(h), Rule 313, or Rule711(I)

Operator Name: Conoco Inc.

Operator Address: 61 County Rd 4900 (mailing address P.O. Box 217) Bloomfield, NM 87413

Lease or Facility Name: San Juan Gas Processing Plant Location NW1/4 NW 1/4 14 29N 11W
Ut. Ltr. Sec. Twp. Rge

Size of pit or tank: West 183' X 226" East 234' X 230'

Operator requests exception from the requirement to screen, net or cover the pit or tank at the above-described facility.

X The pit or tank is not hazardous to migratory waterfowl. Describe completely the reason pit is non-hazardous.

The pit accepts only non-contact cooling tower water. The water used in the cooling tower exhangers does not contact any process fluid and has no opportunity for contamination.

1) If any oil or hydrocarbons should reach this facility give method and time required for removal:

Oil or hydrcarbons will be removed by using absorbent booms to soak up oil. A supply of booms and absorbant materials are keep on hand at the facility at all times.

2) If any oil or hydrocarbons reach the above-described facility the operator is required to notify the appropriate District Office of the OCD with 24 hours.

____ Operator proposes the following alternate protective measures:

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JUL 22 1996
OIL CON. DIV.
DIST. 3

CERTIFICATION BY OPERATOR: I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature Kathy A Kanocz Title Environmental Engineer Date 07/16/96

Printed Name Kathy A. Kanocz Telephone No. (713) 293-4067

FOR OIL CONSERVATION DIVISION USE

Date Facility Inspected 7/23/96

Inspected by D-S

Approved by Denny Foust

Title Deputy Oil and Gas Inspector

Date 7/23/96

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

June 27, 1996

CERTIFIED MAIL
RETURN RECEIPT NO.P-594-835-150

Ms. Kathy Kanocz
Conoco, Inc.
P.O. Box 2197-HU 3086
Houston, TX 77252-2197

RE: Discharge Plan Inspection
San Juan Gas Plant GW-035
San Juan County, New Mexico

Dear Ms. Kanocz:

The New Mexico Oil Conservation Division (OCD) on June 5, 1996 along with Mr. David Bottoms of Conoco, Inc. inspected the San Juan Gas Plant (GW-035) as part of the Discharge Plan Renewal process. The inspections purpose was to determine compliance with the previously approved OCD discharge plans for the facility. The information that follows will address the concerns and observations of the OCD at the San Juan Gas Plant (Note: Also included with this report are the photographs that were taken be the OCD during the inspection.)

1. **Solid Waste Issues. (RCRA Subtitle D wastes and RCRA Subtitle C Exempt Wastes)**

- During the inspection it was brought to OCD's attention that a caustic cleaner scrub was going to be performed on the Amine treating system and that Conoco would like to take this waste to Basin Disposal. At that point the OCD inspectors advised Conoco that an analysis for hazardous characteristics would have to be performed on the waste caustic scrub in order to determine proper disposal options since this would be a non-exempt waste from RCRA Subtitle C. Note: Basin Disposal is permitted through the OCD to receive only wastes that are exempt from RCRA Subtitle C.

- Paint wastes are per the Conoco people handled by Riley Industries - OCD would like to see know how Riley handles the paint waste for Conoco and at what disposal facility the waste is currently sent to?

- How and where would Conoco dispose of used batteries such as those in the MCC building serving as back-up power to the electronic control systems?

- Laboratory waste is non-exempt from RCRA Subtitle C regulations - Conoco is currently seggrating the waste from the lab and adding into the Amine waste water tank which is hauled to a Class II disposal well. Conoco shall sample the lab waste for hazardous characteristics (D listing) and verify that the lab waste is not considered an F, K, P, or U listed hazardous waste, per 40 CFR Part 261. If the lab waste is hazardous Conoco needs to contact the NMED HRMB at (505)-827-1558 Mr. Coby Muckelroy for further guidance. In any case Conoco will send the sample results to the OCD Santa Fe office for review. Conoco shall seek and /or propose appropriate disposal or recycling methods for the lab waste.

NOTE: (UIC Regulations) - 40 CFR PART 144.6 B. " *Class II. Wells which inject fluids: (1) Which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operation unless those waters are classified as a hazardous waste at the time of injection.*"

- With regards to other "Gas Plant waste waters" Conoco is asked to sample/classify those wastes at the primary point of generation before they are mixed in accordance with the EPA document *"EPA530-K-95-003, May 1995." Title: " Crude Oil and Natural Gas Exploration and Production Wastes: Exemption from RCRA Subtitle C Regulation"* **- enclosed for Conoco reference -**

- See photo No.07 Dated:06/05/96 - the "Solid Waste Dumpster area" the two 55 gallon drums need to be labeled as to thier contents.

2. **Pollution Prevention and Containment Areas:**

- The lube oil vents on the inlet gas turbines are misting oil outside of the containment areas and getting onto the ground. Conoco will resolve this issue by placing a device or similar item on the end of these vents as suggested by Mr. David Bottoms with Conoco. Also, Conoco will clean up the small spills that are a result of this process by insitu remmediation or other approvable method proposed to the OCD. Also, plant clean up crews need to avoid the practice of allowing wash water to drain off the excellent spill control pad/curb containment Conoco has in place - and will make sure that all wash water is directed to the sumps located through out the process area.

- In accordance with OCD Discharge plan guidelines Conoco will be required to test for integrity all below grade waste water lines as part of the renewal process. Conoco will notify the OCD 72 hours in advance of any integrity testing of below grade lines so that the OCD may have the opportunity to have a representative present to witness the test.

P 574 035 150

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to Conoco - Ms Kathy Kanicz	
Street & Number P.O. Box 2197 - HU 3086	
Post Office, State, & ZIP Code Houston, TX 77252-2197	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

- The Methanol storage tank needs to have its secondary containment sealed - during the inspection OCD inspectors and Mr. David Bottoms with Conoco noted that weeds were growing through the containment.

- See photo No. 03, Date:06/05/96 - the pumps serving the cooling tower were leaking water from the pump seals off of the pump containment onto the ground - Conoco needs to correct this problem. Note: The OCD understands that just simply replacing the seals may not be a long term solution, so perhaps Conoco will look into an expanded containment area for the pumps.

- The water treatment building which is west of the cooling tower had a below grade sump with an open drain line capped by a removable plug-Since Conoco in all probability would not drain the contents of the sump (due to the chemicals that are stored in the building) the OCD requires that Conoco permanently seal the drain line.

- See photo No. 06, Date:0605/96 - the leak detection underdrains need to be capped on the surface - the leak detection at the ponds shall be monitored at least monthly and documented by Conoco.

- All existing below grade tanks and sumps that do not have leak detection shall be cleaned and inspected annually for mechanical integrity and all the results of such tests will be documented by Conoco. Any new below grade sump or tank will have secondary containment and leak detection incorporated into the design and will be approved by the OCD prior to installation.

If you have any questions regarding this matter feel free to call me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineer
Environmental Bureau OCD

Attachment

XC: Mr. Denny Foust - Geologist, Mr. G. Lane Ayers - Conoco Inc.

ATTACHMENT - PHOTOS
SAN JUAN GAS PLANT GW-035

<CONOCO> GW-035 (PHOTOS BY OCD)

PHOTO NO. 01 DATE: 06/05/96

PHOTO NO. 02 DATE: 06/05/96

<CONOCO> GW-035 (PHOTOS BY OCD)

PHOTO NO. 03 DATE: 06/05/96

PHOTO NO. 04 DATE: 06/05/96

<CONOCO> GW-035 (PHOTOS BY OCD)

PHOTO NO. 05 DATE: 06/05/96

PHOTO NO. 06 DATE: 06/05/96

<CONOCO> GW-035 (PHOTOS BY OCD)

PHOTO NO. 07 DATE: 06/05/96

5/23/96 GW-035
D.P. Renewal Application.

DISCHARGE PLAN

SAN JUAN GAS PROCESSING PLANT

BLOOMFIELD, SAN JUAN COUNTY

May 1996

Prepared by

Conoco Inc., Natural Gas & Gas Products Department
P.O. Box 2197- HU 3086
Houston, TX 77252

I. Type of Operation

San Juan Gas Processing Plant is a natural gas, cryogenic processing plant, and propane manufacturer and distributor. The plant processes natural gas to remove the liquids and sells the liquids and dry, residue gas.

Two natural gas streams are delivered from El Paso's Blanco Plant to the San Juan Processing Plant: (1) 180 MMSCFD at 300 psi and (2) 320 MMSCFD at 900 psi. Stream (1) is compressed at the San Juan Plant to 900 psi for combination with Stream (2).

Prior to processing, all water must be removed from the gas stream because of low temperature in the cryogenic process. To remove free water, separators are used. This water is used as amine system make-up water. The gas then flows through desiccant dehydration beds to remove the entrained water. The beds are regenerated using hot gases flowing through the saturated desiccant. Subsequently cooling the gases and removing the waste in a knock-out vessel. The water flows into the closed drain vessel, the oil-water separator (skim basin M1402) and then to the oily water storage tank (TK-1403). See Appendix A for a schematic of the wastewater system.

The dehydrated natural gas is then transferred to two parallel 250 MMSCF liquid extraction trains and passing through a series of heat exchangers to reduce the temperature to approximately -100^0 F. A high pressure cold separator removes any free liquified hydrocarbons.

The vapor from the cold separator is fed to the turboexpander. A near isentropic expansion drops the vapor phase pressure to demethanizer pressure, both cooling the gas to -150^0 F and delivering shaft work to the turboexpander recompressor. The turboexpander is used for partial compression of the residue gas.

The cold methanizer residue stream, recovered at the top of the demethanizer, goes to the cryogenic heat exchangers. The warmed gas is compressed by the turboexpander recompressor before transfer to residue compression, two parallel 15,000 horsepower compressors. These compressors increase residue gas pressure for delivery to pipeline.

In the demethanizer, ethane, propane, butane and condensate (EPBC) are liquified and recovered. The EPBC is either fed to the deethanizer for PBC recovery or sent to the MAPCO Rocky Mountain product pipeline to Mont Belvieu, Texas.

Ethane and some propane (EP), recovered at the top of the deethanizer, are either combined with the residue gas prior to final compression or condensed and shipped via MAPCO's pipeline. The bottoms from the deethanizer contain

mainly propane, butane, and condensate (PBC). This stream is transported via pipeline to the Conoco Wingate Plant.

The amine unit recovers CO_2 from the EP product stream. Although inlet and residue gas H_2S concentration meet pipeline quality standards, trace amounts of H_2S remain in the EPBC stream and are subsequently removed with the CO_2 from the product stream. The amine unit vent gas is bubbled through a tank filled with proprietary alkaline aqueous solution known as "Gas Spec".

The "Gas Spec" system is designed to extract hydrogen sulfide from the amine unit vent gas which is predominantly carbon dioxide (CO_2). The H_2S removed and entrained in the "Gas Spec" solution. The spent solutions is non-hazardous.

Appendix B is a process flow diagram of the plant operations.

II. Operator/Legally Responsible Party & Local Representative

Conoco Inc. operates the San Juan Gas Processing Plant.

a. Natural Gas & Gas Products Department Contact
   Rick McCalip
   Director of Safety & Environmental Services
   Conoco Inc., Natural Gas and Gas Products Department
   P.O. Box 2197 - Humber 3000
   Houston, TX 77252-2197
   (713) 293-1123

b. Site Contact
   Lane Ayers, Plant Manager
   P.O. Box 217
   Bloomfield, NM 87413
   (505)632-4900

III. Location of Discharge/Facility

The San Juan Gas Plant is located 1.5 miles north of Bloomfield off Highway 44, in the NW 1/4, NW 1/4 Section 14, Township 29N, Range 11W in San Juan County. A U.S. Department of the Interior Geological Survey/Topographical Map and a facility plot plan are included in Appendices C and D, respectively.

IV. Landowners

El Paso Natural Gas
P.O. Box 4990
Farmington, New Mexico, 87499

V. Facility Description

Appendix D is the facility plot plan. It shows the facility boundaries, the location of fences, pits, dikes/berms, and tanks. The plot plan also identifies the locations of storage facilities, processing facilities, and other relevant areas.

VI. Material Stored or Used at the Facility

The materials stored or used at the San Juan Gas Processing Plant including the form of the material, the type of container, estimated volume, and location is provided in Appendix E.

All of the listed liquid materials are stored at atmospheric pressure in above-ground tanks with secondary containment (floor drains or dikes).

VII. Source and Quantities of Effluent and Process Fluids

A. Below are the sources and types of major effluents, the estimated quantities in barrels or gallons per month and the types and volumes of major additives.

SOURCE	QUANTITY PER MONTH	ADDITIVES
1. Separators, Scrubbers, and Slug Catchers	Separator water, stormwater, and washwater is drained to TK-1403. The estimated quantity per month is 136,875 gallons.	N/A
2. Boilers, Waste Heat Recovery Units, Cogeneration Facilities, & Cooling Towers/Fans	Continuous cooling water blowdown is discharged to two evaporation ponds at 306,600 gallons per month.	-anti-scale phosphonates -sulfuric acid -chlorine -biocide (non-phenol based) (used as needed)
3. Wash-down /Steam-out	N/A	N/A
4. Solvent/Degreaser use	N/A	N/A
5. Spent Acids or Caustics	N/A	N/A
Used Engine Coolants	N/A	N/A
7. Used Lubrication and Motor Oil	N/A	N/A
8. Used Lube Oil and Process Filters	N/A	N/A
9. Solids and Sludges from Tanks (Gas Spec/Sulfa Check)	60 cu. yd. each 6 months	Gas Spec
10. Painting Wastes	N/A	N/A
11. Sewage	N/A	N/A
12. Laboratory Wastes	N/A	N/A
13. Other wastes liquids	N/A	N/A
14. Other waste solids	N/A	N/A

B. Quality Characteristics

The major effluents and solid waste identified above are exempt from RCRA under the E&P exemption, 40 CFR 261. Special wastes[1] are re-tested and re-profiled. Analytical data on liquid and solid wastes are obtained as required by the disposal facilities, state, or federal laws. The data are kept on file at the plant.

C. Commingled Waste Streams

Water from the separators, stormwater and washwater are commingled in tank TK-1403, the oily water separator tank. Analytical data indicate that these waste water streams are non-hazardous.

VIII. Current Liquid and Solid Waste Collection/Storage/Disposal Procedures

A. Summary Information

Appendix F provides summary information of the liquid and solid waste collection/storage and disposal practices at the San Juan Gas Processing Plant.

Additionally, the San Juan Plant property is graded with drainage from north to south. All process transfer and storage equipment have secondary containment. Process areas are located on graded concrete pads with drainage to the waste water collection system. All other equipment foundations are connected to an open drain system which leads to the oil/water separator, (i.e., skimmer basin). At the skimmer, gravity separates oil from wastewater. The oil is pumped to a slop oil storage tank. The wastewater - stormwater and washwater - are diverted to a 500-barrel tank, TK-1403.

Tanks are surrounded by earthen or concrete dikes with the OCD required capacity. They are fitted with manually operated, positive shut-off valves. Dikes are drained only after visual inspection assures no oil sheen is present. A dike is constructed along the southwest property line to prevent any oil escape from the facility.

In the unlikely event of a significant amount of oil reaching this barrier, a third party cleanup will be authorized to remove any retained oil.

Only waste materials are stored underground in sumps and oil skimmer pits. The oil-water skimmer is drained annually and visually inspected.

[1]Special Wastes - those generated by industrial processes (i.e., used filters.)

Sulfuric acid is controlled by pH sensors on the cooling water system. These prevent wide swings in the pH of the blowdown water.

Methanol is used periodically to prevent freeze-ups in the plant process. The methanol stays in the product stream and leaves the plant with the products.

Any losses of diethanolamine (DEA) from the amine unit or amine process area are collected in TK-803.

Precautions have also been taken to prevent contamination of the storage tanks. For example, any oil that enters the open drain system must pass thorough the oil-water separator where it will be removed. If the separator fails to operate properly, the oil-contaminated wastewater will be pumped to the water storage tank, TK-1403.

Only two underground tanks are subject to this plan. Appendix G details characteristics of each tank. Both tanks are installed in the gas treating (amine system) area at an approximate depth of eight (8) feet. To install the tanks below grade, an outside contractor was hired to drill though the rock which is present at the location. Both sites were packed with fresh dirt prior to installing the tanks. No groundwater was encountered during the installation procedure.

Used oil is collected and stored in a tank on site. The used oil is sold to Giant Refinery. They pick up the used oil periodically by vacuum truck. Oil filters are drained and stored in special waste dumpsters for disposal by Waste Management.

B. Collection and Storage Systems

1. Wastewater Flow Schematics

   Appendix A is a diagram of the plant's wastewater system. Estimated maximum flow rates are shown for each stream. Wastewater temperatures are not expected to exceed the ambient temperature.

2. Tankage and Chemical Storage Areas.

   To prevent discharges from reaching surface and groundwater, the San Juan Gas Processing Plant has measures in place that meet the OCD design requirements outlined in the guidelines for discharge plans.

3. Piping

   All in-plant piping was designed and tested in accordance with American

National Standards Institute (ANSI) B 31.3. All pipe except the 6-inch sanitary sewer line is carbon steel line pipe. Carbon steel pipe was wrapped and checked with a holiday detector prior to installation. Design corrosion allowance is 0.063 inches. The 6-inch sanitary sewer line (Line No. 6 DY16101) is standard PVC pipe. Appendix H lists the piping specifications and includes all underground pipe line numbers with respective wall thickness, operating pressure and temperature, and design pressure and temperature.

All tanks and piping were pressure-tested prior to being placed in service to insure equipment integrity. Numerous pressure monitors are located on plant piping, tanks, and vessels for leak detection.

Plant piping and equipment are designed to resist corrosion for the life of the facility. All underground steel piping is doped and wrapped. Tanks are tested for metal thickness approximately every two years. The two underground tanks in the gas treating area (V-806 and V-807) are pressure tested every two years. Additional testing is performed on an as-needed basis.

C. Existing Effluent and Solids Disposal.

1. On-Site Facilities

a. Surface impoundments

Two evaporation ponds were installed in 1993. Cooling tower blowdown wateris directed to these ponds. Appendix I provides details on the construction and use of the ponds.

b. There are no on-site leach fields.

c. There are no on-site injection wells.

d. There are no drying beds or other pits on site.

e. There is no on-site solids disposal.

f. There is no landfarm associated with the gas plant.

2. Off-site Disposal

A. Wastewater

The sources and estimated composition of the major wastewater streams are described in Section VII. Additional detail is provided in Appendix A.

Domestic wastewater and sewage are discharged via pipeline into the City of Bloomfield's wastewater treatment system:

City of Bloomfield
P.O. Box 1839
1076 South Church
Bloomfield, NM 87413

Separator water, stormwater, and washwater are collected in TK-1403 and transported for disposal by one of the following companies:

Dawn Trucking
P.O. Box 1498
Farmington, NM 87499

Sunco Trucking Company
P.O. Box 443
Farmington, NM 87499

Class II disposal wells owned by third parties are used for the effluent disposal. Two disposal sites are used so that storage capacities are not exceeded while one well is being repaired or worked over. One of the trucking companies delivers the wastewater to either of the following Class II disposal wells:

Basin Disposal Well
County Road 5046
Bloomfield, NM 87413

Sunco Disposal Well
3145 County Road 3500
Azetc, NM

B. Solids and sludges are trucked offsite to the appropriate landfill or hazardous waste facility at the following locations :

Crouch Mesa Landfill (solid waste)
78 County 3140
Farmington, NM 87499

US PCI Lone Mountain Facility (hazardous waste)
5 mi east, 1 mi north of Hwy 281 and 41 junction
Waynoka, OK
EPA ID # OKD065438376

IX. Proposed Modifications

There are no proposed modifications at this time.

X. Inspection, Maintenance and Reporting

A. Routine Evaporation Pond Inspections.

The evaporation ponds are double-lined and include an interstitial leak detection system to monitor fluid containment. The leak detection devices are monitored monthly.

B. Groundwater Monitoring.

There is no groundwater monitoring at this time.

C. Procedures for Containment of Precipitation and Runoff.

The gas treating area is contained with concrete flooring and curbed, providing secondary containment of potentially contaminated stormwater and/or washwater and any spills. The curbed area drains to TK-803, a 500-barrel tank.

All other equipment foundations are equipped with drains to collect dripped fluids and washwater. These areas drain to TK-1403, a 500-barrel tank. A 2-3 foot earthen dike was constructed inside the fence at the south edge of the property. The dike contains all other stormwater, preventing any runoff to surrounding areas. A field road, outside the fence and on El Paso Natural Gas property, provides secondary containment before any stormwater reaches Citizen's Ditch.

Precautions to eliminate runoff contamination have been taken. If for any reason contamination should occur, a third party will be contacted immediately to provide whatever services are necessary to remedy the situation. A list of service providers is maintained in the SPCC Plan.

Oil pads are used liberally to cleanup small spills. This prevents future groundwater contamination.

Washwater from equipment cleaning and maintenance is sent via the drain system to the waste water tanks for proper disposal.

XI. Spill/Leak Prevention and Housekeeping Procedures

A. Containment and Cleanup of Spills

As required by Federal regulations, 40 CFR 112, the San Juan Gas Plant operates in compliance with an SPCC Plan. The SPCC table of contents is shown in Appendix J.

The SPCC plan specifies containment requirements for tanks and other equipment. All tanks used to store hydrocarbons, or liquids at standard temperature and pressure, or hazardous substances are diked or curbed to prevent releases in the event of tank failure.

Plant personnel receive annual training on spill prevention, containment, cleanup, and notification procedures. In the event of a spill of oil or other regulated materials, the Oil Conservation Division and the Environment Department will be notified as specified in Conoco's Spill Reporting Procedures Guide. A copy of this guide is included in Appendix K.

XII. Site Characteristics

A. Hydrologic Features

Appendix L, the New Mexico Bureau of Mines & Mineral Resources Hydrogeologic Map of the San Juan Basin illustrates the area surrounding the facility. All bodies of water, rivers, and canals are labelled.

B. Geologic Description of Discharge Site

Appendix C is a U.S. Department of the Interior Geological Survey/Topographic Map. The soil is Fruitland sandy loam, 0-2 percent slopes. Appendix L provides hydrogeologic data for the area.

C. Flood Protection

Site work including grading changes was conducted prior to commencement of construction. A contour map showing final elevations and plant orientation is included in Appendix M. The entire plant site is elevated to effectively eliminate any potential for flooding. Sources of potential stormwater contamination are curbed to prevent such contamination.

XIII. Closure Plan for San Juan Gas Plant

In the event Conoco were to cease operation and close the Plant, prior to permanent closure, Conoco would perform an assessment of the site to

determine if there has been an exceedance of the standards of Section 3103 or the presence of a toxic pollutant in the groundwater.

The following is an description of Conoco's plan to close the San Juan Gas Plant site if operation of the facility were to cease.

A. Dismantle the hardware at the plant.
B. Remove above ground equipment and associate piping.
C. Remove underground equipment and associated piping.
D. Properly dispose of wastes.
E. Remove the double lined pit liner from the evaporation ponds.

Along with the plant dismantling and equipment removal, an environmental assessment of the plant site would be performed. Remediation and cleanup of any spills that may have occurred during the operation of this plant would be conducted. If contamination is found during the assessment, the following procedure will be used to determine if the standards of section 3103 have been exceeded and to determine the nature and extent of remediation:

1. Determine the vertical and horizontal extent of contamination.

2. Remediate contamination using NMOCD guidelines.

3. Conduct groundwater monitoring as appropriate

4. Remediate contaminated soils by landfarming, aeration, or other appropriate method. Provide closure reports to the appropriate agencies when closure levels are met.

5. Remediate contaminated water by approved methods. Provide closure reports to the appropriate agencies when closure levels are met.

6. Conoco is financially able to accomplish the closure of the San Juan Gas Processing Plant.

XIV. Copies

Copies of the discharge plan have been provided as follows: original plus one copy to the Santa Fe office, one copy to the appropriate District Office.

XV. Certification

I hereby certify that the information submitted with this application is true, and correct to the best of my knowledge and belief.

Rick McCalip

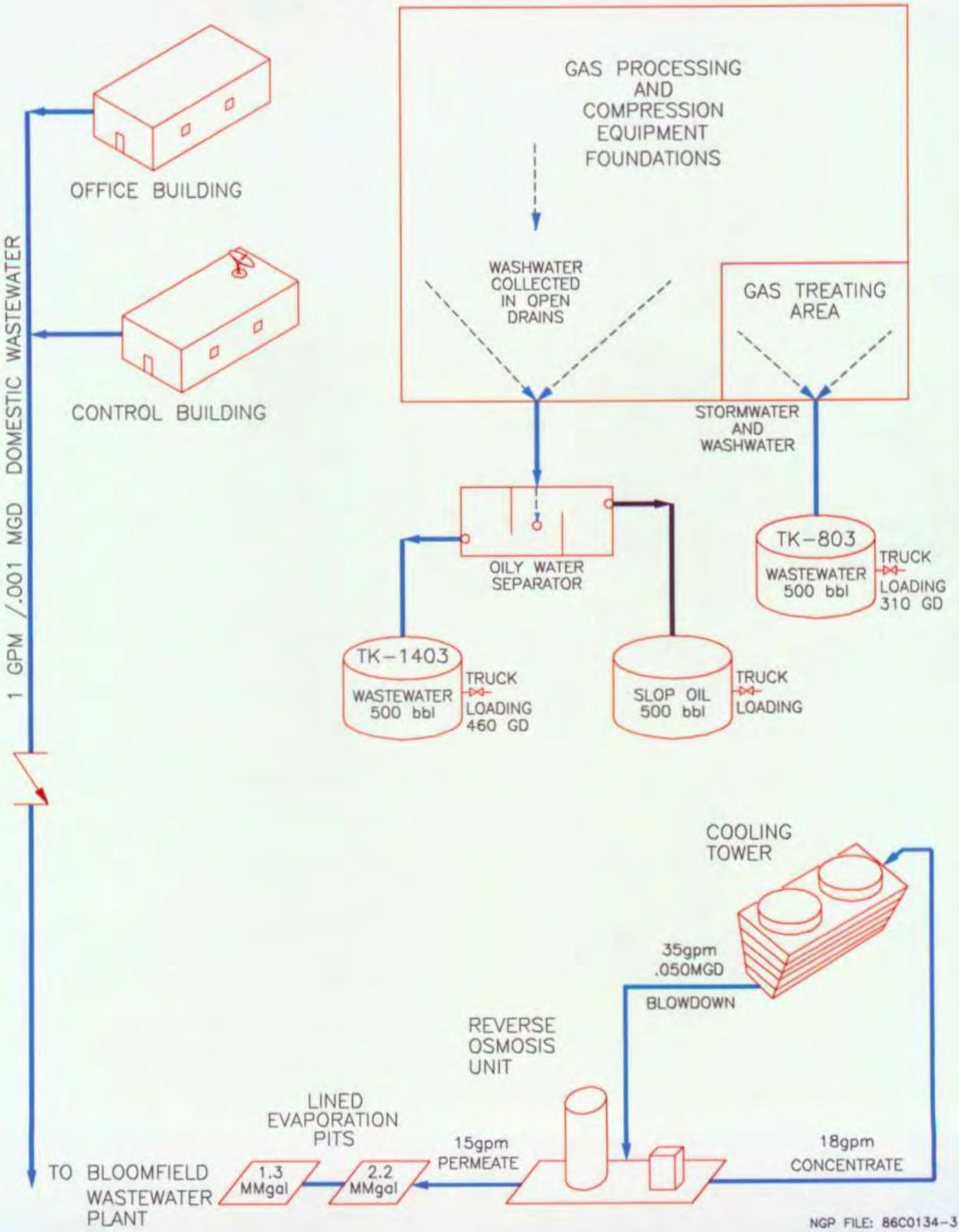
Rick McCalip 5-15-96

(signature)(date)
Director - Safety & Environmental Services
Natural Gas & Gas Products Department

Appendix A

Wastewater Collection System Schematic Diagram

SCHEMATIC DIAGRAM
WASTEWATER DRAINAGE SYSTEM
CONOCO, INC.
SAN JUAN BASIN PLANT

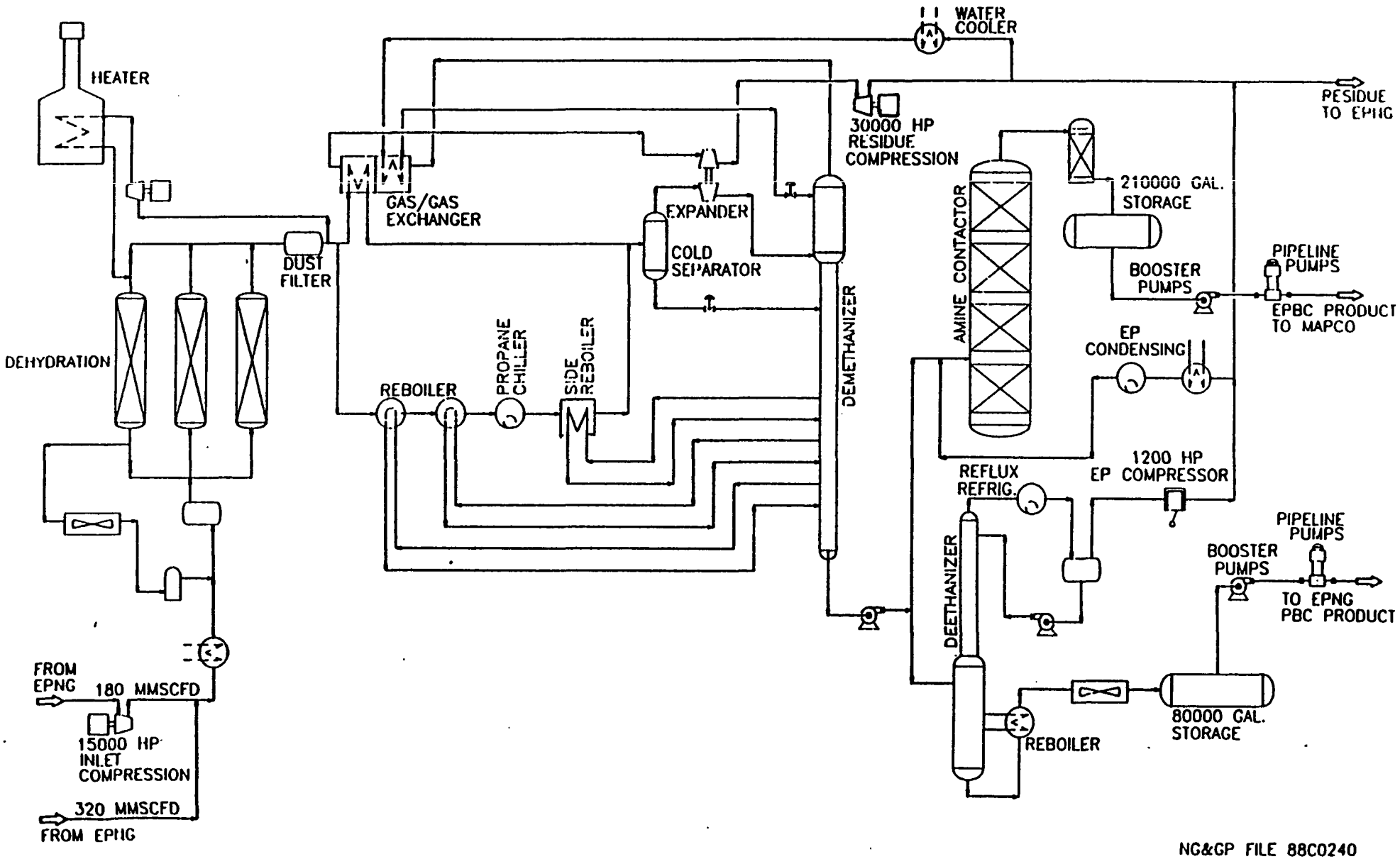


NGP FILE: 86C0134-3

Appendix B

Process Flow Diagram

SAN JUAN GAS PLANT – PROCESS FLOW DIAGRAM



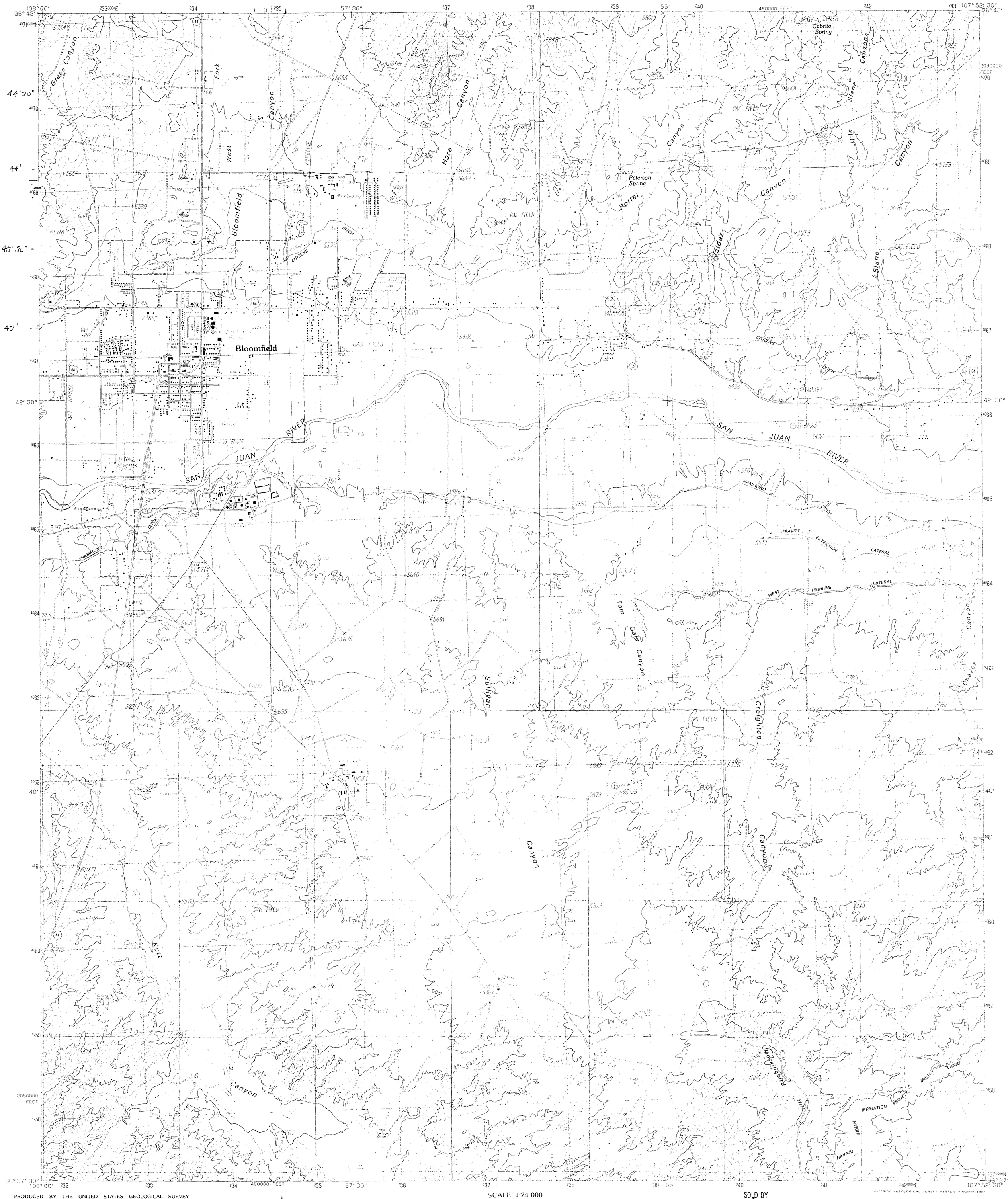
NG&GP FILE 88C0240

Appendix C

U.S. Department of the Interior
Geological Survey/Topographic Map

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BLOOMFIELD QUADRANGLE
NEW MEXICO–SAN JUAN CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY ..... USGS, NOS/NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN 1977
FIELD CHECKED ..... 1981 MAP EDITED 1985
PROJECTION ..... TRANSVERSE MERCATOR
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR ..... ZONE 13
10,000-FOOT STATE GRID TICKS ..... NEW MEXICO, WEST ZONE
UTM GRID DECLINATION ..... 1°45′ WEST
1985 MAGNETIC NORTH DECLINATION ..... 13° EAST
VERTICAL DATUM ..... NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM ..... 1927 NORTH AMERICAN DATUM

To place on the predicted North American Datum of 1983, move the projection lines as shown by dashed corner ticks (2 meters north and 56 meters east)

There may be private inholdings within the boundaries of any Federal and State Reservations shown on this map

NORTH

SCALE 1:24 000

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER
1 MILE

CONTOUR INTERVAL 20 FEET

PROVISIONAL MAP
Produced from original manuscript drawings. Information shown as of date of field check.

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092

SOLD BY
GAYLORD STICKLE CO. & ASSOC., INC.
Authorized Agents For U.S. Geological Survey Maps
Houston, Texas
528-5471

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Flora Vista
2 Aztec
3 Turley
4 Horn Canyon
5 Blanco
6 Gallegos Trading Post
7 East Fork Kutz Canyon
8 Huerfanito Peak

ADJOINING 7.5 QUADRANGLE NAMES

ROAD LEGEND

Improved Road .....
Unimproved Road .....
Trail .....

Interstate Route U.S. Route State Rou

BLOOMFIELD, NEW MEXICO

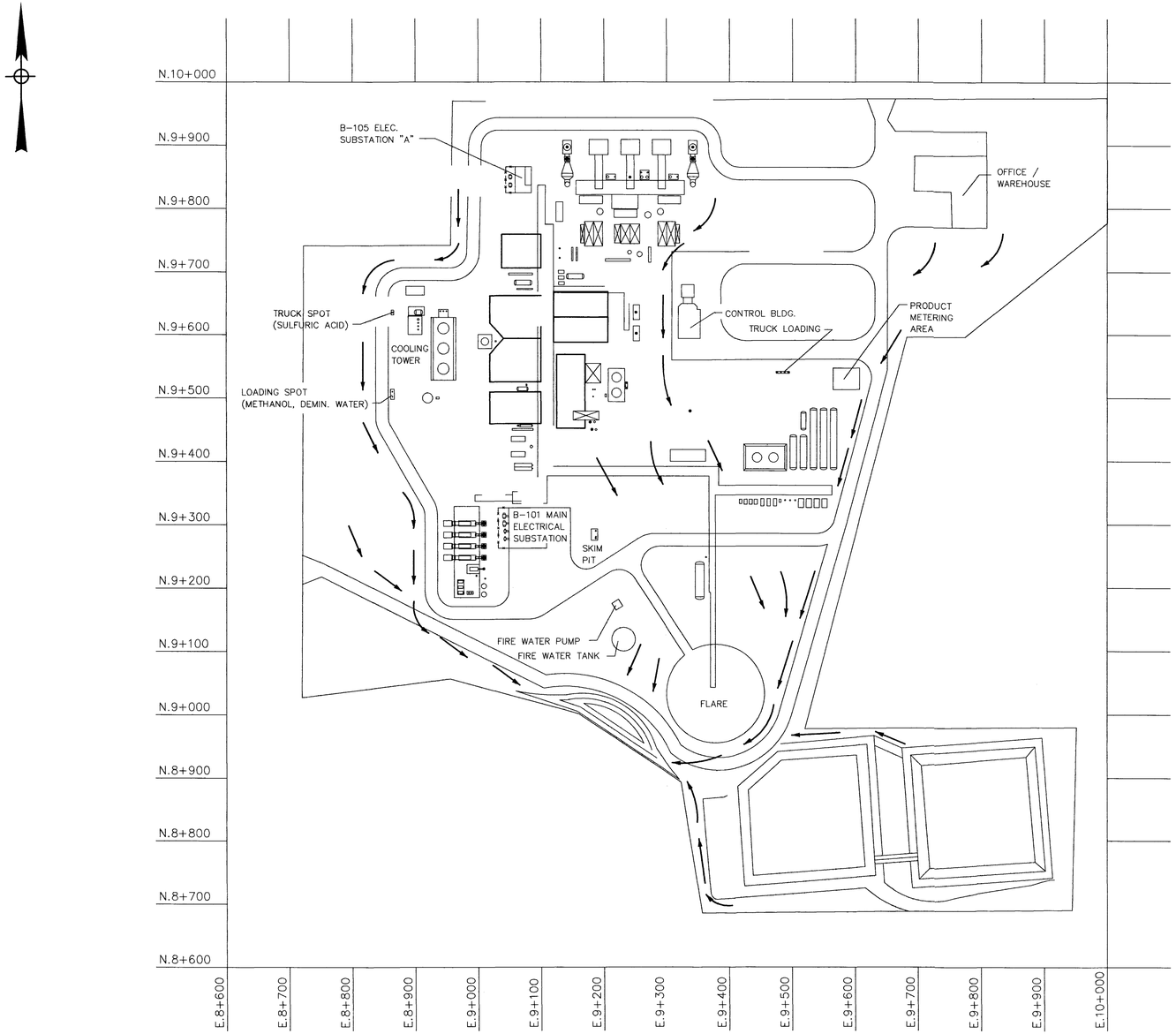
PROVISIONAL EDITION 1985

36107-F8-TF-024

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA 1985

Appendix D

Facility Plot Plan



REFERENCE DRAWINGS:

NO.	DATE	REVISION	DRW.	DES.	CHK.	APP.

NO.	DATE	REVISION	DRW.	DES.	CHK.	APP.
A	23SEP93	ISSUE FOR APPROVAL	JWU	VGW	VGW	

CONOCO INC.
NATURAL GAS & GAS PRODUCTS DEPARTMENT

SAN JUAN BASIN GAS PLANT

SPCC DRAWING

SCALE: 1"=100'	PLOT SCALE: 1"=100'
AFE:	LOCATION: BLOOMFIELD, NM
DWG. NO: NG&GP-SJSPCC	REV. A

DWG NO. NG&GP-

JWU

092293.1606 SJSPCC

Appendix E

San Juan Plant Chemicals Stored and Used Inventory

SAN JUAN PLANT
CHEMICAL STORED OR USED INVENTORY

Chemical	Mfr./MSDS by (other than Conoco)		Quantity (Lbs)		Quantity (Gal,Bbl,...)		Days on Site	Stge. Code	Pres. Code	Temp. Code	*Container and Location
			Maximum	Average	Maximum	Average					
Acetylene	General Electric	*EH/BT	76	38			365	L	1	4	Warehouse
Activated Alumina	Alcoa	NH	Not Stored								
Alcohol-Based Window Cleaner	General Monitors	BT			2 gal	1 gal					I & E Shop
Amino Acid Reagent Powder	Betz	BT	4	2			365	K	1	4	Lab
Ammonium Bisulfite Solution Industrial	Hickson Kerley		2,200	1,760	200 gal	160 gal	365	I	1	4	Amine Area
Antifreeze			2,075	1,800			365	D	1	4,5	Oil Storage
Asto 500	Royal Lubricants Co.	NH			165 gal	55 gal	365	D	1	4	Oil Storage
A. T. Fluid Type F		NH	800	600			365	D,R	1	4	Oil Storage
B&B 3100	B&B Chemical Co.	BT	300	200			365	F	1	4	Shop
BFC (Halon 1211)	ICI U.S. Inc.		Not Stored								Gas Turbines & Generators
Benzene	DuPont		Not Stored (found in inlet gas only)								EPBC Driers
Betz Inhibitor 20K-41558	Betz		5,700	3,200	450 gal	250 gal	365	A	1	4	Cooling Towers
Betz Inhibitor 22K-41557	Betz	NH	4,400	2,400	450 gal	250 gal	365	A	1	4	Cooling Towers
Blend 4A8-92	Phillips 66	BT	10	5			365	L	2	4	
Blue Toolmaker's Ink 6001,..	Crown Industrial	BT		<1		12 oz	365	N	1	4	I & E Shop
Bromocresol Green	Ricca	BT			1 gal	<1	365	M	1	4	Lab
Buffer Solution, pH 4.00	Ricca	NH			2	<2	365	N	1	4	Lab

Chemical	Mfr./MSDS by (other than Conoco)		Quantity (Lbs)		Quantity (Gal,Bbl,...)		Days on Site	Stge. Code	Pres. Code	Temp. Code	*Container and Location
			Maximum	Average	Maximum	Average					
Buffer Solution, pH 10.00	Ricca	NH			2	<2	365	N	1	4	Lab
Buffer Solution, pH 7.00	Betz	NH			1 gal	<1	365	N	1	4	Lab
Burke 881 LPL Epoxy Patch	Burke Co.	BT			1 gal	<1	365	N	1	4	I & E Shop
Butane/Gasoline Mix											Process & Storage
Butane/Isobutane			1,500,000	900,000			365	A	2	4,5,6,7	Process & Storage
Cairox Potassium Permanganate	Carus Chem.	BT	50	<35			365	D	1	4	Cooling Tower
Calcium Indicator	Betz	BT	2	<1			365	N	1	4	Lab
Capella Oil WF68, 00562	Texaco	NH	2,700	2,000			365	A,N	1,2	4,5	Oil Storage
Carbon Dioxide	General Electric		800,000	460,000			365	A	2	5,6,7	Process & Amine Sulfa Check Area
Cecarbon Activated Carbon	Atochem	NH	2,000	1,100			365	A,I,K	1,2	4,5	Oil Storage
Certi-Etch	Certified Labs		not stored								
Cer-wool Blanket HT, HP, RT, LT	C-E Refractories		Not Stored				365	K	1	4	Dehy Heaters
Cer-wool Moldable F	C-E Refractories		Not Stored				365	F	1	4	EPBC Drier Heater
Cerablanket (Alumino silicate)			Not stored								Dehy Heaters
Chlorine	Chlorine Institute	*EH	1,500	900			365	L	2	4	Cooling Tower
Coil Clean	Landa Inc.	BT			1 gal	<1	365	N	1	4	I & E Shop
Condensate (Natural Gasoline)			1,000,000	750,000			365	A	2	4,5,6,7	Process & Storage Area

Chemical	Mfr./MSDS by (other than Conoco)		Quantity (Lbs)		Quantity (Gal,Bbl,...)		Days on Site	Stge. Code	Pres. Code	Temp. Code	*Container and Location
			Maximum	Average	Maximum	Average					
Conductivity Std 1150 MHOS Code 281	Betz Laboratories	NH			1 gal	<1	365	N	1	4	Lab
Conductivity Std 2875 MHOS Code 347	Betz Laboratories	NH			1 gal	<1	365	N	1	4	Lab
Contact Cleaner	Lawson Products	BT	10	3			365	F	2	4	I & E Shop
Cut Thru	Certif labs	BT	70	35	10 gal	5 gal	365	N	1	4	Warehouse
Dectol R. O. Oils		NH	3,600	2,300			365	A,D	1	4,5	Oil Storage
Denstone® 57 (D-57) Balls, Pellets, Tower Packing	Norton Co.			not stored							
Dexron III and Mercon		NH	800	500			365	A,D	1,2	4	Oil Storage
Diesel, No. 2			33,900	18,300			365	A,B, C	1	4	Solar Turbine Area
Diethanolamine 85%	Coastal		200,000	100,000			365	A	1	4	TK-801
DPD Free Chlorine Reagent	Betz	BT	1	<1			365	K	1	4	Lab
DPD-2 Total Chlorine Reagent	Betz Laboratories	BT	5	2.5			365	K	1	4	Lab
DS-1001(dust control)	Environmental Mktg.	NH	600	300	55 gal	30 gal	365	A	1	4	Oil Storage
Ethane			3,000,000	2,000,000			365	A	2	4,5,6,7	Process & Storage Area
Ferrover Iron Reagent	Betz	BT	1	<1			365	K	1	4	Lab
Flap Wheel	Dyna Systems	BT	5	1			365	K	1	4	I & E Shop
Fleet HD Motor Oil		NH	1,600	800			365	D	1	4,5	Oil Storage
Foam-trol CT .841	Betz		1,179	884	4 bbl	3 bbl	365	A	1	4	Cooling Tower

Chemical	Mfr./MSDS by (other than Conoco)		Quantity (Lbs)		Quantity (Gal,Bbl,...)		Days on Site	Stge. Code	Pres. Code	Temp. Code	Container and Location
			Maximum	Average	Maximum	Average					
Foamglass Insulation	Pittsburgh Corning		Not Stored								Process Area & Analyzer Bldg
GPA-NGL Blend No. 5	Phillips 66	BT	10	5			365	L	2	4	Process Area
Gas Treat 102	Champion Tech.		86,800	86,800	8,000 gal	8,000 gal	365	A	1	4	Amine Area
Gear Oils 68, 100, 150, ...		NH	2,500	2,000			365	D	1,2	4	Oil Storage
Gyptron T-92	Champion Tech.		not stored								
Hardness Titrating Solution	Betz	NH			2 gal	<2 gal	365	N	1	4	Lab
Heat Transfer Oil		NH	180,000	175,000			365	A	2	5	V-1101
Hydrochloric Acid Solution 20 & 22 Deg. BE	K A Steel	BT	43	14	3 gal	1 gal	365	N	1	4	Lab
Hydrogen Sulfide		*EH	2,000	1,500			365	R	1,2	4,5,6,7	Sulfa-Check
Kit M-11 Total Count	Betz Laboratories	NH	2	1			365	K	1	4	Lab
KM-12 Sulfate Reducers	Betz Laboratories	NH	2	1			365	K	1	4	Lab
Kwikee Penetrating Oil	Lawson Products	BT	10	5			365	F	2	4	Shop
7.78 lbs/gal		BT	16	4	2 gal	1/2 gal	365	F	1	4	I&E Shop
MB Aerobic Count Plates	Betz	NH	1	<1			365	N	1	4	Lab
MB Dil. Water Sterile, 99 ML	Betz	NH			1	<1	365	N	1	4	Lab
Manville Fiber Glass Insulation	Manville		Not Stored								Process Area
Methane (Sweet Natural Gas)			2,100,000	1,900,000			365	A	2	4,5,6,7	Process & Compression
Methanol	DuPont		70,000	23,000			365	A	1,2	4	TK-1401
Methyl Ethyl Ketone	Celanese Chemical	BT	50	25	10 gal	5 gal	365	F	1	4	Lab

Chemical	Mfr./MSDS by (other than Conoco)		Quantity (Lbs)		Quantity (Gal,Bbl,...)		Days on Site	Stge. Code	Pres. Code	Temp. Code	*Container and Location
			Maximum	Average	Maximum	Average					
Methyl Red	Ricca	BT			1 gal	<1	365	M	1	4	Lab
Methyl Purple	Ricca	BT			1 gal	<1	365	M	1	4	Lab
Mineral Wool Fiber	Rockwool Mftg.		Not Stored								Process Area
Mole Sieve	Union Carbide	NH	Not Stored				365	A,J	1,2	4,5	Dehy's
Molybdate Reagent for Phosphate 1.3	Betz	*EH/BT	10.85	<10.85	1 gal	<1 gal	365	N	1	4	Lab
Nitrogen	Airco Ind. Gases	BT	200	100			365	L	2	4	Analyzer Bldg
Osmonic's Detergent NP-03	Osmonics, Inc.	BT	10	5			365	J	1	4	Cooling Tower
Oxygen	Accurate Gas	NH	450	300			365	L	2	4	Warehouse
Pale Paraffin Oil 10		NH			5 gal	1 gal					Oil Storage
PBC Mix/EPBC Mix			367,220	137,708	80M gal	30M gal	365	A	2	4,5,6,7	Oil Storage
Phenolphthalein Ind	Ricca	BT			2	<2	365	N	1	4	Lab
PK-Standard Dry Chemical	Chemguard Inc.	NH	300	200							Oil Stge.
Plasite No. 71 Thinner	Wisconsin Protective	BT	25	5	5 gal	1 gal					w/ MEKetone
Plasite 9060 Lt Gray 12 lb/gal	Wisconsin Protective		600	60	50 gal	5 gal	365	F	1	4	Shop
Potassium Hydroxide	Ricca	BT	2	<2	2	<2	365	N	1	4	Lab
Propane			2,300,000	1,800,000			365	A	2	4,5,6,7	Process & Storage Area
Propane/Butane Mix											
Prussian Blue	Permatex	BT			2 oz	1 oz	365				Shop
QD Contact Cleaner .760	CRC Industries	BT	13	6	2 gal	1 gal					I & E Shop
Leaded Regular Gasoline-.77			500	250			365	F	1	4	Outside Warehouse

Chemical	Mfr./MSDS by (other than Conoco)		Quantity (Lbs)		Quantity (Gal,Bbl,...)		Days on Site	Stge. Code	Pres. Code	Temp. Code	Container and Location
			Maximum	Average	Maximum	Average					
Rarus SHC 924	Mobil	NH	2,000	1,500			365	C,D	1,2	4,5	Oil Storage
Round-Up L&G Herbicide	Monsanto Co.	BT	49	10	5 gal	1 gal	365	F	1	4	Cooling Tower
Scentinel A	Phillips 66		2,800	1,400	400 gal	200 gal	365	A	2	4	C3 Loading
Silicone Lubricant	Lawson Proucts	BT	3	2	2 gal	2 gal	365	F	2	4	Shop
Slop Oil			125,000	62,500			365	A	1	4	TK-1402
Soda Ash		NH	2,5000	1,250			365	J	1	4	Cooling Tower
Sodium Hydroxide	Betz	BT			1 gal	<1	365	N	1	4	Lab
Solvent 140 Nonexempt	Ashland	BT	100	0	15 gal	0 gal					
Spray Paint	True Value	BT	11	5.5	1 gal	.5 gal	365	F	1	4	I&E Shop
Stainless Steel Cleaner	Lawson Products	BT	5	2			365	F	2	4	Shop
Starch Indicator	Ricca	BT			2 gal	<2	365	M	1	4	Lab
Steel Blue DX-100	ITW Devcon	BT			4 oz	4 oz					Shop
Sulfuric Acid, 77-100%	DuPont	*EH	22,000	10,000			365	A,M	1	4	V-1201 Cooling Twr
Super All-Season Motor Oil		NH			55 gal	25 gal	365	M			Oil Stg Bldg
Super Hydraulic Oil 22, 32,..		NH	4,800	3,000			365	A,D	1,2	4,5	Oil Stg Bldg
Super 77 Kleaning Solvent	Lawson Products	BT	10	8			365	F	1	4	Shop
Super-Sta Grease		NH	20	10			365	K	1	4	Oil Storage
Syncon 32		NH			4,000 gal	2,500 gal	365	A	1	4	Solars
Tefseal	Lawson Products	BT			30 pts	30 pts	365				Shop
Thermo-12	Manville Corp.		Not Stored								Process Area

Chemical	Mfr./MSDS by (other than Conoco)		Quantity (Lbs)		Quantity (Gal,Bbl,...)		Days on Site	Stge. Code	Pres. Code	Temp. Code	*Container and Location
			Maximum	Average	Maximum	Average					
Thymolphthalein	Ricca Chemical Co.	BT	70	10			365	M	1	4	Lab
Trymer 190-2 Rigid Insulation			Not Stored								Process Area
Turbine Oils		NH	100,900	57,000			365	A	1	4,5	Oil Storage
Tutwiler Iodine	Ricca	BT			1	<1	365	M	1	4	Lab
UGL 80W-90		NH	50	25			365	F	1	4	Oil Storage
Unleaded Gasoline			650	300			365	R	1	4	Plant Trucks
Vai-Tex No. 85 & 85-S (Valve Grease)	Vai-Tex	NH	5	3			365	K	1	4	I&E Shop
Valvepack B	Team Inc.		Not Stored								
Zep Choice	Zep Mfg.										
Zep Double Play	Zep Mfg.	BT	197	79	25 gal	10 gal	365	N	1	4	Shop
Zepride - E 1.08	Zep Mfg.		1,983	991	220 gal	110 gal	365	D	1	4	Shop
DUPONT PAINTS	DuPont	BT	200	100			365	F	1	4	Paint Storage
Imron Polyurethane Enamel	DuPont										
Paint Additives	DuPont										
Solvent Based Paints (Other Than Isocyanates)	DuPont										

EH= extremely hazardous
BT= below threshold for SARA III
NH= Not hazardous for SARA III
* Acetylene contains Hydrogen Sulfide (500 = Threshold Quantity)
Chlorine (100 = Threshold Quantity)
Molybdate Reagent for Phosphate contains Sulfuric Acid (500 = Threshold Quantity)
Hydrogen Sulfide (500 = Threshold Quantity)

Appendix F

Waste Management Practices Chart

San [redacted]an Gas Plant

05/09/96

Waste Management Practices

Solid Waste	Process Generating this Waste	Number of Units	Quantity per Unit	TOTALS	Frequency of change "Months"	Annualized Waste Generated	Disposal
Amine Sock Filters	Amine System	1	200	200	3	800	- Drained,dried,keep separate,& dispose at local landfill
Amine Charcoal Filters	Amine System	1	45	45	3	180	- Drained,dried,keep separate,& dispose at local landfill
D-R Lub Skid Filters	D-R Compressor Units	3	51	153	24	76.5	- Drained,dried,keep separate,& dispose at local landfill
Solar Lub Skid Filters	Solar Generator Units	4	5	20	12	20	- Drained,dried,keep separate,& dispose at local landfill
Refrigeration Compressor Lub Filters	Refrig. Compressor Units	3	1	3	12	3	- Drained,dried,keep separate,& dispose at local landfill
EP Compressor Lub Filters	EP Compressor Units	2	1	2	12	2	- Drained,dried,keep separate,& dispose at local landfill
Instrument Air Compressor Filters	Instrument Air Units	3	9	27	12	27	- Disposal at local landfill
Instrument Air Dehy Filters	Instrument Air Dehy System	1	10	10	6	20	- Disposal at local landfill
Expander Lub Skid Filters	Expander Lub Skids	2	3	6	12	6	- Drained,dried,keep separate,& dispose at local landfill
Emergency Generator Filters	Emergency Generator	1	10	10	12	10	- Drained,dried,keep separate,& dispose at local landfill
Fire Water Pump Filters	Fire Water Pump	1	3	3	12	3	- Drained,dried,keep separate,& dispose at local landfill
Regen Compressor Lub Filters	Regen Compressors	2	1	2	24	1	- Drained,dried,keep separate,& dispose at local landfill
P-903 Pump Lub Filters	EPBC Pumps	4	1	4	6	8	- Drained,dried,keep separate,& dispose at local landfill
Inlet Gas Filters	Inlet Gas Dehy Units	2	28	56	6	112	- Drained,dried,keep separate,& dispose at local landfill
Inlet Gas Coalescing Filters	Inlet Gas Dehy Units	2	27	54	12	54	- Drained,dried,keep separate,& dispose at local landfill
Inlet Gas Dust Filters	Inlet Gas Dehy Units	2	55	110	6	220	- Drained,dried,keep separate,& dispose at local landfill
EPBC Coalescing Filters	EPBC Dryer Unit	1	25	25	3	100	- Drained,dried,keep separate,& dispose at local landfill
Avon Inlet Air Filters	D-R Compressor Units	3	224	672	24	336	- Disposal at local landfill
Solar Inlet Air Filters	Solar Generator Units	4	48	192	24	96	- Disposal at local landfill
				Total Annual Filters Waste :		2,075	
Molecular Sieve Type 4A	Inlet Gas Dehy Units	6	586 ft3	3,516 ft3	36	1,172 ft3	- Disposal at local landfill
Activated Alumina	EPBC Dryer Unit	2	195 ft3	390 ft3	36	130 ft3	- Hauled to hazardous waste disposal site in Oklahoma
Activated Alumina	Instrument Air Dryer Unit	1	16 ft3	16 ft3	12	16 ft3	- Disposal at local landfill
Sulfa Check (Sludge) (25 cubic	Sulfa Check Unit (TK-804)	1	675 ft3	675 ft3	4	2,025 ft3	- Dried,keep separate,& dispose at local landfill
Oil Adsorbing Material	Clean-up around Plant	-	-	-	-	-	- Dried,keep separate,& dispose at local landfill
Oily Rags	Plant maintenance activities	-	-	-	-	-	- Dried,keep separate,& dispose at local landfill
Insulation Material	Plant maintenance activities	-	-	-	-	-	- Disposal at local landfill
Aerosol Cans	Plant maintenance activities	-	-	-	-	-	- Use up all paint & dispose at local landfill
Paper Trash	Office Trash	-	-	-	-	-	- Disposal at local landfill

Liquid Waste	Process Generating this Waste	Storage Unit	Quantity per Day Gallons	Quantity per Month Gallons		Annualized Waste Generated		
Produced Waste Waters	Inlet Scrubber Dumps	TK-1403	4,500	136,875	-	1,642,500	gal	- Hauled to Disposal Well
CT Blowdown Water	Cooling Tower	Ponds	10,080	306,600	-	3,679,200	gal	- SJ Evaporation Ponds
Waste Amine	Waste Amine System	TK-802	360	10920	-	131,040	gal	- Hauled to Disposal Well
Waste Oils / Condensate	Inlet Scrubber Dumps	TK-1402	25	760	-	9,120	gal	- Sale to Giant Refinery
Solvents	Parts cleaning Unit	-	-	40	-	480	gal	- Recycled
Paint & Activator	Plant maintenance activities	-	-	-	-	-		- Use up all paint,dry out cans, & dispose at local landfill

Appendix G

Underground Storage Tanks

Appendix G

UNDERGROUND STORAGE TANKS

Tank Number	V-806	V-807
Vessel Name	Amine Drain Tanks	Amine Waste Sump
Commodity Stored	30% Diethanolamine [1]	Stormwater[2]
Capacity (gal)	950	4200
Construction Material	Carbon Steel	Carbon Steel
Dimensions	48" OD x 10' T/T	72" OD x 20' T/T
Wall Thickness [3]	0.25	0.25
External Protection	Epoxy Coating	Epoxy Coating
Design Pressure [4]	14.9 psig @ 150 degrees	12.9 psig @ 150 degrees

(1) DEA solution from system blowdown. This material can be returned to the process unit or disposed of via TK-803

(2) Stormwater from curbed gas-treating area; stormwater through drain to TK-803 via V-807

(3) Wall thickness includes 0.125" corrosion allowance

(4) Both vessels were pressure tested prior to installation and are tested every two years. Next test due September 1996.

Appendix H

Piping Specifications

PIPING SPECIFICATIONS

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Cooling Water					
1.5" WC 12 135 1.5" WC 12 136 1.5" WC 12 141 1.5" WC 12 142	80	70	80	100	150
2" WC 12 115 2" WC 12 116 2" WC 12 134	80	70	71	100	150
3" WC 12 108 3" WC 12 109	STD	70	71	100	150
3" WC 12 124 3" WC 12 125	STD	50	81	100	150
6" WC 12 101 6" WC 12 117 6" WC 12 120	STD	50	81	100	150
8" WC 12 104 8" WC 12 139	STD	70	71	100	150
8" WC 12 140	STD	50	81	100	150
10" WC 12 101 10" WC 12 103 10" WC 12 106 10" WC 12 107	STD	70	71	100	150
10" WC 12 119 10" WC 12 122 10" WC 12 123 10" WC 12 131	STD	50	81	100	150
12" WC 12 118	STD	50	81	100	150
14" WC 12 101 14" WC 12 131	STD	50	81	100	150
16" WC 12 131	STD	50	81	100	150
24" WC 12 101 24" WC 12 132	STD	70	71	100	150
Firewater					
8" WF 14 104 8" WF 14 105 8" WF 14 107 8" WF 14 109 8" WF 14 110 8" WF 14 111 8" WF 14 112 8" WF 14 113	STD	ATM	AMB	NA	NA
12" WF 14 100 12" WF 14 102 12" WF 14 109	STD	ATM	AMB	NA	NA

PIPING SPECIFICATIONS - (Continued)

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Utility Water					
1" WU 14 109 1" WU 14 110 1" WU 14 111 1" WU 14 112 1" WU 14 113 1" WU 14 114 1" WU 14 115 1" WU 14 116 1" WU 14 118 1" WU 14 119	80			200	150
3" WU 14 101	10S	ATM	AMB	100	150
4" WU 14 102	STD			200	150
6" WU 14 101	0.280			200	150
Treated Water					
1.5" WT 14 111	40S	50	AMB	100	150
2" WT 14 104	40S	50	AMB	100	150
3" WT 14 101	10S	ATM	AMB	100	150
Drinking Water					
1.5" WD 14 104 1.5" WD 14 106 1.5" WD 14 107 1.5" WD 14 108	STD	60	70	100	150
2" WD 14 101	STD	60	70	100	150
3" WD 14 101	STD	60	70	100	150
Process Hydrocarbon Liquids					
3" HL 14 106	STD	ATM	AMB	50	150
4" HL 9 180	80	820	110	1415	150
6" HL 9 159 6" HL 9 182	80	1687	83	1815	150
8" HL 9 161	0.322	1687	83	1815	150
Process Hydrocarbon Gas					
20" HG 1 101	STD	345	110	596	150
20" HG 1 112	0.750	845	110	940	150
24" HG 1 111	0.750	845	80	940	150
24" HG 2 110	0.750	850	120	940	150

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Amine					
2" XA 8 125 2" XA 8 132 2" XA 8 144	80	36	70	272	200
2" XA 8 145 2" XA 8 146	80	ATM	AMB	100	150
2" XA 8 150 2" XA 8 151 2" XA 8 153 2" XA 8 160	80	22	AMB	200	150
3" XA 8 129	STD	ATM	AMB	100	150
3" XA 8 142	STD	12	248	100	300
6" XA 8 100 6" XA 8 148	STD	ATM	AMB	100	150
Refrigerant					
1.5" RF 10 140	80	200	100	250	150
2" RF 10 113	80	70	44	250	150
3" RF 10 141	STD	200	100	250	150
Fuel Gas					
2" FG 14 112	80	60	42	110	175
Flare					
2" FL 14 240 2" FL 14 241	80	ATM	AMB	50	-20/260
Methanol					
2" XX 14 101	80	50	110	100	150
Sanitary Sewer					
6" DY 14 101	Standard PVC pipe				
Closed Drain System					
1" DC 14 135	80	300	80	350	275
2" DC 14 102	80	300	80	350	275
2" DC 14 107 2" DC 14 110 2" DC 14 116	40S	40	-200	50	-220/350
3" DC 14 101	STD	300	80	350	275
3" DC 14 122 3" DC 14 127	10S	40	-200	50	-220/350
4" DC 14 109 4" DC 14 112	10S	40	-200	50	-220/350
6" DC 14 123	10S	40	-200	50	-220/350

Notes:

1. Discharge means the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous wastes into or on any land or water.

2. If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated OSC for the geographic area where the discharge occurs. (Refer to EPA Regions or Coast Guard Districts lists on pages Federal – 18 and 19.) If it is not possible to notify the NRC or the predesignated OSC immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible.

3. Each carrier who transports hazardous wastes shall report in writing in duplicate on Form DOT F 5800.1 within 15 days of the date of discovery of each incident that occurs during the course of transportation. A copy of the hazardous waste manifest for the waste must be attached to Form DOT F 5800.1, and an estimate of the quantity of the waste removed from the scene, the name and address of the facility to which it was taken, and the manner of disposition of any unremoved waste must be entered in Part H of Form DOT F 5800.1. Additional forms can be obtained by calling (202) 472-1024 or writing to the following address.

Submit two copies of Form DOT F 5800.1 to:

U.S. Department of Transportation
Research and Special Programs Administration
Information Systems Manager
Washington, DC 20590

(40 CFR 262.34, 265.56, 302.6)

Hazardous Materials:

Report transportation-related (including loading, unloading, and temporary storage) incidents in which as a direct result of hazardous materials (including hazardous wastes) the following occurred to:

National Response Center

(24-hour)	(800) 424-8802
(24-hour)	(202) 267-2675

Notes:

1. Hazardous materials are listed under 49 CFR 172.101.

2. Report incidents in which:

   a. A person is killed.
   b. A person receives injuries requiring his hospitalization.

c. Estimated carrier or other property damage exceeds $50,000.
d. Fire, breakage, spillage, or suspected radioactive contamination occurs involving shipment of radioactive material.
e. Fire, breakage, spillage, or suspected contamination occurs involving shipment of etiologic agents. Notice may be given to the Director, **Center for Disease Control**, U.S. Public Health Service, (404) 633-5313, in lieu of notifying the NRC.
f. A situation exists of such a nature that, in the judgment of the carrier, it should be reported, even though it does not meet criteria a. through c.

3. Reports must include the following:

   a. Name of the reporter.
   b. Name and address of carrier represented by reporter.
   c. Phone number where reporter can be contacted.
   d. Date, time, and location of incident.
   e. The extent of injuries, if any.
   f. Classification, name, and quantity of hazardous material involved, if such information is available.
   g. Type of incident and nature of hazardous material involvement and whether a continuing danger to life exists at the scene.

4. Each carrier who transports hazardous materials shall report in writing in duplicate on Form DOT F 5800.1 within 15 days of the date of discovery of each incident that occurs during the course of transportation. Additional forms can be obtained by calling (202) 472-1024 or writing to the following address.

Submit two copies of Form DOT F 5800.1 to:

U.S. Department of Transportation
Research and Special Programs Administration
Information Systems Manager
Washington, DC 20590

Excess Air Emissions:

Conventional Air Pollutants

In March 1994, EPA issued new rules for new and modified stationary sources of air pollution. The new reporting system relies on owners and operators of facilities to provide ongoing records of the occurrence and duration of any startup, shutdown, or malfunction in operations; any malfunction of the air pollution control equipment; or any periods when a continuous monitoring system or operating system is inoperative. Reports will be made to the EPA Regional Office and/or state authority that oversaw initial construction or reconstruction of the facility.

Additional requirements imposed by the new rule include:

1. Each owner or operator required to install a continuous monitoring system (CMS) or monitoring device shall submit an excess emissions and monitoring systems performance report and/or summary report form to EPA semiannually, except when: (a) EPA requires more frequent reporting; or (b) CMS data are to be used directly for compliance determination, in which case quarterly reports are to be submitted. All such reports are due by the 30th day following the end of each calendar half (or quarter). Written reports shall include the following information:

    a. The magnitude of excess emissions, any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and the process operating time during the reporting period.
    b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. In addition, include information on the nature and cause of a malfunction (if known), the corrective action taken, or preventative measures adopted.
    c. The date and time identifying each period during which the CMS was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
    d. When no excess emissions have occurred or the CMS may not have been inoperative, repaired, or adjusted, such information shall be reported.

2. One summary report form shall be submitted for each pollutant monitored at each affected facility. (The format is found on page Federal – 21.)

    a. If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the report form shall be submitted.
    b. If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and excess emission report described above shall both be submitted.

3. An owner or operator required to submit excess emissions and monitoring systems reports on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if:

    a. For 1 full year (4 quarterly or 12 monthly reporting periods) the affected facility's excess emissions and monitoring systems reports submitted to comply with a standard continually demonstrate that the facility is

complying with the applicable standard.

b. The owner or operator continues to comply with all recordkeeping and monitoring requirements and the applicable standard.
c. EPA does not object to a reduced frequency of reporting for the affected policy. Contact the agency for the information and procedure required for such a determination.

(40 CFR 60.7)

Hazardous Air Pollutants

1. Releases of hazardous air pollutants are subject to the same reporting requirements as **Hazardous Substances** above. (See discussion of Reportable Quantities above.)
2. In addition, releases of specific types of hazardous air pollutants releases may be covered by semiannual and special reporting requirements under the National Emission Standards for Hazardous Air Pollutants (see 40 CFR Part 61).
3. The only applicable special reporting requirement under NESHAP is for Vinyl Chloride relief valve discharges. Within 10 days of any relief valve discharge (except for emergency relief discharge), a written report must be submitted to the appropriate EPA Regional Administrator (refer to listing on page Federal – 18).

The written submission shall include:

a. Source, nature, and cause of discharge.
b. Date and time of discharge.
c. Estimated vinyl chloride loss.
d. Method of estimation.
e. Action to prevent discharge.
f. Measures adopted to prevent future discharges.

(40 CFR 61.65(a))

Wastewater Excursions:

Report any excursion (noncompliance) which may endanger health or the environment within 24 hours of becoming aware of the circumstances to the appropriate EPA Regional Administrator (refer to listing on page Federal - 18). A written submission shall also be provided within 5 days of becoming aware of the circumstances.

Notes:

1. The following shall be included as information which must be reported within 24 hours:

a. Any unanticipated bypass which exceeds any effluent limitation in the NPDES permit.
b. Any upset which exceeds any effluent limitation in the NPDES permit.
c. Violation of a maximum daily discharge limitation for any pollutants listed in the NPDES permit to be reported within 24 hours.

2. Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

3. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

4. The written submission shall be submitted to EPA Regional Offices (see listing on page Federal – 18) and include the following:

   a. Description of the noncompliance and its cause.
   b. Period of noncompliance, including exact dates and times.
   c. If the noncompliance has not been corrected, the anticipated time it is expected to continue.
   d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

5. The Regional Administrator may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

(40 CFR 122.41(l))

Underground Tank Leaks:

Report within 24 hours to:

Environmental Protection Agency
(see listing on page Federal – 18)

Notes

1. Releases can be identified from:

   a. The presence of regulated substances in soils, groundwater, basements, sewers and utility lines, nearby surface waters, or wells.
   b. Unusual operating conditions at the tank system, including sudden loss of a substance from a tank or the unexplained presence of water in a tank.
   c. Monitoring system results, unless:

      (1) The monitoring device is defective, is immediately repaired, and subsequent monitoring does not confirm the release.
      (2) Where monitoring is used to control inventory, the second month of

data does not confirm a similar loss.

2. If the tank holds petroleum, the owner or operator must report, within 24 hours, spills or overfills that exceed 25 gallons, or that cause a sheen on nearby surface waters. If the spill or overfill is less than 25 gallons, the release must be reported to the department if it cannot be cleaned up within 24 hours.

3. If the tank holds hazardous substances, the owner or operators must report within 24 hours any spills or overfills that equal or exceed the Reportable Quantity for that substance under the federal CERCLA law.

(40 CFR 280, Subpart E)

SARA Title III:

Report any release of a hazardous substance equal to or exceeding its reportable quantity in any 24-hour period into the environment, to:

National Response Center

(24-hour)	(800) 424-8802
(24-hour)	(202) 267-2675

Notes:

1. Refer to the SARA Title III section for the state in which the release occurred for further reporting requirements. Refer also to the requirements for reporting Hazardous Substance releases above, which mirror those for SARA Title III releases.

2. Release means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any hazardous chemical, extremely hazardous substance, or CERCLA hazardous substance.

3. Environment includes water, air, and land and the interrelationship that exists among water, air, and land and all living things.

4. Facility means all buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and that are owned or operated by the same person (or by any person who controls, is controlled by, or under common control with, such person). For purposes of emergency release notification, the term includes motor vehicles, rolling stock, and aircraft.

5. The emergency release notification shall include the following:

   a. The chemical name or identity of any substance involved in the release.
   b. An indication of whether the substance is an extremely hazardous substance. (See 40 CFR 355, Appendix A or B.)
   c. An estimate of the quantity of any such substance that was released into

the environment.

d. The time and duration of the release.
e. The medium or media into which the release occurred.
f. Any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals.
g. Precautions to take because of the release, including evacuation (unless such information is readily available to the community emergency coordination pursuant to the emergency plan).
h. The names and telephone number of the person or persons to be contacted for further information.

6. The written follow-up emergency notice(s) required by 40 CFR 355.40(b)(3) does not need to be submitted to the National Response Center; however, it must be submitted to the State Emergency Response Commission. The emergency notice(s) shall update the information required in Note 7 above and include the following:

   a. Actions taken to respond to and contain the release.
   b. Any known or anticipated acute or chronic health risks associated with the release.
   c. Where appropriate, advice regarding medical attention necessary for exposed individuals.

(40 CFR 302, 355)

PCBs:

Under the Toxic Substances Control Act, spills of 10 pounds or more by weight of PCBs (any concentration greater than 50 parts per million) must be reported to the appropriate EPA Regional Office. Spill cleanup must begin promptly, no later than 24 hours after the spill is discovered.

Under CERCLA, the RQ for PCBs is 1 pound. Spills of PCB-containing materials (mixtures and solutions) must be reported when the total volume spilled times the concentration equals or exceeds the RQ (1 pound). Reports are made to the National Response Center. Spill containment and cleanup must be timely and effective.

EPA Regional Offices

Region I	John F. Kennedy Federal Bldg. 1 Congress St. Boston, MA 02203 (617) 565-3420	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Region II	26 Federal Plaza New York, NY 10278 (212) 264-2657	New Jersey, New York, Puerto Rico, Virgin Island
Region III	841 Chestnut St. Philadelphia, PA 19107 (215) 597-9800	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
Region IV	345 Courtland St. NE Atlanta, GA 30365 (404) 347-4727	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
Region V	77 West Jackson Blvd. Chicago, IL 60604-3507 (312) 353-2000	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
Region VI	12th Floor, Suite 1200 1445 Ross Ave. Dallas, TX 75202-2733 (214) 655-6444	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
Region VII	726 Minnesota Ave. Kansas City, KS 66101 (913) 551-7000	Iowa, Kansas, Missouri, Nebraska
Region VIII	Suite 500 999 18th St. Denver, CO 80202-2405 (303) 293-1603	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
Region IX	75 Hawthorne St. San Francisco, CA 94105 (415) 744-1305	American Samoa, Arizona, California, Guam, Hawaii, Mariana Islands, Nevada, Northern Mariana Islands
Region X	1200 6th Ave. Seattle, WA 98101 (206) 553-4973	Alaska, Idaho, Oregon, Washington

Coast Guard Districts

District 1	408 Atlantic Ave. Boston, MA 02110-2209 (617) 223-8444	Connecticut, Maine, Massachusetts, New Hampshire, New Jersey (Northern Portion), New York (Coastal Area and Eastern Portion), Rhode Island, Vermont
District 2	1430 Olive St. St. Louis, MO 63103 (314) 425-4655	Alabama (Northern Portion), Arkansas, Colorado, Illinois (Inland Rivers Area), Indiana (Inland Rivers Area), Iowa, Kansas, Kentucky, Minnesota (Inland Rivers Area), Mississippi (Northern Portion), Missouri, Nebraska, North Dakota, Ohio (Inland Rivers Area), Oklahoma, Pennsylvania (Southwestern Portion), South Dakota, Tennessee, West Virginia, Wisconsin (Inland Rivers Area), Wyoming
District 5	Federal Bldg. 431 Crawford, St. Portsmouth, VA 23705-50004 (804) 398-6638	Delaware, District of Columbia, Maryland, New Jersey (Lower Portion), North Carolina, Pennsylvania (Eastern Portion), Virginia
District 7	Federal Bldg. Room 1221 51 S.W. 1st Ave. Miami, FL 33130 (305) 536-5651	Florida (Atlantic and Gulf Coasts), Georgia, Puerto Rico, South Carolina, Virgin Islands
District 8	Hale Boggs Federal Bldg. 500 Camp St. New Orleans, LA 70130-3396 (504) 589-6901	Alabama (Southern Portion), Florida (Panhandle Area), Louisiana, Mississippi (Southern Portion), New Mexico, Texas
District 9	1240 East 9th St. Cleveland, OH 44199 (216) 522-3919	Illinois (Great Lakes Area), Indiana (Great Lakes Area), Michigan, Minnesota (Great Lakes Area), New York (Great Lakes and Western Portion), Ohio (Great Lakes Area), Pennsylvania (Great Lakes Area), Wisconsin (Great Lakes Area)
District 11	Union Bank Bldg. 400 Oceangate Long Beach, CA 90822-5399 (213) 499-5330	Arizona, California, Nevada, Utah
District 13	Federal Bldg. 915 Second Ave. Seattle, WA 98174 (206) 442-5850	Idaho, Montana, Oregon, Washington

District 14	Prince Kalanianaole Federal Bldg. 9th Floor 300 Ala Moana Blvd. Honolulu, HI 96850 (808) 541-2114	American Samoa, Guam, Hawaii, Northern Mariana Islands, Pacific Islands Trust Territory
District 17	P.O. Box 3-5000 Juneau, AK 99802 (907) 586-7195	Alaska

Note: Coast Guard Districts not included here (3, 4, 6, etc.) are not listed in Federal Regulations as contact points for reporting incidents.

SUMMARY REPORT — GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

Pollutant (Circle One — SO_2 / NO_x / TRS / H_2S / CO / Opacity

Reporting Period Dates: From _____ to _____

Company:

Emission Limitation:

Address:

Monitor Manufacturer and Model No.:

Date of Latest CMS Certification or Audit:

Process Unit(s) Description:

Total source operating time in reporting period:

Emission Data Summary[1]

1. Duration of excess emission in reporting period due to:
   a. Startup/Shutdown:
   b. Control equipment problems:
   c. Other known causes:
   d. Unknown causes:
2. Total duration of excess emissions:
3. Total duration of excess emissions X (100) (Total source operating time) %[2]

CMS Peformance Summary[1]

1. CMS downtime in reporting period due to:

   a. Monitor equipment malfunctions:

   b. Non-Monitor equipment malfunctions

   c. Quality assurance calibration:

   d. Other known causes:

   e. Unknown causes:

2. Total CMS Downtime:

3. (Total CMS Downtime) X (100) (Total Source Operating Time) %[2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.

[2] For the reporting period: If the total duration of excess emission is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the operating time, both the summary report form and the excess emission report described in Section 60.7(c) **[Ed. note:** See note in Excess Air Emission above.] shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process, or controls. I certify that the information contained in this report is true, accurate, and complete.

Name:

Signature:

Title:

Date:

Oil:

Report any discharge from any facility of oil or other water contaminant whose quantity may, with reasonable probability, injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, as soon as possible after learning of such a discharge, but in no event more than 24 hours thereafter to:

New Mexico Environment Department, Santa Fe
Water and Waste Management Division
Ground Water Bureau

(8 to 5)	(505) 827-2918
	(505) 827-2932 (UST Section)
(24-hour)	(505) 827-9329 (Alternate)

Notes:

1. Verbal reports shall include the following items:
   a. The name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility.
   b. The name and address of the facility.
   c. The date, time, location, and duration of the discharge.
   d. The source and cause of discharge.
   e. A description of the discharge, including its chemical composition.
   f. The estimated volume of the discharge.
   g. Any actions taken to mitigate immediate damage from the discharge.
2. Within one week after the discharger has learned of the discharge, the facility owner and/or operator shall send written notification verifying the prior oral notification as to each of the items in Note 1, providing any appropriate additions or corrections to:

New Mexico Environment Department
Water and Waste Management Division
Chief, Ground Water Bureau
Harold Runnels Building
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

3. Any facility which is subject to the notification and reporting requirements of the Oil Conservation Division is not required to comply with these environmental improvement notification and reporting requirements.

Report any fire, break, leak, spill, or blowout at any injection or disposal facility or at any oil and gas drilling, producing, transporting, or processing facility to:

New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division

(8 to 5)	(505) 827-5800

In addition, make immediate and/or subsequent notifications for any fire, break, leak, spill, or blowout to the appropriate district office (refer to notes for details and map for nearest district offices):

District	City	Numbers
1	Hobbs	(505) 393-6161
2	Artesia	(505) 748-1283
3	Aztec	(505) 334-6178
4	Santa Fe	(505) 827-7131

Notes:

1. Immediate notification shall be as soon as possible after discovery in person or by telephone to the appropriate district office or, if after business hours, to the district supervisor. Immediate notification to be followed by subsequent notification.
2. Subsequent notification shall be a complete written report of the incident in duplicate to the appropriate district office within 10 days after discovery of the incident.
3. Verbal or written reports shall include:
   a. Location of the incident by quarter-quarter, section, township, and range.
   b. Location by distance and direction from the nearest town or prominent landmark so that the exact site of the incident can be readily located on the ground.
   c. Nature and quantity of the loss.
   d. General conditions prevailing in the area to include precipitation, temperature, and soil conditions.
   e. Measures that have been taken and are being taken to remedy the situation.
4. Notifications shall be in accordance with the following:
   a. Well blowout - immediate notification.
   b. Major and minor breaks, spills or leaks; gas leaks and line breaks; tank fires; drilling pits, slush pits, storage pits, and ponds:

Material	Quantity (bbls unless otherwise noted)	Watercourse[1]	Notification
Crude Oil or Condensate	≥25	No	Immediate
	5<25	No	Subsequent
	≥1	Yes	Immediate
(Tank Fires)	≥25	---	Immediate
(Tank Fires)	5<25	---	Subsequent
(Endanger Life or Property)	Any Quantity	---	Immediate
Salt Water	≥100	No	Immediate
	≥25	Yes	Immediate
	25<100	No	Subsequent
(Endanger Life or Property)	Any Quantity	---	Immediate
Gas			
(Endanger Life or Property)	Any Quantity	---	Immediate
(No Danger)	≥1000 MCF	---	Subsequent
Related Materials[2]			
(Endanger Life or Property)	Any Quantity	---	Immediate
- Drilling pits, slush pits, storage pits and ponds (Endanger Life or Property)	Any Quantity	---	Immediate
(No Danger)	Any Quantity	---	Subsequent

[1] Water course is defined as any lake bed or gully, draw, stream bed, wash, arroyo, or natural or man-made channel through which water flows or has flowed.
[2] Related materials include hydrocarbons, hydrocarbon waste or residue, strong caustics, strong acids or other deleterious chemicals or harmful contaminants.

5. The following notification form shall be submitted in duplicate to the appropriate district office within 10 days after discovery of the incident. This applies to both Immediate and Subsequent Notifications. Refer to the map for addresses.

6. If the discharge of oil or other water contaminant is in such quantity so that it may injure or be detrimental to humans, animal, or plant life, or property, or interfere with public welfare or property, any person in charge of the discharging facility shall immediately take appropriate and necessary steps to contain and remove or mitigate the damage caused by the discharge.

Report leaks from natural gas and other gas pipelines within 2 hours of discovery to:

New Mexico State Corporation Commission, Santa Fe
Pipeline Division

Office Numbers (8 to 5)	Home Numbers
(505) 827-3549	(505) 983-1810 (Rey S. Medina)
(505) 827-3772	(505) 473-1923 (Albino O. Zuniga)
(505) 827-3773	(505) 473-0717 (Ray Elliott)
(505) 827-3774	(505) 892-2274 (Joe Johnson)

Hazardous Substances:

Same as Oil.

Hazardous Wastes:

For waste generators who generate between 100 kilograms and 1000 kilograms of hazardous waste per month: if a release could threaten human health or the environment outside the facility, notify:

National Response Center
(800) 424-8802

New Mexico Environment Department, Santa Fe
Water and Waste Management Division
Hazardous Waste Bureau

(8 to 5)	(505) 827-4308
(24-hour)	(505) 827-9329

The report, to be made immediately, should indicate:

1. The name, address, and EPA identification number of the generator.
2. The date, time, and type of incident.
3. The quantity and type of hazardous waste involved.
4. The extent of injuries, if any.

(40 CFR 262.34(d))

For generators of 1000 kilograms or more of hazardous waste per month: if a release could threaten human health or the environment outside the facility, the emergency coordinator must notify:

National Response Center
(800) 424-8802

New Mexico Environment Department, Santa Fe
Water and Waste Management Division
Hazardous Waste Bureau
(8 to 5) (505) 827-4308
(24-hour) (505) 827-9329

The report, to be made immediately, should indicate:

1. Name and telephone number of the reporter.
2. Name and address of the facility.
3. Time and type of incident.
4. Name and quantity of materials involved.
5. The extent of injuries, if any.
6. Possible hazards to human health or the environment, outside the facility.

Within 15 days a written report must be submitted to the Department, providing the above information and describing the quantity and disposition of any material recovered from the incident.

(New Mexico Environmental Improvement Board, Hazardous Waste Management Regulations, Part III, Section 301, adopting 40 CFR 262.34(a), referring to 40 CFR 265.56)

Hazardous Materials:

Same as Oil.

Excess Air Emissions:

Report excess emissions within 24 hours or no later than the next working day to:

New Mexico Environment Department, Santa Fe
Environmental Health Division Air Quality Bureau
1190 St. Francis Rd.
Santa Fe, NM 87503
(8 to 5) (505) 827-0062

Within 10 days provide written notification including:

1. Name of the firm experiencing the excess emissions, and the name and title of the person reporting the incident.
2. Location of the facility.
3. Identification of the equipment involved and the emission point from which the excess emissions occurred.
4. Approximate period of the excess emissions.
5. Identification of the air contaminant and magnitude of excess emissions.
6. Cause and nature of the excess emissions and reasons for the problem.

7. Efforts taken to minimize the emissions and steps taken to bring the facility back into compliance.

(New Mexico Environmental Improvement Board, Air Quality Control Regulations, Section 801(b))

Wastewater Excursions:

Within 24 hours, the holder of the pollutant discharge permit shall orally report any excess discharges that may endanger human health or the environment. Report to:

New Mexico Environmental Department
Surface Water Quality Bureau
P.O. Box 26110
Santa Fe, NM 87502
(505) 827-0187

Federal EPA , as required by NPDES Permit

Within 5 days, a written report will be submitted describing:

1. A description of the noncompliance and its cause.
2. The period of the discharge, including dates and times.
3. If uncorrected, how long the discharge will continue.
4. Steps taken to reduce, eliminate, and prevent recurrence of the problem.

The following incidents must also be reported within 24 hours:

1. Any unanticipated bypass or system upset that exceeds permit limitations.
2. Violation of a maximum daily discharge limitation for which the state requires 24-hour reporting in the permit.

(Federal Requirements — 40 CFR 122.41(l): New Mexico lacks its own NPDES Program)

Underground Tank Leaks:

Report releases within 24 hours to:

New Mexico Environment Department, Santa Fe
Water and Waste Management Division
Underground Storage Tank Bureau

(8 to 5)	(505) 827-0173
(24-hour)	(800) 827-9329 (Alternate)

Notes:

1. Releases can be identified from:
   a. The presence of regulated substances in soils, groundwater, basements, sewers and utility lines, nearby surface waters, or wells.
   b. Unusual operating conditions at the tank system, including sudden loss of a substance from a tank or the unexplained presence of water in a tank.

c. Monitoring system results, unless:

(1) The monitoring device is defective, is immediately repaired, and subsequent monitoring does not confirm the release.
(2) Where monitoring is used to control inventory, the second month of data does not confirm a similar loss.

2. If the tank holds petroleum, the owner or operator must report, within 24 hours, spills or overfills that exceed 25 gallons, or that cause a sheen on nearby surface waters. If the spill or overfill is less than 25 gallons, the release must be reported to the department if it cannot be cleaned up within 24 hours.

3. If the tank holds hazardous substances, the owner or operators must report within 24 hours any spills or overfills that equal or exceed the Reportable Quantity for that substance under the U.S. CERCLA law.

4. Verbal report shall include:

a. The name, address, and telephone number of the agent in charge of the site at which the UST system is located, as well as of the owner and the operator of the system.
b. The name and address of the site at which the UST system is located and the location of the UST system on that site.
c. The date, time, location, and duration of the spill, release, or suspected release.
d. The source and cause of the spill, release, or suspected release.
e. A description of the spill, release, or suspected release, including its chemical composition.
f. The estimated volume of the spill, release, or suspected release.
g. Action taken to mitigate immediate damage from the spill, release, or suspected release.
h. As available, provide information on the soil type, depth to groundwater, location of surface water courses, location of nearby water supply wells, etc.
i. If known, provide information on location of underground utilities.
j. Presence or absence of petroleum product vapors in onsite or nearby surface or subsurface structures.
k. Information on notification to local fire authorities.

5. Written notice describing the spill, release, or suspected release and any investigation or follow-up action taken or to be taken must be mailed or delivered within 7 days of the incident. The written notice shall verify the prior oral notification as to each item of information listed above and provide any appropriate additions or corrections to the information contained in the prior notification. The written notice must be submitted to:

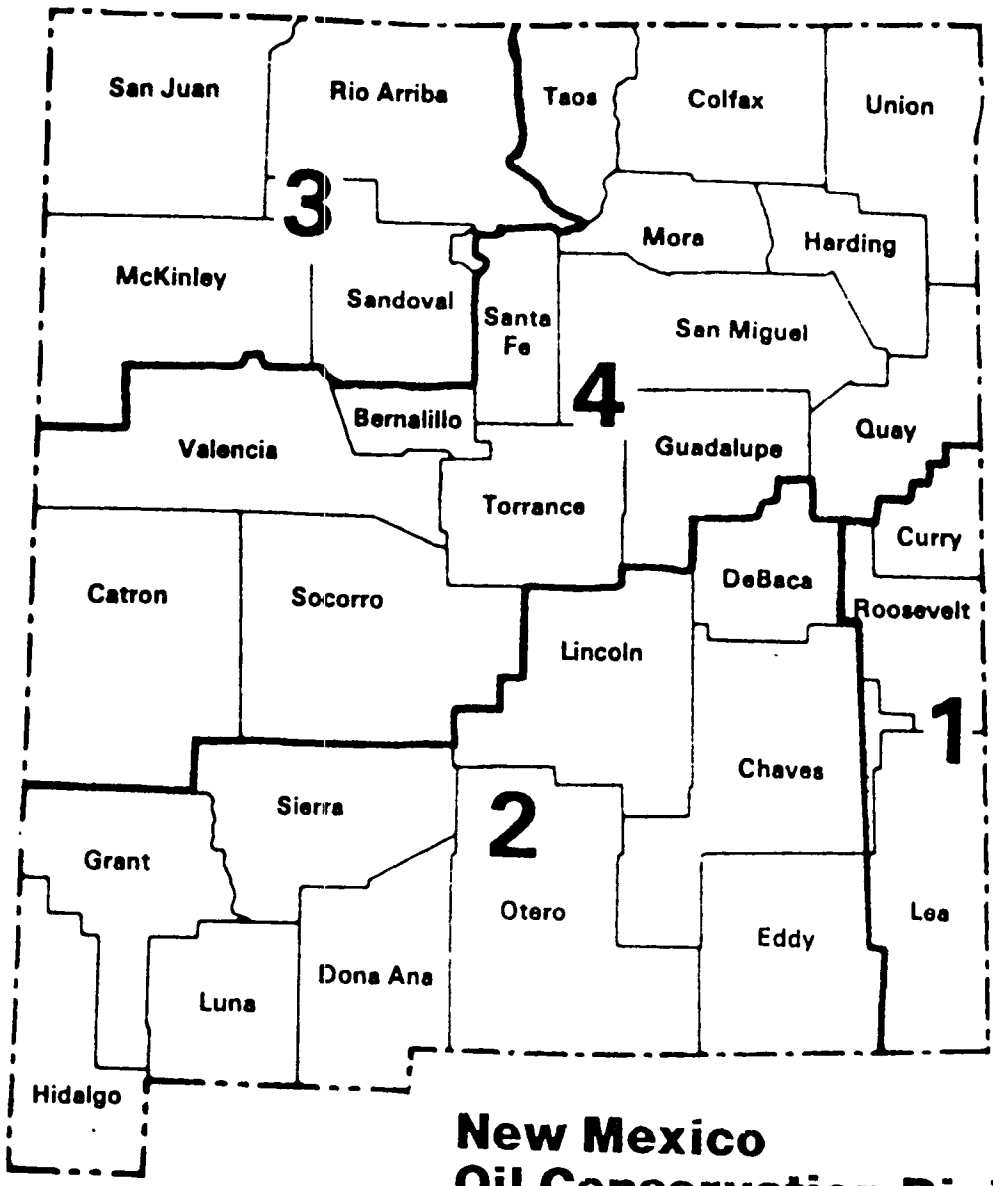
Manager, Remedial Action Program
NMED-WWMD-UST
Runnels Building, P.O. Box 26110
1190 St. Francis Drive
Santa Fe, NM 87502

(New Mexico Environmental Improvement Board, Underground Storage Tank Regulations, Sections 204, 700, 703)

SARA Title III:

Report releases and submit written follow-up emergency notice(s) to:

New Mexico Emergency Response Commission
Department of Public Safety
Title III Bureau
P.O. Box 1628
Santa Fe, NM 87504-1628
(505) 827-9222



New Mexico Oil Conservation Division District Offices

District	City	Numbers	Addresses
1	Hobbs	(505) 393-6161	1000 W. Broadway, 88240
2	Artesia	(505) 748-1283	811 South First, 88210
3	Aztec	(505) 334-6178	1000 Rio Brazo, 87410
4	Santa Fe	(505) 827-7131	2040 Pacheco, 87502

State of New Mexico
Energy and Minerals Department

OIL CONSERVATION DIVISION
2040 Pacheco Street
Santa Fe, New Mexico 87502

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

Name of Operator				Address			
Report of	Fire	Break	Spill	Leak	Blowout	Other*	
Type of Facility	Drlg Well	Prod Well	Tank Btty	Pipe Line	Gaso Plnt	Oil Rfy	Other*
Name of Facility							
Location of Facility (Quarter/Quarter Section or Footage Description)				Sec.	Twp.	Rge.	County
Distance and Direction From Nearest Town or Prominent Landmark							
Date and Hour of Occurrence				Date and Hour of Discovery			
Was Immediate Notice Given?	Yes	No	Not Required	If Yes, To Whom			
By Whom				Date and Hour			
Type of Fluid Lost				Quantity of Loss _____BO _____BW		Volume Recovered _____BO _____BW	
Did Any Fluids Reach a Watercourse?	Yes	No	Quantity				
If Yes, Describe Fully**							
Describe Cause of Problem and Remedial Action Taken**							
Describe Area Affected and Cleanup Action Taken**							
Description of Area	Farming	Grazing	Urban	Other*			
Surface Conditions	Sandy	Sandy Loam	Clay	Rocky	Wet	Dry	Snow
Describe General Conditions Prevailing (Temperature, Precipitation, Etc.)**							
I Hereby Certify That the Information Above Is True and Complete to the Best of My Knowledge and Belief.							
Signed		Title		Date			

*Specify

**Attach Additional Sheets if Necessary

Appendix F

UNDERGROUND STORAGE TANKS

Tank Number	V-806	V-807
Vessel Name	Amine Drain Tanks	Amine Waste Sump
Commodity Stored	30% Diethanolamine [1]	Stormwater[2]
Capacity (gal)	950	4200
Construction Material	Carbon Steel	Carbon Steel
Dimensions	48" OD x 10' T/T	72" OD x 20' T/T
Wall Thickness [3]	0.25	0.25
External Protection	Epoxy Coating	Epoxy Coating
Design Pressure [4]	14.9 psig @ 150 degrees	12.9 psig @ 150 degrees

(1) DEA solution from system blowdown. This material can be returned to the process unit or disposed of via TK-803

(2) Stormwater from curbed gas-treating area; stormwater through drain to TK-803 via V-807

(3) Wall thickness includes 0.125" corrosion allowance

(4) Both vessels were pressure tested prior to installation and are tested every two years. Next test due September 1996.

DRAFT
f:\group\enviro\sjdisch.wp
4/24/96

Appendix L

Hydrological Formations

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Open Drain System					
2" DO 14 102	80	ATM	AMB	50	150
2" DO 14 103					
2" DO 14 109					
2" DO 14 110					
2" DO 14 114					
2" DO 14 119					
2" DO 14 120					
2" DO 14 121					
2" DO 14 124					
2" DO 14 125					
2" DO 14 129					
2" DO 14 131					
2" DO 14 132					
2" DO 14 133					
2" DO 14 134					
2" DO 14 135					
2" DO 14 136					
2" DO 14 137					
2" DO 14 142					
2" DO 14 143					
2" DO 14 144					
2" DO 14 145					
2" DO 14 146					
2" DO 14 147					
2" DO 14 149					
2" DO 14 153					
2" DO 14 157					
2" DO 14 158					
2" DO 14 173					
2" DO 14 183					
2" DO 14 202					
3" DO 14 104	STD	ATM	AMB	50	150
3" DO 14 112					
3" DO 14 126					
3" DO 14 150					
3" DO 14 151					
4" DO 14 107	STD	ATM	AMB	50	200
4" DO 14 155					
6" DO 14 138	STD	ATM	AMB	50	150
6" DO 14 140					
Instrument Air					
1" AI 14 118	STD	125	120	150	300
1" AI 14 119					
Utility Air					
2" AU 14 109	STD	125	120	150	300

Appendix I

Evaporation Ponds Details

EFFLUENT DISPOSAL

A. Existing Operations

1. On-Site Disposal

Two ponds will be engineered and constructed according to the preliminary design in the attached drawing with 3:1 slopes on both sides of each levee, a maximum height of 10' and a total lined surface area of 115,500 sq. ft. (2.65 acres). The top of the levees will be 12' wide to provide a service road access to all four sides of each of the ponds. Transfer structures will be provided between the ponds with gate valves to control the level and flows between the ponds; a dispersion pipe array will disperse the drainage into the West Pond to absorb solar heat from liner slope and maximize evaporation.

The ponds will be sized as follows:

	West Pond	East Pond
Base Elevation	94'	102'
Levee Elevation	102'	110'
Area (berm to berm)	183'x 226' = 41,357 sq. ft.	234'x 230'=54,510 sq. ft.
Area (@ 6' depth)	171'x 214' = 36,594 sq. ft.	225'x 218'=49,050 sq. ft.
Volume (@ 6' depth)	1.35 million gallons	2.20 million gallons
Sprinkling system	15 - 2.5" nozzles	20 - 2.5" nozzles

Each pond will be equipped with a sprinkler system designed to enhance the yearly solar evaporation rate by 2 - 3 times with an anemometer monitor and several valve stations to limit and control overspray. An 8" PVC line from the cooling tower will feed a 6" PVC grid system with 3" PVC risers to nozzles fixed at 9' above the pond's bottom surface. The estimated flow rate is 50-60 gpm per sprinkler.

The primary liner in each pond will be 36 ml hypalon with a secondary 30 ml PVC liner. The liners will be vented according to NMOCD guidelines. The leak detection bedding will be 8 oz. geotextile for each pond.

The drainage and sump leak detection system will consist of 4" perforated PVC piping with 20' maximum spacing and slope equal to 6" per 50'. A corrosion-proof sump will be located outside the pond.

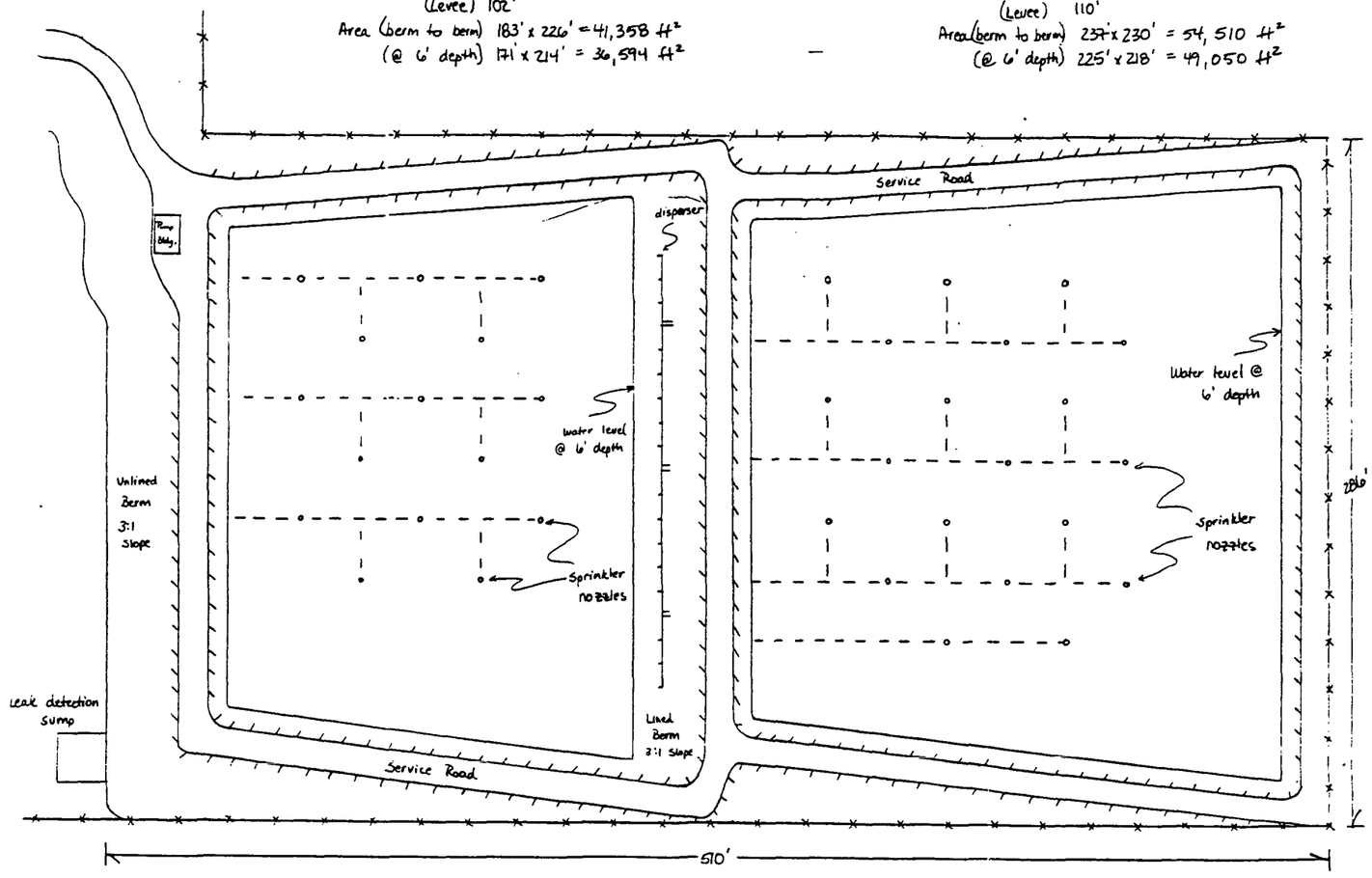
CONOCO EVAPORATION PONDS
Plan View - Scale: 1" = 40'

WEST POND

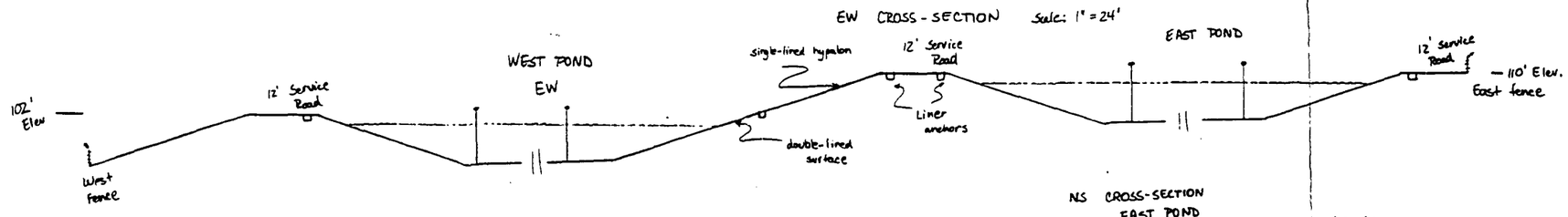
Elevation (Base) 94'
(Levee) 102'
Area (berm to berm) 183' x 226' = 41,358 ft²
(@ 6' depth) 171' x 214' = 36,594 ft²

EAST POND

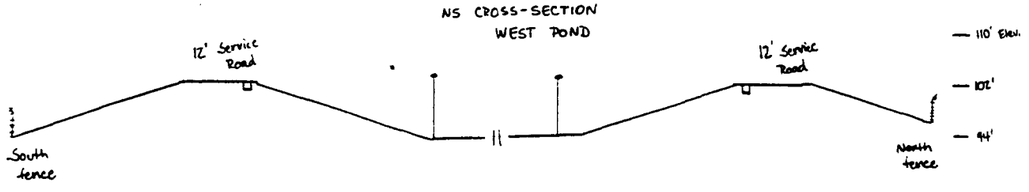
Elevation (Base) 102'
(Levee) 110'
Area (berm to berm) 237' x 230' = 54,510 ft²
(@ 6' depth) 225' x 218' = 49,050 ft²



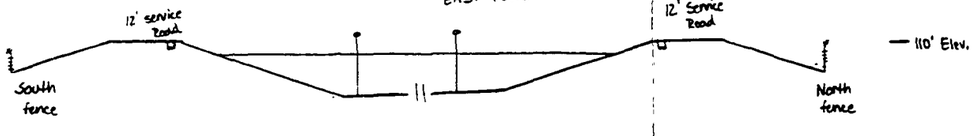
EW CROSS-SECTION Scale: 1" = 24'



NS CROSS-SECTION WEST POND

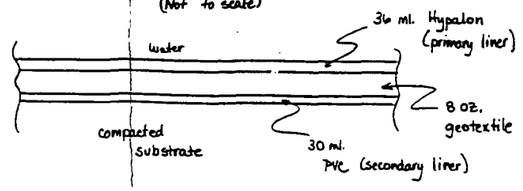


NS CROSS-SECTION EAST POND



rmi
P.O. Box 2522
Farmington, NM 87499
505-327-5966

LINER DETAIL
(Not to scale)



11/02/92

Appendix J

SPCC Table of Contents

Appendix J

SPILL PREVENTION CONTROL AND COUNTER MEASURES PLAN
SAN JUAN GAS PROCESSING PLANT

Table of Contents

Appendix K

Spill Reporting Procedures Guide

Oil:

Report spills into or upon the navigable waters of the United States or adjoining shorelines, as soon as there is knowledge of the spill, to:

National Response Center

(24-hour)	(800) 424-8802
(24-hour)	(202) 267-2675

Notes:

1. Navigable waters of the United States include all surface waters.
2. The spill report shall include:
   a. Time of the spill.
   b. Identity of the material spilled.
   c. Approximate quantity spilled.
   d. Location and source of the spill.
   e. Cause and circumstances of the spill.
   f. Existing or potential hazards (fire, explosion, etc.), if any.
   g. Personal injuries or casualties, if any.
   h. Corrective action being taken and an approximate timetable to control, contain, and clean up spill.
   i. Name(s) and telephone number(s) of individual(s) who discovered and/or reported the spill.
   j. Other unique or unusual circumstances.
3. If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated OSC for the geographic area where the discharge occurs. (Refer to Coast Guard Districts or EPA Regions listings on pages Federal - 18 and 19.) If it is not possible to notify the NRC or the nearest Regional EPA Office immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible.
4. Facilities required to have a Spill Prevention Control and Countermeasure (SPCC) Plan that have a spill in excess of 1000 U.S. gallons in a single event or have two spill events within any 12-month period into or upon navigable waters of the United States or adjoining shorelines shall submit to the appropriate EPA Regional Administrator (refer to listing on page Federal – 18) within 60 days from the time the facility becomes aware of the spill the following:
   a. Name of the facility.
   b. Name(s) of the owner or operator of the facility.
   c. Location of the facility.
   d. Date and year of initial facility operation.
   e. Maximum storage or handling capacity of the facility and normal daily throughput.

f. Description of the facility, including maps, flow diagrams, and topographical maps.
g. A complete copy of the SPCC Plan with any amendments.
h. The cause(s) of such spill, including a failure analysis of system or subsystem in which the failure occurred.
i. The corrective actions and/or countermeasures taken, including an adequate description of equipment repairs and/or replacements.
j. Additional preventive measures taken or contemplated to minimize the possibility of recurrence.
k. Such other information as the Regional Administrator may reasonably require pertinent to the Plan or spill event.

Report all Outer Continental Shelf (OCS) spills of oil and liquid pollutants to the appropriate District Supervisor within 12 hours, if spills are 1.0 cubic meters (6.3 barrels) or less, and without delay, if spills are more than 1.0 cubic meters (6.3 barrels).

OCS Areas	Office/Supervisor	Numbers
Gulf of Mexico	Texas District,	
	Ed Smith	(409) 299-1041
	Lafayette District,	
	Elmo G. Hubble	(318) 264-6632
	Houma District,	
	John D. Borne	(504) 868-4033
	New Orleans District,	
	Don Howard	(504) 736-2511
Gulf of Alaska	Alaska District,	
	Brian Schoof	(907) 261-4066
Pacific	Santa Maria District,	
	Phillip Schroeder	(805) 922-7958
	Ventura District,	
	Rishi Tyagi	(805) 485-1704

Notes:

1. All spill reports shall be confirmed in writing to the appropriate District Supervisor named above. Submit to:

U.S. Department of Interior
Minerals Management Service

Texas District
115 Circle Way
Lake Jackson, TX 77566

Santa Maria District
Suite 201
222 West Carmen Lane
Santa Maria, CA 93454

Houma District
3804 Country Drive
P.O. Box 760
Bourg, LA 70343-0037

Lafayette District
Brandywine 2, Suite 201
825 Kaliste Saloom Rd.
Lafayette, LA 70508

Alaska District
949 East 36th Avenue
Anchorage, AK 99508

New Orleans District
1201 Elmwood Park Ave.
New Orleans, LA 70123-2394

Ventura District
Suite 202
145 North Brent St.
Venture, CA 93003

The written confirmation shall include:

For all reports:

a. Cause of the spill.
b. Location of the spill.
c. Volume of the spill.
d. Action taken.

For spills of more than 5.0 cubic meters (31.5 barrels):

a. Information on sea state.
b. Meteorological conditions.
c. Size and appearance of slick.

2. For the Gulf of Mexico Region only, the following reporting requirements apply to metering equipment and pipelines.

   a. Any accident involving metering equipment which causes a fire, damage to equipment, serious injuries, or pollution shall be reported to the Regional Supervisor, Operations Support, within 24 hours. A complete, detailed report shall be submitted to this Supervisor within 10 days.

Regional Supervisor for Field Operations
1201 Elmwood Park Blvd., Rm. 917C
New Orleans, LA 70123-2394
(504) 736-2845

   b. All spills or leakages that are in any way related to or suspected to be related to pipeline causes including flowlines between platforms shall be immediately reported to the Regional Supervisor in New Orleans.

      The pipeline operator shall orally report each day to the Plans, Platforms and Pipeline Section the progress of the repair operation and any new development or additional damage determined during repair operations. Revised methods of repair and retesting may be requested and approvals

granted orally. A complete written report shall be submitted to the Regional Supervisor in New Orleans, within 20 days after completion of the repairs. The report shall include:

(1) Date and time incident occurred;
(2) OCS permit number, specify whether DOT or DOI pipeline;
(3) Degree of pollution (volume spilled);
(4) Type of line (oil, gas, or condensate);
(5) Location (area and block or distance from a structure);
(6) Approximate water depth;
(7) Injuries or fatalities;
(8) Description of cause;
(9) Corrective action;
(10) Three copies of the pressure test procedure, and pressure and temperature test charts; and
(11) Date returned to service.

Report any failure in a pipeline system in which there is a release of a hazardous liquid resulting in any of the following (see notes) to:

U.S. Department of Transportation, Washington, D.C.
Office of Pipeline Safety

(24-hour)	(800) 424-8802 (National Response Center)
(24-hour)	(202) 267-2675 (National Response Center)

Notes:

1. Hazardous liquid means petroleum, petroleum products, and anhydrous ammonia.

2. Report any failure that:

   a. Caused a death or a personal injury requiring hospitalization.
   b. Resulted in either a fire or an explosion not intentionally set by the operator.
   c. Caused estimated damage to the property of the operator or others, or both, exceeding $5,000.
   d. Resulted in pollution of any stream, river, lake reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines.
   e. In the judgment of the operator was significant, even though it did not meet the criteria of a. through d. above.

3. Reports must include the following:

   a. Name and address of the operator.
   b. Name and telephone number of reporter.
   c. Location of the failure.

d. Time of the failure.
e. Fatalities and personal injuries, if any.
f. All other significant facts known by the operator that are relevant to the cause of the failure or extent of the damages.

4. Each operator that has a failure that is required to be reported shall, as soon as practical but not later than 30 days after discovery of the failure, file an accident report in duplicate on DOT Form 7000-1. However, reports for intrastate pipelines subject to the jurisdiction of a state agency pursuant to certification under Section 205 of the Hazardous Liquid Pipeline Safety Act of 1979 may be submitted in duplicate to that state agency if the regulations of that agency require submission of these reports and provide for further transmittal of one copy within 10 days of receipt to the Information Resources Manager. Additional forms can be obtained by calling (202) 472-1024 or writing to the following address.

Submit two copies of DOT Form 7000-1 to:

U.S. Department of Transportation
Office of Pipeline Safety
Information Resources Manager
Washington, DC 20590

Report any release of gas from a pipeline resulting in any of the following (see notes) to:

U.S. Department of Transportation, Washington, D.C.
Office of Pipeline Safety

(24-hour)	(800) 424-8802 (National Response Center)
(24-hour)	(202) 267-2675 (National Response Center)

Notes:

1. Gas means natural gas, flammable gas, or gas which is toxic or corrosive.

2. Report any incident that involves a release of gas from a pipeline or of liquefied natural gas or gas from an LNG facility that:

   a. Caused a death or a personal injury necessitating in-patient hospitalization.
   b. Caused estimated property damage, including cost of gas lost, of the operator or others, or both, of a total of $50,000 or more.
   c. Resulted in an emergency shutdown of an LNG facility.
   d. In the judgment of the operator was significant, even though it did not meet the criteria of a. through c. above.

3. Reports must include the following:

   a. Names of operator and person making the report and their telephone numbers.

b. The location of the leak.
c. The time of the leak.
d. The fatalities and personal injuries, if any.
e. All other significant facts that are known by the operator that are relevant to the cause of the leak or extent of the damages.

4. Each operator that has a reportable incident from a gas distribution or gas transmission and gathering system shall, as soon as practicable but not later than 30 days after detection, file an incident report on Form RSPA F 7100.1 or RSPA F 7100.2, respectively. (Call **DOT** at the above numbers for information on the Forms.) However, reports for intrastate pipelines subject to the jurisdiction of a state agency pursuant to certification under Section 5(a) of the Natural Gas Pipeline Safety Act of 1968 may be submitted in duplicate to the state agency if the regulations of that agency require submission of these reports and provide for further transmittal of one copy, within 10 days of receipt for incident reports and not later than March 15 for annual reports. Submit incident and annual report forms to:

U.S. Department of Transportation
Office of Pipeline Safety
Information Resources Manager
Washington, DC 20590

5. Each operator of a distribution pipeline system shall submit an annual report for that system on DOT Form RSPA F 7100.1-1 by March 15 for the preceding calendar year. This annual report is not required for petroleum gas systems which serve fewer than 100 customers from a single source, master meter systems, or LNG facilities. Refer to Note 4 for address.

6. Each operator of a transmission or a gathering pipeline system shall submit an annual report for that system on DOT Form RSPA F 7100.2-1 by March 15 for the preceding calendar year. This annual report is not required for LNG facilities. Refer to Note 4 for address.

(33 CFR Part 153, Subpart B; 40 CFR 110.10, 112.7)

Hazardous Substances:

Report any release equal to or exceeding the reportable quantity in any 24-hour period into the environment to:

National Response Center

(24-hour)	(800) 424-8802
(24-hour)	(202) 267-2675

Notes:

1. Release means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, but excludes:

a. Any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons.
b. Emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine.
c. Release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under Section 170 of such act, or, for the purpose of Section 104 of CERCLA or any other response action, any release of source, byproduct, or special nuclear material from any processing site designated under Section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978.
d. The normal application of fertilizer.

For the purpose of this Guide, release also means substantial threat of release.

2. Environment means all surface and groundwater, land surface, or subsurface strata and ambient air within the United States or under the jurisdiction of the United States.

3. Reportable quantities of hazardous substances can be found in the **Reportable Quantities** Tab and at 40 CFR 302 (Table 302.4).

4. Releases of mixtures or solutions (including hazardous waste streams) of hazardous substances are subject to the following reporting requirements:

   a. If the quantity of all of the hazardous constituent(s) of the mixture of solution is known, notification is required where an Reportable Quantity or more of any hazardous constituent is released; or
   b. If the quantity of one or more of the hazardous constituent(s) of the mixture or solution released equals or exceeds the Reportable Quantity for the hazardous constituent with the lowest RQ.

5. Releases of mixtures or solutions containing radionuclides must be reported under the following circumstances:

   a. If the identity and quantity (in curies) of each radionuclide in a released mixture of solution is known, the ratio between the quantity released (in curies) and the Reportable Quantity for the radionuclide must be determined for each radionuclide. The only such releases subject to these reporting requirements are those in which the sum of the ratios for the radionuclides in the mixture or solution released is equal to or greater than one.
   b. If the identity of each radionuclide in a released mixture or solution is known but the quantity released (in curies) of one or more of the radionuclides is unknown, the only such releases that must be reported are

those in which the total quantity (in curies) of the mixture or solution released is equal to or greater than the lowest Reportable Quantity of any individual radionuclide in the mixture or solution.

c. If the identity of one or more radionuclides in a released mixture or solution is unknown (or if the identity of a radionuclide released by itself is unknown), the only such releases subject to reporting requirements are those in which the total quantity (in curies) released is equal to or greater than either one curie or the lowest Reportable Quantity of any known individual radionuclide in the mixture or solution, whichever is lower.

6. For releases of a hazardous substance that are continuous and stable in quantity and rate:

   a. A release is continuous if it occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes.
   b. Provide notice initially to the National Response Center at the above numbers.
   c. Written notice must also be provided to the appropriate EPA Regional Office (see page Federal – 18) within 30 days of the telephone notification to the NRC.

7. The following categories of releases are exempt for the reporting requirements of this section:

   a. Releases of those radionuclides that occur naturally in the soil from land holdings such as parks, golf courses, or other large tracts of land.
   b. Releases of radionuclides occurring naturally from the disturbance of land for purposes other than mining, such as for agricultural or construction activities.
   c. Releases of radionuclides from the dumping of coal or coal ash at utility and industrial furnaces with coal-fired boilers.
   d. Releases of radionuclides from coal and ash piles at utility and industrial facilities with coal-fired boilers.

8. Except for releases of radionuclides, notification of the release of a Reportable Quantity of solid particles of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, or zinc is not required if the mean diameter of the particles released is larger than 100 micrometers (0.004 inches).

9. See also PCBs, page Federal – 17.

(33 CFR Part 153, Subpart B; 40 CFR 302.6)

Hazardous Wastes:

Report any release from a treatment, storage, or disposal facility equal to or exceeding the reportable quantity into the environment to:

National Response Center

(24-hour)	(800) 424-8802
(24-hour)	(202) 267-2675

Notes:

1. Release is not defined in the hazardous waste regulations; however, EPA uses the CERCLA definition of release, given above, interchangeably.
2. Reportable quantities for hazardous substances which when released to the environment and become hazardous wastes and reportable quantities of unlisted hazardous wastes can be found at 40 CFR Table 302.4.

Report any release, fire, or explosion from a facility which could threaten human health or the environment, outside the facility, to local authorities if evacuation of local areas is advisable and to:

National Response Center

(24-hour)	(800) 424-8802
(24-hour)	(202) 267-2675

Notes:

1. Facility means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).
2. If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated OSC for the geographic area where the discharge occurs. (Refer to EPA Regions or Coast Guard Districts lists on pages Federal – 18 and 19.) If it is not possible to notify the NRC or the predesignated OSC immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible.
3. The report must include:
   a. Name and telephone number of reporter.
   b. Name and address of facility.
   c. Time and type of incident (e.g., release, fire).
   d. Name and quantity of material(s) involved, to the extent known.
   e. The extent of injuries, if any.
   f. The possible hazards to human health or the environment outside the facility.

4. The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the EPA Regional Administrator. The report must include:

   a. Name, address, and telephone number of the owner or operator.
   b. Name, address, and telephone number of the facility.
   c. Date, time, and type of incident (e.g., fire, explosion).
   d. Name and quantity of material(s) involved.
   e. The extent of injuries, if any.
   f. An assessment of actual or potential hazards to human health or the environment, where this is applicable.
   g. Estimated quantity and disposition of recovered material that resulted from the incident.

Report any release to the environment from a hazardous waste tank system or secondary containment system to the EPA Regional Administrator within 24 hours of its detection. (Refer to the EPA Regions list on page Federal – 18.)

Notes:

1. If the release has been reported pursuant to 40 CFR 302 (Hazardous Substances above), that report will satisfy this requirement.

2. A leak or spill of hazardous waste is exempted from this requirement if it is:

   a. Less than or equal to a quantity of 1 pound.
   b. Immediately contained and cleaned up.

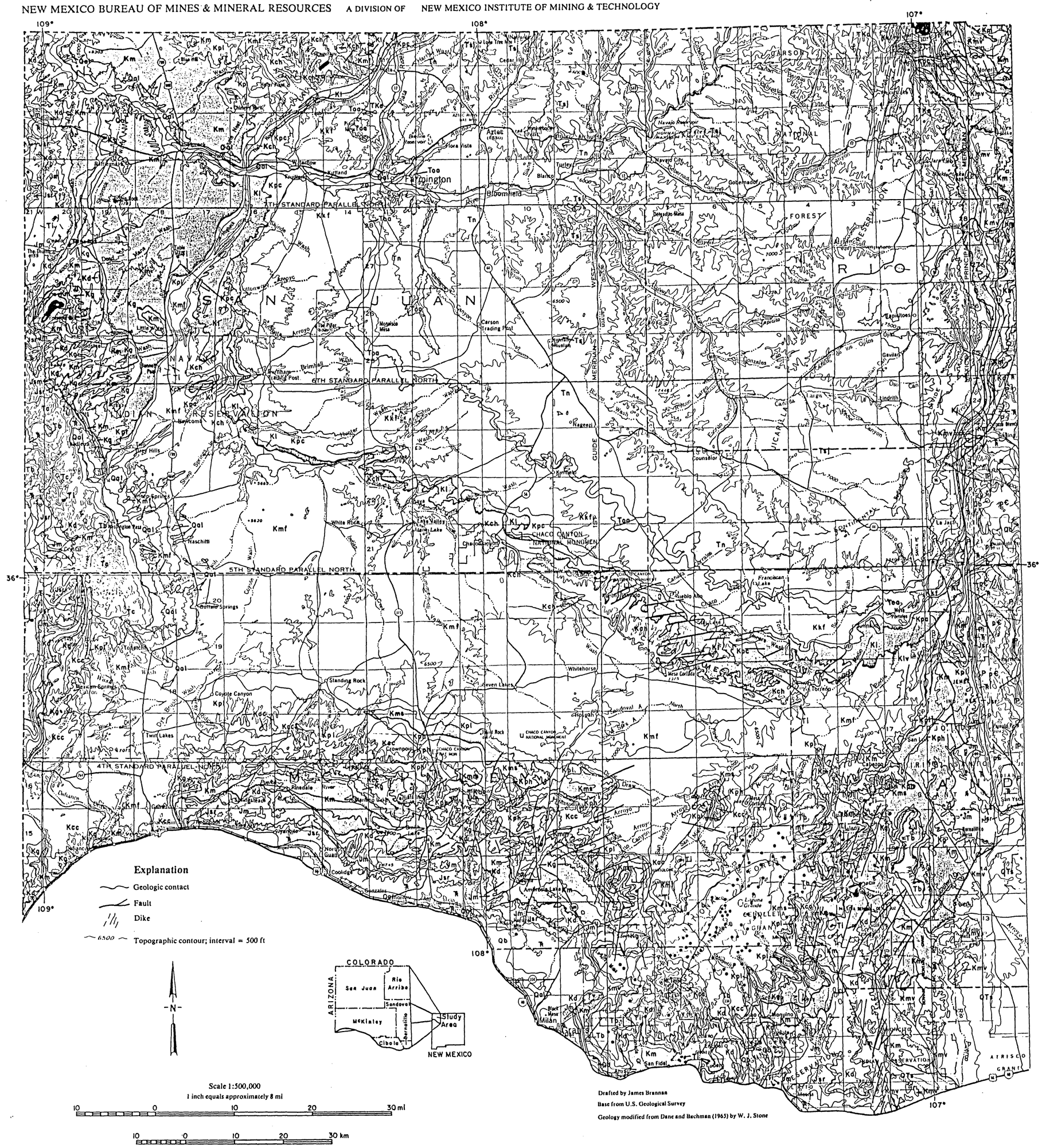
3. Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the EPA Regional Administrator:

   a. Likely route of migration of the release.
   b. Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate).
   c. Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the EPA Regional Administrator as soon as they become available.
   d. Proximity to downgradient drinking water, surface water, and population areas.
   e. Description of response actions taken or planned.

Report any discharge from an air, rail, highway, or water transport in which an incident described in Note 2 under Hazardous Materials occurred to:

National Response Center

(24-hour)	(800) 424-8802
(24-hour)	(202) 267-2675



GEOLOGIC UNITS

(see text for descriptions)

Quaternary

- Qal **Alluvium;** includes landslide deposits (east side of Chuska Mountains), terrace deposits (San Juan River valley)
- Qb **Basalt**

Quaternary/Tertiary

- Qts **Santa Fe Group and younger alluvium, undifferentiated** (Rio Grande valley)

Tertiary

- Ti **Intrusions, dikes**
- Tb **Basalt**
- Tv **Volcanics other than basalt**
- Tc **Chuska Sandstone**
- Tsj **San Jose Formation**
- Tn **Nacimiento Formation**
- Toa **Ojo Alamo Sandstone**

Tertiary/Cretaceous

- Tka **Animas Formation**

Cretaceous

- Kkf **Fruitland Formation–Kirtland Shale, undifferentiated**
- Kpc **Pictured Cliffs Sandstone**
- Kl **Lewis Shale**
- Kmv **Mesaverde Group, undifferentiated**
- *Kch **Cliff House Sandstone**
- *Klv **La Ventana Tongue, Cliff House Sandstone**
- *Kmf **Menefee Formation**
- *Kpl **Point Lookout Sandstone**
- Kms **Satan Tongue, Mancos Shale**
- *Kph **Hosta Tongue, Point Lookout Sandstone**
- *Kcc **Crevasse Canyon Formation**
- Kmm **Mulatto Tongue, Mancos Shale**
- *Kg **Gallup Sandstone**
- Km ***Mancos Shale, undifferentiated***
- Kd **Dakota Sandstone;** includes Burro Canyon Formation (northeast)

*in Mesaverde Group

Jurassic

- Jm **Morrison Formation**
- Jsr **San Rafael Group,** undifferentiated; includes Entrada Sandstone, Todilto Limestone, Summerville Formation, Cow Springs Sandstone/Bluff Sandstone, in ascending order

Triassic

- TR **Triassic rocks, undifferentiated;** includes Chinle Formation and overlying Glen Canyon Group

Paleozoic

- P **Permian rocks, undifferentiated;** includes Abo Formation (south), lower Cutler Formation (north), DeChelly Sandstone, Yeso Formation, Glorieta Sandstone, San Andres Limestone, in ascending order
- IP **Pennsylvanian rocks, undifferentiated;** includes Molas Formation, Pinkerton Trail Formation, Paradox Formation (northwest), Honaker Trail Formation, in ascending order

Precambrian

- pC **Precambrian rocks, undifferentiated**

WATER-YIELDING CHARACTERISTICS*

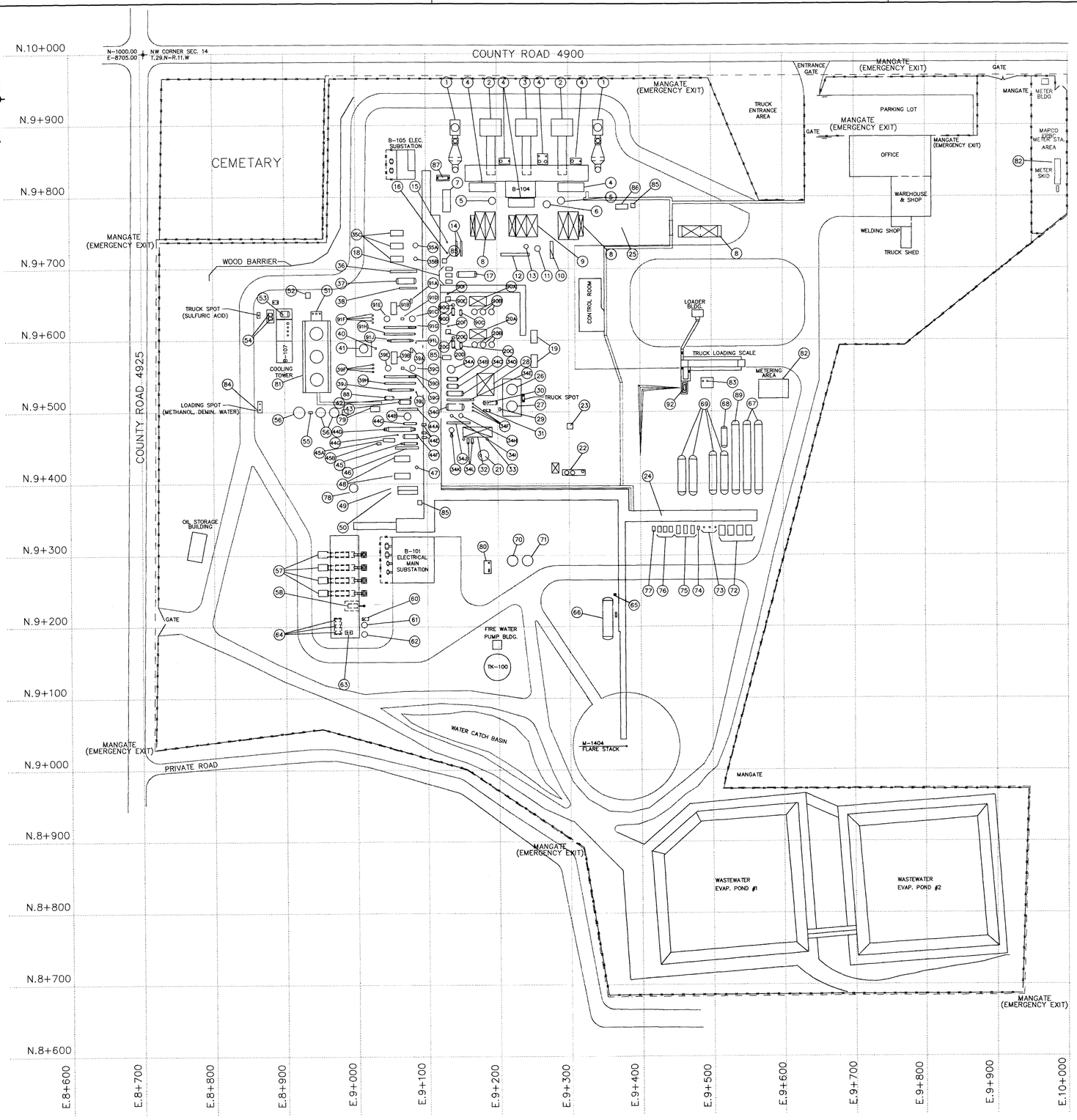
- Aquifer
- Locally an aquifer or contains aquifer
- Aquitard
- Poorly known or outside study area

*See table 14 (inside front cover) for summary of aquifer characteristics

Hydrogeologic map of the San Juan Basin, New Mexico

Appendix M

Site Contour Map



ITEM	EQUIPMENT DESCRIPTION	EQUIPMENT #	ITEM	EQUIPMENT DESCRIPTION	EQUIPMENT #
1	HOT OIL HEATERS (2)	WH-1101 A,B	50	EP COMPRESSOR AFTERCOOLER	AC-902
2	RESIDUE COMPRESSORS (2)	C-201/301	51	COOLING WATER CIRCULATING PUMPS (3)	P-1201 A,B,C
3	INLET COMPRESSOR	C-101	52	CHLORINE FOR WATER TREATING	M-1202
4	LUBRICATING OIL SKIDS (6)		53	ACID STORAGE TANK	V-1201
5	RESIDUE COMPRESSOR SUCTION SCRUBBERS (2)	V-201/301	54	WATER TREATMENT CHEMICAL TANKS (2)	M-1201
6	LOW PRESSURE INLET GAS SEPARATOR	V-101	55	DEMINERALIZED WATER PUMP	P-1407
7	HOT OIL TRIM COOLER	AC-1101	56	DEMINERALIZED WATER STORAGE TANK (3)	TK-802
8	RESIDUE COMPRESSOR AFTERCOOLERS (3)	AC-100-201-301	57	POWER GENERATORS (4)	G-1300 A,B,C,D
9	INLET COMPRESSOR AFTERCOOLER	AC-101	58	EMERGENCY GENERATOR	G-1301
10	HIGH PRESSURE INLET COOLER	E-101			
11	HIGH PRESSURE INLET GAS SEPARATOR	V-101	60	WASTE LUBE OIL DRAIN TANK & PUMP	V-1401/P-1402
12	INLET COMPRESSOR TRIM COOLER	E-102	61	INSTRUMENT AIR RECEIVER	V-1408
13	INLET COMPRESSOR DISCHARGE SCRUBBER	V-103	62	UTILITY AIR RECEIVER	V-1407
14	RECYCLE COOLERS (2)	E-201/301	63	INSTRUMENT AIR DRIER	M-1409
15	HIGH PRESSURE FUEL GAS SCRUBBER	V-1404	64	INSTRUMENT/UTILITY AIR COMPRESSOR (3)	M-1401 A,B,C
16	LOW PRESSURE FUEL GAS SCRUBBER	V-1405	65	FLARE KNOCKOUT DRUM PUMP	P-1406
17	HOT OIL EXPANSION VESSEL	V-1101	66	FLARE KNOCKOUT DRUM	V-1406
18	HOT OIL PUMPS (3)	P-1101 ABC	67	EPBC PRODUCT SURGE TANKS (2)	V-902 B,C
19	REGEN GAS HEATERS (2)	H-401/501	68	PROPANE STORAGE TANK	V-1007
20A	INLET GAS DEHYD. – COOLERS	AC-501 (TRAIN #1 OF 2)	69	PBC PRODUCT SURGE TANKS (4)	V-903 A,B,C,D
20B	INLET GAS DEHYD. – DEHYDRATORS (3)	V-501 A,B,C (TRAIN #1 OF 2)	70	WASTEWATER STORAGE TANK	TK-1403
20C	INLET GAS DEHYD. – DUST FILTER	F-502 (TRAIN #1 OF 2)	71	SLOP OIL STORAGE TANK	TK-1402
20D	INLET GAS DEHYD. – FILTER SEPARATOR	F-501 (TRAIN #1 OF 2)	72	EPBC PRODUCT PIPELINE PUMPS (4)	P-903 A,B,C,D
20E	INLET GAS DEHYD.–REGEN COMPR. & OIL COOLER	C-501 (TRAIN #1 OF 2)	73	EPBC PRODUCT BOOSTER PUMPS (3)	P-902 A,B,C
20F	INLET GAS DEHYD. – REGEN. SCRUBBER	V-502 (TRAIN #1 OF 2)	74	PROPANE MAKEUP PUMP	P-1001
20G	INLET GAS COALESCER	F-501B (TRAIN #1 OF 2)	75	PBC PRODUCT PIPELINE PUMPS (3)	P-905 A,B,C
21	SULFA CHECK SYSTEM	TK-804	76	PBC PRODUCT BOOSTER PUMPS (3)	P-904 A,B,C
22	EPBC PRODUCT DEHY. SKID	F-903/V-906 A,B/ V-907	77	PROPANE LOADING PUMP	P-906
23	EPBC PRODUCT DEHY REGEN HEATER	H-901	78	GENERATOR LUBE OIL TANK	TK-1300
24	FLANGED PIPING WITH HVL		79	VAPOR RECOVERY COMPRESSOR	C-1410
25	FLANGED PIPING WITH LIGHTER THAN AIR GASES		80	SKIM PIT	M-1402
26	WASTEWATER AND AMINE STORAGE TANK	TK-802	81	COOLING TOWER	CT-1201
27	AMINE STORAGE TANK	TK-801	82	PRODUCT METERING AREA & MAPCO MTR. AREA	
28	AMINE COOLER	AC-801	83	TRUCK LOADING CONNECTIONS (HVL)	
29	AMINE MAKEUP PUMP	P-803	84	TRUCK LOADING CONNECTIONS (FLAMMABLE LIQ.)	
30	AMINE SUMP PUMPS (2)	P-805 A,B	85	GAS ANALYZER BUILDING (4)	
31	AMINE DRAIN TANK PUMP	P-804	86	METER TRANSDUCER BUILDING	
32	AMINE STILL CONDENSER	AC-802	87	TURBINE LUBE OIL TANK	TK-101
33	AMINE STILL REFLUX ACCUMULATOR	V-805	88	COLD DRAIN VESSEL	V-1403
34A	AMINE TREATING – CONTACTOR	T-801	89	PROPANE STORAGE TANK	V-902 A
34B	AMINE TREATING – HYDROCARBON COALESCER	V-801	90A	INLET GAS DEHYD. – COOLERS	AC-401 (TRAIN #2 OF 2)
34C	AMINE TREATING – AMINE COALESCER	V-803	90B	INLET GAS DEHYD. – DEHYDRATORS (3)	V-401 A,B,C (TRAIN #2 OF 2)
34D	AMINE TREATING – FLASH VESSEL	V-802	90C	INLET GAS DEHYD. – DUST FILTER	F-402 (TRAIN #2 OF 2)
34E	AMINE TREATING – COOL AMINE EXCHANGER	E-801	90D	INLET GAS DEHYD. – FILTER SEPARATOR	F-401 (TRAIN #2 OF 2)
34F	AMINE TREATING – CIRCULATION PUMPS (3)	P-801 A, B, C	90E	INLET GAS DEHYD.–REGEN COMPR. & OIL COOLER	C-401 (TRAIN #2 OF 2)
34G	AMINE TREATING – SURGE VESSEL	V-804	90F	INLET GAS DEHYD. – REGEN. SCRUBBER	V-402 (TRAIN #2 OF 2)
34H	AMINE TREATING – CHARCOAL FILTER	F-802	90G	INLET GAS COALESCER	F-401B (TRAIN #2 OF 2)
34I	AMINE TREATING – SOCK FILTER	F-801	91A	CRYO. TRAIN–GAS/GAS & COLD GAS/GAS EXCH.	E-701, E-702 (TRAIN #2 OF 2)
34J	AMINE TREATING – HOT AMINE EXCHANGER	E-802	91B	CRYO. TRAIN – EXPANDER/COMPRESSOR	X-701 (TRAIN #2 OF 2)
34K	AMINE TREATING – STILL PLUS REBOILER	T-802 & E-803	91C	CRYO. TRAIN – DEMETHANIZER + COLD VENT	T-701 (TRAIN #2 OF 2)
34L	AMINE TREATING – STILL REFLUX PUMPS (2)	P-802 A, B	91D	CRYO. TRAIN – DEMETH. UPPER SIDE REBOILER	E-705 (TRAIN #2 OF 2)
35A	REFRIGERANT COMPR. – LOW STAGE SUCT. SCRUB.	V-1002	91E	CRYO. TRAIN – COLD SEPARATOR	V-701 (TRAIN #2 OF 2)
35B	REFRIGERANT COMPR. – ECONOMIZER	V-1004	91F	CRYO. TRAIN – DEMETH. BOTTOMS PUMPS (3)	P-701 A, B, C (TRAIN #2 OF 2)
35C	REFRIGERANT COMPR. – COMPRESSORS (3)	C-1001 A, B, C	91G	CRYO. TRAIN – DEMTH. & TRIM REBOILERS	E-703, E-706 (TRAIN #2 OF 2)
36	REFRIGERANT CONDENSER	E-1001	91H	CRYO. TRAIN – LOWER SIDE REBOILER	E-707 (TRAIN #2 OF 2)
37	REFRIGERANT ACCUMULATOR	V-1001	91I	CRYO. TRAIN – LOW STAGE REFRIG. RECLAIMER	V-1009 (TRAIN #2 OF 2)
38	REFRIGERANT SUBCOOLER	E-1002	91J	CRYO. TRAIN – GAS CHILLER	E-704 (TRAIN #2 OF 2)
39A	CRYO. TRAIN–GAS/GAS & COLD GAS/GAS EXCH.	E-601, E-602 (TRAIN 1 OF 2)	92	STENCH VESSEL (ETHYL MERCAPTAN)	
39B	CRYO. TRAIN – EXPANDER/COMPRESSOR	X-601 (TRAIN 1 OF 2)			
39C	CRYO. TRAIN – DEMETHANIZER + COLD VENT	T-601 (TRAIN 1 OF 2)			
39D	CRYO. TRAIN – DEMETH. UPPER SIDE REBOILER	E-605 (TRAIN 1 OF 2)			
39E	CRYO. TRAIN – COLD SEPARATOR	V-601 (TRAIN 1 OF 2)			
39F	CRYO. TRAIN – DEMETH. BOTTOMS PUMPS (3)	P-601 A, B, C (TRAIN 1 OF 2)			
39G	CRYO. TRAIN – DEMTH. & TRIM REBOILERS	E-603, E-606 (TRAIN 1 OF 2)			
39H	CRYO. TRAIN – LOWER SIDE REBOILER	E-607 (TRAIN 1 OF 2)			
39I	CRYO. TRAIN – LOW STAGE REFRIG. RECLAIMER	V-1008 (TRAIN 1 OF 2)			
39J	CRYO. TRAIN – GAS CHILLER	E-604 (TRAIN 1 OF 2)			
40	METHANOL INJECTION PUMP	P-1401			
41	METHANOL STORAGE TANK	TK-1401			
42	CLOSED DRAIN PUMP	P-1403			
43	CLOSED DRAIN VESSEL	V-1402			
44A	DEETHANIZER – REBOILER	E-904			
44B	DEETHANIZER	T-901			
44C	DEETHANIZER – SIDE REBOILER	E-905			
44D	DEETHANIZER – REFLUX CONDENSER	E-901			
44E	DEETHANIZER – REFLUX PUMPS (3)	P-901 A, B, C			
44F	DEETHANIZER – REFLUX ACCUMULATOR	V-901			
44G	DEETHANIZER – HIGH STAGE REFRIG. RECLAIMER	V-1006			
45	EP PRODUCT CHILLER	E-903			
45A	EP METER SKID				
45B	EP REINJECTION PUMP	P-970			
46	EP PRODUCT TRIM COOLER	E-902			
47	EP COMPRESSOR SUCTION SCRUBBER	V-904			
48	EP PRODUCT COMPRESSORS (2)	C-901 A,B			
49	PBC COOLER	AC-901			

REFERENCE DRAWINGS:

NO.	DATE	REVISION	DRW.	DES.	CHK.	APP.
E	06DEC95	REVISED PER FIELD TRIP	MSR	MSR	LA	LA
D	07/24/95	REVISED PER FIELD COMMENTS	JWJ	LA		
C	3/95	REVISED AS BUILT	LRW	LRW	LA	LA
B	12/94	REVISED BACKGROUND PER FIELD COMMENTS	MSR	MSR		
A	17MAY91	ORIGINAL ISSUE	BKJ	V.WOOD		

CONOCO INC.
NATURAL GAS & GAS PRODUCTS DEPARTMENT

SAN JUAN BASIN GAS PLANT

EQUIPMENT DESCRIPTION PLOT PLAN

SCALE: 1"=80'
PLOT SCALE: 1=960
AFE:
LOCATION: BLOOMFIELD, NM.
DWG. NO: NG&GP-SJ-29008
REV. E

121395.1300 MSR

NG&GP-SJ-29008

EQUIPMENT DESCRIPTION PLOT PLAN

DWG NO.

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3000
Houston, TX 77252
(713) 293-1123

Certified Mail P 365 728 000
Return Receipt Requested

May 15, 1996

Mr. Roger Anderson, Chief Oil Conservation Division
Oil Conservation Division
NM Water Quality Control Commission
P.O. Box 6429
Santa Fe, NM 87505-6429

RE: Request for Discharge Plan Renewal
San Juan Gas Plant
Bloomfield, NM 87413

Dear Mr. Anderson:

The Discharge Plan for the San Juan Gas Processing Plant was last renewed on August 16, 1991. The current plan approval expires on August 16, 1996.

In accordance with Section 3-109 of the New Mexico Water Quality Control Commission Regulations and the current approval, Conoco Inc. hereby requests the discharge plan approval be renewed. Enclosed are two copies of the draft updated plan and a check for $1,717.50 for renewal.

If you have any questions or require additional information, please contact Kathy Kanocz at (713) 293-4067. Thank you for your assistance.

Sincerely,

Rick McCalip

Rick McCalip

RECEIVED
MAY 2 3 1996
Environmental Bureau
Oil Conservation Division

Attachments
2 Copies - Addressee
1 Copy - OCD District III
1000 Rio Brazo Road
Aztec, NM 87410

District I - (505) 393-6161
P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Revised 12/1/9

RECEIVED
MAY 2 3 1996
Environmental Bureau
Oil Conservation Division

Submit Origin
Plus 1 Copi
to Santa F
Copy to appropria
District Offic

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS, REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal ☐ Modification

1. Type: Gas Processing
2. Operator: Conoco Inc.

   Address: P.O. Box 2197 - HU 3000, Houston, TX 77252-2197

   Contact Person: Rick McCalip Phone: 713-293-1123
3. Location: NW /4 NW /4 Section 14 Township 29N Range 11W

   Submit large scale topographic map showing exact location.
4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14. CERTIFICATION

    I herby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

    NAME: Rick McCalip Title: Director - Safety & Environmental Services

    Signature: Rick M S Calip Date: 05/15/96

OIL CONSERVATION DIVISION

October 19, 1995

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-963-084

Z-765-963-092 ⇐ 2nd

First time on October 19, 1995 - Called Conoco on 11-8-95, They still have not received -

Mr. Lane Ayers
Plant Manager-NG&GP
Conoco, Inc.
P.O. Box 217
Bloomfield, NM 87413

RE: Discharge Plan GW-35 Renewal
San Juan Gas Processing Plant
San Juan County, New Mexico

Dear Mr. Ayers:

On October 11, 1991, the groundwater discharge plan, GW-35, for the Conoco San Juan Gas Plant located in NW/4 NW/4, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico, **will expire on October 27, 1996.** The plan was approved by the Director of the New Mexico Oil Conservation Division (OCD). This discharge plan was required and submitted pursuant to Water Quality Control Commission (WQCC) regulations and was approved for a period of five years.

If your facility continues to have potential or actual effluent or leachate discharges and you wish to continue operation, you must renew your discharge plan. **If Conoco Inc. (NG&GP) submits an application for renewal at least 120 days before the discharge plan expires (on or before June 27, 1996), then the existing approved discharge plan for the same activity shall not expire until the application for renewal has been approved or disapproved.** The OCD is reviewing discharge plan submittals and renewals carefully and the review time can extend for several weeks to months. Please indicate whether you have made, or intend to make, any changes in your system, and if so, please include these modifications in your application for renewal.

The discharge plan renewal application for the San Juan Gas Plant is subject to the WQCC Regulations 3-114 discharge plan fee. Every billable facility submitting a discharge plan renewal will be assessed a fee equal to the filing fee of fifty (50) dollars plus a flat fee of $1,667.50 for Natural Gas Plants.

The (50) dollar filing fee is to be submitted with the discharge plan renewal application and is nonrefundable. The flat fee for an approved discharge plan renewal may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the discharge plan - with the first payment due the at the time of approval. Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office.

Z 765 963 092

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Conoco - 2nd	
Street and No. Mailing	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, March 1993

Conoco Inc.
San Juan Gas Plant
P.O. Box 217
Bloomfield, NM 87413

March 5, 1993

Denny G. Foust
Deputy Oil & Gas Inspector
Energy, Minerals & Natural
Resources Department
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Dear Mr. Foust,

This letter serves to document the site remediation action plan formulated March 3, 1993 at Conoco's San Juan Gas Plant and supersedes the March 1, 1993 letter to the OCD. This plan was mutually created with the interaction of both the State (Roger Anderson) and District (Denny Foust) levels of OCD, Conoco personnel (Jon Bowerbank), El Paso Natural Gas representatives (Anu Pundari, Loren Paris, and Bennie Armenta), as well as Conoco-retained engineering (SRK - Glenn Guyer) and contractor (CDK - Wally Salazar) firms. Additionally, this morning representatives of both Conoco and El Paso met to finalize the coordination and implementation of this plan.

During excavation of the west pond (Pond 1) a contaminated area with approximate dimensions of 100' North to South by 60' East to West, was discovered in the pond's northeast corner. Tests were performed on said material by Envirotech Inc. for Conoco's account. A copy of these results is attached for your reference. It seems that the contamination is localized at a natural sump settling point in the northeast corner of Pond 1. Conoco trenched along the west/east property line, north of Pond 1 and did not find hydrocarbon contaminated soil. Bedrock was encountered at a depth of four to twelve feet. A test trench, dug at the northeast corner of our property, adjacent to EPNG and near Pond 2, revealed hydrocarbon contaminated soils at a depth of 6" below grade.

Contaminated soils were first encountered at an approximate relative elevation of 89.5' in Pond 1. Further excavation determined that the depth of contamination varies significantly within the 6000 square foot area. EPNG reviewed their historical records and found that only operations associated with natural gas gathering and production were conducted in the immediate area. Therefore, the contaminated materials should be considered "exempt waste". Water was encountered at an approximate elevation of 87.4'.

Remediation will consist of excavation of contaminated materials to the appropriate OCD determined depth below the initial water interface. This level is anticipated to be a minimum of one foot below the interface or an approximate relative elevation of 86.0'. However, on-site inspection by OCD personnel will make the final determination as to the total depth of the

required excavation. When that point is reached, excavation will be suspended and the soils remaining in the area will be dewatered. It is anticipated that this will transform the area to such a condition to allow for adequate compaction. Extracted water will be retained on-site until suitable disposal methods and locations are identified.

The contaminated soils will be transported by CDK from the Conoco leased site to Envirotech for El Paso's account. Conoco will coordinate the excavation and transportation as part of remediation effort and El Paso will work with Envirotech for the final offsite remediation of the contaminated soil. These materials will be land farmed at the El Paso designated area of the Envirotech facility. Fill dirt will be back hauled from Envirotech to replace the excavated material. Quality control of this fill will be determined and verified by SRK for Conoco. Results of these tests will be made available to the OCD. Twelve inch lifts will then be utilized to raise the pond foundation to the original elevation of 89.5'. Pond construction will then continue in accordance with the OCD approved permit.

Conoco appreciates the OCD's cooperation in this matter. Please contact me at (505) 632-4900 if you have any questions or require any further information.

Sincerely,

Jon Bowerbank
Administrative Coordinator
Rocky Mountain District

Concurrence Denny G. Foust
Denny G. Foust

1. Groundwater will be tested,
2. monitor wells will be addressed later,

cc: Cleo M. Schmitz, District Manager
Pat Redalen, District Engineer
Mike Luchetti, Engineer
G. Lane Ayers, Plant Manager
Harold Dye, CDK Area Manager
Glenn Guyer, SRK Site Representative
Anu Pundari, El Paso Natural Gas Company

Roger Anderson

March 2. 1993

MEMORANDUM TO OCD ENVIRONMENTAL STAFF
FROM: Denny G. Foust

RE: Conoco San Juan Basin Gas Plant Contamination at Evaporation Pond Construction Site

2/16/93 Conoco's Lane Ayres through Vicki Wood reported discovering hydrocarbon contamination in the northeast corner of Conoco's highest and easternmost evaporation pond which is under construction. Roger Anderson and myself inspected the sight with Lane Ayres and Mike Luchetti of Conoco. We determined the contamination was approximately twelve inches thick and thirty inches wide. We considered the contamination to be over ten years old, highly degraded by bacteria, small in volume, not related to Conoco's operation and not a threat to groundwater. Conoco was authorized to resume operations.

2/24/93 Conoco reported cutting additional hydrocarbon contamination in the northeast corner of the western and lowermost evaporation pond under construction.

2/25/93 Field inspection revealed second plume of contamination about 15 feet deeper than the original contamination. Original estimate of volume approximately 200 cy. Water seeped into evaluation hole overnight. Contamination is old and highly degraded by bacteria.

3/1/93 Conoco has identified a plume 60 by 100 feet consisting of up to 2000 cy. Conoco has committed to removing the contaminated material above 100 TPH to Envirotech Facility 2 for remediation. Conoco will also install one or two monitor wells to check for contamination of the ground water. If groundwater is at pit level engineering for the evaporation pond is to be reviewed.

Conoco Inc.
Rocky Mountain District
P.O. Box 217
Bloomfield, NM 87413

OIL CONSERVATION DIVISION
'93 MAR 2 AM 9 10

March 1, 1993

Denny G. Foust
Deputy Oil & Gas Inspector
Energy, Minerals & Natural
Resources Department
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Dear Mr. Foust,

Per our phone conversation on February 26th, Conoco will commence with the site clean up of the contaminated material discovered during excavation of the west evaporation pond. Conoco will excavate and dispose of all material with a total petroleum hydrocarbon content above 100 ppm. Envirotech will have a qualified technician on site to verify proper sampling and testing. Conoco will take composite samples of the area with supervision from Envirotech, and any suggestions offered by yourself. The contaminated material will be excavated and transported to Envirotech's Land Farm #2 for remediation. Conoco has solicited the services of CDK Contracting Company to handle all excavation and transportation of the contaminated material.

Once all the contaminated materials have been excavated Conoco plans to continue construction of the evaporation ponds. Conoco is aware of concerns pertaining to the location of the water table relative to the ponds. Conoco will submit to the OCD an analysis performed by Conoco's consulting engineers, describing the structural integrity of the ponds and how the water table may affect it. Conoco also plans to identify any existing ground water monitoring wells near the ponds and gather any information which can determine if the ground water has been contaminated.

Conoco appreciates the OCD's cooperation in this matter. Please contact me at (505) 632-4900 if you have any questions or require any further information.

Sincerely,

Michael A. Luchetti, Jr.
Engineer
Rocky Mountain District

Concurrence Denny G. Foust
Denny G. Foust

cc: Cleo M. Schmitz, District Manager
Pat Redalen, District Engineer
Jon Bowerbank, Administrative Coordinator
G. Lane Ayers, Plant Manager
Harold Dye, CDK Area Manager
Glenn Guyer, SRK Site Representative

RECEIVED
MAR 11 1993
OIL CON. DIV.
DIST. 3

RECEIVED
FEB 26 1993
OIL CON. DIV
DIST. 3

Conoco

STEFFEN ROBERTSON AND KIRSTEN

MEMORANDUM

TO: Mr. Jon Bowerbank, Conoco

FROM: Rick Frechette, SRK

DATE: February 8, 1993

SUBJECT: Evaporation Ponds: Construction Schedule

Attached is the revised schedule for construction of the evaporation ponds at the San Juan Plant. At your request, this schedule is being forwarded to OCD's Roger Anderson in Santa Fe, and Frank Chavez in Aztec.

Regards.

Rick

/rf
Attachment
cc: R. Anderson
F. Chavez

STEFFEN ROBERTSON AND KIRSTEN
Consulting Engineers and Scientists

CONOCO SAN JUAN PLANT
Evaporation Pond Construction Schedule (as of 2/8/93)
SRK Project No. 58201

- Subcontracts awarded:
  Electrical/Mechanical: 1/25/93 . . . . . DME
  Earthworks: 1/28/93 . . . . . CDK
  Liner (includes subgrade geotextile and leak detection geonet): 1/29/93 . . . . . Palco
- Pond design complete (earthwork and liner system) - drawings and specifications submitted to Conoco 2/2/93
- SRK and CDK mobilized to site to start construction 2/2/93
- Earthworks commenced 2/3/93
- Geotextile and geonet materials delivered to site 2/17/93
- Palco's installation crew mobilized and liner delivered 2/22/93
- Liner installation commences 2/23/93
- Earthwork completed 2/24/93
  - CDK demobilized 2/25/93
- Pump equipment delivered to site 3/1/93
- DME's installation crew mobilized 3/8/93
- Liner installation completed 3/9/93
- Pump and spray system installation commences 3/9/93
- Palco demobilized 3/10/93
- Pump and spray system installation completed, DME demobilized 3/15/93
  - SRK demobilized 3/15/93

Steffen Robertson and Kirsten (U.S.), Inc.
3232 South Vance Street, Lakewood, Colorado 80227, U.S.A.
Tel. (303) 985-1333 Facsimile (303) 985-9947
Other offices in: U.S.A., Canada, United Kingdom and Africa

STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DIVISION

OIL CONSERVATION DIVISION

AZTEC DISTRICT OFFICE

RECEIVED

'93 FEB 25 AM 8 51

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(500) 334-6178

February 19, 1991

Conoco, Inc.
San Juan Basin Gas Processing Plant
Attn. Michael A. Luchetti, Jr.
P. O. Box 217
Bloomfield, NM 87413

RE: Inspection of hydrocarbon contamination exposed by evaporation pond construction.

Dear Mr. Luchetti:

Denny Foust and Roger Anderson of the Oil Conservation Division, plus Conoco represenatives Lane Ayres and Mike Lucetti, viewed the contamination exposed in the northeast corner of the eastern most evaporation pond February 16, 1993. The highly degraded hydrcarbon contamination is approximately twelve inches thick and thirty inces wide. The Oil Conservation Division considers this contamination to be over 10 years old, highly degraded by bacteria, small in volume, not related to Conoco's operation and not a threat to groundwater.

Conoco was authorized to resume construction of the evaporation ponds by the OCD represenatives onsite at 3:30 PM February 16, 1993. If there are any questions please feel free to contact this office at 505-334-6178.

Yours truly,

Denny G. Foust

Denny G. Foust
Environmental Geologist

XC: OCD Environmental Bureau
DGF file
Environmental file

STEFFEN ROBERTSON AND KIRSTEN
Consulting Engineers and Scientists

February 1, 1993
SRK Project No. 58201

State of New Mexico
Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, New Mexico 82504-2088

Attention: Mr. Roger Anderson

RE: CONOCO'S SAN JUAN GAS PLANT - EVAPORATION POND DESIGN

Dear Mr. Anderson:

1.0 INTRODUCTION

The purpose of this letter is to document the minor modifications to the evaporation ponds that have resulted from our design work on behalf of Conoco. The specific design details discussed below are different from those presented by Conoco in their revised Discharge Plan. Each of these particular details were discussed with you at our meeting in your office on January 11, 1993 or in our follow-up telephone conversation. At your request, this letter is being submitted prior to completion of construction and submission of the final as-built report.

2.0 POND STRUCTURE

The general pond design is not significantly different from that described in the Discharge Plan. Final dimensions will be incorporated in the as-built drawings. The pond embankment will incorporate adequate width for construction/access purposes (12 ft). Embankment slopes will be 3:1 (H:V) external and 2:1 internal.

3.0 LINER AND LEAK DETECTION SYSTEMS

The proposed liner system still incorporates a 30-mil PVC secondary liner and 36-mil Hypalon primary liner. However, the proposed underlying venting media is a 12-oz nonwoven geotextile and the proposed intervening leak detection layer is a geonet. The geotextile serves the purpose of a continuous vent layer while providing a cushion beneath the secondary liner to protect against puncture by the subgrade. The geonet, as we discussed, provides a higher transmissivity and thus a reduced response time in comparison to a sand layer in the event of a primary liner leak. This allows construction of the pond floor at a nominal gradient (0.25 percent) which reduces the total pond depth and resulting dead storage space required of a 2 percent slope.

The proposed leak detection sumps (LDS) will be within the ponds at the low side of the pond. No liner penetrations will be required to install or use the monitor system. The monitor pipe will be installed between the liners on the pond sideslope. A peristaltic pump can be used to obtain samples from the LDS in the event of a leak. The peristaltic pump can operate at a very low flow rate, thus reducing turbulence and possible volatilization of VOC's. Conoco will provide a sampling kit for on-site use by OCD, such as the Geopump that we provided you literature for.

4.0 SPRAY SYSTEM

The spray system concept is the same as indicated in the Discharge Plan, however the details are somewhat different. The proposed concept is for increasing evaporation rates and therefore implements low flow/high pressure sprays. Each pond will contain 25, 3/4-inch nozzles that are designed to operate in the 5 gpm or less range. The spray system and nozzles will be arranged to float in the pond to allow maximization of flow versus ambient wind conditions. During high wind/low pond level conditions, the spray can be kept below the pond crest level and thus minimize wind drift potential. During high wind/high pond level conditions, the spray setup can be easily moved to the windward side of the pond to allow continued operation of the sprays.

5.0 SUMMARY

In general, the differences in the pond design as proposed versus documented in the Discharge Plan are relatively minor. All differences are a result of finalizing the design and generally reflect technical improvements in the proposed pond facilities.

Please do not hesitate to call to discuss any details of the design.

Sincerely,

STEFFEN ROBERTSON AND KIRSTEN (U.S.), INC.

Rick Frechette
Division Head, Geotechnics

RJF/bl
cc: Jon Bowerbank, Conoco

CEMETERY

PAD ELEV. 5585.00' ±

PAD EL. 5590.00±

OFFICE/WAREHOUSE PAD
EL. 5590.00±

CONTROL ROOM
PAD
EL. 5585.8' ±

PAD EL. 5589.50±

PAD ELEV. 5586.00' ±

PAD ELEV. 5585.00' ±

PAD ELEV. 5578.00' ±

PAD ELEV. 5574.00' ±

PAD ELEV. 5572.00' ±

BUILT-UP ROAD
(DIRT SURFACE)

℄ EXISTING ROAD

TEMPORARY ROAD

CONTRACTORS
GATE
(TEMPORARY)

4' GATE

GUY WIRE

POWER POLE

GAS LINE

B.L.M. BRASS CAP:
N=9940.00
E=9970.00
ELEV. 5573.73'

B.L.M. BRASS CAP:
N=9940.00
E=9500.00
ELEV. 5586.35'

B.L.M. BRASS CAP:
N=9060.00
E=8970.00
ELEV. 5561.26'

B.L.M. BRASS CAP:
N=9060.00
E=9500.00
ELEV. 5566.98'

N

CONOCO INC., NATURAL GAS PRODUCTS DEPARTMENT
SAN JUAN GAS PROCESSING PLANT
ELEVATION AND DRAINAGE AS-BUILT

State of New Mexico
Energy and Minerals Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

Name of Operator: Conoco Inc.				Address: P.O. Box 217, Bloomfield, NM 87413			
Report of	Fire	Break	Spill	Leak	Blowout	Other* X Stained Soil	
Type of Facility	Drlg Well	Prod Well	Tank Btty	Pipe Line	Gaso Plnt X	Oil Rfy	Other*
Name of Facility: San Juan Gas Plant							
Location of Facility (Quarter/Quarter Section or Footage Description): NW 1/4, NW 1/4				Sec. 14	Twp. 29N	Rge. 11W	County San Juan
Distance and Direction From Nearest Town or Prominent Landmark: 1.5 miles N. of Bloomfield off Highway 44							
Date and Hour of Occurrence: unknown				Date and Hour of Discovery: 1:00 pm, 2/15/93			
Was Immediate Notice Given?	Yes X	No	Not Required	If Yes, To Whom: Diana Fairhurst			
By Whom: Vicki Wood				Date and Hour: 1:30 pm, 2/16/93			
Type of Fluid Lost: Hydrocarbon				Quantity of Loss: unknown BO / BW		Volume Recovered: N/A BO / BW	
Did Any Fluids Reach a Watercourse? Unknown	Yes	No	Quantity				
If Yes, Describe Fully**							

FEB 25 1993
OIL CON. DIV.
DIST. 3

Describe Cause of Problem and Remedial Action Taken**

Hydrocarbon contaminated soils were discovered at a depth of 7' below grade during excavation. Area was near corner of plant, covering approximately 1 sq. yard.

Describe Area Affected and Cleanup Action Taken**

OCD personnel (Roger Anderson & Denny Foust) inspected site and stated that no further action was required by Conoco. Conoco continued with excavation.

Description of Area	Farming	Grazing	Urban	Other* Gas Plant		
Surface Conditions	Sandy X	Sandy Loam	Clay	Rocky	Wet	Dry X	Snow

Describe General Conditions Prevailing (Temperature, Precipitation, Etc.)**

Light snow, 40° when discovered

I Hereby Certify That the Information Above Is True and Complete to the Best of My Knowledge and Belief

Signed Rick McCalip Title DIRECTOR Date 2-17-93

*Specify **Attach Additional Sheets if Necessary

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

December 10, 1992

Mr. William J. LeMay
Director, State of New Mexico
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. LeMay:

This responds to the notice of publication received by the U.S. Fish and Wildlife Service (Service) on November 27, 1992, regarding Oil Conservation Division discharge permit GW-35 on fish, shellfish, and wildlife resources in New Mexico.

Conoco, Inc., has submitted a discharge plan modification application for the previously approved discharge plan for their San Juan Basin Gas Processing Plant, located in the NW/4 NW/4, Section 14, T29N, R11W, NMPM, San Juan County, New Mexico. The Service has the following comments on the discharge plan modification that would allow the addition of two evaporation ponds to accept cooling tower wastewater which previously went to the City of Bloomfield Wastewater Treatment Facility. The Service is concerned that open ponds will create a potential risk to Department of the Interior Trust Resources. The Service recommends that steps be taken to ensure that migratory birds cannot gain access to the ponds. The Service recommends screening or netting be implemented to exclude migratory birds.

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA). If migratory birds become exposed to or accumulate harmful levels of contaminants, this constitutes "take" under the MBTA. The MBTA makes it unlawful for anyone at anytime or in any manner to capture, transport, or kill any migratory birds unless permitted by regulations promulgated under it. The courts have stated the MBTA can be constitutionally applied to impose penalties to persons, associations, partnerships, or corporations which did not intend to "kill" migratory birds and that the MBTA includes poisoning by any means. The MBTA holds that the unlawful killing of even one migratory bird is an offense.

If you have an questions concerning our comments, please contact Mary Orms at (505) 883-7877.

Sincerely,

for Jennifer Fowler-Propst
Field Supervisor

cc:
Directory, New Mexico Department of Game and Fish, Santa Fe, New Mexico.
Regional Administrator, Environmental Protection Agency, Dallas, Texas

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3034
Houston, TX 77252
(713) 293-1123

December 4, 1992

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87504

Re: **Discharge Plan GW-35**
Conoco Inc., San Juan Basin Gas Processing Plant
San Juan County, New Mexico

Dear Mr. Anderson:

A request to modify Discharge Plan GW-35 was submitted November 10, 1992. Ms. Kathy Brown contacted Ms. Vicki Wood seeking further clarification on the source of the waters to be discharged to the proposed evaporation pits. Please be advised that these ponds will receive cooling tower blowdown exclusively. All process water, wash water, and stormwater from the closed drain system will be collected for underground injection. Therefore, the ponds will not receive any water containing hydrocarbons or hydrogen sulfide.

Conoco further requests that the requirement for netting ponds be waived in this circumstance since no oily substances harmful to birds or other wildlife will be present.

If you have any further questions, please contact Vicki Wood at (713) 293-1124.

Sincerely,

Rick McCalip

Rick McCalip

AFFIDAVIT OF PUBLICATION

No. 30379

STATE OF NEW MEXICO,
County of San Juan:

KIT OWENS being duly sworn, says: "That he is the ADVERTISING MANAGER of The Farmington Daily Times, a daily newspaper of general circulation published in English in Farmington, said county and state, and that the hereto attached LEGAL NOTICE was published in a regular and entire issue of the said Farmington Daily Times, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for ONE consecutive (days) (/////) on the same day as follows:

First Publication WEDNESDAY, DECEMBER 2, 1992

Second Publication _____

Third Publication _____

Fourth Publication _____

and the cost of publication was $ 43.95

Subscribed and sworn to before me this 30th day of DECEMBER, 1992.

Notary Public, San Juan County, New Mexico

My Comm expires: ~~JULY 3, 1993~~ April 2, 1996

Legals

NOTICE OF PUBLICATION

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION**

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan modification has been submitted to the Director of Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-35) - Conoco Inc., Rick McCalip, Director, Safety and Environmental Services, P.O. Box 2197, HU 3034, Houston Texas, 77252, has submitted a discharge plan modification application for the previously approved discharge plan for their San Juan Basin Gas Processing Plant located in the NW/4 NW/4, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The modification proposes the addition of two evaporation ponds to accept cooling tower wastewater which previously went to the City of Bloomfield Wastewater Treatment Facility. The ponds will be double lined with leak detection. Groundwater most likely to be affected by an accidental discharge is at a depth ranging from 15 feet to 55 feet with a total dissolved solids concentration in excess of 4400 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 5:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 23rd day of November 1992.

SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY, Director

Legal notice 30379 published in The Farmington Daily Times, Farmington New Mexico on Wednesday, December 2, 1992.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION DISTRICT

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, PO Box 2088, Santa Fe, New Mexico 87504-2088, Telephone 505-827-5800:

(GW-35) - Conoco Inc., Rick McCallp, Director, Safety and Environmental Services, P.O. Box 2197, HU, 3034, Houston, Texas, 77252, has submitted a discharge plan modification application for the previously approved discharge plan for their San Juan Basin Gas Processing Plant located in the NW/4 NW/4, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The modification proposes the addition of two evaporation ponds to accept cooling tower wastewater which previously went to the City of Bloomfield Wastewater Treatment Facility. The ponds will be double lined with leak detection. Groundwater most likely to be affected by an accidental discharge is at a depth ranging from 15 feet to 55 feet with a total dissolved solids concentration in excess of 4400 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico on this 23rd day of November, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/William J. Lemay, Director

Journal: December 4, 1992

STATE OF NEW MEXICO
County of Bernalillo ss

Thomas J. Smithson being duly sworn declares and says that he is National Advertising manager of the **Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chaper 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for 1 times, the first publication being on the 4 day of December, 1992, and the subsequent consecutive publications on ....., 1992.

Thomas J. Smithson

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 4 day of Dec., 1992.

Bernadette Ortiz

PRICE $23.71

Statement to come at end of month.

CLA-22-A (R-12/92) ACCOUNT NUMBER C81184

FILED WITH NEW MEXICO SECRETARY OF STATE
12-18-93

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3034
Houston, TX 77252
(713) 293-1123

November 10, 1992

Mr. Roger Anderson
Oil Conservation Division
State Land Office Building, Room 206
310 Old Santa Fe Road
Santa Fe, New Mexico 87501

Re: **Discharge Plan GW-35**
Conoco Inc., San Juan Basin Gas Processing Plant
San Juan County, New Mexico

Dear Mr. Anderson:

Conoco Inc. hereby submits the enclosed revisions to the existing discharge plan. The major operational change is the proposed addition of two evaporation ponds. Enclosed are the amendments to the written plan and drawings. Check number 143 in the of amount of $50.00 is also enclosed as the filing fee.

The evaporation ponds are necessitated due to the fact that the City of Bloomfield is no longer able to accept cooling tower blowdown from the San Juan Plant. The combination of the reverse osmosis unit installed earlier this year, and the evaporation ponds will eliminate the need to discharge cooling tower blowdown off-site. The ponds will be double lined with a leak detection sump as specified in NMOCD guidelines.

The other change is the replacement of the "Sulfa-Scrub" solution with "Sulfa-Check". "Sulfa-Check" has been used at the San Juan Plant previously and is more effective than "Sulfa-Scrub".

Your prompt review and renewal of this plan are appreciated. If you have any questions or comments, please contact Vicki Wood at (713) 293-1124.

Sincerely,

Rick McCalip

Rick McCalip

Enclosures

SECTION I

GENERAL INFORMATION

D. Type of Natural Gas Operation

. . . The "Sulfa-Check" system is designed to extract hydrogen sulfide (H_2S) from the amine unit vent gas which is predominantly carbon dioxide (CO_2). The H_2S is removed and entrained in the "Sulfa-Check" solution. The spent solution and solids are non-hazardous.

F. Affirmation

I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate and complete to the best of my knowledge.

Rick McCalip
Director, Safety & Environmental Services
Natural Gas & Gas Products Department

Rick McCalip
(Signature)

11-10-92
(Date)

SECTION II

PLANT PROCESSES

A. Sources and Quantities of Effluent and Process Fluids

2. Cooling Tower Blowdown

The cooling tower is designed to operate at a maximum circulation rate of 9950 gallons per minute (gpm). There is a continuous 35 gpm blowdown of cooling water which will be treated with a reverse osmosis (R. O.) unit. The R. O. permeate will be recycled through the cooling water system at the rate of approximately 20 gpm. The R. O. concentrate will be produced at a rate of approximately 15 gpm. This water will be evaporated in one of two evaporation ponds on-site. No cooling tower blowdown will be discharged to the City of Bloomfield Municipal Water Treatment Facility during normal operations.

Conoco utilizes the following water treatment chemicals:

- anti-scale phosphonates
- sulfuric acid
- chlorine (gas or pelletized)
- biocide (non-phenol based)

Domestic wastewater is delivered via pipeline to the City treatment facility. The Wastewater Treatment Agreement defines the quality limitations for the combined wastewater stream discharged from the plant to the City. (Exhibit B of Appendix J.)

4. Sulfa-Scrub

The "Sulfa-Scrub" solution has been replaced with "Sulfa-Check", another proprietary process. A TCLP test has been completed previously and shows the spent solution to be non-hazardous. Solids are disposed of at the Waste Management Rio Blanco landfill; water is disposed of at the Hicks disposal well. The procedure is repeated approximately every six months, depending upon gas volumes, hydrogen sulfide content, and solution efficiency.

B. Quality

Sanitary water is discharged to the City of Bloomfield. Cooling tower blowdown may be discharged to the City on a temporary emergency basis only.

All flow rates presented are anticipated maximum rates and all samples are grab type. No major variations are expected in rates of discharge for washwater and stormwater drainage or domestic wastewater.

D. Spill/Leak Prevention and Housekeeping Procedures

5. Evaporation Ponds

Two evaporation ponds will be built according to the guidelines set forth by the NMOCD. Each pond will be double-lined with a leak detection system between the liners to monitor and guarantee fluid containment. The leak detection devices will be monitored monthly.

SECTION III

EFFLUENT DISPOSAL

A. Existing Operations

1. On-Site Disposal

Two ponds will be engineered and constructed according to the preliminary design in the attached drawing with 3:1 slopes on both sides of each levee, a maximum height of 10' and a total lined surface area of 115,500 sq. ft. (2.65 acres). The top of the levees will be 12' wide to provide a service road access to all four sides of each of the ponds. Transfer structures will be provided between the ponds with gate valves to control the level and flows between the ponds; a dispersion pipe array will disperse the drainage into the West Pond to absorb solar heat from liner slope and maximize evaporation.

The ponds will be sized as follows:

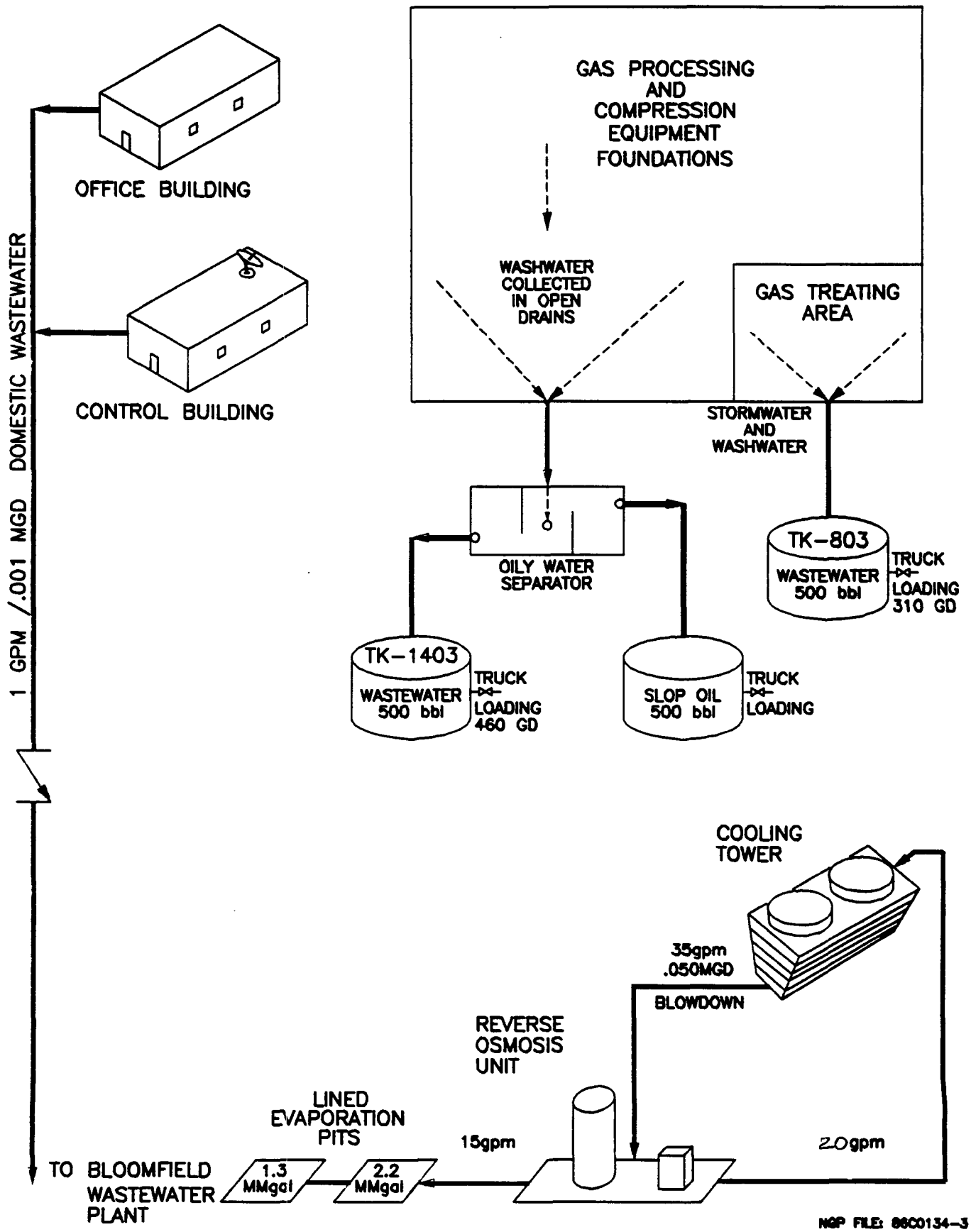
	West Pond	East Pond
Base Elevation	94'	102'
Levee Elevation	102'	110'
Area (berm to berm)	183'x 226' = 41,357 sq. ft.	234'x 230'=54,510 sq. ft.
Area (@ 6' depth)	171'x 214' = 36,594 sq. ft.	225'x 218'=49,050 sq. ft.
Volume (@ 6' depth)	1.35 million gallons	2.20 million gallons
Sprinkling system	15 - 2.5" nozzles	20 - 2.5" nozzles

Each pond will be equipped with a sprinkler system designed to enhance the yearly solar evaporation rate by 2 - 3 times with an anemometer monitor and several valve stations to limit and control overspray. An 8" PVC line from the cooling tower will feed a 6" PVC grid system with 3" PVC risers to nozzles fixed at 9' above the pond's bottom surface. The estimated flow rate is 50-60 gpm per sprinkler.

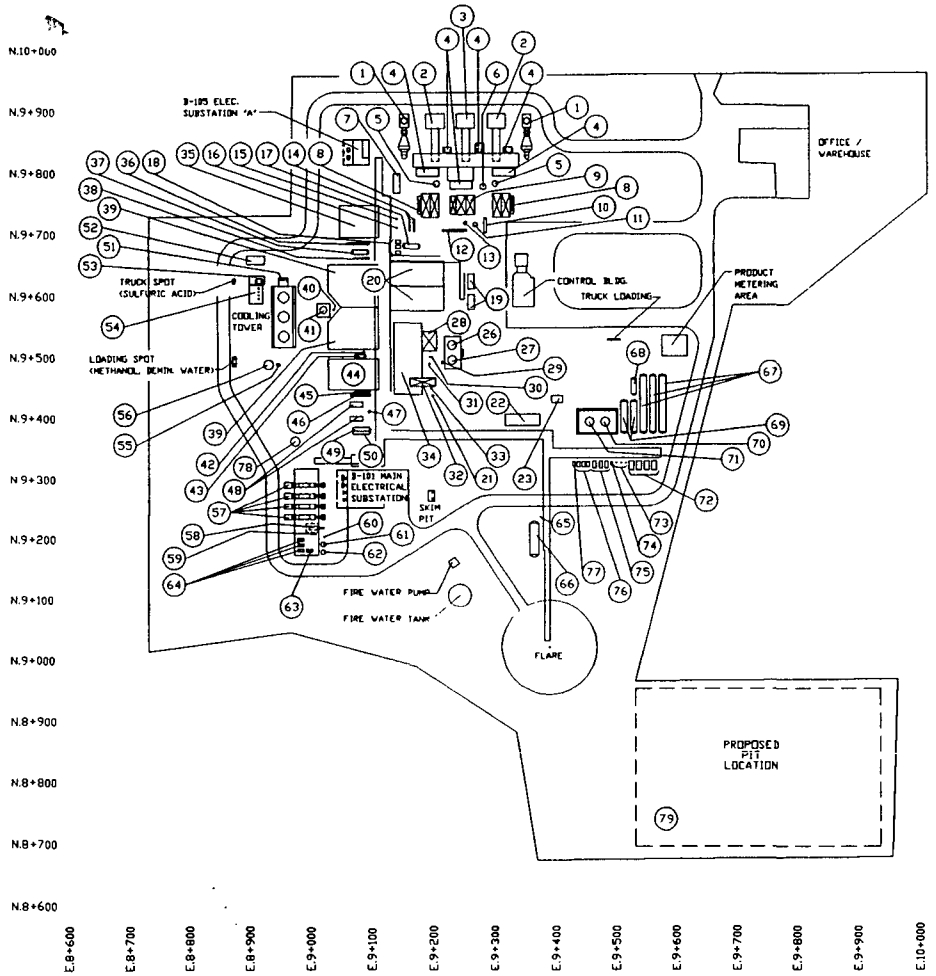
The primary liner in each pond will be 36 ml hypalon with a secondary 30 ml PVC liner. The liners will be vented according to NMOCD guidelines. The leak detection bedding will be 8 oz. geotextile for each pond.

The drainage and sump leak detection system will consist of 4" perforated PVC piping with 20' maximum spacing and slope equal to 6" per 50'. A corrosion-proof sump will be located outside the pond.

SCHEMATIC DIAGRAM
WASTEWATER DRAINAGE SYSTEM
CONOCO, INC.
SAN JUAN BASIN PLANT



NGP FILE: 86C0134-3



ITEM	EQUIPMENT
1	HOT OIL HEATERS (2)
2	RESIDUE COMPRESSORS (2)
3	INLET COMPRESSOR
4	LUBRICATING OIL SKIDS (4)
5	RESIDUE COMPRESSOR SUCTION SCRUBBERS (2)
6	LOW PRESSURE INLET GAS SEPARATOR
7	HOT OIL TRIM COOLER
8	RESIDUE COMPRESSOR AFTERCOOLERS (2)
9	INLET COMPRESSOR AFTERCOOLER
10	HIGH PRESSURE INLET COOLER
11	HIGH PRESSURE INLET GAS SEPARATOR
12	INLET COMPRESSOR TRIM COOLER
13	INLET COMPRESSOR DISCHARGE SCRUBBER
14	RECYCLE COOLERS (2)
15	HIGH PRESSURE FUEL GAS SCRUBBER
16	LOW PRESSURE FUEL GAS SCRUBBER
17	HOT OIL EXPANSION VESSEL
18	HOT OIL PUMPS (3)
19	REGEN GAS HEATERS (2)
20	INLET GAS DEHYDRATION (see detail) (2)
21	SULFACHECK SYSTEM
22	EP/PC PRODUCT DEHY. SKID
23	EP/PC PRODUCT DEHY REGEN HEATER
24	WASTEWATER AND AMINE STORAGE TANK
27	AMINE STORAGE TANK
28	AMINE COOLER
29	AMINE MAKEUP PUMP
30	AMINE SUMP PUMPS (2)
31	AMINE DRAIN TANK PUMP
32	AMINE STILL CONDENSER
33	AMINE STILL REFLUX ACCUMULATOR
34	AMINE TREATING AREA (see detail)
35	REFRIGERANT COMPRESSOR AREA (see detail)
36	REFRIGERANT CONDENSER
37	REFRIGERANT ACCUMULATOR
38	REFRIGERANT SUBCOOLER
39	CRYO TRAIN AREA (see detail) (2)
40	METHANOL INJECTION PUMP
41	METHANOL STORAGE TANK
42	CLOSED DRAIN PUMP
43	CLOSED DRAIN VESSEL
44	DEETHANIZER AREA (see detail)
45	EP PRODUCT CHILLER
46	EP PRODUCT TRIM COOLER
47	EP COMPRESSOR SUCTION SCRUBBER
48	EP PRODUCT COMPRESSORS (2)
49	PBC COOLER
50	EP COMPRESSOR AFTERCOOLER
51	COOLING WATER CIRCULATING PUMPS (3)
52	WATER TREATING CHLORINATOR
53	ACID STORAGE TANK
54	WATER TREATING PACKAGE
55	DEMINERALIZED WATER PUMP
56	DEMINERALIZED WATER STORAGE TANK
57	POWER GENERATORS (4)
58	EMERGENCY GENERATOR
59	DIESEL TRANSFER PUMP
60	WASTE LUBE OIL DRAIN TANK PUMP
61	INSTRUMENT AIR RECEIVER
62	UTILITY AIR RECEIVER
63	INSTRUMENT AIR DRIER
64	INSTRUMENT/UTILITY AIR COMPRESSOR (3)
65	FLARE KNOCKOUT DRUM PUMP
66	FLARE KNOCKOUT DRUM
67	EP/PC PRODUCT SURGE TANKS (3)
68	PROPANE STORAGE TANK
69	PBC PRODUCT SURGE TANKS (2)
70	WASTEWATER STORAGE TANK
71	SLOP OIL STORAGE TANK
72	EP/PC PRODUCT PIPELINE PUMPS (4)
73	EP/PC PRODUCT BOOSTER PUMPS (3)
74	PROPANE MAKEUP PUMP
75	PBC PRODUCT PIPELINE PUMPS (3)
76	PBC PRODUCT BOOSTER PUMPS (3)
77	PBC PRODUCT RERUN PUMP
78	GENERATOR LUBE OIL TANK
79	EVAPORATION PITS (2)

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED
E	ISSUED FOR APPROVAL 09NOV92	JVU	V. WOOD		
D	ISSUED FOR APPROVAL 10FEB92	MSR	B. BOTTOMS	RLH	T. KILLIAN
C	REVISED PER MARKUP 28JAN91	BKJ	B. BOTTOMS	RLH	T. KILLIAN
B	ISSUE FOR APPROVAL 2/3/90	BKJ	T. KILLIAN		
A	ISSUE FOR APPROVAL 12/17/87	BKJ	T KILLIAN		

CONOCO INC.
NATURAL GAS & GAS PRODUCTS DEPARTMENT

SAN JUAN GAS PLANT

CHEMICAL INVENTORY

SCALE: 1" = 100'-0"
LOCATION: BLOOMFIELD, NM
FILE NO: SJ29009
NG&GP-SJ-29009
REV NO D

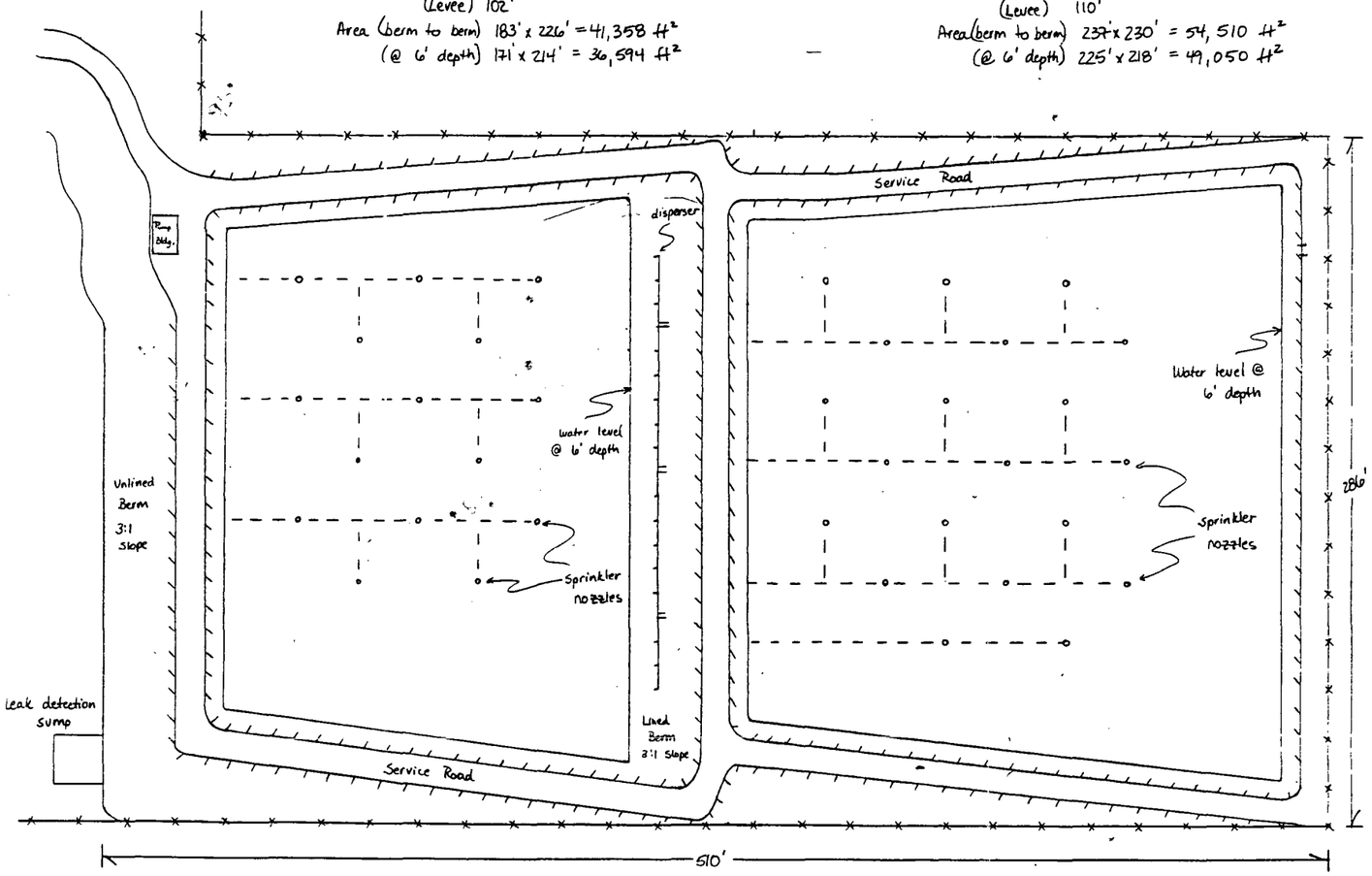
CONOCO EVAPORATION PONDS
Plan View - Scale: 1" = 40'

WEST POND

Elevation (Base) 94'
(Levee) 102'
Area (berm to berm) 183' x 226' = 41,358 ft²
(@ 6' depth) 171' x 214' = 36,594 ft²

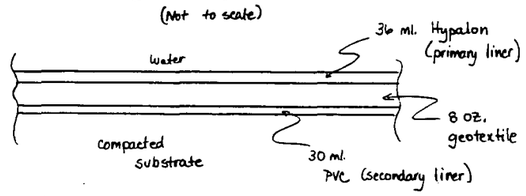
EAST POND

Elevation (Base) 102'
(Levee) 110'
Area (berm to berm) 237' x 230' = 54,510 ft²
(@ 6' depth) 225' x 218' = 49,050 ft²

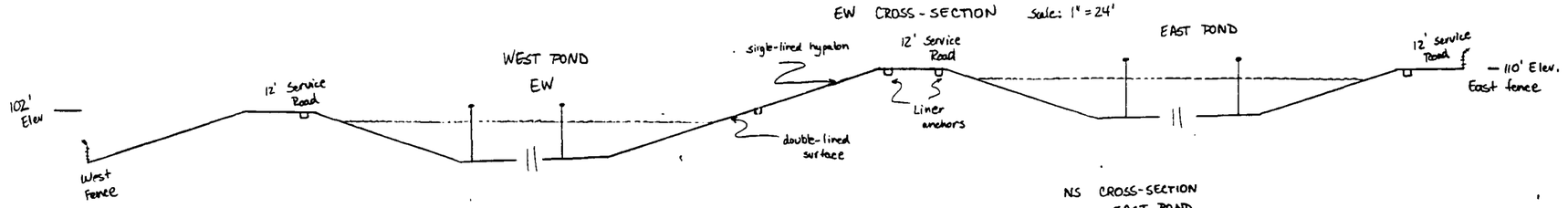


rmi
P.O. Box 2522
Farmington, NM 87499
505-327-5966

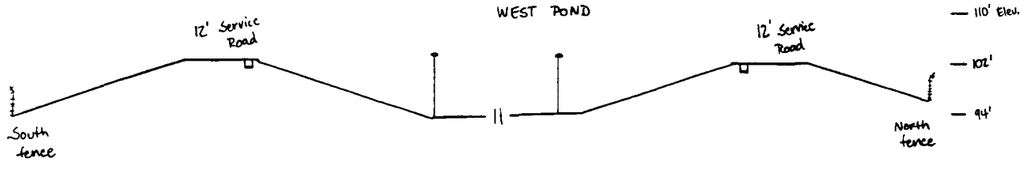
LINER DETAIL
(Not to scale)



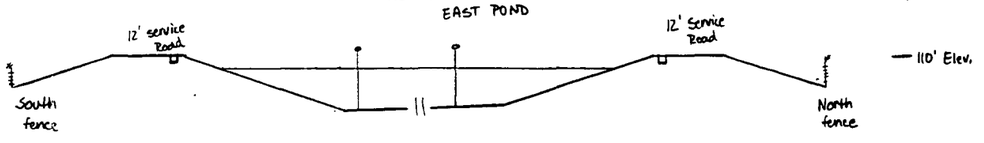
EW CROSS-SECTION Scale: 1" = 24'



NS CROSS-SECTION WEST POND



NS CROSS-SECTION EAST POND



11/02/92

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3034
Houston, TX 77252
(713) 293-1123

October 1, 1992

Certified Mail Number P 362 953 526
Return Receipt Requested

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87504

Re: **Conoco Inc., San Juan Gas Processing Plant**

Dear Mr. Anderson:

On December 18, 1991 Conoco Inc. notified you that on a temporary basis, the San Juan Plant was modifying the discharge of the cooling tower blowdown. Half of the water was to be trucked to a disposal well and the other half was to be mixed with freshwater to reduce the TDS to 500 mg/l and then delivered to the City of Bloomfield. This arrangement was to end as soon as wastewater treatment facilities were installed. After consultation with several design firms, it is apparent that the facilities planned by Conoco will not be sufficient. It is now necessary to design another type of system to treat the blowdown and reduce its volume. Therefore, Conoco is continuing the temporary arrangement outlined in our letter of December 18, 1991.

A request for minor modification of the discharge plan will be forwarded to you in the near future under separate cover. If you have any questions or require further information, please contact Vicki Wood at (713) 293-1124.

Sincerely,

Rick McCalip

Rick McCalip

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan modification has been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-35) - Conoco Inc., Rick McCalip, Director, Safety and Environmental Services, P.O. Box 2197, HU 3034, Houston Texas, 77252, has submitted a discharge plan modification application for the previously approved discharge plan for their San Juan Basin Gas Processing Plant located in the NW/4 NW/4, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The modification proposes the addition of two evaporation ponds to accept cooling tower wastewater which previously went to the City of Bloomfield Wastewater Treatment Facility. The ponds will be double lined with leak detection. Groundwater most likely to be affected by an accidental discharge is at a depth ranging from 15 feet to 55 feet with a total dissolved solids concentration in excess of 4400 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 5:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 23rd day of November 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

WILLIAM J. LEMAY, Director

ACKNOWLEDGEMENT OF RECEIPT
OF CHECK/CASH

I hereby acknowledge receipt of check No [redacted] dated 11/9/92,
or cash received on 11/20/92 in the amount of $ 50.00
from Conoco Inc.
for San Juan Basin Gas Processing Plant (Facility Name) GW-35 (DP No.)
Submitted by: _____ Date: _____
Submitted to ASD by: Kathy Brown Date: 11/20/92
Received in ASD by: Sherry Gonzales Date: 11/20/92

Filing Fee X for Modification ___ New Facility ___ Renewal ___
Other _____ (specify)

Organization Code 521.07 Applicable FY 93

To be deposited in the Water Quality Management Fund.

Full Payment ___ or Annual Increment ___

[redacted]

BONNIE MATERNE 09-91
WORKING FUND
RT. 1 BOX 1345 LUKE POWERS RD. 494-4408
LAKE CHARLES, LA 70601

[redacted]

11/9 19 92

84-21/652

Pay to the order of New Mexico Water Quality Mgmt $ 50.00
fifty and no/100 dollars

PremierBank Lake Charles, La.
Bank Code 06

CONOCO INC.

For San Juan Discharge Plan Bonnie Materne

[redacted]

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

January 21, 1992

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-690-155-050

Mr. Rick McCalip
Conoco Inc.
P.O. Box 2197, HU 3034
Houston, Texas 77252

RE: Discharge Plan GW-35 Modification
San Juan Basin Gas Processing Plant
San Juan County, New Mexico

Dear Mr. McCalip:

The groundwater discharge plan modification for the Conoco Inc. San Juan Basin Gas Processing Plant located in the NW/4 NW/4, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico is hereby approved. The modification consists of the discharge plan as renewed on October 11, 1991 and the modification application dated December 19, 1991. The modification decreases the volume of discharges to the City of Bloomfield and is considered a minor modification, therefore, public notice was not required.

The modification application was submitted pursuant to Section 3-109.F of the Water Quality Control Commission Regulations. It is approved pursuant to Section 3-109.A. Please be advised that approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other laws and/or regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (tanks exceeding 16 feet in diameter) shall be screened, netted or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3-104 of the regulations requires that "When a plan has been approved,discharges must be consistent with the terms and conditions of the plan". Pursuant to Section 3-107.C you are required to notify the Director of any facility expansion, production increase, or process modification that would result in

any change in the discharge of water quality or volume.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

William J. LeMay
Director

WJL/rca

xc: OCD Aztec Office

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3034
Houston, TX 77252
(713) 293-1123

December 19, 1991

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87504

Re: **Discharge Plan GW-35**
Conoco Inc., San Juan Basin Gas Processing Plant
San Juan County, New Mexico

Dear Mr. Anderson:

Conoco Inc. hereby submits the enclosed discharge plan modifications for approval. The modifications are necessary to meet standards set by the City of Bloomfield. Attached are the amended sections of the discharge plan as well as a check for the $50.00 filing fee.

Conoco will no longer discharge cooling tower blowdown to the City on a consistent basis. Instead, a reverse osmosis unit will be installed allowing almost half of the blowdown to be recycled to the cooling tower. The remainder of the blowdown will be evaporated using excess capacity on the plant heating system. The net effect is that the cooling tower blowdown will be reduced from 50 gpm to 0 gpm. Blowdown will be discharged to the City during periods when maintenance is performed on the reverse osmosis unit.

Your prompt review of these modifications is appreciated. If you have any questions or comments, please contact Vicki Wood at (713) 293-1124.

Sincerely,

Rick McCalip

Rick McCalip

Vendor Code: 113657R02 Company: 001 - CONOCO INC Check No.: [redacted]

S H	Voucher Reference	Invoice Date	Invoice Number	1099 CD	Gross Amount	ADJ CD	Adjustment Amount	Discount Amount	Net Amount
	VENDOR NAME: NEW MEXICO OIL CONSERVATION								
	IN CASE OF QUESTIONS ABOUT THE FOLLOWING INVOICES, PLEASE CALL (000) 000-0000								
S	1209115DC353F027	19911217	RQC355461		50.00		.00	.00	50.00
*	SAN JUAN DISCHARGE PLAN FILING FEE								
							TOTAL NET AMOUNT		$50.00

1099 CODES - R=RENTAL L=ROYALTIES P=PERSONAL SERVICES M=MEDICAL I=INTEREST F=FOREIGN VDR PYMT N=NET PROFIT
D=PERMIT/DAMAGE G=PRIZES/AWARDS C=BWP REFUND/INTEREST B=BWP REFUND/MISC A=NON-REPORTABLE TYPES
ADJ CODES - Q=WRONG QUANTITY P=WRONG PRICE C=WRONG CALCULATION M=MULTIPLE ERRORS F=CORRECTED FREIGHT CHARGES
D=CORRECTED DISCOUNT T=TAX REMOVAL B=BACKUP WITHHOLDING OF 20% PER IRS REGULATIONS O=OTHER

SECTION II

PLANT PROCESSES

A. Sources and Quantities of Effluent and Process Fluids

2. Cooling Tower Blowdown

The cooling tower is designed to operate at a maximum circulation rate of 9950 gallons per minute (gpm). There is a continuous blowdown of cooling water which will be treated with a reverse osmosis (R. O.) unit. The R. O. permeate will be recycled through the cooling water system at the rate of approximately 18 gpm. The R. O. concentrate will be produced at a rate of approximately 17 gpm. This water will be evaporated in an exchanger using excess capacity on the waste heat system. No cooling tower blowdown will be discharged to the City of Bloomfield Municipal Water Treatment Facility during normal operations. Blowdown will be discharged to the City when maintenance is performed on the R.O. unit, approximately 10 -20 days per year.

Conoco utilizes the following water treatment chemicals:

- anti-scale phosphonates
- sulfuric acid
- chlorine (gas or pelletized)
- biocide (non-phenol based)

Domestic wastewater is delivered via pipeline to the City treatment facility. The Wastewater Treatment Agreement defines the quality limitations for the combined wastewater stream discharged from the plant to the City. (Exhibit B of Appendix J.)

4. Sulfa-Scrub

A portion of the "Sulfa-Scrub" solution is removed from the unit periodically depending upon gas volumes, hydrogen sulfide content, and solution efficiency. Approximately 120 barrels of "Sulfa-Scrub" will be removed throughout the year. The spent solution contains no appreciable solids. The solution removed is sent to a Class II well for disposal.

B. Quality

Sanitary water is discharged to the City of Bloomfield. Cooling tower blowdown will be discharged to the City when maintenance is performed on the R.O. unit. The maximum concentrations, as specified in the Wastewater Treatment Agreement for the combined flows are:

Parameter	Concentration (mg/l)
Biochemical Oxygen Demand	200
Chemical Oxygen Demand	500

Oil & Grease	35
Total Suspended Solids	200
Phosphates	15
Nitrates	20
pH	8.6 (max) 6.6 (min)

Total Dissolved Solids: The difference between influent and effluent total dissolved solids will be less than 1000.

The water discharged to the City of Bloomfield is analyzed weekly by the City for BOD, COD, Total Dissolved Solids, and Total Suspended Solids. Supplemental analyses will be conducted by Conoco on a quarterly basis. Flow measurement for this combined stream is accomplished by the partial flume technique.

All flow rates presented are anticipated maximum rates and all samples are grab type. No major variations are expected in rates of discharge for washwater and stormwater drainage or domestic wastewater.

SECTION I

GENERAL INFORMATION

F. Affirmation

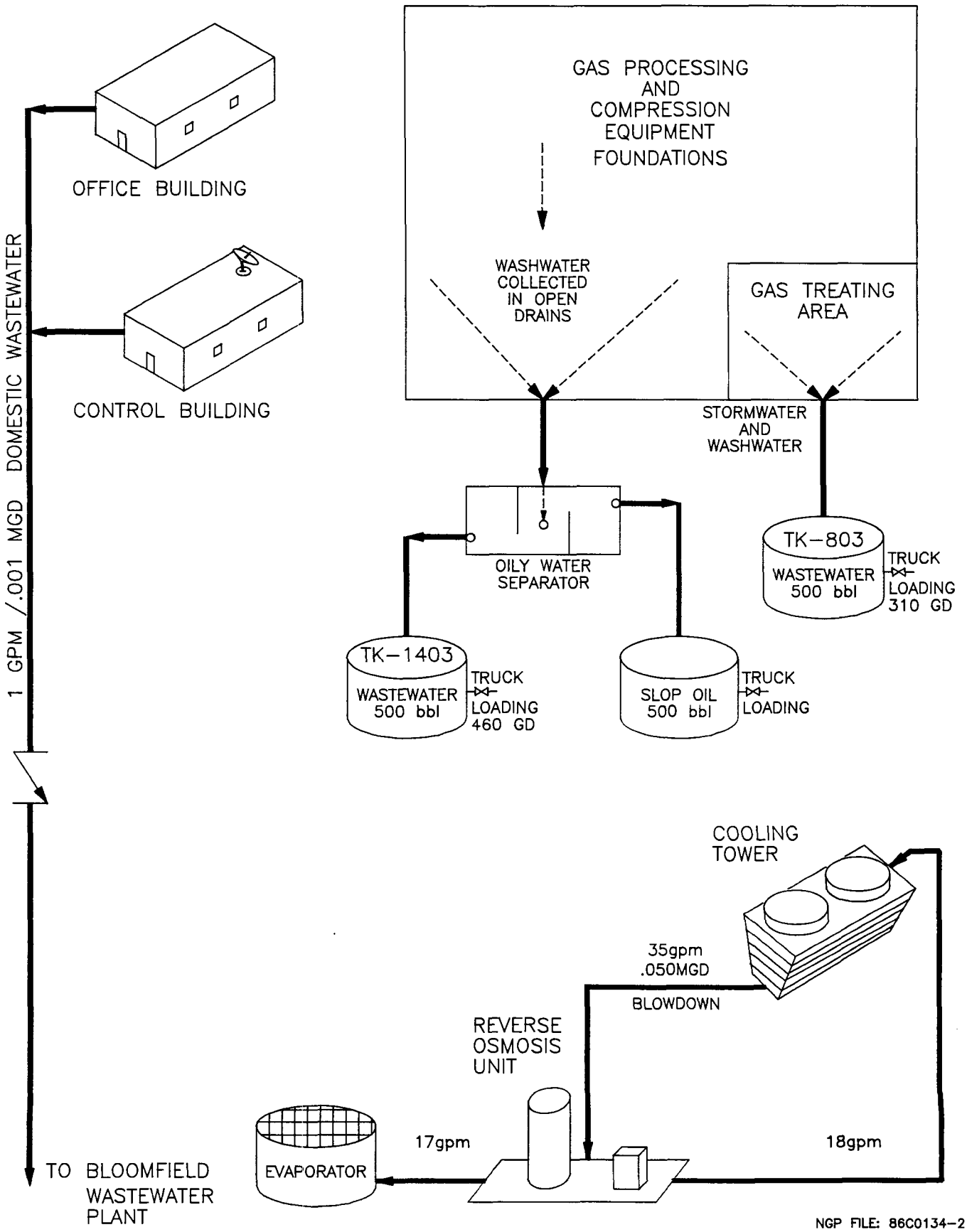
I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate and complete to the best of my knowledge.

Rick McCalip
Director, Safety & Environmental Services
Natural Gas & Gas Products Department

Rick McCalip
(Signature)

12-19-91
(Date)

SCHEMATIC DIAGRAM
WASTEWATER DRAINAGE SYSTEM
CONOCO, INC.
SAN JUAN BASIN PLANT



NGP FILE: 86C0134-2

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3034
Houston, TX 77252
(713) 293-1123

December 18, 1991

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87504

Re: **Conoco Inc., San Juan Gas Processing Plant**

Dear Mr. Anderson:

This letter is being sent as notification that the San Juan Gas Processing Plant will be modifying its water discharge on a temporary basis. An agreement with the City of Bloomfield allowed Conoco to discharge cooling tower blowdown and domestic wastewater. The City has requested that the effluent TDS be reduced from 1500 mg/l to 500 mg/l. To accomplish this, Conoco will install a reverse osmosis unit by February 1, 1992. In the interim, Conoco will undertake several temporary measures to meet the 500 mg/l TDS limit.

Due to cold winter temperatures, the cooling tower cycles will be increased to 9 or 10 cycles which will reduce the cooling tower blowdown from 50 GPM to 10 GPM. The cooling tower blowdown stream will be split and metered into two separate streams. One stream will be mixed with fresh water to reduce the TDS to 500 mg/l at the current daily flow rates for delivery to the City's wastewater system. The other stream will be placed in a storage tank and trucked to a disposal site. This plan will enable Conoco to meet the City's requirements while completing wastewater treatment facilities.

If you have any questions or require further information, please contact Vicki Wood at (713) 293-1124.

Sincerely,

Rick McCalip

Rick McCalip

ACKNOWLEDGEMENT OF RECEIPT
OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 12/20/91,

or cash received on 12/26/91 in the amount of $ 50.00

from Conoco Inc

for San Juan Gas Plant (Facility Name) GW-35 (DP No.)

Submitted by: Rayen Calhoun Date: 12/26/91

Submitted to ASD by: _____ Date: _____

Received in ASD by: _____ Date: _____

Filing Fee X New Facility ____ Renewal ____

Modification X Other _____ (specify)

Organization Code _____ Applicable FY _____

To be deposited in the Water Quality Management Fund.

Full Payment ____ or Annual Increment ____

CONOCO

No. [redacted]

62-20
311

CONOCO INC
PONCA CITY, OK 74603

To: Citibank Delaware
New Castle, DE

*** VOID AFTER 90 DAYS ***

DECEMBER 20, 1991

Vendor Code: 113657R02

Exactly **********$50.00**

Pay To the Order Of
NEW MEXICO OIL CONSERVATION
DIVISION
PO BOX 2088
SANTA FE NM 87504

Authorized Signature

[redacted]

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

October 11, 1991

CERTIFIED MAIL
RETURN RECEIPT NO. P-327-278-263

Mr Rick McCalip
Conoco, Inc
P.O. Box 2197, HU 3034
Houston, Texas 77252

RE: Discharge Plan GW-35
San Juan Basin Gas Processing Plant
San Juan County, New Mexico

Dear Mr. McCalip:

The groundwater discharge plan renewal GW-35 for the Conoco, Inc. San Juan Basin Gas Processing Plant located in the NW/4 NW/4, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico is hereby approved. The discharge plan consists of the original discharge plan as approved on October 27, 1986 and the renewal application dated August 21, 1991.

The discharge plan was submitted pursuant to Section 3-106 of the Water Quality Control Commission Regulations. It is approved pursuant to section 3-109.A. Please note Section 3-109.f., which provides for possible future amendments of the plan. Please be advised that approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other laws and/or regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (tanks exceeding 16 feet in diameter) shall be screened, netted or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that section 3-104 of the regulations requires that "When a plan has been approved,discharges must be consistent with the terms and conditions of the plan". Pursuant to Section 3-107.c. you are required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3-109.g.4., this plan approval is for a period of five years. This approval will expire October 27, 1996 and you

should submit an application for renewal in ample time before that date.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

William J. LeMay
Director

WJL/rca

xc: OCD Aztec Office

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

October 9, 1991

Mr. William J. Lemay
Director, New Mexico Energy, Minerals
and Natural Resources Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Lemay:

This responds to the Public Notice dated August 30, 1991, regarding the effects of granting State of New Mexico groundwater discharge permits on fish, shellfish, and wildlife resources in New Mexico.

The U.S. Fish and Wildlife Service (Service) has determined there are no wetlands or other environmentally sensitive habitats that will be adversely affected by the following discharges. Our data indicate no listed species would be affected by the proposed action.

GW-70 Union Oil Company of California, Compressor Station No. 1, Section 1, T26N, R7W, Rio Arriba County, New Mexico

GW-81 Union Oil Company of California, Compressor Station No. 2, Section 13, T27N, R7W, Rio Arriba County, New Mexico

GW-82 Union Oil Company of California, Compressor Station No. 3, Section 27, T27N, R6W, Rio Arriba County, New Mexico

GW-83 Union Oil Company of California, Compressor Station No. 4, Section 20, T27N, R6W, Rio Arriba County, New Mexico

GW-35 Conoco Inc., Section 14, T29N, R11W, San Juan County, New Mexico

Direct adverse impacts to migratory birds will occur from petroleum hydrocarbon contamination if the birds gain access to oil that is present on the ponds. Migratory birds that become covered by or ingest oil typically suffer mortality due to hypothermia or poisoning. The Service recommends that all tanks and ponds, regardless of size, be netted to prevent access by migratory birds.

Migratory birds are protected under the Migratory Birds Treaty Act (MBTA). If migratory birds become exposed to or accumulate harmful levels of contaminants, this constitutes "take" under the MBTA. The MBTA makes it unlawful for anyone at any time or in any manner to ". . . kill . . ." any migratory birds unless permitted by regulations promulgated under the Act. The courts have stated that the MBTA can be constitutionally applied to impose penalties to persons, associations, partnerships, or corporations that did not intend to "kill" migratory birds and that the MBTA includes poisoning by any means. The MBTA holds that the unlawful killing of even one migratory bird is an offense.

These comments represent the views of the Fish and Wildlife Service. If you have any questions, please contact Scott Hamilton-McLean at (505) 883-7877.

Sincerely,

for Jennifer Fowler-Propst
Field Supervisor

cc:
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Regional Administrator, U.S. Environmental Protection Agency, Dallas, Texas
Regional Director, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement, Albuquerque, New Mexico

STATE OF NEW MEXICO
County of Bernalillo ss

Thomas J. Smithson being duly sworn declares and says that he is National Advertising manager of the **Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chaper 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for 1 times, the first publication being on the 12 day of Sept, 1991, and the subsequent consecutive publications on ....., 1991.

Thomas J. Smithson

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 12 day of Sept, 1991.

PRICE $31.11

Statement to come at end of month.

CLA-22-A (R-12/91) ACCOUNT NUMBER C81184

OFFICIAL SEAL
Bernadette Ortiz
BERNADETTE ORTIZ
NOTARY PUBLIC-NEW MEXICO
FILED WITH SECRETARY OF STATE
My commission expires 12-18-93

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications and renewal applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-70)-Union Oil Company of California, DBA UNOCAL, Glen O. Papp, District Production Engineer, 3300 North Butler, Suite 200, Farmington, New Mexico, 87401, has submitted a discharge plan application for its Compressor Station Number 1 located in the NW/4, NW/4, Section 1 Township 26 North, Range 7 West, NMPM, Rio Arriba County, New Mexico. Approximately 4 gallons per day of washdown water and natural gas liquids will be collected in a double lined pond equipped with leak detection prior to disposal at an OCD approved offsite disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth in excess of 400 feet with a total dissolved solids concentration ranging from 500 mg/l to 1500 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

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OIL
'91

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Any interested person may obtain further information from the Oil Conservation Discharge Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 5:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 5th day of August, 1991.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY, Director

Journal: September 12, 1991

AFFIDAVIT OF PUBLICATION

No. 28272

STATE OF NEW MEXICO,
County of San Juan:

CHRISTINE HILL being duly sworn, says: "That she is the NATIONAL AD MANAGER of The Farmington Daily Times, a daily newspaper of general circulation published in English in Farmington, said county and state, and that the hereto attached LEGAL NOTICE

was published in a regular and entire issue of the said Farmington Daily Times, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for ONE consecutive (days) (/////) on the same day as follows:

First Publication THURSDAY, SEPTEMBER 5, 1991

Second Publication

Third Publication

Fourth Publication

and that payment therefore in the amount of $ 77.12 has been made.

Christine Hill

Subscribed and sworn to before me this 10th day of SEPTEMBER, 1991.

Connie Andrae

Notary Public, San Juan County, New Mexico

My Comm expires: JULY 3, 1993

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NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 30th day of August, 1991

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY, Director

SEAL

Legal No 28272 published in the Farmington Daily Times, Farmington, New Mexico on Thursday, September 5, 1991.

NOTICE OF PUBLICATION

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ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 30th day of August, 1991.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY, Director

S E A L

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3034
Houston, TX 77252
(713) 293-1123

August 21, 1991

Mr. David Boyer
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87504

Re: **Discharge Plan GW-35**
Conoco Inc., San Juan Basin Gas Processing Plant
San Juan County, New Mexico

Dear Mr. Boyer:

Conoco Inc. hereby submits the enclosed discharge plan as application for renewal. The approval of the discharge plan for the above referenced facility expires on October 27, 1991.

Various amendments have been incorporated into the enclosed plan to meet OCD's guidelines for preparation of ground water discharge plans. The only major operational change is the replacement of the "Sulfa-Check" process with "Sulfa-Scrub". Also, Conoco plans to sample the waste water disposed of in injection wells once per quarter, rather than monthly. As requested during this year's OCD inspection, the oil-water skimmer will be drained annually and visually inspected.

Your prompt review and renewal of this plan are appreciated. If you have any questions or comments, please contact Vicki Wood at (713) 293-1124.

Sincerely,

Rick McCalip

Rick McCalip

RECEIVED

AUG 26 1991

OIL CONSERVATION DIV.
SANTA FE

DISCHARGE PLAN

SAN JUAN GAS PROCESSING PLANT
BLOOMFIELD, SAN JUAN COUNTY

Prepared By

Conoco Inc., Natural Gas & Gas Products Department
P. O. Box 2197 - HU 3034
Houston, Texas 77252

TABLE OF CONTENTS

SECTION I

GENERAL INFORMATION

A. Name of Discharger

Conoco Inc., Natural Gas & Gas Products Department
P.O. Box 2197, Humber 3034
Houston, TX 77252

Contact: Rick McCalip, Director - Safety & Environmental Services
(713) 293-1123

B. Name of Local Representative

San Juan Gas Processing Plant
P. O. Box 217
Bloomfield, NM 87413

Contact: Lane Ayers, Plant Manager
(505) 632-4900

C. Location of Discharge

The San Juan Plant is located 1.5 miles north of Bloomfield off Highway 44, in the NW 1/4, NW 1/4 Section 14, Township 29N, Range 11W in San Juan county. A USGS topographical map and a facility plot plan are included in Appendices A and B, respectively.

D. Type of Natural Gas Operation

The main purpose of the plant is to process raw natural gas to remove the liquids and sell both the liquids and clean, residue gas.

Two raw natural gas streams are delivered from El Paso's Blanco Plant to the San Juan Plant: (1) 180 MMSCFD at 350 psi and (2) 320 MMSCFD at 900 psi. Stream (1) is compressed at the San Juan Plant to 900 psi for combination with Stream (2).

Prior to processing, all water must be removed from the gas stream due to low temperatures in the cryogenic process. To remove the water, the gas flows through desiccant dehydration beds. The beds are regenerated using hot gases flowing through the saturated desiccant and subsequently cooling the gases and removing the water in a knock-out vessel. The water from the knock-out vessel flows into the closed drain, the oil-water separator (skim basin M1402) and then the oily water storage tank (TK-1403). See Appendix A for a schematic of the wastewater

system.

The dehydrated natural gas is then transferred to two parallel 250 MMSCFD liquid extraction trains, passing through a series of heat exchangers to reduce the temperature to approximately -100°F. A high pressure cold separator removes any free liquefied hydrocarbons which are subsequently fed to the demethanizer.

The vapor from the cold separator is fed to the turboexpander. A near isentropic expansion drops the vapor phase pressure to demethanizer pressure, both cooling the gas to -150°F and delivering shaft work to the turboexpander recompressor (which is used for partial compression of the residue gas).

The cold methane residue stream, recovered at the top of the demethanizer, goes to the cryogenic heat exchangers. The warmed gas is compressed by the turboexpander recompressor before transfer to residue compression, two parallel 15,000 horsepower compressors. These compressors increase residue gas pressure for delivery to pipeline.

In the demethanizer, ethane, propane, butane and condensate (EPBC) are liquefied and recovered. The EPBC is either fed to the deethanizer for PBC recovery or sent to the MAPCO Rocky Mountain product pipeline to Mont Belvieu, Texas.

Ethane and some propane (EP), recovered at the top of the deethanizer, are either combined with the residue gas prior to final compression or condensed and shipped via MAPCO's pipeline. The bottoms from the deethanizer contain mainly propane, butane and condensate (PBC). This stream is transported via pipeline to the El Paso Wingate Plant.

The amine unit removes CO_2 from the EP product stream. Although inlet and residue gas H_2S concentrations meet pipeline quality standards, trace amounts of H_2S remain in the EPBC stream and are subsequently removed with the CO_2 from the product stream. The amine unit vent gas is bubbled through a tank filled with a proprietary alkaline aqueous solution known as "Sulfa-Scrub"(TM).

The "Sulfa-Scrub" system is designed to extract hydrogen sulfide (H_2S) from the amine unit vent gas which is predominantly carbon dioxide (CO_2). The H_2S is removed and entrained in the "Sulfa-Scrub" solution. The spent solution is non-hazardous.

A process flow diagram is included in Appendix B.

E. Copies

Three copies of this discharge plan are being provided to the Santa Fe office.

F. **Affirmation**

I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate and complete to the best of my knowledge.

Rick McCalip
Director, Safety & Environmental Services
Natural Gas & Gas Products Department

Rick McCalip
(Signature)

8-16-91
(Date)

SECTION II

PLANT PROCESSES

A. Sources and Quantities of Effluent and Process Fluids

1. Separators (Produced Water)

There are two inlet separators. The produced water is mixed with the stormwater and washwater in TK-1403, the oily water storage tank. The produced water is not measured. Produced water contains some hydrocarbons and other naturally occuring elements.

2. Cooling Tower Blowdown

The cooling tower is designed to operate at a maximum circulation rate of 9950 gallons per minute (gpm). There is a continuous blowdown of cooling water which is discharged to the City at an average rate of 50 gallons per minute, maximum 180,000 gallons per day, as allowed by the Wastewater Treatment Agreement. Blowdown temperature typically does not exceed 80°F.

Conoco utilizes the following water treatment chemicals:

- anti-scale phosphonates
- sulfuric acid
- chlorine (gas or pelletized)
- biocide (non-phenol based)

Domestic wastewater and the cooling tower blowdown are combined prior to discharge from the plant. The combined stream is delivered via pipeline to the City treatment facility. The Wastewater Treatment Agreement defines the quality limitations for the combined wastewater stream discharged from the plant to the City. (Exhibit B of Appendix J.)

3. Domestic Wastewater

Domestic wastewater, including sewage, is discharged to the City of Bloomfield Municipal Treatment Facility under terms outlined in a Wastewater Treatment Agreement between the City and Conoco, Appendix J. As indicated in the Agreement, the maximum volume of domestic wastewater discharged to the City is 1440 gallons per day.

There are no major additives.

4. Sulfa Scrub

The "Sulfa-Scrub" solution will be changed periodically depending upon gas volumes, hydrogen sulfide content, and solution efficiency. "Sulfa-Scrub" is a new process. It is assumed that 5000 gallons of "Sulfa-Scrub" will be disposed of every six to twelve

months. The spent solution will contain no appreciable solids. The spent solution will be removed from the unit and placed in a truck for transportation and disposal at a Class II well.

5. Other - Stormwater and Washwater

By agreement, no stormwater or washwater is diverted into the City's wastewater system. The majority of stormwater is non-contaminated and is not collected for disposal. The only cases of stormwater collection for discharge are as follows: (1) rainwater falling directly on the equipment foundations, and (2) stormwater from the curbed gas treating area.

B. Quality

The quality of the process area washwater (TK-1403) and the amine system washwater/stormwater (TK-803) is analyzed quarterly. The samples are analyzed for pH, BOD, COD, TDS, oil and grease, phenols and heavy metals to insure that the wastewater quality is acceptable. The tank contents are transported for disposal to Hicks Oil and Gas, Inc. or Southwest Water Disposal's saltwater disposal well.

Average Composition:

Component	TK-1403	TK-803
BOD (mg/l)	10,000	10,000
COD (mg/l)	85,000	80,000
Oil & Grease (mg/l)	15	50

Cooling tower blowdown and sanitary water is discharged to the City of Bloomfield. The maximum concentrations, as specified in the Wastewater Treatment Agreement for the combined flows are:

Parameter	Concentration (mg/l)
Biochemical Oxygen Demand	200
Chemical Oxygen Demand	500
Oil & Grease	35
Total Suspended Solids	200
Phosphates	15
Nitrates	20
pH	8.6 (max) 6.6 (min)

Total Dissolved Solids: The difference between influent and effluent total dissolved solids will be less than 1000.

The combined cooling tower blowdown and sanitary sewer stream is analyzed weekly by the City of Bloomfield for BOD, COD, Total Dissolved Solids, and Total Suspended

Solids. Supplemental analyses are conducted by Conoco on a monthly, quarterly and annual basis. The schedule for analyses is outlined in Exhibits C and D of the Wastewater Treatment Agreement, Appendix J. Flow measurement for this combined stream is accomplished by the partial flume technique.

All flow rates presented are anticipated maximum rates and all samples are grab type. No major variations are expected in rates of discharge for washwater and stormwater drainage or domestic wastewater.

Cooling tower blowdown volumes (125 gpm) are maximum design values. Normal operations will result in approximately 50 gpm blowdown in winter, 60 gpm in summer.

C. Transfer and Storage of Process Fluids and Effluents

1. Wastewater Flow Schematics

Appendix A contains schematic diagrams of the plant's wastewater system. Estimated maximum flow rates are shown for each stream. Wastewater temperatures are not expected to exceed the ambient temperature.

2. Potential Surface and Subsurface Discharges

The following liquid materials are kept on the plant site:

- diethanolamine
- sulfuric acid
- natural gasoline
- diesel fuel
- methanol
- lubricating oils, including

Conoco ATF	Conoco Fleet 30
Conoco Dectol 150	Conoco Superhydraulic 32
Conoco Gear Lube 90	Conoco R&O 220
Texaco Capella WF 68	Shell Aerostar 500
Mobil Rarus 826	Conoco Turbine 46
Conoco Turbine 32	Mobil SHC 824

- biodegradeable detergent cleaners
- water treatment chemicals
  - chlorine
  - Betz 25K Series 25176
- EPBC (ethane, propane, butane, condensate product mixture)
- slop oil

Material Safety Data Sheets for on-site chemicals and products are kept at the plant.

All of the above materials are stored in areas with secondary containment (floor drains or dikes). This will prevent any of these materials in significant quantities from entering the City wastewater system or groundwater. All are stored at

atmospheric pressure in aboveground tanks. Only waste materials are stored underground in sumps and oil skimmer pits.

Sulfuric acid is controlled by pH sensors on the cooling water system. These will prevent wide swings in pH in the blowdown.

Methanol is used periodically to prevent freezeups in the plant process. The methanol stays in the product stream and leaves the plant with the products.

Any losses of diethanolamine (DEA) from the amine unit or amine process area are collected in TK-803. All other equipment foundations are connected to an open drain system which leads to the oil/water separator (i.e. skimmer basin). At the skimmer, gravity separation segregates oil from wastewater. The oil is transferred by a float-operated pump to a storage tank. The wastewater (stormwater and washwater) is diverted to a 500-barrel tank (TK-1403).

Precautions have also been taken to prevent contamination of the storage tanks. For example, any oil that enters the open drain system must pass through the oil-water separator where it will be removed. Should the separator fail to operate properly, the oil-contaminated wastewater will be pumped to the water storage tank, TK-1403.

Only two underground tanks are subject to this plan. Table II.C details characteristics of each tank. Both tanks are installed in the gas treating (amine system) area at an approximate depth of eight (8) feet. To install the tanks below grade, an outside contractor was hired to drill through the rock which is present at that location. Both sites were packed with fresh dirt prior to installing the tanks. No groundwater was encountered during the installation procedure.

3. Underground Piping

All in-plant piping was designed and tested in accordance with American National Standards Institute (ANSI) B31.3. All pipe except the 6-inch sanitary sewer line is carbon steel line pipe. Carbon steel pipe was wrapped and checked with a holiday detector prior to installation. Design corrosion allowance is 0.063 inches. The 6-inch sanitary sewer line (Line No. 6 DY16101) is standard PVC pipe. Appendix C lists all underground pipe line numbers with respective wall thickness (sch), operating pressure and temperature, and design pressure and temperature.

D. Spill/Leak Prevention and Housekeeping Procedures

1. Containment and Cleanup of Spills

As required by Federal Regulations (40 CFR 112), the San Juan Gas Plant operates in compliance with an SPCC Plan. This SPCC Plan has been fully implemented. The table of contents is shown in Table II.D.

The SPCC Plan, which is on file with the OCD, specifies containment requirements for tanks and other equipment. All tanks which store hydrocarbons which are liquid at standard temperature and pressure or hazardous substances are diked or curbed to prevent releases in the event of tank failure.

Plant personnel receive annual training on spill prevention, containment, cleanup, and notification procedures. In the event of a spill of oil or other regulated materials, the Oil Conservation Division and the Environmental Improvement Division shall be notified as specified in Conoco's Spill Reporting Procedures Guide. A copy of this guide is included in Appendix D.

The gas treating area is contained with concrete flooring and curbed, providing secondary containment of potentially contaminated stormwater and/or washwater and any spills. The curbed area drains to a 500-barrel tank (TK-803).

All other equipment foundations are equipped with drains to collect dripped fluids and washwaters. These areas drain to TK-1403, a 500-barrel tank.

A 2-3 foot earthen dike was constructed inside the fence at the south edge of the property. The dike contains all other stormwater, preventing any runoff to surrounding areas. A field road, outside the fence and on El Paso Natural Gas property, provides secondary containment before any stormwater reaches Citizen's Ditch.

2. Housekeeping

Precautions to eliminate runoff contamination have been taken. If for any reason contamination should occur, a third party will be contacted immediately to provide whatever services are necessary to remedy the situation. A list of service providers is maintained in the SPCC Plan.

Oil pads are used liberally to clean up small spills. This prevents future groundwater contamination.

Washwater from equipment cleaning and maintenance is sent via the drain system to the wastewater tanks for proper discharge. No solvents, only detergent-based cleaners, are used for cleaning equipment.

3. Leak Detection and Integrity Testing

All tanks and piping were pressure-tested prior to being placed in service in order to insure the equipment's integrity. Leaks within the plant can be detected by numerous pressure monitors located on plant piping, tanks, and vessels.

Plant piping and equipment are designed to resist corrosion for the life of the facility. All underground steel piping is doped and wrapped. Tanks are tested for metal thickness approximately every two years. The two underground tanks from the gas treating area (V-806 and V-807) are pressure tested every two

years. Additional testing will be performed on an as-needed basis. Section II.C.3 contains additional information on underground piping specifications.

The oil-water skimmer will be drained annually and visually inspected.

4. Injection Well

Injection wells owned by third parties are used for effluent disposal. Two disposal sites are used so that storage capacities are not exceeded while one well is being repaired or worked over.

TABLE II.C - 2
UNDERGROUND STORAGE TANKS

Tank Number	V-806	V-807
Vessel Name	Amine Drain Tanks	Amine Waste Sump
Commodity Stored	30% Diethanolamine[1]	Stormwater[2]
Capacity (gal)	950	4200
Construction Material	Carbon Steel	Carbon Steel
Dimensions	48" OD x 10' T/T	72" OD x 20' T/T
Wall Thickness[3]	0.25"	0.25"
External Protection:	Epoxy Coating	Epoxy Coating
Design Pressure[4]	14.9 psig @ 150°	12.9 psig @ 150°

(1) DEA solution from system blowdown. This material can be returned to the process unit or disposed of via TK 803.

(2) Stormwater from curbed gas-treating area; stormwater through drain to TK-803 via V-807

(3) Wall thickness includes 0.125" corrosion allowance

(4) Both vessels were pressure tested prior to installation and are tested every two years.

TABLE II.D

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN
TABLE OF CONTENTS

SECTION III

EFFLUENT DISPOSAL

A. Existing Operations

1. On-Site Disposal

There are no on-site facilities for effluent disposal. All drains, tanks, and piping are for collection and transfer to off-site facilities.

2. Off-Site Disposal

The sources and estimated composition of the wastewater streams are described in Section II.A. Domestic wastewater and cooling tower blowdown are discharged via pipeline into the City of Bloomfield's wastewater treatment system:

City of Bloomfield
P.O. Box 1839 (Office)
Bloomfield, NM 87413

1076 South Church (Site)
Bloomfield, NM 87413

Stormwater and washwater from the gas treating process area tanks, and Sulfa Scrub water are transported via truck. One of the following agents is used:

Dawn Trucking
P.O. Box 1498
Farmington, NM 87499

Sunco Trucking Company
P.O. Box 443
Farmington, NM 87499

The trucking companies ship to either of the following Class II disposal wells:

Southwest Water Disposal
P.O. Box 308
Farmington, NM

Hicks Oil and Gas, Inc.
Unit Well No. 37 (Site)
Section 15, Township 28N, Range 13W
San Juan County, NM

B. Proposed Modifications

No modifications are proposed at this time.

SECTION IV

SITE CHARACTERISTICS

A. Hydrologic Features

United States Geological Survey (USGS) map, Appendix E illustrates the area surrounding the facility. All bodies of water, rivers, and canals are labelled.

Appendix F lists water wells located within one mile of the plant perimeter. Only wells in Sections 10, 11, 12, 13, 14, 15, 22, 23, and 24 are within one mile; the other wells have been blocked from the list. The information was provided by the State Engineer's Office in Albuquerque.

A plot plan showing locations of ground water monitoring wells is included in Appendix G. Analyses by Western Technologies, Inc. of Farmington, New Mexico and Phoenix, Arizona for dissolved organic carbon showed a higher level than expected in Well #1, Appendix G. Subsequent testing for hydrocarbons was performed on Well #1 and a composite of Wells #2-6, Appendix G. No detectable hydrocarbons were found. A potential contributor to the high levels in Well #1 may be leaching from an existing nearby cemetery.

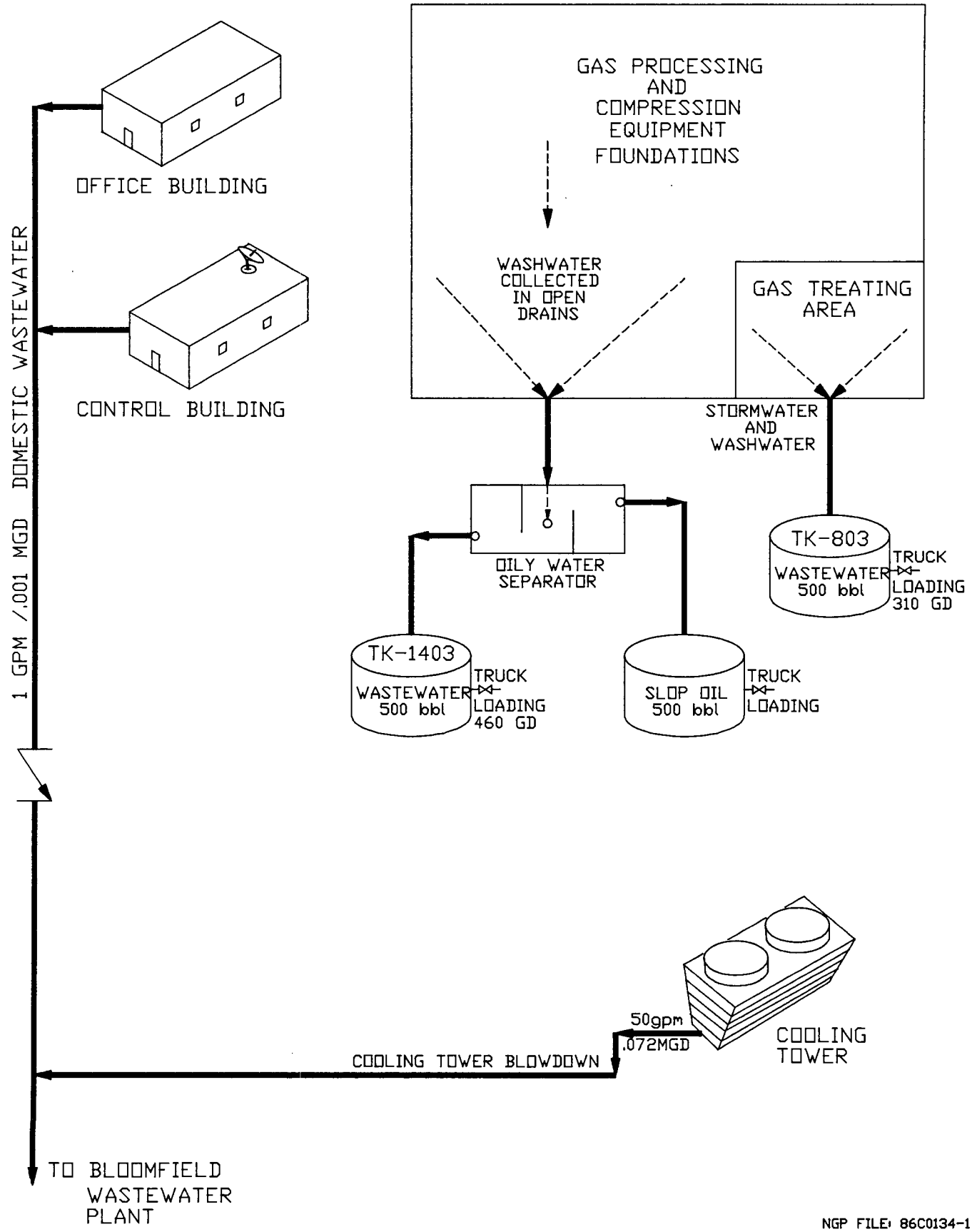
B. Geologic Description Of Discharge Site

Department of Agriculture, U.S. Department of the Interior, and the New Mexico Agricultural Experiment Station. The soil is Fruitland sandy loam, 0 to 2 percent slopes. Appendix H provides hydrologic formation data for the area.

C. Flood Protection

Site work including grading changes was conducted prior to commencement of construction. A contour map showing final elevations and plant orientation is included in Appendix I. The entire plant site is elevated to effectively eliminate any potential for flooding. Sources of potential stormwater contamination are curbed to prevent such contamination. Refer to Section II.D.1 for additional information.

SCHEMATIC DIAGRAM
WASTEWATER DRAINAGE SYSTEM
CONOCO, INC.
SAN JUAN BASIN PLANT



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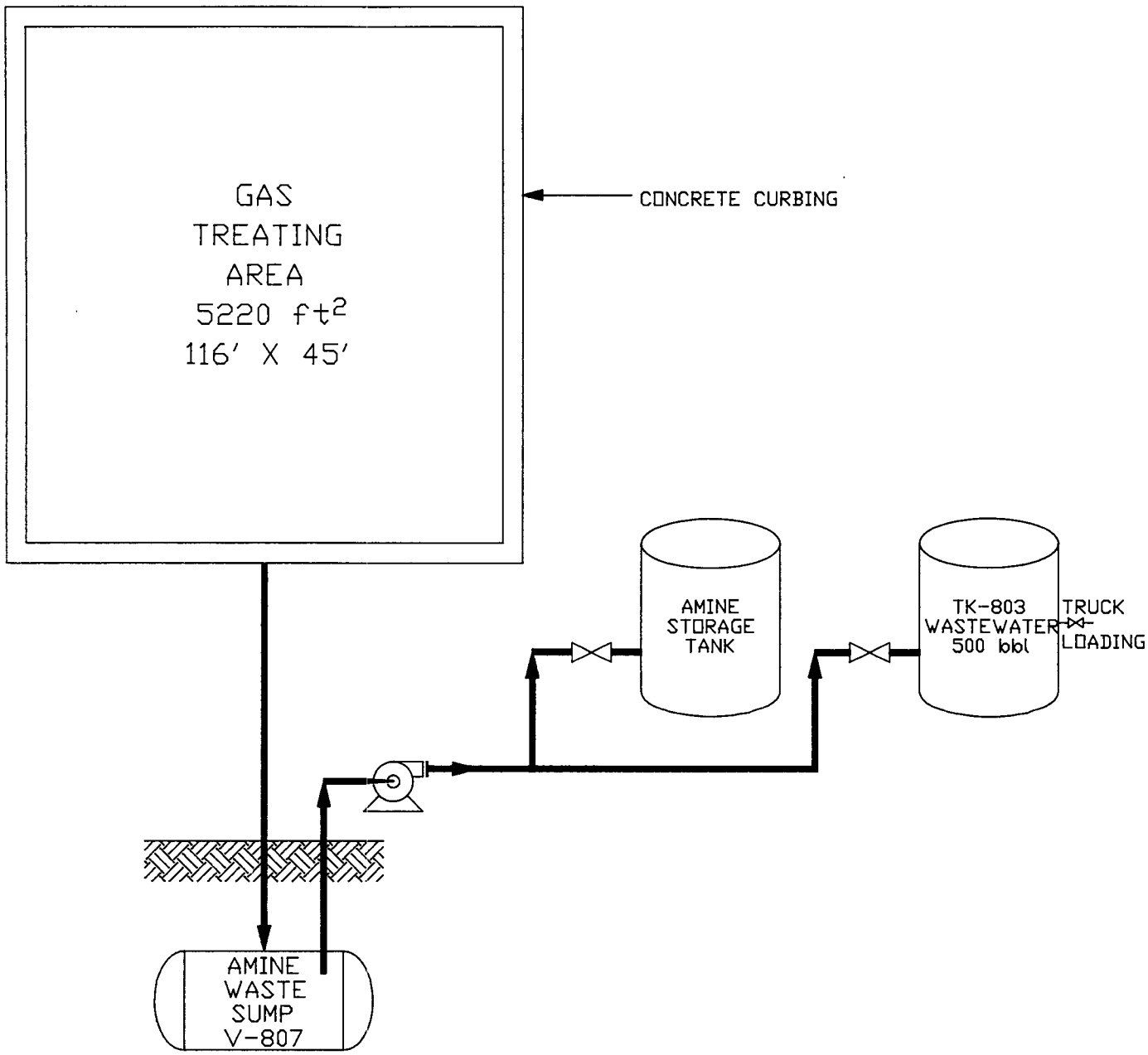
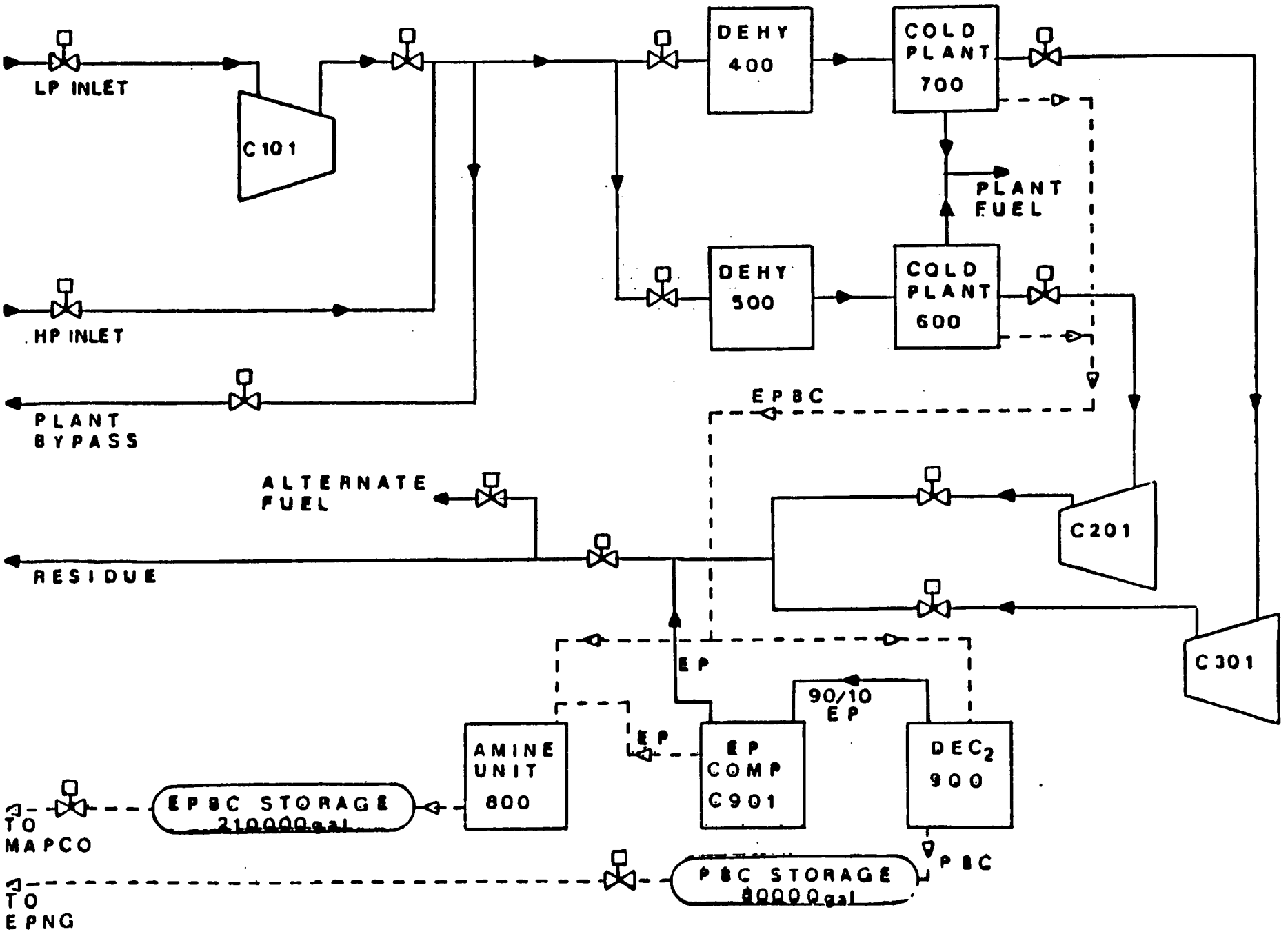
SCHEMATIC DIAGRAM
GAS TREATING AREA
WASHWATER AND STORMWATER DRAINAGE
CONOCO, INC.
SAN JUAN BASIN PLANT



NG&GP FILE: 86C0148-1

SAN JUAN BASIN PLANT
BLOCK DIAGRAM



PIPING SPECIFICATIONS

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Cooling Water					
1.5" WC 12 135	80	70	80	100	150
1.5" WC 12 136					
1.5" WC 12 141					
1.5" WC 12 142					
2" WC 12 115	80	70	71	100	150
2" WC 12 116					
2" WC 12 134					
3" WC 12 108	STD	70	71	100	150
3" WC 12 109					
3" WC 12 124	STD	50	81	100	150
3" WC 12 125					
6" WC 12 101	STD	50	81	100	150
6" WC 12 117					
6" WC 12 120					
8" WC 12 104	STD	70	71	100	150
8" WC 12 139					
8" WC 12 140	STD	50	81	100	150
10" WC 12 101	STD	70	71	100	150
10" WC 12 103					
10" WC 12 106					
10" WC 12 107					
10" WC 12 119	STD	50	81	100	150
10" WC 12 122					
10" WC 12 123					
10" WC 12 131					
12" WC 12 118	STD	50	81	100	150
14" WC 12 101	STD	50	81	100	150
14" WC 12 131					
16" WC 12 131	STD	50	81	100	150
24" WC 12 101	STD	70	71	100	150
24" WC 12 132					
Firewater					
8" WF 14 104	STD	ATM	AMB	NA	NA
8" WF 14 105					
8" WF 14 107					
8" WF 14 109					
8" WF 14 110					
8" WF 14 111					
8" WF 14 112					
8" WF 14 113					
12" WF 14 100	STD	ATM	AMB	NA	NA
12" WF 14 102					
12" WF 14 109					

PIPING SPECIFICATIONS - (Continued)

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Utility Water					
1" WU 14 109 1" WU 14 110 1" WU 14 111 1" WU 14 112 1" WU 14 113 1" WU 14 114 1" WU 14 115 1" WU 14 116 1" WU 14 118 1" WU 14 119	80			200	150
3" WU 14 101	10S	ATM	AMB	100	150
4" WU 14 102	STD			200	150
6" WU 14 101	0.280			200	150
Treated Water					
1.5" WT 14 111	40S	50	AMB	100	150
2" WT 14 104	40S	50	AMB	100	150
3" WT 14 101	10S	ATM	AMB	100	150
Drinking Water					
1.5" WD 14 104 1.5" WD 14 106 1.5" WD 14 107 1.5" WD 14 108	STD	60	70	100	150
2" WD 14 101	STD	60	70	100	150
3" WD 14 101	STD	60	70	100	150
Process Hydrocarbon Liquids					
3" HL 14 106	STD	ATM	AMB	50	150
4" HL 9 180	80	820	110	1415	150
6" HL 9 159 6" HL 9 182	80	1687	83	1815	150
8" HL 9 161	0.322	1687	83	1815	150
Process Hydrocarbon Gas					
20" HG 1 101	STD	345	110	596	150
20" HG 1 112	0.750	845	110	940	150
24" HG 1 111	0.750	845	80	940	150
24" HG 2 110	0.750	850	120	940	150

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Amine					
2" XA 8 125 2" XA 8 132 2" XA 8 144	80	36	70	272	200
2" XA 8 145 2" XA 8 146	80	ATM	AMB	100	150
2" XA 8 150 2" XA 8 151 2" XA 8 153 2" XA 8 160	80	22	AMB	200	150
3" XA 8 129	STD	ATM	AMB	100	150
3" XA 8 142	STD	12	248	100	300
6" XA 8 100 6" XA 8 148	STD	ATM	AMB	100	150
Refrigerant					
1.5" RF 10 140	80	200	100	250	150
2" RF 10 113	80	70	44	250	150
3" RF 10 141	STD	200	100	250	150
Fuel Gas					
2" FG 14 112	80	60	42	110	175
Flare					
2" FL 14 240 2" FL 14 241	80	ATM	AMB	50	-20/260
Methanol					
2" XX 14 101	80	50	110	100	150
Sanitary Sewer					
6" DY 14 101	Standard PVC pipe				
Closed Drain System					
1" DC 14 135	80	300	80	350	275
2" DC 14 102	80	300	80	350	275
2" DC 14 107 2" DC 14 110 2" DC 14 116	40S	40	-200	50	-220/350
3" DC 14 101	STD	300	80	350	275
3" DC 14 122 3" DC 14 127	10S	40	-200	50	-220/350
4" DC 14 109 4" DC 14 112	10S	40	-200	50	-220/350
6" DC 14 123	10S	40	-200	50	-220/350

LINE NUMBER	SCH OR WT	OPER. PRES.	OPER. TEMP.	DESIGN PRES.	DESIGN TEMP.
Open Drain System					
2" DO 14 102	80	ATM	AMB	50	150
2" DO 14 103					
2" DO 14 109					
2" DO 14 110					
2" DO 14 114					
2" DO 14 119					
2" DO 14 120					
2" DO 14 121					
2" DO 14 124					
2" DO 14 125					
2" DO 14 129					
2" DO 14 131					
2" DO 14 132					
2" DO 14 133					
2" DO 14 134					
2" DO 14 135					
2" DO 14 136					
2" DO 14 137					
2" DO 14 142					
2" DO 14 143					
2" DO 14 144					
2" DO 14 145					
2" DO 14 146					
2" DO 14 147					
2" DO 14 149					
2" DO 14 153					
2" DO 14 157					
2" DO 14 158					
2" DO 14 173					
2" DO 14 183					
2" DO 14 202					
3" DO 14 104	STD	ATM	AMB	50	150
3" DO 14 112					
3" DO 14 126					
3" DO 14 150					
3" DO 14 151					
4" DO 14 107	STD	ATM	AMB	50	200
4" DO 14 155					
6" DO 14 138	STD	ATM	AMB	50	150
6" DO 14 140					
Instrument Air					
1" AI 14 118	STD	125	120	150	300
1" AI 14 119					
Utility Air					
2" AU 14 109	STD	125	120	150	300

Oil:

Report any discharge from any facility of oil or other water contaminant whose quantity may, with reasonable probability, injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, as soon as possible after learning of such a discharge, but in no event more than 24 hours thereafter to:

New Mexico Health and Environment Department, Santa Fe
Environmental Improvement Division
Ground Water Bureau
(8 to 5) (505) 827-2917
(505) 827-0188 (UST Section)
(24-hour) (505) 827-9329 (Alternate)

Notes:

1. Verbal reports shall include the following items:
   a. The name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility.
   b. The name and address of the facility.
   c. The date, time, location, and duration of the discharge.
   d. The source and cause of discharge.
   e. A description of the discharge, including its chemical composition.
   f. The estimated volume of the discharge.
   g. Any actions taken to mitigate immediate damage from the discharge.
2. Within one week after the discharger has learned of the discharge, the facility owner and/or operator shall send written notification verifying the prior oral notification as to each of the items in Note 1, providing any appropriate additions or corrections to:

   New Mexico Health and Environment Department
   Environmental Improvement Division
   Chief, Ground Water Bureau
   Harold Runnels Building
   1100 St. Francis Drive
   Santa Fe, NM 87503
3. Any facility which is subject to the notification and reporting requirements of the Oil Conservation Division is not required to comply with these environmental improvement notification and reporting requirements.

Report any fire, break, leak, spill, or blowout at any injection or disposal facility or at any oil and gas drilling, producing, transporting, or processing facility to:

New Mexico Energy, Minerals and Natural Resources Department, Santa Fe
Oil Conservation Division
(8 to 5) (505) 827-5800

In addition, make **"immediate"** and/or **"subsequent"** notifications for any fire, break, leak, spill, or blowout to the appropriate district office (refer to notes for details and map for nearest district offices):

District	City	Numbers	After Hours
I	Hobbs	(505) 393-6161	(505) 393-6161
II	Artesia	(505) 748-1283	(505) 748-1283
III	Aztec	(505) 334-6178	(505) 334-6178
IV	Santa Fe	(505) 827-5810	(505) 471-1068

Notes:

1. **"Immediate notification"** shall be as soon as possible after discovery in person or by telephone to the appropriate district office or, if after business hours, to the district supervisor. Immediate notification to be followed by subsequent notification.
2. **"Subsequent notification"** shall be a complete written report of the incident in duplicate to the appropriate district office within 10 days after discovery of the incident.
3. Verbal or written reports shall include:
   a. Location of the incident by quarter-quarter, section, township, and range.
   b. Location by distance and direction from the nearest town or prominent landmark so that the exact site of the incident can be readily located on the ground.
   c. Nature and quantity of the loss.
   d. General conditions prevailing in the area to include precipitation, temperature, and soil conditions.
   e. Measures that have been taken and are being taken to remedy the situation.
4. Notifications shall be in accordance with the following:
   a. Well blowout—immediate notification.
   b. Major and minor breaks, spills or leaks; gas leaks and line breaks; tank fires; drilling pits, slush pits, storage pits and ponds:

Material	Quantity (bbls unless otherwise noted)	Water-course[1]	Notification
Crude Oil or Condensate	≥25	No	Immediate
	5<25	No	Subsequent
	≥1	Yes	Immediate
(Tank Fires)	≥25	—	Immediate
(Tank Fires)	5<25	—	Subsequent
(Endanger Life or Property)	Any Quantity	—	Immediate

Material	Quantity (bbls unless otherwise noted)	Water-course[1]	Notification
Salt Water	≥100	No	Immediate
	≥25	Yes	Immediate
	25<100	No	Subsequent
(Endanger Life or Property)	Any Quantity	—	Immediate
Gas			
(Endanger Life or Property)	Any Quantity	—	Immediate
(No Danger)	≥1000 MCF	—	Subsequent
Related Materials[2]			
(Endanger Life or Property) —Drilling pits, slush pits, storage pits and ponds (Endanger Life or Property)	Any Quantity	—	Immediate
(No Danger)	Any Quantity	—	Subsequent

[1]Water course is defined as any lake bed or gully, draw, stream bed, wash, arroyo, or natural or man-made channel through which water flows or has flowed.

[2]Related materials include hydrocarbons, hydrocarbon waste or residue, strong caustics, strong acids or other deleterious chemicals or harmful contaminants.

5. The following notification form shall be submitted in duplicate to the appropriate district office within 10 days after discovery of the incident. This applies to both Immediate and Subsequent Notifications. Refer to the map for addresses.

6. If the discharge of oil or other water contaminant is in such quantity so that it may injure or be detrimental to humans, animal, or plant life, or property, or interfere with public welfare or property, any person in charge of the discharging facility shall immediately take appropriate and necessary steps to contain and remove or mitigate the damage caused by the discharge.

Report leaks from natural gas and other gas pipelines within 2 hours of discovery to:

New Mexico State Corporation Commission, Santa Fe
Pipeline Division

Office Numbers (8 to 5)	Home Numbers	
(505) 827-4581 or 4497	(505) 983-1810	(Rey S. Medina)
(505) 827-4521 (Alternate)	(505) 473-1923	(Albino O. Zuniga)
(505) 827-4009 (Alternate)	(505) 473-0717	(Ray Elliott)
(505) 827-4494 (Alternate)	(505) 892-2274	(Joe Johnson)

Hazardous Substances:

Same as Oil.

Hazardous Wastes:

Report spills to:

New Mexico Health and Environment Department, Santa Fe
Environmental Improvement Division
Hazardous Waste Bureau
(8 to 5) (505) 827-2929
(24-hour) (505) 827-9329

Hazardous Materials:

Same as Oil.

Excess Air Emissions:

Report excess emissions within 24 hours or no later than the next working day to:

New Mexico Health and Environment Department, Santa Fe
Environmental Improvement Division
Air Quality Bureau
(8 to 5) (505) 827-0062

Wastewater Excursions:

Same as Oil.

Underground Tank Leaks:

Report any known or suspected release from a UST system, any spill, or any other emergency situation within 24 hours to:

New Mexico Health and Environment Department, Santa Fe
Environmental Improvement Division
Underground Storage Tank Bureau
(8 to 5) (505) 827-0173
(24-hour) (800) 827-9329 (Alternate)

Notes:

1. Verbal report shall include:
   a. The name, address, and telephone number of the agent in charge of the site at which the UST system is located, as well as of the owner and the operator of the system.
   b. The name and address of the site at which the UST system is located and the location of the UST system on that site.
   c. The date, time, location, and duration of the spill, release, or suspected release.
   d. The source and cause of the spill, release, or suspected release.
   e. A description of the spill, release, or suspected release, including its chemical composition.
   f. The estimated volume of the spill, release, or suspected release.

g. Action taken to mitigate immediate damage from the spill, release, or suspected release.

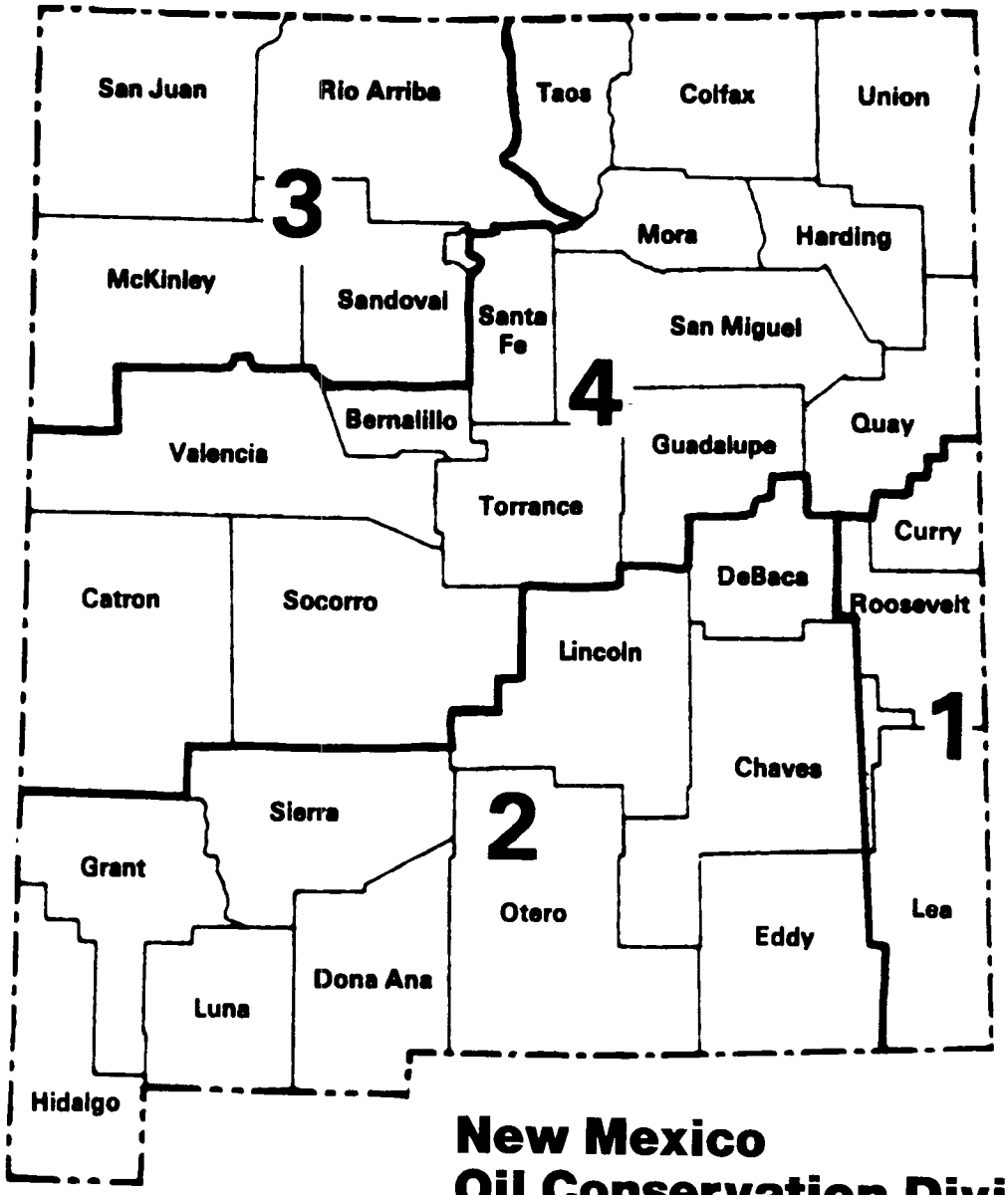
2. Written notice describing the spill, release, or suspected release and any investigation or follow-up action taken or to be taken must be mailed or delivered within seven (7) days of the incident. The written notice shall verify the prior oral notification as to each of the items of information listed above and provide any appropriate additions or corrections to the information contained in the prior oral notification. The written notice must be submitted to:

Marcig Leavitt, Manager, Remedial Action Program
New Mexico Environmental Improvement Division
Runnels Building
1190 St. Francis Drive
Santa Fe, NM 87503

SARA Title III:

Report releases and submit written follow-up emergency notice(s) to:

New Mexico Emergency Response Commission
Department of Public Safety
Title III Bureau
P.O. Box 1628
Santa Fe, NM 87504-1628
(505) 827-9222



New Mexico Oil Conservation Division District Offices

District	City	Numbers	Addresses
1	Hobbs	(505) 393-6161	1000 W. Broadway, 88240
2	Artesia	(505) 748-1283	811 South First, 88210
3	Aztec	(505) 334-6178	1000 Rio Brazo, 87410
4	Santa Fe	(505) 827-5810	P.O. Box 2088, 87504

State of New Mexico
Energy and Minerals Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

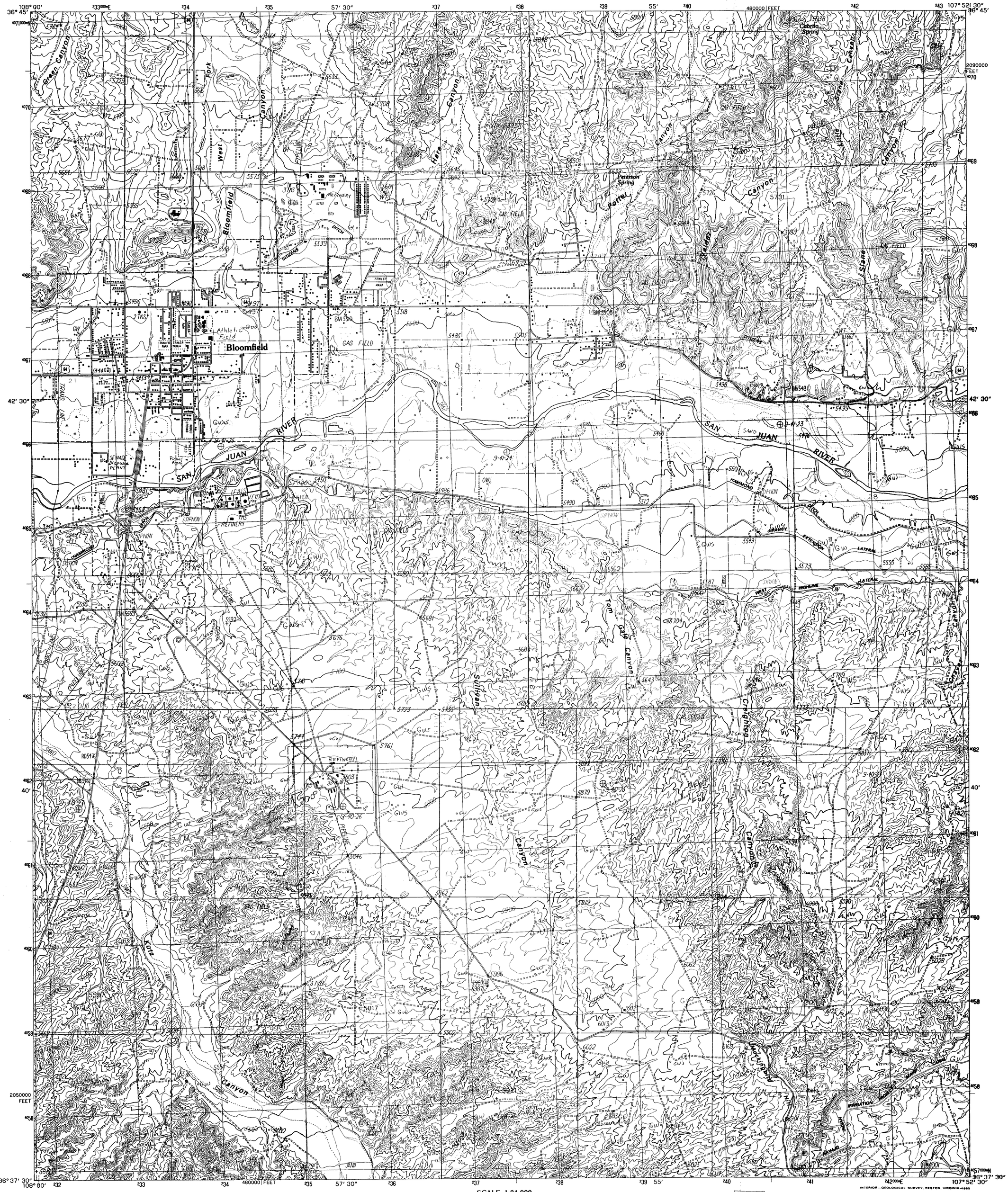
Name of Operator				Address			
Report of	Fire	Break	Spill	Leak	Blowout	Other*	
Type of Facility	Drlg Well	Prod Well	Tank Btty	Pipe Line	Gaso Plnt	Oil Rfy	Other*
Name of Facility							
Location of Facility (Quarter/Quarter Section or Footage Description)				Sec.	Twp.	Rge.	County
Distance and Direction From Nearest Town or Prominent Landmark							
Date and Hour of Occurrence				Date and Hour of Discovery			
Was Immediate Notice Given?	Yes	No	Not Required	If Yes, To Whom			
By Whom				Date and Hour			
Type of Fluid Lost				Quantity of Loss _____BO _____BW		Volume Recovered _____BO _____BW	
Did Any Fluids Reach a Watercourse?	Yes	No	Quantity				
If Yes, Describe Fully**							
Describe Cause of Problem and Remedial Action Taken**							
Describe Area Affected and Cleanup Action Taken**							
Description of Area	Farming	Grazing	Urban	Other*			
Surface Conditions	Sandy	Sandy Loam	Clay	Rocky	Wet	Dry	Snow
Describe General Conditions Prevailing (Temperature, Precipitation, Etc.)**							
I Hereby Certify That the Information Above Is True and Complete to the Best of My Knowledge and Belief Signed Title Date							

*Specify

**Attach Additional Sheets if Necessary

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BLOOMFIELD QUADRANGLE
NEW MEXICO–SAN JUAN CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY ..... USGS, NOS/NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN 1977
FIELD CHECKED ..... 1981 MAP EDITED 1985
PROJECTION ..... TRANSVERSE MERCATOR
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR ..... ZONE 13
10,000-FOOT STATE GRID TICKS ..... NEW MEXICO, WEST ZONE
UTM GRID DECLINATION ..... 1°45′ WEST
1985 MAGNETIC NORTH DECLINATION ..... 13° EAST
VERTICAL DATUM ..... NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM ..... 1927 NORTH AMERICAN DATUM
To place on the predicted North American Datum of 1983, move the projection lines as shown by dashed corner ticks (2 meters north and 56 meters east)
There may be private inholdings within the boundaries of any Federal and State Reservations shown on this map

NORTH

PROVISIONAL MAP
Produced from original manuscript drawings. Information shown as of date of field check. 2

SCALE 1:24 000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092

SOLD BY
GAYLORD STICKLE, CSW & ASSOC., INC.
Authorized Agents For U.S. Geological Survey Maps
Houston, Texas
529-8471

QUADRANGLE LOCATION

1	2	3	1 Flora Vista 2 Aztec 3 Turley 4 Horn Canyon 5 Blanco 6 Gallegos Trading Post 7 East Fork Kutz Canyon 8 Huerfanito Peak
4		5	
6	7	8	

ADJOINING 7.5 QUADRANGLE NAMES

ROAD LEGEND

Improved Road .....
Unimproved Road .....
Trail .....

Interstate Route U.S. Route State Route

BLOOMFIELD, NEW MEXICO

PROVISIONAL EDITION 1985

36107-F8-TF-024

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1985

WATER WELL INVENTORY

Location	Name	Well No.	Use	Depth	Perforations
29.11.10.44	Bosse, Joe	SJ-1851	dom,stk		
29.11.13.4	Peterson, Charles	SJ-0987	dom	415	
29.11.14.11	Armenta, Ernest G.	SJ-1743	dom		
29.11.14.14	Goebel, George	SJ-1426	dom,stk	155	115-155
29.11.14.223	El Paso Natural Gas	SJ-0007	ind	752	29.11.14.33
29.11.14.33	DeYapp, Steve	SJ-0702	dom		no log
29.11.14.3423	Heron, Celsa	SJ-1774	dom	82	78-82
29.11.15.44	Fleming, Lindon	SJ-0409	dom		no log
29.11.15.441	DeLeon, N.S.	SJ-0395	dom, stk		no log
29.11.15.441	DeLeon, N.S.	SJ-0909	dom, stk		no log
29.11.15.441	McGuire, Alfred J	SJ-0670	dom		no log
29.11.15.443	Sorrell, Kenneth	SJ-0229	dom		no log
29.11.22.12	Cassiday, Robert	SJ-1698	dom		
29.11.22.12	Hutton, Edward W.	SJ-1557	dom	70	
29.11.22.12	Jaramillo, Carlos	SJ-0704	dom	55	
29.11.22.12	Johnson, T.P.	SJ-0796	dom	50	
29.11.22.12	West, James R.	SJ-1703	dom	68	
29.11.22.13	Lafferton, Henry	SJ-1214	dom	49	
29.11.22.131	Wileman, Melvin W.	SJ-0320	dom	38	
29.11.22.133	Chacon, Gilbert A.	SJ-0484	dom	37	
29.11.22.133	Williams, Windell	SJ-1280	dom		no log
29.11.22.134	Tomlinson, Clay	SJ-0151	dom	45	42-45
29.11.22.23	Brothers, Thomas T.	SJ-0476	dom		no log
29.11.22.314	Edge, Ben	SJ-0623	dom		no log
29.11.22.32	Binnette, Fred E.	SJ-1320	dom		no log
29.11.22.43	Wampler, Walter N.	SJ-0696	dom	34	
29.11.22.434	Lopez, Albert	SJ-1732	dom		
29.11.23.14	McCoy, Edward E.	SJ-0812	dom	44	

29.11.23.22	Boyles, C.M.	SJ-1610	dom	52	
29.11.23.23	Crabtree, T.V.	SJ-1573	dom	41	
29.11.23.43	Smith, Jonnie L.	SJ-1844	dom, stk		
29.11.15	Ray, Brad	SJ-1889	dom	60	
29.11.22	Hinson, Samuel	SJ-2020	dom	30	
29.11.22	Martinez, Richard	SJ-1984	dom		
29.11.23	Jordan, Jimmy	SJ-2027	dom	25	
29.11.23	Walters, David	SJ-1870	dom	60	

San Juan list sorted by LOCATION - NAME - WELL NUMBER

LOCATION	NAME	WELL NUMBER	USE	DEPTH	PERFORATIONS	AQUIFER
[illegible].18.42	Valencia, Ernest D.	SJ-0095	irr	16		
29.0[illegible].18.42	Valencia, Ernest D.	SJ-0096	irr	16		
29.09.[illegible].42	Baca, Robert & Patr.	SJ-0094	irr, stk	15		
29.09.18.4[illegible]	Baca, Robert & Patr.	SJ-0093	dom	155		
29.10.13.22	Robbins, Clyde R.	SJ-0680	dom, stk	40		
29.10.13.42	[illegible]ris, Michael	SJ-1105	dom, stk			no log
29.10.19.12	Well[illegible] Ralph	SJ-0137	dom, stk	450		
29.10.19.33	Di[illegible], Ph[illegible]	SJ-0303	dom	20		
29.10.19.44	Current, [illegible]ie	SJ-1124	dom, stk			no log
29.10.20.321	Florez, Kenne[illegible] D.	SJ-1769	dom			
29.10.20.322	Page, Gary	SJ-1140	dom	[illegible]		
29.10.21.4	Abeyta, Ralph	SJ-1853	dom			
29.10.21.4	Gallegos, Marlin	SJ-1854	dom			
29.10.21.4	Gallegos, Simon Jr.	SJ-[illegible]20	dom			no log
29.10.21.4	Mo[illegible]t, Ernie	SJ-185[illegible]	do[illegible]			
29.10.21.423	Phillips, Roger D.	SJ-1678	[illegible]om			
29.10.21.44	Jaramillo, Ralph A.	SJ-1474	dom	25		
29.10.22.234	Thomas, George E.	SJ-1262	[illegible]om			no log
29.10.22.234	Thomas, George E.	SJ-1262[illegible]1)	do[illegible]			no log
29.10.22.33	Markle, David K.	SJ-09[illegible]4	dom			no log
29.10.24.21	Ismay, John R.	SJ-0370	dom, stk			no log
29.10.24.2423	Chavez, Sabino	SJ-0092	dom	33		
29.10.26.4334	Vaughn, Hollis	SJ-1019	dom	[illegible]0		
29.10.27.32	Brown, Jimmy [illegible]	SJ-1056	dom	50		
29.10.28.4	Alsup, Art[illegible] Kim	SJ-0999	dom			no log
29.10.28.43	Wright, [illegible]avid R.	SJ-0506	dom, stk	78		
29.10.28.44	Gary, Tommy W.	SJ-0951	dom			no log
29.10.28.443	M[illegible]nnes, Loren E.	SJ-0662	dom	93		73-93
29.10.29.323	Moore, Jack M.	SJ-0497	dom,stk	85		73-83
29.10.30.24	Evans, T. L.	SJ-0473	dom, stk	58		
29.10.35.[illegible]22	Stock, Robert E.	SJ-1051	dom	90		
29.10.[illegible]6.14	McCarthy, Daniel F.	SJ-1050	stk	85		
29.[illegible]1.07.4	Brannin, Stanton L.	SJ-0867	dom	77		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29.11.10.44	Bosse', Joe	SJ-1851	dom, stk			

San Juan list sorted by LOCATION - NAME - WELL NUMBER

LOCATION	NAME	WELL NUMBER	USE	DEPTH	PERFORATIONS	AQUIFER
29.11.14.11	Armenta, Ernest G.	SJ-1743	dom			
29.11.14.14	Goebel, George	SJ-1426	dom, stk	155	115-155	
29.11.14.223	El Paso Natural Gas	SJ-0007	ind	752		
29.11.14.33	DeYapp, Steve A.	SJ-0702	dom		no log	
29.11.14.3423	Heron, Celsa (Lobato	SJ-1774	dom	82	78-82	
29.11.15.44	Fleming, Lindon	SJ-0409	dom		no log	
29.11.15.441	DeLeon, N. S.	SJ-0395	dom, stk		no log	
29.11.15.441	DeLeon, N. S.	SJ-0909	dom, stk		no log	
29.11.15.441	McGuire, Alfred Jame	SJ-0670	dom		no log	
29.11.15.443	Sorrell, Kenneth	SJ-0229	dom			
29.11.15.443	Sorrell, Kenneth	SJ-0229	dom		no log	
29.11.16.442	Yolkan, Vance	SJ-1648	dom		no log	
29.11.17.24	Harris, Larry D.	SJ-0977	dom		no log	
29.11.17.24	Seiferle, Rebecca	SJ-1410	dom		no log	
29.11.17.24	Seiferle, Rebecca	SJ-1410 (2)	dom			
29.11.17.24	Seiferle, Rebecca	SJ-1410	dom		no log	
29.11.17.42	Proctor, Floyd E.	SJ-1654	dom		no log	
29.11.17.44	Rogers, Gerald	SJ-0487	dom	60		
29.11.19.223	Henry, Bruce	SJ-1641	dom	120	80-120	
29.11.19.431	Baxter, Doyle E.	SJ-0707	dom		no log	
29.11.19.44	Francisco, Eddie	SJ-1250	dom	60		
29.11.20.31	Basinger, Oliver C.	SJ-1[illegible]	dom		no log	
29.11.20.32	Saiz, Fermin Jacob	SJ-1[illegible]	dom		no log	
29.11.20.332	Larby, Jack	SJ-0583	dom, stk		no log	
29.11.20.332	Larby, Jack	SJ-0583 (1)	dom	150	110-150	
29.11.20.44	Perez, Toney J.	SJ-1355	irrigation	36	6-30	
29.11.21.	Norman, William	SJ-0452	dom	42		
29.11.21.	Osborn, Manning	SJ-0160	dom			
29.11.21.21	Hu[illegible], Harold	SJ-0515	dom		no log	
29.11.21.22	Rodriquez, Gerald T.	SJ-0701	dom	70		
29.11.21.24	Bingham, Larry	SJ-1090	dom	31		
29.11.21.24	Toliver, R. T.	SJ-1054	dom	43		
29.11.21.41	DeVilbiss, Glen A.	SJ-1532	dom		no log	
[illegible]	[illegible]	[illegible]	[illegible]			
29.11.22.12	Cassiday, Robert	SJ-1698	dom			
29.11.22.12	Hutton, Edward W. Jr	SJ-1557	dom	70		

San Juan list sorted by LOCATION - NAME - WELL NUMBER

LOCATION	NAME	WELL NUMBER	USE	DEPTH	PERFORATIONS	AQUIFER
29.11.22.12	Jaramillo, Carlos W.	SJ-0704	dom	55		
29.11.22.12	Johnson, T. P.	SJ-0796	dom	50		
29.11.22.12	West, James R.	SJ-1703	dom	68		
29.11.22.13	Lafferton, Henry I.	SJ-1214	dom	49		
29.11.22.131	Wileman, Melvin W.	SJ-0320	dom	38		
29.11.22.133	Chacon, Gilbert A.	SJ-0484	dom	37		
29.11.22.133	Williams, Windell	SJ-1280	dom		no log	
29.11.22.134	Tomlinson, Clay	SJ-0151	dom	45	42-45	
29.11.22.23	Brothers, Thomas T.	SJ-0476	dom		no log	
29.11.22.314	Edge, Ben	SJ-0623	dom		no log	
29.11.22.32	Birnette, Fred E.	SJ-1320	dom		no log	
29.11.22.43	Wampler, Walter N.	SJ-0696	dom	34		
29.11.22.434	Lopez, Albert	SJ-1732	dom			
29.11.23.14	McCoy, Edward E.	SJ-0812	dom	44		
29.11.23.22	Bowles, C. M.	SJ-1610	dom	52		
29.11.23.23	Crabtree, T. V.	SJ-1573	dom	41		
29.11.23.43	Smith, Jonnie L.	SJ-1844	dom, stk			
29.11.24.142	Schrantz, Bela A.	SJ-1826	dom			
29.11.24.22	Rinaman, William J.	SJ-1833	dom			
29.11.24.23	Dees, Savoy & Grace	SJ-0420	dom, irr, st			
[illegible]						
29.11.27.11	Quintana, Pablo D.	SJ-0394	dom, stk		no log	
29.11.27.11	Schlinger, John	SJ-1845	dom			
29.11.27.133	Brown, Edd H.	SJ-0700	dom	[illegible]		
29.11.27.3	Plat[illegible] Inc.	SJ-1808	thru-O-6 explore			
29.11.27.333	Larsen, K[illegible]neth W.	SJ-1804	dom			
29.11.28.	Lopez, Edward[illegible]	SJ-0598	dom		no log	
29.11.28.122	Weatherford, James A	SJ-1159	dom		no log	
29.11.28.21	Baisley, Gerald R.	SJ-[illegible]	dom, stk			
29.11.28.21	Chapman, Autry T.	SJ-1555	dom		no log	
29.11.28.22	McDonald, Eldean	SJ-1606	dom	35		
29.11.28.31	Haston, Troy O.	SJ-1086	dom, stk		no log	
29.11.29.1234	Merriman, Earl L.	SJ-0306	dom			
29.11.29.2143	Hengst, Arthur W.	SJ-0292	dom			
29.11.29.2[illegible]	Davis, W. R.	SJ-1554	dom	35		
29.11.29.43	Williams, Patricia	SJ-0822	dom	34		
[illegible]						

LOCATION	NAME	WELL NUMBER	USE	DEPTH
✓ 29.11.15	Ray, Brad	SJ-1889	dom	60
29.11.22	Hinson, Samuel	SJ-2020	dom	30
29.11.22	Martinez, Richard Garcia, Juan	SJ-1984	dom	NA
29.11.23	Jordan, Jimmy	SJ-2027	dom	25
29.11.23	Walters, David	SJ-1870	dom	60
29.11.24	Hunt, Glen	SJ-2015	dom	NA

WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

LABORATORY REPORT

Client Conoco, Inc. 30917
P.O. Box 1267
Ponca City, Oklahoma 74603

Job No. _____
Lab/Invoice No. 31750028
Date of Report 1/30/85

Project San Juan Gas Plant
Location Bloomfield, New Mexico
Material/Specimen Well Water Sampled By S. Wood Date 1/10/85
Source Wells #1 thru #6 Submitted By J. Weaver Date 1/14/85
Test Procedure Std. Methods 15th Ed. #505* Authorized By R. Lauritsen/Client Date 1/11/85

RESULTS

TOTAL ORGANIC CARBON

(Mg/Liter)

Well/Sample No.	1	2	3	4	5	6
	130	36	27	21	27	24

*Water filtered through a 0.45 micro mesh filter prior to testing.

Copies to Mr. Michael J. Morgan, P. E.
Conoco, Inc.
P.O. Box 2197
Houston, Texas 77252

/cb

WESTERN TECHNOLOGIES INC.

3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

LABORATORY REPORT

REVISED 5/6/85

Client: Conoco Incorporated
P.O. Box 2197
HU 2020
Houston, Texas 77252
Attn: Randy Majors

RECEIVED
MAY 6 9 1985
OPERATIONS
ENGINEERING & ECONOMICS

Job No. 851597, 1598
Lab./Invoice No. 3125W025
Date of Report 4/24/85
Reviewed By Steven P. Hoppe

Project: San Juan Gas Plant
Location:
Material/Specimen: Water — Sampled By: CI/Personnel — Date: --
Source: — Submitted By: WT/Weaver — Date: 4/4/85
Test Procedure: GC/MS — Authorized By: CI/Majors — Date: --

RESULTS

Two water samples were received for analysis of hydrocarbon contamination using gas chromatography mass spectrometry followed extraction into methylene chloride. No compounds were detected and identified using this analysis.

Sample Identification	Hydrocarbons mg/L
Well 2-6 (851597)	<10.
Well 1 (851598)	<10.

Analysis was consistent with EPA method 625 for semi-volatile extractable compounds and verified using our standard library search of approximately 70,000 compounds.

Copies to: Client (1)

jm

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

Conoco, Inc.
P.O. Box 2197
Houston, Texas 77252

October 10, 1984

Attention: Mr. Michael J. Morgan, P.E.
Project Manager, Operations Engineering
and Economics Division
Natural Gas Products

Project: San Juan Gas Plant
Bloomfield, New Mexico
CED Project No. Ag-000-25C

Invoice No. 31840008

Pursuant to your request an examination of the subsurface water was completed at the proposed San Juan Gas Plant to be located north of Bloomfield, New Mexico. The purpose of this examination was to establish a base datum for environmental evaluations.

Six test wells were drilled at the locations shown on the drawing submitted under a cover letter by Randy Lauritson of Conoco dated August 24, 1984. The wells varied in depth from 30 to 78 feet depending on the depth at which water was encountered.

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

LABORATORY REPORT

Client: Conoco, Inc. 30859
P.O. Box 2197
Houston, Texas 77252

Job No.:
Lab/Invoice No.: 31840008
Date of Report: 10/09/84

Project: San Juan Gas Plant
Location: Bloomfield, New Mexico
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 09/18/84
Source: Test Wells — Submitted By: S. Wood/WTI — Date: 09/18/84
Test Procedure: — Authorized By: M. Morgan/Client — Date: 09/18/84

TEST WELLS

Hole Number	Date Drilled	Total Depth, Ft.	Water Depth on 9/18/84, Ft.
#1	8/29/84	78 ft.	45.5
#2	8/29/84 8/30/84	70 ft.	55.5
#3	8/30/84	62 ft.	31.5
#4	8/31/84	32 ft.	15.0
#5	8/31/84 9/05/84	78 ft.	None
#6	8/31/84	30 ft.	15.0

opies to Client
/cb

WESTERN TECHNOLOGIES INC.

300 West Boston Avenue
Las Vegas, Nevada 89102
(702) 382-7483

LABORATORY REPORT

Client: Conoco, Inc.
P.O. Box 2197
Houston, TX 77252

Lab/Invoice No: 31840008-1
Date of Report: 9/26/84

Project: Safe Drinking Water Analysis
Location: San Juan Gas Plant
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 9/18/84
Source: See Below — Submitted By: S. Wood/WTI — Date: 9/18/84
Test Procedure: Standard Methods — Authorized By: M. Morgan — Date: 9/18/84

RESULTS

COMPONENT	No. 1 Sample A 45.5'	No. 2 Sample B 55.5'	LIMIT
Arsenic, mg/L	<0.5	<0.5	0.5
Barium, mg/L	<1.0	<1.0	1.0
Cadmium, mg/L	<.01	.01	.01
Chloride, mg/L	71	128	250
Copper, mg/L	.04	.04	1.0
Total Chromium, mg/L	<.04	<.04	.05
Iron, mg/L	.13	.28	.30
Lead, mg/L	.72	.17	.05
Manganese, mg/L	.12	.19	.05
Mercury, mg/L	<.0005	<.0005	.002
Nitrate, mg/L	11	12	10
Selenium, mg/L	<.005	<.005	.01
Silver, mg/L	.02	.02	.05
Sulfate, mg/L	10,200	14,400	250
Sodium, mg/L	4,660	6,090	N/A
Zinc, mg/L	.02	.02	5.0
Fluoride, mg/L	2.1	2.3	1.6
Total Dissolved Solids, mg/L	16,300	21,300	500
Alkalinity as $CaCO_3$, mg/L	414	186	N/A
Hardness as $CaCO_3$, mg/L	612	732	N/A
Calcium	113	135	N/A
Magnesium	80	96	N/A

By: Francis Xavier Suarez
Francis X. Suarez, Chemist

Copies to: Client (2)

bjc
0201C

WESTERN TECHNOLOGIES INC.

300 West Boston Avenue
Las Vegas, Nevada 89102
(702) 382-7483

LABORATORY REPORT

Client: Conoco, Inc.
P.O. Box 2197
Houston, TX 77252

Lab/Invoice No: 31840008-2
Date of Report: 9/26/84

Project: Safe Drinking Water Analysis
Location: San Juan Gas Plant
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 9/18/84
Source: See Below — Submitted By: S. Wood/WTI — Date: 9/18/84
Test Procedure: Standard Methods — Authorized By: M. Morgan — Date: 9/18/84

RESULTS

COMPONENT	No. 3 Sample C 31.5'	No. 4 Sample D 15.0'	LIMIT
Arsenic, mg/L	< 0.5	< 0.5	0.5
Barium, mg/L	< 1.0	< 1.0	1.0
Cadmium, mg/L	< .01	.02	.01
Chloride, mg/L	108	69	250
Copper, mg/L	.04	< .03	1.0
Total Chromium, mg/L	< .04	< .04	.05
Iron, mg/L	.22	< .04	.30
Lead, mg/L	.27	.06	.05
Manganese, mg/L	.12	.39	.05
Mercury, mg/L	< .0005	< .0005	.002
Nitrate, mg/L	25	9.6	10
Selenium, mg/L	< .005	< .005	.01
Silver, mg/L	.02	.01	.05
Sulfate, mg/L	12,800	4,800	250
Sodium, mg/L	3,820	1,840	N/A
Zinc, mg/L	.06	.02	5.0
Fluoride, mg/L	2.0	1.9	1.6
Total Dissolved Solids, mg/L	13,800	7,900	500
Alkalinity as $CaCO_3$, mg/L	287	338	N/A
Hardness as $CaCO_3$, mg/L	664	669	N/A
Calcium	111	126	N/A
Magnesium	94	86	N/A

Copies to: Client (2)

By: Francis Xavier Suarez
Francis X. Suarez, Chemist

bjc
0201C

WESTERN TECHNOLOGIES INC.

300 West Boston Avenue
Las Vegas, Nevada 89102
(702) 382-7483

LABORATORY REPORT

Client: Conoco, Inc.
P.O. Box 2197
Houston, TX 77252

Lab/Invoice No: 31840008-3
Date of Report: 9/26/84

Project: Safe Drinking Water Analysis
Location: San Juan Gas Plant
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 9/18/84
Source: See Below — Submitted By: S. Wood/WTI — Date: 9/18/84
Test Procedure: Standard Methods — Authorized By: M. Morgan — Date: 9/18/84

RESULTS

COMPONENT	No. 6 Sample F 15.0'	LIMIT
Arsenic, mg/L	<0.5	0.5
Barium, mg/L	<1.0	1.0
Cadmium, mg/L	< .01	.01
Chloride, mg/L	56	250
Copper, mg/L	< .03	1.0
Total Chromium, mg/L	< .04	.05
Iron, mg/L	.04	.30
Lead, mg/L	.12	.05
Manganese, mg/L	.23	.05
Mercury, mg/L	< .0005	.002
Nitrate, mg/L	2.4	10
Selenium, mg/L	< .005	.01
Silver, mg/L	< .01	.05
Sulfate, mg/L	2,630	250
Sodium, mg/L	940	N/A
Zinc, mg/L	.02	5.0
Fluoride, mg/L	1.4	1.6
Total Dissolved Solids, mg/L	4,400	500
Alkalinity as $CaCO_3$, mg/L	397	N/A
Hardness as $CaCO_3$, mg/L	466	N/A
Calcium	129	N/A
Magnesium	35	N/A

Copies to: Client (2)

By: Francis Xavier Suarez
Francis X. Suarez, Chemist

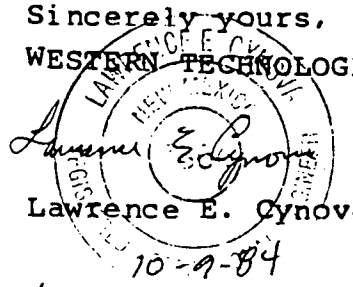
bjc
0201C

Conoco, Inc.
San Juan Gas Plant
Invoice No. 31840008

Water was sampled from five of the six test wells on September 18, 1984 and submitted to our chemistry laboratory for Safe Drinking Water Analysis. Test well No. 5 was drilled to 78 feet but no water was found in the test well after setting for 13 days. The results of these water tests are enclosed.

If you should have any questions concerning this report or if we may be of additional service, please contact us.

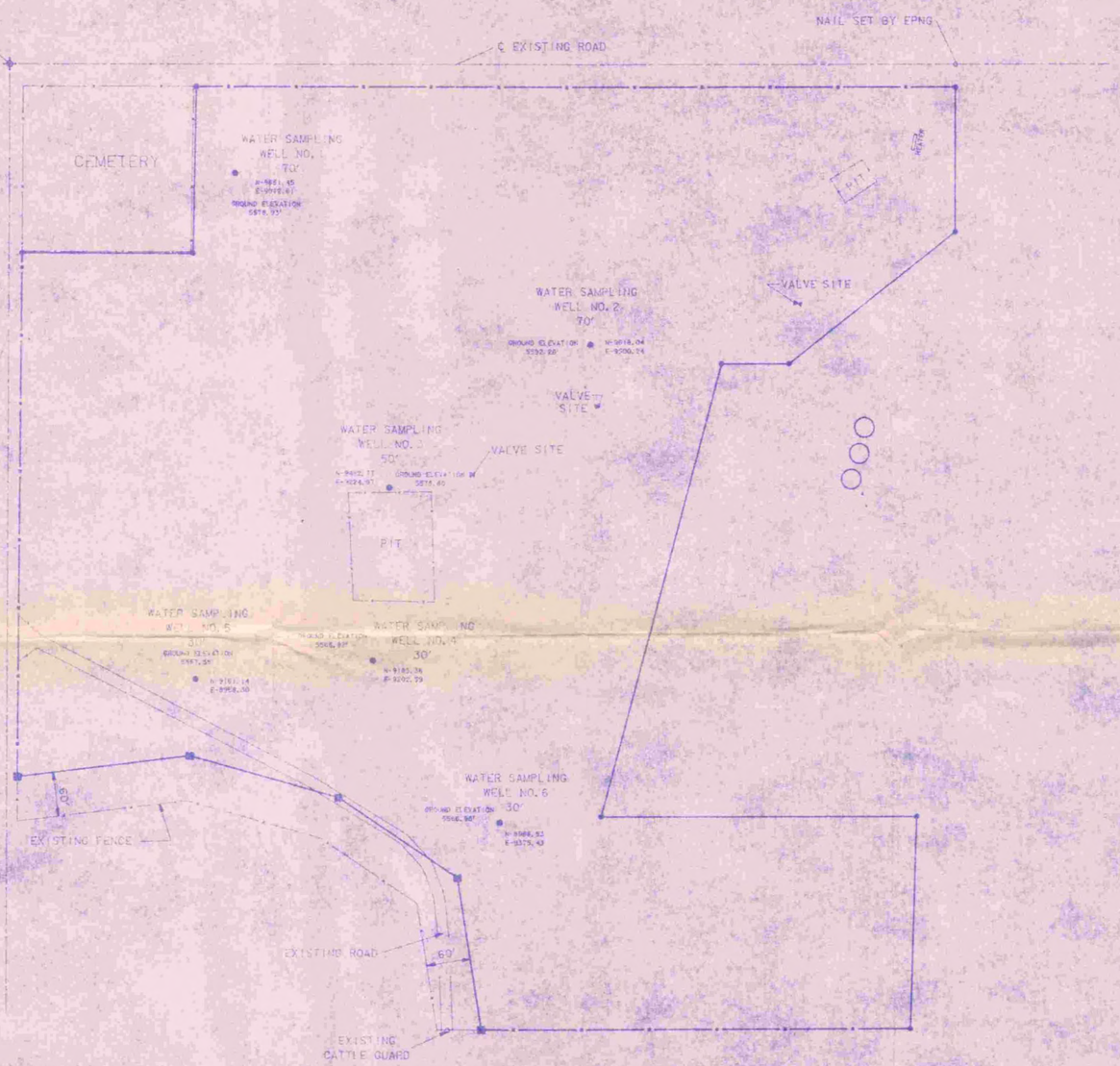
Sincerely yours,
WESTERN TECHNOLOGIES INC.



Lawrence E. Cynova, P.E.

10-9-84

/slm



LEGEND

- PROPERTY PIN (INSTALLED)
- PROPERTY PIN (NOT INSTALLED)

AFE #

AS-BUILT-OCT 92

ISU	DATE	DESCRIPTION	BY	CKD	APD
2	4-2-92	REV. PER FIELD SURVEY	CLP	CAP	
1	5-5-84	ORIGINAL	CLP	CAP	

CONOCO INC.
ENGINEERING CENTER
PONCA CITY, OKLAHOMA

FARMINGTON, N. MEX. LOC.

WATER WELL LAYOUT
SAN JUAN GAS PLANT

SCALE: 1" = 30'

APPD	SHT. NO.	UNIT	AREA
DATE			

NO. NG-000-8401-CV-2-D ISSUE 2

085-A000002C.001

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

October 27, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Bob Walker, Gen. Mgr.
Natural Gas Products Dept.
Conoco, Inc.
P. O. Box 2197
Houston, Texas 77252

RE: Discharge Plan (GW-35)
Conoco Inc., Natural Gas Products Dept.
San Juan Basin Gas Processing Plant
Bloomfield, San Juan County

Dear Mr. Walker:

The ground water discharge plan (GW-35) for the Conoco San Juan Basin Gas Plant located in the NW/4 NW/4 of Section 14, Township 29 North, Range 11 West (NMPM), San Juan County, New Mexico, is hereby approved with the following provisions:

1. The two underground storage tanks, V-806 and V-807, are to be pressure tested every two years. If the tanks are removed for repair or replacement, approved leak detection will be incorporated prior to reinstallation. The reason for the provision is that the tanks contain substances that can contaminate ground water and their integrity must be maintained.

2. Any contaminated storm water that breaches or overtops the earthen containment dike and the field road and leaves your property boundaries will be reported to the OCD District Office in Aztec in the form of a spill report. The report will include the approximate volume and type of discharge, cleanup plans, and schedule for any necessary cleanup. This provision clarifies information already submitted in the discharge plan, and is necessary so that the Division can properly evaluate the effects of any such breach or overtopping.

The approved discharge plan consists of the plan received July 11, 1986, and the materials dated September 10, 1986, September 22, 1986, and October 2, 1986, submitted as supplements to the discharge plans.

The discharge plan was submitted pursuant to Section 3-106 of the N.M. Water Quality Control Commission Regulations. It is approved pursuant to Section

3-109.F., which provides for the possible future amendments of the plan. Please be advised that the approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

There will be no routine monitoring or reporting requirements other than those contained in the plan.

Please note that Section 3-104 of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3-107.C., you are required to notify the Director of any facility expansion, production increase, or process modification that would result in any significant change in discharge water quality or volume. In the event the City of Bloomfield is unable to accept the wastewater stream, any evaporation pits or ponds, and mechanical separation equipment specifications are to be submitted as a discharge plan modification for approval. Use of these facilities will be contingent on approval.

Pursuant to Section 3-109.G.4., this plan approval is for a period of five (5) years. This approval will expire October 19, 1991 and you should submit an application for renewal in ample time before that date.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

R. L. STAMETS
Director

RLS:RA:dp

cc: OCD-Aztec
Rick McCalip, Conoco, Houston, Tex.

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

October 2, 1986

Mr. Roger C. Anderson
Environmental Engineer
Oil Conservation Division
Energy and Minerals Division
State Land Office Building
P.O. Box 2088
Santa Fe, NM 87501-2088

Re: Discharge Plant (GW-35)
Conoco Inc., Natural Gas Products Department
San Juan Basin Gas Processing Plant
Bloomfield, San Juan County, New Mexico

Dear Mr. Anderson:

This letter is in response to your comments dated August 11, 1986, on the two underground storage tanks, V-806 and V-807, at the San Juan Basin Plant. The enclosed installation and construction details are submitted for inclusion in the subject discharge plan.

Conoco has installed these tanks to store processing supplies. The tanks were pressure tested and coated for corrosion protection. Conoco believes the design, construction and installation are adequate to provide containment of DEA and to protect the surrounding land and groundwater.

If you should require further information, please contact me at (713) 293-1123 or Terry Killian at (713) 293-1188.

Sincerely,

Rick McCalip

Rick McCalip

/nl

Enclosure

TK-0517

DISCHARGE PLAN (GW-35)

SAN JUAN BASIN GAS PROCESSING PLANT

	VESSEL NO.	
	V-806	V-807
VESSEL NAME	Amine Drain Tank	Amine Waste Sump
STORED MATERIAL	30% DEA	DEA
CAPACITY	950 Gallons	4,200 Gallons
CONSTRUCTION MATERIAL	Carbon Steel	Carbon Steel
DIMENSIONS	48" O.D. x 10'0" T/T	72" O.D. x 20'0" T/T
WALL THICKNESS*	0.25"	0.25"
OUTSIDE PROTECTION	Epoxy Coating	Epoxy Coating
DESIGN PRESSURE**	14.9 psig @ 150° F	14.9 psig @ 150° F

* Wall thickness includes 0.125" corrosion allowance.

** Both vessels were pressure tested. Records are maintained in the plant files.

INSTALLATION DETAILS

Both tanks are installed in the gas treating (amine system) area at an approximate depth of eight (8) feet. To install the tanks below grade, an outside contractor was hired to drill through the rock which is present at that location. Both sites were packed with fresh dirt prior to installing the tanks. No groundwater was encountered during the installation procedure.

TK-0517

conoco

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: Turbine Oils (32, 46, 68, 100, 32S)
Conoco Product Code: 7319/7320/7321/7322/7325
Synonyms: Petroleum Lubricating Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Light brown liquid; mild petroleum hydrocarbon odor.

Boiling Range (Deg.F)	650-1060F	Specific Gravity (H_2O=1)	0.86-0.87
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	NA	Evaporation Rate (=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X — Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

June 14, 1985

CAS Registry No.: Mixture

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 285-380 F (PM) Autoignition Temperature: 650-680 F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION			HAZARD RATING		
Health 0	Fire 1	Reactivity 0	Least - 0	Slight - 1	Moderate - 2
			High - 3	Extreme - 4	

VI. TRANSPORTATION AND STORAGE

DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

Label: Not D.O.T. Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure: No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

CAS Registry No.: Mixture

VII. HEALTH HAZARD INFORMATION (continued)

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700 F, and which are similar to ingredients in this product, have not caused skin tumors. Studies of petroleum workers have not shown a significant increased incidence of skin tumors.

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure. Overexposure may cause central nervous system depression.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes _____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including solids and place in proper container for disposal. Avoid washing, draining, or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

CAS Registry No.: Mixture

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: Impervious to protect against chronic skin contact.

Eye Protection: Safety glasses with side shields.

Other Protective Equipment: Coveralls if splashing is probable.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: A.T. Fluid Type F
Conoco Product Code: 6689
Synonyms: Automatic Transmission Fluid
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Clear red liquid; Mild petroleum hydrocarbon odor.

Boiling Point (Deg.F)	650-950	Specific Gravity (H_2O=1)	0.86
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	NA	Evaporation Rate (Ether=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X — Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

CAS Registry No.: Mixture

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 325F (PMCC) Autoignition Temperature: 650F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION			HAZARD RATING		
Health 0	Fire 1	Reactivity 0	Least - 0	Slight - 1	Moderate - 2
			High - 3	Extreme - 4	

VI. TRANSPORTATION AND STORAGE — DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

D.O.T. Label: Not Regulated.

OSHA Label: Not Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route(s) of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure:
No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700F, and which are similar to ingredients in this product, have not caused skin tumors.

CAS Registry No.: Mixture

VII. HEALTH HAZARD INFORMATION (continued)

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

If exposed to hot oil, immediately cool with cold water. Do not attempt to remove oil but continue to cool exposed areas with cold packs and seek medical assistance immediately.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including soils and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

CAS Registry No.: Mixture

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Equipment: None required.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: EP Rock Drill Oil 32, 100, 150
Conoco Product Code: 7389/7390/7392
Synonyms: Lubricating Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Brown liquid; mild petroleum hydrocarbon odor.

Boiling Range (Deg.F)	650-1200	Specific Gravity (H_2O=1)	0.88
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	Not Applicable	Evaporation Rate (=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X — Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

April 12, 1985

CAS Registry No.: Mixture

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 290F (PMCC) Autoignition Temperature: 660F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION	HAZARD RATING
Health 0 Fire 1 Reactivity 0	Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

VI. TRANSPORTATION AND STORAGE

DOT HAZARD CLASS: Not applicable.

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. regulated.

Placard: Not D.O.T. regulated.

Label: Not D.O.T. regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated by Exposure:
No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700 F, and which are similar to ingredients in this product, have not caused skin tumors. Studies of petroleum workers have not shown a significant increased incidence of skin tumors.

CAS Registry No.: Mixture

VII. HEALTH HAZARD INFORMATION (continued)

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention:

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes _____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including soils and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration complying with federal, state and local regulations.

CAS Registry No.: Mixture

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: Impervious to protect against chronic skin contact.

Eye Protection: Safety glasses with side shields.

Other Protective Equipment: Coveralls if splashing is probable.

April 12, 1985

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: UGL 80W-90 & 85W-140
Conoco Product Code: 9019/9024
Synonyms: Petroleum Lubricating Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Dark brown liquid; mild petroleum hydrocarbon odor.

Boiling Point (Deg.F)	750-1200	Specific Gravity (H_2O=1)	0.89
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	Not Applicable	Evaporation Rate (Ether=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X — Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

CAS Registry No.: Mixture

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 330F (PMCC) Autoignition Temperature: 750F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION			HAZARD RATING		
Health 0	Fire 1	Reactivity 0	Least - 0	Slight - 1	Moderate - 2
			High - 3	Extreme - 4	

VI. TRANSPORTATION AND STORAGE — DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

Label: Not D.O.T. Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure:
No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700F, and which are similar to ingredients in this product, have not caused skin tumors.

CAS Registry No.: Mixture

VII. HEALTH HAZARD INFORMATION (continued)

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including solids and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

CAS Registry No.: Mixture

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Equipment: None required.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: Conoco Dectol® R.O. Oils 150,220,320,460
Conoco Product Code: 7312/7314/7316/7318
Synonyms: Petroleum Lubricating Hydraulic Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Light brown liquid; Mild petroleum hydrocarbon odor.

Boiling Point (° F)	780-1200	Specific Gravity (H_2O=1)	0.89
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	Not Applicable	Evaporation Rate (Ether=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X — Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide. Incomplete combustion may produce carbon monoxide.

Conditions To Avoid: Will not occur.

Hazardous Polymerization: Strong oxidizing materials, heat, flame.

CAS Registry No.: Mixture

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 390° F (PMCC) Autoignition Temperature: 690° F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION			HAZARD RATING		
Health 0	Fire 1	Reactivity 0	Least - 0	Slight - 1	Moderate - 2
			High - 3	Extreme - 4	

VI. TRANSPORTATION AND STORAGE — DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

D.O.T. Label: Not Regulated.

OSHA Label: Not Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route(s) of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure: No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

CAS Registry No.: Mixture

VII. HEALTH HAZARD INFORMATION (continued)

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700° F, and which are similar to ingredients in this product, have not caused skin tumors.

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

If exposed to hot oil, immediately cool with cold water. Do not attempt to remove oil but continue to cool exposed areas with cold packs and seek medical assistance immediately.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including soils and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

CAS Registry No.: Mixture

IX. SPILL, LEAK AND DISPOSAL PROCEDURES (continued)

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: Impervious.

Eye Protection: Safety glasses with side shields.

Other Protective Equipment: Coveralls.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: Conoco Fleet Motor Oil SAE 10W, 10W LP, 15W-40, 20-20W, 30, 40, 50/ Fleet Supreme 10W-30, 15W-40
Conoco Product Code: 6210/6211/6220/6230/6240/6250/ 6260/6261/6271
Synonyms: Lubricating Oil, Motor Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.: (800) 424-9300 (Chemtrec)
Product Information No.: (405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Dark brown liquid; mild petroleum hydrocarbon odor.

Boiling Range (° F)	650-1200	Specific Gravity (H_2O=1)	0.88
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	Not Applicable	Evaporation Rate (Ether=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 340° F (PMCC) Autoignition Temperature: 650° F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquids.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

V. FIRE AND EXPLOSION HAZARD DATA (continued)

National Fire Protection Agency (NFPA) CLASSIFICATION — HAZARD RATING

Health 0 Fire 1 Reactivity 0

Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

VI. TRANSPORTATION AND STORAGE

DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

D.O.T. Label: Not Regulated.

OSHA Label (Recommended): CAUTION: Prolonged or repeated skin contact with used motor oil may be harmful. Wash thoroughly with soap and water after use.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure:
No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700° F, and which are similar to ingredients in this product, have not caused skin tumors. The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Laboratory studies have shown that mice developed skin cancer following repeated skin application of, and continuous exposure to, used motor oil. In these studies, the used motor oil was not removed between applications. Health hazards to used motor oil can be minimized by avoiding prolonged skin contact.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

If exposed to hot oil, immediately cool with cold water. Do not attempt to remove oil but continue to cool exposed areas with cold packs and seek medical attention.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes _____ No __X__

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including solids and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Equipment: None required.

The above data is based on tests and experience which Conoco believes reliable and are supplied for informational purposes only. CONOCO DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE USE OF THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY CONOCO WITH RESPECT TO THE DATA, THE PRODUCT DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO CONOCO.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: Conoco Super Hydraulic Oil 552M
Conoco Product Code: 7463
Synonyms: Petroleum Hydraulic Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Brown liquid; mild petroleum hydrocarbon odor.

Boiling Range (Deg.F)	650-1000	Specific Gravity (H_2O=1)	0.87
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	Not Applicable	Evaporation Rate (=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X — Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide. Incomplete combustion can form carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

August 5, 1985

CAS Registry No.: Mixture

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 285F (PM) Autoignition Temperature: 650F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION			HAZARD RATING		
Health 0	Fire 1	Reactivity 0	Least - 0	Slight - 1	Moderate - 2
			High - 3	Extreme - 4	

VI. TRANSPORTATION AND STORAGE — DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

Label: Not D.O.T. Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure: No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700F, and which are similar to ingredients in this product, have not caused skin tumors. Studies of petroleum workers have not shown a significant increased incidence of skin tumors.

CAS Registry No.: Mixture

VII. HEALTH HAZARD INFORMATION (continued)

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes _____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including soils and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

CAS Registry No.: Mixture

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: Impervious.

Eye Protection: Safety glasses with side shields.

Other Protective Equipment: Coveralls.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: Conoco Super Hydraulic Oil 100, 150, 220
Conoco Product Code: 7451/7452/7453-34
Synonyms: Petroleum Hydraulic Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Dark brown liquid; mild petroleum hydrocarbon odor.

Boiling Range (Deg.F)	780-1200	Specific Gravity (H_2O=1)	0.88
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	NA	Evaporation Rate (=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide. Incomplete combustion may form carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

August 5, 1985

CAS Registry No.: Mixture

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 390F (PM) Autoignition Temperature: 690F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION	HAZARD RATING
Health 0 Fire 1 Reactivity 0	Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

VI. TRANSPORTATION AND STORAGE

DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

Label: Not D.O.T. Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure:
No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700F, and which are similar to ingredients in this product, have not caused skin tumors. Studies of petroleum workers have not shown a significant increased incidence of skin tumors.

CAS Registry No.: Mixture

VII. HEALTH HAZARD INFORMATION (continued)

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes _____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including soils and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: Impervious.

Eye Protection: Safety glasses with side shields.

Other Protective Equipment: Coveralls.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: Conoco Super Hydraulic Oil,
Grades 32F, 46F, 100F
Conoco Product Code: 7458-39/7459-39/7461-39
Synonyms: Petroleum Hydraulic Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Light brown liquid; mild petroleum hydrocarbon odor.

Boiling Range (°F)	650-1060	Specific Gravity (H_2O=1)	0.87
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	Not Applicable	Evaporation Rate (Ether=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide. Incomplete combustion may form carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 275° F (PM) Autoignition Temperature: 640° F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION			HAZARD RATING		
Health 0	Fire 1	Reactivity 0	Least - 0	Slight - 1	Moderate - 2
			High - 3	Extreme - 4	

May 30, 1986/HYDC0150

VI. TRANSPORTATION AND STORAGE — DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

D.O.T. Label: Not Regulated.

OSHA Label: Not Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure:
No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700° F, and which are similar to ingredients in this product, have not caused skin tumors.

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

VIII. EMERGENCY AND FIRST AID PROCEDURES (continued)

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes _____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including soils and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: Impervious.

Eye Protection: Safety glasses with side shields.

Other Protective Equipment: Coveralls.

MATERIAL SAFETY DATA SHEET

I. MATERIAL IDENTIFICATION

Name: Conoco Super Hydraulic Oil 22, 32, 46, 68
Conoco Product Code: 7447/7448/7449/7450
Synonyms: Petroleum Hydraulic Oil
Chemical Family: Petroleum Hydrocarbon
Manufacturer: Conoco Inc.
Address: P.O. Box 1267, Ponca City, OK 74603

CAS Registry No.: Mixture
Transportation Emergency No.:
(800) 424-9300 (Chemtrec)
Product Information No.:
(405) 767-6000

II. HAZARDOUS INGREDIENTS — HAZARD DATA

Hazard Determination:
Health Effect Properties: None. — Not applicable.

Physical Effect Properties:
Product/Mixture: None. — Not applicable.

III. PHYSICAL DATA

Appearance and Odor: Brown liquid; mild petroleum hydrocarbon odor.

Boiling Range (°F)	650-1060	Specific Gravity (H_2O=1)	0.86
Vapor Pressure (mmHg)	Nil	% Volatile (by volume)	Nil
Vapor Density (Air=1)	Not Applicable	Evaporation Rate (Ether=1)	Nil
Solubility in Water	Insoluble		

IV. REACTIVITY DATA — Stable: X — Unstable:

Hazardous Decomposition Products: Normal combustion forms carbon dioxide. Incomplete combustion may product carbon monoxide.

Conditions To Avoid: Strong oxidizing materials, heat, flame.

Hazardous Polymerization: Will not occur.

V. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): 285° F (PM) Autoignition Temperature: 650° F
Handle and store in accordance with NFPA procedure for Class III B Combustible Liquid.

Extinguishing Media: Use water spray, dry chemical, foam, or carbon dioxide.

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Agency (NFPA) CLASSIFICATION — HAZARD RATING

Health 0 Fire 1 Reactivity 0 — Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

VI. TRANSPORTATION AND STORAGE — DOT HAZARD CLASS: Not Applicable

Precautions To Be Taken In Handling And Storing: Product is Class III B Combustible Liquid per NFPA Code No. 30-1984. Store and handle accordingly.

Shipping Paper Description: Not D.O.T. Regulated.

Placard: Not D.O.T. Regulated.

D.O.T. Label: Not Regulated.

OSHA Label: Not Regulated.

VII. HEALTH HAZARD INFORMATION

PEL Not Established TLV Not Established
Ceiling Value Not Established AEL Not Established

Primary Route of Exposure/Entry: Skin.

Signs and Symptoms of Exposure/Medical Conditions Aggravated By Exposure:
No adverse health effect has been identified specifically for this product. Health effect information from animal and human studies has been included on related materials, even though health experts may disagree as to the significance of this data.

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates having a boiling point below 700° F, and which are similar to ingredients in this product, have not caused skin tumors.

The product may cause irritation to eyes, lungs, or skin after prolonged or repeated exposure.

Listed as Carcinogen or Potential Carcinogen by: NTP No IARC No OSHA No

VIII. EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately wash with fresh water for at least 15 minutes and get medical attention.

Skin: Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, consult a physician.

Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

Inhalation: If overexposure occurs, remove individual to fresh air. If breathing stops, administer artificial respiration.

VIII. EMERGENCY AND FIRST AID PROCEDURES (continued)

Ingestion: If this material is swallowed, do not induce vomiting. If vomiting begins, lower victim's head in an effort to prevent vomitus from entering lungs. Immediately consult a physician. Do not attempt to give liquid to an unconscious person.

Note to Physicians: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

RCRA HAZARDOUS WASTE: Yes _____ No X

In Case Of Spill Or Leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up residual fluids by use of absorbent materials. Remove contaminated items including soils and place in proper container for disposal. Avoid washing, draining or directing material to storm or sanitary sewers.

Waste Disposal Method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material by such methods as controlled incineration, complying with federal, state and local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: None required except under unusual circumstances such as described in Section V.

Ventilation: Normal shop ventilation.

Protective Gloves: Impervious.

Eye Protection: Safety glasses with side shields.

Other Protective Equipment: Coveralls.

MOBIL OIL CORPORATION MATERIAL SAFETY DATA BULLETIN

********** I. PRODUCT IDENTIFICATION **********

MOBIL RARUS 826

SUPPLIER:
MOBIL OIL CORP.

HEALTH EMERGENCY TELEPHONE:
(212) 883-4411

CHEMICAL NAMES AND SYNONYMS:
SYN. HYDROCARBONS AND ADDITIVES

TRANSPORT EMERGENCY TELEPHONE:
(800) 424-9300 (CHEMTREC)

USE OR DESCRIPTION:
COMPRESSOR OIL

********** II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES **********

APPEARANCE: ASTM 1.5 LIQUID ODOR: MILD PH: NA
VISCOSITY AT 100 F, SUS: 348.0 AT 40 C, CS: 67.0
VISCOSITY AT 210 F, SUS: 51.0 AT 100 C, CS: 7.5
FLASH POINT F(C): >430(221) (ASTM D-92)
MELTING POINT F(C): NA POUR POINT F(C): -35(-37)
BOILING POINT F(C): > 600(316)
RELATIVE DENSITY, 15/4 C: 0.94 SOLUBILITY IN WATER: NEGLIGIBLE
VAPOR PRESSURE-MM HG 20C: < .1
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES
FOR FURTHER INFORMATION, CONTACT YOUR LOCAL MARKETING OFFICE.

********** III. INGREDIENTS **********

	WT PCT (APPROX)	EXPOSURE LIMITS MG/M3	PPM	SOURCES (AND NOTES)
HAZARDOUS INGREDIENTS:				
NONE				
OTHER INGREDIENTS:				
SYNTHETIC OILS	>95			
ADDITIVES AND/OR OTHER INGREDS.	< 5			

KEY TO SOURCES: A=ACGIH-TLV, A*=SUGGESTED-TLV, M=MOBIL, O=OSHA
NOTE: LIMITS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS.

********** IV. HEALTH HAZARD DATA **********

EFFECTS OF OVEREXPOSURE: NOT EXPECTED TO BE A PROBLEM.

********** V. EMERGENCY AND FIRST AID PROCEDURES **********

EYE CONTACT: FLUSH WITH WATER.
SKIN CONTACT: WASH CONTACT AREAS WITH SOAP AND WATER.
INHALATION: NOT EXPECTED TO BE A PROBLEM.
INGESTION: NOT EXPECTED TO BE A PROBLEM. HOWEVER, IF GREATER THAN 1/2 LITER(PINT) INGESTED, IMMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, HOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

********** VI. FIRE AND EXPLOSION HAZARD DATA **********
FLASH POINT F(C): > 430(221) (ASTM D-92)
FLAMMABLE LIMITS. LEL: .6 UEL: 7.0
EXTINGUISHING MEDIA: CARBON DIOXIDE, FOAM, DRY CHEMICAL AND WATER FOG.
SPECIAL FIRE FIGHTING PROCEDURES: FIREFIGHTERS MUST USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE
NFPA HAZARD ID: HEALTH: 0, FLAMMABILITY: 1, REACTIVITY: 0

********** VII. REACTIVITY DATA **********
STABILITY (THERMAL, LIGHT, ETC.): STABLE
CONDITIONS TO AVOID: STRONG OXIDATION
INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS
HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE.
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

********** VIII. SPILL OR LEAK PROCEDURE **********
ENVIRONMENTAL IMPACT: REPORT SPILLS AS REQUIRED TO APPROPRIATE AUTHORITIES. U. S. COAST GUARD REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO COAST GUARD TOLL FREE NUMBER 800-424-8802.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: ADSORB ON FIRE RETARDANT TREATED SAWDUST, DIATOMACEOUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.
WASTE MANAGEMENT: PRODUCT IS SUITABLE FOR BURNING IN AN ENCLOSED, CONTROLLED BURNER FOR FUEL VALUE OR DISPOSAL BY SUPERVISED INCINERATION. IN ADDITION, THE PRODUCT IS SUITABLE FOR PROCESSING BY AN APPROVED RECYCLING FACILITY OR CAN BE DISPOSED OF AT ANY GOVERNMENT APPROVED WASTE DISPOSAL FACILITY. USE OF THESE METHODS IS SUBJECT TO USER COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND CONSIDERATION OF PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

********** IX. SPECIAL PROTECTION INFORMATION **********
EYE PROTECTION: NO SPECIAL EQUIPMENT REQUIRED.
SKIN PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED.
RESPIRATORY PROTECTION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.
VENTILATION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

********** X. SPECIAL PRECAUTIONS **********
HANDLING: NO SPECIAL PRECAUTIONS REQUIRED.
STORAGE: SEE APPENDIX FOR PRECAUTIONARY LABEL. CPD-0

********** XI. TOXICOLOGICAL DATA **********

---ACUTE---

ORAL TOXICITY (RATS): LD50: > 5 G/KG SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

DERMAL TOXICITY (RABBITS): LD50: > 2 G/KG SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

INHALATION TOXICITY (RATS): NOT APPLICABLE ---HARMFUL CONCENTRATIONS OF MISTS AND/OR VAPORS ARE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTOMARY OR REASONABLY FORESEEABLE HANDLING, USE, OR MISUSE OF THIS PRODUCT.

EYE IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING. ---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

SKIN IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING. ---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

********** XII. REGULATORY INFORMATION **********

TSCA INVENTORY STATUS: ALL COMPONENTS REGISTERED.

D.O.T. SHIPPING NAME: NOT APPLICABLE

D.O.T. HAZARD CLASS: NOT APPLICABLE

US OSHA HAZARD COMMUNICATION STANDARD: PRODUCT ASSESSED IN ACCORDANCE WITH OSHA CFR 1910.1200 AND DETERMINED NOT TO BE HAZARDOUS.

RCRA INFORMATION: THE UNUSED PRODUCT, IN OUR OPINION, IS NOT SPECIFICALLY LISTED BY THE EPA AS A HAZARDOUS WASTE (40 CFR, PART 261D); DOES NOT EXHIBIT THE HAZARDOUS CHARACTERISTICS OF IGNITABILITY, CORROSIVITY, OR REACTIVITY, AND IS NOT FORMULATED WITH THE METALS CITED IN THE EP TOXICITY TEST. HOWEVER, USED PRODUCT MAY BE REGULATED.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
1,2-BENZENEDICARBOXYLIC ACID, DITRIDECYL ESTER	119-06-2	8

--- KEY TO LIST CITATIONS ---

1 = OSHA Z, 2 = ACGIH, 3 = IARC, 4 = NTP, 5 = NCI,
6 = EPA CARC, 7 = NFPA 49, 8 = NFPA 325M, 9 = DOT HMT, 10 = CA RTK,
11 = IL RTK, 12 = MA RTK, 13 = MN RTK, 14 = NJ RTK, 15 = MI 293,
16 = FL RTK, 17 = PA RTK.

****

INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

****

PREPARED BY: MOBIL OIL CORPORATION
ENVIRONMENTAL AFFAIRS AND TOXICOLOGY DEPARTMENT, PRINCETON, NJ
FOR FURTHER INFORMATION, CONTACT:
MOBIL OIL CORPORATION, PRODUCT FORMULATION AND QUALITY CONTROL
3225 GALLOWS ROAD, FAIRFAX, VA 22037 (703) 849-3265

********** APPENDIX **********

FOR MOBIL USE ONLY: (FILL NO: RL1151001) MHC: 1* 1* NA 0* 0* PPEC:
US78-098 APPROVE REVISED: 01/25/86

****

PRECAUTIONARY LABEL TEXT FOR PACKAGED PRODUCTS:

CHEMICAL ADDITIVE (PETROLEUM PRODUCT ADDITIVE)

FOR INDUSTRIAL USE ONLY.

NOT INTENDED OR SUITABLE FOR USE
IN OR AROUND A HOUSEHOLD OR DWELLING.

ATTENTION

EMPTY CONTAINERS MAY CONTAIN PRODUCT RESIDUE,
INCLUDING IGNITABLE OR EXPLOSIVE VAPORS. DO NOT
CUT, PUNCTURE OR WELD ON OR NEAR CONTAINER.

REFER TO PRODUCT MATERIAL SAFETY DATA BULLETIN
FOR FURTHER SAFETY AND HEALTH INFORMATION.

MOBIL CHEMICAL COMPANY, CHEMICAL PRODUCTS DIVISION
EDISON, NEW JERSEY 08818 CPD-3(7/85)

****

D.O.T. SHIPPING NAME: NOT APPLICABLE
D.O.T. HAZARD CLASS: NOT APPLICABLE

MOBIL OIL CORPORATION MATERIAL SAFETY DATA BULLETIN

********** I. PRODUCT IDENTIFICATION **********

MOBIL SHC 824

SUPPLIER:
MOBIL OIL CORP.

HEALTH EMERGENCY TELEPHONE:
(212) 883-4411

CHEMICAL NAMES AND SYNONYMS:
SYN. HYDROCARBONS AND ADDITIVES

TRANSPORT EMERGENCY TELEPHONE:
(800) 424-9300 (CHEMTREC)

USE OR DESCRIPTION:
LUBRICANT

********** II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES **********

APPEARANCE: ASTM 6.5 LIQUID ODOR: MILD PH: NA
VISCOSITY AT 100 F, SUS: 160.0 AT 40 C, CS: 32.0
VISCOSITY AT 210 F, SUS: 32.0 AT 100 C, CS: 6.4
FLASH POINT F(C): >425(218)
MELTING POINT F(C): NA POUR POINT F(C): -65(-54)
BOILING POINT F(C): > 600(316)
RELATIVE DENSITY, 15/4 C: 0.833 SOLUBILITY IN WATER: NEGLIGIBLE
VAPOR PRESSURE-MM HG 20C: < .1

NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER INFORMATION, CONTACT YOUR LOCAL MARKETING OFFICE.

********** III. INGREDIENTS **********

	WT PCT (APPROX)	EXPOSURE LIMITS MG/M3	PPM	SOURCES (AND NOTES)
HAZARDOUS INGREDIENTS:				
NONE				
OTHER INGREDIENTS:				
SYNTHETIC OILS	>90			
ADDITIVES AND/OR OTHER INGREDS.	<10			

KEY TO SOURCES: A=ACGIH-TLV, A*=SUGGESTED-TLV, M=MOBIL, O=OSHA

NOTE: LIMITS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS.

********** IV. HEALTH HAZARD DATA **********

EFFECTS OF OVEREXPOSURE: SLIGHT SKIN IRRITATION.

********** V. EMERGENCY AND FIRST AID PROCEDURES **********

EYE CONTACT: FLUSH WITH WATER.
SKIN CONTACT: WASH CONTACT AREAS WITH SOAP AND WATER.
INHALATION: NOT EXPECTED TO BE A PROBLEM.
INGESTION: NOT EXPECTED TO BE A PROBLEM. HOWEVER, IF GREATER THAN 1/2 LITER(PINT) INGESTED, IMMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, HOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

********** VI. FIRE AND EXPLOSION HAZARD DATA **********
FLASH POINT F(C): > 425(218)
FLAMMABLE LIMITS. LEL: .6 UEL: 7.0
EXTINGUISHING MEDIA: CARBON DIOXIDE, FOAM, DRY CHEMICAL AND WATER FOG.
SPECIAL FIRE FIGHTING PROCEDURES: FIREFIGHTERS MUST USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE
NFPA HAZARD ID: HEALTH: 0, FLAMMABILITY: 1, REACTIVITY: 0

********** VII. REACTIVITY DATA **********
STABILITY (THERMAL, LIGHT, ETC.): STABLE
CONDITIONS TO AVOID: HEAT, SPARKS, FLAME AND BUILD UP OF STATIC ELECTRICITY.
INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS
HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE. NITROGEN OXIDES.
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

********** VIII. SPILL OR LEAK PROCEDURE **********
ENVIRONMENTAL IMPACT: REPORT SPILLS AS REQUIRED TO APPROPRIATE AUTHORITIES. U. S. COAST GUARD REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO COAST GUARD TOLL FREE NUMBER 800-424-8802.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: ADSORB ON FIRE RETARDANT TREATED SAWDUST, DIATOMACEOUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.
WASTE MANAGEMENT: PRODUCT IS SUITABLE FOR BURNING IN AN ENCLOSED, CONTROLLED BURNER FOR FUEL VALUE OR DISPOSAL BY SUPERVISED INCINERATION. IN ADDITION, THE PRODUCT IS SUITABLE FOR PROCESSING BY AN APPROVED RECYCLING FACILITY OR CAN BE DISPOSED OF AT ANY GOVERNMENT APPROVED WASTE DISPOSAL FACILITY. USE OF THESE METHODS IS SUBJECT TO USER COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND CONSIDERATION OF PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

********** IX. SPECIAL PROTECTION INFORMATION **********
EYE PROTECTION: NO SPECIAL EQUIPMENT REQUIRED.
SKIN PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED.
RESPIRATORY PROTECTION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.
VENTILATION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

********** X. SPECIAL PRECAUTIONS **********
NO SPECIAL PRECAUTIONS REQUIRED.

********** XI. TOXICOLOGICAL DATA **********

---ACUTE---

ORAL TOXICITY (RATS): LD50: > 5 G/KG SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

DERMAL TOXICITY (RABBITS): LD50: > 2 G/KG SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

INHALATION TOXICITY (RATS): NOT APPLICABLE ---HARMFUL CONCENTRATIONS OF MISTS AND/OR VAPORS ARE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTOMARY OR REASONABLY FORESEEABLE HANDLING, USE, OR MISUSE OF THIS PRODUCT.

EYE IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING. ---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

SKIN IRRITATION (RABBITS): MAY CAUSE SLIGHT IRRITATION ON PROLONGED OR REPEATED CONTACT. ---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

********** XII. REGULATORY INFORMATION **********

TSCA INVENTORY STATUS: ALL COMPONENTS REGISTERED.

D.O.T. SHIPPING NAME: NOT APPLICABLE

D.O.T. HAZARD CLASS: NOT APPLICABLE

US OSHA HAZARD COMMUNICATION STANDARD: PRODUCT ASSESSED IN ACCORDANCE WITH OSHA CFR 1910.1200 AND DETERMINED NOT TO BE HAZARDOUS.

RCRA INFORMATION: THE UNUSED PRODUCT, IN OUR OPINION, IS NOT SPECIFICALLY LISTED BY THE EPA AS A HAZARDOUS WASTE (40 CFR, PART 261D); DOES NOT EXHIBIT THE HAZARDOUS CHARACTERISTICS OF IGNITABILITY, CORROSIVITY, OR REACTIVITY, AND IS NOT FORMULATED WITH THE METALS CITED IN THE EP TOXICITY TEST. HOWEVER, USED PRODUCT MAY BE REGULATED.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS

*** NO INGREDIENT CITATIONS ***

--- KEY TO LIST CITATIONS ---

1 = OSHA Z, 2 = ACGIH, 3 = IARC, 4 = NTP, 5 = NCI,
6 = EPA CARC, 7 = NFPA 49, 8 = NFPA 325M, 9 = DOT HMT, 10 = CA RTK,
11 = IL RTK, 12 = MA RTK, 13 = MN RTK, 14 = NJ RTK, 15 = MI 293,
16 = FL RTK, 17 = PA RTK.

****

INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

****

PREPARED BY: MOBIL OIL CORPORATION
ENVIRONMENTAL AFFAIRS AND TOXICOLOGY DEPARTMENT, PRINCETON, NJ
FOR FURTHER INFORMATION, CONTACT:
MOBIL OIL CORPORATION, PRODUCT FORMULATION AND QUALITY CONTROL
3225 GALLOWS ROAD, FAIRFAX, VA 22037 (703) 849-3265

********** APPENDIX **********

FOR MOBIL USE ONLY: (FILL NO: RL850A1*001) MHC: 1* 1* NA 0* 1* PPEC: US85-266 APPROVE REVISED: 09/10/85

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

October 2, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Michael J. Donahoo
Acting Field Supervisor
U.S. Dept. of the Interior
Fish & Wildlife Service
P. O. Box 4487
Albuquerque, N.M. 87196

RE: DISCHARGE PLAN GW-35, CONOCO INC., SAN JUAN BASIN GAS PROCESSING PLANT

Dear Mr. Donahoo:

The Oil Conservation Division has received your letter dated September 5, 1986, responding to the public notice of the above-referenced proposed ground water dishcarge plan. Your stated concerns are whether the City of Bloomfield municipal wastewater treatment plant has the capacity to treat the additional discharges from Conoco's plant and if the facilities are capable of removing any toxic substances present prior to discharge into the San Juan River.

The Oil Conservation Division does not have jurisdiction over effluent received by municipal wastewater treatment systems. The Environmental Improvement Division (EID) regulates surface and ground water discharges from municipal facilities, and specific comments on the discharge from the Bloomfield treatment plant should be addressed to them. The EID also certifies NPDES permits (including review for toxic constituents when appropriate) pursuant to the Clean Water Act, EPA and state requirements.

The City of Bloomfield is fully aware of the need to monitor Conoco's effluent and to require Conoco to pretreat the wastewater if needed to meet NPDES permit and other applicable requirements. There have been numerous meetings and correspondence between Conoco Inc. and the City of Bloomfield concerning potential volumes and constituents of Conoco's proposed discharge stream. Based on the most recent correspondence between the City of Bloomfield and Conoco (enclosed), and effluent disposal and contingency plans contained in the discharge plan application (portions enclosed), the OCD feels the steps to be taken are sufficient to assure the protection of ground or surface waters.

A copy of the complete discharge plan application with supplements is available at our Santa Fe office for public review. I hope I have answered your concerns stated in your letter and if you have any questions or further

concerns, please do not hesitate to contact Roger Anderson, Environmental Engineer, at (505) 827-5885.

Sincerely,

R. L. STAMETS
Director

RLS:RCA:dp

Enclosures

cc: OCD-Aztec
Director, N.M. Department of Game and Fish, Santa Fe, N.M.
Director, N.M. Health and Environment Department, Environmental Improvement Division, Santa Fe, N.M.
Regional Administrator, Environmental Protection Agency, Dallas, Texas
Regional Director, FWS, AWE, Albuquerque, N.M.

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

September 24, 1986

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Bob Walker, Gen. Mgr.
Natural Gas Products
Conoco, Inc.
P. O. Box 2197
Houston, Texas 77252

RE: DISCHARGE PLAN (GW-35), CONOCO INC. NATURAL GAS PRODUCTS DEPT., SAN JUAN BASIN GAS PROCESSING PLANT, BLOOMFIELD, SAN JUAN COUNTY

Dear Mr. Walker:

We have received Conoco's request dated September 22, 1986, for permission to discharge without an approved discharge plan at the above-referenced facility. The discharge plan application was received July 11, 1986, with supplements dated July 15, 1986, September 10, 1986, and September 22, 1986.

Pursuant to Section 3-106.B. of the New Mexico Water Quality Control Commission Regulations and for good cause shown, Conoco is hereby granted permission until December 24, 1986, or until discharge plan approval, whichever is earlier, to discharge without an approved discharge plan. This permission is granted to allow for the submittal of additional information and the completion of the plan review by the OCD. All plant specifications, operations, and discharges must be consistent with the terms and conditions in your discharge plan application.

Please be advised that the approval to discharge without an approved discharge plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

Approval to discharge without an approved discharge plan may be allowed for a period not to exceed 120 days and cannot be extended.

Sincerely,

R. L. STAMETS
Director

RLS:RCA:dp

cc: OCD, Aztec
Rick McCalip, Conoco, Houston
W. V. Thompson, Conoco, Bloomfield

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

September 22, 1986

Roger C. Anderson, Environmental Engineer
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
P.O. Box 2088
Santa Fe, NM 87501-2088

Re: Discharge Plan (GW-35)
Conoco Inc., Natural Gas Products Department
San Juan Basin Gas Processing Plant
Bloomfield, San Juan County

Dear Mr. Anderson:

Conoco Inc. requests that permission be granted to commence discharge from the subject facility on September 24, 1986. The request is in accordance with New Mexico Water Quality Control Regulations, Part 3-106(B) which states that at the consent of the director a facility may discharge pending approval of a submitted discharge plan. Conoco Inc. understands that approval of the plan must be granted within 120 days in order to continue discharging.

Additional information for the subject plan is enclosed, at your request. Ccpies of correspondence between Mr. Bob Walker, Conoco Inc. and Mayor R. T. Toliver, City of Bloomfield regarding the City's agreement to accept the San Juan Basin Plant's discharge are enclosed. Also attached are Material Safety Data Sheets from Betz Laboratories and Texaco Inc. for cooling tower water corrosion inhibitor and lubricating oil, respectively.

Thank you for your assistance in this matter. If you have any questions or require additional information, please contact Rick McCalip at (713) 293-1123 or the undersigned at (713) 293-1188.

Sincerely,

Terry L. Killian
Staff Engineer

/nl

Attachment

TK-0508

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

September 10, 1986

Roger C. Anderson, Environmental Engineer
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
P.O. Box 2088
Santa Fe, NM 87501-2088

Re: Discharge Plan (GW-35); Supplemental Information
Conoco Inc.; Natural Gas Products Department
San Juan Basin Gas Processing Plant
Bloomfield, San Juan County

Dear Mr. Anderson:

In response to your correspondence dated August 11, 1986, supplemental information for the subject plan is attached. A copy of the August 11 correspondence is attached also.

Not all requested information is available at this time (i.e., some MSD Sheets). Conoco Inc. will submit this information as soon as possible.

The locations of the six groundwater wells have been located. Although not all are accessible, well #1 (west of the cemetery) is available for sampling. Conoco Inc. requests that Billy Thompson, Plant Manager, at (505) 632-1831 be notified at least 24 hours prior to sampling to ensure the appropriate Conoco personnel are available.

As discussed with Terry Killian during a telephone conversation this morning, start-up of the San Juan Basin Plant is scheduled for next month. New Mexico Water Quality Control Commission Regulations, Part 3-106(B), state that 'for good cause shown the director may allow ..... discharge without an approved discharge plan for a period not to exceed 120 days." Conoco Inc. is requesting that such permission be granted while awaiting approval of the plan.

Thank you for your assistance in this matter. If you have any questions or require additional information, please contact me at (713) 293-1123 or Terry Killian at (713) 293-1188.

Sincerely,

Rick McCalip

Rick McCalip
Coordinator

/nl
Attachment

TK-446

DISCHARGE PLAN (GW-35)

SAN JUAN BASIN PLANT

The following inforamtion is provided as a supplement to Discharge Plan GW-35.

Section II - Plant Processes

1. Material Safety Data Sheets

Material Safety Data Sheets (MSDS) for the following process and treatment chemicals are attached.

Lubricating Oils

Conoco - Turbine Oil 32
A T Fluid Type F
EP Rock Drill 32
UGL 80W-90
Dectol R.O. Oil
Fleet Motor Oil SAE 10W-30
Super Hydraulic Oil

Mobil - Rarus 826
SHC 824

The remaining MSDS will be provided as soon as possible.

2. Spill Prevention Control and Countermeasure (SPCC)

The SPCC Plan for the San Juan Basin Plant will be submitted upon completion.

Section III - Effluent Disposal

Under the proposed plan of operations, all effluent will be discharged via pipeline to the City of Bloomfield's wastewater treatment system. As stated in the submitted discharge plan (Section II.B), the stormwater/washwater from the two gas processing area tanks (TK-803 and 801) will be analyzed prior to disposal. If at any time the wastewater is unacceptable to the City of Bloomfield, the tank contents will be transported to Basin Disposal, Inc. in Aztec, New Mexico for disposal.

Cooling tower blowdown will not be accumulated and sent to Basin Disposal. In the unlikely event that the City cannot accept the blowdown, additional raw water will be injected into the plant discharge to dilute the blowdown stream. Supplemental water rights have been purchased by Conoco Inc. This combined discharge will then be sent via pipeline to the City's facility. The dilution is expected to eliminate any problems which may occur.

The final option is that should the City have difficulty handling even the diluted stream, Conoco Inc. will install whatever facilities

are necessary to solve the problem. This may involve an on-site lined evaporation pond and mechanical separation equipment to treat the discharge.

The City of Bloomfield has reviewed and agreed to these plans. The attached correspondence from Mr. Bob Walker of Conoco Inc. and Mayor R. T. Toliver of the City of Bloomfield confirms this agreement. In addition, the City has agreed that should any problems arise in the future, the City will provide reasonable time for Conoco to solve the problems.

Section IV - Site Characteristics

1. Groundwater Analysis

Western Technologies Inc. of Farmington, New Mexico has informed Conoco Inc. that driller's logs are not available for the six groundwater wells.

All six wells have been located but due to changes in the site and construction, not all are available for sampling. Well #1, though, is available for additional testing. Please contact Billy Thompson, Plant Manager, at (505) 632-1831 at least 24 hours in advance of testing to ensure Conoco personnel are available.

2. Stormwater Contamination

Contingency plans to prevent stormwater contamination were included in the plant design (Section II.A.3 of the submitted plan). All equipment foundations are connected to an open drain system which leads to the oil/water separator. From the separator, oils are pumped to a storage tank while the water is diverted to one of two wastewater tanks (TK-801). The gas treating area (amine system) is curbed with a drain to the second wastewater tank (TK-803). The curbing provides secondary containment of any spills and potentially contaminated stormwater/washwater. These measures are expected to eliminate the potential of stormwater contamination.

A 2-3 foot earthen dike will be constructed inside the fence at the south edge of the property. The dike will contain any stormwater, preventing runoff to surrounding areas. The dike will be constructed as part of the final site work.

A field road is located on El Paso Natural Gas property directly south of the Conoco leased property. If stormwater should carryover the proposed dike, this road provides secondary containment before any stormwater escapes to Citizen's Ditch.

As stated, precautions to eliminate runoff contamination have been taken. If for any reason contamination should occur, a third party will be contacted immediately to provide whatever services are necessary to remedy the situation.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Field Supervisor
Ecological Services, USFWS
Post Office Box 4487
Albuquerque, New Mexico 87196

September 5, 1986

Mr. R. L. Stamets
Oil Conservation Division
State of New Mexico
State Land Office Building
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Stamets:

This responds to your public notice for the proposed discharge plan (GW-35), Conoco, Inc., San Juan Basin Gas Plant. The gas plant under construction is located in the NW¼, NW¼, Section 14, TWN 29 N, R 11 W (NMPM), San Juan County. The plant will discharge approximately 72,000 gallons/days of process and cooling tower water to the City of Bloomfield's municipal wastewater treatment facility.

We have reviewed the public notice and have the following concerns that should be addressed by the Oil Conservation Division and by the New Mexico Environmental Improvement Division.

The discharge plan should address whether an additional 72,000 gallons/day discharge of water to the municipal wastewater treatment plant will over burden the plant's water purification capabilities. The discharge plan should also identify any toxic substances the process and cooling water may contain. If there are toxic substances present, will the Bloomfield municipal wastewater treatment plant be capable of removing them or will they be discharged into the San Juan River.

The San Juan River supports both a warm and cold water fishery and the aquatic ecosystems and associated terrestrial habitat support a wide variety of species also. Any discharge associated with this plan should not be present in levels that would be detrimental to the ecology of the receiving waters.

These comments represent the views of the Fish and Wildlife Service. Thank you for the opportunity to comment on the proposed plan. If you have any questions concerning our comments, please contact Tom O'Brien at (505) 766-366 or FTS 474-3966.

Sincerely yours,

Michael J. Donahoo
Acting Field Supervisor

cc:
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Health and Environment Department, Environmental Improvement Division, Santa Fe, New Mexico
Regional Administrator, Environmental Protection Agency, Dallas, Texas
Regional Director, FWS, AWE, Albuquerque, New Mexico

AFFIDAVIT OF PUBLICATION

No. 18783

STATE OF NEW MEXICO,
County of San Juan:

Margaret Billingsley being duly sworn, says: That he is the Sec. to the Publisher of THE FARMINGTON DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said FARMINGTON DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for 1 consecutive (days) (weeks) on the same day as follows:

First Publication Friday August 22, 1986

Second Publication

Third Publication

Fourth Publication

and that payment therefor in the amount of $ 28.06 has been made.

Margaret Billingsley

Subscribed and sworn to before me this 27th day of August, 19 86.

Connie Gipson

NOTARY PUBLIC, SAN JUAN COUNTY, NEW MEXICO

My Commission expires: July 3, 1989

Copy of Publication

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following proposed discharge plan has been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, PO Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-35) Conoco Inc., San Juan Basin Gas Plant, Bob Walker, General Manager, Natural Gas Products Department, PO Box 2197, No. 3048, Houston, Texas 77252, has submitted for approval a ground water discharge plan for its facility under construction located in the NW¼ NW¼ of Section 14, Township 29 North, Range 11 West (NMPM), San Juan County, New Mexico. Approximately 72,000 gallons per day of process and cooling tower water with a total dissolved solids content of approximately 1250 mg/l will be piped to the City of Bloomfield's municipal treatment facility. The discharge plan addresses how spills, leaks and other discharges to ground water at the plant site will be managed. The ground water most likely to be affected by any discharge to the surface is at a depth ranging from 15 feet to 55 feet, with total dissolved solids concentrations ranging from 4500 to 21,000 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by an interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN Under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 14th day of August, 1986. To be published on or before August 22, 1986.

SEAL

STATE OF NEW MEXICO
OIL CONSERVATION [redacted]

Director

Legal No. 18783 published in the Farmington Daily Times, Farmington, New Mexico on Fridays, August 22, 1986.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN Under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 14th day of August, 1986. To be published on or before August 22, 1986.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/R.L. STAMETS
Director

Journal, August 21, 1986

RECEIVED
AUG 22 1986
OIL CONSERVATION DIVISION
SANTA FE

STATE OF NEW MEXICO }
County of Bernalillo } ss

..... being duly sworn declares and says that he is ..... of the **Albuquerque Journal,** and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for ..... times, the first publication being on the 21 day of August ,198 6, and the subsequent consecutive publications on ..... ,198.....

.....

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 21 day of August ,198 6

PRICE 22.09

Statement to come at end of month.

ACCOUNT NUMBER C80933

EDJ-15 (R-2/86)

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

August 20, 1986

Roger C. Anderson, Environmental Engineer
Oil Conservation Division
Energy and Minerals Department
P.O. Box 2088
State Land Office Building
Santa Fe, NM 87501-2088

Re: Discharge Plan (GW-35)
Conoco Inc., Natural Gas Products Department
San Juan Basin Gas Plant
Bloomfield, San Juan County

Dear Mr. Anderson:

This letter acknowledges receipt of your correspondence dated August 11, 1986 requesting additional information for the subject plan.

The information is being gathered and will be submitted for your review as soon as possible. If you have any questions, please contact the undersigned at (713) 293-1188.

Sincerely,

Terry L. Killian

Terry L. Killian
Staff Engineer

/nl

TK-436

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

August 14, 1986

San Juan County Commissioners
San Juan County Courthouse
112 S. Mesa Verde
Aztec, New Mexico 87410

Gentlemen:

Enclosed is a public notice which includes notice of a proposed discharge plan for an operation located in your county.

If you have any questions, please do not hesitate to contact me at the address and telephone number given above.

Sincerely,

DAVID G. BOYER
Environmental Bureau Chief

RLS:dp

Enc.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN Under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 14th day of August, 1986. To be published on or before August 22, 1986.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

R. L. STAMETS
Director

S E A L

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

August 11, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Terry L. Killian, Staff Engineer
Natural Gas Products Department
Conoco, Inc.
P. O. Box 2197
Houston, Texas 77252

RE: DISCHARGE PLAN (GW-35)
CONOCO, INC., NATURAL GAS PRODUCTS DEPARTMENT
SAN JUAN BASIN GAS PLANT
BLOOMFIELD, SAN JUAN COUNTY

Dear Ms. Killian:

The Oil Conservation Division has received and is in the process of reviewing the above-referenced discharge plan. The plan submittal, dated July 10, 1986, was received by the OCD on July 11, 1986. The following comments and requests for additional information are based on our review of the data provided in the plan and observations from a site inspection field trip conducted July 28, 1986.

General Comments

Our review of the discharge plan and the July site visit indicate the basic plan is acceptable. A major question that remains is the fate of any storm water runoff. As indicated on the plat plan and observed during the site visit, any storm water, as well as any uncontained spills in the process area, are drained to underground conduits under the road on the south edge of the facility. These conduits discharge to grade approximately 100 feet north of Citizens Ditch. A barrier must be constructed with the expressed intent of retaining all storm water and spill fluids within the boundaries of your property. After any spill event in which fluids accumulate, a plan must be initiated to dispose of these fluids properly. Please submit the plans for construction of the barrier and contingency plans for fluid disposal.

Another major concern is the possibility of existing contamination of the groundwater at the site. The results submitted of the analysis of the fluids from the monitor wells indicate some form of contamination, however, these wells have apparently been covered or lost during construction, making confirmation of results by OCD sampling and analysis impossible at this time.

Specific Comments

Section II - Plant Processes

1. Numerous process and treatment chemicals that will be utilized and stored on site are listed in Sections II.A.2. and II.A.3.C. Please supply the MSD sheets for these materials for inclusion in the plan.

2. Section II.B. states four tanks are installed underground and registered with NMEID. Tanks V-1402 and TK-1301 containing diesel and waste lube oil may be regulated under the EID "UST" Program. Tanks V807 and V806 contain DEA, a non-hazardous process chemical, and are regulated by the OCD. Does their installation conform to the enclosed OCD's "Guidelines for the Installation of Below-Grade Tanks"? Please supply the installation specifications for inclusion in the plan.

3. Section C.1. states a SPCC plan is currently being developed. Please supply a copy when completed.

Section III - Effluent Disposal

In this section, it is stated there are "no on-site facilities for effluent disposal". Randy Majors, a Conoco project engineer, stated that the evaporation pit identified as M-1410 on your plat plan, Appendix B, was not going to be constructed. If all effluent is to be discharged to the City of Bloomfield and there are no on-site storage facilities planned, what are the contingency plans if the city refuses the cooling tower blowdown? Will there be any emergency storage facilities? Will this effluent also be transported to Basin Disposal? Where will it be stored prior to transport?

Section IV - Site Characteristics

1. Analyses of the water samples obtained from five of the six monitoring wells show elevated levels of lead, nitrates, sulfates, fluoride, TDS and possibly arsenic. The exact location of these wells and their status, and their availability for OCD sampling, was unknown at the time of the site visit. Have these wells been located and will they be available for sampling to confirm the analyses contained in the plan? During the site visit, Conoco discussed the possibility of drilling at least one additional monitoring well, if the existing wells cannot be located. Please keep OCD informed of this proposed action, and notify us prior to construction so that we can have input as to its design and location. We also desire to sample any such well after its completion. Please supply the driller's logs for all six (6) monitor wells, any preconstruction test borings deeper than 36 inches, and logs for any future monitor wells constructed.

2. The soils map provided in the plan did not include the plant site. The correct map (enclosed) indicates the soils are loamy sand and sand, and are included in the Gypsiorthids-Badland-Stumble complex. These soils are well drained to excessively drained, with rapid permeability and poor filtering capabilities. Surface drainage is toward Citizens Ditch.

Therefore, as stated previously, any spills and/or storm water would drain to the south edge of the property.

Given the permeability of the soils, any contaminant in this drainage could move into Citizens Ditch. Water level measurements indicate a northward flow of groundwater away from Citizens Ditch during September, but the possibility exists for reverse flow into the ditch during the non-irrigating season. Therefore, all areas having significant volumes of liquid fluids should be curbed and drained to an impermeable collection area. If any spill fluids do reach the storm water area, a plan must be in place to remove them and to evaluate the impact on groundwater from seepage prior to removal. Provide such a plan to accomplish this and to remove and clean up spills from other areas where curbing or drains are not sufficient.

If you have any questions, please do not hesitate to contact me at (505) 827-5885.

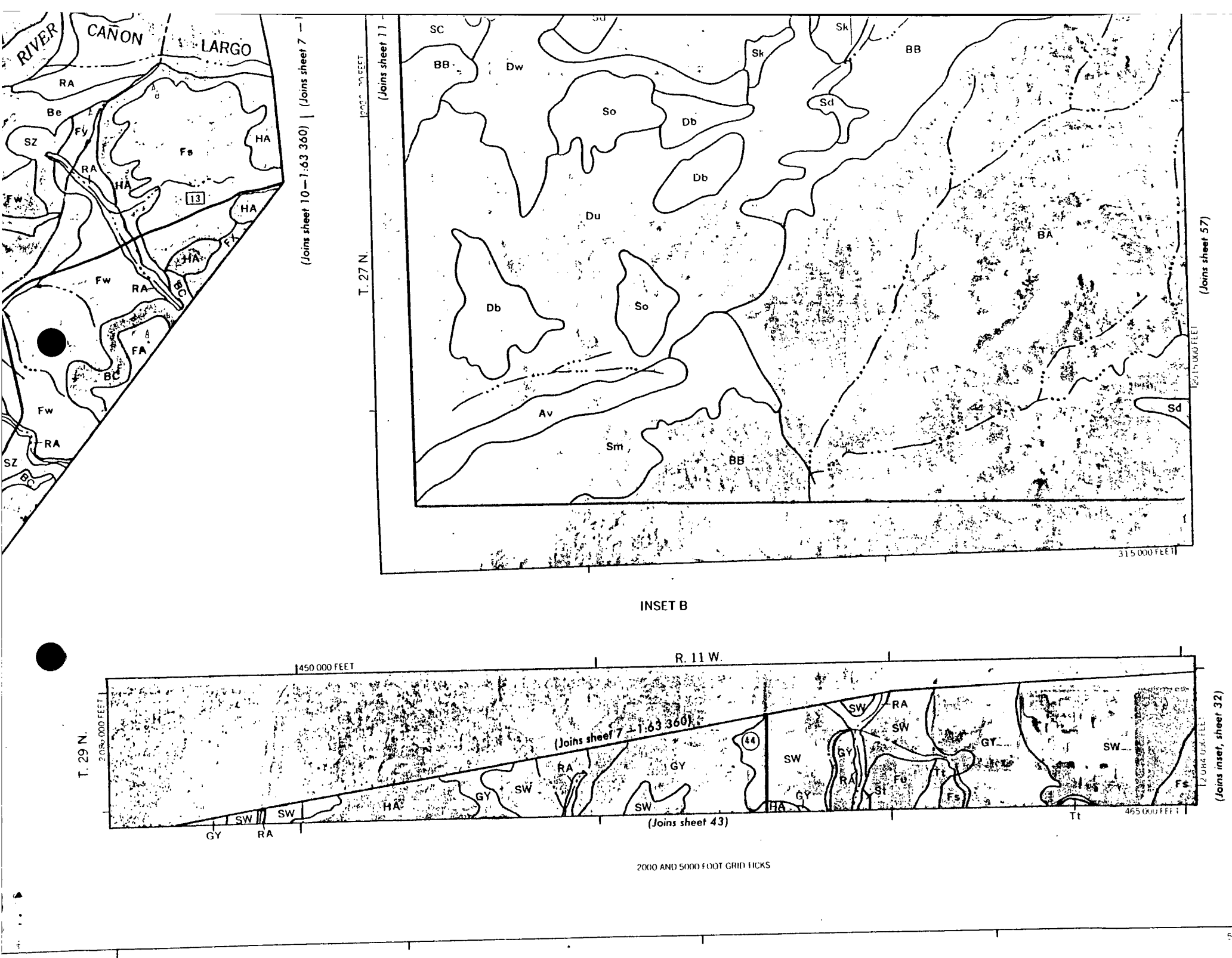
Sincerely,

Roger C Anderson

ROGER C. ANDERSON
Environmental Engineer

RCA:dp

cc: Aztec District Office



2000 AND 5000 FOOT GRID TICKS

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

July 15, 1986

Oil Conservation Division
New Mexico Energy and Minerals Department
State Land Office Building
P.O. Box 2088
Santa Fe, NM 87501

Attn: Mr. Dave Boyer

Re: Discharge Plan for Conoco Inc.'s San Juan Basin Gas Plant

Dear Mr. Boyer:

As we discussed at our meeting of Friday, July 11, 1986, the following items are being provided for inclusion in the Discharge Plan:

	Item	Insert At:
1.	Signature Page	Section I
2.	Table of Underground Storage Tanks	Section II
3.	Ground Water Well Data	Appendix H

Thank you for your cooperation in the preparation of this Discharge Plan. If you have any questions, please call Ms. Terry Killian at (713) 293-1188.

Sincerely yours,

Laura G. Daniel

Laura G. Daniel
Coordinator

/nl

LD-0463

City of Bloomfield

915 NORTH FIRST

BLOOMFIELD, NEW MEXICO 87413

P. O. BOX 1839

PHONE 632-8096

June 23, 1986

Mr. Bob Walker
General Manager, Natural Gas Products
Conoco Inc.
Box 2197
Houston, Texas 77252

Dear Mr. Walker;

The City of Bloomfield appreciates the cooperative spirit expressed by Conoco in a meeting on June 12, 1986 and your subsequent letter of June 16, 1986. We are pleased to have Conoco as a member of our community and hope that is long and fruitful.

This letter will confirm on Bloomfield's part the agreement reached concerning the monitoring and problem solving plan as outlined in your letter should that become necessary. We will accept the waste water stream from your plant based on the conditions as noted.

Thank you for your time and valuable consideration.

Sincerely,

R. T. Toliver

R.T. Toliver
Mayor

CC: Mike Morgan

RTT/gh

LGD

Bob Walker
General Manager
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

June 16, 1986

The Honorable R. T. Toliver
Mayor, City of Bloomfield
P. O. Box 1839
Bloomfield, New Mexico 87413

Dear Mayor Toliver:

Pursuant to the meeting between Conoco and the City of Bloomfield on June 12, 1986, Conoco hereby guarantees that it provide adequate monitoring equipment at the San Juan Gas Plant to monitor the effluent streams from its cooling tower water blowdown and other streams to meet the criteria of the City of Bloomfield. Conoco's plant personnel will work with the City to insure that the City is satisfied with the method of monitoring and the equipment to be installed.

Conoco further agrees that if the effluent discharge from the San Juan Gas Plant contributes to the City of Bloomfield's treating plant exceeding its NPDES permit, Conoco will work with the City, at the City's request, to develop and implement a solution to the problem. Such solutions may involve pretreatment of the effluent stream, either at the Conoco plant or an industry funded pre-treating facility; adjustments to cooling tower operations to reduce solids concentration; dilution of the plant effluent stream; or other possible solutions.

Please confirm as soon as possible that the City of Bloomfield will accept the wastewater stream from our plant under these conditions, and that if there is a future problem that the City will provide reasonable time for Conoco to correct said problem. This will help us proceed with plans to complete and start up the San Juan Gas Plant as scheduled.

We at Conoco look forward to a long term, continued good relationship with the City of Bloomfield.

Very truly yours,

Bob Walker

Bob Walker

cc: Mr. C. R. Nolen
Chief Administrator
City of Bloomfield, New Mexico

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

July 10, 1986

Dave Boyer, Chief
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
P.O. Box 2088
Santa Fe, NM 87501

Re: DISCHARGE PLAN;
CONOCO INC., NATURAL GAS PRODUCTS DEPARTMENT;
SAN JUAN BASIN GAS PLANT;
BLOOMFIELD, SAN JUAN COUNTY

Dear Mr. Boyer:

Enclosed please find the subject discharge plan. The plan was developed according to the OCD's January 1985 "Guidelines for the Preparation of Ground Water Discharge Plans at Natural Gas Processing Plants".

Thank you for your assistance in developing this plan. If you have any questions regarding this submittal, please contact the undersigned at (713) 293-1123, or Ms. Terry Killian at (713) 293-1188.

Very truly yours,

Laura G. Daniel
Coordinator

City of Bloomfield

915 NORTH FIRST

BLOOMFIELD, NEW MEXICO 87413

P. O. BOX 1839

PHONE 632-8096

June 23, 1986

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General Manager, Natural Gas Products
Conoco Inc.
Box 2197
Houston, Texas 77252

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Thank you for your time and valuable consideration.

Sincerely,

R. T. Toliver

R.T. Toliver
Mayor

CC: Mike Morgan

RTT/gh

Bob Walker
General Manager
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

June 16, 1986

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Mayor, City of Bloomfield
P. O. Box 1839
Bloomfield, New Mexico 87413

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We at Conoco look forward to a long term, continued good relationship with the City of Bloomfield.

Very truly yours,

Bob Walker

Bob Walker

cc: Mr. C. R. Nolen
Chief Administrator
City of Bloomfield, New Mexico

- LGD, MWM, RNA, WVT, JCM
- PLNIT(NVIRO) File
- NB010.5

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

June 12, 1986

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Laura G. Daniel, Coordinator
Environmental & Energy Services
Conoco, Inc.
P. O. Box 2197
Houston, Texas 77252

Dear Ms. Daniel:

Under the provisions of the Water Quality Control Commission (WQCC), you are hereby notified that the filing of a discharge plan is required for your proposed Bloomfield Gas Processing Plant to be located in Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico.

This notification of discharge plan requirement is pursuant to Sections 3-104 and 3-106 of the WQCC regulations. The discharge plan, defined in Section 1-101.P of the WQCC Regulations, should cover all discharges of effluent or leachate at the plant site or adjacent to the plant site. A copy of the regulations is enclosed for your convenience. Also enclosed is a copy of an OCD guide to the preparation of discharge plans for gas processing plants. Three copies of your discharge plan should be submitted for review purposes.

Please be advised that any discharge from this facility without prior approval from OCD would be in violation of the regulations. Before discharging, you must have either a discharge plan approved by the OCD or temporary permission to discharge without an approved discharge plan pursuant to Section 3-106.B. Temporary permission can only be granted for good cause shown by you and can only be for a non-renewable period of not more than 120 days.

If there are any questions on this matter, please feel free to call Dave Boyer or Roger Anderson at (505) 827-5812, as they have the assigned responsibility for review of all discharge plans.

Sincerely,

R. L. STAMETS
Director

RLS:RCA:dp

cc: OCD, Aztec
John L. Mitcha, Jr., Conoco

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

May 13, 1986

Ms. Laura Daniels
Conoco, Inc. - 3048 HU
P. O. Box 2197
Houston, Texas 77252

Dear Ms. Daniels:

As per our phone conversation of May 12, I am sending copies of the implementation policy for salinity control on the Colorado River. Please note the requirements for Industrial Sources on pages A-2 through A-6, and the waiver provision for discharges contributing less than one ton per day. My calculations, assuming a discharge of 700 mg/l TDS at 50 gpm, show a maximum of 0.21 tons per day, of which 0.15 tons is new salt and the remainder was originally diverted from the river.

If you desire to apply for a NPDES permit, you should contact the New Mexico Environmental Improvement Division, Surface Water Quality Bureau, Attention Ms. Kathy Sisneros, at (505) 827-2792. Your decision on the method of effluent disposal will need to be made soon so that permitting can be conducted concurrently with construction of the plant, and any startup delays in this area will be avoided.

If you have any questions, please contact Roger Anderson or me at 827-5885.

Sincerely,

DAVID G. BOYER
Hydrogeologist/Environmental
Bureau Chief

DGB:dp

Enc.

cc: Kathy Sisneros, NMEID, Surface Water Quality Bureau

Flow weighted Intake (713) 293-1123

≤ 400mg/l

upto City City has no intention of letting industrial hookups that add salt.

0.75mgd ~~From EPNG~~ City

.070,000 gpd From Tenneco @ 700 ppm TDS

.82 mgd

200mg/l Intake

639 mg/l - Discharge Grab

City Must Notify EPA, ETC >

From EPNG
No wastewater production - ① Very little change in 10,000 hp idle with little change in cooling water discharged. Boiler still on line.
② Want to retain rights to discharge.

Call ~~Hagen~~ Benson on Monday
Spray coating, vegetation, & runoff is only problem!

Ton of TDS

$$12{,}000\ \frac{gal}{day} \times \frac{4\ ft^3}{1\ gal} \times \frac{0.0468\ l}{1\ ft^3} \times \frac{700\ mg}{l} \times \frac{g}{1000\ mg} \times \frac{1\ kg}{1000\ g} \times \frac{2.2\ lbs}{1\ kg} \times \frac{1\ Ton}{2000\ lbs} = 0.21\ Tons/day$$

(additional 0.15 Tons)

$$\frac{1000\ gal}{min} \times \frac{380\ mg}{l} \times \frac{1440\ min}{day} \times \frac{4\ ft^3}{gal} \times \frac{.9966}{ft^3} \times \frac{1\ kg}{10^6\ mg} \times \frac{2.2\ lbs}{1\ kg} \times \frac{Ton}{2000\ lbs} = 1.5\ \frac{Tons}{day}$$

(OVER)

No discharge for new industries

May be waived if < 1 ton/day or 350/year (whichever is less.)

must demonstrate that not practicable to treat load reaching the main stem

Industrial - No discharge, don't get credit

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 1030	Date 5/9/86
Originating Party	Other Parties	
ROGER ANDERSON	LAURA DANIELS - CONOCO	

Subject STATUS OF CONOCO/TENNECO BLOOMFIELD GAS PLANT

Discussion CONOCO had meeting with Bloomfield city engineer. City indicated they would take waste from plant until EID issued a new permit for city waste treatment that states waste received cannot exceed normal plant waste by TDS of more than 400mg/l. Conoco now working on pretreatment of their waste stream to comply. Engr. plans should be complete by end of May. We will get a copy. Laura will also keep us informed by letter of developements. I told her we will be requiring a D.P. in one form or another.

Conclusions or Agreements

Plant Project manager - Mike Morgan
Plant manager - Billy Thompson
Plant # (505) 632 - 9240 or 9204

Distribution

Signed R C Anderson

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

March 27, 1986

Ms. Laura Daniels
Conoco Inc. - 3048 HU
P. O. Box 2197
Houston, Texas 77252

Dear Ms. Daniels:

As per our phone conversation on March 26, 1986, I am enclosing copies of pertinent OCD rules and regulations. I am also enclosing the revised WQCC regulations with delegation to the OCD.

As I stated in our conversation, we are not yet formally requesting a discharge plan for your proposed gas plant at Bloomfield, however, a close look at the following concerns must be taken:

1. Will an agreement be made with the City of Bloomfield to discharge your plant effluent to the city treatment plant?

2. Will the city have the capacity to handle all planned present and future effluent?

3. Will there be any on-site storage prior to discharge to the city?

4. What provisions are there for containment around any tanks or within any pits or ponds?

5. What are the contingency plans for spills? Emergency pits or tanks?

6. What are the contingency plans if the city refuses to accept your discharges for short periods during the term of the agreement?

Even if there are no planned discharges via pits, ponds, etc., the discharge plan process is an ideal mechanism for regulatory control of inadvertent or occasional discharges. Actions taken in the event of such discharges would be covered under the discharge plan, and not under Section 1-203 of the Regulations. An approved discharge plan will have spelled out what reporting and what action will be taken in the event of unanticipated releases. In this way, there is no guessing by either

party as to the regulatory requirements in the event of spills, leaks, or other discharges covered by the WQCC Regulations.

In view of the above discussion, it is likely a discharge plan will be required. As the planning and construction phase of your plant proceeds, it would be beneficial to keep the OCD informed of your progress. Any requirements pursuant to WQCC regulations can be implemented easier during construction rather than through remedial work.

If I can be of any further assistance to you, please do not hesitate to call at (505) 827-5885.

Sincerely,

Roger C Anderson

ROGER C. ANDERSON
Environmental Engineer

RCA:dp

Enc.

cc: Frank Chavez, OCD, Aztec
Dave Boyer

Storage prior to going to city
Incidental storage.
Containment around any tanks to prevent discharge on ground
Plant plan
~~Emergency~~ Contingency plans (spills, emergency pits etc

SPCC or NPDES

Lana Daniels
Canada Inc 3048 HU
PO Box 2197
Houston Tx 77252

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time	Date
	1030	3/26/86

Originating Party	Other Parties
ROGER ANDERSON	LAURA DANIELS CONOCO - HOUSTON

Subject: Discharge plan for Proposed Conoco/Texaco Gasplant in Bloomfield

Discussion: Not yet formally receiving a DP. Discussed OCD concerns. Laura said they are in negotiations this week with City. Twill send letter of concerns and copy of regs.

Conclusions or Agreements

Distribution: Conoco - Bloomfield File

Signed: R. Anderson

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☐ Telephone ☐ Personal

Time: 0830

Date: 2/27/86

Originating Party	Other Parties
Ms L. Daniel 713-293-1123	R. Anderson

Subject: Start up date for Conoco/Tennessee Gas Plant at Fanning, Tex & requirement for discharge plan

Discussion:

Conoco is negotiating with city To Take their waste water To treatment plant. They will let us know.

Plant start up scheduled for mid November

Conclusions or Agreements:

Distribution:

Signed:

Independent
Review
25¢
Aztec, NM 87410
Volume 97/Issue 35
Thursday, February 27, 1986
USPS 657320

Conoco plant construction on schedule

BY LIZ ATTEBERY
Review staff

Gas plant construction proceeds on schedule

Construction of the $60 million Conoco-Tenneco gas processing plant just outside the Bloomfield city limits is "moving along at a steady pace," according to Billy Thompson, chief inspector and future manager of the plant. The Four Way Co. in Farmington completed site preparation and Pan West, of Houston, is the general contractor. The target date for the plant's completion, Thompson said, is Oct. 1.

Despite decreases in profits caused by the recent drop in oil prices, Conoco and Tenneco are continuing with plans to make their new plant the largest natural gas liquid producing plant in the United States.

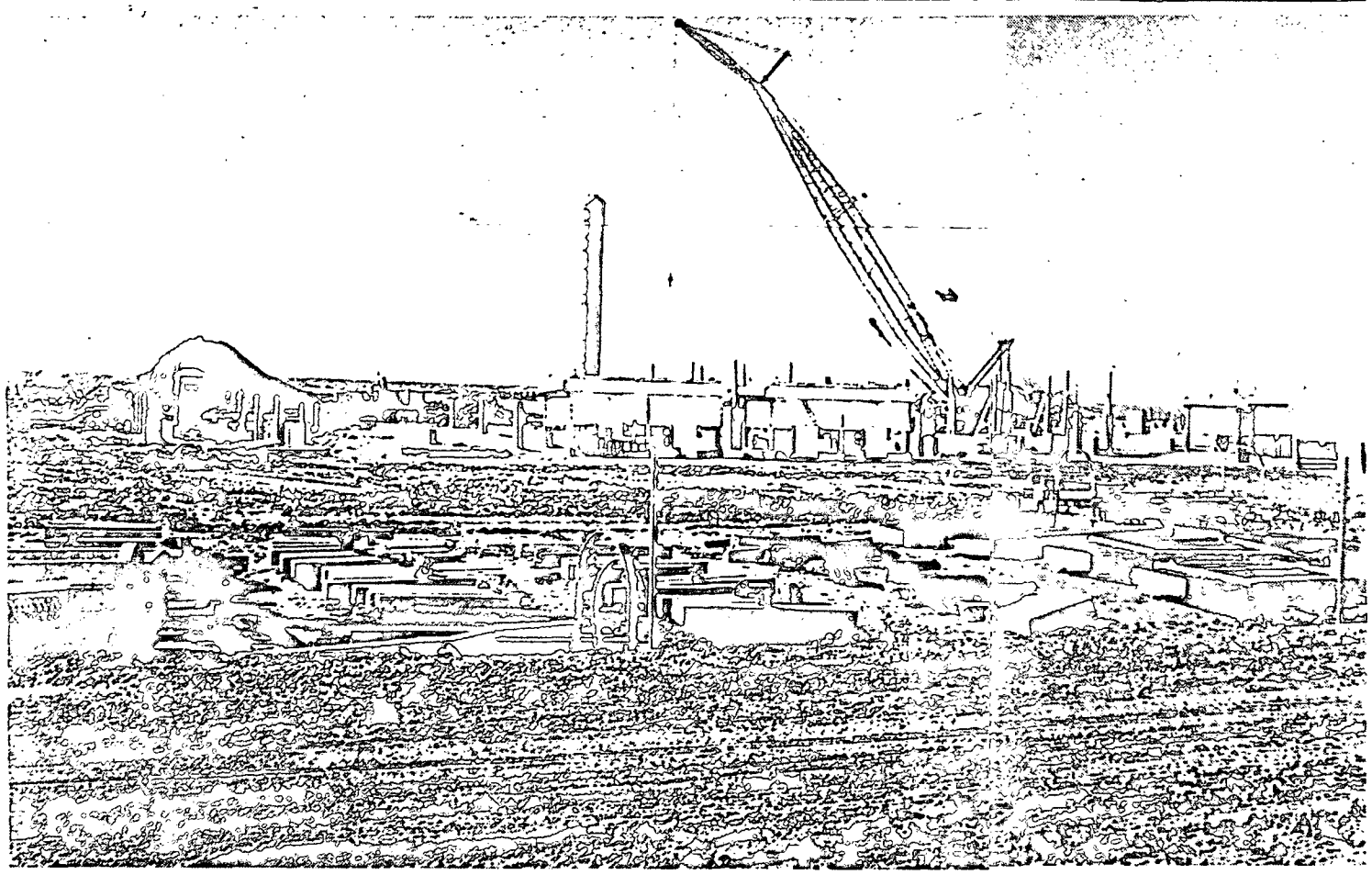
"It will be the largest, not in volume, but in terms of producing barrels of liquid a day," Thompson explained. With "a recovery of 98 percent ethane, we're only going to leave 2 percent of the ethane in the gas when it goes to homes to be burned."

The plant, with a capacity of 500 million cubic feet of natural gas a day, will use a cryogenic process to strip liquids from the gas and make it suitable to burn in homes. A high velocity device called an expander will "take high pressure natural gas and drop the pressure and temperature to a range of -150 degrees," Thompson explained, "and when it's cold, we'll recover the liquids."

The energy produced as a by-product of this process will be used to turn a compressor, Thompson said. The liquids derived will be pipelined to nearby Mid-America Pipeline Company, which will distribute them to the Gulf Coast and other parts of the country.

While construction proceeds, six employees are at work at the new plant. Thompson anticipates that, on completion, the plant will employ a permanent staff of about 22.

Although the plant will not be operational for another seven months, Thompson is proud that one facet of the job has been completed. Trees have been planted and a fence has been erected to the west of the plant, in deference to St. Mary's Cemetery next door.



Seven months to go Construction is moving on schedule for $60 million gas processing plant.

Commission studies airport proposals

Commissioners are expected to give one of three applicants an 18-month test flight in leasing the Aztec Airport during the regularly scheduled March 4 meeting.

Commissioners reviewed bids Tuesday and questioned two applicants, Dan Fischer and Alexandria Csaquijpers, both with Aztec Flying Service, about their proposals. The third applicant, Airport Manager Mike Williams, did not attend the meeting.

After a long-running dispute between Fischer and Williams, which ended when Fischer was evicted from his rented office at the aiport, commissioners agreed it was in the city's best interst to lease the entire facility.

Although Fischer was evicted from his office, he told commissioners he continues to use the airport and has not had any problems in the past few months.

But the warning from Mayor Doug Madlock about disputes between airport businessmen was clear when he said, "We're dead serious about the thing, we're not going to put up with any more problems."

In an effort to resolve nagging problems with the airport, commissioners have agreed the appearance and maintenance of the buildings and grounds needs to be improved, wants final say over anyone interested in subleasing space and wants out from under the utility bills.

Commissioners say they are only willing to enter an 18-month agreement because Williams' lease for several buildings lasts that long. They will consider a longer lease agreement after that period if the person awarded the contract proves efficient.

Fischer told commissioners he would be willing to remodel restrooms, build a porch on the office, landscape and be responsible for snow and weed removal. He offered to pay the city $1,400 per month plus 4 cents a gallon on fuel sold.

Ms. Csaquijpers, business manager and stockholder of Aztec Flying Service, told the city she was unwilling to make the major renovations Fischer had suggested unless the lease would be extended from 18 months.

"I agree with most of Dan's proposals, but if there is only an 18-month lease, I do not think it is financially feasible to make all those changes," she said, adding that she would be willing to paint, keep the area clean and weed free and ensure safety measures were enforced.

Ms. Csaquijpers offered to pay the city $1,200 per month plus 4 cents per gallon of gasoline sold.

According to Williams proposal, he is only willing to lease a portion of the airport to include the automobile gasoline concession, north half of the large hangar, an office and the home on the property. He offered to pay $661 per month plus 2 cents per gallon of gasoline.

However, Ms. Csaquijpers told commissioners Williams is interested in selling his business, Williams Airepair, and she is interested in buying.

Several details were omitted from the proposals as written by the city and can be settled when the contract is drawn up, Madlock said.

Commissioners are unsure whether the leasee will carry insurance or will reimburse the city for its costs under its current policy. Another matter yet to be resolved is who will be responsible for installing separate gas meters in each building.

"My concern is that there is no pro-

Farmington To Get New Gas Processing Plant

By Patrice Armstrong

JOURNAL BUSINESS WRITER

A natural gas processing plant which its planners say will be the "largest producer of natural gas in the U.S." will be built 15 miles east of Farmington in the San Juan Basin of northwest New Mexico.

The $60 million plant will produce 500 million cubic feet of natural gas each day, about 40,000 barrels, said Archie W. Dunham, Conoco Inc. executive vice president, at a press conference in Albuquerque on Friday afternoon.

Conoco and Tenneco Oil share the plant as equal partners, and Conoco will operate it.

Pan West Constructors Inc. of Houston will employ 175 people temporarily while the plant is under construction, Dunham said. Construction should start in early September. The facility is scheduled to be finished in the fourth quarter of 1986.

When the plant is in operation it will have 20 to 25 permanent employees, many of them from Farmington, he said. The expected annual economic impact on the community, including payroll, should be $1.7 million.

"We are glad to see it coming," said Richard Pinkerton, Farmington Chamber of Commerce executive director.

A natural gas processing plant is a closed system operation, with hardly any exposure to air, said Bob Walker, general manager of the Conoco natural gas products department.

"It is extremely safe," he said.

There is little waste generated by a gas processing plant, DeCola said, but what there is will be put into containers and taken out of the state.

Conoco has received first-place safety awards for six years out of the past eight from the Gas Processors Association, Walker said.

The air quality permits have been issued by the state, and the equipment the plant is using should actually reduce oxides by 5 percent from the current levels, Dunham said.

On Friday, the Federal Energy Regulatory Commission was believed to have approved the settlement that made the plant possible, the gas company officials said. The settlement of a 12-year-old dispute among Conoco, Tenneco and El Paso Natural Gas Co. involved oil and gas properties in the San Juan Basin.

The settlement had initially included a $50 million refund to EPNG's customers in California, but the $50 million will now take the form of a lower natural gas price to EPNG, Dunham said.

The dispute was over whether the relationship of the parties was under FERC jurisdiction.

Albuquerque Journal 8/31/85

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

June 10, 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Conoco Inc.
P.O. Box 2197
Suite 410 RT
Houston, Texas 77252

Attention: Ms. L. Daniel

Re: New Gas Plant Near
Bloomfield, NM

Dear Ms. Daniel:

Please find attached a Notice of Intent to Discharge form which should be filled in with information pertaining to your new gas plant near Bloomfield. This form will provide us with information necessary to determine the need for a discharge plan. Please recall that Section 3-104 of the New Mexico Water Quality Control Commission Regulations states that, "...no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge plan approved by the director". This regulation emphasizes the need to have an approved discharge plan (should one be needed) prior to plant start-up. Your prompt action in this matter is greatly appreciated.

Should you have any questions pertaining to this letter or the discharge plan process, please do not hesitate in calling me at (505) 827-5885.

Sincerely,

Philip L. Baca

PHILIP L. BACA
Environmental Engineer

PLB/dp

Enc.

cc: OCD-Aztec

P 505 906 047

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Conoco Inc	
Street and No. P.O. Box 2197	
P.O., State and ZIP Code Houston, Texas 77252	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time	Date
	2^00 PM	5/13/85

Originating Party	Other Parties
P. Baca - OCD	L. Daniel - Conoco
	(713) 293-1123

Subject: Conoco / Tenneco Gas Processing Plant

Discussion: Informed Ms. Daniel of the need to submit a notice of intent to discharge as per WQCC Reg. 3-106 B. The new plant will have a cooling tower and will discharge approx. 2 gpm. Informed her that if a discharge plan is required, it must be approved prior to plant start-up.

Conclusions or Agreements: Ms. Daniel will submit a notice of intent to discharge.

Distribution

Signed Philip L. Baca

85-027

•EID NEWS

NEW MEXICO ENVIRONMENTAL IMPROVEMENT DIVISION

Denise Fort, Director

PUBLIC INFORMATION OFFICE
Post Office Box 968
Santa Fe, New Mexico 87504-0968
984-0060 ext. 226

FOR IMMEDIATE RELEASE:

CONTACT:

May 8, 1985

Gordon Venable 984-0020 Ext. 39

SANTA FE, NEW MEXICO -- The construction of a natural gas processing plant, near Bloomfield, will improve air quality with the installation of modern and efficient equipment.

The new plant, owned jointly by Conoco, Inc. and Tenneco Oil Company, is a result of a settlement agreement reached by Conoco, Tenneco and El Paso Natural Gas Company after 12 years of litigation. The plant will replace gas processing operations now conducted at the adjacent El Paso Blanco plant. El Paso has agreed to retire certain existing facilities at the Blanco Plant when the new plant begins operation to offset air pollutant emissions from the Conoco/ Tenneco plant.

Environmental Improvement Division Air Quality Bureau Chief Gordon Venable issued an air quality permit to the Conoco/Tenneco plant on Monday. Venable said the new equipment installed at the plant will substantially decrease air pollutant emissions. Gordon said specifically, there will be a reduction in nitrogen oxide and volatile organic compounds. "A negligible increase of carbon monoxide, particulate matter and sulfur dioxide will occur, but these emissions will be well within state and federal standards governing air pollutant emissions," he stated.

(more0

EID Director Denise Fort said the construction and operation of the plant will have a positive impact on the local economy as well as the environment. She noted the settlement agreement will result in additional development activities on properties in the San Juan Basin which will increase local and state tax revenues.

"People from the local labor market will be hired to construct the plant," she said. "The plant's operation will actually improve air quality in the San Juan Basin which is an area in the state with high levels of nitrogen oxide," she stated.

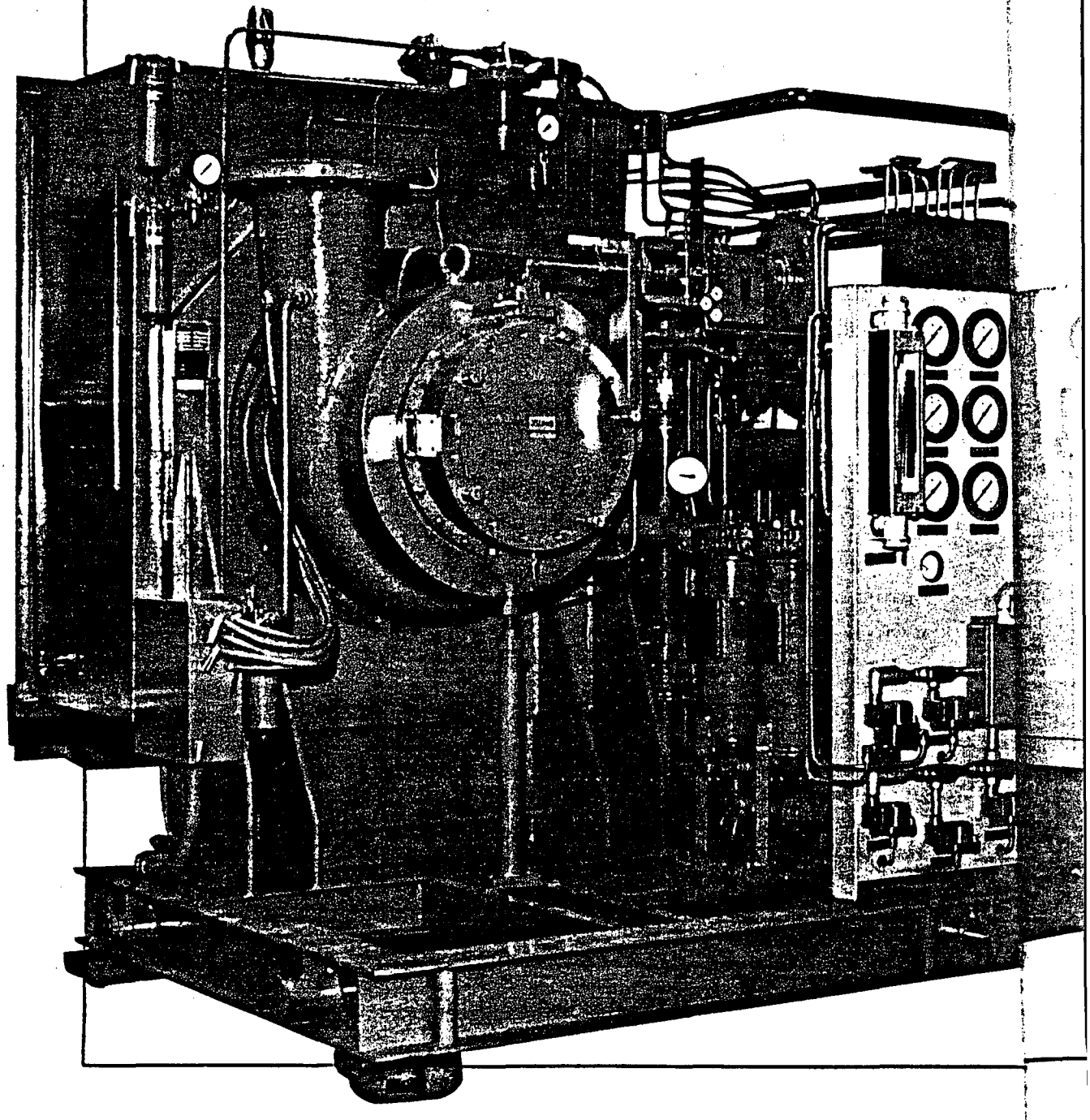
The Connoco/Tenneco plant is scheduled to begin operation by July 1986.

-30-

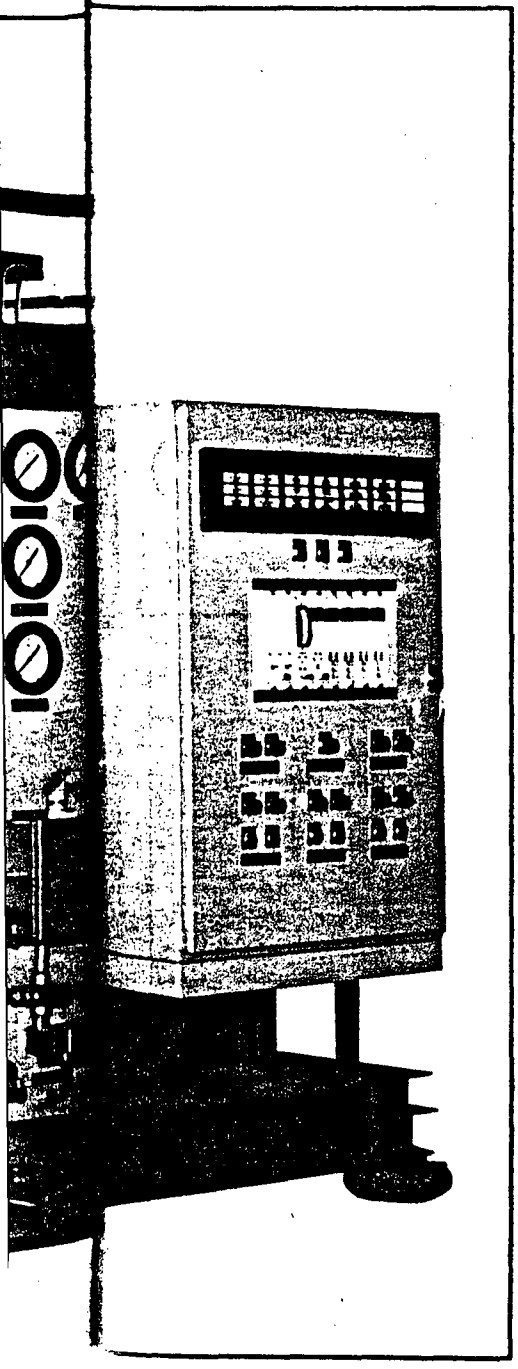
Dave,
FYI

Re: New Bloomfield
Gas Plant

CRYOGENICS



PRINCIPLES AND APPLICATIONS



Atlas Copco Comptec Inc.

This technology is employed in many operations in the chemical process industries, including air separation and cryogenic absorption. Here given are its principles, equipment and major uses.

Helmut Springmann, Lotepro Corp.

The cryogenic regime comprises temperatures below –100°F (200 K). As a technology, cryogenics goes back almost a century. Numerous workers have made significant contributions to this discipline, but three names stand out: Carl von Linde, Georges Claude and Heike Kamerlingh Onnes. With them, cryogenics became a true technology. This technology and its applications involve mainly physical rather than chemical reactions, because nearly all chemical reactions slow to a halt at cryogenic temperatures. Thus practically no disturbing *chemical* reactions occur in cryogenic processes.

Properties of materials at very low temperatures are well understood, and there are few problems in their use. This is markedly not the case with warm processes, in which there can be major problems owing to complicated chemical reactions at the high temperatures.

Among the most economically and technically important physical reactions occurring at cryogenic temperatures are the cooling and liquefaction of gases, and the distillation and fractional condensation of liquefied-gas mixtures to yield pure-component streams. Cooling and liquefaction are the basis of every cryogenic process.

Gases with low boiling points are used as working media in cooling and liquefaction. For production of ultralow temperatures, helium is used, but below 1 K, liquid helium has a very low vapor pressure so that adiabatic demagnetization must be employed to reach temperatures close to absolute zero at present. Economically significant cryogenic processes do not occur at such extremes.

Due to the contraction in volume of gases with decreasing temperature, cryogenic facilities are smaller than standard process facilities, and must be well insulated for energy conservation. This sometimes creates the impression that maintenance is more difficult than for warm plants. This is not so. Mechanically moving parts can be designed and installed with ready access for easy maintenance.

In most cryogenic projects, the cold box (see the cover photograph) is designed without a spare unit since it is highly reliable. On the other hand, rotating equipment is usually designed in double. In this respect, cold plants are like many warm ones. They are also like them in terms of startup, in that a good deal of time can be spent reaching operating temperatures, although supply of liquid products from storage, or use of a spare compressor or turbine in parallel, will cut delay.

Let us now present a short discussion of cryogenic principles. Important cryogenic processes will then be described briefly, their applications illustrated,

and comparisons made with some warm processes. Thermodynamic explanations are given only as required for adequate understanding.

Basic thermodynamic principles

In commercial cryogenic processes, expansion of gases produces cold. While just a burner may be all that is required to produce heat in warm processes, all cryogenic gas systems consist of a compressor, a heat exchanger and an expander.

Carnot showed that only a certain amount of mechanical power can be produced from an ideal gas in a reversible process consisting of adiabatic and isothermal changes, with heat supplied from and rejected to the environment. In producing cold, the cycle is reversed. Mechanical work must be expended to produce cold. The following Carnot equation shows the theoretical amount of mechanical work that must

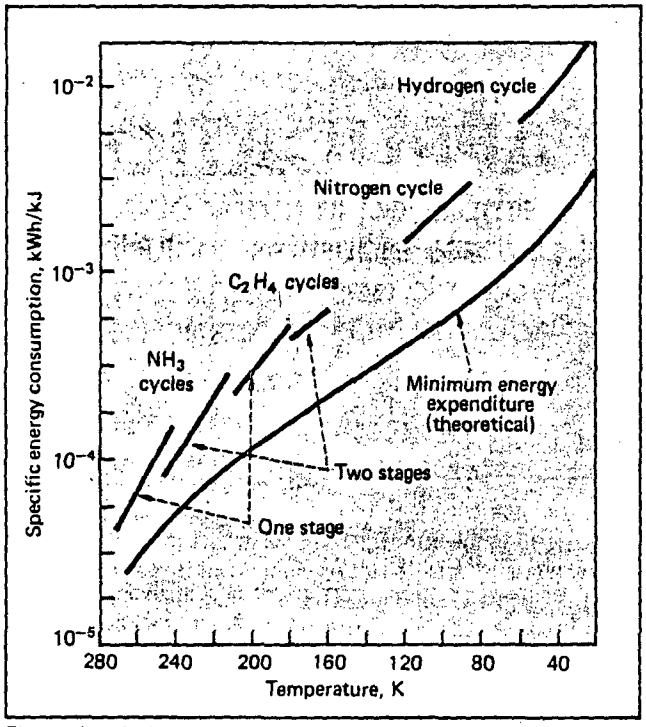


Figure 1 — As temperature decreases, work to produce a unit amount of cold increases

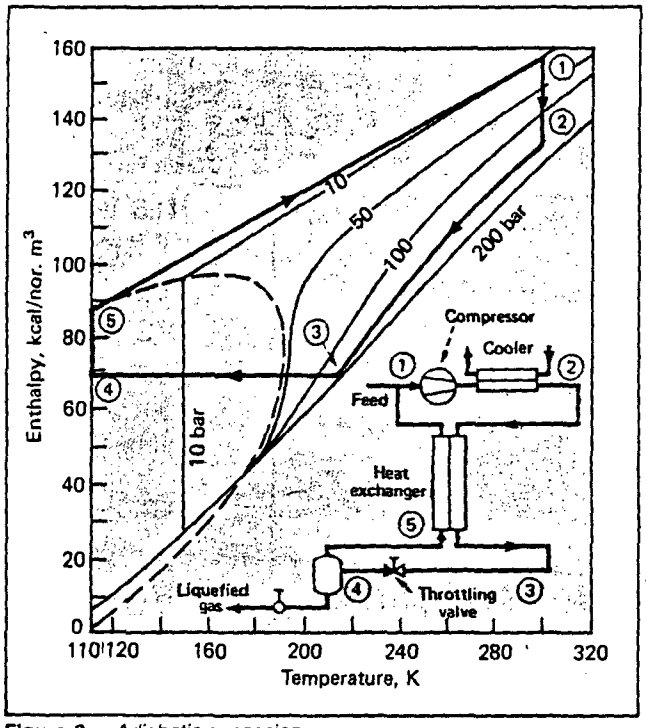


Figure 3 — Adiabatic expansion. Expansion turbine plus throttling valve produce cold

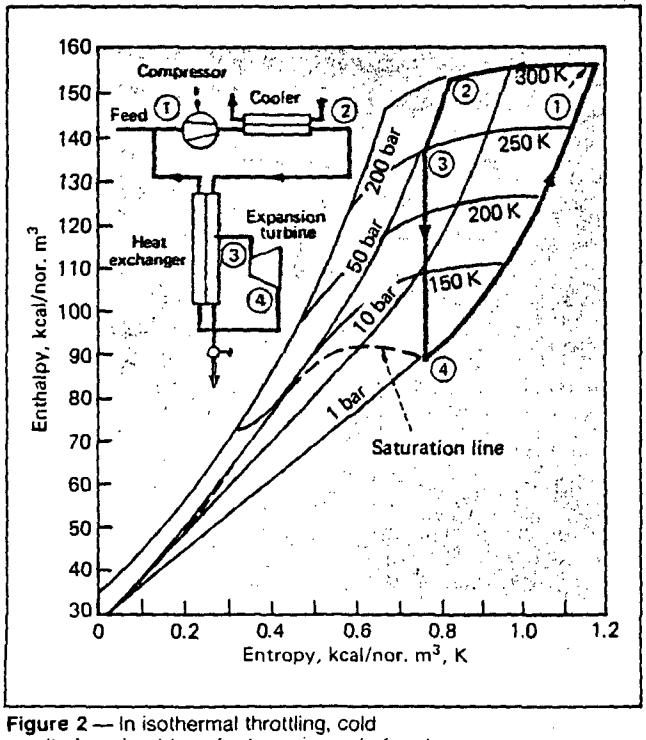
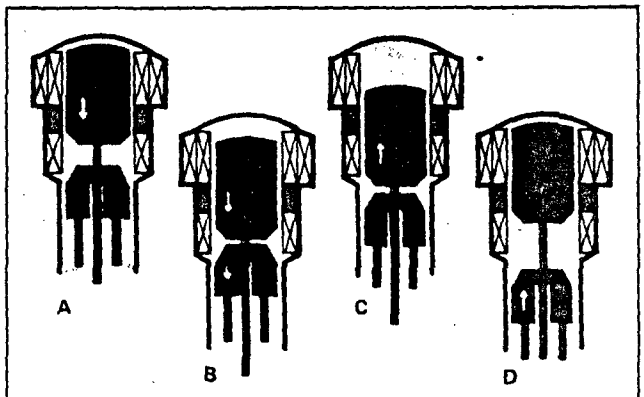


Figure 2 — In isothermal throttling, cold results from heat transfer to warm end of system



Phase A: Working fluid is compressed and energy is extracted as heat of compression is removed in cooling water.

Phase B: Transfer of working fluid from compression space through regenerator to expansion chamber. Cooling of gas occurs in its passage through the regenerator where heat is temporarily given up.

Phase C: Expansion of working fluid by simultaneous motion of piston and displacer. Cold is generated and can be utilized at the surface of the cylinder head.

Phase D: Working fluid is returned to the compression space. During passage through regenerator, stored heat is reabsorbed by gas.

Philips (Eindhoven, the Netherlands)

Figure 4 — Stirling cycle, using a reciprocating compressor, is for small plants

be expended as a function of the cold that is to be produced:

$$L_c = Q_0(T - T_0)/T_0$$

where:

L_c = mechanical work needed.
Q_0 = cold available at the cryogenic temperature.
T_0 = cryogenic temperature required.
T = temperature of the environment.

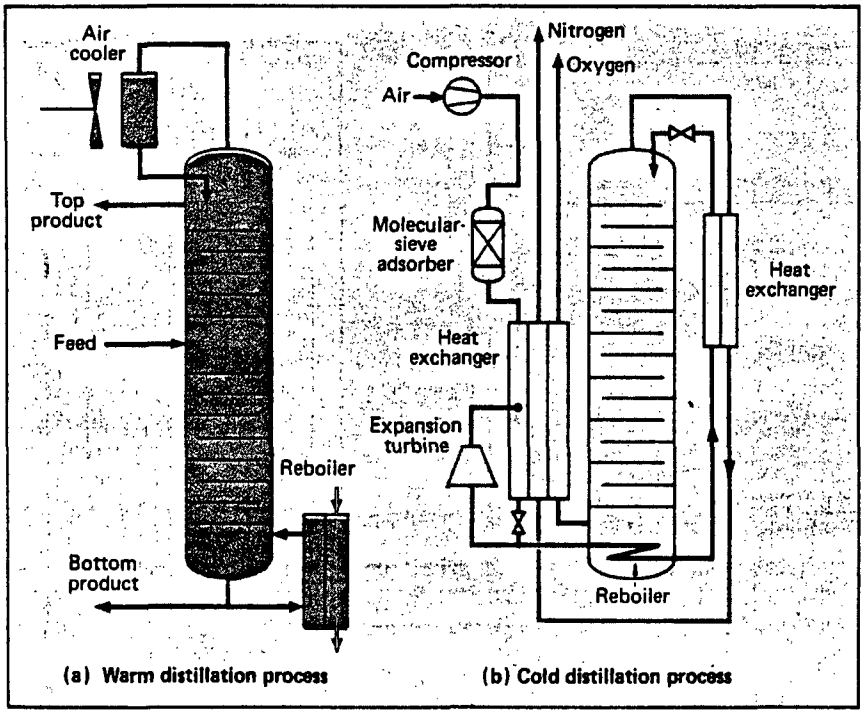


Figure 5 — Comparison of warm and cold distillation

The equation shows that mechanical input increases with decreasing cryogenic temperatures (Fig. 1). If, for example, 1 kWh of cold is to be produced at 250 K (–10°F), 0.2 kWh of mechanical power must be expended and 1.2 kWh of heat sent to the environment, assumed here to be 300 K (80°F). If the same amount of cold is to be produced at, say, 80 K (–315°F), 2.75 kWh must be expended and 3.75 kWh sent to the surroundings. These are ideal values. For actual ones, assume an efficiency of 60% (to cover irreversible losses).

If the cold is used to cool an object or liquefy a gas, it is contained as recoverable energy. If required only temporarily, the cold must be transferred to the next portion being processed to save energy. Cold can also be recovered as mechanical energy. The portion of energy that can be so recovered as mechanical energy is called available energy or exergy (see *CE*, Feb. 23, 1981, pp. 62–72).

There are two basic methods to produce cold. Both are gas processes and make use of the fact that the heat of compression is transferred to the environment and the gas is then cooled down by expansion. Fig. 2 illustrates the first, the production of cold by a cycle introduced by Hampson and improved by Carl von Linde. A gas (e.g., air) is compressed to a high pressure, roughly 150 bar (2,200 psi). It is then cooled in a heat exchanger and throttled through a valve, cooling down as its enthalpy remains constant (the Joule-Thomson effect). The major portion of gas is sent back to the heat exchanger as coolant, and finally to the suction of the recycle compressor, while a minor portion of it is liquefied. The temperature-enthalpy diagram shows that the high-pressure stream has a lower enthalpy than the low-pressure one. This is because van der Waals attractive forces increase with higher pressure. Therefore, the cycle transfers heat from the cold end to the warm end. The amount is the enthalpy difference at the warm end. Producing cold by transferring heat to the warm end is frequently called the isothermal throttling effect. Isothermal throttling differs from the Carnot cycle, which represents a theoretical process. Actual processes have, of course, lower efficiencies.

Keesom found that a combination of throttling cycles is a highly efficient way to produce cryogenic temperatures. A case in point is a four-cycle system using ammonia, ethylene, ethane and nitrogen to produce liquid nitrogen. Keesom coined the name "cascade" for such a system [*1*]. Unfortunately, it requires a high investment and has not been used often.

Adiabatic expansion

Fig. 3 shows the second basic method for producing cold — adiabatic or isentropic expansion. Combined with isothermal throttling, it is the main process used for producing cold in commercial plants.

A gas is compressed to 30–50 bar (700 psi) and the heat of compression removed in a cooler and then it goes to an exchanger. A portion of the high-pressure gas is extracted and sent to an expansion turbine where it isentropically expands and produces mechanical energy. The cold gas is sent back through the heat exchanger to the suction of the recycle compressor to cool incoming feed. A smaller portion of gas is sent under high pressure to the cold end of the heat exchanger, subcooled in the exchanger and throttled. It changes from supercritical fluid to liquid.

Cold is produced in the expander as well as by throttling. The amount produced by the expander is shown at the left of the closed-cycle diagram in Fig. 3. It is large compared with the isothermal throttling effect, and the expander process is therefore widely used. The isentropic expansion machine was introduced by Georges Claude.

Another process, a combination of elements used in the isentropic process, is the Stirling cycle, Fig. 4 [*2*]. Efficiency is high due to a compact mechanical design. Unfortunately, the cycle can be used only with reciprocating machines, thus limiting its size to small plants.

A totally different process is adiabatic demagnetization, used only in the laboratory. It employs liquid helium and a salt whose ions normally have randomly aligned magnetic dipoles. When a magnetic field is applied, all the ions align, liberating heat, which is transferred to the liquid-helium cycle. When the field is killed, some ions fall back into random orientation, increasing entropy. Sensible heat is consumed, decreasing the liquid-helium temperature [*1*].

Major applications

Production of cold is the only true cryogenic process. All others are applications. Among the most important is the separation of gases. There are four chief methods:

Condensation — Different gases generally have different vapor-pressure curves. For a mixture of methane and nitrogen, for example, methane is the less volatile and on cooling begins to liquefy first. As determined by Raoult's law, the equilibrium liquid is richer in methane than the gas; a partial separation can be effected. The condensation process is also used to freeze out traces of water vapor and carbon dioxide in the front end of cryogenic plants.

Distillation (rectification) — This process, of course, also depends on differences in vapor pressures, but permits a more complete separation of components. There is a significant difference between cold and warm distillation systems. Fig. 5 shows two distillation columns. The setup in Fig. 5a is frequently seen in refineries and has a reboiler heated by steam or a furnace. Reflux is produced by an air cooler — and almost all of the heat is wasted at the cold end.

Fig. 5b shows the simplest scheme for air separation. Air is compressed to about 10 bar A (155 psia), dried, freed of CO_2, and sent through a heat exchanger. There it is cooled close to the liquefaction point. A portion is extracted from the middle of the exchanger and used for cold production in an expansion turbine. Then all the air is sent though the reboiler of the column, liquefied and finally used as reflux. In the column, the O_2 is concentrated at the bottom. It is withdrawn as a gas and warmed in the heat exchanger. N_2 is enriched overhead, withdrawn as a low-purity stream and is also warmed by passage through the heat exchanger. O_2 recovery in this single-column system is poor, due to the low-quality reflux liquid (air). The expander must produce only as much cold as is needed to cover losses through insulation, and those generated at the warm end of the exchanger by the temperature differential. Isothermal throttling is negligible for small plants operating at low pressures. Very little heat is wasted.

The above example shows that the material processed undergoes three operations: it is separated into components; it is used to heat and cool the column; and it is compressed and expanded to produce cold. Such a design, however, is quite energy-efficient and is a must for cryogenic plants.

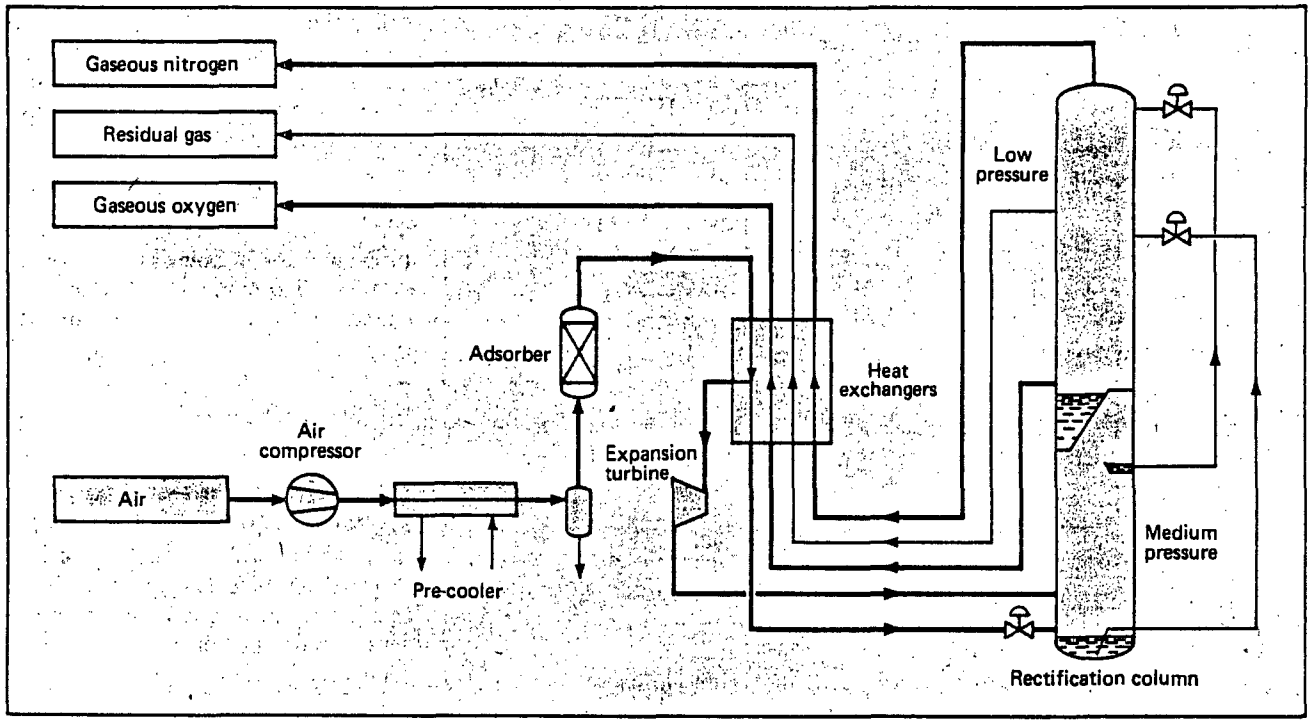


Figure 6 — Typical air-separation plant. It is most economical route to yield oxygen

Cryogenic absorption — The physical solubility of gases in some solvents used in absorption processes increases with decreasing temperature. Such solvents include methanol, trichloroethylene and acetone. The amount of gas that dissolves depends on (besides its solubility coefficient) the partial pressure of the gas and the temperature of the solvent. Processes based on physical absorption offer advantages at high gas pressures and concentrations.

Cryogenic adsorption — Typical adsorption materials are silica gel, alumina gel and molecular sieves. With decreasing temperature, they show increasing adsorption rates. Such processes are used mainly for removing traces of vapors and gases.

Equipment used in cold plants is the same as that for warm ones — compressors, coolers, expanders, control and shutoff valves, etc. Differences do exist, however, particularly in materials of construction, since components must not become brittle at cryogenic temperatures. The preferred materials are Type 316 stainless steel, aluminum 5083 and 5086 [these are AA (Aluminum Assn.) numbers] and pure aluminum. Organic materials are almost never used.

Air-separation technology

Air is not the only source of oxygen, of course, but cryogenic air separation is the most economical process for producing

oxygen, nitrogen, and argon and other rare gases. Deriving oxygen from chemical compounds requires a lot of energy. Air, on the other hand, contains oxygen that is free in two ways — molecularly free and cost-free — and is therefore the preferred feedstock. (Noncryogenic air-separation processes will be described later.)

Fig. 6 shows the flowsheet of a modern cryogenic air-separation plant. It is the Beulah installation of the Great Plains coal gasification project, and has five units:

1. Air compression — Air is compressed to the required pressure in the high-pressure column. Compressors for large plants are generally centrifugal or combined axial/centrifugal units [*3*]. Air is sent to a contact cooler to remove dust and chemical impurities, mainly SO_2.

2. Air purification — Molecular-sieve adsorbers are used here. Water vapor, CO_2 and hydrocarbons (ethylene, acetylene and heavier) are removed by pairs of these adsorbers. In the author's opinion, molecular-sieve front-end cleanup is very good, although other means can be used. The most important of these is reversing heat exchangers, in which impurity removal is combined with air cooling [*4*].

3. The cold box — Air is cooled to liquefaction temperature in plate-fin heat exchangers, using cold oxygen and nitrogen product-streams. Plate-fin exchangers made of aluminum are common. They are highly efficient and accept pressures to 70 bar (1,000 psi) [*5,6*]. After cooling, air is sent to the double-column (Fig. 6), where it is separated into O_2 and N_2 fractions. Product O_2 is taken from the bottom of the low-pressure column as a liquid and sent to the product evaporator-condenser (not shown in Fig. 6). Here it is evaporated at slightly increased pressure while an equivalent amount of air is liquefied. Then, the O_2 is sent to the main heat exchanger and finally to the compressor. N_2 is taken from the top of the low-pressure column and is also sent to the main heat exchanger.

The double column consists of high- and low-pressure units connected by the main evaporator-condenser. The high-pressure column allows production of pure nitrogen, which is used as a reflux for both columns. Nitrogen is liquefied in the high-pressure column at a pressure that permits the use of higher-boiling oxygen as coolant. Liquid-nitrogen, instead of liquid-air, reflux increases oxygen recovery.

Refrigeration is produced by expansion turbines (see the lead photograph). Some use air; others, nitrogen. With air turbines, the exit air is generally injected into the low-pressure column to recover its oxygen. With nitrogen turbines, gas from which oxygen has already been recovered is fed to the turbine from the top of the high-pressure column [*7*]. For high-purity-O_2 production, optimum turbine flow is generally 10–15% of total airflow. Modern expansion turbines operate with up to 85% isentropic efficiency.

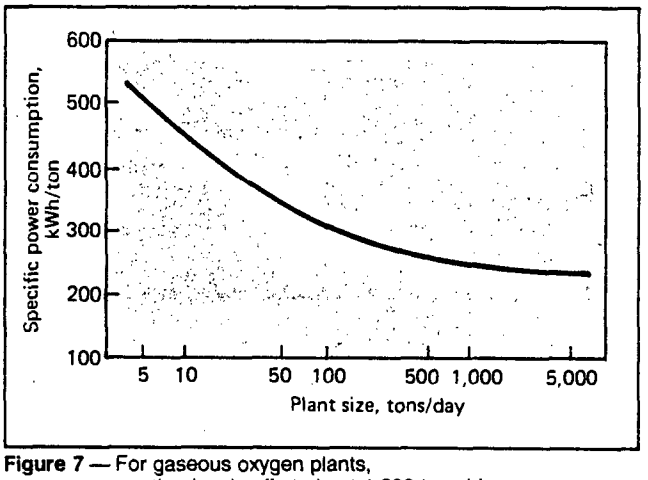


Figure 7 — For gaseous oxygen plants, power consumption levels off at about 1,500 tons/d

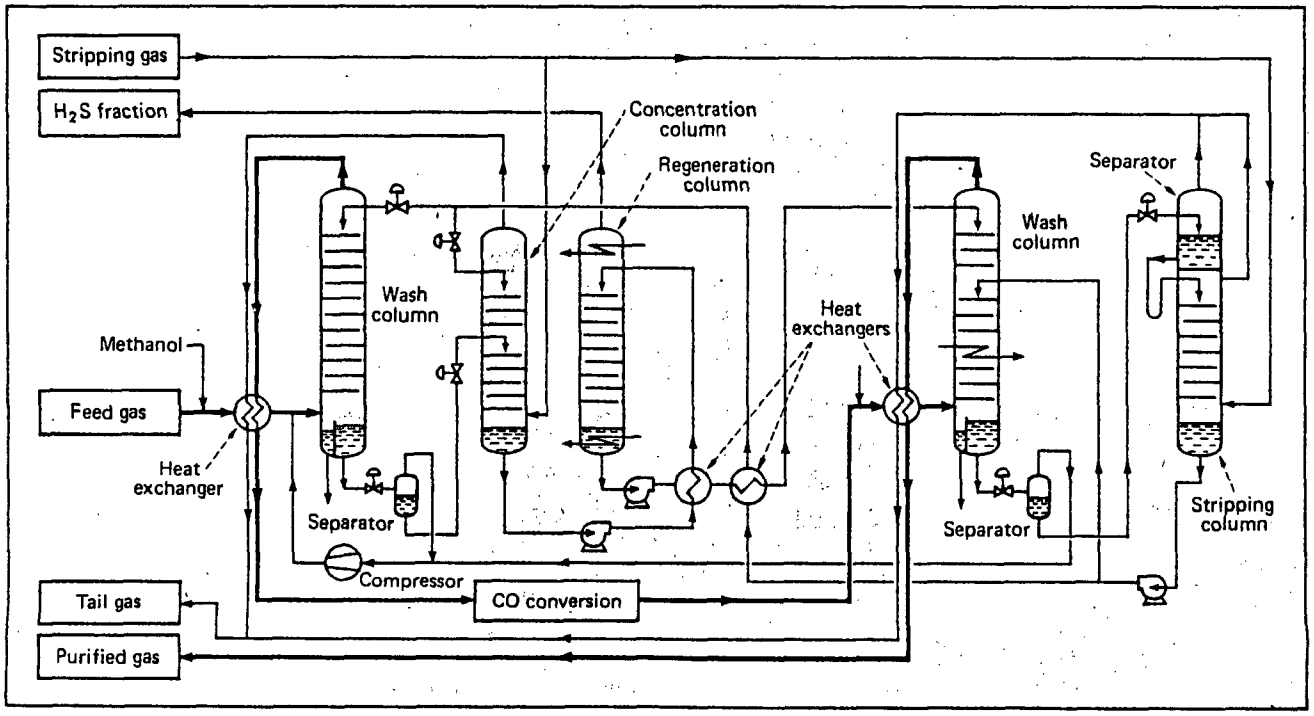


Figure 8 — Rectisol process scrubs CO_2 and sulfur compounds from partial-oxidation gas

4. Product compression — Gaseous product oxygen produced in large-capacity air-separation plants is generally raised to delivery pressure in centrifugal compressors [*8*]. Limitations of stage pressure-ratio, temperature and materials of construction provide high margins of safety.

5. Oxygen backup system — In case of a power failure, this system automatically goes into operation, so flow is uninterrupted. The system usually has a large tank to collect liquid O_2. When power fails, liquid is pumped to product pressure, evaporated, and sent to the consumer line.

Table I gives typical production figures for a large plant.

Table I — Yields for a typical large O_2 plant

Product	Output, tons/d	Pressure, psig	Oxygen concentration
Gaseous oxygen	550	525	99.5%
Liquid oxygen	25	1	99.5%
Gaseous nitrogen	250	25	10 ppm

Table II — In air-separation plants, the largest power loss is in the compressor

Energy use/loss	Energy consumed, %
Compressor losses	70
Pressure drops	20
Theoretical energy	10

Power consumption

Fig. 7 shows how the amount of power consumed in producing low-pressure gaseous oxygen varies with plant size (in terms of oxygen production). Power consumption can be reduced by lowering oxygen purity [*9*]. Power consumed in air separation is allocated as shown in Table II.

Theoretical energy consumption, compressor losses and pressure drops account for most consumption. The limited efficiency of the cryogenic process has led to many ideas for improvement; all but a few have been found unreliable. In [*10*], a process is described in which the main condenser is replaced with a number of smaller condenser-evaporators, which connect both columns at appropriate places.

As already mentioned, there has been little experience with oxygen compression for pressures higher than 70 bar (1,000 psi). In the high-pressure range, the so-called internal compression system offers safety and economy [*11*].

Gasification plants and other large consumers either have their own air-separation plant or tap off from oxygen pipelines. Many medium-sized oxygen consumers such as foundries, however, have a fluctuating demand and are economically supplied with compressed or liquid oxygen from merchant producers. Compressed oxygen requires heavy high-pressure steel cylinders. Liquid oxygen demands well-insulated tanks for transport, but these are relatively light. For the same standard volume of oxygen, there is a tare weight-ratio of 7:1 between cylinders and tanks.

Liquefaction of oxygen and nitrogen is carried out in multistage cycles. Considerable power is expended in liquefaction: 0.7–0.9 kWh/nor. m^3 [nor. m^3 is a m^3 of gas at 760 torr and 0°C] for liquid oxygen (450–570 kWh/ton) and 0.6–0.8

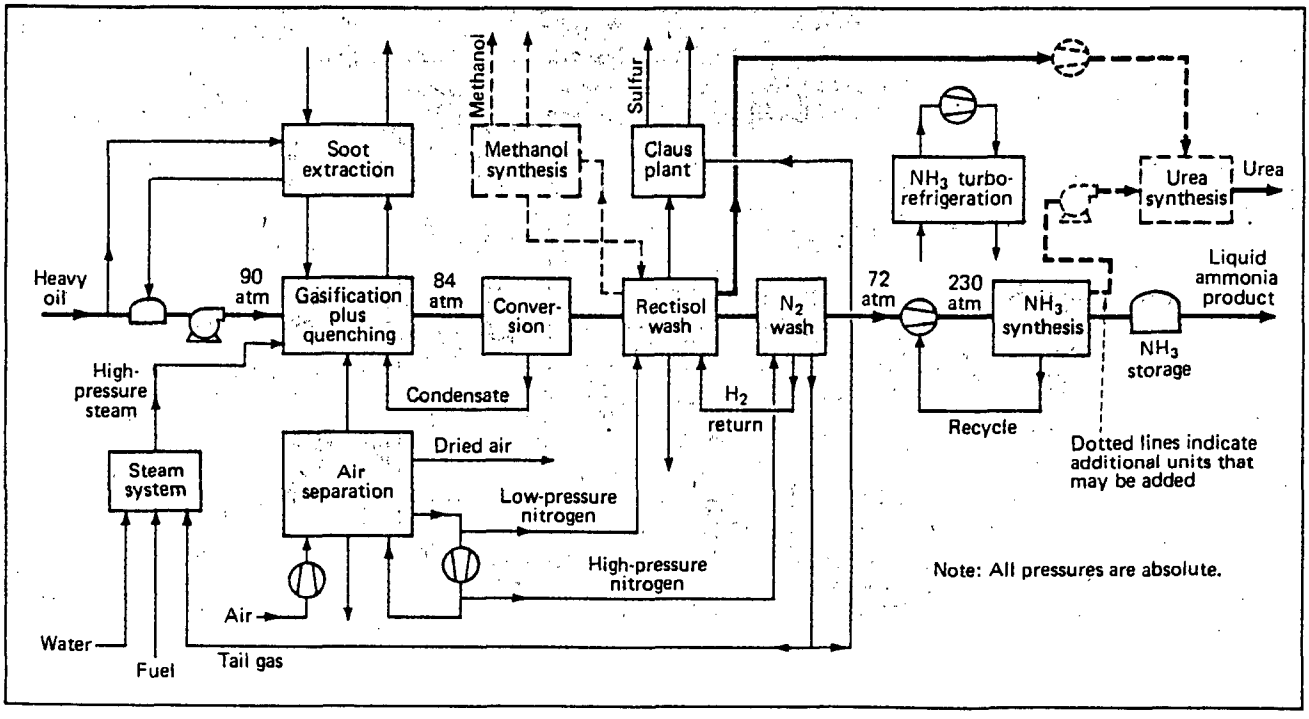


Figure 9 — Heavy oil is used as a feedstock for ammonia and a high gasifier pressure is applied

kWh/nor. m³ (380–510 kWh/ton) for liquid nitrogen [7].

Cryogenic plants can be furnished fully automated. For years, pneumatic control systems were used, but electronic ones are increasingly being installed.

Alternative separation processes

The oldest industrial process for the production of oxygen is water electrolysis, but electric power consumption is so high that, except in special cases, large-scale production is uneconomical. Much research is being devoted to catalytic and thermolytic splitting of water, but to the author's knowledge no commercial process has yet been developed that accomplishes this.

There are alternative air separation processes. One of the most important is pressure-swing adsorption (PSA). There are various pressure-swing adsorption processes, if the expression can be applied to all isothermal processes in which gas is adsorbed at a higher pressure and desorbed at a lower one. For producing smaller amounts of medium-purity oxygen, zeolitic molecular sieves are used frequently. Power consumption is about 0.6 kWh/nor. m³ (380 kWh/ton) for 90%-pure oxygen [12].

In the Bergbauforschung process, activated-carbon molecular sieves are used, mainly to produce nitrogen. The route faces competition from combustion processes for producing inerting gases [13]. An interesting alternative to cryogenic air-separation is the Moltox process [14,15], which selectively absorbs oxygen and nitrogen in a bath of molten-alkali nitrates and nitrites. Membrane systems can be used for separating air into low-purity oxygen (30% oxygen concentration) and nitrogen. Such a process is highly power-effective. For oxygen, the method is used only for enriching combustion air; for nitrogen, for safety blanketing.

As noted previously, atmospheric gases such as oxygen, nitrogen and argon can be pipelined, delivered in high-pressure steel cylinders or transported as liquids in insulated tank wagons. Oxygen is generally sold at a high purity, typically 99.5–99.7%, to eliminate the cost of transporting ballast gas.

Nitrogen is available in very high purtity — 99.9999% ("six nines") — but should be transported only in carefully dried and baked cylinders. Lower-purity gas is often pipelined.

Table III — Of various processes used to absorb gases, Rectisol is the only cryogenic one used

Type	Chemical washes					Physical washes			
	MEA*	DEA†	NH_3	Benfield	Stretford	Water	Selexol	Rectisol	CO_2
Preferred pressure, bar	1–6						5–10	20–120	
Gases to be removed	CO_2, H_2S		CO_2	CO_2	H_2S	CO_2	CO_2, H_2S	CO_2, H_2S, COS	CO_2, H_2S
Selectivity	Limited selectivity						Selective		
Purity obtainable									
CO_2	50–1,000 ppm						1 ppm	1 ppm	
H_2S	1–5 ppm						1 ppm	0.1 ppm	
COS	Restricted purity						1 ppm	0.1 ppm	
Dewpoint	Saturated with water						0° C	−40° C	
Undesirable feed-gas components	O_2						HCN	HCN	
	Acids stronger than CO_2								

*Monoethanolamine
†Diethanolamine

Table IV — Various processes can be used for concentrating hydrogen

Type of process	Products and purity	Recovery rate
Cryogenic		
Condensation	98% H_2	90-95% H_2
Condensation and CH_4-CO split	98% H_2, 99.8% CO	90-95% H_2 96% CO
Methane wash	99% H_2, 1 ppm CO	98% H_2
Nitrogen wash	75% H_2 + 25% N_2	98% H_2
	1 ppm CO, 0.1 ppm CH_4	
Nitrogen wash and N_2-CH_4-Ar separation	75% H_2 + 25% N_2 99.9995% Ar	
Non-cryogenic		
Pressure-swing adsorption	99.5% H_2	85% H_2
Membrane*	Permeate: CO_2, H_2S, H_2O, He, H_2, O_2	
	Residue: CH_4, N_2, CO, C_2, C_3+, Ar	

*Note: Feedgas contains He, H_2, N_2, O_2, Ar, CH_4, CO, C_2, CO_2, H_2O, H_2S and C_2

"Six nines" argon is also available in cylinders. Both nitrogen and argon can be transported as liquids, but the unloading of them requires specially trained personnel to safeguard the high purity of these liquid products.

Cryogenic absorption processes

Methanol is the only important cryogenic absorbent. It is used for acid-gas cleanup to remove CO_2, H_2S, COS, HCN and other gases. Table III lists some absorption processes used to isolate such gases. Of those listed, only the Rectisol process is cryogenic. It has advantages under high gas pressure, high acid-gas content, high flowrates, high product purities and high selectivity for and sulfur compounds. Such conditions exist in the production of synthesis gas [*16*]. Thus, most Rectisol units are found in syn-gas plants.

Fig. 8 shows a Rectisol unit. CO_2 and sulfur compounds are removed together, yet released separately, yielding a CO_2 stream and an H_2S + COS fraction, along with the purified main-product stream. Sulfur compounds can be sent to a Claus (or other) unit.

Hydrogen concentration processes

Table IV shows several processes for concentrating H_2. Selection depends on composition of the feedgas, desired composition and purity of the product, recovery rate, and power consumption. A methane wash is often chosen when a mixture of H_2 and CO is to be separated into CO-free H_2 and highly concentrated CO. The process is very selective, with methane in the hydrogen only 1%. If this amount is undesirable, residual methane can be removed in a temperature-swing adsorption (TSA) unit at cryogenic temperatures [*17*]. The methane "wash" is a condensation rather than a true wash. Membrane separation can be used for hydrogen recovery if concentration and recovery rate need not be high and if components in the feedgas meet membrane-separation criteria — i.e., if the feedgas contains only H_2, CO, N_2 and CH_4.

Syngas plants

In an ammonia plant based on steam reforming, cryogenic H_2-CH_4-Ar separation makes possible not only hydrogen production but also pure-argon recovery. A PSA unit could provide the hydrogen, of course, but it could not yield a stoichiometric N_2:$3H_2$ synthesis stream, a pure-argon fraction, and a highly concentrated fuelgas.

When ammonia is based on partial oxidation, O_2 rather than air as the oxidizing agent is required to avoid too high an N_2 concentration in the syngas, which would disturb purification. In the example shown in Fig. 9, a higher gasifier pressure of 90 bar (1,300 psi) is applied. This requires an internal-compression system for safe delivery of the high-purity O_2. In an oil-from-coal process, such as that used for Sasol II and III, various cryogenic steps are required. Ref. [*18*] details these plants.

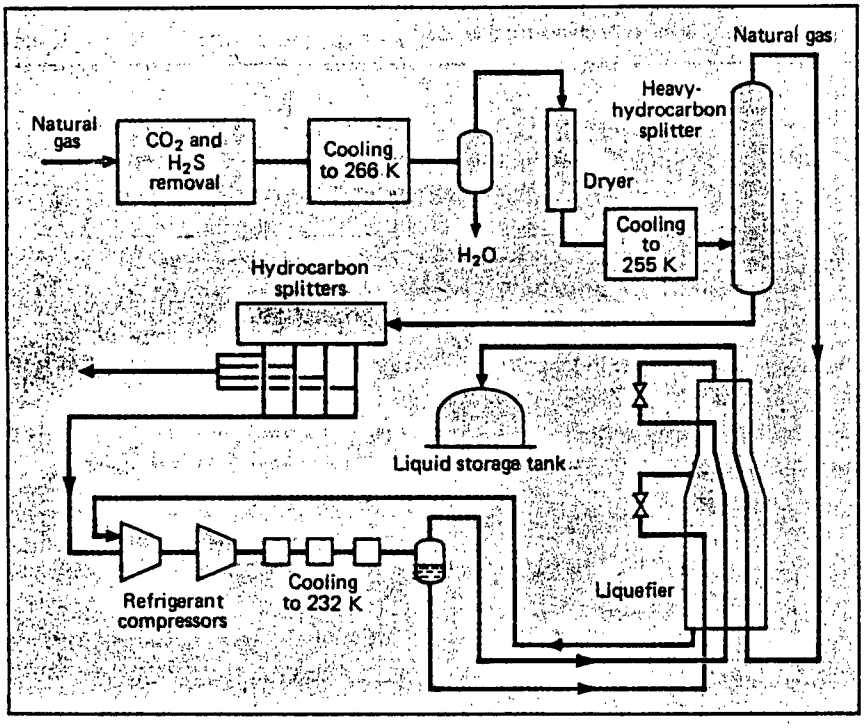


Figure 10 — Simplified flowsheet of a baseload plant to liquefy natural gas

Natural-gas liquefaction

Though the current oil glut has influenced liquefied natural gas (LNG) economics, LNG is still important in the world market [*19*].

Natural gas is liquefied in highly specialized plants [*20*]. Fig. 10 shows a baseload plant, part of an LNG facility that went onstream in Brunei on the island of Borneo in 1972. Annual production is 1 million metric tons. Makeup gas for the liquefaction cycle consists of C_1–C_4 hydrocarbons, which are separated from the gas to be liquefied. Use of a multicomponent-refrigerant cycle provides optimum economics. Specific power consumption is 0.36 kWh/nor. m^3 (450 kWh/short ton) [*21,22*].

In common with other cryogenic liquids, LNG contains a great deal of exergy. Thus, when it is to be regasified and fed into the consumer pipeline grid, the contained cold can be used to liquefy O_2 and N_2 in air-separation plants . Electric power can be produced. Then N_2 is cooled by LNG to –140°C (–220°F) and compressed to a pressure suitable for a hot-gas turbine. The power output of the cycle is doubled by compressing the N_2 at cold, rather than ambient, temperatures.

Natural-gas processing

Cryogenic processes remove components from natural gas (other than methane) that either cause trouble in downstream processing units or have a high value [*23*]. Among the former are hydrogen sulfide, carbon dioxide and nitrogen, when present in small concentrations. More-common valuable components include helium, ethane and C_3 to C_4 hydrocarbons — liquefied petroleum gas (LPG).

Ethylene recovery

Commercial quantities of ethylene have been available since the late 1920s when it was recovered as a byproduct in

cryogenic plants treating coke-oven gas. The main product was ammonia synthesis gas [*24*]. Nowadays, the feedstock is generally ethane or naphtha. The only cryogenic process in a modern ethylene plant is separating hydrogen-methane-ethylene-ethane.

Hydrogen liquefaction

At present, almost all elemental H_2 is used in the gaseous state and is either produced close to the point of consumption or pipelined. Very little is used as liquid. Yet, liquid H_2 has the greatest energy/weight of many fuels. For example, the value is 10,200 Kcal/kg for jet fuel and 28,752 Kcal/kg for liquid H_2. This value makes liquid H_2 useful in flight [*25*].

A self-sustaining hydrogen liquefier is typically used. For better understanding of its operation, however, it is necessary to review a little of the thermodynamics and physical chemistry of hydrogen:

First, the Joule-Thomson effect does not produce cooling with hydrogen at ambient temperatures. At temperatures over 170 K (-154°F), throttling produces instead a *rise* in temperature. Therefore, a hydrogen liquefier requires expansion turbines in its warm section or a liquid-nitrogen precooling section.

Second, all liquefied H_2 must be converted into the *para* state. Third, whatever the case — whether for small or large liquefiers — since all impurities except helium freeze at liquid-hydrogen temperatures, all contaminants must be removed by adsorbers as the H_2 is cooled down.

Influence on noncryogenic processes

Cryogenic plants have always been designed with care due to the high power used. Loss of cold has to be minimized by insulation, and cold must be recovered by heat exchange.

Because we have been profligate with combustion, less care with respect to energy consumption has been exercised in the design of warm processes. Now, concern with conservation similar to that in cryogenics has begun to invade warm-process design. This is not to say that the methodology of cryogenics is required to teach economical design, but its principles can certainly be beneficial.

For example, consider cogeneration. Similar combined processes have long been used in cryogenics. Adiabatic expansion, for example, is often linked with separation. In an air plant, part of the pressurized air is taken from the middle of the main heat exchanger at a temperature that is high compared with the liquefaction temperature. It is sent to the expansion turbine, where it produces mechanical energy while cooling; and then to the low-pressure column, where it participates in the separation. The goals of the hot and cold methods may differ, but the process is really the same.

It is not just process design that has sometimes been pioneered in cold processes, but equipment too. One such case is the coil or helically wound heat exchanger. Coil exchangers with high efficiencies were designed specifically for cryogenic service. Recently, the coil exchanger has formed the basis of a new type of warm reactor. It takes advantage of the countercurrent flow and good heat exchange of the coil design, along with the fact that a catalyst may be placed between the coils. The reactor is specially designed for high heats of formation and small gas flows, in which heat is transferred with high efficiency to the cooling surfaces. A first application has been in catalytic conversion of methane to methanol. The temperature profile is nearly isothermal. For this reason, the equipment is called an isothermal reactor. It contains more catalyst per unit volume than a straight-through-tube design and is made smaller.

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Richard Greene, Editor

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N 10000.00
E 10000.00

N 9969.00
E 9999.91

N 9771.70
E 9999.36

N 8974.88
E 9945.88

N 9884.62
E 9986

N

WIND DATA
SUMMER - 9MPH SOUTHEAST
WINTER - 8MPH NORTH

N.10+000
N.9+800
N.9+600
N.9+400
N.9+200
N.9+000
N.8+800

E.9+800
E.9+600
E.9+400
E.9+200
E.9+000

H.P. FIN GRADE EL. 118'-0"

OFFICE & WHSE.

N 9591.88
E 9771.87

N 9722.0
E 9641.16

N 9655.32
E 864.16

PIPE ALLEY

N 9591.81
E 9679.95

N 9545.16
E 9611.16

H.P. FIN GRADE EL. 118'-0"

N 9576.5
E 9641.16

PRODUCT ALLEY

PRODUCT METERING AREA

N 9276.0
E 9559.0

N 8974.26
E 9514.41

M-1410
EVAP. PIT

TRUCK LOADING

H.P. FIN. GRADE EL. 106'-0"

TK-1403

TK-1402

BURM

M-1405

N 9032.52
M-1404
FLARE STACK

H.P. FIN. GRADE EL. 100'-0"

N 9855.32
E 9376.86

N 9933.63
E 9376.86

E 9376.89

V-1402

N 8688.16
E 9349.62

N 8890.76
E 9317.12

CONTROL BUILDING

E 9393.0 ACCESS

B-104 COMPR. BLDG.

E 9311.0 ACCESS

E 9161.30 ACCESS

ACCESS

N-401 N-501

TRUCK SPOT

TK-803

TK-801

H.P. FIN. GRADE EL. 114'-0"

PIPERACK

N 9276.0
E 9269.0

N 9252.52
E 9233.43

M-1402
SKIM PIT

N 9000.16
E 9164.11

H.P. FIN. GRADE EL. 102'-0"

B-105 ELECTRICAL SUBSTATION

B-101 MAIN ELECTRICAL SUBSTATION

N 9160.68
E 9091.01

PIPERACK

NOTE: PLANT EL. 100'-0" = MSL EL. 5572'-0"

N 9969.60
E 8959.66

N 9933.63
E 8995.96

N 9696.70
E 8991.34

N 9741.80
E 8955.04

N 9696.70
E 8847.25

COOLING TOWER CT-12.01

B-106 CHLORINATOR SHED

ACID STORER

B-107 INHIBITOR

TK-802

B-102 GENERATOR BLDG.

N 9525.02
E 8925.60

N 9160.63
E 8925.60

N 9659.16
E 8847.25

TRUCK SPOT
METHANOL
ACID

N 9086.54
E 8950.50

FIGURE 1

NOTES:

REV.	DATE	DESCRIPTION	APP'D.
O	9-27-86	A.F.C.	JDS
F	9-11-86	ISSUE FOR APPROVAL	
E	8-22-86	ISSUE	

REVISIONS

DRAWN BY: S.G.
CHECKED BY: T.F.C.
APPROVAL:
CLIENT APPROVAL: [illegible] 10/21/86
DATE: 9-27-86
SCALE: 1" = 80'

PAN WEST CONSTRUCTORS, INC.

CLIENT: CONOCO INC.

PLOT PLAN

SAN JUAN BASIN GAS PLANT

BLOOMFIELD NEW MEXICO

JOB: 8310 DWG: 15F4002 100A REV: O

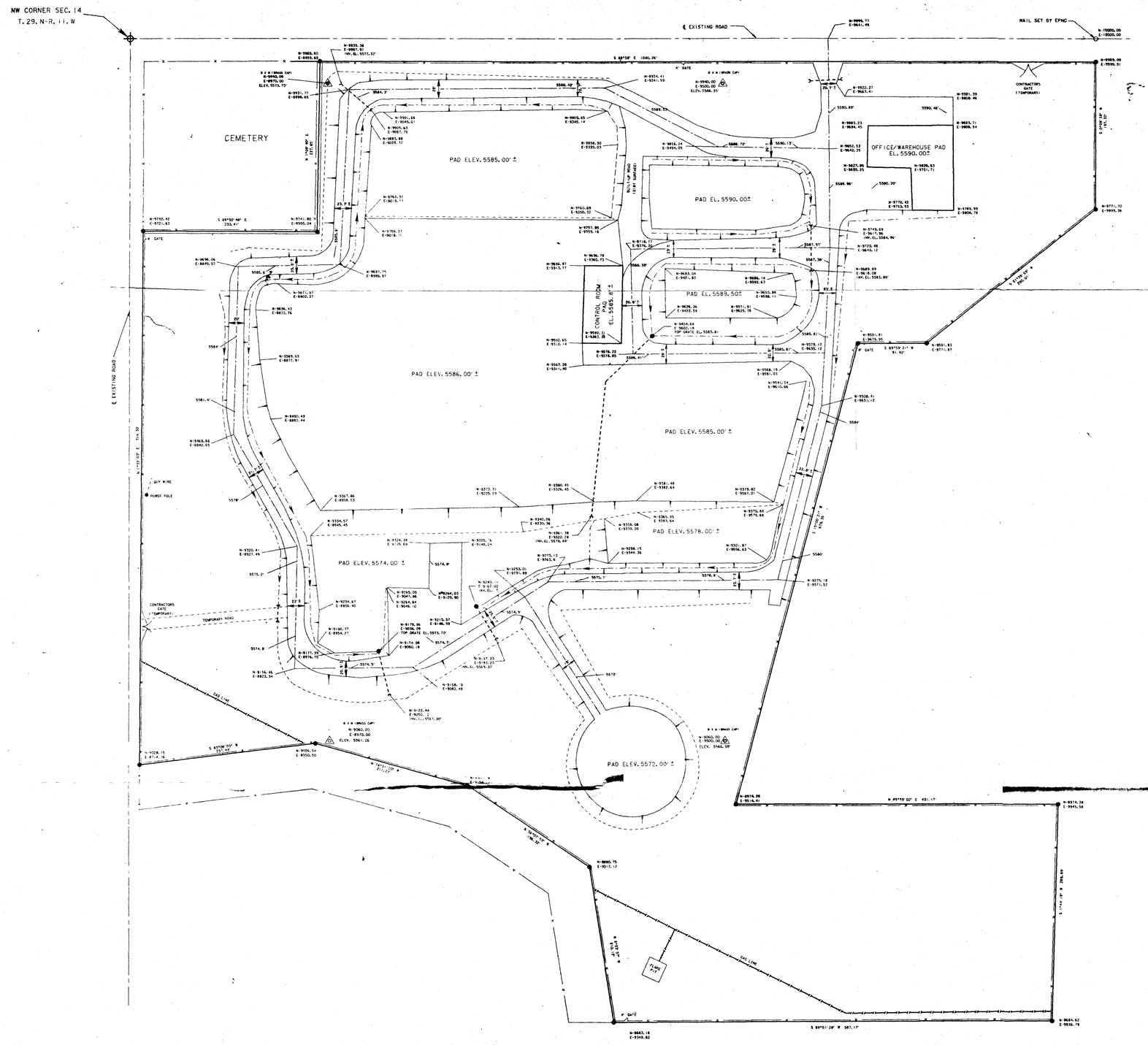

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FIGURE 2

LEGEND

- GRADE LINE
- TOE OF SLOPE
- DITCH LINE
- CULVERTS
- DROP INLET
- 8" GRAVEL

NOTE: ALL CULVERTS ARE 18" CMP

AG-000-025

ISU	DATE	DESCRIPTION	BY	CKD	APD
1	11-26-85	"AS BUILT" FIELD SURVEY	DLP	CJO	

CONOCO INC.
ENGINEERING CENTER
PONCA CITY, OKLAHOMA

BLOOMFIELD, N. M. NGP

PADS, ROADS & DRAINAGE "AS BUILT"
SAN JUAN GAS PLANT

SCALE: 1" = 60'

APPD : C. J. Okun
DATE : 11-26-85

SHT. NO. | UNIT | AREA

NO. NG-000-8401-CV-12-D | ISSUE 1

385/AG000002C. 001

MATERIAL SAFETY DATA SHEET
CHLORINE

I. PRODUCT IDENTIFICATION

MANUFACTURER'S NAME

REGULAR TELEPHONE No.

EMERGENCY TELEPHONE No.

CHEMICAL NAME *Chlorine* FORMULA Cl_2 CHEMICAL FAMILY *Halogen* MOLECULAR WGT. *70.90*

DOT CLASSIFICATION *Non-Flammable Gas* CAS No. *7782-50-5* UN No. *1017*

II. HAZARDOUS INGREDIENTS

Chlorine is one of the chemical elements. The chlorine in shipping containers is 99.5% or higher concentration.

III. PHYSICAL DATA

PHYSICAL STATE IN SHIPPING CONTAINERS *Liquified gas under pressure*

BOILING POINT (1atmos) *$-29.3^{o}F$ ($-34.0^{o}C$)* MELTING POINT *$-149.8^{o}F$ ($-101^{o}C$)*

LIQUID – SPECIFIC GRAVITY @ $0^{o}C$ *1.467* (H_2O = 1) VAPOR PRESSURE (PSIG @ $60^{o}F$) *71*

GAS – VAPOR DENSITY (AIR = 1) *2.5* SOLUBILITY IN WATER - % *Slight*

COLOR *Gas: greenish yellow Liquid: amber* ODOR *Pungent*

IV. FIRE AND EXPLOSION DATA

FLASH POINT — *Nonflammable but does support combustion.*

SPECIAL FIRE FIGHTING PROCEDURES — *Remove chlorine containers from fire zone if possible. Apply water to cool containers except if chlorine is escaping. In presence of chlorine use SCBA and firefighter turnout clothing.*

UNUSUAL FIRE AND EXPLOSION HAZARD — *Many metals ignite in presence of chlorine–for example, steel at about $485^{o}F$. May react to cause fire and/or explosion upon contact with turpentine, ether, ammonia, hydrocarbons, finely divided metals or other flammables.*

V. HEALTH HAZARD INFORMATION

HEALTH HAZARD DATA

ROUTES OF EXPOSURE:

INHALATION — *ACGIH TLV=1ppm (8 hr. time weighted average) Permissible exposure level 1 ppm ceiling. Severe exposures can be fatal. Pungent odor below PEL provides warning of gas presence.*

SKIN CONTACT — *Liquid & Gas; Capable of causing a burn.*

SKIN ABSORPTION — *Not likely a problem because it is a gas at room temperature.*

EYE CONTACT — *Liquid & Gas; Capable of causing a burn.*

INGESTION — *Not likely a problem because it is a gas at room temperature.*

EFFECTS OF OVER EXPOSURE:

ACCUTE — *From mild irritation of eyes, throat and upper respiratory system to possible death from suffocation.*

CHRONIC — *Mild upper respiratory tract irritation. No known chronic effects at or below PEL.*

EMERGENCY AND FIRST AID PROCEDURES:

EYES	*Immediately flush with water at least 15 min. Use no oils or chemical neutralizers. Obtain medical assistance promptly.*
SKIN	*Remove contaminated clothing under shower.*
INHALATION	*Remove from contaminated area. If breathing has ceased, start artificial respiration at once. Obtain medical assistance. Keep patient warm, at rest, comfortable.*
INGESTION	*Not a likely occurrence. Vomiting should be induced.*
NOTES TO PHYSICIAN	*No known antidote. Treatment for inhalation is symptomatic and supportive. Keep patient at rest until respiratory symptoms subside. Sedation for apprehension or restlessness may be considered to prevent pulmonary edema, as well as diuretics and antibiotics to alleviate edema and protect against secondary infection. Administer oxygen under exhalation pressure not exceeding 4cm water to 15 minutes each hour until symptoms subside (except in presence of impending or existing cardiovascular failure).*

VI. REACTIVITY DATA

CHEMICAL REACTIONS	*Chlorine reacts as an oxidizer with most organic materials (except those which are fully halogenated) at room temperature and at higher temperatures with most metals. It reacts with water to produce a mixture of hydrochloric and hypochlorous acids which are corrosive to most metals.*
CORROSION	*Dry chlorine at ambient temperatures is not corrosive to most metals; titanium and tin are highly reactive. Wet chlorine is corrosive to most metals except titanium.*
STABILITY	*Chlorine is one of the chemical elements. It cannot decompose and does not polymerize.*

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:	*Move unprotected personnel upwind or crosswind out of danger area. Isolate leak to whatever extent possible. If a chlorine container is leaking, try to position it so that gas rather than liquid leaks. Using full personal protective equipment, apply emergency kit device if possible. For other than minor leaks immediately implement predetermined emergency plan. Report spills as required to appropriate government authorities. Call CHEMTREC or supplier when help is needed.*
NEUTRALIZING CHEMICALS	*Caustic soda (NaOH); Soda ash (Na_2CO_3); Hydrated lime ($Ca[OH]_2$).*
WASTE DISPOSAL METHOD	*Chlorine gas will disperse to atmosphere leaving no residue.*

VIII. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS	*Sufficient to control to below PEL. Chlorine is heavier than air and tends to collect at ground or floor level.*

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY	*Up to 25 ppm, chemical cartridge (acid gas) respirator with full facepiece or superior; over 25 ppm (or unknown concentration) SCBA or equivalent.*
EYES	*Chemical workers goggles.*
GLOVES	*Non-porous.*
OTHER	*Protective clothing for exposure to liquid chlorine or high concentration of gas. In the open, fireman's "turn out" clothing is recommended.*

IX. SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS

Do not attempt to handle, store or use chlorine without complete review of the Chlorine Institute's **Chlorine Manual**

Obtain medical assistance as soon as possible after exposure, even if injury appears minor.

Leaks always get worse unless corrected promptly.

Chlorine piping and equipment must be thoroughly cleaned of organics and moisture before use.

Keep chlorine piping and handling equipment clean and dry. Always handle chlorine with full regard to its pressure characteristics.

Date: May 2011 (Revised May 1998)

Betz Laboratories, Inc.
4636 Somerton Road, Trevose, Pa. 19047
Betz Material Safety Data Sheet
24 Hour Emergency Telephone (Health or Accident) 215/355-3300

PRODUCT :BETZ 25K SERIES 25176

EFFECTIVE DATE 07-14-87
REV.: SEC.9

PRODUCT APPLICATION : WATER-BASED CORROSION INHIBITOR/DEPOSIT CONTROL AGENT.

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

POTASSIUM HYDROXIDE***(CAUSTIC POTASH);CAS#1310-58-3;CORROSIVE;TOXIC IF ORALLY INGESTED;PEL:NONE;TLV:2.0MG/M3(CEILING).

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: AS IS (APPROX.) 12.8	ODOR: SLIGHT
FL.PT.(DEG.F): >200 SETA(CC)	SP.GR.(70F)OR DENSITY: 1.277
VAPOR PRESSURE(mmHG): ND	VAPOR DENSITY(AIR=1): ND
VISC cps70F: 32	%SOLUBILITY(WATER): ND
EVAP.RATE: ND WATER=1	APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID	FREEZE POINT(DEG.F): 10

-----SECTION 3----------REACTIVITY DATA----------

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

PRODUCT: BETZ 25K SERIES 25176

---SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS ***
MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED CONTACT MAY CAUSE PRIMARY IRRITANT DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
MAY CAUSE REDNESS OR ITCHING OF SKIN.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER.WET AREA MAY BE SLIPPERY.IF SO,SPREAD SAND OR GRIT.

DISPOSAL INSTRUCTIONS***
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

.ODUCT: BETZ 25K SERIES 25176

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

VENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.
RECOMMENDED SKIN PROTECTION***
RUBBER GLOVES
WASH OFF AFTER EACH USE.REPLACE AS NECESSARY
RECOMMENDED EYE PROTECTION***
SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***
KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.
PROTECT FROM FREEZING.IF FROZEN,THAW COMPLETELY AND MIX THOROUGHLY PRIOR TO USE
HANDLING INSTRUCTIONS***
IMMEDIATELY REMOVE CONTAMINATED CLOTHING,WASH BEFORE REUSE
ALKALINE.DO NOT MIX WITH ACIDIC MATERIAL.

---SECTION 9----------FEDERAL REGULATIONS----------

OSHA(29CFR)-USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTIONS 1910.132-1910.134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
REPORTABLE QUANTITY: AS IS PRODUCT (HAZARDOUS SUBSTANCE)
3,916 GAL(POTASSIUM HYDROXIDE)
TREAT AS OIL SPILL
RCRA(40CFR): IF DISCARDED,THIS MATERIAL BEARS HWI# D002
DOT(49CFR)CLASSIFICATION: NOT APPLICABLE
NFPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - ALK ; PE- B

****

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HAROLD M. HERSH
ENVIRONMENTAL INFORMATION COORDINATOR

Betz Laboratories, Inc
4636 Somerton Road, Trevose, Pa. 19047
Betz Material Safety Data Sheet
24 Hour Emergency Telephone (Health or Accident) 215/355-3300

PRODUCT :SLIMICIDE C31

EFFECTIVE DATE 02-05-87
LATEST VERSION

PRODUCT APPLICATION : SOLVENT-BASED MICROBIAL CONTROL AGENT.

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

DODECYLGUANIDINE HYDROCHLORIDE***(DGH);CAS#13590-97-1;CORROSIVE;PEL:NONE; TLV:NONE.

METHYLENE BIS(THIOCYANATE)***CAS#6317-18-6;POTENTIAL REPRODUCTIVE TOXIN; PEL:NONE;TLV:NONE.

ISOPROPYL ALCOHOL***(IPA);CAS#67-63-0;FLAMMABLE LIQUID;CHRONIC OVEREXPOSURE MAY CAUSE LIVER AND KIDNEY TOXICITY;PEL/TLV:400PPM.

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: AS IS (APPROX.) 3.2	ODOR: NONE
FL.PT.(DEG.F): 120 SETA(CC)	SP.GR.(70F)OR DENSITY: 1.095
VAPOR PRESSURE(mmHG): 24	VAPOR DENSITY(AIR=1): ND
VISC cps70F: 64	%SOLUBILITY(WATER): 100
EVAP.RATE: ND WATER=1	APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID	FREEZE POINT(DEG.F): <-30

-----SECTION 3----------REACTIVITY DATA----------

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

PRODUCT: SLIMICIDE C31

---SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
SEVERE IRRITANT TO THE SKIN.SKIN SENSITIZER

ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES, POSSIBLY CORROSIVE

ACUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE
VAPORS,GASES,MISTS AND/OR AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED EXPOSURES MAY CAUSE REPRODUCTIVE SYSTEM TOXICITY.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
INHALATION MAY CAUSE IRRITATION OF MUCOUS MEMBRANES AND RESPIRATORY TRACT; SKIN CONTACT CAUSES SEVERE IRRITATION OR BURNS.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CLOTHING.WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER FOR 15 MIN.IMMEDIATELY CONTACT PHYSICIAN

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA.APPLY NECESSARY FIRST AID TREATMENT.IMMEDIATELY CONTACT A PHYSICIAN.

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DILUTE CONTENTS OF STOMACH.INDUCE VOMITING BY ONE OF THE STANDARD METHODS.IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBANT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER.THE CONTAMINATED ABSORBANT SHOULD BE CONSIDERED A PESTICIDE AND DISPOSED OF IN AN APPROVED PESTICIDE LANDFILL.SEE PRODUCT LABEL STORAGE AND DISPOSAL INSTRUCTIONS.
REMOVE IGNITION SOURCES.FLUSH AREA WITH WATER.SPREAD SAND OR GRIT.

DISPOSAL INSTRUCTIONS***
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
BURY IN AN APPROVED PESTICIDE FACILITY OR DISPOSE OF IN ACCORDANCE WITH LABEL INSTRUCTIONS

E EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER.FOAM OR WATER CREATE A SLIPPERY CONDITION.SPREAD SAND OR GRIT

ODUCT: SLIMICIDE C31

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

VENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,
USE RESPIRATOR WITH ORGANIC VAPOR,HIGH EFFICIENCY PARTICULATE CARTRIDGES
RECOMMENDED SKIN PROTECTION***
GAUNTLET-TYPE RUBBER GLOVES,CHEMICAL RESISTANT APRON
REPLACE AS NECESSARY
RECOMMENDED EYE PROTECTION***
SPLASH PROOF CHEMICAL GOGGLES.FACE SHIELD

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***
KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.
KEEP AWAY FROM FLAMES OR SPARKS.GROUND DRUMS DURING FILLING OR
DISCHARGE OPERATIONS
HANDLING INSTRUCTIONS***
IMMEDIATELY REMOVE CONTAMINATED CLOTHING,WASH BEFORE REUSE
COMBUSTIBLE.ACIDIC.DO NOT MIX WITH ALKALINE MATERIAL.

---SECTION 9----------FEDERAL REGULATIONS----------

FIFRA(40CFR):EPA REG.NO. 3876- 121
OSHA(29CFR)-USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTIONS
1910.132-1910.134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE
SUPPLIED AIR RESPIRATORS.
REPORTABLE QUANTITY: AS IS PRODUCT (HAZARDOUS SUBSTANCE)
NOT APPLICABLE
RCRA(40CFR): IF DISCARDED,THIS MATERIAL BEARS HWI# D001
DOT(49CFR)CLASSIFICATION: COMBUSTIBLE
NFPA/HMIS : HEALTH - 3 ; FIRE - 2 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE- D

****

THIS DOCUMENT IS PROVIDED TO SUPPLY ALL THE INFORMATION NECESSARY TO COMPLY WITH OSHA HAZARD COMMUNICATIONS REGULATIONS, AND RIGHT-TO-KNOW REQUIREMENTS. WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF, BETZ LABORATORIES MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

HAROLD M. HERSH
ENVIRONMENTAL INFORMATION COORDINATOR

EXXON CHEMICALS

MATERIAL SAFETY DATA SHEET

EXXON CHEMICAL AMERICAS • P.O. BOX 3272, HOUSTON, TEXAS 77001
A division of EXXON CHEMICAL COMPANY, a division of EXXON CORPORATION

11/24/86

NO. 776690

SECTION I PRODUCT IDENTIFICATION & EMERGENCY INFORMATION

PRODUCT NAME

COREXIT 7668 7-7669

CHEMICAL NAME

Not applicable: Blend

CHEMICAL FAMILY

Glycol Surfactant

PRODUCT APPEARANCE

Light Amber Liquid
Mild Odor

EMERGENCY TELEPHONE NUMBERS: EXXON CHEMICAL AMERICAS 713-870-6000
CHEMTREC 800-424-9300

SECTION II HAZARDOUS COMPONENTS OF MIXTURES

THE PRECISE COMPOSITION OF THIS MIXTURE IS PROPRIETARY INFORMATION. A MORE COMPLETE DISCLOSURE WILL BE PROVIDED TO A PHYSICIAN OR NURSE IN THE EVENT OF A MEDICAL EMERGENCY. THE FOLLOWING COMPONENTS ARE DEFINED HAZARDOUS IN ACCORDANCE WITH 29CFR1910.1200:

OSHA HAZARD	COMPONENT
Combustible	Oxyalkylated Polyol

SECTION III HEALTH INFORMATION AND PROTECTION

FIRST AID & NATURE OF HAZARD

EYE CONTACT:
Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.
Slightly irritating but does not injure eye tissue.

SKIN CONTACT:
Flush with large amounts of water; use soap if available.
Remove grossly contaminated clothing, including shoes, and launder before reuse.
If irritation persists, seek medical attention.
Low order of toxicity.
Frequent or prolonged contact may irritate and cause dermatitis.

INHALATION:
Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.
Irritating to eyes and respiratory tract in high concentrations.

INGESTION:
First aid is normally not required.
No hazard in normal industrial use.

ACUTE TOXICITY DATA IS AVAILABLE UPON REQUEST

PERSONAL PROTECTION

For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where overexposure by inhalation may occur and engineering, work practice or other means of exposure reduction are not adequate, approved respirators may be necessary.

VENTILATION

The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated.

SECTION IV FIRE & EXPLOSION HAZARD

FLASHPOINT DEG. F : 176 METHOD: Seta CC
FLAMMABLE LIMITS-LEL: UEL: NOTE: Not applicable
AUTOIGNITION TEMPERATURE DEG. F : NOTE: Not available

GENERAL HAZARD

Combustible Liquid, can form combustible mixtures at temperatures at or above the flashpoint.
Toxic gases will form upon combustion.
Empty product containers may contain product residue. Do not pressurize, cut, heat, weld or expose containers to flame or other sources of ignition.

FIRE FIGHTING

Use water spray to cool fire exposed surfaces and to protect personnel.
Isolate "fuel" supply from fire.
Use foam, dry chemical, or water spray to extinguish fire.
Respiratory and eye protection required for fire fignting personnel.
Avoid spraying water directly into storage containers due to danger of boilover.

HAZARDOUS COMBUSTION PRODUCTS

Smoke, Fumes, Carbon Monoxide, Carbon Dioxide

SECTION V SPILL CONTROL PROCEDURE

LAND SPILL

Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is an EPA hazardous substance (See Section X, Page 4) notify the U.S. EPA if appropriate.
Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.
Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

WATER SPILL

Material will sink. No immediate action required - consult an expert.
Consult Health Information and Protection (Section III) regarding possible hazards .
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

SECTION VI NOTES

No notes applicable.

SECTION VII TYPICAL PHYSICAL & CHEMICAL PROPERTIES

SP. GRAVITY 1.01 @ 60.1/60.1 REF. TEMP., F DENSITY, LBS/GAL: 8.43 @ 61	VAPOR PRESSURE mmHg @ F 55.003 @ 100 Calculated
SOLUBILITY IN WATER, WT. % at F Insoluble	VISCOSITY OF LIQUID, cST at F Not available
SP. GRAVITY OF VAPOR, at 1 ATM AIR=1 >1.0	FREEZING MELTING POINT/RANGE, F -20 Pour Point
EVAPORATION RATE, n-BU ACETATE=1 1.5, Calculated	BOILING POINT/RANGE, F 212 Calculated

SECTION VIII REACTIVITY DATA

STABILITY? Stable	HAZARDOUS POLYMERIZATION OCCUR? Will not occur
CONDITIONS TO AVOID INSTABILITY None	CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION Not applicable

MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY
Strong Oxidizing Agents. May dissolve some plastics or rubber.

HAZARDOUS DECOMPOSITION PRODUCTS
None

SECTION IX TRANSPORT & STORAGE

ELECTROSTATIC ACCUMULATION HAZARD
Unknown. Use proper grounding procedure

STORAGE TEMPERATURE, F Not available	LOADING/UNLOADING TEMPERATURE, F Not available
STORAGE TRANSPORT PRESSURE, mmHg Not available	VISCOSITY AT LOADING/UNLOADING TEMPERATURE, cST Not available

SECTION X HAZARD CLASSIFICATION

U.S. DOT CLASSIFICATION Combustible Liquid	EPA HAZARDOUS SUBSTANCE AMOUNT LBS. Not applicable

ADDITIONAL INFORMATION
Not Available

REFERENCE NUMBER	DATE PREPARED	SUPERCEDES ISSUE DATE
HDHA-A-10658	NOVEMBER 24, 1986	AUGUST 01, 1986

FOR ADDITIONAL PRODUCT INFORMATION CONTACT YOUR TECHNICAL SALES REPRESENTATIVE
FOR ADDITIONAL HEALTH/SAFETY INFORMATION CALL 713-870-6885

Rick McCalip

Inter-Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

CONOCO, INC.
Attn: Mitchell Scarbrough
Plant Foreman
San Basin Gas Processing Plant
P.O. Box 217
Bloomfield, NM 87413

23 May, 1988

Dear Mr. Scarbrough:

On May 03, 1988, our laboratory received one (1) sample for analysis. Sample was analyzed for parameters requested.

EP Toxicity, as defined in 40 CFR 261 App. I, requries a leaching procedure and metal analyses by assigned methods. The analyses of your sample followed these guidelines.

The methods used in your analyses are referenced as follows.

Leaching procedure, 40 CFR part 261, App. II

Parameter:	Method:	Reference:
Arsenic	SW-846	7061
Barium	SW-846	7080
Cadmium	SW-846	7131
Chromium	SW-846	7091
Lead	SW-846	7421
Mercury	SW-846	7471
Selenium	SW-846	7741
Silver	SW-846	7760
pH	SW-846	9040
Ignitability	SW-846	1010
Reactivity	SW-846	9030

Digestion sample preparation	Method	Reference
Acid Leachate	1330 & 1310	SW-846

Method Reference is: Tests Methods for Evaluating Solid Waste: Physical/Chemical Methods, USEPA. September 1986 Amended.

Should you have any questions, please feel free to call at your convenience.

Sincerely,

Ron R Richardson

Ron R. Richardson
Lab Director

Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Conoco, Inc.
Attn: Mitchell Scarbrough
Plant Foreman
San Juan Basin Gas Processing Plant
P.O. Box 217
Bloomfield, NM 87413

24 May, 1988

RE: EP Tox Analysis

Sample Site: Sulfa Check
Lab No: F1321
Date Sampled: 05/03/88
Date Received:05/03/88

Parameter	Sample Results (mg/l)	Report Limit (mg/l)	Maximum Concentrations (mg/l)
Arsenic	0.151	0.005	5.0
Barium	0.2	0.5	100
Cadmium	<0.002	0.002	1.0
Chromium	<0.02	0.02	5.0
Lead	<0.02	0.02	5.0
Mercury	<0.005	0.005	0.2
Selenium	<0.005	0.005	1.0
Silver	<0.01	0.01	5.0
Flash Point	>140	140	140
Reactivity, mg/kg H2S	<0.1	0.1	
pH, (s.u.)	7.5		<2 & >12.5

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

July 15, 1986

Oil Conservation Division
New Mexico Energy and Minerals Department
State Land Office Building
P.O. Box 2088
Santa Fe, NM 87501

Attn: Mr. Dave Boyer

Re: Discharge Plan for Conoco Inc.'s San Juan Basin Gas Plant

Dear Mr. Boyer:

As we discussed at our meeting of Friday, July 11, 1986, the following items are being provided for inclusion in the Discharge Plan:

	Item	Insert At:
1.	Signature Page	Section I
2.	Table of Underground Storage Tanks	Section II
3.	Ground Water Well Data	Appendix H

Thank you for your cooperation in the preparation of this Discharge Plan. If you have any questions, please call Ms. Terry Killian at (713) 293-1188.

Sincerely yours,

Laura G. Daniel
Coordinator

/nl

LD-0463

WESTERN TECHNOLOGIES INC.

300 West Boston Avenue
Las Vegas, Nevada 89102
(702) 382-7483

LABORATORY REPORT

Client: Conoco, Inc.
P.O. Box 2197
Houston, TX 77252

Lab/Invoice No: 31840008-1
Date of Report: 9/26/84

Project: Safe Drinking Water Analysis
Location: San Juan Gas Plant
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 9/18/84
Source: See Below — Submitted By: S. Wood/WTI — Date: 9/18/84
Test Procedure: Standard Methods — Authorized By: M. Morgan — Date: 9/18/84

RESULTS

COMPONENT	No. 1 Sample A 45.5'	No. 2 Sample B 55.5'	LIMIT
Arsenic, mg/L	<0.5 ?	<0.5 ?	0.5
Barium, mg/L	<1.0	<1.0	1.0
Cadmium, mg/L	<.01	.01	.01
Chloride, mg/L	71	128	250
Copper, mg/L	.04	.04	1.0
Total Chromium, mg/L	<.04	<.04	.05
Iron, mg/L	.13	.28	.30
Lead, mg/L	.72	.17	.05
Manganese, mg/L	.12	.19	.05
Mercury, mg/L	<.0005	<.0005	.002
Nitrate, mg/L	11	12	10
Selenium, mg/L	<.005	<.005	.01
Silver, mg/L	.02	.02	.05
Sulfate, mg/L	10,200	14,400	250
Sodium, mg/L	4,660	6,090	N/A
Zinc, mg/L	.02	.02	5.0
Fluoride, mg/L	2.1	2.3	1.6
Total Dissolved Solids, mg/L	16,300	21,300	500
Alkalinity as $CaCO_3$, mg/L	414	186	N/A
Hardness as $CaCO_3$, mg/L	612	732	N/A
Calcium	113	135	N/A
Magnesium	80	96	N/A

Copies to: Client (2)

By: Francis Xavier Suarez
Francis X. Suarez, Chemist

bjc
0201C

WESTERN TECHNOLOGIES INC.

300 West Boston Avenue
Las Vegas, Nevada 89102
(702) 382-7483

LABORATORY REPORT

Client: Conoco, Inc.
P.O. Box 2197
Houston, TX 77252

Lab/Invoice No: 31840008-2
Date of Report: 9/26/84

Project: Safe Drinking Water Analysis
Location: San Juan Gas Plant
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 9/18/84
Source: See Below — Submitted By: S. Wood/WTI — Date: 9/18/84
Test Procedure: Standard Methods — Authorized By: M. Morgan — Date: 9/18/84

RESULTS

COMPONENT	No. 3 Sample C 31.5'	No. 4 Sample D 15.0'	LIMIT
Arsenic, mg/L	< 0.5 ?	< 0.5	0.5
Barium, mg/L	< 1.0	< 1.0	1.0
Cadmium, mg/L	< .01	.02 ⌓	.01
Chloride, mg/L	108	69	250
Copper, mg/L	.04	< .03	1.0
Total Chromium, mg/L	< .04	< .04	.05
Iron, mg/L	.22	< .04	.30
Lead, mg/L	.27 ⌓	.06 ⌓	.05
Manganese, mg/L	.12	.39 ⌓	.05
Mercury, mg/L	< .0005	< .0005	.002
Nitrate, mg/L	25 ⌓	9.6	10
Selenium, mg/L	< .005	< .005	.01
Silver, mg/L	.02	.01	.05
Sulfate, mg/L	12,800 ⌓	4,800 ⌓	250
Sodium, mg/L	3,820	1,840	N/A
Zinc, mg/L	.06	.02	5.0
Fluoride, mg/L	2.0 ⌓	1.9 ⌓	1.6
Total Dissolved Solids, mg/L	13,800 ⌓	7,900 ⌓	500
Alkalinity as $CaCO_3$, mg/L	287	338	N/A
Hardness as $CaCO_3$, mg/L	664	669	N/A
Calcium	111	126	N/A
Magnesium	94	86	N/A

Copies to: Client (2)

By: Francis Xavier Suarez
Francis X. Suarez, Chemist

bjc
0201C

WESTERN TECHNOLOGIES INC.

300 West Boston Avenue
Las Vegas, Nevada 89102
(702) 382-7483

LABORATORY REPORT

Client: Conoco, Inc.
P.O. Box 2197
Houston, TX 77252

Lab/Invoice No: 31840008-3
Date of Report: 9/26/84

Project: Safe Drinking Water Analysis
Location: San Juan Gas Plant
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 9/18/84
Source: See Below — Submitted By: S. Wood/WTI — Date: 9/18/84
Test Procedure: Standard Methods — Authorized By: M. Morgan — Date: 9/18/84

RESULTS

COMPONENT	No. 6 Sample F 15.0'	LIMIT	
Arsenic, mg/L	<0.5 ?	0.5	0.1
Barium, mg/L	<1.0	1.0	
Cadmium, mg/L	< .01	.01	
Chloride, mg/L	56	250	
Copper, mg/L	< .03	1.0	
Total Chromium, mg/L	< .04	.05	
Iron, mg/L	.04	.30	1.0
Lead, mg/L	.12	.05	
Manganese, mg/L	.23	.05	.2
Mercury, mg/L	<.0005	.002	
Nitrate, mg/L	2.4	10	
Selenium, mg/L	<.005	.01	.05
Silver, mg/L	<.01	.05	
Sulfate, mg/L	2,630	250	600
Sodium, mg/L	940	N/A	
Zinc, mg/L	.02	5.0	10
Fluoride, mg/L	1.4	1.6	
Total Dissolved Solids, mg/L	4,400	500	
Alkalinity as $CaCO_3$, mg/L	397	N/A	
Hardness as $CaCO_3$, mg/L	466	N/A	
Calcium	129	N/A	
Magnesium	35	N/A	

Copies to: Client (2)

By: Francis Xavier Suarez
Francis X. Suarez, Chemist

bjc
0201C

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

LABORATORY REPORT

Client: Conoco, Inc. 30859
P.O. Box 2197
Houston, Texas 77252

Job No.:
Lab/Invoice No.: 31840008
Date of Report: 10/09/84

Project: San Juan Gas Plant
Location: Bloomfield, New Mexico
Material/Specimen: Water — Sampled By: S. Wood/WTI — Date: 09/18/84
Source: Test Wells — Submitted By: S. Wood/WTI — Date: 09/18/84
Test Procedure: — Authorized By: M. Morgan/Client — Date: 09/18/84

TEST WELLS

Hole Number	Date Drilled	Total Depth, Ft.	Water Depth on 9/18/84, Ft.
#1	8/29/84	78 ft.	45.5
#2	8/29/84 8/30/84	70 ft.	55.5
#3	8/30/84	62 ft.	31.5
#4	8/31/84	32 ft.	15.0
#5	8/31/84 9/05/84	78 ft.	None
#6	8/31/84	30 ft.	15.0

Copies to: Client
/db

TABLE II B.1

UNDERGROUND STORAGE TANKS

Tank No.	V-807	V-806	V-1402	TK-1301
Capacity (gal.)	4200	950	600	3000
Material	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
Corrosion Protection				
Internal	None	None	None	None
External	Epoxy coat	Epoxy coat	Epoxy coat	Epoxy coat
Commodity stored	DEA	30% DEA	Diesel	Waste Lube Oil

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

Conoco, Inc.
P.O. Box 2197
Houston, Texas 77252

October 10, 1984

Attention: Mr. Michael J. Morgan, P.E.
Project Manager, Operations Engineering
and Economics Division
Natural Gas Products

Project: San Juan Gas Plant
Bloomfield, New Mexico
CED Project No. Ag-000-25C

Invoice No. 31840008

Pursuant to your request an examination of the subsurface water was completed at the proposed San Juan Gas Plant to be located north of Bloomfield, New Mexico. The purpose of this examination was to establish a base datum for environmental evaluations.

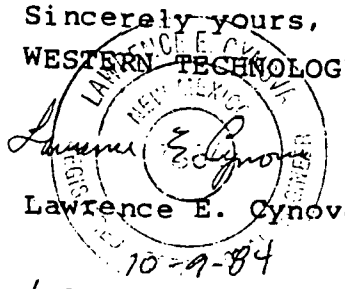
Six test wells were drilled at the locations shown on the drawing submitted under a cover letter by Randy Lauritson of Conoco dated August 24, 1984. The wells varied in depth from 30 to 78 feet depending on the depth at which water was encountered.

Conoco, Inc.
San Juan Gas Plant
Invoice No. 31840008

Water was sampled from five of the six test wells on September 18, 1984 and submitted to our chemistry laboratory for Safe Drinking Water Analysis. Test well No. 5 was drilled to 78 feet but no water was found in the test well after setting for 13 days. The results of these water tests are enclosed.

If you should have any questions concerning this report or if we may be of additional service, please contact us.

Sincerely yours,
WESTERN TECHNOLOGIES INC.



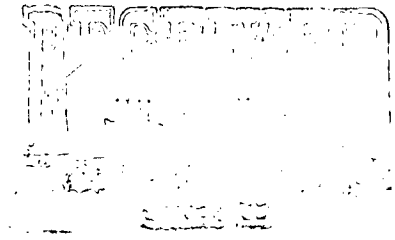
Lawrence E. Cynova, P.E.

/slm

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

July 10, 1986



Dave Boyer, Chief
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
P.O. Box 2088
Santa Fe, NM 87501

Re: DISCHARGE PLAN;
CONOCO INC., NATURAL GAS PRODUCTS DEPARTMENT;
SAN JUAN BASIN GAS PLANT;
BLOOMFIELD, SAN JUAN COUNTY

Dear Mr. Boyer:

Enclosed please find the subject discharge plan. The plan was developed according to the OCD's January 1985 "Guidelines for the Preparation of Ground Water Discharge Plans at Natural Gas Processing Plants".

Thank you for your assistance in developing this plan. If you have any questions regarding this submittal, please contact the undersigned at (713) 293-1123, or Ms. Terry Killian at (713) 293-1188.

Very truly yours,

Laura G. Daniel
Coordinator

Barbara

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

August 14, 1987

Mr. J. David Duran
New Mexico Environmental Improvement Division
Air Quality Bureau
P. O. Box 968
Santa Fe, NM 87504

Re: Progress Report
Amine Regenerator Vent Stack
Conoco Inc., San Juan Gas Plant

Dear Mr. Duran:

As we reported by our letter of May 14, 1987, the vent gas from the amine treating system at the San Juan Gas Plant exceeds the allowable concentration of H_2S specified by New Mexico Air Quality Regulation 627. To resolve this difficulty, we have identified two possible alternatives to reduce emissions of H_2S to below the 10 ppm limitation.

Alternative 1: A new flare may be installed to totally combust the vent gas stream. This will provide total conversion of the H_2S in the vent gas stream to SO_2.

Because of the SO_2 emissions which would result from the operation of this flare, it appears that our emissions permit may require a revision to include this new source. Approximately 2.0 pounds per hour (8.8 tons per year) of SO_2 emissions are calculated to result from the combustion of the H_2S in the vent gas stream.

Alternative 2: A "Sulfa-Check"(TM) absorption system may be installed to remove the H_2S from the vent stream, allowing the vent gas to be discharged directly to the atmosphere in compliance with NMAQR 627.

This absorption system has an advantage over the flare since it could be done without adding a source of SO_2 to the plant emissions inventory. We are currently investigating the operating experience of others using the system and considering the proper disposal alternatives for the absorbing solution.

We feel strongly that one of these two alternatives will be selected in the next 30 to 45 days. Either system should well satisfy the requirements of NMAQR 627.

RMC/RM-0746

We truly appreciate your patience as we work through these items. A new plant seems to always have a few "bugs" to work out. If you have any need for additional information or would like to discuss anything, please call me at (713) 293-1123.

Sincerely,

Rick McCalip

Rick McCalip
Coordinator

RMC/RM-0746

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

May 14, 1987

Mr. J. David Duran
New Mexico Environmental Improvement Division
Air Quality Bureau
P.O. Box 968
Santa Fe, NM 87504

Re: Additional Permitting Issues
Conoco Inc., San Juan Gas Plant
Air Quality Permit 613

Dear Mr. Duran:

Two issues remain to be resolved with the air emissions permit for the San Juan Gas Plant. Now that the emissions testing is completed for the turbines and the limitations have been adjusted, resolution of these remaining items should put us in good compliance status.

1. Permitting of Emergency/Stand-By Sources

On September 30 and October 9, 1986, letters were received by Conoco indicating intent by the NMEID to amend Permit 613 to include the diesel powered emergency generator and fire water pump. It does appear that a public notice was made of this revision, however we have not received any subsequent correspondence on the result of the public notice.

2. Amine Regenerator Vent Stack

An amine treating system is used at the San Juan Gas Plant to remove carbon dioxide from an ethane/propane product stream fractionated from recovered liquids. Carbon dioxide is extracted from the hydrocarbon stream, then released from the amine by heating. The carbon dioxide is then vented to atmosphere from the amine regenerator (still) vent stack.

During performance testing of the amine unit in April, we discovered that trace quantities of H_2S in the inlet gas are remaining in this ethane/propane stream and are being removed by the Amine treater. Both inlet and product natural gas continue to meet pipeline specifications for H_2S content (less than 0.25 grains of H_2S per 100 cubic feet of gas). However, traces of H_2S removed from the 500 million cubic feet of processed natural gas become more significant when concentrated in only 3.6 million cubic feet per day of carbon dioxide in the vented gas.

The amine vent gas has been found to contain approximately 80 ppm by volume of H_2S. New Mexico Air Quality Regulation 627 appears applicable to this vent, and therefore, this vent gas must be passed through a device capable of oxidizing the hydrogen sulfide to sulfur dioxide.

We are investigating the appropriate disposition of this vent gas. The most likely option is to vent the gas into the plant flare system, however, we must review the design of the existing flare system and the ability of the flare burner tip to properly deal with the carbon dioxide without smoking. We estimate 90 days will be necessary to complete this study, and we will report our plans for achieving compliance with AQR 627 no later than August 15, 1987.

Our calculations indicate that 2.0 pounds per hour (8.8 tons per year) of SO_2 emissions will result from combustion of the H_2S from the vent stack. When the proper disposition is determined, a permit revision will be necessary to include these emissions.

If you need further information or would like to discuss these items, please call me at (713) 293-1123.

Sincerely,

Rick McCalip

Rick McCalip
Coordinator

/nl

Environmental & Energy Services
Natural Gas Products Department

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

November 3, 1986

Mr. Roger C. Anderson
Environmental Engineer, Oil Conservation Division
New Mexico Energy and Minerals Department
P.O. Box 2088
Santa Fe, NM 87501-2088

Dear Mr. Anderson:

Enclosed for your files is a copy of the Spill Prevention Control and Countermeasure Plan for the Conoco Inc., San Juan Gas Plant.

Sincerely,

Rick McCalip

Rick McCalip
Coordinator

/nl

Attachment

86-1346-C

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

HEALTH ENVIRONMENT — STATE OF NEW MEXICO

754-wpx

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 1346 A+B
DATE REC. 11-20-86
PRIORITY

PHONE(S): 827-5812
USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer
CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 6 / / / 8 / 4 / 0 SPS

SAMPLE TYPE: WATER [X], SOIL [ ], FOOD [ ], OTHER: _____ CODE: _____

COUNTY: SAN JUAN ; CITY: BLOOMFIELD CODE: _____

LOCATION CODE: (Township-Range-Section-Tracts) 29N / / W / 4 + 2 2 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- [ ] (753) Aliphatic Purgeables (1-3 Carbons)
- [X] (754) Aromatic & Halogenated Purgeables
- [ ] (765) Mass Spectrometer Purgeables
- [ ] (766) Trihalomethanes

Other Specific Compounds or Classes

- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

EXTRACTABLE SCREENS

- [ ] (751) Aliphatic Hydrocarbons
- [ ] (760) Organochlorine Pesticides
- [ ] (755) Base/Neutral Extractables
- [ ] (758) Herbicides, Chlorophenoxy acid
- [ ] (759) Herbicides, Triazines
- [ ] (760) Organochlorine Pesticides
- [ ] (761) Organophosphate Pesticides
- [ ] (767) Polychlorinated Biphenyls (PCB's)
- [ ] (764) Polynuclear Aromatic Hydrocarbons
- [ ] (762) SDWA Pesticides & Herbicides

RECEIVED
DEC 8 0 1986
OIL CONSERVATION DIVISION
SANTA FE

Remarks: CONOCO BLOOMFIELD PLANT
Monitor Well #1

FIELD DATA:

pH=_____; Conductivity= 1700 umho/cm at 15 °C; Chlorine Residual=_____mg/l

Dissolved Oxygen=_____mg/l; Alkalinity=_____mg/l; Flow Rate_____ ____/____

Depth to water _____ft.; Depth of well_____ft.; Perforation Interval _____-_____ft.; Casing:_____

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Bailed 5 times

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): D. Boyer Method of Shipment to the Lab: Hand carried

This form accompanies 2 Septum Vials, _____ Glass Jugs, and/or _____ _____

Samples were preserved as follows:

- [ ] NP: No Preservation; Sample stored at room temperature.
- [X] P-Ice Sample stored in an ice bath (Not Frozen).
- [ ] P-$Na_2S_2O_3$ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from _____ to _____

at (location) _____ on ____/____/____ - ____:____ and that

the statements in this block are correct. Evidentiary Seals: Not Sealed [ ] Seals Intact: Yes [ ] No [ ]

Signatures _____ _____

For OCD Use: Date Owner Notified 1/2/86 Phone or (Letter?) _____ Initials RA

ANALYSES PERFORMED

LAB. No.: OR- 1346

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
- ☒ (754) Aromatic & Halogenated Purgeables
- ☐ (765) Mass Spectrometer Purgeables
- ☐ (766) Trihalomethanes

Other Specific Compounds or Classes

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (760) Organochlorine Pesticides
- ☐ (755) Base/Neutral Extractables
- ☐ (758) Herbicides, Chlorophenoxy acid
- ☐ (759) Herbicides, Triazines
- ☐ (760) Organochlorine Pesticides
- ☐ (761) Organophosphate Pesticides
- ☐ (767) Polychlorinated Biphenyls (PCB's)
- ☐ (764) Polynuclear Aromatic Hydrocarbons
- ☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
Halogenated Purgeables	ND		
Benzene	2		
* DETECTION LIMIT *	1 ppb	+ DETECTION LIMIT +	

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT
T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)
[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS: One other compound was detected by the aromatic screen that was not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☐. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 26 Nov 86. Analyst's signature: JA Finney

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: _____

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

859-wnf

DATE RECEIVED 11 | 20 | 86	LAB NO. WC 5398	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 11 | 18 | 86	SITE INFORM-ATION ►	Sample location CONOCO BLOOMFIELD PLANT	
Collection TIME 1410		Collection site description MONITOR WELL #1	
Collected by — Person/Agency ANDERSON / BAILEY / OLSON / OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

RECEIVED
DEC 30 1986
OIL CONSERVATION DIVISION
SANTA FE

Station/ well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Pump ☐ Dipped ☐ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected) 1700 µmho	Water Temp. (00010) 15 °C	Conductivity at 25°C (00094) µmho

Field comments BAILED 5 TIMES

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted 1

☐ **NF:** Whole sample (Non-filtered) ☒ **F:** Filtered in field with 0.45 µmembrane filter ☐ **A:** 2 ml H_2SO_4/L added

☒ **NA:** No acid added ☐ Other-*specify:* ☐ A: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NF, NA		Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)		µmho	
☐ Total non-filterable residue (suspended) (00530)		mg/l	
☐ Other:			
☐ Other:			
☐ Other:			

F, NA		Units	Date analyzed
☒ Calcium (00915)	120.0	mg/l	12-1
☒ Magnesium (00925)	39.5	mg/l	12-1
☒ Sodium (00930)	2168	mg/l	12-4
☒ Potassium (00935)	936	mg/l	12-4
☒ Bicarbonate (00440)	431	mg/l	11/26
☒ Chloride (00940)	54	mg/l	12/2
☒ Sulfate (00945)	4633	mg/l	12/16 11/26
☒ Total filterable residue (dissolved) (70300)	7130	mg/l	12/4
☒ Other: CO_3	0		11/26

NF, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l	
☐ Ammonia-N total (00610)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Chemical oxygen demand (00340)		mg/l	
☐ Total organic carbon ( )		mg/l	
☐ Other:			
☐ Other:			

F, A-H_2SO_4			
☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ( )		mg/l	
☐ Other:			

Analyst	Date Reported	Reviewed by
	12 | 16 | 86	CO

Laboratory remarks pH = 7.77

SLD 726 (12/84)

FOR OCD USE -- Date Owner Notified 1/7/86 Phone or letter? _____ Initials RCA

New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

HEAVY METALS & GENERAL WATER CHEMISTRY & NITROGEN ANALYSIS

DATE RECEIVED 11 | 20 | 86	LAB NO. HM 2348	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235	
Collection DATE 11 | 18 | 86	SITE INFORM-ATION ►	Sample location CONOCO, BLOOMFIELD PLANT	
Collection TIME 1410		Collection site description MONITOR WELL #1	
Collected by — Person/Agency ANDERSON / BAILEY / CLEAN / OCD			

SEND FINAL REPORT TO ►

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

Station/ well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Pump ☐ Dipped ☐ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected) 1700 µmho	Water Temp. (00010) 15 °C	Conductivity at 25°C (00094) µmho

Field comments: BAILED 5 TIMES

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 1

☐ **NF:** Whole sample (Non-filtered) ☒ **F:** Filtered in field with 0.45 µmembrane filter ☐ **A:** 2 ml H_2SO_4/L added

☐ **NA:** No acid added ☐ Other-*specify:* ☐ A: 5ml conc. HNO_3 added ☒ A: 4ml fuming HNO_3 added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: As			☐ Sodium (00930)	mg/l	
☒ Other: Se			☐ Potassium (00935)	mg/l	
☒ Other: ICAP			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H_2SO_4			**F, A-H_2SO_4**		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ( )	mg/l		☐ Total Kjeldahl-N ( )	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ( )	mg/l				
☐ Other:					
☐ Other:					

Analyst | Date Reported 12 \| 31 \| 86 | Reviewed by Jim Ashley

Laboratory remarks

SLD 726 (12/84)

FOR OCD USE -- Date Owner Notified 1/7/86 Phone or letter? _____ Initials RA

ICAP SCAN

SLD Lab No. HM 2349 Reviewed by: Jim Ashley

Analyst JB 12/5/86 Date Reported: 12/31/86

ELEMENT	ICAP VALUE(mg/l)	AA VALUE(mg/l)
Aluminum	<0.1	
Barium	<0.1	
Beryllium	<0.1	
Boron	0.2	
Cadmium	<0.1	
Calcium	240.	
Chromium	<0.1	
Cobalt	<0.1	
Copper	<0.1	
Iron	<0.1	
Lead	<0.1	
Magnesium	33.	
Manganese	0.18	
Molybdenum	<0.1	
Nickel	<0.1	
Silicon	4.5	
Silver	<0.1	
Strontium	3.3	
Tin	<0.1	
Vanadium	<0.1	
Zinc	<0.1	
Arsenic		0.024
Selenium		0.005
Mercury		

SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

Conoco Inc.
San Juan Basin Plant
Bloomfield, New Mexico

October, 1986

TABLE OF CONTENTS

SPCC PLAN

SAN JUAN BASIN PLANT

SPCC PLAN

SAN JUAN BASIN PLANT

I. FACILITY INFORMATION AND CERTIFICATION

A. Facility Description and Location

1. Name and Address of Owner/Operator:

   San Juan Basin Plant
   Conoco Inc., Natural Gas Products Department
   P.O. Box 2197, Humber 3048
   Houston, TX 77252
   (713) 293-1123

2. Facility Contact:

   W. V. Thompson, Plant Manager
   P. O. Box 3070
   Bloomfield, NM 87413
   (505) 632-1831

3. Location:

   The plant is located 1.5 miles north of Bloomfield, NM, off Highway 44, in NW 1/4, NW 1/4 Section 14, Township 29N, Range 11W

4. Type of Operation:

   Conoco Inc. and Tenneco Oil constructed the San Juan Basin Plant in 1986. Conoco, as operator of the facility, processes 500 million cubic feet per day of natural gas for recovery of ethane, propane, butane, and condensate (natural gasoline).

B. Certification

1. Management Approval

   The SPCC Plan will be implemented, as herein described, in accordance with applicable laws and regulations.

E. L. Oshlo
Signature

E. L. Oshlo
Name

Manager-Operations
Title

10/27/86
Date

2. Certification

The undersigned hereby certifies that, having examined this SPCC Plan and being familiar with the provisions of 40 CFR Part 112, this Plan has been prepared in accordance with good engineering practices.

BERNARD M. TUSS
Printed Name of Registered Professional Engineer

Signature of Registered Professional Engineer

Registration No.: CE 859

State: CALIF.

Date: 10/27/86

II. SPILLS AND SPILL SOURCES

A. Inventory of Spill Events

The San Juan Gas Plant is scheduled to begin operation in October, 1986, therefore, no spill events have occurred. Such spill events will be described in this Section of the Plan in subsequent revisions.

B. Potential Spill Sources

Spills of oil can occur from storage tanks, process vessels and piping, the oil/water separation sump, and from storage areas for drums of lubricating oils.

Attachment 1 is a summary table of storage tanks at the facility showing the capacity of each.

Attachment 2 provides the pumping rate for transfer and loading pumps and an estimated discharge prior to emergency shut down.

To assist with predictions of the direction a spill will flow, two figures are attached. Figure 1 is the general plot plan of the facility with process equipment, offices and tanks indicated. Figure 2 shows the elevation of the concreted areas, drainage culvert and ditch grading with direction of flow, and the roadways providing access within the facility. In general, drainage is from northeast to southwest.

III. CONTAINMENT, DRAINAGE CONTROL AND DIVERSIONARY STRUCTURES

All process transfer and storage equipment is provided with secondary containment for oil. Tanks are surrounded by earthen dikes with sufficient capacity to hold the maximum capacity of the largest tank with at last two feet of freeboard. Process areas are sited on graded concrete pads with drainage culverts to stormwater collection. A dike is constructed along the southwest property line to prevent any oil escape from the facility as a whole. In the unlikely event of oil reaching this barrier, a third party cleanup will be authorized to remove any retained oil. A list of available contractors is included in Attachment 3.

IV. DEMONSTRATION OF IMPRACTICABILITY

Secondary containment has been provided, adequate to reasonably protect navigable waterways from the discharge of oil. Therefore, no demonstration of impracticability is required.

V. CONFORMANCE WITH APPLICABLE GUIDELINES

A. Facility Drainage

Because of the relatively small quantity of rainfall expected at the plant site, drainage systems can be simple yet provide for adequate control of oil. Processing areas are located on graded concrete slabs which drain to a wastewater collection system. A gravity oil/water separator collects oil which is removed by a permanently mounted lift pump to slop oil storage. Wastewater from the separator is transferred to a storage tank by one of two permanently mounted lift pumps.

Tank dikes are constructed with locked drain valves for positive retention of collected water or released oil. Dikes are drained only after visual inspection.

Other areas inside the facility drain via open ditches toward the southwest property line where an earthen dike will prevent discharge of any collected oil.

Discharge of process area stormwater is not expected except through the Bloomfield wastewater treatment plant.

B. Bulk Storage Tanks

All bulk storage tanks are constructed of welded carbon steel, in conformance with API and ASME standards.

Tanks are diked with adequate secondary containment to hold the full capacity of the largest tank in each diked area, plus one foot of freeboard. The dike for the wastewater and oil tanks is constructed of compacted natural soil providing sufficient impermeability for the relatively short time they would be required to contain any spilled oil. Other tanks are diked with concrete walls. Dikes are fitted with locked drain valves.

Four below-grade storage tanks are used and are protected from corrosion with an exterior coating.

C. Facility Transfer Operations, Pumping and In-Plant Process

Piping is inspected daily for leaks or other indications that unusual corrosion or conditions may exist. Underground piping is wrapped for corrosion protection. Out-of-service lines are blind-flanged or capped at terminal ends.

Pipe supports are constructed to allow free movement of piping during expansion and contraction, with a minimum of abrasion.

D. Facility Rail Tank Car and Tank Truck Loading/Unloading Rack

No such facilities are used at the plant.

E. Inspections and Records

Annual inspections are to be made to assure maintenance and function of those facilities intended to prevent the discharge of oil. Records of these inspections are kept in the facility files.

F. Security

The perimeter of the facility is fenced with six-foot chain link fence with barbed wire strands on top. Lighting is provided adequately in the area for gates and around the processing area for night operation. During periods when minimal plant staffing is necessary, entrance gates are closed and locked.

G. Personnel Training and Spill Prevention Procedures

At least annually, all employees will attend a review of this SPCC Plan. The general procedures and equipment necessary for oil spill prevention will be discussed. This review will be conducted by the Plant Manager. Records of these sessions, indicating attendees, will be maintained in the facility files.

ATTACHMENT 1

TANKS

Tank No.	Name	Size	Capacity (Bbl)	Material Stored
TK-801	Amine Storage Tank	15'6" OD x 16'	500	DEA
TK-802	Water Storage Tank	15'6" OD x 16'	500	Water for Cooling Tower
TK-803	Waste/Amine/Water Storage	15'6" OD x 16'	500	Stormwater/Washwater from Gas Treating Area
TK-1401	Methanol Storage Tank	12' OD x 10'	200	Methanol
TK-1402	Slop Oil Tank	15'6" OD x 16'	500	Slop Oil
TK-1403	Process Wastewater Tank	15'6" OD x 16'	500	Stormwater/Washwater from Equipment Foundations

ATTACHMENT 2

PUMPS

Pump No.	Name	Rated Discharge (GPM)	Maximum Discharge* (Gal)	Manufacturer
601 A, B, C	Demethanizer Bottoms	313	1,565	Bingham
701 A, B, C	(Same As Above)			
801 A, B, C	Amine Circulation	300	1,500	Bingham
802 A, B	Amine Still Reflux	45	225	Lawrence
803	Amine Make-up	50	250	Worthington
804	Amine Drain Tank	50	250	Bingham
805 A, B	Amine Sump	100	500	Bingham
901 A, B, C	De-ethanizer Reflux	184	920	Bingham
902 A, B, C	EPBC Product Booster	650	3,250	Bingham
903 A, B, C, D	EPBC Product to Pipeline	325	1,625	Goulds/Gaso
904 A, B, C	PBC Product Booster	175	875	Bingham
905 A, B, C	PBC Product to Pipeline	175	875	Goulds/Gaso
906	PBC Product Rerun	38	190	Sunflo
1001	Propane Make-up	10	50	Sunflo
1101 A, B, C	Hot Oil	1,900	9,500	Bingham
1201 A, B, C	Cooling Water Circulation	6,000	30,000	Layne & Bowler
1301	Diesel Transfer	19	95	Blackmer
1401	Methanol Injection	5	25	Goulds/Gaso
1402	Waste Lube Oil Drain Tank	48	240	Bingham
1403	Closed Drian	100	500	Bingham
1404	Slop Oil	27	135	Lawrence
1405 A, B	Process Wastewater	60	300	Lawrence
1406	Flare Knockout Drum	50	250	Bingham
1407	Demineralized Water	60	300	Worthington

* Calculated assuming full rate discharge for 5 minutes prior to discovery and shutdown.

ATTACHMENT 3

Oil Spill Response Contractors

Pads, Booms, Etc, - Supplies

Garner Environmental, Inc.
8930 Lawndale, Suite B
Houston, TX 77012
(713) 921-2432

Illinois Chemical Corporation
P.O. Box E
Highland Park, Illinois 60035
(312) 433-1145

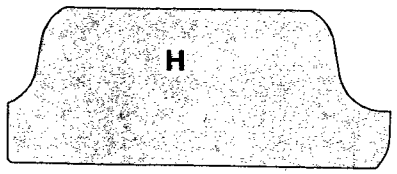
Moore Engineering and Sales, Inc.
3620 South Galopago Street
Englewood, Colorado 80110
(303) 789-1009

Spill Control Company
Sorbent Sciences Division
828 North Grand Avenue
Covina, California 91724
(213) 339-1259

3M Company
2121 Santa Anna Avenue
Dallas, TX 75228
(214) 327-7311

Vacuum Trucks

Chief Transport Co.
P.O. Box 358
604 W. Pinion
Farmington, NM 87401
(505) 325-1845, 325-2396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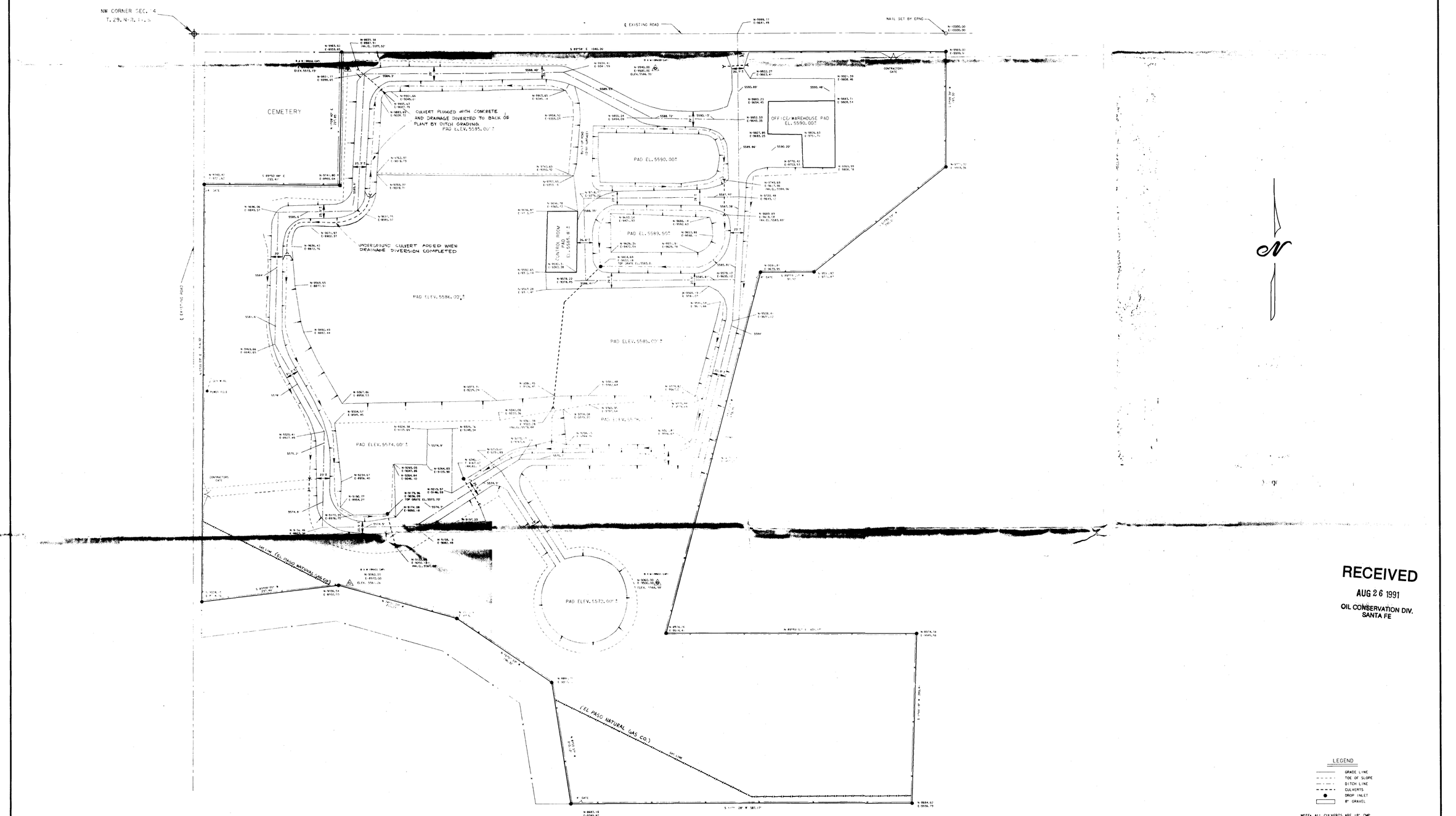


RECEIVED
AUG 26 1991
OIL CONSERVATION DIV.
SANTA FE

LEGEND
- GRADE LINE
- TOE OF SLOPE
- DITCH LINE
- CULVERTS
- DROP INLET
- 8" GRAVEL

NOTE: ALL CULVERTS ARE 18" CMP

-40 0 40 80 120 160
SCALE IN FEET

AG-000-825

ISU	DATE	DESCRIPTION	BY	CKD	APD
2	8-22-90	ADDED CULVERT	MSR	TLK	
1	11-26-85	"AS BUILT" FIELD SURVEY	DLP	[illegible]	CJO

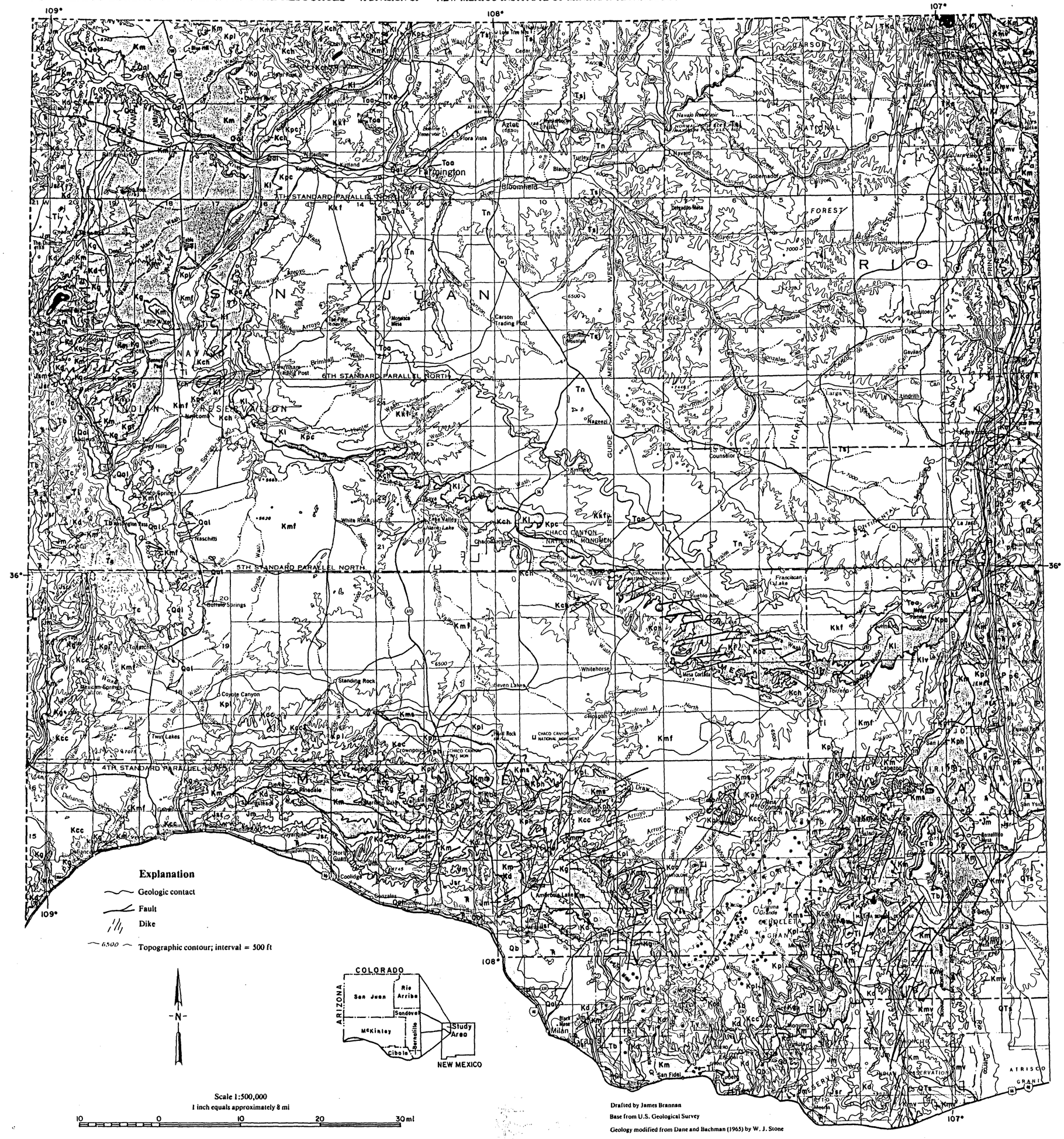
CONOCO INC.
ENGINEERING CENTER
PONCA CITY, OKLAHOMA

BLOOMFIELD, N.M. NDP

PADS, ROADS & DRAINAGE "AS BUILT"
SAN JUAN GAS PLANT

APPD : C. J. O'Rear	SHT. NO.	UNIT	AREA
DATE : 11-26-85			
NO. NG-000-8401-CV-12-D			ISSUE 2

305/AG000002C.001



GEOLOGIC UNITS

(see text for descriptions)

Quaternary

Qal Alluvium; includes landslide deposits (east side of Chuska Mountains), terrace deposits (San Juan River valley)

Qb Basalt

Quaternary/Tertiary

Qts Santa Fe Group and younger alluvium, undifferentiated (Rio Grande valley)

Tertiary

Ti Intrusions, dikes

Tb Basalt

Tv Volcanics other than basalt

Tc Chuska Sandstone

Tsj San Jose Formation

Tn Nacimiento Formation

Toa Ojo Alamo Sandstone

Tertiary/Cretaceous

Tka Animas Formation

Cretaceous

Kkf Fruitland Formation–Kirtland Shale, undifferentiated

Kpc Pictured Cliffs Sandstone

Kl Lewis Shale

Kmv Mesaverde Group, undifferentiated

***Kch** Cliff House Sandstone

***Klv** La Ventana Tongue, Cliff House Sandstone

***Kmf** Menefee Formation

***Kpl** Point Lookout Sandstone

Kms Satan Tongue, Mancos Shale

***Kph** Hosta Tongue, Point Lookout Sandstone

***Kcc** Crevasse Canyon Formation

Kmm Mulatto Tongue, Mancos Shale

***Kg** Gallup Sandstone

Km Mancos Shale, undifferentiated

***K** Dakota Sandstone; includes Burro Canyon Formation (northeast)

*in Mesaverde Group

Jurassic

Jm Morrison Formation

Jsr San Rafael Group, undifferentiated; includes Entrada Sandstone, Todilto Limestone, Summerville Formation, Cow Springs Sandstone/Bluff Sandstone, in ascending order

Triassic

Ṯ Triassic rocks, undifferentiated; includes Chinle Formation and overlying Glen Canyon Group

Paleozoic

P Permian rocks, undifferentiated; includes Abo Formation (south), lower Cutler Formation (north), DeChelly Sandstone, Yeso Formation, Glorieta Sandstone, San Andres Limestone, in ascending order

P̃ Pennsylvanian rocks, undifferentiated; includes Molas Formation, Pinkerton Trail Formation, Paradox Formation (northwest), Honaker Trail Formation, in ascending order

Precambrian

pC Precambrian rocks, undifferentiated

WATER-YIELDING CHARACTERISTICS*

Aquifer

Locally an aquifer or contains aquifer

Aquitard

Poorly known or outside study area

*See table 14 (inside front cover) for summary of aquifer characteristics

Hydrogeologic map of the San Juan Basin, New Mexico

WASTEWATER TREATMENT AGREEMENT

This Wastewater Treatment Agreement is made and entered into as of the 24th day of FEBRUARY, 1988, (the "Agreement"), between the Conoco, Inc., San Juan Gas Processing Plant ("Conoco"), and the City of Bloomfield, New Mexico ("the City").

ARTICLE I

EFFECTIVE DATES

This Agreement shall be effective as of this 24th day of FEBRUARY, 1988, and, except as provided by Article V herein, shall remain effective for a period of three years ending therefore on the 24 day of FEBRUARY, 1991.

ARTICLE II

DEFINITIONS

As used in this Agreement, the following terms shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

Section 2.1 "Agreement" means this Wastewater Treatment Agreement between Conoco and the City, dated the date written above, and all Exhibits attached hereto.

Section 2.2 "Cooling Tower Blowdown" means the stream of purged wastewater from the operation of the circulating cooling water system at the San Juan Gas Processing Plant.

Section 2.3 "Domestic Wastewater" means sanitary sewage wastes collected from the rest rooms, kitchen, and office areas

of the San Juan Gas Processing Plant.

Section 2.4 "Parties" means both Conoco and the City.

Section 2.5 "Party" means either Conoco or the City, depending upon the context in which the term is used.

Section 2.6 "Stormwater" means the water resulting from rainfall runoff from the processing and storage areas of the San Juan Gas Processing Plant.

Section 2.7 "Washwater" means water collected from the processing and storage areas of the San Juan Gas Processing Plant resulting from maintenance and cleaning activities.

Section 2.8 "Wastewater" means the combined streams of all wastewaters discharged from the San Juan Gas Processing Plant to the City of Bloomfiled, New Mexico, Wastewater Treatment System. The streams to be combined include Cooling Tower Blowdown, Domestic Wastewater, Stormwater, and Washwater.

Section 2.9 "Wastewater Treatment" means the receipt, treatment, and proper discharge of treated wastewaters by the City of Bloomfield, New Mexico, Wastewater Treatment System, in accordance with applicable regulations and permits.

Section 2.10 "Wastewater Treatment System" means the piping and treatment equipment operated by the City of Bloomfield, New Mexico for the receipt, treatment, and discharge of municipal and industrial wastewaters.

ARTICLE III

PERFORMANCE

Section 3.1 The City will provide Wastewater Treatment for Wastewater from the Conoco, Inc., San Juan Gas Processing Plant.

Section 3.2 Conoco Will discharge Wastewater to the City in accordance with the quantity limitations listed in Exhibit A and the quality limitations listed in Exhibit B.

Section 3.3 The City will provide analytical testing of wastewaters after Wastewater Treatment to assure compliance with all regulations, permit conditions, and limitations imposed upon the City. The City will provide analytical testing of Wastewater prior to treatment, according to the list of tests, and at such frequency, as shown in Exhibit C.

Section 3.4 Conoco will provide analytical testing of Wastewater discharged to the City by Conoco, according to the list of tests, and at such frequency, as shown in Exhibit D.

Section 3.5 The City of Bloomfield at the Superintendent's discretion will collect 24-Hours time Proportional Sample of water discharged from Conoco Plant to the City of Bloomfield collection system.

Sampling will be determined by past performance.

Section 3.6 Conoco will install and maintain in good working order an effluent flow meter for use by the City in determining the quantity of Wastewater discharged to the Wastewater Treatment System.

ARTICLE IV

REPORTING

Section 4.1 Conoco will provide the results of analyses perfomed under Section 3.4, above, to the City within 10 days of their receipt by Conoco. A report shall be made at least once each calendar quarter, ending on the last day of March, June, September and December of each year.

Section 4.2 The City will provide the results of analyses performed under Section 3.3, above, on the Wastewater received by the City from Conoco prior to treatment, within 30 days of the completion of analysis.

Section 4.3 Conoco will, as soon as possible after recognition, report any upset, abnormal operation, emergency, or other condition that could reasonably be expected to result in adverse impact upon the operation of the City Wastewater Treatment System.

ARTICLE V

COST REIMBURSEMENT

Section 5.1 Conoco will pay for the treatment of the Wastewater at a rate of fifteen hundred dollars ($1,500.00) per month. Quantities of Wastewater shall be measured by a flow meter installed according to Section 3.6, above, and in accordance with Section 18.54-(4) of the City Code of the City of Bloomfield (as amended).

Section 5.2 Conoco will provide sampling and analytical services as described in Sections 3.4 and 3.5, above, for

Wastewater discharged to the City free of charge.

Section 5.3 For analytical testing of Wastewater prior to treatment, as described in Section 3.3, above, Conoco shall reimburse the City according to the charges shown in Exhibit C. The City will invoice Conoco for the costs incurred as a result of such testing, and Conoco shall provide appropriate payment within 30 days of the date of receipt of the invoice.

Section 5.4 Conoco and the City shall review the monthly rate being charged on a semi-annual basis. At such time, the parties may change the rate by mutual agreement in writing. If, upon review, the parties cannot agree upon the monthly rate to be charged, either party may terminate this agreement to be effective in thirty (30) days upon written notice to the other party.

ARTICLE VI

DAMAGES

In the event Conoco discharges or causes to discharge any substance or material which results in an adverse impact upon the operation of the City Wastewater System, Conoco shall promptly pay the City all actual and consequential damages as a result of said discharge.

ARTICLE VII

ATTORNEY'S FEES

In the event the City incurs attorney's fees or costs to

enforce the terms of this Agreement or attorney's fees, costs, fines or penalties as a result of a third-party action due to the non-compliance of the terms of this Agreement by Conoco, the City shall be paid any such attorney's fees, costs, fines and penalties by Conoco.

ARTICLE VIII

ASSIGNMENT

Neither Party may assign this Agreement without prior written consent of the other Party. Neither Party shall unreasonably withhold its consent to the assignment of this Agreement.

ARTICLE IX

GOVERNING LAW

All provisions of this Agreement shall be governed by and construed in accordance with the Federal Regulations and the laws of the State of New Mexico, excluding any conflicts-of-law rule or principle that might apply the laws of another jurisdiction.

ARTICLE X

MISCELLANEOUS PROVISIONS

Section 10.1 The Section headings contained in this Agreement are for the convenience of the Parties only and shall not be interpreted as part of this Agreement.

Section 10.2 This Agreement shall not be modified except by written instrument executed by duly authorized representatives

of the respective parties.

Section 10.3 Waiver by one Party of the other's breach of any provision of this Agreement shall not be deemed a waiver of any subsequent or continuing breach of such provision or of the breach of any other provision or provisions hereof.

Section 10.4 This Agreement may be renewed or extended upon the mutual agreement and written verification of both parties.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

CITY OF BLOOMFIELD

By: R.T. Toliver
R.T. Toliver
Mayor

ATTEST:

By: Patsy Milligan
Patsy Milligan
City Clerk

CONOCO, INC.

By: William Thompson
William Thompson
Plant Supervisor

ATTEST:

By: Patsy Milligan - Notary
Comm. exp - 9-28-90

EXHIBIT A

QUANTITY LIMITATIONS
WASTEWATER DISCHARGED BY THE
SAN JUAN GAS PROCESSING PLANT
TO THE CITY OF BLOOMFIELD

	TYPICAL AVERAGE GPM*	MAXIMUM GPD*
Domestic Wastewater	1	1440
Cooling Tower Blowdown	125	180000
TOTAL	126	181440

Conoco agrees not to discharge stormwater and washwater into the City of Bloomfield collection system.

*GPM means gallons per minute
*GPD means gallons per day

EXHIBIT B

QUALITY LIMITATIONS
WASTEWATER DISCHARGED BY THE
SAN JUAN GAS PROCESSING PLANT
TO THE CITY OF BLOOMFIELD

PARAMETER		MAXIMUM CONCENTRATION mg/l
Biochemical Oxygen Demand (5-day)		200
Chemical Oxygen Demand		500
Oil and Grease (Freon Ext.)		35
Total Suspended Solids		200
Phosphates		15
Nitrates		20
pH (Standard Units)	Max.	8.6
	Min.	6.6

Total Dissolved Solids: The difference of influent total dissolved solids and the effluent total dissolved solids will not be greater than 1,000.

EXHIBIT C

ANALYTICAL TESTS TO BE DONE
BY THE CITY OF BLOOMFIELD
ON WASTEWATER FROM CONOCO
PRIOR TO TREATMENT

PARAMETERS

Analyses to be done monthly:

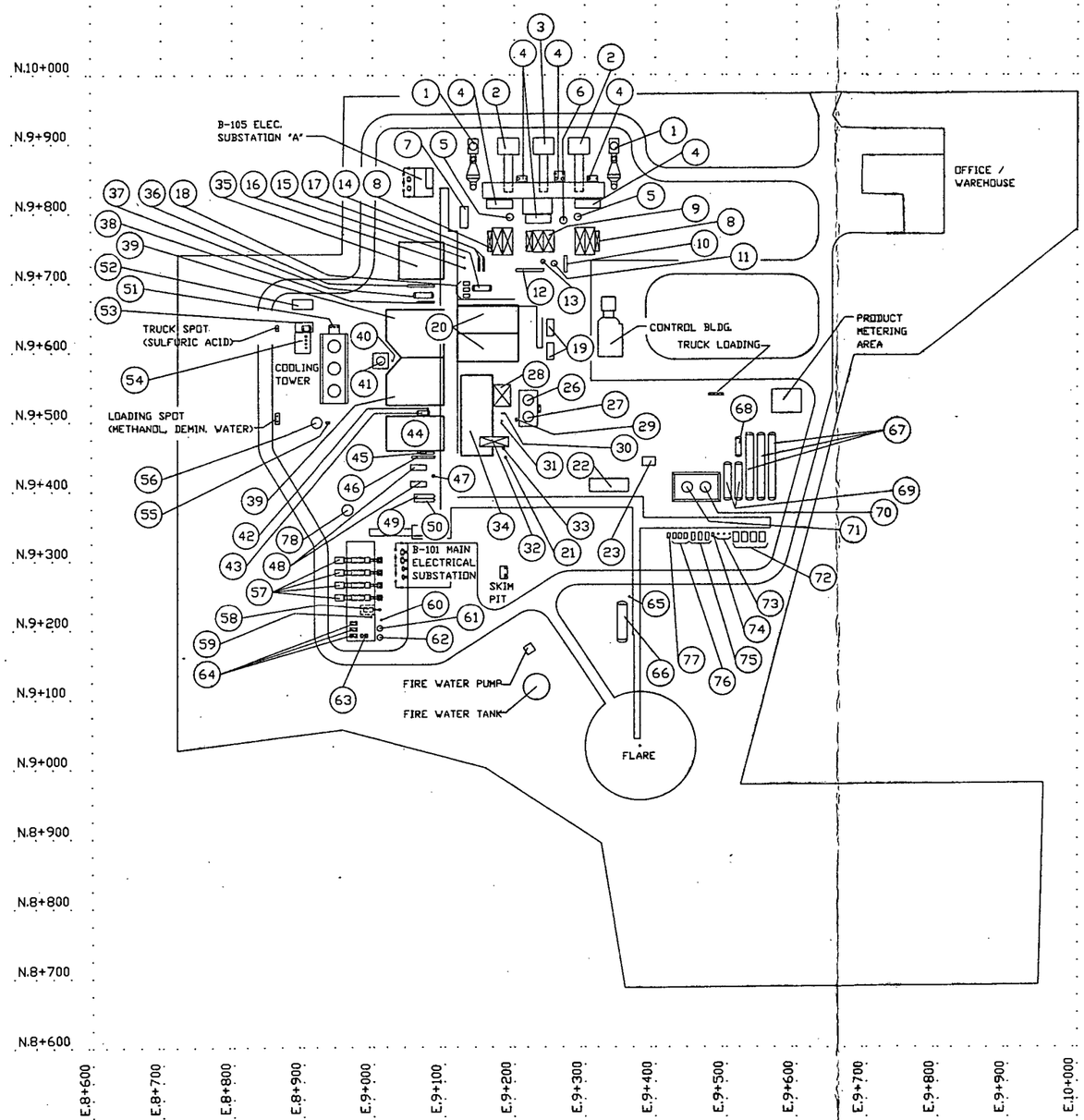
Biochemical Oxygen Demand
Chemical Oxygen Demand
Total Dissolved Solids
Total Suspended Solids

For the above tests, Conoco will reimburse the City $60.00 for each set of tests performed.

EXHIBIT D

ANALYTICAL TESTS TO BE DONE BY CONOCO ON WASTEWATER DISCHARGED TO THE CITY OF BLOOMFIELD

	PARAMETERS
Analyses to be performed quarterly for three quarters, then annually thereafter:	Aluminum, dissolved Antimony Arsenic Barium Boron Cadmium Chromium, total Chromium, hexavalent Cobalt Copper Cyanide, total Fluoride Lead Manganese Mercury Nickel Selenium Silver Titanium, dissolved Zinc
Analyses to be performed quarterly:	Iron Phenols Total Kjeldahl Nitrogen (TKN) Oil and Grease Phosphates Nitrates Biochemical Oxygen Demand Chemical Oxygen Demand Total Dissolved Solids Total Suspended Solids



ITEM	EQUIPMENT
1	HOT OIL HEATERS (2)
2	RESIDUE COMPRESSORS (2)
3	INLET COMPRESSOR
4	LUBRICATING OIL SKIDS (6)
5	RESIDUE COMPRESSOR SUCTION SCRUBBERS (2)
6	LOW PRESSURE INLET GAS SEPARATOR
7	HOT OIL TRIM COOLER
8	RESIDUE COMPRESSOR AFTERCOOLERS (2)
9	INLET COMPRESSOR AFTERCOOLER
10	HIGH PRESSURE INLET COOLER
11	HIGH PRESSURE INLET GAS SEPARATOR
12	INLET COMPRESSOR TRIM COOLER
13	INLET COMPRESSOR DISCHARGE SCRUBBER
14	RECYCLE COOLERS (2)
15	HIGH PRESSURE FUEL GAS SCRUBBER
16	LOW PRESSURE FUEL GAS SCRUBBER
17	HOT OIL EXPANSION VESSEL
18	HOT OIL PUMPS (3)
19	REGEN GAS HEATERS (2)
20	INLET GAS DEHYDRATION (see detail) (2)
21	SULFACHECK SYSTEM
22	EPBC PRODUCT DEHY. SKID
23	EPBC PRODUCT DEHY REGEN HEATER
26	WASTEWATER AND AMINE STORAGE TANK
27	AMINE STORAGE TANK
28	AMINE COOLER
29	AMINE MAKEUP PUMP
30	AMINE SUMP PUMPS (2)
31	AMINE DRAIN TANK PUMP
32	AMINE STILL CONDENSER
33	AMINE STILL REFLUX ACCUMULATOR
34	AMINE TREATING AREA (see detail)
35	REFRIGERANT COMPRESSOR AREA (see detail)
36	REFRIGERANT CONDENSER
37	REFRIGERANT ACCUMULATOR
38	REFRIGERANT SUBCOOLER
39	CRYO TRAIN AREA (see detail) (2)
40	METHANOL INJECTION PUMP
41	METHANOL STORAGE TANK
42	CLOSED DRAIN PUMP
43	CLOSED DRAIN VESSEL
44	DEETHANIZER AREA (see detail)
45	EP PRODUCT CHILLER
46	EP PRODUCT TRIM COOLER
47	EP COMPRESSOR SUCTION SCRUBBER
48	EP PRODUCT COMPRESSORS (2)
49	PBC COOLER
50	EP COMPRESSOR AFTERCOOLER
51	COOLING WATER CIRCULATING PUMPS (3)
52	WATER TREATING CHLORINATOR
53	ACID STORAGE TANK
54	WATER TREATING PACKAGE
55	DEMINERALIZED WATER PUMP
56	DEMINERALIZED WATER STORAGE TANK
57	POWER GENERATORS (4)
58	EMERGENCY GENERATOR
59	DIESEL TRANSFER PUMP
60	WASTE LUBE OIL DRAIN TANK PUMP
61	INSTRUMENT AIR RECEIVER
62	UTILITY AIR RECEIVER
63	INSTRUMENT AIR DRIER
64	INSTRUMENT/UTILITY AIR COMPRESSOR (3)
65	FLARE KNOCKOUT DRUM PUMP
66	FLARE KNOCKOUT DRUM
67	EPBC PRODUCT SURGE TANKS (3)
68	PROPANE STORAGE TANK
69	PBC PRODUCT SURGE TANKS (2)
70	WASTEWATER STORAGE TANK
71	SLOP OIL STORAGE TANK
72	EPBC PRODUCT PIPELINE PUMPS (4)
73	EPBC PRODUCT BOOSTER PUMPS (3)
74	PROPANE MAKEUP PUMP
75	PBC PRODUCT PIPELINE PUMPS (3)
76	PBC PRODUCT BOOSTER PUMPS (3)
77	PBC PRODUCT RERUN PUMP
78	GENERATOR LUBE OIL TANK

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED
A	ORIGINAL ISSUE 17MAY91	BKJ	V.WOOD		

CONOCO INC.
NATURAL GAS & GAS PRODUCTS DEPARTMENT

AFE:

SAN JUAN GAS PLANT

EQUIPMENT DESCRIPTION PLOT PLAN

SCALE: 1" = 100'-0"
LOCATION: BLOOMFIELD, NM
FILE NO: SJ29008
NG&GP-SJ-29008
REV NO. A

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

November 8, 1990

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P. 918 402 464

Mr. Rick McCalip
Conoco Inc.
P.O. Box 2197 HU 3048
Houston, Texas 77252

Re: **Discharge Plan GW-35**
San Juan Basin Gas Processing Plant
San Juan County, New Mexico

Dear Mr. McCalip:

On October 27, 1986, the ground water discharge plan, GW-35, for the San Juan Basin Gas Processing Plant located in the NW/4 NW/4, Section 14, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico, was approved by the Director of the Oil Conservation Division (OCD). This discharge plan was required and submitted pursuant to Water Quality Control Commission (WQCC) regulations and was approved for a period of five years. The approval will expire on October 27, 1991.

If you facility continues to have effluent or leachate discharges and you wish to continue discharging, please submit your application for renewal of plan approval as quickly as possible. The OCD is reviewing discharge plan submittals and renewals carefully and the review time can often extend for several months. Please indicate whether you have made, or intend to make, any changes in your discharge system, and if so, include an application for plan amendment with your application for renewal.

To assist you in preparation of your renewal application, I have enclosed a copy of the OCD's guidelines for preparation of ground water discharge plans at natural gas processing plants. These guidelines are presently being revised to include berming of tanks, curbing and paving of process areas susceptible to leaks or spills and the disposition of any solid wastes. Please include these items in your renewal application.

If you no longer have such discharges and discharge plan renewal is not needed, please notify this office.

Please note that all gas plants, refineries and compressor stations in excess of 25 years of age will be required to submit plans for, or the results of, an underground drainline testing program as a requirement for discharge plan renewal.

If you have any questions, please do not hesitate to contact **Roger Anderson** at **(505) 827-5884.**

Sincerely,

DAVID G. BOYER, Hydrogeologist
Environmental Bureau Chief

DGB/dp

Enclosure

cc: OCD Aztec Office

Rick McCalip, Director
Safety & Environmental Services
Natural Gas & Gas Products Department

Conoco Inc.
600 N. Dairy Ashford Rd.
P. O. Box 2197, HU 3048
Houston, TX 77252
(713) 293-1123

October 25, 1990

Mr. Roger C. Anderson
Oil Conservation Division
Energy, Minerals and Natural Resources Department
P. O. Box 2088
Santa Fe, NM 87504

Re: Underground Tank Pressure Testing
Discharge Plan (GW-25)
San Juan Gas Plant, San Juan County
Conoco Inc., Natural Gas & Gas Products Department

Dear Mr. Anderson:

Two underground tanks (V-806 and V-807) at the San Juan Plant were hydrostatically pressure tested on October 11, 1990. The testing was conducted in accordance with requirements of the subject discharge plan.

Each tank was blinded, pressured to 25 psig, and monitored by pressure gauge for approximately 30 minutes. Tank V-806 showed no pressure fluctuation during the test; V-807 showed a minor pressure fluctuation which is believed attributable to temperature variations. There are no indications that the pressure fluctuation signifies a leak in the tank. The next pressure testing will be conducted in late 1992, as required in the discharge plan.

If you have any questions or require additional information, please call Ms. Terry Killian (713) 293-1188.

Sincerely,

Rick McCalip

Rick McCalip

Attachment

RLM\102390A.wp

MIKE NEEAEV
Mike Neely
TERRY BROUSSARD

HYDROSTATIC LEAK TEST

Date: 10 / 11 / 90 Inspector: Terry L Broussard

System Being Tested: V-807-STORM WATER DRAIN TANK Test PSIG 24 PSI

Time	PSIG	Temp. °F
11:10 AM	25 Psi	53°
11:13	25 Psi	54°
11:16	25 Psi	55°
11:19	25 Psi	55°
11:22	25 Psi	54°
11:25	24½ Psi	53°
11:28	24 Psi	53°
11:31	24 Psi	53°
11:33	22½ Psi	52°
11:36	22 Psi	53°
11:39	22 Psi	53°
11:41	22 Psi	54°

Comments: GUAGE WAS CALIBRATED

TERRY BROUSSARD
MIKE NEELEY

HYDROSTATIC LEAK TEST

Date: 10/11/90 Inspector: Terry A Broussard

System Being Tested: V-806- AMINE DRAIN TANK. Test PSIG 24 PSI

Time	PSIG	Temp. °F
10:00 AM	25 PSI	43°F
10:03	25 PSI	43°F
10:06	25 PSI	43°F
10:09	25 PSI	43°F
10:12	25 PSI	44°F
10:15	25 PSI	44°F
10:18	25 PSI	45°F
10:21	25 PSI	44°F
10:24	25 PSI	45°F
10:27	25 PSI	46°F
10:30	25 PSI	47°F
10:33	25 PSI	47°F

Comments: GUAGE WAS CALIBRATED

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

September 13, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-153

Mr. David Bottoms
Conoco, Inc.
P. O. Box 217
Bloomfield, New Mexico 87413

RE: **Spent Sulfa Treat Disposal**
San Juan Gas Plant
San Juan County, New Mexico

Dear Mr. Bottoms:

The Oil Conservation Division (OCD) has received your request to dispose of spent "Sulfa Treat" from the above referenced facility at the San Juan County Regional Landfill.

Based on the information provided in your request, the spent material is not classified as "Hazardous", therefore, disposal at the regional landfill is approved. Please be advised that concurrence with the operators of the landfill is required prior to actual disposal.

If you have any questions, please contact me at (505) 827-5884.

Sincerely,

Roger C. Anderson
Environmental Engineer

RCA/sl

cc: *Aztec District Office*

Conoco Inc.
San Juan Gas Plant
P.O. Box 217
Bloomfield, NM 87413

August 24, 1990

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Anderson,

Conoco, Inc. is planning to use a "Sulfa Treat" process at its San Juan Gas Plant near Bloomfield, New Mexico and wishes to dispose of this reacted material at the San Juan County Regional Landfill. For purposes of securing verbal approval, please find enclosed various items and information concerning the Sulfa Treat process.

The manufacturer describes Sulfa Treat as being a patented process for selectively removing H2S and other sulphur compounds from gas. It is a granular material, which is classified as non-toxic and non-hazardous according to EPA guidelines.

Sulfa Treat is in use in over 40 facilities in nine states and is either buried on site or disposed of in non-hazardous landfills. We wish to use this process soon and would appreciate your verbal approval subsequent to testing of actual material from our plant operations.

If any additional information is needed, please call me at (505) 632-4900. Thank you very much for your consideration of this request.

Sincerely,

David Bottoms

David Bottoms
Process Foreman
San Juan Gas Plant

DB/dlg

Enc.

APPENDIX A

EVALUATION OF SulfaTreat$_{tm}$ AND ITS REACTION PRODUCTS USING EPA GUIDELINES FOR THE "IDENTIFICATION AND LISTING OF HAZARDOUS WASTE"

Alvin Samuels
Manager Research & Development
Gas Sweetener Associates

Dr. R.P. Wendt
Professor of Chemistry
Loyola University

I. SUMMARY

SulfaTreat$_{tm}$ is used in a patented process which consists of the use of a proprietary iron oxide material to remove hydrogen sulfide from natural gas. The primary function of SulfaTreat$_{tm}$ is the scavenging of hydrogen sulfide to eliminate undesirable environmental effects and to maintain reliable and safe operation of the production well. As a result of the process, a solid residue is produced.

Laboratory evaluations were performed on SulfaTreat$_{tm}$ and its air dried reaction products according to U.S. Environmental Protection Agency (EPA) test protocol cited in Subpart C (Section 261.20 through 261.24) of Section 3001 of the Resource Conservation and Recovery Act in the Federal Register, Volume 45, Number 98, on May 19, 1980 to determine if the residue, non-gaseous, reaction products were hazardous. Evaluations included testing of the ignitability, corrosivity, reactivity, and the determination of the presence of heavy metals and pesticides as prescribed in the regulations.

Also the oral and dermal toxicity was tested to evaluate possible personnel, handling or health problems. Finally, the agricultural characteristics were studied. All results showed SulfaTreat$_{tm}$ and its reaction products to be safe for personnel and non-hazardous to the environment.

The work summarized herein was performed for Gas Sweetener Associates by the following companies and individuals:

EPA:
Gulf South Research Institute (GSRI)
Shilstone Testing Laboratories
Tim Sloan, Scientific Consultant
Dr. R. P. Wendt, Professor of Chemistry, Loyola University

ORAL AND DERMAL TOXICITY:

Scientific Associates, Inc.

BEAN GROWTH EXPERIMENTS:

Gulf South Research Institute

II. EXPERIMENTAL RESULTS

A. Characteristics of Ignitability

The residue is not a liquid. Flash point of wet sludge - Does not flash below 100 C. Flash point of dry sludge - 137 C.

1. Friction Testing

Friction testing was conducted by grinding the sample under standard temperature and pressure in a mortar and pestle and monitoring the temperature. There was neither ignition nor nay variation in the temperature or cause of fire during the course of the evaluation.

2. Flame Testing

Flame testing was conducted by 1) directly heating the sample with a Fischer burner flame and 2) indirectly heating the sample in a porcelain crucible. In both cases, the sample did not ignite but merely glowed with red color due to high temperature.

3. Exposure to Moisture Testing

Exposure to moisture testing was conducted by placing small amounts of the sample in water. the sample remained unchanged.

4. Oxidizer

By the definition stated in 49 CFR 173.141, the sample is not an oxidizer.

B. Characteristics of Corrosivity

1. pH Determination

The pH determination was made on a slurried sample in accordance with EPA 600/4.79-020. The initial pH reading was approximately 9.

2. Corrosion Rate Determination

The corrosion rate of the sample on 1020 steel was determined using a potentiodynamic polarization technique (ASTM G-5 specification).* the studies were conducted using a Pricenton Applied Research computerized Model 350 corrosion measurement system.

The results of the potentiodynamic polarization experiment with SAE 1020 steel showed that the general corrosion rate a 55C (130F) of 5.8 mils (.15 mm) per year is substantially below the maximum 0.250 inches (6.25 mm) per year specified in the regulation.

C. Characteristics of Reactivity

1. Stability Testing

An aqueous suspension of the reacted SulfaTreat$_{tm}$ monitored with a potentiometer from pH 1 to pH 12.5. the pH alterations

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
Gas Sweetener Associates	(314) 725-7900

ADDRESS (Number, Street, City, State, and ZIP Code): 225 S. Meramec, Suite 1220, St. Louis, MO 63105 USA

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
Iron Oxide & inert sub-strate material	SulfaTreat tm
CHEMICAL FAMILY: N.A.	FORMULA: N.A.

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N.A.	SPECIFIC GRAVITY (H_2O=1)	0.48
VAPOR PRESSURE (mm Hg.)	N.A.	PERCENT, VOLATILE BY VOLUME (%)	0 %
VAPOR DENSITY (AIR=1)	N.A.	EVAPORATION RATE (_____ =1)	0
SOLUBILITY IN WATER	insoluble		
APPEARANCE AND ODOR	Black granular odorless powder		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
N.A.	N.A.		

EXTINGUISHING MEDIA: N.A.

SPECIAL FIRE FIGHTING PROCEDURES: NONE

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	LD 50 greater than 39.91 g/kg of body weight
EFFECTS OF OVEREXPOSURE	not toxic substance
EMERGENCY AND FIRST AID PROCEDURES	N.A.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID N.A.
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)* Material is inert

HAZARDOUS DECOMPOSITION PRODUCTS N.A.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

No special precautions required.

WASTE DISPOSAL METHOD

As required by local laws. Product is classified as non-hazardous using EPA guidelines.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)* Dust Mask

VENTILATION	LOCAL EXHAUST	N.A.	SPECIAL	N.A.
	MECHANICAL *(General)*	N.A.	OTHER	N.A.

PROTECTIVE GLOVES Not required	EYE PROTECTION Goggles

OTHER PROTECTIVE EQUIPMENT Dust Mask

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Not required

OTHER PRECAUTIONS Not required

Memo

From
DAVID G. BOYER
Hydrogeologist

7/19

To Cecilia Williams -
EID Air Quality

Attached is complaint from EID Farmington. Our staff checked out Basin Disposal - No emissions now. Notified EPNG and Conoco, but did not notice H_2S during our & Aztec office inspections. Some possible odorant (mercaptons?) smell was identified nearby but the source was not obvious. I'm passing to you since EPNG & Conoco have air Quality Permits

Dave

Oil Conservation Division
P.O. Box 2088 Santa Fe, N.M. 87501

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 1600	Date 7/16/90

Originating Party	Other Parties
Charles Gholson - OCD Aztec	Bill Olson - OCD Santa Fe

Subject

Bloomfield H_2S Reports

Discussion

Two separate residents south of the Conoco plant have reported symptoms of H_2S exposure.
One is the Tipton residence. The Tiptons live on the 1st road south of the Navaj school. Phone # 632-2937
The other resident is the Bennet's. The Bennets live on 310 Salt Lane approximately 200' from the stack. 2 adults and 4 children live there. Phone # 632-1422
These people were referred to Aztec Office by FID Farmington Office

Conclusions or Agreements

In addition, Charles stated that he was at Basin Disposal today and noticed no H_2S odors. Basin is currently down to ± 2' ft. freeboard and expects to open when the level is down further

Distribution

Basin Disposal File
OGB

Signed Bill Olson