GW - 119

PERMITS, RENEWALS, & MODS Application

New Mexico Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

John H. Bemis
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division

FEBRUARY 21, 2012

Mr. Keith Price
ConocoPhillips Company
29 Vacuum Complex Lane
Lovington, New Mexico 88260-9664

Dear Mr. Price:

Based on your responses given in the "Oil & Gas Facilities Questionnaire for Determination of a WQCC Discharge Permit", the Oil Conservation Division (OCD) has determined that one of your facilities with a soon to expire permit is not required to operate under a Water Quality Control Commission (WQCC) Discharge Permit. This means that the WQCC Discharge Permit for **GW - 119** (Phillips East Vacuum Gas Plant) will be allowed to expire and you are not required to proceed with the renewal of these expired WQCC Discharge Permits. OCD will close these discharge permits in its database.

Because this WQCC Discharge Permit will now longer be in effect, you may be required to obtain separate OCD permit(s) for other processes at your facility, such as: pits, ponds, impoundments, below-grade tanks; waste treatment, storage and disposal operations; and landfarms and landfills. OCD will determine if any of these existing processes may require a separate permit under OCD's Oil, Gas, and Geothermal regulations. If OCD determines that a separate permit(s) is required, then a letter will be sent to you indicating what type of permit is required. Please keep in mind, if your facility has any discharges that would require a WQCC Discharge Permit now or in the future, then you will be required to renew or obtain a WQCC Discharge Permit.

If you have any questions regarding this matter, please contact Glenn von Gonten at 505-476-3488.

Thank you for your cooperation.

Jami Bailey
Director

JB/ll

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No: _____ dated 3/3/08

or cash received on _____ in the amount of $ 4000 00

from ConocoPhillips

for GW-119

Submitted by: Lawrence Romero Date: 3/12/08

Submitted to ASD by: Lawrence Romero Date: 3/12/08

Received in ASD by: _____ Date: _____

Filing Fee _____ New Facility _____ Renewal _____

Modification _____ Other _____

Organization Code 521.07 Applicable FY 2004

To be deposited in the Water Quality Management Fund.

Full Payment ✓ or Annual Increment _____

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

February 25th, 2008

RECEIVED
2008 MAR 10 PM 1 56

Mr. Kenneth N. Anderson
Environmental Specialist
ConocoPhillips Company
3300 North "A" Street, 6 – 129
Midland, Texas 79705-5490

Re: Discharge Permit Renewal
East Vacuum Liquid Recovery Gas Plant (GW-119)
NE/4 Section 33, Township 17 South, Range 35 East, NMPM,
Lea County, New Mexico

Dear Mr. Anderson,

Pursuant to Water Quality Control Commission (WQCC) Regulations 20.6.2.3104 - 20.6.2.3114 NMAC, the Oil Conservation Division (OCD) hereby approves the discharge permit for the **ConocoPhillips** (owner/operator) for the above referenced site contingent upon the conditions specified in the enclosed **Attachment to the Discharge Permit**. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter including permit fees.**

Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If you have any questions, please contact Leonard Lowe of my staff at (505-476-3492) or E-mail leonard.lowe@sate.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff For your cooperation during this discharge permit review.

Sincerely,

Wayne Price
Environmental Bureau Chief

LWP/lrl
Attachments-1
xc: OCD District Office

ATTACHMENT- DISCHARGE PERMIT APPROVAL CONDITIONS

1. **Payment of Discharge Plan Fees:** All discharge permits are subject to WQCC Regulations. Every billable facility that submits a discharge permit application will be assessed a filing fee of $100.00, plus a flat fee (*see* WQCC Regulation 20.6.2.3114 NMAC). The Oil Conservation Division ("OCD") has received the required $100.00 filing fee. ***The flat fee for a Gas Processing Plant is $4000.00. Please submit this amount along with the signed certification item 23 of this document after the final permit is issued in approximately 45 days. Checks should be made out to the New Mexico Water Quality Management Fund.***

2. **Permit Expiration, Renewal Conditions and Penalties:** Pursuant to WQCC Regulation 20.6.2.3109.H.4 NMAC, this permit is valid for a period of five years. **The permit will expire on September 9, 2012** and an application for renewal should be submitted no later than 120 days before that expiration date. Pursuant to WQCC Regulation 20.6.2.3106.F NMAC, if a discharger submits a discharge permit renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit will not expire until the application for renewal has been approved or disapproved. ***Expired permits are a violation of the Water Quality Act {Chapter 74, Article 6, NMSA 1978} and civil penalties may be assessed accordingly.***

3. **Permit Terms and Conditions:** Pursuant to WQCC Regulation 20.6.2.3104 NMAC, when a permit has been issued, the owner/operator must ensure that all discharges shall be consistent with the terms and conditions of the permit. In addition, all facilities shall abide by the applicable rules and regulations administered by the OCD pursuant to the Oil and Gas Act, NMSA 1978, Sections 70-2-1 through 70-2-38.

4. **Owner/Operator Commitments:** The owner/operator shall abide by all commitments submitted in its June 2007 discharge plan application, including attachments and subsequent amendments and these conditions for approval. Permit applications that reference previously approved plans on file with the division shall be incorporated in this permit and the owner/operator shall abide by all previous commitments of such plans and these conditions for approval.

5. **Modifications:** WQCC Regulation 20.6.2.3107.C, and 20.6.2.3109 NMAC addresses possible future modifications of a permit. The owner/operator (discharger) shall notify the OCD of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants. The Division Director may require a permit modification if any water quality standard specified at 20.6.2.3103 NMAC is being or will be exceeded, or if a toxic pollutant as defined in WQCC Regulation 20.6.2.7 NMAC is present in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the Water Quality Standards for Interstate and Intrastate streams as specified in 20.6.4 NMAC are being or may be violated in surface water in New Mexico.

6. **Waste Disposal and Storage:** The owner/operator shall dispose of all wastes at an OCD-approved facility. Only oil field RCRA-exempt wastes may be disposed of by injection in a Class II well. RCRA non-hazardous, non-exempt oil field wastes may be disposed of at an OCD-

approved facility upon proper waste determination pursuant to 40 CFR Part 261. Any waste stream that is not listed in the discharge permit application must be approved by the OCD on a case-by-case basis.

A. **OCD Rule 712 Waste:** Pursuant to OCD Rule 712 (19.15.9.712 NMAC) disposal of certain non-domestic waste without notification to the OCD is allowed at NMED permitted solid waste facilities if the waste stream has been identified in the discharge permit and existing process knowledge of the waste stream does not change.

B. **Waste Storage:** The owner/operator shall store all waste in an impermeable bermed area, except waste generated during emergency response operations for up to 72 hours. All waste storage areas shall be identified in the discharge permit application. Any waste storage area not identified in the permit shall be approved on a case-by-case basis only. The owner/operator shall not store oil field waste on-site for more than 180 days unless approved by the OCD.

7. **Drum Storage:** The owner/operator must store all drums, including empty drums, containing materials other than fresh water on an impermeable pad with curbing. The owner/operator must store empty drums on their sides with the bungs in place and lined up on a horizontal plane. The owner/operator must store chemicals in other containers, such as tote tanks, sacks, or buckets on an impermeable pad with curbing.

8. **Process, Maintenance and Yard Areas:** The owner/operator shall either pave and curb or have some type of spill collection device incorporated into the design at all process, maintenance, and yard areas which show evidence that water contaminants from releases, leaks and spills have reached the ground surface.

9. **Above Ground Tanks:** The owner/operator shall ensure that all aboveground tanks have impermeable secondary containment (e.g., liners and berms), which will contain a volume of at least one-third greater than the total volume of the largest tank or all interconnected tanks. The owner/operator shall retrofit all existing tanks before discharge permit renewal. Tanks that contain fresh water or fluids that are gases at atmospheric temperature and pressure are exempt from this condition.

10. **Labeling:** The owner/operator shall clearly label all tanks, drums, and containers to identify their contents and other emergency notification information. The owner/operator may use a tank code numbering system, which is incorporated into their emergency response plans.

11. **Below-Grade Tanks/Sumps and Pits/Ponds.**

A. All below-grade tanks and sumps must be approved by the OCD prior to installation and must incorporate secondary containment with leak detection into the design. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal. All existing below-grade tanks and sumps without secondary containment and leak detection must be tested annually or as specified herein. Systems that have secondary containment with leak detection shall have a monthly inspection of

the leak detection system to determine if the primary containment is leaking. Small sumps or depressions in secondary containment systems used to facilitate fluid removal are exempt from these requirements if fluids are removed within 72 hours.

B. All pits and ponds, including modifications and retrofits, shall be designed by a certified registered professional engineer and approved by the OCD prior to installation. In general, all pits or ponds shall have approved hydrologic and geologic reports, location, foundation, liners, and secondary containment with leak detection, monitoring and closure plans. All pits or ponds shall be designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health, safety and the environment for the foreseeable future. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal.

C. The owner/operator shall ensure that all exposed pits, including lined pits and open top tanks (8 feet in diameter or larger) shall be fenced, screened, netted, or otherwise rendered non-hazardous to wildlife, including migratory birds.

D. The owner/operator shall maintain the results of tests and inspections at the facility covered by this discharge permit and available for OCD inspection. The owner/operator shall report the discovery of any system which is found to be leaking or has lost integrity to the OCD within 15 days. The owner/operator may propose various methods for testing such as pressure testing to 3 pounds per square inch greater than normal operating pressure and/or visual inspection of cleaned tanks and/or sumps, or other OCD-approved methods. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

12. Underground Process/Wastewater Lines:

A. The owner/operator shall test all underground process/wastewater pipelines at least once every five (5) years to demonstrate their mechanical integrity, except lines containing fresh water or fluids that are gases at atmospheric temperature and pressure. Pressure rated pipe shall be tested by pressuring up to one and one-half times the normal operating pressure, if possible, or for atmospheric drain systems, to 3 pounds per square inch greater than normal operating pressure, and pressure held for a minimum of 30 minutes with no more than a 1% loss/gain in pressure. The owner/operator may use other methods for testing if approved by the OCD.

B. The owner/operator shall maintain underground process and wastewater pipeline schematic diagrams or plans showing all drains, vents, risers, valves, underground piping, pipe type, rating, size, and approximate location. All new underground piping must be approved by the OCD prior to installation. The owner/operator shall report any leaks or loss of integrity to the OCD within 15 days of discovery. The owner/operator shall maintain the results of all tests at the facility covered by this discharge permit and they shall be available for OCD inspection. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

13. Class V Wells: The owner/operator shall close all Class V wells (e.g., septic systems, leach fields, dry wells, etc.) that inject non-hazardous industrial wastes or a mixture of industrial

wastes and domestic wastes unless it can be demonstrated that ground water will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells, that inject domestic waste only, must be permitted by the New Mexico Environment Department (NMED).

14. Housekeeping: The owner/operator shall inspect all systems designed for spill collection/prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records at the facility and available for OCD inspection.

15. Spill Reporting: The owner/operator shall report all unauthorized discharges, spills, leaks and releases and conduct corrective action pursuant to WQCC Regulation 20.5.12.1203 NMAC and OCD Rule 116 (19.15.3.116 NMAC). The owner/operator shall notify both the OCD District Office and the Santa Fe Office within 24 hours and file a written report within 15 days.

16. OCD Inspections: The OCD may place additional requirements on the facility and modify the permit conditions based on OCD inspections.

17. Storm Water: The owner/operator shall implement and maintain run-on and runoff plans and controls. The owner/operator shall not discharge any water contaminant that exceeds the WQCC standards specified in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) including any oil sheen in any stormwater run-off. The owner/operator shall notify the OCD within 24 hours of discovery of any releases and shall take immediate corrective action(s) to stop the discharge.

18. Unauthorized Discharges: The owner/operator shall not allow or cause water pollution, discharge or release of any water contaminant that exceeds the WQCC standards listed in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) unless specifically listed in the permit application and approved herein. ***An unauthorized discharge is a violation of this permit.***

19. Vadose Zone and Water Pollution: The owner/operator shall address any contamination through the discharge permit process or pursuant to WQCC 20.6.2.4000-.4116 NMAC (Prevention and Abatement of Water Pollution). The OCD may require the owner/operator to modify its permit for investigation, remediation, abatement, and monitoring requirements for any vadose zone or water pollution. Failure to perform any required investigation, remediation, abatement and submit subsequent reports will be a violation of the permit.

20. Additional Site Specific Conditions: N/A

21. Transfer of Discharge Permit (WQCC 20.6.2.3111) Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of a facility with a discharge

permit, the transferor shall notify the transferee in writing of the existence of the discharge permit, and shall deliver or send by certified mail to the department a copy of such written notification, together with a certification or other proof that such notification has in fact been received by the transferee.

Upon receipt of such notification, the transferee shall have the duty to inquire into all of the provisions and requirements contained in such discharge permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the department's file or files concerning such discharge permit. The transferee (new owner/operator) shall sign and return an original copy of these permit conditions and provide a written commitment to comply with the terms and conditions of the previously approved discharge permit.

22. Closure Plan and Financial Assurance: Pursuant to 20.6.2.3107 NMAC an owner/operator shall notify the OCD when any operations of the facility are to be discontinued for a period in excess of six months. Prior to closure, or as a condition of this permit, or request from the OCD, the operator will submit an approved closure plan, modified plan, and/or provide adequate financial assurance.

23. Certification: (Owner/Operator), by the officer whose signature appears below, accepts this permit and agrees to comply with all submitted commitments, including these terms and conditions contained here. **Owner/Operator** further acknowledges that the OCD may, for good cause shown, as necessary to protect fresh water, public health, safety, and the environment, change the conditions and requirements of this permit administratively.

Conditions accepted by: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

ConocoPhillips Company
Company Name-print name above

Kenneth N. Andersen
Company Representative- print name

Kenneth N. Andersen
Company Representative- Signature

Title Sr. Environmental Tech

Date: 02/29/2008

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

February 25th, 2008

Mr. Kenneth N. Anderson
Environmental Specialist
ConocoPhillips Company
3300 North "A" Street, 6 – 129
Midland, Texas 79705-5490

Re: Discharge Permit Renewal
East Vacuum Liquid Recovery Gas Plant (GW-119)
NE/4 Section 33, Township 17 South, Range 35 East, NMPM,
Lea County, New Mexico

Dear Mr. Anderson,

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Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If you have any questions, please contact Leonard Lowe of my staff at (505-476-3492) or E-mail leonard.lowe@sate.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff For your cooperation during this discharge permit review.

Sincerely,

Wayne Price
Environmental Bureau Chief

LWP/lrl
Attachments-1
xc: OCD District Office

ATTACHMENT- DISCHARGE PERMIT APPROVAL CONDITIONS

1. **Payment of Discharge Plan Fees:** All discharge permits are subject to WQCC Regulations. Every billable facility that submits a discharge permit application will be assessed a filing fee of $100.00, plus a flat fee (*see* WQCC Regulation 20.6.2.3114 NMAC). The Oil Conservation Division ("OCD") has received the required $100.00 filing fee. ***The flat fee for a Gas Processing Plant is $4000.00. Please submit this amount along with the signed certification item 23 of this document after the final permit is issued in approximately 45 days. Checks should be made out to the New Mexico Water Quality Management Fund.***

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4. **Owner/Operator Commitments:** The owner/operator shall abide by all commitments submitted in its June 2007 discharge plan application, including attachments and subsequent amendments and these conditions for approval. Permit applications that reference previously approved plans on file with the division shall be incorporated in this permit and the owner/operator shall abide by all previous commitments of such plans and these conditions for approval.

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the leak detection system to determine if the primary containment is leaking. Small sumps or depressions in secondary containment systems used to facilitate fluid removal are exempt from these requirements if fluids are removed within 72 hours.

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C. The owner/operator shall ensure that all exposed pits, including lined pits and open top tanks (8 feet in diameter or larger) shall be fenced, screened, netted, or otherwise rendered non-hazardous to wildlife, including migratory birds.

D. The owner/operator shall maintain the results of tests and inspections at the facility covered by this discharge permit and available for OCD inspection. The owner/operator shall report the discovery of any system which is found to be leaking or has lost integrity to the OCD within 15 days. The owner/operator may propose various methods for testing such as pressure testing to 3 pounds per square inch greater than normal operating pressure and/or visual inspection of cleaned tanks and/or sumps, or other OCD-approved methods. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

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B. The owner/operator shall maintain underground process and wastewater pipeline schematic diagrams or plans showing all drains, vents, risers, valves, underground piping, pipe type, rating, size, and approximate location. All new underground piping must be approved by the OCD prior to installation. The owner/operator shall report any leaks or loss of integrity to the OCD within 15 days of discovery. The owner/operator shall maintain the results of all tests at the facility covered by this discharge permit and they shall be available for OCD inspection. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

13. Class V Wells: The owner/operator shall close all Class V wells (e.g., septic systems, leach fields, dry wells, etc.) that inject non-hazardous industrial wastes or a mixture of industrial

wastes and domestic wastes unless it can be demonstrated that ground water will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells, that inject domestic waste only, must be permitted by the New Mexico Environment Department (NMED).

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17. Storm Water: The owner/operator shall implement and maintain run-on and runoff plans and controls. The owner/operator shall not discharge any water contaminant that exceeds the WQCC standards specified in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) including any oil sheen in any stormwater run-off. The owner/operator shall notify the OCD within 24 hours of discovery of any releases and shall take immediate corrective action(s) to stop the discharge.

18. Unauthorized Discharges: The owner/operator shall not allow or cause water pollution, discharge or release of any water contaminant that exceeds the WQCC standards listed in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) unless specifically listed in the permit application and approved herein. ***An unauthorized discharge is a violation of this permit.***

19. Vadose Zone and Water Pollution: The owner/operator shall address any contamination through the discharge permit process or pursuant to WQCC 20.6.2.4000-.4116 NMAC (Prevention and Abatement of Water Pollution). The OCD may require the owner/operator to modify its permit for investigation, remediation, abatement, and monitoring requirements for any vadose zone or water pollution. Failure to perform any required investigation, remediation, abatement and submit subsequent reports will be a violation of the permit.

20. Additional Site Specific Conditions: N/A

21. Transfer of Discharge Permit (WQCC 20.6.2.3111) Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of a facility with a discharge

permit, the transferor shall notify the transferee in writing of the existence of the discharge permit, and shall deliver or send by certified mail to the department a copy of such written notification, together with a certification or other proof that such notification has in fact been received by the transferee.

Upon receipt of such notification, the transferee shall have the duty to inquire into all of the provisions and requirements contained in such discharge permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the department's file or files concerning such discharge permit. The transferee (new owner/operator) shall sign and return an original copy of these permit conditions and provide a written commitment to comply with the terms and conditions of the previously approved discharge permit.

22. **Closure Plan and Financial Assurance:** Pursuant to 20.6.2.3107 NMAC an owner/operator shall notify the OCD when any operations of the facility are to be discontinued for a period in excess of six months. Prior to closure, or as a condition of this permit, or request from the OCD, the operator will submit an approved closure plan, modified plan, and/or provide adequate financial assurance.

23. **Certification: (Owner/Operator)**, by the officer whose signature appears below, accepts this permit and agrees to comply with all submitted commitments, including these terms and conditions contained here. **Owner/Operator** further acknowledges that the OCD may, for good cause shown, as necessary to protect fresh water, public health, safety, and the environment, change the conditions and requirements of this permit administratively.

Conditions accepted by: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

_____
Company Name-print name above

_____
Company Representative- print name

_____
Company Representative- Signature

Title_____

Date:_____

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
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Mark E. Fesmire, P.E.
Director
Oil Conservation Division

August 8, 2007

Mr. Kenneth N. Andersen
Environmental Specialist
ConocoPhillips Company
3300 North "A" Street, 6-129
Midland, Texas 79705-5490

Re: Discharge Permit Renewal (GW-119)
ConocoPhillips East Vacuum Liquid Recovery Gas Plant Permit

Dear Mr. Andersen:

The New Mexico Oil Conservation Division (NMOCD) has received ConocoPhillips request and initial $100 filing fee dated June 22, 2007, to renew GW-119 for the ConocoPhillips East Vacuum Liquid Recovery Gas Plant located in the NE/4 of Section 33 Township 17 South, Range 35 East, NMPM, Lea County, New Mexico. The initial submittal provided the required information in order to deem the application "administratively" complete.

Therefore, the New Mexico Water Quality Control Commission regulations (WQCC) notice requirements of 20.6.2.3108 NMAC must be satisfied and demonstrated to the NMOCD. NMOCD will provide public notice pursuant to the WQCC notice requirements of 20.6.2.3108 NMAC to determine if there is any public interest.

If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3491 or carlj.chavez@state.nm.us. On behalf of the staff of the NMOCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,

Carl J. Chavez
Environmental Engineer

CJC/cjc

xc: OCD District I Office, Hobbs

ConocoPhillips

Kenneth N. Andersen
Environmental Specialist
Phone: (432) 688-9020
Fax: (432) 688-6017
Cell: (432) 599-8172
Email: ken.n.andersen@conocophillips.com

ConocoPhillips Company
3300North "A" St., 6-129
Midland, TX 79705-5490

Mid Continent Business Unit

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Date: June 22, 2007

Subject: Discharge Plan GW-119 Renewal
East Vacuum Liquids Recovery Plant/CO_2 Plant
Lea County, New Mexico

Enclosed please find the original and one copy of ConocoPhillips Company's renewal application for Discharge Plan GW-119 for the East Vacuum Liquids Recovery Plant/CO_2 Plant located in Lea County, New Mexico. Another copy of the Discharge Plan Application was sent to District I (Hobbs) as required.

We will be using the Hobbs News Sun, 201 N. Thorp, Hobbs, N.M. 88240, to meet the requirements of Paragraph (2) Subsection C of 20.6.2.3108. A copy of the synopsis is enclosed.

Also enclosed is a check to cover the applicable filing fee for this renewal application.

If there are any questions or concerns with this renewal, please contact me. Thank you for your time.

Sincerely,

Kenneth N. Andersen

NOTICE OF PUBLICATION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge permit renewal has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(GW-119) – ConocoPhillips Company, Ken Andersen, Environmental Specialist, 3300 North "A" Street, Midland, Texas, 79705-5490, has submitted an application for renewal of their previously approved discharge plan for the East Vacuum Liquid Recovery Plant/CO_2 Plant located in the W/2 NE/4 of Section 33, Township 17 South, Range 35 East, Lea County, New Mexico. At this facility the C5+ liquids are removed from the gas stream and sold and the CO_2 enriched gas is compressed and re-injected into a CO_2 flood. Approximately 304,166 gallons per month of waste water is discharged onsite into the Free Water Knock Outs located at the East Vacuum Grayburg San Andres Unit Central Tank Battery where it is used as feedstock in the production stream, hydrocarbons being sold and water used as makeup for water injection flood. Ground water most likely to be affected by a spill, leak or accidental discharge to the surface is at a depth of approximately 42 to 70 feet with a total dissolved solids concentration of approximately 297 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

The New Mexico Oil Conservation Division will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments or requesting to be on a facility-specific mailing list for future notices may contact:

Carl Chavez, CHMM
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505
Office: (505) 476-3491

NOTA DE PUBLICACION

Se notifica, que de acuerdo a la Comisión de Regulación de Control de Calidad de Agua de Nuevo México, el siguiente permiso de renovación ha sido presentada a el director de la División de Conservación de Petróleo, 1220 S. Saint Francis Drive, Santa Fe, Nuevo México 87505, Teléfono (505) 476-3440

(GW-119) – ConocoPhillips Company, Ken Andersen, Especialista Ambiental, 3300 North "A" Street, Midland, Texas, 79705-5490, ha presentado una aplicación para renovar el permiso de descarga previamente aprobado para la planta Este de Recuperación de Líquidos. La planta esta localizada en la esquina O/2 NE/4 de la sección 33, municipio 17 sur, rango 35 Este, Condado de Lea, Nuevo México. En esta locación los líquidos C5+ son removidos de la corriente de gas y vendidos. Gas rico en CO2 es comprimido y re-inyectado en un yacimiento de CO2. Aproximadamente 304,166 galones mensuales de agua de desecho son desechados en un tanque de agua en la Batería Central Grayburg San Andres, donde el agua es mezclada con la corriente de producción. Hidrocarburos son vendidos y el agua es usada como substituta en el yacimiento de inundación de agua. Agua del subsuelo con probabilidad de ser afectada por un derrame, goteos y otros descargos accidentales en la superficie se encuentra a una profundidad aproximada de 42 a 70 pies, con un total aproximado de 297mg/L de concentración de sólidos disueltos. El plan de descarga hace referencia a como los derrames, goteos y otros descargos accidentales en la superficie serán controlados para proteger el agua fresca

La División de Conservación de Petróleo de Nuevo México (New México Oil Conservación División) aceptara comentarios y declaraciones de interés en referencia a esta aplicación y creara una lista especifica a la locación para personas que deseen recibir notificaciones por correo. Personas interesadas en obtener mas información, enviar comentarios o que deseen ser puestas en la lista de notificaciones por correo pueden ponerse en contacto con:

Sr. Carl Chavez, CHMM
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505
Oficina: (505) 476-3491

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

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

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

☐ New ☒ Renewal ☐ Modification

1. Type: Discharge Plan GW-119 Renewal
East Vacuum Liquid Recovery Plant/CO_2 Plant

2. Operator: ConocoPhillips Company

Address: 29 Vacuum Complex lane
Lovington, NM 88260-9664

Contact Person: Kenneth N. Andersen
Environmental Specialist
3300 North "A" Street, 6-129
Midland, TX 79705-5490
(432) 688-9020
ken.n.andersen@conocophillips.com

3. Location: W/2 NE/4 Section 33, Township 17 South, Range 35 East
Lea County, New Mexico
(See Attachment 1 for Facility Site Plan)

4. Landowner: State of New Mexico
State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501
Phone: (505) 827-5760

5. Facility Description and Plot Plans: The East Vacuum Liquids Recovery Plant (EVLRP) is a Ryan-Holmes type process plant that is licensed from Koch Engineering. The process includes a two-column process operating in the propane recovery mode. The plant is sized for a maximum inlet feed capacity of 28 MMSCFD; and as much gas as possible is fed to the EVLRP with the remainder bypassing through the CO_2 Reinjection Facility. Feed gas to the EVLRP is taken from downstream of the Triethylene Glycol (TEG) contactor after the 3rd stage of compression at about 300 psig. Compression liquids recovered from the 3rd stage compression (collected in the TEG Knockout Drum) are processed (stabilized) in the EVLRP. These liquids enter the first column as a liquid feed stream. Molecular sieve dehydration is required before the feed streams are processed in the EVLRP. The residue CO_2 stream (CO_2, H_2S, Methane and Ethane) from the EVLRP is delivered back to the 4th stage suction header. The recovered Natural Gas Liquids (NGL) are delivered to the NGL storage facility and to the Central Tank Battery. The NGL product is pumped from the storage facility and delivered via a metering skid to the ConocoPhillips Company

NGL Pipeline No. 38, which is about 2,200 feet south of the EVLRP. An automatic bypass line around the EVLRP is installed to allow continued CO_2 reinjection when the EVLRP is down. The Hot Oil system provides heat for the column reboilers and heats the regeneration gas for molecular sieve dehydrators. The Propane Refrigeration system provides refrigeration for the overhead condenser on the first column of the EVLRP. The Cooling Water system and TEG system are shared with the CO_2 Reinjection facility.

(See Attachment 1 for Plot Plan information.)
(See Attachment 2 for Process Flow information.)

6. Materials Stored/ Used:

The following materials are stored or used at the facility (Maximum quantities):

- Solvent – liquid, drum,100 Gallons, shop
- Methanol – liquid, tank, 210 BBLs, yard
- Phillips Eclipse 30-40 – liquid, tank, 210 BBLs, yard
- Conoco Wet Gas Compressor Fluid 220 – liquid, tank, 1000 gallons, yard
- Triethylene Glycol – liquid, tank, 1200 Gallons, yard
- Champion Cortron-2378 – liquid, tank, 500 Gallons, yard
- Ethylene Glycol (aka ES Coolant Blends) – liquid, tank, 4000 gallons, yard

7. Sources of Effluent and Waste Solids:

PLANT WATER SYSTEM

Raw Water:

EVLRP receives its process make-up water and non-potable water from the Central Tank Battery (CTB) located adjacent to the plant. Approximately 15,000 gallons per day are provided to the plant from this source.

(See Attachment 1 for Plot Plan information)

Potable Water:

Bottled drinking water for ConocoPhillips Company employees, contract personnel, and guests of the facility is supplied in the EVLRP Control Room.

Cooling Tower System:

The cooling tower system is comprised of one open re-circulating tower. The cooling tower has a re-circulation rate of 800 gallons per minute with an approximate daily volume of 400 gallons per day. The water in the tower is re-circulated and treated to maintain a pH of 7.2 to 7.6 and a Phosphate level 12 to 17. The following chemicals with their specific feed rates, are being added to cooling tower waters for the treatment of scale, corrosion and biological treatment:

- Alpha 512 – as needed
- Champion Antipol 310 – as needed
- Champion Defoamer-V-116 – as needed
- Chlorine Tablets (Trichloro-5-Triazinetrione) – as needed
- Sulfuric Acid – as needed

Engine Cooling Systems:

Water and antifreeze (50/50 mix) are used as coolant in the jacket water systems of all engines and compressors at the plant. The plant has two propane compressors referred to as the "Refrigeration Compressors."

Coolant from engines is drained to the respective jacket water drain tank when an engine is being worked on. The coolant is pressured back to the engine when the work is completed.

Filter Coalescer System:

The filter coalescer is a two-stage separator that separates micron size particles and tiny mist like droplets of triethylene glycol (TEG). The TEG is recycled through an existing Rich TEG Line. Any particles are trapped in the cartridge type filters, which are changed as needed.

(See Attachment 1 for Plot Plan information)

8. Collection and Disposal Procedures:

PLANT DRAIN SYSTEM

Engine Oil Drain System:

Lube oil in the EVLRP's Refrigeration Compressors is changed by draining the "spent" oil charge from an engine into a below grade storage and collection point constructed of a steel tank contained in a cement vault. Atmospheric drains, located around the plants engines, are designed to catch leaking oil, and drain to the fiberglass sump and are pumped to the above mentioned below grade storage. Liquids from the steel tanks are pumped into the CTB Free Water Knock Outs (FWKO) as feedstock & processed through the production system.

(See Attachment 3 for EVLRP Drain System information)
(See Attachment 1 for Plot Plan information)

Cooling Tower Wastewater Disposal System:

The cooling tower blow down is sent through a 2-inch line to the CTB Free Water Knock Outs (FWKO) as feedstock & processed through the production system.

(See Attachment 3 for EVLRP Drain System information)
(See Attachment 1 for Plot Plan information)

SOLID WASTE

General Waste:

EVLRP disposes non-domestic wastes at solid waste facilities in New Mexico. Per NM OCD 19.15.9.712, EVLRP disposes, or has the potential to dispose, the following wastes without testing:

- Barrels, drums, 5-gallon buckets, 1-gallon containers - empty and EPA-clean.
- Uncontaminated brush and vegetation arising from clearing operations.
- Uncontaminated concrete.
- Uncontaminated construction debris.
- Non-friable asbestos and asbestos contaminated waste material.
- Detergent buckets, so long as completely empty.
- Fiberglass tanks so long as the tank is empty, cut up or shredded, and EPA clean.
- Grease buckets, so long as empty and EPA clean.
- Uncontaminated ferrous sulfate or elemental sulfur so long as recovery and sale as a raw material is not possible.
- Metal plate and metal cable.
- Office trash.
- Paper and paper bags, so long as empty (paper bags).
- Plastic pit liners, so long as cleaned well.
- Soiled rags or gloves. If wet, must pass Paint Filter Test prior to disposal.
- Uncontaminated wood pallets.

In addition, EVLRP disposes the following in accordance with NM OCD 19.15.9.712 (D)(2) for waste that must be tested prior to disposal:

- Activated alumina - tested for TPH and BTEX.
- Activated carbon - tested for TPH and BTEX.
- Amine filters - tested for BTEX (and air-dried for at least 48 hours before testing).
- Friable asbestos and asbestos-contaminated waste material must be tested pursuant to NESHAP.
- Cooling tower filters - tested for TCLP/chromium (and drained and then air-dried for at least 48 hours before testing).
- Dehydration filter media - tested for TPH and BTEX (and drained and then air-dried for at least 48 hours before testing).
- Gas condensate filters - tested for BTEX (and drained and then air-dried for at least 48 hours before testing).
- Glycol filters - tested for BTEX (and drained and then air-dried for at least 48 hours before testing).
- Iron sponge must be oxidized completely and then undergo ignitability testing.
- Junked pipes, valves, and metal pipe must be tested for NORM.
- Molecular sieve must be tested for TPH and BTEX (and must be cooled in a non-hydrocarbon inert atmosphere and hydrated in ambient air for at least 24 hours before testing).
- Pipe scale and other deposits removed from pipeline and equipment must be tested for TPH, TCLP/metals and NORM.

- Produced water filters must be tested for Corrosivity (and drained and then air-dried for at least 48 hours before testing).
- Sandblasting sand must be tested for TCLP/metals or, at the discretion of the Division, TCLP/total metals.
- Waste oil filters must be tested for TCLP/metals (and must be drained thoroughly of oil for at least 24 hours before testing and oil and metal parts must be recycled).

Spent Molecular Sieve:

Approximately every five years the molecular sieve dehydrators at the plant are recharged. The spent molecular sieve will be disposed of in accordance with all appropriate state and federal regulations. Approximately 14,000 pounds of this material are disposed of each time the beds are recharged.

Sanitary Waste:

Sanitary waste from the plant and office are handled by a septic tank and leach field located North of the Control Room of the facility.

9. Proposed Modifications: (Completed)

East Vacuum Grayburg San Andres Unit (EVGSAU) Lined Pit Closure

ConocoPhillips Company (COPC) remediated the lined overflow pit located at the EVGSAU Central Tank Battery (CTB) in accordance with the requirements outlined by the New Mexico Oil Conservation Division (NMOCD) in the first quarter of 2003 with site closure approval being granted by the NMOCD District I field office August 1, 2003. In addition, one 15,000bbls storage tank with secondary containment, leak detection beneath the tank, and Cathodic protection was installed to replace the lined pit.

(See Attachment 1 for Plot Plan information and new tank layout)
(See Attachment 4 for Overflow Pit Closure information)

10. Routine Inspection/ Maintenance:

The EVLRP's below grade vessels and piping are visually inspected and pressure tested prior to being put into service. The vessels and lines are externally and/ or internally coated if required, to ensure against corrosion. Operators that are on duty 24 hours a day check this equipment continuously.

11. Contingency Plan for Reporting Releases:

Leaks are detected by the operators and corrected in a timely manner. The plant supervisor notifies the New Mexico Oil Conservation Division of any such leaks under the terms of Statewide Rule 116.

12. Geological/ Hydrological Information:

Plant Topography:

A topographic map of the plant area is found in Attachment 5. The EVLRP is represented by the #1 on Attachment 5 and #2 represents the CO_2 portion of the facility. There are no bodies of water within a one-mile radius of the plant.

Flooding Potential:

None.

Groundwater Information:

The depth of groundwater at the EVLRP approximately 42 to 70 feet and the quality of the water is potable. There are no groundwater monitoring wells at the facility.

Geological Information:

The facility is underlain by caliche soil. Groundwater is in the Ogallala aquifer, which has composition of sand to gravel to caliche with some clay beds. The depth of the rock at base of alluvium is less than one foot. (Reference source: New Mexico State Geologist)

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

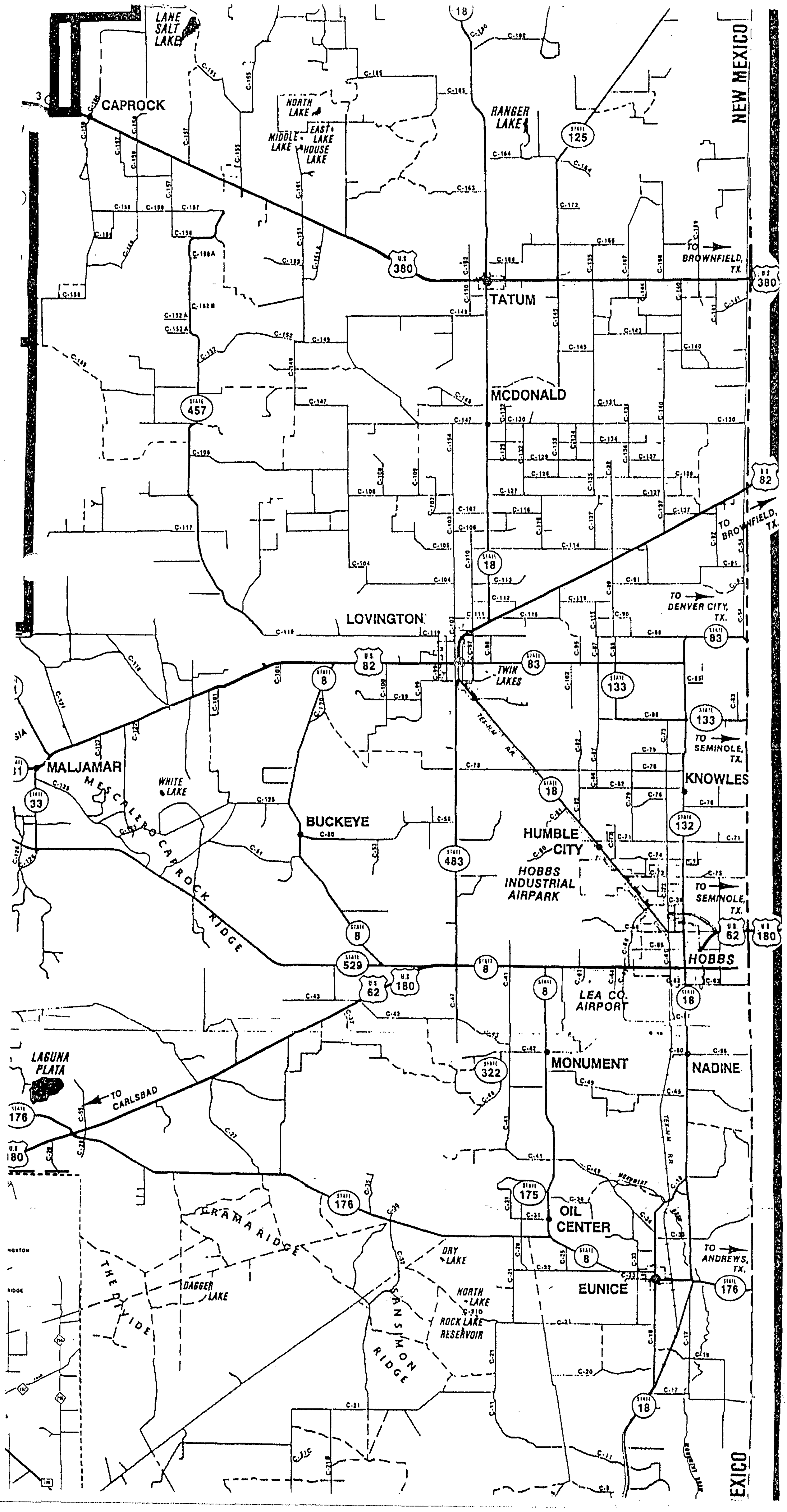
Name: Greg Ashdown Title: Manager Permian Operations

Signature: Date: 06/12/2007

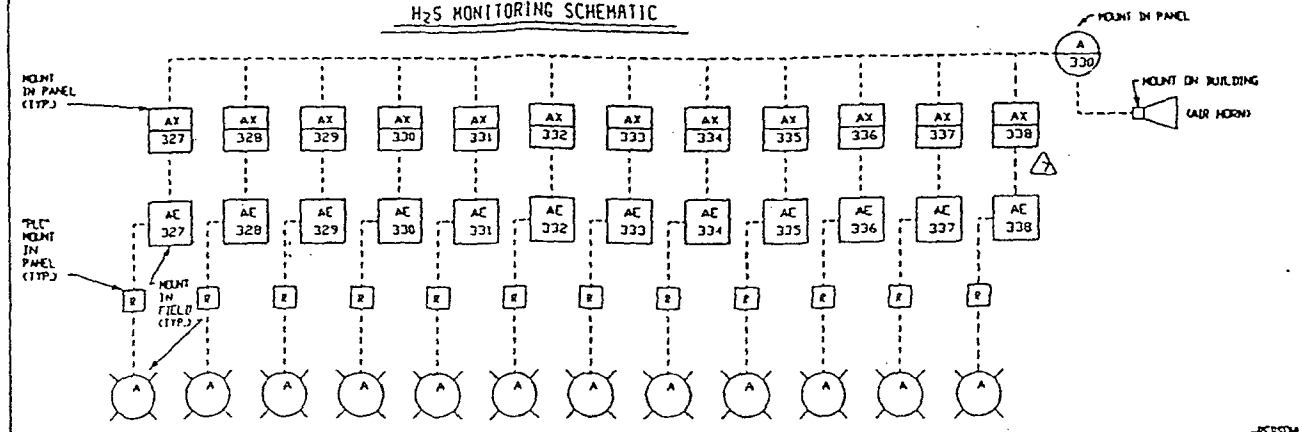
E-mail Address: greg.ashdown@conocophillips.com

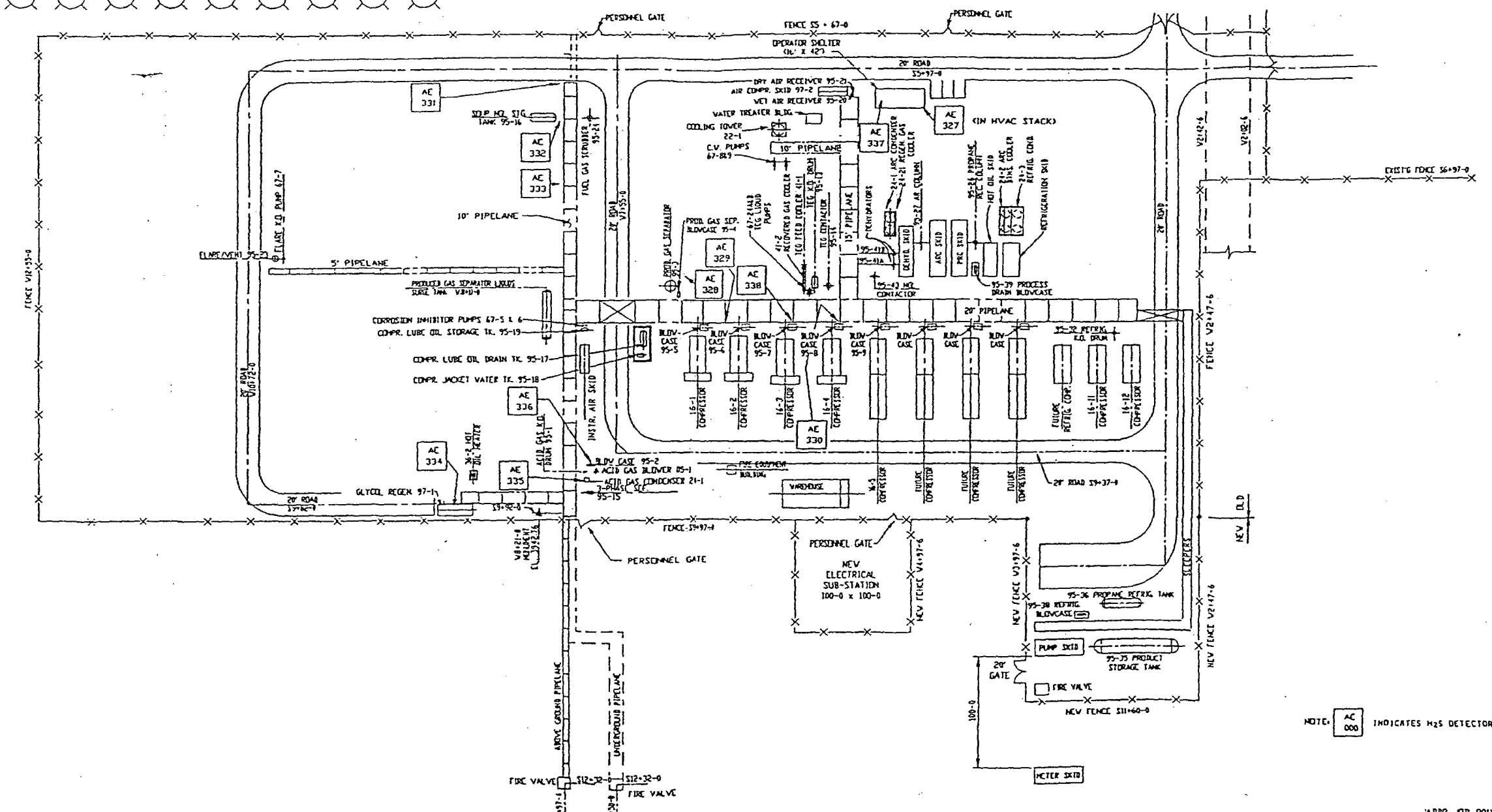
ATTACHMENT 1

EVLRP PLOT PLANS


LANE SALT LAKE
CAPROCK
NORTH LAKE
EAST LAKE
MIDDLE LAKE
HOUSE LAKE
RANGER LAKE
NEW MEXICO
TO BROWNFIELD, TX.
TATUM
MCDONALD
TO BROWNFIELD, TX.
TO DENVER CITY, TX.
LOVINGTON
TWIN LAKES
TO SEMINOLE, TX.
MALJAMAR
WHITE LAKE
MESCALERO CAPROCK RIDGE
KNOWLES
BUCKEYE
HUMBLE CITY
HOBBS INDUSTRIAL AIRPARK
TO SEMINOLE, TX.
HOBBS
LEA CO. AIRPORT
MONUMENT
NADINE
LAGUNA PLATA
TO CARLSBAD
OIL CENTER
TO ANDREWS, TX.
GRAMA RIDGE
THE DIVIDE
DAGGER LAKE
DRY LAKE
NORTH LAKE
ROCK LAKE RESERVOIR
SAN SIMON RIDGE
EUNICE
EXICO

H_2S MONITORING SCHEMATIC





NOTE: AC 000 INDICATES H_2S DETECTOR

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE
		CHK'D	APP'D			CHK'D	APP'D			CHK'D	APP'D
1	REV. H_2S MONITORING SCHEMATIC & ADDED MONITORS 328,328C,329A AND 329B. P-KN51	SWF / RDB	7/85 / RAC	3	REVISED TO SHOW RELOCATED EQUIPMENT. P-KN51	RDB / RAC	10/85	7	ADDED COMPR. #16-4, BLOWCASE #95-8 & AE 338 P-C412	ELP / ELP	11/88
2	REV. H_2S MONITORING SCHEMATIC & REV. MONITOR NUMBERS. P-KN51	SWF / RDB	8/85 / RAC	4	REV. & ADDED NEW PERSONNEL GATE P-KN51	ELP / RDB	2/86 / DMG	8	ISSUED FOR CONSTRUCTION P-C867	JHH / DH	11/88 / 5-6-92
				5	REVISED PER AS BUILT. P-KN51	ELP / DMG	6/86 / RDB	9	AS-BUILT		
				6	RELOCATED 16-3 & 95-7 AND SHOWED AS NEW EQUIP. P-C136	JF / RDB	12/87 / RDB				

FOR BIDS	
FOR APPR	0-6-6-85 RAC
FOR CONST	1-8-7-85 RAC 5-6-10-86 KRS
DRAWN	BARRINGER 5/85
CHECKED	R.A.C. 6/85
APP'D	R.A.C. 6/85

ABBR JOB 80110 9-16-92

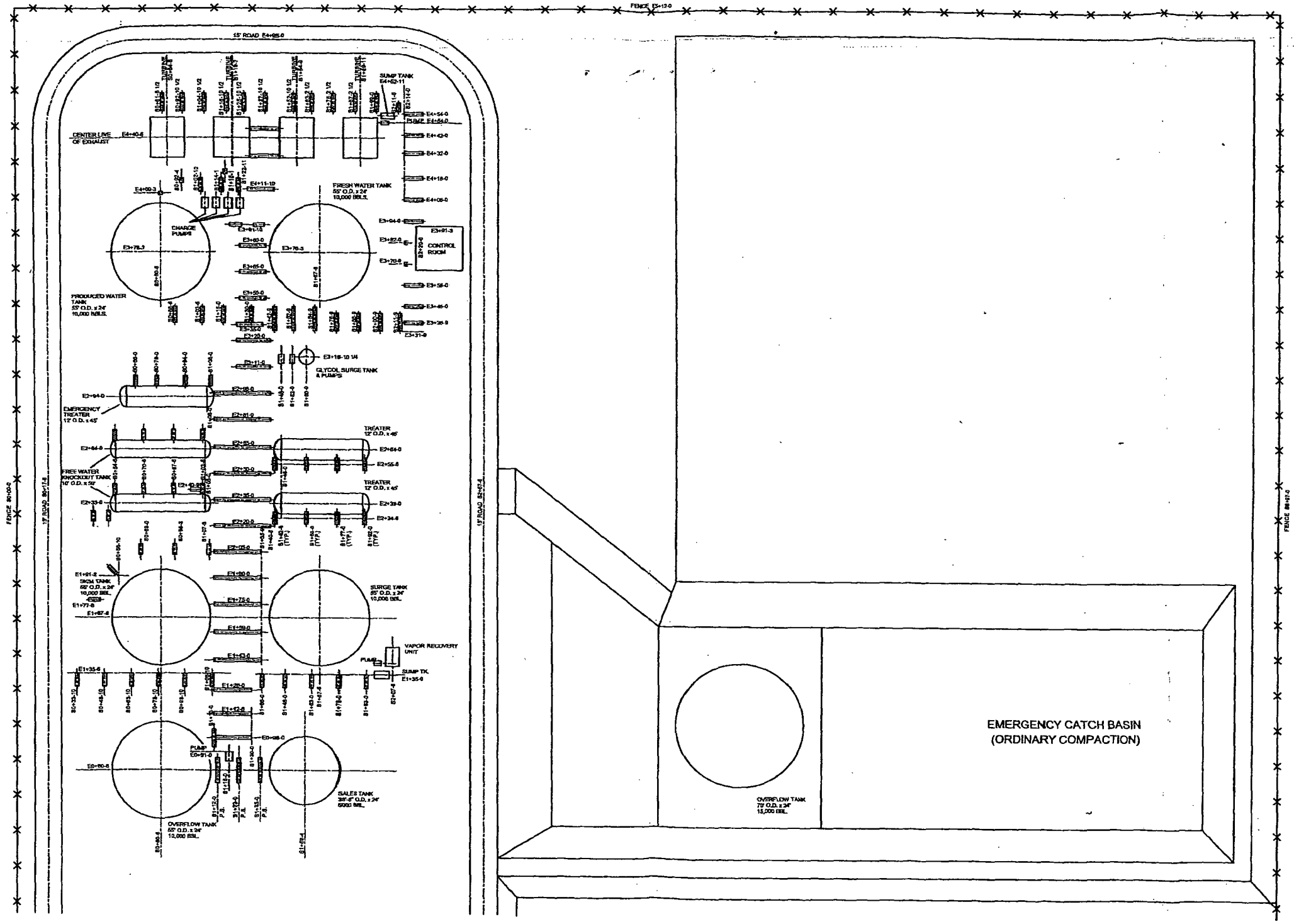
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

MECHANICAL FLOW SHEET
EAST VACUUM CO_2 REINJECTION PLANT
H_2S MONITORS

EAST VACUUM PLANT — LEA COUNTY, NEW MEXICO

HEAD & MERG COORDINATE REV. W/ CAD SUPV

JA NO.	56-9241
FILE CODE	= 506
AFE NO.	P-KN51
SCALE	NONE
DWG NO.	PED-256
SH NO.	MF-14-9



NO.	REVISION	BY CHKD	DATE APP'D
1	Redrawn	CDS	11/5/03

NO.	REVISION	BY CHKD	DATE APP'D

ConocoPhillips
4001 Penbrook
Odessa, Texas 79762

EQUIPMENT LAYOUT
CENTRAL TANK BATTERY
EAST VACUUM GRAYBURG – SAN ANDRES UNIT
EAST VACUUM PLANT LEA CO., NM

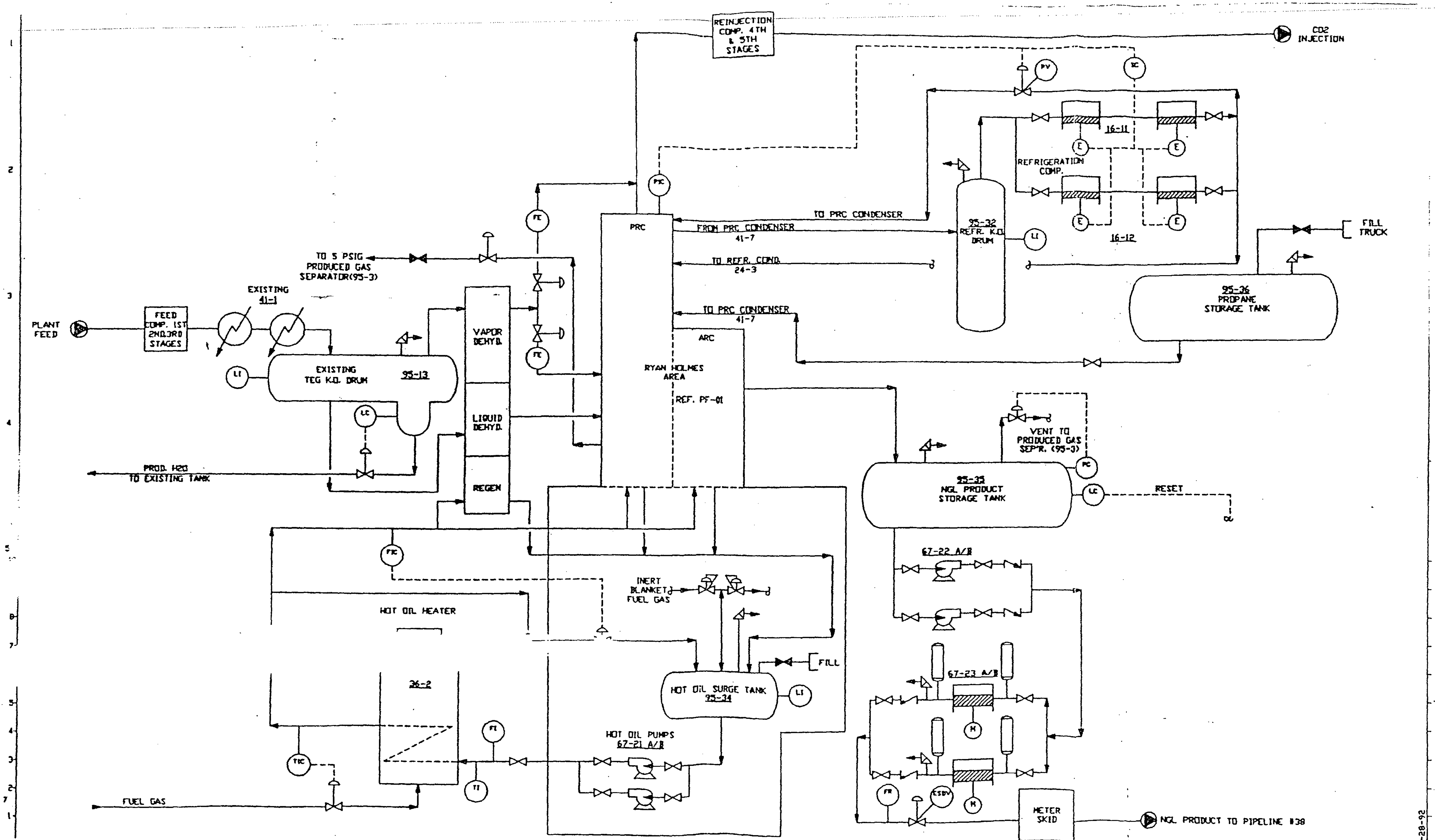
Federal Lease NO.
DWG NO. PED-256

FOR BIDS
FOR APPR
FOR CONST

DRAWN CDS 11/5/03
CHECKED
APP'D
JA NO. 56-9241
FILE CODE #507
AFE NO. P-10151
SCALE 1"=30'-0"
SH NO. MP-3-0

ATTACHMENT 2

EVLRP PROCESS FLOW SHEET


REINJECTION COMP. 4TH & 5TH STAGES
CO2 INJECTION
PV
SC
16-11
16-12
REFRIGERATION COMP.
PIC
PRC
TO PRC CONDENSER
FROM PRC CONDENSER 41-7
TO REFR. COND. 24-3
TO PRC CONDENSER 41-7
95-32 REFR. K.O. DRUM
LI
FILL TRUCK
95-36 PROPANE STORAGE TANK
TO 5 PSIG PRODUCED GAS SEPARATOR(95-3)
EXISTING 41-1
PLANT FEED
FEED COMP. 1ST 2ND,3RD STAGES
VAPOR DEHYD.
LIQUID DEHYD.
REGEN
EXISTING TEG K.O. DRUM 95-13
LC
FE
ARC
RYAN HOLMES AREA
REF. PF-01
PROD. H2O TO EXISTING TANK
VENT TO PRODUCED GAS SEP'R. (95-3)
PC
95-35 NGL PRODUCT STORAGE TANK
RESET
67-22 A/B
FIC
INERT BLANKET FUEL GAS
HOT OIL HEATER
36-2
FILL
HOT OIL SURGE TANK 95-34
HOT OIL PUMPS 67-21 A/B
67-23 A/B
FI
TI
TIC
FUEL GAS
FR
ESDV
METER SKID
NGL PRODUCT TO PIPELINE #38
1-28-92

REVISION				
P1	KPS DEO# 1997	A	ISSUED FOR APPROVAL P-C867	CFD
P2	KPS DEO# 2065	B	ISSUED FOR CONSTRUCTION	CFD
P3	KPS DEO# 2128			

A 10-29-91 CFD
B 1-28-92 CFD

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

PROCESS SCHEMATIC DIAGRAM
RYAN/HOLMES PLANT-EVGSAU CO2 FACILITY

56-9288 | 511
P-C867 | NONE
PED-256
PF-06-0

95-26 PROPANE RECOVERY COLUMN (PRC)	41-5 PRC REBOILER	41-8 PRC SIDE REBOILER	41-9 PRC SIDE HEATER	41-7 PRC CONDENSER	95-28 PRC REFLUX DRUM	41-10 ADDITIVE SUBCOOLER	67-17A/B PRC REFLUX PUMP	95-27 ADDITIVE RECOVERY COLUMN (ARC)	41-6 ARC REBOILER	24-1 ARC CONDENSER	95-29 ARC REFLUX DRUM	67-19A/B ADDITIVE PUMP	95-30 ADDITIVE DRUM	67-18A/B ARC REFLUX PUMP	24-2 ARC BTMS COOLER	41-11 NGL CONDENSER
	DUTY MM BTU/HR	DUTY MM BTU/HR	DUTY MM BTU/HR	DUTY MM BTU/HR		DUTY MM BTU/HR	GPM		DUTY MM BTU/HR	DUTY MM BTU/HR		GPM		GPM	DUTY MM BTU/HR	DUTY MM BTU/HR
	(A) 2.77	(A) 0.59	(A) 0.51	(A) 5.00		(A) 0.17	(A) 83		(A) 2.00	(A) 0.67		(A) 26		(A) 18	(A) 0.22	(A) 1.39
	(B) 2.22	(B) 0.67	(B) 0.45	(B) 4.75		(B) 0.25	(B) 74		(B) 1.89	(B) 0.60		(B) 26		(B) 16	(B) 0.18	(B) 1.12
	(C) 2.46	(C) 1.40	(C) 1.68	(C) 3.91		(C) 1.01	(C) 62		(C) 1.94	(C) 0.88		(C) 62		(C) 24	(C) 0.84	(C) 0.32

RESET
TO REFRIG. COMPRESSOR CAPACITY CONTROL
REFRIGERANT VAPOR
REFRIGERANT LIQUID
REFRIG. SUBCOOLER (41-13)
CO2 TO 4TH STAGE COMPRESSION
PLANT FEED GAS
FEED COMPRESSION CONDENSATION VAPOR/LIQ. SEP'N. AND DEHYDRATION
DRY LIQUID
DRY VAPOR
VAPOR DRAW RECYCLE TO PRC VAPOR DRAW COMPRESSOR (16-13)
150 PSIG FUEL GAS SUPPLY
VENT TO PRODUCED GAS SEP'R. (95-3)
SAMPLE
COOLING WATER
NGL PRODUCT TO NGL STORAGE TANK (95-35)
HOT OIL SUPPLY
HOT OIL RETURN
SELECT

LEGEND:
(A) LOW CO2 CASE - 1992 OPERATION
(B) BASE CASE - 1992 OPERATION
(C) HIGH CO2 CASE - 2004 OPERATION

NO.	REVISION	BY	DATE
P1	KPS DED# 1997		
P2	KPS DED# 2065		
P3	KPS DED# 2128		

A	ISSUED FOR APPROVAL P-C867	CFD	10-29-91
0	ISSUED FOR CONSTRUCTION	CFD	1-28-92

FOR ISSUE
FOR APPR A 10-29-91 CFD
FOR ISSUE 0 1-28-92 CFD

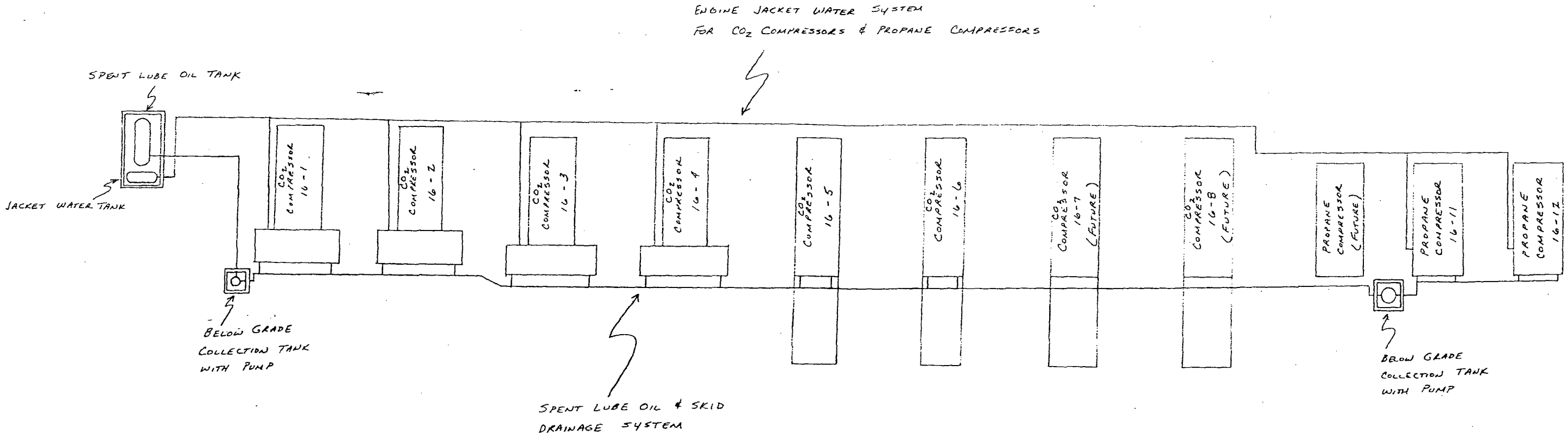
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA
PROCESS FLOW SHEET
RYAN/HOLMES PLANT
EVGSAU CO2 FACILITY

JOB NO. 56-9288
APP NO. P-C867
SCALE NONE
DWG NO. PED-256
SH NO. PF-01-0

1-28-92

ATTACHMENT 3

EVLRP DRAIN SYSTEM


ENGINE JACKET WATER SYSTEM
FOR CO_2 COMPRESSORS & PROPANE COMPRESSORS
SPENT LUBE OIL TANK
JACKET WATER TANK
CO_2 COMPRESSOR 16-1
CO_2 COMPRESSOR 16-2
CO_2 COMPRESSOR 16-3
CO_2 COMPRESSOR 16-4
CO_2 COMPRESSOR 16-5
CO_2 COMPRESSOR 16-6
CO_2 COMPRESSOR 16-7 (FUTURE)
CO_2 COMPRESSOR 16-8 (FUTURE)
PROPANE COMPRESSOR (FUTURE)
PROPANE COMPRESSOR 16-11
PROPANE COMPRESSOR 16-12
BELOW GRADE COLLECTION TANK WITH PUMP
SPENT LUBE OIL & SKID DRAINAGE SYSTEM
BELOW GRADE COLLECTION TANK WITH PUMP

ATTACHMENT 4

OVERFLOW PIT CLOSURE INFORMATION

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

August 1, 2003

ConocoPhillips
Attn: Dan McCarty
4001 Penbrook Street
Odessa, TX 79762

Re: Pit Closure Approval - Dated: March 10, 2003
EVGSAU Central Tank Battery
UL-_, Sec 33-T17S-R35E.

Dear Mr. McCarty,

The Pit Closure Report referenced above and submitted to the New Mexico Oil Conservation Division (OCD) by BBC International for ConocoPhillips is **hereby approved.** According to the information submitted, no further action is required.

Please be advised that OCD approval of this plan does not relieve ConocoPhillips of liability should their operations fail to adequately investigate and remediate contaminants that threaten ground water, surface water, human health or the environment. In addition, OCD approval does not relieve ConocoPhillips of responsibility for compliance with any other federal, state, or local laws and/or regulations.

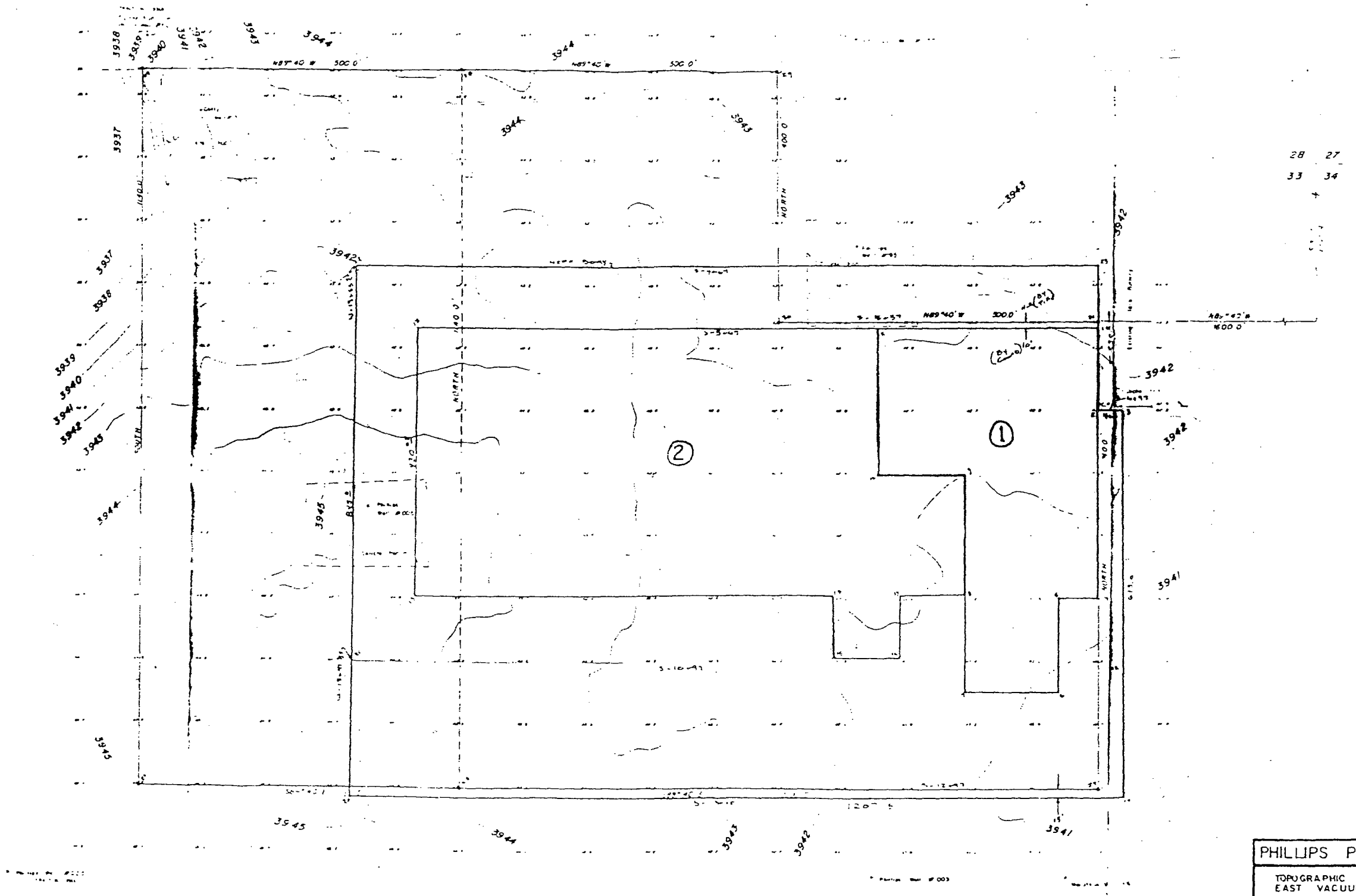
If you have any questions or need assistance please write or call: (505) 393-6161, ext. 113, or e-mail: psheeeley@state.nm.us

Sincerely,

Paul Sheeley-Environmental Engineer
Cc: Roger Anderson - Environmental Bureau Chief
Chris Williams - District I Supervisor
William Olson - OCD Hydrologist
Larry Johnson - Environmental Engineer
Ken Swinny - BBC

ATTACHMENT 5

TOPOGRAPHIC MAP



PHILLIPS PETROLEUM COMPANY

TOPOGRAPHIC SURVEY OF PROPOSED
EAST VACUUM CO_2 PLANT SITE

SITUATED WITHIN SECTION 33 TOWNSHIP 17 SOUTH,
RANGE 35 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO

JOHN WEST ENGINEERING CO.
CONSULTANTS
HOBBS NEW MEXICO

ACKNOWLEDGEMENT OF RECEIPT
OF CHECK/CASH

I hereby acknowledge receipt of check No. _____ dated 6/7/07

or cash received on _____ in the amount of $ 100.00

from Conoco Phillips Co.

for GW-119

Submitted by: Lawrence Romero Date: 7/5/07

Submitted to ASD by: Lawrence Romero Date: 7/5/07

Received in ASD by: _____ Date: _____

Filing Fee _____ New Facility _____ Renewal ✓

Modification _____ Other _____

Organization Code 521.07 Applicable FY 2004

To be deposited in the Water Quality Management Fund.

Full Payment _____ or Annual Increment _____

ConocoPhillips

Kenneth N. Andersen
Environmental Specialist
Phone: (432) 688-9020
Fax: (432) 688-6017
Cell: (432) 599-8172
Email: ken.n.andersen@conocophillips.com

ConocoPhillips Company
3300North "A" St., 6-129
Midland, TX 79705-5490

Mid Continent Business Unit

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Date: June 22, 2007

Subject: Discharge Plan GW-119 Renewal
East Vacuum Liquids Recovery Plant/CO_2 Plant
Lea County, New Mexico

Enclosed please find the original and one copy of ConocoPhillips Company's renewal application for Discharge Plan GW-119 for the East Vacuum Liquids Recovery Plant/CO_2 Plant located in Lea County, New Mexico. Another copy of the Discharge Plan Application was sent to District I (Hobbs) as required.

We will be using the Hobbs News Sun, 201 N. Thorp, Hobbs, N.M. 88240, to meet the requirements of Paragraph (2) Subsection C of 20.6.2.3108. A copy of the synopsis is enclosed.

Also enclosed is a check to cover the applicable filing fee for this renewal application.

If there are any questions or concerns with this renewal, please contact me. Thank you for your time.

Sincerely,

Kenneth N. Andersen

NOTICE OF PUBLICATION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge permit renewal has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(GW-119) – ConocoPhillips Company, Ken Andersen, Environmental Specialist, 3300 North "A" Street, Midland, Texas, 79705-5490, has submitted an application for renewal of their previously approved discharge plan for the East Vacuum Liquid Recovery Plant/CO_2 Plant located in the W/2 NE/4 of Section 33, Township 17 South, Range 35 East, Lea County, New Mexico. At this facility the C5+ liquids are removed from the gas stream and sold and the CO_2 enriched gas is compressed and re-injected into a CO_2 flood. Approximately 304,166 gallons per month of waste water is discharged onsite into the Free Water Knock Outs located at the East Vacuum Grayburg San Andres Unit Central Tank Battery where it is used as feedstock in the production stream, hydrocarbons being sold and water used as makeup for water injection flood. Ground water most likely to be affected by a spill, leak or accidental discharge to the surface is at a depth of approximately 42 to 70 feet with a total dissolved solids concentration of approximately 297 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

The New Mexico Oil Conservation Division will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments or requesting to be on a facility-specific mailing list for future notices may contact:

Carl Chavez, CHMM
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505
Office: (505) 476-3491

NOTA DE PUBLICACION

Se notifica, que de acuerdo a la Comisión de Regulación de Control de Calidad de Agua de Nuevo México, el siguiente permiso de renovación ha sido presentada a el director de la División de Conservación de Petróleo, 1220 S. Saint Francis Drive, Santa Fe, Nuevo México 87505, Teléfono (505) 476-3440

(GW-119) – ConocoPhillips Company, Ken Andersen, Especialista Ambiental, 3300 North "A" Street, Midland, Texas, 79705-5490, ha presentado una aplicación para renovar el permiso de descarga previamente aprobado para la planta Este de Recuperación de Líquidos. La planta esta localizada en la esquina O/2 NE/4 de la sección 33, municipio 17 sur, rango 35 Este, Condado de Lea, Nuevo México. En esta locación los líquidos C5+ son removidos de la corriente de gas y vendidos. Gas rico en CO2 es comprimido y re-inyectado en un yacimiento de CO2. Aproximadamente 304,166 galones mensuales de agua de desecho son desechados en un tanque de agua en la Batería Central Grayburg San Andres, donde el agua es mezclada con la corriente de producción. Hidrocarburos son vendidos y el agua es usada como substituta en el yacimiento de inundación de agua. Agua del subsuelo con probabilidad de ser afectada por un derrame, goteos y otros descargos accidentales en la superficie se encuentra a una profundidad aproximada de 42 a 70 pies, con un total aproximado de 297mg/L de concentración de sólidos disueltos. El plan de descarga hace referencia a como los derrames, goteos y otros descargos accidentales en la superficie serán controlados para proteger el agua fresca

La División de Conservación de Petróleo de Nuevo México (New México Oil Conservación División) aceptara comentarios y declaraciones de interés en referencia a esta aplicación y creara una lista especifica a la locación para personas que deseen recibir notificaciones por correo. Personas interesadas en obtener mas información, enviar comentarios o que deseen ser puestas en la lista de notificaciones por correo pueden ponerse en contacto con:

Sr. Carl Chavez, CHMM
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505
Oficina: (505) 476-3491

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

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

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

☐ New ☒ Renewal ☐ Modification

1. Type: Discharge Plan GW-119 Renewal
East Vacuum Liquid Recovery Plant/CO_2 Plant

2. Operator: ConocoPhillips Company

Address: 29 Vacuum Complex lane
Lovington, NM 88260-9664

Contact Person: Kenneth N. Andersen
Environmental Specialist
3300 North "A" Street, 6-129
Midland, TX 79705-5490
(432) 688-9020
ken.n.andersen@conocophillips.com

3. Location: W/2 NE/4 Section 33, Township 17 South, Range 35 East
Lea County, New Mexico
(See Attachment 1 for Facility Site Plan)

4. Landowner: State of New Mexico
State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501
Phone: (505) 827-5760

5. Facility Description and Plot Plans: The East Vacuum Liquids Recovery Plant (EVLRP) is a Ryan-Holmes type process plant that is licensed from Koch Engineering. The process includes a two-column process operating in the propane recovery mode. The plant is sized for a maximum inlet feed capacity of 28 MMSCFD; and as much gas as possible is fed to the EVLRP with the remainder bypassing through the CO_2 Reinjection Facility. Feed gas to the EVLRP is taken from downstream of the Triethylene Glycol (TEG) contactor after the 3rd stage of compression at about 300 psig. Compression liquids recovered from the 3rd stage compression (collected in the TEG Knockout Drum) are processed (stabilized) in the EVLRP. These liquids enter the first column as a liquid feed stream. Molecular sieve dehydration is required before the feed streams are processed in the EVLRP. The residue CO_2 stream (CO_2, H_2S, Methane and Ethane) from the EVLRP is delivered back to the 4th stage suction header. The recovered Natural Gas Liquids (NGL) are delivered to the NGL storage facility and to the Central Tank Battery. The NGL product is pumped from the storage facility and delivered via a metering skid to the ConocoPhillips Company

NGL Pipeline No. 38, which is about 2,200 feet south of the EVLRP. An automatic bypass line around the EVLRP is installed to allow continued CO_2 reinjection when the EVLRP is down. The Hot Oil system provides heat for the column reboilers and heats the regeneration gas for molecular sieve dehydrators. The Propane Refrigeration system provides refrigeration for the overhead condenser on the first column of the EVLRP. The Cooling Water system and TEG system are shared with the CO_2 Reinjection facility.

(See Attachment 1 for Plot Plan information.)
(See Attachment 2 for Process Flow information.)

6. Materials Stored/ Used:

The following materials are stored or used at the facility (Maximum quantities):

- Solvent – liquid, drum,100 Gallons, shop
- Methanol – liquid, tank, 210 BBLs, yard
- Phillips Eclipse 30-40 – liquid, tank, 210 BBLs, yard
- Conoco Wet Gas Compressor Fluid 220 – liquid, tank, 1000 gallons, yard
- Triethylene Glycol – liquid, tank, 1200 Gallons, yard
- Champion Cortron-2378 – liquid, tank, 500 Gallons, yard
- Ethylene Glycol (aka ES Coolant Blends) – liquid, tank, 4000 gallons, yard

7. Sources of Effluent and Waste Solids:

PLANT WATER SYSTEM

Raw Water:

EVLRP receives its process make-up water and non-potable water from the Central Tank Battery (CTB) located adjacent to the plant. Approximately 15,000 gallons per day are provided to the plant from this source.

(See Attachment 1 for Plot Plan information)

Potable Water:

Bottled drinking water for ConocoPhillips Company employees, contract personnel, and guests of the facility is supplied in the EVLRP Control Room.

Cooling Tower System:

The cooling tower system is comprised of one open re-circulating tower. The cooling tower has a re-circulation rate of 800 gallons per minute with an approximate daily volume of 400 gallons per day. The water in the tower is re-circulated and treated to maintain a pH of 7.2 to 7.6 and a Phosphate level 12 to 17. The following chemicals with their specific feed rates, are being added to cooling tower waters for the treatment of scale, corrosion and biological treatment:

- Alpha 512 – as needed
- Champion Antipol 310 – as needed
- Champion Defoamer-V-116 – as needed
- Chlorine Tablets (Trichloro-5-Triazinetrione) – as needed
- Sulfuric Acid – as needed

Engine Cooling Systems:

Water and antifreeze (50/50 mix) are used as coolant in the jacket water systems of all engines and compressors at the plant. The plant has two propane compressors referred to as the "Refrigeration Compressors."

Coolant from engines is drained to the respective jacket water drain tank when an engine is being worked on. The coolant is pressured back to the engine when the work is completed.

Filter Coalescer System:

The filter coalescer is a two-stage separator that separates micron size particles and tiny mist like droplets of triethylene glycol (TEG). The TEG is recycled through an existing Rich TEG Line. Any particles are trapped in the cartridge type filters, which are changed as needed.

(See Attachment 1 for Plot Plan information)

8. Collection and Disposal Procedures:

PLANT DRAIN SYSTEM

Engine Oil Drain System:

Lube oil in the EVLRP's Refrigeration Compressors is changed by draining the "spent" oil charge from an engine into a below grade storage and collection point constructed of a steel tank contained in a cement vault. Atmospheric drains, located around the plants engines, are designed to catch leaking oil, and drain to the fiberglass sump and are pumped to the above mentioned below grade storage. Liquids from the steel tanks are pumped into the CTB Free Water Knock Outs (FWKO) as feedstock & processed through the production system.

(See Attachment 3 for EVLRP Drain System information)
(See Attachment 1 for Plot Plan information)

Cooling Tower Wastewater Disposal System:

The cooling tower blow down is sent through a 2-inch line to the CTB Free Water Knock Outs (FWKO) as feedstock & processed through the production system.

(See Attachment 3 for EVLRP Drain System information)
(See Attachment 1 for Plot Plan information)

SOLID WASTE

General Waste:

EVLRP disposes non-domestic wastes at solid waste facilities in New Mexico. Per NM OCD 19.15.9.712, EVLRP disposes, or has the potential to dispose, the following wastes without testing:

- Barrels, drums, 5-gallon buckets, 1-gallon containers - empty and EPA-clean.
- Uncontaminated brush and vegetation arising from clearing operations.
- Uncontaminated concrete.
- Uncontaminated construction debris.
- Non-friable asbestos and asbestos contaminated waste material.
- Detergent buckets, so long as completely empty.
- Fiberglass tanks so long as the tank is empty, cut up or shredded, and EPA clean.
- Grease buckets, so long as empty and EPA clean.
- Uncontaminated ferrous sulfate or elemental sulfur so long as recovery and sale as a raw material is not possible.
- Metal plate and metal cable.
- Office trash.
- Paper and paper bags, so long as empty (paper bags).
- Plastic pit liners, so long as cleaned well.
- Soiled rags or gloves. If wet, must pass Paint Filter Test prior to disposal.
- Uncontaminated wood pallets.

In addition, EVLRP disposes the following in accordance with NM OCD 19.15.9.712 (D)(2) for waste that must be tested prior to disposal:

- Activated alumina - tested for TPH and BTEX.
- Activated carbon - tested for TPH and BTEX.
- Amine filters - tested for BTEX (and air-dried for at least 48 hours before testing).
- Friable asbestos and asbestos-contaminated waste material must be tested pursuant to NESHAP.
- Cooling tower filters - tested for TCLP/chromium (and drained and then air-dried for at least 48 hours before testing).
- Dehydration filter media - tested for TPH and BTEX (and drained and then air-dried for at least 48 hours before testing).
- Gas condensate filters - tested for BTEX (and drained and then air-dried for at least 48 hours before testing).
- Glycol filters - tested for BTEX (and drained and then air-dried for at least 48 hours before testing).
- Iron sponge must be oxidized completely and then undergo ignitability testing.
- Junked pipes, valves, and metal pipe must be tested for NORM.
- Molecular sieve must be tested for TPH and BTEX (and must be cooled in a non-hydrocarbon inert atmosphere and hydrated in ambient air for at least 24 hours before testing).
- Pipe scale and other deposits removed from pipeline and equipment must be tested for TPH, TCLP/metals and NORM.

- Produced water filters must be tested for Corrosivity (and drained and then air-dried for at least 48 hours before testing).
- Sandblasting sand must be tested for TCLP/metals or, at the discretion of the Division, TCLP/total metals.
- Waste oil filters must be tested for TCLP/metals (and must be drained thoroughly of oil for at least 24 hours before testing and oil and metal parts must be recycled).

Spent Molecular Sieve:

Approximately every five years the molecular sieve dehydrators at the plant are recharged. The spent molecular sieve will be disposed of in accordance with all appropriate state and federal regulations. Approximately 14,000 pounds of this material are disposed of each time the beds are recharged.

Sanitary Waste:

Sanitary waste from the plant and office are handled by a septic tank and leach field located North of the Control Room of the facility.

9. Proposed Modifications: (Completed)

East Vacuum Grayburg San Andres Unit (EVGSAU) Lined Pit Closure

ConocoPhillips Company (COPC) remediated the lined overflow pit located at the EVGSAU Central Tank Battery (CTB) in accordance with the requirements outlined by the New Mexico Oil Conservation Division (NMOCD) in the first quarter of 2003 with site closure approval being granted by the NMOCD District I field office August 1, 2003. In addition, one 15,000bbls storage tank with secondary containment, leak detection beneath the tank, and Cathodic protection was installed to replace the lined pit.

(See Attachment 1 for Plot Plan information and new tank layout)
(See Attachment 4 for Overflow Pit Closure information)

10. Routine Inspection/ Maintenance:

The EVLRP's below grade vessels and piping are visually inspected and pressure tested prior to being put into service. The vessels and lines are externally and/ or internally coated if required, to ensure against corrosion. Operators that are on duty 24 hours a day check this equipment continuously.

11. Contingency Plan for Reporting Releases:

Leaks are detected by the operators and corrected in a timely manner. The plant supervisor notifies the New Mexico Oil Conservation Division of any such leaks under the terms of Statewide Rule 116.

12. Geological/ Hydrological Information:

Plant Topography:

A topographic map of the plant area is found in Attachment 5. The EVLRP is represented by the #1 on Attachment 5 and #2 represents the CO_2 portion of the facility. There are no bodies of water within a one-mile radius of the plant.

Flooding Potential:

None.

Groundwater Information:

The depth of groundwater at the EVLRP approximately 42 to 70 feet and the quality of the water is potable. There are no groundwater monitoring wells at the facility.

Geological Information:

The facility is underlain by caliche soil. Groundwater is in the Ogallala aquifer, which has composition of sand to gravel to caliche with some clay beds. The depth of the rock at base of alluvium is less than one foot. (Reference source: New Mexico State Geologist)

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

Name: Greg Ashdown Title: Manager Permian Operations

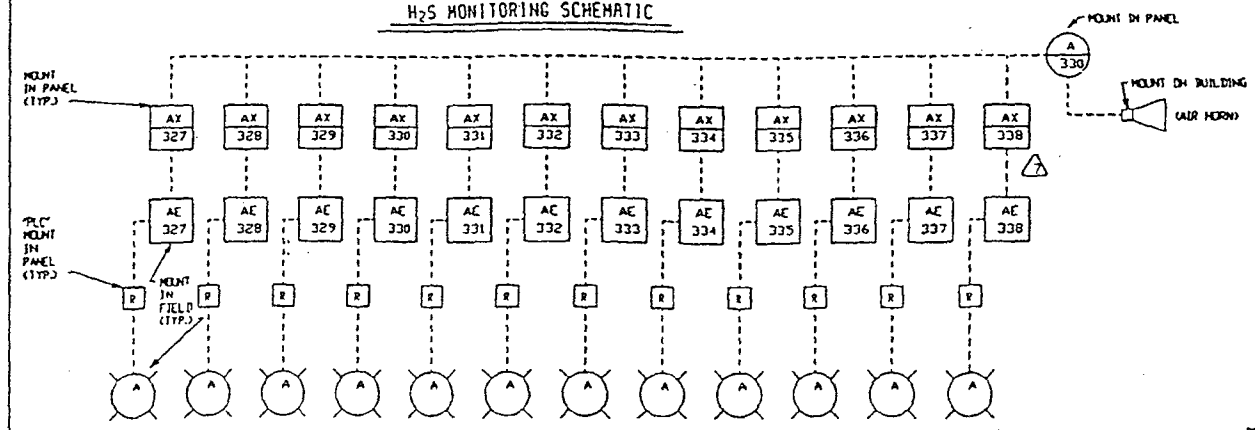
Signature: Date: 06/12/2007

E-mail Address: greg.ashdown@conocophillips.com

ATTACHMENT 1

EVLRP PLOT PLANS

H_2S MONITORING SCHEMATIC



NOTE: AC 000 INDICATES H_2S DETECTOR

NO.	REVISION	BY	DATE
		CWD	APP'D
1	REV. H_2S MONITORING SCHEMATIC & ADDED MONITORS 328B,328C,329A AND 329B. P-KN51	SVF	7/85
		RDB	RAE
2	REV. H_2S MONITORING SCHEMATIC & REV. MONITOR NUMBERS P-KN51	SVF	8/85
		RDB	RAE
3	REVISED TO SHOW RELOCATED EQUIPMENT. P-KN51	LI	10/85
		RDB	RAE
4	REV. & ADDED NEV PERSONNEL GATE P-KN51	ELP	2/86
		RDB	DMG
5	REVISED PER AS BUILT. P-KN51	ELP	6/86
		DMG	RDB
6	RELOCATED 16-3 & 95-7 AND SHOWED AS NEV EQUIP. P-C134	JF	11/87
		RDB	RDB
7	ADDED COMPR. #16-4, BLOWCASE #95-8 & AE 338 P-C412	JMH	11/88
		CLP	ELP
8	ISSUED FOR CONSTRUCTION P-C867	DH	5-6-92
9	AS-BUILT		

FOR BIDS		
FOR APPR	0-6-6-85	RAE
FOR CONST	1-8-7-85 RAE; 5-6-10-86 ERS	
DRAWN	BARRINGER	5/85
CHECKED	RAE	6/85
APP'D	RAE	6/85

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

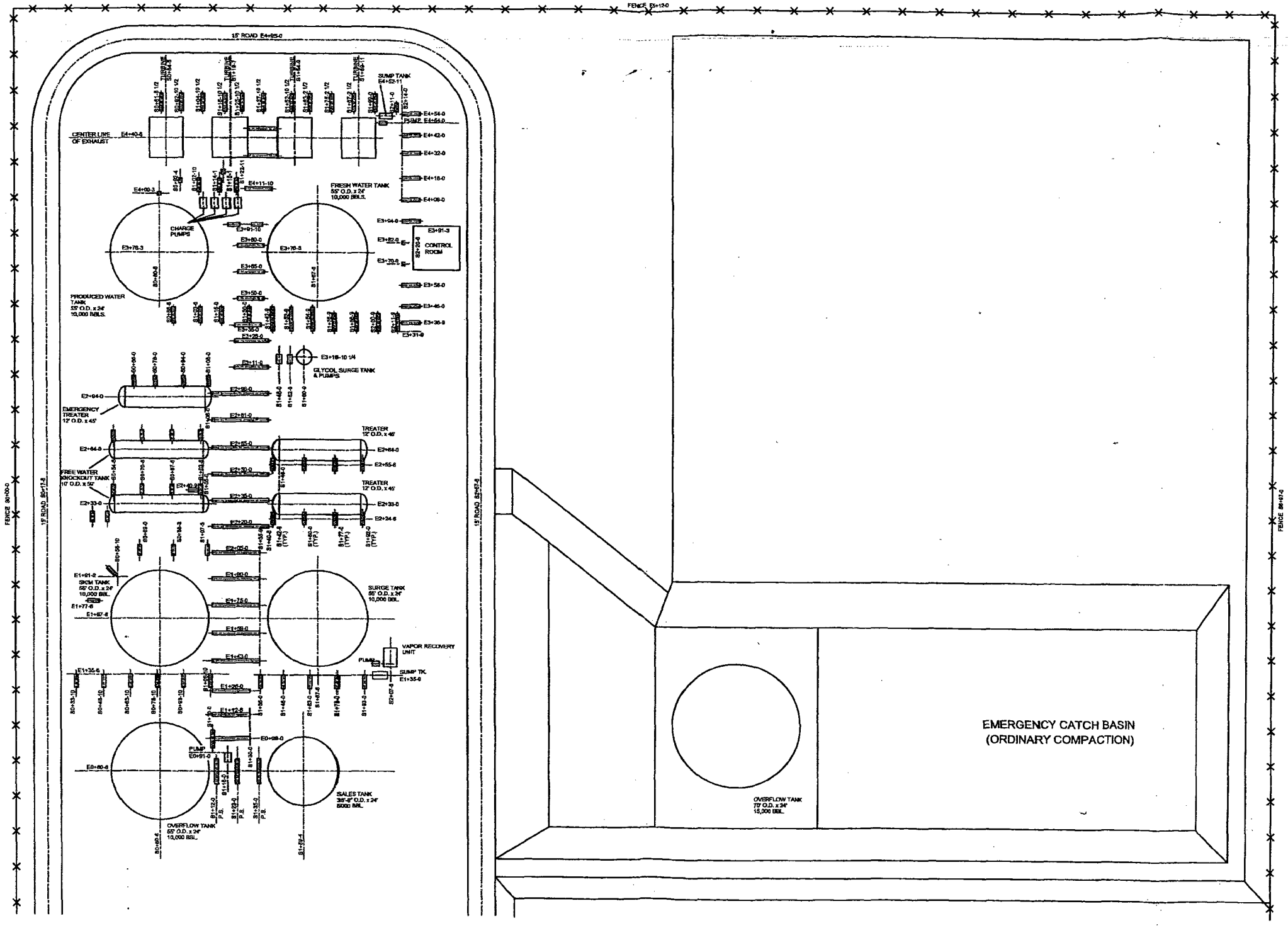
MECHANICAL FLOW SHEET
EAST VACUUM CO_2 REINJECTION PLANT
H_2S MONITORS

EAST VACUUM PLANT — LEA COUNTY, NEW MEXICO

'ABBR JOB 80110 — 9-16-92

JA NO.	56-9241
FILE CODE	# 506
AFC NO.	P-KN51
SCALE	NONE
DWG NO.	PED-256
SH NO.	MF-14-9

READ & MERGE/COORDINATE REV. W/ CAD SHEET



NO.	REVISION	BY CHKD	DATE APP'D	NO.	REVISION	BY CHKD	DATE APP'D
1	Redrawn	CDS	11/5/03				

ConocoPhillips
4001 Penbrook
Odessa, Texas 79762

EQUIPMENT LAYOUT
CENTRAL TANK BATTERY
EAST VACUUM GRAYBURG – SAN ANDRES UNIT
EAST VACUUM PLANT LEA CO., NM

Federal Lease NO.
DWG NO. PED–256

FOR BIDS
FOR APPR
FOR CONST

DRAWN	CDS	11/5/03
CHECKED		
APP'D		
JA NO. 56–9241	FILE CODE #507	
AFE NO. P–10151	SCALE 1"–30'–0"	
SH NO. MP–3–0		

FILE NAME

ATTACHMENT 2

EVLRP PROCESS FLOW SHEET

95-26 PROPANE RECOVERY COLUMN (PRC)	41-5 PRC REBOILER	41-8 PRC SIDE REBOILER	41-9 PRC SIDE HEATER	41-7 PRC CONDENSER	95-28 PRC REFLUX DRUM	41-10 ADDITIVE SUBCOOLER	67-17A/B PRC REFLUX PUMP	95-27 ADDITIVE RECOVERY COLUMN (ARC)	41-6 ARC REBOILER	24-1 ARC CONDENSER	95-29 ARC REFLUX DRUM	67-19A/B ADDITIVE PUMP	95-30 ADDITIVE DRUM	67-18A/B ARC REFLUX PUMP	24-2 ARC BTMS COOLER	41-11 NGL CONDENSER
	DUTY MM BTU/HR	DUTY MM BTU/HR	DUTY MM BTU/HR	DUTY MM BTU/HR		DUTY MM BTU/HR	GPM		DUTY MM BTU/HR	DUTY MM BTU/HR		GPM		GPM	DUTY MM BTU/HR	DUTY MM BTU/HR
	(A) 2.77	(A) 0.59	(A) 0.51	(A) 5.00		(A) 0.17	(A) 83		(A) 2.00	(A) 0.67		(A) 26		(A) 18	(A) 0.22	(A) 1.39
	(B) 2.22	(B) 0.67	(B) 0.45	(B) 4.75		(B) 0.25	(B) 74		(B) 1.89	(B) 0.60		(B) 26		(B) 16	(B) 0.18	(B) 1.12
	(C) 2.46	(C) 1.40	(C) 1.68	(C) 3.91		(C) 1.01	(C) 62		(C) 1.94	(C) 0.88		(C) 62		(C) 24	(C) 0.84	(C) 0.32

RESET
TO REFRIG COMPRESSOR CAPACITY CONTROL
REFRIGERANT VAPOR
REFRIG. SUBCOOLER (41-13)
CO2 TO 4TH STAGE COMPRESSION
PLANT FEED GAS
41-7
REFRIGERANT LIQUID
150 PSIG FUEL GAS SUPPLY
VENT TO PRODUCED GAS SEP'R. (95-3)
24-1
SAMPLE
95-28
95-30
95-29
FEED COMPRESSION CONDENSATION VAPOR/LIQ. SEP'N. AND DEHYDRATION
67-17A/B
41-10
RESET
67-19A/B
67-18A/B
COOLING WATER
41-11
DRY LIQUID
DRY VAPOR
95-26
95-27
24-2
41-9
41-8
RESET
RESET
SELECT
HOT OIL SUPPLY
HOT OIL RETURN
41-5
41-6
NGL PRODUCT TO NGL STORAGE TANK (95-35)
VAPOR DRAW RECYCLE TO PRC VAPOR DRAW COMPRESSOR (16-13)

LEGEND
(A) LOW CO2 CASE - 1992 OPERATION
(B) BASE CASE - 1992 OPERATION
(C) HIGH CO2 CASE - 2004 OPERATION

1-28-92

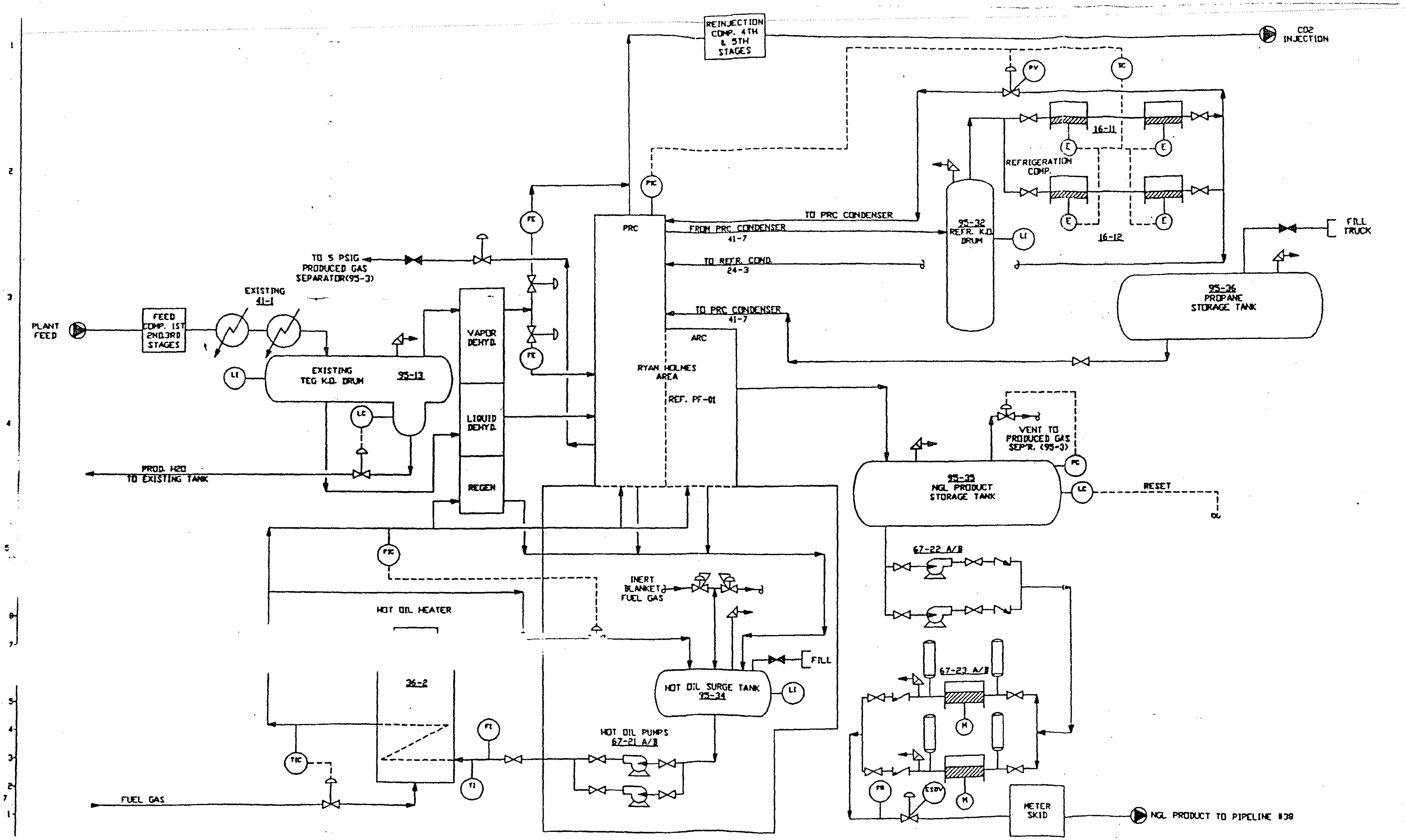
NO.	REVISION	BY	DATE				
		CHK'D	APP'D				
P1	KPS DED# 1997			A	ISSUED FOR APPROVAL P-C867	CF'D	10-29-91
P2	KPS DED# 2065			0	ISSUED FOR CONSTRUCTION	CF'D	1-28-92
P3	KPS DED# 2128						

FOR BIDS
FOR APPR'L A 10-29-91 CF'D
FOR CONST 0 1-28-92 CF'D
DRAWN
CHECKED
APP'D

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

PROCESS FLOW SHEET
RYAN/HOLMES PLANT
EVGSAU CO2 FACILITY

JN NO. 56-9288
FILE CODE
APE NO. P-C867
SCALE NONE
DWG NO. PED-256
SH NO. PF-01-0


REINJECTION COMP. 4TH & 5TH STAGES
CO2 INJECTION
PV
SC
PIC
16-11
16-12
REFRIGERATION COMP.
TO PRC CONDENSER
FROM PRC CONDENSER 41-7
TO REFR. COND. 24-3
TO PRC CONDENSER 41-7
95-32 REFR. K.O. DRUM
FILL TRUCK
95-36 PROPANE STORAGE TANK
PRC
ARC
RYAN HOLMES AREA
REF. PF-01
TO 5 PSIG PRODUCED GAS SEPARATOR(95-3)
EXISTING 41-1
PLANT FEED
FEED COMP. 1ST 2ND,3RD STAGES
EXISTING TEG K.O. DRUM
95-13
VAPOR DEHYD.
LIQUID DEHYD.
REGEN
PROD. H2O TO EXISTING TANK
VENT TO PRODUCED GAS SEP'R. (95-3)
95-35 NGL PRODUCT STORAGE TANK
RESET
67-22 A/B
67-23 A/B
INERT BLANKET FUEL GAS
FILL
HOT OIL HEATER
36-2
HOT OIL SURGE TANK 95-34
HOT OIL PUMPS 67-21 A/B
FUEL GAS
METER SKID
NGL PRODUCT TO PIPELINE #38
1-28-92

	REVISION	BY	DATE				
P1	KPS DEON 1997			A	ISSUED FOR APPROVAL P-C867	CFD	
P2	KPS DEON 2065			0	ISSUED FOR CONSTRUCTION	CFD	1-28-92
P3	KPS DEON 2128						

A 10-29-91 CFD
0 1-28-92 CFD

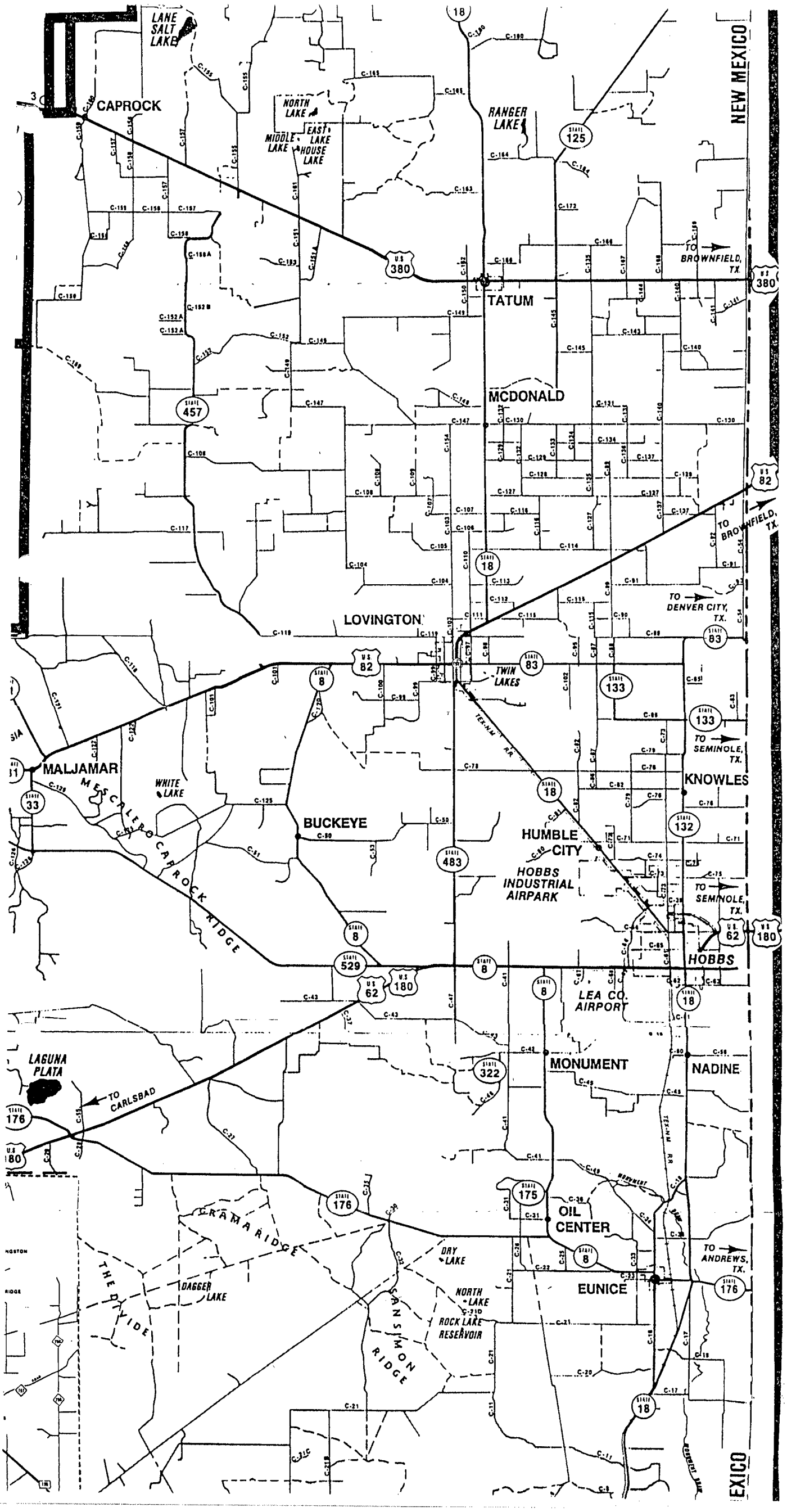
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

PROCESS SCHEMATIC DIAGRAM
RYAN/HOLMES PLANT-EVGSAU CO2 FACILITY

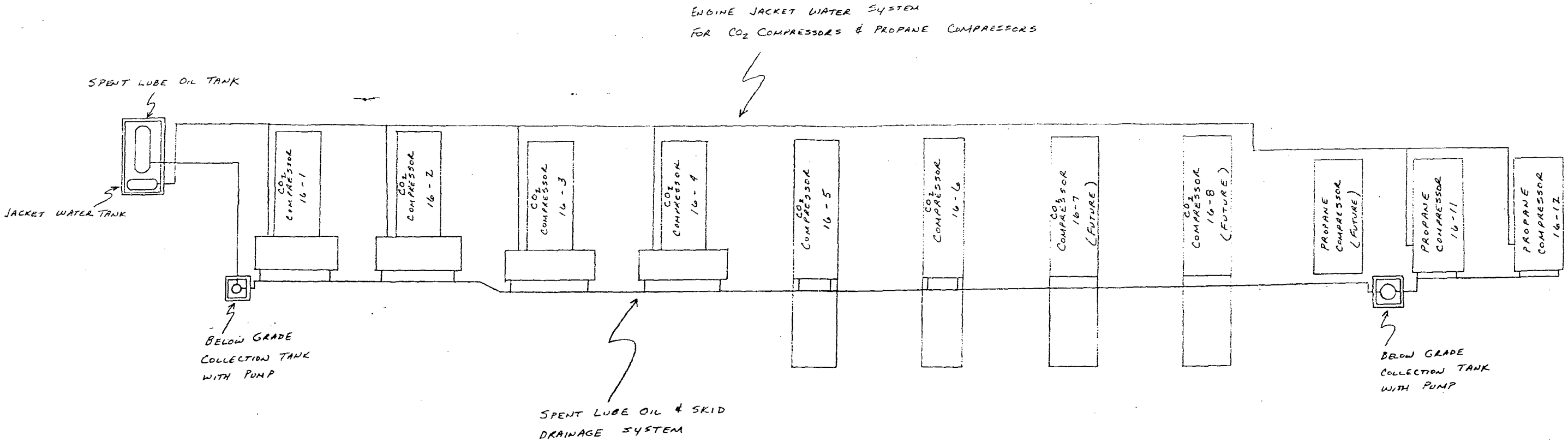
56-9288 | 511
P-C867 | NONE
PED-256
PF-06-0

ATTACHMENT 3

EVLRP DRAIN SYSTEM



CR 238
CR 50
E 3.5 mi. on CR 50.


ENGINE JACKET WATER SYSTEM
FOR CO_2 COMPRESSORS & PROPANE COMPRESSORS
SPENT LUBE OIL TANK
JACKET WATER TANK
CO_2 COMPRESSOR 16-1
CO_2 COMPRESSOR 16-2
CO_2 COMPRESSOR 16-3
CO_2 COMPRESSOR 16-4
CO_2 COMPRESSOR 16-5
CO_2 COMPRESSOR 16-6
CO_2 COMPRESSOR 16-7 (FUTURE)
CO_2 COMPRESSOR 16-8 (FUTURE)
PROPANE COMPRESSOR (FUTURE)
PROPANE COMPRESSOR 16-11
PROPANE COMPRESSOR 16-12
BELOW GRADE COLLECTION TANK WITH PUMP
SPENT LUBE OIL & SKID DRAINAGE SYSTEM
BELOW GRADE COLLECTION TANK WITH PUMP

ATTACHMENT 4

OVERFLOW PIT CLOSURE INFORMATION

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

August 1, 2003

ConocoPhillips
Attn: Dan McCarty
4001 Penbrook Street
Odessa, TX 79762

Re: Pit Closure Approval - Dated: March 10, 2003
EVGSAU Central Tank Battery
UL-_, Sec 33-T17S-R35E.

Dear Mr. McCarty,

The Pit Closure Report referenced above and submitted to the New Mexico Oil Conservation Division (OCD) by BBC International for ConocoPhillips is **hereby approved.** According to the information submitted, no further action is required.

Please be advised that OCD approval of this plan does not relieve ConocoPhillips of liability should their operations fail to adequately investigate and remediate contaminants that threaten ground water, surface water, human health or the environment. In addition, OCD approval does not relieve ConocoPhillips of responsibility for compliance with any other federal, state, or local laws and/or regulations.

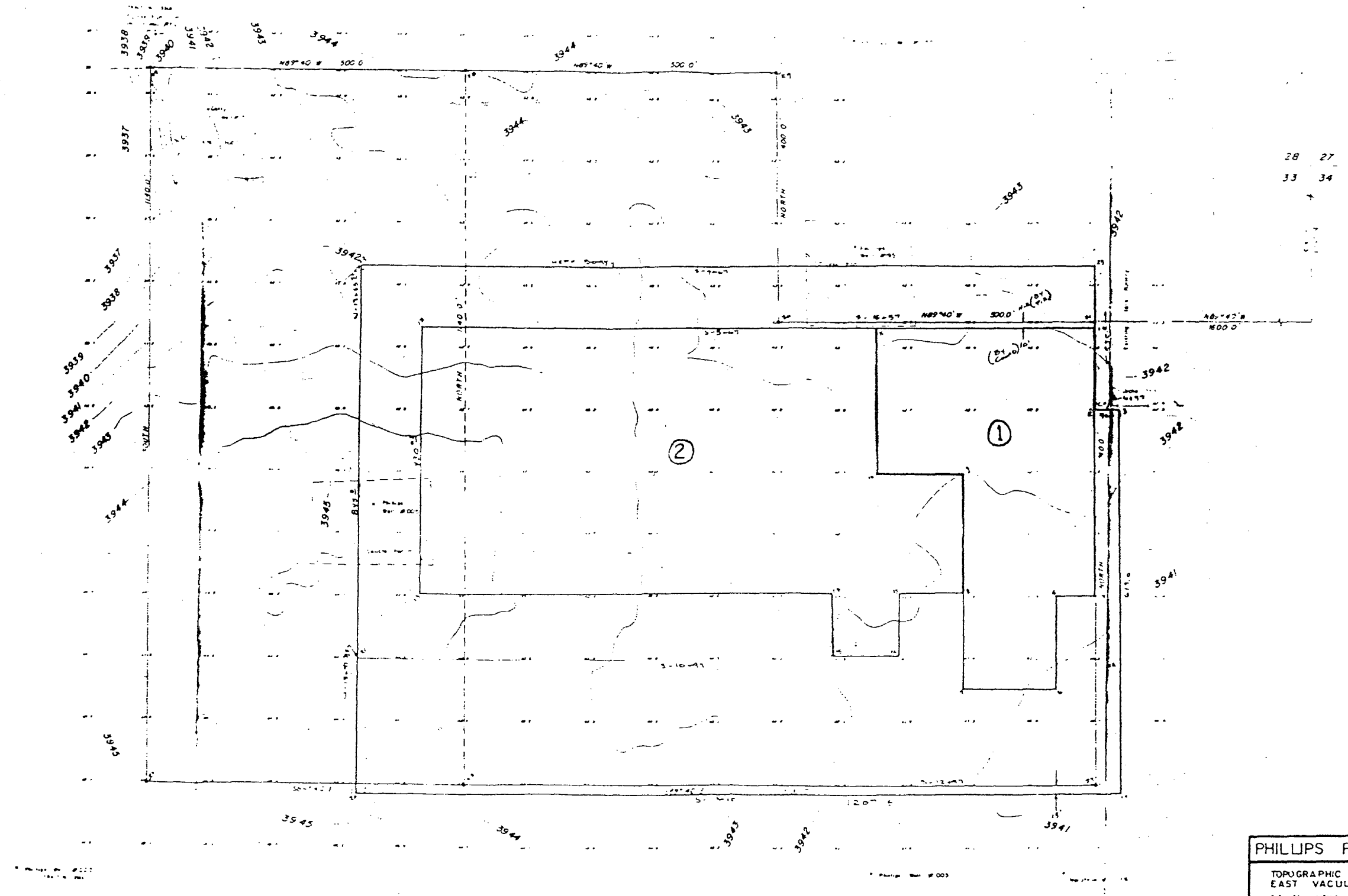
If you have any questions or need assistance please write or call: (505) 393-6161, ext. 113, or e-mail: psheeley@state.nm.us

Sincerely,

Paul Sheeley-Environmental Engineer
Cc: Roger Anderson - Environmental Bureau Chief
Chris Williams - District I Supervisor
William Olson - OCD Hydrologist
Larry Johnson - Environmental Engineer
Ken Swinny - BBC

ATTACHMENT 5

TOPOGRAPHIC MAP



PHILLIPS PETROLEUM COMPANY

TOPOGRAPHIC SURVEY OF PROPOSED
EAST VACUUM CO_2 PLANT SITE

SECTION 4 WITHIN SECTION 33 TOWNSHIP 17 SOUTH,
RANGE 35 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO

JOHN WEST ENGINEERING CO.
CONSULTANTS
HOBBS NEW MEXICO

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

January 14, 2003

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 3929 9734

Mr. Sean C. Parks
Conoco-Phillips Company
4001 Penbrook
Odessa, TX 79762

Re: Renewal of Discharge Permit GW-119
East Vacuum Liquids Recovery Plant

Dear Mr. Parks:

The groundwater discharge permit GW-119 for the Conoco-Phillips Company, East Vacuum Liquids Recovery Plant, located in the W/2 NE/4 of Section 33, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter.**

The original discharge plan was approved on September 09, 1992. The discharge permit renewal application dated June 6, 2002, including attachments, submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals.

The discharge permit is renewed pursuant to Section 3109.C. Please note Section 3109.G., which provides for possible future amendment of the permit. Please be advised that approval of this permit does not relieve Conoco-Phillips Company of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does it relieve Conoco-Phillips Company of its responsibility to comply with any other governmental authority's rules and regulations.

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

Please note that Section 3104. of the regulations requires that "when a permit has been approved, discharges must be consistent with the terms and conditions of the permit."

Pursuant to Section 3107.C., Conoco-Phillips Company is 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 3109.H.4., this approval is for a period of five years. **This approval will expire September 09, 2007** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 3106.F. of the regulations, if a discharger submits a discharge permit renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit will not expire until the application for renewal has been approved or disapproved.

The discharge permit application for the Conoco-Phillips Company , East Vacuum Liquids Recovery Plant, is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge permit will be assessed a fee equal to the filing fee of $100.00 plus a flat fee of $4000.00 for processing plants. The OCD has received the $100.00 filing fee and $4000.00 flat fee.

Please make all checks payable to: Water Quality Management Fund
C/o: Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

If you have any questions, please contact Wayne Price of my staff at (505-476-3487) or E-mail WPRICE@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief
RCA/lwp
Attachment-1
Xc: OCD Hobbs Office

ATTACHMENT TO THE DISCHARGE PERMIT GW-119 APPROVAL
Conoco-Phillips Company , East Vacuum Liquids Recovery Plant
DISCHARGE PERMIT APPROVAL CONDITIONS
January 14, 2003

1. Payment of Discharge Permit Fees: The $100.00 filing fee and required flat fee of $ 4000.00 has been received by the OCD.

2. Commitments: Conoco-Phillips Company will abide by all commitments submitted in the discharge permit renewal application dated June 6, 2002 including attachments and these conditions for approval.

3. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. 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 must also be stored on an impermeable pad with curbing.

4. 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.

5. 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 within the berm.

6. 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.

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

8. 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 below grade tanks, sumps and pits must be tested annually, except systems that have secondary containment with leak detection. These systems with leak detection shall have a monthly inspection of the leak detection to determine if the primary containment is leaking. Results of tests and inspections shall be maintained at the facility covered by this discharge plan and available for NMOCD inspection. Any system found to be leaking shall be reported pursuant to Item # 12. Permit holders may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing.

9. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be approved by the OCD prior to installation and must be tested to demonstrate their mechanical integrity every five (5) years. Results of such tests shall be maintained at the facility covered by this discharge plan and available for NMOCD inspection. Permit holders 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.

10. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

11. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices will be emptied of fluids within 48 hours of discovery. A record of inspections will be retained on site for a period of five years.

12. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD District Office.

13. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261.

    Any waste stream that is not listed in the discharge permit will be approved by OCD on a case-by-case basis.

    Rule 712 Waste: Pursuant to Rule 712 disposal of certain non-domestic waste is allowed at solid waste facilities permitted by the New Mexico Environment Department as long as the waste stream is identified in the discharge permit, and existing process knowledge of the waste stream does not change without notification to the Oil Conservation Division.

14. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections. As a result of OCD's inspection conducted on May 17, 2002 the following action items shall be addressed:

    Submit a closure plan for OCD approval by March 30, 2003 for the Lined Pit.

15. Storm Water Permit: Stormwater runoff controls shall be maintained. As a result of operations, if any water contaminant that exceeds the WQCC standards listed in 20 NMAC 6.2.3101 is discharged in any stormwater run-off, then immediate actions shall be taken to mitigate the effects of the run-off, notify the OCD within 24 hours, and modify the discharge permit to include a formal stormwater run-off containment permit and submit for OCD approval within 15 days.

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

17. 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 permit 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.

18. Certification: **Conoco-Phillips Company** by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. **Conoco-Phillips Company** further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Conditions accepted by: **Conoco-Phillips Company**

_____
Company Representative- print name

_____Date_____
Company Representative- Sign

Title_____

PHILLIPS PETROLEUM COMPANY

4001 PENBROOK
ODESSA, TEXAS 79762

EXPLORATION AND PRODUCTION
Southwest Region

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Date: June 6, 2002

Subject: Discharge Plan GW-119 Renewal
East Vacuum Liquids Recovery Plant
Lea County, New Mexico

Enclosed please find the original and one copy of Phillips Petroleum Company's renewal application for Discharge Plan GW-119 for the East Vacuum Liquids Recovery Plant located in Lea County, New Mexico. Also enclosed please find a check #159387 to cover the applicable filing fees for this renewal application.

If there are any questions or concerns with this renewal, please contact me at 915-368-1620 or by email at scparks@ppco.com.

Sincerely,

Merley Taylor
for S. C. Parks

Sean C. (Chris) Parks, CSP
Sr. Safety & Environmental Representative

\SCP
Enclosure
cc: NM OCD -1625 N. French Dr., Hobbs, NM 88240
Lee Owens
RC Cudney, ESI

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised January 24, 2001

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

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

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

☐ New ☒ Renewal ☐ Modification

1. Type: Discharge Plan GW-119 Renewal
East Vacuum Liquid Recovery Plant

2. Operator: Phillips Petroleum Company

Address: HC 60, Box 450
Lovington, NM 88260

Contact Person: S. C. (Chris) Parks, CSP
Sr. Safety and Environmental Representative
4001 Penbrook
Odessa, Texas 79762
(915) 368 – 1620
scparks@ppco.com

3. Location: W/2 NE/4 Section 33, Township 17 South, Range 35 East
Lea County, New Mexico
(See Attachment 1 for Facility Site Plan)

4. Landowner: State of New Mexico
State Land Office
P. O. Box 1148
Santa Fe, New Mexico, 87504-1148

5. Facility Description and Plot Plans: The East Vacuum Liquids Recovery Plant (EVLRP) is a Ryan-Holmes type process plant that is licensed from Koch Engineering. The process includes a two-column process operating in the propane recovery mode. The plant is sized for a maximum inlet feed capacity of 28 MMSCFD; and as much gas as possible is fed to the EVLRP with the remainder bypassing through the CO_2 Reinjection Facility. Feed gas to the EVLRP is taken from downstream of the Triethylene Glycol (TEG) contactor after the 3rd stage of compression at about 300 psig. Compression liquids recovered from the 3rd stage compression (collected in the TEG Knockout Drum) are processed (stabilized) in the EVLRP. These liquids enter the first column as a liquid feed stream. Molecular sieve dehydration is required before the feed streams are processed in the EVLRP. The residue CO_2 stream (CO_2, H_2S, Methane and Ethane) from the EVLRP is delivered back to the 4th stage suction header. The recovered Natural Gas Liquids (NGL) are delivered to the NGL storage facility and to the Central Tank Battery. The NGL product is pumped from the storage facility and delivered via a metering skid to the Phillips Petroleum Company NGL Pipeline No. 38, which is about 2,200 feet south of the EVLRP. An automatic bypass line around the EVLRP is installed to allow

continued CO_2 reinjection when the EVLRP is down. The Hot Oil system provides heat for the column reboilers and heats the regeneration gas for molecular sieve dehydrators. The Propane Refrigeration system provides refrigeration for the overhead condenser on the first column of the EVLRP. The cooling Water system and TEG system are shared with the CO_2 Reinjection facility.

(See Attachment 1 for Plot Plan information.)
(See Attachment 2 for Process Flow information.)

6. Materials Stored/ Used:

The following materials are stored or used at the facility (Maximum quantities):

- Solvent – 100 Gallons
- Methanol – 210 BBLs
- Mobil Pegasus 805 – 210 BBLs
- Mobil DTE – 1000 Gallons
- Triethylene Glycol – 1200 Gallons
- Unichem 7125 – 500 Gallons
- Ethylene Glycol – 4000 Gallons

(See Attachment 3 for Stored/ Used Materials MSDS)

7. Sources of Effluent and Waste Solids:

PLANT WATER SYSTEM

Raw Water:

EVLRP receives its process make-up water and non-potable water from the Central Tank Battery (CTB) located adjacent to the plant. Approximately 15,000 gallons per day are provided to the plant from this source.

(See Attachment 1 for Plot Plan information)

Potable Water:

Bottled drinking water for Phillips employees, contract personnel and guests of the facility is supplied in the EVLRP Control Room.

Cooling Tower System:

The cooling tower system is comprised of two open re-circulating towers. The cooling towers have a re-circulation rate of 800 gallons per minute with an approximate daily volume of 400 gallons per day. The water in the towers is re-circulated and treated to maintain a pH of 7.2 to 7.6 and a Phosphate level 12 to 17. The following chemicals with their specific feed rates, are being added to cooling tower waters for the treatment of scale, corrosion and biological treatment:

- Alpha 512
- Unichem 1304
- Trichloro-5-Triazinetrione
- Sulfuric Acid

(See Attachment 3 for MSDS information)

Engine Cooling Systems:

Water and antifreeze (50% mix) are used as coolant in the jacket water systems of all engines and compressors at the plant. The plant has two propane compressors referred to as the "Refrigeration Compressors."

Coolant from engines is drained to the respective jacket water drain tank when an engine is being worked on. The coolant is pressured back to the engine when the work is completed.

(See Attachment 3 for MSDS information)

Filter Coalescer System:

The filter coalescer is a two-stage separator that separates micron size particles and tiny mist like droplets of triethylene glycol (TEG). The TEG is recycled through an existing Rich TEG Line. Any particles are trapped in the cartridge type filters, which are changed as needed.

(See Attachment 1 for Plot Plan information)
(See Attachment 3 for MSDS information)

8. Collection and Disposal Procedures:

PLANT DRAIN SYSTEM

Engine Oil Drain System:

Lube oil in the EVLRP's Refrigeration Compressors is changed by draining the "spent" oil charge from an engine into a below grade storage and collection point constructed of a steel tank contained in a cement vault. Atmospheric drains, located around the plants engines, are designed to catch leaking oil, and drain to the fiberglass sump and are pumped to the above mentioned below grade storage. Liquids from the steel tanks are pumped into the CTB overflow storage tank.

(See Attachment 1 for Plot Plan information)

Cooling Tower Wastewater Disposal System:

The cooling tower blow down is sent through a 2-inch line to the CTB emergency overflow system.

(See Attachment 1 for Plot Plan information)

SOLID WASTE

General Waste:

EVLRP disposes non-domestic wastes at solid waste facilities in New Mexico. Per NM OCD 19.15.9.712, EVLRP disposes, or has the potential to dispose, the following wastes without testing:

- Barrels, drums, 5-gallon buckets, 1-gallon containers - empty and EPA-clean.
- Uncontaminated brush and vegetation arising from clearing operations.
- Uncontaminated concrete.
- Uncontaminated construction debris.
- Non-friable asbestos and asbestos contaminated waste material.
- Detergent buckets, so long as completely empty.
- Fiberglass tanks so long as the tank is empty, cut up or shredded, and EPA clean.
- Grease buckets, so long as empty and EPA clean.
- Uncontaminated ferrous sulfate or elemental sulfur so long as recovery and sale as a raw material is not possible.
- Metal plate and metal cable.
- Office trash.
- Paper and paper bags, so long as empty (paper bags).
- Plastic pit liners, so long as cleaned well.
- Soiled rags or gloves. If wet, must pass Paint Filter Test prior to disposal.
- Uncontaminated wood pallets.

In addition, EVLRP disposes the following in accordance with NM OCD 19.15.9.712 (D)(2) for waste that must be tested prior to disposal:

- Activated alumina - tested for TPH and BTEX.
- Activated carbon - tested for TPH and BTEX.
- Amine filters - tested for BTEX (and air-dried for at least 48 hours before testing).
- Friable asbestos and asbestos-contaminated waste material must be tested pursuant to NESHAP.
- Cooling tower filters - tested for TCLP/chromium (and drained and then air-dried for at least 48 hours before testing).
- Dehydration filter media - tested for TPH and BTEX (and drained and then air-dried for at least 48 hours before testing).
- Gas condensate filters - tested for BTEX (and drained and then air-dried for at least 48 hours before testing).
- Glycol filters - tested for BTEX (and drained and then air-dried for at least 48 hours before testing).
- Junked pipes, valves, and metal pipe must be tested for NORM.
- Molecular sieve must be tested for TPH and BTEX (and must be

cooled in a non-hydrocarbon inert atmosphere and hydrated in ambient air for at least 24 hours before testing).

- Pipe scale and other deposits removed from pipeline and equipment must be tested for TPH, TCLP/metals and NORM.
- Produced water filters must be tested for Corrosivity (and drained and then air-dried for at least 48 hours before testing).
- Sandblasting sand must be tested for TCLP/metals or, at the discretion of the Division, TCLP/total metals.
- Waste oil filters must be tested for TCLP/metals (and must be drained thoroughly of oil for at least 24 hours before testing and oil and metal parts must be recycled).

Spent Molecular Sieve:

Approximately every five years the molecular sieve dehydrators at the plant are recharged. The spent molecular sieve will be disposed of in accordance with all appropriate state and federal regulations. Approximately 14,000 pounds of this material are disposed of each time the beds are recharged.

Sanitary Waste:

Sanitary waste from the plant and office are handled by a septic tank and leach field located North of the Control Room of the facility.

9. Proposed Modifications:

East Vacuum Grayburg San Andres Unit (EVGSAU) Lined Pit Closure

Phillips Petroleum Company (PPCo) is in the process of closing the lined overflow pit located at the EVGSAU Central Tank Battery (CTB). The closure plan was submitted to and approved by the New Mexico Oil Conservation Division (NM OCD) during the year 2000. Currently, the lined pit is out of service. Four frac tanks have been installed as temporary overflow containment until permanent tankage is installed. The temporary frac tanks will be replaced with up to three 10,000 BBL storage tanks with secondary containment, leak detection beneath the tanks and Cathodic protection. In addition, the existing lined pit will be remediated and closed in accordance with the requirements outlined by the NM OCD.

(See Attachment 1 for Plot Plan information and new tank layout)
(See Attachment 4 for Overflow Pit Permitting information)

10. Routine Inspection/ Maintenance:

The EVLRP's below grade vessels and piping are visually inspected and pressure tested prior to being put into service. The vessels and lines are externally and/ or internally coated if required, to ensure against corrosion. Operators that are on duty 24 hours a day check this equipment continuously.

11. Contingency Plan for Reporting

Leaks are detected by the operators and corrected in a timely manner. The plant supervisor notifies the New Mexico Oil Conservation Division of

Releases: any such leaks under the terms of Statewide Rule 116.

12. Geological/ Hydrological Information:

Plant Topography:

A topographic map of the plant area is found in Attachment 8. The EVLRP is represented by the #1 on Attachment 8 and #2 represents the CO_2 portion of the facility. There are no bodies of water within a one-mile radius of the plant.

Flooding Potential:

None.

Groundwater Information:

The depth of groundwater at the EVLRP approximately 220 to 280 feet and the quality of the water is potable. There are no groundwater monitoring wells at the facility.

Geological Information:

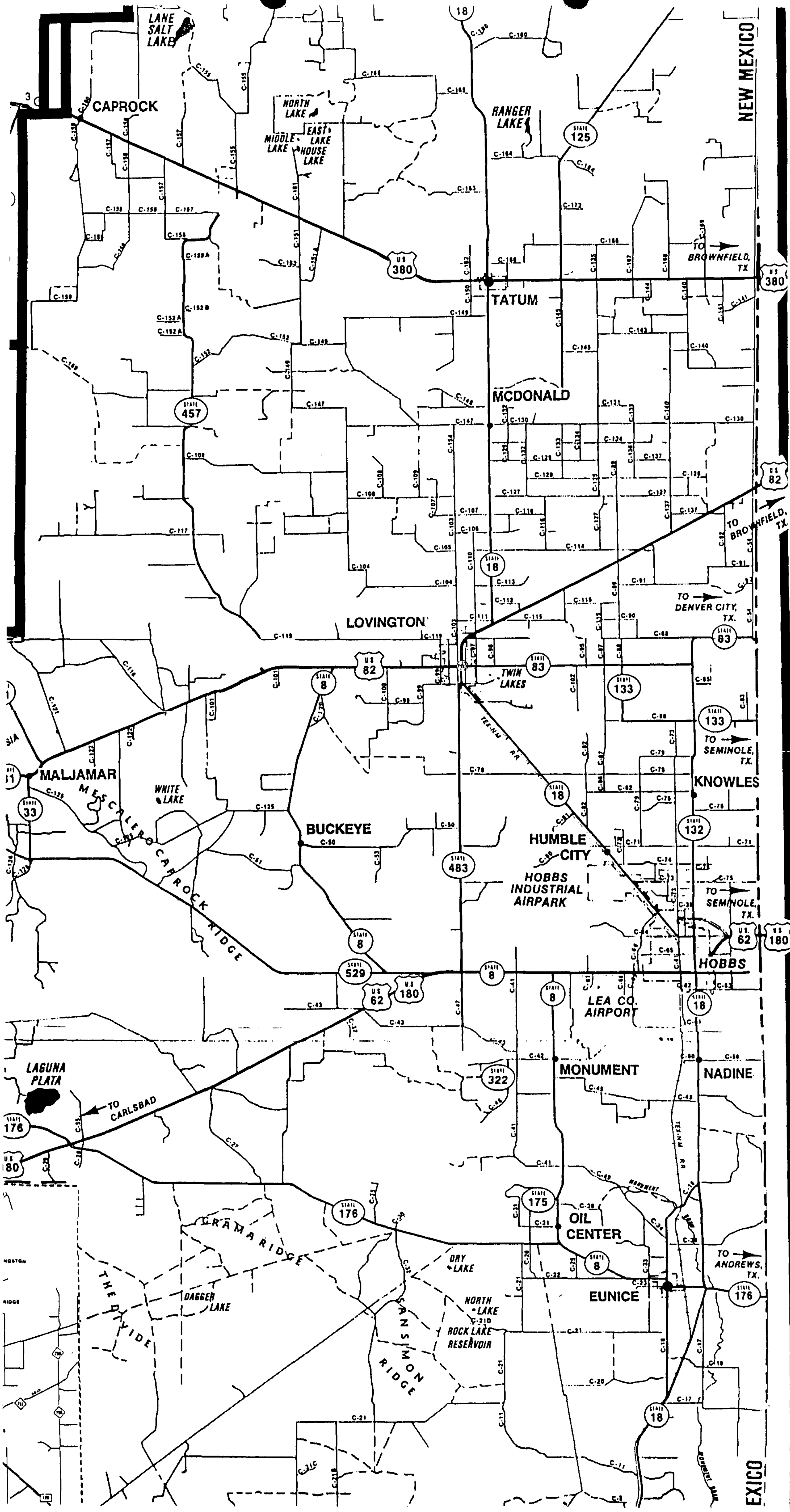
The facility is underlain by caliche soil. Groundwater is in the Ogallala aquifer, which has composition of sand to gravel to caliche with some clay beds. The depth of the rock at base of alluvium is less than one foot. (Reference source: New Mexico State Geologist)

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

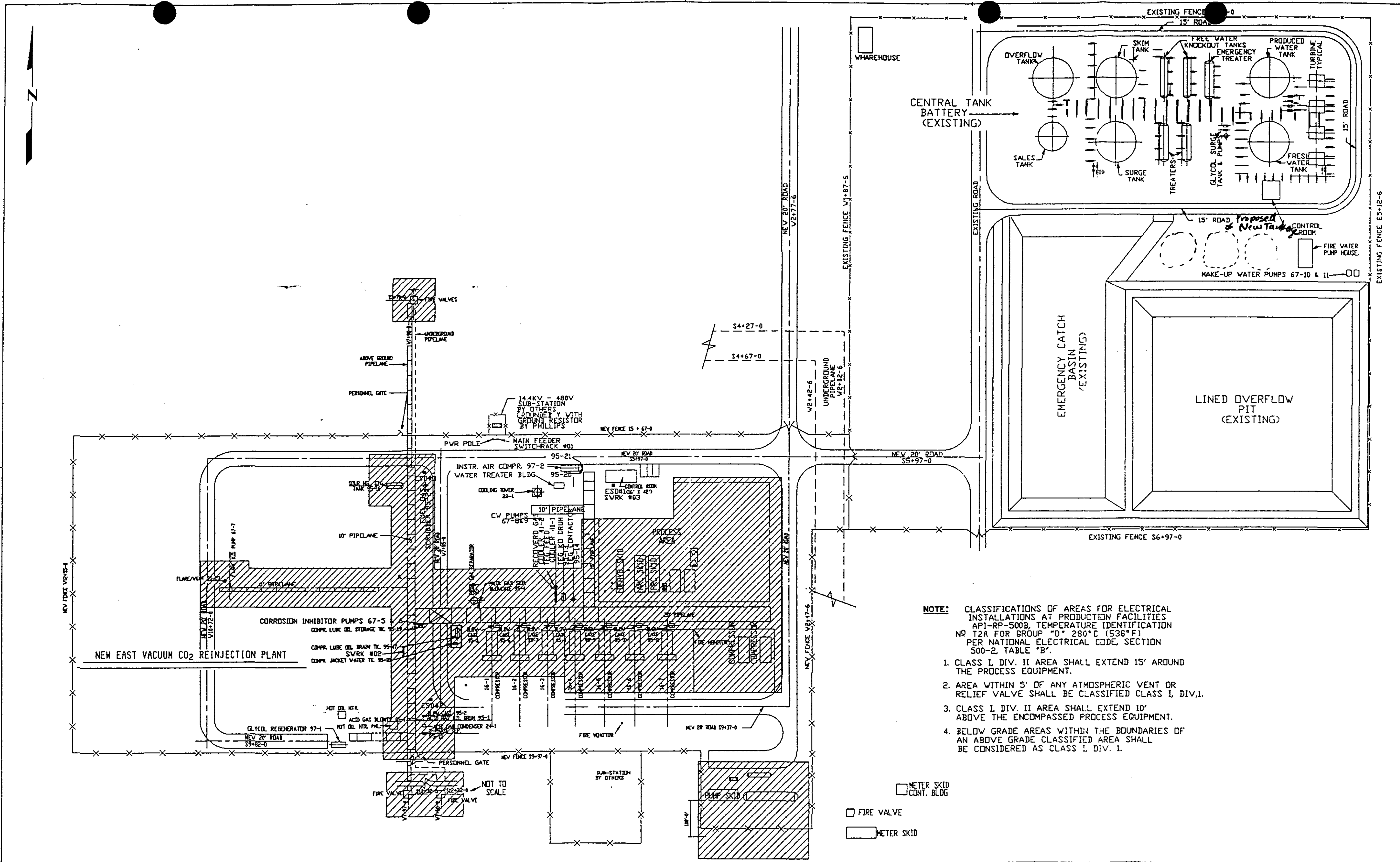
Name: LEE OWENS Title: CO2 PLANT SUPERVISOR

Signature: Lee Owens Date: 5/31/02

Attachment 1
EVLRP Facility Site Plan and Plot Plans



LANE SALT LAKE
CAPROCK
NORTH LAKE
EAST LAKE
MIDDLE LAKE
HOUSE LAKE
RANGER LAKE
NEW MEXICO
TO BROWNFIELD, TX.
TATUM
MCDONALD
TO BROWNFIELD, TX.
TO DENVER CITY, TX.
LOVINGTON
TWIN LAKES
TO SEMINOLE, TX.
MALJAMAR
MESCALERO CAPROCK RIDGE
WHITE LAKE
BUCKEYE
KNOWLES
HUMBLE CITY
HOBBS INDUSTRIAL AIRPARK
TO SEMINOLE, TX.
HOBBS
LEA CO. AIRPORT
LAGUNA PLATA
TO CARLSBAD
MONUMENT
NADINE
OIL CENTER
GRAMA RIDGE
DRY LAKE
TO ANDREWS, TX.
THE DIVIDE
DAGGER LAKE
NORTH LAKE
ROCK LAKE RESERVOIR
SAN SIMON RIDGE
EUNICE
EXICO



N
EXISTING FENCE
15' ROAD
WHAREHOUSE
OVERFLOW TANK
SKIM TANK
FREE WATER KNOCKOUT TANKS
EMERGENCY TREATER
PRODUCED WATER TANK
TURBINE TYPICAL
CENTRAL TANK BATTERY (EXISTING)
SALES TANK
SURGE TANK
TREATERS
GLYCOL SURGE TANK & PUMPS
FRESH WATER TANK
15' ROAD
Proposed New Tanks
CONTROL ROOM
FIRE WATER PUMP HOUSE
MAKE-UP WATER PUMPS 67-10 & 11
EXISTING FENCE E5+12-6
EXISTING FENCE V1+87-6
EXISTING ROAD
NEW 20' ROAD V2+77-6
EMERGENCY CATCH BASIN (EXISTING)
LINED OVERFLOW PIT (EXISTING)
EXISTING FENCE S6+97-0
S4+27-0
S4+67-0
UNDERGROUND PIPELANE V2+02-6
V2+42-6
NEW 20' ROAD S5+97-0
FIRE VALVES
UNDERGROUND PIPELANE
ABOVE GROUND PIPELANE
PERSONNEL GATE
14.4KV - 480V SUB-STATION BY OTHERS GROUNDED Y WITH GROUND RESISTOR BY PHILLIPS
PVR POLE
MAIN FEEDER SWITCHRACK #01
95-21
INSTR. AIR COMPR. 97-2
WATER TREATER BLDG.
95-20
COOLING TOWER 22-1
ESD#1
CONTROL ROOM
ESD#2
SWRK #03
CV PUMPS 67-8&9
10' PIPELANE
10' PIPELANE
PROCESS AREA
FLARE/VENT
5' PIPELANE
CORROSION INHIBITOR PUMPS 67-5 & 6
COMPR. LUBE OIL STORAGE TK.
COMPR. LUBE OIL DRAIN TK.
SWRK #02
COMPR. JACKET WATER TK.
NEW EAST VACUUM CO_2 REINJECTION PLANT
HOT OIL HTR.
GLYCOL REGENERATOR 97-1
NEW 20' ROAD S9+82-0
ACID GAS BLOWER
ACID GAS CONDENSER 24-1
FIRE MONITOR
PERSONNEL GATE
NEW FENCE S9+97-0
SUB-STATION BY OTHERS
NEW 20' ROAD S9+37-0
NEW FENCE V2+47-6
NOT TO SCALE
FIRE VALVE
PUMP SKID
METER SKID CONT. BLDG
FIRE VALVE
METER SKID

NOTE: CLASSIFICATIONS OF AREAS FOR ELECTRICAL INSTALLATIONS AT PRODUCTION FACILITIES API-RP-500B, TEMPERATURE IDENTIFICATION Nº T2A FOR GROUP "D" 280°C (536°F) PER NATIONAL ELECTRICAL CODE, SECTION 500-2, TABLE "B".

1. CLASS I, DIV. II AREA SHALL EXTEND 15' AROUND THE PROCESS EQUIPMENT.
2. AREA WITHIN 5' OF ANY ATMOSPHERIC VENT OR RELIEF VALVE SHALL BE CLASSIFIED CLASS I, DIV.1.
3. CLASS I, DIV. II AREA SHALL EXTEND 10' ABOVE THE ENCOMPASSED PROCESS EQUIPMENT.
4. BELOW GRADE AREAS WITHIN THE BOUNDARIES OF AN ABOVE GRADE CLASSIFIED AREA SHALL BE CONSIDERED AS CLASS I, DIV. 1.

NO.	REVISION	BY / CHKD	DATE / APP'D
1	MOVED CONTROL RM & PARKING LOT & CHANGED INTO UNCLASSIFIED AREA. ADDED NOTE. P-KN51	SAVAGE / BIZZARRI	10/85 / RICH
2	REVISED CLASSIFIED AREA. ADDED ESD#1,2,3. P-KN51	SAVAGE	12/85
3	REVISED CLASSIFIED AREA. P-KN51	SAVAGE / RLB	3/86 / TJR
4	REVISED AS BUILT. P-KN51	L.B. / TJR	9-86 / TJR
5	COMPRESSOR 16-3 IS NO LONGER FUTURE. P-C131	BEP / RJ	11/87 / RLB
6	ADDITION OF COMPRESSOR #16-4 P-C412	KLS / FLH	12/88
7	REVISED PER ABBR JOB #80110	AG / TLD	9/13/91
8	AS BUILT	GSS / TLD	11-3-92 / 11-3-92
9	COMPRESSOR 16-5, 16-6, AND 16-7 ARE NO LONGER FUTURE.	DGU	2-6-97

FORM 3674-C 1-85 PRINT DATE 1-85 NO-ORIGINAL

FOR BIDS	0-9-18-85 RE
FOR APPR	
FOR CONST	1-12-20-85 SCHOCH 8-11-3-92 GSS
DRAWN	SAVAGE 8/85
CHECKED	BIZZARRI 12/85
APP'D	RICH 12/85

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

AREA CLASSIFICATION

EAST VACUUM CO_2 REINJECTION PLANT

EAST VACUUM PLANT — LEA CO., NEW MEXICO

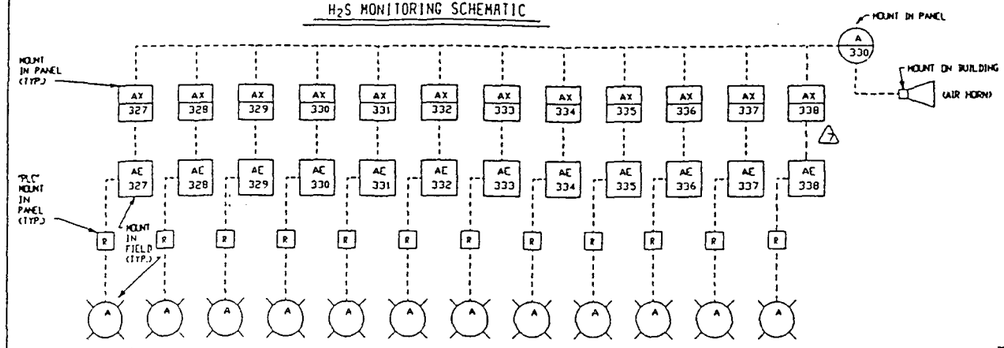
PHILLIPS 66

JA NO. 569241	FILE CODE *492
AFE NO. P-KN51	SCALE 1"=60'
DWG NO. PED-256	
SH NO. E-12-8	

*CAD# E00AL

Attachment 2
EVLRP Process Flow Sheet

H_2S MONITORING SCHEMATIC



NOTE: AE 000 INDICATES H_2S DETECTOR

NO.	REVISION	BY CHKD	DATE APP'D
1	REV. H_2S MONITORING SCHEMATIC & ADDED MONITORS 328B,328C,329A AND 329B. P-KN51	SVF RDB	7/85 RAE
2	REV. H_2S MONITORING SCHEMATIC & REV MONITOR NUMBERS P-KN51	SVF RDB	8/85 RAE
3	REVISED TO SHOW RELOCATED EQUIPMENT P-KN51	LJ RDB	10/85 RAE
4	REV. & ADDED NEW PERSONNEL GATE P-KN51	CLP RDB	2/86 DMG
5	REVISED PER AS BUILT. P-KN51	CLR DMG	6/86 RDB
6	RELOCATED 16-3# & 95-7# AND SHOWED AS NEW EQUIP. P-C139	JF RDB	11/87 RDB
7	ADDED COMPR. 816-4, BLDVCASE 895-8 & AE 338 P-C412	JHH CLP	11/88 CLP
8	ISSUED FOR CONSTRUCTION P-C867	DH	5-6-92
9	AS-BUILT		

FOR BIDS
FOR APPR 0-6-6-85 RAE
FOR CONST 1-8-7-85 RAE 5-6-10-86 KRS
DRAWN BARRINGER 5/85
CHECKED RAE 6/85
APP'D RAE 6/85

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

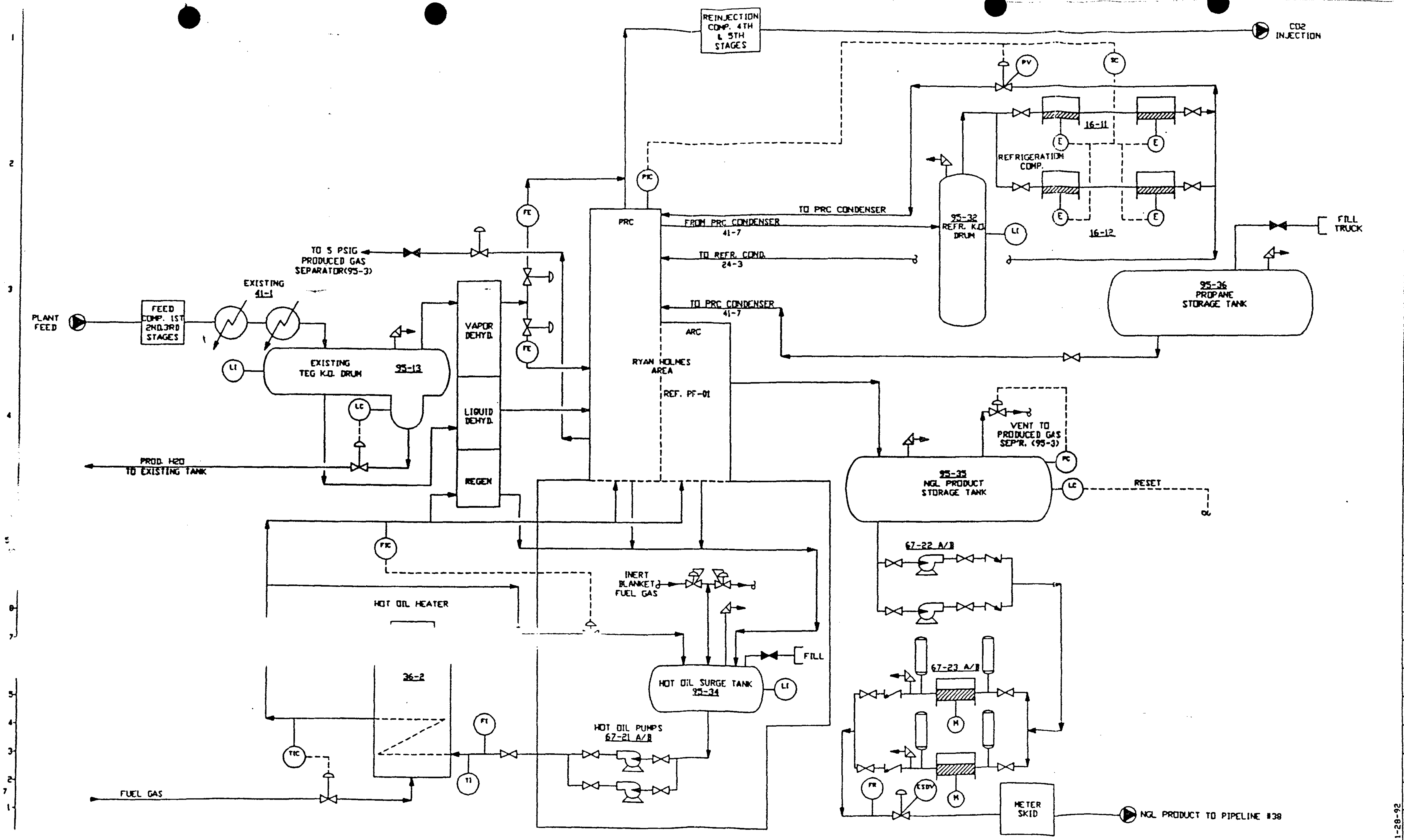
MECHANICAL FLOW SHEET
EAST VACUUM CO_2 REINJECTION PLANT
H_2S MONITORS

EAST VACUUM PLANT LEA CO., NEW MEXICO

HEAD 8 MFK6 COORDINATE REV W/ CAD SUPV

ABBR JOB 80110 9-16-92

JA NO. 56-9241 FILE CODE 506
AFE NO. P-KN51 SCALE NONE
DWG NO PED-256
DW NO MF-14-9


REINJECTION COMP. 4TH & 5TH STAGES
CO2 INJECTION
PV
TC
PIC
16-11
REFRIGERATION COMP.
16-12
TO PRC CONDENSER
FROM PRC CONDENSER 41-7
TO REFR. COND. 24-3
TO PRC CONDENSER 41-7
95-32 REFR. K.O. DRUM
LI
FILL TRUCK
95-36 PROPANE STORAGE TANK
PRC
ARC
RYAN HOLMES AREA
REF. PF-01
FE
TO 5 PSIG PRODUCED GAS SEPARATOR(95-3)
EXISTING 41-1
PLANT FEED
FEED COMP. 1ST 2ND.3RD STAGES
VAPOR DEHYD.
LIQUID DEHYD.
REGEN
EXISTING TEG K.O. DRUM 95-13
LC
PROD. H2O TO EXISTING TANK
VENT TO PRODUCED GAS SEP'R. (95-3)
95-35 NGL PRODUCT STORAGE TANK
RESET
67-22 A/B
FIC
INERT BLANKET FUEL GAS
HOT OIL HEATER
36-2
FILL
HOT OIL SURGE TANK 95-34
HOT OIL PUMPS 67-21 A/B
67-23 A/B
TIC
FI
TI
FUEL GAS
FR
ESDV
M
METER SKID
NGL PRODUCT TO PIPELINE #38
1-28-92

	REVISION						
P1	KPS DEO# 1997			A	ISSUED FOR APPROVAL P-C867	CFD	10-29-91
P2	KPS DEO# 2065			0	ISSUED FOR CONSTRUCTION	CFD	1-28-92
P3	KPS DEO# 2128						

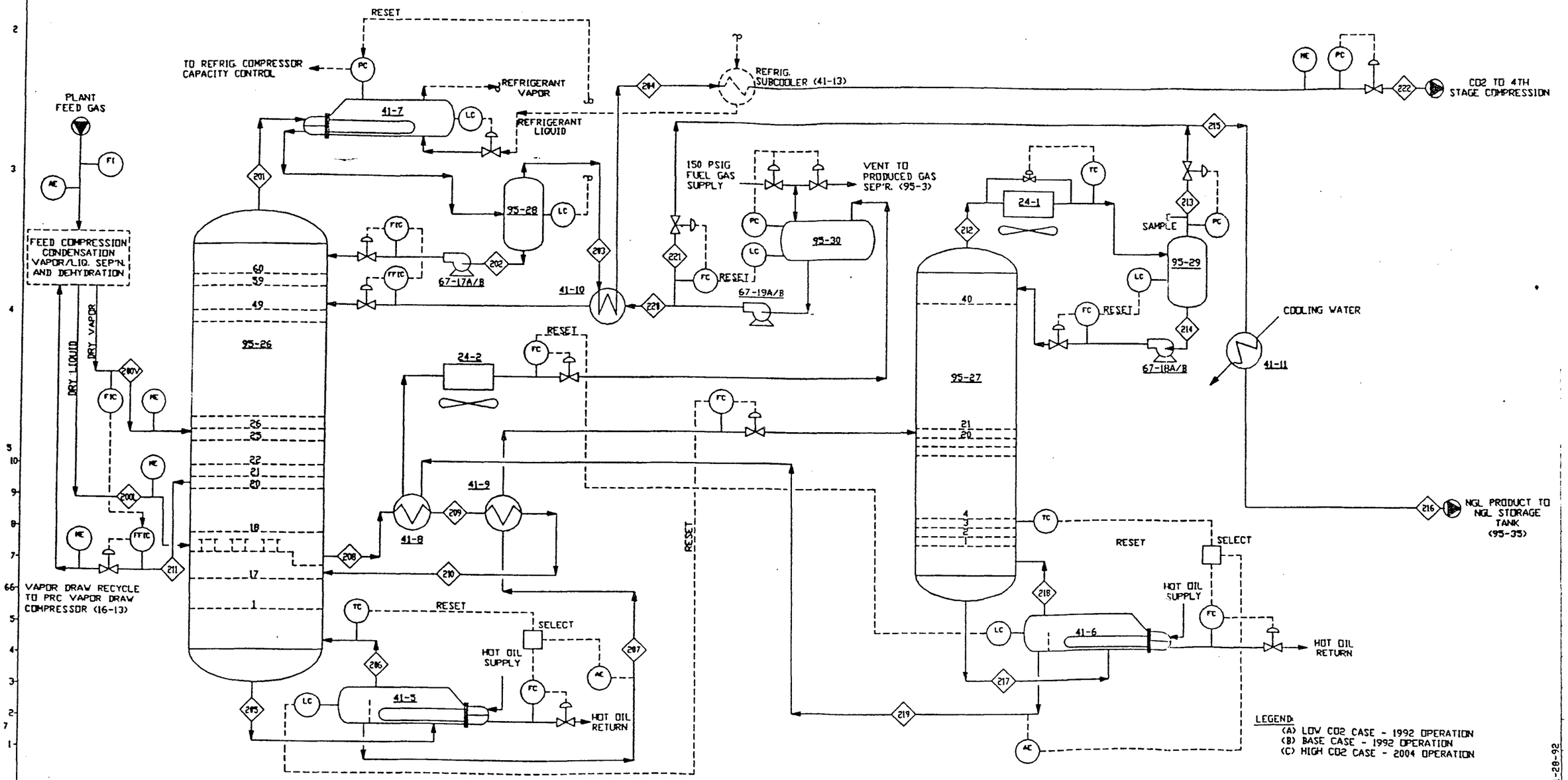
FOR APPR A 10-29-91 CFD
FOR CONST 0 1-28-92 CFD

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

PROCESS SCHEMATIC DIAGRAM
RYAN/HOLMES PLANT-EVGSAU CO2 FACILITY

56-9288 | 511
P-C867 | SCALE NONE
PED-256
PF-06-0

95-26 PROPANE RECOVERY COLUMN (PRC)	41-5 PRC REBOILER	41-8 PRC SIDE REBOILER	41-9 PRC SIDE HEATER	41-7 PRC CONDENSER	95-28 PRC REFLUX DRUM	41-10 ADDITIVE SUBCOOLER	67-17A/B PRC REFLUX PUMP	95-27 ADDITIVE RECOVERY COLUMN (ARC)	41-6 ARC REBOILER	24-1 ARC CONDENSER	95-29 ARC REFLUX DRUM	67-19A/B ADDITIVE PUMP	95-30 ADDITIVE DRUM	67-18A/B ARC REFLUX PUMP	24-2 ARC BTMS COOLER	41-11 NGL CONDENSER
	DUTY MM BTU/HR	DUTY MM BTU/HR	DUTY MM BTU/HR	DUTY MM BTU/HR		DUTY MM BTU/HR	GPM		DUTY MM BTU/HR	DUTY MM BTU/HR		GPM		GPM	DUTY MM BTU/HR	DUTY MM BTU/HR
	(A) 2.77	(A) 0.59	(A) 0.51	(A) 5.00		(A) 0.17	(A) 83		(A) 2.00	(A) 0.67		(A) 26		(A) 18	(A) 0.22	(A) 1.39
	(B) 2.22	(B) 0.67	(B) 0.45	(B) 4.75		(B) 0.25	(B) 74		(B) 1.89	(B) 0.60		(B) 26		(B) 16	(B) 0.18	(B) 1.12
	(C) 2.46	(C) 1.40	(C) 1.68	(C) 3.91		(C) 1.01	(C) 62		(C) 1.94	(C) 0.88		(C) 62		(C) 24	(C) 0.84	(C) 0.32



NO.	REVISION	BY / CHK'D	DATE / APP'D				
P1	KPS DEDI 1997			A	ISSUED FOR APPROVAL P-C867	CFD	10-29-91
P2	KPS DEDI 2065			0	ISSUED FOR CONSTRUCTION	CFD	1-28-92
P3	KPS DEDI 2128						

FOR BIDS
FOR APPR'L A 10-29-91 CFD
FOR ISSUE 0 1-28-92 CFD
DRAWN MAB
CHECKED
APP'D

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

PROCESS FLOW SHEET
RYAN/HOLMES PLANT
EVGSAU CO2 FACILITY

A.FE NO. 56-9288 | P.E.C. CODE
APP. NO. P-C867 | SCALE NONE
DWG NO. PED-256
SH. NO. PF-01-0

1-28-92

Attachment 3
Stored/ Used Materials MSDS

628280

Product Name: ALPHA 512

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 3/17/92
Date Prepared 9/21/93
Version: 0000002

Product Name: ALPHA 512

Chemical Description:
Proprietary Microbiocide Blend

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 6

To Max Comer	From Keith Farris
Co.	Co.
Dept.	Phone # 5309
Fax #	Fax #

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
methanol	00067-56-1	40%
potassium dimethyldithiocarbamate	00128-03-0	30%

Section: 03 PHYSICAL DATA

Freezing Point: - 35 Deg.F.
Boiling Point, 760 mm Hg: init 150 Deg.F
Specific Gravity(H_2O=1) : 1.000 Solubility in water: Complete
Appearance and Odor: Brown, clear liquid; sulfur odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): 69 Deg.F TCC

Extinguishing Media

CO_2, dry chemical, water spray or fog, or foam. Use water to keep containers cool. Isolate "fuel" supply from fire. Contain fire fighting liquids for proper disposal.

Special Fire Fighting Procedures

Do not enter confined fire space without proper personal protective equipment including NIOSH approved self-contained breathing apparatus with full facepiece operated in the positive pressure demand mode. Do not inject a solid stream of water or foam into hot, burning pools; this may cause splattering and increase fire intensity. Evacuate personnel to a safe area. Keep unnecessary people away.

VERIFIED

Unusual Fire and Explosion Hazards

This material is volatile and readily gives off vapors that may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge, or other ignition sources at locations distant from material handling point. Never use welding or cutting torch on or near drum

Product Name: ALPHA 512

Section: 04 FIRE AND EXPLOSION HAZARD DATA CONTINUED

(even empty) because product (even just residue) can ignite explosively. Containers may explode from internal pressure if confined to fire. Keep containers cool. Keep unnecessary people away.

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: may cause moderate irritation, including burning sensation, tearing, redness, swelling and blurred vision. Effects may vary depending on the length of exposure, solution concentration, and first aid measures.

Skin Contact: may produce mild to severe irritation depending on length of exposure, solution concentration and first aid measures. Can also cause defatting and dermatitis. May cause skin sensitization. No instances of human allergic reaction are known. Exposure to this material can result in absorption through skin causing health hazard.

Inhalation: overexposure may cause coughing, shortness of breath, dizziness, intoxication and collapse. Can cause nasal and respiratory irritation, weakness, nausea, fatigue, headache, and possible unconsciousness and even death.

Ingestion: can cause gastrointestinal irritation, acidosis, nausea, vomiting, diarrhea, ocular toxicity ranging from diminished visual capacity to complete blindness and death.

Chronic Overexposure: may cause liver abnormalities, kidney damage, eye damage, lung damage, brain damage, and nervous system damage.

Environmental Hazards: this product is toxic to fish. Do not apply in marine and/or estuarine oil fields. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Note to Physician: no specific antidote is known. Probable mucosal damage may contraindicate the use of gastric lavage. Treat symptoms.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical

Product Name: ALPHA 512

Section: 05 HEALTH HAZARD DATA CONTINUED

attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Avoid contact with strong oxidizing agents, strong alkalies, and strong mineral acids.

Hazardous Decomposition Products

Thermal decomposition or combustion may produce smoke, carbon monoxide and carbon dioxide.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

VERIFIED

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Eliminate sources of ignition. Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled materials with sand or earth. Recover undamaged and minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.

Product Name: ALPHA 512

Section: 07 SPILL OR LEAK PROCEDURES CONTINUED

Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA and/or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If workplace exposure limit(s) of product or any component is exceeded, an NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure organic vapor type) under specified conditions. Engineering or administrative controls should be implemented to reduce exposure.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist. Keep away from heat, sparks, and open flames and never use a cutting torch on or near container (even empty) or explosion may result. Vapors may travel to areas away from the work site and ignite.

Product Name: ALPHA 512

Section: 09 SPECIAL PRECAUTIONS CONTINUED

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Do not transfer to improperly marked container. Do not use pressure to empty container. Do not cut, heat, weld, or expose containers to flame or other sources of ignition. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should be grounded and bonded to receiving container(s) when being emptied. Containers should not be washed out and used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard	_ Sudden Release of Pressure	X Fire
X Chronic Health Hazard	_ Reactive	

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
methanol	00067-56-1	40%

VERIFIED

Product Name: ALPHA 512

Section: 10 REGULATORY INFORMATION CONTINUED

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
methanol	00067-56-1	5000

OSHA Exposure Limits

Component Name
methanol
TWA ppm: 200.0 TWA MG/M3: 260.0 STEL ppm: 250.0 STEL MG/M3: 310.0 Skin: X

National Fire Protection Agency

2 Health 3 Fire
0 Reactive ____ Other

Department of Transportation Shipping Information

Proper Shipping Name: Flammable liquids, n.o.s.
Hazard Class: 3 Identification: UN1993
Packaging Group: PG II
Contains: methanol
Hazardous Substance RQ: 12500# Emergency Response Guide Number: 27
Labels: Flammable liquid

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

VERIFIED

ANSUL FIRE PROTECTION
ANSUL(R) MARINETTE, WI 54143-2542

MATERIAL SAFETY DATA SHEET

ANSUL AR-33-D RECHARGE

QUICK IDENTIFIER (In Plant Common Name)

Manufacturer's Name:	Emergency Telephone No.:
ANSUL FIRE PROTECTION, WORMALD U.S., INC.	(715) 735-7411
Address:	Other Information Calls:
One Stanton Street Marinette, WI 54143-2542	Same
Prepared By:	Date Prepared:
Safety and Health Department	June 1, 1986

SECTION 1 -- IDENTITY

Common Name: (used on label) (Trade Name and Synonyms)	CAS No.:
Ansul AR-33-Recharge	N/A
Chemical Name:	Chemical Family:
N/A This is a mixture	Mixture
Formula:	
N/A	

SECTION 2 -- INGREDIENTS

PART A -- HAZARDOUS INGREDIENTS

Principal Hazardous Component(s) (chemical and common name(s)):	%	CAS No.	ACGIH TLV	Acute Toxicity Data
Diethylene Glycol Monobutyl Ether (Butyl Carbitol)	10.0	112-34-5	NDA	Oral LD50 (rat) 4120 mg/kg Dermal LD50 (rat) 6560 mg/kg

PART B -- OTHER INGREDIENTS

Other Component(s) (chemical and common name(s))	%	CAS No.	Acute Toxicity Data
Dowicide A	0.006	132-27-4	NDA
Proprietary mixture of hydrocarbon surfactants, fluorosurfactants, inorganic salts,	89.9	N/A	NDA

high molecular weight polysaccharide
not otherwise specified; and water.

SECTION 3 -- PHYSICAL AND CHEMICAL CHARACTERISTICS (Fire and Explosion Data)

Boiling Point:	Specific Gravity (H2O=1):	Vapor Pressure (mm Hg):
99 C	1.003	Not Determined

Percent Volatile by Volume (%):	Vapor Density (Air=1):	Evaporation Rate (Butyl Acetate=1):
Approx. 95	Less than 1	0.37

Solubility in Water:	Reactivity in Water:
100%	Unreactive

Appearance and Odor: Straw colored gelled liquid, mild sweet odor.

Flash Point:	Flammable Limits in Air % by Volume:	Extinguisher Media:	Auto-Ignition Temperature:
None to boiling	N/A	N/A	N/A

Special Fire Fighting Procedures: N/A THIS IS AN EXTINGUISHING AGENT

Unusual Fire and Explosion Hazards: None

SECTION 4 -- PHYSICAL HAZARDS

Stability: Unstable ¢ | Stable ¢X | Conditions to Avoid: N/A

Incompatibility (Materials to Avoid): Reactive metals, electrically energized equipment, any materials reactive with water.

Hazardous
Decomposition Products: None known.

Hazardous Polymerization:	May Occur ¢ / Will Not Occur ¢X	Conditions to Avoid: N/A

ORIGINAL DOCUMENT - END OF PAGE 1

SECTION 5 -- HEALTH HAZARDS

Threshold
Limit Value: None established by ACGIH or OSHA.

Routes of Entry:
Eye Contact: May cause mild transient irritation.

Skin Contact:
May cause mild transient irritation.

Inhalation:
Inhalation is not anticipated to be a problem.

Ingestion: Irritating to mucous membranes. Large oral doses could produce narcosis.

Signs and Symptoms	Acute Overexposure:	Irritation of the eyes, skin and mucous membranes.

Chronic
Overexposure: Delayed kidney injury, possible liver damage.

Medical Conditions Generally
Aggravated by Exposure: Diseases of the kidney and liver.

Chemical Listed as Carcinogen
or Potential:

National Toxicology Program:	Yes ¢ / No ¢X	I.A.R.C. Monographs:	Yes ¢ / No ¢X	OSHA:	Yes ¢ / No ¢X

SECTION 6 -- EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Flush with large amounts of water; if irritation persists, seek Medical attention.

Skin Contact: Wash with soap and water; if irritation persists, seek Medical attention.

Inhalation: Remove victim to fresh air. Seek Medical attention if discomfort continues.

Ingestion: If patient is conscious, give large amounts of water and induce vomiting. Seek Medical help.

SECTION 7 - SPECIAL PROTECTION INFORMATION

Respiratory Protection
(Specify Type): Not normally necessary.

Ventilation:	Local Exhaust: N/A	Mechanical (General):	Recommended
Protective Gloves:	N/A	Eye Protection:	Chemical goggles recommended
Other Protective Clothing or Equipment:	Eye wash and safety showers are good safety practice.		

SECTION 8 -- SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be Taken in Handling and Storage:	Store in original container. Note incompatibility information in Section 4.
Other Precautions:	Do not mix agents. Avoid skin and eye contact. Avoid ingestion.
Steps to be Taken in Case Material is Released or Spilled:	Rinse floor thoroughly with water as material is slippery. Prevent material from reaching sewers or waterways to avoid nuisance foaming.
Waste Disposal Methods:	Dispose of in compliance with local, state, and federal regulations.

N/A = Not Applicable NDA = No Data Available

ORIGINAL DOCUMENT - END OF PAGE 2

MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor as "essentially similar" to Form LSB-00S-4)

EXXON CHEMICAL AMERICAS - P.O. BOX 3272, HOUSTON, TEXAS 77001
A Division of EXXON CHEMICAL COMPANY, A Division of EXXON CORPORATION

SECTION I - IDENTIFICATION OF PRODUCT

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
EXXON CHEMICAL AMERICAS	713-870-6000
ADDRESS (Number, Street, City, State and ZIP Code)	
P.O. BOX 3272, HOUSTON, TEXAS 77001	
TRADE NAME	**CHEMICAL NAME**
COREXIT 7669 Antifoam	Not applicable; blend of materials
CHEMICAL FAMILY	**CHEMICAL FORMULA**
Glycol Surfactant	Not applicable; blend of materials

SECTION II - HAZARDOUS COMPONENTS OF MIXTURES

The precise composition of this product is proprietary information. A more detailed disclosure will be provided by Exxon Medical or Industrial Hygiene personnel to qualified Medical or Industrial Hygiene personnel as privileged information upon request in case of need for specific treatment.

Oxyalkylated glycol.

SECTION III - TYPICAL PHYSICAL DATA

APPEARANCE AND ODOR	SPECIFIC GRAVITY
Clear yellow to dark brown liquid; bland	1.006 @ 60 /60 F (15.5/15.5 C)
BOILING POINT (F)	**PERCENT VOLATILE (BY VOLUME)**
Decomposes	*-Negligible
VAPOR PRESSURE	**EVAPORATION RATE (n-BUTYL ACETATE = 1)**
<5 mm Hg @ 100 F/38 C	>0.5
VAPOR DENSITY (AIR 1)	
1	
SOLUBILITY IN WATER	
Insoluble	*-Components with B.P. Equal to or less than 212 F./100 C

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method)	FLAMMABLE LIMITS (PERCENT BY VOLUME)	Lel	Uel
>210 F/99 C (SETACC - ASTM D3278)		None	None

FIRE EXTINGUISHING MEDIA

Extinguish preferentially with dry chemical, foam, waterspray or water fog.

SPECIAL FIRE FIGHTING PROCEDURES

Use waterspray to cool fire-exposed surfaces and to protect personnel.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Respiratory protection required for fire-fighting personnel.

HAZARDOUS PRODUCTS OF COMBUSTION

SMOKE, FUMES, CARBON DIOXIDE, CARBON MONOXIDE

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of our knowledge and belief, accurate and reliable as of the date complied. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer any warranty against patent infringement.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

COREXIT 7669 Antifoam Vapor Concentration is negligible at workroom temperature.

EFFECTS OF OVEREXPOSURE

ACUTE May cause skin and eye irritation. Vapors irritant to respiratory passages.

CHRONIC Prolonged or repeated skin contact may cause irritation.

EMERGENCY AND FIRST AID PROCEDURES

Flush eyes with plenty of water until irritation subsides. Wash skin with soap and water. Remove to fresh air. If not breathing, apply artificial respiration and CALL A PHYSICIAN.

SECTION VI - REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID
	UNSTABLE	Not Applicable
	STABLE X	

INCOMPATIBILITY (MATERIALS TO AVOID FOR PURPOSES OF TRANSPORT, HANDLING & STORAGE ONLY)

Strong Oxidizing Agents. May dissolve some plastics or rubber.

HAZARDOUS DECOMPOSITION PRODUCTS

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Keep public away. Shut off source, if possible to do so safely. Advise authorities if substance has entered a watercourse, or sewer, or has contaminated soil or vegetation.

WASTE DISPOSAL (INSURE CONFORMITY WITH LOCAL DISPOSAL REGULATIONS)

Contain spilled liquid with sand or earth. Recover by pumping or with suitable absorbent. Consult an expert on disposal of recovered material.

SECTION VIII - PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION

Use approved respiratory protection such as air-supplied mask if used in enclosed spaces.

VENTILATION	LOCAL EXHAUST Usually not needed in open unconfined areas.	SPECIAL
	MECHANICAL (General) Explosion-proof ventilation equipment.	OTHER

PROTECTIVE GLOVES	EYE PROTECTION
Chemically-resistant gloves.	Chemical splash goggles.

OTHER PROTECTIVE EQUIPMENT

SECTION IX - HANDLING AND STORAGE PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep container closed when not in use. Keep away from heat, sparks, and open flames. Do not store near flame, heat, or strong oxidants.

OTHER PRECAUTIONS

None

DATE OF ISSUE SEP 23 1976 APPROVED BY: _____

¢X| NEW ¢ | REVISED: SUPERSEDES TITLE: Director of Industrial Hygiene

Material Safety Data Sheet

CO2 TO REINJECTION

November 15, 1991

PHILLIPS PETROLEUM COMPANY
Bartlesville, Oklahoma 74004

PHONE NUMBERS
Emergency: (918) 661-8118
General MSDS Information: (918) 661-8327
For Additional MSDSs: (918) 661-5952

A. Product Identification

Synonyms: Not Establish
Chemical Name: Mixture
Chemical Family: Mixture
Chemical Formula: Mixture
CAS Reg. No.: Mixture
Product No.: Not Established

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it is subject to all applicable provisions and restrictions of 40 CFR, section 721 and 723.250.

B. Components

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Methane	74-82-8	2-5	NE	Simple Asphyxiant
Ethane	74-84-0	5-9	NE	Simple Asphyxiant
Nitrogen	7727-37-9	1-4	NE	NE
Hydrogen Sulfide	7783-06-4	0-3	10 ppm	10 ppm
Carbon Dioxide	124-38-9	85-90	10000 ppm	5000 ppm

C. Personal Protection Information

Ventilation: Use adequate ventilation to control exposure below recommended levels.

Respiratory Protection: For concentrations exceeding the recommended level, use NIOSH/MSHA approved air purifying respirator. If conditions immediately dangerous to life or health exist, use NIOSH/MSHA self-contained breathing apparatus (SCBA).

Eye Protection: Use chemical goggles.

Skin Protection: No special garments required. Avoid unnecessary skin contamination with material.

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

D. Handling and Storage Precautions

Do not get in eyes, on skin or on clothing. Do not breathe vapors. Wash thoroughly after handling. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Launder contaminated clothing before reuse.

Store in a cool, well-ventilated area. Protect from sources of ignition. Keep containers closed.

E. Reactivity Data

Stability:	Stable
Conditions to Avoid:	Not Established
Incompatibility (Materials to Avoid):	Oxygen and strong oxidizing materials
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid:	Not Established
Hazardous Decomposition Products:	Carbon oxides and various hydrocarbons formed when burned. Sulfur oxides if hydrogen sulfide is present.

F. Health Hazard Data

Recommended Exposure Limits:

See Section B.

Acute Effects of Overexposure:

Eye: May cause irritation.

Skin: May cause slight irritation.

Inhalation: May cause nausea, diarrhea, loss of appetite, dizziness, disorientation, headahce, excitation, rapid respiration, drowsiness, labored breathing, anesthesia and other central

nervous system effects. Hydrogen sulfide may cause lung paralysis and asphyxiation. Extreme overexposure may cause rapid unconsciousness and respiratory arrest.

Ingestion: Not Applicable.

Subchronic and Chronic Effects of Overexposure:

Carbon dioxide exposure may cause acidosis and imbalance of electrolytes in the blood. Hydrogen sulfide may cause nerve damage.

Other Health Effects:

In high concentrations the odor of hydrogen sulfide may not be recognized due to paralysis of the sense of smell.

Health Hazard Categories:

	Animal	Human		Animal	Human
Known Carcinogen	___	___	Toxic	_X_	___
Suspect Carcinogen	___	___	Corrosive	___	___
Mutagen	___	___	Irritant	___	___
Teratogen	___	___	Target Organ Toxin	_X_	_X_
Allergic Sensitizer	___	___	Specify - Nerve Toxin; Blood Toxin		
Highly Toxic	___	___	Lung-Simple Asphyxiant		

First Aid and Emergency Procedures:

Eye: Flush eyes with running water for at least fifteen minutes. If irritation develops, seek medical attention.

Skin: Flush skin with water for fifteen minutes. If illness or adverse symptoms develop, seek medical attention.

Inhalation: Immediately remove from exposure. If breathing is difficult, give oxygen and seek medical attention. If breathing ceases, administer artificial respiration followed by oxygen. Additional First Aid and Emergency Procedures for inhalation continued below.

Ingestion: Not Applicable.

Prompt medical attention is mandatory in all cases of overexposure to hydrogen sulfide. Rescue personnel should be equipped with NIOSH/MSHA approved self-contained breathing apparatus (SCBA). Rescue Personnel should recognize the hazards of overexposure due to olfactory fatigue. The use of rescue equipment which might contain ignition sources or cause static discharges should be avoided.

Nitrite treatment as medical therapy has been used in persons overexposed to hydrogen sulfide, but the benefits of this treatment is still considered by some to be of questionable usefulness.

Therapy can only be undertaken by qualified emergency medical personnel.

Treatment should be initiated with inhalation of Amyl nitrite for fifteen to thirty seconds of each minute until 10 ml of a 3% solution of sodium nitrite can be injected intravenously at a rate of 2.5 to 5 ml per minute. Sodium nitrite injections may be repeated if necessary.

G. Physical Data

Appearance:	Colorless Gas
Odor:	Mild, rotten egg odor if hydrogen sulfide is present.
Boiling Point:	-285F (-161C)(Estimate)
Vapor Pressure:	Not Applicable
Vapor Density (Air = 1):	0.8 (Estimate)
Solubility in Water:	Negligible
Specific Gravity (H2O = 1):	0.5 (Estimate)
Percent Volatile by Volume:	Not Applicable
Evaporation Rate (Butyl Acetate = 1):	Not Applicable
Viscosity:	Not Applicable

H. Fire and Explosion Data

Flash Point (Method Used):	-292F (-180C) (Estimate)
Flammable Limits (% by Volume in Air):	LEL - 5 UEL - 15.8
Fire Extinguishing Media:	Dry chemical, foam or carbon dioxide (CO2)
Special Fire Fighting Procedures:	Stop flow of gas. If possible, let fire burn until flow of gas can be shut off. Evacuate area of all unnecessary personnel. Wear appropriate safety equipment for fire conditions including NIOSH/MSHA self-contained breathing apparatus (SCBA). Water fog or spray may be used to cool exposed equipment and containers.
Fire and Explosion Hazards:	Very dangerous when exposed to heat or flame. Containers may explode violently in the heat of a fire. Vapors may travel to a source of ignition and flash back. If hydrogen sulfide is present, respiratory equipment specified above must be used. Heated containers may rupture violently and suddenly without warning due to vessel over-pressure (BLEVE). Fragmentation of the container should be anticipated. If flame is against the container,

withdraw immediately on hearing a rising sound, if venting increases in volume or intensity, or if there is discoloration of the tank due to fire.

I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:
Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C as conditions warrant. Shut off source. Protect from sources of ignition. Vapors are explosive. Ventilate area.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):
Incinerate or otherwise manage at a RCRA permitted waste management facility.

J. DOT Transportation

Shipping Name:	Compressed gases, flammable, n.o.s. (contains Carbon dioxide and Ethane)
Hazard Class:	2.1 (Flammable gas)
ID Number:	UN 1954
Packing Group:	Not Applicable
Marking:	Compressed gases, flammable, n.o.s. (contains Carbon dioxide and Ethane), UN 1954, RQ*
Label:	Flammable gas
Placard:	Flammable gas/1954
Hazardous Substance/RQ:	Hydrogen sulfide/100#
Shipping Description:	Compressed gases, flammable, n.o.s. (contains Carbon dioxide and Ethane), 2.1 (Flammable gas), UN 1954, RQ*
Packaging References:	49 CFR 173.302, 173.304, 173.306, 173.244

* Enter the letters "RQ" and the name of the hazardous substance as shown only if the hazardous substance is present in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) shown for the hazardous substance.

K. RCRA Classification - Unadulterated Product Waste

Ignitable (D001)

Prior to disposal, consult your Environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

L. Protection Required for Work on Contaminate Equipment

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or clothing described

in Section C if exposure conditions warrant.

M. Hazard Classification

_X_ This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

___ Combustible Liquid	___ Flammable Aerosol	___ Oxidizer
___ Compressed Gas	___ Explosive	___ Pyrophoric
_X_ Flammable Gas	_X_ Health Hazard (Section F)	___ Unstable
___ Flammable Liquid	___ Organic Peroxide	___ Water Reactive
___ Flammable Solid		

___ Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

N. Additional Comments

SARA 313

As of the preparation date, this product did not contain a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

October 31, 1997

USA and WORLDWIDE

Material Safety Data Sheet

CRUDE OILS, SWEET

PHILLIPS 66 COMPANY
A Division of Phillips Petroleum Company
Bartlesville, Oklahoma 74004

PHONE NUMBERS
Emergency: (918) 661-8118
General MSDS Information: (918) 661-8327
For Additional MSDSs: (918) 661-5952

A. Product Identification

Synonyms: Separator Crude; Field Crude
Chemical Name: Mixture
Chemical Family: Hydrocarbons
Chemical Formula: Mixture
CAS Reg. No.: 8002-05-9
Product No.: Not Established

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product has been commercially introduced into U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals in Commerce; hence, it is subject to all applicable provisions and restrictions under TSCA 40 CFR, section 721 and 723.250.

B. Hazardous Components

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
n-Butane and lighter	NA	0-7.7	800 ppm*	800 ppm*
Gasoline, including	8006-61-9	10.8-80	300 ppm	300 ppm
Toluene	108-88-3	< 10	100 ppm	100 ppm
Ethyl Benzene	100-41-4	< 2	100 ppm	100 ppm
p-Xylene	106-42-3	< 3	100 ppm	100 ppm
m-Xylene	108-38-3	< 6	100 ppm	100 ppm
o-Xylene	95-47-6	< 3	100 ppm	100 ppm
1,2,4-Trimethyl Benzene	95-63-6	< 3	25 ppm	25 ppm
Kerosene	8008-20-6	3.9-23.4	NE	NE
Gas Oil	Various	5.8-35.6	NE	NE
Topped Crude	Various	5.6-61.8	NE	NE
Benzene	71-43-2	0-1.0	1 ppm**	10 ppm
PNA (Polynuclear Aromatics)	Various	0.3-4.1	0.2 mg/m3***	0.2 mg/m3***
Hydrogen Sulfide	7783-06-4	< 0.9	10 ppm	10 ppm

* For n-Butane
** Operations exempted by the Benzene Standard, 24 CFR 1910.1028, will have a 10 ppm 8 hour TWA.
*** As coal tar pitch volatiles

NA - Not Applicable NE - Not Established

C. Personal Protection Information

Ventilation: Use adequate ventilation to control below recommended exposure levels. Monitoring of hydrogen sulfide air concentrations should be maintained.

Respiratory Protection: For concentrations exceeding the recommended exposure level, use NIOSH/MSHA approved air purifying respirator. In case of spill or leak resulting in unknown concentration, use NIOSH/MSHA approved supplied air respirator. If conditions immediately dangerous to life or health (IDLH) exist, use NIOSH/MSHA approved self-contained breathing apparatus (SCBA).

Eye Protection: Use safety glasses with side shields.

Skin Protection: Wear polyvinyl alcohol or Buna-N gloves. Use full-body, long sleeved garments to prevent excessive skin contact.

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

D. Handling and Storage Precautions

Do not get in eyes, on skin, or on clothing. Do not swallow, may be aspirated into lungs. Do not breathe vapor or mist. May be fatal. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Wash thoroughly after handling. Immediately remove and launder contaminated clothing before reuse. Use only with adequate ventilation.

Store in well-ventilated area away from sources of ignition. Bond and ground during liquid transfer. Provide means of controlling leaks and spills. Keep containers closed.

E. Reactivity Data

Stability: Stable
Conditions to Avoid: Not Applicable
Incompatibility (Materials to Avoid): Oxygen and strong oxidizing agents

Hazardous Polymerization: Will Not Occur
Conditions to Avoid: Not Applicable
Hazardous Decomposition Products: Carbon and sulfur oxides and hydrogen sulfide formed when burned.

F. Health Hazard Data

Recommended Exposure Limits:

See Section B.

Acute Effects of Overexposure:

Eye: May cause irritation of the eyes.

Skin: Prolonged contact may result in dermal irritation.

Inhalation: May cause irritation to the nose, throat and upper respiratory tract. Headache, nausea, weakness, sedation, unconsciousness and chemical pneumonitis are possible with high vapor concentrations.

Ingestion: May cause gastrointestinal upset, nausea, vomiting and narcosis. May be aspirated into the lungs if swallowed resulting in pulmonary edema and chemical pneumonitis.

Subchronic and Chronic Effects of Overexposure:

Skin painting studies in mice have indicated a moderate carcinogenic potential for crude oil.

Benzene has been designated as a carcinogen by NTP, IARC, and OSHA. Benzene may produce blood changes which include reduced platelets, reduced red blood cells, reduced white blood cells, aplastic anemia, leukemia and erythroleukemia. Fetal death has been produced in laboratory animals. Chromosome changes were produced in humans and mutation changes occurred in cells of other organisms.

PNA's are designated carcinogens by IARC, NTP and OSHA. Kidney and lung tumors have been reported in animals and man with repeated PNA exposures. Stillbirths, mutagenesis and liver damage have been reported in laboratory animals exposed to PNA's.

Other Health Effects:

Sublethal concentrations of crude oil have been shown to be reversibly toxic to marine organisms.

Hydrogen sulfide may accumulate in concentrations sufficient to produce mucous membrane irritation, pulmonary edema, or even respiratory arrest. The odor of hydrogen sulfide may not be recognized after prolonged inhalation due to paralysis of the sense of smell. Effects from inhaling the fumes may lead to chronic bronchitis, respiratory irritation, increased loss of pulmonary function, and tearing of the eyes.

Health Hazard Categories:

	Animal	Human
Known Carcinogen	_X_	_X_
Suspect Carcinogen	___	___
Mutagen	_X_	___
Teratogen	_X_	___
Allergic Sensitizer	___	___
Highly Toxic	___	___

	Animal	Human
Toxic	_X_	___
Corrosive	___	___
Irritant	___	___
Target Organ Toxin	_X_	_X_

Specify - Lungs-Aspiration Hazard; Blood Toxin; Reproductive & Liver Toxin-Animal; Kidney & Lung Toxin; Nerve Toxin

First Aid and Emergency Procedures:

Eye: Flush eyes with running water for at least fifteen minutes. If irritation develops, seek medical attention.

Skin: Wash with soap and water. If irritation develops, seek medical attention.

Inhalation: Promptly remove from exposure. If breathing becomes shallow, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. If illness or adverse symptoms develop, seek medical attention.

Ingestion: Do not induce vomiting. Seek immediate medical attention.

Note to Physician: Gastric lavage using a cuffed endotracheal tube may be performed at your discretion.

G. Physical Data

Appearance:	Tan to black liquid
Odor:	Mild to Pungent
Boiling Point:	IBP is 0F; EP is 1100F (-18 to 593C)
Vapor Pressure:	Range 1 to 10 Reid Vapor Pressure
Vapor Density (Air = 1):	2.1 is typical
Solubility in Water:	Slight
Specific Gravity (H2O = 1):	0.8 to 1; 0.86 is typical
Percent Volatile by Volume:	<1 to 50; 15-25 is typical
Evaporation Rate (Butyl Acetate = 1):	<1
Viscosity:	Not Established

H. Fire and Explosion Data

Flash Point (Method Used):	<100F to >300F (<38C to >149C)(Estimated)
Flammable Limits (% by Volume in Air):	LEL - Not Established UEL - Not Established
Fire Extinguishing Media:	Dry chemical, foam or carbon dioxide (CO2)
Special Fire Fighting Procedures:	Evacuate area of all unnecessary personnel. Wear appropriate safety equipment for fire conditions including NIOSH/MSHA approved self-contained breathing apparatus (SCBA). Water fog or spray may be used to cool exposed equipment and containers. Shut off source if possible.
Fire and Explosion Hazards:	Carbon oxides, hydrogen sulfide, and sulfur oxides formed when burned. Highly flammable vapors which are heavier than air may accumulate in low areas and/or spread along ground away from handling site. Flash back along vapor trail is possible.

I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:
Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source, if possible and contain spill. Protect from ignition. Keep out of water sources and sewers. Absorb in a dry, inert material (sand, clay, etc). Transfer to disposal drums using non-sparking equipment.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):
Incinerate or place in permitted waste management facility.

J. DOT Transportation

Shipping Name:	Petroleum crude oil
Hazard Class:	3
ID Number:	UN 1267
Packing Group:	I
Marking:	Petroleum crude oil, , UN 1267
Label:	Flammable liquid
Placard:	Flammable/1267
Hazardous Substance/RQ:	Not Applicable
Shipping Description:	Petroleum crude oil, , 3, UN 1267, PG I
Packaging References:	49 CFR 173., 173.201, 173.243

K. RCRA Classification - Unadulterated Product as a Waste

Ignitable (D001)

Prior to disposal, consult your environmental contact to determine if the TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

L. Protection Required for Work on Contaminated Equipment

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

M. Hazard Classification

_X_ This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

_X_ Combustible Liquid	___ Flammable Aerosol	___ Oxidizer
___ Compressed Gas	___ Explosive	___ Pyrophoric
___ Flammable Gas	_X_ Health Hazard (Section F)	___ Unstable
_X_ Flammable Liquid	___ Organic Peroxide	___ Water Reactive
___ Flammable Solid		

___ Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

N. Additional Comments

SARA 313

This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. (See Section B).

Benzene
Toluene
Ethylbenzene
p-Xylene
m-Xylene
o-Xylene
1,2,4-Trimethylbenzene

NFPA 704 Hazard Codes		Signals
		Least - 0
Health	: 1	Slight - 1
Flammability	: 3	Moderate - 2
Reactivity	: 0	High - 3
Special Haz.	: -	Extreme - 4

MATERIAL SAFETY DATA SHEET

Eclipse(TM) "F" Natural Gas Engine Oil (All Grades)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Synonyms: SAE grade 20W-40, 30, 30/40, HDG Gas engine motor oil
Formula: Mixture
Chemical Family: Hydrocarbon
CAS Number: Mixture
SAP Code: 1012629; 1012630; 1012636; 1012637
Product Code: 45640; 45900
MSDS Number: US036740
NFPA Ratings: Health 0, Flammability 1 , Reactivity 0
HMIS Ratings: Flammability 1, Reactivity 0, Health 0
Intended Use(s): Industrial Natural Gas Engine Oil

The intended use of this product is indicated above, if any additional use is known please contact us at the Technical Information number listed below.

Manufactured By:
Phillips 66 Company
A Division of Phillips Petroleum Company
Bartlesville, Oklahoma 74004

Phone Numbers
Emergency: (918) 661-8118
Technical Information: (800) 766-0050
For Additional MSDSs: (918) 661-5974

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Specification and CAS #	Weight % In Product	ACGIH TLV (TWA)	ACGIH Short Term Exposure Limit	ACGIH Ceiling Limits	ACGIH Skin Designation	OSHA Final PEL (TWA)	OSHA - Final PELs - Ceiling Limits	OSHA - Final PELs - Skin Notation
Base stock 64741-88-4	80 to 100	NE	NE	NE	NE	NE	NE	NE
Alkylated diphenylamine 36878-20-3	0 to 5	NE	NE	NE	NE	NE	NE	NE
Benzenesulfonic acid, mono-C15-30-branched alkyl and di-C11-13-branched and linear alkyl derivs., calcium salts, overbased 71486-79-8	0 to 5	NE	NE	NE	NE	NE	NE	NE
Alkylated phenol 74499-35-7	0 to 5	NE	NE	NE	NE	NE	NE	NE
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs 84605-20-9	0 to 5	NE	NE	NE	NE	NE	NE	NE
2-Propenoic acid, 2-methyl-, eicosyl ester, polymer with 1-ethenyl-2-pyrrolidinone, hexadecyl 2-methyl-2-propenoate, isodecyl 2-methyl-2-propenoate, etc. 68171-46-0	2 to 5	NE	NE	NE	NE	NE	NE	NE
Calcium sulfonate	0 to 1	NE	NE	NE	NE	NE	NE	NE

61789-86-4								
Zinc dialkyldithiophosphate 68649-42-3	0 to 1	NE	NE	NE	NE	NE	NE	NE

See Section 8 for additional Exposure Limits.

3. HAZARDS IDENTIFICATION

Emergency Overview

Non-Hazardous. Pressure Injection.

Potential Acute Health Effects

Eye Contact: May cause mild irritation.

Skin Contact: May cause mild irritation with prolonged or repeated contact.

Inhalation: No acute effects expected due to low vapor pressure.

Ingestion: Practically non-toxic (LD50 > 15 gm/kg).

Subchronic and Chronic Effects:

Prolonged and repeated exposure to oil mist poses a risk of pulmonary disease such as lung inflammation. This condition usually causes no symptoms.

Aggravated Medical Conditions: Skin Disorders

4. FIRST AID MEASURES

Eye Contact: Flush eyes with running water. If irritation or adverse symptoms develop, seek medical attention.

Skin Contact: Wash skin with soap and water. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If illness or adverse symptoms develop, seek medical attention.

Ingestion: If illness or adverse symptoms develop, seek medical attention.

Notes To Physician: For injection injuries, immediate medical treatment is required. Physicians may call the emergency number (918) 661-8118.

5. FIRE FIGHTING MEASURES

Flash Point: 420-450F (216-232C)
FP Method: COC
Ignition Temperature: 730F (388C) Estimated
Flammable Limits (% by Volume in Air)
Lower Exposure Limit - Not Established
Upper Exposure Limit - Not Established

Fire Extinguishing Media: Dry chemical, alcohol resistant foam, water, carbon dioxide (CO2).

Fire Fighting Procedures: Evacuate area and fight fire from a safe distance. Shut off source, if possible. Use NIOSH approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 8 if conditions warrant. Use water spray to cool nearby containers and structures exposed to fire.

Fire and explosion hazards: Can be made to burn (flash point greater than 200F)

6. ACCIDENTAL RELEASE MEASURES

Sweep or gather up material and place in proper container for disposal or recovery.

7. HANDLING AND STORAGE

Avoid contact with eyes, skin or clothing. Avoid breathing vapors, mist, fume or dust. Use with adequate ventilation. Wear protective equipment and/or garments described in Section 8 if exposure conditions warrant. Launder contaminated clothing before reuse. Wash thoroughly after handling. Store in closed container. Store in well-ventilated area.

If pressure injected under the skin, can cause gangrene if not treated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses.

Respiratory Protection: For concentrations exceeding an applicable exposure limit, use NIOSH approved air purifying respirator equipped with P95 filters, for particulate with time weighted average exposure limit not less than 0.5 mg/M3.

Skin Protection: Use gloves resistant to the material(s) contained in this product.

Ventilation: Use adequate ventilation to control concentrations below applicable exposure limits.

Other Personal Protection: Personal protection information shown in Section 8 is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

Exposure Limits: OSHA PEL and ACGIH TLV for oil mists is 5 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Amber
Odor:	Mild
Odor Threshold (ppm):	Unknown
Boiling Point:	Not Determined
Melting/Freeze Point:	Not Established
Vapor Pressure:	<1 mm Hg @ 68F (20C)
Vapor Density (Air=1):	> 15
Specific Gravity @ 20 C (Water=1):	0.875 - 0.89 @ 60F (16C)
Percent Volatile by Volume:	Negligible
Evaporation Rate (Butyl Acetate=1):	Negligible
Water Solubility:	Negligible
Viscosity:	111 - 129 cSt @ 104F (40C)

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous Polymerization: Will Not Occur

Incompatability (Materials to Avoid): Oxygen and strong oxidizing agents.

Hazardous Decomposition Products: Carbon oxides and various hydrocarbons are formed when burned.

11. TOXICOLOGICAL INFORMATION

Other Health Effects:

Continuous skin contact with used motor oils has caused skin cancer in laboratory animals. Avoid prolonged skin contact with used motor oil.

Pressurized injection of product under the skin can lead to seriously inflammed tissue. If left untreated injury can become gangrenous.

These products may contain petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking or severe hydrotreating. None of the oils require a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

12. ECOLOGICAL INFORMATION

No data at this time.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT Shipping Description:	Not Regulated
IMDG Shipping Description:	Not Regulated
ICAO/IATA Proper Shipping Name:	Not Regulated

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories)

Acute Health:	No
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactivity Hazard:	No

Base stock 80 to 100 **64741-88-4**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Alkylated diphenylamine 0 to 5 **36878-20-3**
Regulated Substance on TSCA Inventory: Listed

Benzenesulfonic acid, mono-C15-30-branched alkyl and di-C11-13-branched and linear alkyl derivs., calcium salts, overbased 0 to 5 **71486-79-8**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Alkylated phenol 0 to 5 **74499-35-7**
Regulated Substance on TSCA Inventory: Listed

Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs 0 to 5 **84605-20-9**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

2-Propenoic acid, 2-methyl-, eicosyl ester, polymer with 1-ethenyl-2-pyrrolidinone, hexadecyl 2-methyl-2-propenoate, isodecyl 2-methyl-2-propenoate, etc. 2 to 5 **68171-46-0**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Calcium sulfonate 0 to 1 **61789-86-4**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Zinc dialkyldithiophosphate 0 to 1 **68649-42-3**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

16. OTHER INFORMATION

Revision Summary: Section 3 - Fomat Change.

Preparer: Health, Environment and Safety Department
Date Prepared: 05/11/2001
Supersedes: 04/27/2001

Chemical Detail Information

Chemical ID: 116540
MSDS ID: 000000
MSDS Date:
Product Name: Generic Carbon Dioxide
Chemical Family:
Chemical Owner:
Vendor Name: GENERIC VENDOR *(vendor ID GENER)*
MSDS Name: Carbon Dioxide
CAS Number: 124389
CAS Name:
Synonym 1:
Synonym 2:
Synonym 3:
Synonym 4:
Synonym 5:

Hints & Tips:

- Click on the MSDS ID to view the MSDS for this chemical.

Click here to return to the webMSDS home page

Chemical Detail Information

Chemical ID: 127110
MSDS ID: 000000
MSDS Date:
Product Name: Generic Gasoline
Chemical Family:
Chemical Owner:
Vendor Name: GENERIC VENDOR *(vendor ID GENER)*
MSDS Name: Generic Gasolines
CAS Number: 86290815
CAS Name:
Synonym 1:
Synonym 2:
Synonym 3:
Synonym 4:
Synonym 5:

Hints & Tips:

- Click on the MSDS ID to view the MSDS for this chemical.

Click here to return to the webMSDS home page

Chemical Detail Information

Chemical ID: 458080
MSDS ID: 000000
MSDS Date:
Product Name: Generic Helium
Chemical Family: Inert Gas
Chemical Owner:
Vendor Name: GENERIC VENDOR *(vendor ID GENER)*
MSDS Name: Generic Helium
CAS Number: 7440597
CAS Name:
Synonym 1:
Synonym 2:
Synonym 3:
Synonym 4:
Synonym 5:

Hints & Tips:

- Click on the MSDS ID to view the MSDS for this chemical.

Click here to return to the webMSDS home page

Chemical Detail Information

Chemical ID: 430920
MSDS ID: 000000
MSDS Date:
Product Name: Generic Nitrogen Dioxide
Chemical Family:
Chemical Owner:
Vendor Name: GENERIC VENDOR *(vendor ID GENER)*
MSDS Name: Generic Nitrogen Dioxide
CAS Number:
CAS Name:
Synonym 1: Dinitrogen Tetroxide
Synonym 2:
Synonym 3:
Synonym 4:
Synonym 5:

Hints & Tips:

- Click on the MSDS ID to view the MSDS for this chemical.

Click here to return to the webMSDS home page

Chemical Detail Information

Chemical ID: 116940
MSDS ID: 000000
MSDS Date:
Product Name: Generic Oxygen
Chemical Family:
Chemical Owner:
Vendor Name: GENERIC VENDOR *(vendor ID GENER)*
MSDS Name: Oxygen
CAS Number: 7782447
CAS Name:
Synonym 1:
Synonym 2:
Synonym 3:
Synonym 4:
Synonym 5:

Hints & Tips:

- Click on the MSDS ID to view the MSDS for this chemical.

Click here to return to the webMSDS home page

Chemical Detail Information

Chemical ID: 024050
MSDS ID: 000000
MSDS Date:
Product Name: Generic Propane
Chemical Family: Paraffinic Hydrocarbon
Chemical Owner:
Vendor Name: GENERIC VENDOR *(vendor ID GENER)*
MSDS Name: Propane
CAS Number: 74986
CAS Name:
Synonym 1: Propane Research; Instrument; Pure; Refrigeration; Commercial; Technical
Synonym 2:
Synonym 3:
Synonym 4:
Synonym 5:

Hints & Tips:

- Click on the MSDS ID to view the MSDS for this chemical.

Click here to return to the webMSDS home page

Chemical Detail Information

Chemical ID: 116820
MSDS ID: 000000
MSDS Date:
Product Name: Generic Sulfuric Acid
Chemical Family: Acid
Chemical Owner:
Vendor Name: GENERIC VENDOR *(vendor ID GENER)*
MSDS Name: Sulfuric Acid
CAS Number: 7664939
CAS Name:
Synonym 1:
Synonym 2:
Synonym 3:
Synonym 4:
Synonym 5:

Hints & Tips:

- Click on the MSDS ID to view the MSDS for this chemical.

Click here to return to the webMSDS home page

MATERIAL SAFETY DATA SHEET

Hector® Oil (All Grades)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Synonyms: Steam cylinder oil, ISO VG 180S, 460S, 630S
Formula: Mixture
Chemical Family: Hydrocarbon
CAS Number: Mixture
SAP Code: 1012795; 1012797; 1012799
Product Code: 80710; 80730; 80750
MSDS Number: US036770
NFPA Ratings: Health 0, Flammability 1 , Reactivity 0
HMIS Ratings: Flammability 1, Reactivity 0, Health 0
Intended Use(s): Industrial Worm Gear Oil

The intended use of this product is indicated above, if any additional use is known please contact us at the Technical Information number listed below.

Manufactured By:
Phillips 66 Company
A Division of Phillips Petroleum Company
Bartlesville, Oklahoma 74004

Phone Numbers
Emergency: (918) 661-8118
Technical Information: (800) 766-0050
For Additional MSDSs: (918) 661-5974

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Specification and CAS #	Weight % In Product	ACGIH TLV (TWA)	ACGIH Short Term Exposure Limit	ACGIH Ceiling Limits	ACGIH Skin Designation	OSHA Final PEL (TWA)	OSHA - Final PELs - Ceiling Limits	OSHA - Final PELs - Skin Notation
Solvent refined residuum 64742-01-4	0 to 80	NE	NE	NE	NE	NE	NE	NE
Base stock 64741-88-4	0 to 50	NE	NE	NE	NE	NE	NE	NE
Solvent deasphalted residual oil 64741-95-3	0 to 50	NE	NE	NE	NE	NE	NE	NE
Residual oils (petroleum), hydrotreated 64742-57-0	0 to 50	NE	NE	NE	NE	NE	NE	NE
Inedible lard oil 8016-28-2	0 to 10	NE	NE	NE	NE	NE	NE	NE
Acrylic copolymers 63197-48-8	0 to 1	NE	NE	NE	NE	NE	NE	NE

See Section 8 for additional Exposure Limits.

3. HAZARDS IDENTIFICATION

Emergency Overview

Non-Hazardous. Pressure Injection.

Potential Acute Health Effects

Eye Contact: May cause mild irritation.

Skin Contact: May cause mild irritation with prolonged or repeated contact.

Inhalation: No acute effects expected due to low vapor pressure.

Ingestion: Practically non-toxic (LD50 > 15 gm/kg).

Subchronic and Chronic Effects:

Prolonged and repeated exposure to oil mist poses a risk of pulmonary disease such as lung inflammation. This condition usually causes no symptoms.

Aggravated Medical Conditions: Skin Disorders

4. FIRST AID MEASURES

Eye Contact: Flush eyes with running water. If irritation or adverse symptoms develop, seek medical attention.

Skin Contact: Wash skin with soap and water. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If illness or adverse symptoms develop, seek medical attention.

Ingestion: If illness or adverse symptoms develop, seek medical attention.

Notes To Physician: For injection injuries, immediate medical treatment is required. Physicians may call the emergency number (918) 661-8118.

5. FIRE FIGHTING MEASURES

Flash Point:	480-515F (249-268C)
FP Method:	COC
Ignition Temperature:	730-755F (387-401C) Estimated
Flammable Limits (% by Volume in Air)	
Lower Exposure Limit -	Not Established
Upper Exposure Limit -	Not Established

Fire Extinguishing Media: Dry chemical, foam or carbon dioxide (CO2), water

Fire Fighting Procedures: Evacuate area and fight fire from a safe distance. Shut off source, if possible. Use NIOSH approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 8 if conditions warrant. Use water spray to cool nearby containers and structures exposed to fire.

Fire and explosion hazards: Can be made to burn (flash point greater than 200F).

6. ACCIDENTAL RELEASE MEASURES

Sweep or gather up material and place in proper container for disposal or recovery.

7. HANDLING AND STORAGE

Avoid contact with eyes, skin or clothing. Avoid breathing vapors, mist, fume or dust. Use with adequate ventilation. Wear protective equipment and/or garments described in Section 8 if exposure conditions warrant. Launder contaminated clothing before reuse. Store in closed container. Store in well-ventilated area.

If pressure injected under the skin, can cause gangrene if not treated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses.

Respiratory Protection: For concentrations exceeding an applicable exposure limit, use NIOSH approved air purifying respirator equipped with P95 filters, for particulate with time weighted average exposure limit not less than 0.5 mg/M3.

Skin Protection: Use gloves resistant to the material(s) contained in this product.

Ventilation: Use adequate ventilation to control concentrations below applicable exposure limits.

Other Personal Protection: Personal protection information shown in Section 8 is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

Exposure Limits: OSHA PEL and ACGIH TLV for oil mists is 5 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Dark
Odor:	Mild
Odor Threshold (ppm):	Unknown
Boiling Point:	Not Determined
Melting/Freeze Point:	Not Established
Vapor Pressure:	<0.0001 mm Hg @ 68F (20C)
Vapor Density (Air=1):	> 15
Specific Gravity @ 20 C (Water=1):	0.88 - 0.91 @ 60F (16C)
Percent Volatile by Volume:	Negligible
Evaporation Rate (Butyl Acetate=1):	Negligible
Water Solubility:	Negligible
Viscosity:	184-475 cSt @ 104F (40C)

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous Polymerization: Will Not Occur

Incompatability (Materials to Avoid): Oxygen and strong oxidizing agents.

Hazardous Decomposition Products: Carbon oxides and various hydrocarbons are formed when burned.

11. TOXICOLOGICAL INFORMATION

Other Health Effects:

Continuous skin contact with used motor oils has caused skin cancer in laboratory animals. Avoid prolonged skin contact with used motor oil.

Pressurized injection of product under the skin can lead to seriously inflammed tissue. If left untreated injury can become gangrenous.

These products may contain petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking or severe hydrotreating. None of the oils require a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

12. ECOLOGICAL INFORMATION

No data at this time.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT Shipping Description:	Not Regulated
IMDG Shipping Description:	Not Regulated
ICAO/IATA Proper Shipping Name:	Not Regulated

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories)

Acute Health:	No
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactivity Hazard:	No

Solvent refined residuum 0 to 80 **64742-01-4**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Base stock 0 to 50 **64741-88-4**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Solvent deasphalted residual oil 0 to 50 **64741-95-3**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Residual oils (petroleum), hydrotreated 0 to 50 **64742-57-0**

Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Inedible lard oil 0 to 10 **8016-28-2**
Regulated Substance on TSCA Inventory: Listed
Pennsylvania Right to Know List: Listed
Canada - Domestic Substances List: Listed

Acrylic copolymers 0 to 1 **63197-48-8**
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

16. OTHER INFORMATION

Revision Summary: Section 3 - Format Change.

Preparer: Health, Environment and Safety Department
Date Prepared: 05/11/2001
Supersedes: 04/27/2001

BioLab
Safety & Governmental Affairs
P.O. Box 1469, Decatur, GA 30031
(404) 378-1753 TWX 810-751-3318

HEALTH 0 / 3 / 2 / OXY REACTIVITY
SPECIAL HAZARD

DEGREE OF HAZARD
4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT

Material Safety Data Sheet

CUSTOMER 215713000

F-0667

1. Identification

PRODUCT NAME: CHLORINE TABLETS REFILL, IT LG STAB CHLOR TABS 3", TABGARD PUCKS (WRAPPED), TABGARD UNIVERSA CANISTE , TABGARD CHLOR. CANISTER, TABGARD CHLORINE TABLETS, TABGARD CHLORINE TABLETS, TABGARD CHLORINE TABLETS,
CHEMICAL NAME: 1,3,5,Trichloro-s-triazine-2,4,6(1H,3H,5H) trione

FORMULA: C3N3O3Cl3

2. Hazardous Ingredients

	%	TLV	CAS NO.
Trichloro-s-triazine trione	99	Not Est.	87-90-1

3. Health Hazards

FIRST AID AND ACUTE HEALTH HAZARDS:
EYE CONTACT: Flush with large volumes of water for 15 minutes. Contact a physician.
SKIN CONTACT: Brush excess material off of skin and flush with water for 15 minutes. If irritation persists, contact a physician.
FOR INGESTION: Drink large quantities of water. DO NOT INDUCE VOMITING. Contact a physician.
INHALATION: Avoid breathing dust or chlorine fumes. If inhales, reomve to fresh air. Call a physician if irritation develops of persists.

CHRONIC/LONG TERM HAZARDS: None expected at use concentrations.

CARCINOGENICITY: None

4. Description And Physical Data

PHYSICAL FORM: Solid (X) Liquid ( ) Gas ( )

SOLUBILITY IN WATER: Insoluble ( ) Moderate (X) Complete ( )

APPEARANCE: White crystalline solid with noticeable chlorine odor.

5. Fire And Explosion Hazard Data

FLASH POINT: N/A

EXTINGUISHING MEDIA: Water (X) Carbon dioxide ( ) Dry chemical ( ) Not Applicable ( )

SPECIAL FIRE FIGHTING PROCEDURES: Isolate container in open air, if possible. Deluge with water. Use NIOSH/MSHA approved self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Contact with most organic materials may result in fire. May be explosive, with the evolution of toxic gases.
HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: Nitrogen trichloride, carbon monoxide, phosgene(400 F), and other chlorine gases.

MATERIAL SAFETY DATA SHEET

Magnus® Oil (All Grades)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Synonyms: Industrial oil, Navy Reference Oil 50, ISO VG 22, 32, 46, 68, 100, 150, 220, 320
Formula: Mixture
Chemical Family: Hydrocarbon
CAS Number: Mixture
SAP Code: 1012815; 1012816; 1012817; 1012818; 1012819; 1012820; 1012821; 1012822; 1012823; 1012824; 1012825; 1012826; 1012827; 1012828; 1012829; 1012830; 1012831; 1012832; 1012833; 1012834; 1012835; 1014713; 1014715; 1031340; 1031877
Product Code: 81220; 81230; 81240; 81250; 81260; 81270; 81280; 81290; 85040
MSDS Number: US036800
NFPA Ratings: Health 0, Flammability 1, Reactivity 0
HMIS Ratings: Flammability 1, Reactivity 0, Health 0
Intended Use(s): Industrial Hydraulic Oil

The intended use of this product is indicated above, if any additional use is known please contact us at the Technical Information number listed below.

Manufactured By:
Phillips 66 Company
A Division of Phillips Petroleum Company
Bartlesville, Oklahoma 74004

Phone Numbers
Emergency: (918) 661-8118
Technical Information: (800) 766-0050
For Additional MSDSs: (918) 661-5974

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Specification and CAS #	Weight % In Product	ACGIH TLV (TWA)	ACGIH Short Term Exposure Limit	ACGIH Ceiling Limits	ACGIH Skin Designation	OSHA Final PEL (TWA)	OSHA - Final PELs - Ceiling Limits	OSHA - Final PELs - Skin Notation
Base stock 64741-88-4	< 100	NE	NE	NE	NE	NE	NE	NE
Petroleum based lubricants 64742-54-7	< 100	NE	NE	NE	NE	NE	NE	NE
Solvent refined residuum 64742-01-4	< 90	NE	NE	NE	NE	NE	NE	NE
Solvent refined petroleum oils 64741-89-5	< 40	NE	NE	NE	NE	NE	NE	NE
Alkylphenol	< 10	NE	NE	NE	NE	NE	NE	NE
2,6-Di-tert-butylphenol 128-39-2	< 1	NE	NE	NE	NE	NE	NE	NE
Alkylated aromatic amine	< 1	NE	NE	NE	NE	NE	NE	NE
2-Propenoic acid, 2-methyl-, eicosyl ester, polymer with 1-ethenyl-2-pyrrolidinone, hexadecyl	< 1	NE	NE	NE	NE	NE	NE	NE

2-methyl-2-propenoate, isodecyl 2-methyl-2-propenoate, etc. 68171-46-0								

See Section 8 for additional Exposure Limits.

3. HAZARDS IDENTIFICATION

Emergency Overview

Non-Hazardous. Pressure Injection.

Potential Acute Health Effects

Eye Contact: May cause mild irritation.

Skin Contact: May cause mild irritation with prolonged or repeated contact.

Inhalation: No acute effects expected due to low vapor pressure.

Ingestion: Practically non-toxic (LD50 > 15 gm/kg).

Subchronic and Chronic Effects:

Prolonged and repeated exposure to oil mist poses a risk of pulmonary disease such as lung inflammation. This condition usually causes no symptoms.

Aggravated Medical Conditions: Skin Disorders

4. FIRST AID MEASURES

Eye Contact: Flush eyes with running water. If irritation or adverse symptoms develop, seek medical attention.

Skin Contact: Wash skin with soap and water. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If illness or adverse symptoms develop, seek medical attention.

Ingestion: If illness or adverse symptoms develop, seek medical attention.

Notes To Physician: For injection injuries, immediate medical treatment is required. Physicians may call the emergency number (918) 661-8118.

5. FIRE FIGHTING MEASURES

Flash Point:	360-510F (184-268C)
FP Method:	COC
Ignition Temperature:	670-745F (354-396C) Estimated
Flammable Limits (% by Volume in Air)	
Lower Exposure Limit -	Not Established
Upper Exposure Limit -	Not Established

Fire Extinguishing Media: Dry chemical, foam or carbon dioxide (CO2), water

Fire Fighting Procedures: Evacuate area and fight fire from a safe distance. Shut off source, if possible. Use NIOSH approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 8 if conditions warrant. Use water spray to cool nearby containers and structures exposed to fire.

Fire and explosion hazards: Can be made to burn (flash point greater than 200F).

6. ACCIDENTAL RELEASE MEASURES

Sweep or gather up material and place in proper container for disposal or recovery.

7. HANDLING AND STORAGE

Avoid contact with eyes, skin or clothing. Avoid breathing vapors, mist, fume or dust. Use with adequate ventilation. Wear protective equipment and/or garments described in Section 8 if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Store in closed container. Store in well-ventilated area.

If pressure injected under the skin, can cause gangrene if not treated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses.

Respiratory Protection: For concentrations exceeding an applicable exposure limit, use NIOSH approved air purifying respirator equipped with P95 filters, for particulate with time weighted average exposure limit not less than 0.05 mg/M3.

Skin Protection: Use gloves resistant to the material(s) contained in this product.

Ventilation: Use adequate ventilation to control concentrations below applicable exposure limits.

Other Personal Protection: Personal protection information shown in Section 8 is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

Exposure Limits: OSHA PEL and ACGIH TLV for oil mists is 5 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Colorless to dark liquid
Odor:	Mild
Odor Threshold (ppm):	Unknown
Boiling Point:	> 600F (> 316C)
Melting/Freeze Point:	Not Established
Vapor Pressure:	< 1 mm Hg @ 68F (20C)
Vapor Density (Air=1):	> 10
Specific Gravity @ 20 C (Water=1):	0.86 - 0.89 @ 60F (16C)
Percent Volatile by Volume:	Negligible
Evaporation Rate (Butyl Acetate=1):	Negligible
Water Solubility:	Negligible
Viscosity:	20 - 330 cSt @ 104F (40C)

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous Polymerization: Will Not Occur

Incompatability (Materials to Avoid): Oxygen and strong oxidizing agents.

Hazardous Decomposition Products: Carbon oxides and various hydrocarbons are formed when burned.

11. TOXICOLOGICAL INFORMATION

Other Health Effects:

Pressurized injection of product under the skin can lead to seriously inflammed tissue. If left untreated injury can become gangrenous.

Continuous skin contact with used motor oils has caused skin cancer in laboratory animals. Avoid prolonged skin contact with used motor oil.

These products may contain petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking or severe hydrotreating. None of the oils require a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

12. ECOLOGICAL INFORMATION

No data at this time.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT Shipping Description:	Not Regulated
IMDG Shipping Description:	Not Regulated
ICAO/IATA Proper Shipping Name:	Not Regulated

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories)

Acute Health:	No
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactivity Hazard:	No

Base stock < 100 64741-88-4
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Petroleum based lubricants < 100 64742-54-7
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Solvent refined residuum < 90 64742-01-4
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Solvent refined petroleum oils < 40 64741-89-5
Regulated Substance on TSCA Inventory: Listed
Massachusetts Right To Know List: Listed
Canada - Domestic Substances List: Listed

Alkylphenol < 10
Regulated Substance on TSCA Inventory: Listed

2,6-Di-tert-butylphenol < 1 128-39-2
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

Alkylated aromatic amine < 1
Regulated Substance on TSCA Inventory: Listed

2-Propenoic acid, 2-methyl-, eicosyl ester, polymer with 1-ethenyl-2-pyrrolidinone, hexadecyl 2-methyl-2-propenoate, isodecyl 2-methyl-2-propenoate, etc. < 1 68171-46-0
Regulated Substance on TSCA Inventory: Listed
Canada - Domestic Substances List: Listed

16. OTHER INFORMATION

Revision Summary:

Section 3 - Format Change.

Preparer: Health, Environment and Safety Department
Date Prepared: 05/11/2001
Supersedes: 04/20/2001

EQUISTAR

Equistar Chemicals, LP
One Houston Center, Suite 1600
1221 McKinney Street
P.O. Box 2583
Houston, Texas 77252-2583
Phone: 713.652.7200

PHILLIPS 66 COMPANY STX

02/07/2001

SWEENY, TX 77480
United States

SARA Title III
Annual Notification

Dear Customer:

Thank you for your interest in Equistar Chemicals, LP products. Attached is a current Material Safety Data Sheet (MSDS) for the following product(s) purchased or requested by your company.

EQUISTAR Product Name	Product Number	Material Name	MSDS #
Methanol LPC	000000000000001080	METHANOL LPC	000000000122

This is to provide annual notification that the product listed above contains substance(s) subject to the reporting requirements of Section 313 of SARA Title III. As specified within paragraph 40 CFR Part 372.45(b)(5) of the rule, this coversheet must be maintained with the attached MSDS. Any copying and redistribution of the MSDS must include this coversheet.

This MSDS has been prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the "Supplier Notification" requirements of Section 313 of SARA Title III (40 CFR Part 327.45). The MSDS provides important health and safety information. We suggest you review this document prior to handling the product. For the MSDS to be an effective means of hazard communication, it must be made available to all those who handle and are responsible for operations involving this product. Maximum concentrations of ingredients, which are SARA 313 listed, are provided within Section 2 of the attached MSDS.

Information contained herein should not be used for specification purposes. We recommend that you consult your occupational health and safety specialist to insure that methods used in the handling, storage and reporting of these products will be adequate and in compliance with applicable laws and regulations.

If additional health and safety information is required, please call the Equistar Product Safety office at (800) 700-0946 or FAX (713) 951-1574.

Sincerely,
Equistar Chemicals, LP
Product Safety

Attachment

Responsible Care®
A Public Commitment

HMIS (USA)	
Health Hazard	3
Fire Hazard	3
Reactivity	0

EQUISTAR
Material Safety Data Sheet
Methanol LPC

MSDS No.: 000000000122
Validation Date: 03/02/2000
Version No: 1.6

SECTION 1: IDENTIFICATION:

Product Name: Methanol LPC

Chemical Name: Methanol alcohol

CAS Number: 67-56-1

Synonyms: Methanol; Methyl alcohol; Wood alcohol.

Chemical Family: Aliphatic Alcohol

Manufacturer: Equistar Chemicals, LP
1221 McKinney St.
One Houston Center, Suite 1600
P.O. Box 2583
Houston, Texas 77252-2583

Telephone Numbers:
Emergency: CHEMTREC 800 424 9300
Equistar 800 245 4532
Product Safety: SETIQ 91 800-00-214

Phone 800 700 0946
FAX 713 951 1574

SECTION 2: COMPOSITION:

Component Name:	CAS No.	OSHA PEL	OSHA STEL	ACGIH TLV	ACGIH STEL	Carcinogenic Listing*	Concentration by Wt./Mol% Avg.	Min.	Max.
Methanol	67-56-1	200 ppm	N/L	200 ppm	250 ppm	N/L		99.9	

*1 = OSHA 2 = IARC 3 = NTP 4 = Others N/L = Not Listed **See Section 11 for more information**

SECTION 3: HAZARD IDENTIFICATION:

Emergency Overview This material is HAZARDOUS by OSHA Hazard Communication definition.

Signal Word: DANGER!

Hazards Identification: Vapors can travel to a source of ignition and flash back. Material can burn with little or no visible flame. FLAMMABLE LIQUID - TOXIC

Physical State: Liquid.

Color: Colorless.

Odor: Alcohol-like.

Odour Threshold: 160 ppm

Potential Health Effects

Routes of Exposure: Ingestion Skin Inhalation

Signs and Symptoms of Acute Exposure: May cause irritation to eyes, skin, and respiratory system. May cause drowsiness and dizziness. Methanol, if ingested or inhaled may cause metabolic acidosis, blindness or death. Skin absorption of methanol may add significantly to the overall toxic effect.

• *Methanol*	May cause irritation to eyes, skin, and respiratory system. May cause drowsiness and dizziness. Methanol, if ingested or inhaled may cause metabolic acidosis, blindness or death. Skin absorption of methanol may add significantly to the overall toxic effect.
Skin:	Skin exposure to methanol may also cause significant toxicity.
Inhalation:	Irritating to the respiratory system. May cause drowsiness and dizziness.
Eye:	Mild eye irritant, can cause conjunctivitis, and/or corneal opacity.
Ingestion:	
Chronic Health Effects:	Methanol is slowly eliminated from the body, therefore it can have cummulative toxicity effects with repeated exposures.
• *Methanol*	Methanol is slowly eliminated from the body, therefore it can have cummulative toxicity effects with repeated exposures.
Conditions Aggravated by Exposure:	Persons with existing skin, kidney, liver or eye disorders may be at increased risk when exposed to methanol

SECTION 4: FIRST AID MEASURES:

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 3 of this MSDS.

Inhalation:	Move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. When breathing is difficult, properly trained personnel may assist the affected person by administering oxygen. Keep the affected person warm and at rest. Get medical attention immediately.
Eye:	Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.
Skin:	Immediately remove excess chemical and contaminated clothing; thoroughly wash contaminated skin with mild soap and water. If irritation persists after washing, seek medical attention. Thoroughly clean contaminated clothing before reuse; discard contaminated leather goods (gloves, shoes, belts, wallets, etc.).
Ingestion:	Get medical attention immediately.

SECTION 5: FIRE FIGHTING MEASURES: NFPA: Health 1; Fire 3; Reactivity 0; Others:

Flammability Classification:	OSHA/NFPA Class IB Flammable Liquid.
Flash Point / Method:	11 °C (51.8 °F) OPEN CUP
Auto-Ignition Temperature:	385 °C (725 °F)
Flammable Limits:	**LOWER:** 6 %(V) **UPPER:** 36 %(V)
Hazardous Combustion Products:	Partial oxidation of methanol can lead to the formation of formaldehyde, carbon monoxide, and formic acid.

Special Conditions to Avoid: Methanol is TOXIC. Avoid all exposure, especially ingestion. Vapors may travel long distances along the ground before reaching a source of ignitionand flashing back.

Extinguishing Media: SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam LARGE FIRE: Use water spray, water fog or alcohol-resistant foam

Fire Fighting Instructions:

Protective Equipment/Clothing: Wear a NIOSH approved positive pressure self-contained breathing apparatus and firefighter turnout gear.

Instructions: Evacuate area and fight from a maximum distance or use unmanned hose holders or monitor nozzles. Heat may generate flammable or explosive vapors; disperse with water spray or cover pooling liquid with foam. Containers can build up pressure if exposed to heat; cool with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devicesor discoloration of vessel. Always stay away from the ends of tanks.

SECTION 6: ACCIDENTAL RELEASE MEASURES:

Release Response: Eliminate all sources of ignition. Stop leak if without risk. Use water spray or alcohol-resistant foam to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Depending on the size and nature of the release, all responders may need to be HAZWOPER trained and local, state and federal authorities may need to be notified.

Reportable Quantities: See Section 15: Regulatory Information.

SECTION 7: HANDLING AND STORAGE:

Handling: Do not handle near heat, sparks, or flame. Avoid contact with incompatible agents. Use only with adequate ventilation/personal protection. Avoid contact with eyes, skin and clothing. Do not enter storage area unless adequately ventilated. Metal containers involved in the transfer of this material should be grounded and bonded.

Storage: Keep containers tightly closed and in a well-ventilated area. Store away from oxidizers and other combustible material by a distance of at least 20 feet. Metal containers used to store this material should be grounded.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION:

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal Protection:

Inhalation: A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use.

Skin: Appropriate protective clothing should be worn to prevent skin contact.

Eye Protection:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES:

Boiling Point:	64.7 °C (148.5 °F)	**pH:**	Not applicable.
Vapor Pressure:	100 mm Hg @ 21.2 °C (70 °F)	**Viscosity:**	
Specific Gravity:	Solid/Liquid: 0.81 (Water = 1) Vapor: 1.1 (air = 1)	**Water Solubility (% weight):**	Easily soluble in cold water.
Octanol/Water Partition Coefficient in Kow:	0.77	**Melting/ Freezing Point:**	-97.8 °C (-144 °F)

Evaporation Rate: 2.1 (Butyl acetate=1)

SECTION 10: STABILITY AND REACTIVITY:

Chemical Stability:	The product is stable.
Conditions to Avoid:	Avoid contact with strong oxidizers, excessive heat, sparks or open flame.
Incompatibility with:	Can react vigorously with oxidizing materials. A number of hazardous reactions have been reported (NFPA, 1986) in cases where methanol is present in combination with: chromic anhydride, phosphorous trioxide, lead perchlorate, perchloric acid and ethy
Hazardous Products of Decomposition:	Partial oxidation of methanol can lead to the formation of formaldehyde carbon monoxide, and formic acid.
Hazardous Polymerization:	Will not occur.
Reactions with Air and Water:	Does not react with air, water or other common materials.

SECTION 11: TOXICOLOGICAL INFORMATION:

Summary Data: Methanol is a human poison. It can produce sever metabolic acidosis, blindness and death. The onset of symptoms may be delayed for 18 to 24 hours after ingestion. Toxicity is related to the degree of acidosis produced thus the time interval between exp

LC50 (Inhl)

Rat 64000 MG/KG

LD50 (Oral)

Rat, Mouse 5628 MG/KG, 7300 MG/KG

ACUTE INHALATION EFFECTS: Inhalation of methanol-is the major route of exposure in the occupational environment causing toxicity.

ACUTE ORAL EFFECTS: Most of the literature on methanol poisoning involves accidental or intentional ingestion. Ingestion of as little as 15 ml can cause blindness, and 30 to 250 ml can be fatal producing severe metabolic acidosis, blindness, and death.

SKIN EFFECTS: Methanol is a skin irritant. Absorption of methanol through the skin may add significantly to the overall toxic effect. Standard Draize skin test (rabbit) - Dose: 20 mg/24 hrs Reaction: Moderate

EYE EFFECTS: Direct contact of methanol with the eye produces a mild, reversible irritation, assuming treatment is initiated promptly. Transient visual abnormalities that develop during acute methanol intoxication may include blurred or double vision, changes in color preception, constricted visual fields, spots before the eyes, and sharply reduced visual acuity. Standard Draize eye test (rabbit) - Dose: 40 mg Reaction: Moderate Dose: 100 mg/24 hrs Reaction: Moderate

REPEATED DOSE TOXICITY: No conclusive data found in literature search.

CARCINOGENICITY: No conclusive data found in literature search.

REPRODUCTIVE / DEVELOPMENT EFFECTS:

Component

- *Methanol*

LC50 (Inhl)

Rat 64000 MG/KG

LD50 (Oral)

Rat 5628 MG/KG

Mouse 7300 MG/KG

ACUTE INHALATION EFFECTS: Inhalation of methanol is the major route of exposure in the occupational environment causing toxicity.

ACUTE ORAL EFFECTS: Most of the literature on methanol poisoning involves accidental or intentional ingestion. Ingestion of as little as 15 ml can cause blindness, and 30 to 250 ml can be fatal producing severe metabolic acidosis, blindness, and death.

SKIN EFFECTS: Methanol is a skin irritant. Absorption of methanol through the skin may add significantly to the overall toxic effect. Standard Draize skin test (rabbit) - Dose: 20 mg/24 hrs Reaction: Moderate

EYE EFFECTS: Direct contact of methanol with the eye produces a mild, reversible irritation, assuming treatment is initiated promptly. Transient visual abnormalities that develop during acute methanol intoxication may include blurred or double vision, changes in color preception, constricted visual fields, spots before the eyes, and sharply reduced visual acuity. Standard Draize eye test (rabbit) - Dose: 40 mg Reaction: Moderate Dose: 100 mg/24 hrs Reaction: Moderate

REPEATED DOSE TOXICITY: No conclusive data found in literature search.

CARCINOGENICITY: No conclusive data found in literature search.

REPRODUCTIVE / DEVELOPMENT EFFECTS: Methanol Subchronic Inhalation studies with Laboratory animals (conducted at approximately 30% of the LC50) has shown specific abnormalities to the cardiovascular, musculoskeletal and urogenital systems of the developing fetus. Reported effects also incl.

SECTION 12: ECOLOGICAL INFORMATION:

Ecotoxicity: When released to the environment, this product will volatilize rapidly. No long term damage to the environment is expected. Operators of water intakes in the vincinity should be notified of releases to water.

Environmental Fate: Methanol is expected to be biodegradable in soil. Its miscibility in water and log KOW(-0.77) suggest high mobility in soil. Based on a vaporpressure of 92 mm Hg at 20 deg evaporation from dry surfaces can be expected to occur. The important environmental fate process for methanol in water is biodegradation. Metanol is expected to exist almost entirely in the vapor-phase in the ambient atmosphere, based on a vapor pressure of 92 mm Hg at 20 deg C. It is degraded by reaction with photochemically produced hydroxyl rad- icals with an estimated half-life of 17.8 days in a typical ambient atmosphere. Because of methanol's water solubility, rain would be expected to physically remove some from the air; the detection of methanol in a thunder storm water tends to confirm this supposition.

Bioaccumulation: Not expected to occur.

SECTION 13: DISPOSAL CONSIDERATIONS:

Disposal should be conducted through a facility equipped with and operating an air emission control device in accordance with requirements of applicable Clean Air Act regulations.

SECTION 14: TRANSPORT INFORMATION:

Proper Shipping Name:	Methanol, or Methyl alcohol		
DOT Hazard Class:	3		
UN/NA ID:	UN 1230	**Marine Pollutant:**	No.
Packing Group:	PG II	**NAER Guidebook:**	131
Labels:	Flammable liquid. Poison.	**DOT Status:**	A U.S. Department of Transportation regulated material.

SECTION 15: REGULATORY INFORMATION:

TSCA: All components of this product are listed on the TSCA 8(b) inventory. If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

TSCA 12(b) Component

SARA - Section 313 Emissions Reporting: The following chemicals in this product exceed the de minimus reporting level established by SARA Title III, Section 313 and 40 CFR 372.

Component	Reporting Threshold
Methanol	1.0%

SARA - Section 311/312: This product is classified into the following hazard catagories:

Immediate Health Delayed Health Fire

CERCLA Hazardous Substances and their ReportableQuantities:

Component	Reportable Quantity
Methanol	5,000 LBS (270 KG)

California Prop. 65:
Proposition 65 requires manufacturers or distributors of consumer products into the State of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the State of California to cause cancer or reproductive toxicity it will be listed below.

SECTION 16: OTHER INFORMATION

DISCLAIMER OF LIABILITY: The information on this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

Latest Revision(s): Conversion to SAP template.

END OF DOCUMENT

June 30, 1992

Material Safety Data Sheet

NATURAL GAS

GPM GAS CORPORATION
Bartlesville, Oklahoma 74004

PHONE NUMBERS
Emergency: (918) 661-8118
General MSDS Information: (918) 661-8327
For Additional MSDSs: (918) 661-5952

A. Product Identification

Synonyms: Raw gas; Residue gas
Chemical Name: Natural gas
Chemical Family: Mixture
Chemical Formula: Mixture
CAS Reg. No.: 8006-14-2
Product No.: Not Established

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

B. Components

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Methane	74-82-8	60-95	NE	Simple Asphyxiant
Ethane	74-84-0	2-15	NE	Simple Asphyxiant
Propane	74-98-6	1-10	1000 ppm	Simple Asphyxiant
Butane	109-97-8	0-4	800 ppm	800 ppm
Isobutane	75-28-5	0-4	NE	NE
Nitrogen	7727-37-9	0-15	NE	NE
Carbon dioxide	124-38-9	0-5	10000 ppm	5000 ppm
Pentanes plus, includes	Various	0-8	NE	NE
Pentane	109-66-0	NE	600 ppm	600 ppm
Isopentane	78-78-4	NE	NE	NE
Hexane	110-54-3	NE	50 ppm	50 ppm
Isohexane	107-83-5	NE	500 ppm	500 ppm
Hydrogen sulfide	7783-06-4	0-30	10 ppm	10 ppm

Normal composition ranges are shown. Exceptions may occur which would invalidate data on this form.

NA - Not Applicable NE - Not Established

C. Personal Protection Information

Ventilation:	Use adequate ventilation to control exposure below recommended levels.
Respiratory Protection:	For concentrations exceeding the recommended level, use NIOSH/MSHA approved air purifying respirator. If conditions immediately dangerous to life or health exist, use NIOSH/MSHA self-contained breathing apparatus (SCBA).
Eye Protection:	Use chemical goggles.
Skin Protection:	No special garments required. Avoid unnecessary skin contamination with material.

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

D. Handling and Storage Precautions

Proper personal protective equipment must be used when handling this chemical. Do not get in eyes, on skin or on clothing. Do not breathe vapor, mist, fume or dust. May be harmful. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use only with adequate ventilation.

Store in tightly closed container. Store in well-ventilated area. Keep away from heat, sparks and flame. Bond and ground during transfer.

E. Reactivity Data

Stability:	Stable
Conditions to Avoid:	Not Established
Incompatibility (Materials to Avoid):	Oxygen and strong oxidizing materials
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid:	Not Established
Hazardous Decomposition Products:	Carbon oxides and various hydrocarbons formed when burned. Sulfur oxides may be formed if hydrogen sulfide is present.

F. Health Hazard Data

Recommended Exposure Limits:

See Section B.

Acute Effects of Overexposure:

Eye: May cause irritation including pain, blurred vision, redness, tearing and superficial corneal turbidity.

Skin: May cause slight irritation.

Inhalation: Toxic by this route of exposure. May cause nausea, diarrhea, loss of appetite, dizziness, disorientation, headache, excitation, rapid respiration, drowsiness, labored breathing, anesthesia and other central nervous system effects. Hydrogen sulfide may cause lung paralysis and asphyxiation. Extreme overexposure may cause rapid unconsciousness and respiratory arrest.

Ingestion: Not Applicable.

Subchronic and Chronic Effects of Overexposure:

Exposure to 1000 ppm propane for 8 hours a day, 5 days a week, for approximately 2 weeks produced no abnormal reactions, including cardiac, pulmonary, and neurologic functions in humans.

Chronic high level n-hexane exposure damages the nervous system initially producing a lack of feeling in the extremities and possibly progressing to a more severe nerve damage.

Inhalation of high levels (1000 and 5000 ppm) of n-hexane has produced testicular damage in rats. Mice exposed to the same dose levels showed no testicular effects.

Carbon dioxide exposure may cause acidosis and imbalance of electrolytes in the blood.

Other Health Effects:

A Toxicity Study Summary for Methane, Pure Grade, is available upon request.

The odor of hydrogen sulfide may not be recognized after prolonged inhalation due to paralysis of the sense of smell. Effects from inhaling the fume may lead to chronic bronchitis, respiratory irritation, increased loss of pulmonary function, and tearing of the eyes.

Health Hazard Categories:

	Animal	Human		Animal	Human
Known Carcinogen	___	___	Toxic	_X_	___
Suspect Carcinogen	___	___	Corrosive	___	___
Mutagen	___	___	Irritant	___	___
Teratogen	___	___	Target Organ Toxin	_X_	_X_
Allergic Sensitizer	___	___	Specify - Nerve Toxin; Blood Toxin Lung-Simple Asphyxiant		
Highly Toxic	___	___			

First Aid and Emergency Procedures:

Eye:	Flush eyes with running water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.
Skin:	Wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.
Inhalation:	Immediately remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.
Ingestion:	If illness or adverse symptoms develop, seek medical attention.

G. Physical Data

Appearance:	Colorless gas
Odor:	Mild to rotten egg odor, if hydrogen sulfide is present.
Boiling Point:	-285F (-161C)(Estimate)
Vapor Pressure:	Not Applicable
Vapor Density (Air = 1):	0.8 (Estimate)
Solubility in Water:	Negligible
Specific Gravity (H2O = 1):	0.5 (Estimate)
Percent Volatile by Volume:	Not Applicable
Evaporation Rate (Butyl Acetate = 1):	Not Applicable
Viscosity:	Not Applicable

H. Fire and Explosion Data

Flash Point (Method Used):	-292F (-180C) (Estimate)
Flammable Limits (% by Volume in Air):	LEL - 5 UEL - 15.8
Fire Extinguishing Media:	Dry chemical, foam or carbon dioxide (CO2)
Special Fire Fighting Procedures:	Stop flow of gas. If possible, let fire burn until flow of gas can be shut off. Evacuate area of all unnecessary personnel. Wear appropriate safety equipment for fire conditions including NIOSH/MSHA self-contained breathing apparatus (SCBA) and protective equipment and garments described in Section C. Water fog or spray may be used to cool exposed equipment and containers.
Fire and Explosion Hazards:	Very dangerous when exposed to heat or flame. Containers may explode violently in the heat of a fire. Vapors may travel to a source of ignition and flash back. If hydrogen sulfide is present, respiratory equipment specified above must be used.

I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:
Evacuate area of all unnecessary personnel. Wear personal protective equipment and/or garments described in Section C if conditions warrant. Shut off source. Protect form ignition. Vapors are explosive. Ventilate area.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):
Incinerate or otherwise manage at a RCRA permitted waste management facility.

J. DOT Transportation

Shipping Name:	Natural gas, compressed
Hazard Class:	2.1 (Flammable gas)
ID Number:	UN 1971
Packing Group:	Not Applicable
Marking:	Natural gas, compressed/UN 1971
Label:	Flammable gas
Placard:	Flammable gas/1971
Hazardous Substance/RQ:	Not Applicable
Shipping Description:	Natural gas, compressed, 2.1 (Flammable gas), UN 1971
Packaging References:	49 CFR 173.302 and 173.306

K. RCRA Classification - Unadulterated Product as a Waste

Ignitable (D001)

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

L. Protection Required for Work on Contaminated Equipment

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if conditions warrant.

M. Hazard Classification

_X_ This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

___ Combustible Liquid	___ Flammable Aerosol	___ Oxidizer
_X_ Compressed Gas	___ Explosive	___ Pyrophoric
_X_ Flammable Gas	_X_ Health Hazard (Section F)	___ Unstable
___ Flammable Liquid	___ Organic Peroxide	___ Water Reactive
___ Flammable Solid		

___ Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

N. Additional Comments

SARA 313

As of the preparation date, this product did not contain a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Material Safety Data Sheet

NATURAL GAS

March 31, 1995

PHILLIPS PETROLEUM COMPANY
Bartlesville, Oklahoma 74004

PHONE NUMBERS
Emergency: (918) 661-8118
General MSDS Information: (918) 661-8327
For Additional MSDSs: (918) 661-5952

A. Product Identification

Synonyms: Residue gas; Raw gas
Chemical Name: Natural gas
Chemical Family: Mixture
Chemical Formula: Mixture
CAS Reg. No.: 8006-14-2
Product No.: Not Established

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

B. Components

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Methane	74-82-8	60-95	NE	Simple Asphyxiant
Ethane	74-84-0	2-15	NE	Simple Asphyxiant
Propane	74-98-6	1-10	1000 ppm	Simple Asphyxiant
Butane	109-97-8	0-4	800 ppm	800 ppm
Isobutane	75-28-5	0-4	NE	NE
Nitrogen	7727-37-9	0-15	NE	NE
Carbon dioxide	124-38-9	0-5	10000 ppm	5000 ppm
Pentanes plus, includes	Various	0-8	NE	NE
Pentane	109-66-0	NE	600 ppm	600 ppm
Isopentane	78-78-4	NE	NE	NE
Hexane	110-54-3	NE	50 ppm	50 ppm
Isohexane	107-83-5	NE	500 ppm	500 ppm
Hydrogen sulfide	7783-06-4	0-30	10 ppm	10 ppm

Normal composition ranges are shown. Exceptions may occur which would invalidate data on this form.

C. Personal Protection Information

Ventilation:	Use adequate ventilation to control exposure below recommended levels.
Respiratory Protection:	For concentrations exceeding the recommended level, use NIOSH/MSHA approved air purifying respirator. If conditions immediately dangerous to life or health exist, use NIOSH/MSHA self contained breathing apparatus (SCBA).
Eye Protection:	Use chemical goggles.
Skin Protection:	No special garments required. Avoid unnecessary skin contamination with material.

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

D. Handling and Storage Precautions

Proper personal protective equipment must be used when handling this chemical. Do not get in eyes, on skin or on clothing. Do not breathe vapor, mist, fume or dust. May be harmful. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use only with adequate ventilation.

Store in tightly closed container. Store in well-ventilated area. Keep away from heat, sparks and flame. Bond and ground during transfer.

E. Reactivity Data

Stability:	Stable
Conditions to Avoid:	Not Established
Incompatibility (Materials to Avoid):	Oxygen and strong oxidizing materials
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid:	Not Established
Hazardous Decomposition Products:	Carbon oxides and various hydrocarbons formed when burned. Sulfur oxides may be formed if hydrogen sulfide is present.

F. Health Hazard Data

Recommended Exposure Limits:

See Section B.

Acute Effects of Overexposure:

Eye: May cause irritation including pain, blurred vision, redness, tearing and superficial corneal turbidity.

Skin: May cause slight irritation.

Inhalation: Toxic by this route of exposure. May cause nausea, diarrhea, loss of appetite, dizziness, disorientation, headache, excitation, rapid respiration, drowsiness, labored breathing, anesthesia and other central nervous system effects. Hydrogen sulfide may cause lung paralysis and asphyxiation. Extreme overexposure may cause rapid unconsciousness and respiratory arrest.

Ingestion: Not Applicable.

Subchronic and Chronic Effects of Overexposure:

Exposure to 1000 ppm propane for eight hours a day, five days a week, for approximately two weeks produced no abnormal reactions, including cardiac, pulmonary, and neurologic functions in humans.

Chronic high level n-hexane exposure damages the nervous system initially producing a lack of feeling in the extremities and possibly progressing to a more severe nerve damage.

Inhalation of high levels (1000 and 5000 ppm) of n-hexane has produced testicular damage in rats. Mice exposed to the same dose levels showed no testicular effects.

Carbon dioxide exposure may cause acidosis and imbalance of electrolytes in the blood.

Other Health Effects:

A Toxicity Study Summary for Methane, Pure Grade, is available upon request.

The odor of hydrogen sulfide may not be recognized after prolonged inhalation due to paralysis of the sense of smell. Effects from inhaling the fume may lead to chronic bronchitis, respiratory irritation, increased loss of pulmonary function, and tearing of the eyes.

Health Hazard Categories:

	Animal	Human		Animal	Human
Known Carcinogen	___	___	Toxic	_X_	___
Suspect Carcinogen	___	___	Corrosive	___	___
Mutagen	___	___	Irritant	___	___
Teratogen	___	___	Target Organ Toxin	_X_	_X_
Allergic Sensitizer	___	___	Specify - Nerve Toxin; Blood Toxin Lung-Simple Asphyxiant		
Highly Toxic	___	___			

First Aid and Emergency Procedures:

Eye: Flush eyes with running water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Skin:	Wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.
Inhalation:	Immediately remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.
Ingestion:	If illness or adverse symptoms develop, seek medical attention.

G. Physical Data

Appearance:	Colorless gas
Odor:	Mild to rotten egg odor, if hydrogen sulfide is present.
Boiling Point:	-285F (-161C)(Estimate)
Vapor Pressure:	Not Applicable
Vapor Density (Air = 1):	0.8 (Estimate)
Solubility in Water:	Negligible
Specific Gravity (H2O = 1):	0.5 (Estimate)
Percent Volatile by Volume:	Not Applicable
Evaporation Rate (Butyl Acetate = 1):	Not Applicable
Viscosity:	Not Applicable

H. Fire and Explosion Data

Flash Point (Method Used):	-292F (-180C) (Estimate)
Flammable Limits (% by Volume in Air):	LEL - 5 UEL - 15.8
Fire Extinguishing Media:	Dry chemical, foam or carbon dioxide (CO2)
Special Fire Fighting Procedures:	Stop flow of gas. If possible, let fire burn until flow of gas can be shut off. Evacuate area of all unnecessary personnel. Wear appropriate safety equipment for fire conditions including NIOSH/MSHA self-contained breathing apparatus (SCBA) and protective equipment and garments described in Section C. Water fog or spray may be used to cool exposed equipment and containers.
Fire and Explosion Hazards:	Very dangerous when exposed to heat or flame. Containers may explode violently in the heat of a fire. Vapors may travel to a source of ignition and flash back. If hydrogen sulfide is present, respiratory equipment specified above must be used.

I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:
Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source, if possible and contain spill. Protect from ignition. Keep out of water sources and sewers. Absorb in a dry, inert material (sand, clay, etc). Transfer to disposal drums using non-sparking equipment.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):
Incinerate or place in permitted waste management facility.

J. DOT Transportation

Shipping Name:	Natural gas, compressed
Hazard Class:	2.1 (Flammable gas)
ID Number:	UN 1971
Packing Group:	Not Applicable
Marking:	Natural gas, compressed/UN 1971
Label:	Flammable gas
Placard:	Flammable gas/1971
Hazardous Substance/RQ:	Not Applicable
Shipping Description:	Natural gas, compressed, 2.1 (Flammable gas), UN 1971
Packaging References:	49 CFR 173.302 and 173.306

K. RCRA Classification - Unadulterated Product Waste

Ignitable (D001)

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

L. Protection Required for Work on Contaminate Equipment

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if conditions warrant.

M. Hazard Classification

_X_ This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

___ Combustible Liquid	___ Flammable Aerosol	___ Oxidizer
_X_ Compressed Gas	___ Explosive	___ Pyrophoric
_X_ Flammable Gas	_X_ Health Hazard (Section F)	___ Unstable
___ Flammable Liquid	___ Organic Peroxide	___ Water Reactive
___ Flammable Solid		

___ Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

N. Additional Comments

SARA 313

This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. (See Section B).

n-Hexane

AMOCO (R) MATERIAL SAFETY DATA SHEET

PHILUBE SMP GEAR OIL SA[redacted]80W-90

MSDS NO: 02003047

MANUFACTURER/SUPPLIER:
Amoco Oil Company
200 East Randolph Drive
Chicago, Illinois 60601

EMERGENCY HEALTH INFORMATION: (800) 447-8735
EMERGENCY SPILL INFORMATION: (800) 424-9300
OTHER PRODUCT SAFETY INFORMATION: (312) 856-3907

IMPORTANT COMPONENTS: Solvent refined paraffinic petroleum oil (CAS 64741-88-4).
Solvent refined residuum (CAS 64742-01-4).
No exposure limit(s) established.

WARNING STATEMENT: Warning! Causes eye and skin irritation.

HMIS/NFPA CODES: (HEALTH; 2) (FLAMMABILITY; 1) (REACTIVITY; 0)

APPEARANCE AND ODOR: Oily liquid.

HEALTH HAZARD INFORMATION

EYE

EFFECT: Causes eye irritation.

FIRST AID: Immediately flush eyes with plenty of water for at least 15 minutes, then get prompt medical attention.

PROTECTION: Do not get in eyes. Wear chemical goggles.

SKIN

EFFECT: Causes skin irritation.

FIRST AID: Wash exposed skin with soap and water. Remove contaminated clothing and thoroughly clean and dry before reuse. Get medical attention if irritation develops.

PROTECTION: Do not get on skin or clothing. Wear protective clothing and gloves.

INHALATION

EFFECT: No significant health hazards identified.

FIRST AID: If adverse effects occur, remove to uncontaminated area. Get medical attention.

PROTECTION: None required; however, use of adequate ventilation is good industrial practice.

INGESTION

EFFECT: Expected to be relatively non-toxic.

FIRST AID: If a large amount is swallowed, induce vomiting. Get medical attention.

ORIGINAL DOCUMENT - END OF PAGE 1

FIRE AND EXPLOSION INFORMATION

FLASHPOINT: 329 F, (COC)

EXTINGUISHING MEDIA: Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, steam) or water fog.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

REACTIVITY INFORMATION

DANGEROUS REACTIONS: None identified.

HAZARDOUS DECOMPOSITION: Polymerization will not occur.

STABILITY: Stable.

CHEMICAL AND PHYSICAL PROPERTIES

SOLUBILITY IN WATER: Negligible, below 0.1%.

SPECIFIC GRAVITY (WATER = 1): 0.89

VISCOSITY: 70-80 SUS @ 210 F VISCOSITY INDEX: 90 minimum

POUR POINT: -10 F Maximum

STORAGE AND ENVIRONMENTAL PROTECTION

STORAGE REQUIREMENTS: No special requirements.

SPILLS AND LEAKS: Treat as an oil spill. Contain and remove by mechanical means.

WASTE DISPOSAL: Disposal must be in accordance with applicable federal, state, or local regulations. Enclosed-controlled incineration is recommended unless directed otherwise by applicable ordinances.

SPECIAL PRECAUTIONS: Avoid strong oxidizers.

TOXICOLOGICAL INFORMATION

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature and/or professional experience.

No component of this product is identified as a carcinogen by NTP, IARC or OSHA.

REGULATORY INFORMATION

CERCLA REPORTABLE QUANTITY:
This product is not reportable under 40 CFR Part 302.4.

DOT PROPER SHIPPING NAME: Not Regulated.

OSHA HAZARD COMMUNICATION STANDARD: Irritant.

ORIGINAL DOCUMENT - END OF PAGE 2

RCRA STATUS:
This product is not subject to the 40 CFR Part 268.30 land ban on the disposal of certain hazardous wastes.

SARA STATUS:
This product is regulated under the following section(s) of SARA Title III, 42 USC 9601. Spills or releases of the product may be reportable as determined by the information given below:

SECTIONS 311 AND 312 OF SARA AND 40 CFR PART 370:
This product is defined as hazardous by OSHA under 29 CFR Part 1910.1200(d).

TSCA STATUS: All of the components of this product are listed on the TSCA Inventory.

ISSUE INFORMATION

BY:

Gerald I. Bresnick
Director, Product Safety

ISSUED: August 14, 1989
SUPERSEDES: February 10, 1989

This material safety data sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in this data sheet which we received from sources outside our company. We believe that information to be correct but cannot guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either express or implied.

ORIGINAL DOCUMENT - END OF PAGE 3

Material Safety Data Sheet

SOUR NGL

May 31, 1995

PHILLIPS PETROLEUM COMPANY
Bartlesville, Oklahoma 74004

PHONE NUMBERS
Emergency: (918) 661-8118
General MSDS Information: (918) 661-8327
For Additional MSDSs: (918) 661-5952

A. Product Identification

Synonyms: Sour Natural Gas Liquids
Chemical Name: Mixture
Chemical Family: Mixture
Chemical Formula: Mixture
CAS Reg. No.: Mixture
Product No.: Not Established

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it is subject to all applicable provisions and restrictions of 40 CFR, section 721 and 723.250.

B. Components

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Propane	74-98-6	40-45	1000 ppm	Simple Asphyxiant
Isobutane	75-28-5	5-9	NE	NE
n-Butane	106-97-8	15-25	800 ppm	800 ppm
Isopentane	78-78-4	5-6	NE	NE
n-Pentane	109-66-0	5-6	600 ppm	600 ppm
n-Hexane	110-54-3	6-9	50 ppm	50 ppm
n-Heptane	142-82-5	12-15	400 ppm	400 ppm
Benzene	71-43-2	0.3-0.7	1 ppm*	10 ppm
Toluene	108-88-3	0.5-0.9	100 ppm	100 ppm
Hydrogen Sulfide	7783-06-4	0-0.1	10 ppm	10 ppm

* Operations exempted by the Benzene Standard, 29 CFR 1910.1028, will have a 10 ppm 8 hour TWA.

C. Personal Protection Information

Ventilation:	Use adequate ventilation to control below recommended exposure levels.
Respiratory Protection:	When entry or exit from concentrations of unknown exposure, use NIOSH/MSHA approved self-contained breathing apparatus (SCBA).
Eye Protection:	Use chemical goggles. For splash protection use chemical goggles and face shield.
Skin Protection:	No special garments required. Avoid unnecessary skin contamination with material.

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

D. Handling and Storage Precautions

Do not get in eyes, on skin or on clothing. Do not breathe vapors. Wash thoroughly after handling. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Launder contaminated clothing before reuse.

Store in a well-ventilated area away from ignition sources. Bond and ground during transfer. Store in tightly closed containers.

E. Reactivity Data

Stability:	Stable
Conditions to Avoid:	Not Established
Incompatibility (Materials to Avoid):	Oxygen and strong oxidizing agents
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid:	Not Established
Hazardous Decomposition Products:	Carbon and sulfur oxides formed when burned.

F. Health Hazard Data

Recommended Exposure Limits:

See Section B.

Acute Effects of Overexposure:

Eye: High gas concentrations may cause mild irritation. Liquefied gas may cause freeze burns upon direct contact.

Skin: Gas is not considered irritating. High gas concentrations may cause mild irritations to the mucous membranes. Liquefied gas may cause freeze burns upon direct contact.

Inhalation: Simple asphyxiant. May cause dizziness, disorientation, headache, excitation, fatigue, inability to concentrate, rapid respiration, coughing, vomiting, central nervous system depression, unconsciousness and death.

Ingestion: Not a likely exposure route. Liquefied gas may cause freeze burns to the mucous membranes and possible central nervous system depression.

Subchronic and Chronic Effects of Overexposure:

Exposures to 1000 ppm propane for eight hours a day, five days a week, for approximately two weeks produced no abnormal reactions, including cardiac, pulmonary and neurologic functions in humans.

Benzene has been designated as a carcinogen by NTP, IARC, and OSHA. Benzene may produce blood changes which include reduced platelets, reduced red blood cells, reduced white blood cells, aplastic anemia, leukemia and erythroleukemia. Fetal death has been produced in laboratory animals. Chromosome changes were produced in humans and mutation changes occurred in cells of other organisms.

Other Health Effects:

Propane was not mutagenic in the AMES assay.

Health Hazard Categories:

	Animal	Human		Animal	Human
Known Carcinogen	_X_	_X_	Toxic	___	___
Suspect Carcinogen	___	___	Corrosive	___	___
Mutagen	_X_	___	Irritant	___	___
Teratogen	___	___	Target Organ Toxin	_X_	_X_
Allergic Sensitizer	___	___	Specify - Eye and Skin Hazard-Freeze burn; Lung - Simple Asphyxiant; Blood Toxin; Reproductive Toxin-Animal		
Highly Toxic	___	___			

First Aid and Emergency Procedures:

Eye: Immediately flush eyes with running water for at least fifteen minutes. If irritation develops, seek medical attention.

Skin: Immediately flush skin with water for fifteen minutes. If irritation develops, seek medical attention.

Inhalation: Remove from exposure. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.

Ingestion: Seek immediate medical attention.

G. Physical Data

Appearance: Colorless liquefied petroleum gas
Odor: Rotten egg
Boiling Point: -58F (-50C)

Vapor Pressure:	190 psia @ 100F (37.8C)
Vapor Density (Air = 1):	>1
Solubility in Water:	Negligible
Specific Gravity (H2O = 1):	0.497 - 0.507
Percent Volatile by Volume:	100
Evaporation Rate (Ethyl Ether = 1):	>1
Viscosity:	0.10 cp @ 60F (15.6C) (estimate)

H. Fire and Explosion Data

Flash Point (Method Used):	<-100F (<-73C) (estimate)
Flammable Limits (% by Volume in Air):	LEL - Not Established UEL - Not Established
Fire Extinguishing Media:	Dry chemical, foam or carbon dioxide (CO2), water
Special Fire Fighting Procedures:	Evacuate area of all unnecessary personnel. Water fog or spray may be used to cool exposed equipment and containers. Shut off source if possible. Use self-contained breathing apparatus and other protective equipment and/or garments described in Section C if conditions warrant.
Fire and Explosion Hazards:	Carbon oxides formed when burned. Highly flammable vapors which are heavier than air may accumulate in low areas and/or spread along ground away from handling site. Heated containers may rupture violently and suddenly without warning due to vessel over-pressure (BLEVE). Fragmentation of the container should be anticipated. If flame is against the container, withdraw immediately on hearing a rising sound, if venting increases in volume or intensity, or if there is discoloration of the tank due to fire.

I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:

Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source, if possible and contain spill. Protect from ignition. Keep out of water sources and sewers. Absorb in a dry, inert material (sand, clay, etc). Transfer to disposal drums using non-sparking equipment.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):

Incinerate or place in permitted waste management facility.

J. DOT Transportation

Shipping Name: Liquefied Petroleum Gas
Hazard Class: 2.1 (Flammable Gas)
ID Number: UN 1075
Packing Group: Not Applicable
Marking: Liquefied petroleum gas, UN 1075, RQ*
Label: Flammable Gas
Placard: Flammable Gas/1075
Hazardous Substance/RQ: Benzene/10#; Hydrogen sulfide/100#; Toluene/1000#
Shipping Description: Liquefied Petroleum Gas, 2.1 (Flammable Gas), UN 1075, RQ*
Packaging References: 49 CFR 173.304, 173.306, 173.314, and 173.315

* Enter the letters "RQ" and the name of the hazardous substance as shown only if the hazardous substance is present in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) shown for the hazardous substance.

K. RCRA Classification - Unadulterated Product Waste

Ignitable - (D001)

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

L. Protection Required for Work on Contaminate Equipment

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

M. Hazard Classification

_X_ This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

___ Combustible Liquid	___ Flammable Aerosol	___ Oxidizer
_X_ Compressed Gas	___ Explosive	___ Pyrophoric
_X_ Flammable Gas	_X_ Health Hazard (Section F)	___ Unstable
___ Flammable Liquid	___ Organic Peroxide	___ Water Reactive
___ Flammable Solid		

___ Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

N. Additional Comments

SARA 313

This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the

Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. (See Section B).

n-Hexane
Benzene

NFPA 704 Hazard Codes - - - - - - - - Signals

		Least - 0
Health	: 3	Slight - 1
Flammability	: 4	Moderate - 2
Reactivity	: 0	High - 3
Special Haz.	: -	Extreme - 4

#306680

Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

Common Name	Triethylene Glycol
Supplier	COASTAL CHEMICAL CO.,INC 3520 Veterans Memorial Drive ABBEVILLE, LA 70510 318-893-3882
Synonym	Not available.
Trade name	Not available.
Material Uses	Not available.
Manufacturer	COMPANY NAME COMPANY ADDRESS EMERGENCY PHONE

Code	93101
MSDS#	Not available.
Validation Date	8/8/96
Print Date	11/11/97
In case of Emergency	Transportation Emergency Call CHEMTREC 800-424-9300 Other Information Call Joe Hudman 713-477-6675

Section 2: Composition and Information on Ingredients

Name	CAS #	% by Weight	TLV/PEL	LC_{50}/LD_{50}
Diethylene glycol	111-46-6	0-5	Not available.	ORAL (LD50) mg/kg: Acute: 12565 (Hamster.). 14800 (Rat). DERMAL (LD50) mg/kg: Acute: 11890 (Hamster.). 11900 (Rabbit).
Triethylene Glycol	112-27-6	95-100		

Section 3: Hazards Identification

Emergency Overview

CAUTION!

MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

Routes of Entry

Eye contact. Ingestion. Skin contact. Inhalation.

Potential Acute Health Effects

Slightly dangerous to dangerous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. This product may irritate eyes and skin upon contact.

Potential Chronic Health Effects

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. The substance is toxic to blood, kidneys, liver. Toxicity of the product to the reproductive system: Not available. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact

Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.

Skin Contact

	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Hazardous Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	No additional information.
Ingestion	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.
Hazardous Ingestion	DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Section 5: Fire and Explosion Data

Flammability of the Product	Combustible.
Auto-Ignition Temperature	The lowest known value is 227.78°C (442°F) (Diethylene glycol).
Flash Points	The lowest known value is CLOSED CUP: 138°C (280.4°F) OPEN CUP: 143°C (289.4°F) (Cleveland) (Diethylene glycol)
Flammable Limits	The greatest known range is LOWER: 2% UPPER: 12.3% (Diethylene glycol)
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Very slightly to slightly flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Special Remarks on Fire Hazards	When heated to decomposition, it emits acrid smoke and irritating fumes. (Diethylene glycol)
Special Remarks on Explosion Hazards	No additional remark.

Section 6: Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Continued on Next Page

Section 7: Handling and Storage

Handling	Not available.
Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engeneering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Safety glasses. Lab coat. Gloves (Impervious).
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Chemical Name or Product Name	CAS #	Exposure Limits
2,2'-Oxydiethanol	111-46-6	Not available.
Triethylene Glycol	112-27-6	

Section 9: Physical and Chemical Properties

Physical state and appearance	Liquid.
Molecular Weight	Not applicable.
pH (1% soln/water)	Neutral.

Odor	Not available.
Taste	Not available.
Color	Not available.

Boiling Point	The lowest known value is 245.8°C (474.4°F) (Diethylene glycol). Weighted average: 284.02°C (543.2°F)
Melting Point	May start to solidify at -5°C (23°F) based on data for: Triethylene Glycol. Weighted average: -5.09°C (22.8°F)
Critical Temperature	Not available.
Specific Gravity	Weighted average: 1.12 (Water = 1)
Vapor Pressure	The highest known value is 0.01 mm of Hg (@ 20°C) (Diethylene glycol).
Vapor Density	The highest known value is 6.7 (Air = 1) (Tetraethylene glycol). Weighted average: 6.7 (Air = 1)
Volatility	Not available.
Odor Threshold	Not available.
Evaporation rate	Not available.
Viscosity	Not available.
Water/Oil Dist. Coeff.	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, methanol, diethyl ether.
Solubility	Easily soluble in cold water, hot water, methanol, diethyl ether.
Physical Chemical Comments	Not available.

Continued on Next Page

Section 10: Stability and Reactivity Data

Chemical Stability	The product is stable.
Conditions of Instability	No additional remark.
Incompatibility with various substances	Very slightly to slightly reactive with oxidizing agents.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Not available.

Section 11: Toxicological Information

Toxicity to Animals	Acute oral toxicity (LD50): > 5000 mg/kg (Hamster.) (Calculated value for the mixture). Acute dermal toxicity (LD50): > 5000 mg/kg (Hamster.) (Calculated value for the mixture).
Chronic Effects on Humans	The substance is toxic to blood, kidneys, liver. Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	Slightly dangerous to dangerous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on other Toxic Effects on Humans	Experimentally tumorigen by inhalation. Exposure can cause nausea, headache and vomiting. (Diethylene glycol)

Section 12: Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13: Disposal Considerations

Waste Disposal	Recycle. If possible. Consult your local or regional authorities.

Section 14: Transport Information

Proper Shipping Name	NONE
DOT Classification	Not a DOT controlled material (United States).
DOT Identification Number	Not applicable (PIN and PG).
Packing Group	NONE
Hazardous Substances Reportable Quantity (kg)	Not available.

MATERIAL SAFETY DATA SHEET

Product Name: UNICHEM 1304

628570

11400 00001

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 4/12/93
Date Prepared 9/21/93
Version: 0000002

Product Name: UNICHEM 1304

Chemical Description:
Proprietary cooling water treatment blend

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
potassium hydroxide	01310-58-3	< 15%

Section: 03 PHYSICAL DATA

Freezing Point: 5 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.340 Solubility in water: Soluble
Appearance and Odor: Clear, amber liquid; sweet odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): None

Extinguishing Media

This material is non-combustible. If this material is involved in a fire, use an extinguishing agent appropriate to surrounding materials. Water spray may be used to cool containers of this material exposed to a fire. Fire extinguishing materials should be collected for determination of proper disposal.

VERIFIED

Special Fire Fighting Procedures

Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards

May release toxic or corrosive material if container is destroyed in a fire.

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: vapors, liquid and mists are corrosive to the

Product Name: UNICHEM 1304

Section: 05 HEALTH HAZARD DATA CONTINUED

11400

eyes. Brief contact of the vapors will be cause irritation while brief contact of the liquid or mists will cause damage the eyes. Prolonged contact may cause permanent eye injury which may be followed by blindness.

Skin Contact: vapors, mists and liquid are corrosive to the skin. Vapors will irritate the skin and liquid will burn the skin. Prolonged liquid contact will burn or destroy surrounding tissue and death may accompany burns which extend over large portions of the body. Some skin absorption may occur.

Inhalation: vapors and mists are corrosive to the nose, throat, and mucous membranes. Bronchitis, pulmonary edema and chemical pneumonitis may occur. Irritation, coughing, chest pain, difficulty in breathing, headache and nausea may occur with brief exposure while prolonged exposure may result in more severe irritation and tissue damage. Breathing high concentrations may result in death.

Ingestion: vapors, mists and liquid are corrosive to the mouth and throat. Swallowing the liquid burns the tissues, causes severe abdominal pain, nausea, vomiting and collapse. Swallowing large quantities can cause death.

Chronic Effects of Exposure: may result in area of destruction of skin tissue or primary irritant dermatitis. Similarly, inhalation of vapors or mists may cause varying degrees of damage to the affected tissues and also increasing susceptibility to respiratory illness.

VERIFIED

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Product Name: UNICHEM 1304

Section: 05 HEALTH HAZARD DATA CONTINUED

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid
None known.

Incompatibility (Materials to Avoid)
Strong oxidizing agents and strong acids.

Hazardous Decomposition Products
Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid
None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled
Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

VERIFIED

Waste Disposal Method
Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection
If a respirator is determined to be necessary, respirators approved by NIOSH and MSHA and selected for the hazard by qualified persons shall be used. Conditions unique to the workplace may allow air purifying devices selected for the contaminate(s) of concern, or require supplied air or self-

Product Name: UNICHEM 1304

Section: 08 SPECIAL PROTECTIVE INFORMATION CONTINUED

contained breathing apparatus. Engineering or administrative controls should be implemented to reduce exposures.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

VERIFIED

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Product Name: UNICHEM 1304

Section: 10 REGULATORY INFORMATION CONTINUED

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard — Sudden Release of Pressure — Fire
X Chronic Health Hazard — Reactive

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

VERIFIED

Component Name	CAS #	CERCLA RQ
potassium hydroxide	01310-58-3	1000

OSHA Exposure Limits

Component Name
potassium hydroxide

Ceiling MG/M3 2.0

06091

National Fire Protection Agency

2 Health — 0 Fire
0 Reactive — ALK Other

Department of Transportation Shipping Information

Proper Shipping Name: Corrosive liquids, n.o.s.

Product Name: UNICHEM 1304

Section: 10 REGULATORY INFORMATION CONTINUED

Hazard Class: 8 Identification: UN1760
Packaging Group: PG II
Contains: potassium hydroxide
Hazardous Substance RQ: 6700# Emergency Response Guide Number: 60
Labels: Corrosive

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

VERIFIED

M A T E R I A L S A F E T Y D A T A S H E E T

Product Name: UNICHEM 7125

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS
NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 1/16/92
Date Prepared 9/21/93
Version: 0000002

Product Name: UNICHEM 7125

Chemical Description:
Proprietary Corrosion Inhibitor

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
aromatic hydrocarbon solvent		< 80%
trimethyl benzenes	25551-13-7	< 20%
xylene	01330-20-7	< 10%
cumene	00098-82-8	< 5%
naphthalene	00091-20-3	< 5%

Section: 03 PHYSICAL DATA

Freezing Point: - 70 Deg. F.
Boiling Point, 760 mm Hg: init 300 Deg. F
Specific Gravity (H2O=1): 0.908 Solubility in water: Dispersible
Appearance and Odor: Brown liquid; aromatic odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): 108 Deg. F TCC

Extinguishing Media

CO2, dry chemical, water spray or fog, or foam. Use water to keep containers cool. Isolate "fuel" supply from fire. Contain fire fighting liquids for proper disposal.

Special Fire Fighting Procedures

Do not enter confined fire space without proper personal protective equipment incuding NIOSH approved self-contained breathing apparatus with full face-piece operated in the positive pressure demand mode. Do not inject a solid stream of water or foam into hot, burning pools; this may cause splattering and increase fire intensity. Evacuate personnel to a safe area. Keep unnecessary people away.

Unusual Fire and Explosion Hazards

This material is combustible and under certain conditions may release vapors that pose a severe fire hazard. These vapors may travel along the ground or be moved by

ORIGINAL DOCUMENT - END OF PAGE 1

ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge, or other ignition sources at locations distant from material handling point. Containers may explode from internal pressure if confined to a fire. Keep unnecessary people away.

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: may cause irritation or eye damage if not promptly removed.
Skin Contact: prolonged or repeated skin contact may cause irritation or dermatitis.
Inhalation: excessive or prolonged exposure to vapors may cause irritation to the eyes and the respiratory tract, may cause headaches, dizziness, nausea, drowsiness, convulsions or loss of consciousness, are anesthetic, and may have other central nervous system effects.
Ingestion: may cause irritation or burning sensation to the mouth, throat and stomach. Possible pneumonia if vomited.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

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Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Avoid contact with strong oxidizing agents, strong alkalies, and strong

mineral acids.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur (Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Eliminate sources of ignition. Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled materials with sand or earth. Recover undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S. EPA and/or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If workplace exposure limit(s) of product or any component is exceeded, an NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure organic vapor type) under specified conditions. Engineering or administrative controls should be implemented to reduce exposure.

Ventilation

The use of mechanical dilution ventilation is recommended

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whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist. Keep away from heat, sparks, and open flames and never use a cutting torch on or near container (even empty) or explosion may result. Vapors may travel to areas away from the work site and ignite.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Do not transfer to improperly marked container. Do not use pressure to empty container. Do not cut, heat, weld, or expose containers to flame or other sources of ignition. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should be grounded and bonded to receiving container(s) when being emptied. Containers should not be washed out and used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the

ORIGINAL DOCUMENT - END OF PAGE 4

regulations should be consulted to verify current statutory requirements.
Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments are Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department.
The SARA physical and health hazards related to this product are:

X Acute Health Hazard	Sudden Release of Pressure	X Fire
-	-	-
X Chronic Health Hazard	Reactive	
-	-	

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
xylene	01330-20-7	< 10%
cumene	00098-82-8	< 5%
naphthalene	00091-20-3	< 5%

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
xylene	00107-15-3	1000
cumene	00098-82-8	5000
naphthalene	00091-20-3	100

OSHA Exposure Limits

Component Name

trimethyl benzenes
TWA ppm: 25.0 TWA MG/M3: 125.0

xylene
TWA ppm: 100.0 TWA MG/M3: 435.0 STEL ppm: 150.0 STEL MG/M3: 655.0

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cumene
TWA ppm: 50.0 TWA MG/M3: 245.0 Skin: X

naphthalene
TWA ppm: 10.0 TWA MG/M3: 50.0 STEL ppm: 15.0 STEL MG/M3: 75.0

National Fire Protection Agency

2 Health	1 Fire
-	-
0 Reactive	Other
-	-

Department of Transportation Shipping Information

Proper Shipping Name: Flammable liquids, n.o.s.
Hazard Class: 3 Identification: UN1993
Packaging Group: PG III

Contains: naphthalene, xylene
Hazardous Substance RQ: 2000# Emergency Response Guide Number: 27
Labels: Flammable liquid

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

ORIGINAL DOCUMENT - END OF PAGE 6

Product Name: UNICHEM 9850

10000

447070

LD

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 9/21/93
Date Prepared 9/28/93
Version: 0000003

Product Name: UNICHEM 9850

Chemical Description:
Proprietary Antifoam Blend

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
NONE		

Section: 03 PHYSICAL DATA

Freezing Point: 32 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 0.990 Solubility in water: Soluble
Appearance and Odor: White, opaque liquid; characteristic odor

Section: 04 FIRE AND EXPLOSION HAZARD DATA

VERIFIED

Flash Point (Test Method): 600 Deg.F TCC

Extinguishing Media
This material is non-combustible. If this material is involved in a fire, use an extinguishing agent appropriate to surrounding materials. Water spray may be used to cool containers of this material exposed to a fire. Fire extinguishing materials should be collected for determination of proper disposal.

Special Fire Fighting Procedures
Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards
None

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure
Eye Contact: liquid may cause minor irritation.
Skin Contact: no irritation expected under normal

Product Name: ONICHEM 9850

Section: 05 HEALTH HAZARD DATA CONTINUED

conditions.
Inhalation: not expected to present a hazard under normal conditions.
Ingestion: may cause gastrointestinal upset and nausea.

Emergency and First Aid Procedures

SKIN
Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES
Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

VERIFIED

INHALATION
Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION
Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid
None known.

Incompatibility (Materials to Avoid)
Strong alkalies and acids.

Hazardous Decomposition Products
Thermal decomposition or burning may produce carbon dioxide and/or carbon monoxide and oxides of silicon.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid
None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled
Wipe up with a cloth or paper (small quantity); or absorb

Product Name: UNICHEM 9850

Section: 07 SPILL OR LEAK PROCEDURES CONTINUED

unrecoverable product with inert materail such as clay, sand or vermiculite, and put into containers for disposal.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

Use a dust/mist mask if spray or mist is present.

Ventilation

Good general mechanical ventilation recommended.

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

VERIFIED

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Product Name: UNICHEM 9850

Section: 10 REGULATORY INFORMATION CONTINUED

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

VERIFIED

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

10000

X Acute Health Hazard _ Sudden Release of Pressure _ Fire
_ Chronic Health Hazard _ Reactive

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
NONE		

OSHA Exposure Limits

Component Name
NONE

National Fire Protection Agency

1 Health 0 Fire
0 Reactive ____ Other

Product Name: UNICHEM 9850

Section: 10 REGULATORY INFORMATION CONTINUED

Department of Transportation Shipping Information

Proper Shipping Name: Nonregulated material
Hazardous Substance RQ: *NONE* Emergency Response Guide Number: 31
Labels: None

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

VERIFIED

CONDEA Vista Company
P. O. Box 19029
Houston, Texas 77224-9029
Phone (281) 588-3000

CONDEA VISTA

VISTA MR SOLVENT

MSDSCODE: MRSOL
REVISION: 02/98

REVISION DATE: 03/27/98
PRINT DATE: 09/11/98

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	VISTA MR SOLVENT
SYNONYMS:	Paraffinic, Naphthenic Solvent
MANUFACTURER:	CONDEA Vista Company
ADDRESS:	900 Threadneedle, Houston, TX 77079

TELEPHONE NUMBERS:	CHEMTREC - Transportation Emergency (24-hr)	(800) 424-9300
	Other Emergencies (24-hrs)	(318) 494-5142
	MSDS and Product Information (8:00am-4:30pm CST)	(281) 588-3491
	Health and Safety Information (8:00am-4:00pm CST)	(318) 494-5403

2. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS Number	Weight%
Raffinates (Petroleum), Sorption Process	64741-85-1	100

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

3. HAZARDS IDENTIFICATION

Emergency Overview

Water white, oily liquid. Hydrocarbon odor.
FIRE OR EXPLOSION: CAUTION! COMBUSTIBLE LIQUID AND VAPOR May by ignited by heat, spark, or flames. Vapors may travel to a source of ignition and flash back. Container may explode in heat of fire.
HEALTH HAZARD: MAY CAUSE SKIN IRRITATION High vapor concentrations may cause headaches, stupor, irritation of throat and eyes.

Potential Health Effects

EYES:
Liquid contact may cause slight irritation.

CONDEA Vista Company
P. O. Box 19029
Houston, Texas 77224-9029
Phone (281) 588-3000

CONDEA VISTA

VISTA MR SOLVENT

MSDSCODE: MRSOL
REVISION: 02/98

REVISION DATE: 03/27/98
PRINT DATE: 09/11/98

FLAMMABLE LIMITS IN AIR % BY VOLUME:
LOWER: 0.6
UPPER: 4.7

FIRE AND EXPLOSION HAZARD:
None expected. NFPA Class IIIA combustible liquid.

EXTINGUISHING MEDIA:
Water spray, dry chemical, or alcohol compatible foam is recommended.

FIRE FIGHTING INSTRUCTIONS:
Cool exposed equipment with water spray until well after fire is out. Self-contained breathing apparatus (SCBA) and structural firefighter's protective clothing will provide limited protection.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE OF SPILL OR LEAK:
Absorb spill with inert material, then place in a chemical waste container. For large spills, dike for later disposal. Dispose of according to local, state, and federal regulations.

CERCLA HAZARDOUS SUBSTANCE:

Component	CERCLA RQ	Maximum Wt. %

Contains no chemicals on the CERCLA Hazardous Substance List.

7. HANDLING AND STORAGE

ELECTROSTATIC ACCUMMULATION HAZARD:
When transferring this product, there is potential for the accumulation of static electricity. Consideration should be given to bonding and grounding of equipment during loading, unloading, and transfer of this product.

USUAL SHIPPING CONTAINERS:
Drums, and DOT approved tank cars and tank trucks.

STORAGE / TRANSPORT TEMPERATURE:
Ambient.

STORAGE / TRANSPORT PRESSURE:
Ambient

CONDEA Vista Company
P. O. Box 19029
Houston, Texas 77224-9029
Phone (281) 588-3000

CONDEA VISTA

VISTA MR SOLVENT

MSDSCODE: MRSOL
REVISION: 02/98

REVISION DATE: 03/27/98
PRINT DATE: 09/11/98

Carcinogenicity

No carcinogenic ingredients.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:
Water white, oily liquid.

ODOR:
Hydrocarbon odor.

VAPOR PRESSURE (mm Hg.):
0.66 torr @ 100°F/38°C

VAPOR DENSITY (Air = 1):
5 - 6

SOLUBILITY IN WATER:
2.5 ppm @ 100°F/38°C

VISCOSITY:
1.5 cSt @ 104°F/40°C

PHYSICAL STATE:
Liquid.

BOILING POINT:
379 - 499°F (193 - 259°C)

MELTING POINT:
<-94°F (<-70°C)

SPECIFIC GRAVITY (H_2O = 1):
0.817 @ 60°F/16°C

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:
High temperatures.

INCOMPATABILITY WITH OTHER MATERIALS:
May react with strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS:
None expected.

HAZARDOUS POLYMERIZATION:
None.

CONDEA Vista Company
P.O. Box 19029
Houston, Texas 77224-9029
Phone (281) 588-3000

CONDEA VISTA

VISTA MR SOLVENT

MSDSCODE: MRSOL
REVISION: 02/98

REVISION DATE: 03/27/98
PRINT DATE: 09/11/98

EMPTY CONTAINERS:

Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

(See Section 6 for CERCLA Reporting Requirements)

14. TRANSPORT INFORMATION

DOT DESCRIPTION:

This product is regulated as a hazardous material according to the Department of Transportation in bulk quantities (greater than 119 gallons per package) only. It is not regulated for transportation in non-bulk quantities.

PROPER SHIPPING NAME: Kerosene
HAZARD CLASS: Combustible liquid
IDENTIFICATION NUMBER: UN 1223
PACKING GROUP: III

ICAO / IATA DESCRIPTION:

This product is not a dangerous good as defined by IATA for air transportation.

IMO DESCRIPTION (IMDG CODE):

This product is not a dangerous good as defined by IMO in the IMDG Code for water transportation.

15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA HAZARD COMMUNICATION STANDARD CLASSIFICATION:

Combustible liquid as defined by the OSHA Hazard Communication Standard.

TSCA INVENTORY LISTING:

Component	CAS Number
Raffinates (Petroleum), Sorption Process	64741-85-1

CONDEA Vista Company
P. O. Box 19029
Houston, Texas 77224-9029
Phone (281) 588-3000

CONDEA VISTA

VISTA MR SOLVENT

MSDSCODE: MRSOL
REVISION: 02/98

REVISION DATE: 03/27/98
PRINT DATE: 09/11/98

State Regulations

CALIFORNIA SAFE DRINKING WATER ACT (PROP 65) LISTING:

Component	CAS Number

"No ingredients listed in this section"

Based on data currently available, this product contains no detectible quantities of Proposition 65 chemicals. This assessment is based on the analytical detection limit of 1 ppm for benzene by GC mass spec.

16. OTHER INFORMATION

Hazard Ratings	NFPA	HMIS
HEALTH:	1	1
FLAMMABILITY:	2	2
REACTIVITY:	1	1

PREPARED BY: CONDEA Vista Safety, Health and Environmental Department
PHONE NUMBER: (281) 588-3491

MATERIAL SAFETY DATA SHEET
Sulfuric Acid (93-99%)

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sulfuric Acid (93-99%)
Product Code: Multiple
Sap Code:
Synonyms: H2SO4
Oil of vitriol
Chemical Family: Inorganic acid
Responsible Party: Phillips Petroleum Company

Bartlesville, Oklahoma 74004
For Additional MSDSs: 800-762-0942
Technical Information:

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

California Poison Control System: (800) 356-3129

Health Hazards/Precautionary Measures: May cause severe burns. May be harmful or fatal if inhaled. Harmful if swallowed. Use ventilation adequate to keep exposure below recommended limits, if any. Do not breathe vapor or mist. Do not get in eyes, on skin or on clothing. Do not taste or swallow. Wash thoroughly after handling. Wear appropriate personal protective equipment.

Physical Hazards/Precautionary Measures: Highly reactive and capable of igniting finely divided combustible materials on contact. Reacts violently with water and organic materials with evolution of heat. Avoid contact with water. Avoid contact with clothing and other combustible material.

Appearance: Clear
Physical Form: Viscous liquid
Odor: Odorless, but has a choking odor when hot.

NFPA Hazard Class:

Health: 3 (High)
Flammability: 0 (Least)
Reactivity: 2 (Moderate)
Other: W (water reactive)

HMIS Hazard Class

Not Evaluated

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% WEIGHT	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Sulfuric Acid	93-99	1 mg/m3	ACGIH	TWA
CAS# 7664-93-9		3 mg/m3	ACGIH	STEL
		1 mg/m3	OSHA	TWA

	15 mg/m3	NIOSH	IDLH

OTHER COMPONENTS	% WEIGHT	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Water CAS# 7732-18-5	1-7	Not Established		

All components are listed on the TSCA inventory

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Corrosive. Contact may cause severe irritation, eye burns, and permanent eye damage.

Skin: Corrosive. Contact may cause severe irritation, skin burns, and permanent skin damage. No information regarding skin absorption, however, corrosivity of material suggests significant skin absorption will occur.

Inhalation (Breathing): Corrosive and highly toxic. May be harmful or fatal if inhaled. May cause severe irritation and burns of the nose, throat, and respiratory tract.

Ingestion (Swallowing): Corrosive and toxic. Harmful if swallowed. May cause severe irritation and burns of the mouth, throat, and digestive tract.

Signs and Symptoms: Effects of overexposure may include severe irritation and burns of the mouth, nose, throat, respiratory, and digestive tract, coughing, nausea, vomiting, abdominal pain, chest pain, pneumonitis (inflammation of the lungs), pulmonary edema (accumulation of fluids in the lungs) and perforation of the stomach.

Cancer: Inadequate evidence available to evaluate the cancer hazard of this material. See Section 11 for carcinogenicity information of individual components, if any.

Target Organs: No data available for this material.

Developmental: Inadequate data available for this material.

Other Comments: Prolonged or repeated overexposure to acid mists has been reported to cause erosion of tooth enamel.

Sulfuric acid releases toxic and irritating fumes of sulfur oxides when heated.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

4. FIRST AID MEASURES

Eye: Immediately move victim away from exposure and into fresh air. If irritation or redness develops, flush eyes with clean water and seek immediate medical attention. For direct contact, immediately hold eyelids apart and flush the affected eye(s) with clean water for at least 30 minutes. Seek immediate medical attention.

Skin: Immediately flush affected area(s) with large amounts of water while removing contaminated shoes, clothing, and constrictive jewelry. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse the affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): Immediately move victim away from exposure and into fresh air. If respiratory symptoms or other symptoms of exposure develop, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): ***Do not induce vomiting. Corrosive material. Acid burns.*** If victim has any breathing difficulties, call for emergency help immediately. If victim is conscious and alert, immediately rinse mouth with water and dilute the ingested material by giving one glass of milk or water to drink; 1/2 glass to children under 5. Call a physician or poison center. If possible, do not leave victim unattended.

Note To Physicians: This material is corrosive and may cause acid burns, including gastroesophageal perforation. Late complications of severe acid burns include esophageal, gastric, or pyloric strictures and stenosis.

5. FIRE FIGHTING MEASURES

Flammable Properties:
Flash Point: None to boiling
OSHA Flammability Class: Not applicable
LEL/UEL%: No Data
Autoignition Temperature: No Data

Unusual Fire & Explosion Hazards: This material will not burn, but if involved in a fire may release hazardous oxides of sulfur. This material may ignite combustibles. Vapors are heavier than air and may accumulate in low areas. Containers exposed to extreme heat may rupture due to pressure buildup. Contact with common metals may generate hydrogen, which can form flammable mixture with air.

Extinguishing Media: Dry chemical, soda ash, lime, or sand is recommended. Use that which is appropriate for the surrounding fire. Avoid use of water if possible.

Fire Fighting Instructions: Emergency responders in the danger area should wear bunker gear and self contained breathing apparatus for fires beyond the incipient stage (29 CFR 1910.156). In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Water reactive. Contact with water may generate heat.

Isolate danger area, keep unauthorized personnel out. If tank, railcar, or tank truck is involved in a fire, isolate for 1/2 mile in all directions. Consider initial evacuation for 1/2 mile in all directions.

Stop spill/release if it can be done with minimal risk. Move undamaged containers from danger area if it can be done with minimal risk. Fires involving small amounts of combustibles may be smothered with suitable dry chemicals. Use water on combustibles burning but avoid using water directly on acid as it results in evolution of heat and causes splattering.

6. ACCIDENTAL RELEASE MEASURES

Water reactive. Reacts violently with water with the evolution of heat (see Section 10). Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate danger area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Do not add water to spilled material. Spilled material may be absorbed into an appropriate absorbent material.

Notify appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. Cleanup under expert supervision is advised. If spill/release in excess of EPA reportable quantity (see Section 14) is made into the environment, immediately notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Protect against moisture including moisture from air or vapor space. Avoid contact with water. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Use good personal hygiene practices.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage and exposure to water. Sulfuric acid is highly corrosive to most metals, especially when dilute. To prevent ignition of hydrogen gas generated in metal containers (from metal contact) smoking, open flames, and sparks must not be permitted in storage areas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required.

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified full face air purifying respirator with a Type 95 particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, absorption, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: The use of a face shield and/or chemical goggles to safeguard against potential eye contact, irritation, or injury is recommended.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance: Clear
Physical State: Viscous liquid
Odor: Odorless, but has a choking odor when hot.
pH: 1-2
Vapor Pressure (mm Hg): 1 @ 145.8°F

Vapor Density (air=1): 3.4
Boiling Point/Range: 315-338°C
Freezing/Melting Point: No Data
Solubility in Water: 100%
Specific Gravity: 1.82-1.84
Percent Volatile: Negligible
Evaporation Rate (nBuAc=1): <1
Bulk Density: 15.2 lb/gal
Flash Point: None to boiling
Flammable/Explosive Limits (%): No Data

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Corrosive to metal. Can react with common metals generating hydrogen gas. Water reactive. Contact with water can generate heat.

Conditions To Avoid: Heat will increase overall reactivity.

Materials to Avoid (Incompatible Materials): Highly reactive and capable of igniting finely divided combustible materials on contact. Extremely hazardous in contact with many materials, particularly carbides, chlorates, fulminates, nitrates, picrates, powdered metals, and other combustible materials. Contact with hypochlorites (e.g., chlorine bleach), sulfides, or cyanides will produce toxic gases. Water reactive. Reacts violently with water, alkaline materials, or organic materials with evolution of heat. Corrosive to metal. Attacks many metals, releasing hydrogen gas (see Section 5).

Hazardous Decomposition Products: Material will not burn but if involved in a fire may generate oxides of sulfur. Decomposes to water and sulfur trioxide above 644°F.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Sulfuric Acid (CAS# 7664-93-9)

Carcinogenicity: The International Agency for Research on Cancer (IARC) classified "strong inorganic acid mists containing sulfuric acid" as a Category I carcinogen (known human carcinogen) based upon epidemiology studies demonstrating excess pharyngeal and lung cancer in chronically exposed workers.

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of corrosivity (D002) and reactivity (D003). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description: Sulfuric Acid,UN1830
Non-Bulk Package Marking: Sulfuric Acid,8,UN1830,II

Note: RQ Sulfuric Acid in packages greater than 1010 lbs. (66 gal.) of this product.

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: Yes
Chronic Health: Yes
Fire Hazard: No
Pressure Hazard: No
Reactive Hazard: Yes

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
Sulfuric Acid	7664-93-9	93-99

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

--None Known--

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any.

EPA (CERCLA) Reportable Quantity:

RQ #1 Sulfuric Acid
1000 lb equal to 1080 lb, (71 gal), of this material.

16. OTHER INFORMATION

Issue Date: 01/01/02
Previous Issue Date: 10/02/00
Product Code: Multiple
Revised Sections: None
Previous Product Code: Multiple
MSDS Number: 0062

Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Attachment 4
Overflow Pit Permitting Information

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

September 12, 1997

P 288 258 973

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to	
Street & Number	
Post Office, State, & ZIP Code	
Postage	$
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Restricted Delivery Fee	
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Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-973

Mr. Sam Christie
Phillips Petroleum Company
4001 Penbrook
Odessa, Texas 79762

RE: Discharge Plan GW-119 Renewal
East Vacuum Liquids Recovery Plant
Lea County, New Mexico

Dear Mr. Christie:

The ground water discharge plan GW-119, for the Phillips Petroleum Company (Phillips) East Vacuum Liquids Recovery Plant located in the W/2 NE/4 of Section 33, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. The discharge plan consists of the original discharge plan as approved September 9, 1992, and the discharge plan renewal application dated June 26, 1997. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 10 working days of receipt of this letter.**

The discharge plan was submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations. It is approved pursuant to Section 3109.A. Please note Sections 3109.E and 3109.F., which provide for possible future amendments or modifications of the plan. Please be advised that approval of this plan does not relieve Phillips of liability should operations result in pollution of surface water, ground water, or the environment.

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

Please note that Section 3104 of the regulations require "When a facility has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C. Phillips is 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 3109.G.4., this plan is for a period of five years. This approval will expire on September 9, 2002, and Phillips should submit an application in ample time before this date. Note that under Section 3106.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved. It should be noted that all discharge plan facilities will be required to submit the results of an underground drainage testing program as a requirement for discharge plan renewal.

The discharge plan renewal application for the Phillips Petroleum Company East Vacuum Liquids Recovery Plant is subject to WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of $50 plus a flat fee of $1,667.50 for compressor stations. The OCD has received the filing fee. The flat fee is due upon receipt of this approval. The flat fee may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office.

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

Sincerely,

William J. LeMay
Director

WJL/mwa
Attachment

xc: OCD Hobbs Office

ATTACHMENT TO THE DISCHARGE PLAN GW-119 RENEWAL
PHILLIPS PETROLEUM COMPANY
EAST VACUUM LIQUIDS RECOVERY PLANT
DISCHARGE PLAN APPROVAL CONDITIONS
(September 12, 1997)

1. Payment of Discharge Plan Fees: The $1,667.50 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.

2. Phillips Commitments: Phillips will abide by all commitments submitted in the discharge plan application dated June 26, 1997.

3. Waste Disposal: All wastes shall be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous by characteristics may be disposed of at an OCD approved facility upon proper waste characterization per 40 CFR Part 261.

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

5. 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.

6. 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 within the berm.

7. 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.

8. Labeling: All tanks, drums and containers should be clearly labeled to identify their contents and other emergency information necessary if they were to rupture, spill, or ignite.

9. 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 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 and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing.

10. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years thereafter, or prior to discharge plan renewal. Permittees 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.

11. Class V Wells: Leach fields and other wastewater disposal systems at OCD regulated facilities which inject fluid other than domestic waste sewage below the surface are considered Class V injection wells under the EPA UIC program. All class V wells will be closed unless, it can be demonstrated that protectable groundwater will not be impacted in the reasonably foreseeable future. Class V wells must be closed through the Santa Fe Office. The OCD allows industry to submit closure plans which are protective of human health, environment and groundwater as defined by the WQCC, and are cost effective.

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

13. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116 and WQCC 1203 to the OCD Hobbs District Office.

14. 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.

15. 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.

16. Certification: Phillips, by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Phillips further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Accepted:

PHILLIPS PETROLEUM COMPANY

by_____
Title

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

September 9, 1992

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

CERTIFIED MAIL
RETURN RECEIPT NO. P-670-683-649

Mr. Jeffrey Carlson
Safety and Environmental Analyst
Phillips Petroleum Company
4001 Penbrook
Odessa, Texas 79762

RE: Approval of Discharge Plan GW-119
Phillips East Vacuum Liquids Recovery Plant
Lea County, New Mexico

Dear Mr. Carlson:

The **discharge plan GW-119 for Phillips Petroleum Company East Vacuum Liquids Recovery Plant** located in the Section 33, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. The discharge plan consists of the application dated May 1, 1992 and the materials dated May 29, 1992 submitted as supplements to the application.

The discharge plan renewal was submitted pursuant to Section 3-106 of the New Mexico Water Quality Control Commission Regulations. It is renewed pursuant to Section 3-109.A. Please note Sections 3-109.E and 3-109.F which provide for possible future amendments or modifications 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 water, ground water, 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 is for a period of five (5) years. This approval will expire September 9, 1997, and you should submit an application for renewal in ample time before this date. It should be noted that all gas processing plants and oil refineries in excess of twenty-five years of age will be required to submit plans for, or the results of an underground drainage testing program as a requirement for discharge plan renewal.

The discharge plan application for the Phillips East Vacuum Liquids Recovery Plant is subject to the WQCC Regulation 3-114 discharge plan fee. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of fifty dollars ($50) plus the flat fee of three-thousand, three-hundred and thirty five dollars ($3335.00) for gas processing plants.

The $50 filing fee has not been received by the OCD and is due upon receipt of this letter. The flat fee for an approved discharge plan 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 at the time of approval. The flat fee (either total payment or installment) is due upon receipt of this letter.

Please make all checks out to the **NMED - Water Quality Management** and send to the OCD Santa Fe Office.

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/kmb
Attachment

xc: Chris Eustice, OCD Hobbs Office

ATTACHMENT TO DISCHARGE PLAN GW-119 APPROVAL
PHILLIPS EAST VACUUM LIQUIDS RECOVERY PLANT
DISCHARGE PLAN REQUIREMENTS
(September 9, 1992)

1. Payment of Discharge Plan Fees: The $50 filing fee and the $3335 flat fee (either total payment or installment) will be paid upon receipt of this approval letter.

2. Tank Berming: All tanks that contain materials other than fresh water that, if released, could contaminate surface or ground water or the environment will be bermed to contain one and one-third times the capacity of the tank.

3. Drum Storage: All drums will be stored on pad and curb type containment.

4. Spills: All spills and/or leaks will be reported to the OCD district office pursuant to WQCC Rule 1-203 and OCD Rule 116.

5. Modifications: All proposed modifications that include the construction of any below grade facilities or the excavation and disposal of wastes or contaminated soils will have OCD approval prior to excavation, construction or disposal.