GW - 18

PERMITS, RENEWALS, & MODS

CLOSED

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

March 05, 2003

CERTIFIED MAIL
RETURN RECEIPT NO. 3929 9802

Mr. Cal Wrangham
Dynegy Midstream Services, L.P.
6 Desta Drive Suite 3300
Midland, Texas 79705

RE: Bluitt Gas Plant
Termination of Discharge Plan GW-018
Dynegy Midstream Services, L.P.
Roosevelt County, New Mexico

Dear Mr. Wrangham:

The New Mexico Oil Conservation Division (OCD) hereby approves of Dynegy Midstream Services, L.P. closure activities at the Bluitt Gas Plant located in the NE/4 Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico and hereby terminates Discharge Permit GW-018.

Please be advised that NMOCD approval of this closure plan and permit termination does not relieve Dynegy Midstream Services, L.P. of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment in the foreseeable future. In addition, NMOCD approval does not relieve Dynegy Midstream Services, L.P. of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/lwp

xc: OCD Hobbs Office

Oil Conservation Division * 1220 South St. Francis Drive * Santa Fe, New Mexico 87505
Phone: (505) 476-3440 * Fax (505) 476-3462 * http://www.emnrd.state.nm.us

Larson &
Associates, Inc.
Environmental Consultants

RECEIVED
AUG 1 3 2002
Environmental Bureau
Oil Conservation Division

July 30, 2002

VIA FACSIMILE: (505) 476-3462

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Re: **Final Closure Documentation for the Dynegy Midstream Services, L.P., Bluitt Gas Processing Plant (GW-018), Roosevelt County, New Mexico**

Dear Mr. Price:
This letter represents final closure documentation, and request to terminate the groundwater discharge plan (GW-018) for the Dynegy Midstream Services, L.P. (Dynegy), Bluitt Gas Processing Plant, located in Unit Letter H (SE/4, NE/4), Section 15, Township 8 South, Range 36 East, Roosevelt County, New Mexico. In November 2000 Dynegy notified the New Mexico Oil Conservation Division (NMOCD) of its intent to dismantle the Bluitt Gas Processing Plant (Facility), and requested termination of the Facility's groundwater discharge plan (GW-018). The NMOCD extended the groundwater discharge plan until July 31, 2002, to allow Dynegy sufficient time to dismantle the Facility.

Gandy Corporation, located in Tatum, Mew Mexico, closed a flare pit near the southwest corner of the Facility in July 2001. The pit was closed in accordance with an NMOCD approved work plan, and collection of final soil sample was witness by Mr. Paul R. Sheeley (NMOCD District 1) on July 23, 2001. Facility dismantlement occurred simultaneously with pit closure, and Vanco Insulation Abatement (Vanco), located in Midland, Texas, removed insulation containing asbestos from vessels and piping. Vanco notified the NMOCD, and the New Mexico Environment Department (NMED) prior to the abatement program, and the asbestos was disposed at Charter Waste Landfill, located in Odessa, Texas. Concrete foundations beneath vessels, tanks and buildings were buried on site, and piping, racks, supports, vessels, tanks and buildings, except the office, shop and generator buildings and a horizontal tank, were removed. A horizontal tank, previously used for product storage, remains near the north side of the Facility to receive liquid from a separator stationed near an active gas line on the west side of the Facility. Liquids are periodically removed from the tank, and hauled to Dynegy's gas plant located southwest of Tatum, New Mexico. An out-of-service generator is present in the generator building. However, it is Dynegy's intent to relocate the generator to another facility. The office and shop buildings are presently used by field personnel that maintain the gas gathering system in the area. An above ground fuel tanks is also located near the former truck loading area, and provides fuel to vehicles for field personnel.

Photographs from a final inspection, performed by Larson and Associates, Inc. (LA) on July 9, 2002, are presented in Attachment A. Please call Mr. Cal Wrangham at (915) 688-0542, or myself at (915) 687-0901 if you have questions.

Sincerely,

Larson and Associates, Inc.

Mark J. Larson, CGP, CGWP
President

Encl.

cc: Mr. Cal Wrangham – Dynegy
Mr. Paul Sheeley, NMOCD – Hobbs District

ATTACHMENT A

Photographs

DYNEGY MIDSTREAM SERVICE L.P.
BLUITT GAS PROCESSING PLANT
PHOTOGRAPHS

1. **Looking Southwest (Former Engine Room)**

2. **Looking Southwest (Former Flare Pit Location)**

DYNEGY MIDSTREAM SERVICES L.P.
BLUITT GAS PROCESSING PLANT
PHOTOGRAPHS

3. Looking West (Former Processing Area Location – Clean Soil Piles)

4. Looking Northwest (Former Processing and Product Storage Area)

DYNEGY MIDSTREAM SERVICES, L.P.
BLUITT GAS PROCESSING PLANT
PHOTOGRAPHS

5. Looking Northwest (Former Product Storage Area – Remaining Tank)

6. Looking North (Former Truck Loading Area – Fuel Tanks for Field Vehicles)

DYNEGY MIDSTREAM SERVICES L.P.
BLUITT GAS PROCESSING PLANT
PHOTOGRAPHS

7. Looking Northeast of Truck Loading Rack (Pipeline Equipment and Chemicals)

8. Looking South (Former Processing and Flare Pit Areas)

DYNEGY MIDSTREAM SERVICES, L.P.
BLUITT GAS PROCESSING PLANT
PHOTOGRAPHS

9. Looking South (Former Processing and Flare Pit Areas)

10. Looking Southeast (Former Processing Area and Remaining Buildings)

Price, Wayne

From:	Price, Wayne
Sent:	Wednesday, November 14, 2001 5:01 PM
To:	'cwwr@dynegy.com'
Cc:	Sheeley, Paul; Johnson, Larry
Subject:	Dynegy Milnesand Bluitt Flare Pit
Contacts:	Cal Wrangham

The NMOCD is in receipt of the closure report dated September 10, 2001 for the above subject site and hereby approves of the closure plan.

Please be advised that NMOCD approval of this closure plan does not relieve Dynegy of responsibility should their closure activities have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Dynegy of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Tracking:

Recipient	Delivery
'cwwr@dynegy.com'	
Sheeley, Paul	Delivered: 11/14/01 5:01 PM
Johnson, Larry	Delivered: 11/14/01 5:01 PM

Dynegy Bluitt Plant- After equipment removed. The seporator tower is being used by production.

looking east

old sulfur area.

GEN. BLDG

[redacted]

shop and lab

piging station.

office.

drain field behind shop and lab.

Dynegy Midstream Services, Limited Partnership
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555 • Fax 915.688.0552

RECEIVED
JUN 25 2001
CONSERVATION DIVISION

June 21, 2001

DYNEGY

Mr. Roger Anderson
Environmental Bureau Chief
Oil Conservation Division
1220 St. Francis Dr.
Santa Fe, NM 87505

RE: Bluitt Plant Demolition
Bluitt Plant Discharge Plan GW-018

Dear Sir:
Dynegy Midstream Services, Limited Partnership (DMS) is preparing to demolish the wooden cooling tower at the Bluitt Plant. This facility is under GW-018. The Discharge Plan does not list cooling tower wood as a waste stream; therefore DMS requests permission to dispose of the wood in the Lea County Landfill located east of Eunice, NM.

Find attached a TCLP analysis for chrome that was ran on a composite sample of the wood collected from the tower. The analysis shows the TCLP < 5ppm which is within EPA guidance as non-hazardous. Also this waste is a RCRA exempt waste due to the E&P process it is from.

Please notify me with any questions or concerns. (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor

Cc: Chris Williams/ OCD Hobbs
Tim Jordan/ Dynegy
Jeff Harbour/ Dynegy

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

JUN 18 2001

ANALYTICAL RESULTS FOR
DYNEGY MIDSTREAM SERVICES
ATTN: JEFF HARBOUR
6 DESTA DR. SUITE 3300
MIDLAND, TX 79705
FAX TO: (915) 688-0552

Receiving Date: 06/13/01
Reporting Date: 06/14/01
Project Number: NOT GIVEN
Project Name: ~~NOT GIVEN~~
Project Location: BLUITT GAS PLANT

Sampling Date: 06/13/01
Sample Type: SOLID
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TOTAL Cr (ppm)	TCLP Cr (ppm)
ANALYSIS DATE:		06/14/01	06/14/01
H5925-1	TCLP WOOD	240	<5
H5925-2	SEDIMENT	604	-
Quality Control		4.057	4.057
True Value QC		4.000	4.000
% Recovery		101	101
Relative Percent Difference		0.9	0.9

METHODS: EPA 600/4-79-020	218.1	218.1

Amy Hill
Chemist

6-14-01
Date

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of ____

		BILL TO	
Company Name:	DYNEGY	P.O. #:	BLUITT
Project Manager:	JEFF HARBOUR	Company:	SAME
Address:	6 DESTA DR. SUITE 3300	Attn:	
City: MIDLAND	State: TX Zip: 79705	Address:	
Phone #: 915-688-0545	Fax #: 915-688-0552	City:	
Project #:	Project Owner:	State: Zip:	
Project Name:		Phone #:	
Project Location:	BLUITT GAS PLANT	Fax #:	
Sampler Name:	JEFF HARBOUR		

Lab I.D. (LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER: SOLID	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: TCLP Cl BC	TOTAL Cl
H5959-1	TCLP - WOOD								X				6/13/01		X	X
-2	SEDIMENT								X				6/13/01			X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: Time:	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: 6/13/01 Time: 9:30	Received By: (Lab Staff) [signature]	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)	REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

Dynegy Midstream Services, Limited Partnership
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555 • Fax 915.688.0552

RECEIVED
JUN 20 2001
CONSERVATION DIVISION

DYNEGY

June 15, 2001

Mr. Roger Anderson
New Mexico Energy, Minerals & Natural
Resources Department
Oil Conservation Division
2020 S. St. Francis Drive
Santa Fe, NM 87505

RE: Bluitt Demolition
NMOCD Discharge Plan GW-018

Mr. Anderson:

Dynegy Midstream Services, L. P. (DMS) has hired Permian Demolition Services Inc. PO Box 4916, Odessa, TX. 79760 to demolish the Bluitt Plant located 6 miles east of Milnsand, NM. An asbestos survey was conducted which identified some pipe insulation as containing asbestos. The contractor has arranged for Vanco Insulation Abatement to remove and dispose of the asbestos. Find attached their correspondence with the State Air Bureau. Please advise if your agency requires any other documentation other than this notification for asbestos removal. The facility will be demolished and wastes disposed of according to the Facility Discharge Plan and OCD Guidelines. Work will begin June 25th.

The flare pit will be closed as per the OCD approved closure plan as a separate project by Gandy Inc. of Tatum, NM later this summer.

Please call if you require further information. (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
Permian Basin ES&H Advisor

Cc: Chris Williams- Hobbs District OCD
Tim Jordan- Dynegy
Jeff Harbour- Dynegy

State of New Mexico
ENVIRONMENT DEPARTMENT
AIR QUALITY BUREAU
2048 Galisteo
Santa Fe, New Mexico 87505
Telephone (505) 827-1494
Fax (505) 827-1523

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

PAUL R. RITZMA
DEPUTY SECRETARY

June 8, 2001 Tracking Number: #041-84546-001

Coy Crow
Vanco Insulation Abatement
5804 S. Farm Road 1788
Midland, TX 79706

Re: Notice of Demolition/Renovation Activity Involving Asbestos

Dear Coy Crow:

This letter is to acknowledge receipt of the notification involving asbestos renovation or demolition activity at: Dynegy Milnesand Plant, Hwy. 262, Milnesand, NM 88125.

The tracking number assigned by AQB for this job is # 041-84546-001. In all future correspondence that deals with this facility, phone conversations, and next to the facility name on the waste manifest, be sure to include this number.

This office has reviewed the notice and determined that it includes the information required by AQCR 751, incorporated federal NESHAP requirement of 40 CFR 61.145 (b).

A copy of the asbestos waste disposal form should be sent to this office upon disposal of the asbestos containing material at an asbestos landfill. If you have any questions, please call me at 505-827-1494.

Sincerely,

Ronald Duffy

Ronald Duffy
Asbestos Compliance Officer
Air Quality Bureau

xc Mark Hansen, EPA Region 6
Cal Wrangham, Dynegy Midstream Services, 6 Desta Drive Suite 3300, Midland, TX 79705

OCD ENVIRONMENTAL BUREAU

SITE INSPECTION SHEET

DATE: 11-20 Time: 10 AM

Type of Facility: Refinery ☐ Gas Plant ☑ Compressor St. ☐ Brine St. ☐ Oilfield Service Co. ☐
Surface Waste Mgt. Facility ☐ E&P Site ☐ Crude Oil Pump Station ☐
Other ☐ ________

Discharge Plan: No ☐ Yes ☑ DP# GW-018

FACILITY NAME: BLUITT GAS PLANT (SHUT DOWN)
PHYSICAL LOCATION: 5 MI EAST of MILNESAND NM
Legal: QTR___QTR___ Sec___ TS___ R___ County ROOSEVELT

OWNER/OPERATOR (NAME) DYNEGY (OLD WARREN)
Contact Person: ________ Tele:# ________
MAILING
ADDRESS: ________ State___ ZIP___
Owner/Operator Rep's: CAL WRANGHAM
CELL # 915-425-7072

OCD INSPECTORS: W PRICE

1. **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.**

2. **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.**

PIC #2 & 3 - PLANT SHUT DOWN
PIC # 4 SURFUL UNDERGROUND STORAGE - CONCRETE
PIC # 6 - OLD FLARE & COOLING TOWER PIT

3. **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 tanks or existing tanks that undergo a major modification, as determined by the Division, must be placed within an impermeable bermed enclosure.**

4. 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.

5. Labeling: All tanks, drums and containers will be clearly labeled to identify their contents and other emergency notification information.

6. 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.

PIC # 5 - OLD COOLING TOWER - BASIN FULL OF SOLID MATERIAL

7. 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. The permittee 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.

8. Onsite/Offsite Waste Disposal and Storage Practices: Are all wastes properly characterized and disposed of correctly? Does the facility have an EPA hazardous waste number? _______ Yes _________ No

ARE ALL WASTE CHARACTERIZED AND DISPOSED OF PROPERLY? YES ☐ NO ☑ IF NO DETAIL BELOW.

OLD LAB CHEMICALS NEEDS TO BE DISPOSED OF OR RE-CYCLED!

9. Class V Wells: 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. All Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be closed unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Closure of Class V wells must be in accordance with a plan approved by the Division's Santa Fe Office. The OCD allows industry to submit closure plans which are protective of human health, the environment and groundwater as defined by the WQCC, and are cost effective. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

ANY CLASS V WELLS NO ☐ YES ☑ IF YES DESCRIBE BELOW ! Undetermined ☐

OLD PLANT LAB - PIC # 9

10. Housekeeping: All systems designed for spill collection/prevention will be inspected weekly and after each storm event to ensure proper operation and to prevent overtopping or system failure. A record of inspections will be retained on site for a period of five years.

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

12. Does the facility have any other potential environmental concerns/issues?

PLANT WASTEWATER + FLARE PIT AREA PIC # 7 - LOOKING WEST

PIC # 8 - LOOKING EAST

PIC # 9 - SULFUR DISPOSAL AREA

13. Does the facility have any other environmental permits - i.e. SPCC, Stormwater Plan, etc.?

14. ANY WATER WELLS ON SITE ? NO ☐ YES ☑ IF YES, HOW IS IT BEING USED ?

EST TO BGS WATER ≈ 171' - WELL LOCATED 1/4 MI - WEST

Miscellaneous Comments:

Number of Photos taken at this site: PIC # 1 SIGN
attachments-

OCD Inspection Sheet
Page ___ of ____

Dynegy Bluitt Plant- Out of service.

Pic #1

Pic# 2

Pic#3

Pic#4

Pic#5

Pic#6


Pic#7


Pic#9


shop and old lab

Price, Wayne

From: Price, Wayne
Sent: Friday, May 11, 2001 8:20 AM
To: Price, Wayne; 'Mike @ Whole Earth'
Cc: Cal Wrangham
Subject: RE: Dynegy Bluitt Gas Plant Closure Revisions

Your request is hereby approved.

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

From: Mike @ Whole Earth[SMTP:whearth@iamerica.net]
Sent: Friday, May 11, 2001 7:25 AM
To: Wayne Price
Cc: Cal Wrangham
Subject: Dynegy Bluitt Gas Plant Closure Revisions

Good Morning!

To confirm our telecon of yesterday, we propose to modify the April 16th acceptance criteria for the above referenced project as follows:

1. The vertical extent of contamination shall be determined by means of excavation. In the process of removing the contamination from the pit, we will keep the site level and take a five point composite sample at each 10' depth increment.

We will test these composite samples for BTEX, TPH, RCRA 8 metals and chlorides.

2. Similarly, the side walls and bottom of the excavation will be tested for the COC's specified in the above revision.

3. Backfill materials will additionally be sampled for the above COC's at each 3' lift going back into the hole except that a single sample, (the location of which will be specified by the OCD) will suffice for RCRA 8 metals.

If this meets with your approval, we will formally amend the protocol, QP-55 to reflect the changes.

Though not discussed yesterday, we additionally request an extension of the requested reporting date of June 1st to June 25th. Due to scheduling conflicts we will not be able to start the project until the week of June 4th.

Thank you again for your flexibility.

Mike Griffin

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

April 16, 2001

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 3771 7279

Mr. Cal Wrangham
Dynegy Midstream Services, L.P.
6 Desta Drive Suite 3300
Midland, Texas 79705

RE: Bluitt Gas Plant Flare Pit Remediation Project
Discharge Plan GW-018
Dynegy Midstream Services, L.P.
Roosevelt County, New Mexico

Dear Mr. Wrangham:

The New Mexico Oil Conservation Division (OCD) is in receipt of the Bluitt Gas Plant Flare Pit Remediation Project along with a request dated October 09, 2000 to terminate the current discharge plan. OCD approved an extension to the discharge plan on October 27, 2000 with an expiration date of July 31, 2002. In the interim period Dynegy requested that OCD hold the remediation plan until Dynegy submitted a gas plant decommission plan. OCD now understands that for budget reasons Dynegy wishes to perform the remediation this year and decommission the plant next year. OCD hereby approves of your request and approves the remediation plan with the following conditions:

1. The vertical extent of the contamination in the pit shall be determined. Samples shall be collected every 10 feet and analyzed for volatiles (8021 BTEX), TPH (8015 of 418.1), WQCC metals (total), and general chemistry (major cations, anions, and Ph). All soil samples shall be collected and analyzed pursuant to approved EPA methods.

2. Final excavated pit side wall and bottom hole soil samples shall be collected and analyzed for volatiles (8021 BTEX), TPH (8015 of 418.1), WQCC metals (total), and general chemistry (major cations, anions, and Ph). All soil samples shall be collected and analyzed pursuant to approved EPA methods.

3. Representative samples of back-fill shall be collected for every 100 yards of soil and analyzed for volatiles (8021 BTEX), TPH (8015 of 418.1), WQCC metals (total), and general chemistry (major cations, anions, and Ph). All soil samples shall be collected and analyzed pursuant to approved EPA methods.

4. **The excavated area shall not be back-filled until OCD has an opportunity to review the analytical data and issues approval.**

5. Dynegy Midstream Services, L.P. will notify the OCD Santa Fe office and the OCD District office at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

Please be advised that NMOCD approval of this plan does not relieve Dynegy Midstream Services, L.P. of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Dynegy Midstream Services, L.P. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Please submit the analytical results as listed in items 1-3 above for OCD review by June 01, 2001. If you have any questions please do not hesitate to contact me at 505-476-3487.

Sincerely;

Wayne Price

Wayne Price-Pet. Engr. Spec.

cc: OCD Hobbs Office

attachments-

4. **The excavated area shall not be back-filled until OCD has an opportunity to review the analytical data and issues approval.**

5. Dynegy Midstream Services, L.P. will notify the OCD Santa Fe office and the OCD District office at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

   Please be advised that NMOCD approval of this plan does not relieve Dynegy Midstream Services, L.P. of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Dynegy Midstream Services, L.P. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Please submit the analytical results as listed in items 1-3 above for OCD review by June 01, 2001. If you have any questions please do not hesitate to contact me at 505-476-3487.

Sincerely;

Wayne Price

Wayne Price-Pet. Engr. Spec.

cc: OCD Hobbs Office

attachments-

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

October 27, 2000

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 5051 4591

Mr. Cal Wrangham
Dynegy Midstream Services, L.P.
6 Desta Drive Suite 3300
Midland, Texas 79705

RE: Discharge Plan Renewal GW-018
Dynegy Midstream Services, L.P.
Bluitt Gas Plant
Roosevelt County, New Mexico

Dear Mr. Wrangham:

The New Mexico Oil Conservation Division (OCD) is in receipt of Dynegy Midstream Services, L.P. (Dynegy) letter dated October 9, 2000 requesting termination of the Discharge Plan. In order to allow Dynegy additional time for closure activities OCD is extending Dynegy's discharge plan for a period of two years and will expire on July 31, 2002. The discharge plans fees will be waived for this time period.

Please submit for OCD approval a comprehensive closure plan for the entire gas plant site by November 30, 2000.

If you have any questions, please contact Wayne Price of my staff at (505-827-7155). 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,

Roger C. Anderson

Roger C. Anderson
Environmental Bureau Chief
RCA/lwp

xc: OCD Hobbs Office

Attachment-

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

July 5, 1995

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-734

Mr. Ken Stinson
Environmental Specialist
Warren Petroleum Company
P.O. Box 67
Monument, NM 88265

RE: **Discharge Plan Renewal GW-18**
Bluitt Gas Processing Plant
Roosevelt County, New Mexico

Dear Mr. Stinson:

The discharge plan renewal GW-18 for the Warren Petroleum Company Bluitt Gas Processing Plant located in the NE/4, Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. The renewal application consists of the original discharge plan as approved June 10, 1985, the renewal dated July 19, 1990, and the renewal application dated April 26, 1995.

The discharge plan renewal was submitted pursuant to Section 3-106 of the New Mexico Water Quality Control Commission (WQCC) Regulations. It is approved 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 the approval of this plan does not relieve you of liability should your operation 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 3-104 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 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 on July 31, 2000, and you should submit an application for renewal six months before this date. It should be noted that all discharge plan facilities 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 Warren Petroleum Company Bluitt Gas Processing Plant is subject to 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 (50) dollars plus one-half of the flat fee, or sixteen-hundred sixty-seven dollars and fifty cents ($1667.50) for gas plants. The New Mexico Oil Conservation Division (OCD) has not received your filing fee or flat fee. The fifty (50) dollar filing fee is due upon receipt of this approval. 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 plan, with the first payment due upon receipt of this 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,

By [signature] Deputy Director
William J. LeMay
Director

WJL/mwa
Attachment

xc: Jerry Sexton, OCD Hobbs Office
Wayne Price, OCD Hobbs Office

ATTACHMENT TO THE DISCHARGE PLAN GW-18 RENEWAL
WARREN PETROLEUM COMPANY
BLUITT GAS PROCESSING PLANT
DISCHARGE PLAN REQUIREMENTS
(July 5, 1995)

1. Payment of Discharge Plan Fees: The fifty (50) dollar filing fee and the sixteen-hundred sixty-seven dollars and fifty cents ($1,667.50) flat fee shall be submitted upon receipt of this approval. The flat fee of sixteen-hundred sixty-seven dollars and fifty cents ($1667.50) 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. Drum Storage: All drums will be stored on pad and curb type containment.

3. Sump Inspection: All pre-existing single-lined sumps at this facility will be cleaned and visually inspected on an annual basis. The inspection will coincide with the annual scheduled plant shutdown.

   Any new or rebuilt sumps or below-grade tanks will incorporate leak detection in their designs and will be approved by the OCD prior to installation.

4. Berms: All tanks that contain materials other than freshwater will be bermed to contain one and one-third (1-1/3) the capacity of the largest tank within the berm or one and one-third (1-1/3) the total capacity of all interconnected tanks.

5. Above Grade Tanks: All above ground tanks (saddle tanks) will be on impermeable pad and curb type containment.

6. Pressure Testing: All discharge plan facilities are required to pressure test all underground piping at the time of discharge plan renewal. All new underground piping shall be designed and installed to allow for isolation and pressure testing at 3 psi above normal operating pressure.

7. Spills: All spills and/or leaks will be reported to the OCD Santa Fe and Hobbs District Offices pursuant to WQCC Rule 1-203 and OCD Rule 116.

8. Pads: All compressor pads will have lips or curb type containment installed to prevent contaminants from running onto the ground surface.

   All containment areas must remain free of any sediments and/or fluids. Routine inspections will be made of all such areas and any sediments and/or fluids found will be removed and disposed of at an approved facility.

9. <u>Fin Fans:</u> Please submit a plan, for approval, to the OCD by August 15, 1995 for installing a containment structure under the fin fans to contain amine leaks.

10. <u>Flare Pit Closure:</u> The flare pit will be closed in 1995. Please submit a plan, for approval, to the OCD by August 15, 1995 for closure of the flare pit.

11. <u>Closure:</u> 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.

Z 765 962 734

Receipt for Certified Mail

UNITED STATES POSTAL SERVICE

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

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	$
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Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, March 1993

Dynegy Midstream Services, Limited Partnership
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

October 9, 2000

Chris Williams
Oil Conservation Division Dist 1
1625 N. French
Hobbs, New Mexico 88240

Discharge Plan GW-18 Termination
Bluitt Gas Processing Plant

Mr. Williams:

Dynegy Midstream Services, L. P. would like to terminate the Bluitt Plant Discharge Plan that was required by WQCC Sec. 3106. The facility was shut down in December 1997 and much of the equipment has been removed.

To facilitate the plan termination Dynegy has hired Larry Gandy of the Gandy Corporation, PO Box 827 Tatum, NM 88267 (505) 398-4960 to do a site assessment and prepare a RCRA exempt unlined pit closure plan for the emergency flare pit as described in the Bluitt Discharge Plan section 6-1. Find this plan attached. Upon OCD's approval the Gandy Corporation will begin the closure.

Please call me with any questions, Office (915) 688-0542 Cellular (915) 425-7072.

Sincerely,

Cal Wrangham

Cal Wrangham
Permian Basin Region ES&H Advisor

Cc: Roger Anderson OCD Santa Fe with attachments

NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

Jennifer A. Salisbury
CABINET SECRETARY

Oil Conservation Div.
Environmental Bureau
2040 S. Pacheco
Santa Fe, NM 87505

Memorandum of Meeting or Conversation

Telephone __X___
Personal _______
E-Mail ___X____

Time: 9:15 am
Date: January 7, 2000

Originating Party: **Wayne Price-OCD**

Other Parties: **Cal Wrangham -Dynegy Midstream Services,LP**
915-688-0542, fax 915-688-0552, E-Mail klee.dynegy.com

Subject: **Discharge Plan Renewal Notice for the following Facilities:**

GW-018	**Bluitt**	**expires**	**7/31/2000** PLANT SHUT DOWN - GAS FLOW THROUGH SCRUBBER ONLY!
GW-025	**Monument**	**expires**	**7/31/2000**
GW-026	**Saunders**	**expires**	**7/31/2000**
GW-027	**Vada**	**expires**	**7/31/2000**

WQCC 3106.F. If the holder of an approved discharge plan submits an application for discharge plan renewal at least 120 days before the discharge plan expires, and the discharger is not in violation of the approved discharge plan on the date of its expiration, then the existing approved discharge plan for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge plan continued under this provision remains fully effective and enforceable. An application for discharge plan renewal must include and adequately address all of the information necessary for evaluation of a new discharge plan. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved. [12-1-95]

Discussion: Discussed WQCC 3106F and gave notice to submit Discharge Plan renewal application with $50.00 filing fee for the above listed facilities.

Conclusions or Agreements:
Signed: [signature]

CC: E-Mail Dynegy

Price, Wayne

From: KLEE@dynegy.com[SMTP:KLEE@dynegy.com]
Sent: Friday, January 07, 2000 11:36 AM
Subject: RE: Discharge Plan Renewal Notice

Return Receipt

Your document: RE: Discharge Plan Renewal Notice

was received by: Johnnie Leeson/NGCCorp

at: 12:36:53 PM Today

WARREN PETROLEUM
COMPANY, L.P.

An NGC Company

13430 Northwest Freeway
Suite 1200
Houston, TX 77040-6095

September 20, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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

Attn.: Mr. Roger C. Anderson
Environmental Bureau Chief

Re: TRANSFER OF DISCHARGE PLANS, SWD ADMINISTRATIVE ORDERS, and ANNUAL LPG STORAGE WELL REPORTS WARREN PETROLEUM COMPANY

Dear Ladies and Gentlemen:

This is to confirm that the merger between Chevron USA Inc.'s Warren Petroleum Company Division and NGC Corporation was completed on August 31, 1996. Effective September 1, 1996, Warren Petroleum Company, Limited Partnership, will be responsible for compliance with the discharge plans, SWD administrative orders and annual storage well reports referenced in the attached letter.

If you have any questions, please call J. Dee Morris at 713-507-6752.

Very truly yours,

H. Schuster

Hans Schuster
Vice President - Technical Services

Attachment
xc: Mr. Jerry Sexton
NMOCD District 1
PO Box 1980
Hobbs, NM 88241-1980

Mr. Bob Boyd
New Mexico

PT27doc

Chevron
Warren

Warren Petroleum Company
P. O. Box 1589
Tulsa, OK 74102

R. L. Langley
Manager, Health, Environment
and Loss Prevention
Phone 918 560 4471
Fax 918 560 4544

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 27, 1996

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

Attn.: Mr. Roger C. Anderson
Environmental Bureau Chief

**Re: TRANSFER OF DISCHARGE PLANS,
SWD ADMINISTRATIVE ORDERS, and
ANNUAL LPG STORAGE WELL REPORTS
WARREN PETROLEUM COMPANY**

Dear Ladies and Gentlemen:

This is to advise you that on or about August 31, 1996, Chevron USA Inc. intends to contribute its Warren Petroleum Company division to a new company ("Newco") into which NGC Corporation will merge. Newco will change its name to NGC Corporation. NGC Corporation intends to contribute most of the former Warren Petroleum Company division assets and obligations to an indirect subsidiary to be named Warren Petroleum Company, Limited Partnership, a Delaware limited partnership ("Warren LP").

Warren Petroleum Company, a Division of Chevron USA Inc., and NGC Corporation agree that on the merger closing, the responsibility for compliance with the Discharge Plans, the SWD Administrative Orders, and the filing of the Annual Storage Well Reports listed on the Attachment will shift from Warren Petroleum Company, a Division of Chevron USA Inc., to Warren LP. Warren LP will be liable for compliance effective the merger close date forward.

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The new address for the home office will change on September 1, 1996 to:

NGC Corporation
Warren Petroleum Company, Limited Partnership
13430 Northwest Freeway
Suite 1200
Houston, TX 77040
Attn.: J. Dee Morris
Environmental Manager

If you have any questions, please call me or J. Dee Morris at 918-560-4114.

Very truly yours,

R. L. Langley

R. L. Langley

Attachment

xc: Mr. Jerry Sexton
NMOCD District 1
PO Box 1980
Hobbs, NM 88241-1980

Mr. Bob Boyd
New Mexico

ATTACHMENT

Warren Petroleum Company
a division of Chevron USA Inc.

Discharge Plans, Annual Storage Well Reports and SWD Administrative Orders

BLUITT PLANT NMOCD Discharge Plan GW-18 (7/5/95)
EUNICE PLANT NMOCD Discharge Plan GW-05 (5/96)
MONUMENT PLANT NMOCD - Discharge Plan GW-25 (7/5/95)
MONUMENT PLANT NMOCD Administrative Order SWD-561 (6/16/94)
MONUMENT PLANT NMOCD Annual Report for Propane Storage Well #1
MONUMENT PLANT NMOCD Annual Report for LPG Storage Well #2
SAUNDERS PLANT NMOCD Discharge Plan GW-26 (7/5/95)
SAUNDERS PLANT NMOCD Administrative Order SWD-255 (7/13/93)
VADA PLANT NMOCD Discharge Plan GW-27 (7/5/95)

Chevron
Warren

Warren Petroleum Company
P. O. Box 1589
Tulsa, OK 74102

D. D. Dunlap
Vice President,
Operations
Phone 918 560 4050
Fax 918 560 4304

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 23, 1996

United States Environmental Protection Agency
Stormwater Notice of Intent/Termination
401 M Street, SW
Washington, DC 20460

Attn.: Mr. Jon D. Klaff

Re: SUPPLEMENTAL FILING TO AUTOMATIC TRANSFER OF NPDES PERMITS DATED JULY 29, 1996

Dear Ladies and Gentlemen:

Warren Petroleum Company filed for Automatic Transfer of NPDES Permits on July 29, 1996 since on or about August 31, 1996, Chevron USA Inc. intends to contribute its Warren Petroleum Company division to a new company ("Newco") into which NGC Corporation will merge. Newco will change its name to NGC Corporation. NGC Corporation intends to contribute most of the former Warren Petroleum Company division assets and obligations to an indirect subsidiary to be named Warren Petroleum Company, Limited Partnership, a Delaware limited partnership ("Warren LP").

In response to our July 29 letter, we received information on August 14, 1996 from Jon D. Klaff of the Storm Water Notice of Intent Processing Center that further information is required so that the permits may be transferred. Mr. Klaff starred 38 items on our list of transferring NPDES Permits that needed more informatin. Please note that this list has been updated and the 38 starred items have been carried over on the new Attachment for ease of identification. Three additional Notices of Termination are also included for recently completed projects, bringing the total to 41 items.

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If you have any questions, please contact Bob Langley at 918-560-4471 or J. Dee Morris at 918-560-4114.

Very truly yours,

R. L. Langley
for
D. D. Dunlap

Attachment
cc without forms:

Jane Saginaw, Reginal Administrator
United States Environmental Protection Agency
Region VI Office
1445 Ross Avenue
Dallas, Texas 75202-2733

Mr. Dale Givens, Secretary
Louisiana Dept. of Environmental Quality
Office of Water Resources
PO Box 82215
Baton Rouge, LA 70884-2215

Mr. Jerry W. Mullican, Director of UIC
Texas Railroad Commission
Oil & Gas Division
PO Box 12967
Austin, TX 78711-2967

Mr. Roger Anderson, Environmental Bureau Chief
New Mexico Oil Conservation Division
PO Box 2088
State Land Office Building
Santa Fe, NM 87504

Warren

Tulsa, OK
August 2, 1995

MEMO TO FILE
LETTER OF AUTHORIZATION

To Whom It May Concern:

Please be advised that effective July 1, 1992, R. L. Langley was appointed Manager -Health, Environment and Loss Prevention for Warren Petroleum Company. In my absence, the incumbent in this position is Warren's duly authorized representative to verify by signature any appropriate permit required reporting or to provide agency required information.

If you have any questions or comments regarding this, please contact L.L. Johnson, Environmental Specialist, Warren's Health, Environment and Loss Prevention.

D. D. Dunlap, Vice President
Operations

DDD/LLJ/lj

xc: L. L. Johnson
C. A. McCartney
File: VII.A.4.b.(4)

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ATTACHMENT
Warren Petroleum Company
(a division of Chevron USA Inc.)
NPDES Permits

ABILENE LPG TRANSPORT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00F771 (9/16/94)*(NOT attached)(NOI attached)(1)
BLUITT PLANT, NM USEPA - Stormwater General Permit Notification (NOI) NMR10A117 (8/13/93)*(NOT filed 12/7/95)(2)
BRIDGEPORT LPG TRANSPORT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00F773 (9/16/94)*(NOT attached)(NOI attached)(3)
CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C292 (12/31/92) (plant)*(NOT attached)(NOI attached)(4)
CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00D737 (12/31/92) (Pipeline)*(NOT filed 4/7/95)(5)
CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00D738 (12/31/92) (Pipeline)*(NOT filed 4/7/95)(6)
CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR10G035 (5/9/94) (Pipeline)*(NOT filed 4/7/95)(7)
CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR10G036 (5/9/94) (Pipeline)*(NOT filed 4/7/95)(8)
CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR10H339 (11/18/93) (Pipeline)*(NOT filed 4/7/95)(9)
CANADIAN PLANT, TX USEPA-NPDES App. No. TX0113204 (02/24/95)
CANADIAN PLANT, TX USEPA-Stormwater General Permit Notification TXR00G271-ElPaso/No. Natural (PIPELINE) (04/07/95)*(NOT filed 7/19/95)(10)
CANADIAN PLANT, TX USEPA-Stormwater General Permit Notification TXR10P104: Red Deer (PIPELINE) (06/06/95)*(NOT attached)(11)
CANADIAN PLANT, TX USEPA-Stormwater General Permit Notification-TXR10M897-Cree Flowers (PIPELINE) (01/17/95)*(NOT filed 7/19/95)(12)
EUNICE PLANT, NM USEPA - Stormwater General Permit Notification (NOI) NMR00A189 (12/31/92)*(NOT filed 3/10/93)(13)
EUNICE PLANT, NM USEPA - Stormwater General Permit Notification NMR10A408, (PIPELINE) Const. (06/06/95)*(NOT attached)(14)
FASHING PLANT, TX USEPA - National Pollutant Discharge Elimination System (NPDES) Permit TX0086720 (5/19/82)
FASHING PLANT, TX USEPA Renewed NPDES Permit (8/18/87) permit # TX0086720
GLADEWATER LPG TRANSPORT, TX USEPA - NPDES No. TX0112712 Administratively Complete Application (8/29/94)
GLADEWATER LPG TRANSPORT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00F774 (9/16/94)*(NOT attached)(NOI attached)(15)
MONAHANS PLANT, TX USEPA - Stormwater General Discharge Permit No. TXR00F913, SW Royalties NXS (PIPELINE) (11/30/94)*(NOT attached)(16)
MONAHANS PLANT, TX USEPA - Stormwater General Discharge Permit Notice No.TXR10N685, Tiger #1 (PIPELINE)(02/15/95)*(NOT attached)(17)
MONAHANS PLANT, TX USEPA - Stormwater General Discharge Permit Notice, No.TXR10M935, Sand Hills to Monahans (PIPELINE) (01/17/95)*(NOT attached)(18)

MONAHANS PLANT, TX USEPA - Stormwater General Discharge Permit Notice, No.TXR10P710 (7/7/95)(NOT attached)(39)
MONT BELVIEU PLANT, TX USEPA - NPDES Application No. TX0002887 deemed complete (9/23/88) and (5/3/96)
MONT BELVIEU PLANT, TX USEPA TX0111414 Discharge Permit Application Complete (6/14/93)
MONT BELVIEU PLANT, TX USEPA - National Pollutant Discharge Elimination System (NPDES) Permit TX0002887 (5/15/75)
MONT BELVIEU PLANT, TX USEPA Stormwater General Permit Notification TXR00C294(12/31/92)*(NOT attached)(19)
MONT BELVIEU TERMINAL, TX USEPA - Stormwater General Permit Notification (NOI) TXR00E567 (12/31/92)*(NOT attached)(NOI attached)(20)
MONT BELVIEU TERMINAL, TX USEPA NPDES- TXG340278 (received 9/28/88)
MONUMENT PLANT, NM USEPA - Stormwater General Permit Notification No. NMR10A327, Joy Compressor Station (PIPELINE) (01/17/95)*(NOT filed 9/26/95)(21)
NO. SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C289 (12/31/92)*(NOT attached)(NOI attached)(22)
SAND HILLS PLANT, TX USEPA - NPDES - NOI approved (Stormwater) Wolfcamp (PIPELINE) (3/30/93) Permit TXR10D572*(NOT filed 4/13/95)(23)
SAND HILLS PLANT, TX USEPA - Stormwater General Permit Notification No. TXR10Q150, Meridian (PIPELINE) 1995 Upgrade (08/09/95)*(NOT attached)(24)
SAND HILLS PLANT, TX USEPA - Stormwater General Permit Notification No.TXR10M664, King Mt. Comp. Sta. (PIPELINE) (11/30/94)*(NOT filed 4/13/95)(25)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10S520, Wolfcamp (PIPELINE) (4/5/96)*(NOT filed 4/5/96)(26)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10S521, Gomez (PIPELINE) (4/5/96)*(NOT filed 4/5/96)(27)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10T722, Crawar (PIPELINE) (4/5/96)*(NOT filed 4/5/96)(28)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10U246, CG-25 Suction (PIPELINE) (5/21/96)*(NOT attached)(29)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10V341, Grayburg 6" Upgrade (7/19/96)(NOT attached)(40)
SAUNDERS PLANT, NM USEPA - Stormwater General Permit Notification (NOI) NMR10A084 (5/21/93)*(NOT filed 4/7/95)(30)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N440, Beulah Hazlip (PIPELINE) tie-in (01/17/95)*(NOT attached)(31)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N441,J. H. Lawrence Upgrade (01/17/95)*(NOT attached)(32)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N442, Shell-Hagerman (PIPELINE) (01/17/95)*(NOT filed 6/3/95)(33)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N443, M/b N Low Pressure (PIPELINE) (01/17/95)*(NOT attached)(34)
MONAHANS PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10P103, Chevron Estes Gas (PIPELINE) (06/06/95)*(NOT attached)(35)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10T942, Chevron-Cullar (PIPELINE) (5/21/96)*(NOT attached)(36)
SO. SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C290 (12/31/92)*(NOT filed 4/7/95)(37))

TONKAWA PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C293 (12/31/92)*(NOT attached)(NOI attached)(38)
VENICE DELTA GATHERING STATION, LA - NPDES Permit # LA0054917 (4/12/78)
VENICE DELTA GATHERING STATION & VENICE STABILIZING PLANT, LA - NPDES Permit # LAG330050 (10/21/93)
VENICE DELTA GATHERING STATION & VENICE STABILIZING PLANT, LA - NPDES Permit # LAG330089 (1/24/95)
VENICE DELTA GATHERING STATION & VENICE STABILIZING PLANT, LA - NPDES Permit # LAG290000 (1/9/95)
VENICE PLANT, LA USEPA - NPDES Permit No. LA003867 (10/24/83)
VENICE PLANT, LA USEPA - NPDES Permit LA0003867 (6/3/83) and (9/23/83)
WARRENGAS TERMINAL, TX USEPA - General Permit TXG340285 (8/27/87)
WARRENGAS TERMINAL, TX USEPA - NPDES Application No. TX0063339 (9/22/88)
WARRENGAS TERMINAL, TX USEPA - NPDES Application No. TX0107361 (5/8/91)
WARRENGAS TERMINAL, TX USEPA - NPDES Application No. TX0103403 (4/25/88)
YSCLOSKEY PLANT, LA USEPA - NPDES Permit # LA0001562 (Originally issued to Shell Western E&P Inc.) (4/6/79)
SAUNDERS PLANT, NM - USEPA - Stormwater General Permit Notification (NOI) TXR10V530 (7/19/96) (NOT attached)(41)

GENERAL PERMIT
STORMWATER PERMITS
EPA FORM 3510-6 (6-92) FILINGS

	Industrial Facility	Individual Filings Construction - Dependent		
Facility	October 1, 1992 Intent For Coverage NPDES General Permit For Stormwater Discharges	NOI Filing Date	Activity	NOT Filing Date
Northern Area				
Bluitt	None			-
Bluitt Interconnect Pipeline (2)	None	6/3/93	Pipeline NMR10A117	12/7/95
Canadian (4)	10/1/92 Filing		Gen.Pmt.Cvg. TXR00C292	NOT-8/21/96 NOI-8/22/96
Canadian Pipeline Const. (5)	10/1/92 Filing		Pipeline TXR00D737	4/07/95
Canadian Pipeline (Bracken) (6)	None	11/23/92	Pipeline TXR00D738	4/07/95
Canadian Bracken 1-58 (8)	None	7/21/93	Pipeline TXR10G036	4/07/95
Canadian Alpar 1-95 (7)	None	7/21/93	Pipeline TXR10G035	4/07/95
Canadian Pipeline 1-49 (9)	None	10/13/93	Pipeline TXR10H339	4/07/95
Canadian Pipeline ElPas/No.Nat.(10)	None	7/23/94 and 3/3/95	Pipeline TXR00G271	7/19/95
Canadian Cree Flowers P/L (12)	None	10/28/94	Pipeline TXR10M897	7/19/95
Canadian Red Deer P/L (11)	None	4/13/95	Pipeline TXR10P104	8/21/96
Eunice (13)	10/1/92 Filing		Gen. Pmt. Cvg. NMR00A189	3/10/93
Eunice P/L Construction Project (14)	None	5/02/95	Pipeline-NMR10A408	8/21/96
Leedey	None			-
Mocane	None			-
Monument (21)	None			-
Joy Compressor Sta. Pjt.	None	11/4/94	Pipeline NMR10A327	9/26/95
Saunders	None			-
NGPL Interconnect Pipeline (30)	None	4/2/93	Pipeline NMR10A084	4/07/95
Crosstimbers Pipeline Project (41)	None	5/31/96	Pipeline TXR10V530	8/21/96
North Sherman (22)	10/1/92 Filing		Gen. Pmt. Cvg. TXR00C289	NOT-8/21/96 NOI-8/22/96
South Sherman (37)	10/1/92 Filing		Gen. Pmt. Cvg. TXR00C290	4/7/95
Chevron Cullar Pipeline (36)	None	10/18/94	Pipeline TXR10T942	8/21/96

M&B North L.P. Pipeline (34)	None	11/29/94	Pipeline TXR10N443	8/21/96
J. H. Lawrence Pipeline Upgrade East/Eagle Oil & Gas (32)	None	11/29/94	Pipeline TXR10N441	8/21/96
Shell Hagerman Pipeline (33)	None	11/29/94	Pipeline TXR10N442	6/03/95
Beulah Hazlip Pipeline (31)	None	11/29/94	Pipeline TXR10N440	8/21/96
Tonkawa (38)	10/1/92 Filing		Gen. Pmt. Cvg. TXR00C293	NOT-8/21/96 NOI-8/22/96
Vada	None			-
Southern Area Como	10/1/92 Filing WPC/11/17/95 Valence		Gen. Pmt. Cvg. TXR00C287	12/6/95
Fashing	None			-
Johnson Bayou	None			-
Mermentau	10/1/92 Filing		Gen. Pmt. Cvg. LAR00A473	3/11/93
Monahans	None			-
Monahans S. W. Royalties NXS No. 1 Pipeline (16)	None	10/13/94	Pipeline TXR00F913	8/21/96
Sand Hills to Monahans PL (18)	None	11/4/94	Pipeline TXR10M935	8/21/96
Monahans Tiger #1 Pipeline (17)	None	1/6/95	Pipeline TXR10N685	8/21/96
Monahans Chevron Estes P/L (35)	None	4/13/95	Pipeline TXR10P103	8/21/96
Monahans Worsham P/L (39)	None	5/26/95	Pipeline TXR10P710	8/21/96
Moore's Orchard	None			-
Puckett	None			-
Sand Hills/Azalea	None			-
Sand Hills King Mt. Com. Sta.(25)	None	9/28/94	Pipeline TXR10M664	4/13/95
Sand Hills Wolfcamp PL (23)	None	2/26/93	Pipeline TXR10D572	4/13/95
Meridian PL Upgrade 1995 (24)	None	6/20/95	Pipeline TXR10Q150	8/22/96
Sand Hills Wolfcamp Pipeline (26)	None	12/20/95	Pipeline TXR10S520	4/5/96
Sand Hills Gomez Pipeline (27)	None	12/20/95	Pipeline TXR10S521	4/5/96
Sand Hills Crawar Pipeline (28)	None	1/22/96	Pipeline TXR10T722	4/5/96
Sand Hills CG 25 Suction PL (29)	None	3/14/96	Pipeline TXR10U246	8/21/96
Sand Hills Grayburg 6" Upg. (40)	None	4/23/96	Pipeline TXR10V341	8/21/96
Venice	None			-
Vermilion	None			-

Waddell	None			-
Worsham	None			-
Yscloskey	None			-
Houston Area Mont Belvieu Plant	None			-
MBP Isom Unit Construction (19)	10/1/92 Filing		ISOM TXR00C294	8/21/96
Mont Belvieu Terminal (20)	None	6/16/93	EPA Gen. Pmt. Number TXG340278 TXR00E567	TXR00E567 NOT-8/21/96 NOI-8/22/96
Port Arthur Terminal	None			-
Warrengas Terminal	None			-
Inland And Marine Operations Terminals Calvert City	None			-
Greenville	10/1/92 Filing		Gen. Pmt. Cvg. MSR000852	
Hattiesburg	10/1/92 Filing		Gen. Pmt. Cvg. MSR000853	
Port Everglades	10/1/92 Filing		Gen. Pmt. Cvg. FLR00A629	
Tampa	10/1/92 Filing		Gen. Pmt. Cvg. FLR00A630	
Venice	None			
Petal Gas Storage Co.	None	3/3/93	Pipeline & Appurtenances MSR100103	
LPG Transports Abilene (1)	None	7/23/94	LPG TK. Wash. TXR00F771	NOT-8/21/96 NOI-8/22/96
Breckenridge	None			-
Bridgeport (3)	None	7/23/94	LPG TK. Wash. TXR00F773	NOT-8/21/96 NOI-8/22/96

LPG Transports (cont.) Gladewater (15)	None	7/23/94	LPG TK. Wash. TXR00F774	NOT-8/21/96 NOI-8/22/96
Greenville	None			-
Mont Blevieu	None			-
Closed/Sold Facilities (Including Dismantling) Breckenridge Plant	10/1/92 Filing		Gen. Pmt. Cvg. TXR00C286	12/11/92
South Sherman Comp. Sta.	10/1/92 Filing		Gen. Pmt. Cvg. TXR00C290	4/07/95
Maggie Harris Comp. Sta.	10/1/92 Filing		Gen. Pmt. Cvg. TXR00C288	12/11/92
Shackelford Plant	10/1/92 Filing		Gen. Pmt. Cvg. TXR00C291	12/11/92
Kingfisher Plant	10/1/92 Filing		Gen. Pmt. Cvg. OKR00A724	3/30/93
Knox Plant	10/1/92 Filing		Gen. Pmt. Cvg. OKR00A725	4/07/95
Gulf McKinney Comp. Sta.	10/1/92 Filing		Gen. Pmt. Cvg. OKR00A726	4/07/95
North Snyder Plant (Demolition)	10/1/92 Filing		Demolition TXR00C295	4/07/95
Krotz Springs Plant (Demolition)	10/1/92 Filing		Demolition LAR00A472	4/07/95

Warren

Warren Petroleum Company
P. O. Box 1589
Tulsa, OK 74102

D. D. Dunlap
Vice President,
Operations
Phone 918 560 4050
Fax 918 560 4304

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 22, 1996

USEPA Region VI Office
1445 Ross Avenue
Dallas, Texas 75202-2733

Attn.: Mr. Fred Woods
Enforcement Division

Re: TRANSFER OF EPA GENERATOR NUMBERS
WARREN PETROLEUM COMPANY

Dear Ladies and Gentlemen:

This is to advise you that on or about August 31, 1996, Chevron USA Inc. intends to contribute its Warren Petroleum Company division to a new company ("Newco") into which NGC Corporation will merge. Newco will change its name to NGC Corporation. NGC Corporation intends to contribute most of the former Warren Petroleum Company division assets and obligations to an indirect subsidiary to be named Warren Petroleum Company, Limited Partnership, a Delaware limited partnership ("Warren LP").

Warren Petroleum Company, a Division of Chevron USA Inc., had been issued EPA Generator Numbers over the years. Those Generator Numbers that were assigned to assets that will be transferred into Warren LP are listed in the Attachment. Most of these numbers were obtained in 1980 and were protective filings. We have since determined that most of our sites are non-handlers of hazardous waste.

United States Environmental Protection Agency
Attn.: Mr. Fred Woods
August 22, 1996

RECEIVED

AUG 2 6 1996

Environmental Bureau
Oil Conservation Division

The new address for the home office will change on September 1, 1996 to:

NGC Corporation
Warren Petroleum Company, Limited Partnership
13430 Northwest Freeway
Suite 1200
Houston, TX 77040
Attn.: J. Dee Morris
Environmental Manager

If you have any questions, please call Bob Langley at 918-560-4471 or J. Dee Morris at 918-560-4114.

Very truly yours,

J. D. Morris
For

D. D. Dunlap

xc: Texas Natural Resource Conservation Commission
PO Box 13087
Austin, TX 7871111-3087

Texas Railroad Commission
PO Box 12967 - Capitol Station
Austin, TX 78711-2967
Attn.: Jerry Mullican

New Mexico Environmental Department
Water and Waste Management Division
2048 Galisteo
Santa Fe, NM 87505

New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505
Attn.: Roger C. Anderson

Oklahoma Department of Environmental Quality
4545 N. Lincoln Blvd., Suite 250
Oklahoma City, OK 73105-3483
Attn.: Al Colter

Louisiana Department of Environmental Quality
Office of Solid and Hazardous Waste
7290 Bluebonnet Road
Baton Rouge, LA 70810

ATTACHMENT
Warren Petroleum Company
(a division of Chevron USA Inc.)
EPA Generator Numbers/State Registration Numbers

Bluitt Plant	EPA Generator # NMD000719385	
Breckenridge Plant	EPA Generator # TXD026092395	TNRCC # 35978
Canadian Plant	EPA Generator # TX0087499539	TNRCC # 35979
Eunice Plant	EPA Generator # NMD008001307	
Fashing Plant	EPA Generator # TXD008130031	TNRCC # 35984
Kingfisher Plant	EPA Generator # OKD000729137	
Leedey Plant	EPA Generator # OKD000729145	
McLean Plant	EPA Generator # TXD071669816	TNRCC # 35987
Monahans Plant	EPA Generator # TXD026858373	TNRCC # 36000
Mont Belvieu Plant	EPA Generator # TXD980625974	TNRCC # 31048
Mont Belvieu Terminal	EPA Generator # TXD070886205	
Monument Plant	EPA Generator # NMD000709303	
Moores Orchard Plant	EPA Generator # TXD073899627	
Sand Hills Plant	EPA Generator # TXD000835090	TNRCC # 36003
Saunders Plant	EPA Generator # NMD000804138	
Shackelford Plant	EPA Generator # TXD000835280	
Tonkawa Plant	EPA Generator # TXT490010865	TNRCC # 35999
Vada Plant	EPA Generator # NMD000709287	
Venice Plant	EPA Generator # LAD041514811	LDEQ # GD-075-1635
Waddell Compressors	EPA Generator # TXD060169448	TNRCC # 35996
Warrengas Terminal	EPA Generator # TXD000835082	TNRCC # 35997
Worsham Plant	EPA Generator # TXD000835298	TNRCC # 36002

Chevron
Warren

Warren Petroleum Company
P. O. Box 1589
Tulsa, OK 74102

D. D. Dunlap
Vice President,
Operations
Phone 918 560 4050
Fax 918 560 4304

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

July 29, 1996

RECEIVED
AUG 1 9 1996
Environmental Bureau
Oil Conservation Division

United States Environmental Protection Agency
Region VI Office
1445 Ross Avenue
Dallas, Texas 75202-2733

Attn.: Ms. Jane Saginaw
Regional Administrator

Re: **AUTOMATIC TRANSFER OF NPDES PERMITS**
WARREN PETROLEUM COMPANY

Dear Ladies and Gentlemen:

This is to advise you that on or about August 31, 1996, Chevron USA Inc. intends to contribute its Warren Petroleum Company division to a new company ("Newco") into which NGC Corporation will merge. Newco will change its name to NGC Corporation. NGC Corporation intends to contribute most of the former Warren Petroleum Company division assets and obligations to an indirect subsidiary to be named Warren Petroleum Company, Limited Partnership, a Delaware limited partnership ("Warren LP").

We trust that the transfer of our NPDES permits may be accomplished automatically according to 40 CFR 122.61 (b), which allows that any NPDES permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit.

Our transfer date will be dependent upon approval of the merger by appropriate governmental agencies. We anticipate such approvals will be obtained and the merger will take place or close on or about August 31, 1996.

U. S. Environmental Protection Agency
Attn.: Ms. Jane Saginaw
7/29/96

Warren Petroleum Company, a Division of Chevron USA Inc., and NGC Corporation agree that on the merger closing, the responsibility for compliance with the NPDES permits listed on the Attachment will shift from Warren Petroleum Company, a Division of Chevron USA Inc., to Warren LP. Warren LP will be liable for permit compliance effective the merger close date forward.

We don't anticipate that you will want to modify, revoke or reissue any of the NPDES permits listed on the Attachment before the merger close date.

The new address for the home office will change on September 1, 1996 to:

NGC Corporation
Warren Petroleum Company, Limited Partnership
PO Box 4777
Houston, Texas 77210-4777

Street:
1000 Louisiana Street
Houston, Texas 77002

If you have any questions, please call Bob Langley at 918-560-4471 or J. Dee Morris at 918-560-4119.

Very truly yours,

D. D. Dunlap
Vice President, Operations
Warren Petroleum Company
(a division of Chevron USA Inc.)

Ralph W. Neumann
Ralph Neumann
Vice President, Technical Services
Trident NGL, Inc.
(a NGC Corporation)

Attachment
cc: United States Environmental Protection Agency
Stormwater Notice of Intent/Termination
401 M Street, SW
Washington, DC 20460

Mr. Dale Givens, Secretary
Louisiana Dept. of Environmental Quality
Office of Water Resources
PO Box 82215
Baton Rouge, LA 70884-2215

Mr. Jerry W. Mullican, Director of UIC
Texas Railroad Commission
Oil & Gas Division
PO Box 12967
Austin, TX 78711-2967

Mr. Roger Anderson, Environmental Bureau Chief
New Mexico Oil Conservation Division
PO Box 2088
State Land Office Building
Santa Fe, NM 87504

ATTACHMENT
Warren Petroleum Company
(a division of Chevron USA Inc.)
NPDES Permits

ABILENE LPG TRANSPORT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00F771 (9/16/94)

BLUITT PLANT, NM USEPA - Stormwater General Permit Notification (NOI) NMR10A117 (8/13/93)

BRIDGEPORT LPG TRANSPORT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00F773 (9/16/94)

CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C292 (12/31/92) (plant)

CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00D737 (12/31/92) (Pipeline)

CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00D738 (12/31/92) (Pipeline)

CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR10G035 (5/9/94) (Pipeline)

CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR10G036 (5/9/94) (Pipeline)

CANADIAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR10H339 (11/18/93) (Pipeline)

CANADIAN PLANT, TX USEPA-NPDES App. No. TX0113204 (02/24/95)

CANADIAN PLANT, TX USEPA-Stormwater General Permit Notification TXR00G271-ElPaso/No. Natural (PIPELINE) (04/07/95)

CANADIAN PLANT, TX USEPA-Stormwater General Permit Notification TXR10P104: Red Deer (PIPELINE) (06/06/95)

CANADIAN PLANT, TX USEPA-Stormwater General Permit Notification-TXR10M897-Cree Flowers (PIPELINE) (01/17/95)

EUNICE PLANT, NM USEPA - Stormwater General Permit Notification (NOI) NMR00A189 (12/31/92)

EUNICE PLANT, NM USEPA - Stormwater General Permit Notification NMR10A408, (PIPELINE) Const. (06/06/95)

FASHING PLANT, TX USEPA - National Pollutant Discharge Elimination System (NPDES) Permit TX0086720 (5/19/82)

FASHING PLANT, TX USEPA Renewed NPDES Permit (8/18/87) permit # TX0086720

GLADEWATER LPG TRANSPORT, TX USEPA - NPDES No. TX0112712 Administratively Complete Application (8/29/94)

GLADEWATER LPG TRANSPORT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00F774 (9/16/94)

MONAHANS PLANT, TX USEPA - Stormwater General Discharge Permit No. TXR00F913, SW Royalties NXS (PIPELINE) (11/30/94)

MONAHANS PLANT, TX USEPA - Stormwater General Discharge Permit Notice No.TXR10N685, Tiger #1 (PIPELINE)(02/15/95)

MONAHANS PLANT, TX USEPA - Stormwater General Discharge Permit Notice, No.TXR10M935, Sand Hills to Monahans (PIPELINE) (01/17/95)

MONT BELVIEU PLANT, TX USEPA - NPDES Application No. TX0002887 deemed complete (9/23/88) and (5/3/96)

MONT BELVIEU PLANT, TX USEPA TX0111414 Discharge Permit Application Complete (6/14/93)
MONT BELVIEU PLANT, TX USEPA - National Pollutant Discharge Elimination System (NPDES) Permit TX0002887 (5/15/75)
MONT BELVIEU PLANT, TX USEPA Stormwater General Permit Notification TXR00C294(12/31/92)
MONT BELVIEU TERMINAL, TX USEPA - Stormwater General Permit Notification (NOI) TXR00E567 (12/31/92)
MONT BELVIEU TERMINAL, TX USEPA NPDES- TXG340278 (received 9/28/88)
MONUMENT PLANT, NM USEPA - Stormwater General Permit Notification No. NMR10A327, Joy Compressor Station (PIPELINE) (01/17/95)
NO. SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C289 (12/31/92)
SAND HILLS PLANT, TX USEPA - NPDES - NOI approved (Stormwater) Wolfcamp (PIPELINE) (3/30/93) Permit TXR10D572
SAND HILLS PLANT, TX USEPA - Stormwater General Permit Notification No. TXR10Q150, Meridian (PIPELINE) 1995 Upgrade (08/09/95)
SAND HILLS PLANT, TX USEPA - *Stormwater General Permit Notification* No.TXR10M664, King Mt. Comp. Sta. (PIPELINE) (11/30/94)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10S520, Wolfcamp (PIPELINE) (4/5/96)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10S521, Gomez (PIPELINE) (4/5/96)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10T722, Crawar (PIPELINE) (4/5/96)
SAND HILLS PLANT, TX USEPA-Stormwater General Permit Notification No. TXR10U246, CG-25 Suction (PIPELINE) (5/21/96)
SAUNDERS PLANT, NM USEPA - Stormwater General Permit Notification (NOI) NMR10A084 (5/21/93)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N440, Beulah Hazlip (PIPELINE) tie-in (01/17/95)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N441,J. H. Lawrence Upgrade (01/17/95)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N442, Shell-Hagerman (PIPELINE) (01/17/95)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10N443, M/b N Low Pressure (PIPELINE) (01/17/95)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10P103, Chevron Estes Gas (PIPELINE) (06/06/95)
SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification, No. TXR10T942, Chevron-Cullar (PIPELINE) (5/21/96)
SO. SHERMAN PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C290 (12/31/92)
TONKAWA PLANT, TX USEPA - Stormwater General Permit Notification (NOI) TXR00C293 (12/31/92)
VENICE DELTA GATHERING STATION, LA - NPDES Permit # LA0054917 (4/12/78)
VENICE DELTA GATHERING STATION & VENICE STABILIZING PLANT, LA - NPDES Permit # LAG330050 (10/21/93)

VENICE DELTA GATHERING STATION & VENICE STABILIZING PLANT, LA - NPDES Permit # LAG330089 (1/24/95)

VENICE DELTA GATHERING STATION & VENICE STABILIZING PLANT, LA - NPDES Permit # LAG290000 (1/9/95)

VENICE PLANT, LA USEPA - NPDES Permit No. LA003867 (10/24/83)

VENICE PLANT, LA USEPA - NPDES Permit LA0003867 (6/3/83) and (9/23/83)

WARRENGAS TERMINAL, TX USEPA - General Permit TXG340285 (8/27/87)

WARRENGAS TERMINAL, TX USEPA - NPDES Application No. TX0063339 (9/22/88)

WARRENGAS TERMINAL, TX USEPA - NPDES Application No. TX0107361 (5/8/91)

WARRENGAS TERMINAL, TX USEPA - NPDES Application No. TX0103403 (4/25/88)

YSCLOSKEY PLANT, LA USEPA - NPDES Permit # LA0001562 (Originally issued to Shell Western E&P Inc.) (4/6/79)

RECEIVED
MAY - 5 1995
5/1/95
USFWS - NMESSO

NOTICE OF PUBLICATION

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

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-018) - Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Bluitt Gas Processing Plant located in the NE/4, Section 15, Township 8 South, Range 36 East, NMPM, Lea County, New Mexico. Approximately 19,500 gallons per day of process waste water is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately 5200 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharge

(GW-026) - Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Saunders Gas Processing Plant located Section 34, Township 14 South, Range 33 East, NMPM, Lea County, New Mexico. Approximately 18,9000 gallons per day of process waste water is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately 3881 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 600 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-027) - Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Vada Gas Processing Plant located Section 23, Township 10 South, Range 33 East, NMPM, Lea County, New Mexico. Approximately 1,380 gallons per day of process waste water is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately 14,890 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 35 feet with a total dissolved solids concentration of approximately 1000 mg/l. The discharge plan addresses how spills, leaks, and other accidental

discharges to the surface will be managed.

(GW-031) - U.S. Department of Energy, Fenton Hill Geothermal Facility, Larry Kirkman, Acting Area Manger, Albuquerque Operations, Los Alamos Area Office, Los Alamos, New Mexico 87544, has submitted a discharge plan renewal application for their Fenton Hill Geothermal Facility located in the NE/4, Section 13, Township 19 North, Range 2 East, NMPM, Sandoval County, New Mexico. Water from a geothermal loop is discharged to a double-lined service pond equipped with leak detection during periods of emergency venting or during periods when maintenance operations on the geothermal loop require a discharge of water from the loop. The discharge to the pond will be temporary as the water will be reinjected to the geothermal loop when normal operating conditions are attained. The water from the geothermal loop has a total dissolved solids concentration of approximately 3,200 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 370 feet with a total dissolved solids concentration of approximately 240 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 2nd day of May, 1995.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

William J. LeMay /by MES

WILLIAM J. LEMAY, Director

SEAL

NO EFFECT FINDING

The described action will have no effect on listed species [redacted]

Date May 15, 1995

Consultation # GW95OCD3

Approved by [signature]

U.S. FISH and WILDLIFE SERVICE
NEW MEXICO ECOLOGICAL SERVICES FIELD OFFICE
ALBUQUERQUE, NEW MEXICO

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

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-131[illegible]

(GW-012) - Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Bluitt Gas Processing Plant located in the NE/4, Section 18, Township 8 South, Range 33 East, NMPM, Lea County, New Mexico. Approximately [illegible] gallons per day of process waste is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately 5200 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharge.

(GW-[illegible]) - Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Saunders Gas Processing Plant located Section [illegible], Township 14 South, Range 33 East, NMPM, Lea County, New Mexico. Approximately 18,000 gallons per day of process waste water is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately [illegible] mg/l. Ground water most likely to be affected in the event of an accidental discharge [illegible] depth of approximately [illegible] with a total dissolved solids concentration of [illegible] The discharge plan addresses how spills, leaks, and other accidental discharges [illegible] will be [illegible]

(GW-[illegible]) - Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has [illegible]

[illegible]

STATE OF NEW MEXICO
County of Bernalillo SS

Bill Tafoya being duly sworn declares and says that he is Classified Advertising manager of The Albuquerque **Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made of assessed as court cost; that the notice, copy of which is hereto attached, was published in said paper in the regular daily edition, for 1 times, the first publication being of the 12 day of May, 1995, and the subsequent consecutive publications on ____________, 1995

Bill Tafoya

Sworn and subscribed to before me, a notary Public in and for the County of Bernalillo and State of New Mexico, this 12 day of, May 1995

OFFICIAL SEAL
Megan Garcia
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 5-20-98

Megan Garcia

PRICE 102.47
Statement to come at end of month.

CLA-22-A (R-1/93) ACCOUNT NUMBER 580238

OK MA

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that he is Adv. Director of THE LOVINGTON DAILY LEADER, a daily newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

RECEIVED
MAY 31 1995
Oil Conservation Division

That the notice which is hereto attached, entitled Notice Of Publication .... was published in a regular and entire issue of THE LOVINGTON DAILY LEADER and not in any supplement thereof, for one (1) day beginning with the issue of May 9, 1995 and ending with the issue of May 9, 1995

And that the cost of publishing said notice is the sum of $75.60 which sum has been (Paid) (Assessed) as Court Costs

Joyce Clemens

Subscribed and sworn to before me this 22nd day of May, 1995.

Jean Sevier
Notary Public, Lea County, New Mexico

My Commission Expires Sept. 28, 1998

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

Notice is hereby given that pursuant to the New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505)827-7131:

(GW-018)-Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Bluitt Gas Processing Plant located in the NE/4, Section 15, Township 8 South, Range 36 East, NMPM, Lea County, New Mexico. Approximately 19,500 gallons per day of process waste water is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately 5200 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharge

(GW-026)-Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Saunders Gas Processing Plant located Section 34, Township 14 South, Range 33 East, NMPM, Lea County, New Mexico. Approximately 18,900 gallons per day of process waste water is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately 3881 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 600 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-027)-Warren Petroleum Company, Ken Stinson, P.O. Box 67, Monument, New Mexico 88265, has submitted a discharge plan renewal application for their Vada Gas Processing Plant located Section 23, Township 10 South, Range 33 East, NMPM, Lea County, New Mexico. Approximately 1,380 gallons per day of process waste water is disposed of in an OCD approved Class II injection well. The waste water has a total dissolved solids concentration of approximately 14,890 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 35 feet with a total dissolved solids concentration of approximately 1000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-031) - U.S. Department of Energy, Fenton Hill Geothermal Facility, Larry Kirkman, Acting Area Manager, Albuquerque Operations, Los Alamos Area Office, Los Alamos, New Mexico 87544, has submitted a discharge plan renewal application for their Fenton Hill Geothermal Facility located in the NE/4, Section 13, Township 19 North, Range 2 East, NMPM, Sandoval county, New Mexico. Water from a geothermal loop is discharged to a double-lined service pond equipped with leak detection during periods of emergency venting or during periods when maintenance operations on the geothermal loop require a discharge of water from the loop. The discharge to the pond will be temporary as the water will be reinjected to the geothermal loop when normal operating conditions are attained. The water from the geothermal loop has a total dissolved solids concentration of approximately 3,200 mg/l. Ground water most likely to be affected in the event of an accidental discharge is at a depth of approximately 370 feet with a total dissolved solids concentration of approximately 240 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 2nd day of May, 1995.

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

(SEAL)
Published in the Lovington Daily Leader May 9, 1995.

STATE OF NEW MEXICO

COUNTY OF LOS ALAMOS

IN THE ________________ COURT

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO)
) ss.
COUNTY OF LOS ALAMOS)

NOTICE OF PUBLICATION

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THE LOS ALAMOS MONITOR
LOS ALAMOS, NEW MEXICO

Evelyn Vigil, being duly sworn, declares and says that she is the Editor of the Los Alamos Monitor, a newspaper published and having a general fully paid circulation and second-class postal privilege in the County of Los Alamos, State of New Mexico.

Affiant further states that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 14-11 N.M.S.A, 1978 Compilation and was so qualified at the time of all publications in reference hereto.

Affiant further states that the publication, a copy of which hereto affixed, was published in said paper, in the regular and entire issue of each number of the paper, during the period and time of publication and that the notice was published in the newspaper proper and not in a supplement, for One (1) consecutive weeks, the first publication being on the 9th day of May, 1995, and the subsequent consecutive publications on ____________ and ____________, 19____.

[signature]

Subscribed and sworn before me this 15th day of May, 1995.

Mary Margaret Fullman
Notary Public
My Commission Expires: November 13, 1996

OFFICIAL SEAL MARY MARGARET FULLMAN NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 11-13-96 be affected in the event of an accidental discharge is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharge

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 2nd day of May, 1995.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

/s/William J. Lemay, Director
WILLIAM J. LEMAY, Director

SEAL

Publication Date: May 9, 1995.

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subsequent consecutive publications on ____________ and ____________, 19____.

[signature]

Subscribed and sworn before me this 15th day of May, 1995.

Mary Margaret Fullman
Notary Public
My Commission Expires: November 13, 1996

Los Alamos Monitor
256 D.P. Rd
Los Alamos, NM 87544
(505) 662-4185

Energy, Min.&Nat. Resources
Sally E. Martinez
2040 S. Pacheco
Santa Fe, NM 87505

505-827-7131

CLASSIFIED ADVERTISING INVOICE

START DATE: 05/09/95
END DATE: 05/09/95
NUMBER OF INSERTIONS: 1
NUMBER OF WORDS: 273
AD CHARGE: 104.24
REMARK:

CLASSIFICATION: 101 LEGALS

FIRST LINE OF AD TEXT: NOTICE OF PUBLICATIO

TOTAL DUE: $ 104.24

TO PLACE A CLASSIFIED AD OR IF YOU HAVE A PROBLEM WITH THIS INVOICE PLEASE CONTACT MARY MARGARET FULLMAN (505) 662-5933. OFFICE HOURS ARE FROM 8:00 TO 5:30.

Z 765 962 345

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

UNITED STATES POSTAL SERVICE

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Certified Fee	
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Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, March 1993

State of New Mexico
Y, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

New Mexico DRUG FREE It's a State of Mind!

JRNAL

xico 87103

G MANAGER

RE: NOTICE OF PUBLICATION

hed notice one time immediately on receipt of this request. Please
ny error in a land description or in a key word or phrase can invalidate

Immediately upon completion of publication, please send the following to this office:

1. Publisher's affidavit in duplicate.
2. Statement of cost (also in duplicate.)
2. CERTIFIED invoices for prompt payment.

We should have these immediately after publication in order that the legal notice will be available for the hearing which it advertises, and also so that there will be no delay in your receiving payment.

Please publish the notice no later than May 12, 1995.

Sincerely,

Sally Martinez

Sally E. Martinez
Administrative Secretary

Attachment

Z 765 962 342

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

UNITED STATES POSTAL SERVICE

Sent to Lovington Daily Leader	
Street and No. P.O. Box 1717	
P.O., State and ZIP Code Lovington, NM 88260	
Postage	$
Certified Fee	
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Restricted Delivery Fee	
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Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, March 1993

State of New Mexico
MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

New Mexico DRUG FREE It's a State of Mind!

EADER

88260

MANAGER

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Please publish the notice no later than May 12, *1995.*

Sincerely,

Sally E. Martinez
Administrative Secretary

Attachment

Chevron

Warren

April 25, 1995

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

RECEIVED

APR 26 1995

Environmental Bureau
Oil Conservation Division

Re: Discharge Plan Renewal Application for Saunders, Vada & Bluitt Plants in Lea & Roosevelt Counties, New Mexico

Dear Mr. Ashley:

Please find enclosed a copy of the Bluitt Discharge Plan submitted for your approval. You can see that this plan is not in the same format as other Warren Petroleum Discharge Plans with which you are familiar. This is in an effort to remove some of the unnecessary material from the plan as I discussed with Roger Anderson and yourself in March. This plant is new to Warren Petroleum and previously was owned and operated by Trident Corporation. We have for the past one and one half years operated under their NMOCD approved plan. There should be nothing we have not discussed on your site visit in March in this plan. If I might provide any other information please let me know.

I have not included copies of Saunders (GW-26) and Vada (GW-27) because I knew that you already had copies of these plans and, as we discussed there will be no changes in these plans except for the removal of the Waste Management Section and referencing this to the Warren Petroleum General file in your office as we decided on my March visit to your office. However, please accept this as application for approval of these plans.

I am in the process of developing a letter to you addressing the requirements for approval of these plans as we discussed on your site visits. I am coordinating this with Wayne Price of your Hobbs office to ensure that I do not overlook anything. One item that we agreed to on an informal basis was testing of wastewater that is injected into Warren owned disposal wells. As I recall this was to be completed in May. This testing is underway and I will provide you with copies of the results as soon as they are available.

I enjoyed your visit and look forward to working with you on a frequent basis. As always, it is a pleasure, both personally and professionally to work with the NMOCD.

Sincerely,

Ken Stinson

Ken Stinson
Environmental Specialist

NOTICE OF PUBLICATION

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 2nd day of May, 1995.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

William J. LeMay / by MES

SEAL

WILLIAM J. LEMAY, Director

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

New Mexico DRUG FREE It's a State of Mind!

January 11, 1995

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-792

Mr. Ken Stinson
Warren Petroleum Company
P.O. Box 1589
Tulsa, OK 74102

RE: Discharge Plan Renewal
Bluitt, Monument, Saunders, and Vada Gas Plants

Dear Mr. Stinson:

On June 15, 1994, Warren Petroleum Company received, via certified mail, notice from the New Mexico Oil Conservation Division (OCD) that the following discharge plans would expire on the noted dates. As of this date (January 11, 1995), the OCD has not received renewal applications from Warren Petroleum Company for the following plants.

- Bluitt Gas Plant, GW-018, located in Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico will expire on June 10, 1995.

- Monument Gas Plant, GW-025, located in Section 36, Township 19 South, Range 36 East, NMPM, Lea County, New Mexico will expire on July 31, 1995.

- Saunders Gas Plant, GW-026, located in Section 34, Township 14 South, Range 33 East, NMPM, Lea County, New Mexico will expire on July 31, 1995.

- Vada Gas Plant, GW-027, located in Section 23, Township 10 South, Range 33 East, NMPM, Lea County, New Mexico will expire on July 31, 1995.

If you wish to renew operations at these facilities, discharge plan applications shall be submitted and approved by the OCD prior to the noted expiration dates. The applications shall follow the Water Quality Control Commission Regulations and the OCD's Guidelines for the Preparation of Ground Water Discharge Plans at Natural Gas Processing Plants delivered to you with the OCD's June 15, 1994 renewal notice letter.

Mr. Ken Stinson
January 11, 1995
Page 2

If there are any questions on this matter, please contact Mark Ashley at (505) 827-7155.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/mwa
xc: OCD Hobbs Office

Z 765 962 792

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

UNITED STATES POSTAL SERVICE

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Street and No.	
P.O., State and ZIP Code	
Postage	$
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Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, March 1993

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

June 15, 1994

CERTIFIED MAIL
RETURN RECEIPT NO. P 111 334 316

Mr. Ken Stinson
Warren Petroleum Company
P.O. Box 1589
Tulsa, OK 74102

RE: Discharge Plan Renewals
Bluitt, Monument, Saunders and Vada Gas Plants

Dear Mr. Stinson,

The following discharge plans were required and submitted to the Oil Conservation Division (OCD) pursuant to Water Quality Control Commission (WQCC) regulations and were approved for a period of five years. These approvals will expire on the noted dates.

- The discharge plan for the Bluitt Gas Plant, GW-018, located in Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico, will expire on June 10, 1995.

- The discharge plan for the Monument Gas Plant, GW-025, located in Section 36, Township 19 South, Range 36 East, NMPM, Lea County, New Mexico, will expire on July 31, 1995.

- The discharge plan for the Saunders Gas Plant, GW-026, located in Section 34, Township 14 South, Range 33 East, NMPM, Lea County, New Mexico, will expire on July 31, 1995.

- The discharge plan for the Vada Gas Plant, GW-027, located in Section 23, Township 10 South, Range 33 East, NMPM, Lea County, New Mexico, will expire on July 31, 1995.

If these facilities continue to have potential or actual effluent or leachate discharges and you wish to continue operation, you must renew your discharge plans. The OCD is reviewing discharge plan submittals and renewals carefully and the review time can extend for several months. Please indicate whether you have made, or intend to make, any changes in you system, and if so, please include these modifications in your applications for renewal.

Note that the completed and signed applications form must be submitted with your discharge plant renewal requests.

If you no longer have any actual or potential discharges please notify this office. If you have any questions, please do not hesitate to contact me at (505)827-5812.

Sincerely,

Roger C. Anderson

Roger C. Anderson
Environmental Bureau Chief

RCA/rlm

xc: OCD Hobbs Office

L CONSERV... ON DIVISION
RECEIVED

'93 DE 21 AM 8 46

December 6, 1993

Department of Energy and Minerals
Oil Conservation Division

Subject: Change of ownership of Bluitt Natural Gas Plant

Gentlemen:

Warren Petroleum Company would like to inform you of a recent change in the ownership of the Bluitt Natural Gas Plant, located approximately 6 miles East of Milnesand, N.M., and formerly owned and operated by Trident. This facility is now owned and operated by Warren Petroleum Company headquartered in Tulsa, Oklahoma. This plant will be under the direct management of J.R.Boyd, also manager of the Saunders and Vada plants in the North Lea county area.

Immediate concerns at the Bluitt facility include updating the discharge plan, which is scheduled to be done in 1994, however; conditions dictated some maintainance on various treating systems at the plant. This resulted in changing the catalyst in the sulfur plant, the charcoal in the amine filtration system, zeolite in the water softening system and the rings in the amine contactor. In Warren's normal operations the waste generated by this maintainance would have been addressed in the waste management section of the Discharge plan. This has not been done under the current plan. We would like to request permission to move these materials to be spread at the Saunders Plant. All are inert. As we did not buy the land on which the plant sits, we are unable to spread any media on the surface. This is the reason for requesting the movement of the waste.

If futher information is required, please contact me at 505-393-2823 and I will be happy to provide it.

Ken Stinson

Ken Stinson

Called Ken 1/3 - on vacation, will call back
1/7 - will send analyses for TPH in those materials in contact w/ hydrocarbons

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 11:00	Date Dec 6, 1993

Originating Party	Other Parties
Ken Stinson - Warren Petroleum	
675-2311 today 369-5324 mobile	

Subject Bluitt Plant

Discussion

~~Sulfur~~ amine contactor rings → Solid Waste disposal?
Sulfur plant catalyst → esp melted plastic rings
charcoal from amine treater
Warren took over Trident's Bluitt plant; DP doesn't discuss disposal of
→ What should they do?

- these three are exempt wastes & can go to OCD approved land farm

Conclusions or Agreements

They will send letter - 1) notifying OCD of change of operatorship
2) request approval to transport to land farm

Distribution

Signed Roberta Myers II

OXY

OIL CONSERV... ON DIVISION
REC... VED

'91 SEP 3 AM 9 11

OXY USA INC.
Box 50250, Midland, TX 79710

August 26, 1991

Mr. Roger Anderson
Energy, Minerals and Natural Resources Dept.
Oil Conversation Division
P. O. Box 2088
Sante Fe, New Mexico 87504

Re: Transfer of Discharge Plans GW-18 and GW-13

Dear Mr. Anderson:

Attached is a copy of the notification of transfer as required by the Oil Conversation Division. Also is the receipt showing the transfer was received.

Occidental Oil and Gas Co. is in the process of selling its domestic gas processing division, which includes the two plants associated with these discharge plans, to Trident NGL Inc. a new company owned by Occidental and Hicks, Muse and Co. At present the new company is in the process of being formed, and an operating staff has not been named. Closing is expected prior to September 1, 1991; however I don't know how long if at all OXY will operate the facilities during an interim period.

If there are any questions please advise at 915 685 5836.

Sincerely,

Keith Brown
OXY USA, Inc.

OXY USA INC.
Box 50250, Midland, TX 79710

August 17, 1991

Mr. Mike Neumann
President, Chief Operating Officer
Trident NGL, Inc.
1980 Post Oak Blvd.-POC II, 77056
Houston, Texas

Re: Transfer of Bluitt and Burton Flats Discharge Plans

Dear Mike:

This letter is to inform a representative of Trident NGL, Inc. that the Burton Flats and Bluitt gas processing plants have ground water discharge plans (GW 18 and GW 13 respectively) required and approved by the state of New Mexico which become the responsibility of Trident NGL, Inc. effective upon closing.

As required by the New Mexico regulations WQCC 82-1, 3-111 a copy of this notification, along with the return receipt designating proof notification was received, is being sent to the director of the New Mexico Oil Conservation Division.

Per the above regulations, "Upon receipt of such notification, the transferee shall have the duty to inquire into all of the provisions and requirements contained in such discharge plan, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the division's file or files concerning such discharge plan." Immediately after the remainder of the Trident organization is announced, I will forward copies of the discharge plans, along with a copy of this letter to the appropriate level of operations management.

Sincerely,

Keith Brown
OXY USA, Inc.

cc: Hans Schuster

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. XX Show to whom delivered, date, and addressee's address. (Extra charge)
2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to: Mr. Mike Neumann President, Chief Operating Officer Trident NGL, Inc. 1980 Post Oak Blvd. - POC II Houston, TX 77056	4. Article Number P 555 868 170 Type of Service: ☐ Registered ☐ Insured XX Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address (*ONLY if requested and fee paid*)
6. Signature — Agent X [signature] 8-22-91	
7. Date of Delivery 8-22-91	

PS Form 3811, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

OXY

OXY USA INC.
Box 50250, Midland, TX 79710

OIL CONSER\ ON DIVISION
REC VED
'91 APR 15 AM 9 34

April 11, 1991

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Attention: Mr. Bill Olson

Gentlemen:

As a follow-up to our conversation this afternoon, I am advising you that OXY USA Inc. is going to close three solid waste pits, one each at the Bluitt Gas Processing Plant, and the Cato and Peterson Compressor Stations. These pits have been inactive for several months to several years and were previously used to hold office type trash such as paper, wood scrap, plastic, etc as well as used filters from compressor engines. This material has been going to a commercial waste disposal facility for some time and the pits are no longer needed. You indicated the pits could be closed with no further action and OXY will do so in the near future.

Please contact me at (915) 685-5822 if any additional information is needed on this matter.

Respectfully yours,

Jerroll G. Sillerud
Engineering Advisor
Western Region - Midland

xc: R. Hunt
H. Schuster
A. Stephenson
S. Tafreshi
Bluitt Discharge Plan file

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

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

January 31, 1991

CERTIFIED MAIL
RETURN RECEIPT NO. P-327-278-076

Mr. Jerrall G. Sillerud
OXY USA Inc.
Box 50250
Midland, Texas 79710

Dear Mr. Sillerud:

The Oil Conservation Division (OCD) has received your proposal for construction of contaminant containment and for soil remediation at the five compressor sites associated with the Bluitt Gas Processing Facility.

The actions you are proposing are approved. The landfarm areas at each site must be designed and operated to prevent any contaminant runoff of your property.

If you have any questions, please call me at (505) 827-5884.

Sincerely,

Roger C. Anderson

Roger C. Anderson
Environmental Engineer

RCA/sl

cc: OCD Artesia Office

OXY

OXY USA INC.
Box 50250, Midland, TX 79710

March 16. 1991

Mr. Roger C. Anderson
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

RE: Discharge Plan GW-18 Renewal
Bluitt Gas Processing Plant
Roosevelt County, New Mexico

Dear Mr. Anderson:

I would like to refer to my letter to you dated June 8. 1990, in which an outline of activities related to the Bluitt Discharge Plan renewal, as well as target dates for its completion were described.

During a recent review with our engineering group, it was established, that several items were not completed at the anticipated and reported dates. The status of work and revised completion dates for the different items are as follows:

Item 1 Spill containment from above ground tanks that contain materials which constituents that can be harmful to freshwater and the environment if a spill occurs. (berming)

Status

Berming of all tanks with the exception of one amine tank has been completed. New expected completion date: March 1991.

Item 2 Paving of areas around above ground saddle tanks, other than product storage tanks, all drum storage areas and those locations mentioned under title 4 of your letter, dated May 28. 1990.

Status

Paving and curbing of all areas is complete with the exception of one tank at the cooling tower. This work is in progress and anticipated to be complete by end of March 1991.
Work is ongoing to eliminate and contain leaks in all parts of the plant process. A plot plan, showing the areas where pavement and curbs were installed, is attached.

Item 3 Sumps and drain lines.

Status

There are two drainage systems currently under construction. A closed system, which is now to be considered to be part of the process flow, because it handles liquid hydrocarbons and water from scrubber dumps essentially, which are piped into an above ground tank for separation of vapors, which are recycled and water, which is piped to a disposal well. This system should not require testing in regular intervals. Work for this part is expected to be complete by the end of May 1991.
The "open drain" system was reviewed carefully with respect to its feasibility to test annually and we determined, that a conversion is more costly than the installation of a new system, which includes above ground piping and pumps, which move the accumulated liquids from environmentally sound sumps to the separator. This work will be completed in June 1991.

I would like to apologize for the delay in our completion dates and ask for your understanding. Some of the modifications required, were significantly more involved, than we originally anticipated.

Sincerely

Hans H. Schuster
Manager Gas Processing
Western Region

Attachment

OXY USA INC.
Box 50250, Midland, TX 79710

DIVISION
'91 JAN 22 AM 9 34

January 17, 1991

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Attention: Mr. Roger Anderson

Gentlemen:

In an effort to eliminate the potential for lube oil and cooling water to runoff and make contact with the ground at the five compressor sites associated with the Bluitt Gas Processing Facility, OXY USA Inc. is initiating a retrofit program at the sites. Typically, a retrofit project will consist of the installation of concrete curbing around the compressor engines. The curbing will be sloped to one end allowing any lube oil and cooling water runoff to be gravity piped to a below grade vessel located in a concrete secondary containment area. The vessel will be equipped with level control head switches for automatic transfer of any accumulations of fluid to an above ground storage tank for further handling.

In the course of performing this work, it will be necessary to excavate soil, some of which will be contaminated with used lube oil. The soil will be landfarmed at the compressor engine site and tilled as necessary in order to facilitate the natural degradation of the hydrocarbon contamination. We believe this method of handling is an effective and responsible means of eliminating the contamination associated with lube oil runoff at compressor stations. We plan to initiate this work in the near future and would appreciate your response if you disagree with the procedure.

For your review, I am enclosing copies of photos which demonstrate the results of our efforts. These photos were taken at our South Peterson site located in Roosevelt County.

If you have any questions or need any information on this matter, please contact me at (915) 685-5822.

Respectfully yours,

Jerroll G. Sillerud
Engineering Advisor
Western Region - Midland

xc: R. Hunt
H. Schuster
D. Selinger

OXY

OIL CONSERV[illegible]ON DIVISION
REC[illegible]VED

'90 AUG 2 AM 8 54

OXY USA INC.
Box 50250, Midland, TX 79710

July 27, 1990

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Attention: Mr. Roger Anderson

Gentlemen;

This is to advise you that OXY USA Inc. has recently removed three underground storage tanks - two blowcases and one antifreeze tank - at the Bluitt Gas Processing Plant located in Roosevelt County, New Mexico. A plot plan identifying the specific sites of these tanks is enclosed for your reference. The antifreeze tank and one blowcase was removed from the site marked "1" and the second blowcase was removed from the site marked "2". I inspected the sites, and each tank, and I saw no evidence of a leak. The soil was not discolored and the tanks were in good mechanical condition with no evidence of corrosion.

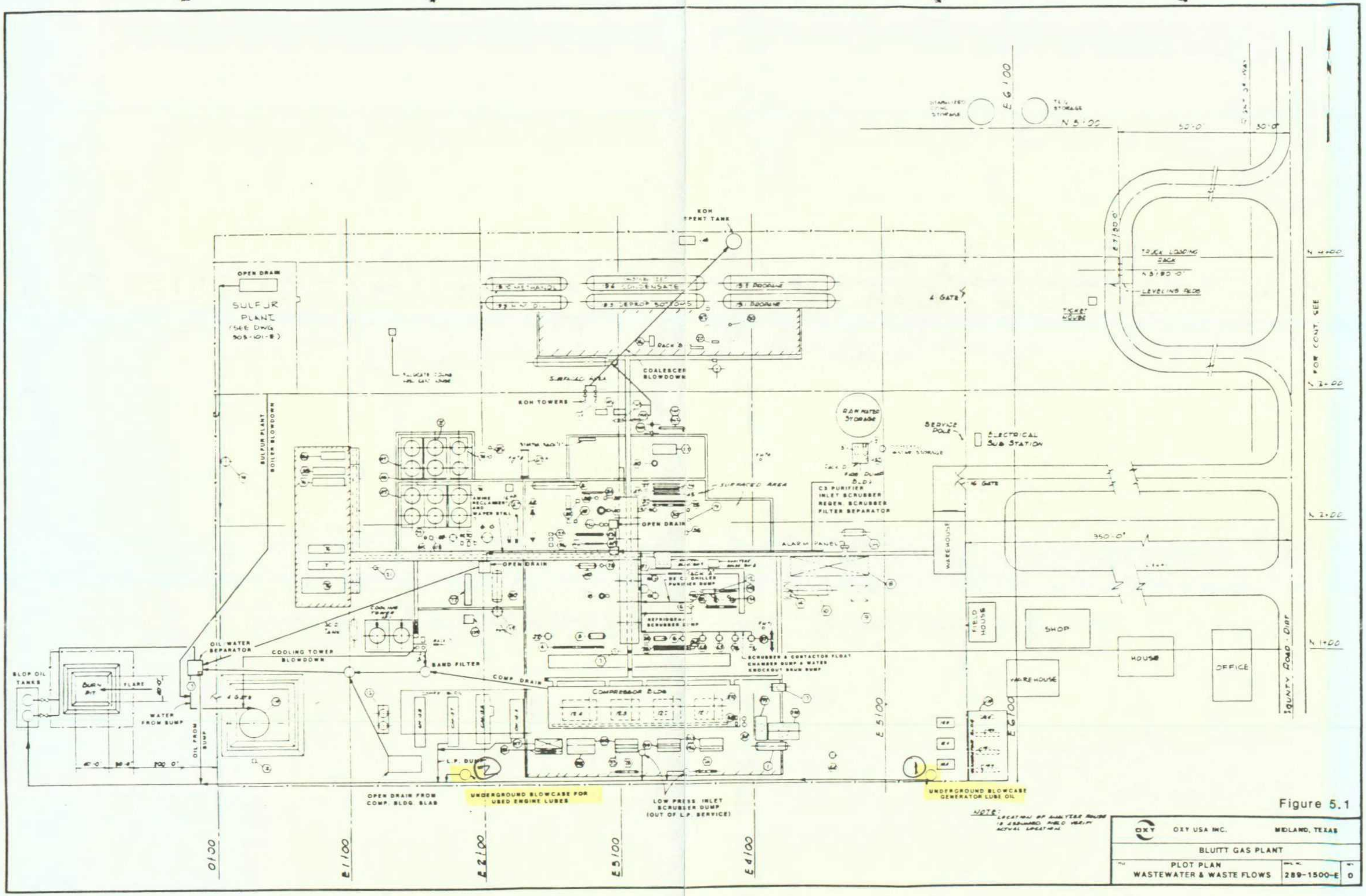
If you need any additional information, please contact me.

Respectfully yours,

Jerroll Sillerud

Jerroll G. Sillerud
Engineering Advisor
Western Region - Midland

xc: H. Adams - Bluitt
R. Hunt
H. Schuster



OXY USA INC.
MIDLAND, TEXAS
BLUITT GAS PLANT
PLOT PLAN
WASTEWATER & WASTE FLOWS
289-1500-E
0
UNDERGROUND BLOWCASE FOR USED ENGINE LUBES
UNDERGROUND BLOWCASE GENERATOR LUBE OIL
OPEN DRAIN FROM COMP. BLDG. SLAB
LOW PRESS. INLET SCRUBBER DUMP (OUT OF L.P. SERVICE)
L.P. DUMP
SLOP OIL TANKS
BURN PIT
FLARE
WATER FROM SUMP
OIL FROM SUMP
OIL-WATER SEPARATOR
COOLING TOWER BLOWDOWN
SAND FILTER
COMP. DRAIN
COMPRESSOR BLDG
SCRUBBER & CONTACTOR FLOAT CHAMBER DUMP & WATER KNOCKOUT DRUM DUMP
OPEN DRAIN
SULFUR PLANT (SEE DWG 505-101-B)
SULFUR PLANT BOILER BLOWDOWN
KOH SPENT TANK
KOH TOWERS
COALESCER BLOWDOWN
SURFACED AREA
RACK B
AMINE RECLAIMER AND WATER STILL
COOLING TOWER
REFRIGERANT SCRUBBER DUMP
C3 PURIFIER INLET SCRUBBER REGEN. SCRUBBER FILTER SEPARATOR
ALARM PANEL
RAW WATER STORAGE
SERVICE POLE
ELECTRICAL SUB STATION
WAREHOUSE
FIELD HOUSE
SHOP
HOUSE
OFFICE
TRUCK LOADING RACK
LEVELING PLUG
TICKET HOUSE
COUNTY ROAD
E 0+00
E 1+00
E 2+00
E 3+00
E 4+00
E 5+00
E 6+00
N 1+00
N 2+00
N 3+00
N 4+00
N 5+00

Figure 5.1

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

July 19, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-291

Mr. Hans Schuster, Manager
Region I
OXY NGL INCORPORATED
Box 50250
Midland, Texas 79710

RE: Discharge Plan GW-18 Renewal
Bluitt Gas Processing Plant
Roosevelt County, New Mexico

Dear Mr. Schuster:

The ground water discharge plan renewal (GW-18) for the Oxy NGL Inc. Bluitt Gas Processing Plant located in the NE/4, Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico is hereby approved. The renewal application consists of the original discharge plan as approved June 10, 1985, the renewal application dated March 5, 1990 and materials dated March 14, 1990 submitted as supplements to the application.

The discharge plan 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., which provides for the possible future amendments of the plan. Please be advised that the approval of this plan does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other laws and/or regulations.

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

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

Pursuant to Section 3-109.G.4., this plan approval is for a period of five (5) years. This approval will expire June 10, 1995 and you should submit an application for renewal in ample time before that 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.

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

Sincerely,

William J. LeMay
Director

WJL/RCA/sl

cc: OCD Hobbs District Office

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal | Time 0850 | Date 6/25/90

Originating Party	Other Parties
Jerry Silirnde - Oxy Bluitt	Bill Olson - OCD Santa Fe

Subject

Oxy Bluitt

Discussion

Removed tanks. Soils beneath were light grey, didn't notice odor. Oxy took samples. Tanks looked good, no obvious corrosion. Pits were backfilled

I asked Oxy to submit sample results to OCD

Conclusions or Agreements

Oxy will contact OCD about sample results

Distribution

Roger Anderson

Signed Bill Olson

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107
June 18, 1990

RECEIVED
JUN 22 1990
OIL CONSERVATION DIVISION

Boyer

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

Dear Mr. Lemay:

This letter responds to the public notice for proposed discharge plans submitted to your division. We have reviewed the following plans and have not identified any resource issues of concern to our agency. Renewal of these plans should not have a significant impact upon plants, fish, shellfish or wildlife resources of New Mexico.

GW-18, OXY USA, Inc., Midland, Texas.
GW-31, U.S. Department of Energy, Los Alamos Area Office, Los Alamos, NM.

These comments represent the views of the Fish and Wildlife Service. Thank you for the opportunity to review and comment on the proposed plans. If you have any questions concerning our comments please contact Tom O'Brien at (505) 883-7877 or FTS 474-7877.

Sincerely yours,

John C. Peterson
Field Supervisor

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

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

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

(GW-18) OXY USA Inc., Hans Schuster, Manager, Western Region, P. O. Box 50250, Midland, TX 79701, has submitted an application for renewal of its previously approved discharge plan for its Bluitt Gas Processing Plant located in the NE/4, Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico. Approximately 19,500 gallons per day of process wastewater is disposed of in an OCD approved Class II injection well. The wastewater has a total dissolved solids concentration of approximately 5200 mg/l. Ground water most likely to be affected by any discharge to the surface is at a depth of approximately 100 feet with a total dissoved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks and other discharges to the ground will be managed.

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 28th day of May, 1990. To be published on or before June 1, 1990.

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

Journal June 1, 1990

STATE OF NEW MEXICO
County of Bernalillo } ss

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

for.........1.........times, the first publication being on the.....1.....day of.........June........., 1990, and the subsequent consecutive publications on.., 1990.

.........Thomas J. Smithson.........

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this.....1..... day of.....June....., 1990.

OFFICIAL SEAL
Bernadette Ortiz
... ORTIZ
... NEW MEXICO
SECRETARY OF STATE
12-18-93

PRICE.........$21.36.........

Statement to come at end of month.

ACCOUNT NUMBER.........C 81184.........

EDJ-15 (R-12/89)

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

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 28th day of May, 1990. To be published on or before June 1, 1990.

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

SEAL

Published in the Portales News-Tribune June 1, 1990. Legal #1211.

Affidavit of Publication

I, Marshall Stinnett

Business Manager of

THE PORTALES NEWS-TRIBUNE

a newspaper of general paid circulation and entered under second class postal privilege in Roosevelt County, published daily, (except Saturday) at Portales, New Mexico, for the fifty-two (52) consecutive weeks preceding this date, do solemnly swear that a copy of the above notice, as per clipping attached, was published weekly in the regular and entire issue of said newspaper, and not in any supplement thereof for 1 consecutive weeks commencing with the issue dated June 1 19 90

and ending with the issue dated June 1 19 90

All publication costs having been paid.

Marshall Stinnett

Subscribed and s[worn] 1st day of June 19 90

Dee Maris Barnett

Notary Public

My commission e[xpires] ______ 19____

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

May 28, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-308

Mr. Hans Schuster, Manager
Region I
OXY NGL INCORPORATED
Box 50250
Midland, Texas 79710

RE: Discharge Plan GW-18 Renewal
Bluitt Gas Processing Plant
Roosevelt County, New Mexico

Dear Mr. Schuster:

The Oil Conservation Division (OCD) has received and is in the process of reviewing your application, dated February 1, 1990, for discharge plan renewal for the above referenced facility. The following requests for additional information and commitments are based on the information contained in the application and information obtained during the OCD site inspection on March 16, 1990.

1. The OCD is requiring that above grade tanks that contain materials with constituents that can be harmful to fresh water and the environment, if a sudden and catastrophic spill were to occur, be bermed so that the spill is contained at that site and mitigated immediately. Containment in a small area of the tank site allows for maximum recovery of fluids and small volumes of contaminants available for infiltration. Without berming the rupture of a tank will spread its contents over a large area minimizing the amount that can be recovered and increasing the surface area of contaminated soil available to leach contaminants. All tanks that contain these types of materials must be bermed to prevent migration of the fluids and decrease the potential for infiltration. The bermed areas shall be large enough to hold one-third more than the volume of the largest vessel or one-third larger than the total volume of all interconnected vessels contained with the berm.

   The following tanks were identified during the inspection that require berming:

a. The vertical lube oil storage tank east of the generator building.

b. The wastewater tank berm may not be large enough. Also fluids were observed standing in the berm.

c. The vertical amine storage tank had a pad but no berm or curb.

Submit a plan and completion timetable for berming these tanks and any other tanks you identify that may require berming.

2. The OCD is requiring that above grade saddle tanks and all drum storage areas be paved and curbed to contain any spills or leaks. the following areas were identified during the inspection that require paving and/or curbing:

   a. The solvent tank at the cooling tower.

   b. The mixing drums at the cooling tower.

   Submit a plan and completion timetable for the construction of containment facilities in these areas.

3. None of the sumps at the facility were constructed with leak detection. It is OCD's policy that all below grade facilities now in service that do not have leak detection are required to be visually inspected yearly to insure integrity. A commitment to incorporate leak detection in the design and construction of any replacement or newly constructed facilities is also required.

4. There was evidence of many spills and/or leaks in the process area. The OCD is requiring the paving and curbing of those areas that are susceptible to leaks. Submit a plan and completion schedule for paving curbing or otherwise containing fluids in areas you identify where spills and/or leaks are likely to occur, (e.g. valves, pumps, flanges, etc.)

If you have any questions, please do not hesitate to contact me at (505) 827-5884.

Sincerely,

Roger C. Anderson

Roger C. Anderson
Environmental Engineer

RCA/sl

cc: OCD Hobbs Office

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

May 28, 1990

ALBUQUERQUE JOURNAL
717 Silver Southwest
Albuquerque, New Mexico 87102

RE: NOTICE OF PUBLICATION

ATTN: ADVERTISING MANAGER

Dear Sir:

Please publish the attached notice one time immediately on receipt of this request. Please proofread carefully, as any error in a land description or in a key word or phrase can invalidate the entire notice.

Immediately upon completion of publication, please send the following to this office:

1. **Publisher's affidavit in duplicate.**

2. **Statement of cost (also in duplicate).**

3. **CERTIFIED invoices for prompt payment.**

We should have these immediately after publication in order that the legal notice will be available for the hearing which it advertises, and also so that there will be no delay in your receiving proper payment.

Please publish the notice not later than Friday, June 1, 1990.

Sincerely,

William J. LeMay
Director

WJL/sl

Attachment

P 918 402 130

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to	Alb. Journal
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, June 1985

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

GARREY CARRUTHERS
GOVERNOR

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

May 28, 1990

PORTALES NEWS TRIBUNE
P. O. Box 848
Portales, New Mexico 88130

RE: NOTICE OF PUBLICATION

ATTN: ADVERTISING MANAGER

Dear Sir:

Please publish the attached notice one time immediately on receipt of this request. Please proofread carefully, as any error in a land description or in a key word or phrase can invalidate the entire notice.

Immediately upon completion of publication, please send the following to this office:

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Please publish the notice not later than Friday, June 1, 1990.

Sincerely,

William J. LeMay
Director

WJL/sl

Attachment

P-106 675 505

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to	Portales News Tribune
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, June 1985

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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

(GW-18) OXY USA Inc., Hans Schuster, Manager, Western Region, P. O. Box 50250, Midland, Texas 79701, has submitted an application for renewal of its previously approved discharge plan for its Bluitt Gas Processing Plant located in the NE/4, Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico. Approximately 19,500 gallons per day of process wastewater is disposed of in an OCD approved Class II injection well. The wastewater has a total dissolved solids concentration of approximately 5200 mg/l. Ground water most likely to be affected by any discharge to the surface is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks and other discharges to the ground will be managed.

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 28th day of May, 1990. To be published on or before June 1, 1990.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY, Director

S E A L

OXY USA INC.
Box 50250, Midland, TX 79710

June 08. 1990

Mr. Roger C. Anderson
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

RE: Discharge Plan GW-18 Renewal
Bluitt Gas Processing Plant
Roosevelt County, New Mexico

Dear Mr. Anderson:

We received your reply to our application for a discharge plan renewal of our Bluitt gas processing plant. On several items addressed in the application and others, discussed during a plant visit on March 16, you requested additional information, which we intend to provide in this letter.

1. Spill containment from above ground tanks that contain materials with constituents that can be harmful to fresh water and the environment if a spill occurs. Specifically there were three tanks mentioned requiring berms.

a) Vertical lubrication oil tank. A berm around the tank is expected to be completed by October 1990.

b) Waste water tank. A project is currently under way to install an additional waste water tank as well as an amine tank in the area. The group of tanks will be adequately bermed. Work is anticipated to be complete by October 1990.

c) Amine tank. Berming of the tank is expected to be completed in October 1990.

A survey, conducted in order to determine locations where tanks need to be bermed in order to meet the established requirements, resulted in an extension of this project area as follows.

d) TEG, antifreeze and stabilized condensate tanks. The three tanks are located in the same general area and will be surrounded with one common berm. Expected completion is October 1990.

e) Spent caustic tank. Expected completion is October 1990.

f) Brine tank. Expected completion is October 1990.

2. Above ground saddle tanks, other than product storage tanks, all drum storage areas and those locations mentioned under title 4. of your letter will be paved and curbed by December 1990. A plan, showing details, is currently in preparation and will be submitted to you as soon as completed.

3. Sumps and drain lines. New underground drain lines are currently under construction. The lines will be built so that they can be isolated for an annual leak test, which will be performed by operating personnel. Records of those leak tests will be maintained at the plant. The sumps, presently in operation, will remain part of the drainage system. For those too, an annual inspection and record system will be implemented by December 1990.

I will be available at your convenience for more detailed information if required.

Sincerely,

H. Schuster

Hans H. Schuster
Manager Gas Processing
Western Region

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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

> (GW-18) OXY USA Inc., Hans Schuster, Manager, Western Region, P. O. Box 50250, Midland, Texas 79701, has submitted an application for renewal of its previously approved discharge plan for its Bluitt Gas Processing Plant located in the NE/4, Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico. Approximately 19,500 gallons per day of process wastewater is disposed of in an OCD approved Class II injection well. The wastewater has a total dissolved solids concentration of approximately 5200 mg/l. Ground water most likely to be affected by any discharge to the surface is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks and other discharges to the ground will be managed.

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 28th day of May, 1990. To be published on or before June 1, 1990.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

William J. LeMay

WILLIAM J. LEMAY, Director

S E A L

OIL CONSERVATION DIVISION
RECEIVED

'90 MAR 16 AM 8 54

OXY NGL INC.
BLUITT PLANT
Milnesand, NM 88125

March 14, 1990

New Mexico Oil Conservation Division
Environmental Bureau
P.O. Box 2088
Santa Fe, N. M. 87501

Attn: Mr. Roger Anderson

Re: Emergency Waste Water Division
Bluitt Plant
Roosevelt County
Milnesand, N. M.

Pursuant to Oxy's Bluitt Plant ground water discharge plan, this letter is to inform you that on January 23, 1990, Bluitt's Plant waste water's were diverted from the disposal well system to the flare pit. This had to be done to clean out the bottom of the disposal tank. The debris (mostly mud that accumulated from transferring fluids from the flare pit) on the bottom of the tank was obstructing the disposal pump suction.

The disposal system was placed back in service on January 31, 1990. It is estimated that 900 Bbl. were diverted to the flare pit (this volume includes water's from the disposal tank). Emptying of the flare pit began on February 5, 1990 and was empty 25 days later.

Steps have been taken to prevent transferring debris to the storage tank by modifying the suction connections and rates when pulling fluids from the flare pit.

Yours truly,

Cesar J. C.

Cesar Espino
Operations Supt.
Bluitt Plant

CE/dt

OXY

OXY USA INC.
Box 50250, Midland, TX 79710

OIL CONSERVATION DIVISION
RECEIVED

'90 MAR 8 AM 9 03

March 5, 1990

Mr. David Boyer, Environmental
Bureau Chief
State of New Mexico
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504

Re: Discharge Plan GW-18
Bluitt Gas Processing Plant
Roosevelt County, New Mexico.

Gentlemen;

Enclosed are three copies of the Discharge Plan for OXY USA Inc. operated Bluitt Gas Processing Plant located in Section 15, T-8-S, R-36-E, Roosevelt County, New Mexico. This plan is submitted as required for renewal of the existing plan, which expires June 10, 1990.

If you should have any questions pertaining to this plan, please contact me at (915) 685-5822.

Respectfully yours;

Jerroll G. Sillerud

Jerroll G. Sillerud
Engineering Advisor
Western Region - Midland

cc: R. Hunt
H. Schuster
Bluitt Plant
File

OXY USA INC.

BLUITT

GAS PROCESSING PLANT

DISCHARGE PLAN

SECTION 15, TOWNSHIP 8 SOUTH, RANGE 36 EAST

ROOSEVELT COUNTY, NEW MEXICO

SUBMITTED TO:

NEW MEXICO OIL CONSERVATION DIVISION

SANTA FE, NEW MEXICO

PREPARED BY:

OXY USA INC.
P. O. BOX 50250
MIDLAND, TEXAS 79710

FEBRUARY 1, 1990

OFFICIAL CONTACT: Manager, Western Region - Hans Schuster
915/685-5834

TECHNICAL CONTACT: Environmental Advisor - Jerry Sillerud
915/685-5822

LOCAL CONTACT: Area Manager - Sohrab Tafreshi
915/332-6114

PLANT SUPERINTENDENT - HARLIE ADAMS
505/675-2311

SUMMARY

OXY USA Inc. purchased the Bluitt Plant in 1966 and has since increased acid gas recovery, installed a sulfur plant, added power generation facilities and installed a cryogenic gas processing unit with increased recovery of LPG. It is now designed to handle 25 MMCFD of gas and has 20 employees who live in the surrounding communities.

All plant wastewater flows are disposed of in a commercially operated disposal well. Eighty-seven percent of the wastewater flow is cooling tower blowdown, averaging 12 gpm. Blowdowns and spills from the process are sent to an oversized oil/water-separator. Water from the separator is pumped to the aboveground disposal storage tank while oils go to an aboveground slop oil tank. Other waste materials and by-products are contained in vessels and hauled off frequently.

Improvements have been made in recent years in the wastewater systems and more are slated this year as good insurance. The current general makeup and operations of the wastewater systems will be maintained.

TABLE OF CONTENTS

Affirmation

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

H. Schuster

(Signature)

2/26/90

(Date)

Hans Schuster

(Printed name of person signing)

Manager, Western Region

(Title)

I. INTRODUCTION

This report is submitted in accordance with Section 3-106 of the New Mexico Water Quality Control Commission Regulations, WQCC81-2, as required by the New Mexico Oil Conservation Division and includes a plan of containment for wastewater and materials associated with the operation of OXY USA Inc.'s Bluitt Gas Processing Plant.

II. HISTORY AND BACKGROUND OF THE PLANT

The original Bluitt Plant was built by Austin Rankin in 1961. It was designed to process 16 MMCFD of inlet gas applying a refrigerated lean oil process to recover propane, butane and natural gasoline. OXY USA Inc. (then Cities Service Company) purchased the Bluitt Plant from Capitan, Inc. in 1966. During 1967 and 1968, OXY added a sulfur recovery plant designed and built by the Ortloff Corporation and expanded the existing processing and treating facilities to handle 37 MMCFD of inlet gas. Ethane recovery facilities were installed in 1971. In 1979, two new sulfur condensers were purchased and installed by Stiles Energy Corporation. A new wasteheat boiler, designed by Western Research and Development, was installed in the spring of 1981. A cryogenic plant and nitrogen rejection unit was installed in 1983. The plant now processes 18.0 MMCFD of inlet gas. Products include a dementhanized mix, propane, sulfur, and condensate. Twenty people are employed and live in the surrounding communities.

III. ENVIRONMENTAL DESCRIPTION

Geology

About 200 million years ago, a shallow (Permian) sea covered the Southern High Plains. The materials laid down in this sea consisted primarily of fine sand, silt and clay. Today these sediments are known as the Permian Red Beds.

Some 185 million years ago the sea retreated, exposing rocks and sedimentary sea deposits. The subsequent weathering action on this surface created the material recognized today as the Triassic Red Beds, distinguished from the Permian sediments by being markedly more red in color. These deposits represent the floor of most of the water wells drilled throughout Roosevelt County. Some 60 million years ago, the area was again submerged by a shallow sea. This sea deposited the blue shale, blue and yellow clay, limestone, sandstone, sand, and gravel identified today as Cretaceous sediments. Only scattered areas of these Cretaceous deposits are found in Roosevelt County.

The Ogallala Formation, the water-bearing strata presently being tapped for domestic and irrigation use, resulted from the rise of the Rocky Mountain chain. As the mountains were worn down by erosion, the streams began to deposit sand, gravel and silt near their source. These deposits formed alluvial fans of course gravelly material along foot slopes of the mountains; the finer materials were moved and spread farther to the east. The Ogallala Formation developed in these deposits of outwash material. Fresh water saturated he material at times during its deposition.

Within the Pleistocene Period, the Ice Age, ice did not advance as far south as the Southern High Plains, but the wet and dry cycles of the glacial and inter-glacial periods had a marked effect on the climate, vegetation and soil of the area. Eolian sands were deposited on the dry cycles, while caliche (calcium carbonate) was precipated as a cap over wind blown material in the wet cycle. Playas were formed where the caliche was less mature. Lakes were enlarged with each cycle and new materials deposited.

Climate

Roosevelt County has a semi-arid continental climate. Winds bring moisture into the area from the Gulf of Mexico. Because of the more favorable summer wind circulation, the large majority of annual rainfall normally occurs during the months of May through September. Much of this precipitation falls in the form of brief, and at times, heavy thunder-showers. The average annual precipitation in the Milnesand area is approximately 16 inches. The average annual snowfall in the county is less than 10 inches.

The annual mean temperature of Roosevelt County is 58^{o}F. The variation in daily temperature of the county is more than 30^{o}. The average annual humidity is near 52%. During the warmest part of the day, the humidity will range from 30% in June to 40% in January.

Wind records are not available for Roosevelt County, but records at nearby stations indicate an average wind velocity of about 12 miles per hour. March normally is the windiest month of the year with an average velocity exceeding 15 miles per hours. Late in fall, velocities drop to less than 10 miles per hour.

Records showing water loss by evaporation from a Class A evaporation pan have been kept near Portales for the period from 1934 to 1960. These records show that approximately 92 inches of water are evaporated each year, or about six times the normal annual rainfall. Water loss by evaporation is greatest in June, about 12.5 inches.

In the course of obtaining approval of the Bluitt Discharge Permit, OXY USA Inc. enlisted the services of Geohydrology Associates Inc., of Albuquerque, New Mexico to conduct an in depth review of the Hydrogeology in the Bluitt Plant Area. Their review begins with "previous investigations".

Previous Investigations

Generalized reports of the geology in the Bluitt Facility area have been made in connection with regional investigations concerned with water development of oil and gas-producing formations. Selected references pertaining to the geology and hydrology of Lea and Roosevelt Counties are listed in the Bibliography.

There have been no detailed studies of the geology and water resources in the vicinity of the Bluitt facility itself. This probably is due to the fact that there are no major water users in the area. Also, the land surface offers few exposures of the underlying strata; much of the area is blanketed by stabilized dune sand or the poorly consolidated deposits of the Ogallala Formation. One of the earliest studies was made by Theis (1932, p. 98-160) which evaluated the potential development of the Ogallala aquifer. This aquifer was later studied by Cronin (1969) and Weeks and Gutentag (1981). Ash (1963) and Mourant (1971) evaluated the ground-water conditions in Lea County near the southern border of the Bluitt project area.

Stratigraphic Sequence

There are no sample logs available for wells drilled within a three-mile radius of the Bluitt Plant. However, on the basis of the studies cited in the preceding paragraph, the stratigraphic sequence can be extrapolated. According to Ash (1963, Fig. 2) the project area is underlain by a gray shale deposit equivalent to the Tucumcari Shale, or by the red and maroon deposits of the Dockum Group which is locally called the Triassic Red Beds (Fig. 3). These deposits are overlain by the Ogallala Formation and discontinuous sequence of stabilized dune sand.

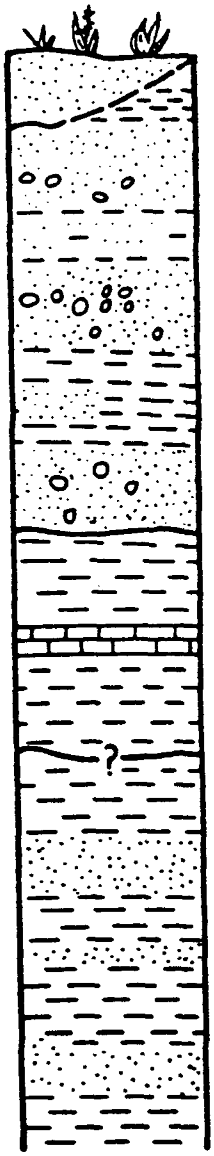
Dockum Group (Triassic Red Beds)

Rocks of the Dockum Group range in thickness from 1,400 to 2,000 feet (Nye, 1930, p. 370). Although they are known to underlie the entire project area, the actual thickness is unknown.

These rocks near Bluitt consist of two different units that are distinctive but which grade into one another. The lower part of the group has a maximum thickness of 600 feet and consists mostly of reddish sandstone but includes a relatively small proportion of variegated shale and limestone. This unit is not known to yield potable water to wells. The upper part of the Dockum Group has a maximum thickness of about 1,200 feet. This part is predominately a reddish shale but includes minor amounts of variegated shale, sandstone, conglomerate, and limestone (Adams, 1929, p. 1051; Nye, 1932, p. 237-238). It is from this unit that the name "Triassic Red Beds" was derived. This unit produces small quantities of water to stock wells.

Tucumcari Shale

The Tucumcari Shale is about 150 feet thick in southeastern Roosevelt County and generally thins toward the south west where



Physical Character	Water-Supply Potential
Recent Deposits	
Eolian sand, silt, and clay, unconsolidated	Non-water-bearing.
Ogallala Formation	
Caliche, clay, silt, sand, and gravel, poorly consolidated.	Yields small to moderate quantities of good quality water; water-bearing zones are discontinuous.
Tucumcari Shale	
Yellow shale, siltstone, with thin limestone beds.	Yields small quantities of mineralized water.
Dockum Group	
Red to brown shale, siltstone, and sandstone.	Yields small quantities of mineralized water.

Figure 3.--Geologic column and water-supply potential in the Bluitt area, Roosevelt County, New Mexico.

it pinches out in northern Lea County. At the plant site, this shale formation probably is less than 100 feet thick.

This formation generally consists of dark gray siltstone with interbedded brownish sandy limestone and sandstone. The limestone and sandstone are very lenticular and discontinuous. The Tucumcari Shale generally weathers yellow to yellowish-green, and a weathered surface is locally present on the top of the formation where it is overlain by the Ogallala Formation.

Limited quantities of ground water occur in the Tucumcari strata. Beds of sandstone near the base of the formation constitute the principal aquifer.

Ogallala Formation

In the project area, the Ogallala Formation probably ranges in thickness from 100 to about 200 feet. This range is based on data from wells located in the area. The variations in thickness are due to the irregularities of the surface of the underlying strata and to post-Ogallala erosion.

The Ogallala consists mostly of fine to very-fine sand but includes minor quantities of clay, silt, coarse sand, and gravel. The lower one-third of the Ogallala contains a higher proportion of coarse sediments than the upper two-thirds. Usually the coarse sediments occur as lenticular beds in the finer material. Extensive beds of coarse sand and gravel are found in some of the buried stream channels cut into the Mesozoic bedrock.

Most of the formation is unconsolidated, although near the top and locally within it the sediments have been cemented by calcium carbonate to form beds of caliche. The degree of cementation of the caliche varies greatly. However, in general the Ogallala is most firmly cemented near the top of the formation and where the sediments are fine and contain much silt (Nye, 1932, p. 235).

The bed of caliche at the top of the formation forms topographic promineces because of its resistance to erosion. It generally occurs at the top of most plateaus and is usually called the cap rock. There is no sharp break between the caliche cap rock and the underlying sediments because the amount of cementation decreases gradually downward. In some places the cap rock is so dense that it breaks with a semiconchoidal fracture; elsewhere it may be soft and chalk-like.

Although the Ogallala Formation locally produces large quantities of water to wells in Roosevelt and Lea Counties, the formation probably is non-water-bearing beneath the Bluitt plant site itself.

<u>Unconsolidated Deposits</u>

Soil, alluvium, and dune sand overlie the Ogallala Formation. These deposits range in thickness from 0 to perhaps 40 feet; the greatest thicknesses are present where dune development is greatest. These deposits are unconsolidated and very permeable. Although they would facilitate the downward percolation of recharge to the underlying Ogallala Formation, there is no record of water production from the alluvial or dune deposits themselves.

IV. WATER-BEARING CHARACTERISTICS

Dockum Group and Tucumcaric Shale

Due to the lack of subsurface control within a three-mile radius of the Bluitt facility, it is difficult to determine which formations are tapped by the existing wells in the area. However, since the water-bearing characteristics of the Dockum Group and the Tucumcari Shale are similar, the actual terminology is somewhat academic.

Theis (1932, p. 119) was the first to assess the production capacity of wells tapping these formations. He states, "In an area of undetermined extent in southern Roosevelt County, . . . the Mesozoic strata are fairly close to the surface and the thin Tertiary mantle does not provide sufficient water. In this area the water in the underlying Mesozoic strata is tapped. This water is used only for stock and domestic purposes. Practically all is pumped by windmills,s and the production of all wells is small." It should be noted that Theis did not differentiate between the Dockum Group and the Tucumcari Shale of Mesozoic age.

The water is produced from more porous strata that are interbedded with the shale and red beds. Some of the early wells encountered artesian conditions in these water-bearing zones; however, Theis states that the pressure was not sufficient to ascend to the level the base of the Ogallala Formation. He also reported that the wells ". . . generally find water within 100 feet or a little more . . ." after penetrating the shale or red beds.

Cooper (1960, p. 27) reports that in the Causey-Lingo area north of Bluitt, the Tucumcari Shale contains little or no water. Near the village of Dora, in T-4-S, R-34-E, the Ogallala Formation contains only a few feet of permeable material at the base of the formation, and most of the water is obtained from sandy shale and clay in the underlying red beds. Some of the well yields are less than 1/4 gpm (gallons per minute).

At the type locality, Trauger (1964, p. 27) reports that the Tucumcari Shale lack permeability. The shaly siltstone and fine-grained shaly sandstone beds of the formation absorb and transmit water at a very slow rate, but the fractures and joints in the rock are believed to be sufficiently well developed to permit small quantities of water to enter a well.

Ogallala Formation

The Ogallala Formation is one of the most highly developed and productive aquifers in eastern New Mexico and west Texas. Detailed studies of this formation have been made by Theis (1932) in the Portales area, by Cooper (1960) in the Causey-Lingo area, and by Ash (1963) in northern Lea County. In all of these areas it is not uncommon for wells to yield 100 gpm or more. However, in many areas the Ogallala is thin, and the amount of saturation may be minimal or totally lacking.

Most of the Ogallala in northern Lea County is unsaturated (Ash, 1963, Figure 2). Detailed mapping of the aquifer by Cronin (1969) and Weeks and Gutentag (1981)s show large areas where the formation is non-water-bearing. The Bluitt plant is located in an area that was considered to be non-water-bearing by Weeks and Gutentag (1981). Throughout most of southern Roosevelt County, there was insufficient water production to justify mapping (Figure 4). According to Douglas P. McAda (written communication, April 20, 1984) who participated in the Weeks and Gutentag study, "The Ogallala Formation in this area is not continuously saturated. Saturation may occur locally in low areas in the pre-Ogallala erosional surface of the underlying Cretaceous rocks. The area was not contoured because of the discontinuous nature of the saturated Ogallala material."

In summary, it is apparent that the Ogallala is capable of producing moderate to large quantities of water in those areas where there is sufficient saturated thickness. However comprehensive and regional studies have shown that throughout most of southern Roosevelt County, including the Bluitt plant site, the formation is not considered to be water-bearing.

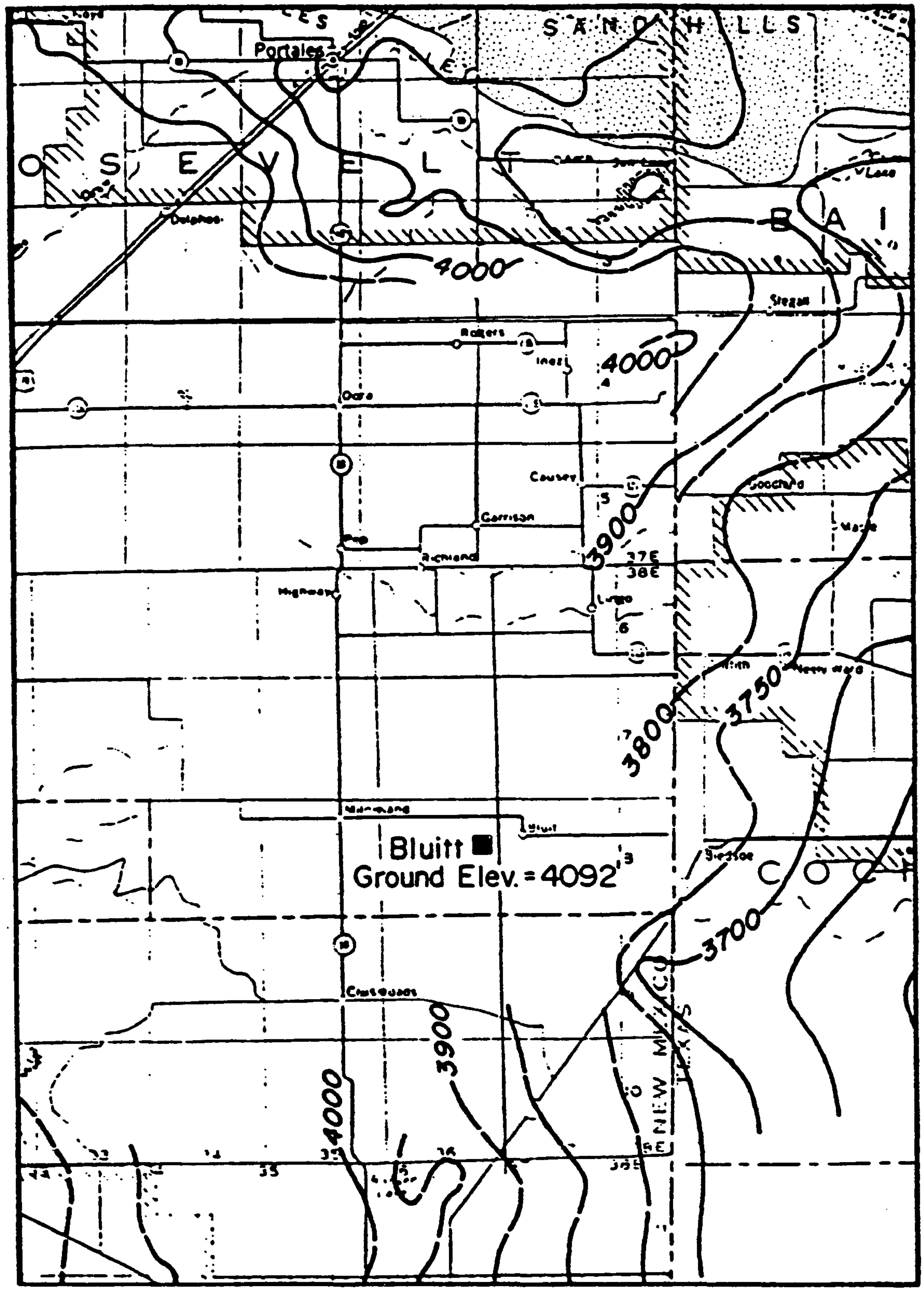


Figure 4.--Elevation of the water table in the Ogallala Formation in the vicinity of Bluitt, New Mexico. Contour interval is 50 feet. (Modified after Cities Service Company, 1982, fig. 3.1).

Chemical Quality of Ground Water

Water quality provided by Cooper (1960, Table 4) suggests that chemical characteristics of water may be used as a general guide to the source of the water-producing zones. In general, water from the Ogallala Formation is less highly mineralized than water produced by wells tapping the red beds or shale deposits.

Specific conductance, measured in micromhos, provides an indication of the amount of total mineralization in a sample of water. In general, the specific conductance multiplied by 0.65 is approximately equal to the total dissolved solids of the sample. For example, if the specific conductance is measured as 1,000 micromhos, the approximate total dissolved solids would be 650 mg/l (milligrams per liter).

In samples from the Ogallala Formation in southern Roosevelt County, the conductance ranged from 564 to 1,230 micromhos (Figure 5). The conductance ranged from 638 to 1,540 micromhos in samples collected from the shale and red bed deposits. From these reported values for specific conductance, it may be concluded that there is a wide range in mineralization in samples from both the Ogallala and the underlying strata. However, in general the mineralization is greatest in the older strata and less in the Ogallala Formation.

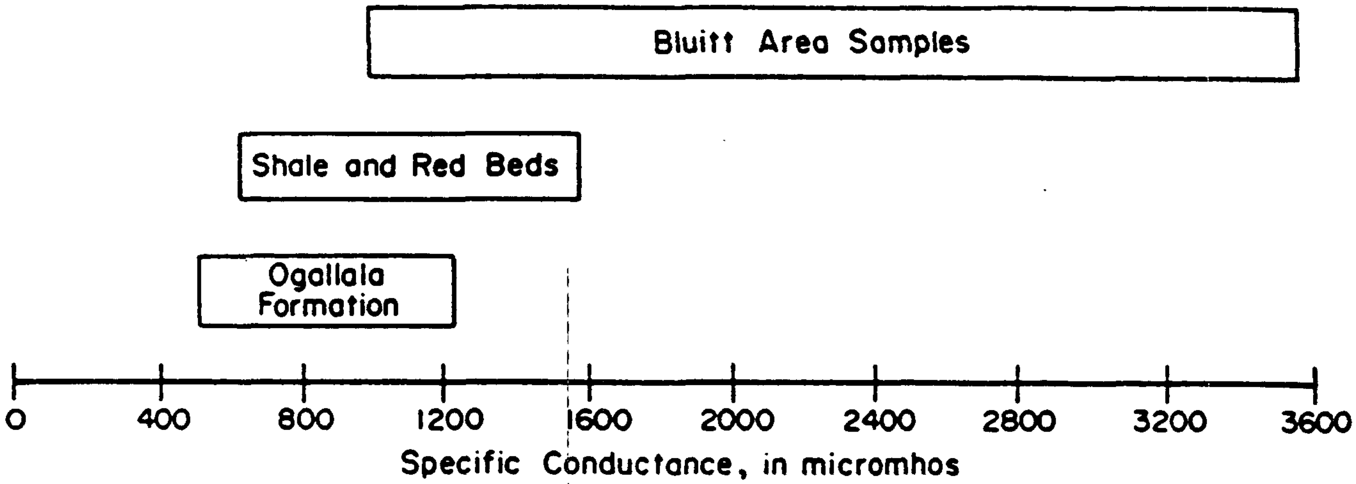


Figure 5.--Bar graphs showing range in specific conductance from water samples in southern Roosevelt County.

While conducting the inventory of wells near the Bluitt plant, samples were collected for partial analysis from three wells in the area (Table 1). Analyses from the plant water supply had previously been included in the report by Cities Service Company (1982, Table 1C). In addition, the specific conductance was measured in seven wells. These conductances indicate that the water from the Bluitt area is more highly mineralized than other water in southern Roosevelt County. Presumably most of the water near Bluitt is more closely related to the shale and red beds than to the shallower Ogallala Formations.

Ground-Water Development Near the Bluitt Plant

A total of 22 wells were inventoried during the field investigation associated with this project. Most of the wells within a radius of three miles were inventoried, as well as several wells beyond these boundaries. A summary of the data from each well is given in Table 2. A total of ten of these wells were considered to be unused and seven were considered to be totally abandoned. One well was serviceable but dry. A home located in 8.36.9.111 reports very little saturation at the base of the sand and gravel deposits, and water from the underlying shale is nonpotable.

All of the water used by the Bluitt plant is obtained under contract from Mr. R. Ainsworth from two wells located in 7.36.26.-

Table 1.--Partial chemical analyses of water samples from the Bluitt area.

Owner	R. Ainsworth	R. Ainsworth		Tyler W. Works+	L. Selman +	+	+		R. Ainsworth +
Location	7.36.26.313a "Large well"	7.36.26.313b "Small well"	7.36.32.424	8.36.1.422	8.36.14.442	8.36.17.442	8.36.18.442	8.36.33.313	8.37.5.333
Arsenic	0.001	0.004							
Cyanide	0.1	0.1							
Fluoride	0.2	0.2							
Mercury	0.002	0.002							
Nitrate	0.5	0.7							
Selenium	0.009	0.008							
Chloride	88	94			450	175			475
Iron		5.01							
Sulfate	241	522			1050	295			900
pH	7.9								
Total Dissolved Solids	809	810			2206	838			2184
Specific Conductance	1245*	1246*	990	1620	2880	1450	1540	1280	3570

* Calculated

\+ Within three-mile radius of plant

Table 2.--Records of wells in vicinity of Bluitt plant, Roosevelt County, New Mexico.

Owner	Location	Depth (feet)	Altitude (feet)	Water Level			Use*	Specific Conductance (micromhos)	Remarks**
				Depth (feet)	Date	Altitude (feet)			
R. Ainsworth	7.36.26.313a	221	4116	82	3/84	4034	I		CA available; "Large well"
R. Ainsworth	26.313b		4114				I		CA; "Small well"; used for stand-by
	27.424		4119				S		Abandoned
	32.424		4118				S	990	
Tyler W.Works	8.36. 1.422		4092				I	1620	w/i 3R
R. Ainsworth	3.444a	135	4083	126.02	3/84	3957	U		Abandoned, w/i 3R
	3.444b	131	4083	119.69	3/84	3961	U		Abandoned, w/i 3R
	9.111	±150	4115				U		Poor quality;very little saturation; w/i 3R
L. Selman	13.313	114	4073	88.96	3/84	3984	S		
L. Selman	14.442		4075				D	2880	CA available, w/i 3R
	15.324	88	4091	73.36	3/84	4018	U		Abandoned, w/i 3R
	15.342	9.5	4100				U		Abandoned, caved, w/i 3R
	17.422		4113				S	1450	CA available, w/i 3R
	18.442		4128				S	1540	w/i 3R
	25.133	105	4067	dry			U		Well serviceable but dry, w/i 3R
	29.222	15.3	4107	dry			U		w/i 3R
	33.313		4092				S	1280	
R. Ainsworth	8.37.5.333		4060				S	3570	CA available
	7.311	95	4074	88.38	3/84	3985	S		w/i 3R
	8.113	65.5	4057	dry			U		Abandoned
	19.112	131	4057	95.91	3/84	3961	U		Abandoned, w/i 3R
	20.141	183	4056	154.46	3/84	3902	U		Abandoned

* I=Industrial; S=Stock; U-Unused; D=Domestic

** CA=Chemical Analysis; w/i 3R = Within 3-mile radius of plant

313. Well 313a is called the "Large Well" and reportedly is completed at a depth of 221 feet with a static water level of 82 feet below land surface. The "Small Well", which is at the same location, is used for stand-by only. Water is also piped from these wells to other water users in the area. These two industrial wells are located approximately 3-1/2 miles north of the plant site.

Many of the operative wells in the area are used for stock watering. These wells are equipped with cylinder pumps and windmills, and therefore are capable of producing relatively large quantities of water.

The nearest well to the plant that presently is being used is owned by Mr. Lee Selman in 8.36.14.442. This well is equipped with a submersible pump and supplies water for his house and is also used for stock watering. Water from the well has a specific conductance of 2,880 micromhos which indicates that the well taps the Tucumcari Shale or the red beds. No logs are available. The Selman well is approximately 1-1/4 miles east-southeast of the Bluitt plant.

A long-abandoned well is located about 1/2 mile west-southwest of the plant at 8.36.15.324. This well had a static water level of 73.36 feet below land surface and a total depth of 88 feet; the well is capped and could not be sampled. Two open casings are located in 8.36.3.444 about 1-1/4 miles north of the plant. The water level is approximately 120 feet below land surface, but the wells were not sampled (Table 2).

V. PLANT DESCRIPTION

Location

The plant is 42 miles south of Portales and 7 miles east of Milnesand off State Highway 262. The area is basically upland range and the vicinity is fairly flat around the plant site. The site itself is at Elevation 4092', encompasses about 10 acres and is a part of a 320 acre parcel. Figure 5.0 is the location map and Figure 5.1 is the Plot Plan.

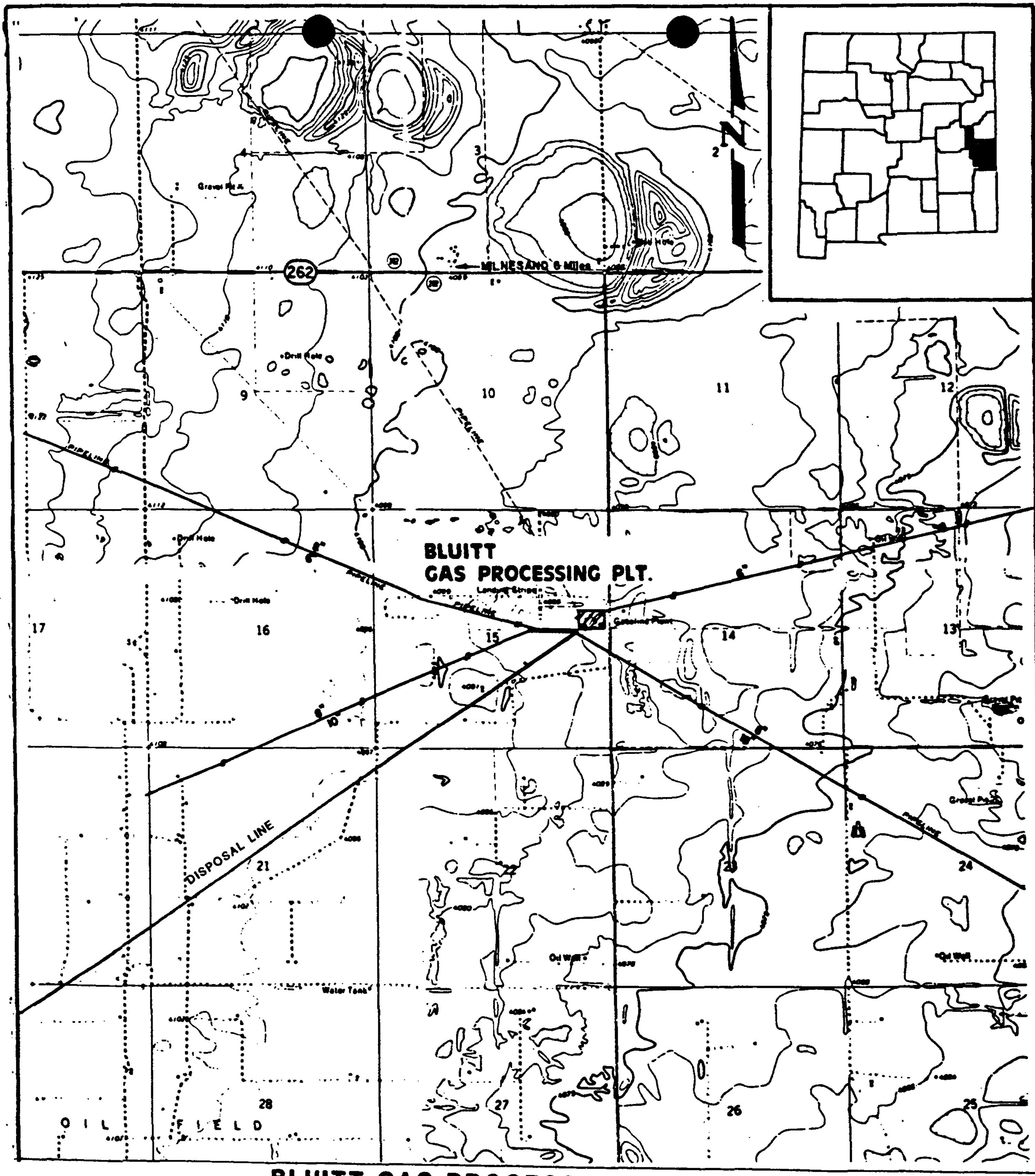
Process Description and Schematic

Inlet Gas

The inlet gas at Bluitt, which requires treating, flows to the inlet gas separator where any entrained liquids are removed as shown in the process schematic, Figure 5.2. The gas then flows to the amine contactor to "sweeten" or remove the corrosive "acid gases". CO_2 and H_2S. It then flows to the amine scrubbers. It is cooled by a series of coolers and exhangers.

Low Pressure Compression

Compressor units 12.5. 12.7 are used to compress 1700 MSCFD of low pressure inlet gas. This gas is combined with the high pressure inlet gas.



BLUITT GAS PROCESSING PLANT
ROOSEVELT COUNTY, NEW MEXICO
SECTION 15, T 8 S, R 36 E
APPROXIMATE ELEVATION 4,092'

APPROXIMATE LAT. 30 37' 17" N **APPROXIMATE LONG. 103 14' 11" W**

Figure 5.0

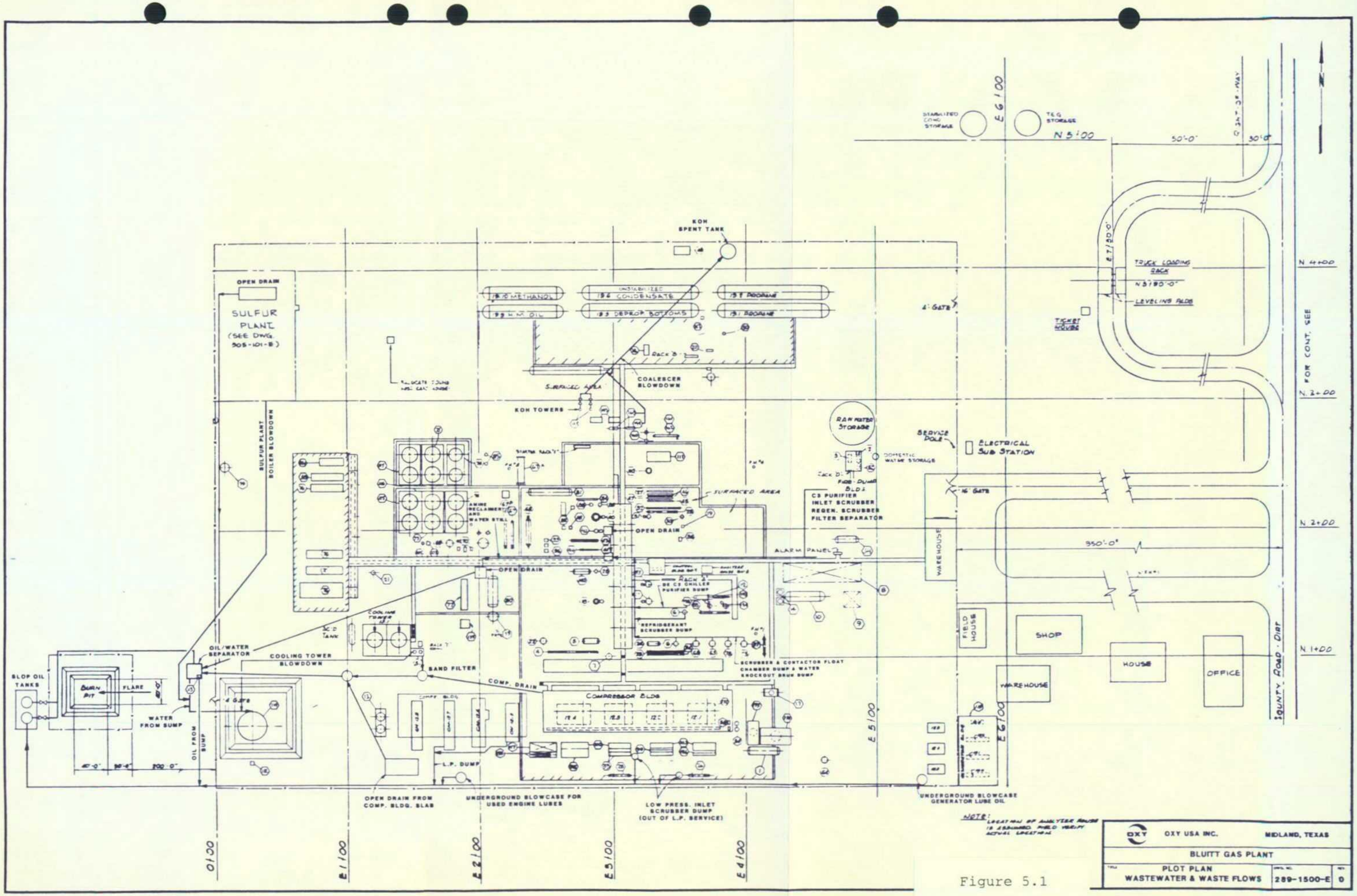

KOH SPENT TANK
OPEN DRAIN
SULFUR PLANT (SEE DWG. 305-101-B)
METHANOL
CONDENSATE
DEPROP BOTTOMS
PROPANE
COALESCER BLOWDOWN
SURFACED AREA
KOH TOWERS
SULFUR PLANT BOILER BLOWDOWN
AMINE RECLAIMER AND WATER STILL
RAW WATER STORAGE
SERVICE POLE
ELECTRICAL SUB STATION
DOMESTIC WATER STORAGE
C3 PURIFIER INLET SCRUBBER REGEN. SCRUBBER FILTER SEPARATOR
ALARM PANEL
WAREHOUSE
FIELD HOUSE
SHOP
HOUSE
OFFICE
COUNTY ROAD - DIRT
STABILIZED COND STORAGE
TEG STORAGE
N 5+00
TRUCK LOADING RACK
LEVELING PADS
TICKET HOUSE
4' GATE
16' GATE
FOR CONT. SEE
N 4+00
N 3+00
N 2+00
N 1+00
COOLING TOWER
SLOP OIL TANKS
BURN PIT
FLARE
WATER FROM SUMP
OIL FROM SUMP
OIL/WATER SEPARATOR
COOLING TOWER BLOWDOWN
SAND FILTER
COMP. DRAIN
COMPRESSOR BLDG
REFRIGERANT SCRUBBER DUMP
SCRUBBER & CONTACTOR FLOAT CHAMBER DUMP & WATER KNOCKOUT DRUM DUMP
L.P. DUMP
OPEN DRAIN FROM COMP. BLDG. SLAB
UNDERGROUND BLOWCASE FOR USED ENGINE LUBES
LOW PRESS. INLET SCRUBBER DUMP (OUT OF L.P. SERVICE)
UNDERGROUND BLOWCASE GENERATOR LUBE OIL
E 1100
E 2100
E 3100
E 4100
E 5100
E 6100
OXY USA INC.
MIDLAND, TEXAS
BLUITT GAS PLANT
PLOT PLAN
WASTEWATER & WASTE FLOWS
289-1500-E
0

Figure 5.1

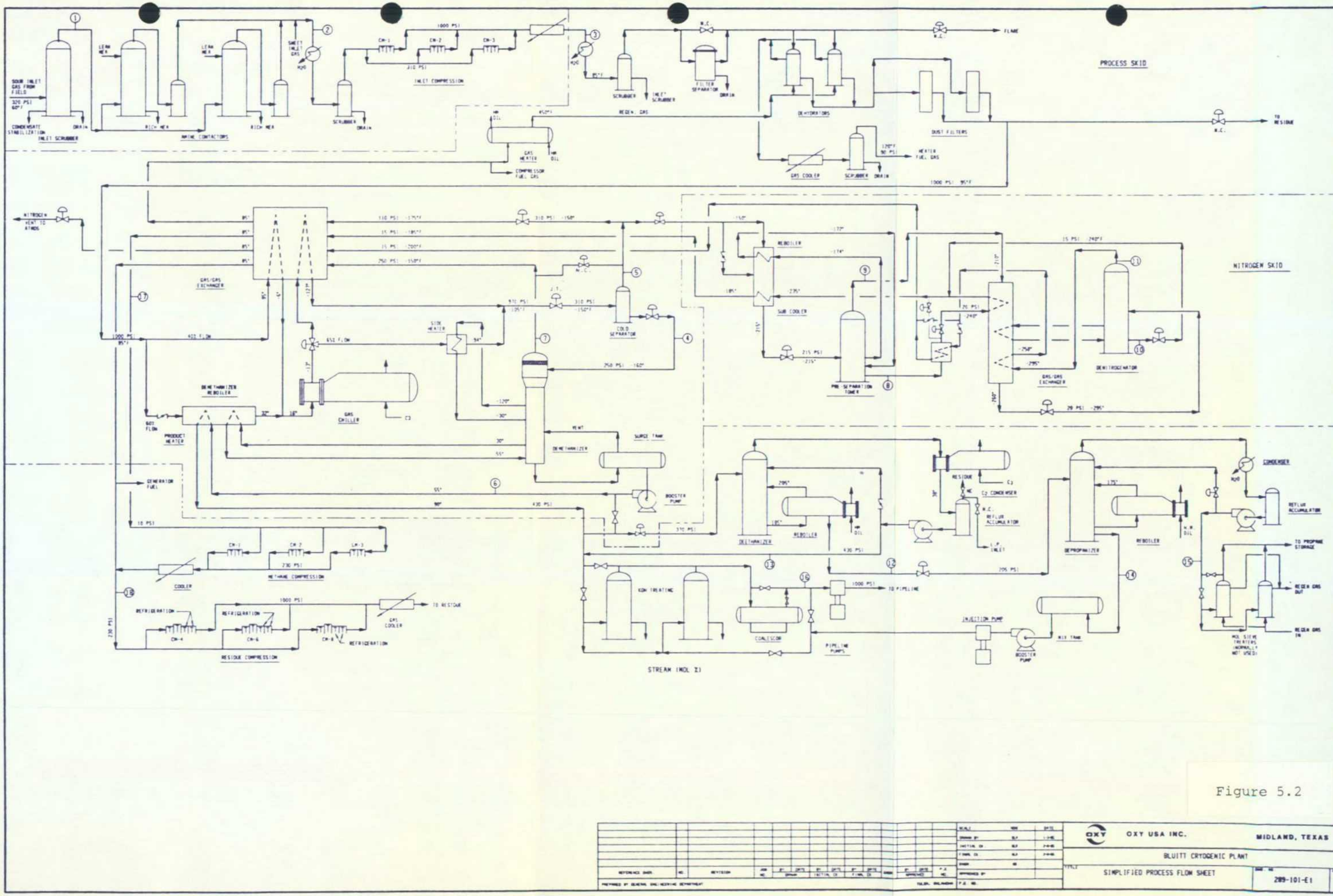

PROCESS SKID
NITROGEN SKID
INLET SCRUBBER
AMINE CONTACTORS
INLET COMPRESSION
SCRUBBER
FILTER SEPARATOR
DEHYDRATORS
DUST FILTERS
GAS COOLER
GAS HEATER
FLARE
TO RESIDUE
GAS/GAS EXCHANGER
COLD SEPARATOR
DEMETHANIZER REBOILER
PRODUCT HEATER
GAS CHILLER
DEMETHANIZER
SURGE TANK
BOOSTER PUMP
SUB COOLER
PRE SEPARATION TOWER
DENITROGENATOR
METHANE COMPRESSION
COOLER
RESIDUE COMPRESSION
DEETHANIZER
REBOILER
DEPROPANIZER
CONDENSER
REFLUX ACCUMULATOR
COALESCOR
PIPELINE PUMPS
INJECTION PUMP
MIX TANK
TO PROPANE STORAGE
STREAM (MOL %)
OXY USA INC.
MIDLAND, TEXAS
BLUITT CRYOGENIC PLANT
SIMPLIFIED PROCESS FLOW SHEET
209-101-E1
0

Figure 5.2

Inlet Compression

Inlet gas at 220 PSIA and 85°F flow from the amine scrubbers to the inlet Compressor Suction Scrubber. From there it flows in a common header to three compressors. 12.1. 12.2. and 12.3. Two cylinders (two stages, no interstage cooling) on each machine are used for inlet compression.

The inlet compressor discharge gas is air cooled to approximately 125°F by air coolers. From the air coolers, the combined gas stream flows through Inlet Gas Cooler (a water cooled exchanger). The gas temperature is cooled to 95°F at outlet of water cooler E-10. Any condensed water is removed in the Inlet Compressor Discharge Scrubber.

The Bluitt cryogenic plant is designed to process 25 MMSCFD of sweet inlet gas (after amine treating) to recover an "ethane-plus" liquid product. Approximately 93% of the ethane is recovered.

Inlet Gas Dehydration

Gas flows from the Inlet Compressor Discharge Scrubber to the Inlet Gas Filter Separator, and then to a conventional two bed molecular sieve dehydration system. This system is designed to dehydrate 25 MMSCF of inlet gas, water saturated at 1000 PSIG and 95°F. This system is time-cycle controlled to regenerate one bed while the other is adsorbing water from the inlet gas.

The regeneration gas stream is a slip stream of the 820 BTU/SCF (GHV) fuel gas from the NIJECT flash. This stream is heated to 430^{O}F by exchange with hot oil in the Regeneration Gas Heater before regenerating a bed. Gas for cooling the dehydrator beds is obtained by bypassing Hot Oil Heater fuel gas around the Regeneration Gas Heater.

Regeneration gas leaving the Dehydrators is cooled in a Regeneration Gas Cooler and then passes through the Regeneration Gas Scrubber where condensed water is removed and dumped into the open drain system. This regeneration gas then is consumed as fuel.

<u>Product Recovery</u>

Dry inlet gas from the Dust Filters flows to the platefin heat exchangers for cooling.

Four streams provide the cooling in the warm and cold gas exchangers. They are the demethanizer overheads, fuel gas, methane, and nitrogen streams.

The inlet gas stream at -105^{O}F and 975 PSIA is flashed across a J-T valve to 310 PSIA and -149^{O}F and the resultant liquid/-vapor mixture is separated in the Cold Separator (V-4). Approximately one-third of the vapor stream from V-4 is used for fuel gas at 820 BTU/SDF.GHV) while the remaining two-thirds flows to the nitrogen rejection plant. The liquid from this flash will flowonlevelcontrol to the Demethanizer. Cold overhead vapors from the Demethanizer are exchanged with the inlet gas as previously noted. The bottom produce from the demethanizer flows to a 10,000 gallon Product Surge Tank.

Nitrogen Rejection Plant

A nitrogen rich stream containing approximately 18% nitrogen and 82% methane is generated in the NIJECT flash in the liquid recovery plant. This gas stream is fed to the N2 plant and chilled and condensed in the Pre-Separator Reboiler and Pre-Separator Subcooler. This stream is then flashed to a pressure of 215 PSIA and fed on the top tray of the Pre-Separator Tower. This tower essentially is a stripper. The overhead stream is cooled and condensed to a temperature of -259^{O}F this stream is flashed to a pressure of 35 PSIA and fed to the Denitrogenation Tower. This tower separates the remaining nitrogen from the methane/nitrogen stream.

The overhead product contains 97% nitrogen and 3% methane. This stream is vented to atmosphere. The bottom product from this column is mixed with the flashed bottom product from the Pre-Separator Tower. This stream is then cross exchanged with the inlet gas stream in the liquids recovery plant and compressed from 20 PSIA to 255 PSIA by compressors CM-12.1.

12.2 and 12.3. This compressed stream is then combined with the Demethanizer overhead stream to form the final residue gas stream.

Recompression

Low pressure methane and demethanizer overhead vapors are combined at 245 PSIA and compressed to 1030 PSIA by compressors CM-12.4. CM-12.6 and CM-12.8. Two cylinders per machine will be on residue compression (first and second stage). Unit CM-12.4 handles 54% of the total flow and units CM-12.6 and CM-12.8 each handle 23% of the total flow.

Product Handling

The demethanizer bottoms flow to the Surge Tank. Product Booster Pumps are used to pump this stream to approximately 400 PSIA. This stream flows directly to the KOH treating and then to the pipeline pumps. A side stream can be flow controlled to feed the Deethanizer.

When a portion of the product stream is fed to the Deethanizer, the deethanizer overhead product stream is pumped via the existing Reflux Pump to product pipeline pump suction.

Deethanizer

The flow controlled demethanizer bottoms stream, from the Product Booster Pumps, flows through the Product Exchanger (E-5) and an exchanger on the depropanizer bottoms. This preheated stream then flows to the Deethanizer. The liquid from the tower overhead is split with part of the condensed stream used as reflux and the reminder combining with the depropanizer bottoms and the demethanizer bottoms to feed the product pipeline pumps. This overhead product is mostly ethane with traces of methane and propane.

Depropanizer

Deethanizer Bottoms are fed to the Depropanizer via the Deethanizer level control valve. Overhead vapors are condensed in a water exchanger and taken to the Depropanizer Reflux accumulator (these liquids are spec propane). These liquids are split, a portion is used for tower reflux and the reminder are taken to the propane treaters (two vessels in parallel containing "Union Carbide RK-29 sieve) and then stored in two 40,000 gallon propane storage tanks. The depropanizer bottoms are cooled with deethanizer feed liquids and stored in a 40,000 gallon butane mix tank (these liquids are butane and gasoline mixture). The product from this tank is pumped to the KOH Tower.

Refrigeration

Refrigerant compression is supplied by compressor units CM-12.4. CM-12.6 and CM-12.8. The compressed propane is condensed in the existing air coolers, the refrigerant inlet gas exchanger, and the water cooled refrigerant condenser. The condensed propane flows to the refrigerant surge tank. This liquid stream is split between the deethanizer reflux condenser and the new inlet gas chiller. The vaporized propane is returned to the suction of the refrigerant compressors.

Hot Oil System

Hot oil will be used as a heat medium for the following new and existing services:

- Inlet Gas Dehydrator Regeneration
- Depropanizer reboiling
- Amine reboiling
- Deethanizer reboiling
- Propane dehydrator regeneration
- Heat tracing

Amine System

The overhead gas from the inlet separators flows into the bottom of amine contactors. As the gas flows upward through the columns it is contacted counter currently with a 18% "lean" MEA solution which sweetens the gas by removing the acid gasses, CO_2 and H_2S. The sweetened gas leaves the top of the contactor to be processed; the acid gas leaves the bottom of the contactor in a "rich" amine solution.

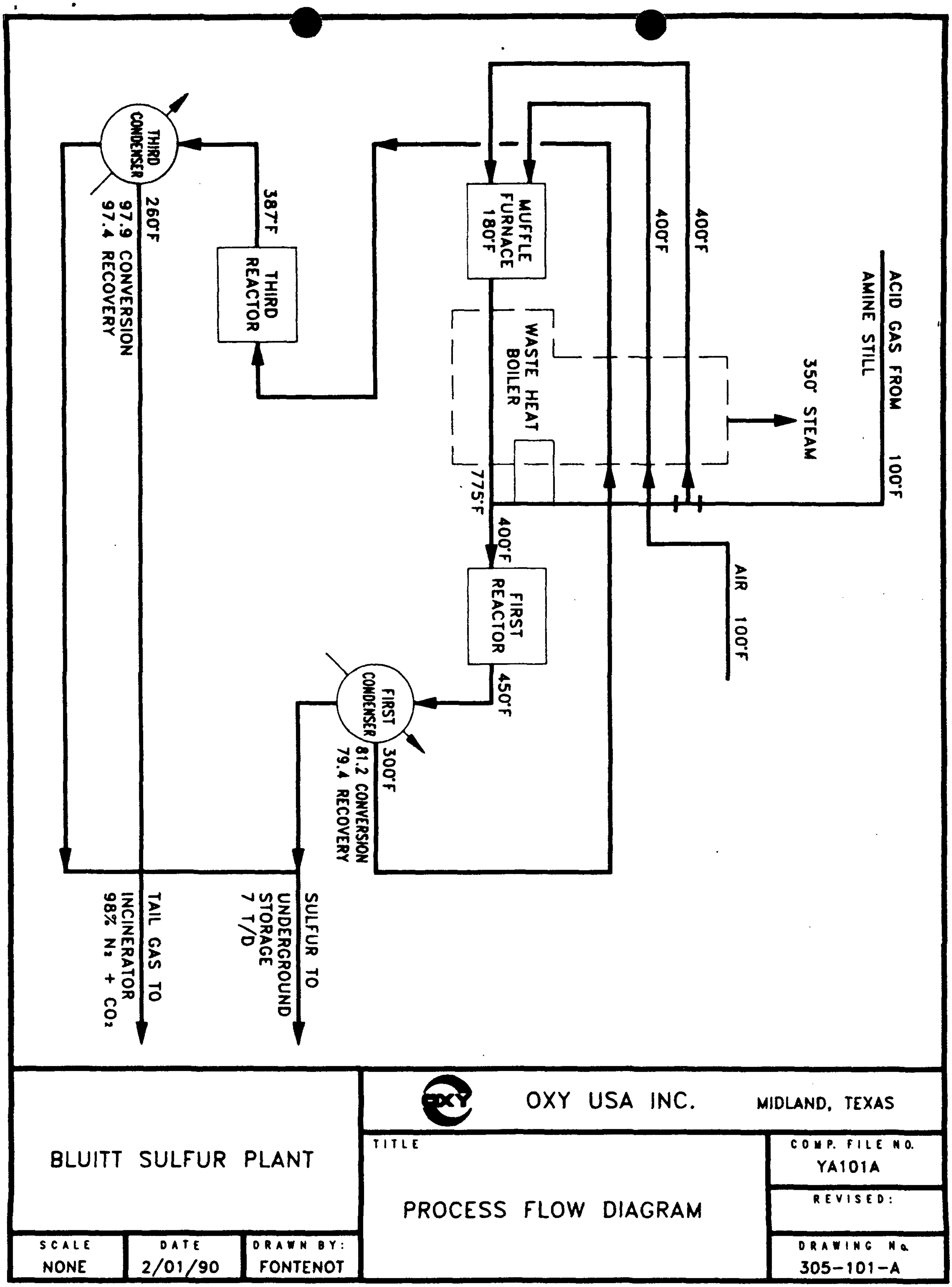
The rich amine enters a flash tank and then goes through some exchangers before it enters the top of the amine still. In the still the reboilers add heat which causes the acid gases to separate from the amine. The acid gases leave the top of the still and go to the sulfur plant where the H_2S is converted into sulfur and sold. The now "lean" amine solution leaves the bottom of the still, is cooled, and is cycled back to the contactor to be used again to sweeten inlet gas. Approximately 400 GPM of amine is circulated.

Caustic System

The caustic system is used to remove any remaining carbon dioxide and sulfur compounds from the liquid products. The caustic is solid walnut potassium hydroxide. The KOH is placed in one KOH Tower and the liquid product flows through this bed of KOH, approximately 1.5 gallons per day of water is injected to the liquid product to maintain the reaction of contaminants with the KOH. Spent caustic is drained from the bottom of the KOH Tower to the spent caustic storage tank.

Sulfur Plant Process

The process used is a modified Claus Split-Flow with preheating of the feed streams. Figure 5.3 shows the flow scheme. Acid gas (H_2S + CO_2) coming from the processing plant's reflux accumulator is passed through the inlet scrubber where entrained liquids are removed. The inlet acid gas stream is then split into two streams, both of which are preheated by the waste heat boiler. Forty percent of the preheated gas flow enters the muffle furnace. Approximately 60% of the acid gas bypasses the furnace, and rejoins the stream just before the first reactor. The inlet to the furnace contains an



ACID GAS FROM AMINE STILL
100°F
350° STEAM
AIR 100°F
400°F
400°F
MUFFLE FURNACE 180°F
WASTE HEAT BOILER
775°F
400°F
FIRST REACTOR
450°F
FIRST CONDENSER
300°F
81.2 CONVERSION
79.4 RECOVERY
THIRD REACTOR
387°F
THIRD CONDENSER
260°F
97.9 CONVERSION
97.4 RECOVERY
SULFUR TO UNDERGROUND STORAGE
7 T/D
TAIL GAS TO INCINERATOR
98% N_2 + CO_2
OXY USA INC.
MIDLAND, TEXAS
BLUITT SULFUR PLANT
TITLE
PROCESS FLOW DIAGRAM
COMP. FILE NO.
YA101A
REVISED:
SCALE
NONE
DATE
2/01/90
DRAWN BY:
FONTENOT
DRAWING No.
305-101-A

Figure 5.3

acid gas burner. In the acid gas burner assembly, a volume of air equal to one third of the total acid gas volume is mixed with 40% of the hydrogen sulfide (H_2S) stream to insure that all the H_2S is converted to sulfur dioxide, SO_2.

$$6H_2S + 3O_2 \rightleftharpoons 2SO_2 + 2H_2O + 4H_2S + 249 \text{ Kcal}$$

The hot gases from the burner pass through the muffle furnace and then into the waste heat reclaimer where the excess heat is used to generate steam. Gases enter the reclaimer at approximately 1,800° F with the outlet temperature controlled at 775° F. The gasses are then combined with the 60% volume of acid gas which bypassed the furnace and the total gas stream enters first reactor bed at 400° F. It is important to keep this temperature above 400°F, or localized condensation of sulfur will occur.

Approximately 85.6% of the hydrogen sulfide and sulfur dioxide in the gas stream is converted to sulfur in the first reactor by way of the following chemical reaction:

$$2H_2S + SO_2 \longrightarrow \frac{3}{X} S_X + 2H_2O + 22.2 \text{ Kcal}$$

This reaction is exothermic; therefore, there is a temperature rise across the catalyst bed. The gas leaves the first reactor and passes through the first sulfur-condenser.

Approximately 83.8% of the sulfur is recovered as condensed sulfur is drained to the underground storage tank. The gas exits the separator chamber at 300°F, is reheated to 400°F, and then routed to the third converter bed.

The gas is reheated to 420°F by steam and enters the third converter bed. Approximately 42% of the remaining hydrogen sulfide and sulfur dioxide is converted to sulfur. The gas passes through a condensing pass at 260°F with the liquids drained to the storage tank. The total sulfur converted is 97.92% and total sulfur recovered is 97.42%. The remaining gases are vented to the stack and tip incinerated.

A tail gas scrubber at the bottom of the stack allows the removal of entrained liquids from the gas. Vent gases are composed of about 98% nitrogen and carbon dioxide.

Heat of reaction, from burning hydrogen sulfide and from converting hydrogen sulfide and sulfur dioxide to sulfur must be removed from the process in the form of steam. The steam is used to preheat the #3 converter bed and to steam trace the liquid sulfur lines.

The waste heat reclaimer and the two sulfur condensers are steam generating units, the products are used for treatment of the water systems: UNICHEM 3030 is a phosphate based internal boiler treatment which contains sludge conditioning agents, embrittlement inhibitors, and organic synthetic polymers.

UNICHEM 3141 is a water soluble solution of catalyzed sulfite. This product is formulated for the removal of dissolved oxygen in boilers and other closed system water heating installations. UNICHEM 3141 should be injected into the storage section of the deaerator for the best effect.

UNICHEM 3200 is a stabilized ammonium based corrosion inhibitor. It is used in steam generating systems to neutralize carbon dioxide in the condensate return lines at the point of condensation. UNICHEM 3200 should be continuously fed in proportion to the quantity of makeup. The PH of the condensate should be maintained between 8.0 to 9.0.

Sodium hydroxide is added ot the boiler feed water to control alkalinity.

Water Supply

All of the water used at the plant comes from a well site 4 miles north in the SE 1/4 of Section 27, TWP 7S, R36E. Two wells are on this site and the larger, referred to as the "large well", is used virtually 100% of the time. The other functions as a backup well. Water from these wells has an initial temperature of 67^{o} F and pH of 7.9. Other parameters are given in Table 1C in Section VI.

As indicated in Figure 5.4, water is pumped to the plant at an average rate of 31.9 gpm. It is stored on the plant site in a 132,000 gallon above-ground storage tank. From there about 25% of the flow goes to the Zeolite softeners and 75%, 37.8 gpm, goes to other unsoftened uses. Of the 37.8 gpm flow, 97% goes to the cooling tower system while the remainder is used for cleanup, miscellaneous, and fire protection. The softened water is used primarily in the sulfur plant, 81%, with the rest used in closed cooling systems (jacket water), Zeolite regeneration, and in the offices.

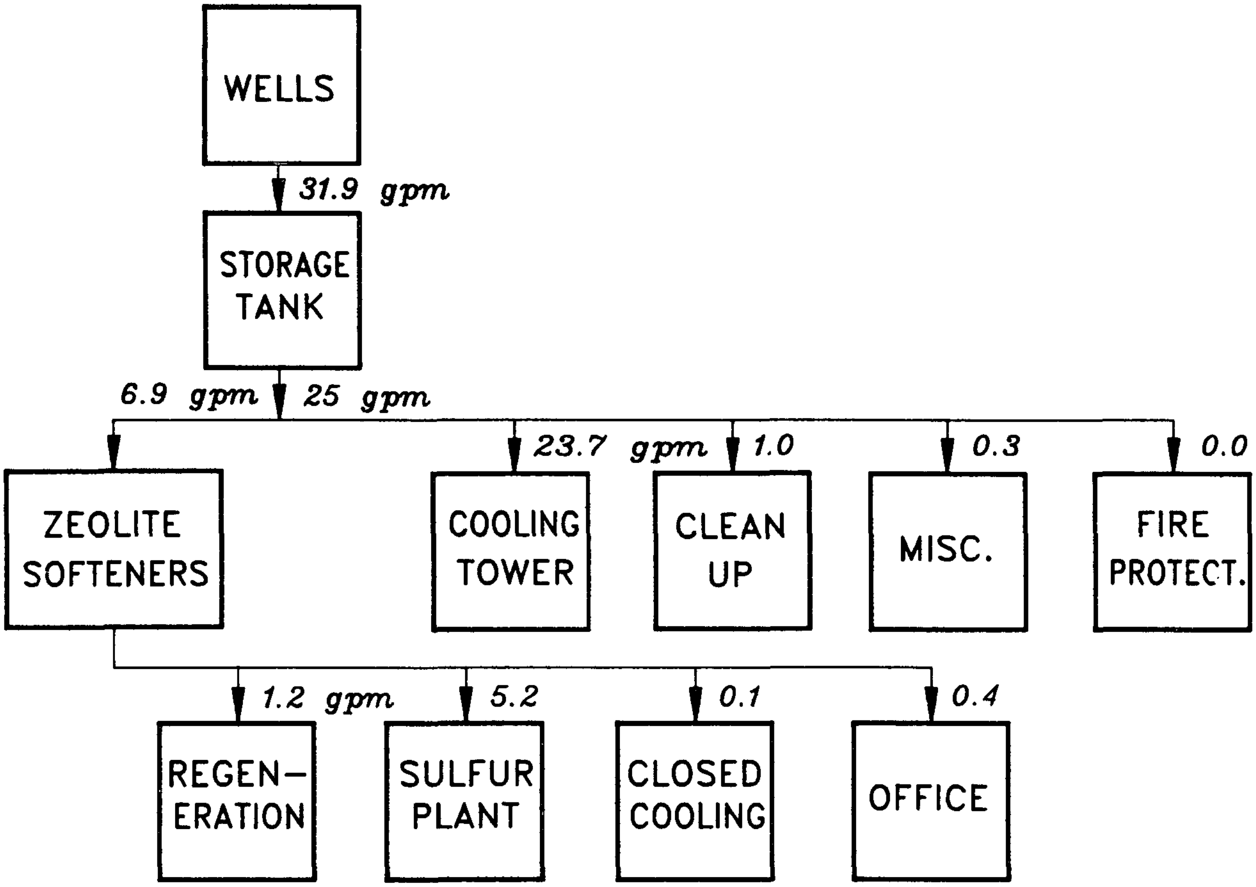


Fig. 5.4 – Water Supply Distribution

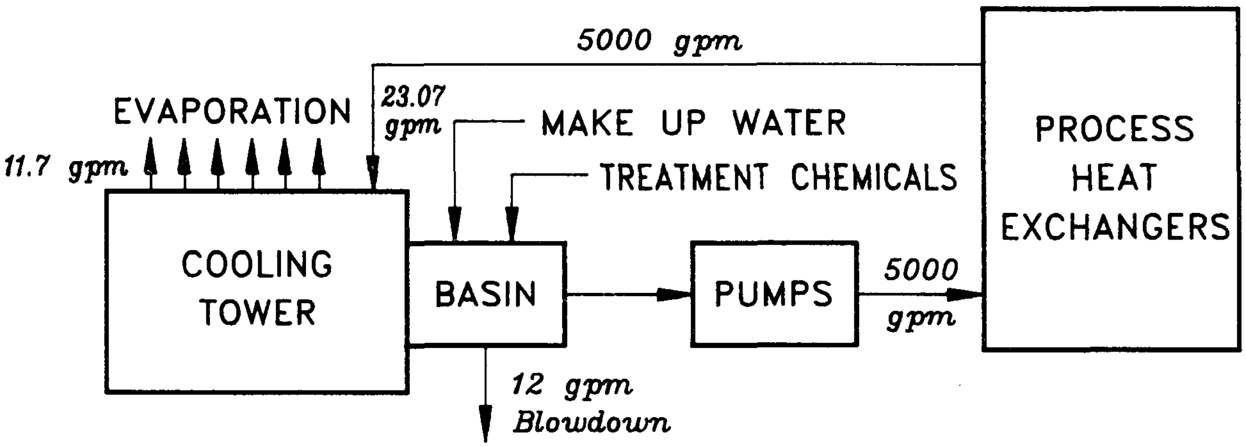


Fig. 5.5 – Cooling Tower System

OXY USA INC. MIDLAND, TEXAS

BLUITT GAS PLANT
WATER SUPPLY DIST.
& COOLING TOWER SYS.

SCALE	DATE	DRAWN BY:	APPROVED:	REVISED:	DRAWING No.
NONE	2/13/90	JRL	JS	2/20/90	289-101-A1

Cooling Water

The cooling tower system is essentially a continuous loop of water flow, Figure 5.5. Cool water is pumped from the cooling tower basin and is circulated at a rate of 5000 gpm through various plant process heat exchangers. Warm water is returned to the top of the cooling tower and is cooled by air pulled up by large fans as it is cascaded back into the basin. The cycle then begins again. Water lost to evaporation is replaced with well water held in the raw water storage tank. Environmentally safe chemicals are added to the basin to control corrosion, scale, and biological fouling.

Unichem International Company currently supplies the chemicals and administers their use. Unichem 1300 is used in the cooling tower water to prevent corrosion and scale with a phosphate formulation. It contains no chromate or zinc. It is non-toxic, and non-hazardous in system concentrations, though it is caustic and has a pH of over 12.0 as drummed. Sulfuric acid is used to keep the alkalinity in range. Also, chlorine Bayhib 305, Bayhib 302 and Unichem Alpha 570 are used for microbiological control.

The current operation utilizes three cycles; i.e. water makes three passes through the loop on the average before being discharged as blowdown. This is reflected in the water analysis data given in Section VI of this report. Here it can be seen that the concentration of some well water constituents is increased threefold, approximately, in the blowdown by evaporation.

There are closed cooling systems for thirteen large engines. The integral compressors (four Cooper Bessemers) are treated with Unichem 2320 (a non-heavy metal nitrate/borate based liquid) to prevent corrosion, and with Bayhib 479 (a chelant organic scale inhibitor with a pH of 10.6). The remaining nine engines use a 50% ethylene glycol base anti-freeze solution and water (automotive type anti-freeze).

VI. DISPOSAL PRACTICES

Slop Oil and Area Drains

The current wastewater flows at Bluitt are shown in Figure 5.1. The open gravity drains from the process area are connected to the API oil/water separator at the west end of the plant fenced area. Oil, which is skimmed off this separator, is pumped to the 210 bbl slop oil tank. This tank is surrounded by a dike to contain any possible leaks.

Also, connected to the slop oil tank is the compression condensate from low pressure. Liquids separated from inlet scrubber and other compression services are sent to the unstabilized condensate tank. These liquids are stabilized (removal of light hydrocarbon ends) and sent to the condensate tank. These condensates are purchased and hauled almost daily by Petro Source. They also pump and haul the contents of the slop oil tank whenever it reaches a level on its gauge of more than half full. Although the compression condensate tank is connected to the slop oil tank, the valve is rarely ever opened since the condensate tank has a capacity of 47,000 gallons.

At the API separator the water separated from the oil is pumped to the water disposal tank.

Flare Pit

Two horizontal flares are operated with a continuous common pilot light. Surges of gases resulting from plant problems and upsets are safely burned by means of these flares. The pit is also used for emergency containment in the event there is a failure of the disposal system. Since the flare occasionally is ignited, this pit is not suitable for conventional netting, screening, etc. Therefore, emergency storage will be added at the site so no waste water enters the pit.

The pit is 175 ft. long, 50 ft. wide and 6 ft. deep on the east end while 9 ft. at the west end. It was excavated in the natural subsoil of the area high in caliche and has a low dike all around.

Disposal Tank

Waste water fluids are accumulated in a 1,000 bbl above-ground steel storage tank until piped to a New Mexico Salt Water Disposal well located SE/NW of Sec. 7, T9S, R36E, Lea County, NM. The disposal line is inspected regularly by a contractor flying over the line. In the event the disposal line or well is inoperable, fluids are diverted to the flare pit until the problem is corrected. The OCD is advised in writing whenever the pit is used in an emergency. Once the disposal system is again operable, fluids are removed from the pit and transferred to the disposal tank.

Preparations are currently underway to install a 1,500 bbl emergency storage tank for use at times there are problems with the disposal line or well, thus eliminating the need to divert fluids to the flare pit.

Cooling Tower Blowdown

As described previously under Section V, and shown in Figure 5.5, there is an average of 12 gpm of cooling water which is wasted from the system. This keeps the minerals which are present in the unsoftened makeup water from building up excessively. This "blowdown" is pumped from cooling tower pumps to the 1,000 bbl disposal tank.

Sulfur Plant Effluent

There are two small wastewater streams from the sulfur plant which go to the 1,000 bbl disposal tank and these are both essentially clear water with a combined flow of about 1 gpm. One is waste heat reclaimer blowdown. This process unit is basically a boiler and generates steam, and condensate from this unit is removed as blowdown periodically. The other flow is from the inlet gas feed separator to the sulfur plant where water is allowed to separate from the gas flow and condense.

Closed Drain System

This gravity drainage system basically consists of trapped floor drains from the engine rooms. The drains have water in their traps as a safety precaution to prevent any possible backflow of gases. This flow is irregular since it is basically cleanup water, but is estimated to be 0.35 gpm on the average.

Spent Caustic

Caustic, dissolved from the KOH towers and caustic accumulated in the KOH coalecers, is sent to a 300 barrel steel storage tank. The tank is fully diked for leak containment. Also connected to this tank is the water bleed line from the condensate storage tank. The contents of the tank are hauled by a hazardous waste disposal firm, Cecos, about every three months. It is taken in corrosion resistant transporters to a site operated by Cecos, in Odessa, Texas.

Sanitary Sewage

Sanitary sewage from the office and employees facilities goes into a septic tank - soil absorption system on the plant property. There are 20 people employed on site 5 days per week and 1 employee on the weekend with an average flow of about 320 gallons per day.

Solid Waste

Solid waste and trash is currently burned on site. Discussions are currently underway with a waste management company to dispose of office trash, filters and other solid waste generated at the plant site.

Surface Runoff

The processing area comprises about 4 acres and drains essentially to the southeast corner of the property at a slope of 1% or less. With the Zita soil, the site use, and a Type II storm distribution, US Soil Conservation Service runoff curve number 80 was appropriate. Assuming a 10-year, 24 hour storm, 3.8 inches of rain is expected and this would result in a peak discharge of 9.5 cubic feet per second. This amount would not indicate any serious flooding potential nor would this indicate a need for hydrocarbon control at the discharge point. Examination of the discharge point itself demonstrates little or no traces of hydrocarbons.

Water Analysis Data

Samples were collected for the various effluents described in the previous paragraphs on three different dates. Samples were also collected from the two water supply wells serving the Bluitt plant. The results of the analytical testing of these samples for contaminants listed in Section 3-103 of the WOCC Regulations are given in Tables 1A, 1B and 1C. Results of tests for toxic pollutants as listed under 1-101X are given in Table 2. As specified in the Regulations they were collected, preserved and analyzed in accordance with the techniques prescribed in Methods for Chemical Analysis of Water and Waste (EPA) and Standard Methods for Examination of Water and Wastewater (APHA). The Cities Service Central Analytical Laboratory used the EPA techniques while Bay Chemical, who collected and analyzed the samples of June 8, 1982, employed the latter techniques.

The cooling tower blowdown, Table 1A, was within the standard on 29 out of the 33 parameters on June 15, 1982, when all parameters were tested. On the two other sampling days there were only three additional parameters which were exceeded. The sulfur plant blowdown exceeded for eight parameters, but this is a very low flow, one gpm. Sulfate, where the exceedance was the greatest, would amount to 21 pounds per day at 1754 mg/1, total. This amounts to but a small portion of the 145 pounds of sulfate which comes into the plant each day at 241 mg/1 from the normally used "large" well. By the same taken, the 8984 mg/1 of Total Dissolved Solids appears to be a lot in the API separator effluent, but this amounts to 14 pounds per day at its low flow of 187.5 gpd. This could be compared with the incoming 487 pounds per day of TDS in the well water.

Table 1A

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

	Parameter and Standard (Max)		Cooling Tower Blowdown 5/26	6/8	6/15	Sulfur Plant Blowdown 6/8
A.	Arsenic	0.1	0.017		0.011	
	Barium	1.0	ND		ND	
	Cadmium	0.01	ND		ND	
	Chromium	0.05	ND		ND	
	Cyanide	0.2	1.8		0.1	
	Fluoride	1.6	0.4		2.4	
	Lead	0.05	0.44		ND	
	Total Mercury	0.002	BDL(.0002)		0.002	
	Nitrate Nitrogen	10.0	2.7		3.6	
	Selenium	0.05	0.07		0.017	
	Silver	0.05	ND		ND	
	Benzene	0.01			ND	
	PCB's	0.001	ND		ND	
	Toluene	15.0			ND	
	Carbon Tetrachloride	0.01			ND	
	EDC	0.02			ND	
	1, 1-DCE	0.005			ND	
	PCE	0.02			ND	
	TCE	0.1			ND	
B.	Chloride	250.	15.5	350	211	155
	Copper	1.0	ND	0.02	ND	0.02
	Iron	1.0	ND	0.08	ND	0.42
	Manganese	0.2	ND	<0.02	ND	0.04
	Phenols	0.005	0.004	0.24	0.017	<0.002
	Sulfate	600	2647	896	968	376
	Total Dissolved Solids	1000.	5233	2252	3085	1268
	Zinc	10.0	BDL(.005)	0.84	ND	0.53
	pH (Std Units)	6 to 9	7.1	7.4	7.9	10.3
C.	Aluminum	5.0	ND		ND	
	Boron	0.75			ND	
	Cobalt	0.05	ND		ND	
	Molybdenum	1.0	ND		ND	
	Nickel	0.2	ND		ND	

BDL - Below Detection Limit
ND - None Detected
NES - Not Enough Sample

Table 1B

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

	Parameter and Standard (Max)		Sulfur Plant Blowdown 6/15	Sulfur Plant Inlet Scrubber 6/8	API Separator 6/8	Sulfur Plant Condensate 6/8
A.	Arsenic	0.1	0.007			
	Barium	1.0	ND			
	Cadmium	0.01	ND			
	Chromium	0.05	ND			
	Cyanide	0.2	0.1			
	Fluoride	1.6	4.5			
	Lead	0.05	ND			
	Total Mercury	0.002	0.003			
	Nitrate Nitrogen	10.0	16.4			
	Selenium	0.05	0.018			
	Silver	0.05	ND			
	Benzene	0.01	ND			
	PCB's	0.001	ND			
	Toluene	15.0	ND			
	Carbon Tetrachloride	0.01	ND			
	EDC	0.02	ND			
	1, 1-DCE	0.005	ND			
	PCE	0.02	ND			
	TCE	0.1	ND			
B.	Chloride	250.	450	400	195	7.0
	Copper	1.0	ND	<0.01	0.27	0.02
	Iron	1.0	0.91	<0.02	2.7	0.08
	Manganese	0.2	ND	<0.02	0.2	<0.02
	Phenols	0.005	0.062	0.28	1.13	0.53
	Sulfate	600	1754	28.4	564	17.0
	Total Dissolved Solids	1000.		108	8984	88
	Zinc	10.0	ND	5.1	6.3	0.53
	pH (Std Units)	6 to 9	10.1	6.6	9.8	9.0
C.	Aluminum	5.0	ND			
	Boron	0.75	ND			
	Cobalt	0.05	ND			
	Molybdenum	1.0	ND			
	Nickel	0.2	ND			

BDL - Below Detection Limit
ND - None Detected
NES - Not Enough Sample

Table 1C

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

	Parameter	Standard (Max)	Hi. Press. Inlet Sep. 6/8	Large Well 6/15	Small Well 6/15
A.	Arsenic	0.1		0.001	0.004
	Barium	1.0		ND	ND
	Cadmium	0.01		ND	ND
	Chromium	0.05		ND	ND
	Cyanide	0.2		0.1	0.1
	Fluoride	1.6		0.2	0.2
	Lead	0.05		ND	ND
	Total Mercury	0.002		0.002	0.002
	Nitrate Nitrogen	10.0		0.5	0.7
	Selenium	0.05		0.009	0.008
	Silver	0.05		ND	ND
	Benzene	0.01		ND	ND
	PCB's	0.001		ND	ND
	Toluene	15.0		ND	ND
	Carbon Tetrachloride	0.01		ND	ND
	EDC	0.02		ND	ND
	1, 1-DCE	0.005		ND	ND
	PCE	0.02		ND	ND
	TCE	0.1		ND	ND
B.	Chloride	250.	255	88	94
	Copper	1.0	1.0	ND	ND
	Iron	1.0	<0.02	BDL	5.01
	Manganese	0.2	1.0	ND	ND
	Phenols	0.005	1.25		
	Sulfate	600	279	241	522
	Total Dissolved Solids	1000.	2892	809	810
	Zinc	10.0	17.0	ND	ND
	pH (Std Units)	6 to 9	6.8	7.9	
C.	Aluminum	5.0		ND	ND
	Boron	0.75		ND	ND
	Cobalt	0.05		ND	ND
	Molybdenum	1.0		ND	ND
	Nickel	0.2		ND	ND

BDL - Below Detection Limit
ND - None Detected
NES - Not Enough Sample

Table 2

WATER ANALYSIS DATA

BLUITT 6/15/82

TOXIC POLLUTANTS

	Cooling Tower Blowdown	Sulfur Plant Boiler Blowdown	Large Well	Small Well
acrolein	ND	ND	ND	ND
acrylonitrile	ND	ND	ND	ND
benzene	ND	ND	ND	ND
carbon tetrachloride	ND	ND	ND	ND
monochlorobenzene	ND	ND	ND	ND
1, 2-dichloroethane	ND	ND	ND	ND
1, 1, 2, 2-tetrachloroethane	ND	ND	ND	ND
1, 1, 1-trichloroethane	ND	ND	ND	ND
1, 1, 2-trichloroethane	ND	ND	ND	ND
chloroform	ND	ND	ND	ND
1, 1-dichloroethylene	ND	ND	ND	ND
dichloropropenes	ND	ND	ND	ND
ethylbenzene	ND	ND	ND	ND
bromodichloromethane	ND	ND	ND	ND
bromomethane	ND	ND	ND	ND
chloromethane	ND	ND	ND	ND
dichloromethane	ND	ND	ND	ND
tribromomethane	ND	ND	ND	ND
trichlorofluoromethane	ND	ND	ND	ND
tetrachloroethylene	ND	ND	ND	ND
toluene	ND	ND	ND	ND
trichloroethylene	ND	ND	ND	ND
vinyl chloride	ND	ND	ND	ND

ND - Non-Detected

In Table 2 it can readily be seen that none of the indicated 23 toxic pollutants were detected in any of the four samples shown. There are only several pollutants in Table 2 that anyone might suspect would be in the two effluents, but it was no additional trouble for the lab to run the extra tests. Of the other 19 toxic pollutants in the list of 42 under Section 1-101X, only one is at all expected in any of the plant effluents. This is phenol and it was detected in each of the wastewater samples as shown in the preceding table.

VII. DISCHARGE PLAN

Disposal Methods

The present wastewater volume and character is not projected to change at Bluitt. The current methods and procedures for waste liquid containment and disposal at the plant, greatly improved over the past few years, will also remain essentially the same. A three foot dike was constructed around the slop tanks to contain any possible spillage.

There are several additional improvements to facilities which will be made this year:

1. A 1,500 bbl steel tank will be installed for use as tankage in the event there is a problem with normal disposal from the plant site (completion April,1990).
2. A curbed concrete pad will be built for the purpose of storing drums of chemicals used in plant operations (completion March, 1990).
3. Additional dikes will be constructed around storage tanks equal to 1-1/3 containment volume of the tank (completion date October, 1990).
4. The two existing below grade blow cases will be removed (completion date July, 1990).
5. Underground drain lines will be pressure tested to ascertain integrity (completion date September, 1990).

6. Will install drip pans or some other similar means to eliminate dripping from valves on active drums (completion date March, 1990).

<u>Contingency</u>

The probability of interruption of wastewater system operations because of power failure is very low for two reasons. most of the basic systems are gravity flow and the plant generates its own power with three on site generators.

The plant would not continue to operate without power after some length of time. In this case, there would be little or no wastewater generated. However, there is plenty of emergency storage capacity in the one significant system depending on electric pumps for discharge, the API separator. As pointed out in Section VI, the water pump only pumps 187.5 gallons per day, normally. The pump contains three to four days storage, at minimum for water and at least as many for oils. Vacuum trucks can be used to retrieve and dispose of the fluids.

If a power failure occurs power can be restored in less than an hour at this plant since it is attended 24 hours/day. It should be noted that the plant has gone a number of one year stretches in recent years with no interruption of power at all.

Inspection and Reporting

All parts of the wastewater systems above ground are checked daily as part of the operator's normal rounds. Maintenance personnel check and service mechanical items such as pumps on a regular schedule. Problems with any of these systems are reported to the appropriate personnel for proper and timely action.

Unlikely as they may be, any spills of hazardous materials occurring on the company property, any significant liquid hydrocarbon (such as condensates and slop oil) spills, and any significant gas leaks will be reported to the Hobbs District Office or designated Oil Conservation Division personnel.

Such notifications will be immediate if human health is endangered, if there is or will be substantial damage to property, or if the substance reaches or threatens to reach a watercourse. Follow-up reports describing the episode, cleanup and corrective action taken and like reports of other minor incidents will be made in written form and will be filed within 10 days.

If there is any proposal for any major modifications to the plant or to the wastewater streams, advanced notification will be made to the Oil Conservation Division giving the particulars.

Plan Summary

1) Hydrology, subsurface geological information and local well water history indicates there is insufficient data available to establish whether or not continuity exists in the various water bearing zones.

2) All plant process wastewater will be collected in steel disposal tanks.

3) In the event of emergency conditions, the disposal tank level will be maintained by removing water which will be hauled to the disposal well. In addition, a 1,500 BBL steel tank is being added to the system for use during emergency situations. Once installed; an application for an Exception to Rule 312 (Netting Requirement) will be made to the OCD.

4) Surface collection tankage will be inspected daily and levels maintained by sale of byproducts and contracted truck hauling for disposal.

5) Curbed and impervious concrete pad will be installed for chemical drum storage to prevent discharge.

6) Berm or dikes will be built around other chemical storage tanks.

7) Any spills will be properly reported and cleanup/cor-reactive action detailed.

VIII. CONCLUSIONS

Aside from the foregoing considerations, population in the Bluitt area is very sparse. There are no towns for many miles east-southeast of the plant, the direction of groundwater flow in the surrounding areas. If it were hypothesized that water left the Bluitt area and traveled ESE at a rate of 150 feet per year, as thought, the first town it would reach would be Bledsoe, Texas, 352 years later.

The major portion of the wastewater generated at the facility is from cooling tower blowdown, 87%. For several years now, there have been no toxic treatment chemicals used in the water. Only non-metallic type treatments have been employed. The test results seen in Table 1A bear this out.

The exceedances of the standard in Table 1A were mainly due to the concentrating effects of the system on the raw well water as discussed in Section VI, plus the addition of sulfuric acid for pH and alkalinity control. The only parameters which were over their standard on all their samples were sulfate (SO_4)and Total Dissolved Solids (TDS). The standards are essentially U.S. Environmental Protection Agency Drinking Water Standards for public water supplies. Standards were included for SO_4 and TDS, not because of any direct health hazard, but because of the laxative effect each may have upon humans.

With the improvements of recent years in the plant's wastewater facilities and the improvements projected for this year, any impact to the surface or subsoil will be minimized.

IX. BIBLIOGRAPHY

1. Adams, J. E., 1929, Triassic of West Texas: American Association of Petroleum Geologists Bulletin, v. 13, no. 8, p. 1045-1055.

2. Ash, Sidney, R., 1963, Ground-Water Conditions in Northern Lea County, New Mexico: U. S. Geological Survey Hydrologic Investigations Atlas HA-62, 2 sheets.

3. Cooper, James B., 1960, Ground Water in the Causey-Lingo Area, Roosevelt County, New Mexico: New Mexico State Engineer Technical Report 14, 51 p.

4. Cronin, J.G., Ground Water in the Ogallala Formation in the Southern High Plains of Texas and New Mexico, Hydrologic Investigations Atlas HA-330, U.S. Geological Survey, Washington, DC, 1969.

5. Hudson, J.D., Ground-Water Levels in New Mexico, 1977, New Mexico State Engineer, Santa Fe, NM, 1980.

6. McDougal, L.F. and C. M. Jackson, Peak Rates of Discharge for Small Watersheds, Chapter 2,

Engineering Field Manual for Conservation Practices, U.S.D.A., Soil Conservation Service, Albuquerque, NM, 1973.

7. Miller, J. F., R. H. Frederick, and R. J. Tracey, NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States, Volume IV - New Mexico, U.S. Department of Commerce, National Weather Service, MD, 1973.

8. Mourant, W. S., 1971, Saturated Thickness of Post-Mesozoic Deposits in the Central and Northern Parts of Lea County, New Mexico, January 1962: New Mexico State Engineer Maps LC4 and LN4, 2 sheets.

9. New Mexico Geological Society, Guidebook of Southeastern New Mexico, Fifth Field Conference, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM, 1954.

10. Nye, S. S., 1930, Shallow Ground-Water Supplies in Northern Lea County, New Mexico: New Mexico State Engineer 9th Biennial Report, 1928-1930, p. 363-387.

11. Nye, S. S., 1932, Progress Report on the Ground-Water Supply of Northern Lea County, New Mexico: New Mexico State Engineer 10th Biennial Report, 1930-1932, p. 229-251.

12. Soil Conservation Service, Soil Survey Roosevelt County, New Mexico, United States Department of Agriculture, Washington, DC, 1967.

13. Theis, C. V., 1932, Report on Ground Water in Curry and Roosevelt Counties, New Mexico: New Mexico State Engineer 10th Biennial Report, p. 98-160, 6 figs.

14. Trauger, F. D. and Bushman, F. X., 1964, Geology and Ground Water in the Vicinity of Tucumcari, Quay County, New Mexico: New Mexico State Technical Report 30, 178 pgs.

15. Tuan, Y., C. E. Everard, J. G. Widdison, and I. Bennett, The Climate of New Mexico, State Planning Office, Santa Fe, NM, 1973.

16. Weeks, J. B., E. D. Gutentag, Bedrock Geology, Altitude of Base, and 1980 Saturated Thickness of the High Plains Aquifer in Parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming:

Hydrologic Investigations Atlas HA-648, U.S. Geological Survey, Reston, VA, 1981.

X.

APPENDIX

CITIES SERVICE

INTEROFFICE LETTER - CA-206-82

June 25, 1982

TO: Mr. Steve Innes

FROM: Paul M. Kerschner

SUBJECT: Samples Water Effluent - Bluitt & Abo

Listed below are the analyses of the first set of water effluent samples from Bluitt and Abo. Sample size limited the number of tests run.

Test	Bluitt [redacted] 5/26/82	Abo Sample 5/27/82
Volatile Organic	None detected	Not enough sample
PCB	None detected	"
Chlordane & penta-chloro phenol	None detected	"
pH	7.1	5.6
Chloride (cl^-)	15.5 ppm	2.4 ppm
Sulfate($SO_4^=$)	2647 ppm	39 ppm
Total dissolved solids	5233 ppm	61 ppm
Nitrate (No_3^-)	12 ppm 2.7 ppm as NO_3-N	5.6 ppm 1.3 ppm as NO_3-N
Cyanide (CN^-)	1.8 ppm	N.E.S.
Fluoride (F^-)	0.4 ppm	0.2 ppm
Phenol	0.004 ppm	0.031 ppm
Metals		
Cadmium	None detected	None detected
Chromium	"	"
Lead	0.44 ppm	"
Copper	None detected	"
Silver	"	"
Nickel	"	"
Zinc	BDL (0.005 mg/l)	BDL
Arsenic	0.017 ppm	BDL (0.002 mg/l)
Selenium	0.07 ppm	0.004 ppm

Metals	Bluitt Sample	Abo Sample
Mercury	BDL (0.0002 mg/l	BDL
Barium	N. D.	N. D.
Iron	N. D.	N. D.
Manganese	N. D.	N. D.
Aluminum	N. D.	N. D.
Cobalt	N. D.	N. D.
Molybdenum	N. D.	N. D.

BDL - Below detection limit - response on instrument, but less than one would get at the lowest detection limit.

N. D. - NONE DETECTED; no instrument response.

If, after reviewing the data, you have any questions please call.

PMK:jcg

BAY CHEMICAL AND SUPPLY CO.

P. O. BOX 1581
CORPUS CHRISTI, TEXAS 78403

WATER ANALYSIS REPORT*

COMPANY Cities Service-Bluitt Plant DATE SAMPLED June 8, 1982

LOCATION New Mexico DATE RECEIVED June 12, 1982

SAMPLE DESCRIPTION	Inlet Scrubber to Sulfur Plant	Cooling Tower Blowdown	API Separator	High Pressure Inlet Separator	Boiler Blowdown
P ALKALINITY					
M ALKALINITY					
BICARBONATE (HCO_3)					
CARBONATE (CO_3)					
HYDROXIDE (OH)					
CHLORIDE (Cl)	400	350	195	255	155
SULFATE (SO_4)	28.4	896	564	279	376
PHOSPHATE (PO_4)					
CHROMATE (CrO_4)					
SILICA (SiO_2)					
BIOCHEMICAL OXYGEN DEMAND					
CHEMICAL OXYGEN DEMAND					
TOTAL HARDNESS ($CaCO_3$)					
CALCIUM (Ca)					
MAGNESIUM (Mg)					
SODIUM (Na)					
IRON (Fe)	<0.02	0.08	2.7	<0.02	0.42
COPPER (Cu)	<0.01	0.02	0.27	1.0	0.02
ZINC (Zn)	5.1	0.84	6.3	17.0	0.53
TOTAL SUSPENDED SOLIDS					
TOTAL DISSOLVED SOLIDS	108	2252	8984	2892	1268
CONDUCTIVITY (MMHOS)	2960	2720	5390	2840	1860
pH	6.6	7.4	9.8	6.8	10.3
OIL AND GREASE					
SAMPLE NUMBER	145	146	147	148	149
Phenols	0.28	0.24	1.13	1.25	<0.002
Manganese	< 0.02	<0.02	0.2	1.0	0.04

*All results are in parts per million unless otherwise indicated.

BAY CHEMICAL AND SUPPLY CO.

P. O. BOX 1581
CORPUS CHRISTI, TEXAS 78403

WATER ANALYSIS REPORT*

COMPANY Cities Service-Bluitt Plant DATE SAMPLED June 8, 1982
LOCATION New Mexico DATE RECEIVED June 12, 1982

SAMPLE DESCRIPTION	Condensate				
P ALKALINITY					
M ALKALINITY					
BICARBONATE (HCO_3)					
CARBONATE (CO_3)					
HYDROXIDE (OH)					
CHLORIDE (Cl)	7.0				
SULFATE (SO_4)	17.0				
PHOSPHATE (PO_4)					
CHROMATE (CrO_4)					
SILICA (SiO_2)					
BIOCHEMICAL OXYGEN DEMAND					
CHEMICAL OXYGEN DEMAND					
TOTAL HARDNESS ($CaCO_3$)					
CALCIUM (Ca)					
MAGNESIUM (Mg)					
SODIUM (Na)					
IRON (Fe)	0.08				
COPPER (Cu)	0.02				
ZINC (Zn)	0.53				
TOTAL SUSPENDED SOLIDS					
TOTAL DISSOLVED SOLIDS	88				
CONDUCTIVITY (MMHOS)	165				
pH	9.0				
OIL AND GREASE					
SAMPLE NUMBER	150				
Phenols	0.53				
Manganese	$<$0.02				

*All results are in parts per million unless otherwise indicated.

High Pressure Inlet Sep - Raw coming into plant
Boiler blowdown - Sulfur plant waste heat reclaimer
Condensate - boiler condensate from leak @ sulfur plant

TUESDAY, JUL 20, 1982 12:57:47

SAMPLE NUMBER : 3222
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : [redacted]
INNES

DESCRIPTION : CT SAMPLES
ORIGINATORS NUMB : Bluitt Plant Cooling Tower Blowdown

DATE PERFORMED	RESULTS	TEST
13JUL82	211MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	2.4MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected
08JUL82	AS-0.011PPM SE-0.017PPM BA-ND AG-ND CD-ND CU-ND CR-ND FE-ND PB-ND MN-ND' HG-0.002PPM	METALS BY AA
13JUL82	16MG/L	NITRATE
07JUL82	NONE DETECTED	POLYCHLORINATED BIPHENYLS IN WATER
15 Jun 82	7.9	pH (Tested onsite with portable probe/meter)
15 Jun 82	76 °F	Temperature (Mercury thermometer onsite, in situ)

TUESDAY, JUL 20, 1982 12:57:47 Con't

SAMPLE NUMBER : 3222
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : [redacted] INNES

DESCRIPTION : CT SAMPLES
ORIGINATORS NUMB : Cooling Tower Blowdown, Bluitt

DATE PERFORMED	RESULTS	TEST
13JUL82	968MG/L	SULFATE
13JUL82	3035MG/L	TOTAL DISSOLVED SOLIDS
13JUL82	.017MG/L	TOTAL PHENOL IN WATER

TUESDAY, JUL 20, 1982 12:[illegible]:47

SAMPLE NUMBER : 3223
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : [redacted]
INNES

DESCRIPTION : ~~[illegible]~~
ORIGINATORS NUMB : S-PLANT – Bluitt Sulfur Plant
Waste Heat Reclaimer Blowdown

DATE PERFORMED	RESULTS	TEST
13JUL82	450MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	4.5MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected (incl. benzene
08JUL82	AS-0.007PPM SE-0.018PPM BA-ND AG-ND CD-ND CU-ND CR-ND FE-0.91PPM PB-ND MN-ND HG-0.003PPM MN-ND	METALS BY AA
13JUL82	73MG/L	NITRATE
15 Jun 82	10.1	pH, onsite w/port. meter
15 Jun 82	190°F	Temp, onsite w/Hg Thermom.

TUESDAY, JUL 20, 1982 12:54:47 Con't

SAMPLE NUMBER : 3223
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : [redacted] INNES

DESCRIPTION : CT SAMPLES
ORIGINATORS NUMB : S-PLANT · Blutt

DATE PERFORMED	RESULTS	TEST
20JUL82	NONE DETECTED	POLYCHLORINATED BIPHENYLS IN WATER
13JUL82	1754MG/L	SULFATE
13JUL82	.062MG/L	TOTAL PHENOL IN WATER

TUESDAY, JUL 20, 1982 12:57:47

SAMPLE NUMBER : 3224
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : INNES

DESCRIPTION : LARGE WELL
ORIGINATORS NUMB : Bluitt - Regular (large) raw water supply well

DATE PERFORMED	RESULTS	TEST
13JUL82	86MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	0.2MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected
08JUL82	AS-0.001PPM PB-ND CU-ND CO-ND BA-ND HG-0.002PPM FE-BDL MO-ND CD-ND SE-0.009PPM MN-ND NI-ND CR-ND AG-ND AL-ND	METALS BY AA
15Jun82	7.9	pH, onsite (ie @ well head)
15Jun82	67°F	Temp, onsite

TUESDAY, JUL 20, 1982 12:57:47 Con't

SAMPLE NUMBER : 3229
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : INNES

DESCRIPTION : LARGE WELL
ORIGINATORS NUMB : Blvitt

DATE PERFORMED	RESULTS	TEST
13JUL82	2.0MG/L	NITRATE
13JUL82	241MG/L	SULFATE
13JUL82	809MG/L	TOTAL DISSOLVED SOLIDS

TUESDAY, JUL 20, 1982 12:57:47

SAMPLE NUMBER : 3225
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : INNES

DESCRIPTION : ~~LARGE WELL~~
ORIGINATORS NUMB : SMALL WELL - Bluitt Plant backup raw water well

DATE PERFORMED	RESULTS	TEST
13JUL82	94MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	0.2MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected
08JUL82	AS-0.004PPM PB-ND CU-ND CO-ND BA-ND HG-0.002PPM FE-5.01PPM MO-ND CD-ND SE-0.008PPM MN-ND NI-ND CR-ND AG-ND AL-ND	METALS BY AA
15 JUN82	66°F	Temp, onsite (ie @ well head)

TUESDAY, JUL 20, 1982 12:57:48 Con't

SAMPLE NUMBER : 3225
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : INNES

DESCRIPTION : ~~LARGE WELL~~
ORIGINATORS NUMB : SMALL WELL - Blvitt

DATE PERFORMED	RESULTS	TEST
13JUL82	3MG/L	NITRATE
13JUL82	522MG/L	SULFATE
13JUL82	810MG/L	TOTAL DISSOLVED SOLIDS

TABLE I

SUPPLEMENTAL EFFLUENT WATER DATA

Sample	Identification	Purgeable Organics	Metals					
			Mo	Co	~~Ba~~ Zn Sn	Al	B	Ni
3222	CT Samples	Non - Detected		Non-Detected				
3223	S Plant	Non - Detected		Non-Detected				
3224	Large Well	Non - Detected		Non-Detected				
3225	Small Well	Non - Detected		Non-Detected				

CA-263-82
August 2, 1982

LOG OF BORING FOR BLUITT GAS PROCESSING PLANT ADDITION

DATE: November 17, 1971
PROJECT LOCATION: Milnesand, New Mex. TYPE: Core
BORING NO. 1
LOCATION: See Plan

DEPTH FEET	SYMBOL	SAMPLE	N-BLOWS PER FOOT	MATERIAL DESCRIPTION	CORE DRILLED	CORE RECOVERED	ELEVATION	DEPTH SCALE
0–3				Brown Sandy Clay				
3–5.5				Tan and Light Gray Clayey Sand				
5.5			32	Tan Sandy Caliche				
10			39	- LL = 30.3%; PI = 14.5%; (-) 200 = 58.9%				
15			17					
20			50/	- 50 Blows = 7.25"				
23.5–25.5				Tan Conglomerate with Caliche Layers; THD Penetration 100 Blows = 5.50"	1.5'	1.0'		

Total Depth of Boring = 25.5 Feet

Note: Boring was advanced to 6.6 feet below the ground surface prior to using drilling fluid and ground-water was not encountered above that depth.

LOG OF BORING FOR BLUITT GAS PROCESSING PLANT ADDITION

DATE: November 17, 1971
BORING NO. 2
PROJECT LOCATION: Milnesand, New Mex
TYPE: Core
LOCATION: See Plan

DEPTH FEET	SYMBOL	SAMPLE	N-BLOWS PER FOOT	MATERIAL DESCRIPTION	CORE DRILLED	CORE RECOVERED	ELEVATION	DEPTH SCALE
0–5			---	Brown Sandy Clay LL = 34.9; PI = 13.2; (-) 200 = 52.2%				
5–9				Tan and Light Gray Clayey Sand w/Caliche Particles				
9–21			10 22 35	Tan Sandy Caliche				
21–25				Tan Conglomerate w/Caliche Layers THD Penetration 100 Blows = 2.75"	4.0'	1.0'		

Total Depth of Boring = 25.3 Feet

Note: Boring was advanced to 10.5 feet below the ground surface prior to using drilling fluid and ground-water was not encountered above that depth.

Full sized USGS Ogallala maps are

contained only in original copy of report

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

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

December 8, 1989

CERTIFIED MAIL
RETURN RECEIPT NO. P-106-675-196

Mr. H. Schuster, Manager
Region I
OXY NGL INCORPORATED
Box 300
Tulsa, Oklahoma 74102

RE: Discharge Plan GW-18
Bluitt Gas Processing Plant
Roosevelt County, New Mexico

Dear Mr. Schuster:

On June 10, 1985, the ground water discharge plan, GW-18 for the Bluitt Gas Processing Plant located in Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico, was approved by the Director of the Oil Conservation Division (OCD). This discharge plan was required and submitted pursuant to Water Quality Control Commission (WQCC) regulations and was approved for a period of five years. The approval will expire on June 10, 1990.

If your facility continues to have effluent or leachate discharges and you wish to continue discharging, please submit your application for renewal of plan approval as quickly as possible. The OCD is reviewing discharge plan submittals and renewals carefully and the review time can often extend for several months. Please indicate whether you have made, or intent to make, any changes in your discharge system, and if so, include an application for plan amendment with your application for renewal. To assist you in preparation of your renewal application, I have enclosed a copy of the OCD's guidelines for preparation of ground water discharge plans at natural gas processing plants. These guidelines will be used in review of your renewal application. The guidelines are presently being revised to include berming of tanks, curbing and paving of process areas susceptible to leaks or spills and the disposition of any solid wastes. Please include these items in your renewal application.

If you no longer have such discharges and discharge plan renewal is not needed, please notify this office.

Please note that all gas plants, refineries and compressor stations in excess of 25 years of age will be required to submit plans for, or the results of, an underground drainline testing program as a requirement for discharge plan renewal.

If you have any questions, please do not hesitate to contact Roger Anderson at (505) 827-5884.

Sincerely,

David G Boyer

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Hobbs Office

OXY

OXY NGL INC.
BLUITT PLANT
Milnesand, NM 88125

September 8, 1989

New Mexico Oil Conservation Division
Environmental Bureau
P. O. Box 2088
Santa Fe, N.M. 87501

Attn: Mr. Roger Anderson

Sir:

Re: Emergency Waste Water Diversion
Bluitt Plant
Roosevelt County
Milnesand, N. M.

Pursuant to Oxy NGL Bluitt's Plant groundwater discharge plan, this letter is to inform you that on August 25, 1989, Bluitt Plant's waste water's were diverted from the disposal well systems to the flare pit because of a blockage on the 4" disposal line. The blockage was located and removed on August 31, 1989 and waste water to the disposal system was restored that same day. Approximately 1,000 Bbls. of waste water were diverted to the pit. Removal of waste water from the flare pit began on September 1, 1989 and was completely emptied on September 7, 1989.

An evaluation is under way to install automatic ph control system on the waste water tank to prevent the deposition of solids from solution.

Should you have any question concerning this matter, please contact me at 505-675-2311.

Very truly yours,

Cesar J. Espino

Cesar Espino
Operations Superintendent
Bluitt Plant

CS:dt

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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

> **(GW-13) OXY NGL Inc., Burton Flats Gas Processing Plant, H. Schuster, Manager, Region 1, P. O. Box 300, Tulsa, Oklahoma, 74102,** has submitted an application for renewal of its previously approved discharge plan for its Burton Flats Gas Processing Plant located in the SE/4, SW/4, Sections 14, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico. There are no continuous flows of wastewater from any plant processes. Any unplanned wastewater generated is collected in on-site storage tanks and disposed of at an OCD approved off-site disposal facility. Ground water most likely to be affected by any discharge at the surface is at a depth of approximately 140 feet with a total dissolved concentration of approximately 3000 mg/l. The discharge plan addresses how spills, leaks and other discharges to the ground will be managed

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 15th day of February. To be published on or before March 1, 1989.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY, Director

S E A L

OXY

OXY NGL INC.
Box 300, Tulsa, OK 74102

April 29, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, NM 87504

Gentlemen:

Subject: Name Change Notification

This is to advise you that effective April 1, 1988, Oxy Cities Service NGL Inc. changed its name to OXY NGL Inc. and Cities Service Oil and Gas Corporation changed its name to OXY USA Inc. OXY USA Inc. operates all natural gas liquid facilities owned by OXY NGL Inc. There is no change in ownership of the OXY NGL Inc. natural gas liquid facilities and they will continue to be operated by the same personnel and management. The address remains the same.

As a result of these name changes and in order for your records to reflect the proper name, OXY wishes to change the name on the following natural gas liquid facilities Discharge Plans to the name of the owner, OXY NGL Inc.:

Facility

Bluitt Plant, Milnesand, NM 88125

Burton Flats Plant & Empire Abo Plant
Box 939, Carlsbad, NM 88220

We would appreciate your written acknowledgement of this notice by signing in the place provided below and returning a signed copy to the undersigned. Should you require any additional information or wish to discuss this matter, please do not hesitate to contact R. J. Cinq-Mars at (918) 561-8411. Thank you for your prompt attention to this matter.

Sincerely,

Robert J. Cinq-Mars
Environmental Compliance Manager

RJC/nca

Received this 2 day of May, 1988 by:
Roger C. Anderson
Environmental Engineer

cc: B. Malek
1988 Name Change File

G5/273

918/561-2 8
Steve Innes

NEW MEXICO OIL CONSERVATION DIVISION

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

NAME OF OPERATOR OXY Cities Service NGL, Inc				ADDRESS Bluitt Plant Milnesand, NM 88125				
REPORT OF	FIRE	BREAK	SPILL ✓	LEAK	BLOWOUT	OTHER*		
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTTY	PIPE LINE	GASO PLNT ✓	OIL RFY	OTHER*	
NAME OF FACILITY Bluitt Gas Plant								
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) N/2					SEC. 15	TWP. 8-S	RGE. 36E	COUNTY Roosevelt
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK 6 mi E, 1½ mi. S of Milnesand, NM								
DATE AND HOUR OF OCCURENCE May 5 - May 12, 1986				DATE AND HOUR OF DISCOVERY Same				
WAS IMMEDIATE NOTICE GIVEN?	YES ✓	NO	NOT REQUIRED	IF YES, TO WHOM NM Oil Cons. Div. - Evelyn Ackes				
BY WHOM R.M. Spinks - Oper. Supt.				DATE AND HOUR May 12, 1986				
TYPE OF FLUID LOST Water				QUANTITY OF LOSS 300 bbl		VOLUME RECOVERED 298 bbl		
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO ✓	QUANTITY					

IF YES, DESCRIBE FULLY**

DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**
water line broke. Shut in after loss of 2 bbl & sent all plant disposal water to ground pit. Line repaired & water sent back to disposal well through repaired line.

DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**
Small area of ground was wetted before disposal pump was shut down. 2 bbl was spilled - this quickly soaked in or evaporated.

DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Open Prairie			
SURFACE CONDITIONS	SANDY ✓	SANDY LOAM	CLAY	ROCKY	WET	DRY ✓	SNOW

DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**
Temp. = 85°F
Dry, Windy

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

SIGNED R. M. Spinks TITLE Op. Supt. DATE 5/14/86

*SPECIFY **ATTACH ADDITIONAL SHEETS IF NECESSARY

OXY CITIES SERVICE NGL INC.
P.O. BOX 300 TULSA, OKLAHOMA 74102

March 21, 1986

Mr. David G. Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Boyer:

Subject: Bluitt Discharge Plan (GW-18)

The flare pit/evaporation pond at the Bluitt Plant has now been emptied. It will function solely as a flare pit except for the emergency storage of solid/liquid waste in accordance with Oil Conservation Division rules and a spill report will be submitted for each occurrence.

This completes action to bring the Bluitt Plant into compliance with the approved groundwater discharge plan. Thank you for your help and cooperation during this project.

Sincerely,

Steve Innes

Steve Innes
Environmental Coordinator

SI:lam

E5/077

OXY CITIES SERVICE

OXY CITIES SERVICE NGL INC.
P.O. BOX 300 TULSA, OKLAHOMA 74102

February 3, 1986

Mr. David G. Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Boyer:

Subject: Bluitt Discharge Plan (GW-18)
Disposal Well Connection

The project to connect the Bluitt Gas Processing Plant wastewater to the New Mexico Saltwater Disposal well system was completed January 31, 1986. On the same day, wastewater discharges to the flare pit/evaporation pond ceased.

Work will be underway shortly to empty the pond in accordance with our approved schedule. If there are any questions, I can be reached at 918/561-2498.

Sincerely,

Steve Innes

Steve Innes
Environmental Coordinator

SI:rb

B1/182 1

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time AM	Date 1/2/86

Originating Party	Other Parties
Steve Innes - Cities Service (918) 561-2498	Dave Boyer OCD

Subject: Hydrostatic Test of Used Natural Gas Pipeline

Discussion: Steve had called in December about requesting to discharge ~63,000 gallons of water to an unlined ~~pi~~ pit in an area of the Ogallala where ground water is 50 to 60 feet near Bluitt. I told him not to plan on it, but I would check further. Today I told him to store it in a tank or lined structure for disposal at an approved facility, since ground water may be impacted. Steve said test is planned for late ~~of~~ January (earliest)

Conclusions or Agreements: Steve will notify us in advance so that we can sample and inspect Bluitt at same time. (Sampling should be for aromatics & PAH's)

Distribution: Hydrostatic test file
Cities Service Bluitt

Signed: David G. Boyer

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS

1935 - 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

October 4, 1985

Certified Mail
RETURN RECEIPT REQUESTED

Cities Service Oil & Gas
Corporation
P.O. Box 300
Tulsa, Ok 74102

Attention: Mr. Steve Innes

Dear Mr. Innes:

We have received your letter dated September 27, 1985, requesting an extension of the deadlines outlined in the provisions for approval of the Cities Service Bluitt gas processing plant discharge plan (GW-18). It is our understanding that more time is required for right-of-way acquisition and construction of the pipeline that will transport the plant effluent to a commercial disposal facility.

For good cause shown, I hereby authorize the following extensions:

1. Discharges to the unlined evaporation pond shall cease no later than January 31, 1986.

2. The unlined evaporation pond shall be emptied no later than February 28, 1986.

Any other conditions made in the approval letter are still in effect. If you have any questions concerning the matter please feel free to call Phil Baca at (505) 827-5885.

Sincerely,

R. L. STAMETS
Director

RLS/PB/et

xc: OCD - Hobbs Office
D. G. Boyer

OXY CITIES SERVICE

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

September 27, 1985

Mr. David G. Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Boyer:

Subject: Bluitt Discharge Plan
Extension Request

As was mentioned to you in early August, there have been difficulties in getting a contract agreed upon with New Mexico Saltwater Disposal Company in taking the Bluitt Plant wastewater. A contract which was prepared by Cities Service has now been signed by New Mexico Saltwater Disposal and returned. It is expected that final in-house approval will come in two to three weeks.

Contract approval will allow the necessary funds which have been approved to be released for right-of-way acquisition and construction. Right-of-way acquisition and construction will take twelve to thirteen weeks to complete.

We are, therefore, requesting a time extension of three months beyond the October 31, 1985, deadline or until January 31, 1986, to be connected and flowing to the disposal well. This will defer the emptying of the flare pit until February 28, 1986.

In support of our request, considerable progress has been made since your Division's approval of our Discharge Plan. We have had the water retested for disposal well system compatibility. Engineering design for the project and cost estimates ($172,000 total) have been completed. The four miles of existing pipeline have been tested and found to be satisfactory.

If you have any questions or need further information, please give me a call at 918/561-2498.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:lam

E5/019

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

[X] Telephone [ ] Personal	Time 10 AM	Date 8-5-85

Originating Party	Other Parties
Steve Innes - Cities Service Bluitt	Dave Boyer OCD

Subject Bluitt Injection Well Negotiations

Discussion Innes called to say lawyers are trying to conclude an agreement with operator of private SWD well ~4 miles from plant - cheaper than SWD operation ~2 miles away though pipeline longer. Cannot begin pipeline construction til agreement signed - now looking at December pond closing, and will need extension. I told him we could give an extension but not one indeterminate in length. Told him State could wait 45-60 days but not longer for lawyers to work things out.

Conclusions or Agreements Requested that Cities Service notify us by mid september (but no later than 9/27) as to what they will need for an extension. He agreed and thought time period reasonable.

Distribution	Signed
Cities Service Bluitt File	David G Boyer

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

June 10, 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Cities Service Oil & Gas Corp.
P.O. Box 300
Tulsa, OK 74102

Attention: Mr. Steve Innes

Dear Mr. Innes:

The ground water discharge plan (GW-18) for the Cities Service Bluitt gas processing plant located in Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico, is hereby approved with the following provisions:

1) All wastewater generated at the plant is disposed of in an approved injection well by October 31, 1985, and the evaporation pond is pumped out and used solely as a flare pit by November 30, 1985, as stated in your letter of May 20, 1985.

2) No solid/liquid waste is to be deposited in the flare pit and any accumulation of storm water shall be pumped out, if possible, to prevent migration of contaminants in the pit-bed into the ground water.

3) Any emergency disposal of solid/liquid waste to the flare pit shall be reported to OCD in the form of a spill report which shall be sent to the OCD District Office in Hobbs. The report shall include the approximate volume and type of discharge, clean-up plans, and a schedule for clean-up.

The approved discharge plan consists of the plan dated September, 1982, and the materials dated January 25, 1985, May 20, 1985, and May 22, 1985, submitted as supplements to the discharge plan.

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

There will be no routine monitoring or reporting requirements other than those previously mentioned.

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 the facility expansion, production increase, or process modification that would result in any significant modification in the discharge of water contaminants.

Pursuant to Subsection 3-109.G.4., this plan approval is for a period of five years. This approval will expire June 10, 1990, and you should submit an application for new approval in ample time before that date.

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

Sincerely,

R. L. STAMETS
Director

RLS/PB/dp

cc: OCD - Hobbs

P 505 906 048

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Cities Service Oil & Gas Corp	
Street and No. P.O. Box 300	
P.O., State and ZIP Code Tulsa, OK 74102	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982

OXY
CITIES SERVICE

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

May 22, 1985

RECEIVED
MAY 28 1985
OIL CONSERVATION DIVISION
SANTA FE

Mr. David G. Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Boyer:

Subject: Discharge Plan Amendment
Bluitt Gas Processing Plant

As mentioned in our letter of March 22, 1985, we have developed responses to your questions and comments put forth in your letter of February 18, 1985. Because we have elected to proceed with a project which will have wastewater directed to a disposal well, the following responses address only items 1 through 9 of your letter:

1. The "1.35 gpm" total flow rate into the pond on P. 25 of the Geohydrologic Evaluation was a typographical error. It should have read 13.5 gpm.

2. There has not been a large decrease in cooling tower blowdown. Chemical analyses as provided in the 1982 Discharge Plan are still representative.

3. To our knowledge, no chromates on any other heavy metal compounds were used for cooling tower water treatment or process treatment.

4. Material Safety Data Sheets for the seven Bay Chemical and Supply Company chemicals are enclosed. The yearly usage for these are:

   Bayhib 108 = 55 gal (closed cooling system)
   Baycide 373 = 110 gal
   Bayhib 126 = 400 gal
   Bayhib 136 = 400 gal
   Bayox 439 = 400 gal
   Bayphos 401 = 275 gal
   Baypros 805 = 150 gal

5. No sludge from the API separator has been disposed of in recent years. Sludge in the future will be tested for hazardous components and disposed of in accordance with RCRA requirements.

C5/012 1

6. Mole sieve media in the dehydration unit is replaced once every two years. The spent media is used to supplement gravel around the plant area.

7. We have contacted Mr. Quintana regarding the storage well and will follow his instructions regarding Class II UIC requirements.

8. No thickness measurements are made on the caustic storage tank. The tank is diked and visually inspected on a routine basis for leaks.

   Process vessels and piping are inspected daily. Corrosion control, painting, etc. are handled as necessary and leaks are repaired as soon as detected.

   There are no underground storage tanks. However, the concrete API separator is in-ground.

9. The plant drainage system is discussed in the 1982 Discharge Plan on P. 6-5 under Surface Runoff.

   The API separator receives no storm water runoff flow. There may be some increase in flow to the separator during rainfall due to drainline infiltration and direct catchment at minor open points in the system. But as noted on P. 6-1 and P. 7-2, there is plenty of storage capacity in the separator.

If further information is needed, please let me know.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI/rf

Enclosures MSDS (7)

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

May 20, 1985

RECEIVED
MAY 27 1985
OIL CONSERVATION DIVISION
SANTA FE

Mr. David G. Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Boyer:

Subject: Wastewater Project Schedule
Bluitt Gas Processing Plant

Cities Service Oil and Gas now has an agreement with New Mexico Salt Water Disposal Company to send the Bluitt Plant wastewater to their injection well system in Lea County. An engineering project is in progress to make the pipeline connection and install the necessary ancillary equipment.

Our schedule is to have this project completed by October 31, 1985. The existing evaporation pond will be pumped out and left to function solely as a flare pit by November 30, 1985.

Please let us know if this schedule is satisfactory. We will notify you when the project has been completed and the pond emptied.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:rb

B4/165 1

MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
SANTA FE, NEW MEXICO

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission regulations, the following discharge plan has been submitted for approval to the Director of the Oil Conservation Division, P.O. Box 2088, State Land Office Building, Santa Fe, New Mexico 87501 (505) 827-5800.

Cities Service Oil and Gas Corp. Bluitt Gas Processing Plant (NE/4 Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico), S. Innes, Authorized Agent, P.O. Box 300, Tulsa, Oklahoma 74102, proposes to modify its existing facility by eliminating and closing an existing unlined evaporation pond, and disposing of approximately 19,500 gallons per day of industrial waste water into a Class II injection well currently operating near the plant. The waste water will be transported to the injection well via pipeline. The waste water is composed of effluents from cooling towers and process vessels. The waste water has a total dissolved solids concentration of approximately 5200 mg/l. The ground water most likely to be affected is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l.

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

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

GIVEN Under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 3rd day of May, 1985.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/ R.L. Stamets
Director

SEAL
Journal, May 9, 1985

County of Bernalillo

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

for ....1.... times, the first publication being on the ..9.. day of May ...., 198 5 ......, and the subsequent consecutive publications on ...., 198 ......

Thomas J Smithson

OFFICIAL SEAL
SYLVIA L. NUANES
NOTARY PUBLIC - NEW MEXICO
FILED WITH SECRETARY OF STATE
Expires 11-18-85

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this ..9.. day of ....May........, 198..5

EDJ-15 (1/80)

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 8 30 am	Date 5/8/85

Originating Party	Other Parties
P. Baca - OCD	S. Howl - Roosevelt County Commissioner, Dist. 1

Subject
OCD Response to Mr. Howl's Letter Dated 5/4/85 Which Contained Inquiries Pertaining to the Cities Service Bluitt Gas Plant Public Notice

Discussion

Explained to Mr. Howl what TDS was and the published units of measurement. Explained that a Class II injection well injects the effluent well below any usable aquifer.

Conclusions or Agreements

Mr. Howl indicated that he had no problem with the notice or disposal method.

Distribution

Signed Philip L. Baca

May 4, 1985
So. Star Rte. Box 85
Portales, New Mexico 88130

Re: The notice of publication of discharge plan issued May 3, 1985.

RECEIVED
MAY - 7 1985
OIL CONSERVATION DIVISION
SANTA FE

Mr. R. L. Stamets, Director
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Stamets

I would very much like to have additional information on the discharge plan which was submitted to you by Cities Service Oil and Gas Corp., Bluitt Gas Processing Plant (NE/4 Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico), S. Innes, Authorized Agent. Would you please reply to the following questions and submit any additional information which might help me to understand the possible ramifications of this proposal?

Exactly what solids are dissolved in the waste-water; what are their properties; and are they dangerous to the surrounding ecology and agricultural interests in the area?

Are these waste solids harmful to our drinking water? How is the ground water affected at the depths of 100 ft. and deeper? We already draw drinking and irrigation water from 100 ft. depths and deeper. How will this be affected by these wastes?

Is this waste water potable?

What exactly is a Class II injection well? How does it function? What eventually happens to the water and wastes placed in it?

The following figures are unclear: 5200 mg/l. and 1400 mg/l. Is the (l.) an abbreviation for liters? Or is the (l.) supposed to be a 1 (one), and if so, what does it stand for? Please elucidate the significance of these figures. Taking into account the properties of whatever waste materials are involved, are these dangerous, merely significant, or safe levels of concentration?

Thank you for your help and cooperation.

ROOSEVELT COUNTY COMMISSION

Steven J. Howl

Steven J. Howl
County Commissioner, Dist. 1

S E A L

477-2498

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

50 YEARS
1935 - 1985

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

May 3, 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Cities Service Oil & Gas Corp.
P.O. Box 300
Tulsa, OK 74102

Attention: Mr. Steve Innes

Dear Mr. Innes:

Enclosed is a copy of the public notice pertaining to your proposed discharge which was issued by this agency pursuant to New Mexico Water Quality Control Commission Regulations 3-108.A.

If you have any questions, please do not hesitate to contact me at the address and telephone number given above.

Sincerely,

David G. Boyer P.G.B.

DAVID G. BOYER
Environmental Bureau
Chief

DGB/PLB/dp

Enc.

P 505 905 847
RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to	Cities Service Oil & Gas Corp.
Street and No.	P.O. Box 300
P.O., State and ZIP Code	Tulsa, OK 74102
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
SANTA FE, NEW MEXICO

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission regulations, the following discharge plan has been submitted for approval to the Director of the Oil Conservation Division, P. O. Box 2088, State Land Office Building, Santa Fe, New Mexico 87501 (505) 827-5800.

Cities Service Oil and Gas Corp, Bluitt Gas Processing Plant (NE/4 Section 15, Township 8 South, Range 36 East, NMPM, Roosevelt County, New Mexico), S. Innes, Authorized Agent, P.O. Box 300, Tulsa, Oklahoma 74102, proposes to modify its existing facility by eliminating and closing an existing unlined evaporation pond, and disposing of approximately 19,500 gallons per day of industrial waste water into a Class II injection well currently operating near the plant. The waste water will be transported to the injection well via pipeline. The waste water is composed of effluents from cooling towers and process vessels. The waste water has a total dissolved solids concentration of approximately 5200 mg/l. The ground water most likely to be affected is at a depth of approximately 100 feet with a total dissolved solids concentration of approximately 1400 mg/l.

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

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

GIVEN Under the Seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 3rd day of May, 1985.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

R. L. STAMETS
Director

S E A L

P 505 905 923

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Commissioner Charlie Turney	
Street and No. Box 134 Route 1	
P.O., State and ZIP Code Portales, NM 88130	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982

P 505 905 921

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Commissioner Jimmy Parrish	
Street and No. P.O. Box 225	
P.O., State and ZIP Code Portales, NM 88130	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982

P 505 905 922

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Steve Howl, Commissioner	
Street and No. Box 85 S. Star Route	
P.O., State and ZIP Code Portales, NM 88130	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

[x] Telephone [ ] Personal	Time: 2 30 pm	Date: 4-15-85

Originating Party	Other Parties
P. Baca - OCD	S. Innes - Cities Service

Subject: Bluitt Gas Processing Plant D.P.

Discussion: Mr. Innes stated that he sent OCD a letter (on 3/22) indicating that they were planning to utilize an injection well for plant effluent and retain the pit for use as a flare pit. OCD never received this letter.

Conclusions or Agreements: OCD will publish an advertisement for the Bluitt Plant and Mr. Innes will send a copy of the 3/22 letter along with a proposed schedule for going on-line with the injection well.

Distribution

Signed P. L. Baca

file
sent orig 3-22
" cc 3-25

OXY CITIES SERVICE

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

March 22, 1985

RECEIVED
APR 8 1985
OIL CONSERVATION DIVISION
SANTA FE

Mr. David Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Boyer:

Subject: Alternate to Discharge Plan Amendment
Bluitt Gas Processing Plant

In response to your February 18, 1985 letter, Cities Service has elected to pursue a course of action leading to the use of a disposal well. We have abandoned the proposal as put forward in our Discharge Plan of October 1, 1982 and Amendment of January 25, 1983 of continuing the use of the pond for wastewater evaporation. Establishing a satisfactory monitoring well program for it could have proven to be an elusive project.

An inactive saltwater disposal line has been located which could take produced water and cooling tower blowdown to a disposal well system 3-4 miles southwest of the Bluitt Plant. The disposal well, the Pray #2 SWD in Lea County, is owned and operated by the M. L. Brown Company of Kansas City, Missouri.

M. L. Brown Company has verbally agreed that they can accept the water. The well has adequate capacity and there should be no problem in laying pipeline to connect ~~it~~ to the system. We do not expect problems with use of the well for this purpose according to our general understanding of underground injection control regulations.

In addition to use of the disposal well for the major portion of the plant wastewater, arrangements may have to be made for storage and disposal of the remainder of the water now going to the evaporation pond. The volumes of these flows will have to be accurately measured before a decision can be made between storage tanks plus hauling or constructing a lined evaporation pit with a leakage detection system.

We are proceeding to answer the questions in your 2-18-85 letter which pertain to matters other than groundwater monitoring. Additionally,

E4/191

another discharge plan amendment could be submitted, if you desire, when courses of action are clearly established and agreed upon in principle by your Bureau.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:lam

CITIES SERVICE

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

March 22, 1985

Mr. David Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

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Subject: Alternate to Discharge Plan Amendment
Bluitt Gas Processing Plant

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E4/191

another discharge plan amendment could be submitted, if you desire, when courses of action are clearly established and agreed upon in principle by your Bureau.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:lam

CITIES SERVICE

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

March 7, 1985

RECEIVED
MAR 11 1985
OIL CONSERVATION DIVISION
SANTA FE

Mr. David Boyer, Chief
Environmental Bureau
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Subject: Discharge Plan Amendment
Bluitt Gas Processing Plant

We have reviewed your February 18, 1985 letter and are evaluating alternatives. The most attractive alternative, an injection well, is being actively pursued. However, we have not yet been able to get in contact with the current operator of the most likely well.

An additional two weeks (to March 22, 1985) is requested to determine if the disposal well is viable in terms of the operator, the well and the OCD UIC program. Please call me at 918/561-2498 if you need further information.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:kb

Phone call to Innes: Verbal approval given 3/11/85. Formal letter to follow if necessary. DGB

L4/082

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 330 pm	Date 3/1/85

Originating Party	Other Parties
P. Baca	S. Innes (Cities Service)

Subject Cities Service D.P. For Bluitt Gas Plant

Discussion Steve said they are investigating the potential use of an injection well for discharging the effluent. He said he may need an additional week to respond to OCD's letter of 2/18/85. I told him that wouldn't be a problem.

Conclusions or Agreements

Distribution

Signed P. L. Baca

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

February 18, 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Cities Service Oil & Gas
Corporation
P.O. Box 300
Tulsa, OK 74102

Attention: Mr. Steve Innes

Re: Discharge Plan Amendment
for the Bluitt Gas
Processing Plant

Dear Mr. Innes:

We have received and reviewed the amended discharge plan dated January 25, 1985, for the Bluitt Gas Processing Plant. Below are questions and comments regarding the material submitted.

1. Part of the January 25, 1985, discharge plan amendment states that the main plant process was replaced in 1984 and that the volume of cooling tower blowdown going to the evaporation pond is expected to be less because of the new cryogenic process. The flow values shown on page 25 of the 1/25/85 amendment are the same as shown in Figure 6.0 (p-6.2) of the 1982 discharge plan submittal except for the total average effluent flow rate to the pond (1.35 gpm in 1985 vs. 13.5 gpm in the 1982 figure). Provide current actual or estimated flow rates of the various effluent streams and clairfy the value for total average pond inflow.

2. If a decrease in cooling tower blowdown has occurred, such a decrease in one particular flowstream implies a probable change in the concentrations of the constituents comprising the effluent held in the evaporation pond. As such, please obtain a current chemical analysis of the water in the pond. The analysis should include a search for those items listed in Section 3-103 of the Water Quality Control Commission Regulations except for silver, uranium, radioactivity, PCB's, and chlorinated hydrocarbons. In addition to the analysis for benzene and toluene, please also include an analysis for para-, meta-, and ortho-xylenes and ammonia.

3. To your knowledge, were chromates or any other compounds used (other than those currently being used) for water treatment or process treatment of the past?

4. Please send chemical safety sheets for Bayhib 108, Baycide 373, Bayhib 126, Bayox 439, Bayphos 401, and Baypros 805. Also indicate the yearly usage of these compounds.

5. Where is the API Separator sludge disposed of and how frequently is it serviced in this manner?

6. Is the mole sieve media from the dehydration unit ever diposed of? Is so, where?

7. The storage well will not be considered to be part of the discharge plan as this is regulated by the Class II Underground Injection Program (UIC). Mr. Gilbert Quintana of the OCD is the UIC Director and he should be contacted immediately to determine what actions, if any, should be taken with respect to this well.

8. Are any thickness measurements (i.e., ultra-sonic readings) made on the caustic storage tank as part of a routine plant inspection procedure? If so, how often? Please detail general plant housekeeping and inspection of process vessels and piping. Are any of the storage tanks underground?

9. Discuss the ability of the plant drainage system and API Separator to handle storm water. Discuss the flooding potential, if any, in the area.

10. The statement on page 19 of the amended discharge plan that the Selman well is assumed to be completed in the Tucumcari Shale can only be demonstrated if more water quality information and additional information on well depth, geology and completion intervals is provided. However, on page 18 it is stated that no well logs are available.

The following comment is directly related to continued use of the unlined evaporation pond:

11. If you propose to show that contaminants moving into ground water from the evaporation pond will not cause ground water at any place of present or future use (ie. off-property) to exceed the WQCC Standards of Section 3-103, and not contain any toxic pollutant as defined in Section 1-101, UU, additional work beyond the monitoring proposed in the discharge plan amendment must be performed. The following must be considered in any such demonstration:

A. If ground water contamination has occurred (from whatever source) and discharges to the subsurface are proposed to continue, then you must demonstrate that the continued discharge will cause neither increased movement of contaminants to an area of present or future use of ground water, nor elevated levels of contaminants beyond what would occur through natural processes if the discharge had ceased.

B. Since your pond discharges effluent to the subsurface, substantial amounts of technical data will be required including: 1) Information on specific fluids and chemicals, their quantities, and use in process or waste streams; 2) detailed information on site hydrogeology, natural and current water quality, and movement of contaminants; 3) processes expected to occur in the vadose and saturated zones to attenuate constituents to meet WQCC standards at a place of present or reasonably foreseeable future use of ground water; and 4) monitoring of ground water (including post operational monitoring as necessary).

More specifically, to properly characterize the existing subsurface conditions, the investigation and monitoring program proposed in pages 22-27 of the 1/25/85 submittal, needs to be performed and submitted for review prior to consideration of discharge plan approval. If contamination due to past or present practices is found, additional monitoring wells will likely be necessary to delineate the extent of migration paths of the contamination. Much more information on the history, quantity and quality of past discharges will be required. Prediction of migration rates and travel times for at least the health related parameters will be required. This would necessitate use of ground water models that would model seepage from the pond, potential mounding effects and the extent and movement of any contaminant plumes. The model should take into account changes in the discharge volumes due to plant modifications.

The following comments are directly related to the proposed investigation and monitoring program:

12. (p. 22, para. 3) The fact that evaporation alone cannot account for the volume discharged indicates that waste products enter the environment. If the unlined pond is to continue to be used, ground water protection must be demonstrated.

13. (p. 22, para. 3) The difficulty of designing a proper monitoring system in absence of adequate subsurface information is correctly stated. Therefore, a ground water discharge plan of the type proposed cannot be approved without this information.

14. (p. 23, para. 2) The statement that the scattered wells in the vicinity of the plant "produce highly mineralized water" is not supported by figure 6 in the amended discharge plan. The only well within a three-mile radius with a relatively high value of specific conductance (2880 umbros) is the Selman well. Three other wells (two to the west and one to the northeast) have conductivity measurements between 1450 and 1620 umbros.

15. (p 24, para. 1) A ground water investigation at the plant should define the depth and characteristics fo the alluvium-Tucumcari shale contact and whether water bearing zones of the shale are isolated from the alluvium by lithologic and hydrologic boundaries (ie. find-grained material and upward potentrometric gradient).

16. (p. 24, para. 3) Proposed monitoring well No. 2 should be drilled far enough up-gradient from the pond to eliminate sampling water that may have been affected by any ground water mounding close to the pond.

17. (p. 26, para. 2) The chemical analyses required from monitor well samples will be the same as required in Item No. 2 of this letter.

In summary, while ground water in some parts of the area may be erratic and discontinuous, there are wells in the vicinity of the plant with usable water having 10,000 mg/l or less TDS. Such water must be protected from discharges onto or below the surface of the ground as per Section 3-101.A of the WQCC regulations.

By a letter dated December 19, 1984, Cities Service was granted an extension until May 31, 1985, to discharge without an approved discharge plan. If you wish to submit evidence that the evaporation pond poses no threat to current or potential sources of usable water, it is likely that another extension to discharge without an approved discharge plan must be considered. You may also wish to consider other discharge alternatives; e.g. a lined evaporation pond or injection well. Please notify the OCD within two weeks of receipt of this letter of your intentions so that a revised schedule for information submittal can be developed, if necessary.

If you have any questions pertaining to this letter, please feel free to call me at (505) 827-5812.

Sincerely,

David Boyer

DAVID BOYER
Environmental Bureau
Chief

DB/dp

cc: OCD-Hobbs Office
Gilbert Quintana
R. L. Stamets

P 505 905 850

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Cities Service Oil & Gas Corp	
Street and No. Box 300	
P.O., State and ZIP Code Tulsa, OK 74102	
Postage	$

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

January 25, 1985

RECEIVED
JAN 28 1985
OIL CONSERVATION DIVISION
SANTA FE

Mr. R. L. Stamets, Director
Oil Conservation Division
Energy and Minerals Department
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Stamets:

Subject: Discharge Plan Amendment
Bluitt Gas Processing Plant

As requested, enclosed is the Bluitt Discharge Plan Amendment. The Amendment is comprised of three elements which are shown as Parts A, B, and C on the enclosed Subject Index.

Part D provides information on significant changes at the plant since the original plan was submitted in 1982.

Part E summarizes actions that will be taken by Cities Service Oil and Gas upon approval of the Amendment. These actions are in addition to those specified in the original plan.

If there are any questions or more information is necessary, please call me at 918/561-2498 or Mr. Bob Cinq-Mars, Environmental Compliance Manager, at 918/561-8411.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:jt

Enclosures

Report in File
—P.B.

K2/053 1

FILE COPY

OXY
CITIES SERVICE

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

January 25, 1985

RECEIVED
JAN 28 1985
OIL CONSERVATION DIVISION
SANTA FE

Mr. R. L. Stamets, Director
Oil Conservation Division
Energy and Minerals Department
P.O. Box 2088
Santa Fe, NM 87501

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Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:jt

Enclosures

K2/053 1

Bluitt Discharge Plan Amendment

Subject Index

K2/053
01/23/85

Part A

Bluitt Discharge Plan Amendment

Chemicals at Plant

I. Purchased Chemicals
   A. Water Treating
      1. Bayhib 108
      2. Baycide 373
      3. Bayhib 126
      4. Bayhib 136
      5. Bayox 439
      6. Bayphos 401
      7. Baypros 805
      8. Sulfuric Acid
      9. Chlorine Gas

   B. Gas Treating, etc.
      1. MEA (monoethanolamine)
      2. TEG (triethylene glycol)
      3. Methanol
      4. Potassium Hydroxide
      5. Sodium Hydroxide
      6. Ethyl Mercaptan

   C. Lab Testing (Small Quantities)
      1. Hydrochloric Acid (Reagent Grade)
      2. Iodine
      3. Sodium Thiosulfate (0.1 Normal)
      4. Starch
      5. Acetone
      6. Sulfuric Acid
      7. Molybdate Solution
      8. Methyl Red Indicator
      9. Methyl Purple Indicator
      10. Phenolphthalein
      11. Bromcresol Green/Methyl Red Indicator
      12. Stannous Chloride Powder
      13. Gallic Acid (Powder)
      14. Potassium Iodide Powder
      15. Bromthymol Blue
      16. Nickel Sulfate
      17. Methyl Orange Indicator
      18. Hardness Titrating Solution
      19. NitriVer II (Nitrite Reagent, Hach Co.)
      20. Sodium Hydroxide (0.1 Normal)
      21. Phenol Red
      22. Acetic Acid - Glacial

II. Products, Byproducts, Intermediates

A. Methane (Gas & Liquid)
B. Nitrogen (Gas)
C. Helium
D. Ethane
E. Propane
F. Iso-butane
G. Normal butane
H. Natural Gasoline (pentane & heaver mixture)
I. Carbon Dioxide
J. Hydrogen Sulfide
K. Elemental Sulfur
L. Condensate

Part B

Bluitt Discharge Plan Amendment

Underground Storage

A storage well was apparently installed when the Bluitt Plant was built in 1961. However, there are no records at the plant or at the Cities Service main office on the well facilities or how it was constructed. Cities Service purchased the Bluitt Plant in 1966. Apparently the original plant owners, Capitan, Inc., did not provide Cities Service with any well records which they might have had. The Hobbs District Office of the Oil Conservation Division states that they would not have a record of an underground storage well such as this.

The well is located across the main plant access road to the east in the SW¼, NW¼, Section 14, Township 8S, Range 36E. It was used for storage of liquid propane and there are records indicating a storage volume of up to 500,000 gallons. In 1975, all the propane in the well was pumped out and no new propane has been pumped to the well since. The cavity is filled with brine. Since the plant is now served by pipeline, the future need for the storage well is pending.

There are no brine pits left in existence. From about 1970 to 1975, brine was disposed of by pipeline to a brine disposal well operated by others about 4 miles southwest of the plant.

Part D

Bluitt Discharge Plan Amendment

Significant Changes in the Original

Plan of September 1982

The main plant process was replaced in 1984 and the new design capacity is 30 MMCFD of sour gas. Gas liquids are now separated from the sweetened inlet gas by a new cryogenic process. This process eliminates the use of absorption oil with its attendant problems of possible leaks and spills at various points in its system of absorbers, pumps, tanks and heaters.

The cooling load is less with the new process and it is expected that the volume of blowdown from the cooling tower will prove to be less. Also, ethylene glycol is no longer used. With this new process, dehydration is accomplished by a molecular sieve bed. The mole sieve media is solid and acts like a desiccant.

There are some important changes in the disposal of spent caustic. First, the amount of caustic used which results in spent caustic has been considerably reduced. Only potassium hydroxide is used in this manner and under current practice it is used only when there is an upset in the amine system. The 300 barrel fiberglass storage tank has been replaced with a corrosion resistant metal tank of the same size. As mentioned in a previous progress report, the caustic is now hauled by CECOS International to their deep disposal well in Odessa, Texas. This well and the CECOS transporters are approved by the Texas Department of Water Resources. Sodium hydroxide is now just used to treat boiler water.

Dikes have been constructed around the 55-gallon chemical drum storage areas to contain any and all spilled liquids. Additionally, special racks have been constructed so that active drums are stored horizontally and drip troughs prevent any liquid from reaching the ground.

The dike around the existing pond has been raised to a three foot height at minimum. A freeboard in excess of two feet has been maintained.

PART E

Summary of Actions to be Taken by
Cities Service Oil and Gas

1. Investigation and Monitoring Program -- Monitoring wells will be constructed, sampled and monitored as outlined in the Geohydrology report (Part C) in the section beginning on page 22. Monitoring reports will be submitted to the Oil Conservation Division.

2. Storage Well Logging -- A service company will be hired to log the storage well to obtain information on the casing, tubing and depths. Reported information will be submitted to the Oil Conservation Division.

GEOHYDROLOGIC EVALUATION IN THE VICINITY OF THE BLUITT GAS PROCESSING PLANT, ROOSEVELT COUNTY, NEW MEXICO

FOR

CITIES SERVICE OIL AND GAS CORPORATION

TULSA, OKLAHOMA

BY

GEOHYDROLOGY ASSOCIATES, INC.

ALBUQUERQUE, NEW MEXICO

NOVEMBER 1984

CONTENTS

TABLES

ILLUSTRATIONS

GEOHYDROLOGIC EVALUATION IN THE VICINITY OF THE

BLUITT GAS PROCESSING PLANT, ROOSEVELT COUNTY, NEW MEXICO

by

Geohydrology Associates, Inc.
Albuquerque, New Mexico

EXECUTIVE SUMMARY

Although it appears that there is ground water in the vicinity of the Bluitt plant, it is not associated with the Ogallala aquifer system. The ground water is discontinuous and rather highly mineralized. Nevertheless, the water is being used locally and is subject to state regulations and must be protected.

A monitoring program is proposed which will identify any pollutants entering the ground-water system. Remedial action could be taken while a pollutant is still within the premises of the Bluitt facility.

INTRODUCTION

In September 1982 a Discharge Plan was submitted to the New Mexico Oil Conservation Division by the Natural Gas Liquids Division of the Cities Service Company for the Bluitt Gas Processing Plant in Roosevelt County, New Mexico. This report was submitted in accordance with Section 3-106 of the New Mexico Water Quality Control Commission Regulations, WQCC81-2. The report included a plan for the containment of wastewater and materials associated with operation of the plant.

In March 1984 the firm of Geohydrology Associates, Inc. (GAI), of Albuquerque, New Mexico, was retained under Agreement with Contractor No. 1539692 to provide supplemental geohydrologic data in the vicinity of the Bluitt facility. Specifically, the agreement required that GAI determine if ground water is present within a three-mile radius of the plant evaporation pond (fig. 1). If water is found to be present, the geohydrologic conditions were to be defined and a monitoring program was to be recommended. The monitoring program should ". . . assure the state of no future contamination of usable groundwater if it is judged to be currently uncontaminated."

All work was performed under the direction of Mr. Steven S. Innes, Environmental Coordinator for the Natural Gas Liquids Group, Cities Service Oil and Gas Corporation. Messrs. Innes and Bob Ralston provided on-site assistance during the field investigation.

Most of the work was performed during March and April 1984. This included a literature and file search for available data in the area. Water records on file with the State Engineer Office in Roswell were examined.

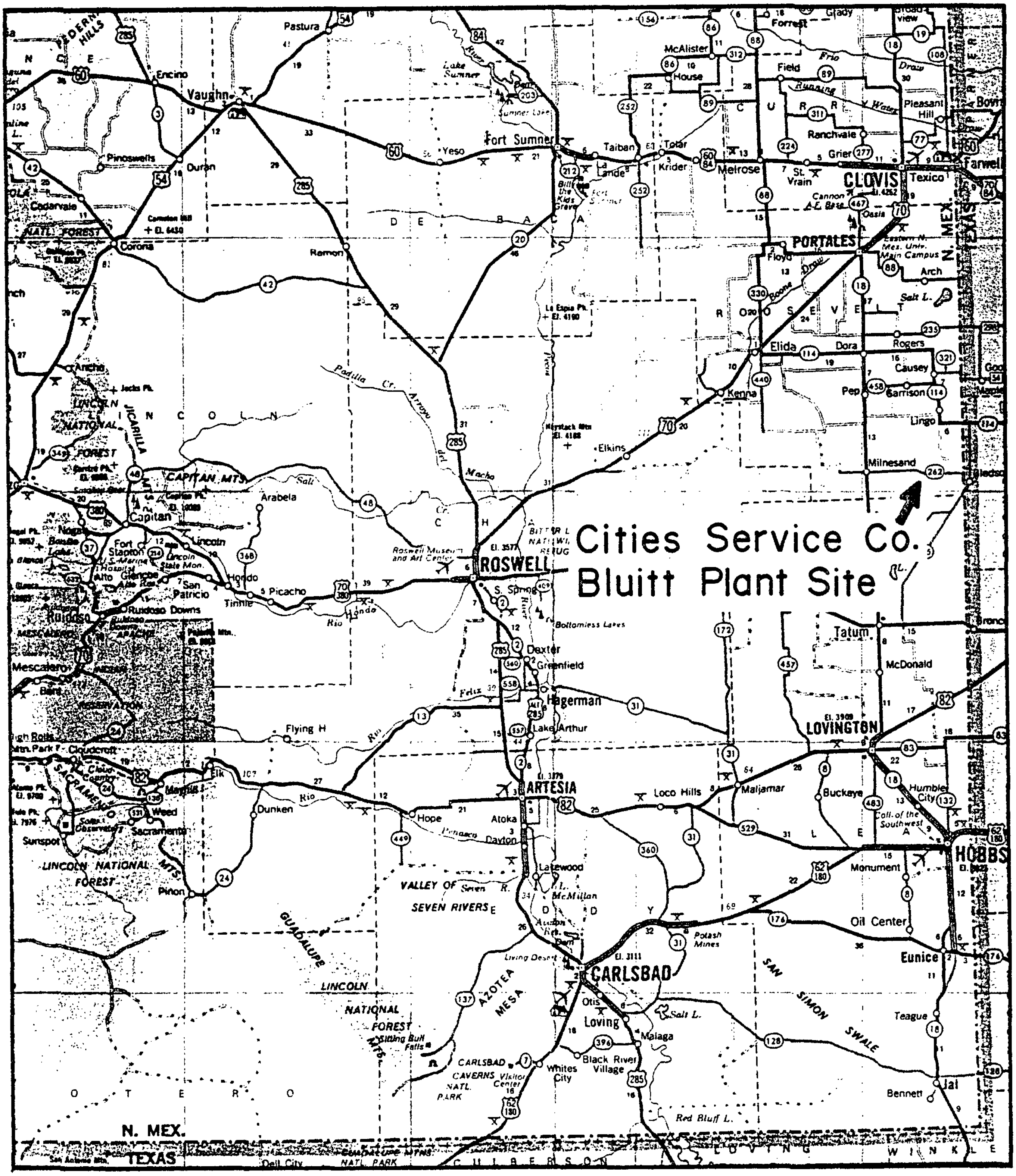


Figure 1.--Map of east-central New Mexico showing location of Bluitt Gas Processing Plant.

Representatives of the U. S. Geological Survey, Water Resources Division, were contacted to determine the results of their earlier investigations in the area. Several published reports were reviewed for content. The field investigations included interviews with several water users in the area in order to determine their water requirements and use. Where possible, existing wells were inventoried to determine the depth and static water level. The specific conductance of water was measured in the field; partial chemical analysis was made on three selected water samples. This report contains a summary of the findings of this investigation.

Well Numbering System

The location of wells in this report is identified by a series of numbers that are based on the common subdivision of lands into townships, ranges, and sections. This series of numbers is segmented by periods. The first segment indicates the township south of the New Mexico baseline, and the second denotes the range east of the New Mexico principal meridian. The third segment is the section number within the township, and the fourth number is the tract within which the well is located. To determine the fourth segment, the segment is divided into four quarters numbered 1, 2, 3, and 4 for NW¼, NE¼, SW¼, and SE¼, respectively (fig. 2).

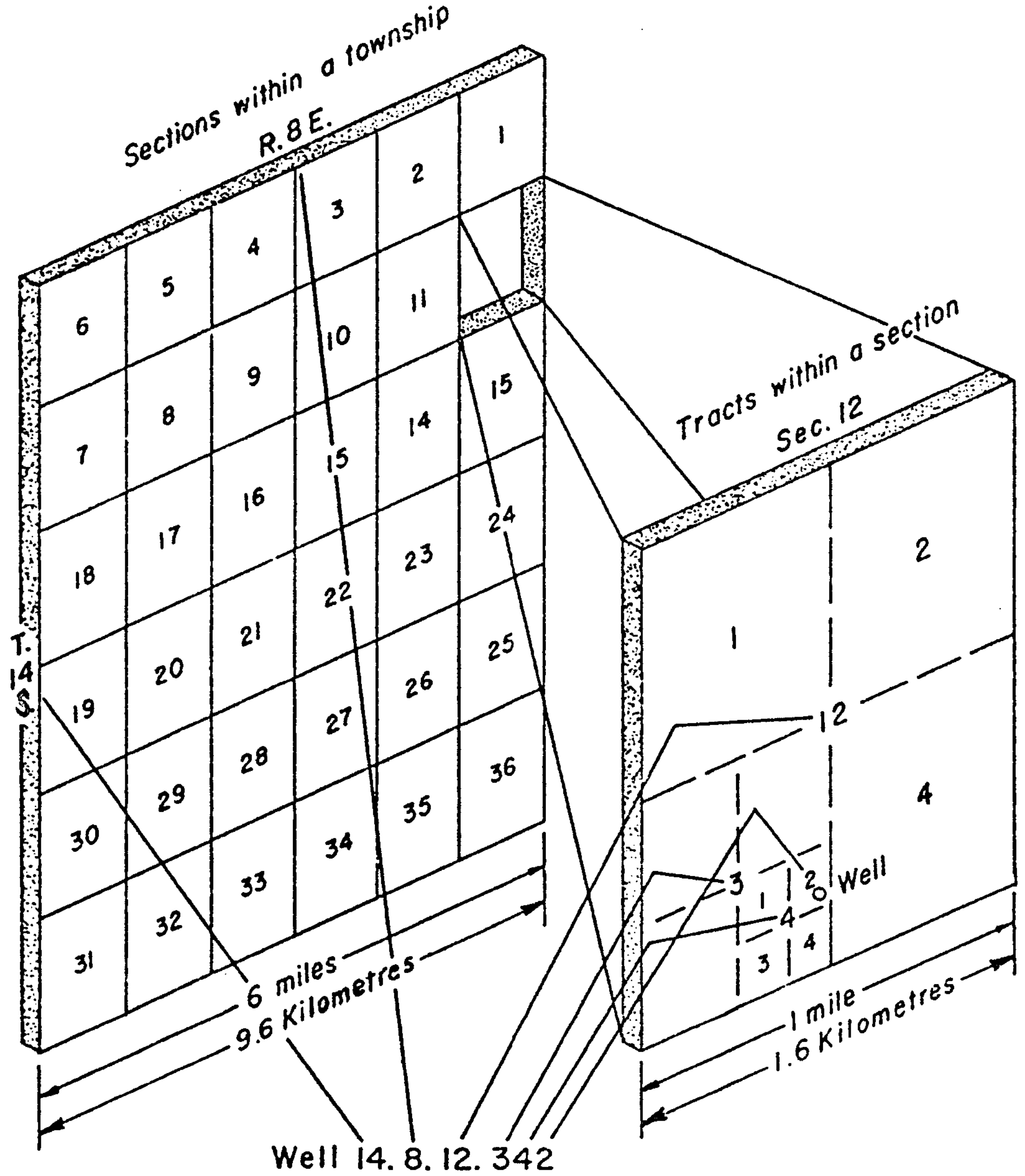


Figure 2.--System of numbering wells in New Mexico.

GEOHYDROLOGY OF THE PROJECT AREA

Previous Investigations

Generalized reports of the geology in the project area have been made in connection with regional investigations concerned with water development of oil and gas-producing formations. Selected references pertaining to the geology and hydrology of Lea and Roosevelt Counties are listed in the Bibliography.

There have been no detailed studies of the geology and water resources in the vicinity of the Bluitt facility itself. This probably is due to the fact that there are no major water users in the area. Also, the land surface offers few exposures of the underlying strata; much of the area is blanketed by stabilized dune sand or the poorly consolidated deposits of the Ogallala Formation. One of the earliest studies was made by Theis (1932, p. 98-160) which evaluated the potential development of the Ogallala aquifer. This aquifer was later studied by Cronin (1969) and Weeks and Gutentag (1981). Ash (1963) and Mourant (1971) evaluated the ground-water conditions in Lea County near the southern border of the Bluitt project area.

Stratigraphic Sequence

There are no sample logs available for wells drilled within a three-mile radius of the Bluitt plant. However, on the basis of the studies cited in the preceeding paragraph, the stratigraphic sequence can be extrapolated. According to Ash (1963, fig. 2) the project area is underlain by a gray shale deposit equivalent to the Tucumcari Shale, or by the red and maroon deposits of the Dockum Group which is locally called the Triassic Red Beds (fig. 3). These deposits are overlain by the Ogallala Formation and discontinuous sequence of stabilized dune sand.

Dockum Group (Triassic Red Beds)

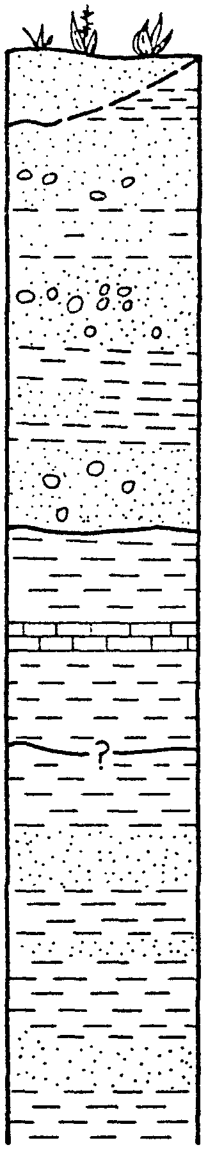
Rocks of the Dockum Group range in thickness from 1,400 to 2,000 feet (Nye, 1930, p. 370). Although they are known to underlie the entire project area, the actual thickness is unknown.

These rocks near Bluitt consist of two different units that are distinctive but which grade into one another. The lower part of the group has a maximum thickness of 600 feet and consists mostly of reddish sandstone but includes a relatively small proportion of variegated shale and limestone. This unit is not known to yield potable water to wells. The upper part of the Dockum Group has a maximum thickness of about 1,200 feet. This part is predominately a reddish shale but includes minor amounts of variegated shale, sandstone, conglomerate, and limestone (Adams, 1929, p. 1051; Nye, 1932, p. 237-238). It is from this unit that the name "Triassic Red Beds" was derived. This unit produces small quantities of water to stock wells.

Tucumcari Shale

The Tucumcari Shale is about 150 feet thick in southeastern Roosevelt County and generally thins toward the south west where it pinches out in northern Lea County. At the plant site, this shale formation probably is less than 100 feet thick.

This formation generally consists of dark gray siltstone with interbedded brownish sandy limestone and sandstone. The limestone and sandstone are



Physical Character	Water-Supply Potential
Recent Deposits	
Eolian sand, silt, and clay, unconsolidated	Non-water-bearing.
Ogallala Formation	
Caliche, clay, silt, sand, and gravel, poorly consolidated.	Yields small to moderate quantities of good quality water; water-bearing zones are discontinuous.
Tucumcari Shale	
Yellow shale, siltstone, with thin limestone beds.	Yields small quantities of mineralized water.
Dockum Group	
Red to brown shale, siltstone, and sandstone.	Yields small quantities of mineralized water.

Figure 3.--Geologic column and water-supply potential in the Bluitt area, Roosevelt County, New Mexico.

very lenticular and discontinuous. The Tucumcari Shale generally weathers yellow to yellowish-green, and a weathered surface is locally present on the top of the formation where it is overlain by the Ogallala Formation.

Limited quantities of ground water occur in the Tucumcari strata. Beds of sandstone near the base of the formation constitute the principal aquifer.

Ogallala Formation

In the project area, the Ogallala Formation probably ranges in thickness from 100 to about 200 feet. This range is based on data from wells located in the area. The variations in thickness are due to the irregularities of the surface of the underlying strata and to post-Ogallala erosion.

The Ogallala consists mostly of fine to very-fine sand but includes minor quantities of clay, silt, coarse sand, and gravel. The lower one-third of the Ogallala contains a higher proportion of coarse sediments than the upper two-thirds. Usually the coarse sediments occur as lenticular beds in the finer material. Extensive beds of coarse sand and gravel are found in some of the buried stream channels cut into the Mesozoic bedrock.

Most of the formation is unconsolidated, although near the top and locally within it the sediments have been cemented by calcium carbonate to form beds of caliche. The degree of cementation of the caliche varies greatly. However, in general the Ogallala is most firmly cemented near the top of the formation and where the sediments are fine and contain much silt (Nye, 1932, p. 235).

The bed of caliche at the top of the formation forms topographic prominences because of its resistance to erosion. It generally occurs at the top of most plateaus and is usually called the cap rock. There is no sharp break between the caliche cap rock and the underlying sediments because the amount of cementation decreases gradually downward. In some places the cap rock is so dense that it breaks with a semiconchoidal fracture; elsewhere it may be soft and chalk-like.

Although the Ogallala Formation locally produces large quantities of water to wells in Roosevelt and Lea Counties, the formation probably is non-water-bearing beneath the Bluitt plant site itself.

Unconsolidated Deposits

Soil, alluvium, and dune sand overlie the Ogallala Formation. These deposits range in thickness from 0 to perhaps 40 feet; the greatest thicknesses are present where dune development is greatest. These deposits are unconsolidated and very permeable. Although they would facilitate the downward percolation of recharge to the underlying Ogallala Formation, there is no record of water production from the alluvial or dune deposits themselves.

Water-Bearing Characteristics

Dockum Group and Tucumcari Shale

Due to the lack of subsurface control within a three-mile radius of the Bluitt facility, it is difficult to determine which formations are tapped by the existing wells in the area. However, since the water-bearing characteristics of the Dockum Group and the Tucumcari Shale are similar, the actual terminology is somewhat academic.

Theis (1932, p. 119) was the first to assess the production capacity of wells tapping these formations. He states, "In an area of undetermined extent in southern Roosevelt County, . . . the Mesozoic strata are fairly close to the surface and the thin Tertiary mantle does not provide sufficient water. In this area the water in the underlying Mesozoic strata is tapped. This water is used only for stock and domestic purposes. Practically *all is* pumped by windmills, and the production of all wells is small." It should be noted that Theis did not differentiate between the Dockum Group and the Tucumcari Shale of Mesozoic age.

The water is produced from more porous strata that are interbedded with the shale and red beds. Some of the early wells encountered artesian conditions in these water-bearing zones; however, Theis states that the pressure was not sufficient to ascend to the level of the base of the Ogallala Formation. He also reported that the wells ". . . generally find water within 100 feet or a little more . . ." after penetrating the shale or red beds.

Cooper (1960, p. 27) reports that in the Causey-Lingo area north of Bluitt, the Tucumcari Shale contains little or no water. Near the village of Dora, in T. 4 S., R. 34 E., the Ogallala Formation contains only a few feet of permeable material at the base of the formation, and most of the water is obtained from sandy shale and clay in the underlying red beds. Some of the well yields are less than 1/4 gpm (gallons per minute).

At the type locality, Trauger (1964, p. 27) reports that the Tucumcari Shale lack permeability. The shaly siltstone and fine-grained shaly sandstone beds of the formation absorb and transmit water at a very slow rate, but the fractures and joints in the rock are believed to be sufficiently well developed to permit small quantities of water to enter a well.

Ogallala Formation

The Ogallala Formation is one of the most highly developed and productive aquifers in eastern New Mexico and west Texas. Detailed studies of this formation have been made by Theis (1932) in the Portales area, by Cooper (1960) in the Causey-Lingo area, and by Ash (1963) in northern Lea County. In all of these areas it is not uncommon for wells to yield 100 gpm or more. However in many areas the Ogallala is thin, and the amount of saturation may be minimal or totally lacking.

Most of the Ogallala in northern Lea County is unsaturated (Ash, 1963, fig. 2). Detailed mapping of the aquifer by Cronin (1969) and Weeks and Gutentag (1981) show large areas where the formation is non-water-bearing. The Bluitt plant is located in an area that was considered to be non-water-bearing by Weeks and Gutentag (1981). Throughout most of southern Roosevelt County, there was insufficient water production to justify mapping (fig. 4). According to Douglas P. McAda (written communication, April 20, 1984) who participated in the Weeks and Gutentag study, "The Ogallala Formation in this area is not continuously saturated. Saturation may occur locally in low areas in the pre-Ogallala erosional surface of the underlying Cretaceous rocks. The area was not contoured because of the discontinous nature of the saturated Ogallala material."

In summary, it is apparent that the Ogallala is capable of producing moderate to large quantities of water in those areas where there is sufficient saturated thickness. However comprehensive and regional studies have shown that throughout most of southern Roosevelt County, including the Bluitt plant site, the formation is not considered to be water-bearing.

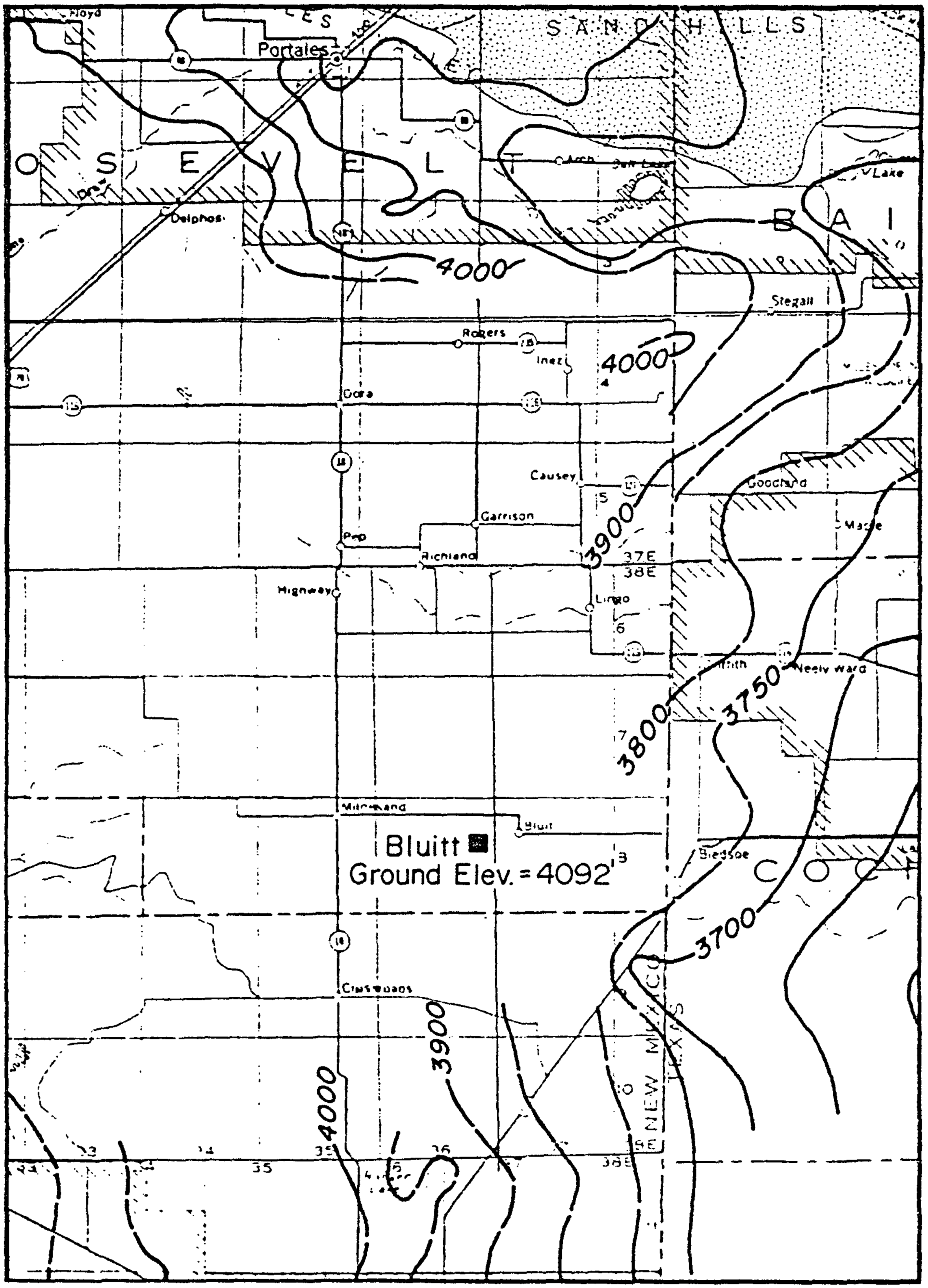


Figure 4.--Elevation of the water table in the Ogallala Formation in the vicinity of Bluitt, New Mexico. Contour interval is 50 feet. (Modified after Cities Service Company, 1982, fig. 3.1).

Chemical Quality of Ground Water

Water quality provided by Cooper (1960, Table 4) suggests that chemical characteristics of water may be used as a general guide to the source of the water-producing zones. In general, water from the Ogallala Formation is less highly mineralized than water produced by wells tapping the red beds or shale deposits.

Specific conductance, measured in micromhos, provides an indication of the amount of total mineralization in a sample of water. In general, the specific conductance multiplied by 0.65 is approximately equal to the total dissolved solids of the sample. For example, if the specific conductance is measured as 1,000 micromhos, the approximate total dissolved solids would be 650 mg/l (milligrams per liter).

In samples from the Ogallala Formation in southern Roosevelt County, the conductance ranged from 564 to 1,230 micromhos (fig. 5). The conductance ranged from 638 to 1,540 micromhos in samples collected from the shale and red bed deposits. From these reported values for specific conductance, it may be concluded that there is a wide range in mineralization in samples from both the Ogallala and the underlying strata. However, in general the mineralization is greatest in the older strata and less in the Ogallala Formation.

While conducting the inventory of wells near the Bluitt plant, samples were collected for partial analysis from three wells in the area (Table 1). Analyses from the plant water supply had previously been included in the report by Cities Service Company (1982, Table 1C). In addition, the specific conductance was measured in seven wells. These conductances indicate that the water from the Bluitt area is more highly mineralized than other water in southern Roosevelt County. Presumably most of the water near Bluitt is more

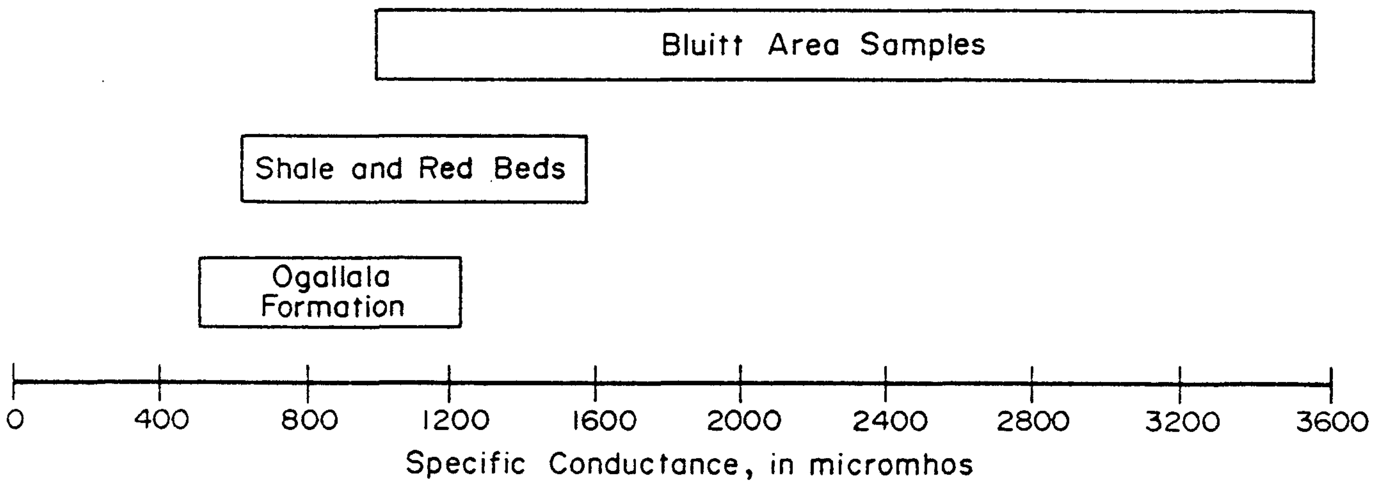


Figure 5.--Bar graphs showing range in specific conductance from water samples in southern Roosevelt County.

Table 1.--Partial chemical analyses of water samples from the Bluitt area.

Owner	R. Ainsworth	R. Ainsworth		Tyler W. Works+	L. Selman +	+	+		R. Ainsworth +
Location	7.36.26.313a "Large well"	7.36.26.313b "Small well"	7.36.32.424	8.36.1.422	8.36.14.442	8.36.17.442	8.36.18.442	8.36.33.313	8.37.5.333
Arsenic	0.001	0.004							
Cyanide	0.1	0.1							
Fluoride	0.2	0.2							
Mercury	0.002	0.002							
Nitrate	0.5	0.7							
Selenium	0.009	0.008							
Chloride	88	94			450	175			475
Iron		5.01							
Sulfate	241	522			1050	295			900
pH	7.9								
Total Dissolved Solids	809	810			2206	838			2184
Specific Conductance	1245*	1246*	990	1620	2880	1450	1540	1280	3570

* Calculated

\+ Within three-mile radius of plant

closely related to the shale and red beds than to the shallower Ogallala Formations.

Ground-Water Development Near the Bluitt Plant

A total of 22 wells were inventoried during the field investigation associated with this project. Most of the wells within a radius of three miles were inventoried, as well as several wells beyond these boundaries (fig. 6). A summary of the data from each well is given in Table 2. A total of ten of these wells were considered to be unused and seven were considered to be totally abandoned. One well was serviceable but dry. A home located in 8.36.9.111 reports very little saturation at the base of the sand and gravel deposits, and water from the underlying shale is nonpotable.

All of the water used by the Bluitt plant is obtained under contract from Mr. R. Ainsworth from two wells located in 7.36.26.313. Well 313a is called the "Large Well" and reportedly is completed at a depth of 221 feet with a static water level of 82 feet below land surface. The "Small Well", which is at the same location, is used for stand-by only. Water is also piped from these wells to other water users in the area. These two industrial wells are located approximately 3½ miles north of the plant site.

Many of the operative wells in the area are used for stock watering. These wells are equipped with cylinder pumps and windmills, and therefore are capable of producing relatively large quantities of water.

The nearest well to the plant that presently is being used is owned by Mr. Lee Selman in 8.36.14.442. This well is equipped with a submersible pump and supplies water for his house and is also used for stock watering. Water from the well has a specific conductance of 2,880 micromhos which

Table 2.--Records of wells in vicinity of Bluitt plant, Roosevelt County, New Mexico.

Owner	Location	Depth (feet)	Altitude (feet)	Water Level Depth (feet)	Water Level Date	Water Level Altitude (feet)	Use*	Specific Conductance (micromhos)	Remarks**
R. Ainsworth	7.36.26.313a	221	4116	82	3/84	4034	I		CA available; "Large well"
R. Ainsworth	26.313b		4114				I		CA; "Small well"; used for stand-by
	27.424		4119				S		Abandoned
	32.424		4118				S	990	
Tyler W.Works	8.36. 1.422		4092				I	1620	w/i 3R
R. Ainsworth	3.444a	135	4083	126.02	3/84	3957	U		Abandoned, w/i 3R
	3.444b	131	4083	119.69	3/84	3961	U		Abandoned, w/i 3R
	9.111	±150	4115				U		Poor quality;very little saturation; w/i 3R
L. Selman	13.313	114	4073	88.96	3/84	3984	S		
L. Selman	14.442		4075				D	2880	CA available, w/i 3R
	15.324	88	4091	73.36	3/84	4018	U		Abandoned, w/i 3R
	15.342	9.5	4100				U		Abandoned, caved, w/i 3R
	17.422		4113				S	1450	CA available, w/i 3R
	18.442		4128				S	1540	w/i 3R
	25.133	105	4067	dry			U		Well serviceable but dry, w/i 3R
	29.222	15.3	4107	dry			U		w/i 3R
	33.313		4092				S	1280	
R. Ainsworth	8.37.5.333		4060				S	3570	CA available
	7.311	95	4074	88.38	3/84	3985	S		w/i 3R
	8.113	65.5	4057	dry			U		Abandoned
	19.112	131	4057	95.91	3/84	3961	U		Abandoned, w/i 3R
	20.141	183	4056	154.46	3/84	3902	U		Abandoned

* I=Industrial; S=Stock; U-Unused; D=Domestic

** CA=Chemical Analysis; w/i 3R = Within 3-mile radius of plant

indicates that the well taps the Tucumcari Shale or the red beds. No logs are available. The Selman well is approximately 1¼ miles east-southeast of the Bluitt plant.

A long-abandoned well is located about ½ mile west-southwest of the plant at 8.36.15.324. This well had a static water level of 73.36 feet below land surface and a total depth of 88 feet; the well is capped and could not be sampled. Two open casings are located in 8.36.3.444 about 1¼ miles north of the plant. The water level is approximately 120 feet below land surface, but the wells were not sampled (Table 2).

CONCLUSIONS

1. Data collected during this investigation indicated that the Ogallala Formation is present in the vicinity of the Bluitt plant; however, the amount of saturation is minimal and its distribution is erratic and discontinuous. In areas where the Ogallala is non-water-bearing, wells are completed in the underlying strata which include the Tucumcari Shale and possibly the Triassic red beds.

2. Water from the Ogallala Formation generally is less highly mineralized than water produced from the deeper formations.

3. Supply wells for the plant are located about 3½ miles north of the facility. The water quality is characteristic of the Ogallala Formation, and the production rate of these wells also is more representative of the Ogallala than the underlying deposits.

4. The Lee Selman well (8.36.14.442), which is the nearest operational well to the plant, is highly mineralized and reportedly has a rather low production capacity. It is assumed that the well is completed in the Tucumari Shale.

5. Fourteen wells were inventoried within a three-mile radius of the plant. There were several wells in addition to this, particularly to the northeast, but they were winterized and inaccessible. Of the fourteen, five were abandoned (one caved-in) and two others were dry. Of the seven other

wells in the three-mile radius, five were sampled and tested for specific conductance. The range was from 1,450 to 3,570 micromhos. All were therefore above the maximum expected in the Ogallala Formation, 1,230 micromhos.

6. Although water is present in wells near the Bluitt plant, there is insufficient data available to establish whether or not continuity exists in the various water-bearing zones. Additional subsurface information would be necessary to determine whether there is a continuous water-bearing horizon, or whether the wells tap discontinuous pockets of water.

7. The construction of six on-site test holes would enable Cities Service Oil and Gas Corporation to verify the presence or absence of an areally extensive water-bearing zone beneath the Bluitt facility. If the test holes are completed as monitoring wells, they could provide a continuous record of water levels, chemical quality, and periodic changes in each. See Proposed Investigation and Monitoring Program, page 22.

REFERENCES CITED

Adams, J. E., 1929, Triassic of West Texas: American Association of Petroleum Geologists Bulletin, v. 13, no. 8, p. 1045-1055.

Ash, Sidney, R., 1963, Ground-water conditions in northern Lea County, New Mexico: U. S. Geological Survey Hydrologic Investigations Atlas HA-62, 2 sheets.

Cooper, James B., 1960, Ground water in the Causey-Lingo area, Roosevelt County, New Mexico: New Mexico State Engineer Technical Report 14, 51 p.

Cronin, J. G., 1969, Ground water in the Ogallala Formation in the southern High Plains of Texas and New Mexico: U. S. Geological Survey Hydrologic Investigations Atlas HA-330.

Mourant, W. S., 1971, Saturated thickness of post-Mesozoic deposits in the central and northern parts of Lea County, New Mexico, January 1962: New Mexico State Engineer Maps LC4 and LN4, 2 sheets.

Nye, S. S., 1930, Shallow ground-water supplies in northern Lea County, New Mexico: New Mexico State Engineer 9th Biennial Report, 1928-1930, p. 363-387.

_________ 1932, Progress report on the ground-water supply of northern Lea County, New Mexico: New Mexico State Engineer 10th Biennial Report, 1930-1932, p. 229-251.

Theis, C. V., 1932, Report on ground water in Curry and Roosevelt Counties, New Mexico: New Mexico State Engineer 10th Biennial Report, p. 98-160, 6 figs.

Trauger, F. D. and Bushman, F. X., 1964, Geology and ground water in the vicinity of Tucumcari, Quay County, New Mexico: New Mexico State Engineer Technical Report 30, 178 p.

Weeks, J. B. and Gutentag, E. D., 1981, Bedrock geology, altitude of base, and 1980 saturated thickness of the High Plains Aquifer in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas and Wyoming: U. S. Geological Survey Hydrologic Investigations Atlas HA-648.

PROPOSED INVESTIGATION AND MONITORING PROGRAM

Cities Service Oil and Gas Corporation
Bluitt Gas Processing Plant

Preliminary work was performed during March and April 1984 at the Bluitt plant near Milnesand, New Mexico, under Agreement with Contractor No. 1539692. The purpose of this work was to collect sufficient data to prepare a geohydrologic study within a three-mile radius of the plant. This study will be used to supplement the Discharge Plan prepared by Cities Service Oil and Gas Corporation and submitted to the Oil Conservation Division in September 1982. In addition, item 7.b.iv of the Contractor's Agreement requires the recommendation of a monitoring program that will " . . . assure the state of no future contamination of usable groundwater if it is judged to be currently uncontaminated."

A properly designed monitoring system and sampling program can be constructed and maintained with a minimum of expense at the Bluitt facility. This would consist of several monitoring wells which can subsequently be measured and sampled by employees of the plant.

Presently (August 1984) there is no evidence that waste products from the plant are entering the environment. Therefore it is not essential that a monitoring system be installed at the plant site. Nevertheless, such a system would provide a warning to Cities Service in the event that unforeseen discharges or accidents occur. Corrective action could be taken immediately so that off-site contamination is minimized. Also, at the present time there is insufficient data available to verify the absence or existence of ground water beneath the Bluitt facility. Until the absence of water has been established, it is difficult to properly design a monitoring system.

Background

Our preliminary investigations have shown that there are two separate water-bearing zones present within a three-mile radius of the plant. One aquifer is located north of the facility, and large-capacity wells produce good quality water from this horizon. This is probably a part of the Ogallala aquifer.

In the vicinity of the plant itself, there are scattered wells which produce small quantities of highly mineralized water. At the present time there is insufficient data to determine the source of this ground water. We have not been able to determine whether there is a continous water-bearing horizon, or whether these are isolated and discontinuous pockets of water. Also, we do not know if the water is perched on top of the bedrock or is being produced from sandstone stringers in the shale bedrock.

If there is a continuous water-bearing zone beneath the plant, the direction of flow is generally from west to east. There may also be a northward component of flow, but this could be verified during installation of the monitoring wells. Rates of flow are unknown.

The installation of monitoring wells would provide the necessary information to resolve these questions.

Monitoring Wells

Monitoring wells should be drilled with air-rotary from the surface to the shale bedrock. The alluvium at the surface would be completely penetrated and samples of the cuttings would be described. When the hole has reached total depth, it would be cased with 4-inch PVC casing that has been capped at the bottom and the lower 20 feet of casing slotted.

The total depth of the holes is difficult to estimate at the present time. Since most wells in the vicinity of the plant are about 120 feet deep, it may be assumed that the top of the aquifer is somewhat shallower. However, if the water-bearing zones are sandstone strings in the shale bedrock, then the alluvium may be considerably thinner. Therefore we estimate that the maximum depth of the proposed monitoring wells would be about 100 feet, and may be as shallow as 30 to 40 feet.

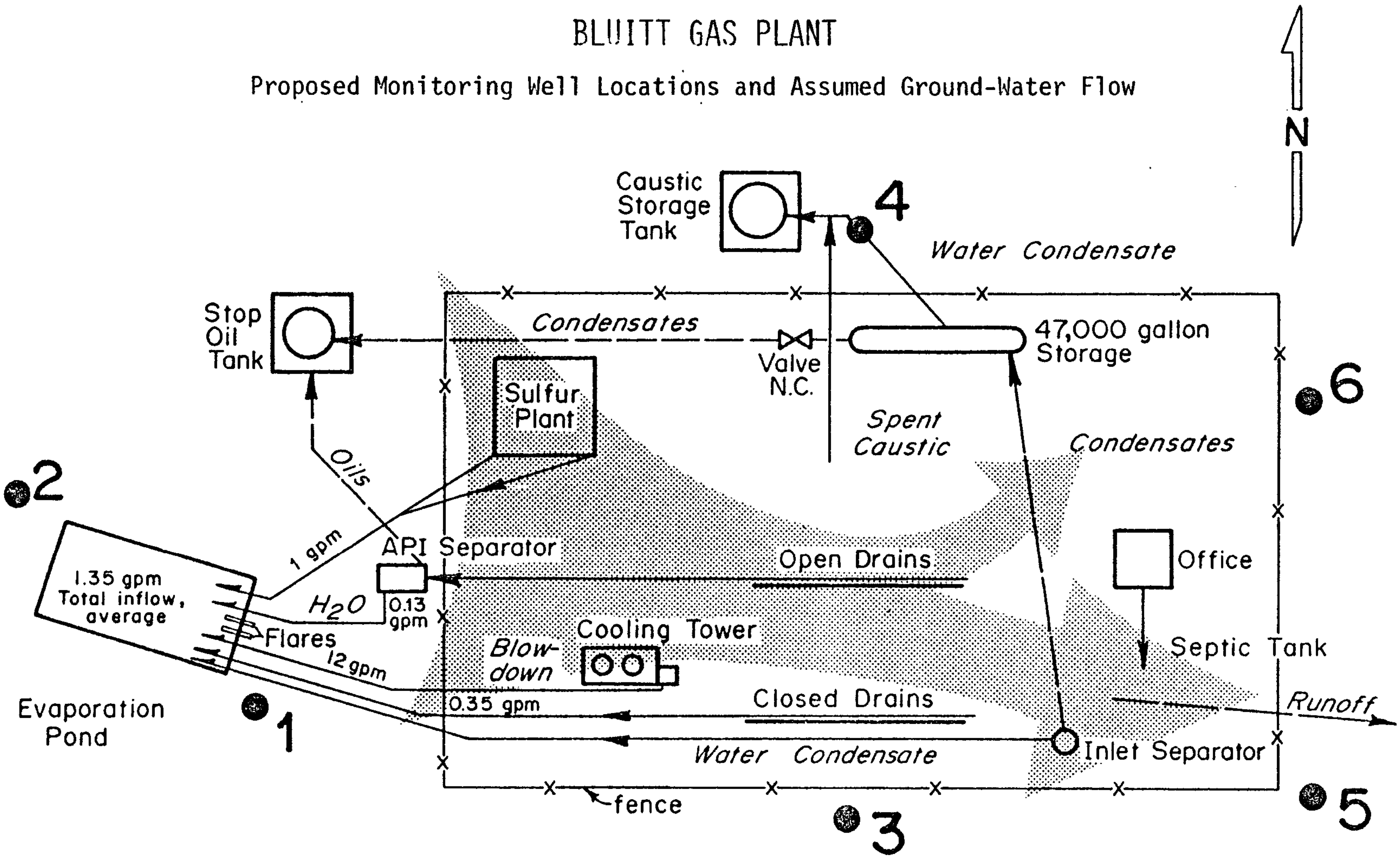
We propose that four to six monitoring wells be installed around the perimeter of the Bluitt plant. (If the services of a drilling rig are retained on an hourly basis, the actual number of installations might vary by the amount of time available.) The proposed locations, numbered by drilling sequence, are shown on the accompanying map.

Assuming an east-southeast direction of ground-water flow, Well No. 1 would be drilled at a site near the southeast corner of the evaporation pond. This well would indicate the presence of infiltration from the pond, if present. It would also become the primary sampling point of the monitoring system. Well No. 2 would be drilled up-gradient from the pond. If there is ground-water movement beneath the pond, this well would show the quality of uncontaminated water with which the waste products are mixing. Well No. 3 would identify the thickness of the alluvium along the south side of the plant site, and it would indicate the presence of contaminants moving off-site to the south. Well No. 4 would monitor the impact of any leakage from the caustic storage tank, as well as show the quality of water on the north edge of the plant. Well Nos. 5 and 6 would be drilled to sample ground water moving eastward from the plant site.

Since all drilling would be done with air, any fluid which collects in the casing would represent aquifer fluid. Water levels in each well would be measured, and if sufficient fluid is present, a sample would be bailed from the well. The samples would be submitted to an independent laboratory for analysis.

BLUITT GAS PLANT

Proposed Monitoring Well Locations and Assumed Ground-Water Flow



NOT TO SCALE

Short-term slug tests should be made on each well to determine the aquifer characteristics of the water-bearing zones. This information would be necessary in order to determine the rate of ground-water flow and the potential for contaminated plume expansion.

Any monitoring well that contains fluid will be sampled and analyzed for major anions and cations, plus total dissolved solids and hydrocarbons. High potassium levels in Well No. 4 would be indicative of seepage from the caustic tanks; hydrocarbons in Well No. 1 would suggest infiltration from the evaporation pond.

Proposed Monitoring Program

After the above described data have been collected and evaluated, it will simply be a matter of periodic measuring and sampling of the monitoring wells. All of this work can be performed by employees at the Bluitt facility, and the data can be submitted to the Oil Conservation Division through the Cities Service office in Tulsa.

There are two items of importance in a monitoring program for a facility similar to that at Bluitt. First, it is important to monitor any changes in water levels in the monitoring wells. Natural water-level fluctuations occur as a result of seasonal changes in precipitation and evaporation. Assuming that uncontaminated ground water is identified in one or more of the wells, monthly measurements could be made which would document the seasonal changes in water levels. Once this pattern has been established--after one or two years--anomalous changes would be very obvious. An anomalous change might result from a spill or excessive leakage from a holding facility.

If all of the monitoring wells are found to be dry, it is important to verify this monthly and maintain a record of the measurements.

Samples would be bailed from each well containing water. Three times the volume of water should be removed from the casing before the sample is collected. For example, there is 0.654 gallon of fluid per vertical foot of 4-inch I.D. casing. If there are four feet of water in the casing, then about eight gallons of water should be removed from the casing prior to collecting the sample.

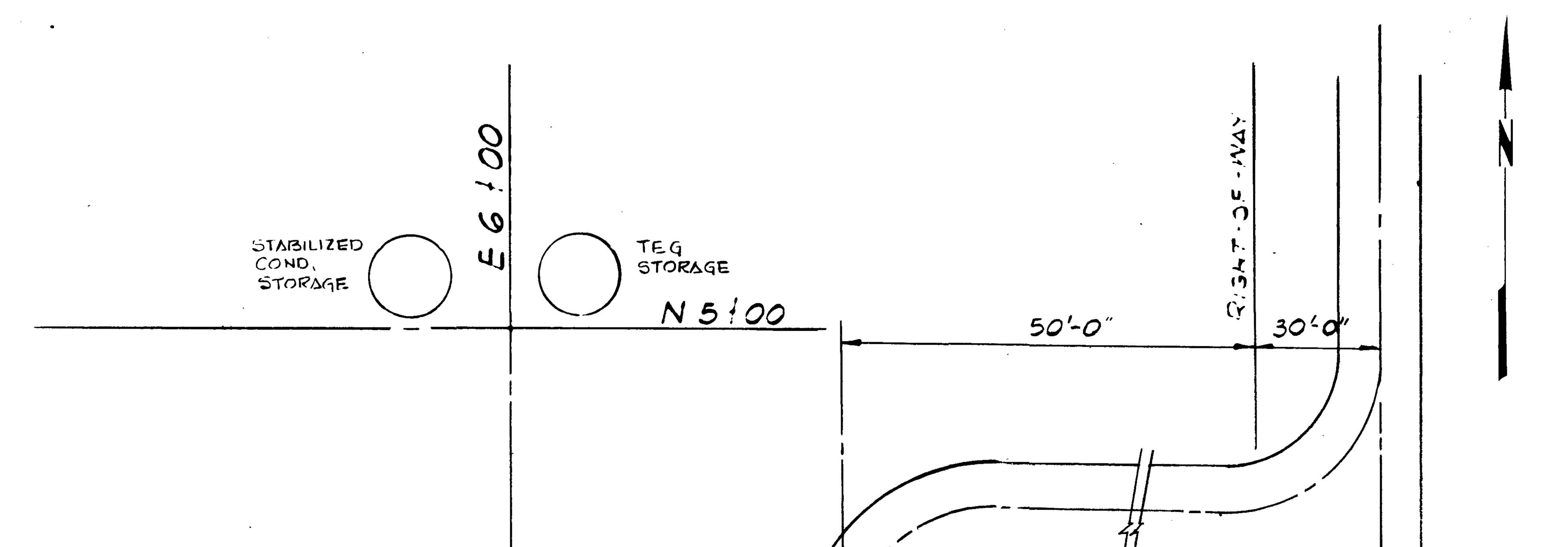
During the first two years, samples should be collected quarterly. As in the case of the water-level measurements, this would help to document any seasonal changes that might occur. If no contaminants are identified during this period of time, the program should be reduced to biannual sampling of the wells. If, and when, an anomaly is identified, the sampling program can be intensified until the problem has been identified and resolved.

The Lee Selman well (8.36.14.442) is apparently the only domestic supply well that is located in an area where plant contaminants could migrate. It might be advantageous to collect a sample from this well and analyze for major anions, cations, hydrocarbons, and total dissolved solids. In the event of a subsequent complaint, the analysis could be used as a guide and comparison.

Summary

Due to the paucity of subsurface information at Bluitt, there are a number of unknowns which could be resolved by the installation of the proposed monitoring system at the plant site. These include thickness of alluvium, presence or absence of shallow ground water, water quality, and aquifer parameters.

	CLOSED DRAIN		REFRIGERANT DRAIN		CLOSED DRAIN OUTLETS
1	LP. INTERSTAGE SCRUBBER #1 & #2 COOPERS	14	REFRIGERANT SCRUBBER	26	CONNECTION TO FLARE
2	L.P. INTERSTAGE SCRUBBER #3 COOPER	15	DeC2 CHILLER RECLAIMER	27	3 PHASE SEPARATOR CONNECT TO COND. FILTERS
3	CM 7			29	3 PHASE SEPARATOR TO DISPOSAL LINE
4	CM 8	24	CRYO PLANT CHILLER RECLAIMER		
5	CM 8				
6	CM 7				
7	CM 6				
8	CM 5				
9	HEATER FUEL GAS SCRUBBER				
10	AMINE FLASH TANK				
11	ENGINE FUEL SCRUBBER				
12	HEATER FUEL MIXER (OLD DeC2)				
13	HEATER FUEL FILTER				
16	DeC2 REBOILER (2)				
17	INLET SCRUBBER, WATER DUMP				
18	AMINE CONTACTOR OVHD SCRUBBER				
19	AMINE CONTACTOR				
20	SWEET INLET GAS WATER K.O.				
21	SWEET INLET GAS COND. K.O.				
22	REFRIGERANT DISCHARGE TO L.P. SCRUBBER				
25	LOW PRESSURE SCRUBBER DUMP				
28	CRYO PLANT TIE IN				



NOTE: LOCATION OF ANALYZER HOUSE IS ASSUMED. FIELD VERIFY ACTUAL LOCATION.

2	ADDED OPEN DRAIN				JTC	2-27-91								
NO.	REVISION	ENGR.	P.E. NO.	JOB NO.	BY	DATE	BY	DATE	BY	DATE	BY	DATE		
					DRAWN		INITIAL CK.		FINAL CK.		APPROVED			

OXY USA INC. MIDLAND, TEXAS

BLUITT GAS PLANT

TITLE: PLOT PLAN DRAIN SYSTEM WASTEWATER & WASTE FLOWS

DWG. NO. 289-1500-E1 REV. 2

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

December 19, 1984

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Innes
Cities Service Oil and Gas Corp.
P.O. Box 300
Tulsa, OK 74102

Re: Discharge Plan for Bluitt Gas Processing Plant

Dear Mr. Innes:

We have received your letter dated December 5, 1984, requesting an extension of time for submittal of the revised Bluitt discharge plan. It is our understanding that a major part of the discharge plan has been completed and received from Geohydrology Associates, Inc., and that information on the underground storage well will be obtained during your December 17th visit to the plant.

Pursuant to Section 3-106.A. of the New Mexico Water Quality Control Commission Regulations and for good cause shown, Cities Service is hereby granted its request for an extension until January 31, 1985, to submit its amended discharge plan for OCD approval. Section 3-106.A. also requires that after 240 days following receipt by Cities Service of written notice that a discharge plan is required, discharges without an approved plan are not allowed except for good cause as authorized by the Director. Because of the extension for discharge plan amendment submittal, the review of the plan after OCD receipt, issuance of public notice and receipt of public comment, Cities Service is granted an extension until May 31, 1985 to discharge at the Bluitt Plant without an approved discharge plan.

Regarding the unlined evaporation pond, to be allowed to continue discharging to the unlined pond you must be able to demonstrate that the discharge will not cause ground water standards to be exceeded at a place of present or foreseeable future use of the water. Such a demonstration would need to include a detailed hydrogeological study of the area (e.g., ground water availability and movement, geology, water quality (organic and inorganic parameters), vadose zone interactions, etc.), and your plans for sampling and monitoring both the effluent and ground water (via likely use of monitoring wells) for the lifetime of the plant and possibly longer (see Section 3-107 of the WQCC Regulations for what may be required). You may wish to also investigate some other method of disposal including a lined evaporation pond, or shipment to an injection well.

If you have any questions on this extension, or on the discharge plan process, please feel free to contact Dave Boyer or Phil Baca at (505) 827-5812.

Sincerely,

R. L. Stamets

R. L. STAMETS
Director

RLS/PB/dp

cc: Oil Conservation Division (Hobbs)

P 505 905 797

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Cities Service Oil & Gas Corp.	
Street and No. Box 300	
P.O., State and ZIP Code Tulsa, OK 74102	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982

OXY
CITIES SERVICE

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

December 5, 1984

RECEIVED
DEC 10 1984
OIL CONSERVATION DIVISION
SANTA FE

Mr. Phillip Baca
State Oil Conservation Division
Environmental Bureau
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Baca:

Subject: Bluitt Discharge Plan Amendment

The report from Geohydrology Associates, Inc. on the Bluitt Plant geohydrology has been received. This will be the major part of the plant Discharge Plan amendment.

Work on another of the three parts to the amendment is still in progress. This is the general description of the underground storage well. Information on the well is scarce since the Bluitt Facility was not built or originally operated by Cities Service. I have a trip scheduled for the week of December 17 during which I plan to obtain the last of the information necessary.

An extension to January 31, 1985 for submission of the amendment is requested in order to complete the third part. Please give me a call if further information is needed.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI:lam

E3/201

CITIES SERVICE OIL AND GAS CORPORATION
BOX 300
TULSA, OKLAHOMA 74102

August 23, 1984

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
Post Office Box 2088
Santa Fe, NM 87501

RE: Discharge Plan Amendment -
Progress, Bluitt Plant

Dear Mr. Ramey:

All the data is now in and Geohydrology Associates, Inc. is in the process of writing their report on the plant area geohydrology. It is expected that we will receive this report during the first part of September.

We have completed our inventory of chemicals used at the plant and now have an updated list to include in our discharge plan amendment.

Also, we now have a change in operations which we will include in our amendment. The discharge plan which we submitted in September 1982 stated on page 6-4 that the spent caustic generated by product treating went to a disposal site near Hobbs operated by Pollution Controls, Inc. This material is now being hauled by CECOS International to their deep disposal well in Odessa, Texas. This well is approved by the Texas Department of Water Resources for this waste under their Underground Injection Control program.

If you have any questions or need additional information, please give me a call at 918/561-2498.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI/mjk

CITIES SERVICE OIL AND GAS CORPORATION
BOX 300
TULSA, OKLAHOMA 74102

April 13, 1984

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Ramey:

Subject: Discharge Plan Amendment - Progress
Bluitt Plant

Geohydrology Associates, Inc., has made a literature and file search for hydrologic data in the vicinity of the plant. Contact has been made with the U.S. Geological Survey to collect information, geologic data and soils maps.

Mr. T. E. Kelly, senior hydrologist with Geohydrology, visited the plant and vicinity on March 28, 1984. He made an inventory of the existing wells within a 3-mile radius of the plant site. On the following day, he met with representatives of the State Engineer Office in Roswell and the OCD in Artesia.

If you have any questions or need additional information, please give me a call at 918/561-2498.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

RECEIVED
APR 16 1984
OIL CONSERVATION DIVISION
SANTA FE

SI/jt

H1/079

CITIES SERVICE OIL AND GAS CORPORATION
BOX 300
TULSA, OKLAHOMA 74102

February 13, 1984

RECEIVED
FEB 17 1984
OIL CONSERVATION DIVISION
SANTA FE

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Ramey:

Subject: Discharge Plan Amendment - Progress
Bluitt Plant

Cities Service has retained Geohydrology Associates, Inc., Albuquerque, to perform the geohydrologic study of the Bluitt Plant area. Study efforts will begin in earnest about the first week of March. A plant site visit is planned for the first or second week of March.

Also, as a separate part of the amendment, a list of chemicals used at the plant is under preparation.

If you have any questions or need additional information, please give me a call at 918/561-2498.

Sincerely,

NATURAL GAS LIQUIDS GROUP

Steve Innes

Steve Innes
Environmental Coordinator

SI/sm

H1/079

CITIES SERVICE OIL AND GAS CORPORATION
BOX 300
TULSA, OKLAHOMA 74102

October 14, 1983

RECEIVED
OCT 18 1983
OIL CONSERVATION DIVISION
SANTA FE

Mr. Joe D. Ramey, Director
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

RE: Cities Service Oil and Gas Corporation
Bluitt Natural Gas Processing Plant Changes

Dear Mr. Ramey:

This letter will confirm our phone conversation of this date concerning conversion of the present oil absorption process to a refrigeration process. This will require venting of some methane in a nitrogen stream at the subject plant. As discussed, nitrogen will have to be rejected from the residue gas stream to meet pipeline BTU specifications due to increased recovery of natural gas liquids with the refrigeration process.

Attached to this letter is a memo to me from the Cities Service project engineer assigned to this project detailing the process change, explaining the venting, and illustrating the fuel savings for the new process.

On the subject of water discharges raised by you, our discharge plan filed with your office in October 1982 will be reviewed and, if necessary, amended to reflect the process conversion.

Please feel free to contact me at (918) 561-8411 if you have any questions about the matters contained in this letter.

Thank you for your help.

Very truly yours,

NATURAL GAS LIQUIDS DIVISION

R J Cinq-Mars

R. J. Cinq-Mars
Environmental Compliance Manager

RJC/lw

Attachment

cc: J. C. Crabtree
R. F. Ralston

CITIES SERVICE

INTEROFFICE LETTER

October 11, 1983

TO: Mr. R. J. Cinq-Mars

FROM: R. M. Spinks R.M. Spinks

SUBJECT: Bluitt Cryogenic Plant
Methane in Nitrogen Vent Stream

The new facilities which will be installed at our Bluitt Gas Processing Plant will replace the refrigerated oil absorption hydrocarbon recovery portion of the existing facilities. This new plant will be a refrigerated J-T process which will recover more gallons of liquid product while consuming fewer Btu's per gallon of liquid recovered. Due to this increased liquid recovery and a high nitrogen content in the inlet gas, some nitrogen must be rejected from the residue gas stream in order to meet the contractual Btu/CF value on that stream.

The new facilities will reject some of that nitrogen to plant fuel and some into the atmosphere. The nitrogen stream vented to the atmosphere, which is the warmed-up overhead product from a stripping tower, will flow at a rate of 1,125 MSCFD and contain 96.6 mol% nitrogen and 3.4 mol% methane.

At first glance, it might appear that valuable fuel Btu's will be wasted by rejecting 38.3 MSCFD of methane to the atmosphere with the nitrogen. However, as those of us in the NGL business are aware, it takes more energy to produce a higher-purity stream. In this case, the Btu's consumed as reboiler heat necessary to produce a higher-purity nitrogen stream would be greater than the Btu's recovered as methane (not to mention the operational problems presented by a reflux pump operating on a -300°F stream). The following table illustrates the fuel savings of the new plant:

	Sweet Gas Feed (MMSCFD)	Liquid Recovery (gal./day)	Fuel Usage (MMBtu/day)	Energy Index (Btu Consumed Per Gallon Recovered)
Existing Plant	27.0	98,930	3,984	40,271
New Plant	25.0	142,020	3,095*	21,793*

*Includes methane in nitrogen vent stream.

These numbers show that even with the vented methane, the new plant operates in a more fuel efficient manner. If you have any further questions, please contact me.

RMS/lem

L2/007

CITIES SERVICE COMPANY
BOX 300
TULSA, OKLAHOMA 74102

October 1, 1982

RECEIVED
OCT 4 1982
OIL CONSERVATION DIVISION
SANTA FE

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Ramey:

SUBJECT: Discharge Plans for Abo, Burton Flats and Bluitt Plants

As required, herewith submitted are the discharge plans for the subject Cities Service plants located in New Mexico. I am sure you will find the plans complete, in depth and in accordance with the Oil Conservation Division guidelines.

If there are any questions regarding any of the plans, do not hesitate to call me at (918) 561-2498. We will be happy to meet with you at any time in your offices for discussion. Your Division's help in these matters have been greatly appreciated.

Sincerely,

NATURAL GAS LIQUIDS DIVISION

Steve Innes

Steve Innes
Environmental Coordinator

SI/lw

Enclosure

cc: Oscar A. Simpson

Cities Service Company

Bluitt

Gas Processing Plant

Discharge Plan

Submitted to:

New Mexico Oil Conservation Division

Santa Fe, New Mexico

Prepared by:

Natural Gas Liquids Division

September, 1982

Summary

Cities Service Company purchased the Bluitt Plant in 1966 and has since increased acid gas recovery, installed a sulfur plant, added power generation facilities and added ethane recovery with increased recovery of LPG. It is now designed to handle 37 MMCFD of gas and has 32 employees who live in the surrounding communities.

All plant wastewater flows are contained in a 173' x 50' evaporation pond. Eighty-seven percent of the wastewater flow is cooling tower blowdown, averaging 12 gpm. Blowdowns and spills from the process area are sent to an oversized oil/water separator. Water from the separator is pumped to the pond while oils go to an aboveground slop oil tank. Other waste materials and by-products are contained in vessels and hauled off frequently.

The Ogallala aquifer does not extend into this area and there is no ground-water to be found under the plant site or in the immediate vicinity.

Improvements have been made in recent years in the wastewater systems and more are slated this year as good insurance. The current general makeup and operations of the wastewater systems will be maintained.

TABLE OF CONTENTS

I. Introduction

This report is submitted in accordance with Section 3-106 of the New Mexico Water Quality Control Commission Regulations, WQCC81-2, as required by the New Mexico Oil Conservation Division and includes a plan of containment for wastewater and materials associated with the operation of Cities Service Company's Bluitt Gas Processing Plant.

II. History and Background of the Plant

The original Bluitt Plant was built by Austin Rankin in 1961. It was designed to process 16 MMCFD of inlet gas applying a refrigerated lean oil process to recover propane, butanes and natural gasoline. Cities Service purchased the Bluitt Plant from Capitan, Inc. in 1966. During 1967 and 1968, Cities added a sulfur recovery plant designed and built by the Ortloff Corporation and expanded the existing processing and treating facilities to handle 37 MMCFD of inlet gas. Ethane recovery facilities were installed in 1971. In 1979, two new sulfur condensers were purchased and installed by Stiles Energy Corporation. A new waste heat boiler, designed by Western Research and Development, was installed in the spring of 1981. The plant now processes 28 MMCFD of inlet gas. Products include a demethanized mix, propane and sulfur. Thirty-two people are employed and live in the surrounding communities.

III. Environmental Description

Geology

About 200 million years ago, a shallow (permian) sea covered the Southern High Plains. The materials laid down in this sea consisted primarily of fine sand, silt and clay. Today these sediments are known as the Permian Red Beds.

Some 185 million years ago the sea retreated, exposing rocks and sedimentary sea deposits. The subsequent weathering action on this surface created the material recognized today as the Triassic Red Beds, distinguished from the Permian sediments by being markedly more red in color. These deposits represent the floor of most of the water wells drilled throughout Roosevelt county. Some 60 million years ago, the area was again submerged by a shallow sea. This sea deposited the blue shale, blue and yellow clay, limestone, sandstone, sand, and gravel identified today as Cretaceous sediments. Only scattered areas of these Cretaceous deposits are found in Roosevelt County.

The Ogallala Formation, the water-bearing strata presently being tapped for domestic and irrigation use, resulted from the rise of the Rocky Mountain chain. As the mountains were worn down by erosion, the streams began to deposit sand, gravel and silt near their source. These deposits formed alluvial fans of coarse gravelly material along foot slopes of the mountains; the finer materials were moved and spread farther to the east. The Ogallala Formation developed in these deposits of outwash material.

Fresh water saturated the material at times during its deposition.

Within the Pleistocene period, the Ice Age, ice did not advance as far south as the Southern High Plains, but the wet and dry cycles of the glacial and inter-glacial periods had a marked effect on the climate, vegetation and soil of the area. Eolian sands were deposited on the dry cycles, while caliche (calcium carbonate) was precipated as a cap over wind blown material in the wet cycle. Playas were formed where the caliche was less mature. Lakes were enlarged with each cycle and new materials deposited.

Climate

Roosevelt County has a semi-arid continental climate. Winds bring moisture into the area from the Gulf of Mexico. Because of the more favorable summer wind circulation, the large majority of annual rainfall normally occurs during the months of May through September. Much of this precipitation falls in the form of brief, and at times, heavy thunder-showers. The average annual precipitation in the Milnesand area is approximately 16 inches. The average annual snowfall in the county is less than 10 inches.

The annual mean temperature of Roosevelt County is 58°F. The variation in daily temperature of the county is more than 30°. The average annual humidity is near 52%. During the warmest part of the day, the humidity will range from 30% in June to 40% in January.

Wind records are not available for Roosevelt County, but records at nearby stations indicate an average wind velocity of about 12 miles per hour. March normally is the windiest month of the year with an average velocity exceeding 15 miles per hour. Late in fall, velocities drop to less than 10 miles per hour.

Records showing water loss by evaporation from a Class A evaporation pan have been kept near Portales for the period from 1934 to 1960. These records show that approximately 92 inches of water are evaporated each year, or about six times the normal annual rainfall. Water loss by evaporation is greatest in June, about 12.5 inches.

Hydrogeology

Rocks of the Permian System underlie all of the Southern High Plains. Saline water is produced from the Permian and older Paleozoic rocks, along with oil and gas; but at no place in the area is potable water known to be pumped from these formations. Any water available from them would probably be saline.

The beds of the Dockum Group of Late Triassic Age lie on the eroded surface of the Permian rocks throughout the area. The amount of water pumped from aquifers in the Dockum Group is small, and the water is used mainly for stock and industrial purposes. The yields of wells completed in these aquifers would range from meager to moderate, possibly 100 gallons per minute or less. The water would probably be saline and probably unsuitable in most instances for irrigation or public supply.

Rocks of early Cretaceous Age were deposited on the eroded surface of older rocks, probably throughout the entire Southern High Plains. The groundwater in these rocks is in hydraulic continuity with the groundwater in the Ogallala Formation in the vicinity of Causey and Lingo in Roosevelt County (Cooper, 1960). Wells tapping aquifers in the Cretaceous rocks or tapping both the Cretaceous aquifer in the Ogallala Formation have been known to yield moderate to large amounts of water suitable for irrigation. However, as the water table in the Ogallala Formation has declined, the yield of some of these wells has decreased. Reports by Leggat (1952 and 1957), Rayner (1963), Ash (1963), and Cronin (1964) indicate that the Cretaceous rocks do not constitute an important source of groundwater for large scale irrigation, municipal water supply or other uses.

The Ogallala Formation consists of clay, silt, fine to coarse-grained sand, gravel and caliche. The lithology varies within short distances, both vertically and horizontally, and individual beds or lenses are not continuous over wide areas. Instead, the individual beds or lenses generally pinch out or grade into finer or coarser material.

Most of the Ogallala is unconsolidated, although near the top and locally within the formation sediments have been cemented, chiefly by calcium carbonate, to form beds of caliche. The degree of cementation varies greatly from well cemented to partially cemented. The caliche occurs in single or multiple layers in the uppermost part of the formation throughout much of the Southern High Plains. Because it is resistant to erosion, it forms the "caprock" of the escarpment and the topographic prominences of the plains surface.

The Ogallala Formation overlies an erosional surface cut into Cretaceous, Jurassic, Triassic, and Permian rocks. The configuration of this surface is shown by contours on the base of the Ogallala Formation, Figure 3.0. The contours show that the slope of this erosional surface is generally east-southeast.

Ground water in the Ogallala Formation is unconfined and is contained in the pore spaces of the unconsolidated or partially consolidated sediments. At present, the Ogallala Formation is at a higher evalation on the High Plains than the surface of all sides. No water enters it from the Rocky Mountains. The only recharge of any consequence for the ground water reservoir is from rain or snow that falls on the High Plains. Researchers with information from the U.S. Geological Survey have suggested that the rate of movement of the Ogallala ground water is of the order of 150 ft. per year.

As previously noted, Figure 3.0 shows the contours of the base of the Ogallala Formation. Figure 3.1 shows the elevation contours of the groundwater. On both maps it will be noted that there are no contours in Southern Roosevelt County and in particular in the vicinity of the hamlets of Milnesand and Bluit where the Bluitt Plant is located. To the north and to the south, the contours for the water table are dashed becaused they are inferred. The contours are also inferred to the north for the base. The reason for all this according to Doug McAda, U.S. Geological Survey hydrologist, Denver, is that the Ogallala Formation in this area is "very discontinuous and essentially unsaturated". There are pockets of groundwater but they cannot be tied together. It was just "coincidental" that the base contour lines terminate about the

Fig. 3.0 - Elevation of the
Base of the Ogallala Formation

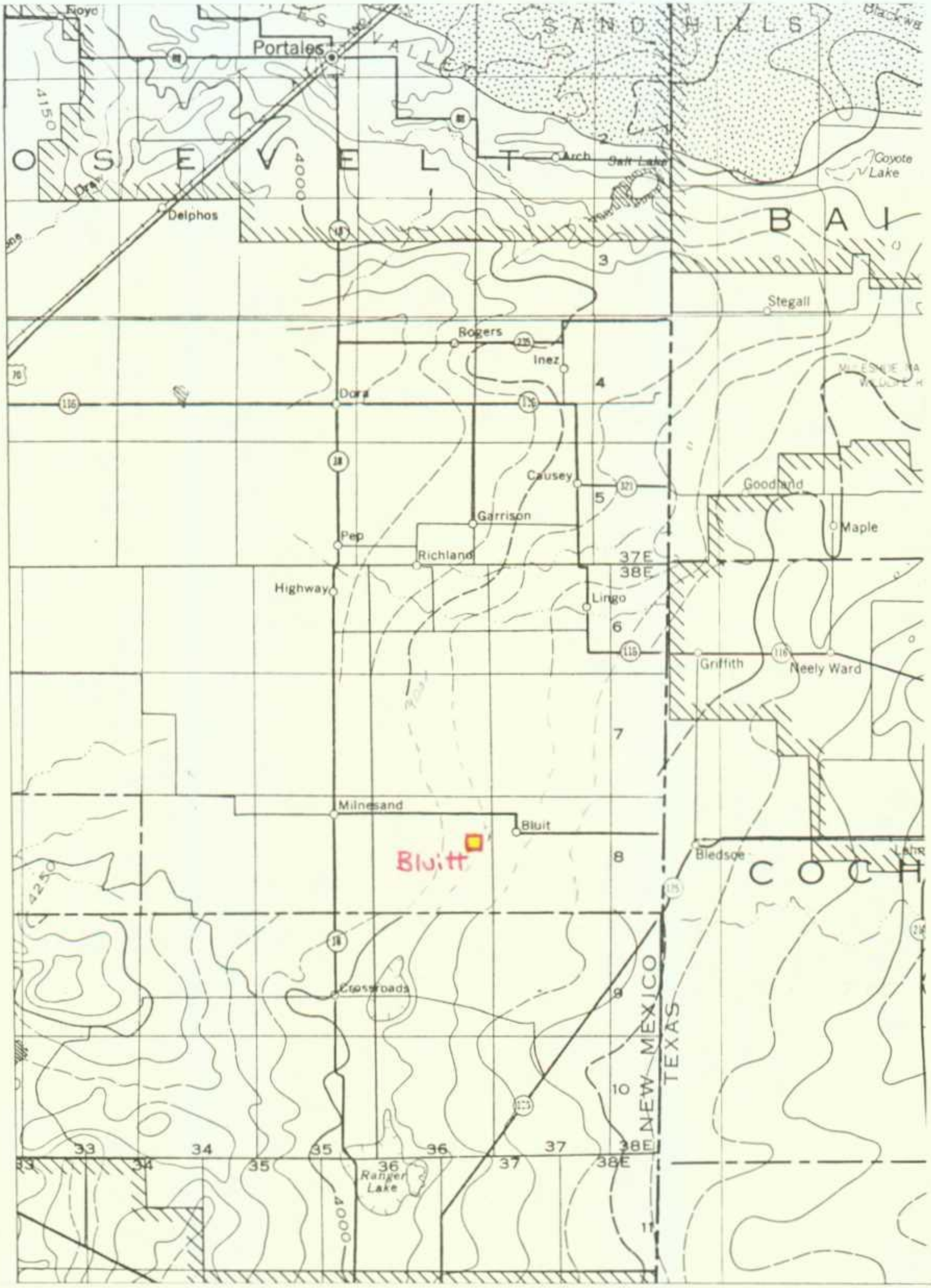
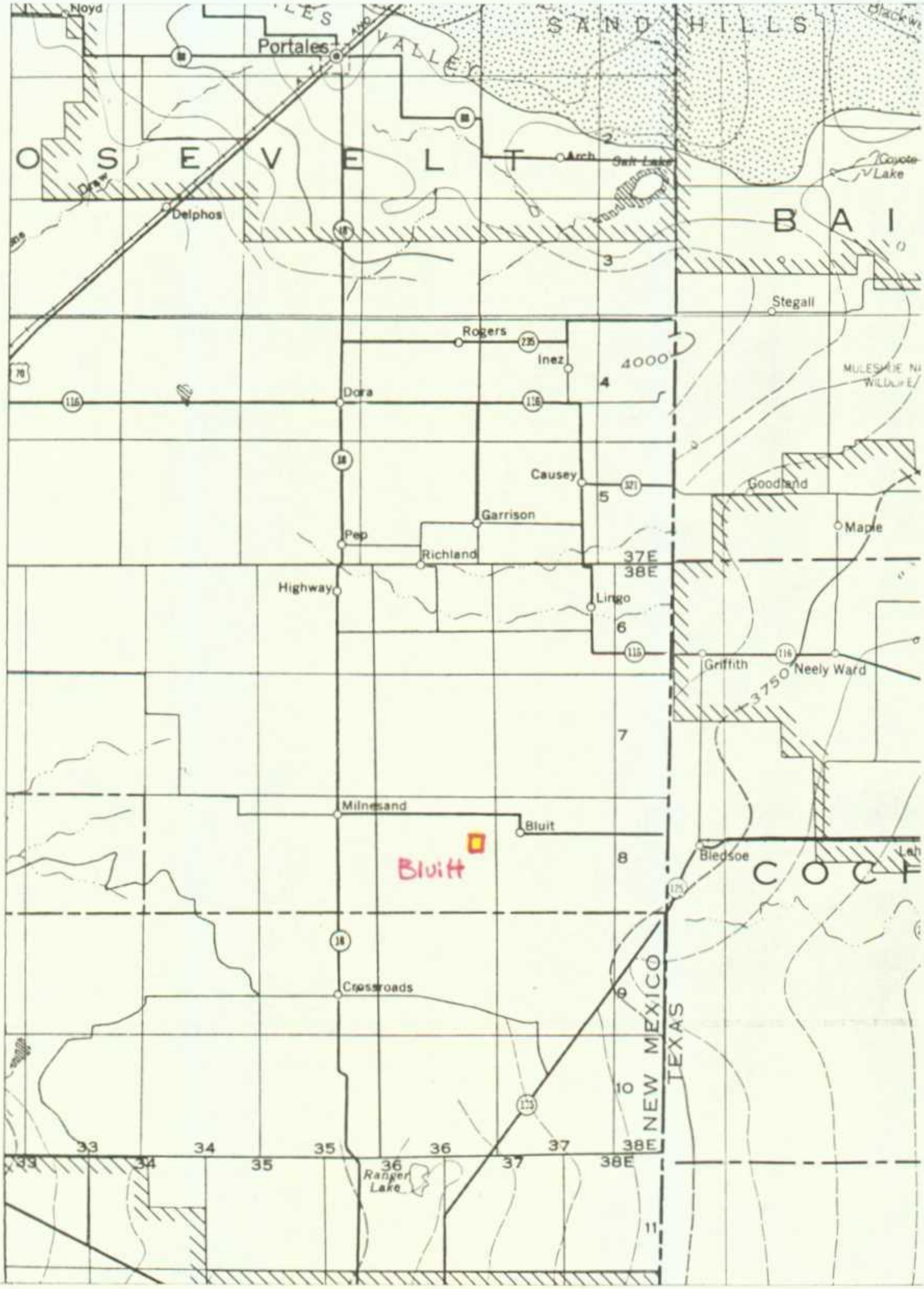


Fig. 3.1 - Elevation of the
Ogallala Water Table, 1967



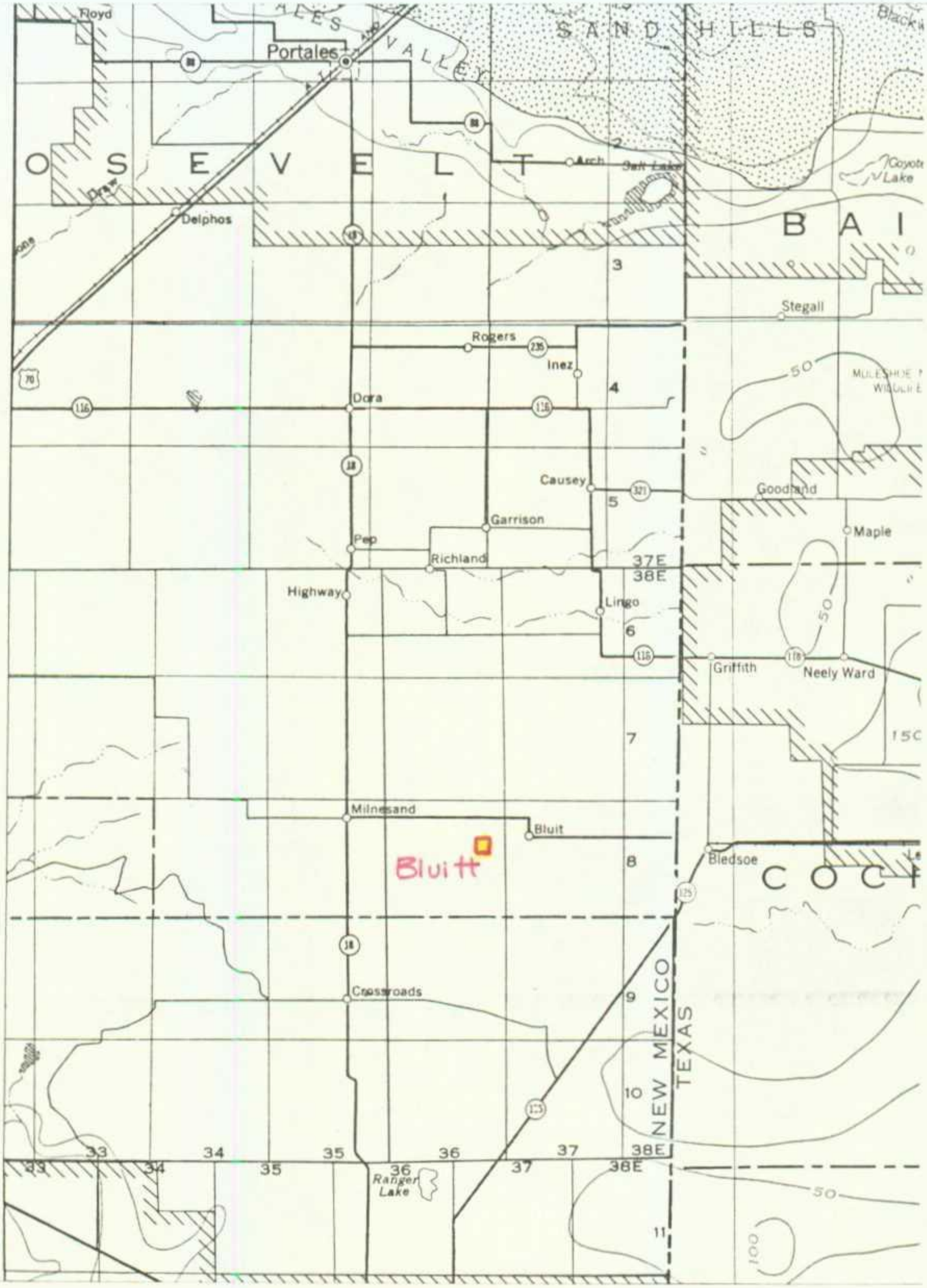
Roosevelt-Lea County line. The information is available for the unmarked area, but contours simply cannot be drawn for such discontinuities.

It is interesting to note what happens if the contour lines are connected through the unmarked area on both the ground water elevation map and its base, though it is clear this cannot legitimately be done. Both the contour elevations which fall in the plant location are 3900 ft, meaning that there would be zero saturated thickness, and no aquifer.

Looking at Figure 3.2 showing the saturated thickness of the Ogallala aquifer, it can be seen that the nearest 50 ft contour, the lowest mapping interval, is 11 miles southeast. The next closest contour is 18 miles northeast. The map was published in 1967. The 30 years preceding that saw a decline in the groundwater table of 20 feet in areas in a 30-mile radius around Bluitt to the east and up to 40 feet in a few isolated spots on the same ring. The groundwater table has undoubtedly continued a gradual decline.

Full sized maps of the last three figures, Figures 3.0, 3.1, and 3.2, are in a pocket in the Appendix. These provide a complete picture of groundwater in the Southern High Plains. They also show the nearest "declared underground water basins." These are outlined in cross-hatching. The closest basin to Bluitt is 23 miles south in Lea County. Thirty miles to the north of the plant is the declared basin which emcompasses Portales and the Portales Valley. The New Mexico State Engineers office recently stated there are no new declared basins between these two as shown or extensions toward Bluitt.

Fig. 3.2 - Saturated Thickness
of the Ogallala Formation, 1967



There is likely no groundwater to be found on or near the plant site and if there were any, it would surely be discontinuous. The plant water wells (2) had to be located four miles north for adequate quantity and quality and are in a different soil association. The wells are 200-250 feet deep and are used both by Cities Service Company and a rancher. Windmills in the area of Bluitt are few and far between. A 1972 U.S.G.S. quadrangle map shows ten windmills plus three other wells in the 25 square miles surrounding the plant, going two sections in each direction from the plant section. This is about one well per two square miles. The nearest well known to be in use is a little over one mile away.

In 1971, test borings were done onsite for a new plant addition. The three holes were located 14 feet to 20 feet apart and no ground water was encountered in any, the deepest being 11-1/2 feet deep. Boring logs for these are included in the Appendix.

Surface Hydrology

The bulk of Roosevelt County is in the Lea Plateau surface water drainage basin. The county is on the western edge of the Southern High Plains. It tilts gently from the panhandle of the northwest down to the southeast corner. There are numerous depressions called playas and and these along with sandhills in the extreme northern and southern parts of the county break up the otherwise generally smooth nearly level plain.

Drainage in the county is mostly internal, according to the Soil Conservation Service. However, there are numerous small draws that carry floodwater from higher areas. Alamosa Creek is the only true creek in the county, but it is located in the panhandle and flows southwest to the Pecos River.

The specific soil on the plant site, as given by the U.S. Soil Conservation Service, is Zita fine sandy loam with 0 to 1 percent slopes (Zf). This soil occupies slightly concave areas on smooth, level uplands. The SCS says that runoff is "slight" in this soil and confined to depressed areas. "Internal drainage is good, permeability is moderate, and the water-holding capacity is low or moderate," it further states.

IV. Water Quality

Since there are only intermittant watercourses in the area which are normally dry and only a very few of them at that, surface water quality is indeterminate. The nearest well, as indicated by the U.S. Soil Conservation Service Soil Survey, is over a mile away. As mentioned previously, groundwater is difficult to locate and any water bearing formation is likely discontinuous. Therefore, no meaningful data was found to be generally available.

V. Plant Description

Location

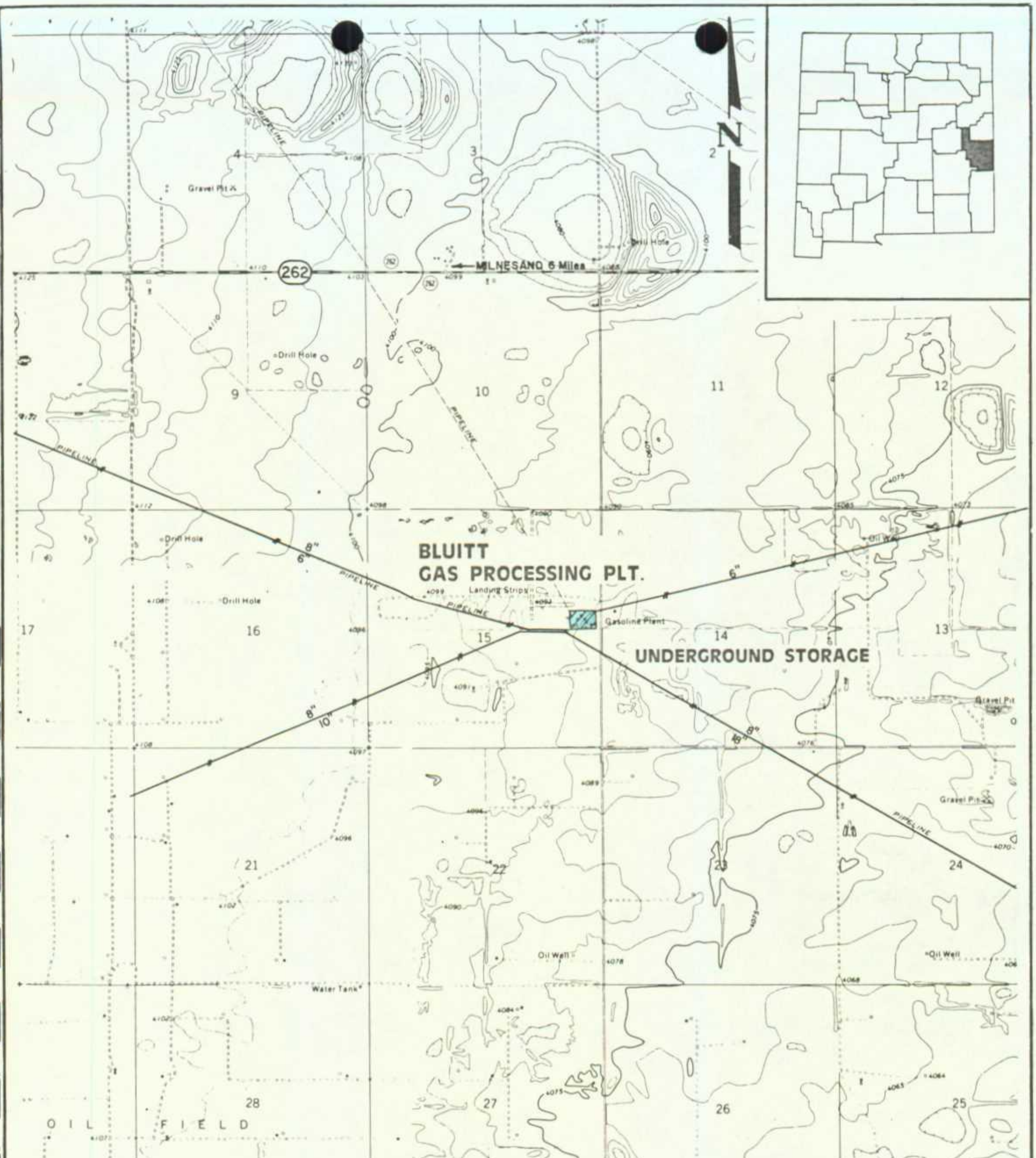
The plant is 42 miles south of Portales and 7 miles east of Milnesand off State Highway 262. The area is basically upland range and the vicinity is fairly flat around the plant site. The site itself is at Elevation 4092', encompasses about 10 acres and is a part of a 320 acre parcel. Figure 5.0 is the location map and Figure 5.1 is the Plot Plan. The Plot Plan is not up to date in two significant areas: the sulfur plant is not shown and the "burn pit" shown is now enlarged and now also functions as an evaporation pond. The sulfur plant is on the northwest corner of the process area.

Process Description and Schematic

1. Inlet Gas

The bulk of the inlet gas at Bluitt, which requires treating, flows to the inlet gas separator where any entrained liquids are removed as shown in the process schematic, Figure 5.2. The gas then flows to the two amine contactors to "sweeten" or remove the corrosive "acid gases", CO_2 and H_2S. At the outlet of the amine scrubbers, the naturally sweet inlet gas, which does not require treating, enters the process and comingles with the treated gas as it is cooled by a series of coolers and exhangers.

It is finally chilled to approximately 30°F by propane refrigeration. Ethylene glycol is injected directly into the stream as an antifreeze to inhibit hydrate formation. The gas enters a glycol separator to remove the glycol and then flows to the absorbers.



PLANT LOCATION
SEC. 15, T-8-S, R-36-E
APPROX. EL. 4,092'
APPROX. LAT. 30° 37' 17" N
APPROX. LONG. 103° 14' 11" W

SCALE	DATE
1" = 3000'	1-1-82

CITIES SERVICE COMPANY

GENERAL ENGINEERING — TULSA, OKLAHOMA

BLUITT GAS PROCESSING PLANT
ROOSEVELT COUNTY, NEW MEXICO

Figure 5.0

C. S. C.
CO. OWNED
CO. OPERATED
CENTRAL
REGION

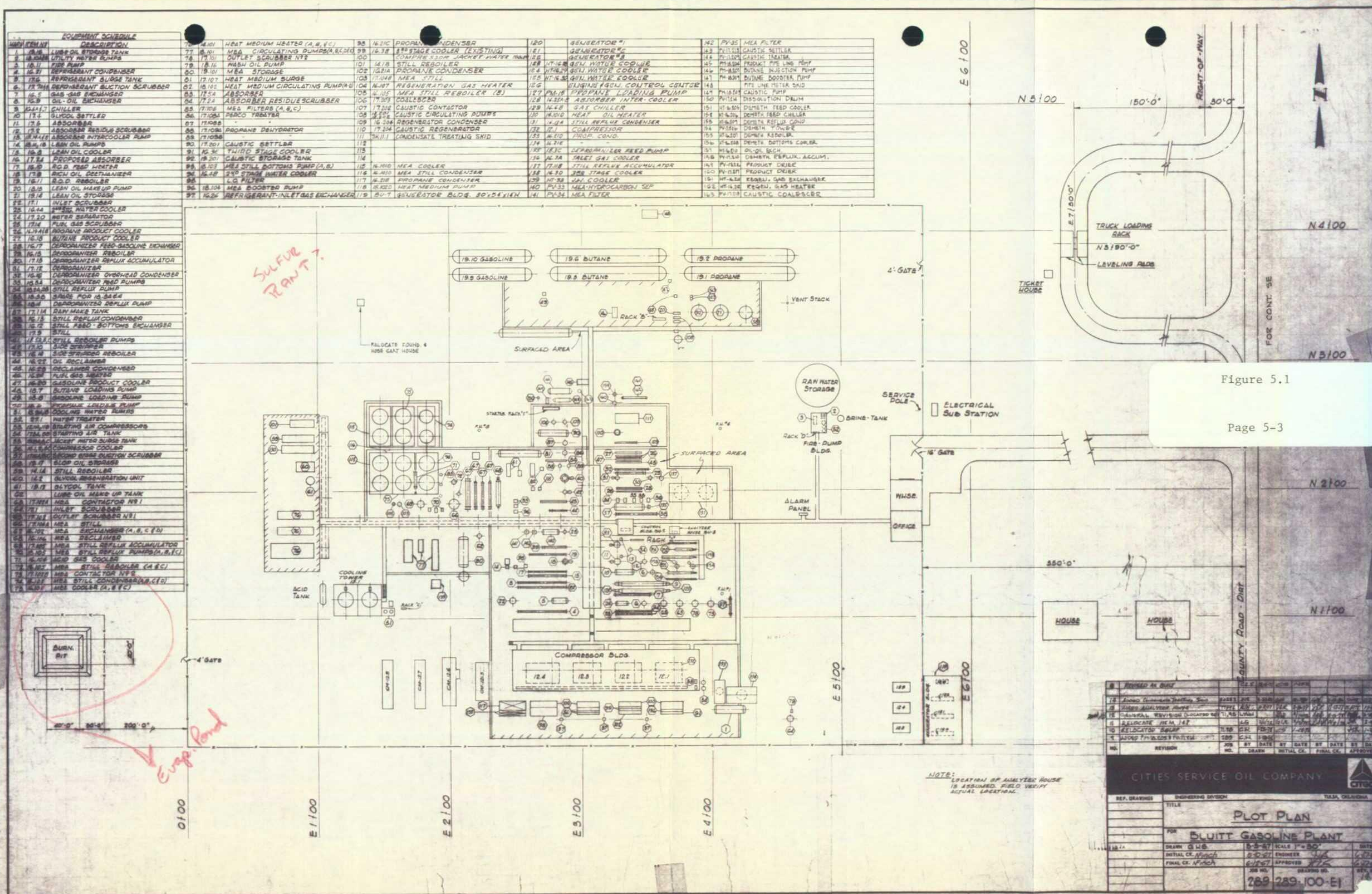
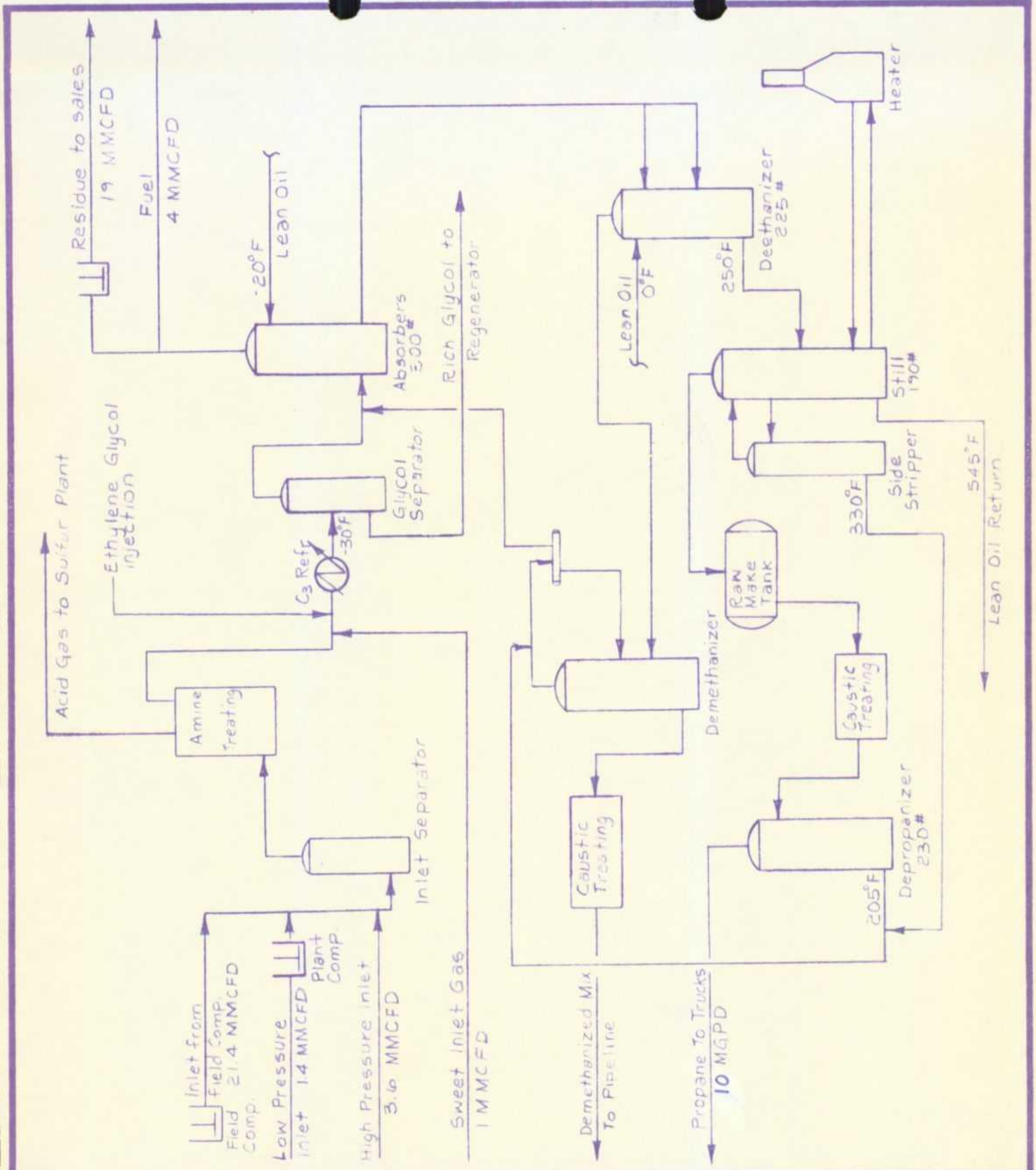


Figure 5.1

Page 5-3

Figure 5.2



REV	DATE			
		SCALE NTS	DATE	CITIES SERVICE COMPANY
		DRAWN BY LJS	9/82	
		INITIAL CK.		
		FINAL CK.		BLUITT PLANT
		ENGR.		
		APPROVED		
		P.E. NO.		TITLE: PROCESS FLOW DIAGRAM — DWG. NO. 289-101-A — REV.

GEN. ENGR. DEPT. TULSA, OKLA.

2. Recovery

The chilled gas enters the bottom of the two absorbers where it is contacted countercurrently with chilled lean oil. As the gas passes upward through the absorbers, the heavier hydrocarbons are recovered as they are absorbed into the downward flowing lean absorption oil. The gas which was not absorbed, made up principally of the lighter molecules such as methane, leaves the top of the absorber to be used as fuel or to be sold as residue.

3. Rejection

The "rich" absorption oil leaving the bottom of the absorbers contains not only the desired heavy hydrocarbons but also some ethane and methane. The stream leaves the bottom of the absorber and goes to the rich oil deethanizer where it is again contacted by a chilled but slightly warmer lean absorption oil stream. The ethane and methane are rejected and leave the top of the tower to go to the demethanizer. The rich absorption oil leaves the bottom of the deethanizer and enters the still.

4. Separation

The rich oil is heated before entering the still and then heated again in the still reboiler. The heat causes the absorbed hydrocarbons to vaporize and separate from the oil. The oil from which the hydrocarbons have been separated is now again a "lean" oil. It leaves the bottom of the still to be used first to give up its heat in heat exchangers and then to be chilled and enter the absorption cycle again. The vaporized hydrocarbons leave the top of the still, are treated with caustic to remove any remaining sulfur compounds, and then sent to the depropanizer.

5. Production

In the depropanizer the still overhead is processed. Propane is separated from the heavier butanes and natural gasolines as a product and leaves the top of the tower to be sent to storage where it is sold and trucked out. The butane and gasoline stream leaves the bottom of the tower, and goes to the top of the demethanizer.

The demethanizer processes the deethanizer overhead stream. With the cooled depropanizer bottoms serving as a reflux, any remaining methane is rejected as overhead and recycled to the absorber inlet. The demethanizer bottoms leave as a demethanized mix or raw product and after caustic treating, enter the pipeline and are sold.

6. Amine System

The overhead gas from the inlet separators flows into the bottom of two large amine contactors. As the gas flows upward through the columns it is contacted countercurrently with a 15% "lean" MEA solution which sweetens the gas by removing the acid gases, CO_2 and H_2S. The sweetened gas leaves the top of the contactors to be processed; the acid gas leaves the bottom of the contactors in a "rich" amine solution.

The rich amine enters a flash tank and then goes through some exchangers before it enters the top of the amine still. In the still the reboilers add heat which causes the acid gases to separate from the amine. The acid gases leave the top of the still and go to the sulfur plant where the H_2S is converted into sulfur and sold. The now "lean" amine solution leaves the bottom of the still, is cooled, and is cycled back to the contactors to be used again to sweeten inlet gas. Approximately 600 GPM of amine is circulated.

7. Glycol System

There is a glycol injection system to inhibit hydrate formation when the inlet gas is chilled. Ethylene glycol is sprayed directly into the inlet gas stream first as it enters the inlet gas/gas exchanger and again as it enters the propane chiller. The glycol mixes with the water that is condensed as the inlet gas is cooled. The total stream enters the glycol separator where the hydrocarbon vapors and liquids are separated and sent on to be processed and the glycol water mixture leaves the separator bottom as "rich" glycol.

The rich glycol is warmed in an exchanger and sent to a lower pressure flash tank which rejects the light hydrocarbons which may have been absorbed. The glycol then flows to a regenerator or reboiler in which heat is supplied to the solution and the water is vaporized and leaves the glycol. The lean glycol is cycled to again be injected into the inlet gas.

8. Caustic System

The caustic system is used to remove any remaining sulfur compounds from the liquid products. The caustic is bought as a concentrated 50% sodium hydroxide solution. It is put into a mixing tank where it is diluted with water. The caustic solution is used to treat the depropanizer inlet and the demethanizer bottoms.

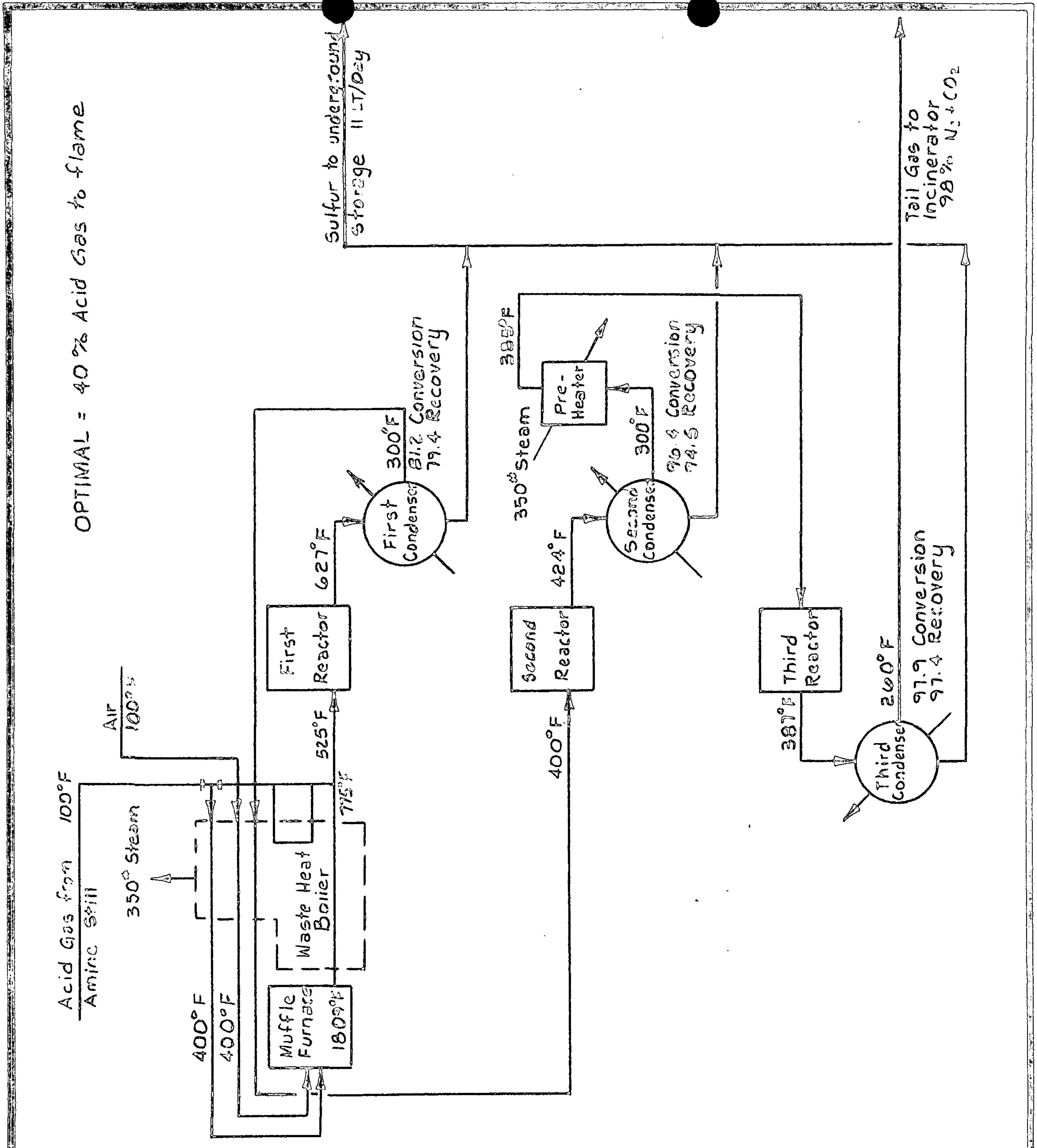
9. Sulfur Plant Process

The process used is a modified Claus Split-Flow with preheating of the feed streams. Figure 5.3 shows the flow scheme. Acid gas (H_2S + CO_2) coming from the processing plant's reflux accumulator is passed through the inlet scrubber where entrained liquids are removed. The inlet acid gas stream is then split into two streams, both of which are preheated by the waste heat boiler. Forty percent of the preheated gas flow enters the muffle furnace. Approximately 60% of the acid gas bypasses the furnace, and rejoins the stream just before the first reactor. The inlet to the furnace contains an acid gas burner. In the acid gas burner assembly, a volume of air equal to one third of the total acid gas volume is mixed with 40% of the hydrogen sulfide (H_2S) stream to insure that all the H_2S is converted to sulfur dioxide, SO_2.

$$6H_2S + 3O_2 \rightleftharpoons 2SO_2 + 2H_2O + 4H_2S + 249 \text{ Kcal}$$

The hot gases from the burner pass through the muffle furnace and then into the waste heat reclaimer where the excess heat is used to generate steam. Gases enter the reclaimer at approximately 1,800° F with the outlet temperature controlled at 775° F. The gasses are then combined with the 60% volume of acid gas which bypassed the furnace and the total gas stream enters first reactor bed at 525° F. It is important to keep this temperature above 400° F, or localized condensation of sulfur will occur. Approximately 85.6% of the hydrogen sulfide and sulfur dioxide in the gas stream is converted to sulfur in the first reactor by way of the following chemical reaction:

Figure 5.3



REV	DATE	SCALE NTS	DATE
		DRAWN BY LJS	9/82
		INITIAL CK.	
		FINAL CK.	
		ENGR.	
		APPROVED	
		P.E. NO.	

GEN. ENGR. DEPT. TULSA, OKLA.

CITIES SERVICE COMPANY

BLUITT SULFUR PLANT

TITLE	DWG. NO.	REV.
PROCESS FLOW DIAGRAM	305-101-A	

$$2H_2S + SO_2 \longrightarrow \frac{3}{X} S_x + 2H_2O + 22.2 \text{ Kcal}$$

This reaction is exothermic; therefore, there is a temperature rise across the catalyst bed. The gas leaves the first reactor and passes through the first sulfur-condenser. Approximately 83.8% of the sulfur is recovered as condensed sulfur is drained to the underground storage tank. The gas exits the separator chamber at 300° F, is reheated to 400° F, and then routed to the second converter bed.

About 81% of the remaining hydrogen sulfide and sulfur dioxide is converted to sulfur in the second reactor. The gas goes through a condensing pass at 300° F, with the liquids separated and drained to the storage tank.

The gas is reheated to 385° F by steam and enters the third converter bed. Approximately 42% of the remaining hydrogen sulfide and sulfur dioxide is converted to sulfur. The gas passes through a condensing pass at 260° F with the liquids drained to the storage tank. The total sulfur converted is 97.92% and total sulfur recovered is 97.42%. The remaining gases are vented to the stack and tip incinerated.

A tail gas scrubber at the bottom of the stack allows the removal of entrained liquids from the gas. Vent gases are composed of about 98% nitrogen and carbon dioxide.

The stack gases are continuously analyzed by an Air Demand Analyzer, designed and manufactured by Western Research & Development. The analyzer develops an output signal which is proportional to the percentage change required in the combustion air to provide stoichiometric concentrations of the principal reactants - H_2S and SO_2.

Heat of reaction, from burning hydrogen sulfide and from converting hydrogen sulfide and sulfur dioxide to sulfur must be removed from the process in the form of steam. The steam is used to preheat the #3 converter bed and to steam trace the liquid sulfur lines.

Water Supply

All of the water used at the plant comes from a well site 4 miles north in the SE ¼ of Section 27, Twp 7S, R36E. Two wells are on this site and the larger, referred to as the "large well", is used virtually 100% of the time. The other functions as a backup well. Water from these wells has an initial temperature of 67°F and pH of 7.9. Other parameters are given in Table 1C in Section VI.

As indicated in Figure 5.4, water is pumped to the plant at an average rate of 50.2 gpm. It is stored on the plant site in a 132,000 gallon above-ground storage tank. From there about 25% of the flow goes to the Zeolite softeners and 75%, 37.8 gpm, goes to other unsoftened uses. Of the 37.8 gpm flow, 97% goes to the cooling tower system while the remainder is used for cleanup, miscellaneous, and fire protection. The softened water is used primarily in the sulfur plant, 81%, with the rest used in closed cooling systems (jacket water), Zeolite regeneration, and in the offices.

Bluitt Gas Plant

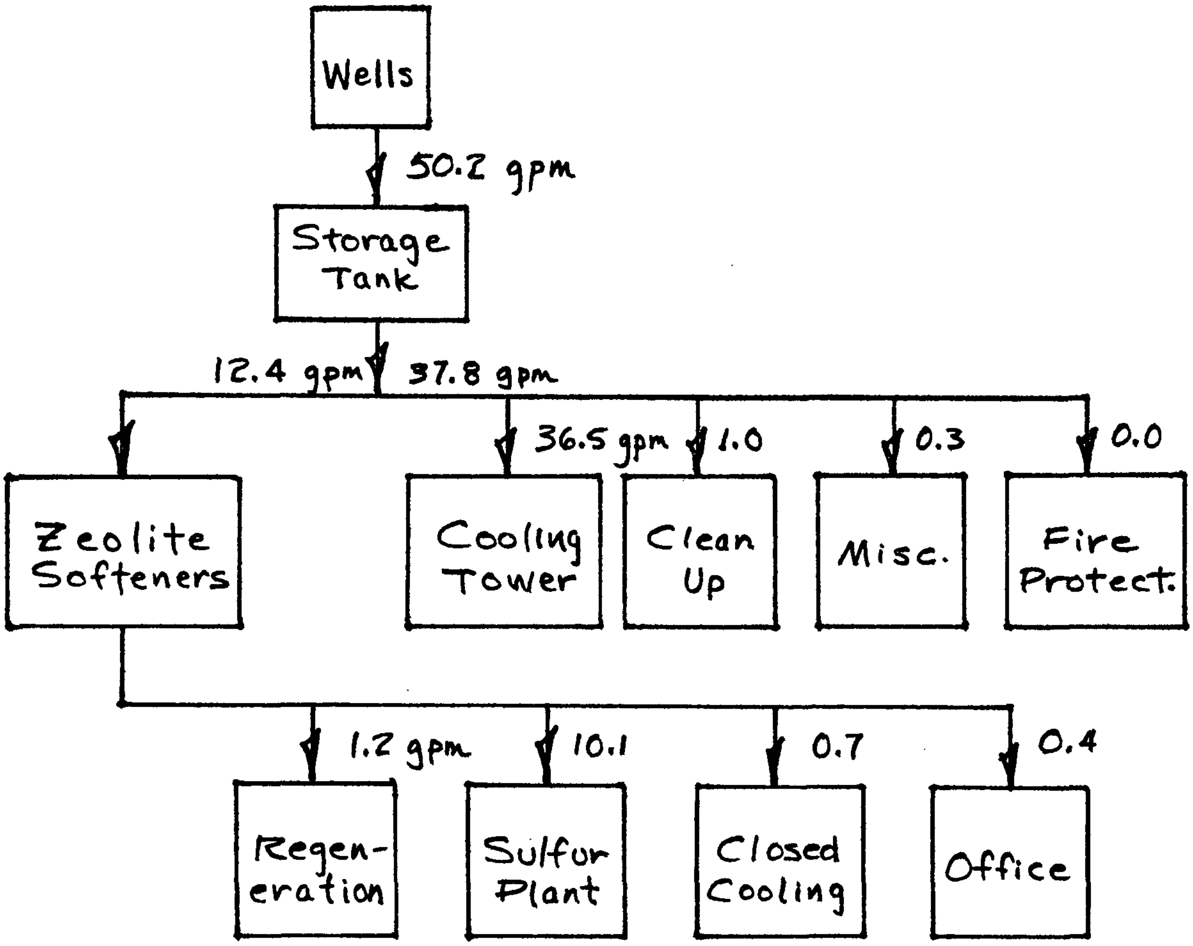


Fig. 5.4 - Water Supply Distribution

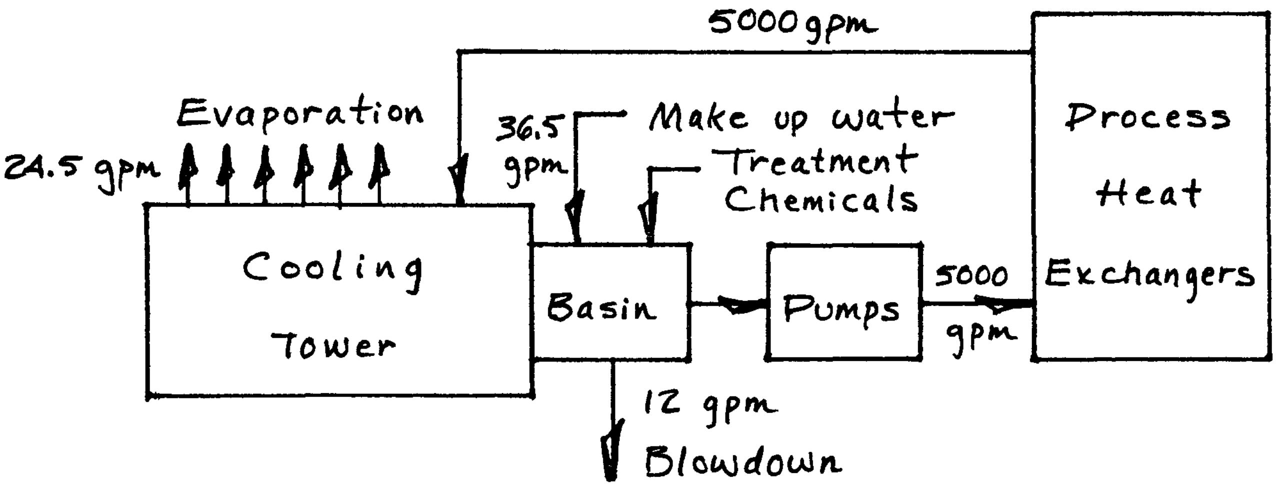


Fig. 5.5 - Cooling Tower System

Cooling Water

The cooling tower system is essentially a continuous loop of water flow, Figure 5.5. Cool water is pumped from the cooling tower basin and is circulated at a rate of 5000 gpm through various plant process heat exchangers. Warm water is returned to the top of the cooling tower and is cooled by air pulled up by large fans as it is cascaded back into the basin. The cycle then begins again. Water lost to evaporation is replaced with well water held in the raw water storage tank. Environmentally safe chemicals are added to the basin to control corrosion, scale, and biological fouling.

Bay Chemical and Supply Company currently supplies the chemicals and administers their use. Bayhib 126-C is used in the cooling tower water to prevent corrosion and scale with a phosphate formulation. It contains no chromate or zinc. Bayhib 136 is a corrosion inhibitor used to protect non-ferrous metals. It is non-toxic, and non-hazardous in system concentrations, though it is caustic and has a pH of over 12.0 as drummed. Sulfuric acid is used to keep the alkalinity in range. Also, chlorine gas is to be used in the future for microbiological control.

The current operation utilizes three cycles; i.e. water makes three passes through the loop on the average before being discharged as blowdown. This is reflected in the water analysis data given in Section VI of this report. Here it can be seen that the concentration of some well water constituents is increased threefold, approximately, in the blowdown by evaporation.

There are closed cooling systems for eleven large engines. Three of these are being used to drive generators while the others are for compressors. The recirculating "jacket water" in these systems is treated with Bayhib 140 and Bayhib 108 for corrosion protection. Bayhib 140 is a non-heavy metal nitrate/borate-based liquid with a pH of 8.4. Bayhib 108 is a chromate based corrosion inhibitor with a pH of 6.5 drummed.

VI. Disposal Practices

Slop Oil and Area Drains

The current wastewater flows at Bluitt are shown in Figure 6.0. The open gravity drains from the process area are connected to the API oil/water separator at the west end of the plant fenced area. Oil which is skimmed off this separator is pumped to the 210 bbl slop oil tank. This tank is surrounded by a 3 ft. dike to contain any possible leaks.

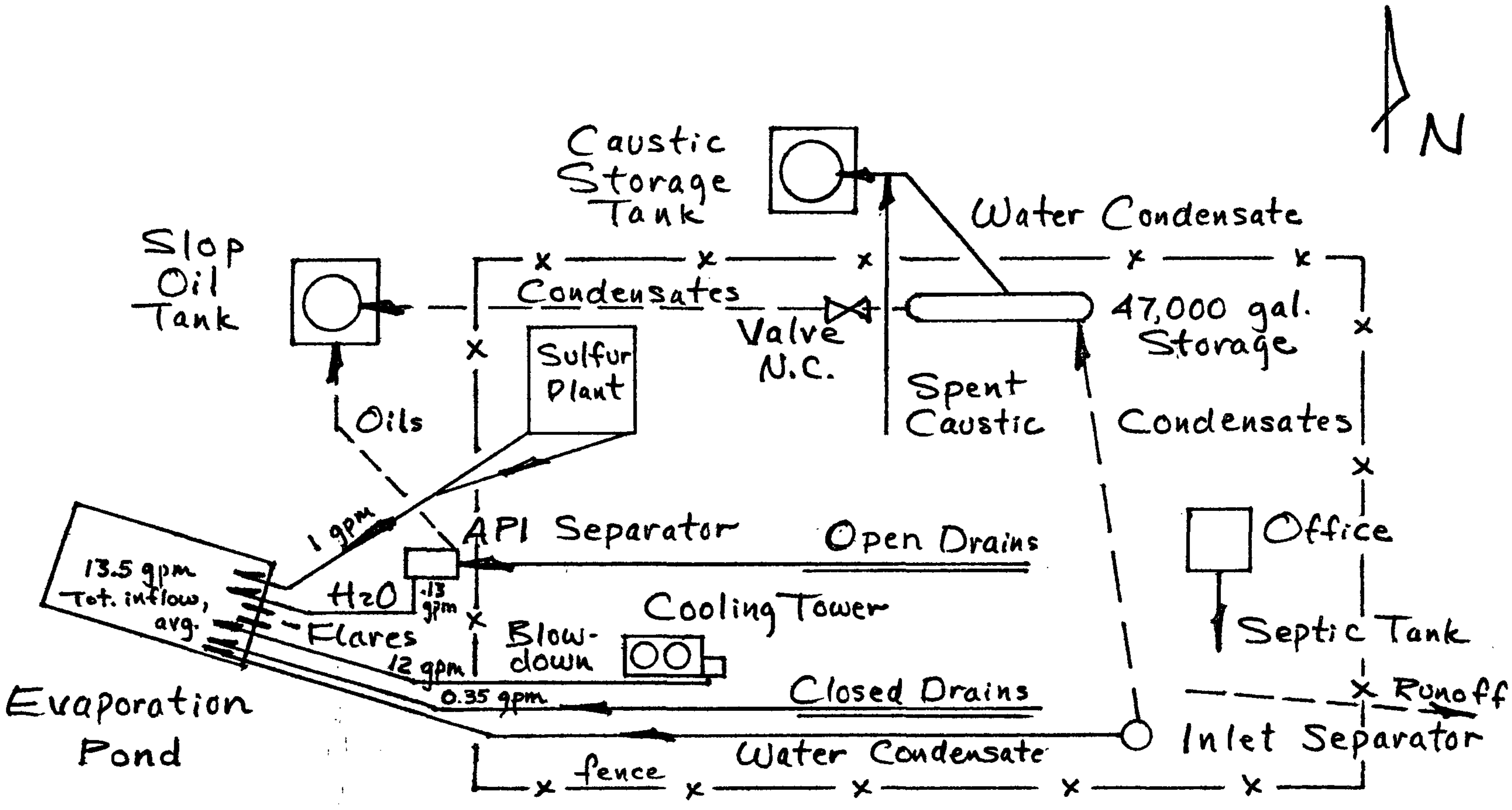
Also, connected to the slop oil tank is the compression condensate tank which receives and stores liquids from the inlet gas separator. These condensates are purchased and hauled almost daily by General Petroleum. They also pump and haul the contents of the slop oil tank whenever it reaches a level on its gauge of more than half full. Although the compression condensate tank is connected to the slop oil tank, the valve is rarely ever opened since the condensate tank has a capacity of 47,000 gallons.

At the API separator the water separated from the oil is pumped to the evaporation pond further west at the rate of 37.5 gallons per minute by a sump pump. However, the pump is on a float switch and pumps only an average of 5 minutes per day for a total of 187.5 gal/day.

The evaporation pond doubles as a flare pit. Two horizontal flares are operated with a continuous common pilot light. Surges of gases from plant problems and upsets are safely burned by means of these flares.

Bluitt Gas Plant

Fig. 6.0 - Wastewater & Waste Flows



- Not to Scale -

This also functions to keep the pond relatively clear of heavy hydrocarbon films which would retard water evaporation.

The pond is 175 ft. long, 50 ft. wide and 6 ft. deep on the east end while 9 ft. at the west end. It was excavated in the natural subsoil of the area high in caliche and has a low dike all around. It also receives wastewater flow from cooling tower blowdown, the sulfur plant, and the closed drain system, and these will be described later. Water condensates from the inlet gas separator additionally drain to the pond at a relatively low volume. A pond in this subsoil will seal itself to a great extent over the years with the wastewater substances plus the natural dissolved solids in the carriage water.

Cooling Tower Blowdown

As described previously under Section V, and shown in Figure 5.5, there is an average of 12 gpm of cooling water which is wasted from the system. This keeps the minerals which are present in the unsoftened makeup water from building up excessively. This "blowdown" flows by gravity to the pond for evaporation.

Sulfur Plant Effluent

There are two small wastewater streams from the sulfur plant which go to the evaporation pond and these are both essentially clear water with a combined flow of about 1 gpm. One is waste heat reclaimer blowdown. This process unit is basically a boiler and generates steam, and condensate from this unit is removed as blowdown periodically. The other flow is from the inlet gas feed separator to the sulfur plant where water is allowed to separate from the gas flow and condense.

Closed Drain System

This gravity drainage system basically consists of trapped floor drains from the engine rooms. The drains have water in their traps as a safety precaution to prevent any possible backflow of gases. This flow is irregular since it is basically cleanup water, but is estimated to be 0.35 gpm on the average.

Spent Caustic

This waste material is pumped into a 300 barrel fiberglass storage tank. The tank is fully diked for leak containment. Also connected to this tank is the water bleed line from the condensate storage tank. The contents of the tank are pumped out and hauled by a contracted trucking firm, Fannie Lee Mitchell, Inc., about every two months. It is taken in plastic coated, corrosion resistent transporters to a site operated by Pollution Controls, Inc. 32 miles west of Hobbs, N.M.

Sanitary Sewage

Sanitary sewage from the office and employees facilities goes into a septic tank - soil absorption system on the plant property. There are 32 people employed on site 5 days per week and 2 employees on the weekend with an average flow of about 500 gallons per day.

Surface Runoff

The processing area comprises about 4 acres and drains essentially to the southeast corner of the property at a slope of 1% or less. With the Zita soil, the site use, and a Type II storm distribution, US Soil Conservation Service runoff curve number 80 was appropriate. Assuming a 10-year, 24 hour storm, 3.8 inches of rain is expected and this would result in a peak discharge of 9.5 cubic feet per second. This amount would not indicate any serious flooding potential nor would this indicate a need for hydrocarbon control at the discharge point. Examination of the discharge point itself demonstrates little or no traces of hydrocarbons. Blowdowns of lean oil and the like go directly to the API separator via the open drain system.

Water Analysis Data

Samples were collected for the various effluents described in the previous paragraphs on three different dates. Samples were also collected from the two water supply wells serving the Bluitt Plant. The results of the analytical testing of these samples for contaminants listed in Section 3-103 of the WQCC Regulations are given in Tables 1A, 1B and 1C. Results of tests for toxic pollutants as listed under 1-101X are given in Table 2. As specified in the Regulations they were collected, preserved and analyzed in accordance with the techniques prescribed in Methods for Chemical Analysis of Water and Waste (EPA) and Standard Methods for Examination of Water and Wastewater (APHA). The Cities Service Central

Analytical Laboratory used the EPA techniques while Bay Chemical, who collected and analyzed the samples of June 8, 1982, employed the latter techniques.

The cooling tower blowdown, Table 1A, was within the standard on 29 out of the 33 parameters on June 15, 1982, when all parameters were tested. On the two other sampling days there were only three additional parameters which were exceeded. The sulfur plant blowdown exceeded for eight parameters, but this is a very low flow, one gpm. Sulfate, where the exceedance was the greatest, would amount to 21 pounds per day at 1754 mg/l, total. This amounts to but a small portion of the 145 pounds of sulfate which comes into the plant each day at 241 mg/l from the normally used "large" well. By the same token, the 8984 mg/l of Total Dissolved Solids appears to be a lot in the API separator effluent, but this amounts to 14 pounds per day at its low flow of 187.5 gpd. This could be compared with the incoming 487 pounds per day of TDS in the well water.

In Table 2 it can readily be seen that none of the indicated 23 toxic pollutants were detected in any of the four samples shown. There are only several pollutants in Table 2 that anyone might suspect would be in the two effluents, but it was no additional trouble for the lab to run the extra tests. Of the other 19 toxic pollutants in the list of 42 under Section 1-101X, only one is at all expected in any of the plant effluents. This is phenol and it was detected in each of the wastewater samples as shown in the preceding table.

Table 1A

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

	Parameter and Standard (Max)		Cooling Tower Blowdown 5/26	6/8	6/15	Sulfur Plant Blowdown 6/8
A.	Arsenic	0.1	0.017		0.011	
	Barium	1.0	ND		ND	
	Cadmium	0.01	ND		ND	
	Chromium	0.05	ND		ND	
	Cyanide	0.2	1.8		0.1	
	Fluoride	1.6	0.4		2.4	
	Lead	0.05	0.44		ND	
	Total Mercury	0.002	BDL(.0002)		0.002	
	Nitrate Nitrogen	10.0	2.7		3.6	
	Selenium	0.05	0.07		0.017	
	Silver	0.05	ND		ND	
	Benzene	0.01			ND	
	PCB's	0.001	ND		ND	
	Toluene	15.0			ND	
	Carbon Tetrachloride	0.01			ND	
	EDC	0.02			ND	
	1, 1-DCE	0.005			ND	
	PCE	0.02			ND	
	TCE	0.1			ND	
B.	Chloride	250.	15.5	350	211	155
	Copper	1.0	ND	0.02	ND	0.02
	Iron	1.0	ND	0.08	ND	0.42
	Manganese	0.2	ND	<0.02	ND	0.04
	Phenols	0.005	0.004	0.24	0.017	<0.002
	Sulfate	600	2647	896	968	376
	Total Dissolved Solids	1000.	5233	2252	3085	1268
	Zinc	10.0	BDL(.005)	0.84	ND	0.53
	pH (Std Units)	6 to 9	7.1	7.4	7.9	10.3
C.	Aluminum	5.0	ND		ND	
	Boron	0.75			ND	
	Cobalt	0.05	ND		ND	
	Molybdenum	1.0	ND		ND	
	Nickel	0.2	ND		ND	

BDL - Below Detection Limit
ND - None Detected
NES - Not Enough Sample

Table 1B

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

	Parameter and Standard (Max)		Sulfur Plant Blowdown 6/15	Sulfur Plant Inlet Scrubber 6/8	API Separator 6/8	Sulfur Plant Condensate 6/8
A.	Arsenic	0.1	0.007			
	Barium	1.0	ND			
	Cadmium	0.01	ND			
	Chromium	0.05	ND			
	Cyanide	0.2	0.1			
	Fluoride	1.6	4.5			
	Lead	0.05	ND			
	Total Mercury	0.002	0.003			
	Nitrate Nitrogen	10.0	16.4			
	Selenium	0.05	0.018			
	Silver	0.05	ND			
	Benzene	0.01	ND			
	PCB's	0.001	ND			
	Toluene	15.0	ND			
	Carbon Tetrachloride	0.01	ND			
	EDC	0.02	ND			
	1, 1-DCE	0.005	ND			
	PCE	0.02	ND			
	TCE	0.1	ND			
B.	Chloride	250.	450	400	195	7.0
	Copper	1.0	ND	<0.01	0.27	0.02
	Iron	1.0	0.91	<0.02	2.7	0.08
	Manganese	0.2	ND	<0.02	0.2	<0.02
	Phenols	0.005	0.062	0.28	1.13	0.53
	Sulfate	600	1754	28.4	564	17.0
	Total Dissolved Solids	1000.		108	8984	88
	Zinc	10.0	ND	5.1	6.3	0.53
	pH (Std Units)	6 to 9	10.1	6.6	9.8	9.0
C.	Aluminum	5.0	ND			
	Boron	0.75	ND			
	Cobalt	0.05	ND			
	Molybdenum	1.0	ND			
	Nickel	0.2	ND			

BDL - Below Detection Limit
ND - None Detected
NES - Not Enough Sample

Table 1C

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

	Parameter and Standard (Max)		Hi. Press. Inlet Sep. 6/8	Large Well 6/15	Small Well 6/15
A.	Arsenic	0.1		0.001	0.004
	Barium	1.0		ND	ND
	Cadmium	0.01		ND	ND
	Chromium	0.05		ND	ND
	Cyanide	0.2		0.1	0.1
	Fluoride	1.6		0.2	0.2
	Lead	0.05		ND	ND
	Total Mercury	0.002		0.002	0.002
	Nitrate Nitrogen	10.0		0.5	0.7
	Selenium	0.05		0.009	0.008
	Silver	0.05		ND	ND
	Benzene	0.01		ND	ND
	PCB's	0.001		ND	ND
	Toluene	15.0		ND	ND
	Carbon Tetrachloride	0.01		ND	ND
	EDC	0.02		ND	ND
	1, 1-DCE	0.005		ND	ND
	PCE	0.02		ND	ND
	TCE	0.1		ND	ND
B.	Chloride	250.	255	88	94
	Copper	1.0	1.0	ND	ND
	Iron	1.0	<0.02	BDL	5.01
	Manganese	0.2	1.0	ND	ND
	Phenols	0.005	1.25		
	Sulfate	600	279	241	522
	Total Dissolved Solids	1000.	2892	809	810
	Zinc	10.0	17.0	ND	ND
	pH (Std Units)	6 to 9	6.8	7.9	
C.	Aluminum	5.0		ND	ND
	Boron	0.75		ND	ND
	Cobalt	0.05		ND	ND
	Molybdenum	1.0		ND	ND
	Nickel	0.2		ND	ND

BDL - Below Detection Limit
ND - None Detected
NES - Not Enough Sample

Table 2

WATER ANALYSIS DATA

BLUITT 6/15/82

TOXIC POLLUTANTS

	Cooling Tower Blowdown	Sulfur Plant Boiler Blowdown	Large Well	Small Well
acrolein	ND	ND	ND	ND
acrylonitrile	ND	ND	ND	ND
benzene	ND	ND	ND	ND
carbon tetrachloride	ND	ND	ND	ND
monochlorobenzene	ND	ND	ND	ND
1, 2-dichloroethane	ND	ND	ND	ND
1, 1, 2, 2-tetrachloroethane	ND	ND	ND	ND
1, 1, 1-trichloroethane	ND	ND	ND	ND
1, 1, 2-trichloroethane	ND	ND	ND	ND
chloroform	ND	ND	ND	ND
1, 1-dichloroethylene	ND	ND	ND	ND
dichloropropenes	ND	ND	ND	ND
ethylbenzene	ND	ND	ND	ND
bromodichloromethane	ND	ND	ND	ND
bromomethane	ND	ND	ND	ND
chloromethane	ND	ND	ND	ND
dichloromethane	ND	ND	ND	ND
tribromomethane	ND	ND	ND	ND
trichlorofluoromethane	ND	ND	ND	ND
tetrachloroethylene	ND	ND	ND	ND
toluene	ND	ND	ND	ND
trichloroethylene	ND	ND	ND	ND
vinyl chloride	ND	ND	ND	ND

ND - Non-Detected

VII. Discharge Plan

Disposal Methods

The present wastewater volume and character is not projected to change at Bluitt. The current methods and procedures for waste liquid containment and disposal at the plant, greatly improved over the past few years, will also remain essentially the same. One of the improvements has been the elimination of the spent caustic pits on site and their replacement with a diked fiberglass storage tank, with the caustic now removed by a contract trucking firm. The pit used for disposal of water bled from the condensate storage tank too has been eliminated and this now also goes into the fiberglass tank. A three foot dike was constructed around the slop oil tank to contain any possible spillage. A produced water line was re-routed to discharge into a wastewater line rather than onto the surface.

There are several additional improvements to facilities which will be made by the end of the year:

1. A dike will be constructed around the 55-gallon chemical drum storage area of sufficient height to contain the total liquid volume of all the drums. Additionally, drum storage will be modified to preclude dripping and spillage due to tap accidents.

2. The dike around the existing pond will be brought up to a three foot height all around. A two foot freeboard will be maintained in the pond at all times except in emergencies as noted in the following section - Contingency.

3. The condensate water from the sulfur plant inlet gas feed separator will be re-routed back into the amine system for reuse to reduce the flow to the pond.

Contingency

The probability of interruption of wastewater system operations because of power failure is very low for two reasons. Most of the basic systems are gravity flow and the plant generates its own power with three onsite generators. Additionally, the plant is served by commercial power which has partial backup capabilities.

The plant would not continue to operate without power after some length of time. In this case, there would be little or no wastewater generated. However, there is plenty of emergency storage capacity in the one significant system depending on electric pumps for discharge, the API separator. As pointed out in Section VI, the water pump only pumps 187.5 gallons per day, normally. The sump contains three to four days storage, at minimum for water and at least as many for oils.

If a power failure occurs power can be restored in less than an hour at this plant since it is attended 24 hours/day. It should be noted that the plant has gone a number of one year stretches in recent years with no interruption of power at all.

Should excess water from a 100-year storm, or worse or any other abnormal occurrence, threaten to cause a pond overflow, vacuum trucks will be used to lower the level and the contents hauled to a state approved disposal site. Should the extremely unlikely event occur that the pond would overflow before trucks would arrive, the water would be contained on the plant site in natural depressions augmented by emergency constructed dikes.

Inspection and Reporting

All parts of the wastewater systems above ground are checked daily as part of the operator's normal rounds. Maintenance personnel check and service mechanical items such as pumps on a regular schedule. Problems with any of these systems are reported to the appropriate personnel for proper and timely action.

Unlikely as they may be, any spills of hazardous materials occurring on the company property, any significant liquid hydrocarbon (such as condensates and slop oil) spills, and any significant gas leaks will be reported to the Hobbs District Office or designated Oil Conservation Division personnel. Any instance where wastewater overflows the pond or breaches the dike will be also reported to the Division.

Such notifications will be immediate if human health is endangered, if there is or will be substantial damage to property, or if the substance reaches or threatens to reach a watercourse. Follow-up reports describing the episode, cleanup and corrective action taken and like reports of other minor incidents will be made in written form and will be filed within 10 days.

If there is proposed to be any major modifications to the plant or to the wastewater streams, advanced notification will be made to the Oil Conservation Division giving the particulars.

Plan Summary

1) Hydrology, subsurface geological information and local well water history indicate that no ground water is located under the Bluitt plant site.

2) All plant process wastewater will be collected in an evaporation pond.

3) No surface will occur from the evaporating pond. The water level will be maintained with a minimum of 2 feet freeboard.

4) In the event of emergency conditions, the level will be maintained by removing water which will be hauled to an approved disposal site.

5) Surface collection tankage will be inspected daily and levels maintained by sale of byproducts and contracted truck hauling for disposal.

6) A containment dike will be maintained around the drummed chemical storage to prevent discharge.

7) Any spills will be properly reported and cleanup/corrective action detailed.

VIII. Conclusions

As is seen in the Hydrogeology subsection under Section III, Environmental Description, there is ample information available to conclude that there is no Ogallala aquifer in southern Roosevelt County and, in particular, the Bluitt Plant vicinity. At most, there may be only a very discontinuous unsaturated Ogallala formation. There is no state declared underground water basin in the area. There is no groundwater to be found under the plant site or in the immediate vicinity. If a pocket of groundwater were to be found, it would be isolated and discontinuous. The nearest known active water well is over a mile away.

Aside from the foregoing considerations, population in the Bluitt area is very sparse. There are no towns for many miles east-southeast of the plant, the direction of groundwater flow in the surrounding areas. If it were hypothesized that water left the Bluitt area and traveled ESE at a rate of 150 feet per year, as thought, the first town it would reach would be Bledsoe, Texas, 352 years later.

The major portion of the wastewater flow to the evaporation pond is from cooling tower blowdown, 87%. For several years now, there have been no toxic treatment chemicals used in the water. Only non-metallic type treatments have been employed. The test results seen in Table 1A bear this out.

The exceedances of the standard in Table 1A were mainly due to the concentrating effects of the system on the raw well water as discussed in Section VI, plus the addition of sulfuric acid for pH and alkalinity control. The only parameters which were over their standard on all their samples were sulfate (SO_4) and Total Dissolved Solids (TDS). The standards are essentially U.S. Environmental Protection Agency Drinking Water Standards for public water supplies. Standards were included for SO_4 and TDS, not because of any direct health hazard, but because of the laxative effect each may have upon humans.

With the improvements of recent years in the plant's wastewater facilities and the improvements projected for this year, any impact to the surface or subsoil will be minimized.

IX. Bibliography

1. Cronin, J. G., Ground Water in the Ogallala Formation in the Southern High Plains of Texas and New Mexico, Hydrologic Investigations Atlas HA-330, U.S. Geological Survey, Washington, DC, 1969.

2. Hudson, J. D., Ground-Water Levels in New Mexico, 1977, New Mexico State Engineer, Santa Fe, NM, 1980.

3. McDougal, L. F. and C. M. Jackson, Peak Rates of Discharge for Small Watersheds, Chapter 2, Engineering Field Manual for Conservation Practices, U.S.D.A., Soil Conservation Service, Albuquerque, NM, 1973.

4. Miller, J. F., R. H. Frederick, and R. J. Tracey, NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States, Volume IV - New Mexico, U.S. Department of Commerce, National Weather Service, MD, 1973.

5. New Mexico Geological Society, Guidebook of Southeastern New Mexico, Fifth Field Conference, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM, 1954.

6. Soil Conservation Service, Soil Survey Roosevelt County, New Mexico, United States Department of Agriculture, Washington, DC, 1967.

7. Tuan, Y., C. E. Everard, J. G. Widdison, and I. Bennett, The Climate of New Mexico, State Planning Office, Santa Fe, NM, 1973.

8. Weeks, J. B., E. D. Gutentag, Bedrock Geology, Altitute of Base, and 1980 Saturated Thickness of the High Plains Aquifer in Parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, Hydrologic Investigations Atlas HA-648, U.S. Geological Survey, Reston, VA, 1981.

X. Appendix

CITIES SERVICE

INTEROFFICE LETTER - CA-206-82

June 25, 1982

TO: Mr. Steve Innes

FROM: Paul M. Kerschner PMK

SUBJECT: Samples Water Effluent - Bluitt & Abo

Listed below are the analyses of the first set of water effluent samples from Bluitt and Abo. Sample size limited the number of tests run.

Test	Bluitt Sample 5/26/82	Abo Sample 5/27/82
Volatile Organic	None detected	Not enough sample
PCB	None detected	"
Chlordane & penta-chloro phenol	None detected	"
pH	7.1	5.6
Chloride (cl^-)	15.5 ppm	2.4 ppm
Sulfate($SO_4^=$)	2647 ppm	39 ppm
Total dissolved solids	5233 ppm	61 ppm
Nitrate (No_3^-)	12 ppm 2.7 ppm as NO_3-N	5.6 ppm 1.3 ppm as NO_3-N
Cyanide (CN^-)	1.8 ppm	N.E.S.
Fluoride (F^-)	0.4 ppm	0.2 ppm
Phenol	0.004 ppm	0.031 ppm

Metals		
Cadmium	None detected	None detected
Chromium	"	"
Lead	0.44 ppm	"
Copper	None detected	"
Silver	"	"
Nickel	"	"
Zinc	BDL (0.005 mg/l)	BDL
Arsenic	0.017 ppm	BDL (0.002 mg/l)
Selenium	0.07 ppm	0.004 ppm

Metals	Bluitt Sample	Abo Sample
Mercury	BDL (0.0002 mg/l	BDL
Barium	N. D.	N. D.
Iron	N. D.	N. D.
Manganese	N. D.	N. D.
Aluminum	N. D.	N. D.
Cobalt	N. D.	N. D.
Molybdenum	N. D.	N. D.

BDL - Below detection limit - response on instrument, but less than one would get at the lowest detection limit.

N. D. - NONE DETECTED; no instrument response.

If, after reviewing the data, you have any questions please call.

PMK:jcg

BAY CHEMICAL AND SUPPLY CO.

P. O. BOX 1581

CORPUS CHRISTI, TEXAS 78403

WATER ANALYSIS REPORT*

COMPANY Cities Service-Bluitt Plant DATE SAMPLED June 8, 1982

LOCATION New Mexico DATE RECEIVED June 12, 1982

SAMPLE DESCRIPTION	Inlet Scrubber to Sulfur Plant	Cooling Tower Blowdown	API Separator	High Pressure Inlet Separator	Boiler Blowdown
P ALKALINITY					
M ALKALINITY					
BICARBONATE (HCO_3)					
CARBONATE (CO_3)					
HYDROXIDE (OH)					
CHLORIDE (Cl)	400	350	195	255	155
SULFATE (SO_4)	28.4	896	564	279	376
PHOSPHATE (PO_4)					
CHROMATE (CrO_4)					
SILICA (SiO_2)					
BIOCHEMICAL OXYGEN DEMAND					
CHEMICAL OXYGEN DEMAND					
TOTAL HARDNESS ($CaCO_3$)					
CALCIUM (Ca)					
MAGNESIUM (Mg)					
SODIUM (Na)					
IRON (Fe)	<0.02	0.08	2.7	<0.02	0.42
COPPER (Cu)	<0.01	0.02	0.27	1.0	0.02
ZINC (Zn)	5.1	0.84	6.3	17.0	0.53
TOTAL SUSPENDED SOLIDS					
TOTAL DISSOLVED SOLIDS	108	2252	8984	2892	1268
CONDUCTIVITY (MMHOS)	2960	2720	5390	2840	1860
pH	6.6	7.4	9.8	6.8	10.3
OIL AND GREASE					
SAMPLE NUMBER	145	146	147	148	149
Phenols	0.28	0.24	1.13	1.25	<0.002
Manganese	<0.02	<0.02	0.2	1.0	0.04

*All results are in parts per million unless otherwise indicated.

BAY CHEMICAL AND SUPPLY CO.

P. O. BOX 1581
CORPUS CHRISTI, TEXAS 78403

WATER ANALYSIS REPORT*

COMPANY Cities Service-Bluitt Plant DATE SAMPLED June 8, 1982

LOCATION New Mexico DATE RECEIVED June 12, 1982

SAMPLE DESCRIPTION	Condensate				
P ALKALINITY					
M ALKALINITY					
BICARBONATE (HCO_3)					
CARBONATE (CO_3)					
HYDROXIDE (OH)					
CHLORIDE (Cl)	7.0				
SULFATE (SO_4)	17.0				
PHOSPHATE (PO_4)					
CHROMATE (CrO_4)					
SILICA (SiO_2)					
BIOCHEMICAL OXYGEN DEMAND					
CHEMICAL OXYGEN DEMAND					
TOTAL HARDNESS ($CaCO_3$)					
CALCIUM (Ca)					
MAGNESIUM (Mg)					
SODIUM (Na)					
IRON (Fe)	0.08				
COPPER (Cu)	0.02				
ZINC (Zn)	0.53				
TOTAL SUSPENDED SOLIDS					
TOTAL DISSOLVED SOLIDS	88				
CONDUCTIVITY (MMHOS)	165				
pH	9.0				
OIL AND GREASE					
SAMPLE NUMBER	150				
Phenols	0.53				
Manganese	<0.02				

*All results are in parts per million unless otherwise indicated.

High Pressure Inlet Sep – Raw coming into plant
Boiler blowdown – Sulfur plant waste heat reclaimer
Condensate – boiler condensate from leak @ sulfur plant

[redacted] B [redacted] E [redacted] E S [redacted] L [redacted]

TUESDAY, JUL 20, 1982 12:57:47

SAMPLE NUMBER : 3222
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : [redacted]
INNES

DESCRIPTION : CT SAMPLES
ORIGINATORS NUMB : Bluitt Plant
Cooling Tower Blowdown

DATE PERFORMED	RESULTS	TEST
13JUL82	211MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	2.4MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected
08JUL82	AS-0.011PPM SE-0.017PPM BA-ND AG-ND CD-ND CU-ND CR-ND FE-ND PB-ND MN-ND HG-0.002PPM	METALS BY AA
13JUL82	16MG/L	NITRATE
07JUL82	NONE DETECTED	POLYCHLORINATED BIPHENYLS IN WATER
15 Jun 82	7.9	PH (Tested onsite with portable probe/meter)
15 Jun 82	76 °F	Temperature (Mercury thermometer onsite, in situ)

LAB TEST RESULTS

TUESDAY, JUL 20, 1982 12:57:47 Con't

SAMPLE NUMBER : 3222 COST CENTER CODE : K
DATE RECEIVED : 23JUN82 ORIGINATOR : [redacted] INNES

DESCRIPTION : CT SAMPLES
ORIGINATORS NUMB : Cooling Tower Blowdown, Bluitt

DATE PERFORMED	RESULTS	TEST
13JUL82	968MG/L	SULFATE
13JUL82	3085MG/L	TOTAL DISSOLVED SOLIDS
13JUL82	.017MG/L	TOTAL PHENOL IN WATER

L A B   T E S T   R E S U L T S

TUESDAY, JUL 20, 1982 12:54:47

SAMPLE NUMBER : 3223
DATE RECEIVED : 23JUN82
COST CENTER CODE : K
ORIGINATOR : [redacted] INNES

DESCRIPTION : ~~CT SAMPLES~~
ORIGINATORS-NUMB : S-PLANT – Bluitt Sulfur Plant
Waste Heat Reclaimer Blowdown

DATE PERFORMED	RESULTS	TEST
13JUL82	450MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	4.5MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected (incl. benzene)
08JUL82	AS-0.007PPM SE-0.018PPM BA-ND AG-ND CD-ND CU-ND CR-ND FE-0.91PPM PB-ND MN-ND HG-0.003PPM MN-ND	METALS BY AA
13JUL82	73MG/L	NITRATE
15 Jun 82	10.1	pH, onsite w/port. meter
15 Jun 82	190°F	Temp, onsite w/Hg Thermom.

LAB TEST RESULTS

TUESDAY, JUL 20, 1982 12:54:47 Con't

SAMPLE NUMBER : 3223
DATE RECEIVED : 23JUN82

COST CENTER CODE : K
ORIGINATOR : [redacted] INNES

DESCRIPTION : CT SAMPLES
ORIGINATORS NUMB : S-PLANT : Bluitt

DATE PERFORMED	RESULTS	TEST
20JUL82	NONE DETECTED	POLYCHLORINATED BIPHENYLS IN WATER
13JUL82	1754MG/L	SULFATE
13JUL82	.062MG/L	TOTAL PHENOL IN WATER

[redacted]

TUESDAY, JUL 20, 1982 12:57:47

SAMPLE NUMBER : 3224 COST CENTER CODE : K
DATE RECEIVED : 23JUN82 ORIGINATOR : INNES

DESCRIPTION : LARGE WELL
ORIGINATORS NUMB : Bluitt - Regular (large) raw water supply well

DATE PERFORMED	RESULTS	TEST
13JUL82	88MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	0.2MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected
08JUL82	AS-0.001PPM PB-ND CU-ND CO-ND BA-ND HG-0.002PPM FE-BDL MO-ND CD-ND SE-0.009PPM MN-ND NI-ND CR-ND AG-ND AL-ND	METALS BY AA
15Jun82	7.9	pH, onsite (ie @ well head)
15Jun82	67°F	Temp, onsite

LAB TEST RESULTS

TUESDAY, JUL 20, 1982 12:57:47 Con't

SAMPLE NUMBER : 3224 COST CENTER CODE : K
DATE RECEIVED : 23JUN82 ORIGINATOR : INNES

DESCRIPTION : LARGE WELL
ORIGINATORS NUMB : Blwitt

DATE PERFORMED	RESULTS	TEST
13JUL82	2.0MG/L	NITRATE
13JUL82	241MG/L	SULFATE
13JUL82	809MG/L	TOTAL DISSOLVED SOLIDS

TUESDAY, JUL 20, 1982 12:57:47

SAMPLE NUMBER : 3225 COST CENTER CODE : K
DATE RECEIVED : 23JUN82 ORIGINATOR : INNES

DESCRIPTION : ~~LARGE WELL~~
ORIGINATORS NUMB : SMALL WELL - Bluitt Plant backup raw water well

DATE PERFORMED	RESULTS	TEST
13JUL82	94MG/L	CHLORIDE
13JUL82	0.1MG/L	CYANIDE
13JUL82	0.2MG/L	FLUORIDE
23JUN82	SEE SHEET	GC/MS SCAN QUANTITATIVE SCAN No purgables detected
08JUL82	AS-0.004PPM PB-ND CU-ND CO-ND BA-ND' HG-0.002PPM FE-5.01PPM MO-ND CD-ND SE-0.008PPM MN-ND NI-ND CR-ND AG-ND AL-ND	METALS BY AA
15 Jun82	66°F	Temp, onsite (ie @ well head)

LAB TEST RESULTS

TUESDAY, JUL 20, 1982 12:57:48 Con't

SAMPLE NUMBER : 3225 COST CENTER CODE : K
DATE RECEIVED : 23JUN82 ORIGINATOR : INNES

DESCRIPTION : ~~LARGE WELL~~
ORIGINATORS NUMB : SMALL WELL - Bluitt

DATE PERFORMED	RESULTS	TEST
13JUL82	3MG/L	NITRATE
13JUL82	522MG/L	SULFATE
13JUL82	810MG/L	TOTAL DISSOLVED SOLIDS

TABLE I

SUPPLEMENTAL EFFLUENT WATER DATA

Sample	Identification	Purgeable Organics	Metals Mo	Co	~~Ba~~ Zn Sr	Al	B	Nl
3222	CT Samples	Non - Detected		Non-Detected				
3223	S Plant	Non - Detected		Non-Detected				
3224	Large Well	Non - Detected		Non-Detected				
3225	Small Well	Non - Detected		Non-Detected				

CA-263-82
August 2, 1982

LOG OF BORING FOR BLUITT GAS PROCESSING PLANT ADDITION

DATE: November 17, 1971
PROJECT LOCATION: Milnesand, New Mex.
TYPE: Core
BORING NO. 1
LOCATION: See Plan

DEPTH FEET	SYMBOL	SAMPLE	N-BLOWS PER FOOT	MATERIAL DESCRIPTION	CORE DRILLED	CORE RECOVERED	ELEVATION	DEPTH SCALE
0–3				Brown Sandy Clay				
3–5.5				Tan and Light Gray Clayey Sand				
5.5–23.5			32	Tan Sandy Caliche				
10			39	– LL = 30.3%; PI = 14.5%; (-) 200 = 58.9%				
15			17					
20			50/	– 50 Blows = 7.25"				
23.5–25.5				Tan Conglomerate with Caliche Layers — THD Penetration 100 Blows = 5.50"	1.5'	1.0'		

Total Depth of Boring = 25.5 Feet

Note: Boring was advanced to 6.6 feet below the ground surface prior to using drilling fluid and ground-water was not encountered above that depth.

TRINITY ENGINEERING TESTING CORPORATION

LOG OF BORING
FOR
BLUITT GAS PROCESSING PLANT ADDITION

DATE: November 17, 1971 **BORING NO.** 3
PROJECT LOCATION: Milnesand, New Mex. **TYPE:** Core **LOCATION:** See Plan

DEPTH FEET	SYMBOL	SAMPLE	N-BLOWS PER FOOT	MATERIAL DESCRIPTION	CORE DRILLED	CORE RECOVERED	ELEVATION	DEPTH SCALE
				Light Brown Sandy Clay				
5				Tan and Light Gray Clayey Sand				
			---	LL = 36.3%;PI = 16.4%; (-) 200 = 33.6%				
				Tan Sandy Caliche				
10			33					
15			38					
20			50/	50 Blows = 6.75"				
				Tan Silty Sand				
				Tan Conglomerate w/Caliche Layers	2.5'	1.5'		
25				THD Penetration 100 Blows = 2.25"				
				Total Depth of Boring = 25.2 Feet				
30				Note: Boring was advanced to 11.5 feet below the ground surface prior to using drilling fluid and groundwater was not encountered above that depth.				

CITIES SERVICE COMPANY
BOX 300
TULSA, OKLAHOMA 74102

September 17, 1982

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Dear Mr. Ramey:

Subject: Monthly Progress Report - Discharge Plans
Abo, Burton Flats, Bluitt Plants

The fourth and last monthly reporting period for Cities Service Company has been primarily one of analysis, review, and drafting of report material. Several final pieces of reference material have come in.

The plans are in the last stages of development. One report is essentially complete, needing final review. The plans will all be complete and forwarded to your office by the end of the month.

If there are any questions, please don't hesitate to give me a call.

Sincerely,

NATURAL GAS LIQUIDS DIVISION

Steve Innes

Steve Innes
Environmental Coordinator

SI/bs

cc: Oscar A. Simpson

A5/008

CITIES SERVICE COMPANY
BOX 300
TULSA, OKLAHOMA 74102

August 17, 1982

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
P. O . Box 2088
Santa Fe, NM 87501

Dear Mr. Ramey:

Subject: Monthly Progress Report - Discharge Plans
Abo, Burton Flats, Bluitt Plants

The third monthly reporting period for Cities Service Company has been basically one of data analysis, literature review, and rough drafting of report material.

The results of samples collected June 15, 1982, from the Bluitt Plant have been received from our Central Analytical Laboratories. These have been put into tabular form and listed in the same order as given in Section 3-103 of the WQCC Regulations for ease of review.

We have received and reviewed two reports which have come in. One is on the climate of New Mexico and the other is on ground water levels in the state.

Also, we have received and reviewed two sets of U.S. Geological Survey maps. One shows the eight-state High Plains Aquifer at a 1:2,500,000 scale. The other shows the Ogallala Formation and its ground water at a scale of 1:500,000, but is discontinuous or nonexistent in the areas of our plants.

If there are any questions, please don't hesitate to give me a call.

Sincerely,

NATURAL GAS LIQUIDS DIVISION

Steve Innes

Steve Innes
Environmental Coordinator

SI/sm

cc: Oscar A. Simpson

H2/070

CITIES SERVICE COMPANY
BOX 300
TULSA, OKLAHOMA 74102

July 20, 1982

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Dear Mr. Ramey:

Subject: Monthly Progress Report - Discharge Plans
Abo, Burton Flats, Bluitt Plants

During the second monthly reporting period Cities Service Company has had accomplishments in several areas and continued progress in others in following a path toward compliance with the state regulations on discharge plans. The month was generally characterized by completion of some important onsite work, receipt of maps and continued research and correlation of information.

The ponds at both Burton Flats and Abo were completely cleaned by a contractor. The pond liner at Burton Flats was sealed professionally at the seams, and at the area where inlet pipes come through, "boot" kits were employed. At both Burton Flats and Abo, plant personnel built new storage racks for chemicals in 55-gallon drums. These racks are modeled after manufactured units which allow the drums to be stored vertically with the taps on top precluding dripping and spillage due to tap accidents.

At Bluitt, plant personnel constructed a three foot dike around the slop oil tank to contain any possible spillage. They re-routed a small interstage line (produced water) from the inlet gas scrubber so that it could not discharge south off the property. Also, the evaporative cooler water was redirected to stay on the property and it now goes to the flare pond.

We have received a number of maps which had been ordered. Soil survey maps of all three plant areas from the U.S. Soil Conservation Service have come in. Flood maps have come in for Eddy County and the City of Portales from the Federal Emergency Management Agency, but these may not be of much help. We have received our USGS topographic quadrangle maps from our library and some hydrogeologic maps from the New Mexico State Engineer Office. Most of the hydrogeologic maps were not of the correct areas and it seems that the State Engineer does not have any for Burton Flats or any showing the "Red Beds" near the Bluitt Plant. We are currently checking for these internally and with the USGS Office in Denver. Aerial photos of each plant were put on order early this month, but we were told they will take four to six weeks to obtain.

H2/095

All of the maps received have been studied and correlations made. We have met with our production group (Energy Resources Group) and discussed the different plant situations and avenues of information. But we have still not received returns on our literature search by our technical library and therefore have only the very beginnings of what is needed to analyze each plant from an informed, holistic viewpoint.

On testing, our Central Analytical Laboratories have sent us the results of our samples taken on May 26 and 27, 1982. The number of tests run at a collection point were limited by the sample size. Results on the samples collected June 15 are expected soon.

Let me know if there are questions or a need for additional information.

Sincerely,

NATURAL GAS LIQUIDS DIVISION

Steve Innes

Steve Innes
Environmental Coordinator

SI/sm

cc: Oscar A. Simpson

H2/095

CITIES SERVICE COMPANY

BOX 300

TULSA, OKLAHOMA 74102

May 21, 1982

MAY 24 1982

Mr. Joe D. Ramey, Director
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, N. M. 87501

RE: Discharge Plans for Abo, Burton Flats and Bluitt Plants

Dear Mr. Ramey:

In response to your letter dated May 7, 1982, Cities Service Company fully intends to comply with the provisions of Part 3 and other applicable parts of the Water Quality Control Commission Regulations adopted under the New Mexico Water Quality Act for our three New Mexico gas processing plants and intends to meet your October 4, 1982, deadline.

As indicated by our previous correspondence, these plants do not discharge contaminated water from our facilities; thus we thought that a discharge plan would not be required.

In order to meet your requirements, we shall proceed to formulate a discharge plan for each plant. We plan to properly sample our wastewaters as the first step in formulating our discharge plans for each of our plants as required in the regulations under Section 3-104. The sampling will be accomplished by June 25 and results will be available by July 21, 1982.

Review of the water analyses and assembling of the data will be completed and forwarded to your office for the required plans by October 4, 1982 as requested.

Your assistance in advising Cities Service Company of the discharge plan requirements and the laboratories available for testing has been greatly appreciated. We will proceed as expeditiously as possible to satisfy the regulatory requirements and will keep you informed with a monthly report of our progress.

Should you have any questions please call me at (918) 561-2641.

Very truly yours,

NATURAL GAS LIQUIDS DIVISION

W J Templeton

W. J. Templeton
Measurement Manager

WJT/dg

cc: Mr. Oscar Simpson
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088

CITIES SERVICE COMPANY
BOX 300
TULSA, OKLAHOMA 74102

MAY 18 1982

May 11, 1982

Mr. Oscar Simpson
New Mexico Oil Conservation Div.
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Simpson:

Subject: Bluitt, Abo and Burton Flats Plants
Discharge Plans

Cities Service would like to go ahead and get things in motion so that we may file discharge plans for our three New Mexico Gas Processing Plants as apparently required.

We need to know what specifically needs to be submitted in the plans, and especially what water quality parameters need to be sampled and tested. In our phone conversations of March 12 and March 30, 1982, you indicated that you would send us this type of information and also what laboratories were available and qualified in the area to run the required tests. We have not yet received this information.

Additionally, can you advise us of possible sources of information for our different sites on (a) ground water depths and compositions; (b) flooding potential and (c) rock depth and lithological description. We would certainly be most appreciative.

Sincerely,

NATURAL GAS LIQUIDS DIVISON

Steve Innes

Steve Innes
Environmental Coordinator

SI:jk
G2/D/T

918 561-2498

3-12-82

Called 9:45 AM Cities Service Co
Natural Gas Liquids Div.
Steve Innes
Environmental Coordinator
P.O. Box 300 817 CSB
Tulsa OKLa 74102
PH 918-561-2498

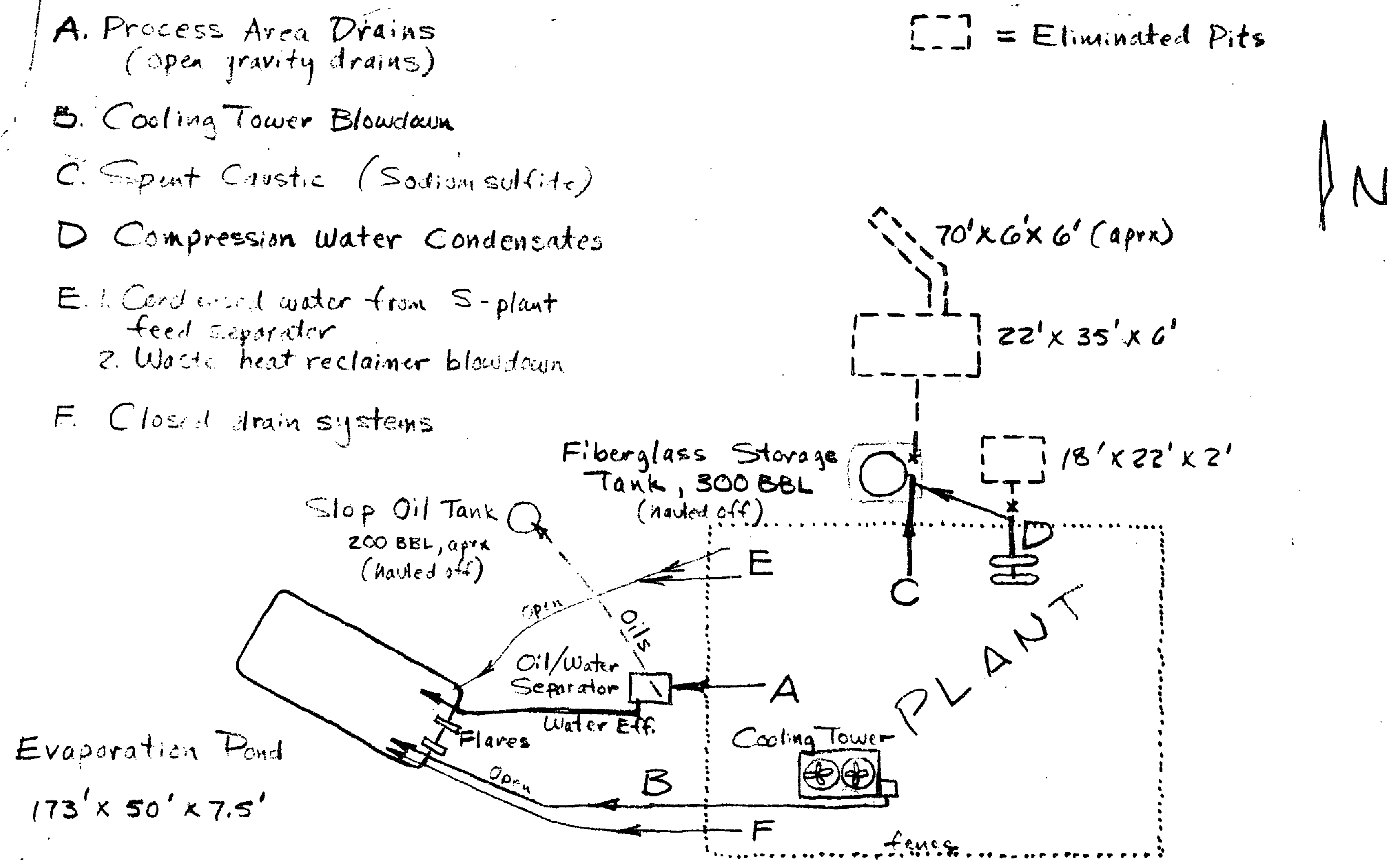
Informed him havent received DP for
Abo Plant
Bluit Plant
Burton Flats Plant

- will send revised WQCC regs, letter of explanation, & list of labs.

- Warned of seriousness of not sending DP

Cities Service Co.
Bluitt Gas Plant

- A. Process Area Drains (open gravity drains)
- B. Cooling Tower Blowdown
- C. Spent Caustic (Sodium sulfite)
- D Compression Water Condensates
- E. 1. Condensed water from S-plant feed separator
  2. Waste heat reclaimer blowdown
- F. Closed drain systems



CITIES SERVICE COMPANY
BOX 300
TULSA, OKLAHOMA 74102

RECEIVED
FEB 04 1981
OIL CONSERVATION DIVISION
SANTA FE

January 27, 1981

Mr. J. D. Ramey
Water Quality Control Commission
P. O. Box 2088
Santa Fe, New Mexico

Subject: Bluitt Plant Discharge Plan

Dear Mr. Ramey:

Under the provisions of the regulations of the Water Quality Control Commission Section 3-106 A, Cities Service Company is requesting that an extension of 120 days on the time limit for submittal of a discharge plan be granted.

This extension is being requested in order to allow us time to complete our discharge water analysis and to determine the best approach or technique to resolving the problem.

Changes at the plant site have already been made and more are anticipated, however, adverse weather conditions are limiting progress.

Please notify us of your decision for the granting of this discharge plan extension request.

Very truly yours,

NATURAL GAS LIQUIDS DIVISION

R. H. Willison
Environmental Coordinator

RHW/rs
F3/C/B

CITIES SERVICE COMPANY
BOX 300
TULSA, OKLAHOMA 74102

October 24, 1980

RECEIVED
OCT 28 1980
OIL CONSERVATION DIVISION
SANTA FE

Mr. Joe D. Ramey
Water Quality Control Commission
P. O. Box 2088
Santa Fe, NM 87501

Re: Bluitt Plant Discharge Plan

Dear Mr. Ramey:

Under the provisions of the regulations of the Water Quality Control Commission Section 3-106 A, Cities Service Company is requesting that an extension of the time limit for submittal of a discharge plan be granted.

This extension is being requested in order to allow us time to complete our discharge water analysis and to develop a complete discharge plan if we find that one is required.

As a result of the Resource Conservation Recovery Act, changes in our plant discharge have already been made that are bringing us into compliance with the act. Additional modifications are anticipated however, these changes will require some additional time.

Please notify us of your decision for the granting of this discharge plan extension request.

Very truly yours,

NATURAL GAS LIQUIDS DIVISION

R H Willison

R. H. Willison
Environmental Coordinator

RHW:lm

Tom:
No time specified. Why don't you answer & give them 120 days. JDR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

June 27, 1980

Cities Service Company
Box 300
Tulsa, Oklahoma 74102

Re: Request for Discharge Plan

Gentlemen:

Under the provisions of the regulations of the Water Quality Control Commission you are hereby notified that the filing of a discharge plan for Cities Service Company's Bluit Plant (15-T8S-R36E) is required. Discharge plans are defined in Section 1-101.1 of the regulations and a copy of the regulations is enclosed for your convenience.

These plans should cover all discharges of effluent at the plant sites or adjacent to the plant sites. Section 3-106A. of the regulations requires submittal of the discharge plans within 120 days of receipt of this notice unless an extension of this time period is sought and approved.

The discharge plan should be prepared in accordance with Part 3 of the Regulations. Due to a recent court decision references to "toxic pollutants" may be ignored.

If there are any questions on this matter, please do not hesitate to call me or Thomas Parkhill at 827-3260. Mr. Parkhill has assigned responsibility for review of all discharge plans.

Very truly yours,

JOE D. RAMEY
Division Director

JDR/TP/og

cc: Oil Conservation Division
Hobbs, New Mexico

Cities Service Company
Bluit Plant
Milnesand, New Mexico 88125

GANDY CORPORATION
OILFIELD SERVICES
P.O. BOX 827
TATUM, NEW MEXICO 88267
(505) 398-4960
FAX -505-398-6887

DYNEGY

BLUITT PLANT
FLARE PIT
REMEDIATION PROJECT

Introduction

Dynegy Midstream Services, Limited Partnership
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

October 9, 2000

Chris Williams
Oil Conservation Division Dist 1
1625 N. French
Hobbs, New Mexico 88240

Discharge Plan GW-18 Termination
Bluitt Gas Processing Plant

Mr. Williams:

Dynegy Midstream Services, L. P. would like to terminate the Bluitt Plant Discharge Plan that was required by WQCC Sec. 3106. The facility was shut down in December 1997 and much of the equipment has been removed.

To facilitate the plan termination Dynegy has hired Larry Gandy of the Gandy Corporation, PO Box 827 Tatum, NM 88267 (505) 398-4960 to do a site assessment and prepare a RCRA exempt unlined pit closure plan for the emergency flare pit as described in the Bluitt Discharge Plan section 6-1. Find this plan attached. Upon OCD's approval the Gandy Corporation will begin the closure.

Please call me with any questions, Office (915) 688-0542 Cellular (915) 425-7072.

Sincerely,

Cal Wrangham

Cal Wrangham
Permian Basin Region ES&H Advisor

Cc: Roger Anderson OCD Santa Fe with attachments

Site Profile

Site Profile

Location
The site is located approximately ten miles east and two miles south of the intersections of NM Hwys 206 and 262. The nearest metropolitan area is the city of Portales, New Mexico, approximately fifty miles to the north.

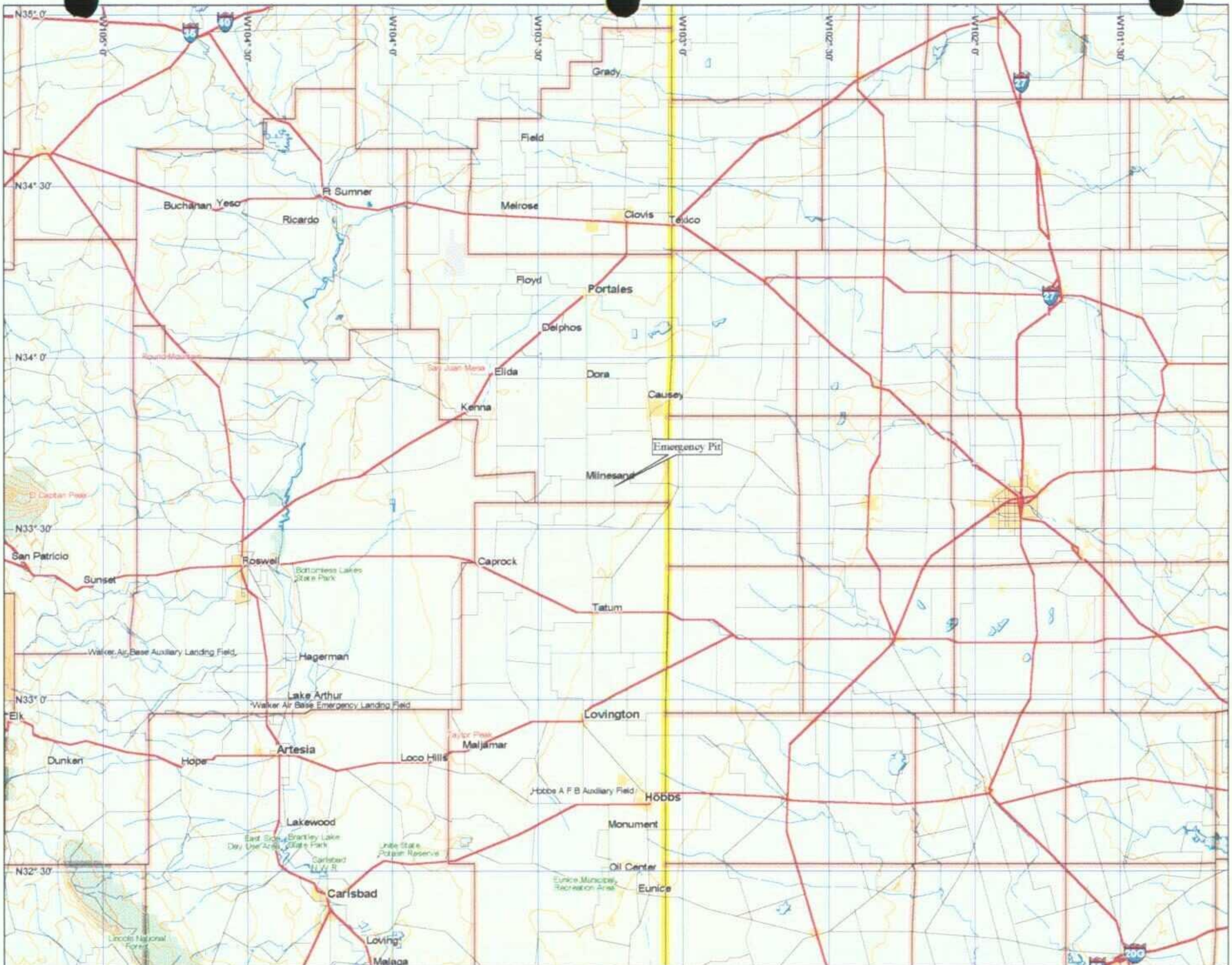
The site is accessible by a well maintained lease road.

Site History
The pit compound was used as an emergency diversion and flare pit for a refining plant. All fluids going into the emergency impoundment were exempt oilfield waste products.

Land Use
The primary land usage is for the grazing of cattle. Oil and gas production is the dominant secondary land use. The land is owned in fee by Dynegy Corporation.

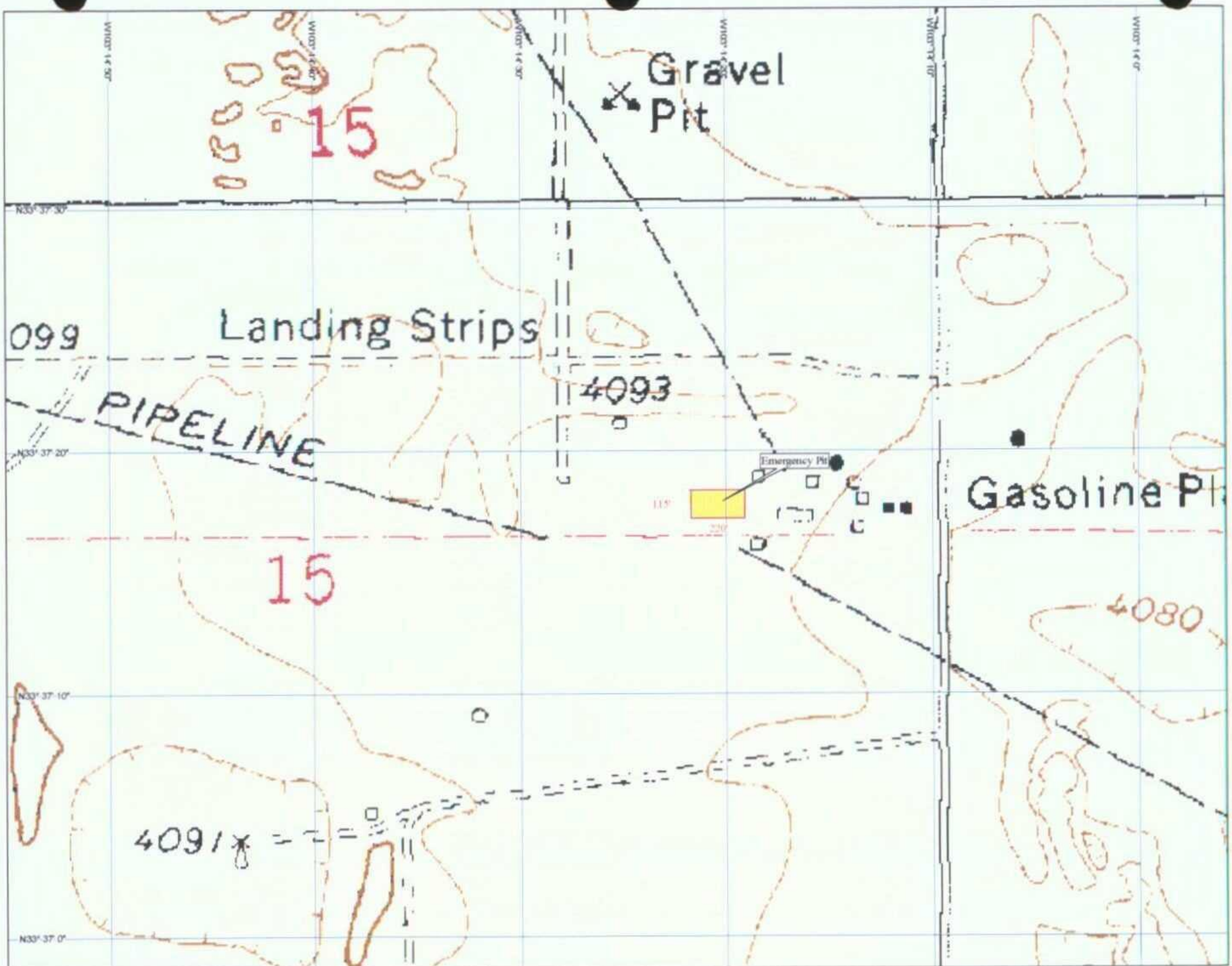
Distance to Surface and Ground Water
There are windmills, water pumps or surface water within one mile of the site. The vertical distance to groundwater is estimated to be greater than 100'.

?



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 | 10 mi Scale: 1 : 1,600,000 Detail: 7-0 Datum: WGS84

3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 1000 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84



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7. 20. 2000


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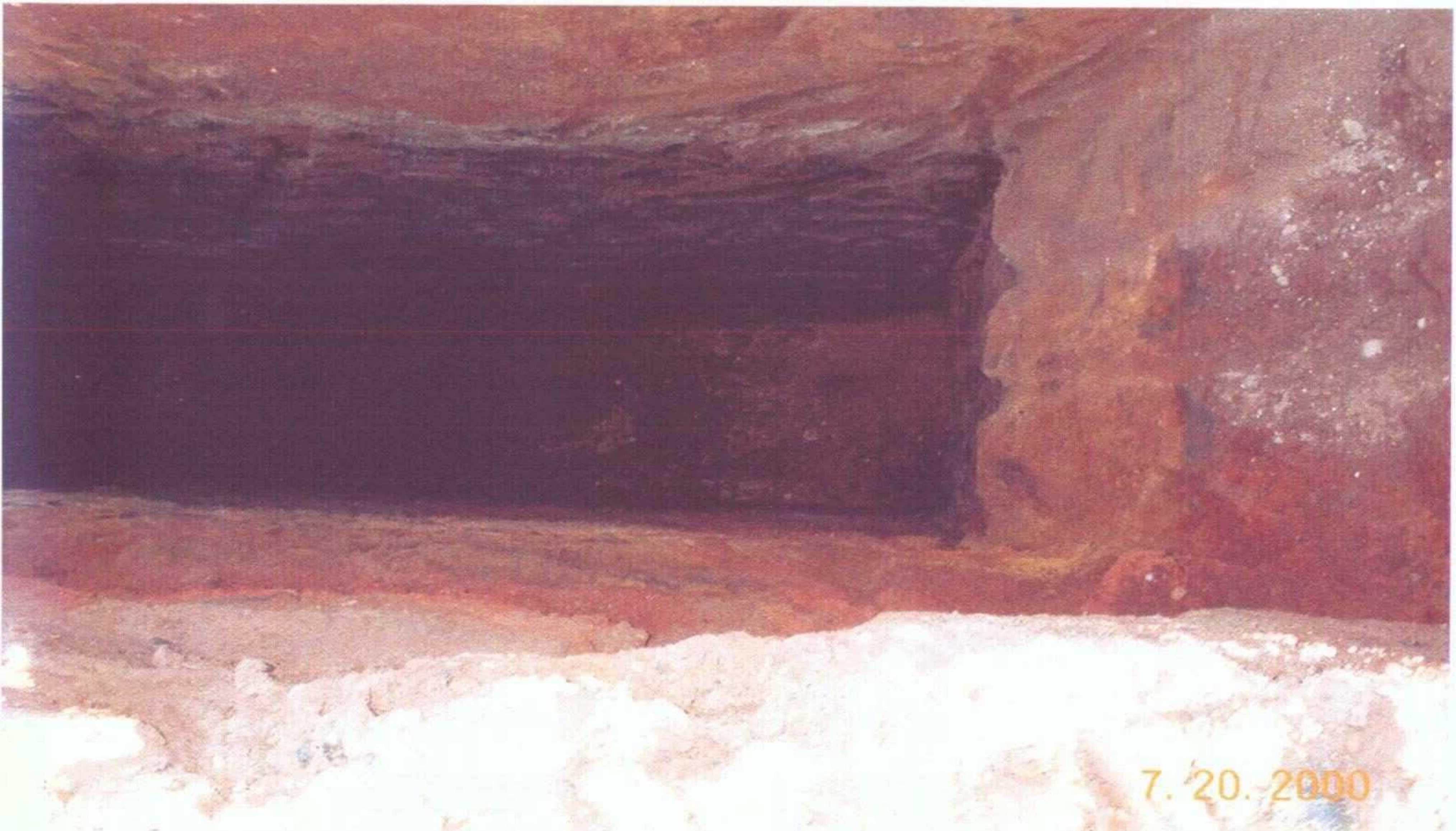
7. 20. 2000


7. 20. 2000

Atkins Engineering Associates, Inc.
2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING Dynergy, Inc.-Bluit Plant TH-1

Gandy Corporation
P.O. Box 827
Tatum, New Mexico

Contact: Larry Gandy

Job #: GANDYLY.THD.00

Date	: 07-25-00	Site Location	: 6 mi. E & 2 mi. S of
Drill Start	: 7:45 a.m.		: Milnesand, New Mexico
Drill End	: 3:15 p.m.	Auger Type	: Hollow Stem
Boring Location	: 30' E of edge of Pit	Logged By	: Mort Bates

Depth in Ft.	GRAPHIC	USCS	Samples	DESCRIPTION	Lab mg/kg		Well: TH-1
0–2		CL		Sandy Clay Mix Back Fill, Red Brown, Black, Loose, Dry			
2–22		SM		Silty Sand, Black, Loose, Damp			Grout; BTS (at ~15)
22–28		SS		Sandstone, w/ Silty Clay, Gray, Loose, Damp			
28–30		SS		Sandstone, Gray, Broken, Dry			

Atkins Engineering Associates, Inc.
2904 W. 2nd St., Roswell, NM 88202-3156

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Gandy Corporation
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Boring Location	: 30' E of edge of Pit	Logged By	: Mort Bates

Depth in Ft.	GRAPHIC	USCS	Samples	DESCRIPTION	Lab mg/kg		Well: TH-1
30–35		SS		Sandstone, Gray, Broken, Dry			Grout
35–47		SS		Sandstone, Gray, Firm, Dry			Grout BLS
47–50		LS		Limestone, Gray, Hard, Dry			Grout

Unable to drill anymore. Mr. Gandy shut down at 50 ft.

Depth scale: 30, 35, 40, 45, 50, 55, 60

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
GANDY CORP.
ATTN: LARRY GANDY
P.O. BOX 827
TATUM, NM 88267
FAX TO: (505) 398-6887

Receiving Date: 08/09/00
Reporting Date: 08/10/00
Project Number: 8B (DYNEGY)
Project Name: FLARE PIT
Project Location: BLUITT PLANT

Sampling Date: 08/09/00
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		08/10/00	08/09/00	08/09/00	08/09/00	08/09/00
H5080-1	FLARE PIT @ 45 FT.	2500	<0.005	<0.005	<0.005	<0.015
H5080-2	FLARE PIT @ 55 FT.	2640	<0.005	<0.005	<0.005	<0.015
Quality Control		244	0.088	0.094	0.095	0.285
True Value QC		240	0.100	0.100	0.100	0.300
% Recovery		102	87.8	93.9	95.1	95.1
Relative Percent Difference		2.4	5.6	3.2	3.8	2.0

METHODS: TRPHC - EPA 600/4-79-020, 418.1; BTEX - EPA SW-846 8260

Burgess J A Cooke
Chemist

8/10/00
Date

H5080.XLS

Protocol

Pit Remediation Protocol
Dynegy Corporation
Buitt Plant
Flare Pit Remediation Project

1.0 Purpose

This protocol is to provide a detailed outline of the steps to be employed in the remediation and final closure of the Dynegy Buitt Plant flare pit.

2.0 Scope

This protocol is site specific for the Dynegy pit.

3.0 Preliminary

Prior to any field operations, Gandy Corporation shall conduct the following activities:

3.1 Client Review

3.1.1 Gandy Corporation shall meet with cognizant personnel within Dynegy to review this protocol and make any requested modifications or alterations prior to submittal to the State of New Mexico Oil Conservation Division.

3.1.2 Changes to this protocol will be documented and submitted for final review by the Dynegy Corporation prior to submittal to the Oil Conservation Division.

3.2 Oil Conservation Division Review

3.2.1 Upon client approval, this procedure will be submitted to the New Mexico Oil Conservation Division for review and comment. Recommended changes will be reviewed by the client prior to the commencement of any On-site remediation activity.

4.0 Safety

4.1 Prior to work on the site, Gandy Corporation shall obtain the location and phone numbers of the nearest emergency medical treatment facility. We will review all safety related issues with the appropriate Dynegy personnel, sub-contractors and exchange phone numbers.

4.2 A tailgate safety meeting shall be held and documented each day. All sub-contractors must attend and sign the daily log-in sheet.

4.3 Anyone allowed on location must be wearing sleeved shirts, steel-toed boots, and long pants. Each vehicle must be equipped with two way communications capabilities.

4.4 Prior to any excavation, the area shall be surveyed with a line finder. If lines are discovered within the area to be excavated they shall be marked with pin flags on either side of the line at maximum five foot intervals.

5.0 Excavation & Remediation

5.1 The site shall be excavated to a minimum depth of 15'. All excavated material will be deposited immediately adjacent to the pit site.

5.2 The bottom of the pit and all four side walls will be tested for TPH and BTEX concentration using WEQP-06 and WEQP-10, Excavation will continue until such concentrations are<5,000 ppm TPH<10 ppm benzene and ,50 ppm total BTEX.

5.3 The excavated materials will be mixed and blended with additional topsoils obtained from the area immediately adjacent to the pit until the hydrocarbon concentrations fall below the maximum limits as described in Paragraph 5.2 of this protocol. The remediated materials will then be replaced into the excavated area, compacted and the surface contoured to provide for positive drainage.

6.0 Documentation & Reporting

6.1 At the conclusion of the pit remediation project, Gandy Corporation will prepare a closure report to include the following information:

A plat of the location showing the exact location of the pit, the dimensions prior to excavation and the actual excavated dimensions.

Photographs of the pit prior to excavation, at the point of maximum excavations and after final closure.

- Field Sampling Report to include the side wall and pit bottom TPH and BTEX concentrations after excavation.
- Field Sampling Report to include TPH and BTEX concentrations of all remediated materials deposited into the pit deposited into the pit.
- Daily calibration records of each testing instrument

Procedures

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Conducting Field TPH Analysis

Completed By: Approved By: Effective Date: 02/15/97

1.0 Purpose
To define the procedure to be used in conducting total percentage hydrocarbon testing in accordance with EPA Method 418.1 (modified) using the "MEGA" TPH Analyzer.

2.0 Scope
This procedure is to be used for field testing and on site remediation information.

3.0 Procedure
3.1 The G.A.C. "MEGA" TPH analyzer is an instrument that measures concentrations of aliphatic hydrocarbons by means of infra-red spectrometry. It is manufactured to our specifications and can accurately measure concentrations from two parts per million through 100,000 parts per million. The unit is factory calibrated however minor calibration adjustments may be made in the field. Quality Procedure 25 defines the field calibration methods to be employed.

3.2 Prior to taking the machine into the field, insert a 500 ppm and 5,000 ppm calibration standard into the sample port of the machine. Zero out the Range dial until the instrument records the exact standard reading.

3.3 Once in the field, insert a large and small cuvette filled with clean Freon 113 into the sample port of the machine. Use the range dial to zero in the reading. If the machine does not zero, do not attempt to adjust the span dial. Immediately implement Quality Procedure 25 .

3.4 Place a 100 g. weight standard on the field scale to insure accuracy. Zero out the scale as necessary.

3.5 Tare a clean 100 ml. sample vial with the Teflon cap removed. Add 10 g. (+/- .01 g), of sample soil into the vial taking care to remove rocks or vegetable matter from the sample to be tested. If the sample is wet, add up to 5 g. silica gel or anhydrous sodium sulfate to the sample after weighing.

3.6 Dispense 10 ml. Freon 113 into the sample vial.

3.7 Cap the vial and shake for five minutes.

3.8 Carefully decant the liquid contents of the vial into a filter/desiccant cartridge and affix the cartridge cap. Recap the sample vial and set aside.

3.9 Insert the metal tip of the pressure syringe into the cap opening and slowly pressurize. WARNING: APPLY ONLY ENOUGH PRESSURE ON THE SYRINGE TO EFFECT FLOW THROUGH THE FILTERS. TOO MUCH PRESSURE MAY CAUSE THE CAP TO SEPARATE FROM THE BODY OF THE CARTRIDGE. Once flow is established through the cartridge direct the flow into the 5 cm. cuvette until the cuvette is full. Reverse the pressure on the syringe and remove the syringe tip from the cartridge cap. Set the cartridge aside in vertical position.

3.10 The cuvette has two clear and two frosted sides. Hold the cuvette by the frosted sides and carefully insert into the sample port of the machine. Read the right hand digital read-out of the instrument. If the reading is less than 1,000 ppm. the results shall be recorded in the field Soil Analysis Report. If the result is higher than 1,000 ppm, continue with the dilution procedure.

4.0 Dilution Procedure

4.1 When initial readings are greater than 1,000 ppm using the 5 cm. cuvette, pour the contents of the 5 cm. cuvette into a 1 cm. cuvette. Insert the 1. cm cuvette into the metal holder and insert into the test port of the instrument.

4.1 Read the left hand digital read-out of the machine. If the results are less than 10,000 ppm, record the results into the field Soil Analysis Report. If greater than 10,000 ppm, continue the dilution process. Concentrations >10,000 ppm are to be used for field screen purposes only.

4.2 Pour the contents of the small cuvette into a graduated glass pipette. Add 10 ml. pure Freon 113 into the pipette. Shake the contents and pour into the 1cm. cuvette. Repeat step 4.2. adding two zeros to the end of the displayed number. If the reported result is greater than 100,000 ppm. the accuracy of further readings through additional dilutions is extremely questionable. Do not use for reporting purposes.

4.4 Pour all sample Freon into the recycling container.

5.0 Split Samples

5.1 Each tenth test sample shall be a split sample. Decant approximately one half of the extraction solvent through a filter cartridge and insert into the instrument to obtain a concentration reading. Clean and rinse the cuvette and decant the remainder of the fluid to obtain a second concentration reading from the same sample. If the second reading varies by more than 1% from the original, it will be necessary to completely recalibrate the instrument.

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Sampling and Testing Protocol
BTEX Speciation in Soil

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure is to be used to determine the concentrations of Benzene, Toluene, Ethyl-Benzene and Xylene (BTEX) in soils.

2.0 Scope

This procedure is to be used as the standard field measurement for soil BTEX concentrations. It is not to be used as a substitute for full spectrographic speciation of organic compounds.

3.0 Procedure

3.1 Sample Collection and Preparation

3.1.1 Collect at least 500 g. of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample of soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.1.2 The soil sample(s) shall be immediately inserted into a one quart or larger polyethylene freezer bag and sealed. When sealed, the bag should contain a nearly equal space between the soil sample and trapped air.

3.1.3 The sealed samples shall be allowed to set for a minimum of five minutes at a minimum temperature of 70^{0}F.

3.1.4 The sealed sample bag should be massaged to break up any clods, and to provide the soil sample with as much exposed surface area as practically possible.

3.2 Sampling Procedure

3.2.1 The instrument to be used in conducting VOC concentration testing shall be a Photovac Ion-chromatograph with BTEX Module. Prior to use the instrument shall be zeroed out in accordance with QP-55.

3.2.2 Carefully open one end of the collection bag and insert the probe tip into the bag taking care that the probe tip not touch the soil sample or the side walls of the bag. If VOC analysis was conducted on the sample prior to BTEX analysis, care should be taken to insure that a sufficient air volume exists in the bag to provide accurate results. **If the available air space within the bag is insufficient to run a full analysis, the sample shall be discarded.**

3.2.3 Set the instrument to retain the highest result reading value. Record the reading onto the Field Analytical Report Form and additionally enter the location code into the instrument data logger.

4.0 After testing, the soil samples shall be returned to the sampling location, and the bags collected for off-site disposal. **IN NO CASE SHALL THE SAME BAG BE USED TWICE. EACH SAMPLE CONTAINER MUST BE DISCARDED AFTER EACH USE.**

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Instrument Calibration and Quality Assurance Analysis for General Analysis "MEGA" TPH Analyzer

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure outlines the methods to be employed in calibrating the GAC MEGA TPH analyzer and for determining and reporting of accuracy curves.

2.0 Scope

This procedure shall be followed each day that the instrument is used.

3.0 Procedure

3.1 Turn the instrument on and allow to warm up with no cuvette in the receptacle. The instrument will take between five and ten minutes to come to equilibrium as can be determined by the concentration display readings moving a maximum of 5 ppm on the low scale. If the instrument continues to display erratic readings greater than 5 ppm, remove the cover and check both the mirrors and chopper to insure cleanliness.

3.2 All TPH standards shall be purchased form Environmental Resources Corporation and as a condition of their manufacture subject to independent certification by third party laboratories. Each standard is received with a calibration certificate.

3.3 Insert the low range (100 ppm) calibration standard into the receiving port and note the result on the right hand digital display. If the displayed reading is less than 98 ppm or greater than 102 ppm, remove the circuit board cover panel and zero out the instrument in accordance with QP-26.

3.4 Repeat the process with the mid range (500 ppm) calibration standard. If the displayed reading is less than 490 ppm or greater than 510 ppm zero out the span as described in QP-26.

3.5 Repeat the process again with the 1,000 and 5,000 ppm calibration standards.

3.6 Pour clean Freon 113 into a filter cartridge and extract into 10 ml cuvette. Insert the cuvette into the receiving port and zero out the instrument reading using the far right adjustment knob on the instrument. Repeat using the 1 ml cuvette and the left hand zero dial.

4.0 Determining & Reporting Instrument Accuracy

4.1 After making the fine adjustment with the zero dials reinsert each calibration standard into the instrument and note the concentration values. ***If <u>any</u> concentration value exceeds 2% of the standard set point, repeat all steps in section 3.0 of this Procedure.*** Note the actual concentration values displayed by the instrument after each calibration standard.

4.2 The four calibration standards shall be used in reporting span deviation as follows:

Standards Range			
100 ppm	**500 ppm**	**1,000 ppm**	**5,000 ppm**
0-250 ppm	251-750 ppm	751-2,500 ppm	2,501-10,000 ppm

4.3 Divide the actual instrument reading value of each calibration sample by the concentration shown on the standard (e.g.. 501 ppm instrument reading / 500 ppm standard = 1.002%). These readings shall be reported for each test performed.

5.0 Re-calibration

5.1 If any sample exceeds the concentration of 1,000 ppm on the 10 ml cuvette or 10,000 ppm on the 1 ml cuvette, the cuvette must be thoroughly rinsed with clean Freon and the instrument re-zeroed in accordance with 0 3.6 of this procedure.

QP-55

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Instrument Calibration and Quality Assurance Analysis for Photovac Gas Chromatograph

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure outlines the methods to be employed in calibrating the Photovac analyzer in the BTEX mode and for determining and reporting of accuracy curves.

2.0 Scope

This procedure shall be followed each day that the instrument is used.

3.0 Procedure

Start-up

3.1 Turn the instrument on and press the Battery button. A battery status report will appear on the screen. If the charge level is less than 8.0, either charge the battery or insert a fresh battery pack.

3.2 Open carrier gas valve on right side of instrument. The instrument is now tuning the lamp. If any "boot" problems occur during warm-up, the "chck" symbol will appear on the screen. Pressing TUTOR will prompt the instrument to provide details. The instrument will not progress beyond the start-up mode until all prompts are cleared.

3.3 The next screen display will be "purj" and will last approximately ten minutes. The instrument is purging the column.

Calibrate

3.4 Connect the regulator to cylinder of calibration gas. Connect calibration adapter and tee assembly to both the regulator and instrument. **DO NOT FORCE ANY CONNECTION!**

3.5 Inspect the open end of the tee vent to insure unobstructed flow.

3.6 Enter CAL on the key pad. The instrument will query "benzene?". Following the prompts and using the key pad, set the concentrations to those defined on the calibration gas bottle. Follow the same procedure for toluene, ethyl-benzene and xylene. After each compound, the instrument will read that the next analysis will be a calibration.

3.7 Press ENTER on key pad. The instrument will calibrate itself for the concentrations specified.

Confirmation Sample

3.8 After each calibration, run the calibration gas through the instrument once again. The display readings should be <u>**exactly**</u> those of the concentrations displayed on the calibration gas bottle. If they are not, the instrument needs factory calibration; do not use.

4.0 Re-calibration

4.1 The instrument is designed with software that prompts you to recalibrate each day, each thirty minutes of use, and after running a sample with high concentrations of one or more of the detected compounds.

5.0 Reporting Instrument Accuracy

5.1 The instrument accuracy as certified by the factory is 15% within one decade of instrument set point. Lower detection limits are 0.1 ppm for benzene and 1.0 ppm for toluene, ethylbenzene and xylene.

5.2 These standards and detection limits must be shown on all reports in which the instrument is used.

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Obtaining
Soil Samples for Transportation to a Laboratory

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

2.0 Scope

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation / anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container with Teflon lid.

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Sampling Procedure

5.1 Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination.

5.2 Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.

5.3 Place the sample directly on ice for transport to the laboratory.

5.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

A. Client, Project and sample name.
B. Signed copy of the original Chain of Custody Form including data on the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab: Ana Lab — Contract No. 78-521.07-013

OCD Sample No. 9003161250

Collection Date	Collection Time	Collected by —Person/Agency
3/16/90	1250	Anderson, Olson /OCD

SITE INFORMATION

Sample location: OXY USA Bluitt Gas Plant

Collection Site Description: Cooling tower basin

Township, Range, Section, Tract: + + +

SEND FINAL REPORT TO
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS

- ☐ Bailed ☐ Pump
- ☒ Dipped ☐ Tap

Water level	—
Discharge	—
Sample type	GRAB
pH(00400)	—
Conductivity (Uncorrected)	1450 μmho
Water Temp. (00010)	17°C
Conductivity at 25° C	μmho

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted: 4 Vials - 2 plastic

- ☒ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- 4p ☒ **NA:** No acid added
- ☐ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- 1p ☒ **A:** ~~5ml conc.~~ HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☒ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☒ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☒ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☒ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ *Waste Treatment & Disposal* ○ *Equipment Sales*

07/23/90

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

RECEIVED
AUG 03 1990
OIL CONSERVATION DIV.
SANTA FE

Sample Identification: OXY USA Bluitt Cooling Tower
Collected By: Roger Anderson
Date & Time Taken: 03/16/90 1250
On Site Data: 9003161250
Other:
Sampling Conditions Dipped Water Temp. 17oC Conductivity 1450 Grab

Lab Sample Number: 162260 **Received:** 03/21/90 **Client:** SNM1

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Acrolein	<100	ug/l	1003	03/31/90	EPA Method 8240	PM
Acrylonitrile	<100	ug/l	1003	03/31/90	EPA Method 8240	PM
Benzene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Bromoform	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Bromomethane	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
Carbon Tetrachloride	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Chlorobenzene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Chloroethane	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
2-Chloroethylvinyl ether	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
Chloroform	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Chloromethane	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
Dibromochloromethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Bromodichloromethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1-Dichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,2-Dichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM

continued

ANA-LAB CORP.
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2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ *Waste Treatment & Disposal* ○ *Equipment Sales*

RECEIVED
AUG 03 1990
OIL CONSERVATION DIV.
SANTA FE

Lab Sample Number: 162260 Continued

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
1,1-Dichloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
trans-1,2-Dichloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,2-Dichloropropane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
cis-1,3-Dichloropropene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Ethyl benzene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Methylene Chloride	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Tetrachloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Toluene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1,1-Trichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1,2-Trichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Trichloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Vinyl Chloride	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
trans-1,3-Dichloropropene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Iron	3.1	mg/l	0935	06/04/90	EPA Method 236.1	CD
Alkalinity	55	mg/l	1800	05/24/90	EPA Method 310.1	MLR
Cation-Anion Balance	1.8	mg/l	0900	06/05/90	ference	NT
Carbonate	<.5	mg/l	1500	04/17/90	APHA Method 263	DFK
Chloride	240	mg/l	0900	03/22/90	EPA Method 325.3	SW
Specific Conductance	2300	Micromhos	2000	03/23/90	EPA Method 120.1	KLM
Bicarbonate	52	mg/l	1500	04/17/90	APHA Method 263	DFK

continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Lab Sample Number: 162260 Continued

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Sulfate	830	mg/l	0900	05/22/90	EPA Method 375.4	MLR
Total Dissolved Solids	1800	mg/l	1200	04/12/90	EPA Method 160.1	DFK
pH	7.6	SU		03/22/90	EPA Method 150.1	LB
Calcium	130	mg/l	2345	05/29/90	EPA Method 215.1	GK
Chromium	<.05	mg/l	0830	03/29/90	EPA Method 218.1	MR
Potassium	30	mg/l	1120	04/13/90	EPA Method 258.1	GDG
Magnesium	38	mg/l	0015	04/05/90	EPA Method 242.1	GK
Sodium	320	mg/l	2200	03/29/90	EPA Method 273.1	GK

Quality Assurance for Sample Number 162260

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	By

Bill Peery

C. H. Whiteside, Ph.D., President

RECEIVED

AUG 03 1990

OIL CONSERVATION DIV.
SANTA FE

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2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ *Waste Treatment & Disposal* ○ *Equipment Sales*

ANA-LAB CORPORATION 1965 25th ANNIVERSARY 1990 KILGORE, TEXAS

06/06/90

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: OXY USA Bluitt Cooling Tower
Collected By: Roger Anderson
Date & Time Taken: 03/16/90 1250
On Site Data: 9003161250
Other: Sampling Conditions Dipped Water Temp. 17oC Conductivity 1450 Grab

Lab Sample Number: 162260 **Received:** 03/21/90

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Acrolein	<100	ug/l	1003	03/31/90	EPA Method 8240	PM
Acrylonitrile	<100	ug/l	1003	03/31/90	EPA Method 8240	PM
Benzene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Bromoform	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Bromomethane	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
Carbon Tetrachloride	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Chlorobenzene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Chloroethane	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
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Chloromethane	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
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Bromodichloromethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1-Dichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,2-Dichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1-Dichloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM

continued

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

ANA-LAB CORP. THE COMPLETE SERVICE LAB

Lab Sample Number: 162260 Continued

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
trans-1,2-Dichloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,2-Dichloropropane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
cis-1,3-Dichloropropene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Ethyl benzene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Methylene Chloride	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Tetrachloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Toluene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1,1-Trichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
1,1,2-Trichloroethane	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Trichloroethene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Vinyl Chloride	<10	ug/l	1003	03/31/90	EPA Method 8240	PM
trans-1,3-Dichloropropene	<5	ug/l	1003	03/31/90	EPA Method 8240	PM
Iron	3.1	mg/l	0935	06/04/90	EPA Method 236.1	CD
Alkalinity	55	mg/l	1800	05/24/90	EPA Method 310.1	MLR
Cation-Anion Balance	1.8	mg/l	0900	06/05/90	ference	NT
Carbonate	<.5	mg/l	1500	04/17/90	APHA Method 263	DFK
Chloride	240	mg/l	0900	03/22/90	EPA Method 325.3	SW
Specific Conductance	2300	Micromhos	2000	03/23/90	EPA Method 120.1	KLM
Bicarbonate	52	mg/l	1500	04/17/90	APHA Method 263	DFK
Sulfate	830	mg/l	0900	05/22/90	EPA Method 375.4	MLR

continued

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2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ◦ Waste Treatment & Disposal ◦ Equipment Sales

Lab Sample Number: 162260 Continued

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Total Dissolved Solids	1800	mg/l	1200	04/12/90	EPA Method 160.1	DFK
pH	7.6	SU		03/22/90	EPA Method 150.1	LB
Calcium	130	mg/l	2345	05/29/90	EPA Method 215.1	GK
Chromium	<.05	mg/l	0830	03/29/90	EPA Method 218.1	MR
Potassium	30	mg/l	1120	04/13/90	EPA Method 258.1	GDG
Magnesium	38	mg/l	0015	04/05/90	EPA Method 242.1	GK
Sodium	320	mg/l	2200	03/29/90	EPA Method 273.1	GK

Quality Assurance for Sample Number 162260

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	By
				Alkalinity					
	Standard	110	ppm	100		110	1800	05/24/90	MLR
	Standard	110	ppm	100		110	1800	05/24/90	MLR
163720	Duplicate	228	ppm	228		100	1800	05/24/90	MLR
163720	Spike		ppm			99	1800	05/24/90	MLR
163720	Spike		ppm		100	99	1800	05/24/90	MLR
				Sulfate					
	Standard	99	mg/l	100		101	0900	05/22/90	MLR
162260	Duplicate	829	mg/l	829		100	0900	05/22/90	MLR
162260	Spike		mg/l		80	107	0900	05/22/90	MLR
				Total Dissolved Solids					
	Standard	996	mg/l	1000		100	1200	04/12/90	DFK
163043	Duplicate	136	mg/l	132		103	1200	04/12/90	DFK
				Potassium					
161990	Duplicate	156	mg/l	152		103	1120	04/13/90	GDG
162258	Duplicate	25	mg/l	23		108	1120	04/13/90	GDG
162261	Duplicate	4200	mg/l	4200		100	1120	04/13/90	GDG
162261	Spike		mg/l		.50	108	1120	04/13/90	GDG
				Magnesium					
	Blank	.025	mg/l				0015	04/05/90	GK
	Blank	.006	mg/l				0015	04/05/90	GK
	Blank	.015	mg/l				0015	04/05/90	GK
	Blank	.026	mg/l				0015	04/05/90	GK
	Standard	.191	mg/l	.200		105	0015	04/05/90	GK
161322	Duplicate	2200	mg/l	2300		104	0015	04/05/90	GK
162121	Duplicate	1.2	mg/l	1.2		100	0015	04/05/90	GK

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2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry ○ Waste Treatment & Disposal ○ Equipment Sales

Quality Assurance for Sample Number 162260

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	By
162258	Duplicate	410	mg/l	480		116	0015	04/05/90	GK
161322	Spike		mg/l		.196	90	0015	04/05/90	GK

C. H. Whiteside, Ph.D., President

WARREN PETROLEUM COMPANY
BLUITT
GAS PROCESSING PLANT
DISCHARGE PLAN
SECTION 15, TOWNSHIP 8 SOUTH, RANGE 36 EAST
ROOSEVELT COUNTY, NEW MEXICO

SUBMITTED TO:
NEW MEXICO OIL CONSERVATION DIVISION
SANTA FE, NEW MEXICO

PREPARED BY:
WARREN PETROLEUM COMPANY
P. O. BOX 67
MONUMENT, NM 88265

TABLE OF CONTENTS

I. INTRODUCTION

This report is submitted in accordance with Section 3- 106 of the New Mexico Water Quality Control Commission Regulations, WQCC81-2, as required by the New Mexico Oil Conservation Division and includes a plan of containment for wastewater and materials associated with the operation of OXY USA Inc.'s Bluitt Gas Processing Plant.

II. HISTORY AND BACKGROUND OF THE PLANT

The original Bluitt Plant was built by Austin Rankin in 1961. It was designed to process 16 MMCFD of inlet gas applying a refrigerated lean oil process to recover propane, butane and natural gasoline. OXY USA Inc. (then Cities Service Company) purchased the Bluitt Plant from Captain, Inc. in 1966. During 1967 and 1968, OXY added a sulfur recovery plant designed and built by the Ortloff Corporation and expanded the existing processing and treating facilities to handle 37 MMCFD of inlet gas. Ethane recovery facilities were installed in 1971. In 1979, two new sulfur condensers were purchased and installed by Stiles Energy Corporation. A new wasteheat boiler, designed by Western Research and Development, was installed in the spring of 1981. A cryogenic plant and nitrogen rejection unit was installed in 1983. The plant then processed 18.0 MMCFD of inlet gas. In 1993 Warren Petroleum Company purchased the plant from Trident and ceased all operations except for treating and H2S removal of the inlet gas. H2S is removed and the entire volume is sent to Warren Petroleums Saunders plant for liquids removal. Onsite the only product from this process is the sulfur produced in the H2S removal.

III. ENVIRONMENTAL DESCRIPTION

Geology

About 200 million years ago, a shallow (Permian) sea covered the Southern High Plains. The materials laid down in this sea consisted primarily of fine sand, silt and clay. Today these sediments are known as the Permian Red Beds.

Some 185 million years ago the sea retreated, exposing rocks and sedimentary sea deposits. the subsequent weathering action on this surface created the material recognized today as the Triassic Red Beds, distinguished fro the Permian sediments by being markedly more red in color. these deposits represent the floor of most of the water wells drilled throughout Roosevelt County. Some 60 million years ago, the area was again submerged by a shallow sea. This sea deposited the blue shale, blue and yellow clay, limestone, sandstone, sand, and gravel identified today as Cretaceous sediments. Only scattered areas of these Cretaceous deposits are found in Roosevelt County.

The Ogallala Formation, the water-bearing strata presently being tapped for domestic and irrigation use, resulted form the rise of the Rocky Mountain Chain. As the mountains were worn down by erosion, the streams began to deposit sand, gravel and silt near their source. The deposits formed alluvial fans of course gravelly material along foot slopes of the mountains; the finer materials were moved and spread farther to the east. The Ogallala Formation developed in these deposits of outwash material. Fresh water saturated the material at times during its deposition.

Within the Pleistocene Period, the Ice Age, ice did not advance as far south as the Southern High Plains, but the wet and dry cycles of the glacial and inter-glacial periods had a marked effect on the climate, vegetation and soil of the area. Eolian sands were deposited on the dry cycles, while caliche (calcium carbonate) was precipitated as a cap over wind blown material in the wet cycle. Playas were formed where the caliche was less mature. Lakes were enlarged with each cycle and new materials deposited.

Climate

Roosevelt County has a semi-arid continental climate. Winds bring moisture into the area from the Gulf of Mexico. Because of the more favorable summer wind circulation, the enlarge majority of annual rainfall normally occurs during the months of May through September. Much of this precipitation falls in the form of brief, and at times, heavy thundershowers. The average annual precipitation in the Milnesand area is approximately 16 inches. The average annual snowfall in the county is less than 10 inches.

The annual mean temperature of Roosevelt County is 58°F. The variation in daily temperature of the county is more than 30°. The average annual humidity is near 52%. During the warmest part of the day, the humidity will range from 30% in June to 40% in January.

Wind records are not available for Roosevelt County, but records at nearby stations indicate an average wind velocity of about 12 miles per hour. March normally is the windiest month of the year with and average velocity exceeding 15 miles per hours. Late in fall, velocities drop to less than 10 miles per hour.

Records showing water loss by evaporation from a Class A evaporation pan have been kept near Portales for the period from 1934 to 1960. These records show that approximately 92 inches of water are evaporated each year, or about six times the normal annual rainfall. Water loss by evaporation is greatest in June, about 12.5 inches.

Previous Investigations

Generalized reports of the geology in the Bluitt Facility area have been made in connection with regional investigations concerned with water development of oil and gas-producing formations. Selected references pertaining to the geology and hydrology of Lea and Roosevelt Counties are listed in the Bibliography.

There have been no detailed studies of the geology and water resources in the vicinity of the Bluitt facility itself. This probably is due to the fact that there are no major water users in the area. Also, the land surface offers few exposures of the underlying strata; much of the area is blanketed by stabilized dune sand or the poorly consolidated deposits of the Ogallala Formation. One of the earliest studies was made by Theis (1932, p. 98-160) which evaluated the potential development of the Ogallala aquifer. This aquifer was later studied by Cronin (1969) and Weeks and Gutentag (1981). Ash (1963) and Mourant (1971) evaluated the gound-water conditions in Lea County near the southern border of the Bluitt project area.

Stratigraphic Sequence

There are no sample logs available for wells drilled within a three-mile radius of the Bluitt Plant. However, on the basis of the studies cited in the preceding paragraph, the Stratigraphic sequence can be extrapolated. According to Ash (1963, Fig. 2) the project area is underlain by a gray shale deposit equivalent to the Tucumcari Shale, or by the red and maroon deposits of the Dockum Group which is locally called the Triassic Red Beds (Fig.3). These deposits are overlain by the Ogallala Formation and discontinuous sequence of stabilize dune sand.

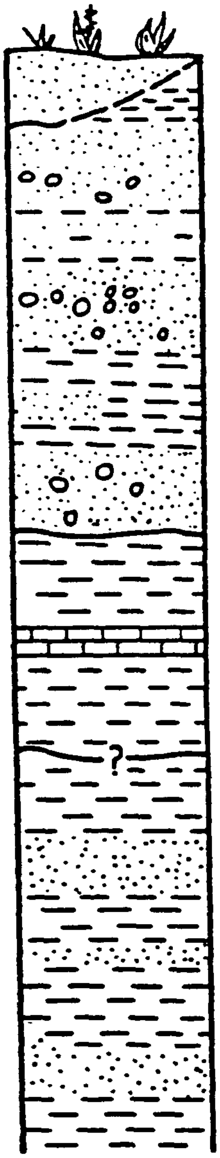
Dockum Group (Triassic Red Beds)

Rocks of the Dockum Group range in thickness from 1,400 to 2,000 feet (Nye, 1930, p. 370). Although they are known to underlie the entire project area, the actual thickness is unknown.

These rocks near Bluitt consist of two different units that are distinctive but which grade into one another. The lower part of the group has a maximum thickness of 600 feet and consists mostly of reddish sandstone but includes a relatively small proportion of variegated shale and limestone. This unit is not known to yield potable water to wells. The upper part of the Dockum Group has a maximum thickness of about 1,200 feet. This part is predominately a reddish shale but includes minor amount of variegated shale, sandstone, conglomerate, and limestone (Adams, 1929, p. 1051; Nye, 1932, p. 237-238). It is from this unit that the name "Triassic Red Beds" was derived. This unit produces small quantities of water to stock wells.

Tucumcari Shale

The Tucumcari Shale is about 150 feet thick in southeastern Roosevelt County and generally thins toward the south west



Physical Character	Water-Supply Potential
Recent Deposits	
Eolian sand, silt, and clay, unconsolidated	Non-water-bearing.
Ogallala Formation	
Caliche, clay, silt, sand, and gravel, poorly consolidated.	Yields small to moderate quantities of good quality water; water-bearing zones are discontinuous.
Tucumcari Shale	
Yellow shale, siltstone, with thin limestone beds.	Yields small quantities of mineralized water.
Dockum Group	
Red to brown shale, siltstone, and sandstone.	Yields small quantities of mineralized water.

Figure 3.--Geologic column and water-supply potential in the Bluitt area, Roosevelt County, New Mexico.

Affirmation

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

(Signature) (Date)

(Printed name of person signing) (Title)

It pinches out in Northern Lea County. At the plant site, this shale formation probably is less than 100 feet thick.

This formation generally consists of dark gray siltstone with interbedded brownish sandy limestone and sandstone. The limestone and sandstone are very lenticular and discontinuous. The Tucumcari Shale generally weathers yellow to yellowish-green, and a weathered surface is locally present on the top of the formation where it is overlain by the Ogallala Formation.

Limited quantities of ground water occur in the Tucumcari strata. Beds of sandstone near the base of the formation constitute the principal aquifer.

Ogallala Formation

In the project area, the Ogallala Formation probably ranges in thickness from 100 to about 200 feet. This range is based on data from wells located in the area. The variations in thickness are due to the irregularities of the surface of the underlying strata and to post-Ogallala erosion.

The Ogallala consists mostly of fine to very-fine sand but includes minor quantities of clay, silt, coarse sand, and gravel. The lower one-third of the Ogallala contains a higher proportion of coarse sediments than the upper two-thirds. Usually the coarse sediments occur as lenticular beds in the finer material. Extensive beds of coarse sand

and gravel are found in some of the buried stream channels cut into the Mesozoic bedrock.

Most of the formation is unconsolidated, although near the top and locally within it the sediments have been cemented by calcium carbonate to form beds of caliche. The degree of cementation of the caliche varies greatly. However, in general the Ogallala is most firmly cemented near the top of the formation and where the sediments are fine and contain much silt (Nye, 1932, p. 235).

The bed of caliche at the top of the formation forms topographic promineces because of its resistance to erosion. It generally occurs at the top of most plateaus and is usually called the cap rock. There is no sharp break between the caliche cap rock and the underlying sediments because the amount of cementation decreases gradually downward. In some places the cap rock is so dense that it breaks with a semiconchodial fracture; elsewhere it may be soft and chalklike.

Although the Ogallala Formation locally produces large quantities of water to wells in Roosevelt and Lea Counties, the formation probably is non-water-bearing beneath the Bluitt plant site itself.

Unconsolidated Deposits

Soil, alluvium, and dune sand overlie the Ogallala Formation. These deposits range in thickness from 0 to perhaps 40 feet; the greatest thickness' are present where dune development is greatest. These deposits are unconsolidated and very permeable. Although they would facilitate the downward percolation of recharge to the underlying Ogallala Formation, there is no record of water production form the alluvial or dune deposits themselves.

IV. WATER-BEARING CHARACTERISTICS

Dockum Group and Tucumcaric Shale

Due to the lack of subsurface control within a three-mile radius of the Bluitt facility, it is difficult to determine which formations are tapped by the existing wells in the area. However, since the water-bearing characteristics of the Dockum Group and the Tucumcari Shale are similar, the actual terminology is somewhat academic.

Theis (1932, p.119) was the first to assess the production capacity of wells tapping these formations. He states, "In an area of undetermined extent in southern Roosevelt County,... the Mesozoic strata are fairly close to the surface and the thin Tertiary mantle does not provide sufficient water. In this area the water in the underlying Mesozoic strata is tapped. This water is used only for stock and domestic purposes. Practically all is pumped by windmills, and the production of all wells is small." It should be noted that Theis did not differentiate between the Dockum Group and the Tucumcari Shale of Mesozoic age.

The water is produced from more porous strata that are interbedded with the shale and red beds. Some of the early wells encountered artesian conditions in these water-bearing zones; however, Theis states that the pressure was not sufficient to ascend to the level of the base of the Ogallala

Formation. He also reported that the wells". . . generally find water within 100 feet or a little more. . ." after penetrating the shale or red beds.

Cooper (1960, p.27) reports that in the Causey-Lingo area north of Bluitt, the Tucumcari Shale Contains little or no water. Near the village of Dora, in T-4-S, R-34-E, the Ogallala Formation contains only a few feet of permeable material at the base of the formation and most of the water is obtained from sandy shale and clay in the underlying red beds. Some of the well yields are less than 1/4 gpm (gallons per minute).

At the type locality, Trauger (1964, p. 27) reports that the Tucumcari Shale lack permeability. The shaly siltstone and fine-grained shaly sandstone beds of the formation absorb and transmit water at a very slow rate, but the fractures and joints in the rock are believed to be sufficiently well developed to permit small quantities of water to enter a well.

Ogallala Formation

The Ogallala Formation is one of the most highly developed and productive aquifers in Eastern New Mexico and West Texas. Detailed studies of this formation have been made by Theis (1932) in the Portales area, by Cooper (1960) in the Causey-Lingo area, and by Ash (1963) in Northern Lea County. In all of these areas it is not uncommon for wells to yield 100 gpm or more. However, in many areas the Ogallala is thin, and the amount of saturation may be minimal or totally lacking.

Most of the Ogallala in Northern Lea County is unsaturated (Ash, 1963, Figure 2). Detailed mapping of the aquifer by Cronin (1969) and Weeks and Gutentag (1981) show large areas where the formation is non-water-bearing. The Bluitt plant is located in an area that was considered to be non-water-bearing by Weeks and Gutentag (1981). Throughout most of Southern Roosevelt County, there was insufficient water production to justify mapping (Figure 4). According to Douglas P. McAda (written communication, April 20, 1984) who participated in the Weeks and Gutentag study. "The Ogallala Formation in this area is not continuously saturated. Saturation may occur locally in low areas in the pre-Ogallala erosional surface of the underlying Cretaceous rocks. The area was not contoured because of the discontinuous nature of the saturated Ogallala material."

In summary, it is apparent that the Ogallala is capable of producing moderate to large quantities of water in those areas where there is sufficient saturated thickness. However comprehensive and regional studies have shown that throughout most of Southern Roosevelt County, including the Bluitt plant site, the formation is not considered to be water-bearing.

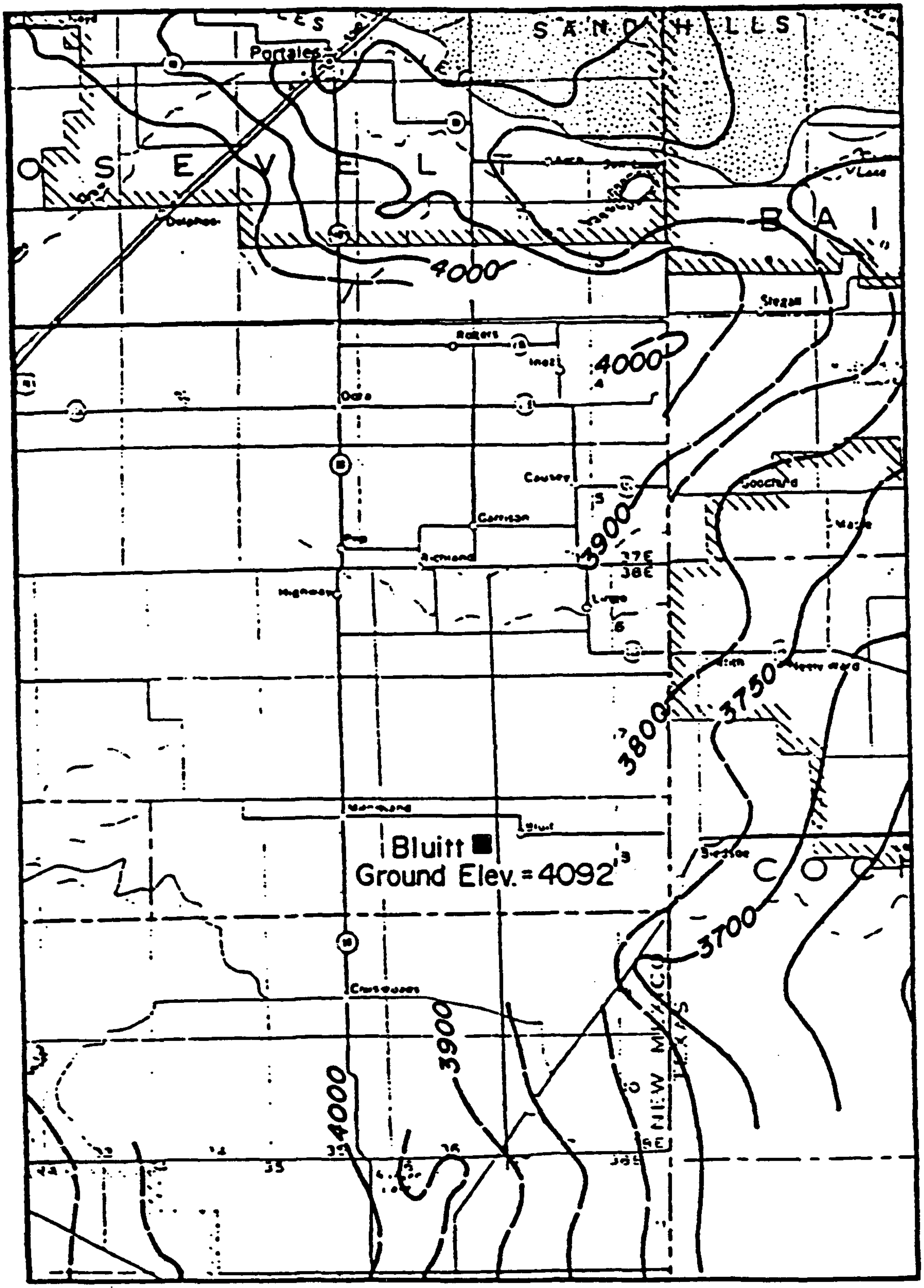


Figure 4.--Elevation of the water table in the Ogallala Formation in the vicinity of Bluitt, New Mexico. Contour interval is 50 feet. (Modified after Cities Service Company, 1982, fig. 3.1).

Chemical Quality of Ground Water

Water quality provided by Cooper (1960, Table 4) suggests that chemical characteristics of water may be used as a general guide to the source of the water-producing zones. In general, water from the Ogallala Formation is less highly mineralized than water produced by wells tapping the red beds or shale deposits.

Specific conductance, measured in micromhos, provides an indication of the amount of total mineralization in a sample of water. In general, the specific conductance multiplied by 0.65 is approximately equal to the total dissolved solids of the sample. For example, if the specific conductance is measured as 1,000 micromhos, the approximate total dissolved solids would be 650 mg/1 (milligrams per liter).

In samples from the Ogallala Formation in Southern Roosevelt County the conductance ranged form 638 to 1,540 micromhos in samples collected for the shale and red bed deposits. From these reported values for specific conductance, it may be concluded that there is a wide range in mineralization in samples from both the Ogallala and the underlying strata. However, in general the mineralization is greatest In the older strata and less in the Ogallala Formation.

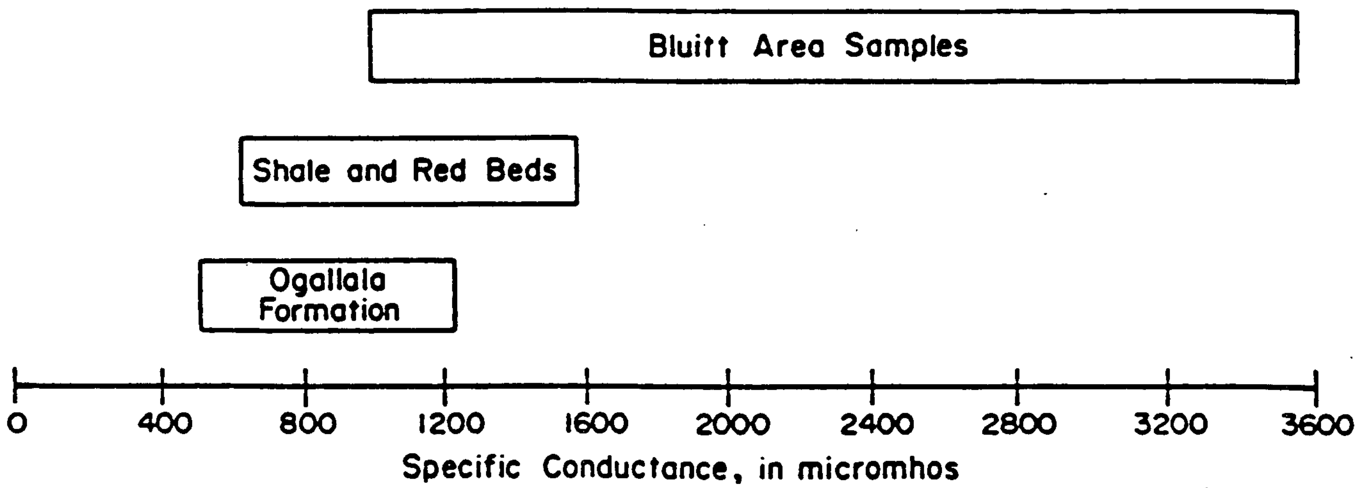


Figure 5.--Bar graphs showing range in specific conductance from water samples in southern Roosevelt County.

While conducting the inventory of wells near the Bluitt plant, samples were collected for partial analysis from three wells in the area (Table 1). Analyses from the plant water supply had been previously been included in the report by Cities Service Company (1982, Table 1C). In addition, the specific conductance was measured in seven wells. These conductance's indicate that the water from the Bluitt area is more highly mineralized than other water in Southern Roosevelt County. Presumably most of the water near Bluitt is more closely related to the shale and red beds than to the shallower Ogallala Formations.

Ground-Water Development Near the Bluitt Plant

A total of 22 wells were inventoried during the field investigation associated with this project. Most of the wells within a radius of three miles were inventoried, as well as several wells beyond these boundaries. A summary of the data from each well is given in Table 2. A total of ten of these wells were considered to be unused and seven were considered to be totally abandoned. One well was serviceable but dry. A home located in 8.36.9.111 reports very little saturation at the base of the sand and gravel deposits, and water from the underlying shale is nonpotable. All of the water used by the Bluitt Plant is obtained under contract from Mr. R. Ainsworth from two wells located in 7.36.26.-

Table 1.--Partial chemical analyses of water samples from the Bluitt area.

Owner	R. Ainsworth	R. Ainsworth		Tyler W. Works+	L. Selman +	+	+		R. Ainsworth +
Location	7.36.26.313a "Large well"	7.36.26.313b "Small well"	7.36.32.424	8.36.1.422	8.36.14.442	8.36.17.442	8.36.18.442	8.36.33.313	8.37.5.333
Arsenic	0.001	0.004							
Cyanide	0.1	0.1							
Fluoride	0.2	0.2							
Mercury	0.002	0.002							
Nitrate	0.5	0.7							
Selenium	0.009	0.008							
Chloride	88	94			450	175			475
Iron		5.01							
Sulfate	241	522			1050	295			900
pH	7.9								
Total Dissolved Solids	809	810			2206	838			2184
Specific Conductance	1245*	1246*	990	1620	2880	1450	1540	1280	3570

* Calculated

\+ Within three-mile radius of plant

Table 2.--Records of wells in vicinity of Bluitt plant, Roosevelt County, New Mexico.

Owner	Location	Depth (feet)	Altitude (feet)	Water Level			Use*	Specific Conductance (micromhos)	Remarks**
				Depth (feet)	Date	Altitude (feet)			
R. Ainsworth	7.36.26.313a	221	4116	82	3/84	4034	I		CA available; "Large well"
R. Ainsworth	26.313b		4114				I		CA; "Small well"; used for stand-by
	27.424		4119				S		Abandoned
	32.424		4118				S	990	
Tyler W.Works	8.36. 1.422		4092				I	1620	w/i 3R
R. Ainsworth	3.444a	135	4083	126.02	3/84	3957	U		Abandoned, w/i 3R
	3.444b	131	4083	119.69	3/84	3961	U		Abandoned, w/i 3R
	9.111	±150	4115				U		Poor quality;very little saturation; w/i 3R
L. Selman	13.313	114	4073	88.96	3/84	3984	S		
L. Selman	14.442		4075				D	2880	CA available, w/i 3R
	15.324	88	4091	73.36	3/84	4018	U		Abandoned, w/i 3R
	15.342	9.5	4100				U		Abandoned, caved, w/i 3R
	17.422		4113				S	1450	CA available, w/i 3R
	18.442		4128				S	1540	w/i 3R
	25.133	105	4067	dry			U		Well serviceable but dry, w/i 3R
	29.222	15.3	4107	dry			U		w/i 3R
	33.313		4092				S	1280	
R. Ainsworth	8.37.5.333		4060				S	3570	CA available
	7.311	95	4074	88.38	3/84	3985	S		w/i 3R
	8.113	65.5	4057	dry			U		Abandoned
	19.112	131	4057	95.91	3/84	3961	U		Abandoned, w/i 3R
	20.141	183	4056	154.46	3/84	3902	U		Abandoned

* I=Industrial; S=Stock; U-Unused; D=Domestic

** CA=Chemical Analysis; w/i 3R = Within 3-mile radius of plant

313. Well 313a is called the "Large Well" and reportedly is completed at a depth of 221 feet with a static water level of 82 feet below land surface. The "Small Well", which is at the same location, is used for stand-by only. Water is also piped from these wells to other water users in the area. These two industrial wells are located approximately 3-1/2 miles north of the plant site.

Many of the operative wells in the area are used for stock watering. These wells are equipped with cylinder pumps and windmills, and therefore are capable of producing relatively large quantities of water.

The nearest well to the plant that presently is being used is owned by Mr. Lee Selman in 8.36.14.442. This well is equipped with a submersible pump and supplies water for his house and is also used for stock watering. Water from the well has a specific conductance of 2,880 micromhos which indicates that the well taps the Tucumcari Shale or the red beds. No logs are available. The Selman well is approximately 1-1/4 miles east-southeast of the Bluitt Plant.

A long-abandoned well is located about 1/2 mile west-southwest of the plant at 8.36.15.324. This well had a static water level of 73.36 feet below land surface and a total depth of 88 feet; the well is capped and could not be sampled. Two open casings are located in 8.36.3.444

about 1-1/4 miles north of the plant. The water level is approximately 120 feet below land surface, but the wells were not sampled (Table 2).

V. PLANT DESCRIPTION

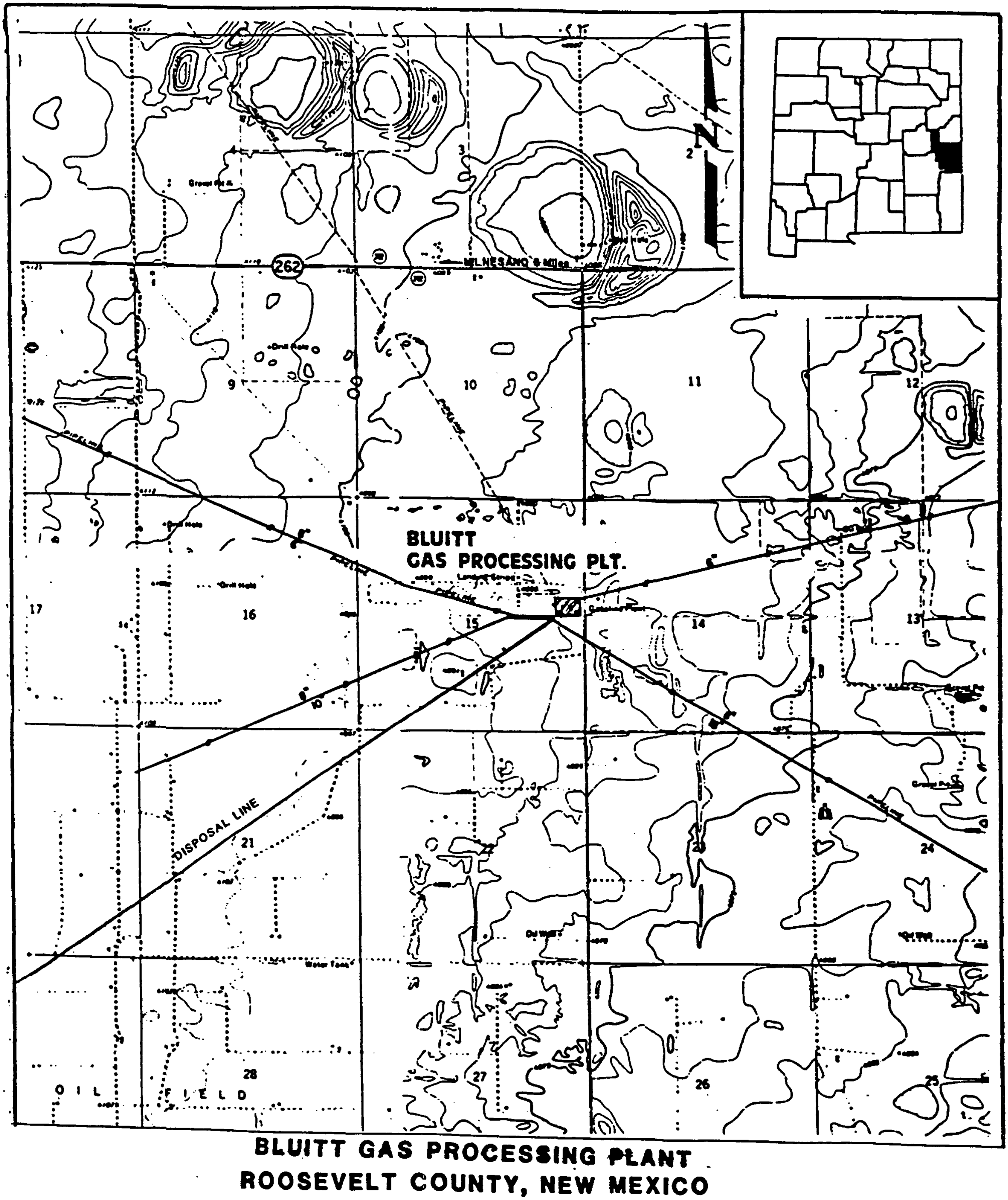
LOCATION

The plant is 42 miles south of Portales and 7 miles east of Milnsand off State Highway 262. The area is basically upland range and the vicinity is fairly flat around the plant site. The site itself is at Elevation 4092', encompasses about 10 acres and is part of a 320 acre parcel. Figure 5.0 is the location map and Figure 5.1 is the Plot Plan.

Process Description and Schematic

Inlet Gas

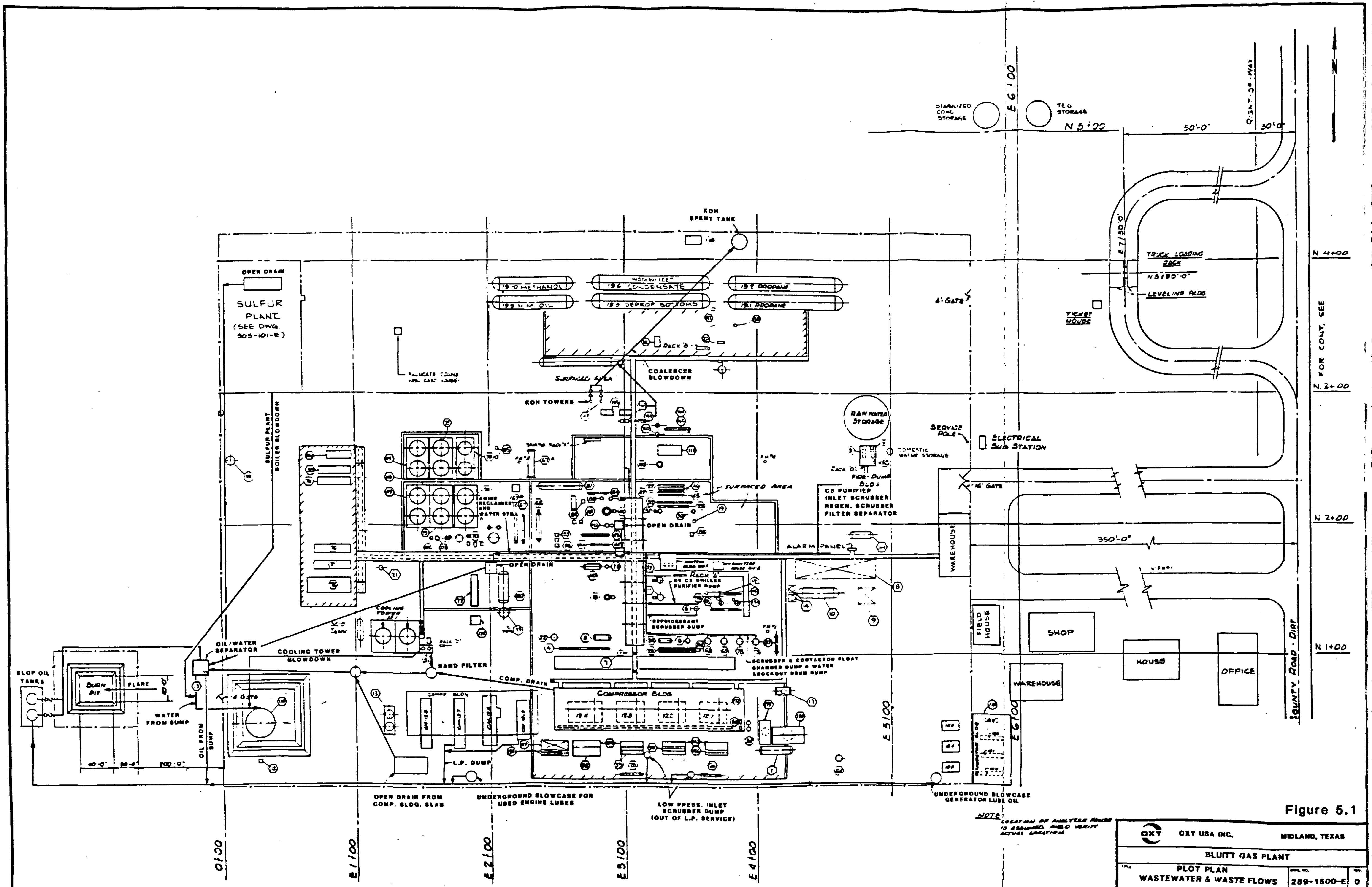
The inlet gas at Bluitt, which requires treating, flows to the inlet gas separator where any entrained liquids are removed as shown in the process schematic, Figure 5.2. The gas then flows to the amine contactor to "Sweeten" or remove the corrosive "acid gases". CO2 and H2S. It then flows to the amine scrubbers. It is cooled by a series of coolers and exchangers.



BLUITT GAS PROCESSING PLANT
ROOSEVELT COUNTY, NEW MEXICO
SECTION 15, T 8 S, R 36 E
APPROXIMATE ELEVATION 4,092'

APPROXIMATE LAT. 30 37' 17" N **APPROXIMATE LONG. 103 14' 11" W**

Figure 5.0



KOH SPENT TANK
OPEN DRAIN
SULFUR PLANT (SEE DWG. 505-101-E)
SULFUR PLANT BOILER BLOWDOWN
COALESCER BLOWDOWN
SURFACED AREA
KOH TOWERS
RAW WATER STORAGE
SERVICE POLE
ELECTRICAL SUB STATION
C3 PURIFIER INLET SCRUBBER REGEN. SCRUBBER FILTER SEPARATOR
AMINE RECLAIMER AND WATER STILL
OPEN DRAIN
ALARM PANEL
WAREHOUSE
DE C3 CHILLER PURIFIER DUMP
REFRIGERANT SCRUBBER DUMP
SCRUBBER & CONTACTOR FLOAT CHAMBER DUMP & WATER KNOCKOUT DRUM DUMP
COOLING TOWER
OIL/WATER SEPARATOR
COOLING TOWER BLOWDOWN
SAND FILTER
COMP. DRAIN
COMPRESSOR BLDG
SLOP OIL TANKS
BURN PIT
FLARE
WATER FROM SUMP
OIL FROM SUMP
L.P. DUMP
OPEN DRAIN FROM COMP. BLDG. SLAB
UNDERGROUND BLOWCASE FOR USED ENGINE LUBES
LOW PRESS. INLET SCRUBBER DUMP (OUT OF L.P. SERVICE)
UNDERGROUND BLOWCASE GENERATOR LUBE OIL
FIELD HOUSE
SHOP
HOUSE
OFFICE
WAREHOUSE
TRUCK LOADING RACK
LEVELING PADS
TICKET HOUSE
TEG STORAGE
COUNTY ROAD
FOR CONT. SEE
N 4+00
N 3+00
N 2+00
N 1+00
E 1+00
E 2+00
E 3+00
E 4+00
E 5+00
E 6+00
350'-0"
50'-0"
30'-0"
OXY USA INC.
MIDLAND, TEXAS
BLUITT GAS PLANT
PLOT PLAN
WASTEWATER & WASTE FLOWS
289-1500-E
0

Figure 5.1

Hot Oil System

Hot oil will be used as a heat medium for the following new and existing services:

* Amine reboiling
* Heat tracing

Amine System

The overhead gas from the inlet separators flows into the bottom of amine contractors. As the gas flows upward through the columns it is contracted counter currently with a 18% "lean" MEA solution which sweetens the gas by removing the acid gasses, CO2 and H2S. The sweetened gas leaves the top of the contractor to be processed; the acid gas leaves the bottom of the contractor in a "rich" amine solution.

The rich amine enters a flash tank and then goes through some exchangers before it enters the top of the amine still. In the still the reboilers add heat which causes the acid gas to separate from the amine. The acid gases leave the top of the still and go to the sulfur plant where the H2S is converted into sulfur and sold. The now "lean" amine solution leaves the bottom of the still, is cooled, and is cycled back to the contractor to be used again to sweeten inlet gas. Approximately 400 GPM of amine is circulated.

Sulfur Plant Process

The process used is a modified Claus Split-Flow with preheating of the feed streams. Figure 5.3 shows the flow scheme. Acid gas (H2S + CO2) coming from the processing plant's reflux accumulator is passed through the inlet scrubber where entrained liquids are removed. The inlet acid gas stream is then split into two streams, both of which are preheated by the waste heat boiler. Forty percent of the preheated gas flow enters the muffle furnace. Approximately 60% of the acid gas bypasses the furnace, and rejoins the stream just before the first reactor. The inlet to the furnace contains an acid gas burner. In the acid gas burner assembly, a volume of air equal to one third of the total acid gas volume is mixed with 40% of the hydrogen sulfide (H2S) stream to insure that all the H2S is converted to sulfur dioxide, SO2.

$$6H_2S + 3O_2 \leftrightarrow 2SO_2 + 2H_2O + 4H_2S + 249 \text{ Kcal}$$

The hot gasses form the burner pass through the muffle furnace and then into the waste heat reclaimer where the excess heat is used to generate steam. Gases enter the reclaimer at approximately 1,800°F with the outlet temperature controlled at 775°F. The gasses are then combined with the 60%

volume of acid gas which bypassed the furnace and the total gas stream enters first reactor bed at 400°F. It is important to keep this temperature above 400°F, or localized condensation of sulfur will occur. Approximately 85.6% of the hydrogen sulfide an sulfur dioxide in the gas stream is converted to sulfur in the first reactor by way of the following chemical reaction:

$$2H2S + SO2 \rightarrow 3/x\ sx + 2H2O + 22.2\ Kcal$$

This reaction is exothermic; therefore, there is a temperature rise across the catalyst bed. The gas leaves the first reactor and passes through the first sulfur-condenser. Approximately 83.8% of the sulfur is recovered as condensed sulfur is drained to the underground storage tank. The gas exits the separator chamber at 300°F, is reheated to 400°F, and then routed to the third converter bed.

The gas is reheated to 420°F by steam and enters the third converter bed. Approximately 42% of the remaining hydrogen sulfide and sulfur dioxide is converted to sulfur. The gas passes through a condensing pass at 260°F with the liquids drained to the storage tank. The total sulfur converted is 97.92% and total sulfur recovered is 97.42%. The remaining gases are vented to the stack and tip incinerated.

A tail gas scrubber at the bottom of the stack allows the removal of entrained liquids from the gas. Vent gases are composed of about 98% nitrogen and carbon dioxide.

Heat of reaction, from burning hydrogen sulfide and from converting hydrogen sulfide and sulfur dioxide to sulfur must be removed from the process in the form of steam. The steam is used to preheat the #3 converter bed and to steam trace the liquid sulfur lines.

The waste heat reclaimer and the two sulfur condensers are steam generating units, the products are used for treatment of the water systems: UNICHEM 3030 is a phosphate based internal boiler testament which contains sludge conditioning agents, embrittlement inhibitors, and organic synthetic polymers.

UNICHEM 3141 is a water soluble solution of catalyzed sulfite. This product is formulated for the removal of dissolved oxygen in boilers and other closed system water heating installations. UNICHEM 3141 should be injected into the storage section of the deaerator for the best effect.

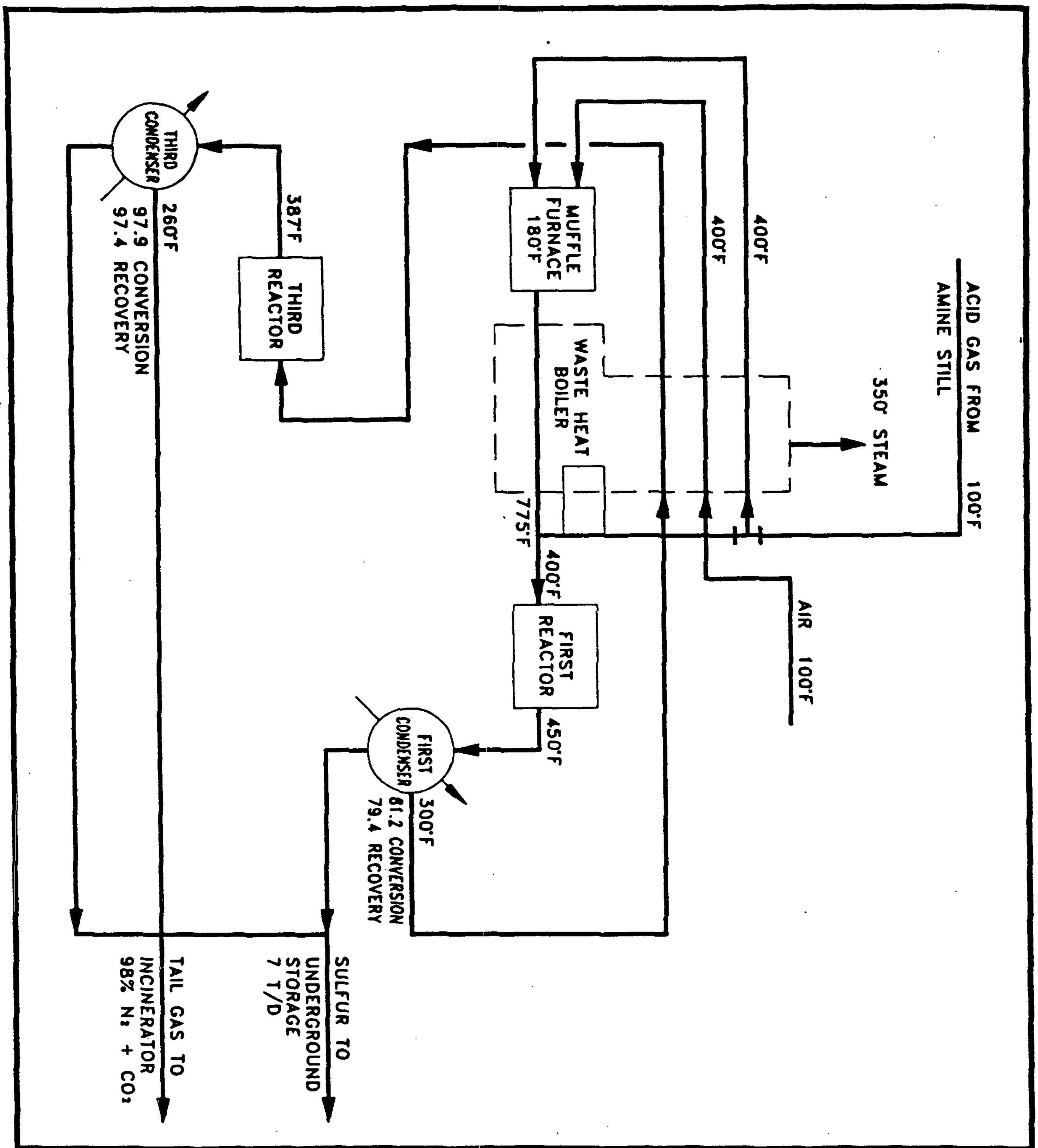
UNICHEM 3200 is a stabilized ammonium based corrosion inhibitor. It is used in steam generating systems to neutralize carbon dioxide in the condensate return lines at the point of condensation. UNICHEM 3200 should be continuously fed in proportion to the quality of makeup. The pH of the condensate should be maintained between 8.0 to 9.0.

Sodium hydroxide is added to the boiler feed water to control alkalinity.

Water Supply

All of the water used at the plant comes from a well site 4 miles north in the SE 1/4 of Section 27, TWP 7S, r36E. Two wells are on this site and the larger, referred to as the "large well", is used virtually 100% of the time. The other functions as a backup well. Water from these wells has an initial temperature of 67°F and pH of 7.9. Other parameters are given in Table 1C in Section VI.

As indicated in figure 5.4, water is pumped to the plant at an average rate of 31.9 gpm. It is stored on the plant site in a 132,00 gallon above-ground storage tank. From there about 100% of the flow goes to the Zeolite softeners. The softened water is used primarily in the sulfur plant, 81% with the rest used in closed cooling systems (jacket water), Zeolite regeneration, amine system, cleanup, fire protection and in the offices.



BLUITT SULFUR PLANT			OXY USA INC.	MIDLAND, TEXAS
			TITLE: PROCESS FLOW DIAGRAM	COMP. FILE NO. YA101A
				REVISED:
SCALE NONE	DATE 2/01/90	DRAWN BY: FONTENOT		DRAWING No. 305-101-A

Figure 5.3

Table 1B

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

Parameter and Standard (Max)			Sulfur Plant Blowdown 6/15	Sulfur Plant Inlet Scrubber 6/8	API Separator 6/8	Sulfur Plant Condensate 6/8
A.	Arsenic	0.1	0.007			
	Barium	1.0	ND			
	Cadmium	0.01	ND			
	Chromium	0.05	ND			
	Cyanide	0.2	0.1			
	Floride	1.6	4.5			
	Lead	0.05	ND			
	Total Mercury	.002 0	0.003			
	Nitrate Nitrogen	10.0	16.4			
	Selenium	0.05	0.018			
	Silver	0.05	ND			
	Benzine	0.01	ND			
	PCB's	0	ND			
	Toluene	.75 15.0	ND			
	Carbon Tetrachloride	0.01	ND			
	EDC	0.02	ND			
	1, 1-DCE	.005 0.01	ND			
	PCE	0.02	ND			
	TCE	0.1	ND			
B.	Chloride	250.	450.	400.	195.	7.0
	Copper	1.0	ND	< 0.01	0.27	0.02
	Iron	1.0	0.91	< 0.02	2.7	0 08
	Manganese	0.2	ND	< 0.02	0.2	< 0.02
	Phenols	0.005	0.062	0.28	1.13	0.53
	Sulfate	600.	1754	28.4	564.	17.0
	Total Dissolved Solids	1000.		108.	8984.	88.
	Zinc	10.0	ND	5.1	6.3	0.53
	pH (Std Units)	6 to 9	10.1	6.6	9.8	9.0
C.	Aluminum	5.0	ND			
	Boron	0.75	ND			
	Cobalt	0.05	ND			
	Molybdenum	1.0	ND			
	Nickel	0.2	ND			

BDL - BELOW DETECTION LIMIT
ND - NONE DETECTED
NES - NOT ENOUGH SAMPLE

Table 1C

WATER ANALYSIS DATA

(mg/l unless noted)

PLANT BLUITT

Parameter and Standard (Max)			High Pressure Inlet Separator 6/8	Large Well 6/15	Small Well 6/15
A.	Arsenic	0.1		0.001	0.004
	Barium	1.0		ND	ND
	Cadmium	0.01		ND	ND
	Chromium	0.05		ND	ND
	Cyanide	0.2		0.01	0.01
	Floride	1.6		0.02	0.02
	Lead	0.05		ND	ND
	Total Mercury	0		0.002	0.002
	Nitrate Nitrogen	10.0		0.5	0.7
	Selenium	0.05		0.009	0.008
	Silver	0.05		ND	ND
	Benzine	0.01		ND	ND
	PCB's	0		ND	ND
	Toluene	15.0		ND	ND
	Carbon Tetrachloride	0.01		ND	ND
	EDC	0.02		ND	ND
	1, 1-DCE	0.01		ND	ND
	PCE	0.02		ND	ND
	TCE	0.1		ND	ND
B.	Chloride	250.	255.	88	94
	Copper	1.0	1.0	ND	ND
	Iron	1.0	<0.02	BDL	5.01
	Manganese	0.2	1.0	ND	ND
	Phenols	0.005	1.25		
	Sulfate	600.	279.	241	522.
	Total Dissolved Solids	1000.	2892.	809.	810.
	Zinc	10.0	17.0	ND	ND
	pH (Std Units)	6 to 9	6.8	7.9	
C.	Aluminum	5.0		ND	ND
	Boron	0.75		ND	ND
	Cobalt	0.05		ND	ND
	Molybdenum	1.0		ND	ND
	Nickel	0.2		ND	ND

BDL - BELOW DETECTION LIMIT
ND - NONE DETECTED
NES - NOT ENOUGH SAMPLE

Table 2

WATER ANALYSIS DATA

BLUITT 6/15/82

TOXIC POLLUTANTS

	Cooling Tower Blowdown	Sulfur Plant Boiler Blowdown	Large Well	Small Well
ACROLEIN	ND	ND	ND	ND
ACRYLONITRILE	ND	ND	ND	ND
BENZENE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
MONOCHLORBENZENE	ND	ND	ND	ND
1, 2-DICHLOROETHANE	ND	ND	ND	ND
1, 1, 2, 2-TETRACHLOROETHANE	ND	ND	ND	ND
1, 1, 1-TRICHLOROETHANE	ND	ND	ND	ND
1, 1, 2-TRICHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
1, 1-DICHLOROETHYLENE	ND	ND	ND	ND
DICHLOROPROPENES	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
DICHLOROMETHANE	ND	ND	ND	ND
TRIBROMOMETHANE	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
TETRACHLOROETHYLENE	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
TRICHLOROETHYLENE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND

ND - NOT DETECTED

VI. DISPOSAL PRACTICES

Slop Oil and Area Drains

The current wastewater flows at Bluitt are shown in Figure 5.1. The open gravity drains from the process area are connected to the API oil/water separator at the west end of the plant fenced area. Oil, which is skimmed off this separator, is pumped to the 210 bbl slop oil tank. This tank is surrounded by a dike to contain any possible leaks. At the API separator the water separated from the oil is pumped to the water disposal tank.

Flare Pit

Two horizontal flares are operated with a continuous common pilot light. Surges of gases resulting from plant problems and upsets are safely burned by means of these flares. The pit is also used for emergency containment in the event there is a failure of the disposal system. Since the flare occasionally is ignited, this pit is not suitable for conventional netting, screening, etc. Therefore, emergency storage has been added at the site so no waste water enters the pit.

The pit is 175 ft. long, 50 ft. wide and 6 ft. deep on the east end while 9 ft. at the west end. It was excavated in the natural subsoil of the area high in caliche and has a low dike all around. This pit will be closed in 1995 and replaced with a flare stack.

Disposal Tank

Waste water fluids are accumulated in a 1,000 bbl above-ground steel storage tank until piped to a New Mexico Salt Water Disposal well located SE/NW of Sec. 7, T9S, R36E Lea County, NM. The disposal line is inspected regularly by a contractor flying over the line. In the event the disposal line or well is inoperable, fluids are diverted to the flare pit until the problem is corrected. The OCD is advised in writing whenever the pit is used in an emergency. Once the disposal system is again operable, fluids are removed from the pit and transferred to the disposal tank. Preparations are currently underway to install a 1,500 bbl emergency storage tank for use at times there are problems with the disposal line or well, thus eliminating the need to divert fluids to the flare pit.

Sulfur Plant Effluent

There are two small wastewater streams from the sulfur plant which go to the 1,000 bbl disposal tank and these are both essentially clear water with a combined flow of about 1 gpm. One is waste heat reclaimer blowdown. This process unit is basically a boiler and generates steam, and condensate from this unit is removed as blowdown periodically. The other flow is from the inlet gas feed separator to the sulfur plant where water is allowed to separate from the gas flow and condense.

Sanitary Sewage

Sanitary sewage from the office and employees facilities goes into a septic tank - soil absorption system on the plant property. There are 13 people employed on site 5 days per week and 1 employee on the weekend with an average flow of about 208 gallons per day.

Solid Waste

Solid waste disposal is incorporated into the general Warren Petroleum File in the NMOCD office in Santa Fe and follows the guidelines set forth in the Warren Petroleum Waste Management Plan.

Surface Runoff

The processing area comprises about 4 acres and drains essentially to the southeast corner of the property at a slope of 1% or less. With the Zita soil, the site use, and a Type II storm distribution, US Soil Conservation Service runoff curve number 80 was appropriate. Assuming a 10-year, 24 hour storm, 3.8 inches of rain is expected and this would result in a peak discharge of 9.5 cubic feet per second. This amount would not indicate any serious flooding potential nor would this indicate a need for hydrocarbon control at the discharge point. Examination of the discharge point itself demonstrates little or no traces of hydrocarbons.

Water Analysis Data

Samples were collected for the various effluents described in the previous paragraphs on three different dates. Samples were also collected from the two water supply wells serving the Bluitt plant. The results of the analytical testing of these samples for contaminants listed in Section 3-103 of the WOK Regulations are given in Tables 1A, 1B and 1C. Results of tests for toxic pollutants as listed under 1-101x are given in Table 2. As specified in the Regulations they were collected, preserved and analyzed in accordance with the techniques prescribed in Methods for Chemical Analysis of Water and Waste (EPA) and Standard Methods for Examination of Water and Wastewater (APHA). The Cities Service Central Analytical Laboratory used the EPA techniques while Bay Chemical, who collected and analyzed the samples of June 8, 1982, employed the latter techniques.

The sulfur plant blowdown exceeded for eight parameters, but this is a very low flow, one gpm. Sulfate, where the exceedance was the greatest, would amount to 21 pounds per day at 1754 mg/l, total. This amounts to but a small portion of the 145 pounds of sulfate which comes into the plant each day at 241 mg/l from the normally used "large" well. By the same taken, the 8984 mg/l of Total Dissolved Solids appears to be a lot in the API separator effluent, but this amounts to 14 pounds per day at its low flow of 187.5 gpd. This could be compared with the incoming 487 pounds per day TDS in the well water.

Table 1A

WATER ANALYSIS DATA
(mg/l unless noted)

PLANT BLUITT

Parameter and Standard (Max)			Cooling Tower Blowdown 5/26	6/8	6/15	Sulfur plant Blowdown 6/8
A.	Arsenic	0.1	0.017		0.011	
	Barium	1.0	ND		ND	
	Cadmium	0.01	ND		ND	
	Chromium	0.05	ND		ND	
	Cyanide	0.2	1.8		0.1	
	Floride	1.6	0.4		2.4	
	Lead	0.05	0.44		ND	
	Total Mercury	0	BDL(.0002)		0.002	
	Nitrate Nitrogen	10.0	2.7		3.6	
	Selenium	0.05	0.07		0.017	
	Silver	0.05	ND		ND	
	Benzine	0.01			ND	
	PCB's	0	ND		ND	
	Toluene	15.0			ND	
	Carbon Tetrachloride	0.01			ND	
	EDC	0.02			ND	
	1, 1-DCE	0.01			ND	
	PCE	0.02			ND	
	TCE	0.1			ND	
B.	Chloride	250.	15.5	350.	211	155.
	Copper	1.0	ND	0.02	ND	0.02
	Iron	1.0	ND	0.08	ND	0.42
	Manganese	0.2	ND	<0.02	ND	0.04
	Phenols	0.005	0.004	0.24	0.017	<0.002
	Sulfate	600.	2647.	896.	968.	376.
	Total Dissolved Solids	1000.	5233.		3085.	1268.
	Zinc	10.0	BDL(.005)		ND	0.53
	pH (Std Units)	6 to 9	7.1		7.9	10.3
C.	Aluminum	5.0	ND		ND	
	Boron	0.75			ND	
	Cobalt	0.05	ND		ND	
	Molybdenum	1.0	ND		ND	
	Nickel	0.2	ND		ND	

BDL - BELOW DETECTION LIMIT
ND - NONE DETECTED
NES - NOT ENOUGH SAMPLE

In Table 2 it can readily be seen that none of the indicated 23 toxic pollutants were detected in any of the four samples shown. There are only several pollutants in Table 2 that anyone might suspect would be in the two effluents, but it was no additional trouble for the lab to run the extra tests. Of the other 19 toxic pollutants in the list of 42 under Section 1-101x, only one is at all expected in any of the plant effluents. This is phenol and it was detected in each of the wastewater samples as shown in the preceding table.

VII. DISCHARGE PLAN

Disposal Methods

The present wastewater volume and character is not projected to change at Bluitt. The current methods and procedures for waste liquid containment and disposal at the plant, greatly improved over the past few years, will also remain essentially the same. A three foot dike was constructed around the slop tanks to contain any possible spillage. Two 1500 bbl steel tanks were installed for use as tankage in the event there is a problem with normal disposal from the plant site. Curbed drum storage for chemical storage has been installed.

There are some improvements planned for 1995 which include:

a. Test underground drain lines to insure integrity. (Completion date - 11/95)

b. Permit and install Flare stack. (Completion date - 10/95)

c. Close existing flare pit. (Completion date - 12/95)

Contingency

The probability of interruption of wastewater system operations because of power failure is very low for two reasons. Most of the basic systems are gravity flow and the plant generates its own power with three site generators.

The plant would not continue to operate without power after some length of time. In this case, there would be little or no wastewater generated.

Inspection and Reporting

All parts of the wastewater systems above ground are checked daily as part of the operator's normal rounds. Maintenance personnel check and service mechanical items such as pumps on a regular schedule. Problems with any of these systems are reported to the appropriate personnel for proper and timely action.

Unlikely as they may be, any spills of hazardous materials occurring on the company property, any significant liquid hydrocarbon (such as condensates and slop oil) spills and any significant gas leaks will be reported to the Hobbs District Office or designated Oil Conservation Division Personnel.

Such notifications will be immediate if human health is endangered, if there is or will be substantial damage to property, or if the substance reaches or threatens to reach a watercourse. Follow-up reports describing the episode, cleanup and corrective action taken and like reports of other minor incidents will be made in written form and will be filed within 10 days.

If there is any proposal for any major modifications to the plant or to the wastewater streams, advanced notification will be made to the Oil Conservation Division giving the particulars.

Plan Summary

1) Hydrology, subsurface geological information and local well water history indicated there is insufficient data available to establish whether or not continuity exists in the various water bearing zones.

2) All plant process wastewater will be collected in steel disposal tanks.

3) In the event of emergency conditions, the disposal tank level will be maintained by removing water which will be hauled to the disposal well. In addition, two 1,500 bbl steel tanks have being added to the system for use during emergency situations.

4) Surface collection tankage will be inspected daily and levels maintained by sale of byproducts and contracted truck hauling for disposal.

5) Berm or dikes will be built around any additional storage tanks that are constructed.

6) Any spills will be properly reported and cleanup corrective action detailed.

VIII. CONCLUSIONS

Aside from the foregoing considerations, population in the Bluitt area is very sparse. There are no towns for many miles east-southeast of the plant, the direction of ground-water flow in the surrounding areas. If it were hypothesized that water left the Bluitt area and traveled ESE at a rate of 150 feet per year, as thought, the first town it would reach would be Bledsoe, Texas, 352 years later.

IX. BIBLIOGRAPHY

1. Adams, J. E., 1929, Triassic of West Texas: American Association of Petroleum Geologists Bulletin, v.13, no.8, p.1045-1055.

2. Ash, Sidney, R., 1963, Ground-Water Conditions in Northern Lea County, New Mexico: U. S. Geological Survey Hydorlogic Investigations Atlas HA-62, 2 sheets.

3. Cooper, James b., 1960, Ground Water in the Causey-Lingo Area, Roosevelt County, New Mexico: New Mexico State Engineer Technical Report 14, 51 p.

4. Cronin, J.G., Ground Water in the Ogallala Formation in the Southern High Plains of Texas and New Mexico, Hydrologic Investigations Atlas HA-330, U.S. Geological Survey, Washington, DC, 1969.

5. Hudson, J.D., Ground-Water Levels in New Mexico, 1977 New Mexico State Engineer, Santa Fe, NM, 1980.

6. McDougal, L. F. and C. M. Jackson, Peak Rates of Discharge for Small Water Sheds, Chapter 2, Engineering Field Manual for Conservation Practices, U.S.D.A., Soil Conservation Service, Albuquerque, NM, 1973.

7. Miller, J. F., R. H. Fredrick, and R. J. Tracey, NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States, Volume IV - New Mexico, U.S. Department of commerce, National Weather Service, MD, 1973.

8. Mourant, W. S., 1971, Saturated Thickness of Post Mesozoic Deposits in the Central and Northern Parts of Lea County, New Mexico, January 1962: New Mexico State Engineer Maps LC4 and LN4, 2 sheets.

9. New Mexico Geological society, Guidebook of Southeastern New Mexico, Fifth Field Conference, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM, 1954.

10. Nye, S. S., 1930, Shallow Ground Water Supplies in Northern Lea County, New Mexico: New Mexico State Engineer 9th Biennial Report, 1928-1930, p. 363-387.

11. Nye, S. S., 1932, Progress Report on the Ground Water Supply of Northern Lea County, New Mexico: New Mexico State Engineer 10 Biennial Report, 1930-1932, p. 229-251.

12. Soil conservation Service, Soil Survey Roosevelt County, New Mexico, United States Department of Agriculture, Washington, DC, 1967.

13. Theis, C. V., 1932, Report on Ground Water in Curry and Roosevelt counties, New Mexico: New Mexico state Engineer 10th Biennial Report, p.98-160, 6 figs.

14. Trauger, F. D. and Bushman, F. X., 1964, Geology and Ground Water in the vicinity of Tucumcari, Quay county, New Mexico: New Mexico State Technical Report 30, 178 pgs.

15. Tuan, y., C. E. Everard, J. G. Widdison, and I. Bennett, The Climate of New Mexico, State Planning Office, Santa Fe, NM, 1973.

16. Weeks, J. B., E. D. Gutentad, Bedrock Geology, Altitude of Base, and 1980 Saturated Thickness of the High Plains Aquifer in Parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas and Wyoming: Hydorlogic Investigations Atlas HA-648, U. S. Geological Survey, Reston, VA, 1981.

X.

APPENDIX

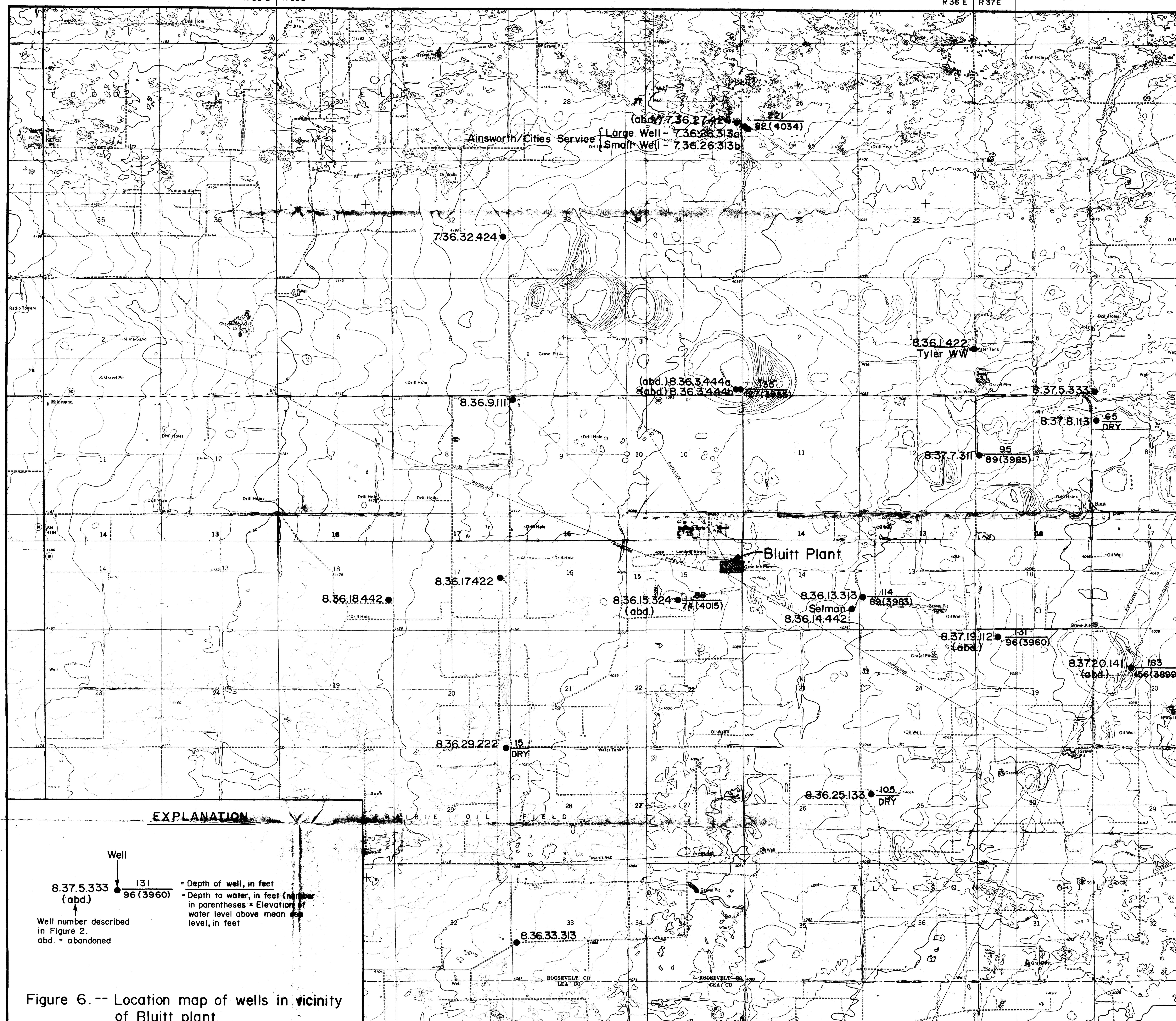


Figure 6. -- Location map of wells in vicinity of Bluitt plant.

DYNEGY

Milnesand Plant Remediation Project

Gandy Corporation
P.O. Box 827
Tatum, NM 88267
(505) 398-4960

Whole Earth Environmental
19606 San Gabriel
Houston, Tx. 77084
(800) 854-4358
wholeearthonline.com

GANDY CORPORATION
OILFIELD SERVICES
P.O. BOX 827
TATUM, NEW MEXICO 88267
(505) 398-4960
FAX 505-398-6887

RECEIVED
SEP 13 2001
Environmental Bureau
Oil Conservation Division

September 10, 2001

Wayne Price
NM Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505

RE: Dynegy Bluitt Plant Flare Pit:

Dear Mr. Price:

Please find enclosed the completed pit closure from the Bluitt Flare Pit. It has been requested by Dynegy, on the final approval of this pit closure, that the NMOCD close the entire Discharge Plan at the Dynegy Bluitt Plant.

Sincerely Yours;

Larry Gandy

Larry Gandy

Executive Summary

Preliminary
An initial site investigation was conducted by Whole Earth Environmental on July 20, 2000. The pit area was excavated to an approximate depth of 15' bgs and samples collected for field analysis. The site was cored by Atkins Engineering on July 25th. Samples were collected from depths of 25' and 35' bgs and submitted to Cardinal Laboratories for the analysis of TPH and BTEX. The depth to ground water is estimated by the New Mexico State Engineer's Office to be greater than 100'.

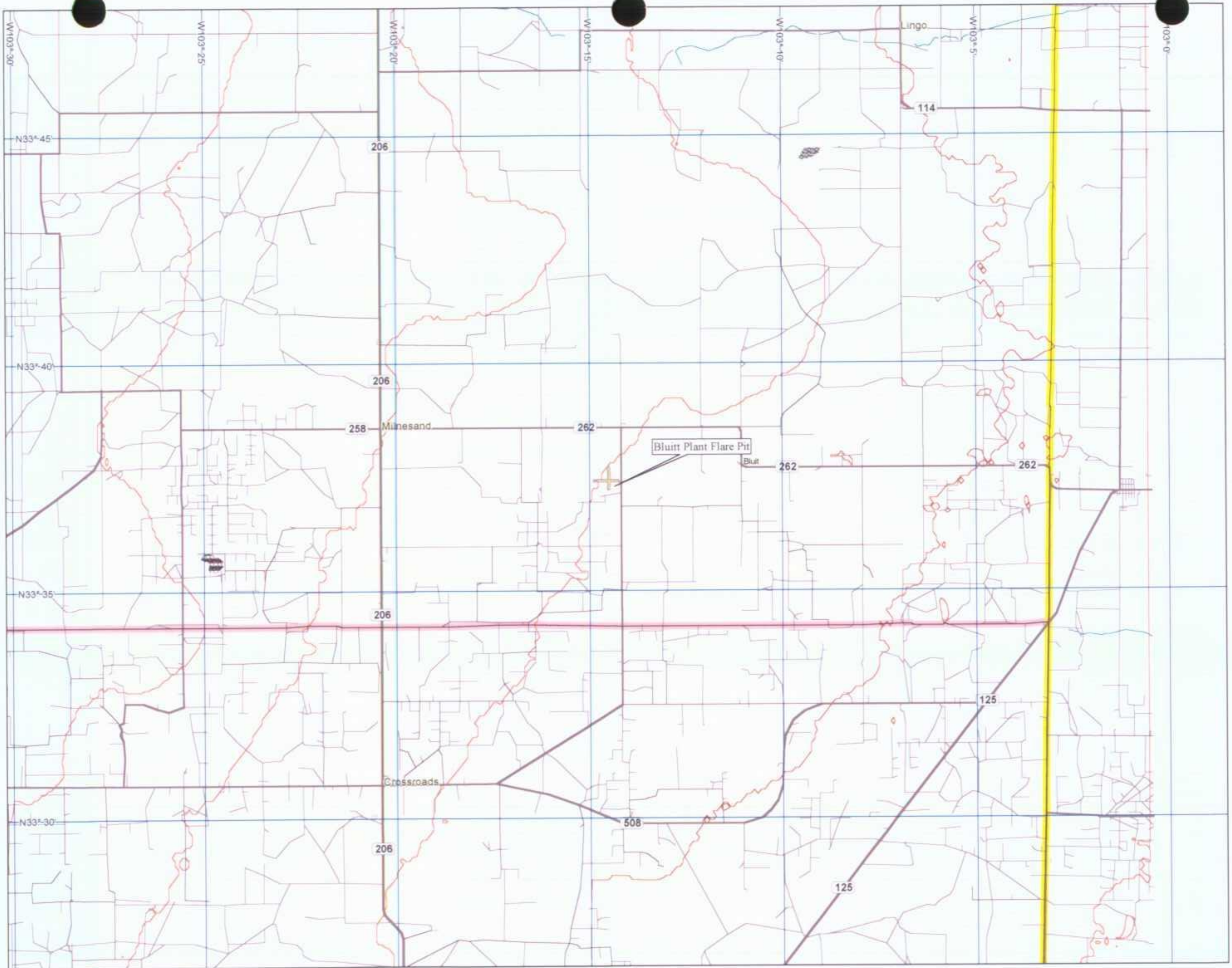
Based on these findings, a remediation protocol was submitted to the NMOCD in August, 2000.

Remediation
The site was cleared for excavation on July 10th, 2001 by removing all brush and vegetation from the immediate pit area. The many flow lines going into the pit were removed and set aside for disposal by the refinery dismantlement crew. Additionally, all cement structures within the immediate area were excavated, examined for the presence of hydrocarbons and deep buried at the northeast corner of the location.

The pit area was excavated to a total depth of approximately 15'bgs and the side-walls extended as described on the attached plat maps. The contents of the pit area appear to have been burned at periodic intervals resulting in heavy aliphatic fractions being the only significant hydrocarbon contaminants within the pit. Continual testing for chlorides revealed that only slight concentrations were contained within the impoundment and were concentrated adjacent to the western side of the structure adjacent to the dump lines.

Witness
Mr. Paul Sheeley of the Hobbs office of the NMOCD witnessed the sampling of the side-walls and bottom of the excavation on July 23rd.

Backfill
Upon receipt of the laboratory confirmation of the above sampling, the excavated materials were mixed, blended and re-deposited within the excavation. Samples were collected at each 3' lift and submitted to Environmental Labs of Texas for the analysis of TPH, BTEX, chlorides and RCRA 8 metals. The results of all laboratory confirmation testing are included within this report.



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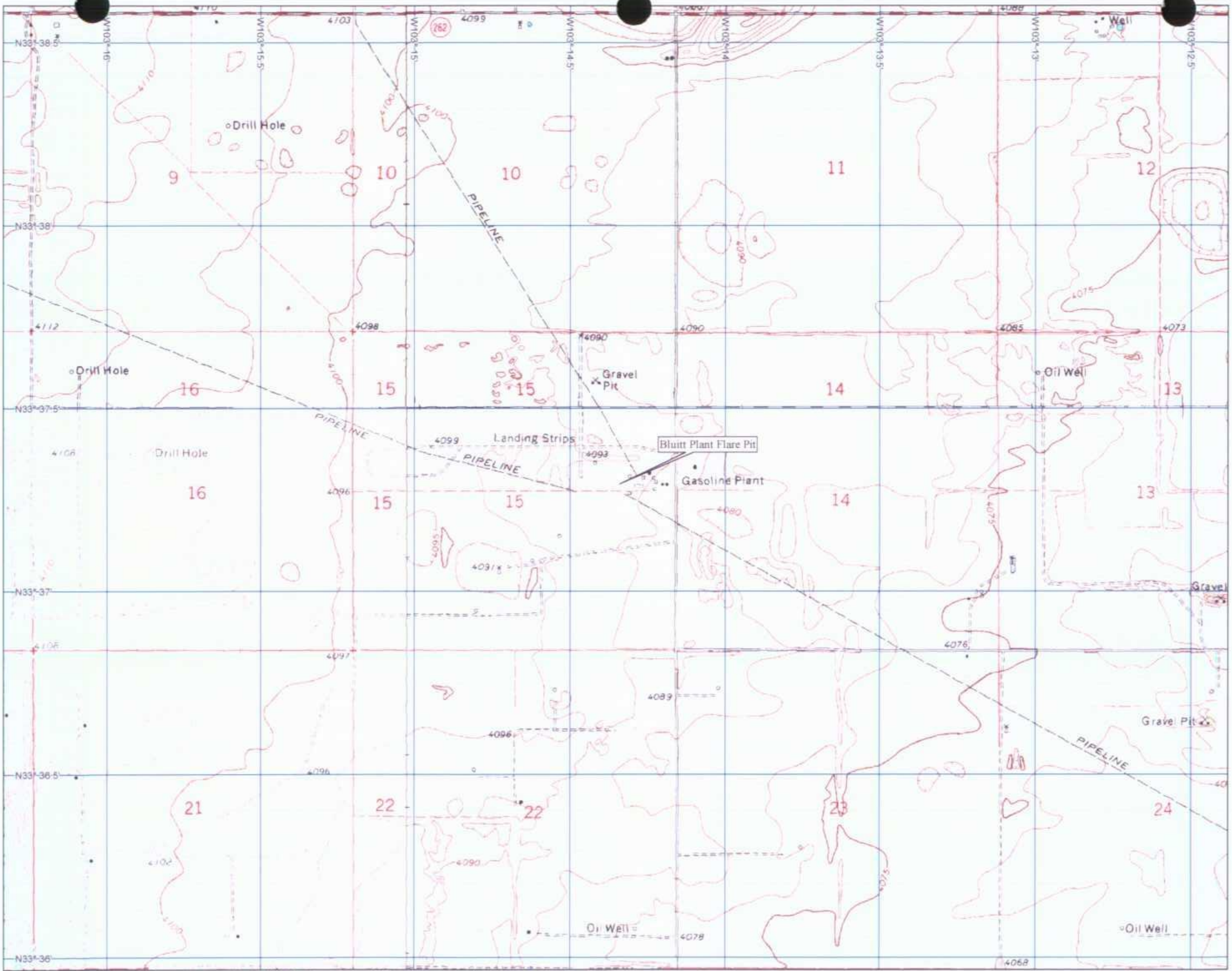
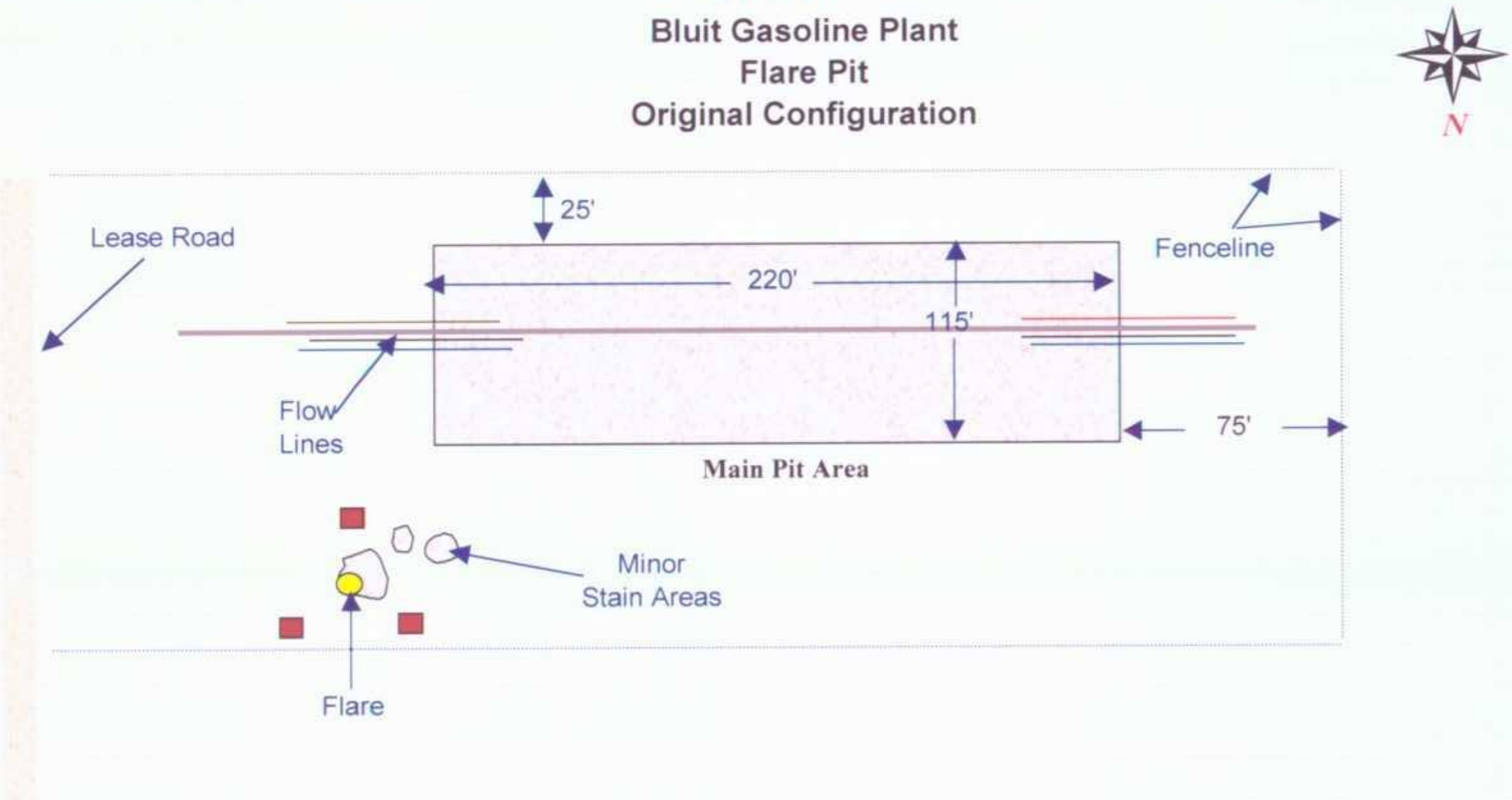


3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 1000 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84

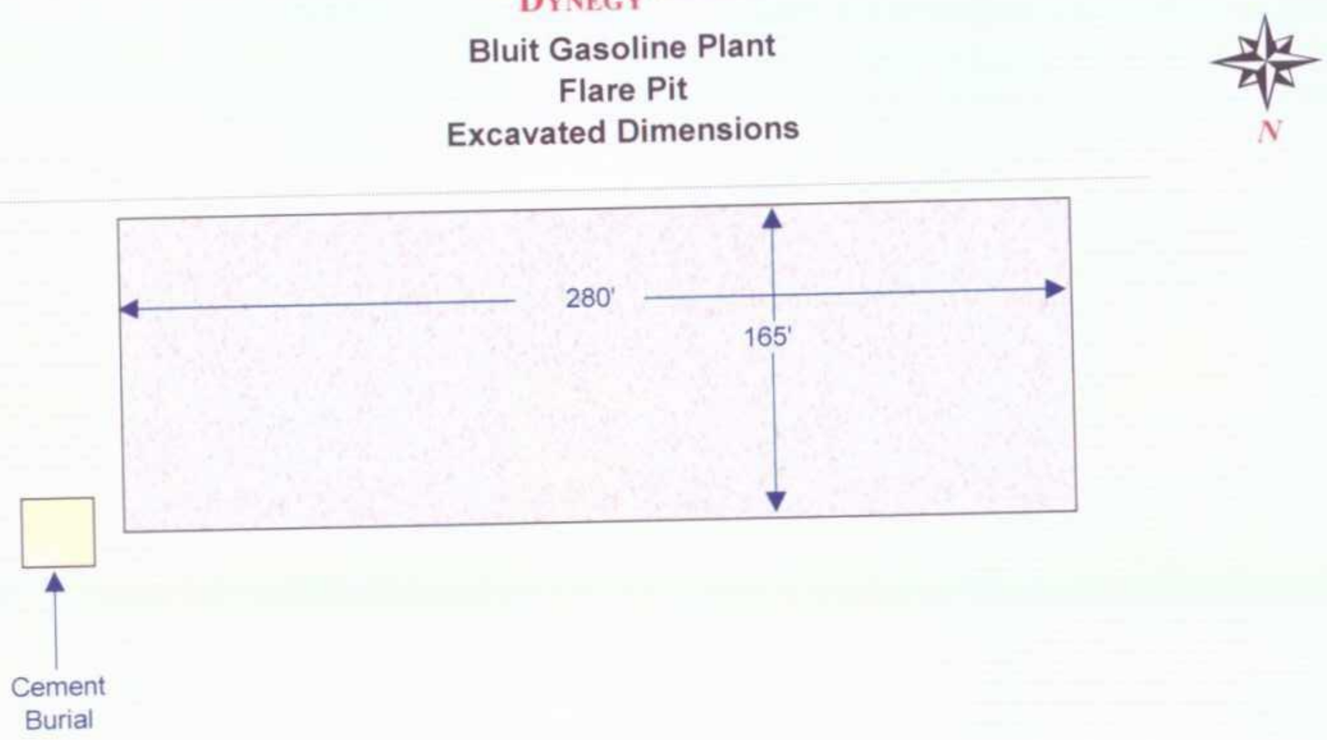
DYNEGY

Bluit Gasoline Plant
Flare Pit
Original Configuration



DYNEGY

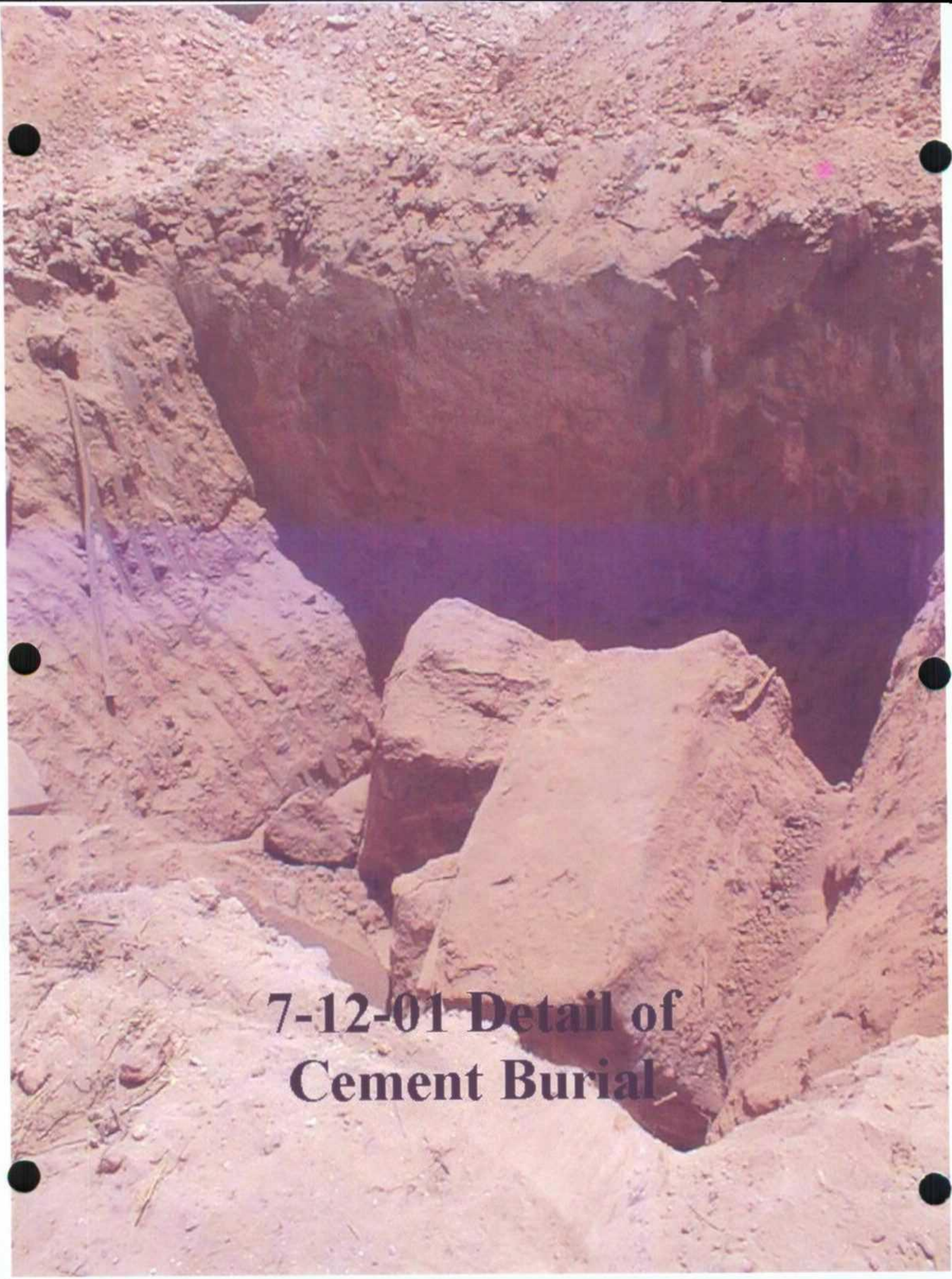
Bluit Gasoline Plant
Flare Pit
Excavated Dimensions



Detail of site prior
to remediation


Detail of site prior
to remediation
7. 20. 2000


7-12-01 Spread Zone
Preparation Detail


7-12-01 Detail of
Cement Burial

7-12-01 Detail of
Cement Internment

Protocol

This section contains a copy of the approved remediation protocol employed on this project.

Remediation Protocol
Dynegy Milnesand
Flare Pit

1.0 Purpose

This protocol is to provide a detailed outline of the steps to be employed in the remediation of a flare pit associated with the Dynegy Milnesand refinery.

2.0 Scope

This protocol is site specific for the above remediation project.

3.0 Preliminary

Prior to any field operations, Whole Earth Environmental shall conduct the following activities:

3.1 Client Review

3.1.1 Whole Earth shall meet with cognizant personnel within Dynegy to review this protocol and make any requested modifications or alterations.

3.1.2 Changes to this protocol will be documented and submitted for final review by Dynegy prior to the initiation of actual field work.

4.0 Safety

4.1 Prior to work on the site, Whole Earth shall obtain the location and phone numbers of the nearest emergency medical treatment facility. We will review all safety related issues with the appropriate Dynegy personnel, sub-contractors and exchange phone numbers.

4.2 A tailgate safety meeting shall be held and documented each day. All sub-contractors must attend and sign the daily log-in sheet.

4.3 Anyone allowed on to location must be wearing sleeved shirts, steel toed boots, and long pants. Each vehicle must be equipped with two way communication capabilities.

4.4 Prior to any excavation, New Mexico One Call will be notified. The One Call notification number will be included within the closure report. If lines are discovered within the area to be excavated they shall be marked with pin flags on either side of the line at maximum five foot intervals.

5.0 Remediation Procedure

5.1 All soils containing a TPH concentration >5,000 ppm, and all soils containing a benzene concentration >10ppm a total BTEX concentration >50ppm, or a chloride concentration > 100 ppm will be excavated and placed immediately adjacent to the excavation. The side walls and bottom of the excavation will be field tested for TPH and BTEX concentrations in accordance with WEQP-06, WEQP-19, and WEQP-96.

5.2 The Hobbs branch of the OCD will be notified to witness the final confirmation sampling of the side walls and bottom of the excavation. Samples will be collected in accordance with WEQP-77 and analyzed for TPH, BTEX and chlorides. Additionally, one sample will be obtained from the bottom of the excavation and analyzed for the presence and concentrations of RCRA 8 metals.

5.3 The excavated soils will be mixed and blended with sub-strait materials to achieve a maximum concentration of 5,000 ppm TPH, 10 ppm benzene, 50 ppm total BTEX and 250 ppm chlorides.

5.4 During the back filling operations, additional samples will be collected and analyzed for the presence and concentrations of those elements or compounds specified in paragraph 5.2 of this protocol at each 3' lift except that one composite sample may suffice for the analysis of RCRA 8 metals.

6.0 Documentation and Reporting

7.1 At the conclusion of the project, Whole Earth shall prepare a closure report which contains the following minimum information:

- Photographs of the location prior to remediation
- Photographs of the location at time of final closure
- Copies of this protocol and all testing procedures
- Plat map of the site to show all relevant surface features
- Chain of Custody and laboratory analytical results

Procedures

This section contains copies of the detailed field sample collection and testing procedures employed on this project.

QP-06 Rev. C

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Conducting Field TPH Analysis

Completed By: Approved By: Effective Date: 02/15/97

1.0 Purpose
To define the procedure to be used in conducting total percentage hydrocarbon testing in accordance with EPA Method 418.1 (modified) using the "MEGA" TPH Analyzer.

2.0 Scope
This procedure is to be used for field testing and on site remediation information.

3.0 Procedure

3.1 The G.A.C. "MEGA" TPH analyzer is an instrument that measures concentrations of aliphatic hydrocarbons by means of infra-red spectrometry. It is manufactured to our specifications and can accurately measure concentrations from two parts per million through 100,000 parts per million. The unit is factory calibrated however minor calibration adjustments may be made in the field. Quality Procedure 25 defines the field calibration methods to be employed.

3.2 Prior to taking the machine into the field, insert a 500 ppm and 5,000 ppm calibration standard into the sample port of the machine. Zero out the Range dial until the instrument records the exact standard reading.

3.3 Once in the field, insert a large and small cuvette filled with clean Freon 113 into the sample port of the machine. Use the range dial to zero in the reading. If the machine does not zero, do not attempt to adjust the span dial. Immediately implement Quality Procedure 25 .

3.4 Place a 100 g. weight standard on the field scale to insure accuracy. Zero out the scale as necessary.

3.5 Tare a clean 100 ml. sample vial with the Teflon cap removed. Add 10 g. (+/- .01 g), of sample soil into the vial taking care to remove rocks or vegetable matter from the sample to be tested. If the sample is wet, add up to 5 g. silica gel or anhydrous sodium sulfate to the sample after weighing.

3.6 Dispense 10 ml. Freon 113 into the sample vial.

3.7 Cap the vial and shake for five minutes.

3.8 Carefully decant the liquid contents of the vial into a filter/desiccant cartridge and affix the cartridge cap. Recap the sample vial and set aside.

3.9 Insert the metal tip of the pressure syringe into the cap opening and slowly pressurize. WARNING: APPLY ONLY ENOUGH PRESSURE ON THE SYRINGE TO EFFECT FLOW THROUGH THE FILTERS. TOO MUCH PRESSURE MAY CAUSE THE CAP TO SEPARATE FROM THE BODY OF THE CARTRIDGE. Once flow is established through the cartridge direct the flow into the 5 cm. cuvette until the cuvette is full. Reverse the pressure on the syringe and remove the syringe tip from the cartridge cap. Set the cartridge aside in vertical position.

3.10 The cuvette has two clear and two frosted sides. Hold the cuvette by the frosted sides and carefully insert into the sample port of the machine. Read the right hand digital read-out of the instrument. If the reading is less than 1,000 ppm. the results shall be recorded in the field Soil Analysis Report. If the result is higher than 1,000 ppm, continue with the dilution procedure.

4.0 Dilution Procedure

4.1 When initial readings are greater than 1,000 ppm using the 5 cm. cuvette, pour the contents of the 5 cm. cuvette into a 1 cm. cuvette. Insert the 1. cm cuvette into the metal holder and insert into the test port of the instrument.

4.1 Read the left hand digital read-out of the machine. If the results are less than 10,000 ppm, record the results into the field Soil Analysis Report. If greater than 10,000 ppm, continue the dilution process. Concentrations >10,000 ppm are to be used for field screen purposes only.

4.2 Pour the contents of the small cuvette into a graduated glass pipette. Add 10 ml. pure Freon 113 into the pipette. Shake the contents and pour into the 1cm. cuvette. Repeat step 4.2. adding two zeros to the end of the displayed number. If the reported result is greater than 100,000 ppm. the accuracy of further readings through additional dilutions is extremely questionable. Do not use for reporting purposes.

4.4 Pour all sample Freon into the recycling container.

5.0 Split Samples

5.1 Each tenth test sample shall be a split sample. Decant approximately one half of the extraction solvent through a filter cartridge and insert into the instrument to obtain a concentration reading. Clean and rinse the cuvette and decant the remainder of the fluid to obtain a second concentration reading from the same sample. If the second reading varies by more than 1% from the original, it will be necessary to completely recalibrate the instrument.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Sampling Procedure

5.1 Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination.

5.2 Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.

5.3 Place the sample directly on ice for transport to the laboratory.

5.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

A. Client, Project and sample name.
B. Signed copy of the original Chain of Custody Form including data on the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

QP-77

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Obtaining
Soil Samples for Transportation to a Laboratory

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

2.0 Scope

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation / anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container with Teflon lid.

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

QP-96

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Sampling and Testing Protocol
Chloride Titration Using .1 Normal
Silver Nitrate Solution

Completed By: Approved By: Effective Date: / /

1.0 Purpose
This procedure is to be used to determine the concentrations of chlorides in soils.

2.0 Scope
This procedure is to be used as the standard field measurement for soil chloride concentrations.

3.0 Sample Collection and Preparation
3.1 Collect at least 80 g. of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample of soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.2 The soil sample(s) shall be immediately inserted into a one quart or larger polyethylene freezer bag. Care should be taken to insure that no cross-contamination occur between the soil sample and the collection tools or sample processing equipment.

3.3 The sealed sample bag should be massaged to break up any clods.

4.0 Sample Preparation

4.1 Tare a plastic cup having a minimum six-ounce capacity. Add between 80-120 grams of the soil sample and record the weight.

4.2 Add the same weight of distilled water to the soil sample and stir thoroughly using a glass or plastic stir stick.

4.3 Allow the sample to set for a period of thirty minutes. The sample should be stirred at least three times before fluid extraction.

4.4 Carefully pour off the free liquid from the sample through a paper filter into a clean plastic cup.

5.0 Titration Procedure

5.1 Using a graduated pipette, remove 10 ml extract and dispense into a clean plastic cup.

5.2 Add 2-3 drops potassium chromate (K_2CrO_4) to mixture.

5.3 If the sample contains any sulfides (hydrogen or iron sulfides are common to oilfield soil samples) add 2-3 drops of hydrogen peroxide (H_2O_2) to mixture. Allow the mixture to set for a minimum of five minutes.

5.4 Using a 1 ml pipette, carefully add .1 normal silver nitrate solution to sample until solution turns salmon red when viewed with yellow goggles. Be consistent with endpoint recognition.

6.0 Calculation

Multiply the amount of silver nitrate used in step 5.4 by 354.5 to obtain the chloride concentration in mg/L.

Laboratory Analytical Results

This section contains copies of the chain of custody and laboratory analytical results for this project.

/iron…ental Lab of Texas, Inc.

/est I-20 East
, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: 800.854.4358

Fax No: 281.646.8996

Sampler Signature: M. G[illegible]

Project Name: Bluitt

Project #:

Project Loc:

PO #:

Analyze For: TCLP: TOTAL: ✓

(lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	Chlorides						RUSH TAT (Pre-Schedule)	Standard TAT
[illegible]-01	East Bottom	7/16/01		1	X									X				X		X			X	X							
02	West Bottom	7/16/01		1	X									X					X					X							
03	South Wall	7/16/01		1	X									X					X					X							
04	N. Wall East	7/16/01		1	X									X					X					X							
05	N. Wall West	7/16/01		1	X									X					X					X							

…al Instructions:

Sample Containers Intact? Y N
Temperature Upon Receipt:
Laboratory Comments: [illegible] °C

Add RCRA 8 metals on highest TPH as per Mike Griffin 7/18/01

…uished by:	Date	Time	Received by:	Date	Time
N. Griffin	7/17	1:00			
…uished by:	Date	Time	Received by ELOT: [illegible]	7-17-01	1300

ENVIRONMENTAL LAB OF TEXAS, INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ 2.5 deg C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

Sampling Date: 07/16/01
Receiving Date: 07/17/01
Analysis Date: 07/17/01

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg
0101151-02	West Bottom	554	1050
0101151-03	South Wall	<10	<10
0101151-04	N. Wall East	762	723
0101151-05	N. Wall West	78.1	1590

	GRO	DRO
QUALITY CONTROL	448	500
TRUE VALUE	500	500
% INSTRUMENT ACCURACY	90	100
SPIKED AMOUNT	476	476
ORIGINAL SAMPLE	<10	<10
SPIKE	471	497
SPIKE DUP	489	519
% EXTRACTION ACCURACY	99	104
BLANK	<10	<10
RPD	4	4

Methods: EPA SW 846-8015M GRO/DRO

Raland K. Tuttle

7-18-01
Date

ENVIRONMENTAL LAB OF TEXAS, INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

SampleType: Soil
Sample Condition: Intact/ Iced/ 2.5 deg C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

Sampling Date: 07/16/01
Receiving Date: 07/17/01
Analysis Date: 07/17/01

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg	TPH C6-C28 mg/kg
0101151-01	East Bottom	922	1590	2510

QUALITY CONTROL	448	500	948
TRUE VALUE	500	500	1000
% INSTRUMENT ACCURACY	90	100	95
SPIKED AMOUNT	476	476	952
ORIGINAL SAMPLE	<25	<25	<25
SPIKE	471	497	968
SPIKE DUP	489	519	1010
% EXTRACTION ACCURACY	99	104	102
BLANK	<25	<25	<25
RPD	4	4	4

METHODS: TNRCC 1005

Raland K Tuttle
Raland K. Tuttle

7-18-01
Date

ENVIRONMENTAL LAB OF TEXAS, INC.

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WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ 2.5 deg C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

Sampling Date: 07/16/01
Receiving Date: 07/17/01
Analysis Date: 07/17/01

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg
0101151-01	East Bottom	3.77	6.07	19.9	24.2	5.87

QUALITY CONTROL	0.094	0.094	0.093	0.203	0.095
TRUE VALUE	0.100	0.100	0.100	0.200	0.100
% INSTRUMENT ACCURACY	94	94	93	102	95
SPIKED AMOUNT	0.100	0.100	0.100	0.200	0.100
ORIGINAL SAMPLE	<0.025	<0.025	<0.025	<0.025	<0.025
SPIKE	0.108	0.113	0.112	0.235	0.108
SPIKE DUP	0.099	0.100	0.098	0.221	0.103
% EXTRACTION ACCURACY	99	100	98	111	103
BLANK	<0.025	<0.025	<0.025	<0.025	<0.025
RPD	9	12	13	6	5

METHODS: EPA SW 846-8021B ,5030

Raland K Tuttle
Raland K. Tuttle

7-18-01
Date

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WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sampling Date: 07/17/01
Receiving Date: 07/17/01
Analysis Date: 07/18/01

Sample Type: Soil
Sample Condition: Intact/ Iced/ 2.5 deg. C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

ELT#	FIELD CODE	Chloride mg/kg
0101151-01	East Bottom	35
0101151-02	West Bottom	35
0101151-03	South Wall	62
0101151-04	N. Wall East	35
0101151-05	N. Wall West	35

QUALITY CONTROL	5140
TRUE VALUE	5000
% INSTRUMENT ACCURACY	103
SPIKE AMOUNT	1000
ORIGINAL SAMPLE	390
SPIKE	1420
SPIKE DUP	1400
EXTRACTION ACCURACY	103
BLANK	<10.0
RPD	1.42

Methods: SW846-9253

Raland K. Tuttle

7-18-01
Date

ENVIRONMENTAL LAB OF TEXAS, INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ 2.5 deg. C
Project #: Bluitt
Project Name: None Given
Project Location: None Given

Sampling Date: 07/16/01
Receiving Date: 07/17/01
Analysis Date: 07/19/01
Analysis Date: Hg 07/20/01

TOTAL METALS (mg/kg)

ELT#	Field Code / Matrix	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
0101151-01	East Bottom	ND	2.38	441	1.73	24.2	ND	ND	ND
	REPORT LIMIT	0.100	0.400	0.050	0.050	0.100	0.100	0.550	0.200
	QUALITY CONTROL	5.00	5.28	5.05	5.21	5.28	0.016	5.22	5.14
	TRUE VALUE	5.00	5.00	5.00	5.00	5.00	0.015	5.00	5.00
	% INSTRUMENT ACCURACY	100	106	101	104	106	109	104	103
	ORIGINAL SAMPLE	<0.100	<0.400	<0.050	<0.050	<0.100	<0.100	<0.550	<0.200
	SPIKED AMOUNT	1.00	1.00	1.00	1.00	1.00	0.015	1.00	1.00
	SPIKE	50.9	9.04	47.1	8.96	44.8	0.015	45.0	8.18
	SPIKE DUP	51.9	9.19	47.1	9.10	46.4	0.013	45.5	8.55
	% EXTRACTION ACCURACY	104	92	94	91	93	97	91	86
	BLANK	<0.100	<0.400	<0.050	<0.050	<0.100	<0.100	<0.550	<0.200
	RPD	1.94	2.20	0.00	1.10	3.28	13.2	1.10	4.76

ND= Not detected at report limit.

METHODS: EPA SW 846- 3050, 7470, 6010B

Raland K. Tuttle
Raland K. Tuttle

7-23-01
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name: Whole Earth

Company Address: 19606 San Gabriel

City/State/Zip: Houston Tx 77084

Telephone No:

Fax No:

Sampler Signature: M. G

Project Name: Bluitt

Project #:

Project Loc:

PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se (TCLP: *)	Volatiles	Semivolatiles	BTEX 8021B/5030	Chlorides						RUSH TAT (Pre-Schedule)	Standard TAT
0107217-01	L-1	7-22	8:10	1	✓									✓				*	✓				✓	✓							
02	L-2	7-22	3:20	1	✓									✓					✓				✓	✓							
03	L-3	7-23	9:05	1	✓									✓					✓				✓	✓							
04	L-4	7-24	3:44	1	✓									✓					✓				✓	✓							
05	TC	7-24	8:21	1	✓									✓					✓				✓	✓							
06	Composite of L-1 → TC				✓									✓						*											

Special Instructions:
*Composite all to run metals (TCLP)

Relinquished by:	Date	Time	Received by:	Date	Time
M. G	7/25	8:00			

Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Richard Ja	7/26/01	0800

Sample Containers Intact? Y N
Temperature Upon Receipt:
Laboratory Comments:
Rec -1 °C

ENVIRONMENTAL LAB OF TEXAS, INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1 deg C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

Sampling Date: See Below
Receiving Date: 07/26/01
Analysis Date: 07/27/01

ELT#	FIELD CODE	Chloride mg/kg	SAMPLE DATE
0101217-01	L-1	106	7/22/01
0101217-02	L-2	142	7/22/01
0101217-03	L-3	142	7/23/01
0101217-04	L-4	89	7/24/01
0101217-05	TC	106	7/24/01

QUALITY CONTROL	5140
TRUE VALUE	5000
% INSTRUMENT ACCURACY	103
SPIKED AMOUNT	5000
ORIGINAL SAMPLE	9930
SPIKE	14000
SPIKE DUP	14200
% EXTRACTION ACCURACY	85
BLANK	<10.0
RPD	1.42

Methods: EPA SW 846-9253

Roland K Tuttle
Raland K. Tuttle

7-31-01
Date

ENVIRONMENTAL LAB OF [Texas], INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1 deg C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

Sampling Date: See Below
Receiving Date: 07/26/01
Analysis Date: 07/26/01

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg	SAMPLE DATE
0101217-01	L-1	91	862	7/22/01
0101217-02	L-2	140	533	7/22/01
0101217-03	L-3	138	998	7/23/01
0101217-04	L-4	106	864	7/24/01
0101217-05	TC	91	891	7/24/01

	GRO	DRO
QUALITY CONTROL	546	590
TRUE VALUE	500	500
% INSTRUMENT ACCURACY	109	118
SPIKED AMOUNT	476	476
ORIGINAL SAMPLE	<10	<10
SPIKE	500	563
SPIKE DUP	495	569
% EXTRACTION ACCURACY	105	94
BLANK	<10	<10
RPD	1	1

Methods: EPA SW 846-8015M GRO/DRO

Raland K. Tuttle
Raland K. Tuttle

7-31-01
Date

ENVIRONMENTAL LAB OF TEXAS, INC.

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WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFIFN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1 deg C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

Sampling Date: See Below
Receiving Date: 07/26/01
Analysis Date: 07/26/01

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg	SAMPLE DATE
0101217-01	L-1	<0.025	0.036	0.051	0.080	0.080	7/22/01
0101217-02	L-2	<0.025	0.154	0.142	0.278	0.206	7/22/01
0101217-03	L-3	<0.025	0.078	0.176	0.224	0.107	7/23/01
0101217-04	L-4	<0.025	<0.025	0.047	0.082	0.052	7/24/01
0101217-05	TC	<0.025	<0.025	0.032	0.068	0.040	7/24/01

QUALITY CONTROL	0.098	0.096	0.094	0.209	0.097
TRUE VALUE	0.100	0.100	0.100	0.200	0.100
% INSTRUMENT ACCURACY	98	96	94	110	97
SPIKED AMOUNT	0.100	0.100	0.100	0.200	0.100
ORIGINAL SAMPLE	<0.025	<0.025	<0.025	<0.025	<0.025
SPIKE	0.102	0.102	0.100	0.226	0.104
SPIKE DUP	0.101	0.102	0.099	0.226	0.103
% EXTRACTION ACCURACY	102	102	100	113	104
BLANK	<0.025	<0.025	<0.025	<0.025	<0.025
RPD	1	0	1	0	1

METHODS: EPA SW 846-8021B ,5030

Raland K Tuttle
Raland K. Tuttle

7-31-01
Date

ENVIRONMENTAL LAB OF TEXAS, INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1 deg C
Project #: None Given
Project Name: Bluitt
Project Location: None Given

Sampling Date: 07/24/01
Receiving Date: 07/26/01
Analysis Date: 08/01/01
Analysis Date: Hg 08/03/01

TCLP METALS (mg/L)

ELT#	Field Code	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
01C1217-06	Comp. L-1 thru TC	0.011	0.076	0.269	0.009	0.023	ND	0.045	0.027

	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
REPORT LIMIT	0.002	0.008	0.001	0.001	0.002	0.002	0.011	0.004
QUALITY CONTROL	1.08	1.01	0.994	0.990	0.988	0.017	0.989	1.03
TRUE VALUE	1.00	1.00	1.00	1.00	1.00	0.015	1.00	1.00
% INSTRUMENT ACCURACY	108	101	99	99	99	111	99	103
SPIKED AMOUNT	1.000	0.200	1.000	0.200	1.000	0.015	1.000	0.200
ORIGINAL SAMPLE	0.023	0.032	0.391	0.002	0.020	<0.002	0.025	<0.004
SPIKE	1.03	0.245	1.35	0.181	0.818	0.017	0.990	0.213
SPIKE DUP	1.04	0.248	1.36	0.181	0.886	0.018	1.02	0.225
% EXTRACTION ACCURACY	102	108	97	90	87	111	99	112
BLANK	<0.002	<0.008	<0.001	<0.001	<0.002	<0.002	<0.011	<0.004
RPD	0.98	1.87	1.04	0.00	8.38	8.04	3.08	4.57

ND= Not detected at report limit.

METHODS: EPA SW 846-1311, 3010, 7470, 6010B

Raland K. Tuttle

8-3-01
Date