GW - 14

GENERAL CORRESPONDENCE

YEAR(S):

1991 - 1994

Memo

From
DAVID G. BOYER
Hydrogeologist

To Dave Griffin — 2/5

Here is a copy of my notes of yesterday's meeting. Let me know if there is anything misrepresented in my notes, since this will save me a letter.

Thx
Dave
827-5812

Oil Conservation Division
P.O. Box 2088 Santa Fe, N.M. 87501

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal | Time 11:45 | Date 2/4/91

Originating Party	Other Parties
David Boyer	David Griffin Navajo Refining Artesia

Subject: Discharge Plan Status - Navajo Artesia, Navajo Lovington

Discussion: I discussed with Griffin several outstanding issues related to the discharge plans:

1. Crude oil tank bottoms at Tank 835 pit have not been removed, and pit has not been closed. About 9000 barrels are to be processed beginning no later than March 15. Total time for removal is expected to be four - five months.
2. Final sewer schematics are on the way - OCD should receive in a couple of weeks at latest.
3. Consultant for Lovington discharge plan expected to be selected this week. Discharge plan by end of February likely.

Conclusions or Agreements:

Distribution: Navajo DP
Navajo-SE Lov. DP
Dave Griffin

Signed: D. Boyer

New Mexico Oil & Gas Association

P.O. Box 1864 ☐ Santa Fe, N.M. 87504-1864 ☐ Telephone 505/982-2568
500 Don Gaspar Telefax 505/986-1094

NEWSLETTER & LEGISLATIVE REPORT NO. 1

191 January 18, 1991

COAL GAS POOL RULES TO BE REVIEWED

The N.M. Oil Conservation Division (OCD) will hold a prehearing conference in Santa Fe on Thursday, January 24, regarding regulations for the Basin-Fruitland Coal Gas Pool. The pool now operates under temporary rules promulgated by OCD Order No. R-8768. The conference will gather preliminary information for the public hearing the OCD plans to hold in late February to receive evidence and testimony related to the establishment of permanent pool rules. For more information regarding the January 24 meeting, call OCD Attorney Robert G. Stovall or Examiner David R. Catanach at (505) 827-5800.

STATE TO SET GAS ALLOWABLES UNDER NEW RULES

Amendments to the N.M. Gas Proration rules will become effective April 1. One major change will be the establishment of semi-annual, rather than monthly, allocations. A public hearing on February 28 will help the N.M. Oil Conservation Commission determine the allowable to be assigned each pool for the first six-month period. Copies of the amended rules and the Oil Conservation Division (OCD) memorandum describing the hearing process can be

(continued on next page)

NEWS INSIDE

BLM CANCELS NOTICE RE MERCURY METER HOUSES

The U.S. Bureau of Land Management has withdrawn its proposed Notice to Lessees and Operators (NTL) regarding requirements for construction of natural gas meter houses which utilize mercury-type meters. After consideration of comments received from gas producers and purchasers, the agency decided that such standards should not be issued as an NTL for Federal and Indian leases. Any questions regarding this notice should be directed to Gary Stephens, Bureau of Land Management, Mineral Resources Division, P.O. Box 1449, Santa Fe, NM 87504, at (505) 988-6109.

WORKERS' COMP COMMITTEE INCLUDES 2 NMOGA MEMBERS

Governor Bruce King has named a nine-person advisory council to oversee operation of the state's new workers' compensation law. The six voting members include Ben Alexander, chairman and chief executive officer of DASCO Corp., an oil well servicing company in Hobbs. Among the three non-voting council members is attorney Gary Kilpatric of the Montgomery & Andrews law firm in Santa Fe.

The law was passed last September by a special legislative session which also created a state-financed employers' mutual fund. Insurance Superintendent Fabian Chavez recently announced approval of a 22.8 percent average rate increase for employers in the state's assigned risk pool. This is a special fund for small or high-risk businesses which have difficulty finding workers' compensation insurance.

NM REFINERY PREDICTS 50% INCREASE

Navajo Refining Co. will expand its operation in Artesia and re-open the Southern Union Refinery between Hobbs and Lovington, which has been closed for more than six years. The $43 million in renovations and installation of new equipment will enable Navajo to boost its gasoline production 50 percent this summer, Executive Vice President William J. Gray said.

The name of the Southern Union Refinery will be changed to Lea Refining Co. It is expected to go on line about July 1, Gray said. Between the two facilities, Navajo will be able to process 60,000 barrels of crude oil a day, a 50 percent increase over current capacity. New equipment at the Artesia refinery will refine heavy crude -- oil too thick to be piped -- which will be hauled in 60 tanker trucks from Hobbs.

SOUTHERN UNION COMPANY
900 FIRST STATE BANK TOWER
400 WEST 15TH STREET
AUSTIN, TEXAS 78701
(512) 477-5852

EUGENE N. DUBAY
SR. VICE PRESIDENT
&
CHIEF INFORMATION OFFICER

November 12, 1990

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

Dear Mr. Anderson:

I appreciate your taking the time to meet with Teresa Salamone and myself last week. I cannot say, having spent $1.5 million on a project, that it was a pleasure to work on the project. However, I believe that your office did its utmost to provide this Company timely information and resources so that we were able to complete work on the project in an efficient manner.

Thank you again. If there is any further information which you need regarding our cleanup, please call.

Respectfully,

Eugene N. Dubay

END/cgj

cc: Teresa Salamone

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

August 27, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-418

Mr. David G. Griffin
Navajo Refining Company
P. O. Drawer 159
Artesia, New Mexico 88210

RE: Crude/Asphalt Blending
Lovington Refinery
Lea County, New Mexico

Dear Mr. Griffin:

The Oil Conservation Division (OCD) has received your request dated August 21, 1990, to initiate crude/asphalt blending operations at the Lovington Refinery facility. Based on the information contained in your request, sufficient safeguards will be implemented to contain any leaks and/or spills and there are to be no planned wastewater discharges, therefore, the operation is approved without the need to reactivate the Lovington Refinery Discharge Plan.

Please be advised that prior to activation or use of any other units at the facility or any waste discharges, the expired Discharge Plan (GW-14) must be reactivated.

Please be aware that approval of this operation does not relieve you of liability should your operation result in actual pollution of ground or surface waters or the environment actionable under other laws and/or regulations. Further, this approval does not relieve you of the responsibility for compliance with other city, county, state or federal laws and/or regulations.

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

Sincerely,

Roger C. Anderson
Environmental Engineer

RCA/sl

cc: OCD Hobbs Office

TELEPHONE
(505) 748-3311

Navajo REFINING COMPANY
501 EAST MAIN STREET • P. O. DRAWER 159
ARTESIA, NEW MEXICO 88210

EASYLINK
62905278
FAX
(505) 746-6410

August 21, 1990

Mr. Roger Anderson
Environmental Bureau
Oil Conservation Division
P.O. Box 2988
Santa Fe, NM 87504-2088

RE: CRUDE OIL/ASPHALT BLENDING AT LEA REFINING COMPANY

Dear Roger:

Per our conversation of Tuesday, August 21, Navajo intends, with OCD concurrence, to set up an operation at Lea Refining in Lovington to blend a 50:50 mixture of New Mexico sour crude and asphalt. As you are aware the handling of crude oil for shipment to Artesia has been an ongoing operation at Lea Refining. The installation of this asphalt/crude blending system will tie into the existing crude handling system. Asphalt will be trucked to Lea Refining from Navajo in Artesia. When each truck is being unloaded, a proportional amount of crude will be injected with it through a static mixer in a pipeline that carries the mix to an existing fin fan air cooler and then on to storage in Tk-1209. The cool mixture in Tk-1209 will be loaded into trucks for the trip to Denver City, Texas where it will enter a pipeline bound for Phillips oil refinery in Borger, Texas.

Navajo will be installing a spill containment pad at the loading site for the mixture from TK-1209. All other equipment being used is existing except the asphalt unloading station. Spill containment for the asphalt unloading station is not thought to be necessary, as asphalt will solidify upon contact with the cool ground.

Navajo intends to produce 1,5000 B/D of the mixture and hopes to get the system installed and operational during the month of September. If you have any questions please call me at 748-3311.

Sincerely,

David G. Griffin
Supt. of Environmental
Affairs & Quality Control

DGG/pb

NEW MEXICO OIL CONSERVATION COMMISSION

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

NAME OF OPERATOR	Lea Refining Company				ADDRESS	P. O. Drawer 159, Artesia, NM 88210	
REPORT OF	FIRE	BREAK	SPILL X	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTTY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*
NAME OF FACILITY	Lea Refinery						
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)	Lovington, NM			SEC.	TWP.	RGE.	COUNTY Lea
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK	5 Miles South of Lovington on Highway 18						
DATE AND HOUR OF OCCURENCE	5/8/90 4:00 AM			DATE AND HOUR OF DISCOVERY	5/8/90 8:00 AM		
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT REQUIRED	IF YES, TO WHOM	Dave Boyer, OCD - Santa Fe Jerry Sextant, OCD - Hobbs		
BY WHOM	David G. Griffin			DATE AND HOUR	5/8/90 9:30 AM		
TYPE OF FLUID LOST	Vacuum Gasoil			QUANTITY OF LOSS	3000 Bbls.	VOLUME RECOVERED	2960 Bbls.
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO X	QUANTITY				

IF YES, DESCRIBE FULLY**

DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** Newly installed electric heat tracing was activated on a section of line between Tank 1206 and a truck loading station. A check valve in the line blocked in a section and the heat applied, expanded the oil resulting in the loading valve failing on the end of the line and spilling oil out of the tank.

DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** The spill affected approximately 3 acres in an area on the West side of refinery. The spill flowed about 150 yards under a pipeway before exiting through a storm drain and pooling up in a natural depression about 500 yards downstream from the spill site.

(Continued next page)

DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Industrial			
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY	ROCKY Caliche	WET	DRY	SNOW

DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**

Dry with typical cool nights ($40^{o}_{s}F$) and sunny warm ($80^{o}_{s}F$) days

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

SIGNED David G. Griffin TITLE Supt. of Environmental Affairs & Utility Control DATE 5/10/90

*SPECIFY **ATTACH ADDITIONAL SHEETS IF NECESSARY

NEW MEXICO OIL CONSERVATION COMMISSION

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS AND BLOWOUTS

Upon discovery, the tank was blocked in to stop the flow, then, five vacuum tank trucks and two backhole/loaders were dispatched to the site to contain and recover the oil. Between 8:30 AM and 6:30 PM, 2800 barrels of oil were recovered and returned to the tank. By 6:30 PM, the ambient temperature had cooled enough that the oil gelled, thus, postponing the final oil recovery until warmer temperatures the next morning.

The backhoes scrapped up as much of the contaminated surface dirt as possible. Dry absorbent material (caliche fines) was mixed with the oily dirt to stabilize it. This material will be graded into the dirt roads in the refinery, per discussions with Mr. Dave Boyer - OCD, Santa Fe. Also, per Mr. Boyer, a hole will be dug at the low spot of the oil pool to determine the depth of penetration of this heavy oil product.

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

April 23, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-146

Mr. Allan T. Schmidt
Geraghty & Miller
Environmental Services
1030 Andrews Highway
Suite 120
Midland, Texas 79701

RE: Lea Refinery Overflow Pond Excavation

Dear Mr. Schmidt:

The Oil Conservation Division (OCD) has reviewed your letter of April 18, 1990 that provided analytical results of the soil samples obtained from the overflow pond. Based on the information provided in that letter, and the onsite inspection April 20th by our OCD Hobbs Geologist, Paul Kautz, your request of April 18th to cease further soil excavation and begin clean soil backfill operations is approved. This approval letter will also confirm the verbal approval given to you April 20th by telephone.

If you have any questions, please contact me by telephone at (505) 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: NMOCD Hobbs District Office
Russel Buss, Southern Union Gas Company
V. Steve Reed, Geraghty & Miller, Corpus Christi
Teresa Salamone, Geraghty & Miller, Austin

GERAGHTY & MILLER, INC.
Environmental Services

Ground Water *Engineering* *Hydrocarbon* *Remediation* *Education*

April 19, 1990

VIA FACSIMILE

Mr. David Boyer
Oil Conservation Division
P.O. Box 2088
Room #206
Sante Fe, New Mexico 875040

Dear Mr. Boyer:

Enclosed, as you requested, is a letter from the Environmental Improvement Division that grants approval for the disposal of soils impacted by waste diesel oil at the Rio Rancho Sanitary Landfill.

Please do not hesitate to contact me if you have any questions.

Very truly yours,

GERAGHTY & MILLER, INC.

V. Steve Reed

V. Steve Reed
Vice President

enclosure

cc: Russel Buss
Allan Schmidt

Formerly Reed & Associates, Inc.
111 Congress Avenue, Suite 830 • Austin, Texas 78701 • (512) 479-6934 • FAX (512) 478-1216

GERAGHTY & MILLER, INC.
Environmental Services

1030 Andrews Highway, Suite 120
Midland, Texas 79701
(915) 699-1361
FAX (915) 699-1978

VIA FACSIMILE

Mr. David Boyer
Oil Conservation Department
State Land Office Building
P.O. Box 2088; Room 206
Santa Fe, NM 87504

Re: Lea Refinery
[illegible]

[illegible]

[illegible] very prompt review of the [illegible] and [illegible] approval in our telephone conversation [illegible] filling of the excavation is appreciated. [illegible] tentatively scheduled to begin the backfill [illegible] will continue to keep you informed of operations [illegible]

[illegible]

[illegible]

GERAGHTY & MILLER, INC.
Environmental Services

Ground Water *Engineering* *Hydrocarbon* *Remediation* *Education*

April 18, 1990

Mr. David Boyer
Oil Conservation Department
State Card Office Building
P. O. Box 2088; Room 206
Santa Fe, NM 87504

Re: Lea Refinery
Lovington, NM

Dear Mr. Boyer:

Attached are sketch maps of sample locations and prelimary analytical sheets for the confirmation sampling at the Lea Refinery overflow pond excavation as discussed in our telephone conversation of 4/17/90. Three sets of samples were taken on 3/30, 4/5 and 4/12/90 (28 total). As you can see by the sketches, large amounts of additional soil were removed after the first and second sampling. The results of the third sampling are at or near background levles. Over 3,000 cubic yards of material have been excavated at the overflow pond. Confirmation sample numbers are designated by a "S-OPC" prefix. The soil stockpile samples are "S-OPS".

I have also attached analytical results for the backfill to be used at the overflow pond (from closure plan of 8/89). We would like to be able to begin backfill operations as soon as possible if we can arrange for an onsite inspection and verbal approval by your office. Please let me know by telephone if you have any questions.

Very truly yours,

GERAGHTY & MILLER, INC.
dba Reed & Associates

Allan T. Schmidt

Allan T. Schmidt
Senior Geologist

ATS/sne

attachment(s)

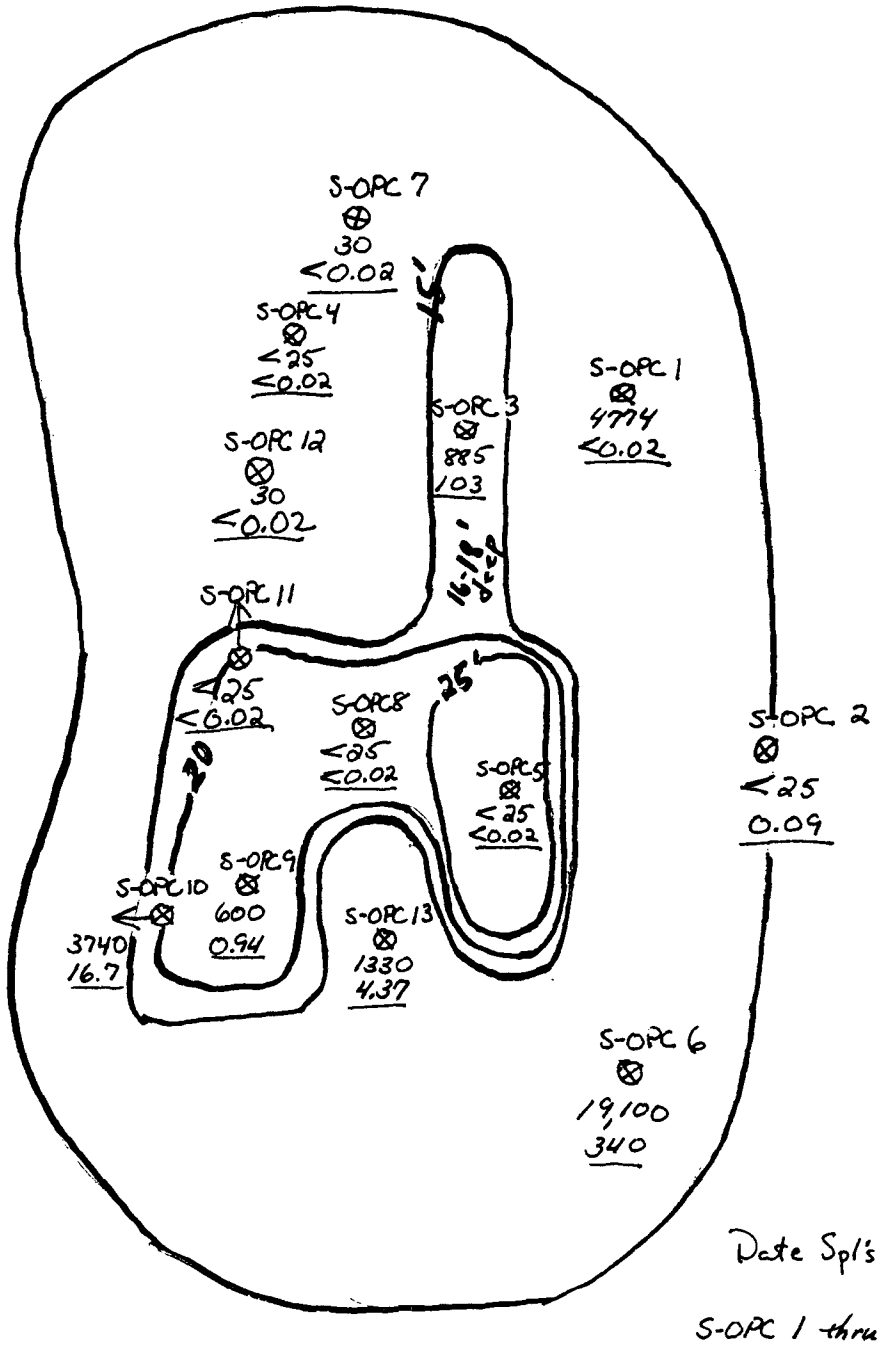
cc: Russel Buss, Southern Union Gas Company
V. Steve Reed, Geraghty & Miller, Corpus
Teresa Salamone, Geraghty & Miller, Austin

GERAGHTY
& MILLER, INC.
Environmental Services

Date 4-13-90 Client So. Union Refining Co

Title Lea Refinery - Overflow Pond Excavation (3-30-90) File

⊗ Sample Location (Floor)
<⊗ Sample Location (Wall)
30 TPH Value
<0.02 BTEX Value



Date Spl's Taken :

S-OPC 1 thru S-OPC 6 3-29-90
S-OPC 7 thru S-OPC 13 3-30-90

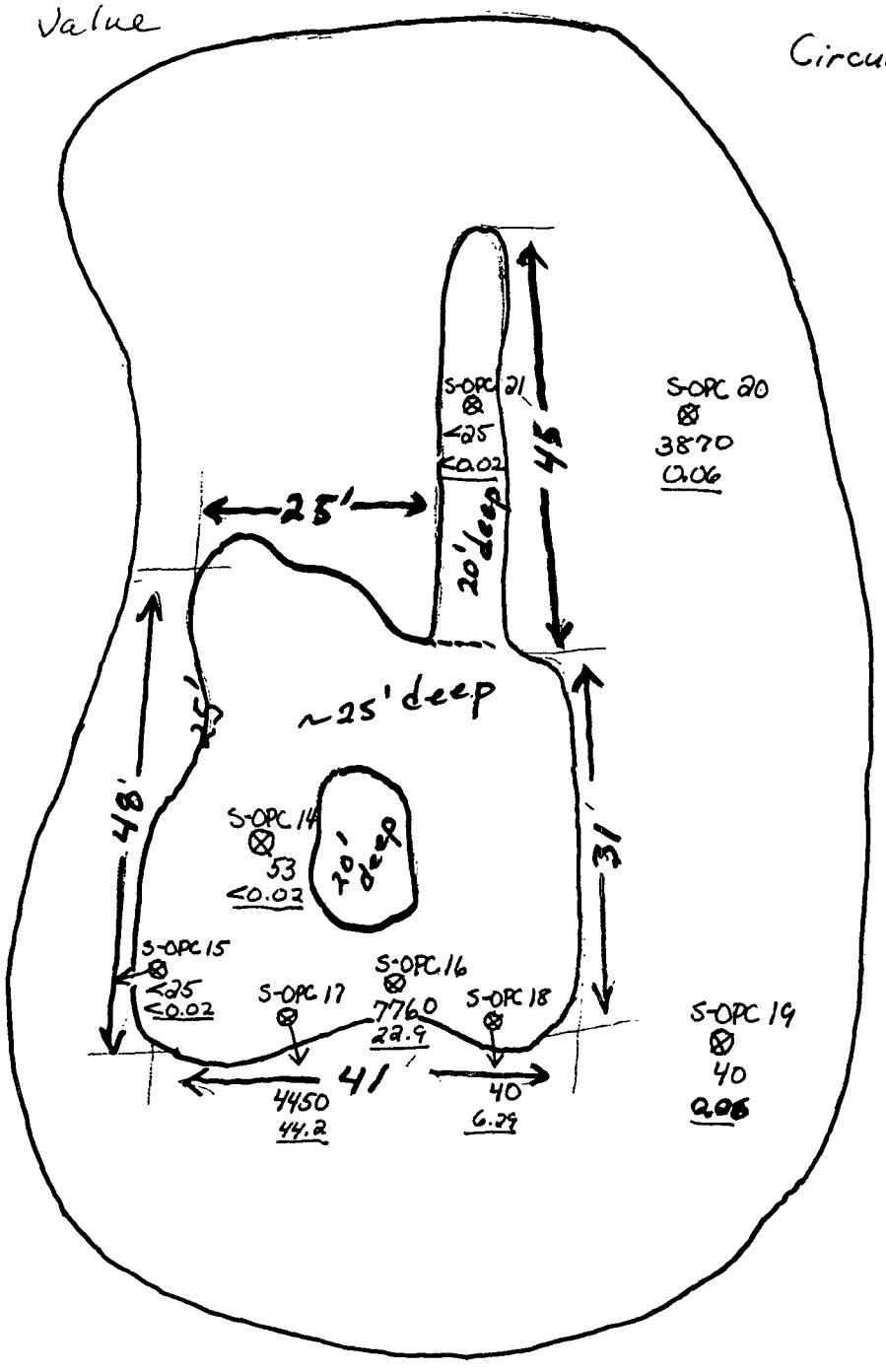
GERAGHTY
& MILLER, INC.
Environmental Services

Date 4-13-90 Client So. Union Refining Co

Title Lea Refinery - Overflow Pond Excavation as of 4-5-90 File

25 TPH Value
<.02 BTEX Value

Circumference: 393'



GERAGHTY
& MILLER, INC.
Environmental Services

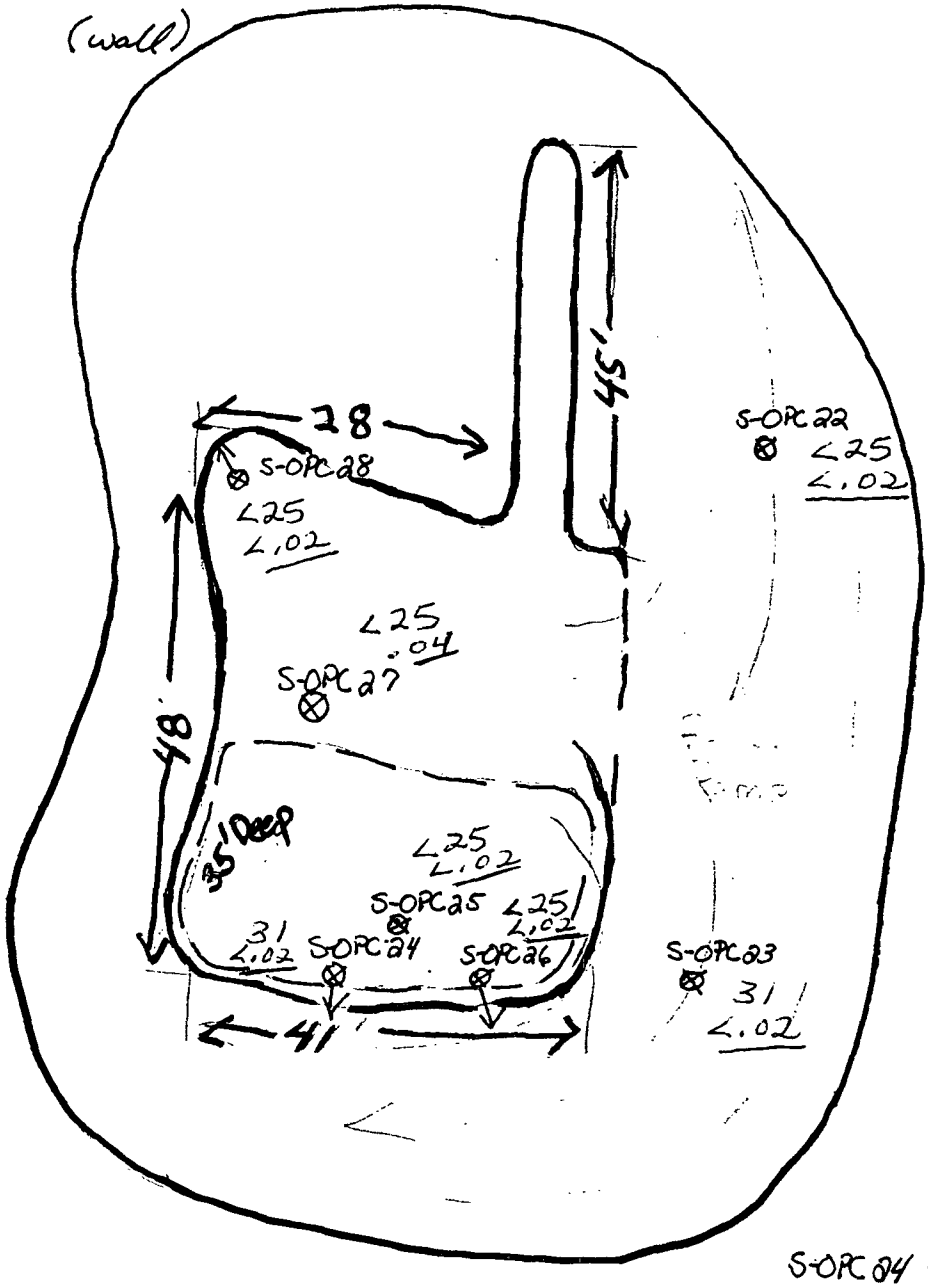
Date 4-13-90 Client So. Union Refining Co

Title Lea Refinery - Overflow Pond Excavation as of 4-12-90 File

25 TPH
<.05 BTEX
wall of excavation

⊗ Sample Location (floor)
⊗ " " (wall)

Circumference: 393'



S-OPC 04 ~ 8' below S-OPC 17
S-OPC 26 ~ 8' below S-OPC 18

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 2, 1990 File No. _____

Report of: Analysis of Soils

Reported to: Geraghty & Miller Company
Attention: Allan Schmidt
1030 Andrews Highway, Suite 120
Midland, TX 79701

Date received: 3/30/90

Identification: Project #CC052.01, Southern Union

PARAMETER	SAMPLE ID AND RESULTS (Stockpile)			(confirmation)		DETECTION LIMITS
	S-OPS-12	S-OPS-13	S-OPS-14	S-OPC-1	S-OPC-2	
Benzene, mg/kg	<0.02	<0.02	7.79	<0.02	<0.02	0.02
Toluene, mg/kg	<0.02	<0.02	5.32	<0.02	<0.02	0.02
Ethyl Benzene, mg/kg	0.02	<0.02	5.79	<0.02	<0.02	0.02
Xylene, mg/kg	0.07	0.06	4.19	<0.02	0.09	0.02
Total BTEX, mg/kg	0.09	0.06	23.1	<0.02	0.09	
Total Petroleum Hydrocarbons, mg/kg	1620	754	4465	4774	<25	25

Method: EPA SW846 #5030 & #8020, EPA 600/4-79 #418.1 Analyst: MD

Distribution of report:

1C: Geraghty & Miller

Respectfully submitted,

SOUTHWESTERN LABORATORIES, INC.

Bob Garrett

Per: Bob Garrett, Manager
Environmental and Analytical Services

Lab. No. D-9003248 Page 2 of 2 :gc

002

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 2, 1990 File No. _____

APR 5 RECD

Report of: Analysis of Soils

Reported to: Geraghty & Miller Company
Attention: Allan Schmidt
1030 Andrews Highway, Suite 120
Midland, TX 79701

Date received: 3/30/90

Identification: Project #CC052.01, Southern Union

confirmation

PARAMETER	SAMPLE ID AND RESULTS				DETECTION LIMITS
	S-OPC-3	S-OPC-4	SOPC-5	S-OPC-6	
Benzene, mg/kg	6.81	<0.02	<0.02	8.59	0.02
Toluene, mg/kg	14.6	<0.02	<0.02	30.8	0.02
Ethyl Benzene, mg/kg	8.50	<0.02	<0.02	119	0.02
Xylene, mg/kg	73.2	<0.02	<0.02	182	0.02
Total BTEX, mg/kg	103	<0.02	<0.02	340	
Total Petroleum Hydrocarbon, mg/kg	885	<25	<25	19,100	25

Method: EPA SW846 #5030 & #8020, EPA 600/4-79 #418.1 Analyst: MD

Lab. No. D-9003248 Page 1 of 2

002-A

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 4, 1990 File No. _____

Report of: Analysis of Soils

Reported to: Geraghty & Miller Company
Attention: Steve Tisher
1030 Andrews Highway, Suite 120
Midland, TX 79701

Date received: 3/30/90

Identification: Project #CC052.01, Southern Union

PARAMETER	SAMPLE ID AND RESULTS (confirmation)				DETECTION LIMIT
	S-OPC-7	S-OPC-8	S-OPC-9	S-OPC-10	
Benzene, mg/kg	<0.02	<0.02	0.10	0.12	0.02
Toluene, mg/kg	<0.02	<0.02	0.05	0.88	0.02
Ethyl Benzene, mg/kg	<0.02	<0.02	0.12	2.77	0.02
Xylene, mg/kg	<0.02	<0.02	0.67	12.9	0.02
Total BTEX, mg/kg	<0.02	<0.02	0.94	16.7	
Total Petroleum Hydrocarbons, mg/kg	30	<25	600	3740	25

Method: EPA SW846 #5030 & #8020, EPA 600/4-79 #418.1 Analyst: MD

Distribution of report:

1C: Geraghty & Miller

Respectfully submitted,

SOUTHWESTERN LABORATORIES, INC.

Per: Bob Garrett

Bob Garrett, Manager
Environmental and Analytical Services

Lab. No. D-9003256 Page 2 of 2 jgc

002

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 4, 1990 File No. _____

Report of: Analysis of Soils

APR 9 RECD

Reported to: Geraghty & Miller Company
Attention: Steve Tisher
1030 Andrews Highway, Suite 120
Midland, TX 79701

Date received: 3/31/90

Identification: Project #CC052.01, Southern Union

PARAMETER	SAMPLE ID AND RESULTS (confirmation / stockpile)				DETECTION LIMITS
	S-OPC-11	S-OPC-12	SOPC-13	S-OPS-15	
Benzene, mg/kg	<0.02	<0.02	0.22	0.03	0.02
Toluene, mg/kg	<0.02	<0.02	0.13	0.09	0.02
Ethyl Benzene, mg/kg	<0.02	<0.02	0.39	0.10	0.02
Xylene, mg/kg	<0.02	<0.02	3.63	0.69	0.02
Total BTEX, mg/kg	<0.02	<0.02	4.37	0.91	
Total Petroleum Hydrocarbon, mg/kg	<25	30	1330	3740	25

Method: EPA SW846 #5030 & #8020, EPA 600/4-79 #418.1

Analyst: MD

Lab. No. D-9003256

002-A

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 13, 1990 File No. _____

Report of: Analysis of Soil

Reported to: Geraghty & Miller
Attn: Steve Fischer
1030 Andrews Hwy. #120
Midland, Texas 79701

Date received: 4/6/90

Identification: Lea Refinery

all confirmation

	S-OPC-14	S-OPC-15	S-OPC-16	S-OPC-17	Detection Limit
Benzene, mg/kg	<0.02	<0.02	<0.5*	3.16*	0.02
Toluene, mg/kg	<0.02	<0.02	<0.5	3.57	0.02
Ethyl Benzene, mg/kg	<0.02	<0.02	8.61	5.53	0.02
Xylene, mg/kg	<0.02	<0.02	14.3	31.9	0.02
Total BTEX, mg/kg	<0.02	<0.02	22.9	44.2	
Total Petroleum Hydrocarbons, mg/kg	53	<25	7760	4450	25

*Higher detection limit due to dilution of samples.

Method: SW846 #5030 & #8020,
EPA 600/4-79 #418.1

Analyst: MD, RZ

Distribution of report:
1C: Geraghty & Miller

Respectfully submitted,

SOUTHWESTERN LABORATORIES, INC.

Per: Bob Garrett
Bob Garrett, Manager
Environmental and Analytical Services

MD

Lab. No. D-9004050 :sf

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 13, 1990 File No. _____

Report of: Analysis of Soil

Reported to: Geraghty & Miller
Attn: Steve Fischer
1030 Andrews Hwy. #120
Midland, Texas 79701

Date received: 4/6/90

Identification: Lea Refinery

All confirmation

	S-OPC-18	S-OPC-19	S-OPC-20	S-OPC-21	Detecion Limit
Benzene, mg/kg	1.35	<0.02	<0.02	<0.02	0.02
Toluene, mg/kg	2.50	<0.02	<0.02	<0.02	0.02
Ethyl Benzene, mg/kg	0.32	0.03	<0.02	<0.02	0.02
Xylene, mg/kg	2.12	0.03	0.06	<0.02	0.02
Total BTEX, mg/kg	6.29	0.06	0.06	<0.02	
Total Petroleum Hydrocarbons, mg/kg	40	40	3870	<25	25

Method: SW846 #5030 & #8020,
EPA 600/4-79 #418.1

Analyst: MD, RZ

Distribution of report:
1C: Geraghty & Miller

Respectfully submitted,

SOUTHWESTERN LABORATORIES, INC.

Per: Bob Garrett
Bob Garrett, Manager
Environmental and Analytical Services

Lab. No. D-9004050 :sf

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 17, 1990 File No. _____

Report of: Analysis of Soils

Reported to: Geraghty & Miller Company
Attention: Steve Tisher
1030 Andrews Highway, Suite 120
Midland, TX 79701

Date received: 4/16/90

Identification: Project #CC052.01, Lea Refinery

confirmation

PARAMETER	SAMPLE ID AND RESULTS					
	S-OPC-22	S-OPC-23	S-OPC-24	S-OPC-25	S-OPC-26	S-OPC-27
Benzene, mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene, mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethyl Benzene, mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Xylene, mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	0.04
Total BTEX, mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	0.04
Total Petroleum Hydrocarbon, mg/kg	<25	31	31	<25	<25	<25

Method: EPA SW846 #5030 & #8020, EPA 600/4-79 #418.1 Analyst: MD, RZ

LP

D-9004120 Page 1 of 2

Lab. No.

SwL SOUTHWESTERN LABORATORIES, INC.

Construction materials testing, analytical chemistry and geotechnical engineering
P.O. Box 224227 • 2575 Lone Star Drive • Dallas, Texas 75222 • 214/631-2700

April 17, 1990 File No. _____

Report of: Analysis of Soils

Reported to: Geraghty & Miller Company
Attention: Steve Tisher
1030 Andrews Highway, Suite 120
Midland, TX 79701

Date received: 4/16/90

Identification: Project #CC052.01, Lea Refinery

confirmation Stockpile

PARAMETER	SAMPLE ID AND RESULTS					Detection Limits
	S-OPC-28	S-OPS-16	S-OPS-17	S-OPS-18	S-OPS-19	
Benzene, mg/kg	<0.02	0.06	<0.02	0.04	0.03	0.02
Toluene, mg/kg	<0.02	0.06	<0.02	0.09	0.03	0.02
Ethyl Benzene, mg/kg	<0.02	0.28	0.03	0.09	0.19	0.02
Xylene, mg/kg	<0.02	0.47	0.11	0.54	0.90	0.02
Total BTEX, mg/kg	<0.02	0.87	0.14	0.76	1.15	
Total Petroleum Hydrocarbons, mg/kg	<25	3868	6747	315	1830	25

Method: EPA SW846 #5030 & #8020, EPA 600/4-79 #418.1 Analyst: MD, RZ

Distribution of report:
1C: Geraghty & Miller

Respectfully submitted,

SOUTHWESTERN LABORATORIES, INC.

Linda Webb-Bray for

Per: Bob Garrett, Manager
Environmental and Analytical Service

LP

Lab. No.

WESTERN TECHNOLOGIES Volatile Organic Compounds June 30, 1989

Back fill / Volatiles

STATION LOCATION:	CP1-7-7.5	CP2A-5-5.5	CP3A-5-5.5	CP5-5-5.5	BG-1	BG-2	BG-3	BG-4	BL-1	BL-2
SAMPLE MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS:	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)	UG/KG (DRY)
COMPOUND										
Chloromethane	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Bromomethane	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Chloroethane	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Methylene Chloride	6258*	7528*	<5	976*	<5	<5	<5	5.98*	<5	7.1*
Acetone	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Carbon Disulfide	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene (total)	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Chloroform	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
2-Butanone	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Vinyl Acetate	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
1,2-Dichloropropene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Trichloroethene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Dibromochloromethane	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Benzene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Bromoform	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
2-Hexanone	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Tetrachloroethene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Toluene	<625	6124	<5	2912	<5	<5	<5	<5	<5	<5
Chlorobenzene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Ethylbenzene	1803	11593	7.13	4556	<5	<5	<5	<5	<5	<5
Styrene	<625	<625	<5	<625	<5	<5	<5	<5	<5	<5
Xylene (total)	6059	8614	<5	6392	<5	<5	<5	<5	<5	<5
Acrolein	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
Acrylonitrile	<1250	<1250	<10	<1250	<10	<10	<10	<10	<10	<10
SOIL VOLATILE SURROGATE RECOVERY	%	%	%	%	%	%	%	%	%	%
1,2-Dichloroethane-d4	101	110	103	103	112	105	117	111	120	120
Toluene-d8	99.9	89.2	93.3	85.8	106	105	115	114	103	103
Bromofluorobenzene	99.3	91	108	90.7	83	83	89	83	102	98

* Methylene Chloride is often a laboratory contamination and was found in the blank

From Overflow pond closure plan 8/89

WESTERN TECHNOLOGIES
CORE SAMPLES
TOTAL METALS
REPORTED AS UG/GM(DRY)

SAMPLE	FT	%MOIST	CD	CU	ZN	PB	BE	SB	NI	CR	AG	AS	SE	TL	HG
BG-1	---------	8.3	<0.5	10.3	28.4	6.9	<0.5	1.4	10.6	10.8	<0.5	2.2	<0.5	<0.5	<0.25
BG-2	---------	5.59	<0.5	8.3	17.4	6.3	<0.5	<1.0	14.5	6.3	<0.5	2.1	<0.5	<0.5	<0.25
BG-3	---------	6.9	<0.5	7.2	13.3	5.1	<0.5	1.2	14.6	5.1	<0.5	2.8	<0.5	<0.5	<0.25
BG-4	---------	13.7	<0.5	11.7	55.8	8.5	1.7	<1.0	23.7	25.6	<0.5	2.4	<0.5	<0.5	<0.25
BL-1	---------	9.11	<0.5	3.7	5.8	<1.5	<0.5	<1.0	13.6	2.5	<0.5	2.1	<0.5	<0.5	<0.25
BL-2	---------	9.34	<0.5	3.3	3.5	<1.5	<0.5	2.4	11.1	1.9	<0.5	3.2	<0.5	<0.5	<0.25
CP-1	7-7.5	3.23	<0.5	9.3	14.5	2.5	<0.5	<1.0	4.2	5.1	<0.5	0.9	<0.5	<0.5	<0.25
CP-1	9.5-10	11.5	<0.5	29.3	25.9	<1.5	<0.5	2.8	11.0	1.8	<0.5	1.6	<0.5	<0.5	<0.25
CP-1	12-12.5	10.9	<0.5	24.4	25.8	<1.5	<0.5	2.1	10.3	1.7	<0.5	1.5	<0.5	<0.5	<0.25
CP-1(SPL)	12-12.5	10.5	<0.5	14.6	32.1	<1.5	<0.5	<1.0	11.6	1.9	<0.5	1.3	<0.5	<0.5	<0.25
CP-1	14.5-15	9.2	<0.5	11.0	23.5	2.0	<0.5	2.7	9.8	1.3	<0.5	0.9	<0.5	<0.5	<0.25
CP-1	17-17.5	6.51	<0.5	32.0	32.2	2.3	<0.5	<1.0	6.0	1.9	<0.5	0.7	<0.5	<0.5	<0.25
CP-1	19.5-20	4.08	<0.5	4.8	16.1	3.0	<0.5	1.5	5.6	2.9	<0.5	0.8	<0.5	<0.5	<0.25
CP-1	24.5-25	3.72	<0.5	4.6	13.1	2.3	<0.5	1.5	2.7	2.5	<0.5	0.9	<0.5	<0.5	<0.25
CP-1	29-29.5	6.07	<0.5	13.9	15.8	2.6	<0.5	<1.0	6.8	1.1	<0.5	1.0	<0.5	<0.5	<0.25
CP-1	35.5-36	6.03	<0.5	6.4	12.0	2.6	<0.5	<1.0	<.0	1.9	<0.5	0.9	<0.5	<0.5	<0.25
CP-1	39.5-40	5.81	<0.5	6.2	11.9	2.1	<0.5	<1.0	4.0	1.8	<0.5	1.0	<0.5	<0.5	<0.25
CP-1	44.5-45	4.27	<0.5	4.1	6.1	<1.5	<0.5	<1.0	2.6	2.2	<0.5	<0.5	<0.5	<0.5	<0.25
CP-1	49.5-50	5.16	<0.5	5.8	10.8	<1.5	<0.5	<1.0	3.7	2.8	<0.5	0.5	<0.5	<0.5	<0.25
CP-2A	3-3.5	13.9	<0.5	18.0	44.8	5.5	0.6	1.9	10.2	10.0	<0.5	1.7	<0.5	<0.5	<0.25
CP-3	5-5.5	22.6	<0.5	16.8	62.9	9.0	1.3	2.0	18.3	46.6	<0.5	2.2	<0.5	<0.5	<0.25
CP-3(SPL)	5-5.5	21.9	<0.5	22.5	68.4	9.7	0.9	4.1	17.0	68.4	<0.5	2.0	<0.5	<0.5	<0.25
CP-5	5-5.5	15.6	<0.5	9.0	41.9	7.4	1.0	1.4	15.3	18.4	<0.5	1.7	<0.5	<0.5	<0.25

metals

Backfill

From overflow pond closure plan 8/89

HUNTER/ESE REPORT: TRPH IN SOILS

CLIENT: WESTERN TECHNOLOGIES

ANALYST: STEVE CLARK
REPORT DATE: 06-21-89
ANALYSIS DATE: 06-21-89
EXTRACT DATE: 06-20-89

QA/QC SPIKE RECOVERIES

SP1:	96.92
SPM1:	88.39
SPM2:	102.87

SAMPLE NAME (FG)	(#)	SAMPLE WT. (KG)	EXTRACT VOL. (L)	PERCENT MOISTURE	IR ABSORBANCE	DILUTION FACTOR	SAMPLE CONC. (MG/KG)	REPORTED SAMPLE CONC. (MG/KG-DRY)
TBLK	9	0.0100	0.1	0.01	0.0009	1	10.0	10.0
SP1	9	0.0100	0.1	0.01	0.0282	1	431.6	431.6
SPM1*BL-1	9	0.0110	0.1	9.10	0.0270	1	413.1	413.1
SPM2*BL-1	9	0.0103	0.1	9.10	0.0293	1	479.1	479.1
CP-1	7-7.5	0.0097	0.1	3.22	0.0246	50	20025.9	20025.9
CP-1	9.5-10	0.0096	0.1	11.40	0.0011	1	15.4	15.4
CP-1	12-12.5	0.0103	0.1	10.90	0.0069	1	111.9	111.9
CP-1	14.5-15	0.0104	0.1	9.20	0.0004	1	2.4	2.4
CP-1	17-17.5	0.0098	0.1	6.50	0.0003	1	0.8	<1.65
CP-1	19.5-20	0.0093	0.1	4.07	0.0029	1	45.9	45.9
CP-1	24.5-25	0.0101	0.1	3.71	0.0006	1	5.5	5.5
CP-1	29-29.5	0.0100	0.1	6.06	0.0015	1	20.5	20.5
CP-1	35.5-36	0.0100	0.1	6.02	0.0011	1	14.0	14.0
CP-1	39.5-40	0.0103	0.1	5.81	0.0011	1	13.5	13.5
CP-1	44.5-45	0.0099	0.1	4.27	0.0008	1	8.9	8.9
CP-1	49.5-50	0.0101	0.1	5.15	0.0007	1	7.2	7.2
CP-2A	3-3.5	0.0107	0.1	13.90	0.0266	50	22082.4	22082.4
CP-3	5-5.5	0.0104	0.1	22.60	0.0260	50	24697.6	24697.6
CP-5	5-5.5	0.0102	0.1	15.60	0.0170	15	4506.5	4506.5
BG	1	0.0107	0.1	8.29	0.0005	1	3.9	3.9
BG	2	0.0101	0.1	5.59	0.0020	1	28.3	28.3
BG	3	0.0100	0.1	6.90	0.0013	1	17.4	17.4
BG	4	0.0101	0.1	13.70	0.0006	1	6.2	6.2
BL	1	0.0105	0.1	9.10	0.0002	1	-0.8	<1.65
BL	2	0.0109	0.1	9.34	0.0002	1	-0.8	<1.65

← Backfill TPH

From overflow pond closure plan 8/89

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 0830	Date 3/21/90
Originating Party	**Other Parties**	
Steve Tischer - Geraghty + Miller	Bill Olson - OCD	

Subject

Lovington Southern Union Refinery

Discussion

Lab has tested solids from the overflow pit and found no haz-waste
They will begin shipping soil to Rio Rancho landfill on Friday
Approximately 2300 cubic yards of soil will be removed

Conclusions or Agreements

Distribution
File

Signed Bill Olson

GERAGHTY & MILLER, INC.
Environmental Services

OIL CONSERVATION DIVISION
RECEIVED

Ground Water *Engineering* *Hydrocarbon* *Remediation* *Education*

'90 MAR 13 AM 8 31

March 9, 1990

Mr. David Boyer
Oil Conservation Department
State Land Office Building
P.O. Box 2088, Room 206
Sante Fe, New Mexico 87504

Re: Southern Union Refinery Company
Lovington, New Mexico

Dear David:

Enclosed as you requested, is a copy of the letter of approval from the Environmental Improvement Division relating to soils remediation at the above referenced facility.

We appreciate your cooperation throughout the development and implementation of this project.

Very truly yours,

GERAGHTY & MILLER, INC.

Teresa B. Salamone
Director, Environmental Regulatory Services

enclosure

cc: Gene Dubay
Russel Buss
Allan Schmidt

boyer/sounion.ltr

New Mexico Health and Environment Department

March 2, 1990

Ms. Theresa Salamome
Geraghty & Miller, Inc
111 Congress Avenue, Suite 830
Austin, Texas 78701

Dear Ms. Salamome:

This is to confirm our conversations and correspondence regarding the removal and disposal of contaminated soils from Southern Union Refinery south of Lovington, New Mexico. Conversations indicated that the landfill of preference was Waste Management of New Mexico at Rio Rancho.

The submitted test results were discussed with Boyd Hamilton of the Hazardous Waste Bureau for determination of classification. It was concluded that the soils from around the cooling tower and from Areas 1 and 2 can be disposed of at the above mentioned landfill with the following provisions.

1. Soils from the cooling tower area have continous testing during removal to assure that the chrome levels stay below the 5 milligrams per liter.

2. The Special Waste Bureau is notified prior to removal of soils from any of the three areas.

3. Notification of when the soils are to be disposed of at the landfill. The soils must be manifested according to Section 405 of the New Mexico Solid Waste Management Regulations (SWMR-2).

Please note that approval from the Special Waste Bureau for disposal at the Rio Rancho landfill does not guarantee that the landfill will accept the soils. If you have any questions please contact me at (505) 827-278.

Sincerely yours,

Phillip L. Westen
Environmental Scientist

– ENVIRONMENTAL IMPROVEMENT DIVISION –
Harold Runnels Building
1190 St. Francis Dr.
Santa Fe, New Mexico 87503

xc: Boyd Hamilton, HPM-1, Hazardous Waste
Roelf Ruffner, Environmental Supervisor, Hobbs
William Terry, General Manager, Waste Management of New Mexico, Rio Rancho

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

March 6, 1990

CERTIFIED MAIL NO. P 612 458 034
RETURN RECEIPT REQUESTED

Mr. Russel A. Buss
Project Manager
Southern Union Gas
P.O. Box 2000
Graves, TX 77619-2000

RE: Closure Plan for Southern Union Refinery, Lovington, Contaminated Soil Removal

Dear Mr. Buss:

The Oil Conservation Division has received a copy of the March 2, 1990 letter from Mr. Phillip Westen of the Environmental Improvement Division Special Waste Bureau to Ms. Theresa Salamone of Geraghty and Miller, Austin, approving disposal of non-hazardous contaminated soils at an EID regulated landfill at Rio Rancho. Based on that approval, OCD has no objections to the disposal location agreed to by New Mexico EID and Southern Union Refinery. We do, however, request that copies of the transfer manifests and results of any soil testing be provided to this office.

If you have any questions, please contact me at (505) 827-5812.

Sincerely,

David G. Boyer
Hydrogeologist/Environmental Bureau Chief

DGB/ag

cc: Jerry Sexton - Oil Conservation Division Hobbs
Phillip L. Westen - EID Special Waste Bureau - Santa Fe
Boyd Hamilton - Hazardous Waste Bureau, Santa Fe
William Terry - EID Waste Management of NM, Rio Rancho

Southern Union Gas

Requested Transmittal Time: 4:30

Transmitted by: kh

Date 3-2-90

GASFAX

To: Dave Boyer

Company/Region: Oil Conservation Div. of the Dept. of Minerals

FAX No. 505-827-5741 Phone No. _____

From: Russel A. Buss

Message: This letter is to follow up on our conversation yesterday regarding approval by the New Mexico Health and Environmental Department to dispose of contaminated soils from the Lea Refinery south of Lovington, NM. The attached letter was received via fax from Mr. Phillip Westen of NMHED today which grants our request for disposal of the material in the Rio Rancho landfill near Albequerque, NM. A follow up original of this letter will be sent to you next week. In the meantime, we would request approval from your organ cion be granted so that our work can proceed next week.

Thank you for your consideration in this matter. If you have ny questions, please contact me at 409-962-8888 or Teresa Salamone of Geraghty & Miller, Inc. at 512-479-6934 or fax #512-478-1216.

This facsimile consists of 3 pages including this form letter.
If you do not receive all the pages of this transmission, PLEASE CONTACT OUR TELECO OPERATOR IMMEDIATELY.

Southern Union Gas
Gulf Coast Region
P. O. Box 2000
Groves, TX 77619-2000
(409) 962-8888
FAX: (409) 962-0329

New Mexico Health and Environment Department

GARREY CARRUTHERS
Governor

DENNIS BOYD
Secretary

MICHAEL J. BURKHART
Deputy Secretary

RICHARD MITZELFELT
Director

March 2, 1990

Ms. Thresea Salemome
Geraghty & Miller, Inc
111 Congress Avenue, Suite 830
Austin, Texas 78701

Dear Ms. Salamome:

This is to confirm our conversations and correspondence regarding the removal and disposal of contaminated soils from Southern Union Refinery south of Lovington, New Mexico. Conversations indicated that the landfill of preference was Waste Management of New Mexico at Rio Rancho.

The submitted test results were discussed with Boyd Hamilton of the Hazardous Waste Bureau for determination of classification. It was concluded that the soils from around the cooling tower and from Areas 1 and 2 can be disposed of at the above mentioned landfill with the following provisions.

1. Soils from the cooling tower area have continous testing during removal to assure that the chrome levels stay below the 5 milligrams per liter.

2. The Special Waste Bureau is notified prior to removal of soils from any of the three areas.

3. Notification of when the soils are to be disposed of at the landfill. The soils must be manifested according to Section 405 of the New Mexico Solid Waste Management Regulations (SWMR-2).

Please note that approval from the Special Waste Bureau for disposal at the Rio Rancho landfill does not guarantee that the landfill will accept the soils. If you have any questions please contact me at (505) 827-278.

Sincerely yours,

Phillip L. Westen
Environmental Scientist

xc: Boyd Hamilton, HPM-1, Hazardous Waste
Roelf Ruffner, Environmental Supervisor, Hobbs
William Terry, General Manager, Waste Management of New Mexico, Rio Rancho

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

February 13, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-211

Mr. V. Steve Reed
REED & ASSOCIATES, INC.
708 American Bank Plaza
Corpus Cristi, Texas 78475

RE: Southern Union Lovington's Overflow Pond Soil Disposal

Dear Mr. Reed:

The Oil Conservation Division (OCD) has received your letter of February 7, 1990 requesting that Southern Union be given authorization to dispose of its overflow pond soils at PARABO, Inc. We appreciate the additional technical information you provided with the letter on the occurrence of natural chromium.

It is the policy of the OCD not to allow the disposal of non-hazardous heavy metal (including chromium) wastes from refineries at OCD regulated solid waste disposal sites for the following reasons:

1. **OCD facilities receive exploration, development and production wastes which are mainly hydrocarbons, contain hydrocarbons or are associated in some form or another with their production (eg. produced water, drilling and completion fluids). Some other non-hazardous materials can be accepted with OCD approval. However, these non-hazardous wastes the facilities receive are generally exempted from RCRA Subtitle C (Hazardous Waste) rules by EPA's regulatory determination of June, 1988.**

2. **Refinery wastes are specifically not included as exempted wastes in the EPA regulatory determination.**

3. **Cooling tower wastes (especially at gas plants that previously used chromates as a corrosion inhibitor) have been recently scrutinized by EPA for hazardous waste consideration (see attached EPA letter).**

4. **Even through the waste may test non-hazardous under the current EPA toxicity test, future test methodology may change and cause different results.**

5. **If in the future a regulatory agency determines that testing was not adequate or if the waste is found to be hazardous, the facility where the waste was disposed of becomes a RCRA regulated unit.**

6. Because these facilities provide OCD and the industry and public with safe and environmentally sound methods of oil and gas waste disposal, OCD and the industry can not afford to have a non-hazardous solid waste disposal facility subject to the risk of RCRA hazardous waste investigation and subsequent permitting, operating, monitoring closure and post-closure requirements.

Review of the results submitted in your August 14, 1989, proposed pond closure plan shows sludge concentrations of chromium ranging up to 68.4 mg/l (ppm) for five samples. Although EPA toxicity results for chromium are less than 0.01 mg/l, it is these elevated levels of total chrome in the sludge that we are concerned about. At some future time could these high levels become the focus of a RCRA investigation at the state or federal level? Of course this question can not be answered now, but such an investigation could have severe consequences if directed at an OCD regulated facility.

The letter of October 13, 1989, approving the cleanup concluded that this material should go to a facility capable of receiving chromium waste, though as non-hazardous waste. PARABO is not such a facility. However, we are willing to discuss this matter further if PARABO desires to take this waste and understands that it may be assuming a serious future regulatory risk by doing so.

Through a copy of this letter I am making PARABO aware of our correspondence on this issue. If you desire to proceed further in this direction, I suggest that you and PARABO representatives meet with OCD staff in Santa Fe to discuss the matter.

Sincerely yours,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

Attachment

cc: OCD Hobbs Office
Russel Buss, Southern Union Refining
Teresa Salamone, Reed & Associates
Wayne Price, PARABO, Inc.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

October 13, 1989

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

CERTIFIED MAIL
RETURN RECEIPT NO. P-106-675-127

Mr. Russel A. Buss
Project Manager
SOUTHERN UNION COMPANY
P. O. Box 2000
Groves, Texas 77619

RE: Closure Plan for the Southern Union Company, Lea Refinery Overflow Pond.

Dear Mr. Buss:

The Oil Conservation Division (OCD) has reviewed the closure plan document dated August 14, 1989, prepared by Read and Associates, Inc. of Midland, Texas and concur with the proposed remediation action.

Since under a new state law, OCD has jurisdiction over solid waste disposal from refineries and other and gas production and processing facilities, you will be required to provide us prior to disposal with specific information as to the disposition of the material including when cleanup will occur, who will perform it and who will receive the material for disposal. Although E.P. toxicity tests show chromium at less than 0.010 mg/l, five samples show total metal chrome above 5.0 ug/g. Therefore, this material should go to a facility capable of receiving such waste through as non-hazardous waste.

If you have any questions, please contact me at (505) 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Hobbs Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202

July, 18, 1989

Mr. Boyd Hamilton
Program Manager
Hazardous Waste Program
New Mexico Health and Environment Department
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, New Mexico 87503

Dear Mr. Hamilton:

On June 8, 1989, you requested that the Environmental Protection Agency (EPA) provide an interpretation of the so called oil and gas exemption to the Resource Conservation and Recovery Act (RCRA) as delineated in the Regulatory Determination in the July 6, 1988, Federal Register (FR). Specifically, you asked if the exemption applied to four gas plants operated by Phillips Petroleum Company (Phillips) in eastern New Mexico. This request was prompted by Phillips' assertion, in a letter dated May 17, 1989, that the surface impoundments in question are not RCRA regulated units based on that regulatory determination. Phillips supported this position with a certificate of no hazardous waste activity for the four plants.

In EPA's regulatory determination, on Page 25454, cooling tower blowdown is specifically included in the wastes exempted from RCRA regulation. However, gas plant cooling tower cleaning wastes are specifically excluded from the exemption. These determinations are based on the three criteria included as an attachment to the June 6, 1989, letter from Dan Derkics, (Chief, Large Volume Waste Section EPA Headquarters) to Julie Wanslow, a copy of which was included in your letter to me of June 15, 1989. Mr. Derkics letter states that cooling tower blowdown "... is comprised only of water, scale or other wastes generated by the actual operation of the cooling tower ... included as part of the functional operation of the cooling tower." The Region interprets this to mean that corrosion inhibitors and biological control agents are included in cooling tower blowdown.

Mr. Derkics also clarifies the meaning of cooling tower cleaning wastes as those wastes which, may be generated by any cooling tower and includes "...solvents, scrubbing agents or other cleaning materials introduced

into the process solely to remove buildup or otherwise clean the equipment, and are not included as part of the functional operation of the cooling tower." Such wastes are not intrinsically derived from primary field operations for natural gas production. The Region interprets this to mean that the wastes generated during the periodic cleaning are not exempt.

In their No Hazardous Waste Activity Certificate, Phillips states that both chromate and non-chromate chemicals have been used in the cooling towers since November 19, 1980, as corrosion inhibitors at these sites. They further state that cooling towers must be cleaned on a periodic basis (approximately once every five years) and that this cleaning consists of removing the sludge by vacuum truck from the basin and removing scale from the cooling coil heads and laterals by sandblasting. Phillips also asserts that these materials have been tested and are not hazardous wastes.

One of the reasons that cleaning waste from a cooling tower may be RCRA hazardous waste is due to the chemicals added to the system for corrosion inhibition or control of biological agents. Chromate compounds have been widely used in this application as they have at the Phillips gas plants. Discarded materials generated in the cooling tower would be hazardous waste, as that term is defined in 40 CFR §261.3, when the chromium concentration reaches 5.0 mg/l when tested using the procedures for EP toxicity.

If the waste generated during the periodic cleaning exceeds a concentration of 5.0 mg/l for chromium, then the waste is hazardous waste. Phillips claims the waste is tested in their certificate but they do not provide enough information for a determination of the adequacy of the testing. Should this waste be EP Toxic and should it be placed in the same surface impoundments as the cooling tower blowdown, then the units are RCRA regulated regardless of the exemption for cooling tower blowdown. If on the other hand these conditions are not met, then the material is not hazardous waste. At the very least, the coil heads and laterals have the potential of having significant levels of chromium waste/scale which must be sandblasted off. It is this cooling tower cleaning waste that may make the units regulated, however, such a determination is not possible from the information provided in the certificate.

Some discussion is necessary about a mixture of an exempted waste and a non-exempted waste. EPA has in the past exempted some such mixtures as in the case of ash waste and flue gas emission control waste generated primarily from the combustion of coal and fossil fuels. [40 CFR 261.4(b)(4)] However, the wastes which are co-disposed and also exempt are those materials generated in conjunction with the exempted wastes. The waste materials are not segregated from the combustion wastes. Wastes which

are segregated and disposed of or treated separately from combustion wastes and otherwise meet the definition of a hazardous waste are regulated under RCRA. This determination was made in 1981 in response to the Utility Solid Waste Activities Group.

The clearest exposition of EPA's stand regarding the applicability of the mixture rule when an exempted waste is mixed with a hazardous waste is found in the proposed rule published in the Federal Register on April 17, 1989, for mining waste.

> "EPA has decided, however, that it is appropriate to revise the proposed regulatory status of some mixtures of non-excluded 'characteristic' wastes and Bevill wastes. In these instances, the mixture will be considered a hazardous waste if it exhibits one or more of the same hazardous characterisitcs that are exhibited by the non-excluded waste. If the mixture exhibits one or more hazardous characteristics that are exhibited by the Bevill waste but not by the non-excluded characteristic waste, then the mixture is not hazardous waste.
>
> EPA wishes to make clear, however that in any case, mixing a characteristic hazardous waste with a Bevill waste would require a RCRA treatment, storage or disposal permit.... "

Although this interpretation applies to a proposed mining waste rule, EPA's Office of General Counsel has assured the Region that the same idea applies in the petroleum exclusion.

Clearly, if at any time the cooling tower cleaning waste meets the definition of hazardous waste and it is mixed with the exempted waste, the unit where mixing takes place is a regulated unit.

The interpretations of the exemption contained in this letter are consistent with those of EPA's Office of General Counsel.

I would suggest that EID review Phillip's analysis and all available information to determine if the cooling tower cleaning waste is EP-toxic for chromium or is not. You should also determine what quantity of waste is generated and if this waste is/was placed in the surface impoundments after 1980.

Although further investigation/evidence is required to conclusively determine the regulatory status of these sites, I hope the information provided above will prove useful to your staff. If your staff has any questions, please have them call Court Fesmire at (214) 655-6775.

Sincerely,

Randall E. Brown, Chief
RCRA Enforcement Branch

cc: Tracy Huges
Office of General Counsel
NMEID

OIL CONSERVATION DIVISION

SANTA FE, NEW MEXICO

TELECOPIER TRANSMITTAL SHEET

DATE: 2/13/90

TO: Steve Reed

FROM: Dave Boyer, OCD

PHONE NUMBER: 827-5812

NUMBER OF PAGES (INCLUDING TRANSMITTAL SHEET): 8

IF YOU HAVE ANY PROBLEMS WITH THE TRANSMISSION, PLEASE CALL (505) 827-5806.

[Sent 1 (512) 478-1216 3PM 2/13/90 DB]

FAX NUMBER: (505) 827-5741

REED & ASSOCIATES, INC.
Hydrologists & Environmental Consultants

February 7, 1990

Mr. David Boyer
Oil Conservation Division
Energy & Minerals Dept.
State of New Mexico
P. O. Box 2088, Room 206
Santa Fe, NM 87504

RE: Southern Union's Overflow Pond Soil Disposal

Dear Mr. Boyer:

Attached are data relating to ranges in natural chromium concentrations in soils. As you will see, the chromium concentrations vary widely and can be as high as 2000 parts per million (ppm) in the western United States. Southeastern New Mexico soils contain chromium ranging from 5 to 60 ppm (see map). It is our opinion, therefore, that the chromium concentration in the overflow pond soils on the Southern Union Lovington Refinery Site is within what could be expected in the native (particularly the clayey) soils at the Parabo, Inc. facility. We request, therefore, that Southern Union be given authorization to dispose of its surge pond soils at Parabo, Inc.

Very truly yours,

REED & ASSOCIATES, INC.

V. Steve Reed

V. Steve Reed

VSR/pc

Attachments

cc: Russel Buss
Teresa Salamone

708 American Bank Plaza • Corpus Christi, Texas 78475
(512) 883-1353 • Telecopy (512) 883-7565

A Geraghty & Miller Company

introduction to geochemistry

KONRAD B. KRAUSKOPF

Professor of Geochemistry

Stanford University

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TABLE 20-3 *Concentrations of some elements in the metallic, sulfide, and silicate phases of meteorites and in the metallurgical products of Mansfeld copper ores**

	Meteorites			Metallurgical products			
	Metal phase	Sulfide phase (troilite)	Silicate phase	Metal (pig iron)	Sulfide (copper matte)	Silicate (slag)	Flue dust
Si	0.015	0	21.60	0.02	0.05	22.09	4.03
Al			1.83	0.05	0	9.11	
Fe	88.60		13.25	73.58	22.92	3.0	5.3
Mg			16.63	0	0.05	7.46	
Ca			2.07	0.003	~0.001	13.50	
Na			0.82	~0.1	0.1	0.64	
K			0.21		0.49	3.28	
P	1,800	3,000	700	18,400	0	300	~50
→ Cr	300	1,200	3,900	0	0	40	0
Ni	84,900	1,000	3,300	17,200	2,800	500	20
Co	5,700	100	400	24,400	2,500	40	0
V	6		50	800	~100	200	70
Ti	100	0	1,800	20	20	300	0
Zr	8	0	95				
Mn	300	460	2,050	0	6,400	2,000	~10
Cu	200	500	2	64,400	462,000	2,340	~30,000
Pb	56	20	2	20	2,200	200	~100,000
Zn	115	1,530	76	8	16,800	3,700	~400,000
Ag	5	19	0	150	2,520	0	300
Au	2	0.5	0	8	0	0	0
Pt	16	3	0	8	0	0	0
Sn	100	15	5	80	0	0	0
W	8	trace	18	0	0	30	0
Mo	17	11	3	66,400	0	20	~5

* Major elements in weight percent (of the elements, not the oxides), minor elements in parts per million. Data on major elements in meteorites represent analyses of stony meteorites, from H. Brown and C. Patterson, The composition of meteoritic matter, *Jour. Geology*, vol. 55, pp. 405 and 508, 1947. Data on minor elements in meteorites are taken from a compilation by K. Rankama and T. G. Sahama ("Geochemistry," University of Chicago Press, 1950), p. 87, and represent averages for meteorites in general; the original data are largely from the work of Goldschmidt, but figures from several other sources have been added. Data on metallurgical products of the Mansfeld copper ores, also from a table in Rankama and Sahama (page 85), are based on analyses by A. Cissarz and H. Moritz, Untersuchungen über die Metallverteilung in Mansfelder Hochofenprodukten und ihre geochemische Bedeutung, *Metallwirtschaft*, vol. 12, p. 131, 1933. The symbol ~ indicates approximate values.

TABLE 20-5 *Average content of major and minor elements in four rock series**

	Ionic radii, Å	World averages: Ultramafic rocks	World averages: Mafic rocks	World averages: Intermediate rocks	World averages: Felsic rocks	Tertiary lavas of NE Ireland: Olivine basalt	Tertiary lavas of NE Ireland: Tholeiite basalt	Tertiary lavas of NE Ireland: Quartz trachyte	Tertiary lavas of NE Ireland: Rhyolite	Skaergaard intrusive rocks: Gabbro-picrite	Skaergaard intrusive rocks: Hyp-oliv gabbro	Skaergaard intrusive rocks: Ferro-gabbro	Skaergaard intrusive rocks: Granophyre	Hawaiian lavas: Picrite-basalt	Hawaiian lavas: Basalt	Hawaiian lavas: Andesine andesite	Hawaiian lavas: Oligoclase andesite	Hawaiian lavas: Trachyte
Si^{4+}	0.42	19.0	24.0	26.0	32.3	21.1	24.3	30.0	35.2	19.3	21.6	20.3	31.2	22.3	24.0	23.7	24.4	29.0
Al^{3+}	0.51	0.5	8.8	8.9	7.7	7.8	7.5	7.5	6.5	4.6	8.9	7.7	6.7	4.9	6.8	8.7	8.8	9.9
Fe^{3+}	0.64	9.9	8.6	5.9	2.7	1.9	1.8	3.2	0.6	1.9	1.1	2.3	2.6	1.0	1.2	4.1	2.2	3.0
Fe^{2+}	0.74					6.7	6.5	2.2	0.3	8.2	8.1	17.1	3.9	8.1	7.3	4.8	5.7	0.1
Mg^{++}	0.66	25.9	4.5	2.2	0.6	6.8	3.5	0.5	0.1	16.3	5.8	1.5	0.3	11.4	4.6	2.6	1.9	0.2
Ca^{++}	0.99	0.7	6.7	4.7	1.6	7.1	7.1	1.5	0.6	4.7	8.1	6.5	2.0	5.5	7.5	4.6	4.5	0.6
Na^{+}	0.97	0.6	1.9	3.0	2.8	1.5	1.9	3.1	2.0	0.5	1.8	2.1	3.0	1.2	1.5	3.5	4.1	5.1
K^{+}	1.33	0.03	0.8	2.3	3.3	0.2	0.9	3.5	3.8	0.1	0.2	0.3	2.6	0.3	0.3	1.8	1.8	
P^{5+}	0.35	170	1,400	1,600	700	970	1,260	535	90	90	260	5,000	1,500	1,000	1,140	740	4,060	1,050
Ga^{3+}	0.62	2	18	20	20	33	35	40	43	8	19	20	33	18	23	20	23	25
Cr^{3+}	0.63	2,000	200	50	25	1,600	150	50	<1	1,500	230	<1	11	1,750	470	<1	<1	20
Li^{+}	0.68	<1	15	20	40	8	18	65	80	2	2	3	20	1	2	15	20	30
Ni^{++}	0.69	2,000	160	55	8	900	50	65	13	1,000	120	<2	9	950	85	7	13	15
Co^{++}	0.72	200	45	10	5	140	110	8	2	90	48	20	5	75	35	14	6	2
V^{3+}	0.74	40	200	100	40	630	750	55	2	120	220	4	9	250	280	70	19	<5
Ti^{3+}†	0.76	300	9,000	8,000	2,300	7,000	6,700	3,200	700	9,000	5,000	15,000	5,000	12,000	20,000	16,000	15,000	2,000
Zr^{4+}	0.79	30	100	260	200	180	700	3,000	2,000	30	33	20	1,200	75	100	350	1,250	1,500
Mn^{++}	0.80	1,500	2,000	1,200	600	1,380	1,360	1,200	130	1,200	700	3,300	800	860	1,010	1,710	1,010	1,170
Sc^{3+}	0.81	5	24	3	3	19	25	25	<10	<10	20	10	<10	<10	10	<10	<10	<10
Cu^{+}†	0.96	20	100	35	20	400	180	50	66	100	67	400	200	150	170	<10	<10	<10
Sr^{++}	1.12	10	440	800	300	680	1,250	650	170	100	600	400	450	300	800	2,500	3,500	100
Pb^{++}	1.20	<1	8	15	20	<20	25	43	43		no data					no data		
Ba^{++}	1.34	1	300	650	830	310	1,350	2,000	2,300	10	18	60	1,100	110	120	600	1,000	800
Rb^{+}	1.47	2	45	100	200	3	90	1,000	930	<20	<20	<20	110	<20	<20	35	55	300

*Major elements in weight percent (of the elements, not the oxides), minor elements in parts per million.
† The elements Ti and Cu may also be present in part as other ions, Ti^{4+} (radius 0.68 Å) and Cu^{++} (radius 0.72 Å).
Sources of data:

Ionic radii: L. H. Ahrens, Ionic radii of the elements, *Geochim. et Cosmochim. Acta*, vol. 2, p. 168, 1952.
World averages: A. P. Vinogradov, Sredniye soderzhaniya khimicheskikh elementov v glavnykh tipakh izverzhennykh gornykh porod zemnoi kory, *Geokhimiya*, vol. 1962, pp. 560–561, 1962.
Irish lavas: E. M. Patterson, A petrochemical study of the Tertiary lavas of northeast Ireland, *Geochim. et Cosmochim. Acta*, vol. 2, p. 291, 1952.
Skaergaard rocks: L. R. Wager, and R. L. Mitchell, Distribution of trace elements during strong fractionation of a basic magma, *Geochim. et Cosmochim. Acta*, vol. 1, p. 199 and Table F, 1951.
Hawaiian lavas: L. R. Wager, and R. L. Mitchell, Trace elements in a suite of Hawaiian lavas, *Geochim. et Cosmochim. Acta*, vol. 3, p. 218, 1953.

tion. Differences in solubility of compounds, adsorption processes, and the activity of organisms all must play a role. In general these processes are not very effective in separating minor elements from major ones. With the exception of phosphates, borates, nitrates, some manganese deposits, and accumulations of copper, vanadium, and uranium with organic matter, the concentrating of rare elements by purely sedimentary processes is not notable.

The distribution of minor elements in the principal kinds of sedimentary rocks is shown in Table 20-6.

TABLE 20-6 *Distribution of minor elements in shales, sandstones, and carbonate rocks, in parts per million*

	Shales	Sand-stones	Carbo-nates		Shales	Sand-stones	Carbo-nates
*Li	66	15	5	Ge	1.6	0.8	0.2
†B	100	35	20	†As	13	1	1
F	740	270	330	†Se	0.6	0.05	0.08
†P	700	170	400	Br	4	1	6.2
Cl	180	10	150	*Rb	140	60	3
Sc	13	1	1	*Sr	300	20	610
Ti	4,600	1,500	400	Y	26	40	30
V	130	20	20	Zr	160	220	19
Cr	90	35	11	†Mo	2.6	0.2	0.4
Mn	850	X0	1,100	I	2.2	1.7	1.2
Co	19	0.3	0.1	*Ba	580	X0	10
Ni	68	2	20	Ce	59	92	11.5
Cu	45	X	4	Pb	20	7	9
Zn	95	16	20	Th	12	1.7	1.7
Ga	19	12	4	U	3.7	0.45	2.2

Notes: **1.** X means between 1 and 10; X0 means between 10 and 100.
2. Elements marked with an asterisk (*) have low ionic potentials (<2.5); those marked with a dagger (†) have high ionic potentials (>9.5). Unmarked metallic elements have ionic potentials between 2.5 and 9.5.
Source: K. K. Turekian and K. H. Wedepohl, Distribution of the elements in some major units of the earth's crust, *Geol. Soc. America Bull.*, vol. 72, pp. 175–192, 1961.

Explanation of the Distribution

One generalization about the distribution stands out immediately: most of the rarer elements show much greater enrichment in shales than in sandstones and limestones. The outstanding exceptions are strontium and manganese, which are markedly

APPENDIX

Element	Crust	Granite	Basalt	Shale	Seawater
O	46.4×10^4				857,000
Si	28.2×10^4	32.3×10^4	24.0×10^4	23.8×10^4	3.0
Al	8.2×10^4	7.7×10^4	8.8×10^4	8.0×10^4*	0.01
Fe	5.6×10^4	2.7×10^4	8.6×10^4	4.7×10^4*	0.01
Ca	4.1×10^4	1.6×10^4	6.7×10^4	2.5×10^4	400
Na	2.4×10^4	2.8×10^4	1.9×10^4	0.66×10^4	10,500
Mg	2.3×10^4	0.16×10^4	4.5×10^4	1.34×10^4	1,350
K	2.1×10^4	3.3×10^4	0.83×10^4	2.3×10^4	380
Ti	5,700	2,300	9,000	4,500	0.001
H	1,400				108,000
P	1,050	700	1,400	770	0.07
Mn	950	400	1,500	850*	0.002
F	625	850	400	500	1.3
Ba	425	600	250	580*	0.03
Sr	375	285	465	450	8.0
S	260	270	250	220	885
C	200	300	100	1,000	28
Zr	165	180	150	200	
V	135	20	250	130	0.002
Cl	130	200	60	160	19,000
Cr	100	4	200	100	0.00005
Rb	90	150	30	140*	0.12
Ni	75	0.5	150	95	0.002
Zn	70	40	100	80	0.01
Ce	67*	87*	48*	50	5.2×10^{-6}
Cu	55	10	100	57	0.003
Y	33	40	25	30	0.0003
Nd	28	35*	20*	23	9.2×10^{-6}
La	25	40	10	40	1.2×10^{-5}
Co	25	1	48	20	0.0001
Sc	22	5	38	10	0.00004
Li	20	30	10	60	0.17
N	20	20	20	60	0.5
Nb	20	20	20	20	0.00001
Ga	15	18	12	19*	0.00003
Pb	12.5	20	5	20	0.00003
B	10	15	5	100	4.6
Th	9.6	17	2.2	11	0.00005
Sm	7.3*	9.4*	5.3*	6.5	1.7×10^{-6}
Gd	7.3*	9.4*	5.3*	6.5	2.4×10^{-6}
Pr	6.5*	8.3*	4.6*	5	2.6×10^{-6}
Dy	5.2*	6.7*	3.8*	4.5	2.9×10^{-6}
Yb	3	3.8*	2.1*	3	2.0×10^{-6}

Element	Crust	Granite	Basalt	Shale	Seawater
Hf	3	4	2	6	
Cs	3	5	1	5*	0.0005
Be	2.8	5	0.5	3	6×10^{-7}
Er	2.8	3.8*	2.1*	2.5	2.4×10^{-6}
U	2.7	4.8	0.6	3.2	0.003
Br	2.5	1.3	3.6	6	65
Sn	2	3	1	6*	0.0008
As	1.8	1.5	2	6.6	0.003
Ge	1.5	1.5	1.5	2	0.00006
Mo	1.5	2	1	2	0.01
W	1.5	2	1	2	0.0001
Ho	1.5*	1.9*	1.1*	1	8.8×10^{-7}
Eu	1.2	1.5*	0.8*	1	4.6×10^{-7}
Tb	1.1*	1.5*	0.8*	0.9	
Lu	0.8*	1.1*	0.6*	0.7	4.8×10^{-7}
Tm	0.25*	0.3*	0.2*	0.25	5.2×10^{-7}
I	0.5	0.5	0.5	1	0.06
Tl	0.45	0.75	0.1	1	<0.00001
Cd	0.2	0.2	0.2	0.3	0.00011
Sb	0.2	0.2	0.2	1.5*	0.0005
Bi	0.17	0.18	0.15	0.01	0.00002
In	0.1	0.1	0.1	0.05	<0.02
Hg	0.08	0.08	0.08	0.4	0.00003
Ag	0.07	0.04	0.1	0.1	0.00004
Se	0.05	0.05	0.05	0.6	0.0004

Au, Pt metals, Re, and Te are less than 0.05 ppm in rocks and less than 0.00001 ppm in seawater. Concentrations of inert gases in seawater: He, 5×10^{-6} ppm; Ne, 0.0001 ppm; Ar, 0.6 ppm; Kr, 0.0003 ppm; Xe, 0.0001 ppm.

Sources: For crust, granite, and basalt, data chiefly from S. R. Taylor, Abundance of chemical elements in the continental crust, *Geochim. et Cosmochim. Acta*, vol. 28, pp. 1280–1281, 1964. Values marked with asterisks from K. K. Turekian and K. H. Wedepohl, Distribution of elements in some major units of the earth's crust, *Geol. Soc. America Bull.*, vol. 72, p. 186, 1964. For shale, data from A. P. Vinogradov, Sredniye soderzhaniya khimicheskikh elementov v glavnykh tipakh izverzhennykh gornykh porod zemnoi kory, *Geokhimiya*, vol. 1962, pp. 560–561; a few values (marked with asterisks) from Turekian and Wedepohl. For seawater, data from J. P. Riley and G. Skirrow (eds.), "Chemical Oceanography," vol. I, pp. 164–165, Academic Press Inc., New York, 1965 (table compiled by E. D. Goldberg).

Notes: The heading "crust" means the continental crust only, and this part of the crust is assumed to be made up of roughly equal parts of basalt and granite. "Shale" includes recent clays as well as shales, but not the fine-grained sediments of the deep sea. "Seawater" is normal surface water with a chlorinity of 19‰.

Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States

By HANSFORD T. SHACKLETTE *and* JOSEPHINE G. BOERNGEN

U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1270

An account of the concentrations of 50 chemical elements in samples of soils and other regoliths

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1984

TABLE 1.—*Average or median contents, and range in contents, reported for elements in soils and other surficial materials*

[Data are in parts per million; each average represents arithmetic mean; leaders (—) in figure columns indicate no data available. A, average; M, median. <, less than; >, greater than]

Element	This report		Rose, and others (1979) (elements useful in geochemical prospecting)		Vinogradov (1959) (presumably, averages from worldwide sampling)	Jackson (1964)	Mitchell (1964)	Brooks (1972)
	Average	Range				"Typical",[1] average, or range in values	Range in contents in Scottish surface soils	Average or range
Al	72,000	700 - <10,000			71,300	10,000 - 60,000		
As	7.2	<0.1 - 97	7.5	(M)	5			5
B	33	<20 - 300	29	(M)	10	30		10
Ba	580	10 - 5,000	300	(M)			400 - 3,000	500
Be	.92	<1 - 15	0.5 - 4		6		<5 - 5	6
Br	.85	<0.5 - 11			5			
C, total	25,000	600 - 370,000			20,000			
Ca	24,000	100 - 320,000			13,700	7,000		
Cd	75	<150 - 300						
Ce	9.1	<3 - 70	10	(M)	8		<2 - 80	10
Cl	54	1 - 2,000	6.3	(M)	200		5 - 3,000	200
Co	25	<1 - 700	15	(M)	20	20	<10 - 100	20
F	430	<10 - 3,700	300	(M)	200			
Fe	26,000	100 - >100,000	21,000	(M)	38,000	7,000 - 42,000		10,000 - 50,000
Ga	17	<5 - 70			30		15 - 70	20
Ge	1.2	<0.1 - 2.5			1			5
Hg	.09	<0.01 - 4.6	0.056	(M)				.01
I	1.2	<0.5 - 9.6						
K	15,000	50 - 63,000	11,000	(M)	13,600	400 - 28,000		
La	37	<30 - 200					<30 - 200	
Li	24	<5 - 140	6.2	(M)	30			30
Mg	9,000	50 - >100,000			6,300	<6,000		
Mn	330	<2 - 7,000	320	(M)	850		200 - 3,000	850
Mo	.97	<5 - 15	2.5	(A)	2		<1 - 5	2.5
Na	12,000	<500 - 100,000			6,300			
Nb	11	<10 - 100	15	(A)				15
Nd	46	<70 - 300						
Ni	19	<5 - 700	17	(M)	40		10 - 800	40
P	430	<20 - 6,800	300	(M)	800	500		
Pb	19	<10 - 700	17	(M)			<20 - 80	10
Rb	67	<20 - 210	33	(M)	100			
S, total	1,600	<500 - 48,000	100 - 2,000		850			
Sb	.66	<1 - 8.8	2	(A)				.5
Sc	8.9	<5 - 50			7		<3 - 15	
Se	.39	<0.1 - 4.3	0.31	(M)	.001			.5
Si	310,000	16,000 - 450,000			330,000			
Sn	1.3	<0.1 - 10	10	(A)				10
Sr	240	<5 - 3,000	67	(M)	300		60 - 700	300
Ti	2,900	70 - 20,000			4,600	1,200 - 6,000		
Th	9.4	2.2 - 31						13
U	2.7	0.29 - 11	1	(A)				1
V	80	<7 - 300	57	(M)	100		20 - 250	100
Y	25	<10 - 200			50		25 - 100	
Yb	3.1	<1 - 50						
Zn	60	<5 - 2,900	36	(M)	50			50
Zr	250	<20 - 2,000	270	(M)	300		200 - >1,000	

[1]Author's usage; generally used to indicate the most commonly occurring value.

collected by U.S. Geological Survey personnel along their routes of travel to areas of other types of field studies or within their project areas.

The locations of the routes that were sampled depended on both the network of roads that existed and the destinations of the samplers. Sampling intensity was kept at a minimum by selecting only one sampling site every 80 km (about 50 miles; selected for convenience because vehicle odometers were calibrated in miles) along the routes. The specific sampling sites were selected, insofar as possible, that had surficial materials that were very little altered from their natural condition and that supported native plants suitable for sampling. In practice, this site selection necessitated sampling away from roadcuts and fills. In some areas, only cultivated fields and plants were available for sampling.

Contamination of the sampling sites by vehicular emissions was seemingly insignificant, even though many sites were within 100 m or less of the roads. Col-

1, unlike the geometric means shown in table 2, are estimates of geochemical abundance (Miesch, 1967). Arithmetic means are always larger than corresponding geometric means (Miesch, 1967, p. B1) and are estimates of the fractional part of a single specimen that consists of the element of concern rather than of the typical concentration of the element in a suite of samples.

Concentrations of 46 elements in samples of this study are presented in table 2, which gives the determination ratios, geometric-mean concentrations and deviations, and observed ranges in concentrations. The analytical data for most elements as received from the laboratories were transformed into logarithms because of the tendency for elements in natural materials, particularly the trace elements, to have positively skewed

TABLE 2.—*Mean concentrations, deviations, and ranges of elements in samples of soils and other surficial materials in the conterminous United States*

[Means and ranges are reported in parts per million (μg/g), and means and deviations are geometric except as indicated. Ratio, number of samples in which the element was found in measurable concentrations to number of samples analyzed. <, less than; >, greater than]

Element	Conterminous United States			Western United States (west of 96th meridian)					Eastern United States (east of 96th meridian)				
	Mean	Deviation	Estimated arithmetic mean	Ratio	Mean	Deviation	Observed range	Estimated arithmetic mean	Ratio	Mean	Deviation	Observed range	Estimated arithmetic mean
Al, percent	4.7	2.48	7.2	661:770	5.8	2.00	0.5 - >10	7.4	450:477	3.3	2.87	0.7 - >10	5.7
As	5.2	2.23	7.2	728:730	5.5	1.98	<0.10 - 97	7.0	521:527	4.8	2.56	<0.1 - 73	7.4
B	26	1.97	33	906:778	23	1.99	<20 - 300	29	428:341	31	1.68	<20 - 150	38
Ba	440	2.14	580	778:778	580	1.72	70 - 5,000	670	341:341	290	2.33	10 - 1,500	420
Be	.63	2.38	.92	310:778	.68	2.30	<1 - 15	.97	169:523	.53	2.53	<1 - 7	.85
Bi	.36	2.50	.83	113:220	.52	2.74	<0.3 - 11	.86	78:128	.62	2.18	<0.5 - 5.3	.85
C, percent	1.6	2.57	2.5	250:250	1.7	2.37	0.16 - 10	2.5	162:162	1.5	2.68	0.06 - 37	2.6
Ca, percent	.92	4.00	2.4	777:777	1.8	3.05	0.06 - 32	3.3	314:314	.34	3.08	0.01 - 28	.63
Ce	63	1.78	73	81:683	63	1.71	<150 - 300	75	70:489	69	1.85	<150 - 300	76
Co	6.7	2.19	9.1	698:778	7.1	1.97	<3 - 30	9.0	403:533	5.9	2.57	<0.3 - 70	9.2
Cr	57	2.37	94	778:778	41	2.19	3 - 2,000	56	541:541	33	2.60	1 - 1,000	52
Cu	17	2.44	25	778:778	21	2.07	2 - 300	27	523:533	13	2.80	<1 - 700	22
F	210	3.34	430	598:610	280	2.32	<10 - 1,900	440	390:435	130	4.19	<10 - 3,700	360
Fe, percent	1.8	2.38	2.6	776:777	2.1	1.95	0.1 - >10	2.6	539:540	1.4	2.87	0.01 - >10	2.5
Ga	13	2.03	17	767:778	16	1.68	<5 - 70	19	431:540	9.3	2.38	<5 - 70	14
Ge	1.2	1.37	1.2	224:224	1.2	1.32	0.58 - 2.5	1.2	130:131	1.1	1.45	<0.1 - 2.0	1.2
Hg	.038	2.52	.089	729:733	.046	2.33	<0.01 - 4.6	.065	534:534	.021	2.82	0.01 - 3.4	.12
I	.75	2.63	1.2	169:246	.79	2.55	<0.5 - 9.6	1.2	90:195	.68	2.81	<0.5 - 7.0	1.2
K, percent[1]	1.5	.78	None	777:777	1.8	.71	0.19 - 6.3	None	537:537	1.2	.75	0.005 - 3.7	--
La	30	1.92	37	462:777	30	1.89	<30 - 200	37	294:516	29	1.98	<30 - 200	37
Li	20	1.85	26	731:731	22	1.58	5 - 130	25	479:527	17	2.16	<5 - 140	22
Mg, percent	.64	3.28	.90	777:778	.74	2.21	0.03 - >10	1.0	528:528	.21	5.55	0.005 - 5	.46
Mn	330	2.77	530	777:777	380	1.98	30 - 5,000	480	537:540	260	3.82	<2 - 7,000	640
Mo	.39	2.72	.97	57:774	.85	2.17	<3 - 7	1.1	32:524	.32	3.93	<3 - 15	.79
Na, percent	.39	3.27	1.2	744:744	.97	1.95	0.05 - 10	1.2	363:449	.25	4.55	<0.05 - 5	.78
Nb	9.3	1.75	11	418:771	8.7	1.82	<10 - 100	10	322:498	10	1.65	<10 - 50	12
Nd	40	1.68	46	120:538	36	1.76	<70 - 300	43	109:332	46	1.58	<70 - 300	51
Ni	13	2.31	19	747:778	15	2.10	<5 - 700	19	443:540	11	2.64	<5 - 700	18
P	260	2.67	430	524:524	320	2.33	40 - 4,500	460	380:382	200	2.95	<20 - 6,800	360
Pb	16	1.86	19	712:778	17	1.80	<10 - 700	20	422:541	14	1.95	<10 - 300	17
Rb	58	1.72	67	221:224	69	1.50	<20 - 210	74	107:131	43	1.94	<20 - 160	53
S, percent	.12	2.04	.16	34:224	.13	2.57	<0.08 - 4.8	.19	20:131	.10	1.34	<0.08 - 0.31	.11
Sb	.48	2.27	.67	35:223	.47	2.13	<1 - 2.6	.62	31:131	.32	2.38	<1 - 8.8	.76
Sc	7.5	1.82	8.9	685:778	8.2	1.74	<5 - 30	9.6	389:526	6.5	1.90	<5 - 30	8.0
Se	.26	2.46	.39	590:733	.23	2.43	<0.1 - 4.3	.34	469:534	.30	2.44	<0.1 - 3.9	.43
Si, percent[1]	31	6.46	None	250:250	30	5.70	15 - 44	None	136:136	34	6.64	1.7 - 45	--
Sn	.89	2.36	1.3	218:224	.90	2.11	<0.1 - 7.4	1.2	125:131	.86	2.81	<0.1 - 10	1.3
Sr	120	3.30	240	778:778	200	2.16	10 - 3,000	270	501:540	53	3.61	<5 - 700	120
Ti, percent	.24	1.89	.29	777:777	.22	1.78	0.05 - 2.0	.26	340:540	.28	2.00	0.007 - 1.5	.35
Th	8.6	1.53	9.4	195:195	9.1	1.49	2.4 - 31	9.8	102:102	7.7	1.58	2.2 - 23	8.6
U	2.3	1.73	2.7	224:224	2.5	1.45	0.68 - 7.9	2.7	130:130	2.1	2.12	0.29 - 11	2.7
V	58	2.25	80	778:778	70	1.93	7 - 500	88	516:541	43	2.31	<7 - 300	66
Y	21	1.78	28	739:778	22	1.66	<10 - 150	29	477:541	20	1.97	<10 - 200	25
Yb	2.6	1.79	3.1	754:784	2.6	1.63	<1 - 20	3.0	432:486	2.6	2.06	<1 - 50	3.3
Zn	48	1.93	60	766:766	55	1.79	10 - 2,100	69	473:482	40	2.11	<5 - 2,900	52
Zr	180	1.91	230	777:778	160	1.77	<20 - 1,500	190	539:541	220	2.01	<20 - 2,000	290

[1]Means are arithmetic, deviations are standard.

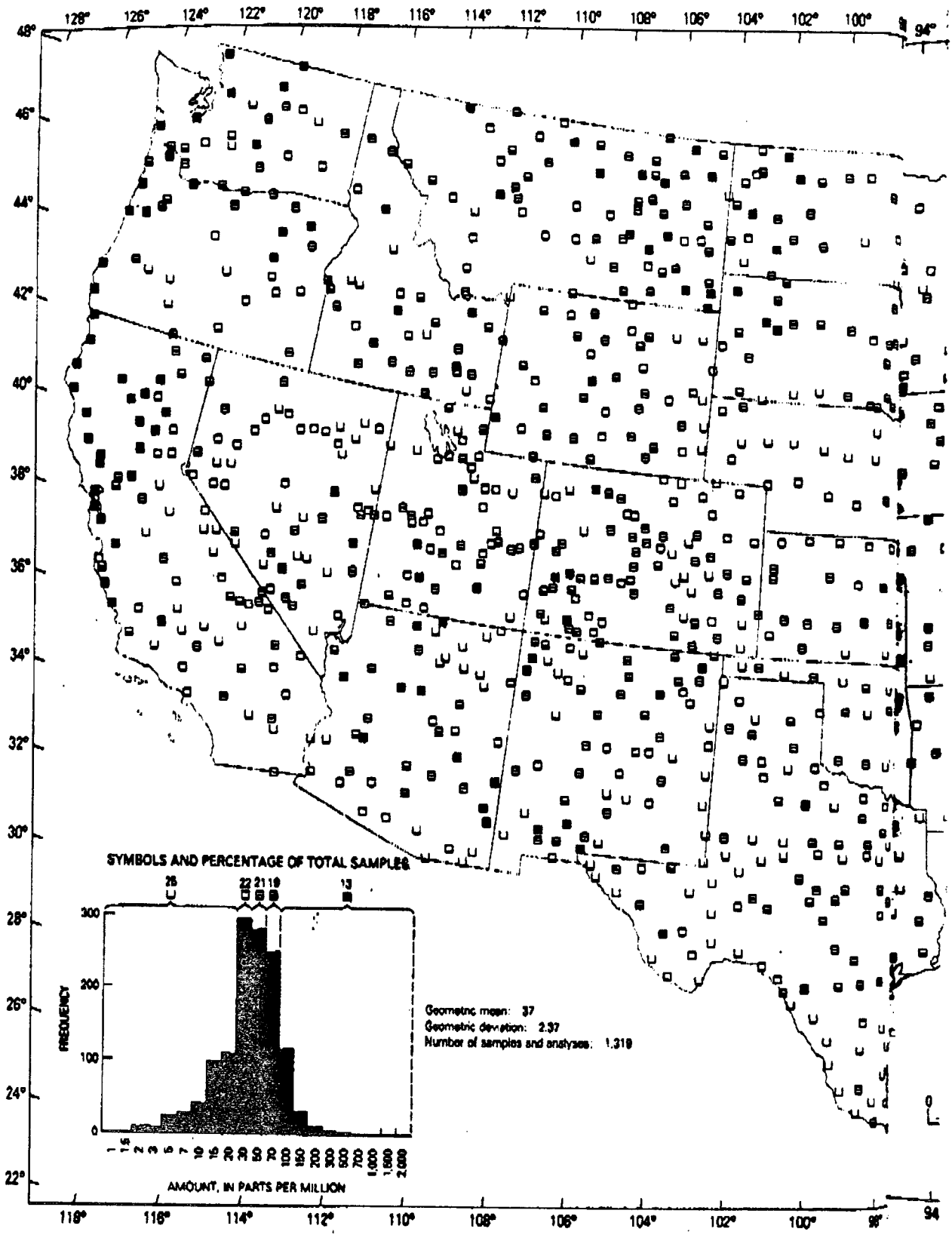


FIGURE 12.—Chromium content of surficial materials.

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-106-675-203

Mr. Russel A. Buss
Project Manager
SOUTHERN UNION COMPANY
P. O. Box 2000
Groves, Texas 77619

RE: Remediation Plan for the Southern Union Company, Lea Refinery Truck Rack Area

Dear Mr. Buss:

The Oil Conservation Division (OCD) has reviewed the closure plan document prepared by Reed and Associates of Austin, Texas, for the above site that was submitted with your letter of September 18, 1989. Our questions regarding the proposed plan were adequately answered by your October 26, 1989 letter. Therefore, we concur with your proposal and you may proceed with the remediation plan. In accordance with Southern Union's commitments in the October 26th letter, OCD must be notified of final disposal arrangements prior to excavation or removal of any soils from the site.

If you have any questions, please contact me at (505) 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Hobbs Office

Southern Union Gas

October 26, 1989

Mr. David G. Boyer
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504

RE: Response to further information requested in Certified Letter No. P-106-675-175

Dear Mr. Boyer:

The Oil Conservation Division posed five questions in your letter of October 13, 1989 regarding the Lea Refinery truck rack remediation plan.

The following are our responses:

1. Ground water report and Test Well 2.

This report is in the process of being compiled by the consultant who performed the ground water investigation. The report will be submitted to the OCD by December 1, 1989.

2. Coating installed on the truck rack pit.

Two coatings of an epoxy copolymer (Vepok VM 500-G) were sprayed onto the concrete surfaces of the truck rack pit. According to Mr. Bill Champlin, the Navajo manager for the Lea Refinery, the first coat was applied in June and the second in August, 1989. The concrete surface was sandblasted prior to coating. Both the bottom and sidewalls were coated. A Vepok specification sheet is attached for your reference.

K & S Sandblasting of Hobbs, New Mexico, prepared the pit surfaces and applied the copolymer coating at the direction of the Southern Union Company. Navajo personnel inspected and approved the work.

P.O. BOX 2000, GROVES, TEXAS 77619 (409) 962-8888

3. Installation of berms and barriers, pit inspeciton, truck wash usage.

The Southern Union Company will install the soil berm around the truck wash pit and raise the elevation of the concrete sidewalls to prevent rainwater runoff from draining into the pit. The truck wash is not currently in use and these improvements will keep the amount of fluid in the pit to a minimum. In anticipation of the future reopening of the refinery by Navajo, Southern Union will also install barriers to prevent the cleaning of transport vehicles directly into the pit. All of the above work will be accomplished when the vapor extraction system is installed.

Once this initial construction is completed, it will be the responsibility of Navajo to ensure that fulid levels in the pit are kept to a minimum when truck rack usage is resumed. It will also be Navajo's responsibility to add separator capacity if necessary and to inspect the pit lining on a semi-annual basis.

4. Disposition of removed soil.

Southern Union Company will remove the stained soil from around the truck rack pit area along with petroleum contaminated soils from the overflow pit. The disposal will be handled by Chemical Waste Management, Inc. The disposal site may be a Texas Department of Health approved landfill in Abilene or Ft. Worth, Texas, if no appropriate sites can be located closer to the Lea Refinery site. Chemical Waste Management is currently finalizing the arrangements for disposal. OCD will be notified of the disposal arrangements prior to the excavation or removal of any soils from the site. Scheduling of soil disposal is contingent upon the initial approval of the OCD for the proposed remediation at the truck rack site.

5. Vapor extraction system operation, reporting requirements, proposed cleanup standard.

The Southern Union Company will install the vapor extraction system. Construction supervision, system adjustment and sampling will be performed by Reed and Associates, Inc. Letter reports of quarterly vapor sampling will be provided for the first year by Reed and Associates to Southern Union Company. These reports will be semi-annual following the first year of operation. Southern Union will forward the results of these reports to the OCD.

Day to day observation of the vapor extraction operations will be handled by Navajo personnel. Preventative maintenance and repair will be handled by Reed and Associates during sampling visits, or between sampling events as necessary. Emergency repairs may be made by Navajo after consultation with Reed and Associates. These procedures have been discussed with Mr. Bill Champlin of Navajo, and Navajo personnel will be briefed on system operation at the time of installation.

The cleanup standard for the vapor extraction system has been proposed at the background level for total petroleum hydrocarbons. The total petroleum hydrocarbon sampling includes the entire range of volatile compounds. This background level will be determined by sampling ambient air total petroleum hydrocarbon levels at the Lea refinery in the current non-operating environment. Ambient air sampling will be done upwind of the truck rack location. Should the refinery resume operations prior to the completion of vapor extraction efforts, the cleanup standard will be adjusted to ambient air total hydrocarbon levels present at that time.

As described in the truck rack remediation plan, the vapor extraction system will remain in operation until every well meets the cleanup standard. When routine sampling indicates that the cleanup standard has been met by the vapor extraction system as a whole, the system will be shutdown for a minimum of one month and then resampled. Should background total petroleum hydrocarbon levels be exceeded after the shutdown period, the system will be returned to operation until ambient air levels can be achieved after shutdown.

If you have any further questions, please call.

Very truly yours,

Russel A. Buss

Russel A. Buss
Project Manager

p.s. In reference to your letter of October 13, 1989--Certified Letter No. P-106-675-127, Southern Union Company will provide specific information as to the disposition of the material when cleanup occurs, as per item 4 above.

RAB:kh

attachments

c: Steve Reed
Allan Schmidt

TECHNICAL DATA SHEET - VM 500-G

PRODUCT NAME	VEPOK 500 Gray (STD)
PRODUCT TYPE	Two-pack epoxy copolymer system.
BASIC PROPERTIES	Oil absorbent coating for oil storage facilities and many other problem areas where oil contamination is present.
COLOR	Gray
APPEARANCE (when dry)	Smooth, semi-matte.
PERMANENT VOLUME SOLIDS	65%
DRY FILM THICKNESS	14 mils.
WET FILM THICKNESS	22 mils.
THEORETICAL COVERAGE	60 square feet per gallon at 14 mils DFT.
METHOD OF APPLICATION	Airless spray or brush.
DRYING TIME (70° F.)	Touch Dry: 4 hours. Full Cure: 7 - 10 days (maximum).
RECOATING TIME	1 - 3 days.
POT LIFE	1 hour at 70° F.
RECOMMENDED THINNER	Do not thin.
RECOMMENDED CLEANER	VEPOK #2 or VEPOK #9 Cleaners.
PACKAGES	5 gallon two part units (spray). 1 gallon two part units (brush).
SHELF LIFE	6 months or more depending on temperature and handling.
STORAGE TEMPERATURE	Store in cool place out of direct sunlight.
HEALTH INFORMATION	Consult the Material Safety Data Sheet available on this product prior to application.

SURFACE PREPARATION

All loose rust and flaking paint should be removed by water jet blasting. Excess water should be removed by blowing with compressed air. The resultant surface should be sound and free from dust and pools of water. As much oil and grease as possible should be removed during this operation, assisted by mechanical scraping where necessary.

APPLICATION CONDITIONS

Temperature: 45° to 80° F.

Humidity: No restriction - but steel substrate temperature should be at least 5° F. above dewpoint so that there is no visible condensation on the steel. The coating should not be exposed to water, chemicals, or mechanical stress before it is cured.

APPLICATION PROCESS

Mixing: Stir base component thoroughly, then add hardener component and continue stirring until product is completely homogeneous. Mechanical mixing is preferred.

Mixing Ratio: 4 parts base to 1 part hardener by volume.

Pot Life: 1 hour at 70° F.

Method: Airless Spray
Tip Size: .018 to .025
Pressure: 2800 psi at tip (minimum)
Pump Size: 45:1 Preferred (30:1 minimum)

CAUTION: VEPOK 500 Gray is not compatible with other proprietary epoxy coatings in the liquid state. It is essential therefore, in order to avoid blockages in tips and lines, to insure that all equipment is thoroughly cleaned prior to use by flushing complete system with VEPOK #9 Cleaner.

Wet Film: 22 mils wet film thickness to achieve 14 mils dry film.

CLEANING ADVICE

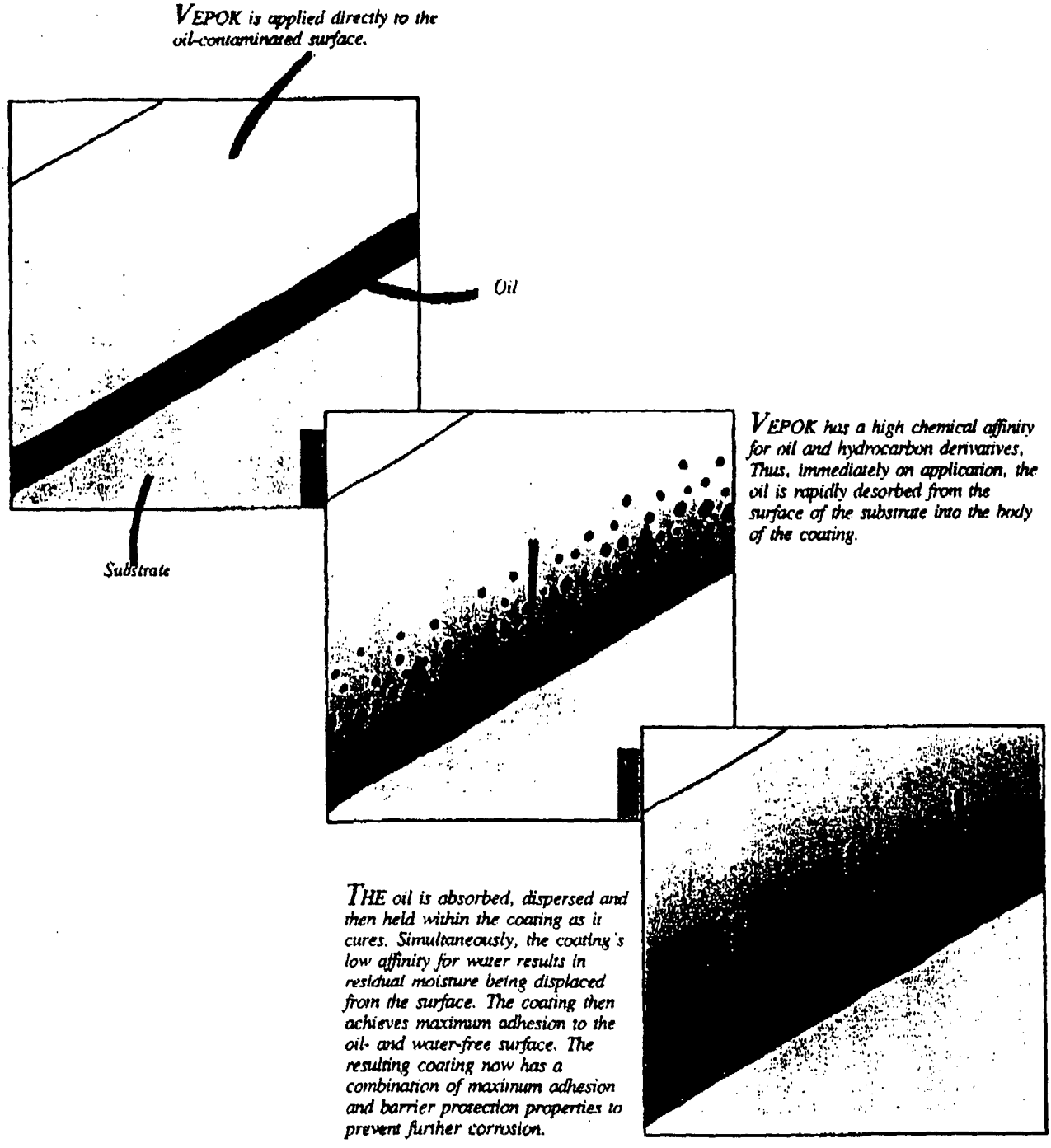
Solvent/Cleaner: VEPOK #2 or VEPOK #9

Clean all equipment immediately after use with VEPOK #2 (Medium Fast) or VEPOK #9 (Fast) solvents. Insure all lines tips, etc. are thoroughly flushed out. It is not sufficient to leave the equipment filled with solvent without cleaning.

FOR MORE INFORMATION: **CONTACT:** Valspar Mebon
P.O. Box 3431
Beaumont, Texas 77704-3431

CALL: 1-800-654-6733
1-800-445-0236 (Texas Only)

OIL-ABSORBENT COATING TECHNOLOGY



A BREAKTHROUGH IN TECHNOLOGY

THE severe limitation of conventional coatings is their reliance on costly, meticulous surface preparation in order to achieve their designed performance. All major oil companies are only too aware of this limitation. As a major user of coatings and desiring new technology to insure compliance to safety regulations plus long service life for each application of a coating system, oil companies demanded improvement in available systems.

Valspar Corporation has recognized this need and joined forces with Mehon Paints (a subsidiary of BP Chemicals Limited) to bring breakthrough technology to the American user. This breakthrough in coating technology came in the late 1970's and was followed by extensive field tests in a variety of industrial locations worldwide. By the early 1980's, the success of these tests had confirmed the outstanding performance of VEPOK for the maintenance of steel structures. VEPOK technology is now accelerating the additional development of a new generation of tolerant coatings for the future.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

October 13, 1989

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

CERTIFIED MAIL
RETURN RECEIPT NO. P-106-675-175

Mr. Russel A. Buss
Project Manager
SOUTHERN UNION COMPANY
P. O. Box 2000
Groves, Texas 77619

RE: Site Investigation and Remediation Plan for the Southern Union Company, Lea Refinery, Truck Rack Area.

Dear Mr. Buss:

The Oil Conservation Division (OCD) has received the closure plan document (enclosed with your September 18, 1989), that was prepared by Reed and Associates, Inc. of Midland, Texas.

To complete review of the proposed remediation action, I am requesting that you provide us with the additional information listed below:

1. p. 12. Trace amounts of volatile hydrocarbons were detected in Test Well 2 (TW-2), now plugged. Provide us with the report that describes the test well program and the results of the sampling of those wells.

2. p. 15. The report states that the concrete pit was recently sprayed with a coating to aid in the reduction of fluid leakage from the pit. Provide us with information on when this was done, the type of material and application procedure. Were the bottom and all walls sprayed? Did Southern Union (SU) or Navajo Refinery perform the work?

3. p. 15. Additional berming and barriers are proposed to be installed to eliminate surface drainage to the pit and prevent cleaning of transport vehicles directly into the pit. Fluid levels are proposed to be kept to a minimum, and a higher capacity separator may be installed to reduce fluid holding time. Pit walls and the lining are proposed to be visually inspected for cracks on a semi-annual basis.

   Who is responsible for performing this work (SU or Navajo)? When will it be done, and will SU or Navajo be responsible for monitoring fluid levels and keeping visual inspection records? Is the truck wash rack in use currently and, if so, who is it used by?

4. p. 16. What will be the final disposition of the removed soil if it is not combined with soil from the pond closure? Since OCD has jurisdiction over solid wastes at oil refineries, you will be required to provide specifics of the proposal prior to removal from the site including information as to the disposition of the material including when cleanup will occur, who will perform it and who will receive the material for disposal.

5. p. 17. What is the total petroleum hydrocarbon vapor background level proposed and how was it determined? Who will be responsible for the operation of the VES system? What reporting to OCD is proposed to keep us current on the status of the system and progress of the cleanup?

If you have any questions about this letter or the information requested, please contact me at (505) 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Hobbs Office

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

October 13, 1989

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

CERTIFIED MAIL
RETURN RECEIPT NO. P-106-675-127

Mr. Russel A. Buss
Project Manager
SOUTHERN UNION COMPANY
P. O. Box 2000
Groves, Texas 77619

RE: Closure Plan for the Southern Union Company, Lea Refinery Overflow Pond.

Dear Mr. Buss:

The Oil Conservation Division (OCD) has reviewed the closure plan document dated August 14, 1989, prepared by Read and Associates, Inc. of Midland, Texas and concur with the proposed remediation action.

Since under a new state law, OCD has jurisdiction over solid waste disposal from refineries and other and gas production and processing facilities, you will be required to provide us prior to disposal with specific information as to the disposition of the material including when cleanup will occur, who will perform it and who will receive the material for disposal. Although E.P. toxicity tests show chromium at less than 0.010 mg/l, five samples show total metal chrome above 5.0 ug/g. Therefore, this material should go to a facility capable of receiving such waste through as non-hazardous waste.

If you have any questions, please contact me at (505) 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Hobbs Office

Southern Union Company
1800 Renaissance Tower
Dallas, Texas 75270
(214) 748-8511

September 18, 1989

Oil Conservation Division of the
New Mexico State Energy Minerals Dept.
Mr. Roger Anderson
3110 Old Santa Fe Trail
Room 206
Santa Fe, New Mexico 87501

Re: Closure Plan for the Truck Rack area at Lea Refinery,
Lovington, New Mexico

Dear Roger,

Enclosed are two copies of a site investigation and a remediation plan developed by Southern Union Company and its consultant, Reed and Associates, for the truck rack area at Lea Refinery which is near Lovington, New Mexico. The remediation plan calls for surface removal of petroleum waste associated with the truck rack area and subsurface removal using a vapor recovery plan used to recover petroleum waste in the subsurface area below the truck rack separator.

After you have received this report I will be calling you to discuss this plan. Should you require further explanation, Reed and Associates and myself will be available to visit Santa Fe.

Very truly yours,

Russel A. Buss

Russel A. Buss
Project Manager

RAB:kh

Enclosure

p.s. If you have any questions, please contact me at:
Southern Union Company (409) 962-8888
P.O. Box 2000
Groves, Texas 77619

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 23, 1989

Certified Mail
Return Receipt No. P-106 675 060

Mr. David Griffin, Superintendent
Environmental Affairs
Navajo Refining Company
P.O. Drawer 159
Artesia, NM 88201

RE: Discharge Plan GW-14
Lovington Refinery
Lea County, New Mexico.

Dear Mr. Griffin:

The Oil Conservation Division (OCD) has been informed of your recent purchase of the Southern Union Refining Company's Lovington Refinery located in Section 36, Township 16 South, Range 36 East, NMPM, Lea County, New Mexico. This refinery was operating and discharging effluent under an approved discharge plan (GW-14). The discharge plan was approved by the Director of the Oil Conservation Division on April 25, 1984, and was approved for a period of five (5) years. The approval to discharge any effluent or leachate expired on April 25, 1989.

Pursuant to Water Quality Control Commission Regulation (WQCC) 3-104, "no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into groundwater unless he is discharging pursuant to a discharge plan approved by the director." Since the discharge plan for the Lovington Refinery has expired and there are no extensions to the term allowable by law or regulation. If the Lovington Refinery was reactivated and began discharging effluent, it would be in violation of the New Mexico Water Quality Act, Section 74-6-5, NMSA 1978, and Water Quality Control Commission Regulations.

If you wish to reactivate the facility and resume discharging effluent, you must apply for renewal of the discharge plan. The OCD is reviewing discharge plan submittals carefully and the review time can often extend for several months. The discharge plan renewal must be approved by the Director prior to start-up.

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

Sincerely,

Roger C. Anderson
Environmental Engineer

RCA/ag

OIL CONSERVATION DIVISION

SANTA FE, NEW MEXICO

Sent
1630
5/25/89

TELECOPIER TRANSMITTAL SHEET

DATE: 5/22/89

TO: DAVID GRIFFIN NAVAJO

FROM: ROGER ANDERSON

PHONE NUMBER: 505-827-5885

NUMBER OF PAGES (INCLUDING TRANSMITTAL SHEET): 3

IF YOU HAVE ANY PROBLEMS WITH THE TRANSMISSION, PLEASE CALL (505) 827-5806.

FAX NUMBER: (505) 827-5741

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

M E M O R A N D U M

TO: JOHN GOULD
EID Hazardous Waste Section

FROM: DAVID G. Boyer DGB
Oil Conservation Division, Environmental Bureau Chief

SUBJECT: DUMPING AT SOUTHERN UNION REFINERY - LOVINGTON

DATE: FEBRUARY 9, 1989

On November 3, 1988, The Oil Conservation Division (OCD) received a copy of a USEPA "Complaint Questionnaire/Investigation Report" and a "Record of Communication" alleging illegal dumping of hazardous waste at the Southern Union Refinery facility located on the Lovington Highway between Hobbs, New Mexico, and Lovington, New Mexico. Copies of these are enclosed.

An inspection of the Refinery was conducted on November 30, 1988 by me and Roger Anderson, OCD Environmental Engineer. There were no stained areas observed within the fenced boundaries of the refinery. We were unable to locate any evidence of recent spills, illegal dumping or clean-up activity.

The only pit on the refinery property was fiberglass lined emergency overflow pit. This pit was closed and reclaimed under OCD supervision in early 1988. No other pits were seen during the inspection. The bermed areas for the storage tanks were inspected and showed no evidence fluids had been placed or stored in them.

An interview was conducted with Mr. Bill Champlin, Refinery Manager, who maintains his office on refinery property. He stated the only activity that is conducted at the facility is routine maintenance to prevent deterioration of the process systems. Also, another refiner is utilizing some tanks on the property for crude storage prior to pipeline transmission.

STATE OF NEW MEXICO
HEALTH ENVIRONMENT department

MEMORANDUM

DATE: 11/1/88

TO: Dave Boyer

FROM: John Gould - Haz. Waste/EID

SUBJECT: Dumping a S. Union - Lovington

Dave,

Attached is info on the dumping incident we discussed this morning.

Thanks

JG

Rec'd OCD 11/3/88

ADM 031A Issued 6/78

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202

October 11, 1988

Mr. Boyd Hamilton, Program Manager
Hazardous Waste Section
Hazardous Waste Bureau
Environmental Improvement Division
The Health & Environment Department
Santa Fe, New Mexico 87503

Dear Mr. Hamilton:

Enclosed are copies of a "Complaint Questionnaire/Investigation Report" and a "Record of Communication" used to record a phone complaint received by our staff concerning alleged hazardous waste activities. This complaint was received from an anonymous caller on September 27, 1988, in reference to Southern Union Gas Company-Livingston Refinery located near Hobbs, New Mexico. I would appreciate you investigating this matter.

Please respond to this request within thirty (30) days of your receipt of this letter regarding any actions taken or proposed. If you have any questions, please contact Mickey Flowers of my staff at (214) 655-6765.

Sincerely yours,

Guanita Reiter
Chief
Oversight Section (6H-HO)

Enclosure

Complaint Questionnaire/Investigation Report

Date Received: 9-27-88 Time Received: _____

Person Taking Complaint: Wesley Hatcher

Complainant: Anonymous - for a relative

Address: _____

City: _____

Telephone: _____

Location/Source of Complaint: Southern Union Gas Co

Address: Livingston Refinery - located

City: north of Hobbs on Lovington Hwy. N.M.

Parties Involved: facility has been inactive for 4 years

Description of Wastes: smelly stained spots at various locations over a 2 month period.

Description of Activity: Recently 2 unmarked trucks dumped material into a pit. The relative was told to forget what he had seen when he asked questions.

Date of Activity: _____

Affected Parties/Possible Health Effects: _____

Has Complainant Previously Contacted the State? : _____

If so, when? _____

State's Comments: _____

Riley Anonymous

RECORD OF COMMUNICATION

☒ PHONE CALL ☐ DISCUSSION ☒ FIELD TRIP ☐ CONFERENCE
☐ OTHER (SPECIFY)
(Record of item checked above)

TO: Presley Hatch (Facility Superfund Site Assessment Section) BHatch

FROM: Anonymous Caller New Mexico

DATE 9-27-88

TIME

SUBJECT

Southern Union Gas Company - Livingston Refinery

SUMMARY OF COMMUNICATION

- The person was calling for a relative who was doing contract labor constructing fencing at the subject facility.
- The caller indicated that the facility has been inactive for about 4 years.
- For a 2 month period, the caller's relative had observed freshly stained spots on the ground at various locations. One night, the caller's relative observed 2 unmarked tank trucks enter the facility and apparently dump material into a pit. ~~The~~ The caller's relative mentioned the observations to ~~the~~ a person involved with managing or securing the site. The caller's relative

CONCLUSIONS, ACTION TAKEN OR REQUIRED

- Southern Union Gas Co Refinery (NMD980864300) and Southern Union Truck Facility (NMD980749360) are listed on CERCLIS and have CERCLIS Files.
- Southern Union Gas Co. Refinery (NMT360010367) is listed on HWDMS as having notified as an active small quantity generator on 8-18-80.
- ACTION - Refer to RCRA Oversight Section for investigation

INFORMATION COPIES TO: KEITER/FLOWERS (6H-HO) FASSETT (6H-ES)

NMD980864300
NMD980749360

R6-123 (2-84)

was told not to say anything more and to forget having seen anything.

- The facility was identified as being located north of Hobbs on the Lovington highway about halfway to Lovington.

SOUTHERN UNION REFINING COMPANY
P.O. Box 980 / [illegible] Hobbs, New Mexico 88241-0980 / Telephone (505) [illegible] 396-5821

October 6, 1988

Mr. Roger C. Anderson
Environmental Engineer
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Re: Discussions with William S. Champlin, Bob Hales and E. N. Dubay
Environmental study by PILKO

Dear Mr. Anderson:

We certainly did appreciate talking with you about the environmental conditions at our refinery and the totally unfounded concerns mentioned by Mr. Cecil Owens.

Southern Union Refining Company has always made every effort to work with the OCD and will continue to do so in the future.

I have enclosed a copy of the Pilko & Associates, Inc. draft report for your review. PILKO did an extensive on-site study of the grounds and facilities. This report, along with your February 4, 1987 recommendations, has served as a guideline for our remedial actions.

During our conversation today we stated the following actions have been taken to date (based on PILKO's recommendations). We have previously taken action based on your inspection in January 1987.

(1) PCB's - Samples of oil were taken from the 38 transformers on site and sent to an independent lab in Lubbock, Texas for PCB analysis. Only three (3) of the 38 transformers showed borderline contamination--the three transformers are currently not in service and are secured safely on pallets. We will also put non-PCB stickers on all the transformers that are in compliance with the regulations.

(2) The drums of chemicals and additives have all been moved to a central location and are sitting on pallets. We are also working with the various chemical companies to secure necessary safety data sheets. The drums have been numbered and contents identified.

Thank you again for working with us, and I assure you we will continue to keep the OCD apprised of our activities.

Yours truly,

William S. Champlin

William S. Champlin

WSC/arw

Enclosures

CC: E. N. Dubay
Bob Hales
Southern Union Company
Dallas, Texas

DRAFT

PREDISPOSITION ENVIRONMENTAL SITE ASSESSMENT

LOVINGTON, NEW MEXICO REFINERY
MIDLAND, TEXAS TERMINAL

PHASE 1: INITIAL SITE INVESTIGATION

Prepared For

SOUTHERN UNION COMPANY

By PILKO & ASSOCIATES, INC.

Clifton C. Twaddle

Jill Barson Gilbert

Arthur E. Penny

August, 1988
(2047.288)

DRAFT

TABLE OF CONTENTS

DRAFT

A.

INTRODUCTION AND SUMMARY

The Southern Union Refinery is located in the southeast corner of New Mexico, approximately five miles south of Lovington on State Highway 18. This 37,000-barrel/day facility was built in 1974 and was designed as a straight-run refinery. A depropanizer, a vacuum distillation unit, and a desulfurization unit were added in the early 1980s. The refinery remained in operation for approximately ten years and was mothballed in August, 1984. Except for two large crude tanks which are in use by Navajo, the facility has been idle since that date. A portion of the crude oil supplies was provided by pipeline from the ARCO tank farm at Midland, Texas where Southern Union owns three crude tanks and a pipeline pump station. These facilities were also decommissioned, although ARCO has leased and is currently using one of the tanks.

Southern Union is evaluating the potential sale of the Lovington Refinery and the Midland facilities to Navajo Refining Company/Holly Corporation. The basis of that sale will be for Southern Union to indemnify Navajo/Holly from liability for any existing environmental contamination. The objective of this environmental assessment is to identify potential environmental liabilities and to establish an environmental baseline. Phase I of this assessment, the initial site investigation, was performed on July 28, 1988. Pilko & Associates personnel were accompanied by Southern Union Refinery personnel Bill Champlin, Jim Kimbrough, and Sonny Blackwelder at Lovington and by Southern Union Risk Administration Manager Bob Hales at Midland.

Soil and water quality issues at Southern Union are regulated by the Oil Conservation Division of the State Energy and Minerals Department. Interviews were conducted with Mr. Roger Anderson (staff environmental engineer) in Santa Fe and with Mr. Eddie Seay in the district office at Hobbs.

The initial site inspection revealed no apparent environmental problems of major magnitude. There remains a low probability of asbestos, a moderate probability of PCBs, and a number of areas which appear to have minor soil contamination. Refinery construction and operations appear to have been conducted in an environmentally sound manner. The facility was properly mothballed and has been well maintained since that date. Relationships with State and Federal regulatory agencies appear to have been conducted in a reasonable fashion and agency personnel indicated no outstanding problems.

Pilko & Associates recommends Phase II efforts to further define potential problem areas and to develop an environmental baseline. The Phase II Action Plan includes the following key elements:

DRAFT

- o Asbestos Survey
- o Testing of transformer fluids for PCBs
- o Surface and Subsurface Soil Testing & Analysis
- o Soil Borings
- o Chemical Inventory and Characterization

B.

SITE HISTORY

The Southern Union Refinery is located in the southeast corner of New Mexico, approximately five miles south of Lovington on State Highway 18. The 600-acre site is located in a sparsely populated area. Topography is generally flat, with the refinery located on a plateau approximately 3,800 feet above Mean Sea Level (MSL). This area of New Mexico is characterized by oil field operations. General site geology data indicate that the facility is underlain by Caliche to a depth of 80 feet. The base of the water-bearing aquifer occurs at a depth of 255 feet below several layers of clay and sand, with static water at 60 to 66 feet below the ground surface. Detailed hydrogeological data were not available.

Refinery personnel indicate that the site was used exclusively for grazing until oil production commenced in the late 1940s. The five onsite producing wells were first drilled by Skelly, were conveyed in the merger with Getty, and were subsequently transferred to Texaco. In 1971 the City of Lovington purchased this site and surrounding properties to form an industrial park. Tracts immediately adjacent to the refinery remain in grazing and oil production uses. Nearby tracts are used for pipeline pump stations, gas plants, and the City landfill.

Famariss built the operating section of the refinery in 1973/1974 using Foster Wheeler as the contractor. As part of the original project, Southern Union built and operated an adjacent products storage and shipping terminal. Operations commenced in June, 1974. In 1975 Southern Union purchased all of Famariss' interests and became the sole owner.

The Lovington facility was originally constructed as a straight-run refinery. Subsequent expansions included a vacuum distillation unit and a depropanizer in 1980, and a desulfurization unit in 1982. Products included LPG's, naphtha, JP4, Jet-A, kerosene, diesel, light gas oil, heavy gas oil, and residual fuel oil.

Refinery operations were terminated in 1984. Vessels and lines were drained. Tank bottoms were collected, blended with crude and sold to Fina. Remaining bottoms were removed by reclaimers. Vessels and equipment were blanketed with natural gas. The overflow pond was closed under approval of the State Oil Conservation Division (OCD).

C.

PHASE I FINDINGS

The Pilko & Associates, Inc. initial site investigation included an inspection of facilities at the Lovington and Midland sites and a review of documentation regarding environmental permits, policies, and practices as well as discussions with both Southern Union staff and regulatory agency personnel. Collectively, these investigations provide an overview of the refinery's operating standards and are indicative of the facility's environmental exposure.

LOVINGTON REFINERY

Construction

The Southern Union refinery is of a relatively recent vintage and reflects the use of environmentally sound construction practices. Most of the operating areas are concrete paved with appropriate slope to direct flows toward the process sewer. Areas where substantial vessel and line drainage is anticipated are generally curbed. With the necessary exceptions of incoming crude pipe lines, outgoing product pipe lines and the process sewer, all piping is run in elevated racks rather than below grade. Crude and product tankage at the refinery is all welded construction with steel bottoms. Refinery staff reported that there are no underground tanks on the site. The only inground tanks evident are the concrete API separator sumps. OSHA began regulating workplace exposure to asbestos in 1972, reducing (but not eliminating) the risk of asbestos use on the site. Southern Union pipelines, installed in the early 1980s, are coated and cathodically protected. Rail loading racks have curbs and drain pans. Truck loading racks are curbed and higher volatiles (kerosene, naphtha, diesel) were bottom loaded. Sanitary wastewater was handled by six onsite septic tanks.

Operations

The refinery's operation was conducted in an era of sharply escalating oil prices, so conservation and product loss prevention was encouraged by both environmental and economic incentives. Tankage was equipped with remote high-level alarms and gauges to help prevent overfilling, and the tanks were manually strapped once each shift to confirm the gauge readings. Tank dike gate valves were normally locked closed to prevent spills from escaping the diked area. Site management reports no tank overfills and no major spills. Drainage from tank bottoms throughout the Lovington site was hard-piped directly to stock tanks to eliminate spillage prior to removal by vacuum trucks. Reusable bottoms were removed by reclaimers as

feedstock. No gasoline was produced so lead contamination is not a concern. Tank and vessel bottoms were generally believed not to contain RCRA - listed hazardous wastes. Cooling water treatment utilized phosphates in 1981 and subsequent years, although the more hazardous chromates were used prior to that date. Spent catalyst was recycled back to UOP and regenerated rather than disposed.

Permits

An onsite review of permit documents and conversations with State OCD officials indicate that Southern Union was cognizant of and in substantial compliance with State and Federal environmental requirements. Document preparation exhibited an above-average level of quality. Documents reviewed included the following:

- PSD Application for 1981 expansion (1979)
- PSD Permit #NM350 (1981)
- State EID Air Permits #273, 304, 404
- State Water Quality Control Commission:
  10/81 Wastewater Discharge Plan
- EPA Hazardous Waste ID #NMT360010367
  10/18/80 EPA Notification Form
  10/31/82 EPA Generator Survey

Southern Union in 1979 submitted a Prevention of Significant Deterioration (PSD) permit application for a 1981 expansion. Plans included an increased volume of sour crude oil processing and production of motor gasoline. The projected increases of sulfur dioxide, nitrogen oxides and particulates triggered the PSD permit requirement. The permit was issued in 1981, although substantial portions of the expansion were never built.

New Mexico EID air permit No. 273 was issued for the Vacuum Distillation Unit. Permit Nos. 304 and 404 were issued for other expansion items. The refinery was not required to hold a wastewater discharge permit, as wastewater was ultimately disposed of by commercial underground injection. Southern Union in 1980 protectively filed under the Resource Conservation and Recovery Act (RCRA) as a hazardous waste generator. The facility maintained an EPA identification number.

Safety

Safety issues are a fairly reliable indicator of management attitudes regarding workplace conditions and operating procedures. Pilko & Associates' assessment included a review of onsite safety manuals and interviews with facility management. Documentation included fairly

thorough emergency procedures for disaster, fire, accident, the existence of a Safe Operations Committee, and requirements for regularly scheduled employee safety meetings. Accident report forms were not inspected. However, management indicated that the refinery had an excellent safety record with no serious accidents. Of the recordable incidents, most were back injuries and all workmen's compensation claims have reportedly been settled.

Environmental

Although the Southern Union refinery is registered as a hazardous waste transporter, site management indicated that no hazardous wastes have ever been shipped from the facility. Tank and vessel bottoms were generally collected and removed by reclaimers. Process wastewater and surface runoff from the cement pads in the process area were collected in a sewer system which carried the wastewater to an oil-water separator (API). The product loading area has a similar arrangement feeding a second API separator. The petroleum component from the two API separators was pumped to a slop oil tank for recycling. The water from the separators was pumped to a skimmer tank and then to two independently operated (Araho, Inc.) Class II deepwells a mile south of the refinery. The State has indicated that Araho must upgrade these wells before they can again accept waste flows from the refinery. Emergency overflow from both API separators originally flowed into the uncontrolled stormwater runoff ditches. Around 1980, overflow from the process area separator was redirected through an open unpaved ditch to a fiberglass lined holding pond. A pumpback line was installed to return this effluent from the pond back into the skimmer tank.

Catalysts used in the refinery include cobalt, nickel and molybdenum. These catalysts remain in the process units, and should not pose an environmental problem if, when removed, the materials are handled following the suppliers' recommendations.

Post-Shutdown

Southern Union personnel appear to have done an above-average job of mothballing the Lovington refinery. They report that all tanks except for the API separator sumps, various additive and chemical tanks, and the two crude tanks in use by Navajo were emptied and cleaned. All process vessels and lines were drained and natural gas blanketed. A closure plan for the lined overflow pond was approved by the State OCD and completed in 1988. Closure included stabilization and backfill with black dirt, followed by grass seeding for cover. The site and equipment appear to be in good condition. Insulation is still relatively intact, rust is minimal and ongoing weed control appears to be effective. Housekeeping was found to be very good.

MIDLAND TERMINAL

Southern Union owns three 1928 vintage 80,000-barrel tanks in the ARCO tank farm located south of Interstate 80, at the eastern edge of Midland, Texas. These tanks are of riveted construction. They were reportedly modified about 1980 with the addition of internal floating roofs, automatic level gauges and bottom linings, and all shell leaks were sealed. Refinery staff indicate that these repairs and upgrades were completed before Southern Union put the tanks into service. Concurrent with the 1979 acquisition of these tanks, Southern Union leased from ARCO the three tracts of land under the tanks and a fourth tract upon which the Mid-Lea pipeline station is located. The Mid-Lea station includes a metering manifold, meter prover, pig launcher, and main line pump. Drainage from the meter prover and the pig trap are piped underground to a small sump and recovered back to tankage. Southern Union also owns four booster pumps which are located in the ARCO tank farm but outside the pump station area. Stormwater runoff and spillage around the three tanks is contained within the tank dikes. Runoff is uncontrolled in the pump station area and at the four off-station booster pumps.

At shutdown, the meters, prover, and pumps were preserved with crude oil. The pipeline station sump remains full. All three tanks were cleaned. Tanks 5606 and 5608 remain empty. Tank 5611 was leased back to ARCO in 1985 and is currently in service.

D.

POTENTIAL AREAS OF CONCERN

LOVINGTON REFINERY

PCB

PCB regulations were not promulgated until 1978, and no field testing has been performed at either the Lovington refinery or the Midland terminal. Pilko & Associates recommends sampling of transformer oil to verify whether PCBs are present.

Overflow Pond

In 1987 the OCD reported that the fiberglass liner on this pond was cracked and ineffective, and raised questions about the condition of the soil beneath the liner. Closure of this lined pond was subsequently conducted under the approval of the OCD. Water and oil were pumped from the pond by a local water hauler. Ultimate disposition is unknown. The pond's bottom sludge was mixed with fill dirt and the liner left intact. The site was capped with black dirt and seeded with grass for cover. Because OCD approved and observed the closure, no significant problems are anticipated. However, Pilko & Associates recommends a minimal analysis which should include one or more soil samples in the area of the inflow channel and one or more perimeter samples around the pond.

Asbestos

OSHA began regulating workplace exposure to asbestos in 1972 and use of asbestos on building structural members was prohibited in 1973. However, asbestos use in piping insulation, floor tile, and roofing felts continued in some places even into the early 1980s. G. A. Baca and Associates reported in a 1981 wastewater discharge plan that no asbestos was onsite but did not indicate how this conclusion had been reached. Pilko & Associates recommends an asbestos survey to verify the absence or presence of asbestos.

Surface Spills

Small surface spills were evident in a few areas. Although none of these look serious, it would be prudent to remove contaminated soils in order to establish a clean environmental baseline. Pilko & Associates recommends soil sampling to delineate the contamination in each of the following areas:

- Process area API separator
- Truck rack area API separator

- o Area between truck rack and truck rack API separator
- o Slope west of rail rack
- o Rail ballast south of rail rack
- o Unpaved process areas
- o Phillips product pipeline area
- o Wastewater skimmer tanks
- o Brine tank

Sub-Surface Spills

Subsurface spills present a potentially greater hazard because they can remain undetected for extended periods of time. Southern Union's exposure is greatly reduced by the limited number of sub-surface structures and pipes. Pilko & Associates recommends sub-soil sampling at random locations along the process sewer lines and in the area of the septic tank which served the laboratory. We also recommend sampling of the sludge and the liquid in the separator sumps.

Chemicals

Various chemicals were used onsite in the process, in the lab, in the water treatment systems, and as product additives (jet fuel deicer, rust inhibitors). Pilko & Associates recommends that chemicals remaining onsite be inventoried and/or tested to determine identity and quantity. Based on these findings, we will recommend appropriate disposition.

Fenceline Storage

A substantial quantity of bagged chemicals, principally charcoal filtrate and clay filtrate, according to Southern Union, and a variety of empty drums are stored along the west fenceline. Pilko & Associates recommends an assessment of the condition of the bagged chemicals, and a relocation into more secure storage pending disposition. We also recommend characterization of drum contents. Based on these findings, we will recommend a disposal plan.

Tank Farm

There is no current evidence of spills within the tank dikes at the refined products tank farm. Earlier aerial photographs, however, show some indication of soil contamination around both crude and product tankage. In order to establish an environmental baseline, Pilko & Associates recommends a soil sampling program.

Cooling Tower

Chromates were in use from start-up until 1981. Pilko & Associates recommends soil sampling in this area to confirm or deny the

presence of chromate contaminants. Sampling and analysis of any sludge remaining in the cooling tower basin is also recommended.

MIDLAND TERMINAL

PCB

Used transformers are stored at the Mid-Lea Pipeline Station. As at the Lovington refinery, Pilko & Associates recommends PCB testing.

Surface Spills

Small surface spills were evident in five areas. Although none of these looked serious, it would be prudent to remove the contaminated soils in order to establish a clean environmental baseline. Pilko & Associates recommends soil sampling to delineate contaminants in each of the following areas:

- Mid-Lea Station meter prover
- Mid-Lea Station sump
- Booster pumps north of Mid-Lea Station
- Booster pump southwest of tank 5606
- Diked area at tank 5611

Pilko & Associates also recommends collection of soil samples within the diked areas of tanks 5606 and 5608.

Tank Dikes

Dikes on tanks 5608 and 5611 appear to be in good condition. The dike on 5606 is showing signs of erosion, and prairie dog tunnels are evident throughout the dike. The integrity of the tank 5606 dike is therefore doubtful, and repairs will likely be required before this tank can be recommissioned. Pilko & Associates recommends that Southern Union properly disclose this situation to any prospective user of this tank.

Mid-Lea Station Sump

The pipeline station sump recovers crude oil drained from the meter prover and the pig launcher. It does not appear to have been cleaned and therefore represents a potential source of future environmental contamination. Pilko & Associates recommends that this system be cleaned, preferably before area soil samples are taken.

E.

PHASE II

ACTION PLAN

KEY ELEMENTS

The Phase I initial site inspection revealed no apparent environmental problems of major magnitude which would prohibit future use of the Lovington refinery or the Midland terminal. Pilko & Associates concludes that there is a low probability of asbestos, a moderate probability of PCBs, and a number of areas which appear to have minor surface and shallow subsurface soil contamination.

Phase II activities will be designed to confirm findings from this initial site investigation. Pilko & Associates proposes five specific efforts:

1. Conduct an asbestos survey to confirm or deny the presence of asbestos at the Lovington refinery.

2. Sample and analyze oil from all transformers at Lovington and Midland to confirm or deny the presence of PCBs.

3. Sample and analyze approximately 50 surface and shallow subsurface soil samples from the locations discussed earlier in this report, at Lovington and Midland. Delineate soil removal requirements in areas of suspected contamination, and establish baseline surface and subsurface soil conditions.

4. Conduct soil borings at the Lovington refinery to determine site-specific hydrogeology. Analyze groundwater, if present, for hydrocarbon contamination. With ARCO's permission, conduct soil borings at Midland. Additional drilling efforts may be dictated by the results of the Step 3 surface soil sampling.

5. Inventory and characterize chemicals remaining onsite, including contents of packaged and used drummed materials. Determine appropriate disposition.

APPROACH

Pilko & Associates project management expertise and environmental analysis experience are geared towards providing Southern Union with a thorough analysis while maximizing efficiency and minimizing time and expenditures. Project management activities for the field sampling and testing of Phase II will include:

- Preparation of task-specific scope
- Solicitation of bids (subject to time constraints)
- Selection of contractor(s)
- Onsite review of scope with contractor(s) at commencement of field work
- Onsite management of contractor(s) during field work
- Review and analysis of sampling and testing data
- Written report describing verifiable environmental baseline, identifying problem areas, and recommending any appropriate remediation efforts for Phase III.

SCHEDULE AND COST

An investigation of the type and size outlined above will generally cost between $50,000 and $100,000. The major governing factor is the amount of testing finally required based on the results of initial findings.

Pilko & Associates is prepared to initiate this program immediately on a per-diem basis. Pilko will advise Southern Union of major individual cost items (in excess of $10,000) and will await approval before proceeding. Our actual charges will be billed monthly and will be based on our Standard Terms and Conditions/Fee Schedule, a copy of which is included. It is anticipated that the final report on Phase II would be completed within eight weeks of receiving project approval.

Pilko & Associates is also agreeable to preparing a firm estimate before proceeding into the sampling and testing work. This advance work would include preparation of a task-specific scope, solicitation of bids, and selection of contractors for each phase of the sampling and testing work. Costs for this firm estimate are $3,000 and it is anticipated that it would be completed within three weeks of receiving project approval.

FYI

J. collier adams

September 23, 1988

Mr. Zugane Dubay
% Southern Union Company
1800 Renaissance Tower
Dallas, Texas 75270

Re: LOVINGTON REFINERY AND PIPELINE SYSTEMS

Dear Mr. Dubay:

As per our telephone conversation, New Mexico Oil Refiners is a serious purchaser of the Lovington Refinery and Midland/Lea Pipeline Interest and the State of New Mexico is a serious lender, as per their letter I have sent to you, so as to protect the jobs in Lovington.

The problems which we speak of are the Toxic Waste Dumps on the back side of the property as well as other spills and leakages all over the property. You and I understand the liability of your company in this matter and we understand the liability of the New Mexico Oil Refinery for cleanup when we purchase both the refinery and the pipeline. New Mexico Oil Refiners has to have a plan of cleanup which is acceptable to all governmental authorities, ourselves, and Southern Union Company as to the method, time period and costs. If we do not have this plan in place before closing and the government steps in, the cost and penalties could run into the $100's of millions of dollars. Among other things, the O.C.D. Discharge Permit expires December 1, 1988. This permit needs to be renegotiated and extended. The only information you sent to us was information concerning the start-up study which does not get into the environmental problems.

We have submitted to you a Contract to Purchase the properties and we have received no response. When I again contacted you, you wanted proof of financing. I sent you a copy of the letter from a State Agency who has been attempting to investigate this matter with little or no information and as you can see, they have the wherewithal to finance this project. And again, I received no response.

Without a contract, New Mexico Oil Refinars can not attempt to try to solve these environmental problems which have been created by Southern Union Company over the years. The unknown factor is the present environmental costs, and these are items and information that New Mexico Oil Refiners can not go out and make a complete independent investigation of without having a contract to purchase. As Southern Union Company knows the environmental laws are becoming stronger and stronger and more and more expensive. The agencies have become more protective, extremely expensive, easy to anger, if provoked and not handled correctly. The environmental negotiations are very delicate and have to be handled gently and with authority based on reality and not with a bunch of if's and maybe's.

New Mexico Oil Refineries is sincere in obtaining, rebuilding, protecting the environment, furnishing jobs and employment and growing for many, many years. They are sincerely interested in the long haul.

We are interested in consummating our contract with you and concluding this transaction as quickly as possible. Please respond as soon as possible for time is of the essence.

Sincerely yours,

J. Collier Adams

JCA/sg

cc: Mr. Frank Denius
Mr. Steve G. Podesta

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

October 5, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Bill Champlin
Refinery Operations Manager
Southern Union Refining Co.
P. O. Box 980
Hobbs, New Mexico 88240

RE: Discharge Plan GW-14
Lovington Refinery
Lea County, New Mexico

Dear Mr. Champlin:

On April 25, 1984, the ground water discharge plan, GW-14, for the Lovington Refinery located in Section 36, Township 16 South, Range 36 East, NMPM, Lea 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 Regulations and it was approved for a period of five years. The approval will expire on April 25, 1989.

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 intend to make, any changes in your discharge system, and if so, include an application for plan amendment with your application for renewal. To assist you in preparation of your renewal application, I have enclosed a copy of the OCD's guidelines for preparation of ground water discharge plans at natural gas processing plants. These guidelines will be used in review of your renewal application.

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

The provisions of Section 3-111 of the Water Quality Control Commission Regulations (enclosed) must be followed if the facility is sold or transferred to another individual or party. Regardless of ownership, the discharge plan must be renewed prior to start-up.

If you have any questions, please do not hesitate to contact Roger Anderson at (505) 827-5885.

Sincerely,

David G. Boyer, Chief
Environmental Bureau

DGB:RA:sl

Enclosures

cc: OCD-Hobbs Office

FYI

J. COLLIER ADAMS

Roger,
This letter was written on behalf of Cecil Owens – please keep Eugene Dubay's response confidential – I will keep you posted
Thanks –
Bill Chamblin
10/8/88

September 23, 1988

Mr. Eugene Dubay
% Southern Union Company
1800 Renaissance Tower
Dallas, Texas 75270

Re: LOVINGTON REFINERY AND PIPELINE SYSTEMS

Dear Mr. Dubay:

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ATTORNEY AT LAW 1220 TEXAS AVENUE / LUBBOCK, TEXAS / U.S.A. / (806) 763-4676

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We are interested in consummating our contract with you and concluding this transaction as quickly as possible. Please respond as soon as possible for time is of the essence.

Sincerely yours,

J. Collier Adams

JCA/sg

cc: Mr. Frank Denius
Mr. Steve G. Podesta

Southern Union Company
1800 Renaissance Tower
Dallas, Texas 75270
(214) 748-8511

EUGENE N. DUBAY
SENIOR VICE PRESIDENT
AND TREASURER

September 26, 1988

Mr. J. Collier Adams
1320 Texas Ave.
Lubbock, Texas 79401

Dear Mr. Adams:

I mentioned in my letter of August 23 that Southern Union was negotiating to sell its refinery and pipeline facilities in New Mexico. I stated in that letter we might consummate those negotiations in the near future. We reached an agreement in principal on September 21 on terms for a sale of those facilities and I informed you of that agreement in my phone call of September 21, 1988.

I must point out that you have erred in your letter in speaking of a contract as we have reached no agreement on terms to the best of my knowledge. I pointed out in my letter that our discussions should not be construed as an offer.

We cannot consider any other offers pending closing of this agreement, which I anticipate will take place in the next 30 days. I appreciate your interest in our refinery and if this transaction does not close I will let you know.

Respectfully,

Eugene N. Dubay

END:nkr

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

February 4, 1987

GARREY CARRUTHERS
GOVERNOR

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

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Bill Champlin
Refinery Operations Manager
Southern Union Refining Co.
P. O. Box 980
Hobbs, New Mexico 88240

RE: OCD INSPECTION TRIP - JANUARY 27, 1987

Dear Mr. Champlin:

I would like to thank you and your staff for their assistance during our recent inspection trip. During the inspection and subsequent meeting, a number of observations and concerns were stated. The following is a summary of those concerns and remedial actions that should be taken prior to reactivation of the refinery:

1. The area inside the berm containing the insulated storage tanks has a solidified paraffin-type hydrocarbon substance in the corner. This substance is to be removed and disposed of properly under the direction of personnel from the OCD Hobbs District Office.

2. The final oil/water separation and wastewater holding tanks immediately prior to the injection well disposal line can, under the right circumstances, overflow. The "oildrain" tank, presently a below-grade tank, should be replaced with an above-grade tank or if below-grade is required by your operations, retrofitted with leak detection (Guidelines enclosed). These three tanks need to be situated within a bermed area that can contain any overflow. If a second separation/holding tank system is to be installed, it should also be bermed and any below-grade tanks be installed with leak detection.

3. The fiberglass lined pit designed for API separator overflow is cracked and ineffective. It was stated that the removal of this pit, its contents, and any contaminated soil beneath it will be the first project after transfer of ownership. The removal and disposal will be under observation of OCD District personnel. The planned replacement tanks should be bermed to contain any potential overflow.

4. The process area has concrete pads but is not curbed. Curbing may be required to contain fluids in areas

where they can leave the pads during storms or in event of a major spill or leak.

5. All drains leading to the API separator shall be tested for integrity prior to start up.

6. All piping, above or below ground, shall be pressure tested prior to startup.

7. Stains were noticed on the ground around the cooling tower. This soil shall be removed and disposed of properly. Concrete pads around the cooling tower may be required to contain any wind drift from the tower and prevent pooling on the ground. All chemicals, drummed or tanked, shall be contained on a concrete pad with curbing to prevent spillage to the ground. Any underground tanks containing chemicals shall be equipped with an OCD-approved leak detection system.

The above are observations from a brief preliminary inspection. Any alterations or modifications to the process systems that you will need to effect start-up were not available to us at the time of the visit. Consequently, a follow-up inspection after start-up will be necessary to evaluate current discharges, any discharge plan modifications that may be required, and any further actions that you may be required to take to assure the protection of ground water.

After transfer of ownership, but prior to start up, a statement from the new owners stating they are aware of the existence of the approved discharge plan, its contents, and that they assume responsibility for compliance with the terms and conditions of the plan shall be submitted to the OCD for inclusion in the file in accordance with the Water Quality Control Commission regulations.

Again, I wish to thank you for your time and assistance during our inspection. If you have any questions or if I can be of any assistance, please do not hesitate to call me at (505) 827-5885.

Sincerely,

Roger C Anderson

ROGER C. ANDERSON
Environmental Engineer

RCA:dp

Enc.

cc: OCD-Hobbs

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

February 4, 1987

GARREY CARRUTHERS
GOVERNOR

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

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RETURN RECEIPT REQUESTED

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Refinery Operations Manager
Southern Union Refining Co.
P. O. Box 980
Hobbs, New Mexico 88240

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Again, I wish to thank you for your time and assistance during our inspection. If you have any questions or if I can be of any assistance, please do not hesitate to call me at (505) 827-5885.

Sincerely,

Roger C Anderson

ROGER C. ANDERSON
Environmental Engineer

RCA:dp

Enc.

cc: OCD-Hobbs

ALBUQUERQUE JOURNAL Thursday, January 8, 1987

Business Group Plans To Reopen Lea County Refinery

THE ASSOCIATED PRESS

SANTA FE — A group of Lea County and New York businessmen on Wednesday announced they have reached an agreement to purchase the idle Southern Union Refinery in Lovington.

The announcement, which is welcome news to the hard-hit New Mexico oil patch, was made jointly by Gov. Garrey Carruthers and principals of AMEX Management Co., East Coast Investors Ltd., and Southern Union.

The agreement calls for the sale and expansion of the petroleum refinery for a total of $70 million.

"This is a lucky one-shot deal that fits into my strategy for economic development," said Carruthers.

AMEX Management Co. President Bill Nadauld, the joint venture's operating partner, said the refinery could be operating within four to eight weeks. He said the refinery and expanded operations could be fully operational within two years.

Nadauld said the refinery, which has been shut down about two years, will begin producing jet fuel and other products. Then crews will begin renovating and expanding the refinery, creating about 170 new construction jobs.

He said the refinery will employ 268 production employees, making it the largest refinery in New Mexico.

Carruthers said the plant will help the Lea County economy.

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

October 9, 1986

Mr. Bill Champlin
Refinery Operations Manager
P. O. Box 980
Hobbs, New Mexico 88240

Re: Araho Disposal Wells

Dear Mr. Champlin:

Enclosed for your review is the draft Enforcement Agreement to allow for continued use of Araho SWD wells for disposal of Southern Union refinery effluent while a discharge plan application is being processed. Upon receipt of your comments, we will finalize the document unless further negotiation is necessary.

Please note that the agreement includes provision for a penalty of up to $100 per day for each day of actual disposal. This addition was felt to be necessary as further examination of the Federal Regulations indicated a temporary permit could not be granted. The Enforcement Agreement then becomes our only vehicle in this matter. Since Araho was notified in September, 1984, and again in May, 1986, that a discharge plan would be necessary, some penalty provision seems appropriate.

It is regrettable that this could not be discussed in person, however, the time available this week to the effort to resolve this matter did not allow for complete consideration of the options prior to our meeting on Tuesday.

Please feel free to call me relative to any questions about, or concerns with, the Enforcement Agreement.

Sincerely,

R. L. STAMETS,
Director

cc: David Boyer
Jeff Taylor
Jerry Sexton

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

October 9, 1986

Mr. Eugene N. Dubay
Vice President and Treasurer
Southern Union Company
1800 InterFirst Two
Dallas, Texas 75270

Re: Araho Disposal Wells

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Sincerely,

R. L. STAMETS,
Director

cc: David Boyer
Jeff Taylor
Jerry Sexton

ENFORCEMENT AGREEMENT

This Agreement is made and entered into this _____ day of October, 1986 by and among the New Mexico Oil Conservation Division of the Energy and Minerals Department (hereinafter "OCD"); Araho, Inc.; and Southern Union Refining Company (hereinafter Southern Union):

WHEREAS Southern Union is the owner of a refinery located approximately five miles southeast of Lovington, New Mexico in Section 36, Township 16 South, Range 36 East, and Section 31, Township 16 South, Range 37 East, NMPM; and

WHEREAS Araho, Inc. is the owner and operator of two Class II disposal wells, being the State LC Well No. 1, located in Section 1, Township 17 South, Range 36 East and the State LC Well No. 2, located in Section 2, Township 17 South, Range 36 East, NMPM; and

WHEREAS the above-referenced wells have historically been utilized for disposal of wastewater effluent from the Southern Union Refinery which disposal is exclusively authorized in the discharge plan for the refinery approved by the OCD in 1984; and

WHEREAS the OCD has notified Araho, Inc. of the need to file a discharge plan for the subject wells to bring such wells into compliance with Part 3 (Discharges to Ground Water) and Part 5 (Underground Injection Control) of the New Mexico Water Quality Control Commission (WQCC) Regulations, if they are to continue to be used for refinery effluent disposal in the future; and

WHEREAS Araho, Inc. has filed a request with the OCD to obtain approval of a discharge plan for the subject wells; and

WHEREAS the OCD has determined that limited continued use of the subject wells presents no hazard to fresh water; and

WHEREAS, the parties to this Agreement desire to set forth the conditions upon which the wells may be utilized for future refinery effluent disposal.

NOW THEREFORE, the parties mutually agree as follows:

1. Upon receipt by OCD of a discharge plan application for effluent disposal (Class I) well approval, Araho Inc. will be granted a 90 (ninety) day period to allow disposal of effluent from the Southern Union Refinery, such period to be extended to six months duration upon request of Araho, Inc. and a satisfactory showing of progress towards discharge plan approval. During the period that this agreement is in force, Araho Inc. shall accept industrial effluent only from the Southern Union Refinery.

2. During this limited period Araho, Inc. will perform such upgrading operations as are necessary to bring the subject wells into compliance with discharge plan requirements pursuant to Parts 3 and 5 of the WQCC Regulations, such upgrading to include at least those items listed in Exhibit A, attached hereto and made a part hereof.

3. Southern Union will apply to the OCD to amend its existing discharge plan in such a manner as to make explicit the requirement that all refinery effluent is to be disposed of into approved effluent disposal wells, or other approved disposal facility.

4. A penalty of up to 100 dollars per day shall be paid for any day during which injection of plant effluent takes place in said wells prior to final discharge plan approval. Such penalty shall be waived in event of delay by OCD beyond the times allowed in the WQCC Regulations for review of the application, or in the event of additional time required if a public hearing on the application is necessary. The actual penalty amount will be determined at the completion of discharge plan processing, and will be dependent on the completeness of the initial application, time taken to comply with the items specified in Exhibit A, prompt and complete response to OCD questions and comments on the application submitted, and on other items that show a willingness to promptly come into compliance.

5. During the period of this Agreement, OCD will take no further enforcement action against Araho, Inc., for utilizing subject wells for disposal of refinery effluent, provided Araho complies with those items in Exhibit B, attached hereto and made a part hereof.

6. This Agreement shall terminate on date of discharge plan approval, or no later than six months following receipt of discharge plan application, or by mutually agreeable consent of the parties.

ARAHO, INC. DATE

OIL CONSERVATION DIVISION DATE

SOUTHERN UNION REFINING COMPANY DATE

EXHIBIT A

Below are the minimum requirements for conversion of your Class II SWD wells to Class I effluent disposal (non-hazardous) wells and for associated surface facilities. Additional requirements may be identified and added based on a physical site inspection, test results, and/or public response following public notification. Final discharge plan approval will be based on the application meeting applicable sections of Part 3 and 5 of the WQCC Regulations.

State LC Well No. 1, Sec. 1, T-17-S, R-36-E
State LC Well No. 2, Sec. 2, T-17-S, R-36-E

(1) Placement of cement in the annulus between the drilled hole and each string of casing extending from the bottom of the pipe to within the previous string of casing where such cement may not now be present.

(2) A bond log or temperature survey verifying all casing is cemented so as to fulfill the requirements in (1) above.

(3) Performance of a Mechanical Integrity test prior to injection after remedial work and yearly thereafter.

(4) Provide analyses of the injected fluids quarterly for constituents determined by the Director.

(5) Install continuous monitoring devices to provide a record of injection pressure (Vacuum), flow rate, flow volume, and pressure on the annulus.

(6) Inject through plastic lined tubing with a packer set no more than 100 feet from the bottom of the long string casing.

(7) Surface equipment will be secured to allow no unauthorized operation.

(8) Surface equipment shall be maintained and have proper berms to contain any leaks or spills.

(9) Automatic equipment shall be installed to interrupt the flow to the facility in the event of tank overflow.

(10) Any pits on the facility shall conform to the OCD "Guidelines," attached.

EXHIBIT B

A. Prior to injecting any industrial effluent pursuant to this Agreement the following will be required:

(1) Static fluid level determination.

(2) Mechanical Integrity Test.

(3) Installation of surface monitoring equipment.

(4) An analyses of the fluid injected.

B. During the period of this Agreement, the following will be required:

(1) Injection of fluids on a vacuum.

(2) Continuous monitoring of injection pressure (vacuum), flow rate, flow volume, and pressure on the annulus with a monthly summary report to the Division.

(3) A quarterly chemical analysis of the injected fluids for those constituents representative of fluid characteristics and required by OCD.

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

October 9, 1986

Mr. Eugene N. Dubay
Vice President and Treasurer
Southern Union Company
1800 InterFirst Two
Dallas, Texas 75270

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It is regrettable that this could not be discussed in person, however, the time available this week to the effort to resolve this matter did not allow for complete consideration of the options prior to our meeting on Tuesday.

Please feel free to call me relative to any questions about, or concerns with, the Enforcement Agreement.

Sincerely,

R. L. STAMETS,
Director

cc: David Boyer
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WHEREAS Southern Union is the owner of a refinery located approximately five miles southeast of Lovington, New Mexico in Section 36, Township 16 South, Range 36 East, and Section 31, Township 16 South, Range 37 East, NMPM; and

WHEREAS Araho, Inc. is the owner and operator of two Class II disposal wells, being the State LC Well No. 1, located in Section 1, Township 17 South, Range 36 East and the State LC Well No. 2, located in Section 2, Township 17 South, Range 36 East, NMPM; and

WHEREAS the above-referenced wells have historically been utilized for disposal of wastewater effluent from the Southern Union Refinery which disposal is exclusively authorized in the discharge plan for the refinery approved by the OCD in 1984; and

WHEREAS the OCD has notified Araho, Inc. of the need to file a discharge plan for the subject wells to bring such wells into compliance with Part 3 (Discharges to Ground Water) and Part 5 (Underground Injection Control) of the New Mexico Water Quality Control Commission (WQCC) Regulations, if they are to continue to be used for refinery effluent disposal in the future; and

WHEREAS Araho, Inc. has filed a request with the OCD to obtain approval of a discharge plan for the subject wells; and

WHEREAS the OCD has determined that limited continued use of the subject wells presents no hazard to fresh water; and

WHEREAS, the parties to this Agreement desire to set forth the conditions upon which the wells may be utilized for future refinery effluent disposal.

NOW THEREFORE, the parties mutually agree as follows:

1. Upon receipt by OCD of a discharge plan application for effluent disposal (Class I) well approval, Araho Inc. will be granted a 90 (ninety) day period to allow disposal of effluent from the Southern Union Refinery, such period to be extended to six months duration upon request of Araho, Inc. and a satisfactory showing of progress towards discharge plan approval. During the period that this agreement is in force, Araho Inc. shall accept industrial effluent only from the Southern Union Refinery.

2. During this limited period Araho, Inc. will perform such upgrading operations as are necessary to bring the subject wells into compliance with discharge plan requirements pursuant to Parts 3 and 5 of the WQCC Regulations, such upgrading to include at least those items listed in Exhibit A, attached hereto and made a part hereof.

3. Southern Union will apply to the OCD to amend its existing discharge plan in such a manner as to make explicit the requirement that all refinery effluent is to be disposed of into approved effluent disposal wells, or other approved disposal facility.

4. A penalty of up to 100 dollars per day shall be paid for any day during which injection of plant effluent takes place in said wells prior to final discharge plan approval. Such penalty shall be waived in event of delay by OCD beyond the times allowed in the WQCC Regulations for review of the application, or in the event of additional time required if a public hearing on the application is necessary. The actual penalty amount will be determined at the completion of discharge plan processing, and will be dependent on the completeness of the initial application, time taken to comply with the items specified in Exhibit A, prompt and complete response to OCD questions and comments on the application submitted, and on other items that show a willingness to promptly come into compliance.

5. During the period of this Agreement, OCD will take no further enforcement action against Araho, Inc., for utilizing subject wells for disposal of refinery effluent, provided Araho complies with those items in Exhibit B, attached hereto and made a part hereof.

6. This Agreement shall terminate on date of discharge plan approval, or no later than six months following receipt of discharge plan application, or by mutually agreeable consent of the parties.

ARAHO, INC. DATE

OIL CONSERVATION DIVISION DATE

SOUTHERN UNION REFINING COMPANY DATE

EXHIBIT A

Below are the minimum requirements for conversion of your Class II SWD wells to Class I effluent disposal (non-hazardous) wells and for associated surface facilities. Additional requirements may be identified and added based on a physical site inspection, test results, and/or public response following public notification. Final discharge plan approval will be based on the application meeting applicable sections of Part 3 and 5 of the WQCC Regulations.

State LC Well No. 1, Sec. 1, T-17-S, R-36-E
State LC Well No. 2, Sec. 2, T-17-S, R-36-E

(1) Placement of cement in the annulus between the drilled hole and each string of casing extending from the bottom of the pipe to within the previous string of casing where such cement may not now be present.

(2) A bond log or temperature survey verifying all casing is cemented so as to fulfill the requirements in (1) above.

(3) Performance of a Mechanical Integrity test prior to injection after remedial work and yearly thereafter.

(4) Provide analyses of the injected fluids quarterly for constituents determined by the Director.

(5) Install continuous monitoring devices to provide a record of injection pressure (Vacuum), flow rate, flow volume, and pressure on the annulus.

(6) Inject through plastic lined tubing with a packer set no more than 100 feet from the bottom of the long string casing.

(7) Surface equipment will be secured to allow no unauthorized operation.

(8) Surface equipment shall be maintained and have proper berms to contain any leaks or spills.

(9) Automatic equipment shall be installed to interrupt the flow to the facility in the event of tank overflow.

(10) Any pits on the facility shall conform to the OCD "Guidelines," attached.

EXHIBIT B

A. Prior to injecting any industrial effluent pursuant to this Agreement the following will be required:

(1) Static fluid level determination.

(2) Mechanical Integrity Test.

(3) Installation of surface monitoring equipment.

(4) An analyses of the fluid injected.

B. During the period of this Agreement, the following will be required:

(1) Injection of fluids on a vacuum.

(2) Continuous monitoring of injection pressure (vacuum), flow rate, flow volume, and pressure on the annulus with a monthly summary report to the Division.

(3) A quarterly chemical analysis of the injected fluids for those constituents representative of fluid characteristics and required by OCD.

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

October 6, 1986

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

Mr. Bill Champlin
Refinery Operations Manager
Southern Union Refining Co.
P. O. Box 980
Hobbs, New Mexico 88240

RE: DISCHARGE PLAN GW-14, SOUTHERN UNION REFINING COMPANY,
LOVINGTON REFINERY

Dear Mr. Champlin:

Enclosed please find a copy of the above-referenced discharge plan. The plan application was submitted to the Oil Conservation Division for review on October 26, 1981, and approved on April 25, 1984. Plan approvals are for a period of five years at which time they must be reviewed for renewal.

Pursuant to Section 3-111 of the New Mexico Water Quality Control Commission Regulations (enclosed), a discharge plan is transferrable when possession and/or ownership of a facility is transferred. The succeeding owner shall be responsible for compliance with the approved discharge plan, and all discharges must be consistent with the terms and conditions of the plan.

The Division will look to the plant operator as the party ultimately responsible for the proper disposal of the plant effluent, including assurance that only approved disposal wells are used. At this time, the contracted effluent disposal wells as specified in the discharge plan are not properly permitted Class I effluent disposal wells. Additionally, a change to the API separator at the facility may be necessary to assure that only clear effluent from the separator is received by the injection wells.

In view of these facts, a modification to your discharge plan acknowledging these changes will be required to be submitted to the OCD for review and approval.

An Oil Conservation Division representative will schedule an inspection visit to your facility as soon as convenient, but no later than 60 days after startup. Submittal of changes to the discharge plan can be delayed until after the inspection so that recent operating information may be incorporated in the plan.

If you have any questions, please do not hesitate to call David Boyer at (505) 827-5812.

Sincerely,

R. L. STAMETS
Director

RLS:dp

Enclosures

cc: David Boyer
Jerry Sexton

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 1:30PM	Date 9/30/86

Originating Party	Other Parties
Bill Nadaulk - Lovington Refining Co	David Boyer - OCD
Bill Champlin - Refinery Operations Manager	→ 396-5821

Subject: Permitting of Southern Union's contract disposal Well

Discussion: I talked to Champlin and he wanted to know what to do to get the well permitted. I told him (& he acknowledged) that we had sent letters beginning last October saying what needed to be done. At this time I need an application for reclassification from Abo. Champlin says will take 10 days to 2 weeks to start up - minimal water generated. Full operation (2,000 bbl/day crude) by early November. I told him discharge plan would take 60 days minimum, variance longer. Possible assurance of discontinuance could be presented at 10/14 WQCC. Will check this PM Champlin will call back in AM.

Conclusions or Agreements:

Distribution: SUR file

Signed: David F Boyer

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 3:30 PM	Date August 12, 1986

Originating Party	Other Parties
Eddie Seay - OCD	D. G. BOYER - OCD

Subject: Southern Union Refinery - Possible Injection well

Discussion: Eddie called to discuss use of the Apollo Class II system for Southern Union's waste. I went over the Part 5 UIC regs and sent him copies of correspondence regarding this. The information will go to Apollo. The contact person is Mary Davis @ 393-4611 in Hobbs Allen Ralston 393-2273

Conclusions or Agreements

Distribution: S.U. file

Signed: D. G. Boyer

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☐ Telephone ☒ Personal | Time 10:30AM | Date 7/9/86

Originating Party	Other Parties
Roland E. Caudill (contractor for Arabo) 398-6304	Dave Boyer

Subject: Class I UIC permitting for Arabo Injection well

Discussion: Caudill come by to ask questions about a Class I UIC permit and discharge plan for their well. Dorothy Runnels has asked him to start getting ideas on the permit process. She is unwilling to pay bucks to get the well permitted if the new owner is not going to use it. Caudill says Rumor is that a foreign company is going to buy the refinery and pipeline for the pipeline only. Southern Union will not sell separately. Therefore, ARABO is reluctant to proceed without specific assurance well will be used after permitting completed.*

Conclusions or Agreements: I gave him a copy of the WQCC Regs with the appropriate sections highlighted. I told him to contact Dave Griffin of Navajo for examples of hazardous waste work that they are doing pursuant to EID/EPA RCRA rules. I told him with 6-months lead time, OCD could likely finish permitting. Faster would go to WQCC

Distribution: EID will do RCRA if needed
- GW-14, Southern Union file
- R.L. Stamets

Signed: D.F. Boyer

*Caudill says refinery will need 6-12 months to repair before startup

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

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

May 28, 1986

Ms. Judy Hinshaw
c/o Araho, Inc.
Runnels Mud Co.
P. O. Box 937
Lovington, N.M. 88260

Dear Ms. Hinshaw:

Enclosed is a copy of the N.M. Water Quality Control Commission Regulations that include requirements for an Effluent Disposal Well, also known as a Class I UIC industrial disposal well. The UIC rules are found in Part 5 of the Regulations. Also enclosed are copies of correspondence regarding the refinery reopening, and a previous letter to Araho.

As Mr. Stamets mentioned in his phone call of May 27, the permitting of such a well requires a considerable length of time and requires that specialized geologic, hydrologic, and chemical data information be collected and submitted to this agency for review. The retention of a consultant familiar with New Mexico, Texas or Federal Class I UIC regulations is strongly recommended to shorten the anticipated permitting period. Mr. Bill Champlin of Southern Union Refinery has informed me that OCD will be immediately notified when the sale has been completed, and the buyers identity is available. I stressed to him the need to keep all parties informed so that injection well permitting can be accomplished as soon as possible.

If I can help you with further information or clarification, please call me at 827-5812.

Sincerely,

DAVID G. BOYER
Hydrogeologist/Environmental
Bureau Chief

DGB:dp

Enc.

cc: R. L. Stamets, OCD Director
Jerry Sexton, OCD, Hobbs

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal | Time 10:45 AM | Date 5/28/86

Originating Party	Other Parties
Dave Boyer OCD	Bill Champlin, Refinery Operations Southern Union Refining * Manager

Subject: Reopening of SUR's Famariss Refinery, Lovington

Discussion: I called Champlin to inquire about status of sale and stress the need to get injection well permitting started. He declined to name the potential ~~buyer~~ buyer, but did say that pre-operation work should start in July with operation beginning ~~in~~ 60 days thereafter. He said that initially, only the same fluids as before would be injected. He received copies from Mayor Stradley of all my correspondence and will pass them on to the buyer. I also told him of the need to get an UIC consultant to expedite well OK.

Conclusions or Agreements: Champlin will let us know as soon as the deal is completed and will schedule a meeting with the new owners.

Distribution: GW-14, SUR File

Signed: David L. Boyer

* P.O. Box 980, Hobbs 88240
396-5821

Firm Negotiating To Buy Refinery Near Lovington

THE ASSOCIATED PRESS

SANTA FE — Gov. Toney Anaya said Tuesday he has been informed that Southern Union Co. of Dallas has accepted an offer to sell its now-closed Famariss petroleum refinery south of Lovington.

The company making the purchase and the sale price were not immediately disclosed, Anaya said.

Meanwhile Lovington City Manager Bob Carter said Lovington officials also had been notified that Southern Union had accepted an offer to sell the refinery.

Carter said final negotiations are under way between Southern Union and the firm that is purchasing the facility. Identity of the buyer is being withheld until negotiations are completed in the near future, Carter said.

Anaya said that Lovington city officials and the state Economic Development and Tourism Department provided technical and administrative assistance in the transaction.

The refinery was built in 1974-75 by Walter Famariss of Hobbs and was purchased by Southern Union in 1976.

It is capable of producing jet engine fuel, gasoline, kerosene, diesel fuel, asphalt and distillate, Anaya said.

The facility was shut down by Southern Union in 1984.

Carter said that once negotiations are completed the new owner will be taking applications for employment. He said the refinery could employ from 80 to 120 people in the production of aviation jet fuel and gasoline.

About 100 employees were laid off then the refinery was shut down in 1984.

"The revamping of this refinery will provide a major economic impact to the Lovington-Hobbs-Lea County area which is suffering due to the depressed oil and gas markets," Anaya said.

50 YEARS

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

1935 - 1985

TONEY ANAYA
GOVERNOR

May 9, 1986

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

The Honorable Keith Spradlin
Mayor of Lovington
P. O. Box 1210
Lovington, New Mexico 88260

RE: REACTIVATION OF SOUTHERN UNION'S LOVINGTON REFINERY

Dear Mayor Spradlin:

This letter is a follow-up to our phone conversation of last week in which we discussed the sale and possible reopening of the Lovington Refinery. The Oil Conservation Division stands ready to assist in the environmental repermitting of the facility so that ground water can be protected and operation can begin as soon as possible after a sale and completion of reopening preparations. However, in light of information I have heard from other sources regarding possible dates for beginning operation, I feel I must again stress that significant time is needed to permit injection wells used for disposal. Also, another State agency is involved if any of the waste is considered "hazardous".

When an injection well used for disposal and not concurrently used as a waterflood is involved, a minimum of six months time will likely be required for permitting. This is because the applicant and/or his consultants are required to research and submit for review a lengthy application, the contents of which are listed in Part 5 of the New Mexico Water Quality Control Commission (WQCC) Regulations. There are no "shortcuts" to reduce permitting time unless the well is legitimately used as an Underground Injection Control Class II waterflood. The USEPA, at the direction of Congress, is looking closely at disposal well permitting because of past abuses and well failures leading to ground water contamination. Since the State, and this agency in particular, enforces EPA's UIC regulations at oil refineries, we have no leeway to grant a "temporary" permit if the refinery chooses to use injection without waterflooding as a method of disposal. Further information was given in my letter of October 2, 1985, and a copy is attached. (Please note the important correction in well classification on Page 2; the change corrects a typographical error but the correct definition was given on Page 1 of that letter.)

Recently, several state operating refineries have had permitting delays because of difficulty in complying with State and Federal regulations regarding "hazardous waste" treatment and disposal. This includes API separator waste, and heat exchanger cleaning sludges. The nearest refinery that has been involved in this process is the Navajo Refinery in Artesia

(contact David Griffin) and their experience may be useful if hazardous waste permitting is required at the Lovington Refinery. The State agency in charge of hazardous waste is the Environmental Improvement Division (contact Peter Pache). The Oil Conservation Division is not directly involved in hazardous waste permitting.

To avoid having the reopening of the refinery delayed by environmental permitting snafus, sufficient lead time must be given to perform this permitting, and prospective operators must be aware of these requirements. Therefore, I request that you give this letter and my October 2 letter the widest circulation possible, and include prospective buyers and their agents.

If you need further information, please contact me at the above address or by phone at 827-5812.

Sincerely,

David G. Boyer

DAVID G. BOYER
Hydrogeologist/Environmental
Bureau Chief

DGB:dp

cc: R. L. Stamets, Director, OCD
Jerry Sexton, Hobbs District Office
L. S. Grebner, Program Officer, Economic Development & Tourism Dept.

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

October 2, 1985

The Honorable Keith Spradlin
Mayor of Lovington
P.O. Box 1210
Lovington, New Mexico 88260

Dear Mayor Spradlin:

Enclosed as requested is a copy of the New Mexico Water Quality Control Commission (WQCC) Regulations. The section dealing with injection wells for disposal of effluent is Part 5 although there are references back to Part 3. I have marked sections therein that are pertinent to your situation. An "effluent disposal well" is New Mexico's equivalent to EPA's "Class I" injection well. The regulations, though formatted differently, are substantially the same as EPA's, and the State of New Mexico has authority to permit these wells in lieu of EPA.

The wells previously used to dispose of refinery effluent are Class II and cannot be used to dispose of such effluent without being repermitted. The attached letter of September 27, 1984 from OCD Director R. L. Stamets to Araho Incorporated explains the matter further. One additional point is that if the waste water was injected into wells currently used and permitted for oil field waterflooding or pressure maintenance (ie. secondary recovery), these wells would continue to be considered Class II. No repermitting would then be required although the operator would want to ensure that such waste waters are compatible with his other injection fluids, the formation fluids, well casing, and cement, etc.

If the assumption is made that no secondary recovery operation is close by, the permitting of an effluent disposal well must be under the Part 5 WQCC Regulations. Because of the large amount of material that must be obtained and compiled by the applicant, submitted to the reviewing agency, reviewed and approved, we are looking at a minimum of six to eight months for complete permitting if the same wells used previously are proposed to be repermitted. Subsurface information currently on file will greatly aid in the repermitting. To further expedite the process, I suggest that you contact a professional consultant experienced in the

preparation of industrial disposal well applications. While New Mexico has had only one application approved, Texas has in excess of one-hundred Class I wells in and operating.

The Oil Conservation Division (OCD) has been delegated authority by the WQCC to permit oil refineries while the EID permits ethanol facilities. If the ethanol unit is an intergal part of the refinery, and not a completely separate facility, OCD could undertake the permitting of the entire facility with the WQCC's approval and EID commenting on the permit application. If the ethanol unit is a wholly separate facility, discharge plan approval for such unit would be by the EID. Given the information available to me, I have drawn up for you several options to consider:

CONDITIONS	REFINERY	DISPOSAL WELL PERMIT
1. Reopen refinery in 8-9 months, no major modifications at this time, use of same injection wells	OCD approved discharge plan in effect through April 1989, (except for effluent disposal to injection well) Refinery will require OCD inspection prior to operation.	Class II (OCD) if waterflood. Class ~~II~~ I (OCD) if effluent disposal well, but no provision for temporary permit. Requires WQCC approved variance. (Section 1-210) with public hearing if repermitting not to be completed prior to reopening. WQCC approves variance.
2. Same as 1. but with new injection well(s)	Same as 1	Same as 1 except that additional time ~~is~~ of several months is necessary for effluent disposal well permitting. New well cannot be drilled until approved, and testing results must be submitted for review prior to well use. OCD approves permit. Time required could delay refinery reopening unless temporary arrangement made. A possible solution is variance for use of Araho well until own wells permitted. WQCC

		approves variance.
3. Reopen refinery in 8-9 months, and permit ethanol production units at later date.	Same as 1 until ethanol units added. Discharge plan modification to be approved by OCD.	Modification of disposal well permit required when ethanol units added. Approval by OCD.
4. Reopen refinery in 8-9 months. Major modifications approved now for ethanol production, use of same injection wells.	OCD appoval of discharge plan modification.	Same as 1
5. Same as 4 except permit new injection wells now for use at present or at later date.	Same as 4	Same as 2

One other alternative that might be considered in lieu of, or in conjunction with, the previously mentioned alternatives would be the transport (via pipeline) of the effluent to the City of Lovington's sewage treatment plant. Such an action would require a modification to the existing discharge plan for the sewage plant. If the modification is approvable by EID, the minimum amount of time required would be 2 months. I suggest that the design consultants for the sewage plant be contacted to determine if this alternative is technically feasible.

The variance procedure will almost certainly need to be followed if injection wells (other than waterflood or pressure maintenance wells) are proposed for effluent disposal and the refinery is proposed to be reopened earlier than next summer. This procedure itself will require at least 90 days and includes a mandatory public hearing. The procedure begins with a petition presented to the WQCC. The Commission's meetings are usually scheduled for the second Tuesday of each month. If you desire to present a petition at a meeting, you must contact Ms. Kathy Sisneros of EID no later than two weeks before the meeting date. Ms. Sisneros, who is in charge of agenda preparation, can be reached by telephone at 984-0020, ext. 318.

The disposal of liquid effluents in a properly permitted, constructed and operated injection well has been demonstrated

to be an environmentally sound practice. There is no reason why this also should not be the case in this instance. The different and increased permitting requirements for a Class I versus a Class II injection well reflect concern at the national level for proper, safe disposal of industrial waste effluents, most of which are hazardous or toxic in some form. The OCD is prepared to assist you in your application by providing additional information on regulatory procedures, by working with a consultant of your choice on application preparation, and by providing expeditious review of a disposal well application. Please contact me at 827-5812 if I can provide you with additional information.

Sincerely,

David G. Boyer PLB

DAVID G. BOYER
Environmental Bureau Chief

DGB/et

encl.

cc: R. L. Stamets, OCD
Jerry Sexton, OCD
Maxine Goad, EID
Paige Morgan, EID
Kathy Sisneros, EID
Bob Carter, City Manager, Lovington

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

September 27, 1984

Araho Inc.
c/o Runnels Mud Co.
P.O. Box 937
Lovington, New Mexico 88260

Re: State L C Salt Water
Disposal Wells No. 1
and 2

Gentlemen:

Araho Inc. operates the two subject salt water disposal wells in Sections 1 and 2, Township 7 South, Range 36 East, NMPM, in Lea County, New Mexico.

The Environmental Protection Agency (EPA) has called our attention to the fact that these wells are apparently being used to dispose of waste waters from the Southern Union Refinery Company, Lovington Refinery without proper authorization. The EPA designates injection wells accepting industrial or municipal wastes as Class I wells. Injection wells related to oil and gas production are Class II wells. Under New Mexico's agreement with the EPA to run the Underground Injection Control Program, each class of injection well is permitted under different authority and processes. The approval process for Class I wells is contained in Section 5 of the regulations of the Water Quality Control Commission (WQCC). A copy of these regulations is enclosed for your convenience.

Until the wells have been approved for use as Class I disposal wells under Part 5 of the WQCC regulations, they should not be used for disposal or refinery waste water or other industrial or municipal wastes. They may continue to be used for disposal of water produced in conjunction with the production of oil or natural gas.

The Part 5 regulations are self explanatory, but, if needed, please do not hesitate to ask us for assistance.

Sincerely,

R. L. STAMETS,
Acting Director

RLS/dp

cc: Dave Boyer
Prentiss Childs
Jerry Sexton

Enc.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal | Time 2:30PM | Date 4/29/86

Originating Party	Other Parties
David Boyer/OCD	Keith Spradlin - Mayor's Office - 396-3608 (work) 396-2884 (City Hall)

Subject: Reactivation of Southern Union's Lovington Refinery

Discussion: I called Spradlin to inquire about status of sale of SUR's Lovington Refinery. He says sale is still being negotiated and that the likely buyer will be with a Salt Lake City refinery or oil company. Details are not public. The deal should be ~~closed~~ closed in the next several weeks or later if things bog down. Efficient disposal would be via an Artesia well, properly permitted. I stressed the need for lead time on the well and he said he reminded city manager (Bob Carter) of this recently.

Conclusions or Agreements:

Spradlin will notify us when deal is closed so that environmental permitting won't delay startup.

Distribution: SUR file

Signed: David L Boyer

PUBLIC NOTICE

Proposal to Grant a PSD Permit Extension to
Southern Union Refining Company

Southern Union Refining Company (SURCO), 1001 North Turner, Hobbs, New Mexico 88241-0980, has submitted a request for an additional extension of the expiration date of the Prevention of Significant Deterioration (PSD) Permit, PSD-NM-350, issued by the Environmental Protection Agency (EPA) on October 5, 1981, and effective on November 8, 1981. The permit was issued for the expansion of the existing petroleum refinery located on Highway 18, approximately 5 miles south of Lovington, Lea County, New Mexico.

Due to the deterioration of economic conditions and the incurred major expenditure of the capital dollars available to the company, SURCO has not commenced modification of the refinery. Therefore, EPA granted SURCO an extension on April 1, 1983, and an additional extension on March 8, 1985. Since the conditions that resulted in the first two extension requests have not been resolved, SURCO has requested an additional extension of six months.

The New Mexico Environmental Improvement Division (NMEID) reviewed the extension request of SURCO since they have been delegated the technical review authority for PSD in the State of New Mexico. The NMEID recommends approval of the extension and EPA accepts their recommendation. Therefore, EPA proposes to grant the requested extension of the expiration date of Permit PSD-NM-350 to May 8, 1986. Because of the potential public interest in this matter, EPA is accepting comments on the merits of the company's extension request for a period of thirty days following the publication of this notice. Since this permit expired on November 8, 1985, EPA is granting an interim extension until February 28, 1986, to preserve the status quo during this comment period.

Comments should be addressed to Mrs. Donna M. Ascenzi, Air Enforcement Branch, Air, Pesticides and Toxics Division, U.S. Environmental Protection Agency, Region 6, 1201 Elm Street, Dallas, Texas 75270. Documents relevant to the company's request are available during normal duty hours at the Air, Pesticides and Toxics Division, address above, and at the offices of the New Mexico Environmental Improvement Division, 725 St. Michaels Drive, Santa Fe, New Mexico 87504-0968.

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

October 2, 1985

The Honorable Keith Spradlin
Mayor of Lovington
P.O. Box 1210
Lovington, New Mexico 88260

Dear Mayor Spradlin:

Enclosed as requested is a copy of the New Mexico Water Quality Control Commission (WQCC) Regulations. The section dealing with injection wells for disposal of effluent is Part 5 although there are references back to Part 3. I have marked sections therein that are pertinent to your situation. An "effluent disposal well" is New Mexico's equivalent to EPA's "Class I" injection well. The regulations, though formatted differently, are substantially the same as EPA's, and the State of New Mexico has authority to permit these wells in lieu of EPA.

The wells previously used to dispose of refinery effluent are Class II and cannot be used to dispose of such effluent without being repermitted. The attached letter of September 27, 1984 from OCD Director R. L. Stamets to Araho Incorporated explains the matter further. One additional point is that if the waste water was injected into wells currently used and permitted for oil field waterflooding or pressure maintenance (ie. secondary recovery), these wells would continue to be considered Class II. No repermitting would then be required although the operator would want to ensure that such waste waters are compatible with his other injection fluids, the formation fluids, well casing, and cement, etc.

If the assumption is made that no secondary recovery operation is close by, the permitting of an effluent disposal well must be under the Part 5 WQCC Regulations. Because of the large amount of material that must be obtained and compiled by the applicant, submitted to the reviewing agency, reviewed and approved, we are looking at a minimum of six to eight months for complete permitting if the same wells used previously are proposed to be repermitted. Subsurface information currently on file will greatly aid in the repermitting. To further expedite the process, I suggest that you contact a professional consultant experienced in the

preparation of industrial disposal well applications. While New Mexico has had only one application approved, Texas has in excess of one-hundred Class I wells in and operating.

The Oil Conservation Division (OCD) has been delegated authority by the WQCC to permit oil refineries while the EID permits ethanol facilities. If the ethanol unit is an intergal part of the refinery, and not a completely separate facility, OCD could undertake the permitting of the entire facility with the WQCC's approval and EID commenting on the permit application. If the ethanol unit is a wholly separate facility, discharge plan approval for such unit would be by the EID. Given the information available to me, I have drawn up for you several options to consider:

CONDITIONS	REFINERY	DISPOSAL WELL PERMIT
1. Reopen refinery in 8-9 months, no major modifications at this time, use of same injection wells	OCD approved discharge plan in effect through April 1989, (except for effluent disposal to injection well) Refinery will require OCD inspection prior to operation.	Class II (OCD) if waterflood. Class ~~II~~ I (OCD) if effluent disposal well, but no provision for temporary permit. Requires WQCC approved variance. (Section 1-210) with public hearing if repermitting not to be completed prior to reopening. WQCC approves variance.
2. Same as 1. but with new injection well(s)	Same as 1	Same as 1 except that additional time ~~is~~ of several months is necessary for effluent disposal well permitting. New well cannot be drilled until approved, and testing results must be submitted for review prior to well use. OCD approves permit. Time required could delay refinery reopening unless temporary arrangement made. A possible solution is variance for use of Araho well until own wells permitted. WQCC

		approves variance.
3. Reopen refinery in 8-9 months, and permit ethanol production units at later date.	Same as 1 until ethanol units added. Discharge plan modification to be approved by OCD.	Modification of disposal well permit required when ethanol units added. Approval by OCD.
4. Reopen refinery in 8-9 months. Major modifications approved now for ethanol production, use of same injection wells.	OCD appoval of discharge plan modification.	Same as 1
5. Same as 4 except permit new injection wells now for use at present or at later date.	Same as 4	Same as 2

One other alternative that might be considered in lieu of, or in conjunction with, the previously mentioned alternatives would be the transport (via pipeline) of the effluent to the City of Lovington's sewage treatment plant. Such an action would require a modification to the existing discharge plan for the sewage plant. If the modification is approvable by EID, the minimum amount of time required would be 2 months. I suggest that the design consultants for the sewage plant be contacted to determine if this alternative is technically feasible.

The variance procedure will almost certainly need to be followed if injection wells (other than waterflood or pressure maintenance wells) are proposed for effluent disposal and the refinery is proposed to be reopened earlier than next summer. This procedure itself will require at least 90 days and includes a mandatory public hearing. The procedure begins with a petition presented to the WQCC. The Commission's meetings are usually scheduled for the second Tuesday of each month. If you desire to present a petition at a meeting, you must contact Ms. Kathy Sisneros of EID no later than two weeks before the meeting date. Ms. Sisneros, who is in charge of agenda preparation, can be reached by telephone at 984-0020, ext. 318.

The disposal of liquid effluents in a properly permitted, constructed and operated injection well has been demonstrated

to be an environmentally sound practice. There is no reason why this also should not be the case in this instance. The different and increased permitting requirements for a Class I versus a Class II injection well reflect concern at the national level for proper, safe disposal of industrial waste effluents, most of which are hazardous or toxic in some form. The OCD is prepared to assist you in your application by providing additional information on regulatory procedures, by working with a consultant of your choice on application preparation, and by providing expeditious review of a disposal well application. Please contact me at 827-5812 if I can provide you with additional information.

Sincerely,

David G. Boyer PLB

DAVID G. BOYER
Environmental Bureau Chief

DGB/et

encl.

cc: R. L. Stamets, OCD
Jerry Sexton, OCD
Maxine Goad, EID
Paige Morgan, EID
Kathy Sisneros, EID
Bob Carter, City Manager, Lovington

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

September 27, 1984

Araho Inc.
c/o Runnels Mud Co.
P.O. Box 937
Lovington, New Mexico 88260

Re: State L C Salt Water
Disposal Wells No. 1
and 2

Gentlemen:

Araho Inc. operates the two subject salt water disposal wells in Sections 1 and 2, Township 17 South, Range 36 East, NMPM, in Lea County, New Mexico.

The Environmental Protection Agency (EPA) has called our attention to the fact that these wells are apparently being used to dispose of waste waters from the Southern Union Refinery Company, Lovington Refinery without proper authorization. The EPA designates injection wells accepting industrial or municipal wastes as Class I wells. Injection wells related to oil and gas production are Class II wells. Under New Mexico's agreement with the EPA to run the Underground Injection Control Program, each class of injection well is permitted under different authority and processes. The approval process for Class I wells is contained in Section 5 of the regulations of the Water Quality Control Commission (WQCC). A copy of these regulations is enclosed for your convenience.

Until the wells have been approved for use as Class I disposal wells under Part 5 of the WQCC regulations, they should not be used for disposal or refinery waste water or other industrial or municipal wastes. They may continue to be used for disposal of water produced in conjunction with the production of oil or natural gas.

The Part 5 regulations are self explanatory, but, if needed, please do not hesitate to ask us for assistance.

Sincerely,

R. L. STAMETS,
Acting Director

RLS/dp

cc: Dave Boyer
Prentiss Childs
Jerry Sexton

Enc.

The following is a partial list of consultant hydrogeologists who are experienced in responding to the technical requirements of the Underground Injection Control program.

Ken E. Davis and Associates *
3121 San Jacinto, Suite 102
Houston, TX 77004
(713) 522-5784

Golden Strataservices, Inc. *
1100 Milan St., Suite 2000
Houston, TX 77002
(713) 759-9764

Randall T. Hicks
GEOSCIENCE CONSULTANTS
222 Copper Square
500 Copper Ave., NW
Albuquerque, NM 87102
(505) 842-0001

Bob Kent
Underground Resources Management, Inc. *
508 Powell Street
Austin, TX 78703
(512) 478-2339

Hank Peters
Consulting Hydrogeologist
P.O. Box 994
Round Rock, TX 78680-0994

Lee Wilson and Associates
P.O. Box 931
Santa Fe, NM 87501
(505) 988-9811

Natural Resources Engineering, Inc.
201 E. Sanger
P.O. Box 2188
Hobbs, NM 88240

* These consultants are known to have experience with Class I applications (although in Texas). No representation is made by me as to the adequacy of their services, or the services of any other consultant whether listed here or not.

D L Boyer 9/16/85

TONEY ANAYA
GOVERNOR

DENISE D. FORT
DIRECTOR

STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT DIVISION
P.O. Box 968, Santa Fe, New Mexico 87504-0968
(505) 984-0020

RECEIVED
SEP 20
OIL CONSERVATION DIVISION
SANTA FE

September 17, 1985

Bob Carter, City Manager
PO Box 1268
Lovington, NM 88260

Re: Regulations governing proposed effluent disposal wells

Dear Mr. Carter:

Enclosed are the Water Quality Control Commission regulations, as I promised. The regulations pertinent to an effluent disposal well are contained primarily in Part 5, although there are references back to Part 3. The terms under which a discharger may petition the Water Quality Control Commission for a variance from the regulations are contained in Section 1-210.

Mr. David Boyer of the Oil Conservation Division plans to be in touch with you within the next few days. That agency has regulatory authority over the disposal of refinery wastes.

Sincerely,

Paige Grant Morgan
Water Resource Specialist

PGM:pgm

cc: David Boyer, Oil Conservation Division

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

[X] Telephone [ ] Personal	Time 8:45AM	Date 9/17/85

Originating Party	Other Parties
D. Boyer OCD	Bill Hosker U.S.EPA Dallas (214) 767-8998

Subject EPA Rules on conversion of Class II to Class I

Discussion No provisions under EPA rules for temporary permit - Emergency permit does not apply here, nor does permit by rule (that is only for wells operating at new program comes into effect). Since NM has program, NM rules apply; but if it was EPA ~~will~~ regulated well would not allow - must have regulated first.

Conclusions or Agreements

Distribution

Signed D. Boyer

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal | Time 9 AM | Date 9/16/85

Originating Party	Other Parties
Keith Spradlin - Mayor of Lovington 396-3608 (work) 396-2884 (city)	Dave Boyer OCD P.O. Box 1210, Hobbs

Subject: Reopening of SU Refinery - use of Injection well (SUR - Southern Union Refinery)

Discussion: Spradlin called to discuss permit needs for using SUR Class II for refinery disposal. I told him well would need to be permitted under WQCC Regs (as Class I effluent disposal wells) and that time frame would be 6-12 months at least. I suggested that the city or company hire an experienced consultant that has Class I permitting experience to avoid new folks "cutting their teeth" on the application. ~~[illegible]~~ E/D has a listing of consultants who are experienced.

Conclusions or Agreements: Will send Regulations and list of consultants (with disclaimer) to Mayor along with letter briefly explaining moves for permitting. Will also review current DP for other deficiencies.

(OVER)

Distribution: SUR file
Dick Stamets

Signed: DG Boyer

Conversation with EIB 9/16 -

Paige Morgan received call from Lovington City Manager asking same questions. Schedule for operation is reopen old units in 3-6 months. Later to add ethanol units. Therefore OCD to permit first, EIB to review later when ethanol added. To get permit for Class I well operation early-on using existing SWD well, will need to go [illegible] before WQCC for Variance (or possibly approval) but only if EPA would agree to such a procedure and only if SWD is mechanically sound and protecting groundwater. Paige preparing letter eventually to deny these two.

WR 9/16

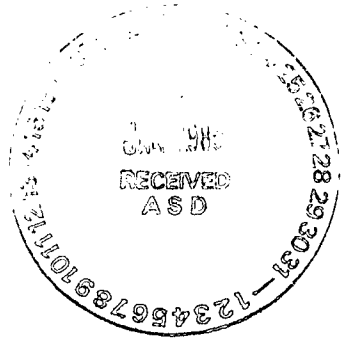
PUBLIC NOTICE

Proposal to Grant a PSD Permit Extension to
Southern Union Refining Company

Southern Union Refining Company (SURCO), 1001 North Turner, Hobbs, New Mexico 88241-0980, has submitted a request for an additional extension of the expiration date of the Prevention of Significant Deterioration (PSD) Permit, PSD-NM-350, issued by the Environmental Protection Agency (EPA) on October 5, 1981, and effective on November 8, 1981. The permit was issued for the expansion of the existing petroleum refinery located on Highway 18, approximately 5 miles south of Lovington, Lea County, New Mexico. Due to the deterioration of economic conditions and the recently incurred major expenditure of the capital dollars available to the company, together with the operating losses, SURCO needs to conserve its resources and recoup some of that cost prior to undertaking the modification for expansion. Therefore, EPA granted SURCO an eighteen months extension on April 1, 1983. Since the conditions that resulted in the first extension request have not been resolved, SURCO has requested an additional extension of twelve months.

The New Mexico Environmental Improvement Division (NMEID) reviewed the extension request of SURCO since they have been delegated the technical review authority for PSD in the State of New Mexico. The NMEID recommends approval of the extension and EPA accepts their recommendation. Therefore, EPA proposes to grant the requested extension of the expiration date of Permit PSD-NM-350 to November 8, 1985. Because of the potential public interest in this matter, EPA is accepting comments on the merits of the company's extension request for a period of thirty days following the publication of this notice. Since this permit expired on November 8, 1984, EPA is granting an interim extension until March 8, 1985, to preserve the status quo during this comment period.

Comments should be addressed to Mrs. Donna M. Ascenzi, Air Branch, Air and Waste Management Division, U.S. Environmental Protection Agency, Region 6, 1201 Elm Street, Dallas, Texas 75270. Documents relevant to the company's request are available during normal duty hours at the Air and Waste Management Division, address above, and at the offices of the New Mexico Environmental Improvement Division, 725 St. Michaels Drive, Santa Fe, New Mexico 87504-0968.


RECEIVED
ASD

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

September 27, 1984

Araho Inc.
c/o Runnels Mud Co.
P.O. Box 937
Lovington, New Mexico 88260

Re: State L C Salt Water
Disposal Wells No. 1
and 2

Gentlemen:

Araho Inc. operates the two subject salt water disposal wells in Sections 1 and 2, Township 7 South, Range 36 East, NMPM, in Lea County, New Mexico.

The Environmental Protection Agency (EPA) has called our attention to the fact that these wells are apparently being used to dispose of waste waters from the Southern Union Refinery Company, Lovington Refinery without proper authorization. The EPA designates injection wells accepting industrial or municipal wastes as Class I wells. Injection wells related to oil and gas production are Class II wells. Under New Mexico's agreement with the EPA to run the Underground Injection Control Program, each class of injection welll is permitted under different authority and processes. The approval process for Class I wells is contained in Section 5 of the regulations of the Water Quality Control Commission (WQCC). A copy of these regulations is enclosed for your convenience.

Until the wells have been approved for use as Class I disposal wells under Part 5 of the WQCC regulations, they should not be used for disposal or refinery waste water or other industrial or municipal wastes. They may continue to be used for disposal of water produced in conjunction with the production of oil or natural gas.

The Part 5 regulations are self explanatory, but, if needed, please do not hesitate to ask us for assistance.

Sincerely,

R. L. STAMETS,
Acting Director

RLS/dp

cc: Dave Boyer
Prentiss Childs
Jerry Sexton

Enc.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

April 27, 1984

MEMO TO: Mr. Joe D. Ramey
Director

FROM: Jerry Sexton
Supervisor, District I

SUBJECT: DISCHARGE FROM SOUTHERN UNION PLANT TO ARAHO SWD SYSTEM

The changes in operation of the Araho Disposal system that were discussed at the meeting with Araho, Southern Union, and OCD personnel have been made and the operations are now adequate to meet OCD rules and regulations.

Changes made are as follows:

1) Meters installed on well

2) Piping changed to prevent tank from being drawn down and BS getting into the well.

3) Southern Union is sending water to the disposal well at a relatively constant rate.

Due to the above changes the SWD wells have not run over for some time, the pits are in shape and the disposal system has an excess capacity of 1000 to 1500 barrels per day. We do not see any future problems with this system.

cc: Eddie W. Seay
Don Hamm, Southern Union Ref.
Araho Inc.
File

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

April 25, 1984

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

Southern Union Refining Company
P. O. Box 980
Hobbs, New Mexico 88240

Re: GWR-14
Discharge Plan

Gentlemen:

The discharge plan submitted pursuant to Water Quality Control Commission Regulations for the controlled discharge of waste water and associated fluids from the Lovington Refinery located in Section 36, Township 16 South, Range 36 East, NMPM, Lea County, New Mexico, is hereby approved with the following restrictions:

1. Waters presently pumped to the emergency pit for cooling purposes will be placed in an above ground tank or suitable container for that purpose.

2. Any leaks or spills of five barrels or more will be reported indicating the cause, repair and cleanup details.

The discharge plan was submitted pursuant to Section 3-106 and is approved pursuant to Section 3-109 of the Water Quality Control Commission Regulations. The plan is approved on April 25, 1984, and is in effect for five years.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

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

March 9, 1984

Mrs. Dorothy Runnels
Araho, Inc.
Box 937
Lovington, New Mexico 88260

Dear Dorothy:

In our meeting with Southern Union and Phillip we brought out what we consider to be problems with the Araho disposal system. Basically, the emergency pits are full of water and appear to be used for disposal purposes. Also, oil and water have overflowed from the pit and/or tanks and have contaminated areas outside your disposal location.

Emergency pits are to be used for emergency purposes and if an emergency does occur, the pit is to be pumped dry immediately. Any spills and leaks, and these should certainly be rare, should be covered immediately with fresh topsoil.

I am in the process of approving a discharge plan for Southern Union. It has been advertised and I have until May 29 to either approve or disapprove the plan. I cannot approve the plan if their waste is being disposed of into open pits at your disposal wells. They have assured us that they will make every effort to minimize the fluctuations in their effluent stream.

In discussing the disposal problems with Phillip, it appears that shut-in valves, to prevent materials in the bottom of the tanks from going into the wells, have been removed. This is a problem particularly after the wells have been acidized. From what Phillip has described, he acidizes the wells and they then take water more rapidly than it is coming into the tanks. When it reaches a low level, bottoms are sucked into the well which probably replugs the disposal interval.

I hope this is some help in solving your disposal problem. We did suggest to Phillip that he consult with Loy Goodheart with Rice Engineering in Hobbs. They operate a similar disposal system nearby and do not appear to be having any problems.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

SOUTHERN UNION REFINING COMPANY
P.O. Box 980 / 1001 North Turner / Hobbs, New Mexico 88241-0980 / Telephone (505) 397-3384

RANDOLPH L. SCOTT
PRESIDENT

March 5, 1984

Araho, Inc.
P. O. Box 937
Lovington, New Mexico 88260

ATTN: Ms. Dorothy Runnels

RE: Agreement dated December 20, 1973 between Famariss Oil & Refining Co. and Araho, Inc.

Dear Dorothy:

After considering recent meetings between your representatives and our representatives and a meeting with the New Mexico Oil Conservation Division, it is apparent that serious problems are present in your operation.

Araho has a clear responsibility to operate the system in such a way as to:

(1) dispose of all contaminated water resulting from the operations of the plant (paragraph I); I don't know what increase in rate users -

(2) comply with applicable regulations and laws (paragraph IV); and

(3) keep the system in good operating repair at all times (paragraph IV). The system operates well

Araho has failed to comply with the terms of the contract. We are advised that the Oil Conservation Division has sixty days in which to approve or disapprove our water discharge plan. This plan will not be approved if you do not meet your contractual agreements. You should do all things necessary to comply with the contract and you must have an approved plan within forty-five days.

You are hereby put on notice that:

(1) your failure to comply exactly with the terms of the contract will result in the exercise of our rights under paragraph V of the contract which will involve termination of the agreement and the purchase of your facility;

(2) in the alternative, we will seek an alternate disposal method and assert a claim against you for the additional costs incurred as a result ~~of your breach~~ of contract; and

(3) in addition, your actions are likely to result in the shutdown of our plant ~~and we will~~ certainly ~~assert a claim for these~~ damages in the event you are responsible ~~for such a shutdown~~.

We do not waive any provision of the contract by this letter.

Sincerely,

Randolph L. Scott

Randolph L. Scott

RLS:ri

cc: Oil Conservation Commission

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

SANTA FE, NEW MEXICO

Notice Dates
1/21/84 (ALB.)
1/3/84 (HOBBS)

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following proposed discharge plan has been submitted for approval to the Director of the Oil Conservation Division, P. O. Box 2088, State Land Office Building, Santa Fe, New Mexico 87501, telephone (505) 827-5803.

SOUTHERN UNION REFINING COMPANY, Lovington Refinery (Section 36, Township 16 South, Range 36 East, NMPM, Lea County, New Mexico) P. O. Box 980, Hobbs, New Mexico 88240, proposes to discharge approximately 4460 barrels of waste water per day. The waste water is derived from the plant process. The waste water will be disposed of into an injection system operated by Araho, Inc. and ultimately into an injection well(s). The total dissolved solids content of the waste water is approximately 1300 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 any interested person. Requests for a 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 January, 1984.

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

JOE D. RAMEY

Director

S E A L

SOUTHERN UNION REFINING COMPANY
P.O. BOX 980/501 NORTH LINAM/HOBBS, NEW MEXICO 88240/TELEPHONE 505/393-6116

November 2, 1981

Monument Plant

Oil Conservation Division
New Mexico State Government
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Oscar Simpson

RE: Waste Water Discharge Plan;
Monument Refinery

Dear Sir:

Southern Union Refining Company's Monument Refinery was shut down in September of 1980. There is no decision at this time, either to start up the refinery or to dismantle the equipment. The process units have been mothballed by filling with diesel fuel and nitrogen gas. The storage tanks have been emptied, leaving only a small heel of product and the sludge accumulated during operations. Cooling towers and the waste water system were pumped dry.

When operating, waste water from the refinery is collected in a sewer system which drains to an oil-water separator (API separator) for oil recovery. The water was disposed of using contract well injection. The API separator is constructed with reinforced concrete. Both tanks and an earth pit were used for water surge between the API separator and the well injection line.

The waste water system was pumped dry when the refinery was shut down. The sewer system still collects rain runoff which flushes trapped oil out of the sewer. The water and oil collects in the API separator, is picked up with a vacuum truck and hauled to a contract oil recovery site. Rain collected in the earth pit is also removed by vacuum truck.

Security staffing is provided to monitor the level of the API separator and periodically inspect the integrity of the tank farm.

Since there are no discharges from the refinery, Southern Union Refining Company requests a variance from the requirement for a waste water discharge plan. Should the decision be made to activate the refinery, Southern Union will submit a waste water discharge plan for water disposal prior to starting the refinery. Should the decision be made to dismantle the refinery, Southern Union Refining Company will prepare a plan demonstrating the safe disposal of sludges from the tanks.

Sincerely,

William L McDonnell

William L. McDonnell
Vice-President Engineering and Refinery
Operations

WLM:pl

SOUTHERN UNION REFINING COMPANY
P.O. BOX 980/501 NORTH LINAM/HOBBS, NEW MEXICO 88240/TELEPHONE 505/393-6116

November 2, 1981

Oil Conservation Division
New Mexico State Government
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Oscar Simpson

RE: Waste Water Discharge Plan;
Monument Refinery

Dear Sir:

Southern Union Refining Company's Monument Refinery was shut down in September of 1980. There is no decision at this time, either to start up the refinery or to dismantle the equipment. The process units have been mothballed by filling with diesel fuel and nitrogen gas. The storage tanks have been emptied, leaving only a small heel of product and the sludge accumulated during operations. Cooling towers and the waste water system were pumped dry.

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Sincerely,

William L. McDonnell

William L. McDonnell
Vice-President Engineering and Refinery
Operations

WLM:pl

Note

Monument Plant shut down
asked for closure of pond
& ass wast & sludge

SOUTHERN UNION REFINING COMPANY
MARKETING OFFICE-LOVINGTON, NEW MEXICO/TELEPHONE 505/396-5821
P.O. BOX 980/HOBBS, NEW MEXICO 88240

October 30, 1981

Oil Conservation Division
New Mexico State Government
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Oscar Simpson

RE: Waste Water Discharge Plan;
Lovington Refinery

Dear Sir:

The attached document is submitted to comply with your request for a waste water discharge plan for Southern Union Refining Company's Lovington Refinery. The plan was prepared by G. A. Baca and Associates (GABA), University Plaza, Suite 207, 330 Garfield Street, Santa Fe, New Mexico 87501. Questions on the content of the plan can be forwarded to either Mr. Stan Zygmunt with GABA (505/983-2594) or to Mr. Don Ham at the Lovington Refinery (505/396-3658).

Sincerely,

William L McDonnell

William L. McDonnell
Vice-President Engineering and
Refinery Operations

WLM:pl

Attachment

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

August 18, 1981

Southern Union Refining Company
P. O. Box 980
Hobbs, New Mexico 88240

Attention; Don Ham

Dear Sir:

Enclosed is a list of consultants and labs as you requested.

Sincerely,

Oscar O. Simpson III

OSCAR O. SIMPSON III
Water Resources Specialist

OOS/jc

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

August 12, 1981

Southern Union Refining Company
P. O. Box 980
Hobbs, New Mexico 88240

Attention: Donald Ham

Re: Discharge Plan for Lovington and
Monument Plants

Gentlemen:

Pursuant to the letter of August 6, 1981, by Donald Ham of Southern Union Refining Company requesting a 90-day extension of time for Lovington and Monument Discharge Plans, the extension of time is hereby granted.

The extension of time was granted on good faith that at the end of this extension, discharge plans shall be submitted for Lovington and Monument Plants in accordance with Water Quality Control Regulations. The extension of time for Monument and Lovington Discharge Plans is hereby extended from August 7, 1981 to November 7, 1981.

Sincerely,

OSCAR A. SIMPSON
Water Resource Specialist

OS/og

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

August 12, 1981

Southern Union Refining Company
P. O. Box 980
Hobbs, New Mexico 88240

Attention: Donald Ham

Re: Discharge Plan for Lovington and
Monument Plants

Gentlemen:

Pursuant to the letter of August 6, 1981, by Donald Ham of Southern Union Refining Company requesting a 90-day extension of time for Lovington and Monument Discharge Plans, the extension of time is hereby granted.

The extension of time was granted on good faith that at the end of this extension, discharge plans shall be submitted for Lovington and Monument Plants in accordance with Water Quality Control Regulations. The extension of time for Monument and Lovington Discharge Plans is hereby extended from August 7, 1981 to November 7, 1981.

Sincerely,

OSCAR A. SIMPSON
Water Resource Specialist

OS/og

SOUTHERN UNION REFINING COMPANY
P.O. BOX 980/501 NORTH LINAM/HOBBS, NEW MEXICO 88240/TELEPHONE 505/393-6116

August 6, 1981

Mr. Oscar Simpson
Oil Conservation Division
P. O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

RE: Request for extension of deadline for submittal of Discharge Plan

Dear Mr. Simpson:

Southern Union Refining Company received a request for a discharge plan from your office on April 14, 1981 (dated April 7, 1981). Due to a large personnel turnover in our refinery over the past few months and subsequent reassignment of responsibilities this request has been overlooked. We are now applying for a deadline extension to give us time to do the work required for the disposal plan. As I discussed with you via telephone on August 5, 1981 a list of consultants competent to prepare this plan in the State of New Mexico and recommendation as to competent laboratories for water analysis would be very much appreciated.

I will be waiting your response.

Respectfully submitted,

Donald Ham

Don Ham

DH:pl

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

April 7, 1981

Mr. M. W. Morrol
Southern Union Refining Co.
Box 980
Hobbs, New Mexico 88240

Re: Request for Discharge Plans

Dear Mr. Morrol:

Under provisions of the regulations of the Water Quality Control Commission you are hereby notified that the filing of discharge plans for Southern Union's Lovington Plant (Lea County) and Monument Plant (Lea County) 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 discharge 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 plans 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 Oscar Simpson at 827-3260. Mr. Simpson has been assigned responsibility for review of all discharge plans.

Very truly yours,

JOE D. RAMEY
Division Director

JDR/OS/og
enc.
cc: Oil Conservation Division - Hobbs

SOUTHERN UNION REFINING COMPANY
MARKETING OFFICE-LOVINGTON, NEW MEXICO/TELEPHONE 505/396-5821
P.O. BOX 980/HOBBS, NEW MEXICO 88240

OK
No Date
11/20/79

November 3, 1978

State of New Mexico
Energy & Minerals Department
Oil Conservation Division
P. O. Box 1980
Hobbs NM 88240

Attention: Eddie Seay

Subject: Pits, Ponds, and Lagoons Associated with
Refinery and Gasoline Plant Operations

Dear Sir:

Please be advised that neither of our two refineries, located at Monument and Lovington, have any of the subject pits, ponds, or lagoons. As such, we will not be forwarding any data.

If you have any questions, please advise.

Very truly yours,

SOUTHERN UNION REFINING COMPANY

John Knight

John R. Knight
Refinery Superintendent

jfd

cc: Blue File

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

May 13, 1974

Famariss Oil and Refining Company
P. O. Box 980
Hobbs, New Mexico 88240

Attention: Mr. Earl N. Crain III

Re: Administrative Order SWD-154

Gentlemen:

COPY

Reference is made to your letter of May 3, 1974, concerning the Araho Inc. State "LC" Well No. 1, located 2190 feet from the South line and 560 feet from the East line of Section 1, Township 17 South, Range 36 East, Lea County, New Mexico, which well was authorized for salt water disposal by the Commission's Administrative Order No. SWD-154, dated April 1, 1974. The order provided that disposal is to be down 3 1/2-inch plastic-lined tubing set in a packer located no higher than 12,100 feet, although the application was for thepacker to be set at 9,000 feet. Injection will be into the open-hole interval from 12,400 feet to 12,704 feet.

It is our understanding that although the well will continue to be operated by Araho, Inc., the waters disposed into the well will include refinery waste water produced at the Famariss refinery near Lovington.

The Foster Wheeler water analysis attached to your most recent letter indicates that the refinery waste water can be safely disposed of in the subject well, although it may be necessary to occasionally acidize or otherwise treat the well to prevent formation blockage.

Administrative Order SWD-154 is therefore hereby amended to include in the authority contained therein authority to dispose

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

of refinery waste waters of the general type described in the Foster Wheeler Corporation letter of October 16, 1973.

Araho, Inc., shall file monthly disposal reports on Commission Form C-120-A, as required by Commission Rules 704 and 1120.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/dr

cc: Oil Conservation Commission - Hobbs
New Mexico State Land Office - Santa Fe
Araho, Inc., Box 5446, Midland, Texas 79701
Attention: Mr. Earl R. Bruno

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

April 5, 1974

COPY

Araho, Inc.
P. O. Box 5456
Midland, Texas

Re: Order No. SWD-154

Gentlemen:

Enclosed herewith please find Administrative Order No. SWD-154 for the following well:

State "LC" Well No. 1 located in Unit I of Section 1, Township 17 South, Range 36 East, NMPM, Lea County, New Mexico.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/CU/og

cc: Oil Conservation Commission
Box 1980
Hobbs, New Mexico

New Mexico State Land Office
Land Office Building
Santa Fe, New Mexico

SUBJECT: SALT WATER DISPOSAL WELL ORDER NO. SWD-154

THE APPLICATION OF ARAHO, INC.
FOR A SALT WATER DISPOSAL WELL.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION COMMISSION

Under the provisions of Rule 701 (C) Araho, Inc., made application to the New Mexico Oil Conservation Commission on March 4, 1974, for permission to complete for salt water disposal its State "LC" Well No. 1 located in Unit I of Section 1, Township 17 South, Range 36 East, NMPM, Lea County, New Mexico.

The Secretary Director finds:

1. That application has been duly filed under the provisions of Rule 701 (C) of the Commission Rules and Regulations;

2. That satisfactory information has been provided that all offset operators and surface owners have been duly notified; and

3. That the applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 (C) will be met.

4. That no objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED:

That the applicant herein, Araho, Inc., is hereby authorized to complete its State "LC" Well No. 1 located in Unit I of Section 1, Township 17 South, Range 36 East, NMPM, Lea County, New Mexico, by the installation of a 5 1/2 inch liner from 4799 feet to approximately 12,150 feet and to dispose of produced salt water through 3 1/2-inch plastic-lined tubing set in a packer located not higher than 12,100 feet, said disposal to be confined to the Silurian formation.

IT IS FURTHER ORDERED:

That the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface to facilitate detection of leakage in the casing, tubing, or packer.

PROVIDED FURTHER:

That jurisdiction of this cause is hereby retained by the Commission for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after notice and hearing, the Commission may terminate the authority hereby granted in the interest of conservation. That applicant shall submit monthly reports of the disposal operation in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

APPROVED at Santa Fe, New Mexico, on this 1st day of April, 1974.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

A. L. PORTER, Jr.
Secretary-Director

S E A L

FAMARISS OIL AND REFINING COMPANY

P. O. BOX 980
HOBBS, NEW MEXICO 88240

TELEPHONE (505) 393-6116

May 3, 1974

Mr. D. S. Nutter
Chief Engineer
Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Nutter:

Please consider the enclosed material as Famariss Oil and Refining Company's application for disposal of its refinery effluent.

Mr. Earl Bruno with Araho Inc. has previously applied for and been granted a permit for salt water disposal. He notified all interested persons in connection with the disposal well and submitted the electric log which we did not enclose.

I sincerely hope the enclosed information will be of sufficient completeness to allow you to act promptly on this request, because our new refinery is due to go into start-up operations on June 1, 1974.

Very truly yours,

Earl N. Crain III

EARL N. CRAIN III
Vice President
Planning and Development

ENC/as
Enclosures

Form C-108
Revised 3-1-68

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR		ADDRESS	
Araho, Inc.		P.O. Box 5456, Midland, Texas 79701	
LEASE NAME	WELL NO.	FIELD	COUNTY
State "LC"	1	Dry Hole	Lea

LOCATION

UNIT LETTER I ; WELL IS LOCATED 2190 FEET FROM THE South LINE AND 560 FEET FROM THE East LINE, SECTION 1 TOWNSHIP 17S RANGE 36E NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8	451	450	Circulated	Visual
INTERMEDIATE	8 5/8	4999	1500	2765	Temp. Survey
LONG STRING	5 1/2	12400	1000	4500	
TUBING	3 1/2	9000	NAME, MODEL AND DEPTH OF TUBING PACKER: Baker Model R 9000'		

NAME OF PROPOSED INJECTION FORMATION	TOP OF FORMATION	BOTTOM OF FORMATION
Fusselman & Sulurian	12400	12704

IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?	PERFORATIONS OR OPEN HOLE?	PROPOSED INTERVAL(S) OF INJECTION
Tubing	Open Hole	12400-12704

IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?
No	Test well to evaluate Fusselman, etc.	No

LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH

None

DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA
200'	6600'	None

ANTICIPATED DAILY INJECTION VOLUME (BBLS.) MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
6000	12000	Closed	Pressure	900

ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE –	WATER TO BE DISPOSED OF	NATURAL WATER IN DISPOSAL ZONE	ARE WATER ANALYSES ATTACHED?
	Yes	Yes	Yes

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)

State of New Mexico (Mobil Oil Corp., Box 900, Dallas, Texas 75221 - B-3009)

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (½) MILE OF THIS INJECTION WELL

Skelly Oil Company - 2nd Floor, Wall Towers West, Midland, Texas 79701

NOTE: The above well was approved for Araho, Inc. to use for salt water disposal under Administrative Order Number SWD-154.

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
	Yes	Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAT OF AREA	ELECTRICAL LOG	DIAGRAMMATIC SKETCH OF WELL
	Yes	No	Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Earl McClain III — (Signature)

Vice President — (Title)

May 3, 1974 — (Date)

NOTE: Should waivers from the surface owner and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

FOSTER WHEELER CORPORATION

5137 WEST ALABAMA
P. O. BOX 22395
HOUSTON, TEXAS 77027

HOME OFFICE:
110 SOUTH ORANGE AVE.
LIVINGSTON, N. J.

BRANCHES IN
THE PRINCIPAL CITIES OF
UNITED STATES AND CANADA
ALSO
LONDON · PARIS
MILAN · TOKYO
MADRID
RIO DE JANEIRO

TELEPHONE:
AREA 713-622-7100
TELETYPE 910-881-1746
CABLE REWOPHOUSTON
TELEX 77-5196

October 18, 1973

Mr. Earl Bruno
P. O. Box 5456
Midland, Texas

SUBJECT: FAMARISS OIL & REFINING CO.
Lovington, New Mexico
FW Contract 14-1190
COMPOSITION OF REFINERY
SEWER EFFLUENT

Dear Mr. Bruno:

At the request of Mr. M. W. Carroll of Famariss Oil & Refining Company, we tabulate below an anticipated analysis of the waste water effluent from the Famariss Refinery.

Composition	PPM
Si	36
Na	106
HCO_3	211
SO_4	72
Cl	141
Ca	90
Mg	9
Sulfide	33 max.
Oil	12

The above anticipated analysis is based upon the continuous flow streams contributing to the Refinery waste water effluent. There are numerous intermittent flows occurring at varying intervals, some as great as yearly. In most cases these intermittent flows are such elements as: rainwater, washdown water, softener back flushing, etc., and as such would not contribute to sulfides or oil contents.

We trust the above supplies the information you require. Should additional data be necessary please do not hesitate to contact Mr. Carroll or the writer.

Very truly yours,
FOSTER WHEELER CORPORATION

R. C. Sibbern, Project Manager
Process Plants Division

rcs:pp

cc: M. W. Carroll
W. J. Dougherty

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Araho, Inc.	State "LC"	1

Unit Letter	Section	Township	Range	County
I	1	17S	36E	Lea

Actual Footage Location of Well:
2190 feet from the South line and 560 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage
	None	Water Disposal Well	None

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

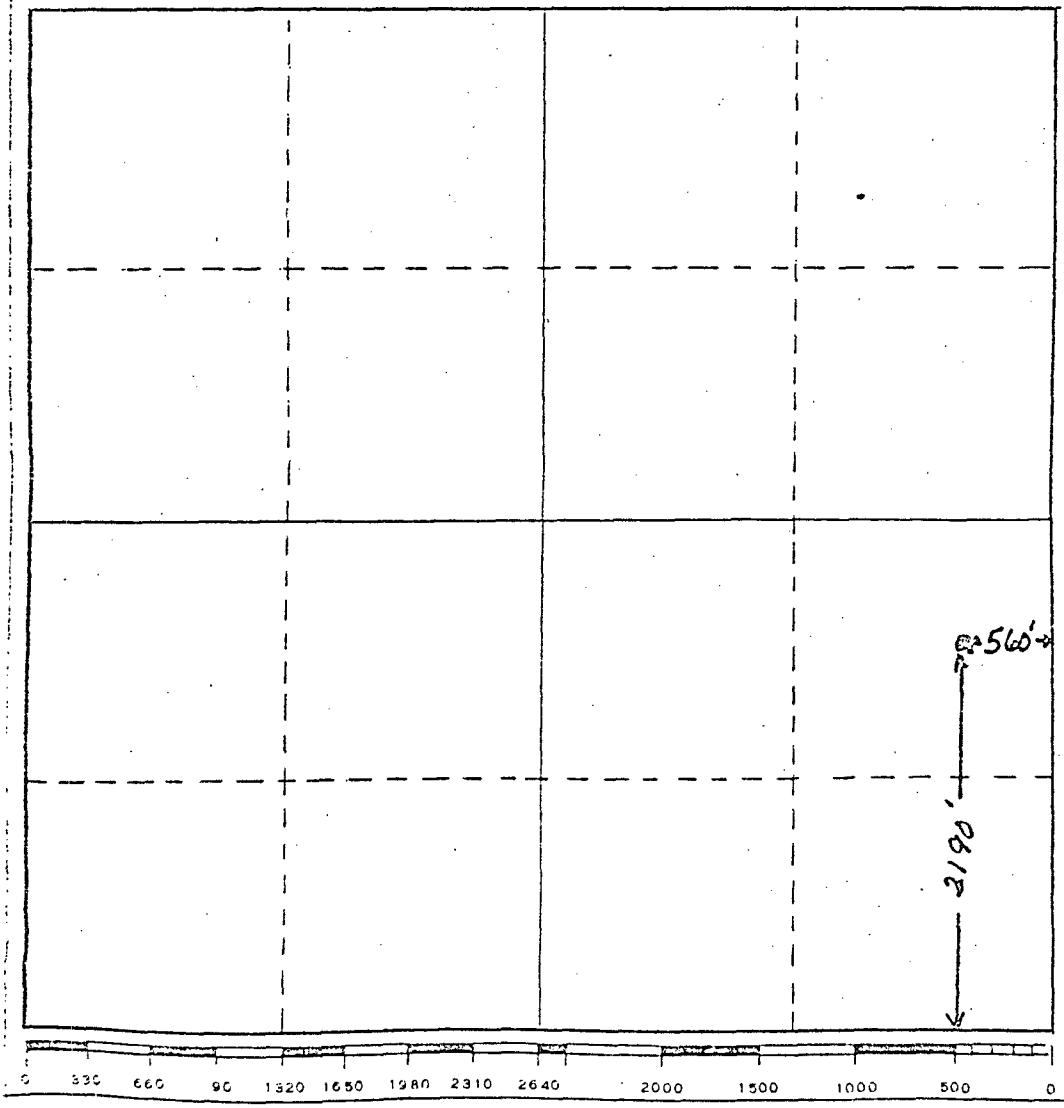
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Vice-President

Position: Araho, Inc.

Company: 4/4/74

Date

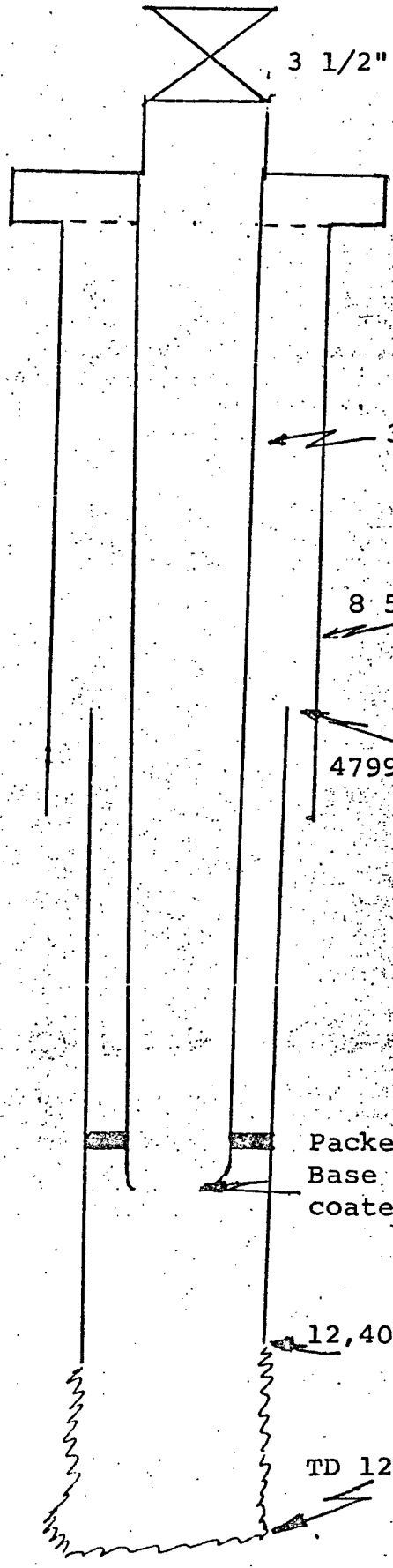
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

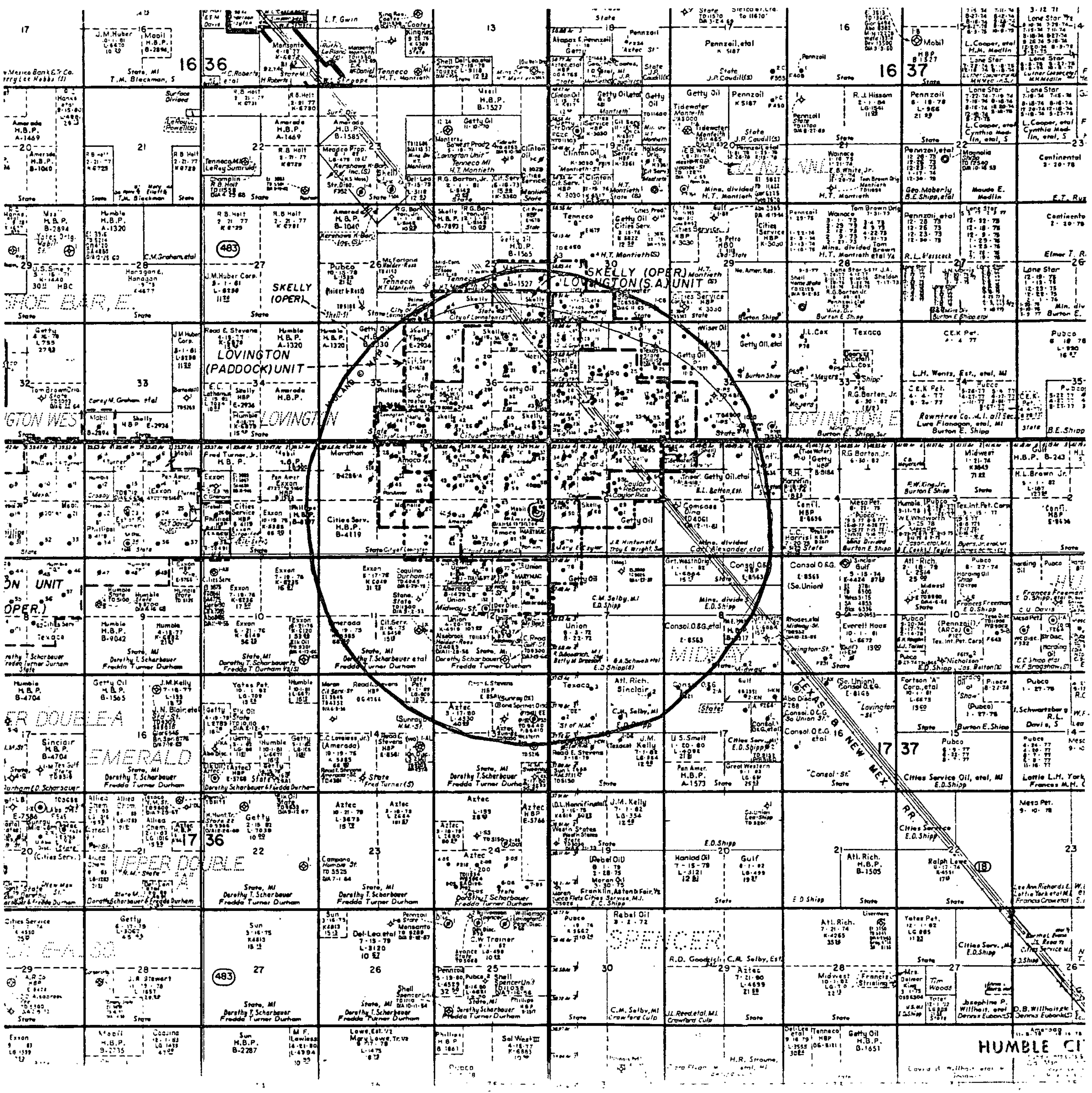
Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.

ARAHO, INC.
State "LC" #1 Well
Sketch of Completion





LOVINGTON
(PADDOCK) UNIT
SKELLY
(OPER)
SKELLY (OPER) LOVINGTON (S.A.) UNIT
EMERALD
SPENCER
MIDWAY
TEXAS & NEW MEX. RR
HUMBLE CI
Getty Oil
Pennzoil
Aztec
Cities Service
State
H.B.P.