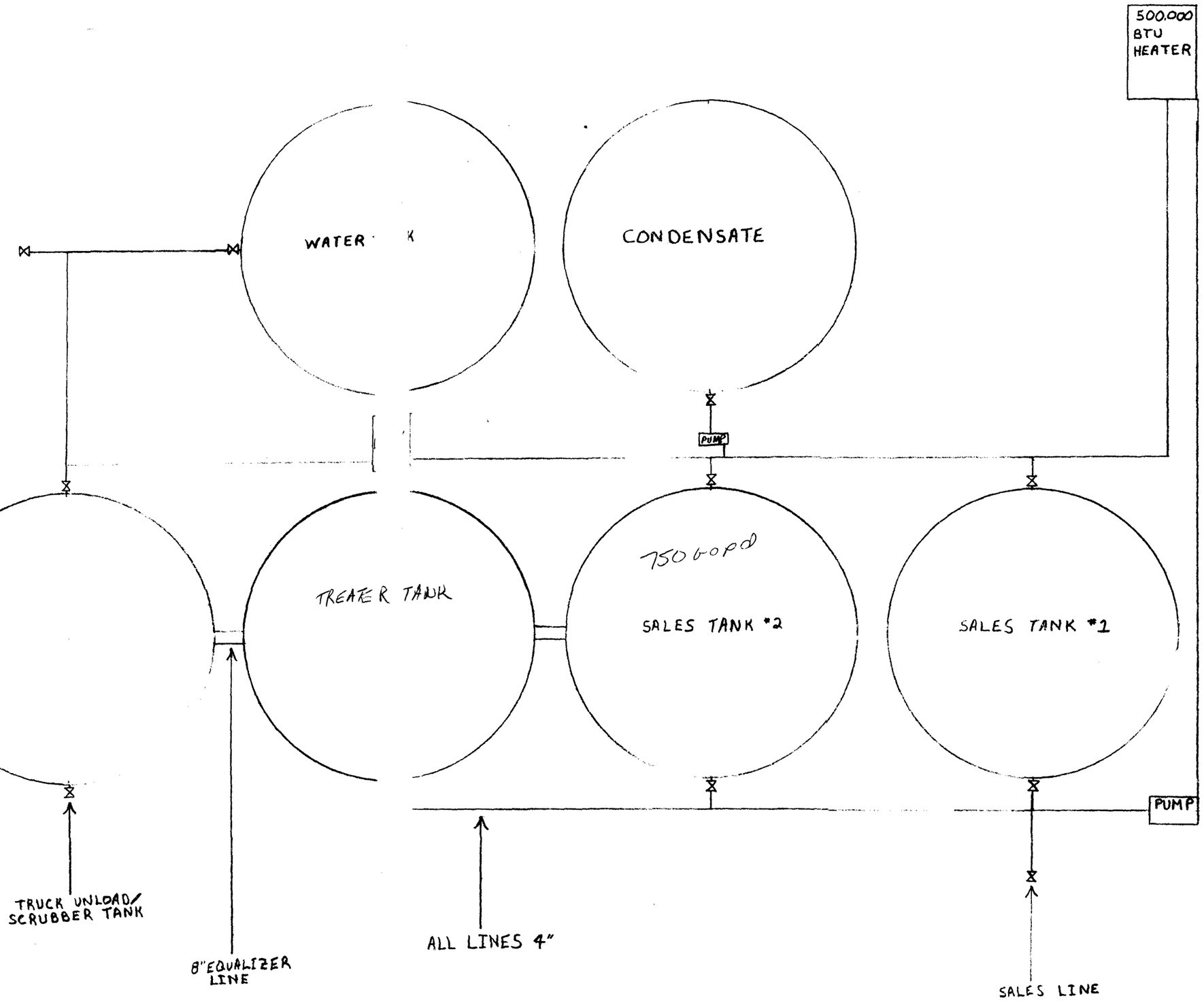
NM - 17

GENERAL CORRESPONDENCE

YEAR(S):
1991 - 1985



OILFIELD SERVICES, INC.
BLOOMFIELD OIL PLANT
MAY 27, 1986
SCALE: 1" = 4"
BY: R. W. McKEE

TEXAS A&M UNIVERSITY
DEPARTMENT OF CHEMICAL ENGINEERING
COLLEGE STATION, TEXAS 77843-3122

TEACHING
RESEARCH - EXTENSION

TELEPHONE
409-845-3361
FAX
409-845-6446

April 12, 1991

Mr. B. E. Shaw
Environmental Coordinator
Amoco Oil Corporation

FAX 505-326-9262

Dear Mr. Shaw,

Mr. Jerry Finney has requested that I provide you with a letter summarizing some of my observations on the composting test that Mr. Finney conducted in Reno, Nevada earlier this year. I am happy to comply.

Over the three week composting process Mr. Finney was successful in completely biodegrading and composting both glossy magazines and paperback books. Moreover, these books and magazines were fed to the composting pile in very large pieces (approximately two to three pieces per book or magazine). The composting process would certainly be more effective and rapid if these paper materials were ground up prior to composting, as I understand Mr. Finney plans to do.

In the test I observed there was no leachate, that is, no free water standing in or around the compost pile. The presence of leachate would in fact indicate a very poorly managed composting operation since composting proceeds best in a moisture range of about 55-70% (dry basis), i.e., when there is no free water. I also understand there is also some concern about spontaneous combustion of composting materials. A well-managed compost pile will operate at about 130-140 F, about 300 degrees below the ignition temperature of paper. I don't think spontaneous combustion should concern you.

One other item, the composting process undoubtedly breaks down both aliphatic and aromatic compounds such as those found in petroleum. The same kind of microbes that "eat" oil slicks also are present during composting. In the Reno test, approximately 90% reduction of the initial

total petroleum hydrocarbons was achieved in about three weeks. Because of the conditions under which this test was conducted, I am certain Mr. Finney can achieve both a more rapid and more complete hydrocarbon breakdown when he is able to better control the conditions.

Although Mr. Finney has no academic qualifications, he understands the theory of composting very well and obviously is an expert practioner of the art. While his language is sometimes unorthodox, he knows what he is doing in composting. I spent several days with him and found him to be an exceedingly creative and original thinker.

I hope this letter provides the information you need. Please call me if I can be of further assistance.

Sincerly yours,

Bruce E. Dale
Professor of Chemical Engineering
Professor of Agricultural Engineering
Director, Engineering Biosciences Research Center

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

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

April 12, 1991

CERTIFIED MAIL
RETURN RECEIPT NO. P327-278-111

Mr. Buddy Shaw
Environmental Supervisor
Amoco Production Company
200 Amoco Court
Farmington, New Mexico 87401

RE: Treatment of oily soil located at Gallegos Canyon Unit No. 102E, NE/NE Section 13-29N,13W

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (NMOCD) has received your request dated April 9, 1991 for permission to conduct a composting test on oily soils located at the above site. In addition to the soil, horse manure, digested sewage sludge and waste paper will be added and mixed on the lease site. The test is planned to be conducted for a limited time of three to five weeks, ground water is at a depth exceeding 200 feet, and no moisture is planned to be added after initial mixing.

Based on the information provided in your request, Amoco is authorized to conduct the test provided the following conditions are met:

1. Under RCRA, sewage sludge is subject to testing to determine if it should be handled as hazardous waste. An analysis of the digested sewage sludge was provided this agency for review and OCD approves mixing the sludge with the other materials.

2. A berm is to be constructed around the mixing area to collect any fluids or precipitation runoff from the pile. The berm must be located away from any watercourses.

3. Amoco will notify OCD district staff prior to mixing of materials at the start of the test.

4. No moisture (other than natural precipitation) is to be added after initial mixing.

5. Monitoring as directed by OCD's Aztec office will be conducted for temperature and hydrocarbon vapors. Internal temperature of the pile will be measured at least daily.

6. Amoco must notify OCD and remove any ponded fluids at the site generated as a result of decomposition of the materials or as a result of precipitation. OCD may require sampling of such fluids prior to authorizing disposal at an OCD-approved facility.

7. Within 14-days from receipt of this letter, Amoco will submit for OCD review and approval the proposed procedures to be used at the conclusion of the test for the sampling and analysis of remediated materials.

This temporary approval will end 45-days from start of the test. Prior to removal from the site of the remediated mixture, sample results must be reviewed and approved by OCD.

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

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

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Aztec Offic
E. Rebuck, NMI
D. Tomko, NMI

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

3. Article Addressed to:
Buddy Shaw
Amoco Production Co
200 Amoco Court
Farmington, NM 87401

4. Article Number
P 327 278 111

Type of Service:
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X D. Kamplain

6. Signature — Agent
X

7. Date of Delivery
4-15-91

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Apr. 1989 ★U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

827-5541

Facsimile Transmission

Addressee's Telecopier Phone	Date	Page
TTY	4-9-91	1 of 4

To:	Company	Location	Mail Code/Room
David Boyer	EID	Santa Fe	
From:	**Company**	**Location**	**Mail Code/Room**
Buddy Shaw	Amoco	Farmington	

Initiated By	Department/Region	Charge (Cost Center Code)	Approved By

Typed By	Ext.	Mail Code/Room	
			☐ Call Sender for Pickup of Originals ☐ Call _____ for Pickup at Receiving Location

RUSH

Composting Proposal

Thanks,
Buddy

FAX No. 326-9262

Telephone No. 326-9219

Analyses is wastewater, not sludge
How water applied for moisture?
Liner?

Composting of Oily Soil

Lease - Gallegos Canyon Unit No. 102E
(NE/NE Section 13-29N-13W)

Landowner - BLM (approval given 4/5/91) Don Ellsworth

Operator - Amoco Production Company
Buddy Shaw 326-9219

Treatment - Oily soil is being removed from the Hutton Gas Com No. 1. (SE/NE Section 6-29N-12W)

Additives & Treating Procedure - attached listing

Soil will be composted on the surface and a berm will be constructed to prevent run-off.

Sampling of soils. Composite samples? Analysis parameters & methods?

Sampling will be conducted by Amoco each week. A final sample will be taken at project completion which should be three to six weeks.

Groundwater depth is estimated to be 225'+.

How is this estimated?

This is a summary of the materials and procedures I will use on the Amoco location to compost the oily dirt.

The materials I will use are as follows:

1. Manure from San Juan Downs Racetrack. This manure is approximately 50% straw and wood chips and 50% manure with the moisture content approximately 35% by weight. The blend will contain approximately 25 to 30% of this manure.

2. Sludge from the sewer plant in Bloomfield ~~or~~ Farmington. This sludge is ~~digested and contains approximately 4% solids.~~ I will supply a lab analysis from the city lab it originated from. ~~The analysis will show the~~ metal levels are in compliance with WQCC regs. The sludge will comprise approximately 15 to 20% of the blend.

3. Waste paper - Computer, news and glossy paper. This will not be ground and it will be controlled so it can't blow away on location. This paper will comprise approximately 10% by weight of the blend.

4. Oily Dirt - This will be defined by Amoco. The mixture will contain approximately 40 to 50% of the oily dirt.

The mixture will be piled in a Windrow that is approximately 6' to 8' high by 10' wide on the bottom. The moisture content will be maintained approximately 60 to 70% to eliminate any leachate. The process will require approximately 3 to 5 weeks at the most and the final product will contain less than 100 ppm hydrocarbon content and the vapors will be contained with the compost. The hydrocarbons are consumed by the bacteria. The end product will resemble potting soil and will be sold as top soil. The metals are bound up with the organics and have passed a TCLP test. The pile will be turned with a one yard loader two times a week at the most. The temperature will be maintained approximately 120° to 130° for two weeks and allowed to cool after that. The PH will be approximately 9 and oxygen content will be maintained at least 1% to keep the pile aerobic. The final product will have a moisture content of approximately 25 to 30%. The total pile will be approximately ~~150~~ 200 cu. yds.

If you need further information, please let me know.

Jerry Finney

SDS Law

CLIENT CITY OF FARMINGTON
ENVIRONMENTAL LAB
ATTN TERRY MOUNT
800 MUNICIPAL DRIVE
FARMINGTON, NM 87401

DATE :
REVIEWED BY:
PAGE : 1 OF 1

CLIENT SAMPLE ID : 0900 TO 800
SAMPLE TYPE .....: WASTEWATER
SAMPLE SOURCE ...: --
SAMPLED BY .....: COF/PERSONNEL
SUBMITTED BY ....: COF/T. MOUNT

AUTHORIZED BY: COF/T. MOUNT
CLIENT P.O. : --
SAMPLE DATE .: --
SUBMITTED ON : 11-28-90

D A T A T A B L E

PARAMETER	RESULT	UNIT	TEST DATE
Total Antimony	<0.005	mg/L	12-05-90
Total Arsenic	<0.001	mg/L	12-05-90
Total Beryllium	<0.0003	mg/L	12-04-90
Total Cadmium	<0.001	mg/L	12-04-90
Total Chromium	<0.005	mg/L	12-10-90
Total Copper	0.030	mg/L	12-10-90
Total Iron	0.420	mg/L	12-10-90
Total Mercury	<0.001	mg/L	12-06-90
Total Nickel	<0.050	mg/L	12-11-90
Total Selenium	<0.050	mg/L	11-30-90
Total Silver	<0.002	mg/L	12-10-90
Total Thallium	<0.005	mg/L	12-04-90
Total Zinc	0.064	mg/L	12-10-90

(1) Copy to Client

5741

Facsimile Transmission

Addressee's Telecopier Phone: TTY		Date: 4-12-91	Page: 1 of 7
To: David Bayer	Company: NMOCD	Location: Santa Fe	Mail Code/Room
From: Buddy Shaw	Company: Amoco	Location: Farmington	Mail Code/Room
Initiated By	Department/Region	Charge (Cost Center Code)	Approved By
Typed By	Ext. / Mail Code/Room	☐ Call Sender for Pickup of Originals ☐ Call _____ for Pickup at Receiving Location	

RUSH

Thanks,
Buddy

Form 1009 Oct-90

T BROADWAY ROAD
PHOENIX AZ 85036
(602) 437-2659 • (602) 437-8706 FAX

LABORATORY REPORT

CLIENT CITY OF FARMINGTON
ENVIRONMENTAL DIVISION
ATTN TERRY MOUNT
800 MUNICIPAL DRIVE
FARMINGTON, NM 87041

SAMPLE NO. : 9100739
INVOICE NO.: 22110191
REPORT DATE: 01-30-91
REVIEWED BY:
PAGE : 1 OF 1

CLIENT SAMPLE ID : SLUDGE STOCKPILE
SAMPLE TYPE .....: DRY SLUDGE
SAMPLED BY .....: COF/T. MOUNT
SUBMITTED BY ....: COF/T. MOUNT
SAMPLE SOURCE ...: --

AUTHORIZED BY : TERRY MOUNT
CLIENT P.O. : --
SAMPLE DATE ...: 01-21-91
SUBMITTAL DATE : 01-23-91
EXTRACTION DATE: 01-28-91

8 TCLP Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Date
Arsenic (TCLP)	0.07	mg/L	0.05	01-29-91
Barium (TCLP)	0.31	mg/L	0.10	01-29-91
Cadmium (TCLP)	<0.05	mg/L	0.05	01-29-91
Chromium (TCLP)	<0.05	mg/L	0.05	01-29-91
Lead (TCLP)	<0.10	mg/L	0.10	01-29-91
Mercury (TCLP)	<0.01	mg/L	0.01	01-29-91
Selenium (TCLP)	<0.05	mg/L	0.05	01-29-91
Silver (TCLP)	<0.05	mg/L	0.05	01-29-91

(1) Copy to Client

WESTERN TECHNOLOGIES INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

LABORATORY REPORT

CLIENT CITY OF FARMINGTON
ENVIRONMENTAL LAB
ATTN TERRY MOUNT
800 MUNICIPAL DRIVE
FARMINGTON, NM 87401

SAMPLE NO. : 9007747
INVOICE NO.: 72101060
DATE : 10-16-90
REVIEWED BY:
PAGE : 1 OF 2

CLIENT SAMPLE ID : 1835
SAMPLE TYPE .....: SLUDGE
SAMPLE SOURCE ...: --
SAMPLED BY .....: COF/J. BIRD
SUBMITTED BY ....: COF/J. BIRD

AUTHORIZED BY: COF/T. MOUNT
CLIENT P.O. : --
ANALYZED ON .: 10-15-90
SAMPLE DATE .: 10-03-90
SUBMITTED ON : 10-05-90

REMARKS -

8240 - GC/MS Volatile Organics

****
* DATA TABLE *
****

PARAMETER	RESULT	UNIT
Chloromethane	<50.	ug/Kg
Bromomethane	<50.	ug/Kg
Vinyl Chloride	<50.	ug/Kg
Chloroethane	<50.	ug/Kg
Methylene Chloride	<25.	ug/Kg
Acetone	<500.	ug/Kg
Carbon Disulfide	<25.	ug/Kg
1,1-Dichloroethene	<25.	ug/Kg
1,1-Dichloroethane	<25.	ug/Kg
trans-1,2-Dichloroethene	<25.	ug/Kg
Chloroform	<25.	ug/Kg
1,2-Dichloroethane	<25.	ug/Kg
2-Butanone	<500.	ug/Kg
1,1,1-Trichloroethane	<25.	ug/Kg
Carbon Tetrachloride	<25.	ug/Kg
Vinyl Acetate	<250.	ug/Kg
Bromodichloromethane	<25.	ug/Kg
1,1,2,2-Tetrachloroethane	<25.	ug/Kg
1,2-Dichloropropane	<25.	ug/Kg
trans-1,3-Dichloropropene	<25.	ug/Kg
Trichloroethene	<25.	ug/Kg
Dibromochloromethane	<25.	ug/Kg
1,1,2-Trichloroethane	<25.	ug/Kg
Benzene	<25.	ug/Kg
cis-1,3-Dichloropropene	<25.	ug/Kg
2-Chloroethyl Vinyl Ether	<25.	ug/Kg
Bromoform	<25.	ug/Kg

(1) Copy to Client

1231 EAST BROADWAY ROAD
PHOENIX AZ 85036
(602) 437-2659 • (602) 437-8706 FAX

LABORATORY REPORT

CLIENT CITY OF FARMINGTON
ENVIRONMENTAL DIVISION
ATTN TERRY MOUNT
800 MUNICIPAL DRIVE
FARMINGTON, NM 87041

SAMPLE NO. : 9100740
INVOICE NO.: 22110191
REPORT DATE: 01-30-91
REVIEWED BY:
PAGE : 1 OF 1

CLIENT SAMPLE ID : SLUDGE - DRY BED #3
SAMPLE TYPE .....: DRY SLUDGE
SAMPLED BY .....: COF/T. MOUNT
SUBMITTED BY ....: COF/T. MOUNT
SAMPLE SOURCE ...: --

AUTHORIZED BY : TERRY MOUNT
CLIENT P.O. : --
SAMPLE DATE ...: 01-21-91
SUBMITTAL DATE : 01-23-91
EXTRACTION DATE: 01-28-91

8 TCLP Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Date
Arsenic (TCLP)	0.06	mg/L	0.05	01-29-91
Barium (TCLP)	<0.10	mg/L	0.10	01-29-91
Cadmium (TCLP)	<0.05	mg/L	0.05	01-29-91
Chromium (TCLP)	<0.05	mg/L	0.05	01-29-91
Lead (TCLP)	<0.10	mg/L	0.10	01-29-91
Mercury (TCLP)	<0.01	mg/L	0.01	01-29-91
Selenium (TCLP)	<0.05	mg/L	0.05	01-29-91
Silver (TCLP)	<0.05	mg/L	0.05	01-29-91

(1) Copy to Client

TECHNOLOGIES INC.
Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

LABORATORY REPORT

CLIENT CITY OF FARMINGTON
ENVIRONMENTAL LAB
ATTN TERRY MOUNT
800 MUNICIPAL DRIVE
FARMINGTON, NM 87401

SAMPLE NO. : 9007747
INVOICE NO.: 72101060
DATE : 10-16-90
REVIEWED BY: [signature]
PAGE : 2 OF 2

****
* D A T A T A B L E (Cont.) *
****

PARAMETER	RESULT	UNIT
2-Hexanone	<250.	ug/Kg
4-Methyl-2-pentanone	<250.	ug/Kg
Tetrachloroethene	<25.	ug/Kg
Toluene	<25.	ug/Kg
Chlorobenzene	<25.	ug/Kg
Ethyl Benzene	<25.	ug/Kg
Styrene	<25.	ug/Kg
Total Xylenes	<25.	ug/Kg

(1) Copy to Client

WESTERN TECHNOLOGIES INC.
___ Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

LABORATORY REPORT

CLIENT CITY OF FARMINGTON
ENVIRONMENTAL LAB
ATTN TERRY MOUNT
800 MUNICIPAL DRIVE
FARMINGTON, NM 87401

SAMPLE NO. : 9007747
INVOICE NO.: 72101060
DATE : 10-16-90
REVIEWED BY:
PAGE : 1 OF 2

CLIENT SAMPLE ID : 1835
SAMPLE TYPE .....: SLUDGE
SAMPLE SOURCE ...: --
SAMPLED BY .....: COF/J. BIRD
SUBMITTED BY ....: COF/J. BIRD

AUTHORIZED BY: COF/T. MOUNT
CLIENT P.O. : --
ANALYZED ON .: 10-10-90
SAMPLE DATE .: 10-03-90
SUBMITTED ON : 10-05-90

REMARKS -

8270 - GC/MS Semivolatile Organics

****
* D A T A T A B L E *
****

PARAMETER	RESULT	UNIT
Phenol	<33.	ug/Kg
bis(2-Chloroethyl) ether	<33.	ug/Kg
2-Chlorophenol	<33.	ug/Kg
1,3-Dichlorobenzene	<33.	ug/Kg
1,4-Dichlorobenzene	<33.	ug/Kg
Benzyl Alcohol	<67.	ug/Kg
1,2-Dichlorobenzene	<33.	ug/Kg
2-Methylphenol	<33.	ug/Kg
bis(2-Chloroisopropyl) ether	<33.	ug/Kg
4-Methylphenol	<33.	ug/Kg
N-Nitroso-Di-N-propylamine	<33.	ug/Kg
Hexachloroethane	<33.	ug/Kg
Nitrobenzene	<33.	ug/Kg
Isophorone	<33.	ug/Kg
2-Nitrophenol	<33.	ug/Kg
2,4-Dimethylphenol	<33.	ug/Kg
Benzoic Acid	<167.	ug/Kg
bis(2-Chloroethoxy) methane	<33.	ug/Kg
2,4-Dichlorophenol	<33.	ug/Kg
1,2,4-Trichlorobenzene	<33.	ug/Kg
Napthalene	<33.	ug/Kg
4-Chloroaniline	<67.	ug/Kg
Hexachlorobutadiene	<33.	ug/Kg
4-Chloro-3-methylphenol	<67.	ug/Kg
2-Methylnaphthalene	<33.	ug/Kg
Hexachlorocyclopentadiene	<33.	ug/Kg
2,4,6-Trichlorophenol	<33.	ug/Kg

(1) Copy to Client

TECHNOLOGIES INC.
Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

LABORATORY REPORT

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ATTN TERRY MOUNT
800 MUNICIPAL DRIVE
FARMINGTON, NM 87401

SAMPLE NO. : 9007747
INVOICE NO.: 72101060
DATE : 10-16-90
REVIEWED BY:
PAGE : 2 OF 2

****
* DATA TABLE (Cont.) *
****

PARAMETER	RESULT	UNIT
2,4,5-Trichlorophenol	<33.	ug/Kg
2-Chloronaphthalene	<33.	ug/Kg
2-Nitroaniline	<167.	ug/Kg
Dimethyl phthalate	<33.	ug/Kg
Acenaphthylene	<33.	ug/Kg
3-Nitroaniline	<167.	ug/Kg
Acenaphthene	<33.	ug/Kg
2,4-Dinitrophenol	<167.	ug/Kg
4-Nitrophenol	<167.	ug/Kg
Dibenzofuran	<33.	ug/Kg
2,4-Dinitrotoluene	<33.	ug/Kg
2,6-Dinitrotoluene	<33.	ug/Kg
Diethylphthalate	<33.	ug/Kg
4-Chlorophenyl phenyl ether	<33.	ug/Kg
Fluorene	<33.	ug/Kg
4-Nitroaniline	<167.	ug/Kg
4,6-Dinitro-2-methylphenol	<167.	ug/Kg
N-Nitrosodiphenylamine	<33.	ug/Kg
4-Bromophenyl phenyl ether	<33.	ug/Kg
Hexachlorobenzene	<33.	ug/Kg
Pentachlorophenol	<167.	ug/Kg
Phenanthrene	<33.	ug/Kg
Anthracene	<33.	ug/Kg
Di-n-butylphthalate	<33.	ug/Kg
Fluoranthene	<33.	ug/Kg
Pyrene	<33.	ug/Kg
Butyl benzyl phthalate	<33.	ug/Kg
3,3'-Dichlorobenzidine	<67.	ug/Kg
Benzo(a)anthracene	<33.	ug/Kg
bis(2-ethylhexyl)phthalate	<33.	ug/Kg
Chrysene	<33.	ug/Kg
Di-n-octyl phthalate	<33.	ug/Kg
Benzo(b)fluoranthene	<33.	ug/Kg
Benzo(k)fluoranthene	<33.	ug/Kg
Benzo(a)pyrene	<33.	ug/Kg
Indeno(1,2,3-c,d)pyrene	<33.	ug/Kg
Dibenzo(a,h)anthracene	<33.	ug/Kg
Benzo(g,h,i)perylene	<33.	ug/Kg

(1) Copy to Client

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

BRUCE KING
GOVERNOR

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

March 25, 1991

CERTIFIED MAIL
RETURN RECEIPT NO. R-327-278-049

Mr. Jerry Finney
C/O Bloomfield Motel
801 West Broadway
Bloomfield, New Mexico 87413

Dear Mr. Finney:

In reference to our discussion of today and last week regarding cleanup of oil sediment in pits at lease sites, the OCD has, in principle, no objection to the use of new and innovative methods for the purpose of demonstrating pit remediation. In addition, I understand that you will not be reclaiming oil, only treating oily soil. However, to provide regulatory oversight and ensure that proper precautions are taken to protect the environment we will require that individual leaseholders who wish to use your service apply with us and provide at least the following minimum information:

1. Lease name, location, landowner, and operator name and phone number.

2. A description of the proposed treatment including:

   a. Chemicals or raw materials from other locations to be used at the site;

   b. Site preparation (e.g. use of a pad, liner or compacted soil as a stable foundation) for the treatment and whether off-site material will be placed in existing pits for treatment.

   c. Treatment procedures including proposed nutrient or water addition, frequency of discing or mixing, and anticipated total length of treatment.

   d. Monitoring or sampling proposed to determine efficacy of treatment and the composition of the end products; and

3. Information on depth to groundwater at the site.

For your initial tests, no approvals will be granted if the lease site is located within the currently defined vulnerable area, or if it is within fifty (50) feet to ground water.

The leaseholder will have the responsibility for ensuring that materials at the site, including existing pits and any off-site materials or end-products resulting from your treatment are properly handled and disposed of so as to avoid threats to public health and impacts on the environment. The leaseholder also has the responsibility for notifying the landowner, including state or federal owners, and receiving approval, if required, before beginning treatments.

If you propose to move oily sediments off-site to conduct your treatments, you are subject to OCD Rule 711 requiring an approved permit to conduct such activity. A condition to such a permit is submittal to the Division of a $25,000 cash or surety bond prior to commencement of construction or operation of such a facility. You are referred to Rule 711 for specifics on such a permit application.

If you wish further information, please contact me at 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: Aztec OCD Office

OIL CONSERVATION DIVISION
RECEIVED
'89 NOV 27 AM 9 34

TROUBLE SHOOTERS, INC.
Mr. Jerry Finney
12 Country Road 5841
Farmington, N.M. 87401
November 14, 1989

U.S. DEPT. OF INTERIOR
BUREAU OF LAND MANAGEMENT
NEW MEXICO
FARMINGTON RESOURCE AREA
1235 La Plata Highway
Farmington, N.M. 87401

ATTN: Mr. Jerry Crockford
RE: Blackwood & Nichols produced water recovery test.

Dear Mr. Crockford;

Thank you for meeting with me on Tuesday. I hope I answered your questions. This letter is an explanation of what we are hoping to accomplish during the ninety day test. I am requesting a right of way permit for ninety days to conduct a test as outlined in my attached drawings.

The test area is on the west side of the location and involves approximately 75'x150' of disturbed ground. Our test equipment will include a small trailer of approximately 8'x20' containing an Ionics EDR unit and a 45' enclosed van containing a natural gas generator powering a Licon Aqua vap vapor compression unit and a Licon Multi effect Multi Stage (MEMS) flash evaporator. The outside units will be three above ground 80 barrel fiberglass storage tanks and a 500 barrell steel storage tank and necessary sloped above ground piping.

The only gas needed by our units will be the fuel to run the 35 kw generator set to power the EDR and Licon units. This generator wil also supply the heat necessary to run the evaporators.

There will be two operating sequences. They are just our units involving straight produced water and our units following the ESI atmospheric evaporator. We want to show the oil companies and the Bureau of Land Management which sequence is most efficient and dependable. In the second method our system will accept the concentrate from the ESI evaporator which should reduce the volume by approximately 50%. The concentrate which should be approximately 100,000 PPM/TDS will flow to the Aqua vap unless we find the saturation limit has been reached for NACL or the bicarbs. If we feel it has reached saturation the concentrate will flow directly to the MEMS unit to begin selective precipitation acccording to the solubility curve. This unit will attempt to seperate the sodium chloride from the sodium

bicarbonate and the sulfates and other minerals. The product water which will be at 1,000 PPM/TDS or less will flow to the 500 barrel tank for testing. If acceptable, hauled to stock ponds for cattle consumption for area rancher Jack Mackey. See attached agreement. If the volume exceeds what he can use the excess will be injected for the duration of the test. The sodium chloride and sodium bicarb will be flowed to seperate 80 barrel tanks as will the residual minerals. These will be trucked to town to be marketed to AMERICAN SALT and TEXAS GUlLF SODA ASH respectively. The residual minerals will be composted under N.M. Environmental Interest Division permit at 4900 East Main Street. A copy of the permit will be forwarded within twenty days to all concerned agencies including the Bureau of Land Management.

If the system shuts down for any reason, the water flow from the tank will be shut off. All water and recovered minerals and salts will be tested by CDS Labs, Durango, Colorado. As will the compost to prove the minerals will be chelated into the compost for use by the plants.

Access to the site will be needed for the tractor to deliver and retrieved the van, a water truck to haul the water and concentrates, company pickups for maintenance and testing of the units. The site will be cleared of all debris and ruts within forty eight hours after the units are removed.

I hope this answers your questions. If you have any further questions please feel free to contact me at 632-3383 or 327-5646. Thank you for your time.

Sincerely,

Jerry W. Finney

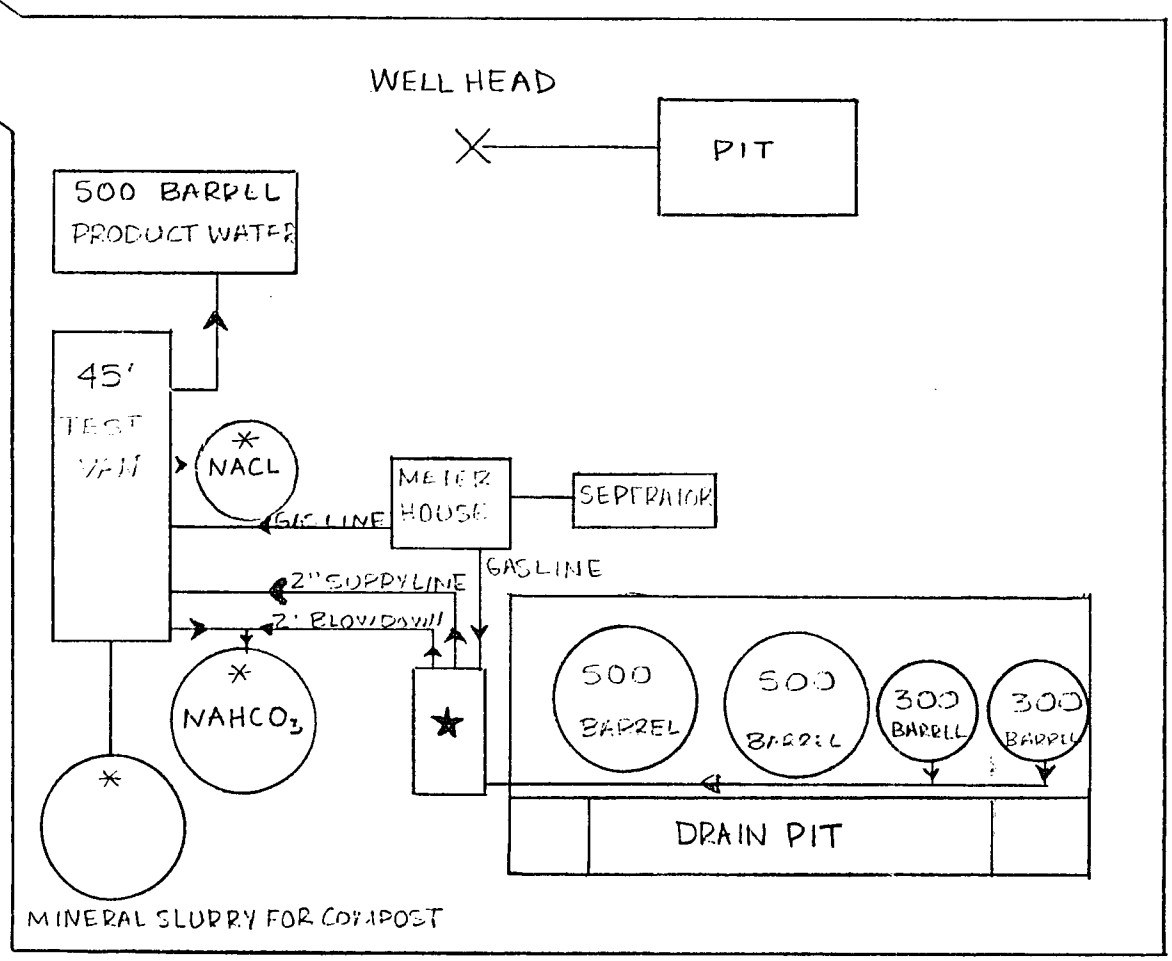
JWF/tbo

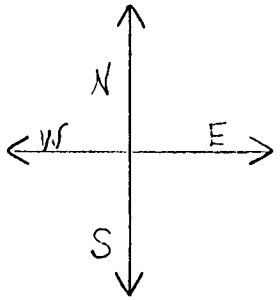
cc: Frank Chavez - ~~Sante Fe~~ AZTEC
~~Dave Boyer - Aztec~~ SANTE FE
Margie Martinez - Albuquerque Office
file

SITE PLAN FOR WATER TEST
BLACKWOOD AND NICHOLS
NORTHEAST BLANCO UNIT#406

T31N, R7W, 22NE1/4

SERVICE ROAD





TEST AREA IS APPROXIMATELY 70' X 150'

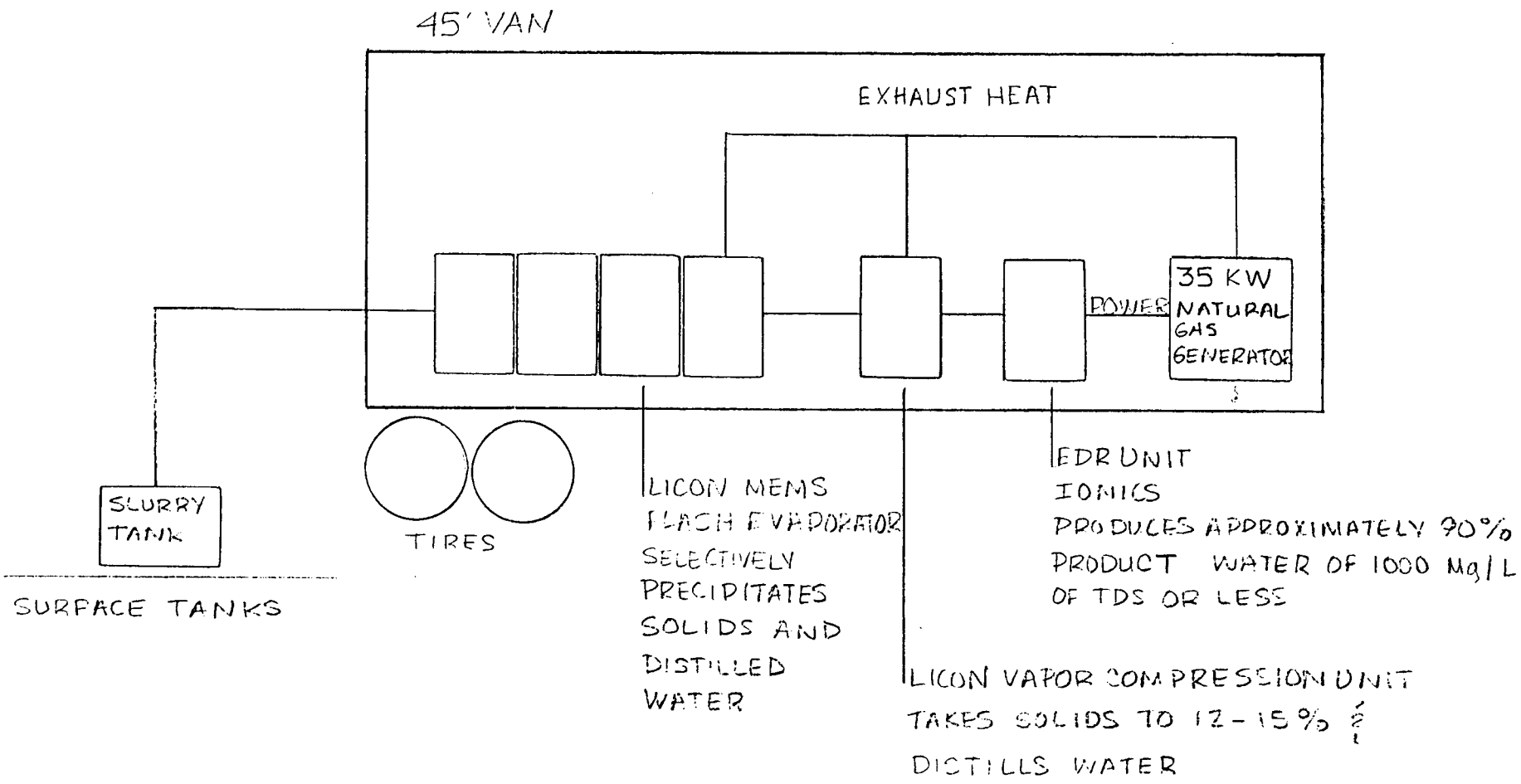
ALL TEST AREA IS ON DISTURBED GROUND

* 80 BARREL FIBERGLASS TANK

★ [illegible]

JWF/TBO

TEST EQUIPMENT SUPPLIED BY TSI

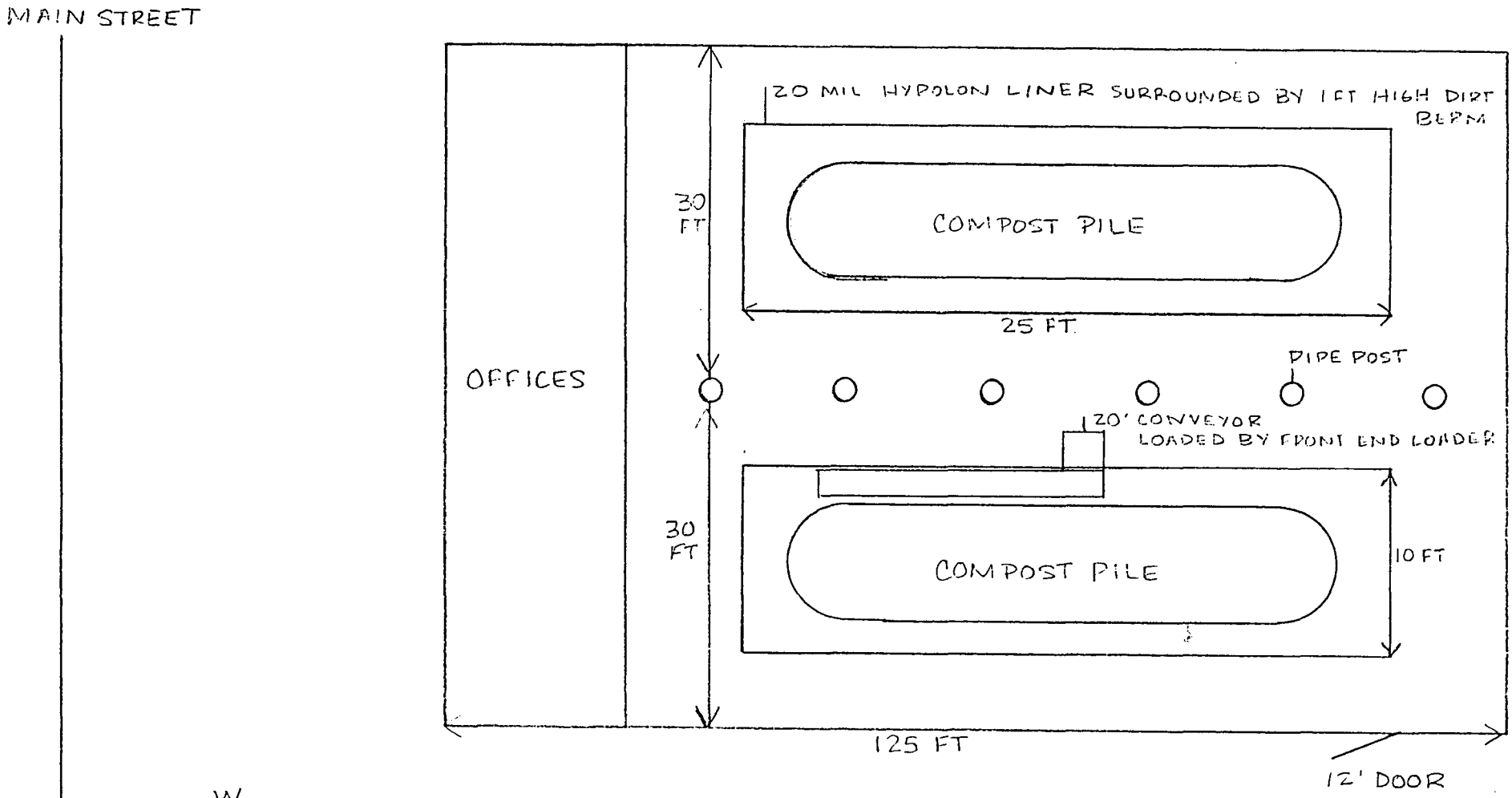


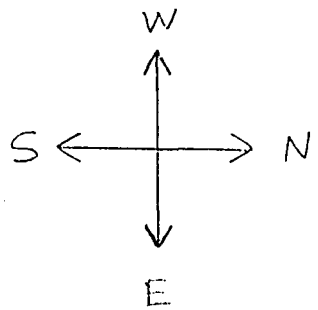
TWT/TBD

COMPOST TEST FACILITY

4900 EAST MAIN STREET

FARMINGTON N. M.





NOTE: HYPLON LINER WILL EXTEND APPROXIMATELY 20' PAST PILE TO ALLOW FOR MOVEMENT WITH CONVEYOR

JWF/+3

Memo

From
DAVID G. BOYER
Hydrogeologist

1/26/89

To Bob –

This letter is in response to your letter of Sept 20 (1988) (attached). Frank [illegible] DBB & never responded then and Finney has asked again. This time he is not going to take possession of the oil and will act only as a "hot oil operator". I told Frank that if he did not take possession or have a permanent title, then we could not consider him any differently than other "hot oilers" and to let him go ahead. Have

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

Memo

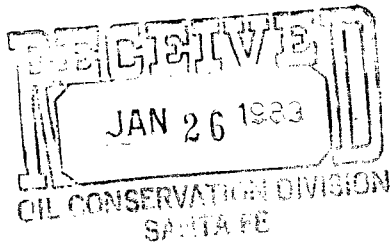
From

FRANK T. CHAVEZ
District Supervisor

To Dave Boyer

Did you reply to this?

F



Oil Conservation Division **Aztec, New Mexico**

October 21, 1988

Jerry Finney
#12 County Road 5841
Farmington, NM 87401

RECEIVED
OCT 24 1988
OIL CON. DIV.
DIST. 3

New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Attn: Mr. Frank Chavez

Re: Produced Water Clean-up Test

Dear Mr. Chavez,

This letter is in response to our conversations about the clean-up of waste oil pits. My company is preparing a proof-of-principle test of our equipment which removes suspended and dissolved solids at the City of Farmington Waste Water Treatment Plant. The testing is to be done from November 7 thru 18, 1988. Part of our test plan includes running samples of produced water through our equipment. We are therefore requesting permission from your office to obtain samples from waste pits in the area. The City has agreed that we may use 500 gallon septic trucks to obtain samples from their plant. We would use this same equipment for produced water and return all samples to the point of origin at the completion of our tests.

As you are aware, we intend to submit a plan to your office for the clean up of waste oil pits. Part of this plan involves the separation and marketing of the associated produced water, which we are presently going to demonstrate as proof-of-principle test for the City and your office. Briefly, our plan for oil pits consists of the following:

1) locating 500 barrel steel tanks on each site.
2) skimming the pits with our skimmer boom.
3) pumping the pits with a vacuum truck into the steel tank.

At this point the waste oil will be checked for BS&W and gravity, then blended accordingly using a parafin breaker. Lighter upper-end aromatic hydrocarbons will be injected under low pressure to obtain 50-55 gravity. These will come either from our gassifier or purchased. Blending is achieved through our proprietary fluidic type catalytic reaction inside the vessel. This is not an experimental process, but one that has been used before for other applications.

We plan to treat the rcovered oil the same way that the present "hot oil treatment" processors do, leaving the clean oil on site for the operator to sell. Produced water will be handled with equipment similar to that used for the Farmington test.

You are cordially invited to witness testing during the second week of operation, at which time we would like to demonstrate the effectiveness of our process on produced water.

Sincerely,

Jerry Finney

Jerry Finney, President
Trouble Shooters, Inc.

...gasohol tanks, but mem- capacities — will be added in a few years, he said.

City Council allows businessman attempt at recycling waste water

By Wren Propp
Daily Times staff

A local businessman will get a chance to prove he can change treated waste water into drinkable water, Farmington City Council decided Tuesday.

They decided Jerry Finney's company, Troubleshooters Inc., can begin a "proof of principal" test of his system which, he says, extracts suspended solids from treated waste water.

Jerry Finney

City council members questioned Finney during a Tuesday work session.

The system's test will begin at the city's South Lake Street waste water treatment plant, perhaps as soon as the first week of November, Finney said. Finney's company needs two weeks to a month to test the system.

The city will supply the electricity needed for the tests.

Finney is hoping a successful test of his system will turn into a service contract with the city to meet higher future standards by the Environmental Protection Agency.

The city's treated waste water flowing into the San Juan River meets present EPA standards, Water Utility Director Chuck Jiles said. The city releases water that has suspended solids of 14 to 15 parts per million, he said.

Finney claims he can clean the treated water to the point of 5 to 0 parts per million — a drinkable standard, Jiles said.

Mayor Tom Taylor, in questioning Finney, said it appeared Finney had gathered different technologies — such as desalination — to develop the process.

Finney said the testing in Farmington could become important if the tests proved successful. He said the EPA will be looking at the results of the tests, as well as waste water treatment workers from Albuquerque and Phoenix.

Finney's company will provide pollution insurance for the tests.

Councilman William Hall said he had heard a Phoenix city official on a morning news show speak about Arizona's growing need for clean water. He asked Finney how committed Phoenix city officials were in the process.

Finney said Phoenix was "very interested" in the results of the tests.

Political Briefs

Farmington Daily Times 10/12/88

Mary Fischer, candidate for state Representative District 2, is scheduled to speak Thursday to the San Juan Chapter of Professional Secre-

• • •

Five local candidates have received contributions from the state Life Underwriters P...

uncontested in District 1 and Toliver, a Republican, is opposing incumbent Charli...

flu

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HED NEWS

NEW MEXICO HEALTH AND ENVIRONMENT DEPARTMENT • Larry Gordon, Secretary • Carla L. Muth, Deputy Secretary

ENVIRONMENTAL IMPROVEMENT DIVISION, Michael J. Burkhart, Director

PUBLIC INFORMATION OFFICE
Post Office Box 968
Santa Fe, New Mexico 87504-0968
Phone (505) 827-2841

FOR IMMEDIATE RELEASE:

CONTACT:
Richard Mitzelfelt - 827-2919
Kevin Lambert - 827-2902

December 21, 1987

SANTA FE, NEW MEXICO -- State environmental officials have notified the owner of a waste disposal facility in Farmington that he can no longer discharge waste because of numerous violations to state water quality and public nuisance requirements.

The Environmental Improvement Division formally terminated the discharge plan held by Environmental Maintenance Services, Inc. on Monday, December 7, according to EID Ground Water Bureau Chief, Richard Mitzelfelt. Mitzelfelt explained that the discharge plan allowed sludge materials to be disposed into lined pits which then were composted.

Instead of abiding by the terms of the discharge plan, the owner discharged septage directly into compost stockpiles and reported possible disposal of approximately 100 to 150 gallons of solvent, a hazardous waste, into abandoned pits, Mitzelfelt said. He also violated the terms of the discharge plan by allowing the overflow of a waste storage tank onto unprotected surrounding areas.

In addition, composting operations should have been transferred from a temporary operation to a concrete building by October 30, but EMS failed to construct the building according to the time requirement, Mitzelfelt said.

"These actions violate the state Water Quality Control Commission Regulations which require that discharges must be consistent with the terms and conditions of the discharge plan approved by the state," Mitzelfelt stated. "Because of the violations, EMS can no longer operate the sludge composting operation either in its present locations, or in another location, without a new state-approved discharge plan."

(more)

Mitzelfelt added that if the owner can modify his operations to come into full compliance with WQCC regulations and can assure EID of continued compliance with the regulations, EID will work with EMS toward discharge plan approval under a new discharge plan.

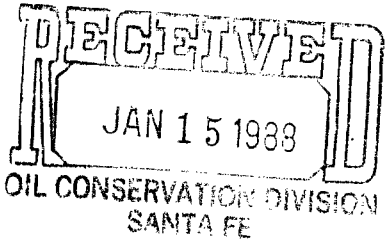
EID Director Michael J. Burkhart said the Division will file a lawsuit in the San Juan District Court for the violations of the state Water Quality Control Commission Regulations and the public nuisance laws. The lawsuit will ask for a civil penalty of up to $6,000 each day for violations of water quality regulations. In addition, the plaintiffs will ask the Court for a permanent injunction requiring EMS to abate the public nuisance.

Memo

From

FRANK T. CHAVEZ
District Supervisor

To Dave Boyer



Oil Conservation Division **Aztec, New Mexico**

FDT 12/17/87

The earthquake, with a pre- age.

academic achievement and behavior.

State, County Hold Septic Waste Meet

By Bill Papich
Daily Times Staff

Environmental Improvement Division officials from Santa Fe held an emergency meeting today with San Juan County officials in Aztec to try and figure out how to dispose of the septic tank waste in the county.

There are no landfills in the county [illegible] can legally accept the sewage, or "septage" (solid materials that are cleaned out of septic tanks periodically). Before Dec. 7, sewage was being accepted by Environmental Maintenance Services Inc., a business south of Bloomfield owned by Jerry Finney.

However, Finney's sludge dump can't receive the septic tank waste anymore because EID recently discovered his sewage holding tanks were overflowing. EID ordered him to stop receiving the material. Finney is in the process of submitting a new plan for disposal of the waste. In the meantime, the cities of Bloomfield and Farmington have been allowing septic waste to be pum[illegible]d into their wastewater treatme[illegible]lants.

However, they cannot accept the septic sewage indefinitely, and there are some forms of the waste that can't be accepted at all.

"There is a limit to how much they can accept," David Tomko, the EID's health program manager in Farmington, said today. "There's a limit because the septage has no oxygen in it, and it puts a heavy demand on a wastewater treatment plant. Too much of it could foul up the plant and put the plant in violation of its discharge limits, overloading the plant."

Restaurants are particularly hard-hit by the crisis because the grease from their grease traps is backing up. So are automotive shops that have to get rid of of used oil. The materials cannot be legally disposed of anywhere in the county right now, Tomko said.

"That stuff gums up a wastewater treatment plant. We are getting calls every day from haulers (of grease) requesting locations of approved disposal sites, of which there are none at this time."

The EID estimates that the county generates up to 500,000 gallons of septic tank waste each month. Before Environmental Maintenance Services Inc. was disposing it, it was dumped at a liquid waste pit at the Flora Vista landfill. San Juan County has since closed the pit and the landfill.

Tomko said he's hoping the BLM will allow the septic waste to be dumped at the Farmington landfill. Although the public works director of Farmington, Bob Metzler, has agreed to the plan, the BLM has the final say because it owns the land the landfill is on.

Trudy Cannon of Cannon Automatic Transmission in Farmington said she hopes the waste disposal problem in the county is solved soon. "We just happened to have our (grease) sump cleaned out right before they refused to take it. It's not critical yet. But we will have to have our sumps cleaned out again. Right now nobody will take it."

Fatalities on 65 MPH Highway

WASHINGTON (AP) — Traffic fatalities on rural interstate highways soared by more than 50 percent in states that increased their speed limit to 65 mph last spring, according to Transportation Department figures.

The National Highway Traffic Safety Administration said 450 people were killed on rural interstate roads over a three-month period last summer in 22 states where higher speed limits went into effect. The same roads claimed 296 lives during the same May-July period the previous year.

Congress cleared the way last April for states to increase their speed limits on rural interstate roadways, but not on other highways. So far 38 states have eased speed restrictions over 27,900 miles of roadway, but only 22 had higher speeds in effect and provided enough data to be included in the NHTSA figures, officials said.

The statistics from the 22 states showed that fatalities climbed by 52 percent on the rural interstate roads during the May-July period, while traffic deaths on other roads where the speed limit could not be increased declined by about 10 percent.

In seven states where the speed limit remained at 55 mph on all highways, the number of deaths on rural interstates rose only 10 percent during the May-July period.

NHTSA officials cautioned against "drawing any conclusions ... about long-term trends" from the statistics, which covered a relatively small period. In four of the 22 states, fatalities on the rural interstates actually declined, while in other states they jumped by 150 percent or more.

Other highway safety experts suggested that the preliminary figures, nevertheless, provide the best glimpse yet of the possible safety implications of traveling at higher speeds even on relatively safe rural interstate highways.

"It's probably a pretty strong in-

Tribal Police Seek To Set Up Oljato Subst

By Times Correspondent
And Times Staff Writer

Navajo Tribal Police officials said Wednesday they are in the

Kellogg said that a request had been made to the tribe's Budget and Finance Committee for funding to purchase the two mobile homes. If

toward solving the case.

Kellogg said Wednesday afternoon that today's meeting will be private and will only involve the rel-

the officers, when they tried to break up a drinking party near Monument Valley High School in Monument Valley, Utah. The of-

was holding a strong grudge against either or both of them, killed and taken to Copper Canyon before

Dave Boyer

Jami Rapp

B'field Residents Angry Over Dumps

By Bill Papich FDT 5/27/87
Daily Times Staff

BLOOMFIELD — In front of what was an unusually large crowd Monday night, the Bloomfield City Council heard complaints about waste disposal sites on the north and south side of town.

The council chamber was packed with people who live near the dumps, and who claim the dumps disrupt their lives and threaten their health.

The complaints inspired the council to look into the possibility of seeking a joint powers agreement with San Juan County that could lead to the the city and county being able to zone areas up to one mile outside city limits.

Talmadge Hill, a man who lives near a sludge waste dump just south of Bloomfield, told the council that because of flies in the area "animals run insane and keel over dead." A woman in the audience, who lives near Basin Disposal Inc., an oil field waste dump on the north side of town that has been emitting hydrogen sulfide fumes said, "near Basin Disposal, all the flies are dead."

Council attorney David Brainerd was asked if there were any legal means by which the city could take action against either of the dumps. He told the council and the crowd that a state statute authorizes a city the size of Bloomfield to take a "nuisance action," with agreement from the county, against an "industrial nuisance" to the city within one mile of city limits. "This is the most direct route," he said.

However, the nuisance action, as it is presently authorized, would only apply to the sludge dump on the south side of town, owned by Jerry Finney, president of Environmental Services Inc. Finney's dump is within a mile of town. Basin Disposal Inc., the oil field dump is more than a mile from town. "We can't touch that one," said Mayor R.T. Toliver.

But Brainerd said there is a possibility that the one mile limit jurisdiction could be extended with a joint powers agreement with the county.

Earl Hickam, a member of the county planning and zoning commission who was at the meeting said, "At this point I can't tell you anything," about the feasibility of a joint powers agreement. But he urged those concerned about the dumps to attend a planning and zoning commission meeting tonight at 6 p.m. in the county Administrative Building.

Mayor Toliver said the sludge dump problem should be resolved by October 30. "I talked with the Environmental Protection Agency today. He (Finney) has until Oct. 30 to put the sludge in a concrete building or he'll have to stop (accepting sludge). The EPA and the city feels he needs a new location."

The Mayor said the council is doing everything it possibly can to resolve the problems of waste dumps near the city. In referring to the owners of the dumps he told the crowd that the law places limitations on how the city can regulate them. "We can't just go out and poke him in the nose and say you can't do that."

The council was also concerned with another problem the city has been facing over the years — fireworks. Fire Chief George Duncan addressed council members and urged them to repeal a city ordinance that authorizes the sale of fireworks in Bloomfield between June 25 and July 5. He said the law should be changed because it is costing his department too much money to respond to brush fires caused by fireworks. The council agreed with Duncan and requested from attorney Brainerd that he draw up a new ordinance which would outlaw the sale and possession of fireworks within city limits.

The council also adopted an ordinance that will allow municipal court to sentence people to community service. "It seems to be a feasible alternative to probation and jail," said Brainerd. All state communities have the option of sentencing people to community service for certain crimes under legislation passed during the 1987 legislative session, he said.

In a final note, the council announced there will be an auction of used city equipment to be held Sept. 26 at 10 a.m. in the Municipal Operations Center. The sealed bid auction will include a few used cars, transmissions and a cash register.

SANTA FE MEETING 8/21/87

Jerry Finney	632-9250
Josh Rogers	632-3625
Ashok Varma	214-987-1900
Skip FOREMAN	326-4373 - 303-259-2924
Dennie Krivoruchka	326-4581
Edna Rogers	632-3625
Kelly Rogers	(213)-929-3718
JAMI BAILEY	827-5884
Frank T. Chavez	374-6109

Memo

From
FRANK T. CHAVEZ
District Supervisor

To Dave Boyer

Jami - Call Frank and get his reaction, Then lets talk

H.

1/8/82 Frank - will oppose application Finney will apply for hearing. Not totally responsable for Geo-Engineering slip; did settle w/ Schalk; did clean up site. Jeff needs to send letter for fine.

JB

To: Oil Conservation Division
Mr. Frank Chavez

Dear Mr. Chavez:

This is a proposal for the oil treatment plant our Company wishes to install in the Bloomfield area. To start off with; this is a new company with the name of Environmental Maintenance Services. We are starting this Company with a different type of leadership and will be making every effort to prove to your agency that we have the capabilities and the resources to start with a fresh company and clean up both the problems of Oilfield Services and the oil and gas industry in relation to dehydration and disposal of the produced water. I realize the operating record of OSI was quite bad and there were various reasons for the problems, EMS is starting with the necessary financial responsibilities, meeting permitting requirements and working more closely with your agency to assure you of our integrity and determination in these matters. We are not going to expect stisfaction on the new permit until we have completely satisfied your office and ourselves that all the previous problems are cleaned up, all the fines paid and we can show ourslves worthy of a permit. We are also going to show your agency that we have assembled a system which will have no discharge of a slurry that needs evaporation pits, injection well, or land farming to dispose of it. All products taken from the water will be a useable form and be sent to their respective markets. The last part of the system renders a flow of irrigation quality water which is badly needed in this state. Our Company would appreciate your agency's indulgence as we strive to clean up old company problems and solve the problems we started to solve in the first place.

I have submitted a drawing of our system as it is planned now. I will explain it to you step by step and if you need any further information please let me know.

The site is the same one you approved for OSI, South of Bloomfield. The entire area will be fenced with 7' Chain Link fence and 3 strands of barbed wire on the top. All gates will be locked and the entire area will be well lighted. We plan to have an attendant on duty at all times. There will be sighs stating the type of operation we are and to keep out.

The tanks will all be 500 BBL except tanks #3 and #7 which will either be two 500 BBL each or 1000 BBL capacity. All piping will be 4" with a double locked valve system on all tanks.

Before I go any further with the explanation of the plant, let me touch on two items. First the records will be kept according to your office requirements such as run tickets, division orders, etc. Second the reason we are putting in this plant in the first place is to prove that by changing the methods of dehydration and disposal of water, that the savings to producers can be substantial. Our Company is starting off by dealing directly with the oil and gas producers to buy their product directly from them wet, by having them put their oil in the production tanks along with glycol to keep the water from freezing. We are able to remove this glycol and reuse it. We are also hoping to handle Natural Gas in the near fut future with this oil treatment plant being the first step in that direction. The wastes and costs of current methods are way out of proportion and if they were cut out, the producers would realize quite a bit of savings, thus encouraging domestic production.

Now back to the discription of the plant, after we have bought the oil from the producer or cleaned their pits, the oil is put into tank #4 if it is heavy, such as 20-30 gravity, if it is 55-60 gravity it is put in tank #1, if itis 35-55 gravity it is put into tank #6 for primary separation.

Condensate from tank #1 may be sold for blending gasoline if not needed for cutting the heavier oils. In the next step, heavy oil from tank #4 will be blended with lighter condensate from tank #1, in tank #5 and heated to about 90 degrees F. The free water from this tank will be flowed to tank #3. The remaining oil/water emulsion which ranges from 2 to 10% BS&W will be flowed to tank #6 then run through Unit A. This is a C-E Natco Performax membrane separator. We chose this unit for the efficiency of oil/water separation with low heat with a small amount of pressure on the liquid for maximum upper end retention. After passing through this unit, the oil is refinery quality and the water is flowed to tank #3. After storage in tank #3 the water is checked for Hydrocarbons and TDS quantity, if nesessary; because of Hydrocarbons greater than 5 PPM with Benzene, Toluene, etc, the water will be run through unit C which is another Performax set up for water/oil separation to remove all Hydrocarbons to less than 5 PPM. Tank #7 is storage for the water after complete removal of Hydrocarbons and the absence of glycol. In the cold months and whin glycol is added, the water is run through unit B which is a glycol reconcentrator which will remove and recycle the glycol for reuse and storage in tank #10. The water which is now mainly high TDS of chlorides, metals and minerals will be put to pre-treatment which removes all TSS and adjusts the PH for metals and minerals recovery.

These metals and minerals will be removed pure enough for sale to the metals market and use in the minerals market such as fertilizers. The water will be mainly chloride water after these are removed and will be flowed to the main treatment which recovers 90% of the water at less than 1000 PPM TDS. This is considered irrigation quality water and flows to tank #8 for monitoring before use in irrigation. The remaining 10% of super-saturated brine to dry salt and distilled water which is sold to the salt market and the water would be used as distilled water or added to the irrigation water. All water will be chlorinated and a biocide added for safety of disease. The Lined Pit will be used for a backup, it will be double lined with a

leak detection system between liners. Tank #9 is also a backup tank fo for the brines of high concentration.

This is the type of system we are proposing to install and will be glad to show you all the performance records for the technologies used in the system, as they are all proven in use of other types but on the same water or oil.

I hope this will open the doors for our Company and your agency to start clean and solve some problems for the oil and gas industry. Our Company has other projects to help domestic industry but we have to start somewhere and prove ourselves. One large part of this project is proving we can totally use everything from oil wells and it is cheaper to do this than to waste all these resources. The largest single asset we are after is the water for use as a wholesale irrigation type asset for use in irrigation or municipal use.

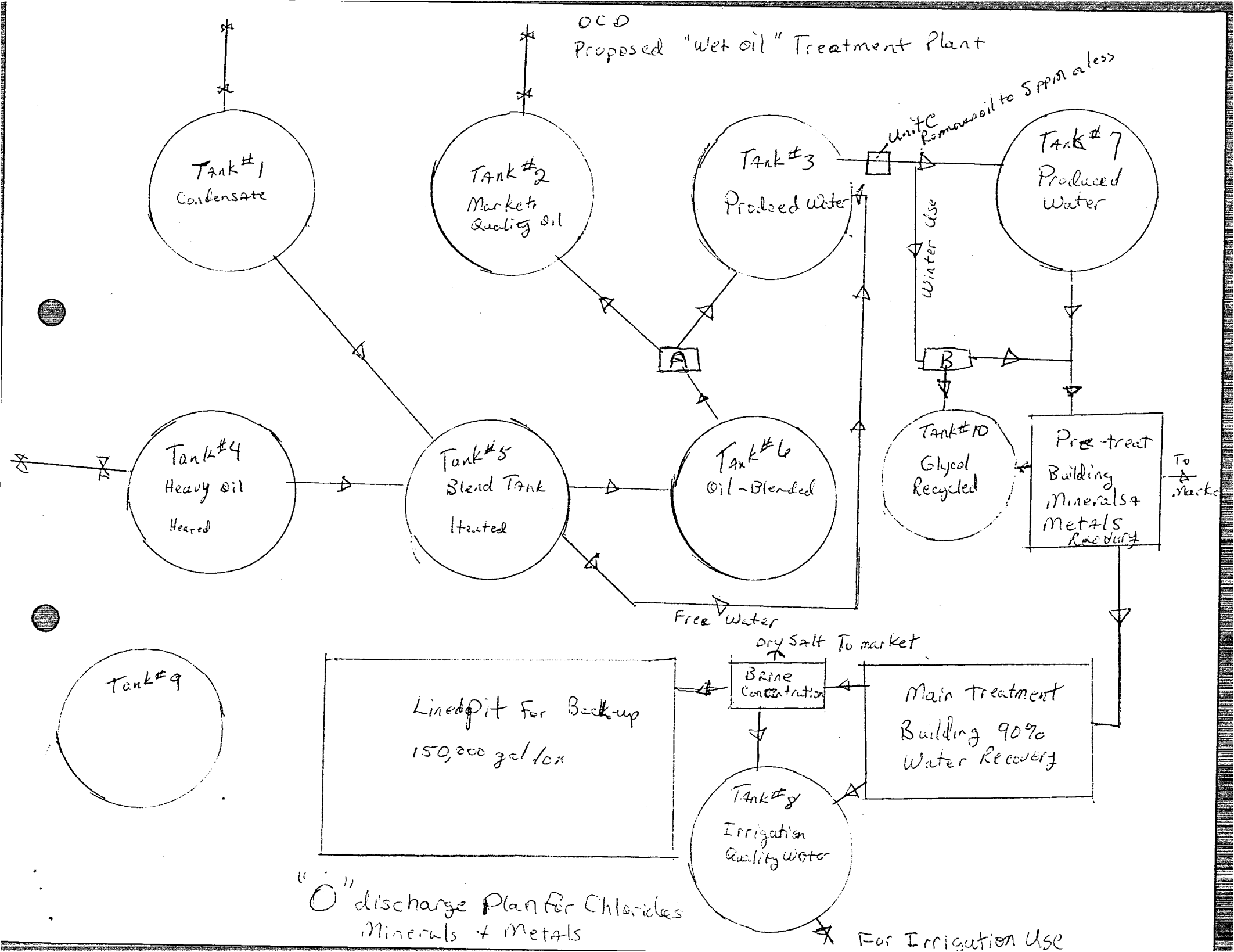
We hope this answers some of your questions and will be glad to answer any more you may have. Thank you for your time.

Sincerely,

Jerry Finney

Jerry Finney

jf/lf


OCD
Proposed "Wet Oil" Treatment Plant
Tank #1
Condensate
Tank #2
Market Quality Oil
Tank #3
Produced Water
Unit C
Remove oil to 5 ppm or less
Tank #7
Produced Water
Winter Use
A
B
Tank #4
Heavy Oil
Heated
Tank #5
Blend Tank
Heated
Tank #6
Oil-Blended
Tank #10
Glycol Recycled
Pre-treat
Building
Minerals & Metals
Recovery
To Market
Free Water
Dry Salt To market
Brine Concentration
Tank #9
Lined pit For Back-up
150,000 gal/ea
Main Treatment
Building 90%
Water Recovery
Tank #8
Irrigation Quality Water
"O" discharge Plan for Chlorides
Minerals & Metals
For Irrigation Use

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

TONEY ANAYA
GOVERNOR

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

November 25, 1986

Mr. Jeff Taylor
Oil Conservation Div.
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Oilfield Service Inc.

Dear Mr. Taylor:

On November 3, 1986, Mr. Stamets, Mr. Golson, and I held a meeting with Mr. Jerry Finny, Mrs. Robbie Finny and Mr. Denny Krivokapich from the referenced firm. At this meeting, we discussed the activities of O.S.I. which led to many violations of our regulations. At that meeting, we agreed to the following fines:

$1,000.00 for one violation of Rule 312
1,000.00 for one violation of Rule 311
2,000,00 total

In order to keep from expanding the fines to include other violations OSI agreed to the following:

1. Clean up of the unauthorized site.

2. Settlement with Schalk Development for an unauthorized load of oil.

3. Settlement with Geo-Engineering for a disputed load of over 200 barrels of oil.

These stipulations are to be accomplished by December 1, 1986.

Sincerely,

Frank T. Chavez
District Supervisor

FTC/dj

xc: File

Finney file.

Vandals Suspected In Friday Oil Spill

By Times Staff Writer

An undetermined amount of oil was spilled from a 400-barrel tank south of Bloomfield Friday.

Frank Chavez, district supervisor of the state's Oil Conservation Division, said the spill may have been caused by vandals opening a valve on the tank. Owners of the tank, Oilfield Services Inc., didn't know how much had spilled from the tank but reported that the tank had been full. Health and Environment Department workers were expected to find out Saturday how much oil had been released from the tank, Chavez said.

The oil ran down an arroyo near the tank for about a quarter of mile. Chavez said no crops were damaged by the oil spill, and the major cost of cleanup would come from cleaning up the area. He could not estimate the amount it would cost to clean up the spill.

Clean up crews had begun vacuming the area with oil field equipment, and some of the oil had already been placed back into the tank Saturday, Chavez said.

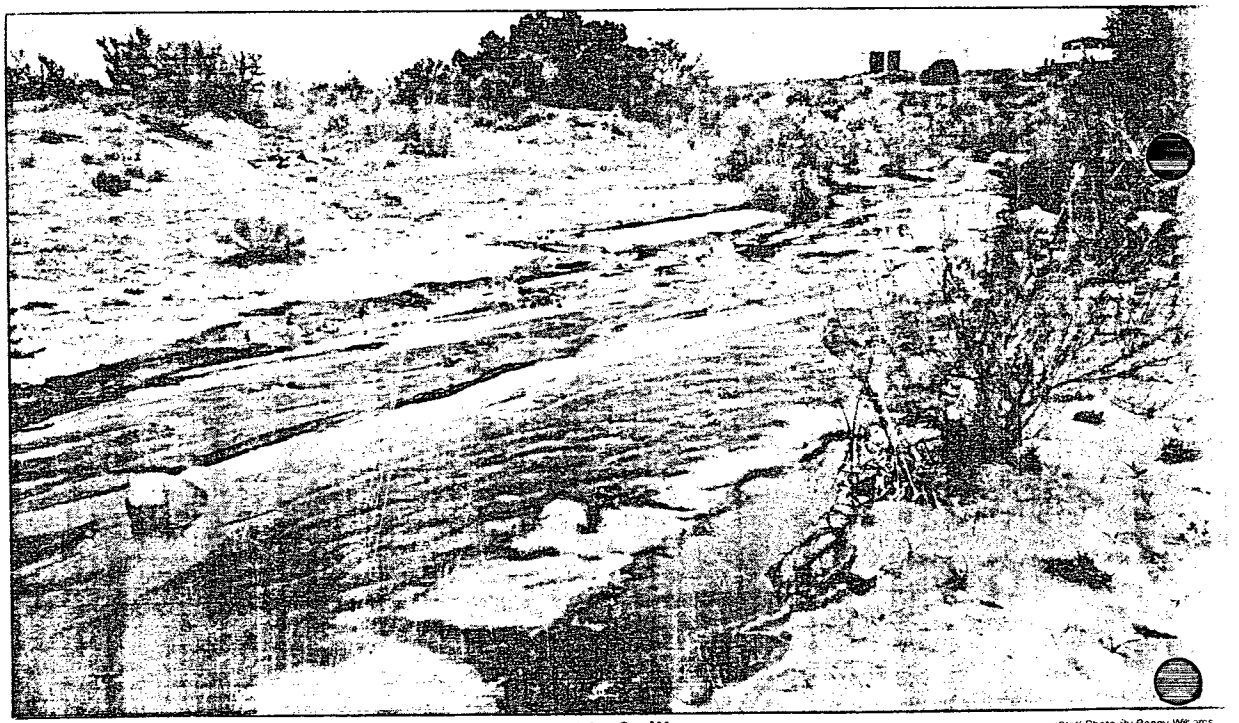
Manufacturing Representative

With 15 years proven experience seeking lines produced in Colorado or New Mexico for regional/national distribution. Food products, gift merchandise, art works, soft goods, jewelry, items with Southwestern theme. Contact M. Allison, Durango Promotional Resources, P.O. Box 380, Durango, CO 81362, 303-259-2131 or 303-259-4350.

REMINDER!

GOVERNOR'S
REGIONAL CONFERENCE
FOR WOMEN
SCHOLARSHIP APPLICATIONS
DUE NO LATER THAN
OCTOBER 15, 1986

Eligibility Conference Registrants Only



Oil Spill

(Staff Photo By Peggy Williams

Vandals may have opened up a valve on a tank owned by a local oilfield company Friday south of Bloomfield, causing the fluid to flow down an arroyo about a quarter of mile.

GETAWAY

Why should honeymooners have all the fun!

2 Charged in Pot Case

SANTA FE, N.M. (AP) – Two men accused of growing marijuana using an [illegible] system [illegible] have been [illegible] on marijuana over 100 pounds.

Magistrate Eugene Romero [illegible] bond at $15,000 for Smith and $5,000 for Vaughn. Smith and Vaughn were released [illegible]

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

September 20, 1988

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

Mr. Jerry Finney
President
Troubleshooters Inc.
No. 12 County Road 5841
Farmington, New Mexico 87410

Dear Mr. Finney:

Mr. Frank Chavez has referred your letter of August 3, 1988, regarding waste oil cleanup to our Environmental Bureau and myself for review. The Environmental Bureau has concluded, and I agree, that you are proposing to establish temporary treating plants at the various sites, therefore it will be necessary for you to comply with Division Rule 312 regarding the permitting of treating plants, including the posting of a cash or surety bond in the amount of $25,000.

Because your facility will be moving from time-to-time, you should consult with David Boyer at the Environmental Bureau regarding the appropriate steps which should be taken to permit each site in a common proceeding.

Sincerely,

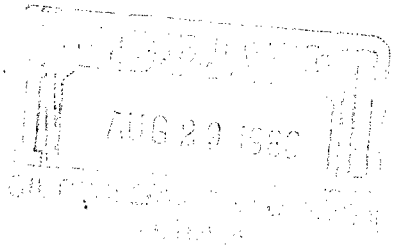
Robert G. Stovall

ROBERT G. STOVALL,
General Counsel

RGS/dr

cc: Frank Chavez - Aztec
David Boyer - Santa Fe

TROUBLE SHOOTERS INC.
#12 COUNTY ROAD 5841
FARMINGTON, NM 87410



August 3, 1988

NEW MEXICO OIL CONSERVATION DIVISION
1000 Rio Brazos Rd
Aztec, NM 87410

ATTENTION: Mr. Frank Chavez

REFERENCE: WASTE OIL CLEAN UP--ODECO, MERRION OIL & GAS (Cuba Pits), BASIN DISPOSAL (Oil Pits)

Dear Mr. Chavez,

This letter is in reference to our discussions on cleaning waste oil pits. We submit our method for clean up of waste oil pits for approval of a temporary permit, that under my direction, we may dismantle the problem and remove the oil from pits which are in need of cleaning.

The clean up will consist of the following: 1. Moving a 500 barrel steel tank onto each site. 2. Skimming the pits with our skimmer boom. 3. Pumping the pit with a vaccum truck.

At this point, the oil will be put in the tank, checked for BS & W and the gravity, then blended accordingly using a paraffin breaker and lighter and upper end aromatic hydrocarbons. These will come from either a gasifier process or another well with higher (50-55) gravity. The blending will be through a slight pressure process, this will not be a high pressure process, but through a fluid type catalyst reaction. This is not an experimental process, but one that has worked before.

We will guarantee that we will take the machinery of the system to the site. The oil that does leave the site will be saleable to Petro Source, attached is a copy of letter of purchase to the Bisti lack unit. Any water that is recovered, such as produced water from the sediment oil will be drained back into the pit which it was taken from. The hydrocarbon content will be in the 100's ppm at the very most. We do have the machinery to take this off, which we will be testing in the near future, but at this time it will be a slight rainbow of hydrocarbons that goes back onto the pit and that should evaporate reasonably fast. In the near future we will be able to remove hydro-carbons to 2 ppm. At this time to get these problems cleaned, we are targeting just the major portions of oil on a temporary basis, taking the machinery to the site to clean the oil, returning it to saleable quality.

The cleaned oil will be loaded straight from our tank into a Pertro Source truck. When it leaves the location it will be ground and stuck to know how many barrels are being taken. We will know the BS & W and gravity to be able to pay the appropriate royalties. At this point we see that this oil is written off by the division royalty people which receive royalties that own the operating interest of the wells. At this time, they are only concerned about getting it cleaned up at no cost, which is what we are offering with this program. We are not viewing any operating royalties to them at this time. At this point the only royalty payment we consider are to the state or the MMS, whoever is the mineral rights holder.

We can do the clean up in the matter of the next 30 days, after being permitted. I request a 60-90 day permit for this cleanup. This will give the time to assure proper and total clean up to the specs indicated of all pits specified for this permit.

We will be able to supply drawings, in the near future, for a permenant treatment plant that is going to be located on Crouch Mesa next to the site that is currently being built to handle waste from other sources. This waste site will then be our oil treatment plant. We will submit proper groundwater specs and geological specs and any other specs, to the state OCD for approval, as we did to the State EID for approval in handling other wastes.

At this time we are asking for temporary approval, to waive hearings so we can solve these problems. We feel this is just the beginning to a permanent solution for the problems of waste related to the oil industry. We hope that you give us this opportunity to solve the problems, and prove ourselves with this process. We look forward to hearing from you and if there are any more questions of concern, please contact at 632-3383 (Bloomfield Motel-Paul or Jerry).

Sincerely,

Jerry Finney

Mr. Jerry Finney, President
TROUBLE SHOOTERS, INC.

JF/dl

cc: Mr. Dave Boyer

enclosure

Memo

From

FRANK T. CHAVEZ
District Supervisor

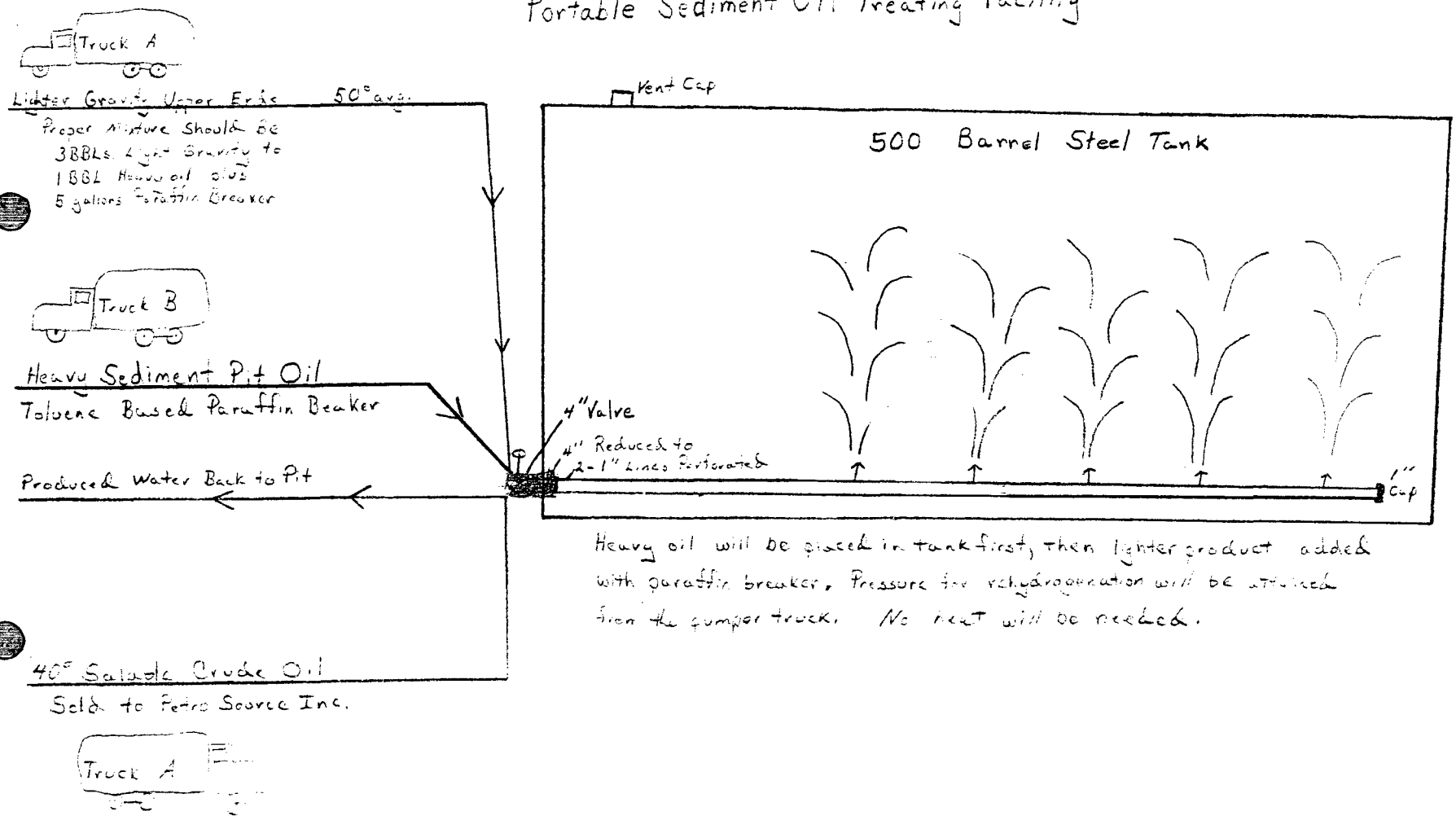
To David Boyer

Apparently you didn't get the drawing with Finney's letter.

FC

Oil Conservation Division **Aztec, New Mexico**

Portable Sediment Oil Treating Facility



Heavy oil will be placed in tank first, then lighter product added with paraffin breaker. Pressure for rehydrogenation will be attained from the pumper trucks. No heat will be needed.

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

TONEY ANAYA
GOVERNOR

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

July 10, 1986

Ms. Robbie Finney
Oilfield Services
P.O. Box 160
Flora Vista, NM 87415

Re: Oil in storage

Dear Ms. Finney:

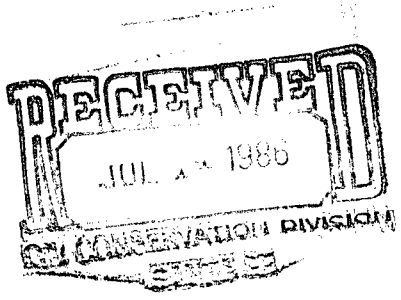
You are hereby directed to remove the liquids from your temporary storage facilities south of Bloomfield. This will preclude the possibilities of accidental spills.

Sincerely,

Frank T. Chavez
District Supervisor

FTC/dj

xc: Operator File
Jamie Bailey



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

TONEY ANAYA
GOVERNOR

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

July 7, 1986

RECEIVED
OIL CONSERVATION DIVISION
SANTA FE

Oilfield Services
P.O. Box 160
Flora Vista, NM 87415

Re: Treating Plant

Gentlemen:

A recent inspection by this office found that you are currently operating a treating facility south of Bloomfield. This operation is in violation of our rules and you are directed to cease its operation immediately. All liquid in storage must be accounted for as to its source and volume to this office within ten days.

The use of plastic lines within a tank battery is not an accepted practice.

Sincerely,

Frank T. Chavez
District Supervisor

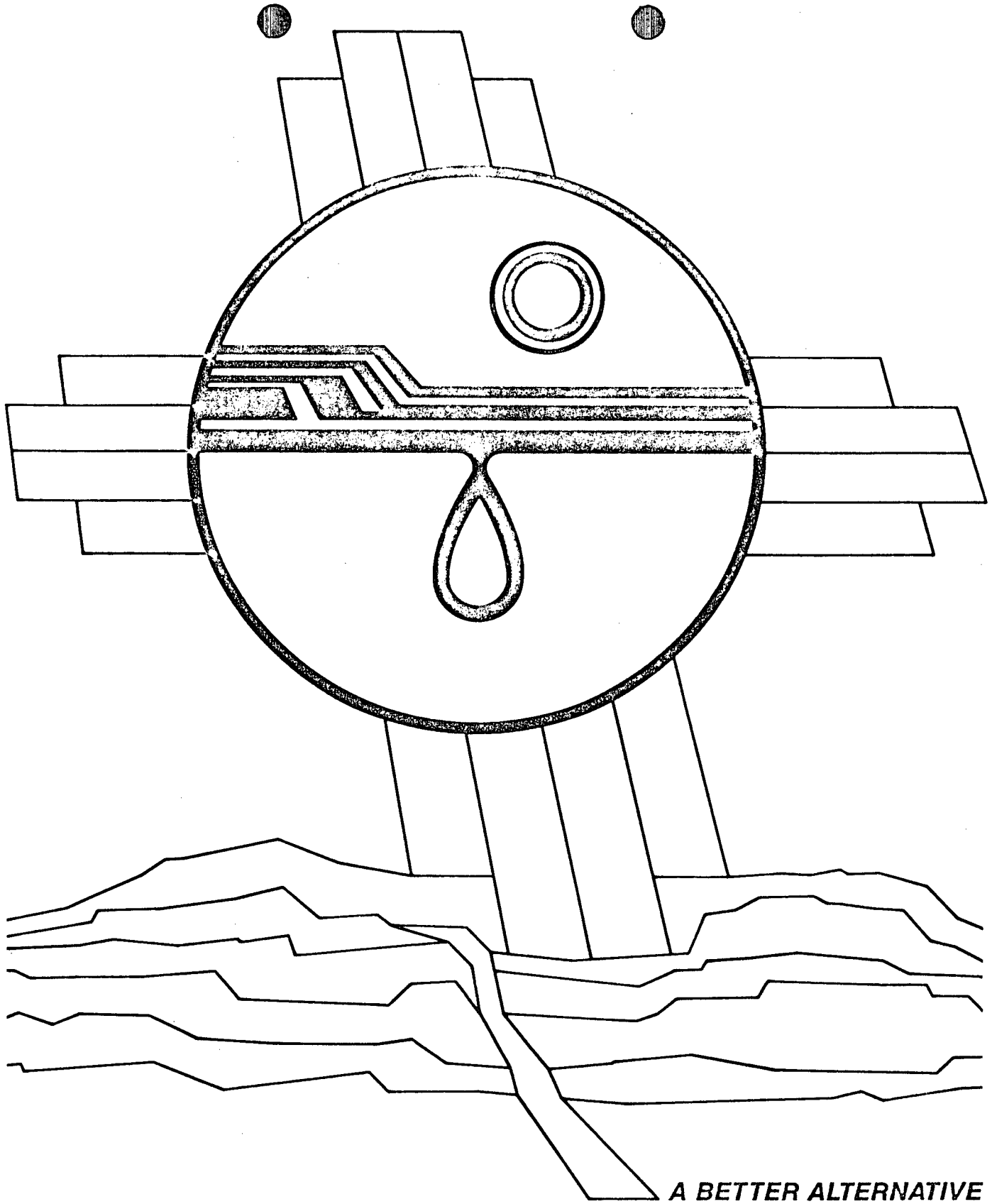
FTC/dj

xc: Operator File
Jamie Bailey

Casey Refining receipts from Sun Refining

May 1 - Gross 221.91 BBL net 217.87

May 22 - Gross 212.73 net 195.65



INDUSTRIAL WATER ENGINEERING, INC.

ENGINEERING DIVISION

INDUSTRIAL WATER ENGINEERING, INC. PROVIDES AN ORDERLY PROGRESSION OF STEPS THAT RESULT IN A CONCEPTUAL ENGINEERING DESIGN APPROPRIATE FOR YOUR SPECIFIC WATER TREATMENT PROBLEM.

PHASE ONE—SITE ASSESSMENT

At least one site visit is normally necessary. **Industrial Water Engineering, Inc.** asks your opinion of the project needs, economic and technical limitations, and site specific limitations. We want to understand your problem. We then develop a plan to characterize your water quality. Our plan includes defining the information desired, sampling techniques and monitoring instrumentation. Following preparation of an analytical plan, we develop the steps for evaluating alternatives (PHASE TWO) and for creating the process design (PHASE THREE).

PHASE TWO—EVALUATION OF ALTERNATIVES

Industrial Water Enginering, Inc. conducts a preliminary economic analysis of alternatives to determine which of the processes merit further consideration. Factors such as maintenance, manpower and capital versus operating money are incorporated. Together, we review the status of the alternatives.

Industrial Water Engineering, Inc. gathers and analyzes the samples. Computer modeling of the water chemistry is used where applicable. The water quality that would result from each of the alternative processes is defined. Chemical, physical and biological processes are screened in the laboratory when appropriate. Process materials such as chemicals are identified and evaluated. Characteristics of a desirable operating environment such as mixing are defined. Pilot plant studies may be added if the scope of the project justifies it.

Industrial Water Engineering, Inc. prepares budget estimates and projected performances. Together, we arrive at a final selection of the process.

PHASE THREE—PROCESS DESIGN

Industrial Water Engineering, Inc. develops a conceptual design of the process and the operating environment. We prepare flow diagrams to show how the processes are integrated. Each unit process is clearly defined with design criteria such as flow rates, hydraulic loadings and reactor sizes.

RIGOROUS ATTENTION TO DEVELOPING THESE FIRST THREE PHASES IS THE BASIS FOR ASSURING THAT THE TREATMENT EQUIPMENT AND HARDWARE WILL BE DESIGNED TO MAKE YOUR PROCESS WORK.

INDUSTRIAL WATER ENGINEERING, INC. CAN PROVIDE OR COORDINATE ENGINEERING SPECIFICATIONS, CONSTRUCTION/INSTALLATION, START-UP AND TRAINING. OUR PARTICIPATION IN THESE PHASES ENSURES THAT THE RESULTANT WATER MANAGEMENT SYSTEM RESEMBLES THE CONCEPTUAL DESIGN IN SPECIFICATION AND PERFORMANCE.

PHASE FOUR—SPECIFICATIONS/CONSTRUCTION/INSTALLATION

Industrial Water Engineering, Inc. translates the conceptual design into equipment and construction specifications. We provide turnkey installations on some jobs. Others may require supplementary support.

If you would like to select your own Architect/Engineering firm or wish to perform Architect/Engineering tasks in-house, **Industrial Water Engineering, Inc.** will serve as the liaison to make sure that the conceptual design is accurately translated into the final project design.

If you wish to select your own Mechanical Contractor or wish to act as your own Mechanical Contractor, **Industrial Water Engineering, Inc.** will serve in a review capacity to ensure that the finished project is an accurate translation of the design intent.

PHASE FIVE—SYSTEM START-UP AND PERSONNEL TRAINING

Industrial Water Engineering, Inc. will review the system and recommend operating procedures. We will show these procedures to your operating personnel and train them in the use of other tools necessary to control your Water Management System. We will then turn the routine operations over to you.

PHASE SIX—FOLLOW-UP

Industrial Water Engineering, Inc. will continue periodic reviews to assure that the Water Management System is functioning as designed and that unforeseen problems do not get out of hand. As we continue to develop new chemicals, we will integrate them into your System, with your approval.

COMPLETE FOLLOW-UP SERVICE IS CRITICAL TO THE SUCCESS OF YOUR WATER MANAGEMENT SYSTEM. INDUSTRIAL WATER ENGINEERING, INC. WANTS YOUR SYSTEM TO CONTINUE TO PERFORM RELIABLY.

SERVICE DIVISION

Industrial Water Engineering, Inc. provides routine service for cooling towers, steam boilers, hot water boilers, closed chilled-water loops, and solar loops. Our service includes the application of custom-formulated chemicals that control scale, corrosion and biological growth. We also offer chemical injection equipment, training, monitoring and troubleshooting. Our daily hands-on responsibilities keep us aware of operating procedures.

CHEMICALS DIVISION

Industrial Water Engineering, Inc. custom formulates its own chemicals. We purchase raw materials from reputable manufacturers of base ingredients. Many of our products are blended in our Albuquerque plant. Some of our products are prepared to our specification at out-of-state facilities.

A large percentage of our chemicals are targeted for the control of scale, corrosion, or biological growth. In addition, we have a very comprehensive selection of polymers that assist in flocculation and sludge dewatering. We also have several cleaning formulations that are inhibited against corrosion.

Industrial Water Engineering, Inc. is constantly evaluating new products. We have originated several that we feel represent state-of-the-art.

EQUIPMENT DIVISION

Industrial Water Engineering, Inc. has developed a comprehensive line of equipment for feeding chemicals to cooling towers, steam boilers, hot water boilers and other closed loops. Our control systems for cooling towers and steam boilers range from the very simple to the highly sophisticated. We have New Mexico Mechanical Contractor's License No. 21439 and can direct or coordinate installation and start-up.

Industrial Water Engineering, Inc. has a good working relationship with manufacturers of specialty equipment and processes. Interaction with their engineers helps us stay up to date. The companies we confer with include manufacturers of

1. pressure vessels—ion exchange, carbon filters, sand filters,
2. brine concentration equipment,
3. partial demineralization equipment,
4. biological processes, and
5. specialty chemicals.

The cooperation of engineers from these companies helps us specify custom designs that might include special valves, materals, wiring and integration into your computer control system.

CLEANING DIVISION

Industrial Water Engineering, Inc. has developed a line of descalers and cleaners that solve several troublesome cleaning problems.

We offer a relatively safe-to-handle descaler for boilers and cooling towers. A mild acid effectively removes calcium carbonate in the absence of silica. A special inhibitor protects zinc, copper and mild steel surfaces from corrosion during the cleaning. Our descaler can be safely used on line in cooling towers.

When a tenacious scale such as silica is present, **Industrial Water Engineering, Inc.** can provide the manpower, equipment, and chemicals to remove it. We have salvaged neglected boilers that were so badly scaled with silica that their replacement had been authorized. Even hard-to-clean cast iron sectional boilers with over one-half inch of scale were cleaned until the surface looked like new cast iron skillets.

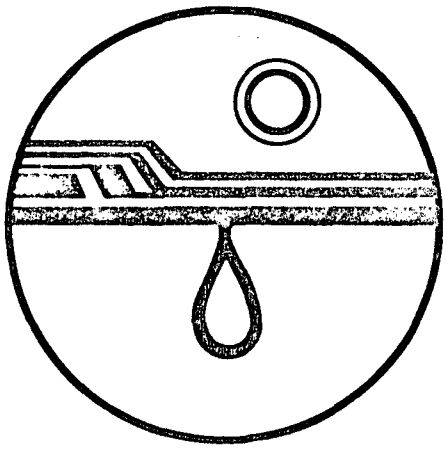
Industrial Water Engineering, Inc. provides or custom formulates additional cleaning chemicals such as chelants, surfactants and emulsion breakers.

PROCESS ALTERNATIVES

- **PHYSICAL TREATMENT ALTERNATIVES**
  - SEDIMENTATION
  - FLOTATION
  - FILTRATION
  - CENTRIFUGATION
  - MEMBRANE (ELECTRODIALYSIS)
  - EVAPORATION
  - MANUAL
  - BRINE CONCENTRATION

- **CHEMICAL TREATMENT ALTERNATIVES**
  - COAGULATION
  - FLOCCULATION
  - PRECIPITATION
  - ION EXCHANGE (INCLUDES SOFTENING)
  - SCALE INHIBITION
  - CORROSION INHIBITION
  - DESCALING
  - OTHER CHEMICAL PROCESSES

- **BIOLOGICAL TREATMENT ALTERNATIVES**
  - BACTERIAL GROWTH STIMULATION (NUTRIENTS, ENVIRONMENT)
  - BACTERIAL SEEDING
  - OXIDATION
  - BIOCIDES



INDUSTRIAL WATER ENGINEERING, INC.

2300 BUENA VISTA, SE
SUITE 135
ALBUQUERQUE, NM 87106
(505) 842-1216

CDM
environmental engineers, scientists,
planners, & management consultants

CAMP DRESSER & McKEE INC.
Three NorthPark East
8800 North Central Expressway, Suite 400
Dallas, Texas 75231
214 987-1900

May 9, 1986

Mr. Jerry Finney
Vice President
Oilfield Services
Phoenix Resource Recovery, Inc.
P.O. Box 10433
Farmington, NM 87433

PRELIMINARY

Subject: Preliminary Feasibility Study
Produced Water Recycling
Bloomfield Site

Dear Mr. Finney:

Camp Dresser & McKee Inc. (CDM) has performed a Preliminary Feasibility Study of the Bloomfield Site for possible implementation of produced water treatment and recycling. This study consisted of both technical and economic analyses of this proposed project. Our findings and conclusions are as follows.

Oilfield Services is considering the implementation of a treatment system to recover and reuse various components found in oilfield produced water. Changes in legislation have mandated that produced water in several counties of Northwest New Mexico no longer discharge produced water into unregulated evaporation facilities. Produced water from various fields in the Farmington area are proposed to be trucked by the lease operators to the Bloomfield Site for treatment and recovery.

Oilfield Services identified the need for a treatment system designed for the treatment and recycling of produced water, yielding the product fractions of recovered oil, recycled waters suitable for unrestricted agricultural use, concentrated salt slurry suitable for metals recovery, and sludges to be shipped to a licensed waste disposal facility. Various sources of produced water have been identified, all of which require additional treatment for physical and chemical contaminant removal.

Chemical analyses were obtained from both Western Company of North America and Halliburton laboratories. These analyses, along with information gained from Oilfield Services staff indicated that the expected influent produced water to average 6,000 - 12,000 mg/l total dissolved solids (TDS), 0 - 5% oil, 500 - 5,000 mg/l total suspended solids (TSS). The influent waters will vary with the source field,

wells collected, and condition of wellhead equipment. Concentrated downhole chemicals such as acids, muds, and surfactants were not expected to be present on a regular basis.

TECHNICAL INTRODUCTION

To treat this produced water several unit processes must be implemented. Prior to the use of any system to improve the chemical quality of the produced water, pretreatment systems should be implemented to improve the physical quality of the feed. To reduce the concentration of oil in the feed, coalescer-heater/treater-free water knock-out facilities are used, followed by a physical-chemical treatment system to remove any residual oil and grease, as well as remove any suspended particulate material. Provisions must be incorporated for the offloading of incoming tank trucks, the measurement of the quantity of produced water, and an inspection of quality to ensure materials unsuitable to treatment are not allowed to enter the treatment system.

In the "pretreatment" area of the facility the influent produced waters are fractioned: oil is removed and recovered for later recycling; suspended materials are removed in the form of sludges for treatment and disposal; the produced water, now free of oil and particulate materials is flowed to the primary storage basin prior to desalination.

The pretreated waters in the primary storage basin are then pumped to a "primary desalination" facility where a major portion of the dissolved ionic material is removed to produce a product water of 1000 mg/l TDS, suitable for unrestricted agricultural reuse and recycling. This facility is conceptualized to operate with a minimum water recovery of 80%, resulting in approximately 90% of the dissolved ionic material concentrated into the residual 20% volume reject brine stream. The desalted product water will be chlorinated for bacteriocidal protection and pumped to an above ground storage tank for distribution, while the concentrated reject brine stream will be flowed to an adjacent secondary storage basin.

The concentrated brines will then be pumped from the secondary storage basin into a "brine recovery" facility, which further concentrates the brine to recover additional product water. This system will operate at a minimum 90% water recovery, with the highly concentrated reject stream now suitable for use by off-site metal and salt reclamation operations. These brines are transferred to transport containers in a dedicated area of the facility prior to off-site shipment.

TECHNICAL DISCUSSION

The treatment of waste produced water requires the marriage of several technologies, several of which are considered "new" and "high technology". It should be noted, however, that ALL of these technologies are well proven and documented. In the past, some have even been utilized for similar oilfield water and waste treatment.

The "pretreatment" systems will be preceeded by a tank truck offloading area with storage tanks. This area will include provisions for metering and sampling of each truck's discharge prior to acceptance to ensure only acceptable produced waters enter the treatment system. This approach will provide a "first line" of protection for the facility, as well as the monitoring, recording, and billing of each incoming shipment.

For the "pretreatment" system, the development of high efficiency in-line coalescers progressed during the growth years of the early 1980's. CE Natco developed the 'Proformax' matrix plate coalescer system to comply with both strict environmental regulations and to improve recovery of the more valuable oil components. In addition, Natco improved performance of its free water knockout (FWKO) systems for these same concerns and to compliment the 'Proformax' coalescer systems. As the market value of pipeline gas climbed, the thermal efficiency also improved to the levels of cost efficiency. The implementation two 'Proformax' coalescers and a free water knockout system has been demonstrated to successfully reduce the level of suspended oil from levels as high as 10% (100,000 mg/l) to less than 30 mg/l. The implementation of a plate and frame heat exchange unit to recover the latent heat from the water after the free water knockout unit will reduce the natural gas consumption of this system. Although the 'Proformax' coalescers have been widely duplicated, their proven performance and low cost in similar applications are difficult to overlook.

The physical-chemical treatment system will include chemical addition, flash mixing, coagulation, flocculation, and sedimentation accentuated by inclined plate settlers, and finally filtration in a multimedia filter bed. The effluents will then flow by gravity to the primary storage basin, while the sludges from the system are pumped to a gravity thickener and sludge filter press. Filter elutriates are pumped back to the flash mix chamber of the physical-chemical treatment unit, or to a "stand-by" storage basin. Although several lines of physical-chemical treatment equipment are available for this operation, Smith & Loveless and U.S. Filter systems have been widely used in oilfield applications throughout the world.

The purpose of the primary storage basin following the "pretreatment" processes is to provide a continuous feed to the primary desalination facility, as well as provide some latitude in operations to allow for either "pretreatment" or "primary desalination" areas to be taken off-

line for maintenance procedures without disrupting the overall facility operations.

The "primary desalination" facility consists of an electrodialysis reversal (EDR) unit, configured to operate at the 5,000 - 12,000 mg/l TDS level. Although other processes are available for this application, only the EDR process is capable operation in a wide range of salinities without scale formation from supersaturated concentrations of salts. In addition, the EDR process from Ionics has been utilized in another oilfield application for brine concentration. This facility, located in California, has demonstrated successful operation even in concentrations of 30 mg/l dissolved oil. In addition, the unit can be easily automated and alarmed, reducing labor requirements. The final advantage of the EDR system is in its ability to operate in an intermittent 'stop-start' mode, with operations keyed to volume of the primary storage basin or the level of the product water storage tank.

The product water from the EDR unit can then be flowed through a packed tower to remove any residual volatile organic materials, chlorinated for bacteriocidal protection, and pumped to a covered, above ground storage tank prior to distribution. The quality of water required for unrestricted agricultural use will provide suitable buffering capacity without chemical addition for corrosion inhibition.

The supersaturated reject brines from the EDR unit will then flow by gravity in an open, lined trench to the secondary storage basin. This basin will feed the "brine concentration" facility. This facility will consist of a small vapor compresion unit to further concentrate the brines an additional 90%. The use of a high efficiency Zarchin process compressor system can be found only in an IDE concentrator unit. The operation of the vapor compression unit is highly energy intensive, thus the implementation of a compressor with the highest possible thermodynamic efficiencies. The vapor compresion unit is a continuous operation - the energy requirements for startup are extremely high. This unit, although expensive to operate, MUST operate at all times. If the secondary basin level falls, it must be fed directly from the primary basin to ensure continuous feed. If Oilfield Services elects to accept raw produced waters from existing evaporation lagoon operations at concentrations greater than 12,000 mg/l TDS, it should be flowed directly to the secondary basin after pretreatment.

The "brine concentration" facility will produce a high quality product water to be added to the product water storage tank. In addition, a supersaturated brine stream suitable for metals and salts reclamation will be produced. Although this stream has some economic value, its volume will be very small. This stream should be shipped to off-site reclamation facilities for further processing in the liquid form. The design of the "brine concentration" facility will include a dedicated area for filling of containers and storage prior to shipment.

A third storage basin is provided for emergency/overflow use on-site.

SYSTEM ECONOMICS

The design of this entire treatment system is not to produce the various fractions previously described. Although most of the products have market value, such as the oil for resale, the water for agricultural reuse, and the concentrated salts for reclamation, these processes are in place for the sole purpose of accepting high volumes of produced water.

The facility proposed for the Bloomfield Site has been conceptualized for a treatment capacity of approximately 7150 barrels of produced water per day (bwpd). The preliminary engineering estimate does not include any capital costs associated with real estate, access road improvements, or utility connections for electrical power, natural gas, potable water, or sanitary sewer.

The preliminary engineering estimate of capital costs is as follows:

Offloading/Pretreatment Areas	$ 231,000
EDR System	500,000
VC System	450,000
Treatment Building/Control Area	125,000
Basins/Tanks	230,000
Sludge/Concentrate Storage	100,000
Yard Piping/Pumps/Site Work	120,000
Misc. Contingency	150,000
Engineering/Consulting	285,900
Total Installed Cost Estimate	$ 2,191,100

A finance rate of 10% with a 7 year payment schedule was assumed, providing an annual debt service cost of $450,228.

The facility was conceptualized to operate at a rate of 250 gallons per minute (gpm), or 7143 barrels produced water per day (bwpd). Although the facility will operate in a continuous mode, operational costs were assumed on a 20 hour per day, 320 days per year basis.

The oil concentration in the produced water was assumed to be 2.5%, with 85% recovered for resale. The market value of $7.50 per barrel (bbl) was assumed, with no royalty fees or associated costs considered.

Although the fees currently charged for produced water disposal in the Farmington area average $0.60 - $1.10/bbl, a fee of $0.50/bbl was assumed.

Although the cost of agricultural water (where available) in the Farmington area is in excess of $1.00/kgal, a cost of $1.00/kgal was

assumed.

The costs associated with sludge disposal were assumed to be $100/ton. The costs of saturated brine for reclamation were assumed to be $0, and no revenue was gained from this product. The cost for electrical power was assumed to be $0.08/kwh.

Because of the degree of technical expertise which must be available to service and operate this facility, unburdened labor costs are estimated to average $18/hr.

No costs associated with taxes, insurance, royalties, etc. have been considered in the estimate of annual O&M or capital costs.

The estimated revenue and costs associated for this operation are as follows:

Produced Water Treatment Fees	$ 1,142,857
Recovered Oil Income	364,286
Agricultural Water Income	82,704
Concentrate Reclamation Income	0
Annual O&M Costs	(590,798)
Annual Capital Costs	(450,228)
	$ 548,821

The system economics appear to be most favorable for the implementation of this facility. It should be noted, however, that in addition to technical and economic feasibilities, regulatory feasibilities must be considered.

In our past discussions, the question has arisen repeatedly from all parties "why isn't everyone implementing this technology?" The answer is frankly that the element of risk is present in an operation such as this. Oilfield Services must carefully weigh the risks associated with accepting produced waters from an 'open' market. Produced waters can contain any number of components, dependent upon the nature of the field and formation of origin. Many of the chemicals commonly used in the oil patch are toxic and hazardous, both to this facility and to human and animal health. When Oilfield Supply begins to supply agricultural quality water, you become a purveyor of water, and have an element of responsibiltiy for its quality. Your liabilities could be very high for this operation, creating an insurance nightmare. This liability could be significantly reduced through effective design and control measures, both on the influent to the Bloomfield Site treatment process and the product water which leaves your facilty.

PERMITS FOR ACTIVITIES RELATED TO DISPOSITION OF PRODUCED WATER

INTRODUCTION

The Oil Conservation Division (OCD) of the New Mexico Energy and Minerals Department has the responsibility to ensure that produced waters are handled and disposed of properly. The authority of the OCD to regulate produced water comes under the Oil and Gas Act, 70-2-1 et seq., NMSA, 1978.

Generally, past regulations for produced waters have been minimal. In the recent past, additional regulations and orders have been promulgated for produced waters, many of which are effective after January 1, 1980. Specifically these are:

(1) Oil Conservation Division, Energy and Minerals Department. Rules and Regulations: Section B - Miscellaneous Rules

(2) Guidelines for the Design and Construction of Lined Evaporation Pits (Revised 5/85) Oil & Gas Division

(3) Guidelines for Application for Lined Evaporation Pit Permits. These guidelines are to be used as a compliment to the Guidelines specified in (2), above

(4) Guidelines for the Selection and Installation of Below Grade Produced Water Tanks in the San Juan Basin's Vulnerable Area

(5) Order No. R-7940 from the Oil Conservation Division

These regulations and guidelines cover the transport and storage of produced water. There are, however, no established regulations and guidelines on the following:

- o Regulations specifically covering the distribution of produced water (e.g. agricultural quality).

- o Specific regulation on disposal of the end products of produced water (e.g. hazardous waste disposal). Disposal options will need to be handled on a case-by-case basis.

SUMMARY OF APPLICABLE REGULATIONS AND REQUIPEMENTS

I. Storage of Produced Water

a. Rule 8 - Lined Pits/Below Grade Tanks. After 1, 1986 lined pits and below grade tanks may be used to contain produced water only upon prior approval of the Oil Conservation Division.

b. Rule 6, Order R-7940. Mandatory Pit Registration Form for San Juan Basin.

Details on Rule 8 are provided in Appendix A. Order R-7940 is included as Appendix E.

II. Transport Regulations on Produced Water

a. Rule 709 - Removal of produced water from Leases and Field Facilities.

Form C-133 (Authorization to move produced water). Only a person possessing an approved Form C-133 may transport produced water.

b. Rule 710 - Disposition of produced water. Prohibits disposal that would constitute a hazard to fresh water supplies.

Additional detail on transporting produced water is provided in Appendix A.

III. Applicable Guidelines

a. Guidelines for Design and Construction of Lined Evaporation Pits (dated 5/85)

- o These guidelines are to be used as a guide to the preparation of plans and specifications for lined evaportation ponds to be used to contain liquid discharges regulated by the Oil Conservation Division.

- o All plans and specifications should be submitted to the Oil Conservation Division prior to construction.

- o Guidelines cover the following:

  - Location: such that water resources are not impacted.

  - Design and Construction: Pond should have maximum evaporative surface; shall be located on level ground and be rectangular; have adequate freeboard; incorporate a double liner with a leak detection system.

  - Materials: Impermeable; shall meet minimum thickness requirements (30 mil for flexible membrane); shall be resistant to chemical and biological degradation.

  - Leak Detection System: shall be installed between primary and secondary liner; shall be inspected by the OCD; must conform to maximum slope standards.

  - Preparation of Pit-Bed for Installation of Liners: Inside shall be smooth and compacted; anchored appropriately.

  - Installation of Flexible Membrane Liners: Pit bed and levee walls to be inspected by OCD; gases shall be vent-

ed as appropriate; liner shall be anchored and protected from the sun.

- Skimmer Ponds and Tanks: Used to separate oil from water; conform to same specifications as skimmer pond; shall be properly designed and built of suitable materials.

- Fences and Signs: Constructed to prevent livestock from entering; appropriate signs posted.

- Maintenance: Inspection schedule of once per week for leak detection system; after rainfalls for levee.

- Contingency Plan: Shall be submitted with details of pit construction.

Details are provided in Appendix B.

b. Guidelines for Application for Lined Evaporation Pit Permits

Two copies of the permit application must be submitted to the OCD. Information to be included in the application include:

o General Information: Name of owner; name of operator; location; type of operation; and affirmation.

o General Description: Proposed operations; spill/leak prevention and procedures.

o Site Characteristics: Hydrologic features; geologic description of pit site; flood protection.

o Additional Information: Other data that will demonstrate that the pit will not result in the contamination of fresh water.

Details on the permit application are provided in Appendix C.

IV. Special Rules and Regulations for Disposal of Produced Water in the Vulnerable Area of Northwest New Mexico. Order R-7940

a. Rule 3 - Effective Jan. 1, 1987 disposal of produced water in unlined pits is prohibited, except for disposal of produced water specifically exempted.

b. Rule 4 - Exemptions

- Produced water pits receiving 5 barrels or less per day, having TDS of 10,000 mg/l or less and that base of unlined pit is at least 10 feet above water table.

- Produced water pits receiving 1/2 barrel or less per day and that base of pit be at least 10 feet above water table.

- Any pits regulated by a discharge plan approved by and permitted under the Water Quality Control Commission Regulations authorized under the NM Water Quality Control Act.

c. Rule 5 - Lists surface disposal facilities to be approved.

Guidelines for the installation of produced water tanks covered under Order R-7940 are included in Appendix D.

V. Hazardous Waste Considerations

a. Under Amendment No. 1 - Environmental Improvement Board, Hazardous Waste Management Regulations, produced waters are excluded as a hazardous waste.

b. A partial listing of produced water contaminants has been compiled by OCD. (See Appendix F)

c. Additional findings of the OCD on the potential contamination problems and criteria are provided in Order No. R-7490 Nos. 25, 26, 27, 28, 30, 34, 37, 43, and 44. (See Appendix E)

We hope that this Preliminary Feasibility Study has addressed any questions you may have regarding this proposed facility and the technical, economic, and regulatory design factors involved. We are most interested in assisting your firm in this venture, as well as providing technical assistance as required as you meet with your Clients.

Most sincerely yours,

CAMP DRESSER & MCKEE INC.

James L. McNutt, Ph.D.
Industrial Program Manager

cc: R. Finney - Oilfield Services
D. Krivokapich - Oilfield Services
C. Smith - CDM/Dallas
E. Hinzel - CDM/Denver
file

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 8:30	Date 4/8/86
Originating Party	**Other Parties**	
Jerry Finney (632-8137)	Jami Bailey	

Subject

Temporary treating plant permit

Discussion

Finney wants to set up frac tanks on his land outside of Bloomfield for primary separation + possible chemical secondary separation of oil/water pulled from pits on BLM + State land. Will go to Gary Energy refinery, P.W. to go to injection well. He has not yet sent paper work to Perry Pearce to get on docket for a treating plant permit hearing.

I called Larry Pipkin, BLM pet. eng. tech, (325-4572) + asked him about the situation. I told him Finney was one we watched closely because of his past performance with the temporary evap. pit. Finney had told me that the BLM pits were mostly oil with very little water; Pipkin said the pits were 25% oil, 75% produced water.

Conclusions or Agreements

I called Finney + told him a temporary treating plant permit was not possible, that he had to go to hearing + post a bond before he could operate a treating plant. I read the definition of "treating plant" in OCD regs + advised him not to set up frac tanks on his property for the purpose of storing waste oil.

Distribution

File
D. Boyer

Signed

Jami Bailey

Memo

From
DAVID G. BOYER
Hydrogeologist

1/24/86

To Jami - Ernie visited Lindrith site. It's located in a broard valley w/out steep sides as a nearby arroyo. Location is T 24 N, R 2 W, Sec 16, Unit For G. Rules WSP 1576-H show DTW @ 240' in SE SE SE 1/4, 92' in NW NW NE of 21, and 42, 65 & 214, 1½ miles north. ERNIE Thinks site O.K. w/ double liner. P.S. - Closest well at ~½ mile is Lindrith Public Supply!

P.S. - Do we have a Lindrith Quad map?

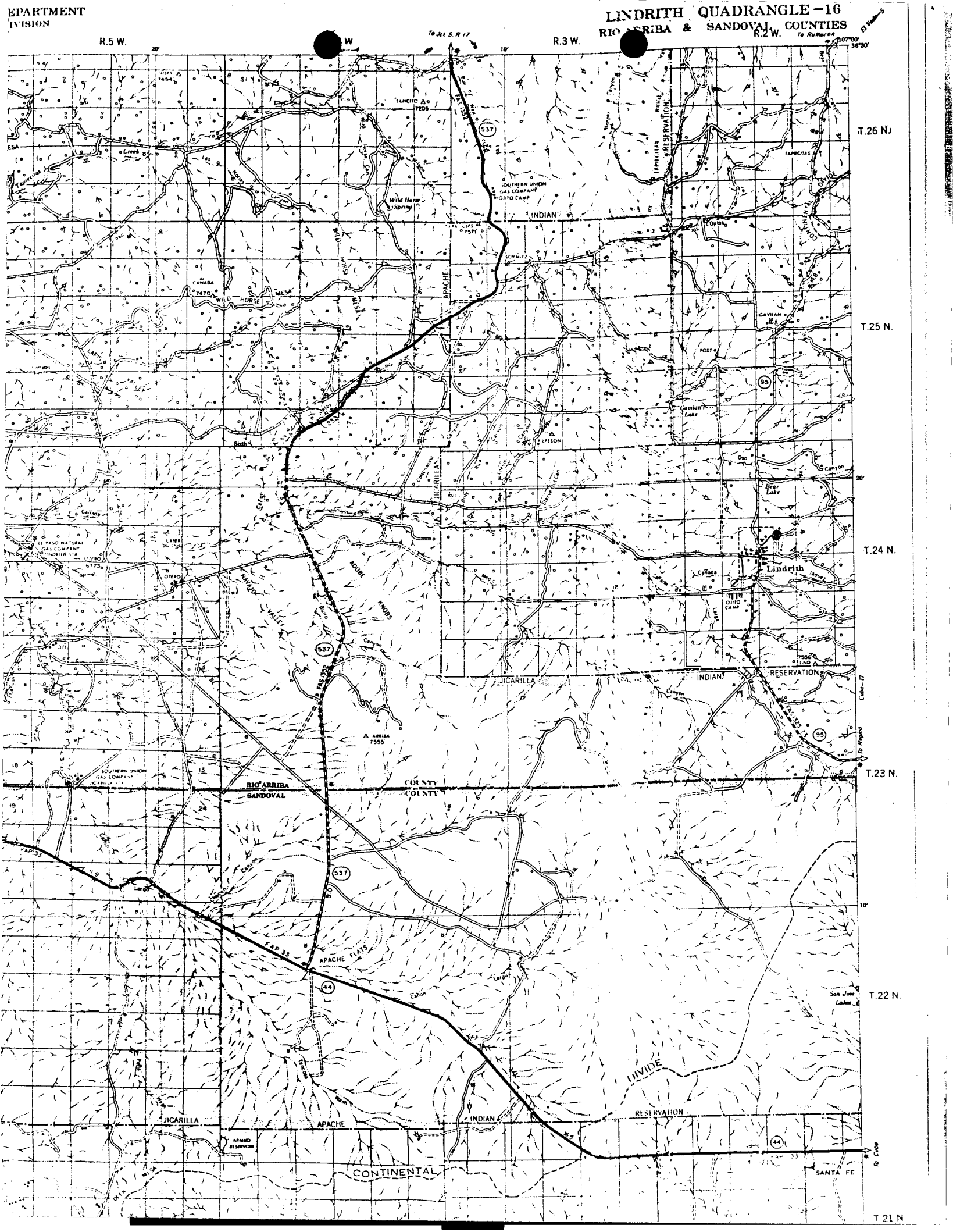
D.

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

EPARTMENT
IVISION

LINDRITH QUADRANGLE—16

RIO ARRIBA & SANDOVAL COUNTIES



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

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

March 13, 1986

Ms. Gina Rowfam
Camp, Dresser & McKee
2300 15th St., Suite 400
Denver, Colorado 80202

Dear Ms. Rowfam:

Enclosed is the information you requested for the Oilfield Services commercial evaporation pit facility in northwestern New Mexico.

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

Sincerely,

JAMI BAILEY
Field Representative

JB:dp

Enc.

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

January 7, 1986

Mr. Jerry Finney
913-A West Oak Avenue
Bloomfield, New Mexico 87413

Dear Mr. Finney:

Your letter of December 12, 1985 states that you intend to improve the quality of water (including removing organic compounds) produced from oil and gas wells for the purpose of selling the water to uses such as municipalities, water users associations and developers. You ask that I reply to your intention in writing.

If the water produced from oil and gas wells results from the extraction of oil and gas from such wells and the water is treated to acceptable drinking water standards, the State Engineer has no jurisdiction to require the acquisition of a permit to appropriate the produced water.

I hope my reply meets your requirements. Should further questions arise you may contact me or my staff.

Sincerely,

S. E. Reynolds
State Engineer

SER:DNS:jcs

STATE OF NEW MEXICO

OFFICE OF STATE ENGINEER

7/19/88
Hi, Dave
attached per our agreement. Steve

S. E. REYNOLDS
STATE ENGINEER
BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503
PHONE: (505) 827-6091

S.E. Reynolds
State Engineer
Room 101
Bataan Memorial Bldg.
Santa Fe, N.M.M 87503

85 DEC 16 A 9:39

12-12-85

STATE ENGINEER OFFICE
SANTA FE NEW MEXICO

Dear Mr. Reynolds,

I am writing this letter in regard to our conversation this morning of 12-11-85. I informed you of our intentions to take produced water from oil & gas wells that producers are paying us to take and is at present useless and a problem to everyone. We are going to remove the TDS from the water down to 500 ppm or less acceptable for drinking and Irrigation standards. We intned to remove all Organics & Hydro carbons & Oil to have marketable water for various uses, such as Municipalities, water users Associations, & Developers.

You advised me that there would be no problems or stipulations on water rights involved & we would be able to market the water without any problems with the State in this regard.

I am writing this letter requesting a reply in writing to your response of anything related that should be brought to my attention. Any advice on this Matter would be appreciated.

Sincerely,

913A W Oak Ave Bloomfield, NM
Bloomfield 632-8137

Jerry Finney

Jerry Finney

EID Farmington
327-4461
327-9851

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 12 PM	Date 11/6/85

Originating Party	Other Parties
Robbie Finney	Jami Bailey

Subject: Unlined pit at facilities

Discussion:

The unlined pit originally approved for drilling mud disposal is nearly empty & should be dry by tonight. Ernie Busch did not require them to pump it out, did we? I said "NO". Their lined pit is full and they are not receiving any fluid. The 3 trucking companies that dispose of fluid there are: Dalgano, Dawn, & occasionally Three Rivers.

They are amazed at the opposition to their business by Basin Disposal & are considering abandoning plans for a permanent facility.

Conclusions or Agreements

Distribution: File

Signed: Jami Bailey

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 10AM	Date 11/1/85
Originating Party		**Other Parties**
Jami Bailey		Aztec Office

Subject: Finney mud pit

Discussion: Unlined mud pit sampled by Charles Gholson 11/1/85 Specific conductance was 19500 µmhos @ 11°C. = 26,812.5 µmhos @ 25°C. = 17,428 TDS. Salinity measurement was 15% NaCl = 216,350 mg/l. Spent HCl odor. No pH measurement. Less than 1000 bbls in pit; 18" freeboard. One Dalgano Transport + 2 Dawn Trucking Co trucks were disposing of fluids in pit. Truck drivers said fluid came from Gobernador area; Finney said fluid from Amoco reserve pits. Charles not aware of Amoco pits in Gobernador area.

Frank Chavez said he had never given permission for use of an unlined mud pit at this location. I told Finney on day of initial site inspection 9/12/85 that he had to talk to Frank re drilling mud pit.

Conclusions or Agreements:

11/1 - Finney called + said fluid in pit was frac water from Amoco Valencia Canyon Unit 45 M

Distribution: File
RLS
D. Boyer

Signed: Jami Bailey

TABLE 5–2
Salt Conditions at 68°F

Mg/L	Salt Added lb/bbl	Percent Salt	Weight of Solution lb/gal
10,050	3.53	1	8.39
20,250	7.14	2	8.45
41,100	14.59	4	8.57
62,500	22.32	6	8.69
84,500	30.44	8	8.81
107,100	38.87	10	8.93
130,300	47.72	12	9.06
254,100	56.96	14	9.19
178,600	66.65	16	9.31
203,700	76.79	18	9.45
229,600	87.47	20	9.58
256,100	98.70	22	9.71
279,500	110.49	24	9.85
311,300	122.91	26	9.99

Table 5–3 shows the effect of temperature on the saturation level of sodium chloride.

TABLE 5–3
Effect of Temperature on Sodium Chloride

Temperature °F	Salt to Saturate lb/bbl
80	127
120	129
160	132
200	137

TABLE 15.—*Temperature factors (f_t) for correcting resistance and conductivity data on soil extracts to the standard temperature of 25° C.*

$$EC_{25}=EC_t \times f_t;\ EC_{25}=(k/R_t) \times f_t;\ R_{25}=R_t/f_t$$

°C.	°F.	f_t	°C.	°F.	f_t	°C.	°F.	f_t
3.0	37.4	1.709	22.0	71.6	1.064	29.0	84.2	0.925
4.0	39.2	1.660	22.2	72.0	1.060	29.2	84.6	.921
5.0	41.0	1.613	22.4	72.3	1.055	29.4	84.9	.918
6.0	42.8	1.569	22.6	72.7	1.051	29.6	85.3	.914
7.0	44.6	1.528	22.8	73.0	1.047	29.8	85.6	.911
8.0	46.4	1.488	23.0	73.4	1.043	30.0	86.0	.907
9.0	48.2	1.448	23.2	73.8	1.038	30.2	86.4	.904
10.0	50.0	1.411	23.4	74.1	1.034	30.4	86.7	.901
11.0	51.8	1.375	23.6	74.5	1.029	30.6	87.1	.897
12.0	53.6	1.341	23.8	74.8	1.025	30.8	87.4	.894
13.0	55.4	1.309	24.0	75.2	1.020	31.0	87.8	.890
14.0	57.2	1.277	24.2	75.6	1.016	31.2	88.2	.887
15.0	59.0	1.247	24.4	75.9	1.012	31.4	88.5	.884
16.0	60.8	1.218	24.6	76.3	1.008	31.6	88.9	.880
17.0	62.6	1.189	24.8	76.6	1.004	31.8	89.2	.877
18.0	64.4	1.163	25.0	77.0	1.000	32.0	89.6	.873
18.2	64.8	1.157	25.2	77.4	.996	32.2	90.0	.870
18.4	65.1	1.152	25.4	77.7	.992	32.4	90.3	.867
18.6	65.5	1.147	25.6	78.1	.988	32.6	90.7	.864
18.8	65.8	1.142	25.8	78.5	.983	32.8	91.0	.861
19.0	66.2	1.136	26.0	78.8	.979	33.0	91.4	.858
19.2	66.6	1.131	26.2	79.2	.975	34.0	93.2	.843
19.4	66.9	1.127	26.4	79.5	.971	35.0	95.0	.829
19.6	67.3	1.122	26.6	79.9	.967	36.0	96.8	.815
19.8	67.6	1.117	26.8	80.2	.964	37.0	98.6	.801
20.0	68.0	1.112	27.0	80.6	.960	38.0	100.2	.788
20.2	68.4	1.107	27.2	81.0	.956	39.0	102.2	.775
20.4	68.7	1.102	27.4	81.3	.953	40.0	104.0	.763
20.6	69.1	1.097	27.6	81.7	.950	41.0	105.8	.750
20.8	69.4	1.092	27.8	82.0	.947	42.0	107.6	.739
21.0	69.8	1.087	28.0	82.4	.943	43.0	109.4	.727
21.2	70.2	1.082	28.2	82.8	.940	44.0	111.2	.716
21.4	70.5	1.078	28.4	83.1	.936	45.0	113.0	.705
21.6	70.9	1.073	28.6	83.5	.932	46.0	114.8	.694
21.8	71.2	1.068	28.8	83.8	.929	47.0	116.6	.683

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

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

October 30, 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jerry Finney
Oil Field Service
P.O. Box 160
Flora Vista, NM 87415

Dear Mr. Finney:

To confirm our phone conversation this morning, the date of first disposal of fluids into the lined evaporation pit located in Section 33, Township 29 North, Range 11 West was October 27, 1985. Approval for use of the temporary pit was for 120 days or until February 24, 1986. By that date, the pit will be drained and closed, with all wastes disposed of in accordance with WQCC and Oil Conservation Division rules and regulations. There will be no extension of this temporary permit.

During the 120 day permit time, maintenance on the pit will be performed such that the liner edges will be buried at all times and the berms will be kept compacted to prevent erosion. A minimum 1.5 feet freeboard will be maintained on the fluid level in the pit. Leaks will not be allowed from any steel holding tanks or from the closed filter system.

Your present system of spraying will be discontinued and spraying will not resume until approval has been obtained from this office. If you have any questions concerning this matter, contact me in Santa Fe at 827-5884.

Sincerely,

JAMI BAILEY
Field Representative

JB/dp

cc: R. L. Stamets
David Boyer
OCD District Office - Aztec

P 612 458 064

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. Jerry Finney	
Street and No. OIT Field Service	
P.O., State and ZIP Code P.O. Box 60 Flora Vista, NM 87415	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982 ★ U.S.G.P.O. 1983-403-517

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 8:15 AM	Date 10/30/85

Originating Party	Other Parties
Jerry Finney	Jami Bailey

Subject: Oilfield Service Temporary pit

Discussion: Date of 1st disposal into Temporary lined pit - 10/27/85
Today they will: ① recompact berm, making top of berm 5' width; ② reanchor liner by burying edge with dirt; ③ have Ernie Busch inspect work; ④ cease spraying for enhanced evaporation; ⑤ lower fluid level in pit so as to have & maintain 1.5' freeboard. A mark will be made on the liner to indicate maximum allowable fluid depth.

Conclusions or Agreements

Distribution: file

Signed: Jami Bailey

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time	Date
	3 PM	10/29/85

Originating Party	Other Parties
Jami Bailey	Finney Oilfield Service

Subject: Temporary pit

Discussion: Charlie Gholson inspected pit after individual complained re conditions at Finney facilities. Violations of 10/21/85 approval for temporary pit: ① Santa Fe office not notified of date of 1st disposal into pit. ② Effluent is being sprayed onto ground surface & doesn't meet WQCC reg. Ground is muddy surrounding pit - spray washed away dirt holding liner down & part of berm. Berms not compacted. Liner loose. Pit operation not in accordance with application. ③ 10-12" freeboard at time of inspection (2:30 PM 10/29/85) ④ Field Rep Carrie — given hard time about sampling fluids in pit. (Report wrong, no hard time here JB 11/1/85)

Conclusions or Agreements: I called Finney answering service & issued cease & desist message. I recommend no more disposal of p.w. until ① berms are compacted; ② liner adequately anchored; ③ inspected by OCD; ④ guarantees of no more discharge to ground surface by spraying or otherwise, & maintenance of 1.5' freeboard

Distribution: File
D. Boyer

Signed: Jami Bailey

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 21, 1985

Oil Field Service
P.O. Box 160
Flora Vista, NM

Attention: Robbie Finney

Re: Temporary Produced Water
Pit Approval

Dear Mrs. Finney:

Your letter and schematic pit drawing dated October 16, 1985, requested approval for a temporary, 1100 bbl maximum capacity, lined produced water pit. This pit will be located on your private property west of Highway 44 in Section 33, Township 29 North, Range 11 West.

You are hereby given approval for use of the temporary pit for 120 days with the following provisions:

1) The Oil Conservation Division District Office and Santa Fe office will be notified of the date of first disposal into the lined pit, and the 120-day limit will begin at that time.

2) All steel holding-tanks at the facilities will be integrity-tested to ensure that no leakage occurs onto the ground surface.

3) No effluent will be discharged onto or below the surface of the ground ~~water~~ unless it meets all standards outlined in Part 3 of the Water Quality Control Commission Regulations.

4) Pit construction and operation will be in accordance with your submitted application.

5) Within 120 days from initial disposal into the pit, the pit will be drained and closed, with all wastes disposed of in accordance WQCC and Oil Conservation Division rules and regulations.

6) There will be no extension of this temporary permit.

If you have any questions, or If I can be of further assistance, contact me in Santa Fe at 827-5884.

Sincerely,

JAMI BAILEY
Field Representative

JB/dp

cc: R. L. Stamets
Frank Chavez
David Boyer

P 612 458 016

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to J. Finney	
Street and No. Box 10433	
P.O., State and ZIP Code Farmington, N.M 87419	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982 ★ U.S.G.P.O. 1983-403-517

DATE Oct 16, 1985.

TO New Mexico Oil Conservation Service.
Attention Phil Baca,

This is A formal Request for A temporary pit for produced water. from the Vulnerable Area. in San Juan County. The intentions of Oil Field Services for this pit is to use this pit on A Temporary 120 day basis to store treated Produced water. for evaporation.
or house as drilling water then as we complete our permanent pit drain this temporary pit & close it. Volume of pit is @1100BBLs, allowing A 1.5FT freeboard. for wave action. Dimensions of the pit are. 30x30 bottom width at 6 Ft deep. with 2 to 1 slopes in the side & 3 to 1 out side. top of pit measuring @ 50xx50 the pit is mainly dug into native soils. of clay and only one side comes above the surface of the ground, with a berm of dirt @ 4 ft wide on top the area id sloping @ 4% to the north. and is entirely on private property. location is Sec 33 township 29 Range 11 of San Juan Coynty. Berms around pit are wheel rolled by loader and are sufficiently hard the liner is of a Hydrocarbon resistent material. 20 Mils thick. own operation willconsist of several steps. first the trucks will dump from the gravled road into steel mud pits. Second, the Oil will be skimmed off and stored in a seperate tank. Third, the water will be sprayed abocve several other tanks (open steel pits) in a small mist then pumped into a large steel closed tank Approx 1300bbls then the skimmed aerated water will be run into and A Culligan minerial to charcol process to remove TDS and Tubidity content. to Irrigation and drilling water. standards. then the water will be put in the lined earth pit for evaporation. or drilling.

water the quality of water in the lined pit will be momiterd daily and quailty recorded for public inspection. we are requesting permit for 120 days minium use and possibilyty 2 pits in the same location.
and same type of liners from supplier will be given and ssamples if available

A cross section is as folows.

WE appreciate all the coooperation from your office and will report any any leak Immededaitley. we welcome your inspection at any time,.

Sincerly, Robbie Finney.

Robbie Finney

Oil Field Seervices.
Box 160
Flora Vista, New Mexico. 87 415

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 8 45 am	Date 03/26/85
Originating Party	Other Parties	
Mr. Jerry Finney	Philip Baca - OCD	

Subject: Temporary Storage of Produced Water

Discussion: Mr. Finney requested permission to store produced water for 60 days in a 3-million gallon storage tank. He also requested permission to install a single-lined temporary pit until he can build a permanent double lined pond. I told him for the temporary pond he would need at least a 20 mil thick liner. I also told him to send a formal request in writing (with all the specs) for the temporary pond. I will send him an approval letter for the storage tank.

Conclusions or Agreements

Distribution

Signed P. J. Baca