

NM2 - 18

**GENERAL  
CORRESPONDENCE  
YEAR(S):**

2003-1994

## Kieling, Martyne

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**From:** Stubblefield, Mike  
**Sent:** Wednesday, April 30, 2003 2:38 PM  
**To:** Kieling, Martyne  
**Subject:** RE: Hillside Oil and Gas

Martyne,

Today I rechecked the status of my request for Hillside Oil & Gas to repair the netting over the Evaporation Pond. The netting has been repaired and is now in compliance with R-313.

Have a Great day.

Mike S.

-----Original Message-----

**From:** Kieling, Martyne  
**Sent:** Tuesday, March 11, 2003 7:34 AM  
**To:** Stubblefield, Mike  
**Subject:** RE: Hillside Oil and Gas

I called the number that I had and they are still exist but moved 2 years ago.

Mr. M.R. "Billy" Tripp Jr.  
Hillside Oil and Gas, LLC  
308 N. Colorado Street  
Midland, TX 79701

Hillside Oil and Gas, LLC  
P.O. Box 8911  
Midland, TX 79708

Phone # 915-685-3011  
Fax# 915-685-1487

-----Original Message-----

**From:** Stubblefield, Mike  
**Sent:** Tuesday, March 11, 2003 6:52 AM  
**To:** Kieling, Martyne  
**Subject:** RE: Hillside Oil and Gas

Martyne,

The letter I sent to Hillside Oil & Gas was returned undelivered. The address the letter was sent to was 510 North Big Spring, Midland, Texas 79701. Do you have a current address for Hillside Oil & Gas, LLC ?

Mike S.

-----Original Message-----

**From:** Kieling, Martyne  
**Sent:** Thursday, February 27, 2003 8:41 AM  
**To:** Stubblefield, Mike  
**Subject:** RE: Hillside Oil and Gas

Thanks Mike!  
have a great day!

-----Original Message-----

**From:** Stubblefield, Mike  
**Sent:** Thursday, February 27, 2003 7:39 AM  
**To:** Kieling, Martyne  
**Subject:** RE: Hillside Oil and Gas

Martyne,

Lets see what the results are from my first letter.  
If we do not get actions taken as required by this first letter  
a second letter will be needed.

Have a great day,

Mike s.

-----Original Message-----

**From:** Kieling, Martyne  
**Sent:** Tuesday, February 25, 2003 10:52 AM  
**To:** Stubblefield, Mike  
**Subject:** Hillside Oil and Gas

Mike,

Thanks for checking up on Hillside and thanks for a copy of your letter. I was wanting to stop by there on my next inspection trip but since our budget is now so tight my trip got canceled. So I take it by your letter that Hillside's net is in disrepair? This is also in violation of their Rule 711 Permit NM-02-0018 . Under EVAPORATION POND OPERATION Item 10. I have attached their permit letter and permit conditions. Please let me know if you wish me to follow up with another letter or if you would rather handle it.

<< File: Perml0402.doc >>

<< File: Permit018-02.doc >>

Thanks Again

*Martyne J. Kieling*

Martyne J. Kieling  
Environmental Geologist

## Kieling, Martyne

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**From:** Kieling, Martyne  
**Sent:** Tuesday, February 25, 2003 9:52 AM  
**To:** Stubblefield, Mike  
**Subject:** Hillside Oil and Gas

Mike,

Thanks for checking up on Hillside and thanks for a copy of your letter. I was wanting to stop by there on my next inspection trip but since our budget is now so tight my trip got canceled. So I take it by your letter that Hillside's net is in disrepair? This is also in violation of their Rule 711 Permit NM-02-0018 . Under EVAPORATION POND OPERATION Item 10. I have attached their permit letter and permit conditions. Please let me know if you wish me to follow up with another letter or if you would rather handle it.



Perm10402.doc



Permit018-02.doc

Thanks Again

*Martyne J. Kieling*  
Martyne J. Kieling  
Environmental Geologist

Centralized Facility

Billy Tripp Jr.  
Hillside oil and Gas LLC  
510 North Big Spring  
Midland TX 79701

915-685-3011

E-mail  
BSTRIPP@APEX2000.NET

CHECKLIST FOR RULE 711 PERMIT APPLICATION COMPLETENESS

1. FACILITY TYPE *Evaporation Ponds*
2. OPERATOR NAME, ADDRESS, CONTACT PERSON AND PHONE#
3. LEGAL LOCATION
4. *Re-permit* MODIFICATION OR NEW FACILITY
5. ✓ NAME AND ADDRESS OF THE FACILITY SITE LANDOWNER *Ralph Nix Surface owner*
6. ✓ NAME AND ADDRESS OF ALL LANDOWNERS OF RECORD WITHIN ONE MILE OF FACILITY SITE.
7. *N/A* NOTIFICATION OF ALL LANDOWNERS OF RECORD WITHIN ONE MILE OF FACILITY SITE RETURN RECEIPT SUBMITTED
8. PUBLIC NOTICE IN TWO NEWSPAPERS ORIGINAL AFFIDAVIT OF PUBLICATION SUBMITTED.
9. ✓ FACILITY DESCRIPTION WITH DIAGRAMS INDICATING ALL PERTINENT FEATURES ( FENCES, BERM, ROADS, PITS, DIKES, TANKS, MONITORING WELLS ....)
10. ✓ CONSTRUCTION INSTILLATION DESIGNS FOR PITS, PONDS, LEAK-DETECTION SYSTEMS, AERATION SYSTEMS, ENHANCED EVAPORATION SYSTEMS, WASTE TREATING SYSTEMS, SOLIDIFICATION SYSTEMS, SECURITY SYSTEMS, AND LANDFARM FACILITIES.
11. ✓ GEOLOGICAL/HYDROLOGICAL EVIDENCE THAT FACILITY WILL NOT IMPACT GROUNDWATER. DEPTH TO AND QUALITY OF GROUNDWATER INCLUDED.
12. ✓ CONTINGENCY PLAN FOR REPORTING AND CLEAN-UP OF SPILLS OR RELEASES.
13. ✓ H2S CONTINGENCY PLAN
14. ROUTINE INSPECTION AND MAINTENANCE PLAN TO ENSURE PERMIT COMPLIANCE
15. ✓ CLOSURE PLAN
16. CLOSURE COST ESTIMATE
17. BONDING AMOUNT *\$25,000 #* TYPE *Surety* DATE APPROVED *oct 30, 2000*  
*WFB000891*
18. ANY OTHER INFORMATION AS NECESSARY TO DEMONSTRATE COMPLIANCE WITH ANY OTHER OCD RULES REGULATIONS AND ORDERS.
19. CERTIFICATION SIGNATURE AND DATE ON PERMIT

## Kieling, Martyne

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**From:** Kieling, Martyne  
**Sent:** Monday, April 01, 2002 10:33 AM  
**To:** 'bjtripp@apex2000.net'  
**Subject:** Draft Permit for Evaporation Ponds

Billy,

Attached please find a draft permit for your Centralized Surface Waste Management Facility evaporation ponds. Please let me know if you wish the wells to be listed out like they were in the previous permit or if you would rather have standard language that would allow produced water from other wells or via trucks. If you want to add truck delivery of produced water then I need a letter from you describing your waste receiving process and any other modifications to the facility (for ex...pipelines, valves, tanks, sumps).

Please let me know if you have changed anything, waste receiving/handling at the facility or if you wish to change the way your waste is handled or received. I would be happy to modify the permit to reflect any process changes. Below is the typical language that is used under the Waste Acceptance Criteria section of a permit such as yours.

### WASTE ACCEPTANCE CRITERIA

1. The facility is authorized to accept only produced waters that are generated in the State of New Mexico by Hillside Oil and Gas, LLC.
2. The facility is authorized to accept only produced waters that are exempt from RCRA Subtitle C regulations and that do not contain Naturally Occurring Radioactive Material (NORM) regulated pursuant to 20 NMAC 3.1 Subpart 1403.
3. At no time may any OCD-permitted surface waste management facility accept wastes that are determined to be RCRA Subtitle C hazardous wastes by either listing or characteristic testing.
4. The transporter of any wastes to the facility must supply a certification that wastes delivered are those wastes received from the generator and that no additional materials have been added.
5. No produced water may be received at the facility from motor vehicles unless the transporter has a valid Form C-133, "Authorization to Move Produced Water," on file with the Division.
6. Comprehensive records of all material disposed of at the surface waste management facility must be maintained by the permit holder.



DRAFT PERMIT.doc

Please review this draft and call me at 505-476-3488 or E-mail me at your earliest convenience.

Sincerely  
Martyne Kieling  
Environmental Geologist

**DRAFT**  
**PERMIT NM-02-0018**  
**HILLSIDE OIL AND GAS, LLC**  
**CENTRALIZED WASTE MANAGEMENT FACILITY**  
**NW/4 SE/4 Section 34, Township 18 South, Range 26 East, NMPM**  
**Eddie County, New Mexico.**  
**(4-1-02)**

**EVAPORATION POND OPERATION**

1. The facility must be fenced and have a sign at the entrance. The sign must be legible from at least 50 feet and contain the following information: a) name of the facility; b) location by section, township and range; and c) emergency phone number.
2. The ponds must have a minimum freeboard of two (2) feet. A liner marking or other device must be installed in each pond to accurately measure freeboard.
3. All produced water must enter holding Pond A through the trunk line entering on the north side of the pond as indicated on the application facility diagram. Per division Rule 310, oil must not be stored or retained in earthen reservoirs or in open receptacles. Any oil that is accidentally discharged into the ponds must be removed within 24 hours. Oil recovered must be stored in closed above-ground storage tanks and then transferred to an OCD approved reclamation facility.
4. Pond inspection and maintenance must be conducted on a weekly basis or immediately following a consequential rainstorm or windstorm. If any defect is noted repairs must be made as soon as possible. If the defect will jeopardize the integrity of the pond additional wastes may not be placed into the pond until repairs have been completed. Records of such inspections must be made available to the OCD upon request.
5. The outside walls of all levees must be maintained in such a manner to prevent erosion. Inspection of the outside walls of the levees must be made weekly.
6. The pond leak detection system sumps must be inspected weekly. Results must be recorded and maintained for OCD review. If fluids are found in the sump, the following steps must be undertaken:
  - a. the operator must notify the Artesia office within 24 hours;
  - b. the fluids must be sampled and analyzed and a comparison made to the fluids in the pond to determine the source; and
  - c. the fluids must be immediately and continuously removed from the sump. Such fluids may be returned to the pond.

7. If a leak is determined to exist in the primary liner, the operator will immediately undertake the following measures under the direction of the OCD:
  - a. introduction of fluids into the pond must cease;
  - b. fluids must be removed from the pond using, injection or transportation to another authorized facility until the fluid level is below the location of the leak in the liner; and
  - c. the liner must be repaired and tested and the leak detection system must be completely drained before introduction of fluids into the pond resumes.
8. Sludge thickness in the base of the pond must be measured annually. Any sludge build-up in the bottom of the pond in excess of 12 inches must be removed and disposed of at an OCD-approved waste management facility.
9. Below grade sumps must be cleaned and visually inspected annually. Results must be recorded and maintained for OCD review. If sump integrity has failed the OCD must be notified within 48 hours of discovery and the sump and contaminated soils must be removed and disposed of at an OCD-approved waste management facility. Soil remediation must follow OCD surface impoundment closure guidelines. Hillside must submit a report to the OCD Santa Fe and Artesia District offices that describes the investigation and remedial actions taken.
10. To protect migratory birds, all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted, covered or otherwise rendered nonhazardous to migratory birds.
11. Liquid reduction technologies that may be used to eliminate pond waters include evaporation and injection at the Class II disposal well, Ann #1, located in SW/4 NE/4 Section 18, Township 19 S, Range 26 E, NMPM, Eddy County , New Mexico.
12. Tests to determine dissolved oxygen levels in the ponds must be conducted on a weekly basis. Test results must be recorded and retained. The sample for each test must be taken one foot from the bottom of each pond and the location of each test must vary around the ponds. The OCD Artesia Office will be notified immediately if any test shows a dissolved residual oxygen level of less than 0.5 ppm.
13. Tests of ambient H<sub>2</sub>S levels must be conducted on a weekly basis. Test results must be recorded and retained. The tests must be conducted at four (4) locations around the ponds at the top of the berm. The wind speed and direction must be recorded in conjunction with each test.
  - a. If an H<sub>2</sub>S reading of 1.0 ppm or greater is obtained:



- i. a second reading must be taken on the downwind berm within one hour;
  - ii. the dissolved oxygen and dissolved sulfide levels of the pond must be tested immediately and the need for immediate treatment determined; and
  - iii. tests for H<sub>2</sub>S levels must be made at the fence line down wind from the problem pond.
- b. If two (2) consecutive H<sub>2</sub>S readings of 1.0 ppm or greater are obtained:
- i. the operator must notify the Artesia office of the OCD immediately;
  - ii. the operator must commence hourly monitoring on a 24-hour basis; and
  - iii. the operator must obtain a daily analysis of dissolved sulfides in the pond.
- c. If an H<sub>2</sub>S reading of 10.0 ppm or greater at the facility fence line is obtained:
- i. the operator must immediately notify the Artesia office of the OCD and the following public safety agencies:  
  
New Mexico State Police  
Eddy County Sheriff  
Eddy County Fire Marshall; and
  - ii. the operator must initiate notification of all persons residing within one-half (½) mile of the fence line and assist public safety officials with evacuation as requested.

**WASTE ACCEPTANCE CRITERIA**

1. The facility is authorized to accept only produced waters that are generated in the State of New Mexico by Hillside Oil and Gas, LLC from the following wells:

Merri #1, #2, #3  
Merrill #1, #2, #3, #4  
Kelly #1, #2  
Dorothy #1  
Fox #1, #2  
Sherri #1  
Fikes #1  
Goodrich #1

Fedell #1, #2, #3, #4  
Melaine #1, #2  
Chad #1, #2  
Lynn #1

Water from any other Hillside Oil and Gas, LLC wells may only be accepted after prior OCD approval.

2. The facility is authorized to accept only produced waters that are exempt from RCRA Subtitle C regulations and that do not contain Naturally Occurring Radioactive Material (NORM) regulated pursuant to 20 NMAC 3.1 Subpart 1403.
3. At no time may any OCD-permitted surface waste management facility accept wastes that are determined to be RCRA Subtitle C hazardous wastes by either listing or characteristic testing.
4. Comprehensive records of all material disposed of at the surface waste management facility must be maintained by the permit holder.

#### **REPORTING AND RECORD KEEPING**

1. Results of weekly inspections of the leak detection system must be recorded and must be submitted to the OCD Santa Fe and Artesia office for annual review **by April 30 of each year.**
2. Results of testing of the evaporation pond for H<sub>2</sub>S, dissolved sulfides and dissolved oxygen must be recorded and must be submitted to the OCD Santa Fe and Artesia office for annual review **by April 30 of each year.**
3. Results of annual maintenance on below grade sumps and annual measurements of sludge thickness in the pond must be recorded and must be submitted to the OCD Santa Fe and Artesia office for annual review **by April 30 of each year.**
4. The applicant must notify the **OCD Artesia office within 24 hours** of any fire, break, leak, spill, blow out, or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.
5. The applicant must file forms C-117 and C-120 with the appropriate OCD office.
6. All records of testing and monitoring must be retained for a period of five (5) years.
7. The OCD must be notified prior to the installation of any pipelines or wells or other structures within the boundaries of the facility.

### **FINANCIAL ASSURANCE**

1. Pursuant to OCD Rule 711.B.3.a., financial assurance in a form approved by the Director is required from Hillside Oil and Gas, LLC in the amount of **\$25,000** for this facility or **\$50,000** for statewide financial assurance.
2. Financial assurance must be submitted within 30 days of this permit approval or on **May 30, 2002**.
3. The facility is subject to periodic inspections by the OCD. The conditions of this permit and the facility may be reviewed by the OCD no later than five (5) years from the date of this approval.

### **CLOSURE**

1. The OCD Santa Fe and Artesia offices must be notified when operation of the facility is to be discontinued for a period in excess of six (6) months or when the facility is to be dismantled. Within six (6) months after discontinuing use or within 30 days of deciding to dismantle the facility a closure plan must be submitted to the OCD Santa Fe office for approval. The operator must complete cleanup of constructed facilities and restoration of the facility site within six (6) months of receiving the closure plan approval, unless an extension of time is granted by the Director.
2. The closure plan to be submitted must include the following procedures:
  - a. When the facility is to be closed no new material will be accepted.
  - b. The evaporation pond must be emptied and any waste and recyclable material must be hauled to an OCD-approved facility. The pond liners, pipe and equipment must be removed.
  - c. Contaminated soils exceeding OCD closure guidelines for the site must be removed or remediated unless it can be demonstrated that levels exceeding the guidelines are protective of public health and the environment
  - d. The soils beneath the evaporation pond will be characterized as to total petroleum hydrocarbons (TPH) and volatile aromatic organics (BTEX) content to determine potential migration of contamination.

- e. Contaminated soils exceeding OCD closure standards for the site will be removed or remediated.
- f. The area will be contoured, seeded with native grasses and allowed to return to its natural state. At the request of the landowner and approval of the OCD, existing, structures, berms, or fences may be left in place for future alternative uses.
- g. Closure will be pursuant to all OCD requirements in effect at the time of closure, and any other applicable local, state and/or federal regulations.

**CERTIFICATION**

Hillside Oil and Gas, LLC by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Hillside Oil and Gas, LLC further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect ground water, surface water, human health and the environment.

Accepted:

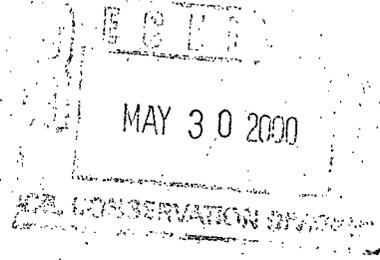
HILLSIDE OIL AND GAS, LLC

Signature \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

# Hillside Oil & Gas, LLC.

May 25, 2000

Ms. Lorie Wrotenbery  
Director, New Mexico Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, New Mexico 87505



RE: Southwest Royalties, Inc.  
Hillside Oil & Gas, LLC  
Eddy County, New Mexico

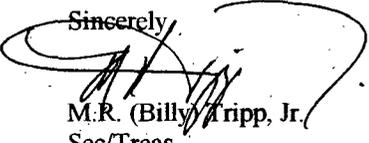
Dear Ms. Wrotenbery,

I have been made aware, today, by Mr. John Tate of Southwest Royalties, Inc., that the Rule 711 permit governing a certain holding pond in Eddy County, New Mexico, did not automatically transfer to us when we acquired the property in May of 1999. The pond I'm referring to is located in the NW/4 of Section 34 - 18S - 26E, Eddy County, New Mexico. I apologize for not having discovered this previously, however, we stand ready to do whatever is required to achieve compliance. To this end, Hillside Oil & Gas, LLC would like to formally request a new Rule 711 permit on the forgoing described property.

I talked to Ms. Martyne Kieling this morning to get a general idea what I needed to do and to set up a time for site visitation and inspection. She was very helpful in directing me towards your internet site and in giving me information concerning this matter.

I have enclosed a copy of the permit issued to Southwest Royalties, Inc. and copies of the C-104s for the wells we need to name in the permit (Note: this list of wells has not changed from the one included in the Southwest Royalties' permit). I will be in touch with you soon in hopes to expedite the process as quickly as possible. Thank you for your assistance in this matter.

Sincerely,

  
M.R. (Billy) Tripp, Jr.  
Sec/Treas

MRT/eel

Cc: Ms. Martyne Kieling

STATE OF NEW MEXICO  
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT  
Santa Fe, New Mexico 87505



January 12, 1995

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-283**

Mr. Doug Keathley  
Southwest Royalties, Inc.  
P.O. Box 11390  
Midland, Texas 79702

**Re: OCD 711 PERMIT APPROVAL  
CENTRALIZED HOLDING POND  
EDDY COUNTY, NEW MEXICO**

Dear Mr. Keathley:

The permit application for the Southwest Royalties, Inc., Centralized Holding Pond located in the NW/4 SE/4 of Section 34, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico, is hereby approved in accordance with the Oil Conservation Division (OCD) Rule 711 under the conditions contained in the enclosed attachment. The application consists of the original application dated June 30, 1994.

The operation, monitoring and reporting shall be as specified in the enclosed attachment. All modifications and alternatives to the approved disposal methods must receive prior OCD approval. You are required to notify the Director of any facility expansion or process modification and to file the appropriate materials with the Division.

Please be advised approval of this facility does not relieve you of liability should your operation result in actual pollution of surface water, ground waters or the environment actionable under other laws and/or regulations. In addition, the OCD approval does not relieve you of liability for compliance with any other laws and/or regulations.

Please be advised all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted or otherwise rendered nonhazardous to migratory birds.

VILLAGRA BUILDING - 488 Galisteo  
Forestry and Resources Conservation Division  
P.O. Box 1948 87505-1948  
827-5833  
Park and Recreation Division  
P.O. Box 1147 87504-1147  
827-7486

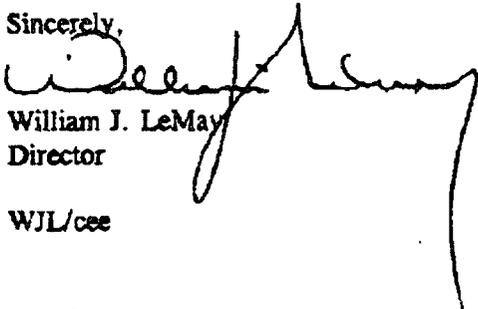
3048 South Parkway  
Office of the Secretary  
827-6830  
Administrative Services  
827-5925  
Energy Conservation & Management  
827-6900  
Mining and Minerals  
827-5970  
Oil Conservation  
827-7131

Mr. Doug Keathley  
January 12, 1995  
Page 2

This permit approval is for a period of five (5) years. This approval will expire on January 12, 2000 and you should submit an application for renewal in ample time before that date. The Division shall have authority to administratively change this permit to protect fresh water, human health and the environment.

If you have any questions, please do not hesitate to call Chris Eustice at (505) 827-7153.

Sincerely,



William J. LeMay  
Director

WJL/cee

Attachment

xc: OCD Artesia Office

711 APP

Is your RETURN ADDRESS completed on the reverse side?	<b>SENDER:</b>		I also wish to receive the following services (for an extra fee):
	<ul style="list-style-type: none"> <li>• Complete items 1 and/or 2 for additional services.</li> <li>• Complete items 3, and 4a &amp; b.</li> <li>• Print your name and address on the reverse of this form so that we can return this card to you.</li> <li>• Attach this form to the front of the mailpiece, or on the back if space does not permit.</li> <li>• Write "Return Receipt Requested" on the mailpiece below the article number.</li> <li>• The Return Receipt will show to whom the article was delivered and the date delivered.</li> </ul>		
	3. Article Addressed to:		4a. Article Number
	MR. DOUG KEATHLEY SOUTHWEST ROYALTIES, INC P.O. Box 11390 MIDLAND, TX 79702		P-176-012-283 4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
5. Signature (Addressee)		7. Date of Delivery	8. Addressee's Address (Only if requested and fee is paid)
6. Signature (Agent) 		1-17-95	

Thank you for using Return Receipt Service.

PS Form 3811, December 1991 • U.S.G.P.O. 1992-307-530

DOMESTIC RETURN RECEIPT

ATTACHMENT TO OCD 711 PERMIT APPROVAL  
SOUTHWEST ROYALTIES, INC.  
CENTRALIZED HOLDING POND  
(December 5, 1994)

FACILITY OPERATIONS

1. The facility will be inspected a minimum of one time per week. and secured when no attendant is present.
2. Only produced water from the following wells will be disposed of at the facility:

- /// Merri #1, #2, #3
- /// Merrill #1, #2, #3, #4
- /// Kelly #1, #2
- ✓ Dorothy #1
- ✓ Fox #1, #2
- ✓ Sherri #1
- ✓ Fikes #1
- ✓ Goodrich #1
- /// Fedell #1, #2, #3, #4
- /// Melaine #1, #2
- ✓ Chad #1, #2
- ✓ Lynn #1

Water from any other Southwest Royalties, Inc. wells may only be accepted after prior OCD approval.

3. All produced water will enter the holding pond through the trunk line entering on the north side of the pond as indicated on the application facility diagram. Per Division Rule 310, oil shall not be stored or retained in earthen reservoirs or in open receptacles. Any oil which is accidentally discharged into the pond will be removed within twenty-four (24) hours. Oil recovered will be stored in closed storage tanks or drums and then transferred to an OCD approved oil reclamation facility.
4. The pond will have a minimum freeboard of two (2) feet. If overtopping occurs at any time, the freeboard will be increased to prevent reoccurrence.
5. Any sludge build-up in the bottom of the pond in excess of twelve (12") inches will be removed and disposed of at an OCD approved disposal facility.
6. The leak detection system for the pond will be inspected a minimum of once a week or when an attendant inspects the facility. Records of such inspections will be made and kept on file for two (2) years from the date of record. If fluids are found in the sump the following steps will be taken:

- a. The operator will notify the OCD Artesia Office within twenty-four (24) hours of discovery.
  - b. The fluids will be sampled and analyzed to determine the source.
  - c. Fluids will be removed from the immediately and continuously from the monitor sump.
7. If a leak is determined to exist in the liner, the operator will immediately undertake the following contingency measures under the direction of the OCD:
- a. Introduction of fluids into the pond will cease.
  - b. Fluids will be removed from the pond by continuous injection into the Ann #1 SWD and transporting the contents of the pond to another authorized facility, until the level of the pond is below the location of the leak in the liner.
  - c. The liner will be repaired and tested and the leak detection system will be completely drained before resuming introduction of fluids into the pond.
8. The outside walls of the levees will be maintained in such a manner to prevent erosion. Inspection of the outside walls of the levees will be made weekly and after any rainfall of consequence.

#### H2S PREVENTION AND CONTINGENCY PLAN

1. Tests will be conducted and reports made to determine the dissolved oxygen levels in the pond. The sample for each test will be taken one foot from the bottom of the pond and the location of the tests will vary around the pond. Tests will be conducted monthly. The OCD Artesia Office will be notified immediately if any test shows a dissolved residual oxygen level of less than 0.5 parts per million (ppm).
2. Tests of the ambient H2S levels will be conducted and records made. Such tests will be made at varying locations around the pond levee. Tests will be conducted a minimum of one time per week or when an attendant inspects the facility. Wind speed and direction will be recorded in conjunction with each test.
3. If an H2S reading of 0.1 ppm or greater is obtained:
  - a. A second reading will be taken on the down wind berm within one hour.
  - b. The dissolved oxygen and dissolved sulfide levels of the pond will be tested immediately and the need for immediate treatment will be determined.
  - c. Tests for H2S levels will be made at the fence line, downwind from the pond.

4. If two (2) consecutive H2S readings of 0.1 ppm or greater are obtained:
  - a. The operator will immediately notify the OCD Artesia Office.
  - b. The operator will determine the source of the H2S.
5. If an H2S reading of 1.0 ppm is obtained:
  - a. The operator will commence hourly monitoring on a twenty-four (24) hour basis.
  - a. The operator will obtain daily analysis of the dissolved sulfide levels of the pond.
  - b. The operator will implement the approved contingency plan so as to reduce the dissolved sulfides in the pond and eliminate H2S emissions.
6. If an H2S reading of 10.0 ppm or greater at the facility fence line is obtained:
  - a. The operator will immediately notify the following public safety agencies:

State Police  
County Sheriff  
County Fire Marshall
  - b. The operator will initiate notification of all persons residing within one-half (1/2) mile of the fence line and assist public safety officials with evacuation as requested.

NOTE\* Requirements for H2S monitoring and treatment may be administratively modified by the OCD based upon actual operating experiences.

#### RECORDS & REPORTING

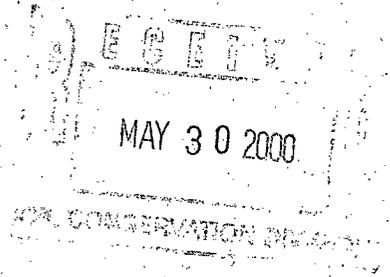
1. The operator will keep and make available for inspection all H2S monitoring and treatment records. Such records will be maintained for a period of two years from the date of reading. Zero H2S readings do not need to be reported to the OCD. If H2S is observed at any time, the OCD may require submittal of all subsequent H2S readings.
  2. The operator will keep and make available for inspection all leak detection monitoring records. Such records will be maintained for a period of two years from the date of reading.
  3. The operator will file forms C-117-A, C-118, and C-120-A with the Santa Fe Office as required by OCD Rules 1118 and 1120. *for*
-

4. The OCD will be notified of any break, spill, blow out, fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

#### **CLOSURE**

1. The OCD will be notified when operation of the facility is discontinued for a period in excess of six (6) months or when the facility is to be dismantled.
2. When the facility is to be closed, no new material will be accepted. The operator will provide for removal of all fluids and/or wastes, closure of all pits and ponds, and cleanup of any contaminated soils and/or waters pursuant to OCD approval. The area will be reseeded with natural grasses and allowed to return to its natural state.
3. Closure and waste disposal will be in accordance with the statues, rules and regulations in effect at the time of closure.

# Hillside Oil & Gas, LLC.



May 25, 2000

Ms. Lorie Wrotenbery  
Director, New Mexico Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, New Mexico 87505

RE: Southwest Royalties, Inc.  
Hillside Oil & Gas, LLC  
Eddy County, New Mexico

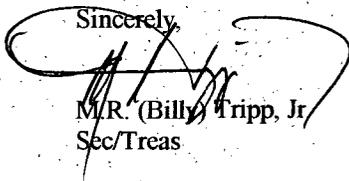
Dear Ms. Wrotenbery,

I have been made aware, today, by Mr. John Tate of Southwest Royalties, Inc., that the Rule 711 permit governing a certain holding pond in Eddy County, New Mexico, did not automatically transfer to us when we acquired the property in May of 1999. The pond I'm referring to is located in the NW/4 of Section 34 - 18S - 26E, Eddy County, New Mexico. I apologize for not having discovered this previously, however, we stand ready to do whatever is required to achieve compliance. To this end, Hillside Oil & Gas, LLC would like to formally request a new Rule 711 permit on the forgoing described property.

I talked to Ms. Martyne Kieling this morning to get a general idea what I needed to do and to set up a time for site visitation and inspection. She was very helpful in directing me towards your internet site and in giving me information concerning this matter.

I have enclosed a copy of the permit issued to Southwest Royalties, Inc. and copies of the C-104s for the wells we need to name in the permit (Note: this list of wells has not changed from the one included in the Southwest Royalties' permit). I will be in touch with you soon in hopes to expedite the process as quickly as possible. Thank you for your assistance in this matter.

Sincerely,

  
M.R. (Billy) Tripp, Jr.  
Sec/Treas

MRT/eel

Cc: Ms. Martyne Kieling

SOUTHWEST ROYALTIES, INC.  
Southwest Royalties Building  
407 N. Big Spring, Midland, TX. 79701-4326  
P.O. Box 11390, Midland, TX. 79702-8390  
(915) 686-9927, 1-800-433-7945

  
SOUTHWEST ROYALTIES

MAY 30 2000

May 25, 2000

Ms. Lorie Wrotenbery  
Director, New Mexico Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, New Mexico 87505

Re: Southwest Royalties, Inc.  
Hillside Oil & Gas  
Eddy County, New Mexico

Dear Ms. Wrotenbery:

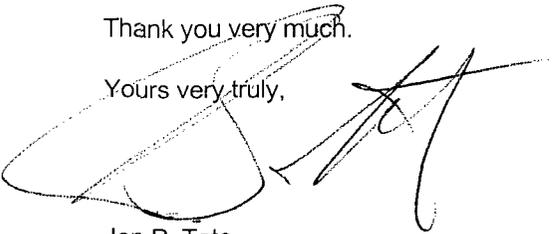
We were taken somewhat by surprise when today we received a telephone call from Ms. Martyne Kieling of your office regarding a Rule 711 Permit governing a holding pond in Eddy County, New Mexico. The pit in question, located in the NW/4 SE/4 of Section 34-18S-26E, Eddy County, New Mexico, is currently permitted to Southwest Royalties, Inc., ("Southwest"). Our surprise was due in large part to the fact that we sold all of the properties associated with this particular permit to Hillside Oil and Gas ("Hillside") effective as of May 1, 1999. As an oversight on our part, we did not at that time realize the necessity of transferring the permit to Hillside.

Accordingly, we are writing today to formally request that the permit covering and pertaining to this particular holding pond be transferred to Hillside. By copy of this letter we are advising Hillside of this necessity and are requesting they contact your office as well so as to furnish you with whatever might be necessary to effect this change. For the convenience of all concerned we are enclosing a copy of the permit in question along with its attachments.

If there is anything further that you should require in regard to this matter, please do not hesitate to call upon us.

Thank you very much.

Yours very truly,



Jon P. Tate  
Vice President

JPT/tbm

CC: Hillside Oil and Gas  
510 N. Big Spring  
Midland, Texas 79701

Ms. Martyne Kieling  
Mr. Doug Keathley  
Mr. Marty Bloodworth

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



January 12, 1995

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-176-012-283**

Mr. Doug Keathley  
Southwest Royalties, Inc.  
P.O. Box 11390  
Midland, Texas 79702

**Re: OCD 711 PERMIT APPROVAL  
CENTRALIZED HOLDING POND  
EDDY COUNTY, NEW MEXICO**

Dear Mr. Keathley:

The permit application for the Southwest Royalties, Inc., Centralized Holding Pond located in the NW/4 SE/4 of Section 34, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico, is hereby approved in accordance with the Oil Conservation Division (OCD) Rule 711 under the conditions contained in the enclosed attachment. The application consists of the original application dated June 30, 1994.

The operation, monitoring and reporting shall be as specified in the enclosed attachment. All modifications and alternatives to the approved disposal methods must receive prior OCD approval. You are required to notify the Director of any facility expansion or process modification and to file the appropriate materials with the Division.

Please be advised approval of this facility does not relieve you of liability should your operation result in actual pollution of surface water, ground waters or the environment actionable under other laws and/or regulations. In addition, the OCD approval does not relieve you of liability for compliance with any other laws and/or regulations.

Please be advised all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted or otherwise rendered nonhazardous to migratory birds.

**VILLAGRA BUILDING - 408 Galisteo**  
Forestry and Resources Conservation Division  
P.O. Box 1946 87504-1946  
827-5890  
Park and Recreation Division  
P.O. Box 1147 87504-1147  
827-7465

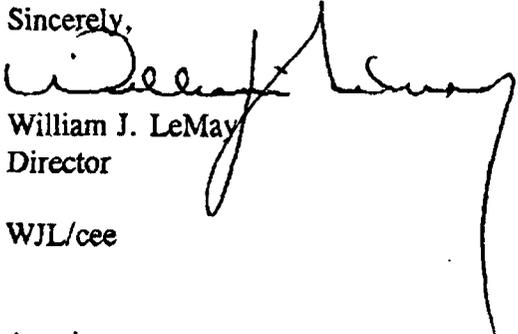
**2040 South Pacheco**  
Office of the Secretary  
827-5950  
Administrative Services  
827-5925  
Energy Conservation & Management  
827-5900  
Mining and Minerals  
827-5970  
Oil Conservation  
827-7131

Mr. Doug Keathley  
 January 12, 1995  
 Page 2

This permit approval is for a period of five (5) years. This approval will expire on January 12, 2000 and you should submit an application for renewal in ample time before that date. The Division shall have authority to administratively change this permit to protect fresh water, human health and the environment.

If you have any questions, please do not hesitate to call Chris Eustice at (505) 827-7153.

Sincerely,

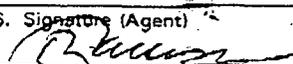


William J. LeMay  
 Director

WJL/cee

Attachment

xc: OCD Artesia Office

Is your RETURN ADDRESS completed on the reverse side?	<b>SENDER:</b> <ul style="list-style-type: none"> <li>• Complete items 1 and/or 2 for additional services.</li> <li>• Complete items 3, and 4a &amp; b.</li> <li>• Print your name and address on the reverse of this form so that we can return this card to you.</li> <li>• Attach this form to the front of the mailpiece, or on the back if space does not permit.</li> <li>• Write "Return Receipt Requested" on the mailpiece below the article number.</li> <li>• The Return Receipt will show to whom the article was delivered and the date delivered.</li> </ul>		711 APP I also wish to receive the following services (for an extra fee):
	3. Article Addressed to: MR. DOUG KEATHLEY SOUTHWEST ROYALTIES, INC P.O. Box 11390 MIDLAND, TX 79702		1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.
	4a. Article Number P-176-012-283		4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
	5. Signature (Addressee)		7. Date of Delivery 1-17-95
6. Signature (Agent) 		8. Addressee's Address (Only if requested and fee is paid)	

Thank you for using Return Receipt Service.

ATTACHMENT TO OCD 711 PERMIT APPROVAL  
SOUTHWEST ROYALTIES, INC.  
CENTRALIZED HOLDING POND  
(December 5, 1994)

FACILITY OPERATIONS

1. The facility will be inspected a minimum of one time per week. and secured when no attendant is present.
2. Only produced water from the following wells will be disposed of at the facility:

Merri #1, #2, #3  
Merrill #1, #2, #3, #4  
Kelly #1, #2  
Dorothy #1  
Fox #1, #2  
Sherri #1  
Fikes #1  
Goodrich #1  
Fedell #1, #2, #3, #4  
Melaine #1, #2  
Chad #1, #2  
Lynn #1

Water from any other Southwest Royalties, Inc. wells may only be accepted after prior OCD approval.

3. All produced water will enter the holding pond through the trunk line entering on the north side of the pond as indicated on the application facility diagram. Per Division Rule 310, oil shall not be stored or retained in earthen reservoirs or in open receptacles. Any oil which is accidentally discharged into the pond will be removed within twenty-four (24) hours. Oil recovered will be stored in closed storage tanks or drums and then transferred to an OCD approved oil reclamation facility.
4. The pond will have a minimum freeboard of two (2) feet. If overtopping occurs at any time, the freeboard will be increased to prevent reoccurrence.
5. Any sludge build-up in the bottom of the pond in excess of twelve (12") inches will be removed and disposed of at an OCD approved disposal facility.
6. The leak detection system for the pond will be inspected a minimum of once a week or when an attendant inspects the facility. Records of such inspections will be made and kept on file for two (2) years from the date of record. If fluids are found in the sump the following steps will be taken:

- a. The operator will notify the OCD Artesia Office within twenty-four (24) hours of discovery.
  - b. The fluids will be sampled and analyzed to determine the source.
  - c. Fluids will be removed from the immediately and continuously from the monitor sump.
7. If a leak is determined to exist in the liner, the operator will immediately undertake the following contingency measures under the direction of the OCD:
- a. Introduction of fluids into the pond will cease.
  - b. Fluids will be removed from the pond by continuous injection into the Ann #1 SWD and transporting the contents of the pond to another authorized facility, until the level of the pond is below the location of the leak in the liner.
  - c. The liner will be repaired and tested and the leak detection system will be completely drained before resuming introduction of fluids into the pond.
8. The outside walls of the levees will be maintained in such a manner to prevent erosion. Inspection of the outside walls of the levees will be made weekly and after any rainfall of consequence.

#### H2S PREVENTION AND CONTINGENCY PLAN

1. Tests will be conducted and reports made to determine the dissolved oxygen levels in the pond. The sample for each test will be taken one foot from the bottom of the pond and the location of the tests will vary around the pond. Tests will be conducted monthly. The OCD Artesia Office will be notified immediately if any test shows a dissolved residual oxygen level of less than 0.5 parts per million (ppm).
2. Tests of the ambient H2S levels will be conducted and records made. Such tests will be made at varying locations around the pond levee. Tests will be conducted a minimum of one time per week or when an attendant inspects the facility. Wind speed and direction will be recorded in conjunction with each test.
3. If an H2S reading of 0.1 ppm or greater is obtained:
  - a. A second reading will be taken on the down wind berm within one hour.
  - b. The dissolved oxygen and dissolved sulfide levels of the pond will be tested immediately and the need for immediate treatment will be determined.
  - c. Tests for H2S levels will be made at the fence line, downwind from the pond.

4. If two (2) consecutive H2S readings of 0.1 ppm or greater are obtained:
  - a. The operator will immediately notify the OCD Artesia Office.
  - b. The operator will determine the source of the H2S.
5. If an H2S reading of 1.0 ppm is obtained:
  - a. The operator will commence hourly monitoring on a twenty-four (24) hour basis.
  - a. The operator will obtain daily analysis of the dissolved sulfide levels of the pond.
  - b. The operator will implement the approved contingency plan so as to reduce the dissolved sulfides in the pond and eliminate H2S emissions.
6. If an H2S reading of 10.0 ppm or greater at the facility fence line is obtained:
  - a. The operator will immediately notify the following public safety agencies:

State Police  
County Sheriff  
County Fire Marshall
  - b. The operator will initiate notification of all persons residing within one-half (1/2) mile of the fence line and assist public safety officials with evacuation as requested.

NOTE\* Requirements for H2S monitoring and treatment may be administratively modified by the OCD based upon actual operating experiences.

#### RECORDS & REPORTING

1. The operator will keep and make available for inspection all H2S monitoring and treatment records. Such records will be maintained for a period of two years from the date of reading. Zero H2S readings do not need to be reported to the OCD. If H2S is observed at any time, the OCD may require submittal of all subsequent H2S readings.
2. The operator will keep and make available for inspection all leak detection monitoring records. Such records will be maintained for a period of two years from the date of reading.
3. The operator will file forms C-117-A, C-118, and <sup>or</sup> C-120-A with the Santa Fe Office as required by OCD Rules 1118 and 1120. ✓

4. The OCD will be notified of any break, spill, blow out, fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

#### CLOSURE

1. The OCD will be notified when operation of the facility is discontinued for a period in excess of six (6) months or when the facility is to be dismantled.
2. When the facility is to be closed, no new material will be accepted. The operator will provide for removal of all fluids and/or wastes, closure of all pits and ponds, and cleanup of any contaminated soils and/or waters pursuant to OCD approval. The area will be reseeded with natural grasses and allowed to return to its natural state.
3. Closure and waste disposal will be in accordance with the statues, rules and regulations in effect at the time of closure.

State of New Mexico  
Energy, Minerals and Natural Resources Department  
OIL CONSERVATION DIVISION  
P.O. Box 2088  
Santa Fe, NM 87501

RECEIVED

JUL 06 1994

## APPLICATION FOR SURFACE WASTE DISPOSAL FACILITY

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

OIL CONSERVATION DIV.  
SANTA FE

Commercial  Centralized

I. Type:  Produced Water  Drilling Muds  Other \_\_\_\_\_  
 Solids/Landfarm  Treating Fluids

II. OPERATOR: Southwest Royalties, Inc.

ADDRESS: P.O. Box 11390, Midland, TX 79702

CONTACT PERSON: Mr. Doug Keathley PHONE: (915) 686-9927

III. LOCATION: NW /4 SE /4 Section 34 Township 18S Range 26E  
Submit large scale topographic map showing exact location.

IV. IS THIS AN EXPANSION OF AN EXISTING FACILITY?  Yes  No

V. Attach the name and address of the landowner of the disposal facility site and landowners of record within one-half mile of the site.

VI. Attach discription of the facility with a diagram indicating location of fences, pits, dikes, and tanks on the facility.

VII. Attach detailed engineering designs with diagrams prepared in accordance with Division guidelines for the construction/installation of the following: pits or ponds, leak-detection systems, aerations systems, enhanced evaporation (spray) systems, waste treating systems, security systems, and landfarm facilities.

VIII. Attach a contingency plan for reporting and clean-up of spills or releases.

IX. Attach a routine inspection and maintenance plan to ensure permit compliance.

X. Attach a closure plan.

XI. Attach geological/hydrological evidence demonstrating that disposal of oil field wastes will not adversely impact fresh water. Depth to and quality of ground water must be included.

XII. Attach proof that the notice requirements of OCD Rule 711 have been met (Commercial facilities only).

XIII. Attach a contingency plan in the event of a release of H<sub>2</sub>S.

XIV. Attach such other information as necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

## XV. CERTIFICATION

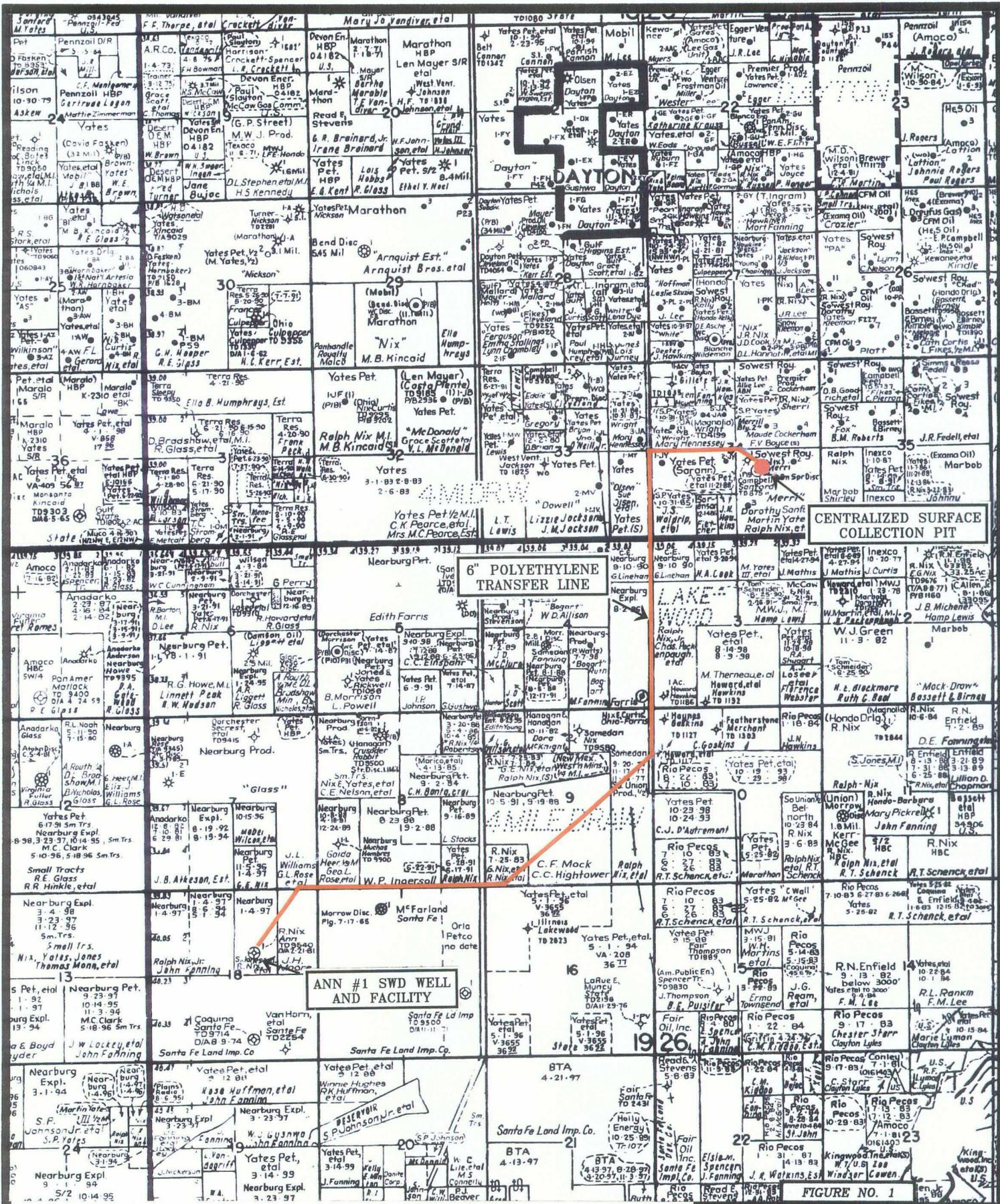
I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Robert McNeill Title: Agent for Southwest Royalties, Inc.

Signature: Robert McNeill Date: 6/30/94

DISTRIBUTION: Original and one copy to Santa Fe with one copy to appropriate Division District Office.

Robert  
915 682 4559



ANN #1 SWD WELL AND FACILITY

CENTRALIZED SURFACE COLLECTION PIT

FIGURE NO. 1

SOURCE: MIDLAND MAP CO.

SCALE: 1"=4,000'

EDDY COUNTY, NEW MEXICO  
 SOUTHWEST ROYALTIES, Inc.  
 LAND OWNERSHIP  
 MAP  
 HIGHLANDER ENVIRONMENTAL  
 MIDLAND, TEXAS

**V. Landowner of the disposal facility and  
landowners of record within one-half  
mile of centralized collection pit.**

## Landowner of Pit Site and Landowners of Record

The landowner of the pit site and landowners of record within one-half mile of the pit site are presented in Figure-3.

### Landowner of Pit Site

Ralph Nix  
P. O. Box 440  
Artesia, New Mexico 88211

### Landowners of record within one-half mile of pit site

Boykin-Harvey Trust  
P. O. Box 140  
El Paso, Texas 79980

Frank V. Boyce  
149 E. Kincaid Ranch Road  
Artesia, New Mexico 88210

Gillette F. Wright  
7 Westwood Forest  
Kirkwood, Missouri 63122

Jeryne Goodrich  
5356 Stevely Avenue  
Lakewood, California 90713

Rex H. Shudde  
27105 Arriba Way  
Carmel, California 93921

Henry H. Fox  
515 E. Las Olas Blvd. #1500  
Ft. Lauderdale, Florida 33301

Howard E. Haskins  
122 S. Ardmore  
Los Angeles, California 90004

J. Standley Waldrip  
480 N. Lake Road  
Artesia, New Mexico 88210

Brue Waldrip  
506 N. Lake Road  
Artesia, New Mexico 88210

Col. Thomas Fletcher, Jr.  
P. O. Box 1394  
Tryon, North Carolina 28782

Mary Lynn Scott  
7102 Meadowlake  
Dallas, Texas 75214

Anthony G. Pellegrini  
34 Beverly Road  
Natick, Massachusetts 01760

E. Reinhardt  
3654 Lierman  
St. Louis, Missouri 63116

J. Garland Martin  
P. O. Box 1611  
Amarillo, Texas 79181

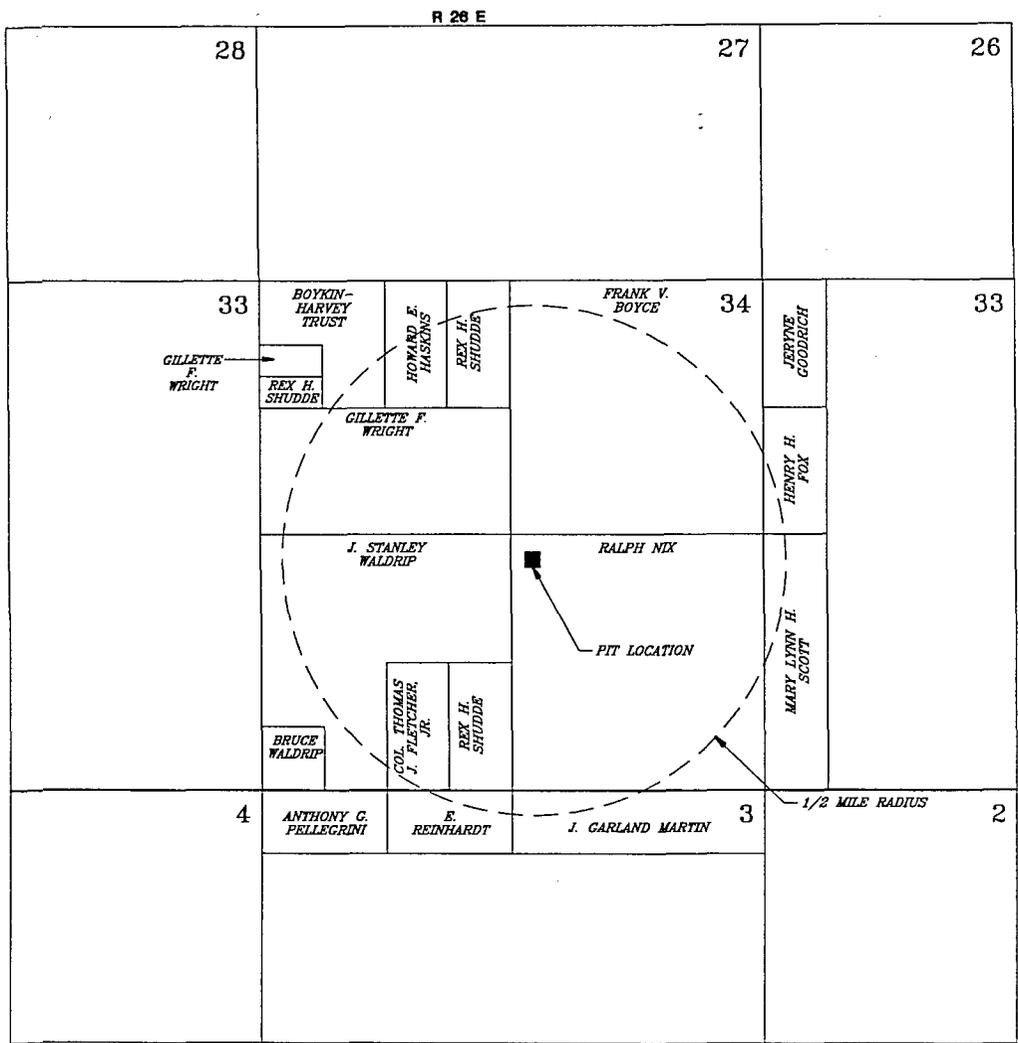


FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

**SOUTHWEST ROYALTIES, Inc.**

SURFACE OWNERSHIP MAP  
1/2 MILE OF PIT LOCATION  
NW/4, SE/4, SEC. 34, T18S, R26E

HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS



DATE:  
5/27/94

OWN. BY:  
R.C.P.

FILE:  
S-WEST/144-PIT/10-3

**VI. Description of the Facility**

## Description of the Facility

The centralized surface collection pit is located in the Southwest Royalties, Inc. operated "Merri" lease in the NW/4, SE/4, Section 34, Township 18S, Range 26E, Eddy County, New Mexico (See Figures 1 and 2).

The collection pit currently receives approximately 1100 barrels per day of produced water from the following Southwest Royalties, Inc. operated wells:

<u>Well Name</u>	<u>Location (Eddy County, New Mexico)</u>
Merri #1, #2, #3	SE/4, Section 34, T-18-S, R-26-E
Merrill #1, #2, #3, #4	NE/4, Section 34, T-18-S, R-26-E
Kelly #1, #2	SW/4, Section 27, T-18-S, R-26-E
Dorothy #1	SE/4, Section 27, T-18-S, R-26-E
Fox #1, #2	NW/4, Section 35, T-18-S, R-26-E
Sherri #1	NW/4, Section 35, T-18-S, R-26-E
Fikes #1	NW/4, Section 35, T-18-S, R-26-E
Goodrich #1	NW/4, Section 35, T-18-S, R-26-E
Fedell #1, #2, #3, #4	NE/4, Section 35, T-18-S, R-26-E
Melaine #1, #2	SE/4, Section 26, T-18-S, R-26-E
Chad #1, #2	SE/4, Section 26, T-18-S, R-26-E
Lynn #1	NW/4, Section 26, T-18-S, R-26-E

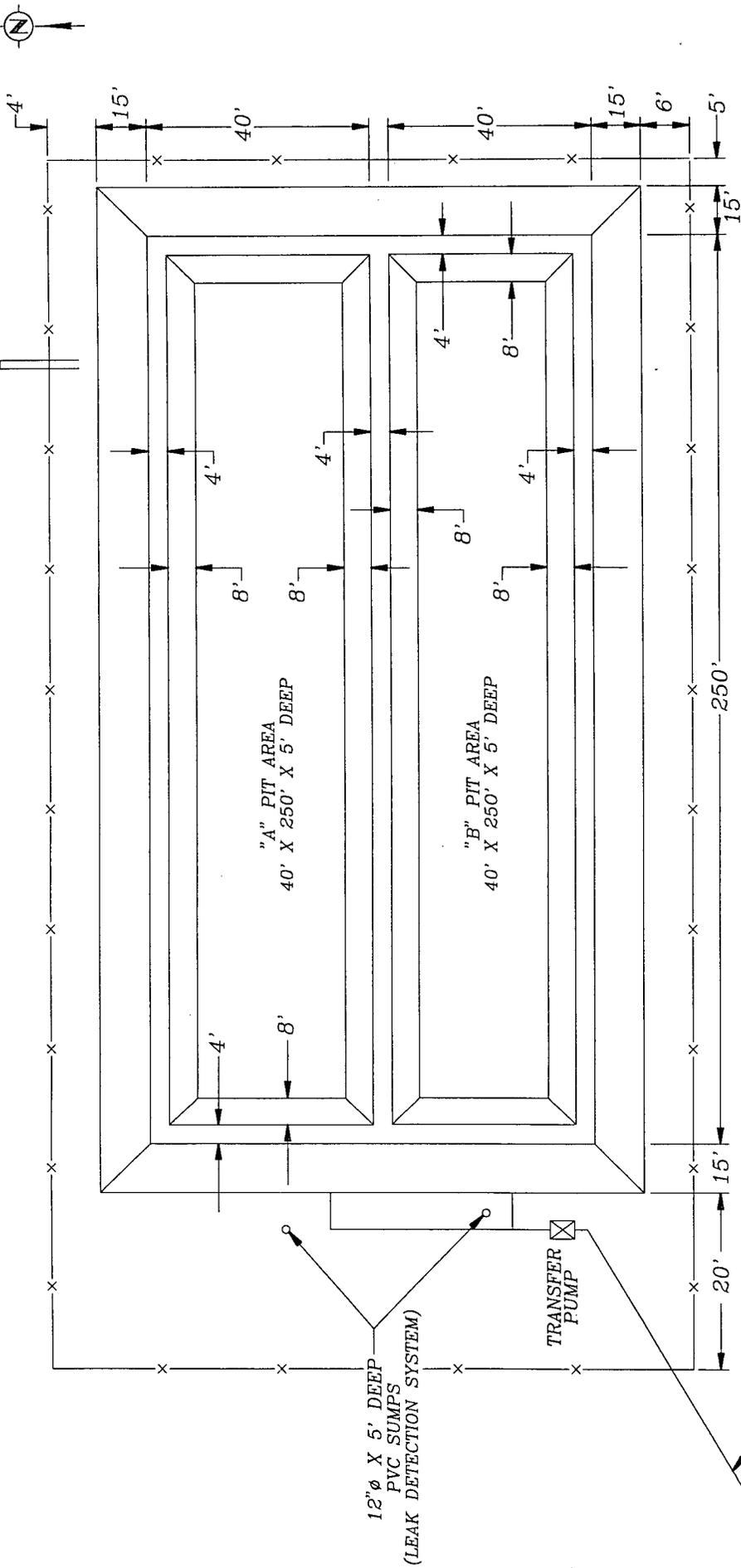
The produced water is temporarily stored at the collection pit. The produced water is then transferred by 6" polyethylene line to the Southwest Royalties, Inc. operated Ann #1 saltwater disposal facility located in the SW/4, NE/4, Section 18, Township 19S, Range 26 E, Eddy County, New Mexico.

At the Ann #1 SWD facility, the produced water and trace amounts of oil carryover are separated by a gunbarrel. The produced water is injected into Class II injection well, Ann #1. The oil is sold to a commercial oil purchaser by truck.

Water analyses of the pit water are attached.

A site diagram of the pit and Ann #1 SWD facility are attached as Figures 4 and 6, respectively.

PRODUCED WATER FROM  
SOUTHWEST ROYALTIES, Inc. LEASES



PLAN VIEW

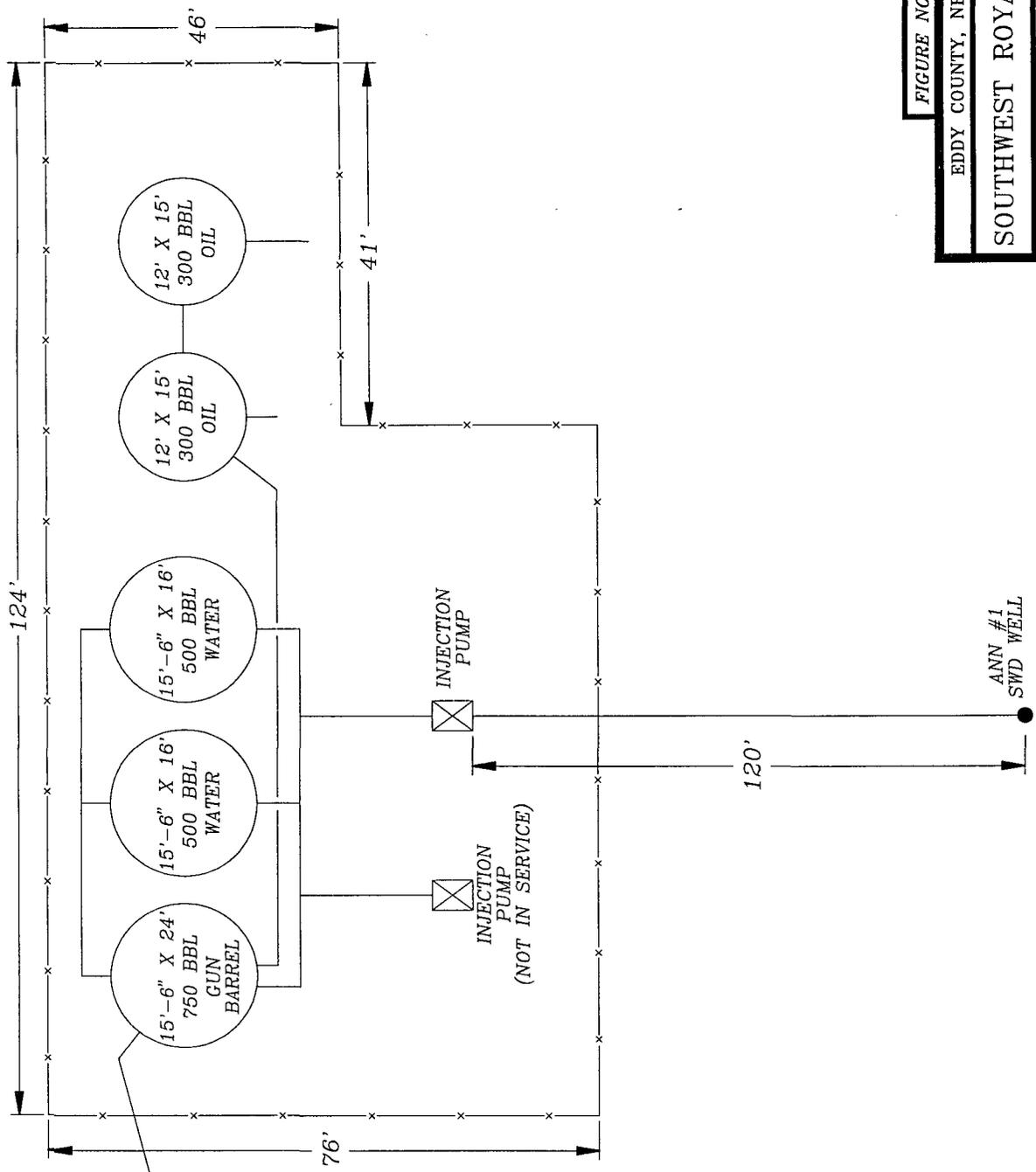
FIGURE NO. 4

EDDY COUNTY, NEW MEXICO  
SOUTHWEST ROYALTIES, Inc.  
CENTRALIZED SURFACE  
COLLECTION PIT  
NW/4, SE/4, SEC. 34, T18S, R26E  
HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS

DATE: 5/27/94  
DWN. BY: R.C.P.  
FILE: S-WEST-VN-PR-10-4

NOT TO SCALE

NOTE: NETTING IS PLACED ON TOP OF  
4' HIGH PIPING AROUND PERIMETER  
OF PIT AREAS



6" POLYETHYLENE PIPE FROM  
CENTRALIZED COLLECTION PIT

FIGURE NO. 6

EDDY COUNTY, NEW MEXICO  
SOUTHWEST ROYALTIES, Inc.  
ANN #1 SWD WELL & FACILITY  
SW/4, NE/4, SEC. 18, T19S, R26E  
HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS

DATE:	5/27/94
OWN. BY:	R.C.P.
FILE:	S-WEST/AN-RTR-6

NOT TO SCALE

W. F. he

P. O. BOX 1488  
MIDLAND, TEXAS 79756  
PH. 943-3234 OR 683-1040

Martin Water Laboratories, Inc.

700 W. INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4621

RESULT OF WATER ANALYSES

LABORATORY NO. 29478  
 TO: Mr. Steve Garner SAMPLE RECEIVED 2-11-94  
P. O. Box 11390, Midland, TX 79702 RESULTS REPORTED 2-14-94

COMPANY Southwest Royalties, Inc. LEASE Merri Lease SWD Pit (Ann SWD)

FIELD OR POOL \_\_\_\_\_  
 SECTION 34 BLOCK \_\_\_\_\_ SURVEY T-183R-26E COUNTY Eddy STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:  
 NO. 1 Disposal water - taken from pit.  
 NO. 2 \_\_\_\_\_  
 NO. 3 \_\_\_\_\_  
 NO. 4 \_\_\_\_\_

REMARKS: \_\_\_\_\_

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 80° F.	1.1298			
pH When Sampled				
pH When Received	6.93			
Bicarbonate as HCO <sub>3</sub>	427			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	9.800			
Calcium as Ca	3.120			
Magnesium as Mg	486			
Sodium and/or Potassium	71.850			
Sulfate as SO <sub>4</sub>	3.291			
Chloride as Cl	115.051			
Iron as Fe	0.81			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	194.225			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	90.0			
Resistivity, ohm-cm at 77° F.	0.059			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

By [Signature]



**Westech  
Laboratories  
Inc.**

The Quality People  
Since 1965

37 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594

CLIENT MARTIN WATER LABORATORIES, INC.  
1210 WEST SEALY  
MONAHANS, TX 79756

SAMPLE NO. : 6400539  
INVOICE NO.: 62140115  
REPORT DATE: 02-14-94  
REVIEWED BY: *AKH*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : Ann SWD  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: T.W. Elrod  
SUBMITTED BY .....: T.W. Elrod  
SAMPLE SOURCE ....: SWR  
ANALYST .....: C. Warner

AUTHORIZED BY : Sue Branam  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-11-94  
SUBMITTAL DATE : 02-12-94  
EXTRACTION DATE: --  
ANALYSIS DATE .: 02-12-94

Method 501/8010- Purgeable Halocarbons

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,1-Trichloroethane	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethane	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethane	<0.5	ug/L	0.5
1,1,2-Trichloroethane	<0.5	ug/L	0.5
1,1-Dichloroethane	<0.5	ug/L	0.5
1,1-Dichloroethene	<0.5	ug/L	0.5
1,2-Dichlorobenzene	<1.0	ug/L	1.0
1,2-Dichloroethane (EDC)	<0.5	ug/L	0.5
1,2-Dichloropropane	<0.5	ug/L	0.5
1,3-Dichlorobenzene	<1.0	ug/L	1.0
1,4-Dichlorobenzene	<1.0	ug/L	1.0
Bromodichloromethane	<1.0	ug/L	1.0
Bromoform	<1.0	ug/L	1.0
Bromomethane	<1.0	ug/L	1.0
Carbon tetrachloride	<0.5	ug/L	0.5
Chlorobenzene	<1.0	ug/L	1.0
Chloroethane	<1.0	ug/L	1.0
Chloroform	<0.5	ug/L	0.5
Chloromethane	<1.0	ug/L	1.0
cis 1,3-Dichloropropene	<0.5	ug/L	0.5
Dibromochloromethane	<1.0	ug/L	1.0
Dibromomethane	<1.0	ug/L	1.0
Dichlorodifluoromethane	<1.0	ug/L	1.0
Dichloromethane	<5.0	ug/L	5.0
trans 1,2-Dichloroethene	<1.0	ug/L	1.0
trans 1,3-Dichloropropene	<1.0	ug/L	1.0
Trichloroethene (TCE)	<0.5	ug/L	0.5
Trichlorofluoromethane	<1.0	ug/L	1.0
Vinyl chloride	<2.0	ug/L	2.0
2-Chloroethylvinyl ether	<15.0	ug/L	15.0

(1) Copy to Client

*[Signature]*  
Managing Director

CLIENT MARTIN WATER LABORATORIES, INC.  
1210 WEST SEALY  
MONAHANS, TX 79756

SAMPLE NO. : 6400539  
INVOICE NO. : 62140115  
REPORT DATE: 02-14-94  
REVIEWED BY: *[Signature]*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : Ann SWD  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: T.W. Elrod  
SUBMITTED BY .....: T.W. Elrod  
SAMPLE SOURCE ....: SWR  
ANALYST .....: C. Warner

AUTHORIZED BY : Sue Branam  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-11-94  
SUBMITTAL DATE : 02-12-94  
EXTRACTION DATE: --  
ANALYSIS DATE .: 02-12-94

Method 602 - Purgeable Aromatics

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Benzene .....	9600	ug/L	1.0
Chlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	280	ug/L	1.0
Toluene .....	2900	ug/L	1.0
Total Xylenes .....	380	ug/L	0.3

(1) Copy to Client

*[Signature]*  
Managing Director

**VII. Engineering Designs and Diagrams**

## Engineering Designs and Diagrams

The centralized surface collection pit was originally constructed in February, 1983 by Ralph Nix, a former operator of the facility. The Oil Conservation Division (OCD) administratively approved the operation of the pit on March 3, 1983 as per Administrative Order No. LP-104. The original engineering designs and diagrams were lost during several changes of ownership of the pit since 1983. The following description of the pit construction was taken from a copy of the application to operate the pit, submitted to the OCD Artesia office by Ralph Nix in February, 1983. A field inspection by Highlander Environmental on May 27, 1994 confirmed that the pit appears to have been constructed and operated in accordance with the OCD application (see Figures 4 and 5).

Design and Construction. The centralized collection pit is constructed of two pits with a common side. This is a built in safety factor in case one pit is leaking, the water can be transferred to the other. The pits are connected by an equalizer pipe with a shut-off valve. Both pits are exactly the same size and design. Dimensions of the pit ("A" and "B" - Figure 4) are 250' x 40' or 10,000 square feet each. The depth (top of levee to floor of pit) is 5 feet. A minimum 1 foot of freeboard is maintained, which gives 7124 bbls. of storage per pit. The pits were constructed by excavating and levelling a maximum of six inches below ground level. Excavation material was used to form the levees around the pit. Levees are constructed as to have an inside grade no steeper than 2:1. The levees also have an outside grade no steeper than 3:1. The top of the levee is flat and is at least 18 inches wide.

Type of Liner. The material used for the liner is Polyethylene with a thickness of 40 mil, manufactured by Gundle Lining Systems, Inc. The material is resistant to the following: sunlight, hydrocarbons, acids, alkalis, salt water, fungus. Joints in the material were fabricated in the field and heat fused to seal.

Leak Detection System. The drainage and sump method of leak detection is used. A network of 5" OD perforated PVC drainage pipes are present. They are placed with sufficient density that no point in the pit-bed is more than 20 feet from a drainage pipe. Slope for all drainage lines is at least six inches per 50 feet. All drainage lines are located on the outer perimeter of the pit and gather into an erosion proof sump. The sump is made of 12" OD PVC pipe with a cap on top, set from surface to a depth of 5'.

Preparation of Pit Bed for Installation of Liner. The bed of the pit and the inside grades of the levees are smooth and compacted and are free of holes, rocks, stumps, clods or any other debris which might rupture the liner. Drainage canals are dry and sloped. According to construction documents, slotted draining pipe was installed after the slope and direction of the drainage was approved by the OCD. A trench was dug on the top of the levee the entire perimeter of the pit to anchor the flexible liner. It is located nine inches out from the slope break and was a minimum of six inches deep.

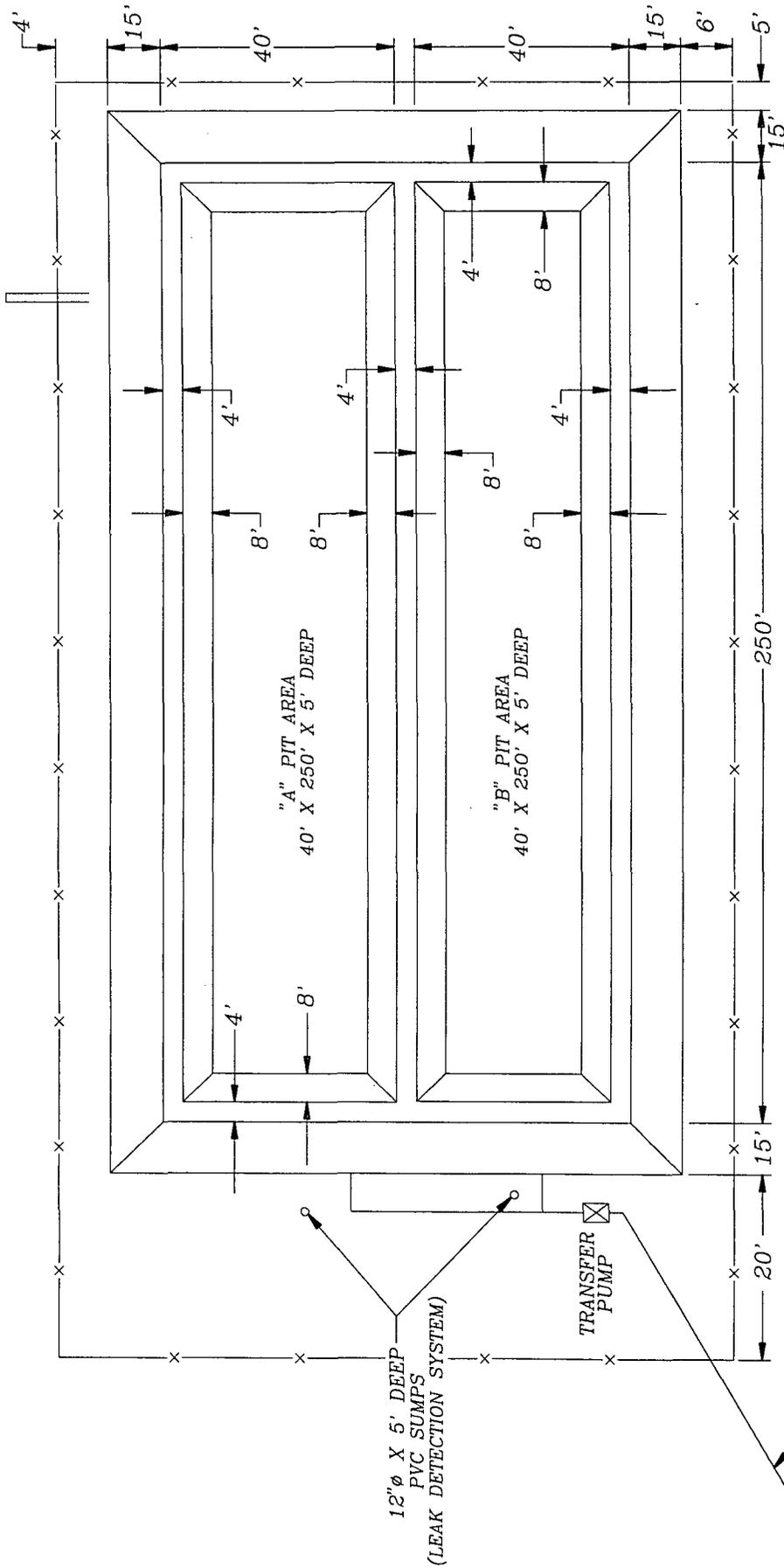
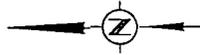
Installation of Flexible Membrane Liner. The liner was put in place after the leak detection system was installed and after the levee walls were inspected and approved by an OCD representative, according to construction documents. The pit liner was installed and joints sealed

according to manufacturer's specifications and with approval of a Commission representative. The liner was laid evenly and wrinkle free and rests smoothly on the pit-bed and inner face of the levees. It also extends down to the bottom of the anchor trench. An anchor of used pipe was placed over the liner in the anchor trench and then the trench was backfilled. The anchor extends the entire perimeter of the pit.

Netting and Sign. The pit is properly netted for migratory bird protection. An identification sign is posted in accordance with OCD requirements.

Security System. The pit is fenced with a 6 foot steel fence topped with barbed wire. The fence is of sufficient strength to keep livestock out of the facility. The gate will be closed and locked at all times when the facility is not manned.

PRODUCED WATER FROM  
SOUTHWEST ROYALTIES, Inc. LEASES



PLAN VIEW

6" POLYETHYLENE  
PIPE TO  
ANN #1 SWD FACILITY

12"φ X 5' DEEP  
PVC SUMPS  
(LEAK  
DETECTION SYSTEM)

TRANSFER  
PUMP

"A" PIT AREA  
40' X 250' X 5' DEEP

"B" PIT AREA  
40' X 250' X 5' DEEP

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

SOUTHWEST ROYALTIES, Inc.

CENTRALIZED SURFACE

COLLECTION PIT

NW/4, SE/4, SEC. 34, T18S, R26E

HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS

DATE:	5/27/94
DWN. BY:	R.C.P.
FILE:	E-WEST, WIL-PRC-4

NOT TO SCALE

NOTE: NETTING IS PLACED ON TOP OF  
4' HIGH PIPING AROUND PERIMETER  
OF PIT AREAS



**VIII. Contingency Plan for Reporting and  
Clean-up of Spills or Releases**

## **Contingency Plan for Reporting and Cleanup of Spills or Releases**

If a leak is detected by the leak detection system, the following contingency plan will be followed:

1. The incoming water will be shut-off at its source or will be diverted and trucked to Southwest Royalties Ann #1 SWD facility and/or commercial SWD facility.
2. The fluids in the leak detection system will be pumped into the unleaking pit or will be trucked out to the Ann #1 SWD facility and/or commercial SWD facility.
3. A sample of water from the leak detection system will be tested and compared to pit water analysis.
4. The leaking pit will be emptied until the water level is below the leak.
5. The liner will be repaired according to the manufacturer's recommendations. The pit will then be placed back in operation.

The leak detection system will be the only means in which leaks are to be detected. The leak detection sumps will be inspected daily during pit fill up and weekly thereafter.

**IX. Inspection and Maintenance Plan**

## Inspection and Maintenance Plan

The leak detection sumps will be checked daily during pit fill up and weekly thereafter. The dikes will be inspected monthly for erosion. Repairs will be made as needed. The sump and dike inspection reports will be maintained at the pumper's doghouse located at the facility and at Southwest Royalties Monahans, Texas field office.

**X. Closure Plan**

## Closure Plan

If the centralized surface collection pit is operated by Southwest Royalties at the time of pit closure, the following pit closure plan will be implemented:

1. The produced water at the pit will be emptied and disposed of properly.
2. The pit liner will be removed and disposed of at an approved offsite disposal facility.
3. The leak detection system will be removed and disposed of properly.
4. Confirmatory soil samples will be collected under the pit area and tested for contaminants such as TPH, BTEX, Chlorides, etc.
5. If no contamination is indicated, the pit will be backfilled with clean soil and levelled to surrounding grade.
6. Upon completion of pit closure, a report will be sent to the OCD.
7. If contamination is indicated, an investigation will be performed to delineate the contamination both horizontally and vertically. A remedial action plan will be submitted to the OCD for approval prior to clean-up of the pit site.

**XI. Geology and Hydrology**

## Hydrology and Geology

HYDROLOGIC FEATURES According to the USGS 7.5 minute topographic maps, Dayton and Lake McMillan North, New Mexico, there are no intermittent or perennial streams, water sources, or ground water discharge sites within a one mile radius of the perimeter of this facility. The only bodies of water noted on the topographic maps are three small rectangular ponds shown in the northern half of Section 2, northern half of Section 34 and the western half of Section 34. It is unknown if these are stock ponds or old reserve pit locations and whether or not they are still in use. The centralized collection pit location is approximately two miles west of the west channel of the Pecos River.

According to published reports and information gained through the New Mexico State Engineer's office, the depth to ground water is likely to be 75' to 100' below the surface in this area. The total dissolved solids of a well located in Section 33 were reported as 1144 mg/l. The hydraulic gradient in this region should be generally east-southeast towards the Pecos River and McMillan Reservoir.

SOILS According to the USDA Soil Conservation Service Soil Survey of Eddy County, New Mexico, the pit site is located on soils of the Reagan Series with soils of the Pima and Upton Series adjacent. Reagan loam typically consists of about 8" of brown loam overlying 24" of light brown loam and heavy loam. The underlying soils extend to a depth of more than 60" and are enriched with calcium carbonate. These soils are typically uneroded or, only slightly eroded with slow runoff, moderate permeability and high water-holding capacity.

Pima soils are typically light brownish gray silt loam in the upper 3 inches overlaying 60" or more of brown or light brown silty clay loam. Upton soils typically have a surface layer of grayish-brown gravelly loam about 3" thick. The next layer, about 6" thick is brown, gravelly loam. Fractured platy, indurated caliche is found at a depth of about 9".

FLOOD PROTECTION Based upon the topographic location of this pit with respect to the surrounding region, the chance for flooding is minimal. The pit is constructed with a dike which is 4.5' above grade and will be maintained with a minimum 1' of freeboard. The pit will be regularly inspected.

Based upon review of the topographic maps, this site is well outside the 100 year flood plain.

**XII. Proof of Notice**

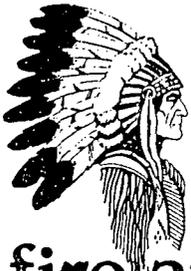
**Proof of Notice**

The notice requirements of OCD Rule 711 do not apply to this facility since it is not a commercial facility. Only produced water from Southwest Royalties operated wells (as listed in Section VI) is handled at the facility.

**XIII: H<sub>2</sub>S Contingency Plan**

## Hydrogen Sulfide Contingency Plan

Attached is a copy of H<sub>2</sub>S contingency plan prepared by Indian Fire and Safety, Inc. of Hobbs, New Mexico for the pit site.



**INDIAN**  
fire and safety, inc.

TELEPHONE (505) 393-3093 or (505) 397-3884 — 1-800-530-8693  
3317 WEST COUNTY ROAD • P.O. BOX 1306  
HOBBS, N.M. 88241-1306

**HYDROGEN SULFIDE CONTINGENCY PLAN**

SOUTHWEST ROYALTIES INC.  
MERRI LEASE SWD PIT (ANN SWD)  
SECTION 34 - TOWNSHIP 18S - RANGE 26E  
NW 1/4 SE 1/4  
EDDY COUNTY NEW MEXICO

*PREPARED BY;*  
*INDIAN FIRE AND SAFETY, INC.*  
*3317 WEST COUNTY ROAD*  
*HOBBS, NEW MEXICO*  
*1-800-530-8693*

6/20/94

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THIS PIT IS CURRENTLY BEING USED TO HOLD PRODUCED WATER PRIOR TO IT BEING INJECTED INTO THE "ANN" SALT WATER DISPOSAL WELL THAT IS ADJACENT TO IT. THE PRODUCED WATER IS PUMPED INTO IT FROM THE AREA WELLS AND CONTAINS NO GAS PRESSURE OR OIL (EXCEPT RESIDUAL OIL) WHICH HAS BEEN SEPERATED OUT. THE PIT ALSO PROVIDES PROTECTION TO AREA WILDLIFE BY BEING COVERED WITH A NET APPROXIMATELY 4 FEET HIGH WITH SUPPORTS, AND AROUND THE PERIMETER OF THE PIT. A LEAK DETECTION SYSTEM IS IN PLACE BELOW THE LINING OF THE PIT TO DETECT CONTAMINATION TO THE SOIL AND THEREBY CONTAMINATION CAN BE PREVENTED. THIS PIT IS BEING USED TO NO OTHER PURPOSE.

## HYDROGEN SULFIDE CONTINGENCY PLAN

### SCOPE

THIS CONTINGENCY PLAN ESTABLISHES GUIDELINES FOR THE PUBLIC, ALL COMPANY EMPLOYEES AND CONTRACT EMPLOYEES WHOSE WORK ACTIVITIES MAY INVOLVE EXPOSURE TO HYDROGEN SULFIDE (H<sub>2</sub>S) GAS.

### OBJECTIVE

1. PREVENT ANY AND ALL ACCIDENTS, AND PREVENT THE UNCONTROLLED RELEASE OF HYDROGEN SULFIDE INTO THE ATMOSPHERE.
2. PROVIDE PROPER EVACUATION PROCEDURES TO COPE WITH EMERGENCIES.
3. PROVIDE IMMEDIATE AND ADEQUATE MEDICAL ATTENTION SHOULD AN INJURY OCCUR.

## H2S CONTINGENCY PLAN

### DISCUSSION

SUSPECTED PROBLEM: H2S AT THE PIT AND THE POSSIBILITY OF H2S IN THE ATMOSPHERE.

IMPLEMENTATION: THIS PLAN, WITH ALL DETAILS, IS TO BE FULLY IMPLEMENTED IMMEDIATELY.

EMERGENCY RESPONSE PROCEDURE: THIS SECTION OUTLINES THE CONDITIONS AND DENOTES STEPS TO BE TAKEN IN THE EVENT OF AN EMERGENCY.

EMERGENCY EQUIPMENT AND PROCEDURES: THIS SECTION OUTLINES THE SAFETY AND EMERGENCY EQUIPMENT THAT WILL BE REQUIRED.

TRAINING PROVISIONS: THIS SECTION OUTLINES THE TRAINING REQUIRED AND ADHERED TO.

EMERGENCY CALL LISTS: INCLUDED ARE THE TELEPHONE NUMBERS OF ALL PERSONS TO BE CONTACTED SHOULD AN EMERGENCY EXIST.

BRIEFING : THIS SECTION INVOLVES THE BRIEFING OF PERSONNEL AND PUBLIC THAT ARE IN THE RADIUS OF EXPOSURE.

CHECK LISTS: THESE ARE INCLUDED TO INSURE ADHERENCE TO THIS PLAN.

GENERAL INFORMATION: SUPPLIES SUPPORT INFORMATION.

H2S SURVEY REPORT FOR:

SOUTHWEST ROYALTY

Mr. Steve Garner

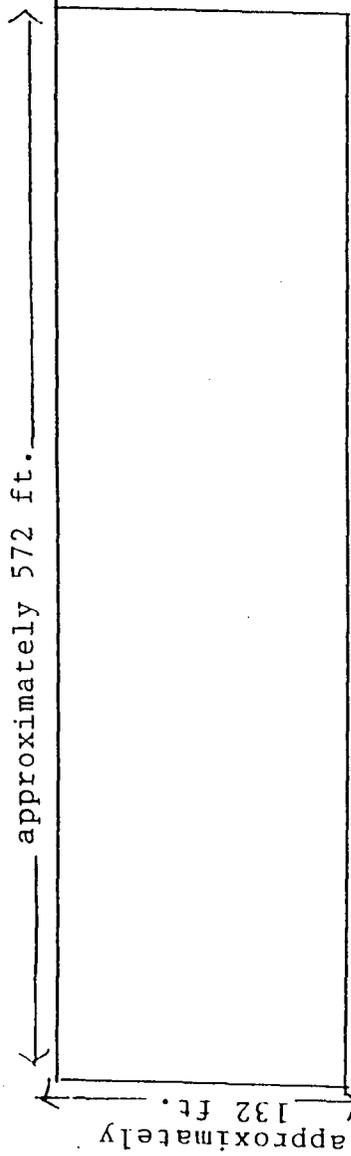
FAX #915-943-6463

On February 14, 1994, Jerry Caudill with Indian Fire and Safety, surveyed this pit to determine H2S concentrations. The pit atmosphere was sampled at all four corners using sensidyne 4L H2S tubes. The weather conditions were damp and cloudy with approximately 12 mile per hour winds blowing out of the South.

This pit is fenced with cyclone fencing, barbed wire at the top and covered with netting which discourages encroachment.

ANN SWD

approximately 572 ft.



H2S Values = 0 PPM (at every sampling point)

H2S CONTINGENCY PLAN

EMERGENCY REACTION STEPS

- A. IN THE EVENT OF ANY EVIDENCE OF H2S LEVEL ABOVE 10 PPM, TAKE THE FOLLOWING STEPS:
1. SECURE BREATHING EQUIPMENT.
  2. ORDER NON-ESSENTIAL PERSONNEL OUT OF DANGER ZONE.
  3. TAKE STEPS TO DETERMINE IF THE H2S LEVEL CAN BE CORRECTED OR SUPPRESSED AND IF SO, PROCEED IN NORMAL OPERATION.
- B. IF UNCONTROLLABLE CONDITIONS OCCUR:
1. TAKE STEPS TO PROTECT AND/OR REMOVE ANY PUBLIC IN THE DOWNWIND AREA FROM THE LOCATION WITHIN 1/2 MILE RADIUS. NOTIFY NECESSARY PUBLIC SAFETY PERSONNEL AND THE NEW MEXICO OIL CONSERVATION DIVISION OF THE SITUATION.
  2. REMOVE ALL PERSONNEL TO SAFE BREATHING AREA.
  3. NOTIFY PUBLIC SAFETY PERSONNEL TO HELP MAINTAIN ROAD BLOCKS.
  4. PROCEED WITH BEST PLAN AT THE TIME TO REGAIN CONTROL OF THE SITUATION. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.
- C. RESPONSIBILITY:
1. APPROVED SUPERVISOR IS STEVE GARNER.
    - A. SHALL BE RESPONSIBLE FOR THE TOTAL IMPLEMENTATION OF THIS PLAN.
    - B. SHALL BE IN COMPLETE COMMAND DURING ANY EMERGENCY.
    - C. SHALL DESIGNATE A BACK UP.
    - D. SHALL BRIEF ALL PERSONNEL INVOLVED.

P. O. BOX 1488  
 MONAHAN, TEXAS 79789  
 PH. 843-9334 OR 843-1040

Martin Water Laboratories, Inc.

709 W. INDIANA  
 MIDLAND, TEXAS 79701  
 PHONE 683-4881

RESULT OF WATER ANALYSES

TO: Mr. Steve Garner  
P. O. Box 11390, Midland, TX 79702

LABORATORY NO. 29478  
 SAMPLE RECEIVED 2-11-94  
 RESULTS REPORTED 2-14-94

COMPANY Southwest Royalties, Inc. LEASE Merri Lease SWD Pit (Ann SWD)

FIELD OR POOL \_\_\_\_\_  
 SECTION 34 BLOCK \_\_\_\_\_ SURVEY T-1888R-26E COUNTY Eddy STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:  
 NO. 1 Diagonal water - taken from pit.  
 NO. 2 \_\_\_\_\_  
 NO. 3 \_\_\_\_\_  
 NO. 4 \_\_\_\_\_

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1298			
pH When Sampled				
pH When Received	6.93			
Bicarbonate as HCO <sub>3</sub>	427			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	9.800			
Calcium as Ca	3.120			
Magnesium as Mg	486			
Sodium and/or Potassium	71.850			
Sulfate as SO <sub>4</sub>	3.291			
Chloride as Cl	115.051			
Iron as Fe	0.81			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	194.225			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	90.0			
Resistivity, ohm/cm at 77° F.	0.059			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

DISCUSSION OF RESULTS OF  
WATER ANALYSIS

THE WATER ANALYSIS BY MARTIN WATER LABORATORIES (PREVIOUS PAGE) REFLECTS 90 PARTS PER MILLION HYDROGEN SULFIDE IN THE WATER. OSHA REGULATIONS STATE THAT A WORKER CAN BE EXPOSED TO 10 PARTS PER MILLION FOR AN 8 HOUR DAY. HOWEVER, THESE VALUES DO NOT REFLECT AMBIENT (AIR BORNE) EMISSIONS, WHICH WOULD BE THE CONCERN FOR THE SAFETY OF THE WORKERS AND THE PUBLIC. BUT THIS PIT HAS BEEN SURVEYED AT ALL FOUR CORNERS, DAILY, BY THE PUMPER USING AN H<sub>2</sub>S MONITOR, FOR THREE WEEKS PRIOR TO THE WRITING OF THIS CONTINGENCY PLAN AND NO EMISSIONS OF HYDROGEN SULFIDE HAVE BEEN DETECTED. WITHOUT GAS PRESSURE THIS SHOULD BE THE RESULTS EXPECTED FOR EACH TEST. BUT THERE MAY BE A NOMINAL SMELL OR STINK DUE TO THE PRODUCED WATER AND SULFUR CONTENT. THIS SHOULD NOT POSE A HAZARD TO THE PERSONNEL OR PUBLIC, PROVIDED THERE IS NOTHING DONE TO MAKE THE GAS BREAK OUT ie.. STIRRING, MIXING OR GASEOUS EMISSIONS ADDED TO THE PIT. AT THE TIME OF THIS WRITING THERE WERE NONE OF THESE OCCURENCES, TO THE BEST OF THIS WRITERS KNOWLEDGE AND BELIEF.

## H2S CONTINGENCY PLAN

### TRAINING REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H2S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE LOCATION WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING;

1. HAZARDS AND CHARACTERISTICS OF H2S
2. PHYSICAL EFFECTS OF H2S ON THE HUMAN BODY
3. TOXICITY OF H2S AND SULFUR DIOXIDE
4. H2S DETECTION
5. EMERGENCY RESCUE
6. RESUSCITATORS
7. FIRST AID AND ARTIFICIAL RESPIRATION
8. EFFECTS OF H2S ON METALS
9. LOCATION SAFETY

### SERVICE COMPANY AND VISITING PERSONNEL

- A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H2S.
- B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELL SITE.
- C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A WELLSITE BRIEFING.

H2S CONTINGENCY PLAN  
EMERGENCY EQUIPMENT REQUIREMENTS

TYPE AND SETUP;

1. SIGNS

- A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING LANGUAGE;

\_\_\_\_\_ (LEASE) \_\_\_\_\_  
CAUTION - POTENTIAL POISON GAS  
HYDROGEN SULFIDE  
NO ADMITTANCE WITHOUT AUTHORIZATION

2. WIND SOCK - WIND STREAMERS;

- A. AT LEAST ONE PERMANENT WIND DIRECTION INDICATOR SHALL BE INSTALLED SO THAT WIND DIRECTION CAN BE EASILY DETERMINED AT OR APPROACHING THE LOCATION.

3. H2S DETECTION AND ALARMS;

- A. PERSONAL H2S MONITORS/DETECTORS SHALL BE PROVIDED FOR THE PUMPER AND ALL PERSONNEL CONTRACTOR OR OTHERWISE WHILE WORKING AT THIS LOCATION.  
B. PERMANENT H2S MONITOR WITH ALARM SHALL BE INSTALLED SHOULD THE SUSTAINED AMBIENT CONCENTRATION OF H2S OR SO2 REACH 10PPM(H2S) OR 2PPM(SO2) AT OR NEAR ANY OCCUPIED RESIDENCE, SCHOOL, CHURCH, PARK, PLAYGROUND, SCHOOL BUS STOP, PLACE OF BUSINESS, OR OTHER AREAS WHERE THE PUBLIC COULD REASONABLY BE EXPECTED TO FREQUENT.

4. CONDITION FLAGS;

- A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE DISPLAYED TO DENOTE CONDITIONS WHEN PERFORMING WORK THAT COULD REASONABLY BE EXPECTED TO OCCUR OR CAUSE THE RELEASE OF H2S AT OR IN EXCESS OF 10PPM.

GREEN= NORMAL CONDITIONS  
YELLOW= POTENTIAL DANGER  
RED= DANGER H2S PRESENT

- B. CONDITION FLAG SHALL BE POSTED AT LOCATION ENTRANCE.

5. EMERGENCY BREATHING AIR EQUIPMENT;

A. PROPER PROTECTIVE BREATHING APPARATUS IN ACCORDANCE WITH ANSI STANDARD Z.88.2-1980 SHALL BE PROVIDED FOR PUMPER AND OTHER PERSONNEL WORKING AT OR NEAR THE LOCATION CONTAINING H<sub>2</sub>S. ESCAPE AND PRESSURE DEMAND TYPE BREATHING APPARATUS SHALL BE PROVIDED FOR WORKING IN, AND ESCAPE FROM, H<sub>2</sub>S CONTAINING ATMOSPHERES. 30 MINUTE RESCUE TYPE SCBA'S SHALL BE TO PREFORM RESCUE ON PERSON'S OVERCOME BY H<sub>2</sub>S.

6. AUXILIARY RESCUE EQUIPMENT;

A. STRETCHER

B. 100' LENGTH OF 5/8" NYLON ROPE.

7. FIRE EXTINGUISHER;

A. ADEQUATE FIRE EXTINGUISHERS SHALL BE PROVIDED TO THE PUMPER AND PERSONNEL WORKING AT THIS SITE.

8. COMMUNICATIONS;

A. RADIO COMMUNICATIONS WILL BE AVAILABLE IN THE VEHICLES ON LOCATION.

9. CONTINGENCY PLAN;

A. THIS CONTINGENCY PLAN SHALL BE MADE AVAILABLE TO ALL PERSONNEL ON LOCATION WHEN PERFORMING WORK THAT MIGHT CAUSE THE RELEASE OF H<sub>2</sub>S, AND KEPT WITH THE PUMPER WHO MAY BE PRESENT AT THE LOCATION DAILY.

## H2S CONTINGENCY PLAN

### GENERAL EVACUATION PLAN

THE DIRECT LINES OF ACTION PREPARED BY INDIAN FIRE AND SAFETY INC. TO PROTECT THE PUBLIC FROM HAZARDOUS GAS SITUATION ARE AS FOLLOWS;

1. WHEN THE COMPANY APPROVED SUPERVISOR DETERMINES THE H2S GAS CANNOT BE LIMITED TO THE WELL LOCATION AND THE PUBLIC WILL BE INVOLVED, HE WILL ACTIVATE THE EVACUATION PLAN. ESCAPE ROUTES ARE NOTED ON AREA MAP.

2. THE SUPERVISOR OR DESIGNEE WILL NOTIFY LOCAL GOVERNMENT AGENCY THAT A HAZARDOUS CONDITION EXISTS AND EVACUATION NEEDS TO BE IMPLEMENTED.

3. COMPANY SAFETY PERSONNEL OR REPRESENTATIVE THAT HAVE BEEN TRAINED IN THE USE OF H2S DETECTION EQUIPMENT AND SELF CONTAINED BREATHING EQUIPMENT, WILL MONITOR H2S CONCENTRATIONS, WIND DIRECTIONS, AND AREA OF EXPOSURE. THEY WILL DELINEATE THE OUTER PERIMETER OF THE HAZARDOUS GAS AREA. EXTENSION TO THE EVACUATION AREA WILL BE DETERMINED FROM INFORMATION GATHERED.

4. LAW ENFORCEMENT PERSONNEL (STATE POLICE, POLICE DEPT., FIRE DEPT., AND SHERIFF'S DEPT.) WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. THEY WILL ALSO AID IN THE EVACUATION OF THE PUBLIC IF NECESSARY.

#### IMPORTANT;

LAW ENFORCEMENT PERSONNEL WILL NOT BE ASKED TO COME INTO A CONTAMINATED AREA. THEIR ASSISTANCE WILL BE LIMITED TO UNCONTAMINATED AREAS. CONSTANT RADIO CONTACT WILL BE MAINTAINED WITH THEM.

5. AFTER THE DISCHARGE OF GAS HAS BEEN CONTROLLED, COMPANY SAFETY PERSONNEL WILL DETERMINE WHEN THE AREA IS SAFE FOR RE-ENTRY.

\* ALSO SEE EMERGENCY REACTION PLAN! \*

WHAT TO DO

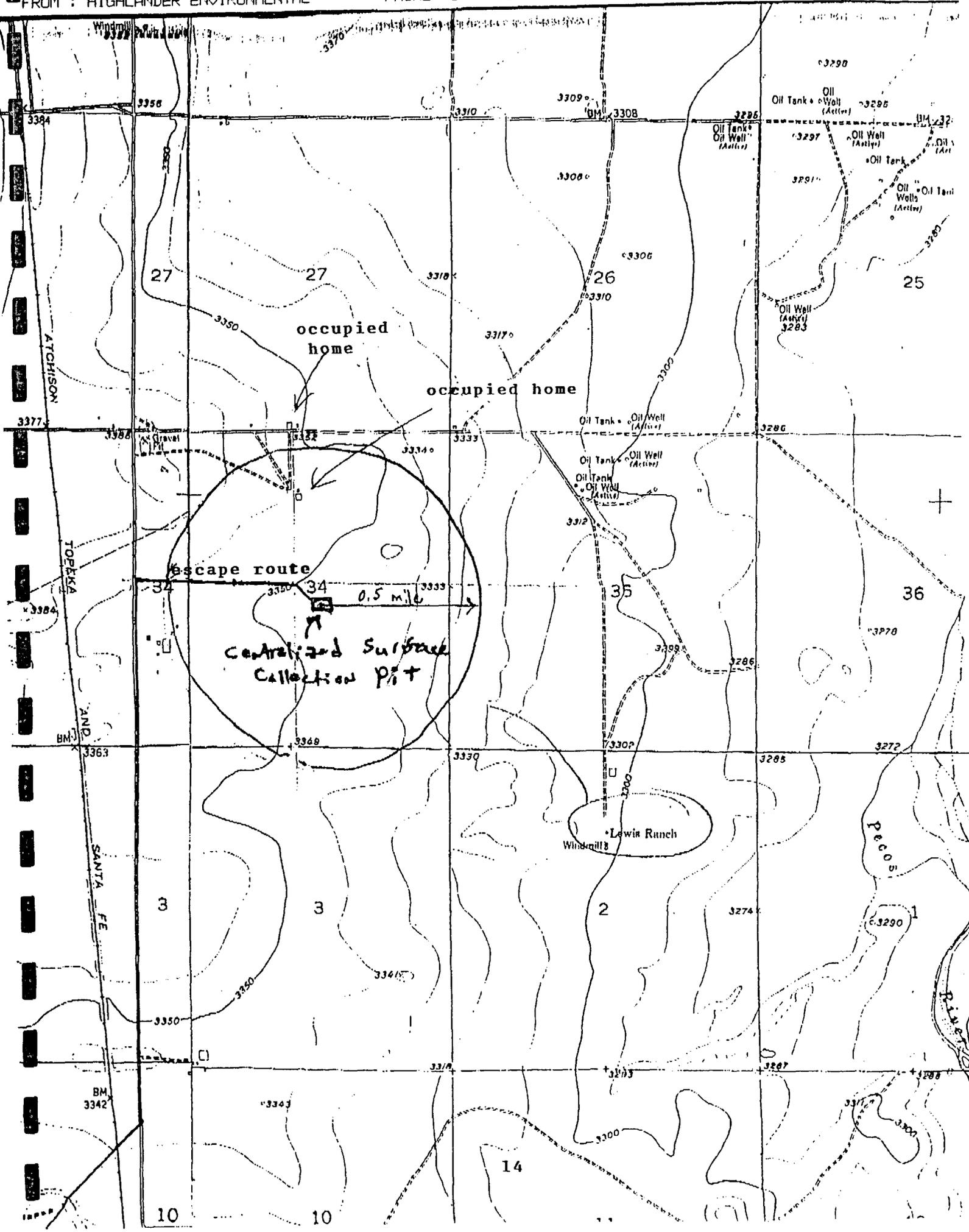
ANYONE  
EMERGENCY ACTION CHECKLIST

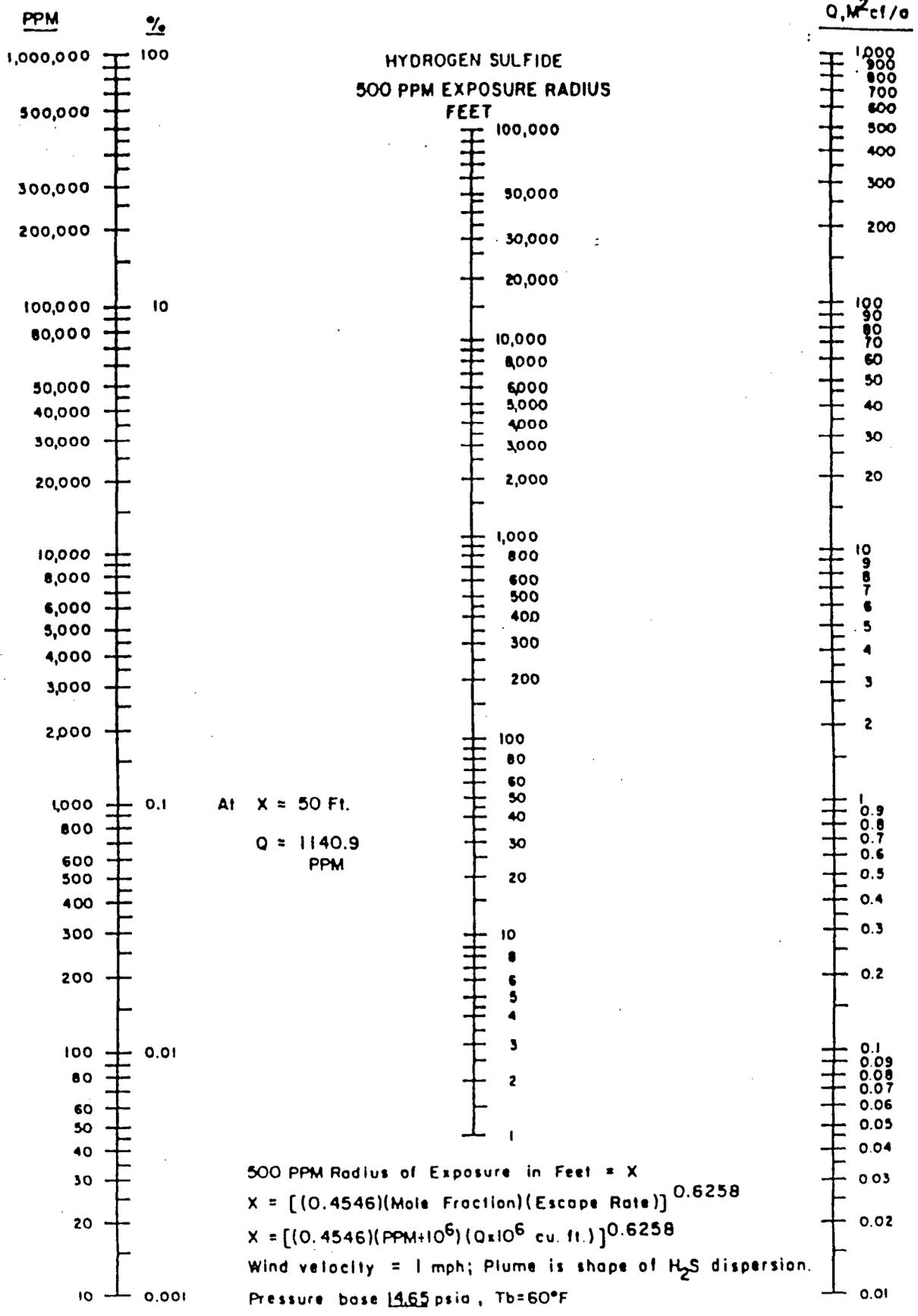
1. IF EMERGENCY: EVACUATE ALL PERSONNEL IF POSSIBLE.
2. IF EMERGENCY: IF SOUR GAS - EVACUATE RIG PERSONNEL.
3. IF EMERGENCY: IF SOUR GAS - EVACUATE PUBLIC WITHIN 1 HR RADIUS OF EXPOSURE.
4. IF EMERGENCY: DON SCBA AND RESCUE.
5. IF EMERGENCY: CALL 911 FOR EMERGENCY HELP (FIRE DEPT., AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.
6. IF EMERGENCY: GIVE FIRST AID.

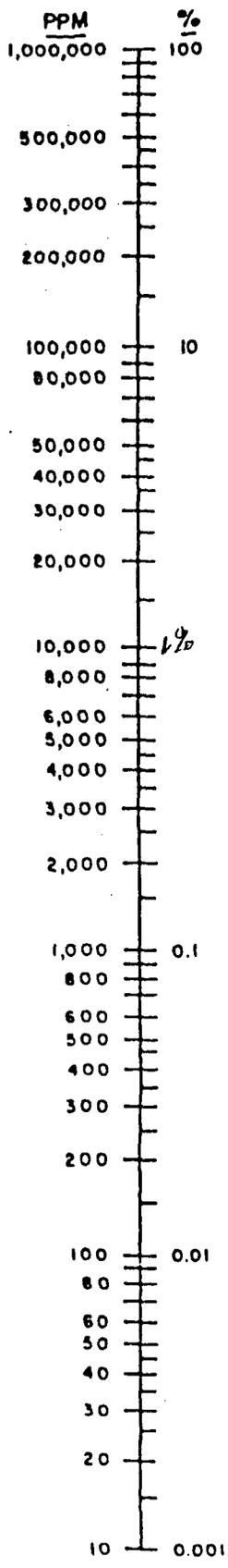
PERSON DOWN LOCATION/FATALITY

1. IF IMMEDIATELY POSSIBLE, CONTACT 911 (FOR AMBULANCE, ETC.). GIVE LOCATION AND WAIT FOR CONFIRMATION.
2. DON SCBA AND RESCUE.



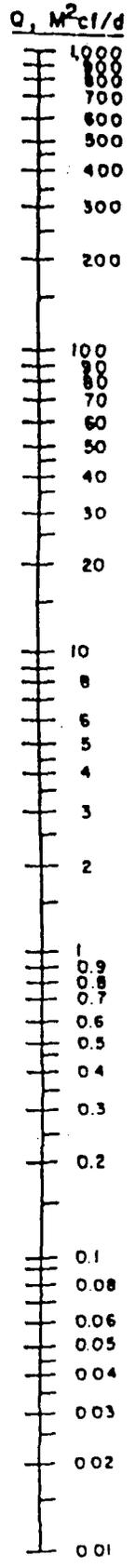
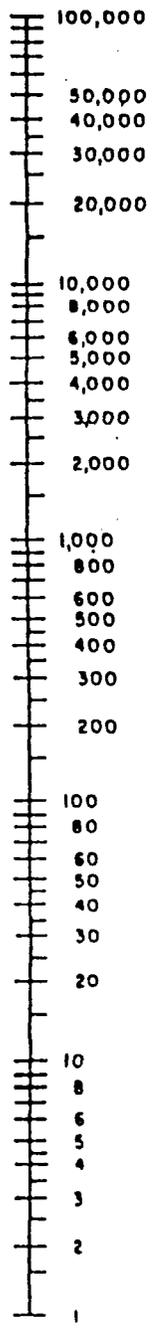






**HYDROGEN SULFIDE  
100 PPM EXPOSURE RADIUS**

**Feet**



At X = 3000 Ft.  
Q = 226,547 PPM

At X = 50 Ft.  
Q = 326.4 PPM

Below 100 PPM  
Rule 36 N.A.

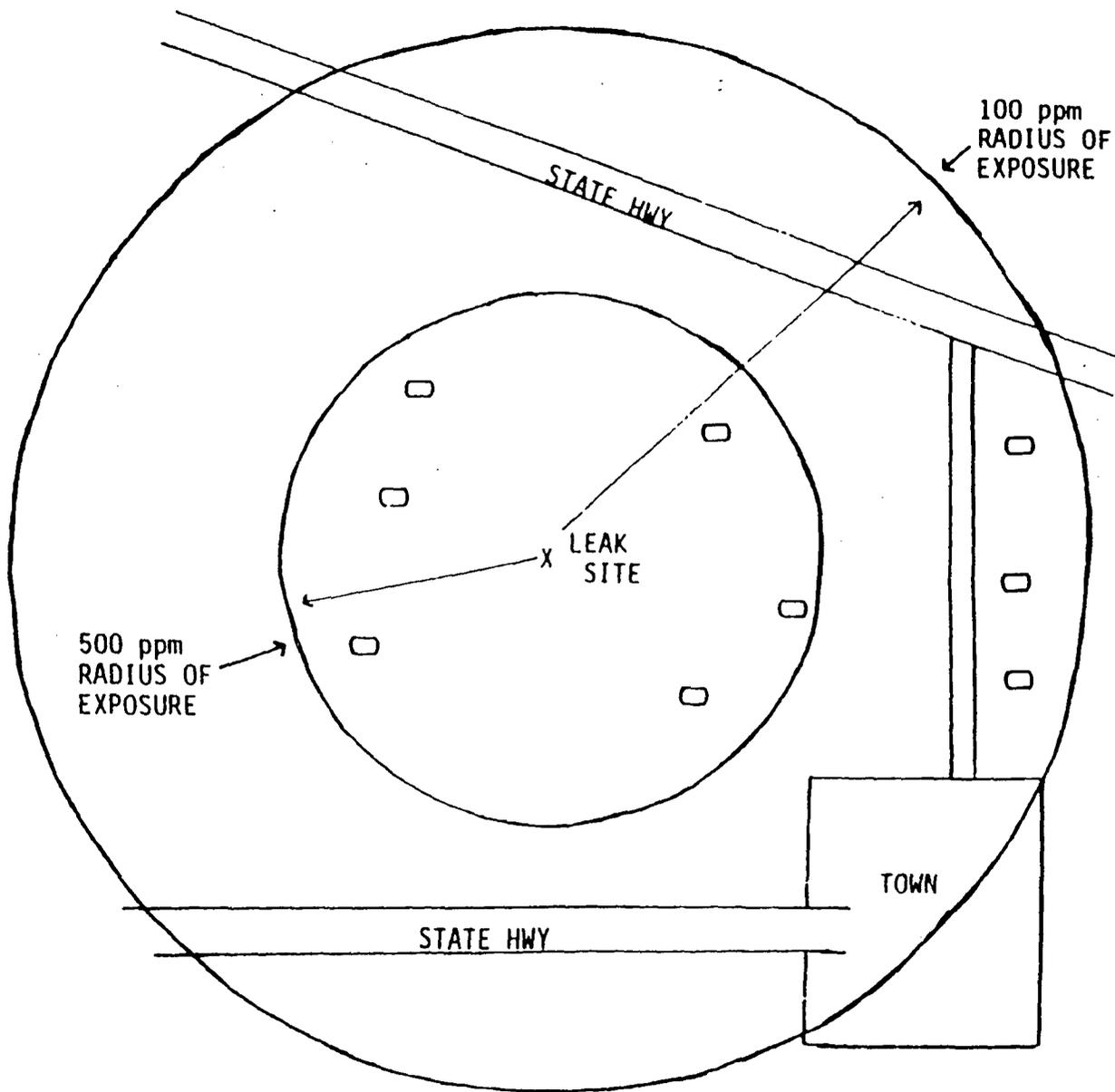
100 PPM Radius of Exposure in Feet = X  

$$X = [(1.589)(\text{Mole Fraction})(\text{Escape Rate})]^{0.6258}$$

$$= [(1.589)(\text{PPM})(Q \text{ in } M^2\text{cf/d})]^{0.6258}$$

P<sub>b</sub> 14.65 psid T 60 °F

EXAMPLES OF DISPERSION PROBLEMS



□ DWELLING

GENERAL INFORMATION

TOXIC EFFECTS OF HYDROGEN SULFIDE

HYDROGEN SULFIDE IS EXTREMELY TOXIC. THE ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE IS 10 PPM, WHICH IS .001% BY VOLUME. HYDROGEN SULFIDE IS HEAVIER THAN AIR (SPECIFIC GRAVITY - 1.192) AND COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 AND 46.0 PERCENT BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE AND SIX TIMES MORE TOXIC THAN CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE TABLE II.

TABLE I  
TOXICITY OF VARIOUS GASES

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY (SC=1)	THRESHOLD LIMIT 1.	HAZARDOUS LIMIT 2	LETHAL CONCENTRATION 3
HYDROGEN CYANIDE	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
HYDROGEN SULFIDE	H <sub>2</sub> S	1.18	10 PPM <sup>4</sup> 20 PPM <sup>5</sup>	250 PPM/HR	600 PPM
SULFUR DIOXIDE	SO <sub>2</sub>	2.21	5 PPM	-----	1000 PPM
CHLORINE	CL <sub>2</sub>	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON MONOXIDE	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
CARBON DIOXIDE	CO <sub>2</sub>	1.52	5000 PPM	5%	10%
METHANE	CH <sub>4</sub>	0.55	90,000 PPM(9%)	COMBUSTIBLE ABOVE 5% IN AIR	----

(CONTIUED ON NEXT PAGE)

- 1 THRESHOLD LIMIT - CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.
- 2 HAZARDOUS LIMIT - CONCENTRATION THAT MAY CAUSE DEATH.
- 3 LETHAL CONCENTRATION - CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.
- 4 THRESHOLD LIMIT - 10 PPM - 1972 ACGIH (AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS).
- 5 THRESHOLD LIMIT - 10 PPM - 1989 ANSI ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE (BASED ON 40-HR WEEK) IS 10 PPM. OSHA RULES AND REGULATIONS (FEDERAL REGISTER, VOLUME 37, NO. 202, PART II, DATED 02/01/89).

TOXIC EFFECTS OF HYDROGEN SULFIDE  
PAGE 2

TABLE II  
PHYSICAL EFFECTS OF HYDROGEN SULFIDE\*

<u>PERCENT (%)</u>	<u>CONCENTRATION</u>		<u>PHYSICAL EFFECTS</u>
	<u>PPM</u>	<u>GRAINS</u> <u>100 STD. FT3**</u>	
0.001	10	.65	OBVIOUS AND UNPLEASANT ODOR.
0.002	20	1.30	SAFE FOR 8 HRS EXPOSURE.
0.01	100	6.48	KILLS SMELL IN 3 - 15 MIN. MAY STING EYES AND THROAT.
0.02	200	12.96	KILLS SMELL SHORTLY; STINGS EYES AND THROAT.
0.05	500	32.96	DIZZINESS; BREATHING CEASES IN A FEW MIN.; NEEDS PROMPT ARTIFICIAL RESPIRATION.
0.07	700	45.36	UNCONSCIOUS QUICKLY; DEATH WILL RESULT IF NOT RESCUED PROMPTLY.
0.10	1000	64.80	UNCONSCIOUS AT ONCE; FOLLOWED BY DEATH WITHIN MINUTES.

\* CAUTION: HYDROGEN SULFIDE IS A COLORLESS AND TRANSPARENT GAS AND IS FLAMMABLE. IT IS HEAVIER THAN AIR AND MAY ACCUMULATE IN LOW PLACES.

\*\* AT 15.00 PSIA AND 60'F.

## GENERAL INFORMATION

### THE USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA'S.
2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RANDOM TO INSURE THAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.
3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR IT IN A TEST ATMOSPHERE. (NOTE: SUCH ITEMS AS FACIAL HAIR (BEARD OR SIDEBURNS) AND EYEGLASSES WILL NOT ALLOW PROPER SEAL.) ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WEAR EYEGLASSES. CONTACT LENSES SHOULD NOT BE ALLOWED.
4. MAINTENANCE AND CARE OF SCBA'S:
  - A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:
    1. INSPECTION FOR DEFECTS, INCLUDING LEAK CHECKS.
    2. CLEANING AND DISINFECTING.
    3. REPAIR.
    4. STORAGE.
  - B. INSPECTION: SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY FOR THE FOLLOWING PERMANENT RECORD KEPT OF THESE INSPECTIONS.
    1. FULLY CHARGED CYLINDERS.
    2. REGULATOR AND WARNING DEVICE OPERATION.
    3. CONDITION OF FACE PIECE AND CONNECTIONS.
    4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.
  - C. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED.

THE USE OF SELF-CONTAINED BREATHING EQUIPMENT  
PAGE 2

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5. PERSON ASSIGNED TASK THAT REQUIRES USE OF SELF-CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.
  
6. SCBA'S SHOULD BE WORN WHEN:
  - A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TET REVEALS LESS THAN 10 PPM OF H<sub>2</sub>S.
  
  - B. WHEN BREAKING OUT ANY LINE WHERE H<sub>2</sub>S CAN REASONABLY BE EXPECTED.
  
  - C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H<sub>2</sub>S EXISTS.
  
  - D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H<sub>2</sub>S HAS BEEN DETECTED.
  
  - E. AT ANY TIME THERE IS A DOUBT AS TO THE H<sub>2</sub>S LEVEL IN THE AREA TO BE ENTERED.

GENERAL INFORMATION

RESCUE - FIRST AID  
FOR HYDROGEN SULFIDE POISONING

DO NOT PANIC!

REMAIN CALM - THINK

1. HOLD YOUR BREATH. (DO NOT INHALE; STOP BREATHING.)
2. PUT ON BREATHING APPARATUS.
3. REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. (GO UP WIND FROM SOURCE OR AT RIGHT ANGLES TO THE WIND; NOT DOWNWIND.)
4. BRIEFLY APPLY CHEST PRESSURE - ARM LIFT METHOD OF ARTIFICIAL RESPIRATION TO CLEAN THE VICTIM'S LUNGS AND TO AVOID INHALING ANY TOXIC GAS DIRECTLY FROM THE VICTIM'S LUNGS.
5. PROVIDE FOR PROMPT TRANSPORTATION TO THE HOSPITAL, AND CONTINUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.
6. HOSPITAL(S) OR MEDICAL FACILITIES NEED TO BE INFORMED, BEFORE-FOREHAND, OF THE POSSIBILITY OF H<sub>2</sub>S GAS POISONING - (NO MATTER HOW REMOTE THE POSSIBILITY IS).
7. NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIM(S) HAS BEEN EXPOSED TO H<sub>2</sub>S GAS.

BESIDES BASIC FIRST AID, EVERYONE ON LOCATION SHOULD HAVE A GOOD WORKING KNOWLEDGE OF ARTIFICIAL RESPIRATION, AS WELL AS FIRST AID FOR EYES AND SKIN CONTACT WITH LIQUID H<sub>2</sub>S. EVERYONE NEEDS TO MASTER THESE NECESSARY SKILLS.

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

MEMORANDUM OF MEETING OR CONVERSATION

Telephone  Personal Time 9:00 Date 5-25-00

Originating Party

Other Parties

Billy Tripp  
Hillside Oil and Gas  
Phone 915-685-3011  
Fax 915-685-1487  
Cell 915-613-8656  
Subject

Martynne Kieling

South west Royalties to ↓  
Transfer of Hillside Oil and Gas

Discussion They Need to write a letter to Director Wrotenberg  
to request transfer <sup>permit</sup> Need \$25,000 Bond, Need to Re-permit,  
Need Someone at Facility on May 30, 2000 12: pm  
For Inspection.

Give them our website to Research 711 Res.

Fixed Jan 12, 1995 Permit

Conclusions or Agreements Hillside will write letter and will be at  
Site For Inspection

Billy Tripp and Jimmy Davis Mobile(505)-746-7273  
cell Above ↑

Distribution

Signed Martynne J Kieling

Email From Mike Stubblefield  
Hillside oil + Gas Current Contact  
Brian Love 1-915 685-3011  
1-(915)685-7487 Fax

# Public Regulation Commission

5/25/2000

HILLSIDE OIL & GAS, LLC (TEXAS Corporation)

**MAILING ADDRESS**

510 NORTH BIG SPRING MIDLAND TEXAS 79701

---

SCC Number: 2015774

Tax & Revenue Number:

ORGANIZED ON JUNE 25, 1999 , IN NEW MEXICO.

ORGANIZATION IS A FOREIGN LIMITED LIABILITY

ORGANIZATION IS EXEMPT

PURPOSE OF THE ORGANIZATION  
NOT REQUIRED

**ORGANIZATION DATES**

Taxable Year End Date:

Filing Date: //

Organization Existence Expiration Date:

**SUPPLEMENTAL POST MARK DATES**

Supplemental:

Name Change:

Purpose Change:

**PRINCIPAL ADDRESS**

*PRINCIPAL ADDRESS(Outside New Mexico)*

510 NORTH BIG SPRING MIDLAND TEXAS 79701

---

**REGISTERED AGENT**

CT CORPORATION SYSTEM

123 EAST MARCY STREET SANTA FE NEW MEXICO 87504

Designation date: 06/25/99

Agent Post Mark Date:

Resignation date:

**COOP LICENSE INFORMATION**

Number:

Type:

Expiration Year:

**ORGANIZER(S)**

TRIPP, JR., MONROE R. THAGARD, J. GREG  
BARKER, GARY S.



---

***DIRECTORS***  
***Date Election of Directors:***

***New Search Inquiry Page***

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

MEMORANDUM OF MEETING OR CONVERSATION

Telephone  Personal Time 8:30 Date 5-25-00

Originating Party

Other Parties

John Tate Martine Kieling  
Southwest Royalties  
(915) 686 9277  
Fax (915) 688 -0191

Subject Transfer of Permit to Hillside oil & Gas  
Gary Barker & Greg Taggard Principals

Discussion Sw Royalties Needs to write a letter  
Requesting Transfer of Permit (Sold to Hillside).  
Letter to Director Lori Wrotenberg CC Martine Kieling

Faxed Jan 12, 1995 permit

Conclusions or Agreements Will call Hillside And Have them Call  
OCD and will write letter.

Distribution

Signed

Martine Kieling

**OIL CONSERVATION DIVISION**

**2040 South Pacheco  
Santa Fe, NM 87505  
(505) 827-7133  
Fax: (505) 827-8177**



**(PLEASE DELIVER THIS FAX)**

**To:** Billy Trip (915) 685-1487 Fax

**From:** Martyne Kieling (505) 827-7153

**Date:** 5-25-00

**Number of Pages (Includes Cover Sheet)** 1 of 7

**Message:** ~~Rule 711~~ Rule 711 Permit

Issued to SW Royalties

Thanks Martyne Kieling

**If you have any trouble receiving this, please call:  
(505) 827-7133**

**OIL CONSERVATION DIVISION**

**2040 South Pacheco  
Santa Fe, NM 87505  
(505) 827-7133  
Fax: (505) 827-8177**



**(PLEASE DELIVER THIS FAX)**

**To:** John Tate (915) 688-0191

**From:** Martynne Kieling (505) 827-7153

**Date:** 5-25-00

**Number of Pages (Includes Cover Sheet)** 1 of 7

**Message:** 711 Permit with conditions.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**If you have any trouble receiving this, please call:  
(505) 827-7133**



## Highlander Environmental

Midland, Texas

June 30, 1994

RECEIVED  
JUL 06 1994  
OIL CONSERVATION DIV.  
SANTA FE

Ms. Kathy M. Brown  
New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87504

RE: Request for Compliance with Rule 711  
Southwest Royalties, Inc.  
Centralized Surface Collection Pit  
NW/4, SE/4, Section 34, T-18-S, R-26-E  
Eddy County, New Mexico

Dear Ms. Brown:

Southwest Royalties, Inc. requests approval for continuing operations of a centralized surface collection pit at the above referenced location. The operation of this pit was administratively approved previously on March 3, 1983 by the Oil Conservation Division (OCD) Administrative order No. LP-104.

Per your request in the April 4, 1994 letter to Southwest Royalties, Inc. enclosed are the "Application for Surface Waste Disposal Facility" and supporting data to bring this pit into OCD Rule 711 compliance. If you need additional information, please contact me at (915) 682-4559.

Highlander Environmental has been retained by Southwest Royalties as a consultant for this project.

Sincerely,

Robert McNeill, P.E., REP

RM: eet

cc: Mr. Doug Keithly - Southwest Royalties, Inc.  
OCD District office

State of New Mexico  
Energy, Minerals and Natural Resources Department  
OIL CONSERVATION DIVISION  
P.O. Box 2088  
Santa Fe, NM 87501

RECEIVED

JUL 06 1994

APPLICATION FOR SURFACE WASTE DISPOSAL FACILITY

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

Commercial  Centralized

OIL CONSERVATION DIV.  
SANTA FE  
Other \_\_\_\_\_

I. Type:  Produced Water  Drilling Muds  
 Solids/Landfarm  Treating Fluids

II. OPERATOR: Southwest Royalties, Inc.

ADDRESS: P.O. Box 11390, Midland, TX 79702

CONTACT PERSON: Mr. Doug Keathley PHONE: (915) 686-9927

III. LOCATION: NW/4 SE/4 Section 34 Township 18S Range 26E  
Submit large scale topographic map showing exact location.

IV. IS THIS AN EXPANSION OF AN EXISTING FACILITY?  Yes  No

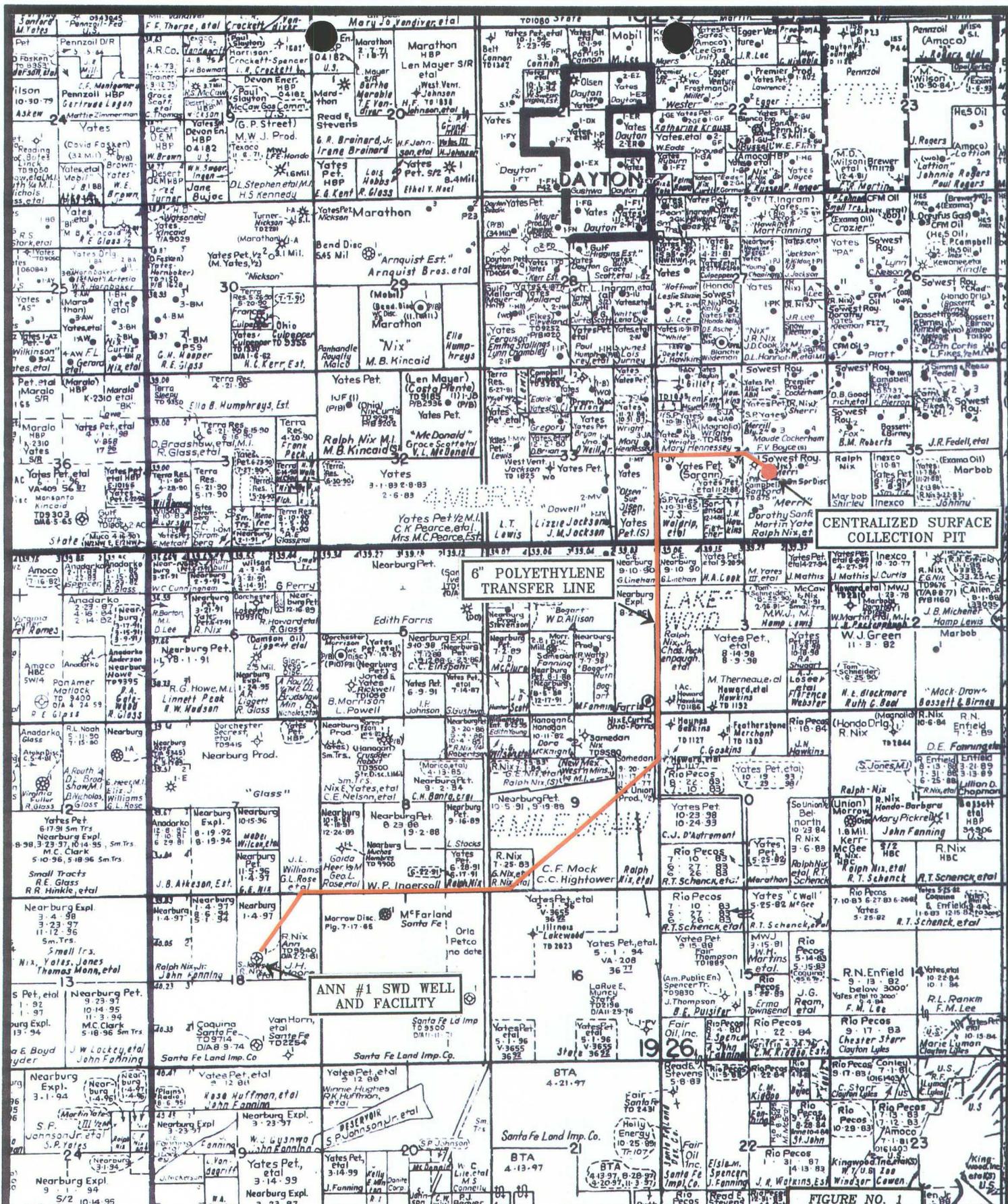
- V. Attach the name and address of the landowner of the disposal facility site and landowners of record within one-half mile of the site.
- VI. Attach discription of the facility with a diagram indicating location of fences, pits, dikes, and tanks on the facility.
- VII. Attach detailed engineering designs with diagrams prepared in accordance with Division guidelines for the construction/installation of the following: pits or ponds, leak-detection systems, aerations sytems, enhanced evaporation (spray) systems, waste treating systems, security systems, and landfarm facilities.
- VIII. Attach a contingency plan for reporting and clean-up of spills or releases.
- IX. Attach a routine inspection and maintenance plan to ensure permit compliance.
- X. Attach a closure plan.
- XI. Attach geological/hydrological evidence demonstrating that disposal of oil field wastes will not adversely impact fresh water. Depth to and quality of ground water must be included.
- XII. Attach proof that the notice requirements of OCD Rule 711 have been met (Commercial facilities only).
- XIII. Attach a contingency plan in the event of a release of H<sub>2</sub>S.
- XIV. Attach such other information as necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
- XV. CERTIFICATION

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

Name: Robert McNeill Title: Agent for Southwest Royalties, Inc.

Signature: Robert McNeill Date: 6/30/94

DISTRIBUTION: Original and one copy to Santa Fe with one copy to appropriate Division District Office.



EDDY COUNTY, NEW MEXICO  
 SOUTHWEST ROYALTIES, Inc.  
 LAND OWNERSHIP  
 MAP  
 HIGHLANDER ENVIRONMENTAL  
 MIDLAND, TEXAS

SOURCE: MIDLAND MAP CO.

SCALE: 1" = 4,000'

**V. Landowner of the disposal facility and  
landowners of record within one-half  
mile of centralized collection pit.**

## Landowner of Pit Site and Landowners of Record

The landowner of the pit site and landowners of record within one-half mile of the pit site are presented in Figure-3.

### Landowner of Pit Site

Ralph Nix  
P. O. Box 440  
Artesia, New Mexico 88211

### Landowners of record within one-half mile of pit site

Boykin-Harvey Trust  
P. O. Box 140  
El Paso, Texas 79980

Frank V. Boyce  
149 E. Kincaid Ranch Road  
Artesia, New Mexico 88210

Gillette F. Wright  
7 Westwood Forest  
Kirkwood, Missouri 63122

Jeryne Goodrich  
5356 Stevely Avenue  
Lakewood, California 90713

Rex H. Shudde  
27105 Arriba Way  
Carmel, California 93921

Henry H. Fox  
515 E. Las Olas Blvd. #1500  
Ft. Lauderdale, Florida 33301

Howard E. Haskins  
122 S. Ardmore  
Los Angeles, California 90004

J. Standley Waldrip  
480 N. Lake Road  
Artesia, New Mexico 88210

Brue Waldrip  
506 N. Lake Road  
Artesia, New Mexico 88210

Col. Thomas Fletcher, Jr.  
P. O. Box 1394  
Tryon, North Carolina 28782

Mary Lynn Scott  
7102 Meadowlake  
Dallas, Texas 75214

Anthony G. Pellegrini  
34 Beverly Road  
Natick, Massachusetts 01760

E. Reinhardt  
3654 Lierman  
St. Louis, Missouri 63116

J. Garland Martin  
P. O. Box 1611  
Amarillo, Texas 79181



R 26 E

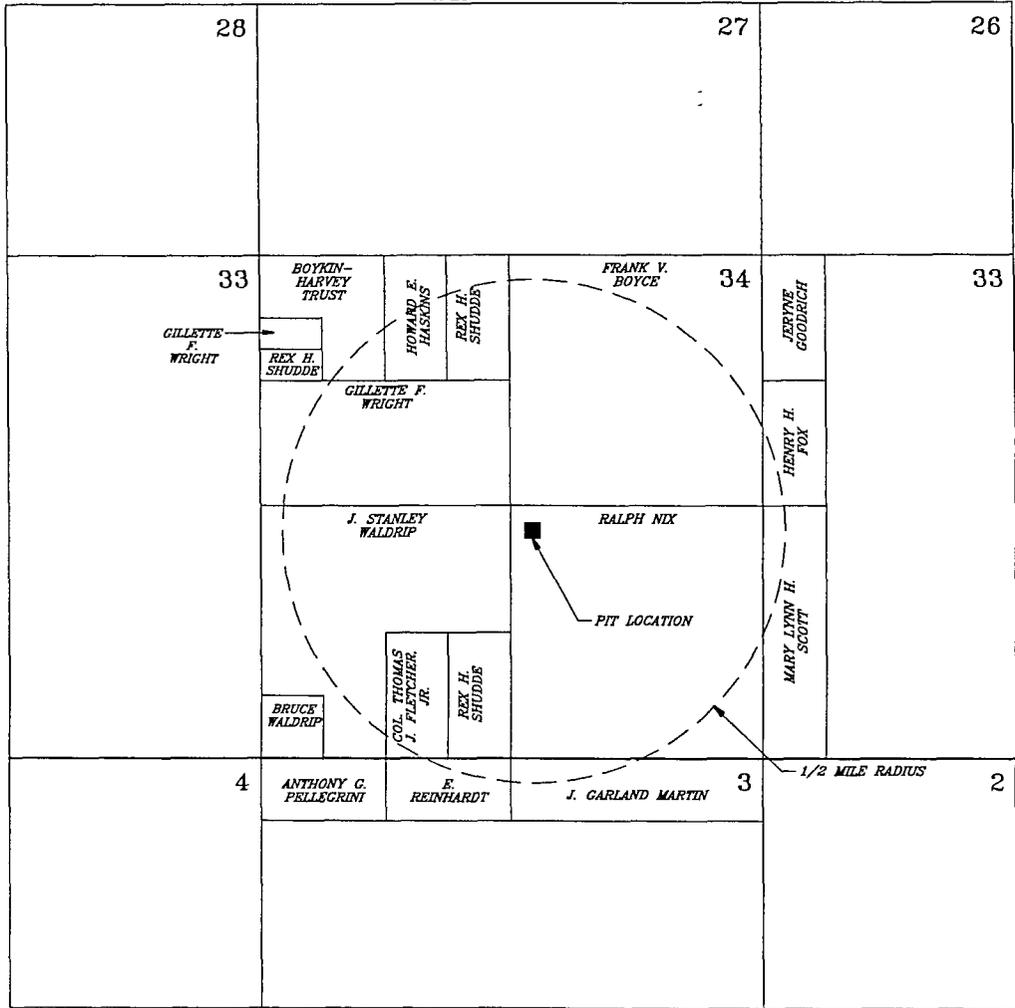


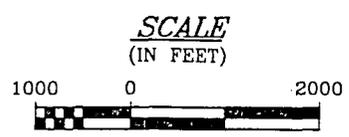
FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

**SOUTHWEST ROYALTIES, Inc.**

SURFACE OWNERSHIP MAP  
 1/2 MILE OF PIT LOCATION  
 NW/4, SE/4, SEC. 34, T18S, R26E

HIGHLANDER ENVIRONMENTAL  
 MIDLAND, TEXAS



DATE:  
5/27/94

DWN. BY:  
R.C.P.

FILE:

5-WEST, NW-1, PIT, PG-3

**VI. Description of the Facility**

## Description of the Facility

The centralized surface collection pit is located in the Southwest Royalties, Inc. operated "Merri" lease in the NW/4, SE/4, Section 34, Township 18S, Range 26E, Eddy County, New Mexico (See Figures 1 and 2).

The collection pit currently receives approximately 1100 barrels per day of produced water from the following Southwest Royalties, Inc. operated wells:

<u>Well Name</u>	<u>Location (Eddy County, New Mexico)</u>
Merri #1, #2, #3	SE/4, Section 34, T-18-S, R-26-E
Merrill #1, #2, #3, #4	NE/4, Section 34, T-18-S, R-26-E
Kelly #1, #2	SW/4, Section 27, T-18-S, R-26-E
Dorothy #1	SE/4, Section 27, T-18-S, R-26-E
Fox #1, #2	NW/4, Section 35, T-18-S, R-26-E
Sherri #1	NW/4, Section 35, T-18-S, R-26-E
Fikes #1	NW/4, Section 35, T-18-S, R-26-E
Goodrich #1	NW/4, Section 35, T-18-S, R-26-E
Fedell #1, #2, #3, #4	NE/4, Section 35, T-18-S, R-26-E
Melaine #1, #2	SE/4, Section 26, T-18-S, R-26-E
Chad #1, #2	SE/4, Section 26, T-18-S, R-26-E
Lynn #1	NW/4, Section 26, T-18-S, R-26-E

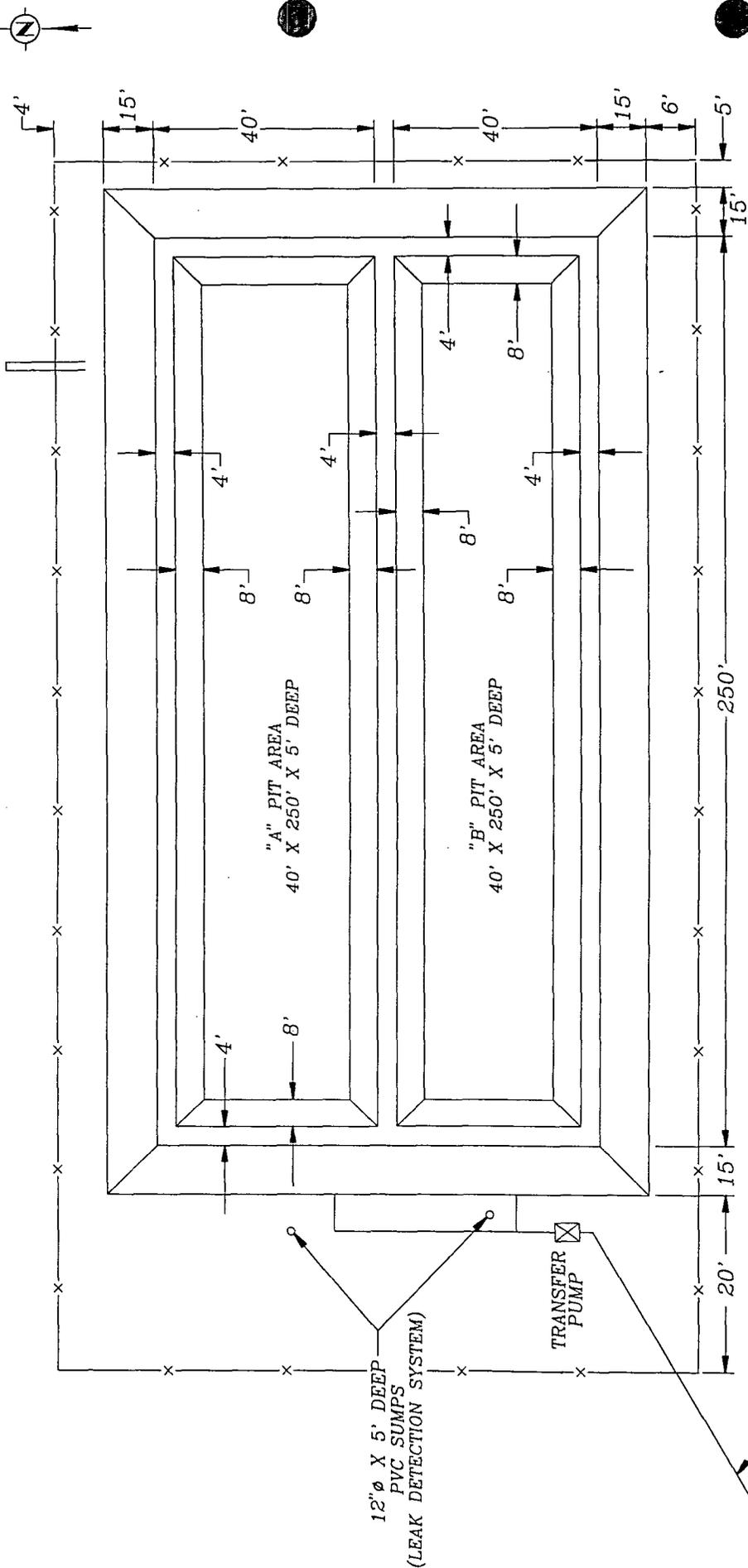
The produced water is temporarily stored at the collection pit. The produced water is then transferred by 6" polyethylene line to the Southwest Royalties, Inc. operated Ann #1 saltwater disposal facility located in the SW/4, NE/4, Section 18, Township 19S, Range 26 E, Eddy County, New Mexico.

At the Ann #1 SWD facility, the produced water and trace amounts of oil carryover are separated by a gunbarrel. The produced water is injected into Class II injection well, Ann #1. The oil is sold to a commercial oil purchaser by truck.

Water analyses of the pit water are attached.

A site diagram of the pit and Ann #1 SWD facility are attached as Figures 4 and 6, respectively.

PRODUCED WATER FROM  
SOUTHWEST ROYALTIES, Inc. LEASES



PLAN VIEW

12"  $\phi$  X 5' DEEP  
PVC SUMPS  
(LEAK DETECTION SYSTEM)

TRANSFER  
PUMP

6" POLYETHYLENE  
PIPE TO  
ANN #1 SWD FACILITY

NOTE: NETTING IS PLACED ON TOP OF  
4' HIGH PIPING AROUND PERIMETER  
OF PIT AREAS

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

SOUTHWEST ROYALTIES, Inc.

CENTRALIZED SURFACE  
COLLECTION PIT

NW/4, SE/4, SEC. 34, T18S, R26E

HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS

DATE:	5/27/94
DRAWN BY:	R.C.P.
FILE:	5-WEST-WW-PRV-PC-4

NOT TO SCALE

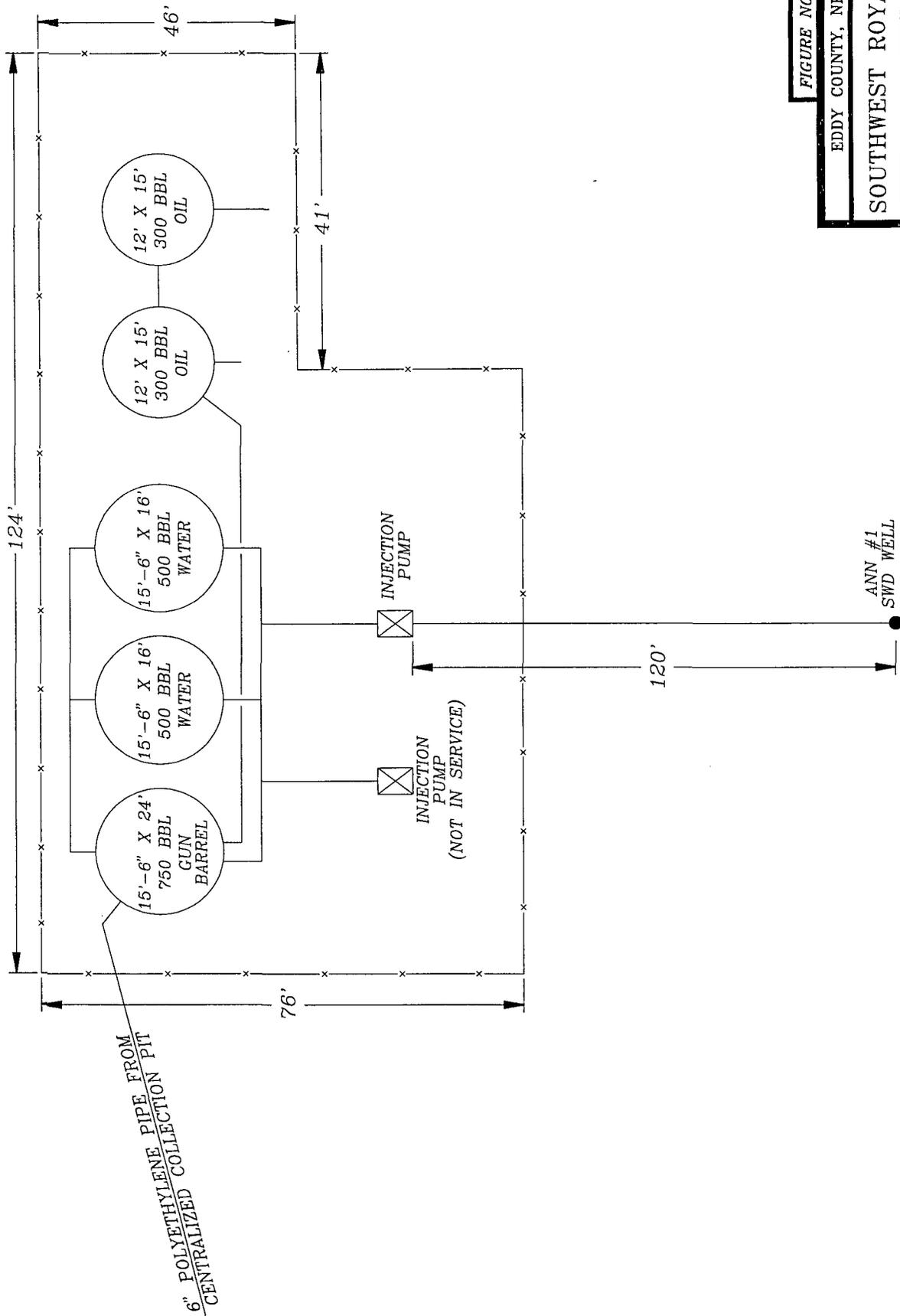
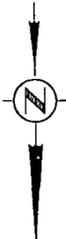


FIGURE NO. 6

EDDY COUNTY, NEW MEXICO

SOUTHWEST ROYALTIES, Inc.

ANN #1 SWD WELL & FACILITY  
SW/4, NE/4, SEC. 18, T19S, R26E

HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS

DATE: 5/27/94  
DWN. BY: R.C.P.  
FILE: 5-WEST-VI-M-RTV-RC-6

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**Westtech  
Laboratories  
Inc.**

The Quality People  
Since 1965

37 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594

CLIENT MARTIN WATER LABORATORIES, INC.  
1210 WEST SEALY  
MONAHANS, TX 79756

SAMPLE NO. : 6400539  
INVOICE NO. : 62140115  
REPORT DATE: 02-14-94  
REVIEWED BY: *AKH*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : Ann SWD  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: T.W. Elrod  
SUBMITTED BY .....: T.W. Elrod  
SAMPLE SOURCE ....: SWR  
ANALYST .....: C. Warner

AUTHORIZED BY : Sue Branam  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-11-94  
SUBMITTAL DATE : 02-12-94  
EXTRACTION DATE: --  
ANALYSIS DATE .: 02-12-94

Method 601/8010- Purgeable Halocarbons

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,1-Trichloroethane	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethane	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethane	<0.5	ug/L	0.5
1,1,2-Trichloroethane	<0.5	ug/L	0.5
1,1-Dichloroethane	<0.5	ug/L	0.5
1,1-Dichloroethene	<0.5	ug/L	0.5
1,2-Dichlorobenzene	<1.0	ug/L	1.0
1,2-Dichloroethane (EDC)	<0.5	ug/L	0.5
1,2-Dichloropropane	<0.5	ug/L	0.5
1,3-Dichlorobenzene	<1.0	ug/L	1.0
1,4-Dichlorobenzene	<1.0	ug/L	1.0
Bromodichloromethane	<1.0	ug/L	1.0
Bromoform	<1.0	ug/L	1.0
Bromomethane	<1.0	ug/L	1.0
Carbon tetrachloride	<0.5	ug/L	0.5
Chlorobenzene	<1.0	ug/L	1.0
Chloroethane	<1.0	ug/L	1.0
Chloroform	<0.5	ug/L	0.5
Chloromethane	<1.0	ug/L	1.0
cis 1,3-Dichloropropene	<0.5	ug/L	0.5
Dibromochloromethane	<1.0	ug/L	1.0
Dibromomethane	<1.0	ug/L	1.0
Dichlorodifluoromethane	<1.0	ug/L	1.0
Dichloromethane	<5.0	ug/L	5.0
trans 1,2-Dichloroethene	<1.0	ug/L	1.0
trans 1,3-Dichloropropene	<1.0	ug/L	1.0
Trichloroethene (TCE)	<0.5	ug/L	0.5
Trichlorofluoromethane	<1.0	ug/L	1.0
Vinyl chloride	<2.0	ug/L	2.0
2-Chloroethylvinyl ether	<15.0	ug/L	15.0

(1) Copy to Client

*[Signature]*  
Managing Director

CLIENT MARTIN WATER LABORATORIES, INC.  
1210 WEST SEALY  
MONAHAN, TX 79756

SAMPLE NO. : 6400539  
INVOICE NO. : 62140115  
REPORT DATE: 02-14-94  
REVIEWED BY: *X*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : Ann SWD  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: T.W. Elrod  
SUBMITTED BY .....: T.W. Elrod  
SAMPLE SOURCE ....: SWR  
ANALYST .....: C. Warner

AUTHORIZED BY : Sue Branam  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-11-94  
SUBMITTAL DATE : 02-12-94  
EXTRACTION DATE: --  
ANALYSIS DATE .: 02-12-94

Method 602 - Purgeable Aromatics

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,2-Dichlorobenzene	<1.0	ug/L	1.0
1,3-Dichlorobenzene	<1.0	ug/L	1.0
1,4-Dichlorobenzene	<1.0	ug/L	1.0
Benzene	9500	ug/L	1.0
Chlorobenzene	<1.0	ug/L	1.0
Ethylbenzene	280	ug/L	1.0
Toluene	2900	ug/L	1.0
Total Xylenes	380	ug/L	0.3

(1) Copy to Client

*[Signature]*  
Managing Director

**VII. Engineering Designs and Diagrams**

## Engineering Designs and Diagrams

The centralized surface collection pit was originally constructed in February, 1983 by Ralph Nix, a former operator of the facility. The Oil Conservation Division (OCD) administratively approved the operation of the pit on March 3, 1983 as per Administrative Order No. LP-104. The original engineering designs and diagrams were lost during several changes of ownership of the pit since 1983. The following description of the pit construction was taken from a copy of the application to operate the pit, submitted to the OCD Artesia office by Ralph Nix in February, 1983. A field inspection by Highlander Environmental on May 27, 1994 confirmed that the pit appears to have been constructed and operated in accordance with the OCD application (see Figures 4 and 5).

Design and Construction. The centralized collection pit is constructed of two pits with a common side. This is a built in safety factor in case one pit is leaking, the water can be transferred to the other. The pits are connected by an equalizer pipe with a shut-off valve. Both pits are exactly the same size and design. Dimensions of the pit ("A" and "B" - Figure 4) are 250' x 40' or 10,000 square feet each. The depth (top of levee to floor of pit) is 5 feet. A minimum 1 foot of freeboard is maintained, which gives 7124 bbls. of storage per pit. The pits were constructed by excavating and levelling a maximum of six inches below ground level. Excavation material was used to form the levees around the pit. Levees are constructed as to have an inside grade no steeper than 2:1. The levees also have an outside grade no steeper than 3:1. The top of the levee is flat and is at least 18 inches wide.

Type of Liner. The material used for the liner is Polyethylene with a thickness of 40 mil, manufactured by Gundle Lining Systems, Inc. The material is resistant to the following: sunlight, hydrocarbons, acids, alkalis, salt water, fungus. Joints in the material were fabricated in the field and heat fused to seal.

Leak Detection System. The drainage and sump method of leak detection is used. A network of 5" OD perforated PVC drainage pipes are present. They are placed with sufficient density that no point in the pit-bed is more than 20 feet from a drainage pipe. Slope for all drainage lines is at least six inches per 50 feet. All drainage lines are located on the outer perimeter of the pit and gather into an erosion proof sump. The sump is made of 12" OD PVC pipe with a cap on top, set from surface to a depth of 5'.

Preparation of Pit Bed for Installation of Liner. The bed of the pit and the inside grades of the levees are smooth and compacted and are free of holes, rocks, stumps, clods or any other debris which might rupture the liner. Drainage canals are dry and sloped. According to construction documents, slotted draining pipe was installed after the slope and direction of the drainage was approved by the OCD. A trench was dug on the top of the levee the entire perimeter of the pit to anchor the flexible liner. It is located nine inches out from the slope break and was a minimum of six inches deep.

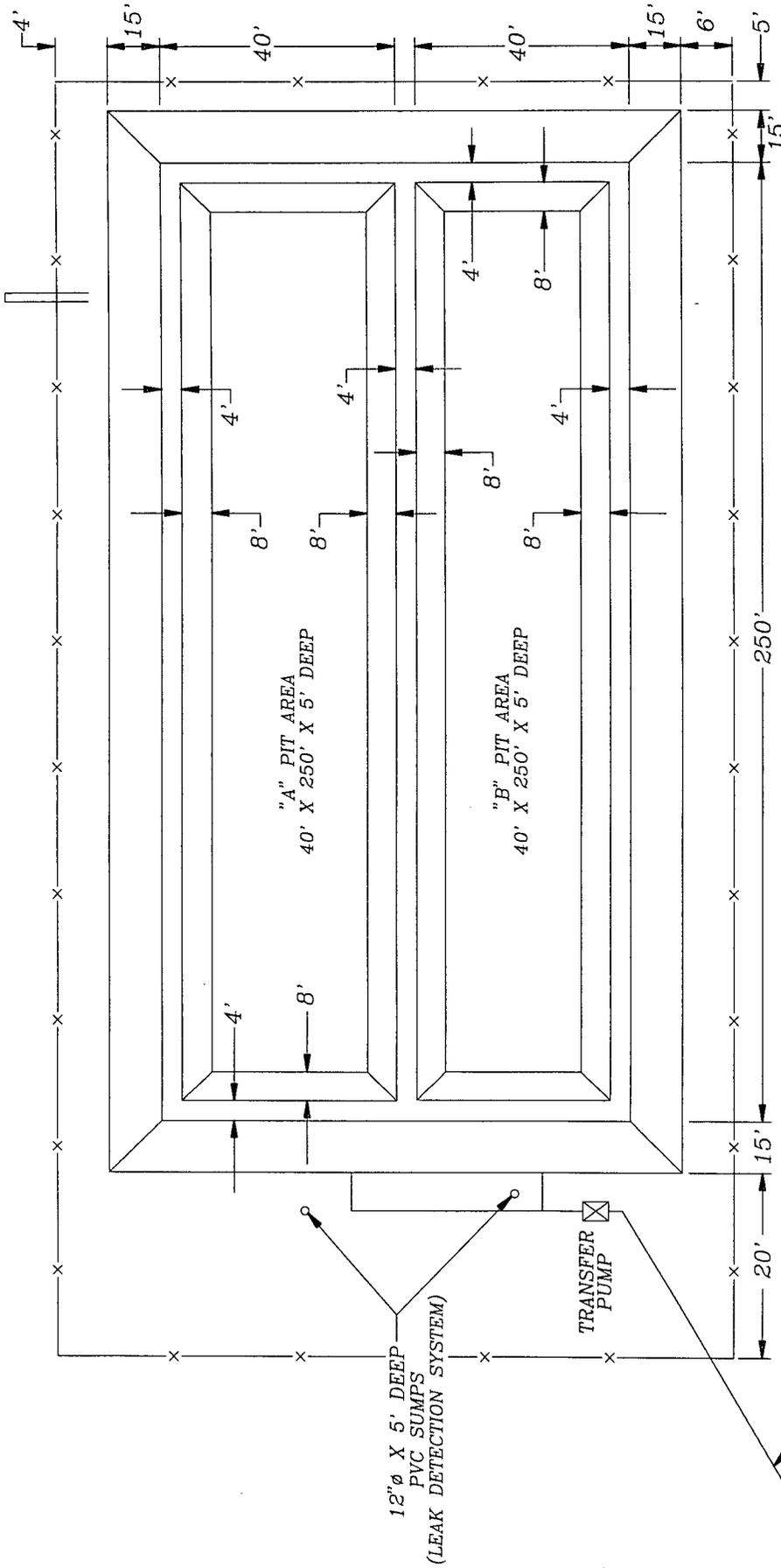
Installation of Flexible Membrane Liner. The liner was put in place after the leak detection system was installed and after the levee walls were inspected and approved by an OCD representative, according to construction documents. The pit liner was installed and joints sealed

according to manufacturer's specifications and with approval of a Commission representative. The liner was laid evenly and wrinkle free and rests smoothly on the pit-bed and inner face of the levees. It also extends down to the bottom of the anchor trench. An anchor of used pipe was placed over the liner in the anchor trench and then the trench was backfilled. The anchor extends the entire perimeter of the pit.

Netting and Sign. The pit is properly netted for migratory bird protection. An identification sign is posted in accordance with OCD requirements.

Security System. The pit is fenced with a 6 foot steel fence topped with barbed wire. The fence is of sufficient strength to keep livestock out of the facility. The gate will be closed and locked at all times when the facility is not manned.

PRODUCED WATER FROM  
SOUTHWEST ROYALTIES, Inc. LEASES



PLAN VIEW

6" POLYETHYLENE  
PIPE TO  
TRANSFER  
PUMP  
ANN #1 SWD FACILITY

NOTE: NETTING IS PLACED ON TOP OF  
4' HIGH PIPING AROUND PERIMETER  
OF PIT AREAS

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

SOUTHWEST ROYALTIES, Inc.

CENTRALIZED SURFACE  
COLLECTION PIT

NW/4, SE/4, SEC. 34, T18S, R26E

HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS

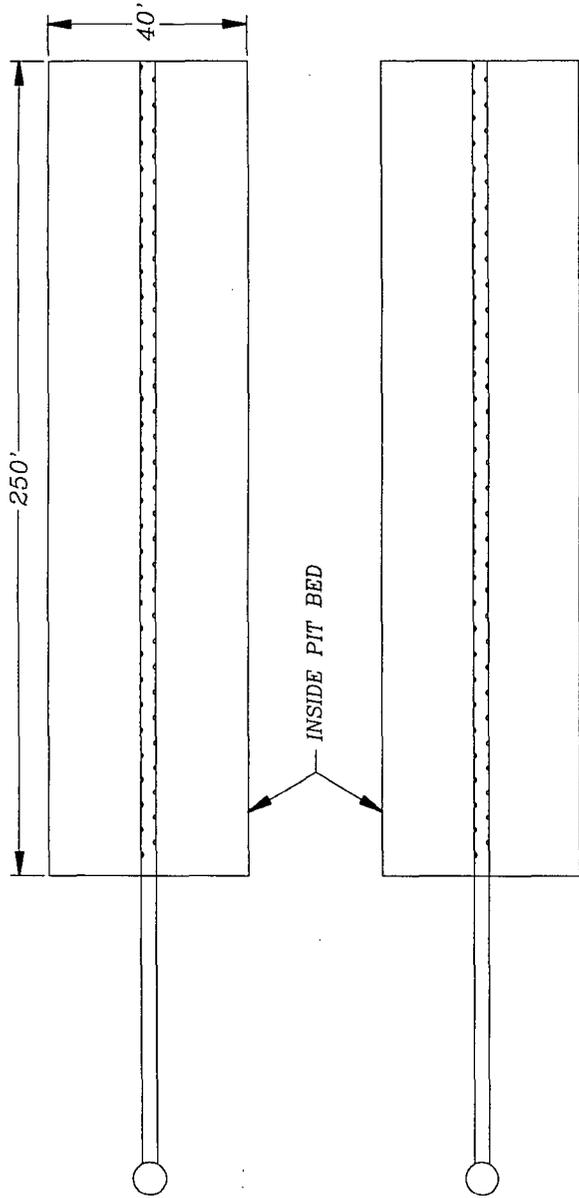
DATE: 5/27/94

DWN. BY: R.C.P.

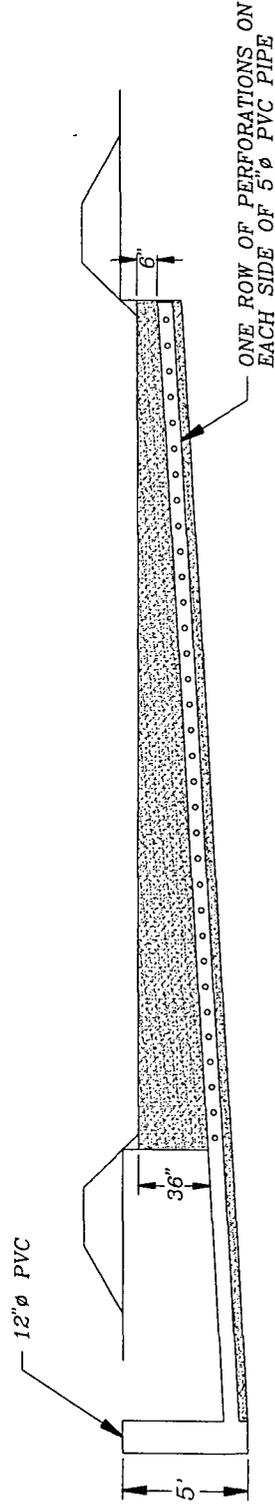
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5-MEX-NEW-SPR-PR-4

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PLAN VIEW



SIDE VIEW

**FIGURE NO. 5**

EDDY COUNTY, NEW MEXICO

**SOUTHWEST ROYALTIES, Inc.**

CENTRALIZED SURFACE  
COLLECTION PITS  
LEAK DETECTION SYSTEM

NW/4, SE/4, SEC. 34, T18S, R26E

HIGHLANDER ENVIRONMENTAL  
MIDLAND, TEXAS

DATE: 5/27/94  
DWN. BY: R.C.P.  
FILE: 5-MEX-104-101-02-4

NOT TO SCALE

**VIII. Contingency Plan for Reporting and  
Clean-up of Spills or Releases**

## Contingency Plan for Reporting and Cleanup of Spills or Releases

If a leak is detected by the leak detection system, the following contingency plan will be followed:

1. The incoming water will be shut-off at its source or will be diverted and trucked to Southwest Royalties Ann #1 SWD facility and/or commercial SWD facility.
2. The fluids in the leak detection system will be pumped into the unleaking pit or will be trucked out to the Ann #1 SWD facility and/or commercial SWD facility.
3. A sample of water from the leak detection system will be tested and compared to pit water analysis.
4. The leaking pit will be emptied until the water level is below the leak.
5. The liner will be repaired according to the manufacturer's recommendations. The pit will then be placed back in operation.

The leak detection system will be the only means in which leaks are to be detected. The leak detection sumps will be inspected daily during pit fill up and weekly thereafter.

**IX. Inspection and Maintenance Plan**

## Inspection and Maintenance Plan

The leak detection sumps will be checked daily during pit fill up and weekly thereafter. The dikes will be inspected monthly for erosion. Repairs will be made as needed. The sump and dike inspection reports will be maintained at the pumper's doghouse located at the facility and at Southwest Royalties Monahans, Texas field office.

X. Closure Plan

## Closure Plan

If the centralized surface collection pit is operated by Southwest Royalties at the time of pit closure, the following pit closure plan will be implemented:

1. The produced water at the pit will be emptied and disposed of properly.
2. The pit liner will be removed and disposed of at an approved offsite disposal facility.
3. The leak detection system will be removed and disposed of properly.
4. Confirmatory soil samples will be collected under the pit area and tested for contaminants such as TPH, BTEX, Chlorides, etc.
5. If no contamination is indicated, the pit will be backfilled with clean soil and levelled to surrounding grade.
6. Upon completion of pit closure, a report will be sent to the OCD.
7. If contamination is indicated, an investigation will be performed to delineate the contamination both horizontally and vertically. A remedial action plan will be submitted to the OCD for approval prior to clean-up of the pit site.

**XI. Geology and Hydrology**

## Hydrology and Geology

HYDROLOGIC FEATURES According to the USGS 7.5 minute topographic maps, Dayton and Lake McMillan North, New Mexico, there are no intermittent or perennial streams, water sources, or ground water discharge sites within a one mile radius of the perimeter of this facility. The only bodies of water noted on the topographic maps are three small rectangular ponds shown in the northern half of Section 2, northern half of Section 34 and the western half of Section 34. It is unknown if these are stock ponds or old reserve pit locations and whether or not they are still in use. The centralized collection pit location is approximately two miles west of the west channel of the Pecos River.

According to published reports and information gained through the New Mexico State Engineer's office, the depth to ground water is likely to be 75' to 100' below the surface in this area. The total dissolved solids of a well located in Section 33 were reported as 1144 mg/l. The hydraulic gradient in this region should be generally east-southeast towards the Pecos River and McMillan Reservoir.

SOILS According to the USDA Soil Conservation Service Soil Survey of Eddy County, New Mexico, the pit site is located on soils of the Reagan Series with soils of the Pima and Upton Series adjacent. Reagan loam typically consists of about 8" of brown loam overlying 24" of light brown loam and heavy loam. The underlying soils extend to a depth of more than 60" and are enriched with calcium carbonate. These soils are typically uneroded or, only slightly eroded with slow runoff, moderate permeability and high water-holding capacity.

Pima soils are typically light brownish gray silt loam in the upper 3 inches overlaying 60" or more of brown or light brown silty clay loam. Upton soils typically have a surface layer of grayish-brown gravelly loam about 3" thick. The next layer, about 6" thick is brown, gravelly loam. Fractured platy, indurated caliche is found at a depth of about 9".

FLOOD PROTECTION Based upon the topographic location of this pit with respect to the surrounding region, the chance for flooding is minimal. The pit is constructed with a dike which is 4.5' above grade and will be maintained with a minimum 1' of freeboard. The pit will be regularly inspected.

Based upon review of the topographic maps, this site is well outside the 100 year flood plain.

**XII. Proof of Notice**

**Proof of Notice**

The notice requirements of OCD Rule 711 do not apply to this facility since it is not a commercial facility. Only produced water from Southwest Royalties operated wells (as listed in Section VI) is handled at the facility.

**XIII: H<sub>2</sub>S Contingency Plan**

## Hydrogen Sulfide Contingency Plan

Attached is a copy of H<sub>2</sub>S contingency plan prepared by Indian Fire and Safety, Inc. of Hobbs, New Mexico for the pit site.



**INDIAN**  
fire and safety, inc.

TELEPHONE (505) 393-3093 or (505) 397-3884 — 1-800-530-8693  
3317 WEST COUNTY ROAD • P.O. BOX 1306  
HOBBS, N.M. 88241-1306

**HYDROGEN SULFIDE CONTINGENCY PLAN**

SOUTHWEST ROYALTIES INC.  
MERRI LEASE SWD PIT (ANN SWD)  
SECTION 34 - TOWNSHIP 18S - RANGE 26E  
NW 1/4 SE 1/4  
EDDY COUNTY NEW MEXICO

*PREPARED BY;*  
*INDIAN FIRE AND SAFETY, INC.*  
*3317 WEST COUNTY ROAD*  
*HOBBS, NEW MEXICO*  
*1-800-530-8693*

6/20/94

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THIS PIT IS CURRENTLY BEING USED TO HOLD PRODUCED WATER PRYOR TO IT BEING INJECTED INTO THE "ANN" SALT WATER DISPOSAL WELL THAT IS ADJACENT TO IT. THE PRODUCED WATER IS PUMPED INTO IT FROM THE AREA WELLS AND CONTAINS NO GAS PRESSURE OR OIL (EXCEPT RESIDUAL OIL) WHICH HAS BEEN SEPERATED OUT. THE PIT ALSO PROVIDES PROTECTION TO AREA WILDLIFE BY BEING COVERED WITH A NET APPROXIMATELY 4 FEET HIGH WITH SUPPORTS, AND AROUND THE PERIMETER OF THE PIT. A LEAK DETECTION SYSTEM IS IN PLACE BELOW THE LINING OF THE PIT TO DETECT CONTAMINATION TO THE SOIL AND THEREBY CONTAMINATION CAN BE PREVENTED. THIS PIT IS BEING USED TO NO OTHER PURPOSE.

## HYDROGEN SULFIDE CONTINGENCY PLAN

### SCOPE

THIS CONTINGENCY PLAN ESTABLISHES GUIDELINES FOR THE PUBLIC, ALL COMPANY EMPLOYEES AND CONTRACT EMPLOYEES WHOSE WORK ACTIVITIES MAY INVOLVE EXPOSURE TO HYDROGEN SULFIDE (H<sub>2</sub>S) GAS.

### OBJECTIVE

1. PREVENT ANY AND ALL ACCIDENTS, AND PREVENT THE UNCONTROLLED RELEASE OF HYDROGEN SULFIDE INTO THE ATMOSPHERE.
2. PROVIDE PROPER EVACUATION PROCEDURES TO COPE WITH EMERGENCIES.
3. PROVIDE IMMEDIATE AND ADEQUATE MEDICAL ATTENTION SHOULD AN INJURY OCCUR.

## H2S CONTINGENCY PLAN

### DISCUSSION

SUSPECTED PROBLEM: H2S AT THE PIT AND THE POSSIBILITY OF H2S IN THE ATMOSPHERE.

IMPLEMENTATION: THIS PLAN, WITH ALL DETAILS, IS TO BE FULLY IMPLEMENTED IMMEDIATELY.

EMERGENCY RESPONSE PROCEDURE: THIS SECTION OUTLINES THE CONDITIONS AND DENOTES STEPS TO BE TAKEN IN THE EVENT OF AN EMERGENCY.

EMERGENCY EQUIPMENT AND PROCEDURES: THIS SECTION OUTLINES THE SAFETY AND EMERGENCY EQUIPMENT THAT WILL BE REQUIRED.

TRAINING PROVISIONS: THIS SECTION OUTLINES THE TRAINING REQUIRED AND ADHERED TO.

EMERGENCY CALL LISTS: INCLUDED ARE THE TELEPHONE NUMBERS OF ALL PERSONS TO BE CONTACTED SHOULD AN EMERGENCY EXIST.

BRIEFING : THIS SECTION INVOLVES THE BRIEFING OF PERSONNEL AND PUBLIC THAT ARE IN THE RADIUS OF EXPOSURE.

CHECK LISTS: THESE ARE INCLUDED TO INSURE ADHERENCE TO THIS PLAN.

GENERAL INFORMATION: SUPPLIES SUPPORT INFORMATION.

H2S SURVEY REPORT FOR:

SOUTHWEST ROYALTY

Mr. Steve Garner

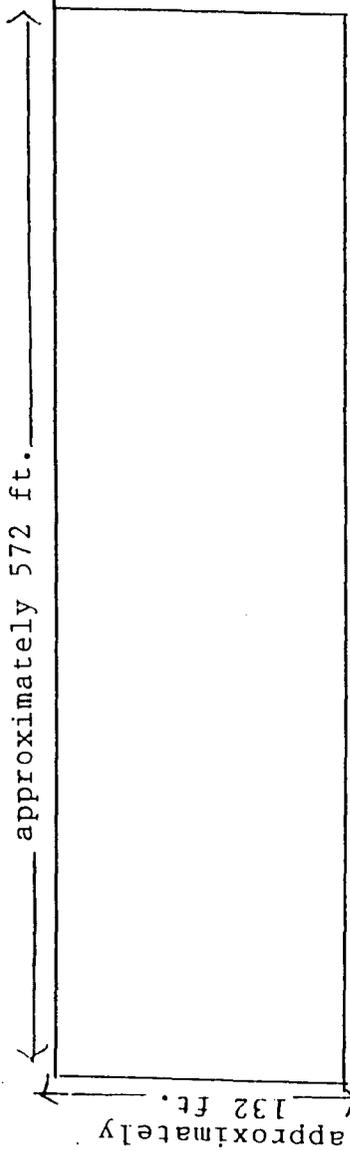
FAX #915-943-6463

On February 14, 1994, Jerry Caudill with Indian Fire and Safety, surveyed this pit to determine H2S concentrations. The pit atmosphere was sampled at all four corners using sensidyne 4L H2S tubes. The weather conditions were damp and cloudy with approximately 12 mile per hour winds blowing out of the South.

This pit is fenced with cyclone fencing, barbed wire at the top and covered with netting which discourages encroachment.

ANN SWD

approximately 572 ft.



H2S Values = 0 PPM (at every sampling point)

H2S CONTINGENCY PLAN

EMERGENCY REACTION STEPS

- A. IN THE EVENT OF ANY EVIDENCE OF H2S LEVEL ABOVE 10 PPM, TAKE THE FOLLOWING STEPS:
1. SECURE BREATHING EQUIPMENT.
  2. ORDER NON-ESSENTIAL PERSONNEL OUT OF DANGER ZONE.
  3. TAKE STEPS TO DETERMINE IF THE H2S LEVEL CAN BE CORRECTED OR SUPPRESSED AND IF SO, PROCEED IN NORMAL OPERATION.
- B. IF UNCONTROLLABLE CONDITIONS OCCUR:
1. TAKE STEPS TO PROTECT AND/OR REMOVE ANY PUBLIC IN THE DOWNWIND AREA FROM THE LOCATION WITHIN 1/2 MILE RADIUS. NOTIFY NECESSARY PUBLIC SAFETY PERSONNEL AND THE NEW MEXICO OIL CONSERVATION DIVISION OF THE SITUATION.
  2. REMOVE ALL PERSONNEL TO SAFE BREATHING AREA.
  3. NOTIFY PUBLIC SAFETY PERSONNEL TO HELP MAINTAIN ROAD BLOCKS.
  4. PROCEED WITH BEST PLAN AT THE TIME TO REGAIN CONTROL OF THE SITUATION. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.
- C. RESPONSIBILITY:
1. APPROVED SUPERVISOR IS STEVE GARNER.
    - A. SHALL BE RESPONSIBLE FOR THE TOTAL IMPLEMENTATION OF THIS PLAN.
    - B. SHALL BE IN COMPLETE COMMAND DURING ANY EMERGENCY.
    - C. SHALL DESIGNATE A BACK UP.
    - D. SHALL BRIEF ALL PERSONNEL INVOLVED.

P. O. BOX 1488  
 MCNAHANS, TEXAS 79709  
 PH. 843-3334 OR 843-1040

Martin Water Laboratories, Inc.

709 W. INDIANA  
 MIDLAND, TEXAS 79701  
 PHONE 683-4981

RESULT OF WATER ANALYSES

TO: Mr. Steve Garner LABORATORY NO. 29478  
P. O. Box 11390, Midland, TX 79702 SAMPLE RECEIVED 2-11-94  
 RESULTS REPORTED 2-14-94

COMPANY Southwest Royalties, Inc. LEASE Merril Lease SWD Pit (Ann SWD)

FIELD OR POOL \_\_\_\_\_  
 SECTION 34 BLOCK \_\_\_\_\_ SURVEY T-1884R-26E COUNTY Eddy STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:  
 NO. 1 Disposal water - taken from pit.  
 NO. 2 \_\_\_\_\_  
 NO. 3 \_\_\_\_\_  
 NO. 4 \_\_\_\_\_

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1298			
pH When Sampled				
pH When Received	6.93			
Bicarbonates as HCO <sub>3</sub>	427			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	9.800			
Calcium as Ca	3.120			
Magnesium as Mg	486			
Sodium and/or Potassium	71.850			
Sulfate as SO <sub>4</sub>	3.291			
Chloride as Cl	115.051			
Iron as Fe	0.81			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	194.225			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	90.0			
Resistivity, ohm-cm at 77° F.	0.059			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filled, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

By Waylan C. Martin, M.A.

DISCUSSION OF RESULTS OF  
WATER ANALYSIS

THE WATER ANALYSIS BY MARTIN WATER LABORATORIES (PREVIOUS PAGE) REFLECTS 90 PARTS PER MILLION HYDROGEN SULFIDE IN THE WATER. OSHA REGULATIONS STATE THAT A WORKER CAN BE EXPOSED TO 10 PARTS PER MILLION FOR AN 8 HOUR DAY. HOWEVER, THESE VALUES DO NOT REFLECT AMBIENT (AIR BORNE) EMISSIONS, WHICH WOULD BE THE CONCERN FOR THE SAFETY OF THE WORKERS AND THE PUBLIC. BUT THIS PIT HAS BEEN SURVEYED AT ALL FOUR CORNERS, DAILY, BY THE PUMPER USING AN H<sub>2</sub>S MONITOR, FOR THREE WEEKS PRIOR TO THE WRITING OF THIS CONTINGENCY PLAN AND NO EMISSIONS OF HYDROGEN SULFIDE HAVE BEEN DETECTED. WITHOUT GAS PRESSURE THIS SHOULD BE THE RESULTS EXPECTED FOR EACH TEST. BUT THERE MAY BE A NOMINAL SMELL OR STINK DUE TO THE PRODUCED WATER AND SULFER CONTENT. THIS SHOULD NOT POSE A HAZARD TO THE PERSONNEL OR PUBLIC, PROVIDED THERE IS NOTHING DONE TO MAKE THE GAS BREAK OUT ie.. STIRRING, MIXING OR GASEOUS EMISSIONS ADDED TO THE PIT. AT THE TIME OF THIS WRITING THERE WERE NONE OF THESE OCCURENCES, TO THE BEST OF THIS WRITERS KNOWLEDGE AND BELIEF.

## H2S CONTINGENCY PLAN

### TRAINING REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H<sub>2</sub>S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE LOCATION WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING;

1. HAZARDS AND CHARACTERISTICS OF H<sub>2</sub>S
2. PHYSICAL EFFECTS OF H<sub>2</sub>S ON THE HUMAN BODY
3. TOXICITY OF H<sub>2</sub>S AND SULFUR DIOXIDE
4. H<sub>2</sub>S DETECTION
5. EMERGENCY RESCUE
6. RESUSCITATORS
7. FIRST AID AND ARTIFICIAL RESPIRATION
8. EFFECTS OF H<sub>2</sub>S ON METALS
9. LOCATION SAFETY

### SERVICE COMPANY AND VISITING PERSONNEL

- A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H<sub>2</sub>S.
- B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELL SITE.
- C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A WELLSITE BRIEFING.

H2S CONTINGENCY PLAN  
EMERGENCY EQUIPMENT REQUIREMENTS

TYPE AND SETUP;

1. SIGNS

- A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING LANGUAGE;

\_\_\_\_\_ (LEASE) \_\_\_\_\_  
CAUTION - POTENTIAL POISON GAS  
HYDROGEN SULFIDE  
NO ADMITTANCE WITHOUT AUTHORIZATION

2. WIND SOCK - WIND STREAMERS;

- A. AT LEAST ONE PERMANENT WIND DIRECTION INDICATOR SHALL BE INSTALLED SO THAT WIND DIRECTION CAN BE EASILY DETERMINED AT OR APPROACHING THE LOCATION.

3. H2S DETECTION AND ALARMS;

- A. PERSONAL H2S MONITORS/DETECTORS SHALL BE PROVIDED FOR THE PUMPER AND ALL PERSONNEL CONTRACTOR OR OTHERWISE WHILE WORKING AT THIS LOCATION.  
B. PERMANENT H2S MONITOR WITH ALARM SHALL BE INSTALLED SHOULD THE SUSTAINED AMBIENT CONCENTRATION OF H2S OR SO2 REACH 10PPM(H2S) OR 2PPM(SO2) AT OR NEAR ANY OCCUPIED RESIDENCE, SCHOOL, CHURCH, PARK, PLAYGROUND, SCHOOL BUS STOP, PLACE OF BUSINESS, OR OTHER AREAS WHERE THE PUBLIC COULD REASONABLY BE EXPECTED TO FREQUENT.

4. CONDITION FLAGS;

- A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE DISPLAYED TO DENOTE CONDITIONS WHEN PERFORMING WORK THAT COULD REASONABLY BE EXPECTED TO CONDITION OR CAUSE THE RELEASE OF H2S AT OR IN EXCESS OF 10PPM.

GREEN= NORMAL CONDITIONS  
YELLOW= POTENTIAL DANGER  
RED= DANGER H2S PRESENT

- B. CONDITION FLAG SHALL BE POSTED AT LOCATION ENTRANCE.

5. EMERGENCY BREATHING AIR EQUIPMENT;

A. PROPER PROTECTIVE BREATHING APPARATUS IN ACCORDANCE WITH ANSI STANDARD Z.88.2-1980 SHALL BE PROVIDED FOR PUMPER AND OTHER PERSONNEL WORKING AT OR NEAR THE LOCATION CONTAINING H<sub>2</sub>S. ESCAPE AND PRESSURE DEMAND TYPE BREATHING APPARATUS SHALL BE PROVIDED FOR WORKING IN, AND ESCAPE FROM, H<sub>2</sub>S CONTAINING ATMOSPHERES. 30 MINUTE RESCUE TYPE SCBA'S SHALL BE TO PREFORM RESCUE ON PERSON'S OVERCOME BY H<sub>2</sub>S.

6. AUXILIARY RESCUE EQUIPMENT;

A. STRETCHER  
B. 100' LENGTH OF 5/8" NYLON ROPE.

7. FIRE EXTINGUISHER;

A. ADEQUATE FIRE EXTINGUISHERS SHALL BE PROVIDED TO THE PUMPER AND PERSONNEL WORKING AT THIS SITE.

8. COMMUNICATIONS;

A. RADIO COMMUNICATIONS WILL BE AVAILABLE IN THE VEHICLES ON LOCATION.

9. CONTINGENCY PLAN;

A. THIS CONTINGENCY PLAN SHALL BE MADE AVAILABLE TO ALL PERSONNEL ON LOCATION WHEN PERFORMING WORK THAT MIGHT CAUSE THE RELEASE OF H<sub>2</sub>S, AND KEPT WITH THE PUMPER WHO MAY BE PRESENT AT THE LOCATION DAILY.

H2S CONTINGENCY PLAN

GENERAL EVACUATION PLAN

THE DIRECT LINES OF ACTION PREPARED BY INDIAN FIRE AND SAFETY INC. TO PROTECT THE PUBLIC FROM HAZARDOUS GAS SITUATION ARE AS FOLLOWS;

1. WHEN THE COMPANY APPROVED SUPERVISOR DETERMINES THE H2S GAS CANNOT BE LIMITED TO THE WELL LOCATION AND THE PUBLIC WILL BE INVOLVED, HE WILL ACTIVATE THE EVACUATION PLAN. ESCAPE ROUTES ARE NOTED ON AREA MAP.

2. THE SUPERVISOR OR DESIGNEE WILL NOTIFY LOCAL GOVERNMENT AGENCY THAT A HAZARDOUS CONDITION EXISTS AND EVACUATION NEEDS TO BE IMPLEMENTED.

3. COMPANY SAFETY PERSONNEL OR REPRESENTATIVE THAT HAVE BEEN TRAINED IN THE USE OF H2S DETECTION EQUIPMENT AND SELF CONTAINED BREATHING EQUIPMENT, WILL MONITOR H2S CONCENTRATIONS, WIND DIRECTIONS, AND AREA OF EXPOSURE. THEY WILL DELINEATE THE OUTER PERIMETER OF THE HAZARDOUS GAS AREA. EXTENSION TO THE EVACUATION AREA WILL BE DETERMINED FROM INFORMATION GATHERED.

4. LAW ENFORCEMENT PERSONNEL (STATE POLICE, POLICE DEPT., FIRE DEPT., AND SHERIFF'S DEPT.) WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. THEY WILL ALSO AID IN THE EVACUATION OF THE PUBLIC IF NECESSARY.

IMPORTANT;

LAW ENFORCEMENT PERSONNEL WILL NOT BE ASKED TO COME INTO A CONTAMINATED AREA. THEIR ASSISTANCE WILL BE LIMITED TO UNCONTAMINATED AREAS. CONSTANT RADIO CONTACT WILL BE MAINTAINED WITH THEM.

5. AFTER THE DISCHARGE OF GAS HAS BEEN CONTROLLED, COMPANY SAFETY PERSONNEL WILL DETERMINE WHEN THE AREA IS SAFE FOR RE-ENTRY.

\* ALSO SEE EMERGENCY REACTION PLAN! \*

WHAT TO DO

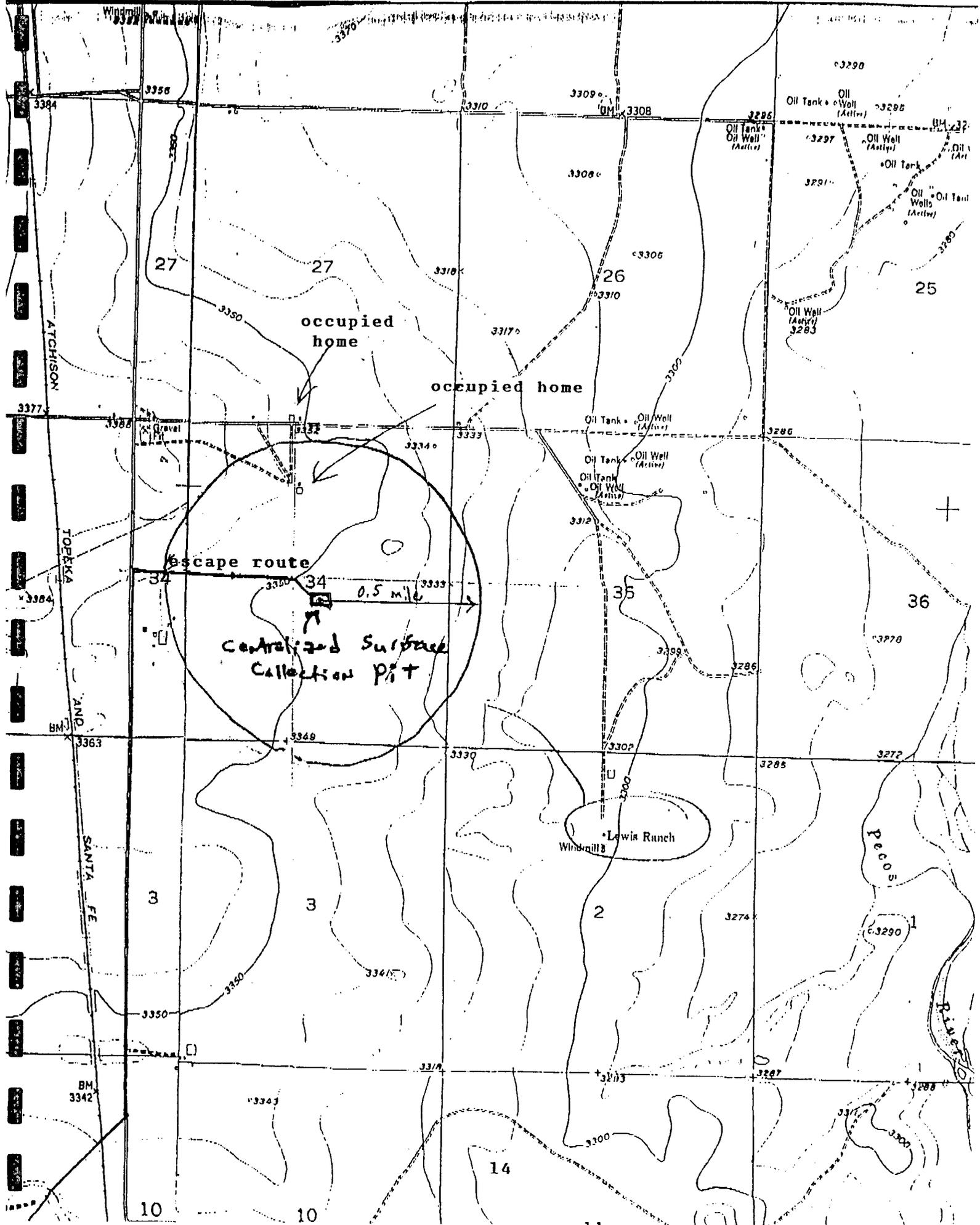
ANYONE  
EMERGENCY ACTION CHECKLIST

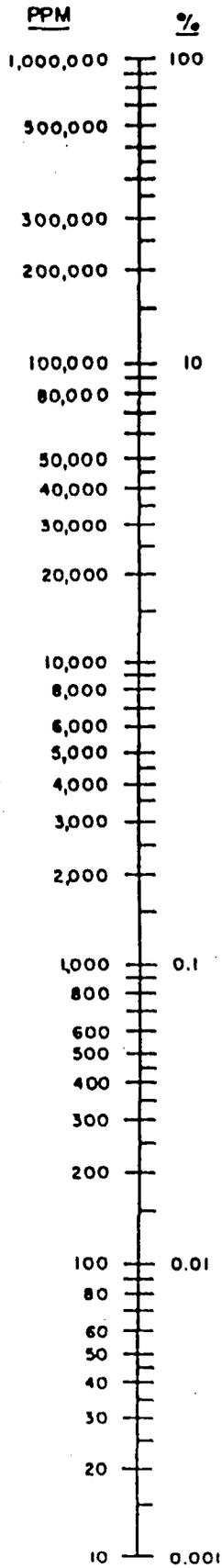
1. IF EMERGENCY: EVACUATE ALL PERSONNEL IF POSSIBLE.
2. IF EMERGENCY: IF SOUR GAS - EVACUATE RIG PERSONNEL.
3. IF EMERGENCY: IF SOUR GAS - EVACUATE PUBLIC WITHIN 1 HR RADIUS OF EXPOSURE.
4. IF EMERGENCY: DON SCBA AND RESCUE.
5. IF EMERGENCY: CALL 911 FOR EMERGENCY HELP (FIRE DEPT., AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.
6. IF EMERGENCY: GIVE FIRST AID.

PERSON DOWN LOCATION/FATALITY

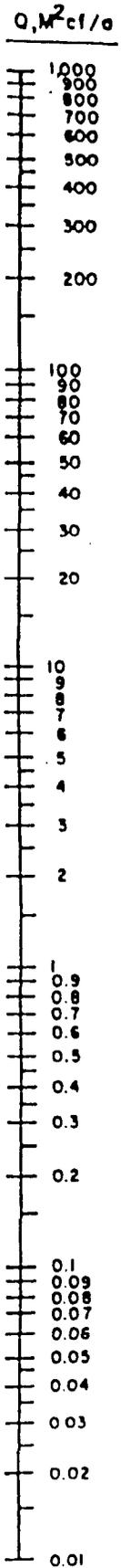
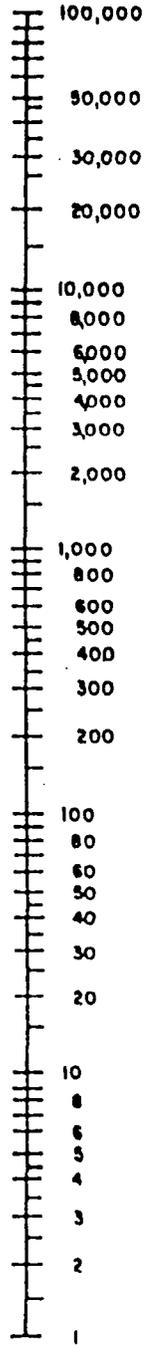
1. IF IMMEDIATELY POSSIBLE, CONTACT 911 (FOR AMBULANCE, ETC.). GIVE LOCATION AND WAIT FOR CONFIRMATION.
2. DON SCBA AND RESCUE.







HYDROGEN SULFIDE  
 500 PPM EXPOSURE RADIUS  
 FEET



At X = 50 Ft.  
 Q = 1140.9  
 PPM

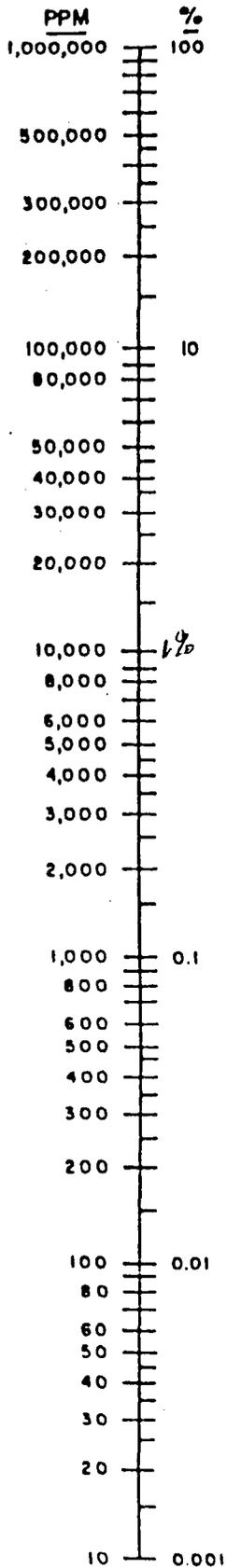
500 PPM Radius of Exposure in Feet = X

$$X = [(0.4546)(\text{Mole Fraction})(\text{Escape Rate})]^{0.6258}$$

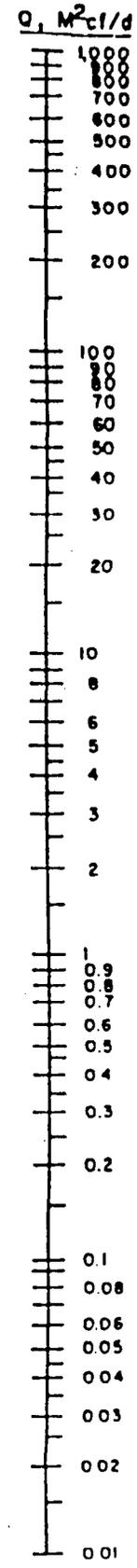
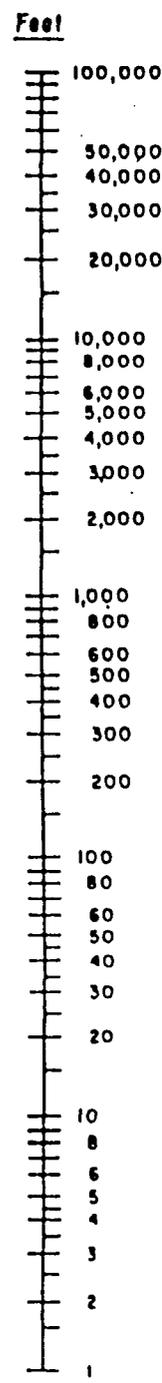
$$X = [(0.4546)(\text{PPM} \times 10^6)(Q \times 10^6 \text{ cu. ft.})]^{0.6258}$$

Wind velocity = 1 mph; Plume is shape of H<sub>2</sub>S dispersion.

Pressure base 14.65 psia, T<sub>b</sub> = 60°F



**HYDROGEN SULFIDE  
100 PPM EXPOSURE RADIUS**



At X = 3000 Ft.  
Q = 226,547 PPM

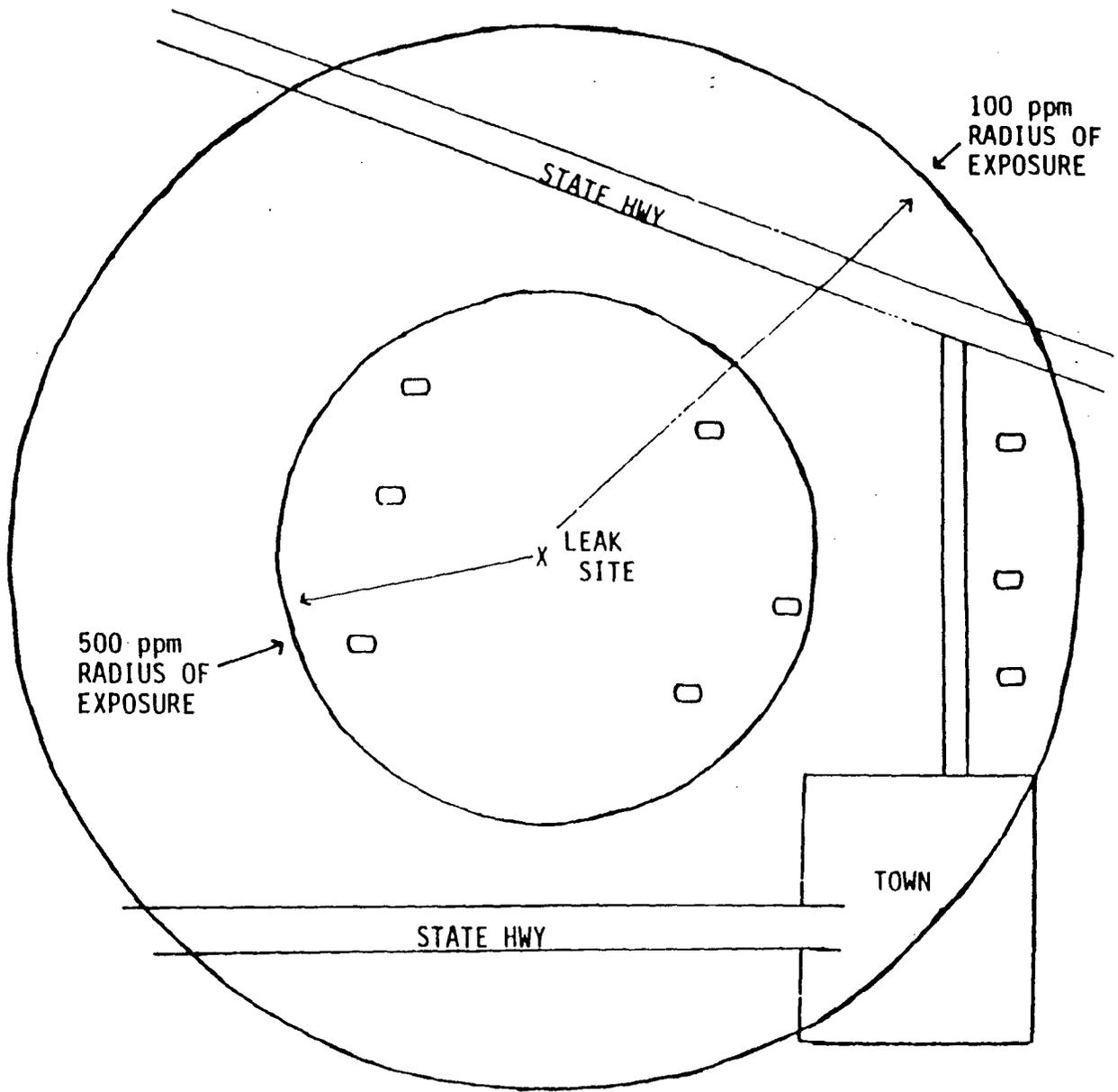
At X = 50 Ft.  
Q = 326.4 PPM

Below 100 PPM  
Rule 36 N.A.

100 PPM Radius of Exposure In Feet = X  
 $X = [(1.589)(\text{Mole Fraction})(\text{Escape Rate})]^{0.6258}$   
 $= [(1.589)(\text{PPM})(Q \text{ In } M^2/d)]^{0.6258}$

P<sub>b</sub> 14.65 psia T 60 °F

EXAMPLES OF DISPERSION PROBLEMS



□ DWELLING

GENERAL INFORMATION

TOXIC EFFECTS OF HYDROGEN SULFIDE

HYDROGEN SULFIDE IS EXTREMELY TOXIC. THE ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE IS 10 PPM, WHICH IS .001% BY VOLUME. HYDROGEN SULFIDE IS HEAVIER THAN AIR (SPECIFIC GRAVITY - 1.192) AND COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 AND 46.0 PERCENT BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE AND SIX TIMES MORE TOXIC THAN CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE TABLE II.

TABLE I  
TOXICITY OF VARIOUS GASES

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY (SC=1)	THRESHOLD LIMIT 1.	HAZARDOUS LIMIT 2	LETHAL CONCENTRATION 3
HYDROGEN CYANIDE	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
HYDROGEN SULFIDE	H <sub>2</sub> S	1.18	10 PPM <sup>4</sup> 20 PPM <sup>5</sup>	250 PPM/HR	600 PPM
SULFUR DIOXIDE	SO <sub>2</sub>	2.21	5 PPM	-----	1000 PPM
CHLORINE	CL <sub>2</sub>	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON MONOXIDE	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
CARBON DIOXIDE	CO <sub>2</sub>	1.52	5000 PPM	5%	10%
METHANE	CH <sub>4</sub>	0.55	90,000 PPM	(9%) COMBUSTIBLE ABOVE 5% IN AIR	

(CONTIUED ON NEXT PAGE)

- 1 THRESHOLD LIMIT - CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.
- 2 HAZARDOUS LIMIT - CONCENTRATION THAT MAY CAUSE DEATH.
- 3 LETHAL CONCENTRATION - CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.
- 4 THRESHOLD LIMIT - 10 PPM - 1972 ACGIH (AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS).
- 5 THRESHOLD LIMIT - 10 PPM - 1989 ANSI ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE (BASED ON 40-HR WEEK) IS 10 PPM. OSHA RULES AND REGULATIONS (FEDERAL REGISTER, VOLUME 37, NO. 202, PART II, DATED 02/01/89).

TOXIC EFFECTS OF HYDROGEN SULFIDE  
PAGE 2

TABLE II  
PHYSICAL EFFECTS OF HYDROGEN SULFIDE\*

<u>PERCENT (%)</u>	<u>CONCENTRATION</u>		<u>PHYSICAL EFFECTS</u>
	<u>PPM</u>	<u>GRAINS</u> <u>100 STD. FT3**</u>	
0.001	10	.65	OBVIOUS AND UNPLEASANT ODOR. SAFE FOR 8 HRS EXPOSURE.
0.002	20	1.30	KILLS SMELL IN 3 - 15 MIN.
0.01	100	6.48	MAY STING EYES AND THROAT. KILLS SMELL SHORTLY; STINGS EYES AND THROAT.
0.02	200	12.96	DIZZINESS; BREATHING CEASES IN A FEW MIN.; NEEDS PROMPT ARTIFICIAL RESPIRATION.
0.05	500	32.96	UNCONSCIOUS QUICKLY; DEATH WILL RESULT IF NOT RESCUED PROMPTLY.
0.07	700	45.36	UNCONSCIOUS AT ONCE; FOLLOWED BY DEATH WITHIN MINUTES.
0.10	1000	64.80	

\* CAUTION: HYDROGEN SULFIDE IS A COLORLESS AND TRANSPARENT GAS AND IS FLAMMABLE. IT IS HEAVIER THAN AIR AND MAY ACCUMULATE IN LOW PLACES.

\*\* AT 15.00 PSIA AND 60'F.

## GENERAL INFORMATION

### THE USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA'S.
2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RANDOM TO INSURE THAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.
3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR IT IN A TEST ATMOSPHERE. (NOTE: SUCH ITEMS AS FACIAL HAIR (BEARD OR SIDEBURNS) AND EYEGLASSES WILL NOT ALLOW PROPER SEAL.) ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WEAR EYEGLASSES. CONTACT LENSES SHOULD NOT BE ALLOWED.
4. MAINTENANCE AND CARE OF SCBA'S:
  - A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:
    1. INSPECTION FOR DEFECTS, INCLUDING LEAK CHECKS.
    2. CLEANING AND DISINFECTING.
    3. REPAIR.
    4. STORAGE.
  - B. INSPECTION: SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY FOR THE FOLLOWING PERMANENT RECORD KEPT OF THESE INSPECTIONS.
    1. FULLY CHARGED CYLINDERS.
    2. REGULATOR AND WARNING DEVICE OPERATION.
    3. CONDITION OF FACE PIECE AND CONNECTIONS.
    4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.
  - C. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED.

THE USE OF SELF-CONTAINED BREATHING EQUIPMENT  
PAGE 2

5. PERSON ASSIGNED TASK THAT REQUIRES USE OF SELF-CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.
6. SCBA'S SHOULD BE WORN WHEN:
  - A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TET REVEALS LESS THAN 10 PPM OF H<sub>2</sub>S.
  - B. WHEN BREAKING OUT ANY LINE WHERE H<sub>2</sub>S CAN REASONABLY BE EXPECTED.
  - C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H<sub>2</sub>S EXISTS.
  - D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H<sub>2</sub>S HAS BEEN DETECTED.
  - E. AT ANY TIME THERE IS A DOUBT AS TO THE H<sub>2</sub>S LEVEL IN THE AREA TO BE ENTERED.

GENERAL INFORMATION

RESCUE - FIRST AID  
FOR HYDROGEN SULFIDE POISONING

DO NOT PANIC!

REMAIN CALM - THINK

1. HOLD YOUR BREATH. (DO NOT INHALE; STOP BREATHING.)
2. PUT ON BREATHING APPARATUS.
3. REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. (GO UP WIND FROM SOURCE OR AT RIGHT ANGLES TO THE WIND; NOT DOWNWIND.)
4. BRIEFLY APPLY CHEST PRESSURE - ARM LIFT METHOD OF ARTIFICIAL RESPIRATION TO CLEAN THE VICTIM'S LUNGS AND TO AVOID INHALING ANY TOXIC GAS DIRECTLY FROM THE VICTIM'S LUNGS.
5. PROVIDE FOR PROMPT TRANSPORTATION TO THE HOSPITAL, AND CONTINUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.
6. HOSPITAL(S) OR MEDICAL FACILITIES NEED TO BE INFORMED, BEFORE-FOREHAND, OF THE POSSIBILITY OF H<sub>2</sub>S GAS POISONING - (NO MATTER HOW REMOTE THE POSSIBILITY IS).
7. NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIM(S) HAS BEEN EXPOSED TO H<sub>2</sub>S GAS.

BESIDES BASIC FIRST AID, EVERYONE ON LOCATION SHOULD HAVE A GOOD WORKING KNOWLEDGE OF ARTIFICIAL RESPIRATION, AS WELL AS FIRST AID FOR EYES AND SKIN CONTACT WITH LIQUID H<sub>2</sub>S. EVERYONE NEEDS TO MASTER THESE NECESSARY SKILLS.



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



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

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

April 4, 1994

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-111-334-309**

Mr. Tripp Wommack, President  
Southwest Royalties, Inc.  
P.O. Box 11390  
Midland, Texas 79701

**RE: REQUEST FOR COMPLIANCE WITH RULE 711  
SOUTHWEST ROYALTIES, INC.  
EDDY COUNTY, NEW MEXICO**

Dear Mr. Wommack:

The New Mexico Oil Conservation Division (OCD) regulates commercial and centralized surface disposal facilities pursuant to OCD Rule 711 (effective date June 6, 1988) and as defined in OCD Order R-8662. Under Ordering Paragraph (2) of R-8662, existing facilities are required to comply with the provisions of Rule 711 no later than 120 days after receipt of OCD's request for additional information.

OCD Rule 711 outlines specific information required by the OCD to permit surface disposal facilities. Although the pond at your facility was administratively approved previously, certain information now required by Rule 711 must be supplied by Southwest Royalties in order for your facility to come into compliance with OCD Rule 711. Please note that this permit applies only to the surface facilities and does not effect your Class II injection well permit or requirements.

You have 120 days from receipt of this letter to come into compliance with OCD Rule 711 for your centralized surface collection facility located in Unit J, Section 34, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico. Please submit the following information to the OCD in a timely manner to allow sufficient time for review and evaluation of your facility prior to permit approval:

1. The contact person's name and phone number.

Mr. Tripp Wommack  
April 4, 1994  
Page 2

2. A plat and topographic map showing the location of the facility in relation to governmental surveys, roads, watercourses, water wells, and dwellings within one mile of the site. Include the location of the Class II injection well.
3. The names and addresses of landowners of record within one-half mile of the site.
4. A facility description and diagram indicating the location of fences, gates, cattleguards, pits/ponds, dikes, tanks and piping at the facility.
5. Detailed engineering designs with diagrams for any pits or ponds, liners, leak-detection systems, aeration systems, enhanced evaporation (spray) system, waste treating systems, security systems and associated waste facilities. Note that disposal of all approved wastes must be in accordance with Division rules, regulations, and guidelines. Enclosed is a copy of the OCD Guidelines for Permit Application, Design, and Construction of Waste Storage/Disposal Facilities.
6. A routine inspection and maintenance plan including good-housekeeping procedures.
7. A contingency plan for reporting and clean-up of spills or releases.
8. A contingency plan in the event of a release of hydrogen sulfide (H<sub>2</sub>S).
9. A closure plan.
10. An affidavit of verification by an authorized representative of the company. Please use the attached "Application for Surface Waste Disposal Facility."

Pursuant to OCD Rule 711, centralized facilities do not require a \$25,000 bond or public notice. If you have any questions please do not hesitate to contact Chris Eustice at (505) 827-5824.

Sincerely,



Kathy M. Brown  
Geologist

Attachments

xc: OCD Artesia District Office  
David Catanach, NMOCD UIC Director



State of New Mexico  
**ENVIRONMENT DEPARTMENT**

*Harold Runnels Building*  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-2850

ENVIRONMENTAL PROTECTION DIVISION  
RECEIVED

204 FEB 21 AM 8 35  
BRUCE KING  
GOVERNOR

JUDITH M. ESPINOSA  
SECRETARY

RON CURRY  
DEPUTY SECRETARY

February 17, 1994

Mr. Cole Boyce  
P.O. Box 822  
Artesia, New Mexico 88210

Dear Mr. Boyce:

Reference is made to your fax to Secretary Espinosa filing a complaint on open settling pits contaminated with oil and H<sub>2</sub>S gas. I appreciate your bringing this situation to the state's attention. I have confirmed with you and the Oil Conservation Division that the situation you reported is being addressed and corrected. Please contact us if we can be of further assistance.

Sincerely,

David Coss  
Director  
Environmental Protection Division

xc: Roger Anderson, OCD

Rave

Judith Espinosa;

I would like to file a formal complaint with the E.P.A. concerning open settling pits contaminated with, and oil wells that produce  $H_2S$  gas.

Southwestern Royalties Co.; the owners of the lease, have made no constructive response to our complaints to the employees who maintain the lease.

I demand an immediate response from both the E.P.A. and the oil company because of the life threatening potential of this extremely poisonous gas.

Location of area;

Menni Tank Battery  
NW4 SE4

Sec. 34 T18S R26E

Eddy Co.

Thank you.

Cole Boyce

P.O. Box 822

Artesia, NM, 88210



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

February 15, 1994

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

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-670-683-602**

Mr. Tripp Wommack, President  
Southwest Royalties, Inc.  
P.O. Box 11390  
Midland, Texas 79701

RE: **RESUMPTION OF OPERATIONS  
SOUTHWEST ROYALTIES, INC.  
EDDY COUNTY, NEW MEXICO**

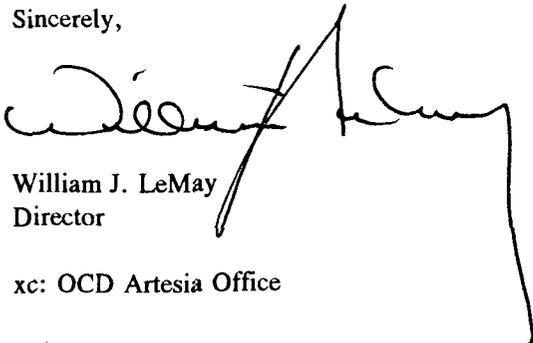
Dear Mr. Wommack:

On February 10, 1994, the New Mexico Oil Conservation Division (OCD) ordered Southwest Royalties to cease operations at your salt water disposal facility located in Unit J, Section 34, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico. On February 11, 1994, the OCD issued requirements for the resumption of operations at the facility. pursuant to the phone conversation between Mr. Roger Anderson, OCD, and Mr. Jon Tate, Southwest Royalties, the OCD has determined that Southwest Royalties has completed the requirements and may resume operations at the above referenced facility with the following conditions:

1. Monitoring of ambient H<sub>2</sub>S levels will be conducted and records made. Such tests will be made at varying locations around the pond levee. Tests will be conducted a minimum of once daily or when an attendant inspects the facility.
2. Only fluids generated in conjunction with Southwest Royalties production will be disposed of in the pond.

If you have any questions please do not hesitate to contact Roger C. Anderson at (505) 827-5812.

Sincerely,

  
William J. LeMay  
Director

xc: OCD Artesia Office



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

February 11, 1994

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

ANITA LOCKWOOD  
CABINET SECRETARY

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. P-111-334-061**

Mr. Tripp Wommack, President  
Southwest Royalties, Inc.  
P.O. Box 11390  
Midland, Texas 79701

RE: **RESUMPTION OF OPERATIONS  
SOUTHWEST ROYALTIES, INC.  
EDDY COUNTY, NEW MEXICO**

Dear Mr. Wommack:

On February 10, 1994, the New Mexico Oil Conservation Division (OCD) ordered Southwest Royalties to cease operations at your salt water disposal facility located in Unit J, Section 34, Township 13 South, Range 26 East, NMPM, Eddy County, New Mexico. The OCD has determined that Southwest Royalties may resume operations at the above referenced facility upon completion and submittal of the following requirements:

1. Chemical analysis of the pond water demonstrating that the water does not contain constituents that are a hazard to public health.
2. A plan and commitment that the facility will be secured to prohibit any illegal dumping.
3. If the chemical analysis shows dissolved hydrogen sulfide (H<sub>2</sub>S), H<sub>2</sub>S monitoring will be required as follows:
  - A. Monitoring of ambient H<sub>2</sub>S levels will be conducted and records made. Such tests will be made at varying locations around the pond levee. Tests will be conducted a minimum of once daily or when an attendant inspects the facility. The wind speed and direction will be recorded in conjunction with each test.

Mr. Tripp Wommack  
February 11, 1994  
Page 2

- B. If an H<sub>2</sub>S reading of 0.1 ppm or greater is obtained:
1. A second reading will be taken on the down wind berm within one hour.
  2. The dissolved oxygen and dissolved sulfide levels of the pond will be tested immediately and the need for immediate treatment determined.
  3. Tests for H<sub>2</sub>S levels will be made at the fence line, downwind from the pond.
- C. If two consecutive H<sub>2</sub>S readings of 0.1 ppm or greater are obtained:
1. The operator will notify the OCD Artesia Office immediately.
  2. The operator will commence hourly monitoring on a 24-hour basis.
  3. The operator will obtain daily analysis of dissolved sulfides in the pond.
  4. The operator will implement the approved treatment plan so as to reduce dissolved sulfides in the pond and eliminate H<sub>2</sub>S emissions.
- D. If an H<sub>2</sub>S reading of 10.0 ppm or greater at the facility fence line is obtained:
1. The operator will immediately notify the OCD Artesia and Santa Fe Offices and the following public safety agencies:  
  
State Police  
County Sheriff  
County Fire Marshall
  2. The operator will initiate notification of all persons residing within one-half (1/2) mile of the fence line and assist public safety officials with evacuation as requested.

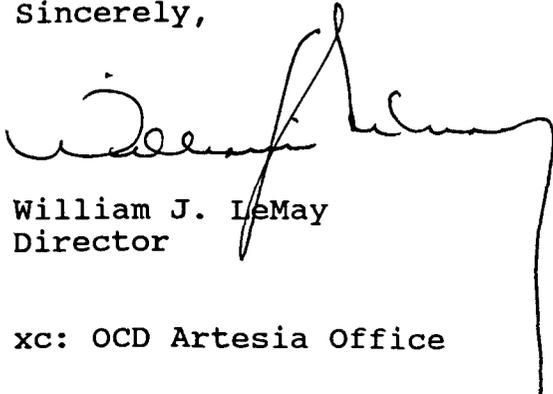
NOTE\* Requirements for H<sub>2</sub>S monitoring and treatment may be administratively modified by the OCD based upon actual operating experiences.

Mr. Tripp Wommack  
February 11, 1994  
Page 3

Please be advised that an OCD Rule 711 application for a centralized surface disposal facility will be required to be submitted for this facility in the future.

If you have any questions please do not hesitate to contact Roger C. Anderson at (505) 827-5812.

Sincerely,

A handwritten signature in cursive script, appearing to read "William J. LeMay". The signature is written in black ink and is positioned above the typed name and title.

William J. LeMay  
Director

xc: OCD Artesia Office



SOUTHWEST ROYALTIES

SOUTHWEST ROYALTIES, INC  
Southwest Royalties Building  
407 N. Big Spring, Midland, TX. 79701-4326  
P.O. Box 11390, Midland, TX. 79702-8390  
(915) 686-9927, 1-800-433-7945

TELECOMMUNICATION TRANSMITTAL

- FAX COVERSHEET -

TO: Roger Anderson  
COMPANY: NIMOC  
FROM: Jon Tete  
FAX #: \_\_\_\_\_  
TOTAL PAGES NUMBER OF INCLUDING THIS SHEET 4  
DATE: 2/14/94

-MESSAGE-

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WE ARE TRANSMITTING FROM AN AT&T 3500D (AUTOMATIC) TELECOPY MACHINE, OUR FAX NUMBER IS (915) 688-0191. PLEASE CALL (915) 686-9927 IF YOU DO NOT RECEIVE ALL PAGES.



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Since 1955

100 PDS FEB 14 1994

CLIENT MARTIN WATER LABORATORIES, INC.  
1210 WEST SEALY  
MONAHANS, TX 79756

SAMPLE NO. : 6400539  
INVOICE NO. : 62140115  
REPORT DATE: 02-14-94  
REVIEWED BY: *[Signature]*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : Ann SWD  
SAMPLE TYPE .....: Water  
SAMPLED BY .....: T.W. Elrod  
SUBMITTED BY .....: T.W. Elrod  
SAMPLE SOURCE ....: SWR  
ANALYST .....: C. Warner

AUTHORIZED BY : Sue Branam  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-11-94  
SUBMITTAL DATE : 02-12-94  
EXTRACTION DATE: --  
ANALYSIS DATE ..: 02-12-94

Method 602 - Purgeable Aromatics

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Benzene .....	9600	ug/L	1.0
Chlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	280	ug/L	1.0
Toluene .....	2900	ug/L	1.0
Total Xylenes .....	380	ug/L	0.3

(1) Copy to Client

*[Signature]*  
Managing Director



**Westtech  
Laboratories  
Inc.**  
The Quality People  
Since 1961

737 Gateway West, No. 100  
El Paso, Texas 79935  
(915) 592-3591 • fax 592-3594

CLIENT MARTIN WATER LABORATORIES, INC.  
1210 WEST SEALY  
MONAHANS, TX 79756

SAMPLE NO. : 6400539  
INVOICE NO. : 62140115  
REPORT DATE: 02-14-94  
REVIEWED BY: *JH*  
PAGE : 1 OF 1

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CLIENT P.O. : --  
SAMPLE DATE ...: 02-11-94  
SUBMITTAL DATE : 02-12-94  
EXTRACTION DATE: --  
ANALYSIS DATE .: 02-12-94

Method 601/8010- Purgeable Halocarbons

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,1-Trichloroethane	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethane	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethane	<0.5	ug/L	0.5
1,1,2-Trichloroethane	<0.5	ug/L	0.5
1,1-Dichloroethane	<0.5	ug/L	0.5
1,1-Dichloroethane	<0.5	ug/L	0.5
1,2-Dichlorobenzene	<1.0	ug/L	1.0
1,2-Dichloroethane (EDC)	<0.5	ug/L	0.5
1,2-Dichloropropane	<0.5	ug/L	0.5
1,3-Dichlorobenzene	<1.0	ug/L	1.0
1,4-Dichlorobenzene	<1.0	ug/L	1.0
Bromodichloromethane	<1.0	ug/L	1.0
Bromoform	<1.0	ug/L	1.0
Bromomethane	<1.0	ug/L	1.0
Carbon tetrachloride	<0.5	ug/L	0.5
Chlorobenzene	<1.0	ug/L	1.0
Chloroethane	<1.0	ug/L	1.0
Chloroform	<0.5	ug/L	0.5
Chloromethane	<1.0	ug/L	1.0
cis 1,3-Dichloropropene	<0.5	ug/L	0.5
Dibromochloromethane	<1.0	ug/L	1.0
Dibromomethane	<1.0	ug/L	1.0
Dichlorodifluoromethane	<1.0	ug/L	1.0
Dichloromethane	<5.0	ug/L	5.0
trans 1,2-Dichloroethene	<1.0	ug/L	1.0
trans 1,3-Dichloropropene	<1.0	ug/L	1.0
Trichloroethene (TCE)	<0.5	ug/L	0.5
Trichlorofluoromethane	<1.0	ug/L	1.0
Vinyl chloride	<2.0	ug/L	2.0
2-Chloroethylvinyl ether	<15.0	ug/L	15.0

(1) Copy to Client

*[Signature]*  
Managing Director



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

TONY ANAYA  
GOVERNOR

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

March 3, 1983

RECEIVED

MAR 07 1983

O. C. D.  
ARTESIA, OFFICE

Ralph Nix  
101 South Seventh  
Artesia, New Mexico 88210

Attention: Bill McCaw

Re: Administrative Order No. LP-104

Dear Mr. McCaw:

Under provisions of Division Order No. R-3221-C, approval is hereby granted for use of a lined Salt-Water pit to be located in the NW/4 SE/4 of Section 34, Township 18 South, Range 26 East, NMPM, Eddy County, New Mexico.

Approval of this application is conditioned upon the following:

- (1) pit construction and operation in accordance with the application;
- (2) notice to the Artesia district office of the Division in time to permit inspection of the leak detection system prior to liner installation, fabrication of the liner, and inspection of the completed system prior to use; and
- (3) compliance with the terms and provisions of Division Order No. R-3221-C not inconsistent with this order.

Authorization for this lined pit may be rescinded if there is evidence that the pit is leaking or if the pit is permitted to overflow.

Sincerely,

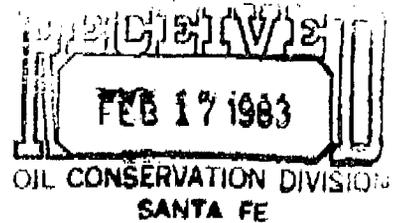
JOE D. RAMEY  
Director

JDR/jc

cc: Artesia District Office

## DATA ON LINED STORAGE PIT

Artesia



OPERATOR: Ralph Nix

ADDRESS: P.O. Box 617, Artesia, New Mexico 88210

LOCATION OF PIT:

The pit will be on the Ralph Nix Merri #1 lease. The surface is owned by Ralph Nix, et al, in unit letter J, Section 34, Township 18 South, Range 26 East, Eddy County, New Mexico. The surface is in a relatively flat area with no water course through the pit area.

SOURCE OF WATER:

Water will be gathered from Ralph Nix wells in the Dayton Area which are being produced from the Atoka Yeso pool, which has approximately 46,300 mg/l of chlorides and 85,128.3 mg/l of dissolved solids. This water will be run through heater treaters to breakout and separate the oil and water. The water is flowed to the fiberglass tank. The water will be pumped from each fiberglass tank to the lined storage pit.

QUANTITY OF WATER AND DISPOSITION:

These wells are presently producing 1500 bbls water per day. This storage tank will hold 14,248 bbls. The proposed water line will be a 6" line with a capacity of 6000 bfpd. It will also be designed for trucks to be able to remove water. The water level shall never be more than one foot from top.

TYPE OF LINER:

Material to be used as liner is Polyethylene with a thickness of 40 mil. The manufacturer does not recommend protection from direct sunlight. The material is resistant to the following: hydrocarbon, acids, alkalis, salts, fungus, and rot-resistant. Joints in material will be fabricated in the field and will use heat fusion for joining material.

LEAKAGE DETECTION SYSTEM:

The drainage and sump method of leakage detection system will be used. A network of perforated drainage PVC pipes shall be installed. They will be placed with sufficient density that no point in the pit-bed shall be more than 20 feet from a drainage pipe. Slope for all drainage lines shall be at least six inches per 50 feet. All drainage shall be to the outer perimeter of the pit and shall gather into an erosion proof dump.

DESIGN AND CONSTRUCTION:

Pit shall be two pit with a common side. This is a built in safety factor in case one pit is leaking the water can be transferred to the other. The pits will be connected with a equalizer pipe with a shut-off valve. Both pits will be built exactly the same size and design. Dimensions of the pit ("A" and "B" Exhibit A) are 250' x 40'. There are 10,000 square feet. Depth (top of level to floor of pit "D" on Exhibit A) is 5 feet. It shall be constructed by excavating and levelling a maximum of six inches below ground level. Excavation material shall be used to form the levels around the pit. Levels shall be so constructed as to have an inside grade no flatter than 1:2. Levels shall have an outside grade no steeper than 1:3.

The top of levels shall be flat and level and shall be at least 18 inches wide.

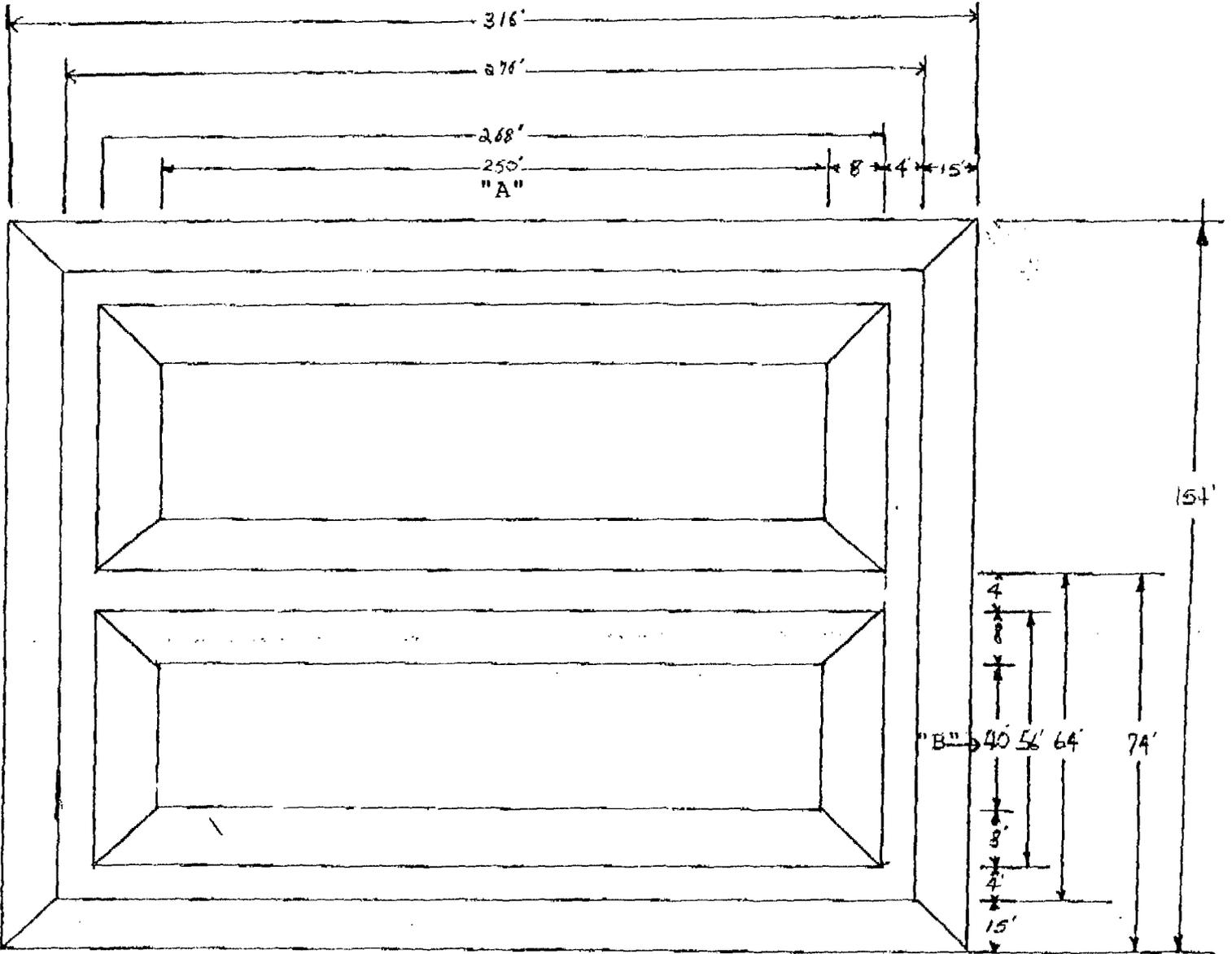
PREPARATION OF PIT BED FOR INSTALLATION OF LINER:

The bed of the pit and the inside grades of the level shall have smooth and compacted and shall be free of holes, rocks, stumps, clods or any other debris which might rupture the liner. Drainage canals shall be dry and sloped prior to requesting inspection of the pit bed. They shall not receive the slotted drainage pipe until after the slope and direction of drainage has been approved. A trench shall be dug on the top of the levee the entire perimeter of the pit for the purpose of anchoring flexible liners. This trench shall be located nine inches out from the slope break and shall be a minimum of six inches deep.

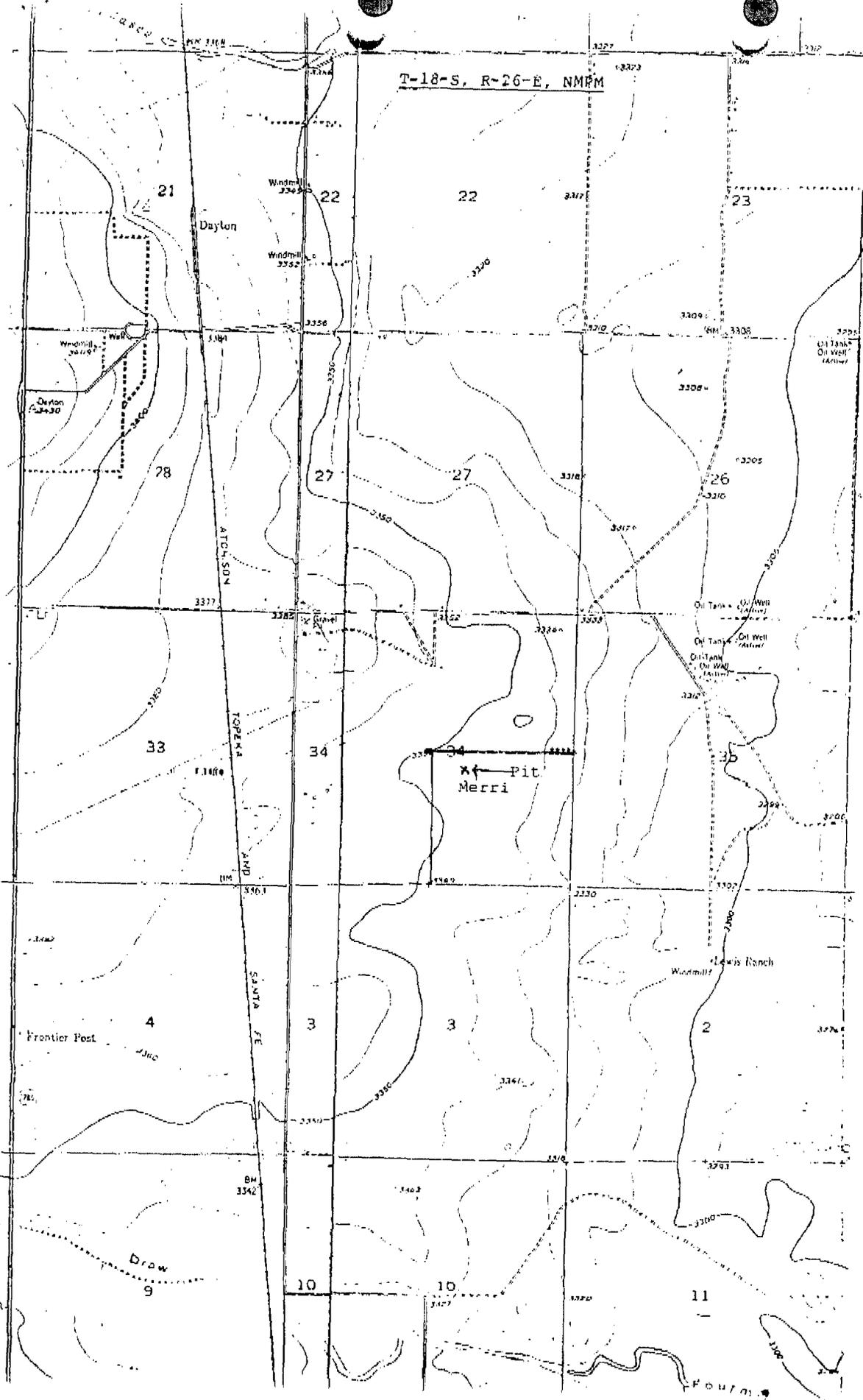
INSTALLATION OF FLEXIBLE MEMBRANE LINERS:

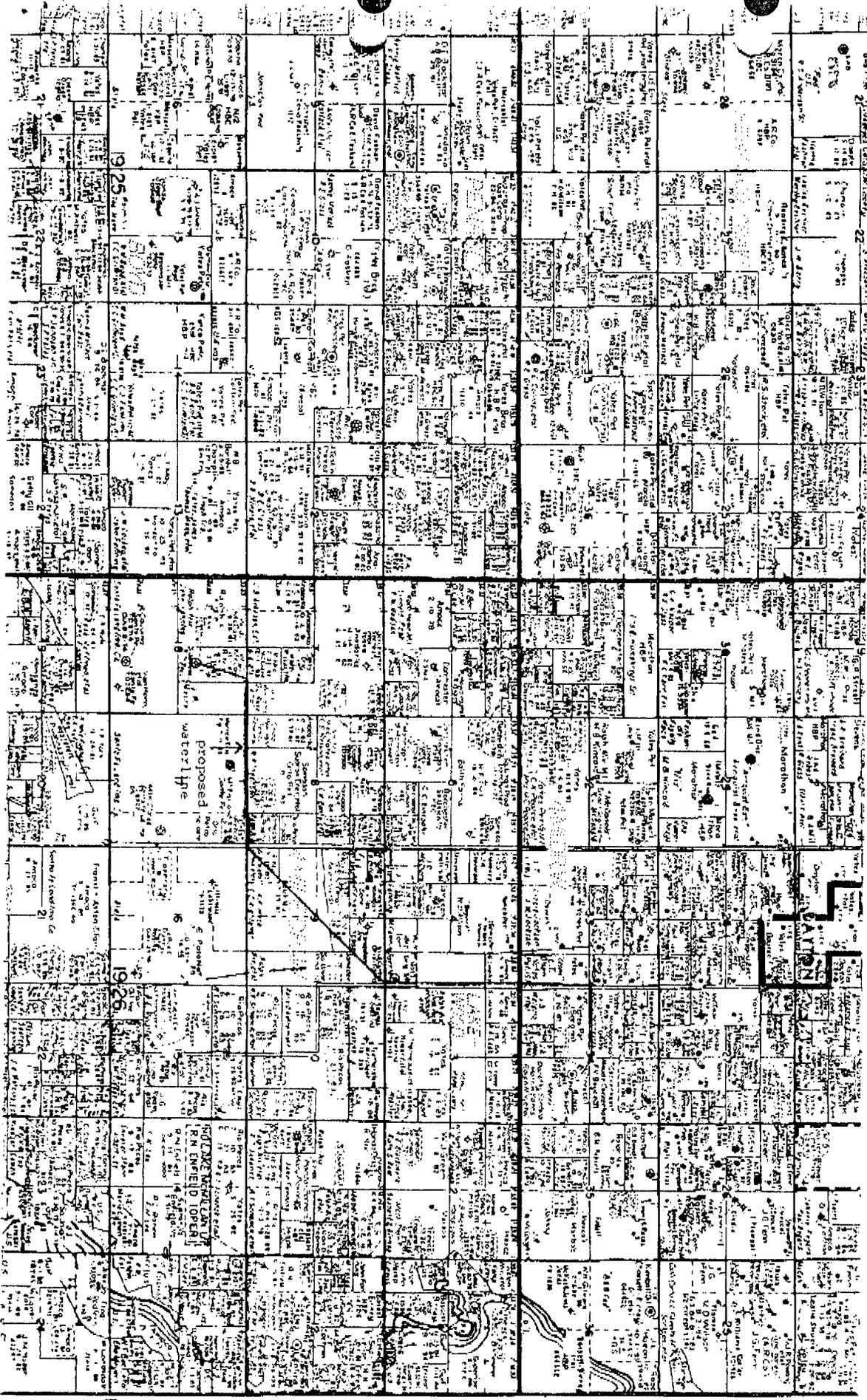
The liner shall be put in place only after the pit-bed, leakage detection system, and levee walls have been inspected and approved by a Commission representative. The pit liner shall be installed and joints sealed according to manufacturer's specifications and with approval of the Commission representative. The liner shall be laid as evenly and wrinkle-free as possible and shall rest smoothly on the pit-bed and the inner face of the levees, and shall be of sufficient size to extend down to the bottom of the anchor trench, and to come back out and a minimum of two inches beyond. An anchor of used pipe, old sucker-rods, or other similar material shall be placed over the liner in the anchor trench and said trench backfilled. The anchor shall extend the entire perimeter of the pit.

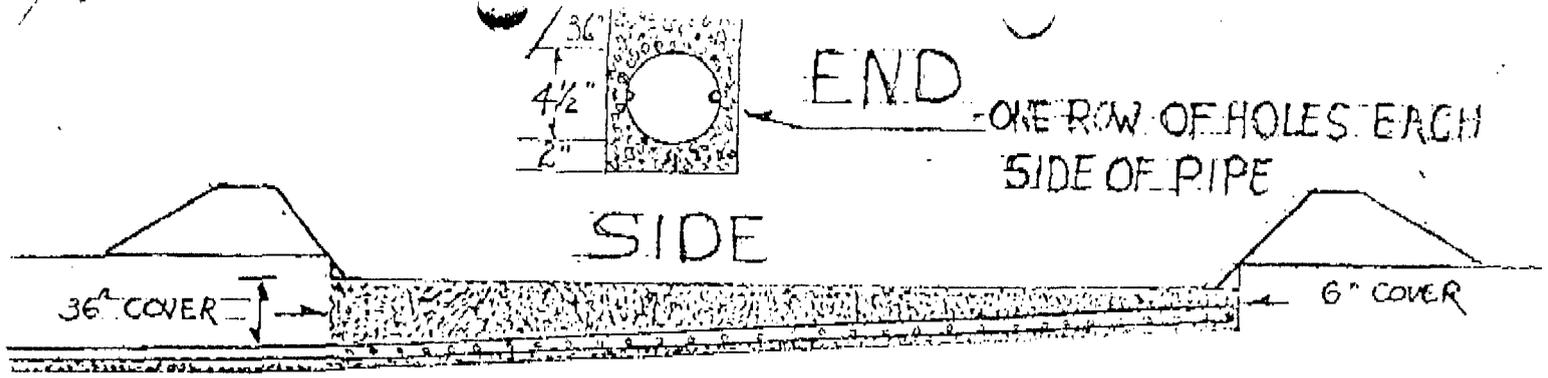
EXHIBIT "A"



T-18-S, R-26-E, NMRM

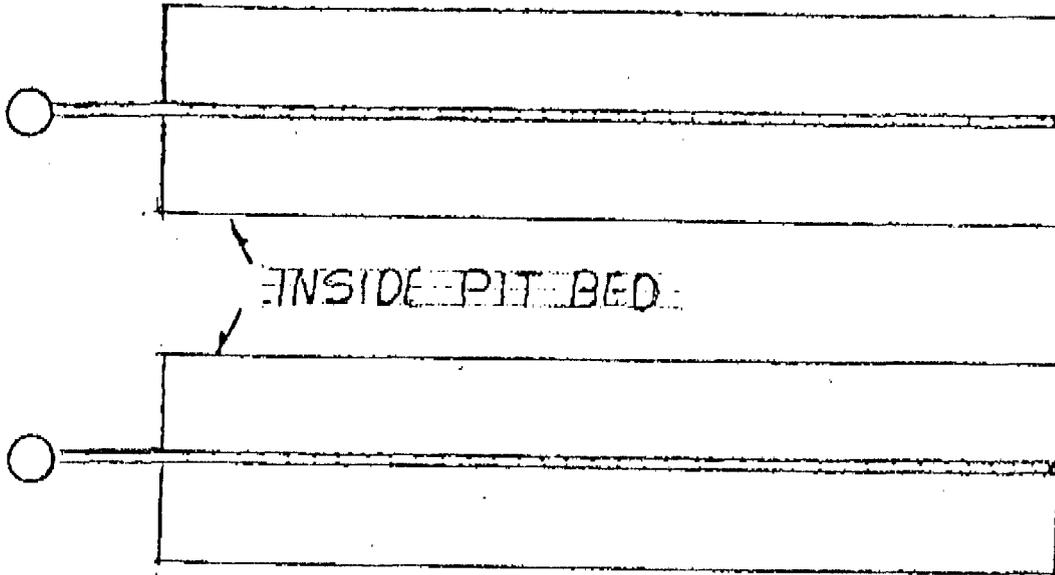






5" PVC PIPE & CAP

TOP



INSIDE PIT BED

# LEAK DETECTION SYSTEM UNDER PITS

## RALPH WIX

101 SOUTH SEVENTH — PHONE 746-2341 — 746-9829

P. O. BOX 617  
ARTESIA, NEW MEXICO 88210  
February 11, 1983

State Land Office Building  
P.O. Box 2088  
Santa FE, New Mexico 87501

Attention: R. L. Stamets

505-827-5000

Dear Mr. Stamets:

This is a letter asking for approval from the State for a lined water disposal storage surface pit. This lined storage pit will be used in conjunction with our water disposal well five miles away. This pit will be used as a central gathering point from our wells in the Dayton area. The water will then be pumped through our purposed water line to the water disposal well. The attached plat will show the location of the purposed storage surface pit, pipeline and water disposal well that is in operation.

We have acquired the Right-of-Way for the pipeline and are waiting on permits from the State highway and railroad for approval to cross them. Enclosed is a data sheet on the lined storage pit, manufactures lining material brochure, plat showing location of pit and water disposal line to water disposal well and exhibit "A" showing the design and dimensions of the pit.

If you have any questions or suggestions, please let me know.

Yours truly,

*William J. McCaw*  
William J. McCaw

WJM/lr  
enclosures

## DATA ON LINED STORAGE PITS

OPERATOR: Ralph Nix

ADDRESS: P.O. Box 617, Artesia, New Mexico 88210

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EXHIBIT "A"

