

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED  
OMB No. 1004-0137  
Expires: March 31, 2007

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an  
abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well  
☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator  
THOMPSON, J. CLEO3a. Address  
P.O. BOX 12577 ODESSA TX 797683b. Phone No. (include area code)  
(432)550-8887

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1208.4' FSL & 2623.8' FEL  
UL:O, SEC. 34, T16S, R30E

5. Lease Serial No.

NM063926

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.  
WSLU, NO. 11264

8. Well Name and No.

WSLU, TRACT 13, WELL NO. 5

9. API Well No.

30-015-

10. Field and Pool, or Exploratory Area

GRAYBURG - SAN ANDRES

11. County or Parish, State

EDDY

NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <b>MOVE LOCATION</b>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<b>OF WELL</b>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

THIS WELL HAS BEEN RE-STAKED AS PER BLM REQUEST. (TODD SUTER)

14. I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)

JIM STEVENS

Title OPERATIONS MANAGER

Signature

Date 01/09/2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

/s/ Don Peterson

FOR

FIELD MANAGER

Date MAY 29 2008

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Ave., Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
1220 St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005

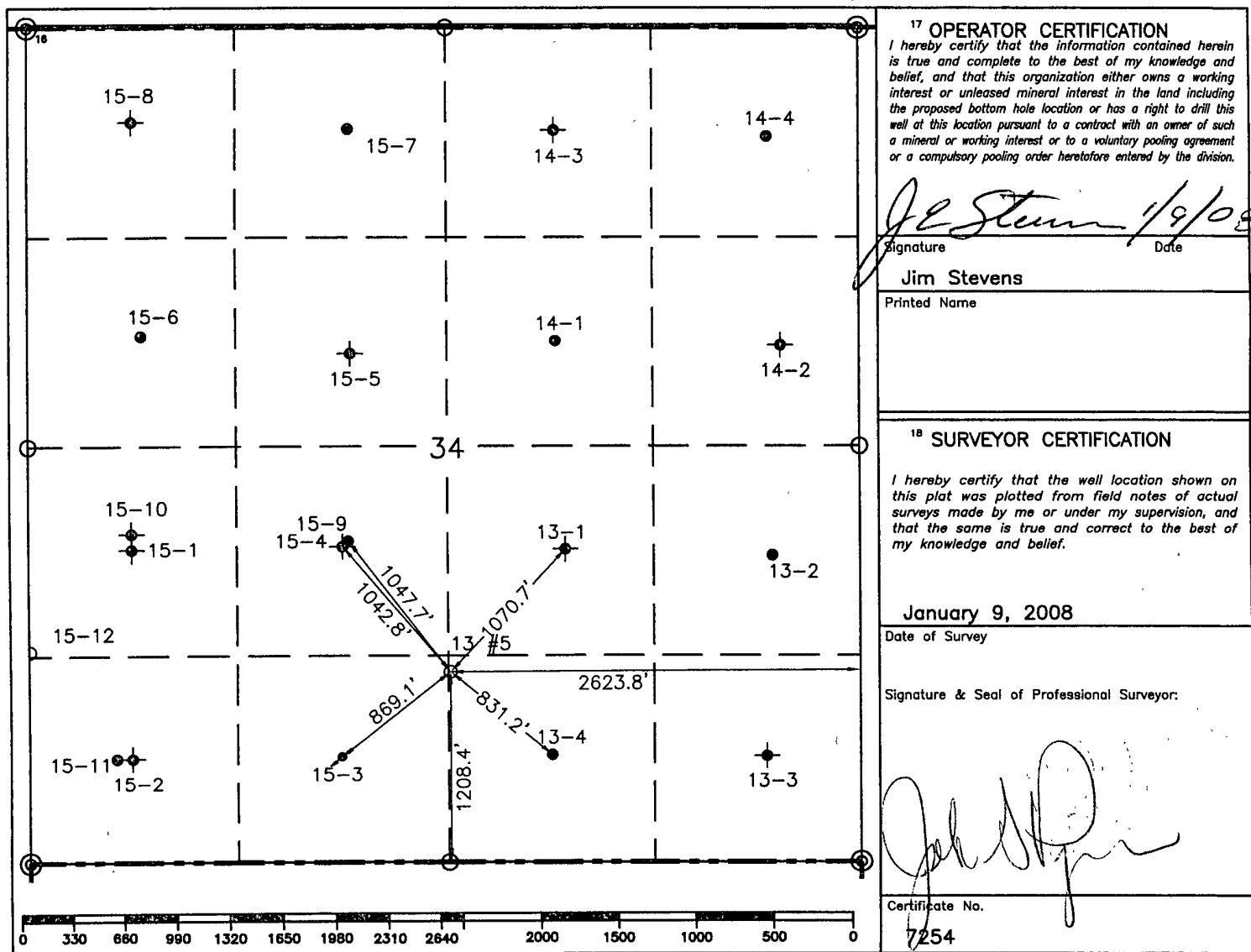
Submit to Appropriate District Office  
State Lease-4 copies  
Fee Lease-3 copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number		<sup>2</sup> Pool Code		<sup>3</sup> Pool Name					
<sup>4</sup> Property Code		<sup>5</sup> Property Name WEST SQUARE LAKE UNIT						<sup>6</sup> Well Number TRACT 13 #5	
<sup>7</sup> OGRID No. 11181		<sup>8</sup> Operator Name J. CLEO THOMPSON & JAMES CLEO THOMPSON, JR., L.P.						<sup>9</sup> Elevation 3737'	
<sup>10</sup> Surface Location									
UL or lot no. 0	Section 34	Township 16-S	Range 30-E	Lot Idn	Feet from the 1208.4'	North/South line South	Feet from the 2623.8'	East/West line East	<sup>7</sup> County Eddy
<sup>11</sup> Bottom Hole Location If Different From Surface									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	<sup>7</sup> County
<sup>12</sup> Dedicated Acres 40		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

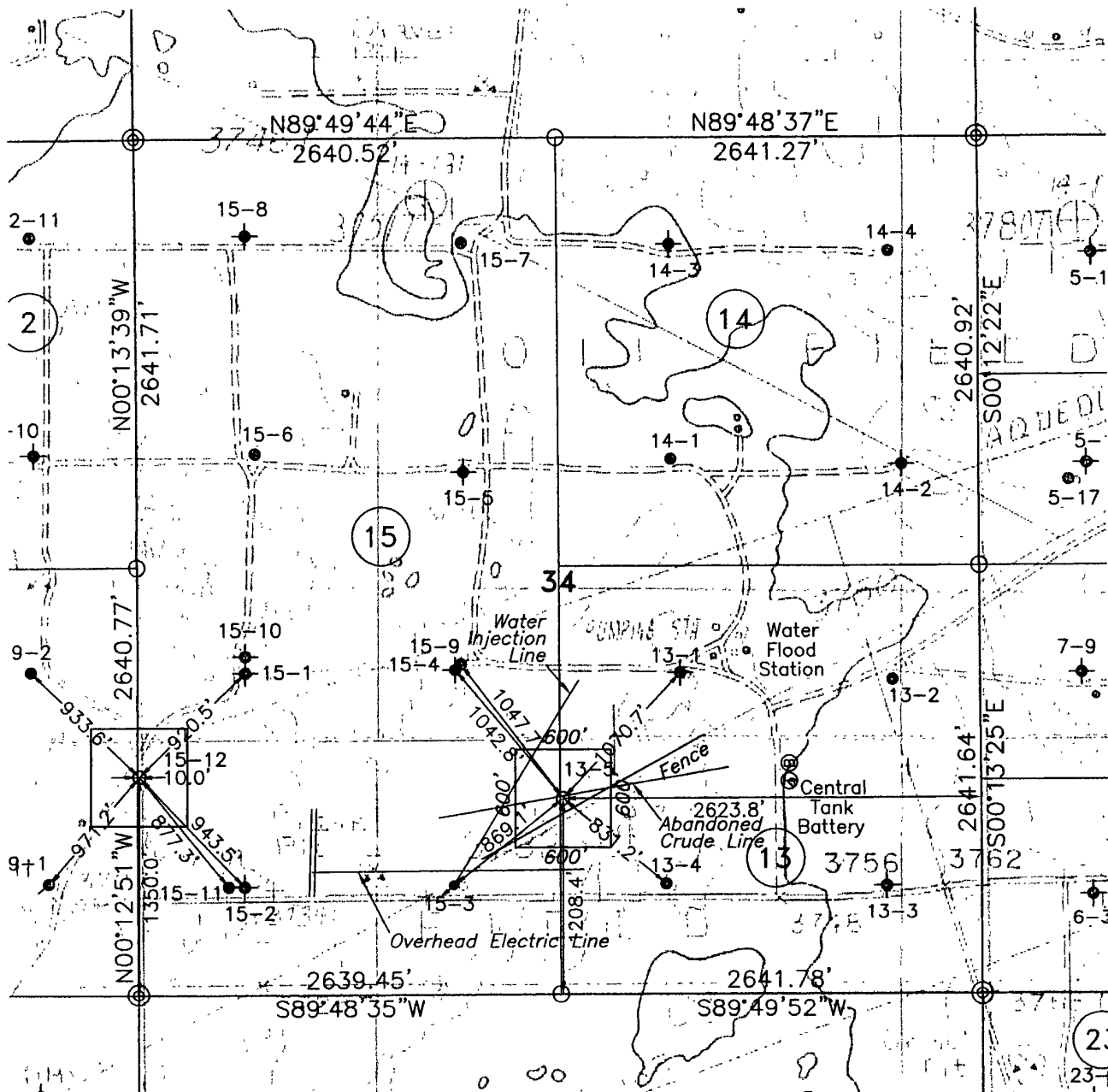
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION.



○ = Staked Location • = Producing Well ● = Injection Well ◇ = Water Supply Well ⊕ = Plugged & Abandon Well  
⊙ = Found Section Corner, 2 or 3" Iron Pipe & GLO B.C. ○ = Found 1/4 Section Corner, 1" Iron Pipe & GLO B.C.

ADDITIONAL INFORMATION ON THE LOCATION

State Plane Coordinates			
Northing 681930.37 (1927=681866.49)		Easting 656045.27 (1927=614866.43)	
Latitude 32°52'26.721"		Longitude 103°57'34.945"	
Zone	North American Datum	Combined Grid Factor	Coordinate File
East	1983	0.999745515	W_Square_Lake83.crd
Drawing File WestSquareLake.Dwg		Field Book Eddy #9, Pg. 26	



# LEGEND OF SYMBOLS

- = Access Road
- = Resource Road on Lease
- = Resource Road on State Land
- = Resource Road on Private Land
- = Resource Road on Federal Land
- = Proposed Resource Road
- E- = Proposed Electric Line
- F- = Proposed Production Flow Line
- o = Staked Well Location
- = Producing Well Location
- = Water Injection Well
- o = Found 1" Iron Pipe with Brass Cap
- ⊙ = Found 2" or 3" Iron Pipe with Brass Cap
- = Unit or Lease Boundary

## EXHIBIT "A" ACCESS ROAD AND FACILITIES MAP

J. CLEO THOMPSON & JAMES CLEO THOMPSON, JR. L.P.

WEST SQUARE LAKE UNIT TRACT 13 #5  
Located 1208.4' FSL & 2623.8' FEL, Section 34,  
T-16-S, R-30-E, NMPM, Eddy County, NM

Drawn by: Gene M. Rodriguez

Scale: 1" = 1000'

Date: January 10, 2008

Attn.: Jim Stevens

Checked by: J. Stan Piper

Sheet 1 of 1

**DRILLING PROGRAM**  
J. Cleo Thompson & James Cleo Thompson, Jr., L.P.  
West Square Lake Unit # 13-5  
1358.4' FSL & 2623.8' FEL, Sec. 34, T16S, R30E  
Eddy County, New Mexico

In accordance with Form 3160 and our application to drill, please find the following items as included in the proposed drilling program.

**1. Estimated tops of geological markers:**

Rustler	350'
Transil	1,350'
Yates	1,450'
Seven Rivers	1,700'
Queen	2,300'
Grayburg	2,800'
San Andres	3,050'
TD:	4,000'

**2. Estimated depths to water, oil, or gas formations.**

Water:	2800'
Oil:	2800'
Gas:	2800'

\* No fresh water zones exist in this area

**3. Proposed Casing Program:**

See COA →

Hole Size	Setting Depth	Csg. Size & Weight	Grade/Joint	Class
12 1/4"	0' to 300'	8 5/8", 24#	J-55/ST&C	New
7 7/8"	0' to 4,000'	5 1/2", 15.5#	J-55/LT&C	New
Design Factors:		Collapse: 1.2   Burst: 1.2	Tension 1.8	

**4. Pressure Control Equipment:**

2,000 # Annular BOP. A diagram of the BOP stack and choke manifold is attached. All BOP and accessory equipment will be tested according to Onshore Order #2 before drilling out with the 7-7/8" hole and tested weekly if necessary.

**5. Proposed Mud Program:**

See COA ←

Mud Program	Mud Weight	Viscosity	Waterloss
0' to 300'   Fresh Water	8.6 to 9.2 ppg	34 to 36	NC
300' to 4,000'   Cut Brine	9.0 to 9.7 ppg	28 to 29	NC

## DRILLING PROGRAM

J. Cleo Thompson & James Cleo Thompson, Jr., L.P.  
West Square Lake Unit # 13-5  
1358.4' FSL & 2623.8' FEL, Sec. 34, T16S, R30E  
Eddy County, New Mexico

5. **Proposed Cementing Program:**

8 5/8" Surface: 195 sacks Class C Cement + 0.125 lbs/sack Cello  
Flake + 2% Calcium Chloride + 56.3% Fresh Water  
TOC to Surface, Yield: 1.35 cu.ft./sx

5 1/2" Production: Lead Cement 407 sacks 50:50 Poz(Fly Ash):Class C +  
5% bwow Sodium Chloride + 0.125 lbs/sack Cello  
Flake + 10% bwoc Bentonite + 139.7% Fresh Water  
Yield: 2.44 cu.ft./sx  
Tail Cement 258 sacks Class C Cement + 5% bwow  
Sodium Chloride + 0.6% bwoc FL-62 + 57.5% Fresh  
Water. TOC to Surface, Yield: 1.37 cu.ft./sx

6. **Auxiliary Equipment:**

Blowout preventer, gas detector, Kelly cock and stabbing valve.

7. **Testing, Logging and Coring Program:**

Drill Stem Tests: None anticipated  
Logging: Platform Express TD to 2000'  
GR-N to Surface  
Coring: None Anticipated

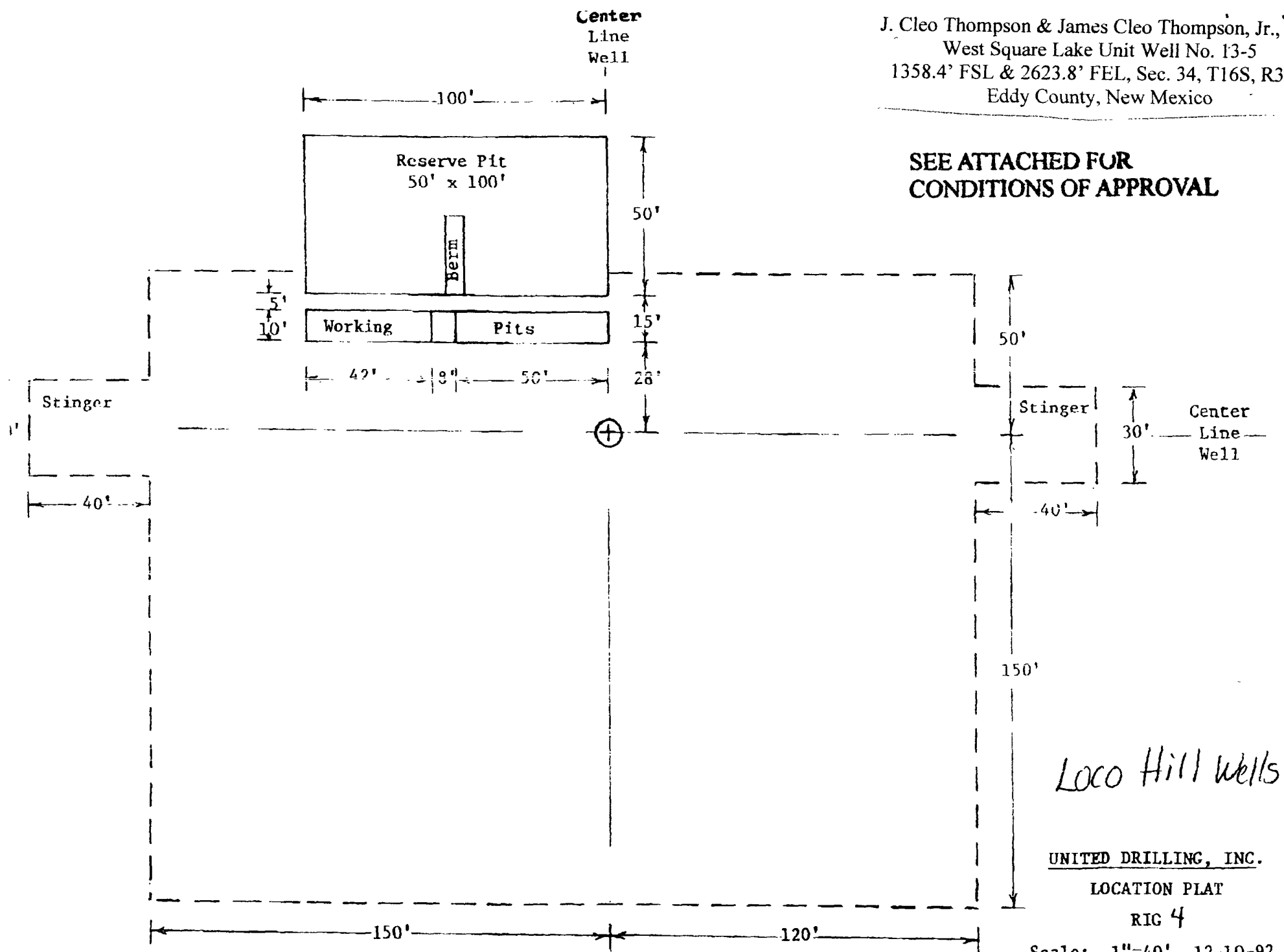
8. No abnormal pressures or temperatures are anticipated. In the event  
abnormal pressures are encountered, the proposed mud program will be  
modified to safely handle any increase in pressure. The estimated BHP is  
estimated to be less than 1,000 psi with a temperature of 82° F.

10. H<sub>2</sub>S: None Anticipated

11. Anticipated Start Date: January 1, 2008  
Anticipated Drilling Time: 7 days

J. Cleo Thompson & James Cleo Thompson, Jr., L.P.  
West Square Lake Unit Well No. 13-5  
1358.4' FSL & 2623.8' FEL, Sec. 34, T16S, R30E  
Eddy County, New Mexico

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**



*Loco Hill Wells*

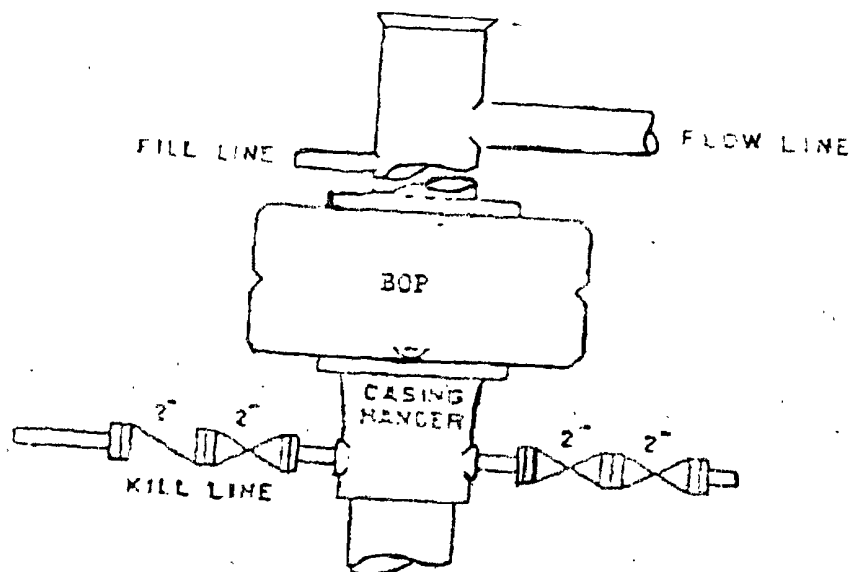
UNITED DRILLING, INC.

LOCATION PLAT

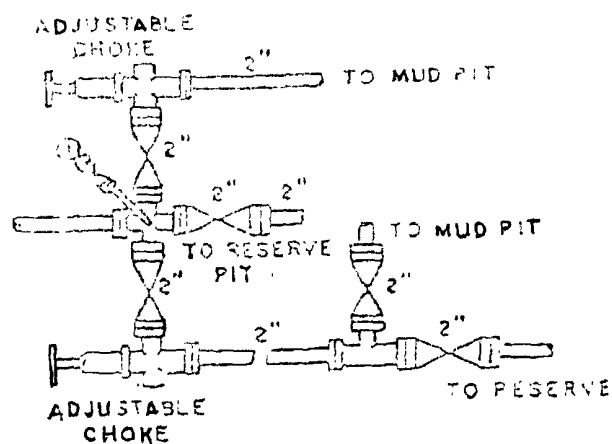
RIG 4

Scale: 1"=40' 12-10-92

J. Cleo Thompson & James Cleo Thompson, Jr., L.P.  
West Square Lake Unit Well No. 13-5  
1358.4' FSL & 2623.8' FEL, Sec. 34, T16S, R30E  
Eddy County, New Mexico



Annular BOP Stack  
Pressure 2000 psi



Choke Manifold Schematic

# **H<sub>2</sub>S CONTINGENCY PLAN**

**J. Cleo Thompson & James Cleo Thompson, Jr., L.P.**

**West Square Lake Unit #13-5**

**1358.4' FSL & 2623.8' FEL**

**Unit: J, Sec. 34, T16S, R30E**

**Eddy County, New Mexico**



# TABLE OF CONTENTS

Table of Contents	Page 2
Scope & Objectives	Page 3
General Emergency Plan	Page 4
J. Cleo Thompson emergency call out numbers	Page 5
Emergency notification numbers	Page 6
Additional Emergency notification numbers	Page 7
Emergency procedures of uncontrollable release of H <sub>2</sub> S gas	Page 8
Ignition procedures of uncontrollable well conditions	Page 9
Instructions for igniting the well	Page 10
Emergency equipment requirements	Page 11 & 12
Toxic effects of H <sub>2</sub> S	Page 13
Physical affects	Page 14
Toxicity of Hydrogen Sulfide (H <sub>2</sub> S)	Page 15
SCBA instructions	Page 16
H <sub>2</sub> S poisoning rescue and first aid	Page 17
Map of West Square Lake Well #13-5	Page 18

*Self checked  
attached  
SN 1-9-08  
JH*

## **SCOPE**

This plan establishes **J. Cleo Thompson** guidelines for all company and contract employees whose duties may involve exposure to hydrogen sulfide gas ( $H_2S$ ) on the West Square Lake well #13-5. **This well is located 1358.4' FSL & 2623.8' FEL in Unit J, Section 34 of the Township 16-S, Range 30-E of Eddy County, New Mexico.** This plan also establishes procedure for isolation of the work site and evacuating the public on the condition that:

- A. There is a release of  $H_2S$  that compasses the radius of exposure (ROE) in this plan,
- B. There are persons and/or roads within the ROE and,
- C. There is the endangerment of human or animal life within the ROE.

## **OBJECTIVE**

The objective of the ***J. Cleo Thompson Company*** is to:

- A. Prevent any and all accidents, and to prevent the uncontrolled release of  $H_2S$  into the atmosphere and,
- B. Provide proper evacuation procedures to cope with emergencies and,
- C. Provide immediate and adequate medical attention should in injury occur.

**It should be noted that J. Cleo Thompson does not expect there to be any release of  $H_2S$  into the atmosphere but has taken the necessary steps to react properly to and control any hazards encountered on any of our facilities.**

## **GENERAL EMERGENCY ACTION**

**In the event of an emergency, the following action should be initiated,**

1. All personnel shall immediately evacuate to an up-wind and up-hill “*safe breathing*” area.
2. Those who must enter the hazard area must wear positive pressure self-contained breathing apparatus and must use other appropriate safety equipment as outlined on page 10.
3. Isolate the well, if possible.
4. Use the “Buddy System” at all times.
5. Account for all personnel and take appropriate action as necessary for personnel safety.
6. Display the appropriate color warning flag to describe the type of emergency.
7. The ***J. Cleo Thompson*** supervisor will assess the situation and assign duties to various persons to bring the situation under control. The ***J. Cleo Thompson*** supervisor will assign the notification of local emergency response agencies and residents. Media inquiries are be referred to:

***J. Cleo Thompson***  
***325 North St. Paul, Suite 4300***  
***Dallas, Texas 75201***

**J. CLEO THOMPSON  
EMERGENCY CALL OUT NUMBERS**

<b>NAME</b>	<b>OFFICE NUMBER</b>	<b>CELLULAR NUMBER</b>	<b>HOME NUMBER</b>
Johnnie Holder Drilling Foreman	(432)550-8887	(432)556-9325	(432)363-8054
Jim Stevens Operations Manager	(432) 550-8887	(432) 664-2917	(432) 563-5504
Amador Pando Production Foreman	(505) 677-2396	(505)746-7324	(505) 677-2396

J. Cleo Thompson is aware and will abide by any current city; county and state burn ban policies.

**Emergency Notification Numbers  
Eddy County, NM**

<b><u>Organization or Agency</u></b>	<b><u>Phone Number</u></b>
<b>New Mexico State Police</b>	<b>(505)885-3137</b>
<b>Eddy County Sheriff's Department</b>	<b>(505)887-7551</b>
<b>Eddy County Emergency Management</b>	<b>(505)887-9511</b>
<b>Emergency Medical Service (Ambulance)</b>	<b>911</b>
<b>State Emergency Response Center <i>Max Johnson (Chairman)</i></b>	<b>(505)476-9620</b>
<b>Loco Hills Fire Department</b>	<b>911 or (505)677-2349</b>
<b>Bureau Land Management (District II)</b>	<b>(505)234-5972</b>
<b>Oil Conservation Division (District II)</b>	<b>(505)748-1283</b>
<b>National Response Center (NRC)</b>	<b>(800)424-8802</b>
<b>Chemtrec</b>	<b>(800)424-9300</b>
<b>Midland Safety &amp; Health</b>	<b>(432)520-3838</b>

**West Square Lake #13-5**

**Neighboring Residents to West Square Lake #13-5**

NONE

**EMERGENCY PROCEDURES FOR UNCONTROLLABLE RELEASE OF  
HYDROGEN SULFIDE GAS (H<sub>2</sub>S)**

1. Secure and don self-contained breathing apparatus.
2. Remove all personnel to up-wind and up-hill "safe breathing" zone.
3. Contact all concerned employees and immediate supervisor for instructions.
4. Take steps to protect and/or remove the general public to an upwind area away from source of H<sub>2</sub>S.
5. Deny entry to unnecessary personnel.
6. Notify necessary public safety personnel:
  - a. State Police if on or near a **state road**
  - b. Sheriff's Department if on or near a **county road***(For assistance in the evacuation of the general public and to help maintain roadblocks)*
7. Contact the Bureau of Land Management (BLM)
8. While attempting to control the release, maintain tight security and safety procedures.
9. Use the "Buddy System" when entering any hazardous area.

**The responsibility of this plan is with the J. Cleo Thompson supervisor(s) who shall be in complete command during the emergency.**

## **IGNITION PROCEDURES FOR UNCONTROLLABLE WELL CONDITIONS**

The decision to ignite the well is the decision of the company supervisor(s). This decision should be made only as a last resort and in a situation where it is determined that:

- Human life and/or property are endangered
- There is no hope of controlling the blowout under the prevailing conditions at the well.



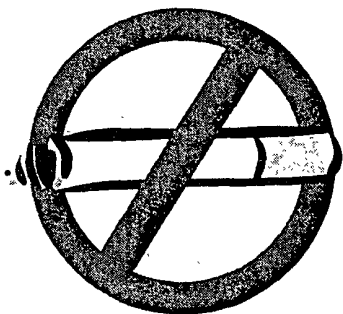
## **INSTRUCTIONS FOR IGNITING THE RELEASE**

1. Two personnel are required for the ignition operation. They **must** wear positive self-contained breathing apparatus and a D-ring style full body safety harness with a non-flammable safety rope attached. **(Must be an OSHA approved body harness)**
2. One (safety) person will test the atmosphere for explosive gases with an approved Triple-range ( $H_2S$ ,  $O_2$ , LFL) monitor.
3. Primary method of ignition shall be with 25mm flare gun with range of approximately 500 feet.
4. Ignite up-wind and do not approach any closer than is warranted.
5. Select a safe ignition site, which offers ultimate egress.
6. Before activating flare gun, check for presence of combustible gas.
7. After ignition, continue emergency action and procedure as before.
8. All unassigned personnel will limit their actions to those directed by the company supervisor.

After the well is ignited, burning  $H_2S$  will produce  $SO_2$ , which is also highly toxic. **Do not assume the area is safe after the well is ignited.**

**A NO SMOKING POLICY shall be strictly enforced on location at all times.**

**DANGER**



**NO SMOKING**

## **EMERGENCY EQUIPMENT REQUIREMENTS**

### **1. Respiratory Protection**

- **Rescue Units (SCBA's):** One (1) unit shall be placed at each briefing area and 2 shall be stored in the safety trailer.
- **Work/Escape Units:** Four (4) units shall be stored on the rig floor connected to the safety trailer with sufficient hose to allow workers to adequately perform duties with minimal restriction.
- **Emergency Escape Units:** Four (4) units shall be stored in the top dog house for emergency evacuation purposes.

### **2. Signs and Flags**

- **One (1) Condition Sign shall be placed at location entrance with the following language:**

**DANGER  
H<sub>2</sub>S**

**POTENTIAL DANGER (GREEN)**

**MODERATE DANGER (YELLOW OR ORANGE)**

**EXTREME DANGER (RED)**

- **Condition flags shall be displayed at the sign in one of the designations:**

**Green/normal conditions**

**Yellow or Orange / potential danger**

**Red/danger  
H<sub>2</sub>S Present**

3. **Briefing Area:** Two (2) briefings areas, designed by signs, shall be located perpendicular to each other and be easily visible and readily accessible.
4. **Windsocks:** Two (2) windsocks shall be strategically placed where they are easily visible from all points.

**5. Hydrogen Sulfide Detectors and Alarms:**

- One (1) stationary H<sub>2</sub>S monitor with three sensors shall be located on the rig in the top dog house. The H<sub>2</sub>S monitor shall be calibrated to alarm at 10PPM for the low alarm (visual alarm) and 15 PPM for the high alarm (audible alarm). Calibrations shall be checked every 30 days or as needed. The sensors shall be located as follows:

#1 – Rig Floor

#2 – Bell Nipple

#3 – Flow line or where the well bore fluid is discharged

- A gas sampling pump, with detector tubes capable of measuring H<sub>2</sub>S gas, shall be located in the safety trailer.

**6. Additional Rescue Equipment**

- One hundred Feet (100') of 5/8" OSHA approved rope.
- Two (2) OSHA approved full body harness
- One (1) Stretcher

**7. Fire Extinguishers:**

- One (1) 20#, Class ABC fire extinguisher shall be located in the safety trailer.

**8. Communication:**

- Cellular Phones/Mobile Phones or two-way radios shall be available via the vehicles on location and on the rig floor.

## **TOXIC EFFECTS OF HYDROGEN SULFIDE**

Hydrogen Sulfide (H<sub>2</sub>S) is extremely toxic. The accepting ceiling concentration for an eight (8) hour exposure is 10PPM, which is .001% by volume. Hydrogen sulfide (H<sub>2</sub>S) is colorless. Hydrogen Sulfide (H<sub>2</sub>S) is heavier than air, the specific gravity is equal to 1.19, which is 20% heavier than ambient temp air, which is 1.00. Hydrogen sulfide (H<sub>2</sub>S) can form an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H<sub>2</sub>S) is as toxic as hydrogen cyanide and is between 5-6 times more toxic than carbon monoxide.

### **TOXICITY OF VARIOUS GASES**

<b>Common Name</b>	<b>Chemical Formula</b>	<b>Specific Gravity</b>	<b>Threshold Limit<sup>1</sup></b>	<b>Hazardous Limit<sup>2</sup></b>	<b>Lethal Concentration<sup>3</sup></b>
Hydrogen Cyanide	HCN	0.94	10 PPM	150 ppm/Hr	300PM
Hydrogen Sulfide	H <sub>2</sub> S	1.189	10 PPM <sup>4</sup> 15 PPM <sup>5</sup>	100 PPM/Hr	600 PM
Sulfur Dioxide	SO <sub>2</sub>	2.21	2 PPM	N/A	100 PPM
Chlorine	CL <sub>2</sub>	2.45	1 PPM	4 PPM/Hr	1000 PPM
Carbon Monoxide	CO	.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	Combustible @5%	N/A

(1)Threshold limit -- Concentration at which it is believed that all workers may be repeatedly exposed, day after day with out adverse effects also referred to as Time Weighted Average (TWA).

(2) Hazardous limit -- Concentration that may cause death

(3) Lethal concentration -- Concentration that will cause death with short-term exposure

(4) Threshold limit -- 10PPM -- NIOSH guide to chemical hazards

(5) Short -- term threshold limit -- Concentration higher than Threshold limit with limits placed on time one can be exposed. Exposure time is limited to15 minutes followed by one (1) hour in fresh air. This cycle can be repeated for four (4) times during a normal eight (8) hour work day.

## PHYSICAL EFFECTS OF HYDROGEN SULFIDE (H<sub>2</sub>S)

(Concentrations are calculated @ 15.00 psia and 60 ° F.)

Concentrations		Physical Effects
0.0001%	10 PPM	Obvious & unpleasant odor. Safe for eight (8) hour exposure.
0.005%	50 PPM	Can cause some flu-like symptoms and can cause pneumonia
0.01%	100 PPM	<b>IDLH</b> <sup>1</sup> . Kills the sense of smell in 3 to 15 minutes. May irritate eyes and throat.
0.02%	200 PPM	Kills the sense of smell rapidly. Severely irritates eyes and throat. Severe flu-like symptoms after 4 or more hours may cause lung damage and/or death.
0.06%	600 PPM	Loss of consciousness quickly, death will result if not rescued promptly.

(1) Immediately dangerous to life or health

## **TOXICITY OF HYDROGEN SULFIDE**

<b>H<sub>2</sub>S % (PPM)</b>	<b>0 – 2 Minutes</b>	<b>0 – 15 Minutes</b>	<b>15 – 30 Minutes</b>	<b>30 Minutes to 1 Hours</b>	<b>1 – 4 Hours</b>	<b>4 - 8 Hours</b>	<b>8 – 48 Hours</b>
0.005 (50 ppm) 0.010 (100 ppm)				Mild Conjunctivitis; Respiratory Tract Irritation			
0.010 (100 ppm) 0.015 (150 ppm)		Coughing; Irritation of eyes; loss of sense of smell	Disturbed Respiration Pain in eyes; Sleepiness	Throat	Salivation & Mucous Discharge; Sharp Pain in eyes; Coughing	Increased Symptoms*	Hemorrhage & Death*
0.015 (150 ppm) 0.020 (200 ppm)		Loss of Sense of Smell	Throat & Eye Irritation	Throat & Eye Irritation	Difficult breathing, Blurred Vision, Light & Shy	Serious irritating Effects	Hemorrhage & Death*
0.025 (250 ppm) 0.035 (350 ppm)	Irritation of Eye and Loss of Sense of Smell	Irritation of Eyes	Painful Secretion of Tears, Weariness	Light & Shy; Nasal Catarrh, Pain in Eyes, Difficult Breathing	Hemorrhage & Death		
0.035 (350 ppm)		Irritation of Eye and Loss of Sense of Smell	Difficult Respiration; Coughing, Irritation of Eyes	Increased Irritation of Eyes & Nasal Tract; Dull pain in Head; Weariness; Light & Shy	Dizziness, Weakness; Increased Irritation; Death	Death*	
0.050 (500 ppm)	Coughing, Collapse & Unconsciousness	Respiratory Disturbances; Irritation of Eyes; Collapse	Serious Eye Irritation; Palpitation of Heart, Few Cases of Death	Severe pain in eyes and head, Dizziness; Trembling of Extremities; Great Weakness & Death*			
0.060 (600 ppm) 0.070 (700 ppm) 0.080 (800 ppm) 0.100 (1000 ppm) 1.150 (1500 ppm)	Collapse* Unconsciousness Death*	Collapse* Unconsciousness Death					

**\*Data secured from experiments of dogs, which have susceptibility similar to men/women.**

**\*\*PPM parts per million**

## **THE USE OF SELF-CONTAINED BREATHING AIR EQUIPMENT**

SCBA should be worn when:

- Working near the top or on top of any tank.
- Disconnecting any line where H<sub>2</sub>S can reasonably be expected.
- Sampling air in the area to determine if toxic concentration of H<sub>2</sub>S exist.
- Working in areas where over 10PPM of H<sub>2</sub>S has been detected.
- At any time there is a doubt as to the H<sub>2</sub>S level in the area to be entered.

Air quality testing shall be continuous throughout the entire operation if a container is breeched or in a hazardous location.

All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

Facial hair and standard eyeglasses are not allowed with SCBA use.

Contact lenses are never allowed with the use of SCBA.

The SCBA shall be inspected monthly.

After each use, the SCBA shall be cleaned, disinfected, serviced, inspected and refilled to proper specifications.

## **RESCUE & FIRST AID FOR VICTIMS OF HYROGEN SULFIDE (H<sub>2</sub>S)** **POISONING**

Do not panic!

Remain calm and think with your head and not your heart.

Don breathing apparatus

Protect yourself, then remove victim to fresh air as quickly as possible.

When evacuating: walk not run, upwind and uphill from the source or crosswind to achieve upwind.

Notify emergency response personnel

Provide artificial respiration and/or CPR, as necessary.

Remove all contaminated clothing to avoid further exposure.

A minimum of two (2) personnel on location shall be trained in CPR and First Aid.



**MULTI POINT SURFACE USE AND OPERATIONS PLAN**  
**J. CLEO THOMPSON & JAMES CLEO THOMPSON, JR., L.P.**  
West Square Lake Unit # 13-5  
1358.4' FSL & 2623.8' FEL, Sec. 34, T16S, R30E  
Eddy County, New Mexico

This plan is submitted with the Application for Permit to drill the above described well. The purpose of the plan is to describe the location of the proposed well; the proposed construction activities and operations plan to be followed in rehabilitating the surface and environmental effects associated with the operations.

**1. EXISTING ROADS:**

- A. Exhibit "A" is a portion of a topographical map showing the location of the proposed well as staked. The well location is approximately 5 miles north of Loco Hills, New Mexico. There is an existing caliche road going to this location
- B. DIRECTIONS: Travel North from Loco Hills on Hwy. 217 ~4 miles to County Rd. 257 (Mallet Rd.). Turn east, travel 1.25 miles to cattle guard on North side of road, turn North on Dim Road to well.

**2. PLANNED ACCESS ROAD**

- A. Length and Width: The existing access road is approximately 550 feet long and 15' wide.
- B. Construction: The existing road has been constructed and will be repaired by grading and topping with compacted caliche. The surface properly drains.
- C. Turnouts: None
- D. Culverts: None
- E. Cuts and Fills: None required
- F. Gates, Cattle guards: None required
- G. Off lease right of way: None required

**3. LOCATION OF EXISTING WELLS:**

- A. Nineteen wells exist in the section, of those, 10 are P&A'd, 1 is injecting, and 8 are producing. This well will be located 930' SE of producing Well No. 15-9 and PP&A Well No. 15-4; 970' SW of P&A well No. 13-1; 970' NE of injection Well No. 15-3; and 930' NW of producing Well No. 13-4.

**MULTI POINT SURFACE USE AND OPERATIONS PLAN**  
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**4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:**

- A. The necessary production facilities, gas separation/process equipment and tank battery are located on the unit premise.

**5. LOCATION AND TYPE OF WATER SUPPLY:**

- A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing access roads.

**6. SOURCE OF CONSTRUCTION MATERIAL:**

- A. Caliche for surfacing any proposed roads and well site will be obtained from the location, if available, or from a commercial site. No surface materials will be disturbed except those necessary for actual grading and leveling of the drill site and access road.

**7. METHODS OF HANDLING WASTE:**

- A. Drill cuttings will be disposed of in the reserve pits.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. All pits will be fenced with normal fencing materials to prevent livestock from entering the area.
- D. Water produced during operations will be produced into central battery and pumped to disposal plant.
- E. Oil produced during operations will be collected in production tanks in a central battery where it will be trucked to a refinery.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering by the wind and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

**MULTI POINT SURFACE USE AND OPERATIONS PLAN**  
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**8. ANCILLARY FACILITIES:**

A. None Required

**9. WELL SITE LAYOUT:**

- A. Exhibit "D" shows the relative dimensions of the well pad, reserve pits, and major rig components. The pad and pit area will be staked, 350' x 250'.
- B. Mat Size: 270' x 200', plus 100' x 50' reserve pits on the North.
- C. Cut and Fill: None Required
- D. The surface will be topped with compacted caliche and the reserve pits will be plastic lined.

**10. PLANS FOR RESTORATION OF THE SURFACE:**

- A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing condition as possible.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. If the proposed well is non-productive; all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and leveled as soon as they are dry enough to be worked.

MULTI POINT SURFACE USE AND OPERATIONS PLAN  
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Eddy County, New Mexico

**11. OTHER INFORMATION**

- A. Topography: The proposed well site and access roads are located on open, rolling coppice dune field formations north of Loco Hills, New Mexico.
- B. Soil: The soils at the well site are tan/red loamy, silty sands mixed with caliche pebbles and cobbles.
- C. Flora and Fauna: The vegetation consists of shinoak, snakeweed, mesquite, grasss, sage, yucca, ephedra, and sunflowers.
- D. Ponds and Streams: None
- E. Residences and Other Structures: None in the immediate vicinity
- F. Land Use: Cattle grazing (but not at the present time)
- G. Surface Ownership: The proposed well site and the access road is on federal surface with federal minerals.
- H. There is no evidence of archaeological, historical or cultural sites in the staked area.

**12. OPERATOR'S REPRESENTATIVE**

- A. The field representative for assuring compliance with the approved use and operations plan is as follows:

**J. E. (Jim) Stevens**  
**J. Cleo Thompson & James Cleo Thompson, Jr., L.P.**  
**P. O. Box 12577**  
**Odessa, TX 79768**  
**Office Phone: (432) 550-8887**  
**Cell Phone: (432) 664-2917**

MULTI POINT SURFACE USE AND OPERATIONS PLAN  
J. CLEO THOMPSON & JAMES CLEO THOMPSON, JR., L.P.  
West Square Lake Unit # 13-5  
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Eddy County, New Mexico

**13. CERTIFICATION:**

I hereby certify that I have inspected the proposed drill site and access road; that I am familiar with the conditions which presently exist; that the statements made in the plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by J. Cleo Thompson and James Cleo Thompson, Jr., L.P. and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date: 10/23/07

J E Stevens  
J. E. Stevens  
Operations Manager

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	J. Cleo Thompson
LEASE NO.:	NMNM02427
WELL NAME & NO.:	West Square Lake Unit No 13-5
SURFACE HOLE FOOTAGE:	1208' FSL & 2623' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 34, T. 16 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

## TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie Chicken
  - Sand Dune Lizard
- ☐ **Construction**
  - Notification
  - Topsoil
  - Reserve Pit
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☐ **Reserve Pit Closure/Interim Reclamation**
- ☐ **Final Abandonment/Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

SENM-S-22

### PRAIRIE CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

On the lands described below:

All of Section 34, T. 16S., R. 30E.

For the purpose of: Protecting Prairie Chickens:

Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in Lesser Prairie Chicken Habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. and 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Bureau of Land Management

SENM  
-S-22

Carlsbad Field Office

December 1997



## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

### **C. RESERVE PITS**

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 100' X 150' on the North side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

#### **D. FEDERAL MINERAL MATERIALS PIT**

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 234-5972.

#### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

#### **F. ON LEASE ACCESS ROADS**

##### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

##### **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

##### **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

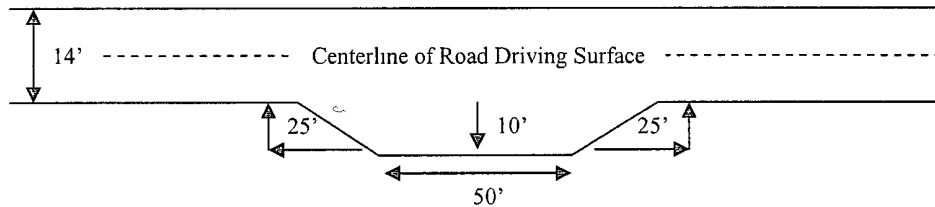
### Ditching

Ditching shall be required on both sides of the road.

### Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

**Standard Turnout – Plan View**

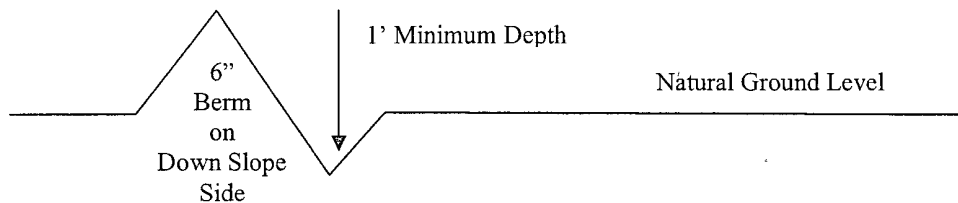


### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### **Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### **Culvert Installations**

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

### **Cattleguards**

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

### **Fence Requirement**

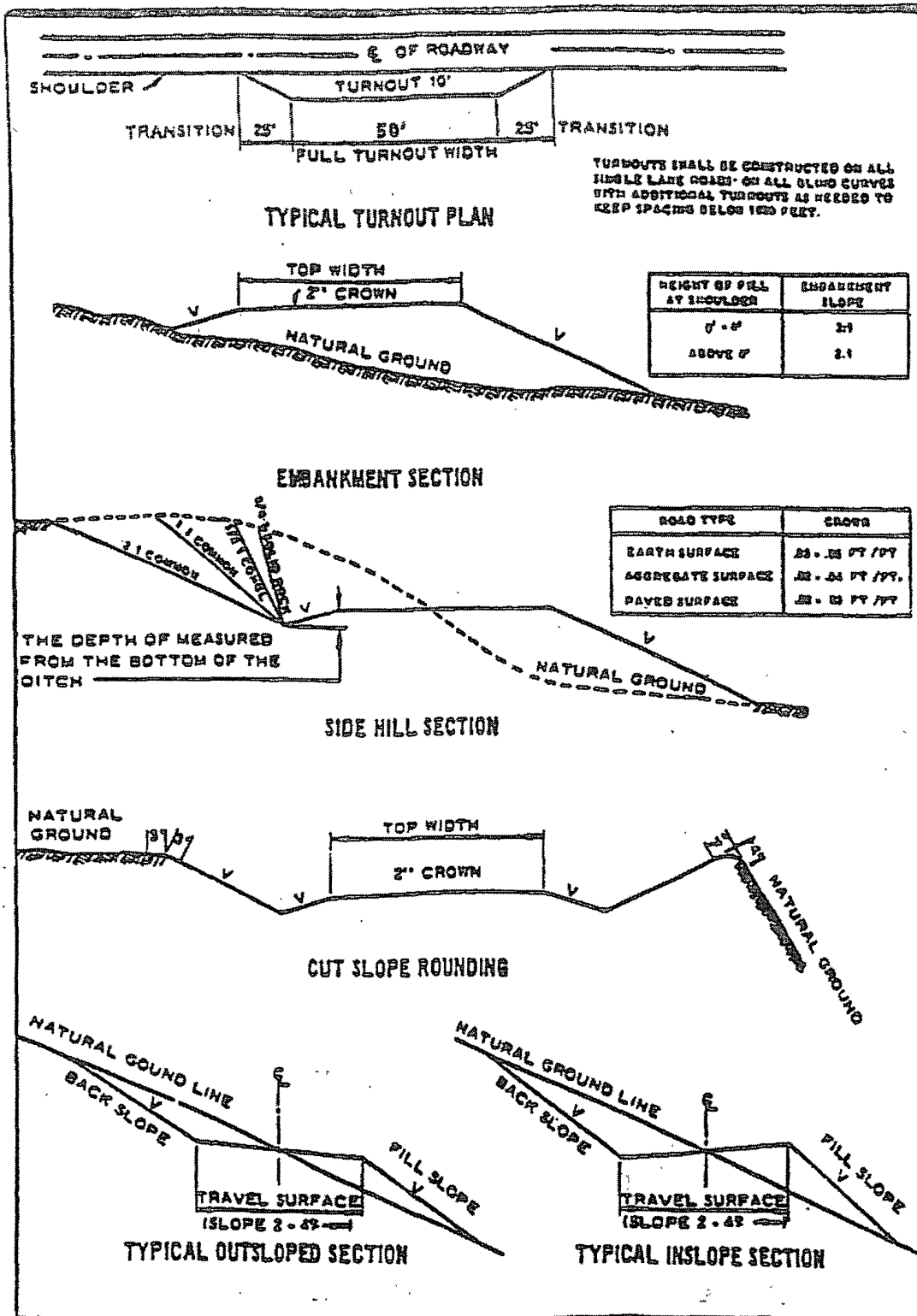
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

### **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 - Cross Sections and Plans For Typical Road Sections



## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Chaves and Roosevelt Counties, T16S Eddy County**  
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.  
(575) 627-0205.

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the **Grayburg** formation. **Hydrogen Sulfide has been reported in this township with measurements of 500-1800 ppm in the gas stream.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

### B. CASING

1. The **8-5/8** inch surface casing shall be set a **minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 375-400** feet and cemented to the surface. **Fresh water mud to be used to setting of surface casing.**
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin; 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial action will be done prior to drilling out that string.

**Possible lost circulation in the Grayburg and San Andres formations.  
Possible water flows in the Salado and Artesia Groups.**

2. The minimum required fill of cement behind the 5-1/2 inch production casing is:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

**C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

**Engineer on call phone (after hours):      Carlsbad: (575) 706-2779**

**WWI 112707**

## **VIII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Containment Structures**

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color  
Shale Green, Munsell Soil Color Chart # 5Y 4/2

#### **VRM Facility Requirement**



## **IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE**

### **A. INTERIM RECLAMATION**

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

### **B. RESERVE PIT CLOSURE**

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

## Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
**Four-winged Saltbush	5lbs/A

\*\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## **X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS**

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.