AFS-11-388

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JUN 15 2011
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Form 3160-3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No: ~~NM-0175774~~ NM103234

6 If Indian, Allotee or Tribe Name:

1a Type of work: ☐ DRILL ☑ REENTER

7 If Unit or CA Agreement, Name and No: NM94514 X

1b Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8 Lease Name and Well No: Mobil Federal, Well No. 3 (15961)

2 Name of Operator: Shackelford Oil Company (20593)

9 API Well No: 30-025-30694

3a Address: 3510 N. A/ St. Bldg B-100, Midland, TX 79705

3b Phone No (include area code): 432-682-9784

10 Field and Pool, or Exploratory: West Lusk Delaware~

4 Location of Well (Report location clearly and in accordance with any State requirements *)
At surface: 2310' FSL & 330' FWL Unit L
At proposed prod zone: same

11 Sec, T R M or Blk and Survey or Area: Sec. 21-T19S-R32E

14 Distance in miles and direction from nearest town or post office*: 23 miles NE of Carlsbad, NM

12 County or Parish:

13 State:

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any)	16 No of acres in lease	17 Spacing Unit dedicated to this well
330'	640	40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	**19 Proposed Depth**	**20 BLM/BIA Bond No on file**
100	6189'	~~NM-2104~~ NM 2154
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	**22 Approximate date work will start***	**23 Estimated duration**
3584' GL	03/28/2011	10 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form

1 Well plat certified by a registered surveyor
2 A Drilling Plan.
3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)
4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5 Operator certification
6 Such other site specific information and/or plans as may be required by the authorized officer

25 Signature	Name (Printed Typed)	Date
George R. Smith	George R. Smith	02/17/2011

Title: POA agent for Shackelford Oil Company

Approved by (Signature)	Name (Printed Typed)	Date
/s/ Jeannette A. Martinez		JUN 8 2011
Title: for FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	

Application approval 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
Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

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)

Capitan Controlled Water Basin

KZ 06/21/11

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

JUN 22 2011

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APPLICATION FOR DRILLING
SHACKELFORD OIL COMPANY, INC.
Re-entry: Mobil Federal, Well No.3
2310' FSL & 330' FWL, Sec. 21-T19S-R32E
Lea County, New Mexico
Lease No.: NM-0175774
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill (Deepen) subject well, Shackelford Oil Company, Inc. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.

2. The estimated tops of geologic markers are as follows:

Anhydrite	810'	Capitan Reef	2,895'
Tansill	2,472'	Delaware	4,802'
Yates	2,592'	T.D.	6,189'
Seven Rivers	2,799'		

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:
   Water: Surface water between 50' - 230' Behind casing
   Oil: Possible in the Yates below 2,600' and the Delaware below 4,820'.
   Gas: None expected.

4. **Proposed New Casing Program**:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	COLLAPSE DESIGN FACTOR	BURST DESIGN FACTOR	TENSION DESIGN FACTOR
17 1/2"	13 3/8"	54.4#	H-40	8 Rnd	455'	Existing in	hole with	475 sx cmt
11"	8 5/8"	32.0 & 24#	J-55	8 Rnd	4,256'	"	"	1090 sx
7 7/8"	5 1/2"	15.5#	J-55-	LTC	7,240'	Exist'g from	TD to 1494	1000 sx
7 7/8" New	5 1/2"	15.5	J-55	LTC	1,494'	6.19	7.37	10.77

5. **Cement Program**

CASING	SETTING DEPTH	QUANITY OF CEMENT	YEILD
13 75/8"	455'	Casing existing in hole and cemented : Circ. 1090 sacks	N/A
8 5/8"	4,256'	Casing existing in hole and cemented with 1000 sacks to surface	N/A
5.1/2"	1,494'	260 sx HalCem-C with 1% calcium chloride-Flake TOC surface Excess cement= 28%	1.34

6. **Proposed Control Equipment: See Exhibit "E":**
   BOP Program:
   A 10" 3000 psi wp Cameron Space Saver, double ram BOP, will be installed on the 8 5/8" casing. Casing and BOP will be tested as described in Onshore Order No. 2 before drilling out with 7 7/8". The pipe rams will be operated and checked daily, plus each time drill pipe is out of hole. This will be documented on driller's log. See Exhibit "E":

7. Mud Program

MUD PROGRAM DEPTH	MUD	MUD WEIGHT	VIS.	W/L CONTROL
0 – 5900'	Brine water mud	~ 9.5 ppg	29	No W/L control

8. Auxiliary Equipment: Blowout Preventer, gas detector, Kelly cock.

9. Testing, Logging, and Coring Program:

Drill Stem Tests: None.
Logging: Bond Log was previously run.
Coring: None

10. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, the proposed mud program will be modified to increase the mud weight. Estimated (evac) BHP=3,218 psi, surface pressure = 1,856 psi (part. evac. hole) with BH temperature of 122°.

11. **H_2S**: None expected. None in previously drilled well, but the Mud Log Unit will be cautioned to use a gas trap to detect H_2S and if any is detected the mud weight will be increased along with H_2S inhibitors sufficient to control the gas. The well will be shut down until a mud separator and flare line can be installed on the choke manifold, if the gas monitor approaches 10.

12. Anticipated starting date: March 28, 2011.
Anticipated completion of drilling operations: Approx. 3 –4 wks

Operator: Shackelford Oil Company
Surface Lease: NM0175774
Producing Lse No: NM0175774
Unit or CA No: N. A.

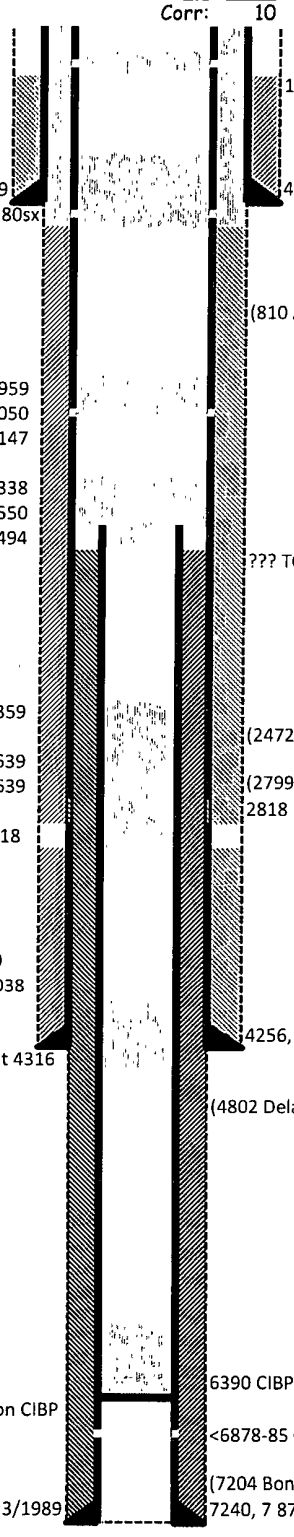
Well: Mobile - 003
API: 3002530694
@ Srfce: T19S-R32E, Sec 21, 2310FSL & 330FWL
@ M TD: N. A.

Subsurface Concerns for Casing Designs: Cap

Well Status: Abd

Spud date: 10/25/1989

KB: 3594
GL: 3584
Corr: 10



11/30/2010 perf & sqz w/60sx cmt at 63

150 TOC temp

11/30/2010 tag top plug at 287
10/25/1989
11/24/2010 perf at 505, sqz w/ 80sx

455, 17.5"hole, 13.375"csg, 54.5#, J55, 475sx circ 89sx

(810 Anhydrite)

11/24/2010 tag top of plug at 959
11/24/2010 perf at 1050
11/24/2010 spot 45sx from 1147

11/23/2010 tag plug top at 1338
11/23/2010 spot 45sx plug at 1550
11/23/2010 cut & pull 5 1/2 csg 1494

??? TOC [-11% excess]

11/21/2010 tag top of plug at 2359

(2472 Tansill)

11/21/2010 spot 25 sx plug at 2639
11/21/2010 tag top of plug at 2639

(2799 Seven Rivers)
2818 DV Tool

11/20/2010 spot 60sx plug at 2918

11/2/1989
11/20/2010 tag top of plug at 4038

4256, 11"hole, 8.625"csg, 24#, 32#, 245sx 1st stg, 845sx 2nd

11/20/2010 spot 25 sx plug at 4316

(4802 Delaware Sand)

6390 CIBP 01/27/2010

11/20/2010 spot 25 sx plug on CIBP

<6878-85 01/09/90>

01/27/2010 MIT held 500psig 30m for TA status

(7204 Bone Springs)

11/13/1989

7240, 7 875"hole, 5.5"csg, 15.5#, 1000sx circ 0sx

Diagram last updated: 05/09/2011

Casing-patch tool Definition

Casing-patch tool: A special tool with a rubber packer or lead seal that is used to repair casing. when casing is damaged downhole, a cut is made below the damaged casing, the damaged casing and the casing above it are pulled from the well, and the damaged casing is removed from the casing string. the tool is made up and lowered into the well on the casing until it engages the top of the casing that remains in the well, and a rubber packer or lead seal in the tool forms a seal with the casing that is in the well. the **casing-patch tool** is an over-shot-like device and is sometimes called a casing overshot.

Terms Related to Casing-patch tool

- **Casing pack**

  A means of cementing casing in a well so that the casing may, if necessary, be retrieved with minimum difficulty. a special mud, usually an oil mud, is placed in the well ahead of the cement after the casing has been set. non-solidifying mud is used so that it does ...

- **Intermediate casing string**

  The string of casing set in a well after the surface casing but before production casing is set. keeps hole from caving and seals off troublesome formations. also called protection casing.

- **Casing seal receptacle**

  A casing sub containing a seal bore and a left-handed thread, run as a crossover between casing sizes, to provide a tubing anchor.

- **Swage**

  A tool used to straighten damaged or collapsed casing in a well.

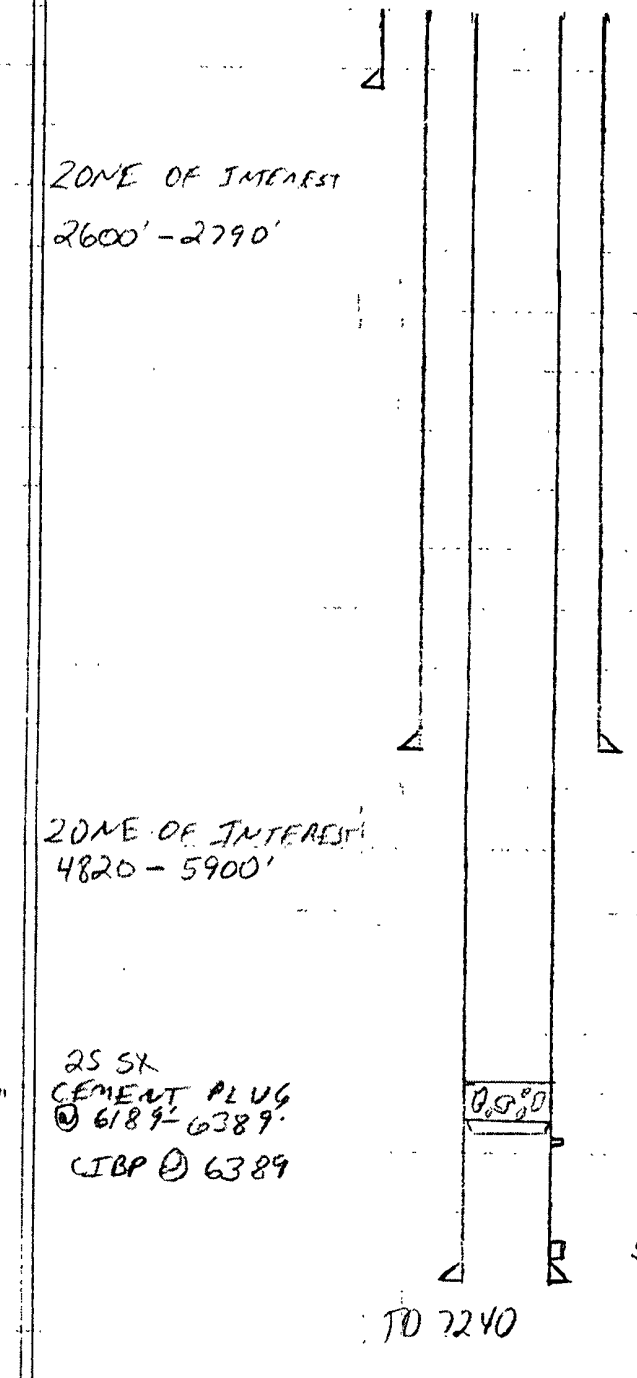
- **Casing overshot**

  See casing-patch tool

- **Casing roller**

  A tool composed of a mandrel on which are mounted several heavy-duty rollers with eccentric roll surfaces. it is used to restore buckled, collapsed, or dented casing in a well to normal diameter and roundness. made up on tubing or drill pipe and run into the well to the depth ...

MOBIL FEDERAL #3
PROPOSED WELL SCHEMATIC
SEC. 21-19S-32E
2310'FSL & 330'FWL



13 3/8" 54# H 40 @ 455'
475 SX CLASS C, W/ 2% CACL CIRCULATED TO SURFACE

ZONE OF INTEREST
2600'-2790'

SQZ HOLES @ 1050'
NO INJ. RATE

NEW CASING
1494' 5 1/2" 15.5# J-55 WILL TIE INTO EXISTING 5 1/2" CASING W/ CASING PATCH

8 5/8" 32# & 24# J-55 @ 4254'
245 SX CLASS C, W/ 10% CACL
+ 1/4# CELLO-SEAL, DV TOOL @ 2818', 645 SX PSL C + 1/4# CELLO-SEAL, TAIL W/ 200 SX CLASS C W/ 1% CACL
TEMP SURVEY TOC 150'

245 SX
645
200
1090 SX CMT TO SURF

ZONE OF INTEREST
4820-5900'

PERFS 6478-6485

25 SX CEMENT PLUG @ 6189'-6389'

BOTTOM 5 1/2" CSG @ 6189' TO CMT PLUG

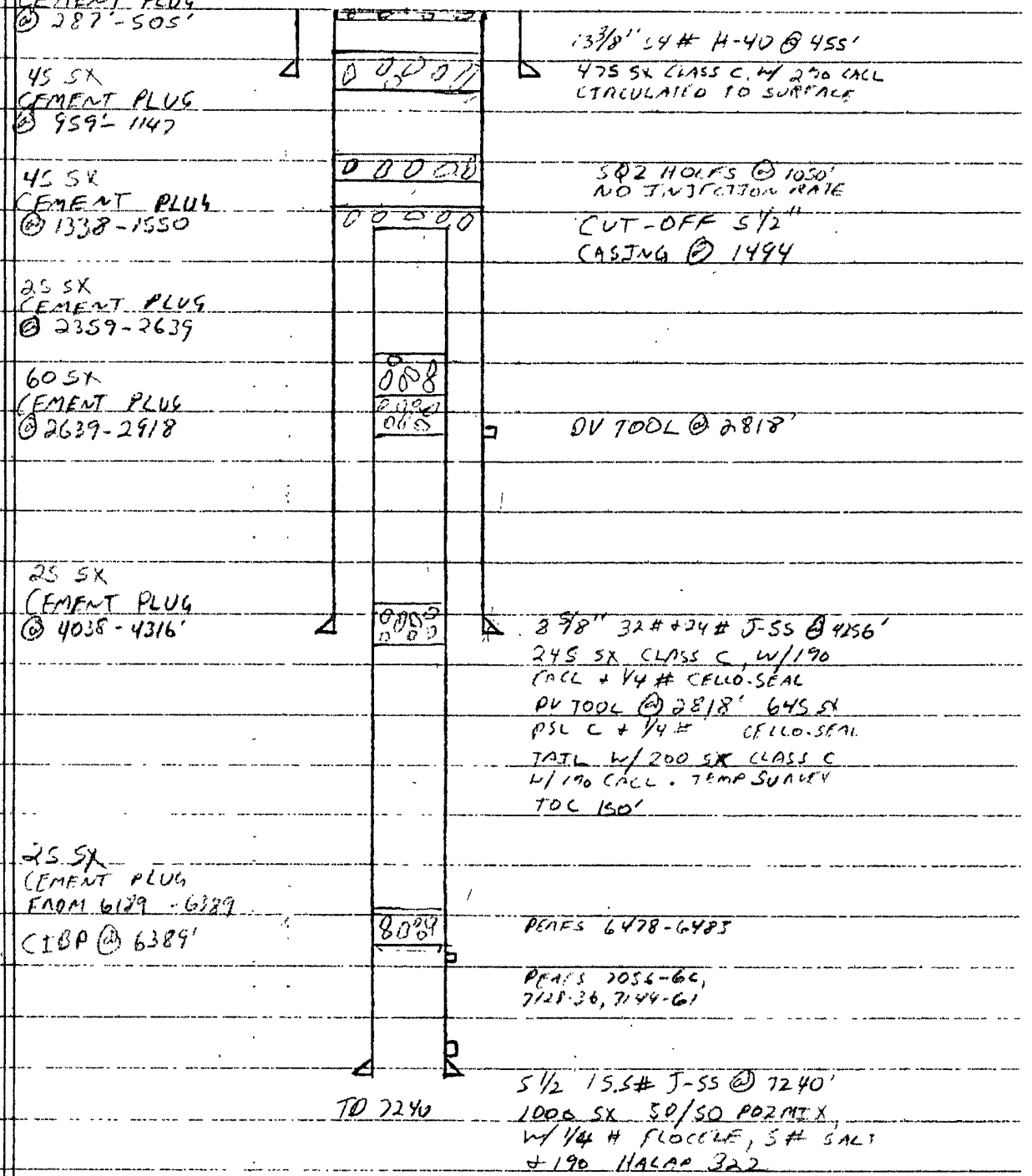
CIBP @ 6389

PERFS 7056-66, 7128-36, 7144-61

5 1/2 15.5# J-55 @ 7240
1000 SX 50/50 POZMIX W/ 1/4# FLOCELE, 5# SALT & 1% HALAD 322

TD 7240

MOBIL FEDERAL #3
PRESENT WELLBORE SCHEMATIC
SEC. 21 - 19S - 32E
2310 FSL + 330 FWL



3000 psi System

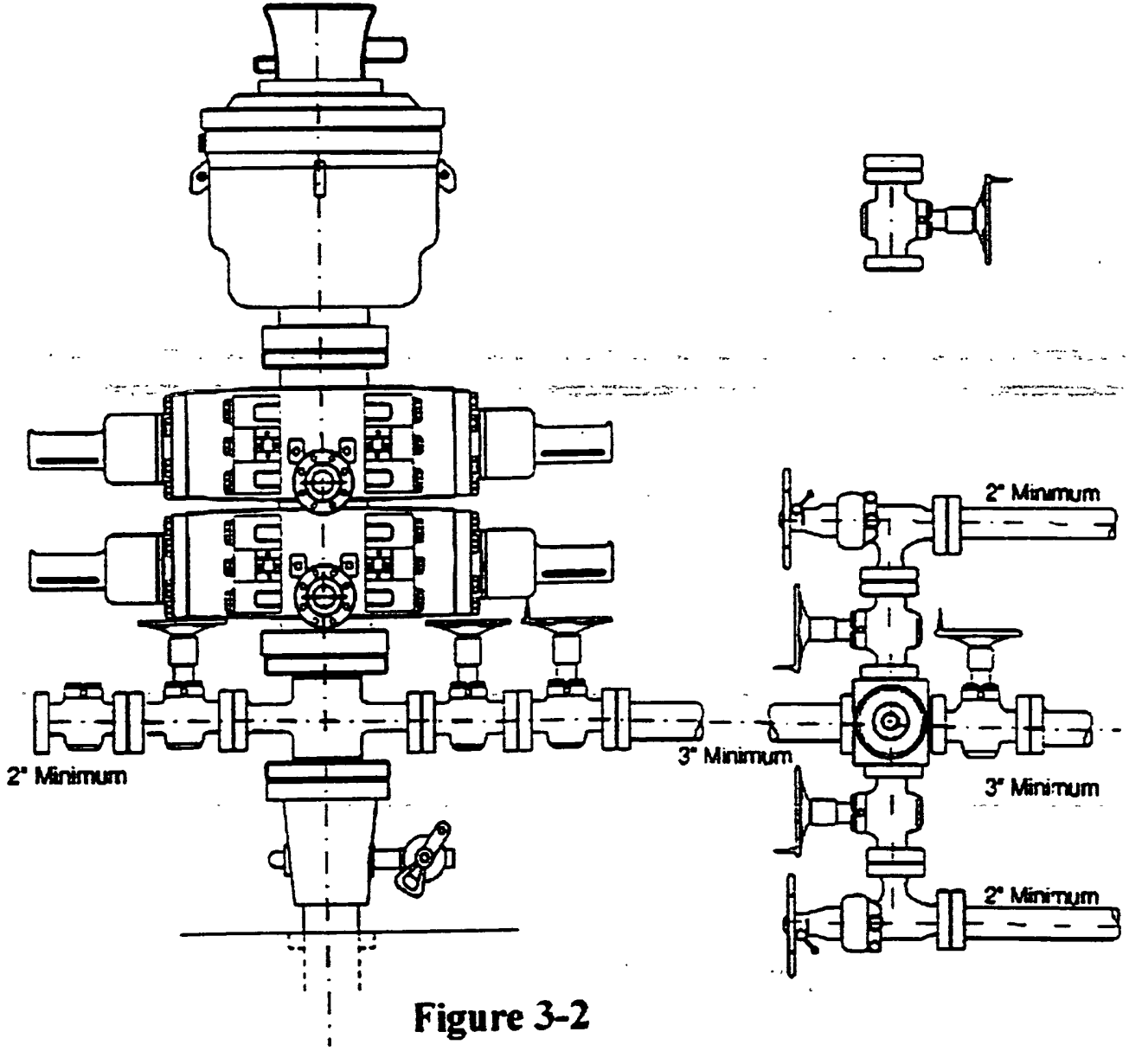


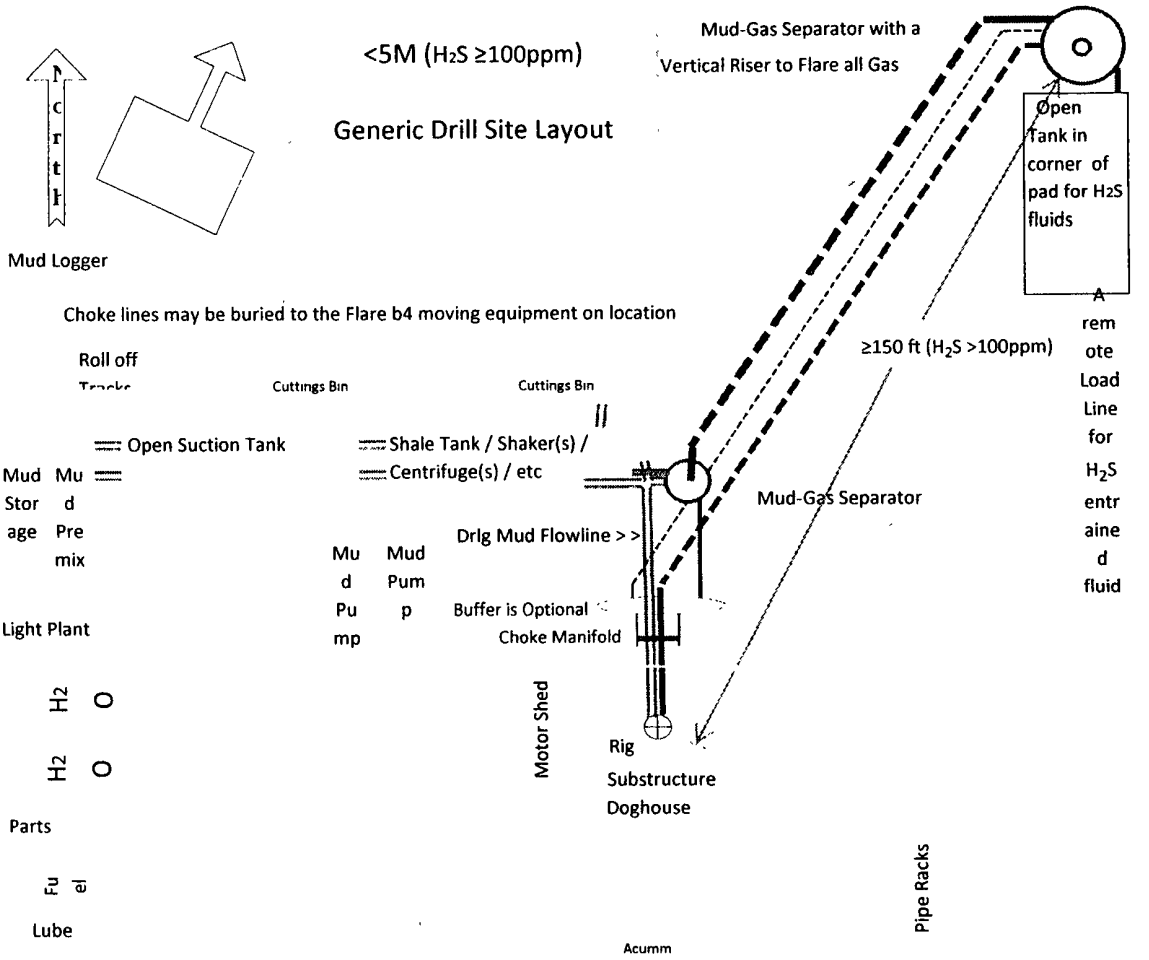
Figure 3-2

EXHIBIT "E"
SHACKELFORD OIL CO.
Re-entry: Mobil Federal, Well No. 3
BOP Specifications

For a vertical gas vent or flare to be 150ft from the wellbore, the well needs to be centered in a square 250ft min on a side. To be 100ft from the wellbore, the well needs to be centered in a square 150ft min on a side.

<5M (H_2S ≥100ppm)

Generic Drill Site Layout



Preplanning reasonable accommodations to achieve necessary and useable "Closed Loop" drillsite features is challenging. Specific considerations must be custom fitted to each wellsite. This generic plat was prepared to emphasize desired APD planning elements for lower pressure wells with the potential for H2S gas. As a minimum the plat should include: a north arrow, prevailing wind direction, access road, a mud-gas separator, and steel tank location or blowdown pit for overpressured fluids. Include truck routing for removal of cuttings bins. Consider an overpressured situation, with the BOPE being closed. Show the choke manifold and a piping system for venting overpressured fluid through a gas/liquid separator to burn gas and flow liquids into the steel tank. Also consider the need for fluid/gas separation during normal drilling with fluid discharged to mud tanks and H2S gas from the flowline venting to the flare.

Tool Pusher Housing

Company man Housing