

OCD Hobbs

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD
JAN 28 2016
RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No. NE DRINKARD; NMNM-072602X
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. NORTHEAST DRINKARD UNIT #359 (22503)
2. Name of Operator APACHE CORPORATION (873)		9. API Well No. 30-025- 43042
3a. Address 303 VETERANS AIRPARK LN #1000 MIDLAND, TX 79705	3b. Phone No. (include area code) 432-818-1167	10. Field and Pool, or Exploratory EUNICE;BLI-TU-DR, N <22900>
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 795' FSL & 1295' FEL At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area SEC: 3 T21S R37E
14. Distance in miles and direction from nearest town or post office* APPROX 5 MILES NORTH OF EUNICE, NM		12. County or Parish LEA
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 795'		13. State NM
16. No. of acres in lease 708.67 ACRES	17. Spacing Unit dedicated to this well 40 ACRES	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 600'	19. Proposed Depth 7000'	20. BLM/BIA Bond No. on file BLM-CO-1463 NATIONWIDE / NMB000736
21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL: 3452.07'	22. Approximate date work will start* AS SOON AS APPROVED	23. Estimated duration ~ 10 DAYS
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature <i>Sorina L Flores</i>	Name (Printed/Typed) SORINA L. FLORES	Date 4/21/15
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Title
SUPV OF DRILLING SERVICES

Approved by (Signature) /S/ STEPHEN J. CAFFEY	Name (Printed/Typed)	Date JAN 25 2016
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Title
FCR FIELD MANAGER

Office
BLM-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.

(Continued on page 2)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

K2 P
01/29/16

*(Instructions on page 2)

Capitan Controlled Water Basin

Witness Surface Casing

FEB 01 2016

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1. Geologic Formations

TVD of target	7000'	Pilot hole depth	N/A
MD at TD:	7000'	Deepest expected fresh water:	91'

Back Reef

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Aeolian	Surf		
Rustler	1306'		
Top of Salt	1484'		
Tansil	2473'		
Yates	2613'		
Seven Rivers	2872'	Oil	
Queen	3429'	Oil	
Grayburg	3749'	Oil	
San Andres	4109'	Oil	
Glorieta	5213'		
Paddock	5275'	Oil	
Blinbry	5589'	Oil	
Tubb	6091'	Oil	
Drinkard	6506'	Oil	
ABO	6782'	Oil	

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
11"	0'	1335' / 440'	8-5/8"	24	J-55	STC	2.1	2.1	8.8
7-7/8"	0'	7000'	5-1/2"	17	L-80	LTC	1.7	2.2	3.34
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

*All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N

See COA

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If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft ³ / sack	H ₂ O gal/s k	500# Comp. Strength (hours)	Slurry Description
Surf	465	13.5	1.73	9.13	9	Lead: Cl C + 4 % Bentonite + 1% CaCL ₂ + 0.25# CF (12hr-677psi; 24hr-1093psi)
	250	14.8	1.35	6.34	5	Tail: Cl C w/2% CaCL ₂ + 0.25# CF (12hr-1121psi; 24hr-1795psi)
Prod	605	12.6	1.95	10.65	8.5	Lead: Cl C 35/65 + 6% Bentonite + 0.1% R-20 + 0.25# CF + 3% Salt (12hr-671psi, 24hr-979psi)
	DV/ECP Tool: N/A					
	345	14.2	1.28	5.81	8.5	Tail: 50:50 Poz C w/2% Bentonite + 0.4% Fl-12 + 0.1% R-20 + 0.25# CF + 3% Salt (12hr-910psi; 24hr-_____psii)

**If DVT used: DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.*

***** PRODUCTION CMT CONTINGENCY IF WATER FLOWS ENCOUNTERED*******

Casing	# Sks	Wt. lb/ gal	Yld ft ³ / sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Prod 1 st Stage	75	12.6	1.95	10.65	8.5	Lead: Cl C 35/65 + 6% Bentonite + 0.1% R-20 + 0.25# CF + 3% Salt (12hr-671psi, 24hr-979psi)
	345	14.2	1.28	5.81	8.5	Tail: Cl C 50/50 + 2% Bentonite + 0.4% FL-12 + 0.1% R-20 + 0.25# CF + 3% Salt (12hr-910psi, 24hr-16985psi)
DV/ECP Tool : 4440'						
Prod 2 nd Stage	465	12.6	1.95	10.65	8.5	Lead: Cl C 35/65 + 6% Bentonite + 0.1% R-20 + 0.25# CF + 3% Salt (12hr-671psi, 24hr-979psi)
	100	14.8	1.33	6.32	6.5	Tail: Cl C (12hr-1281psi, 24hr-1951psi)

Casing String	TOC	% Excess
Surface	0'	100%
Production	0'	30%

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Include Pilot Hole Cementing specs:

Pilot hole depth : N/A

KOP : N/A

Plug top	Plug Bottom	% Excess	No. Sacks	Wt. lb/gal	Yld ft ³ /sack	Water gal/sk	Slurry Description and Cement Type

4. Pressure Control Equipment

NO A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

See COA
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
7-7/8"	11"	3M	Annular	x	50% of working pressure <i>must test to 3,000 psi</i> <i>2M</i> <i>3M</i>
			Blind Ram	x	
			Pipe Ram	x	
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
<i>NO</i>	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
<i>NO</i>	Are anchors required by manufacturer?
<i>NO</i>	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. <ul style="list-style-type: none"> Provide description here See attached schematic.

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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. shoe	FW	8.7 – 9.1	32-34	N/C
Surf shoe	TD	Brine	9.8 – 10.2	32-34	N/C

**Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.*

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
X Resistivity	TD to Int. shoe
X Density	TD to Int. shoe
X CBL	Production casing
	Mud log
	PEX

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	3080 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe: N/A

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

Y	H2S is present
	H2S Plan attached

*See
COA*

8. Other facets of operation

Is this a walking operation? NO

Will be pre-setting casing? NO

Attachments

___ Directional Plan

___ Other, describe

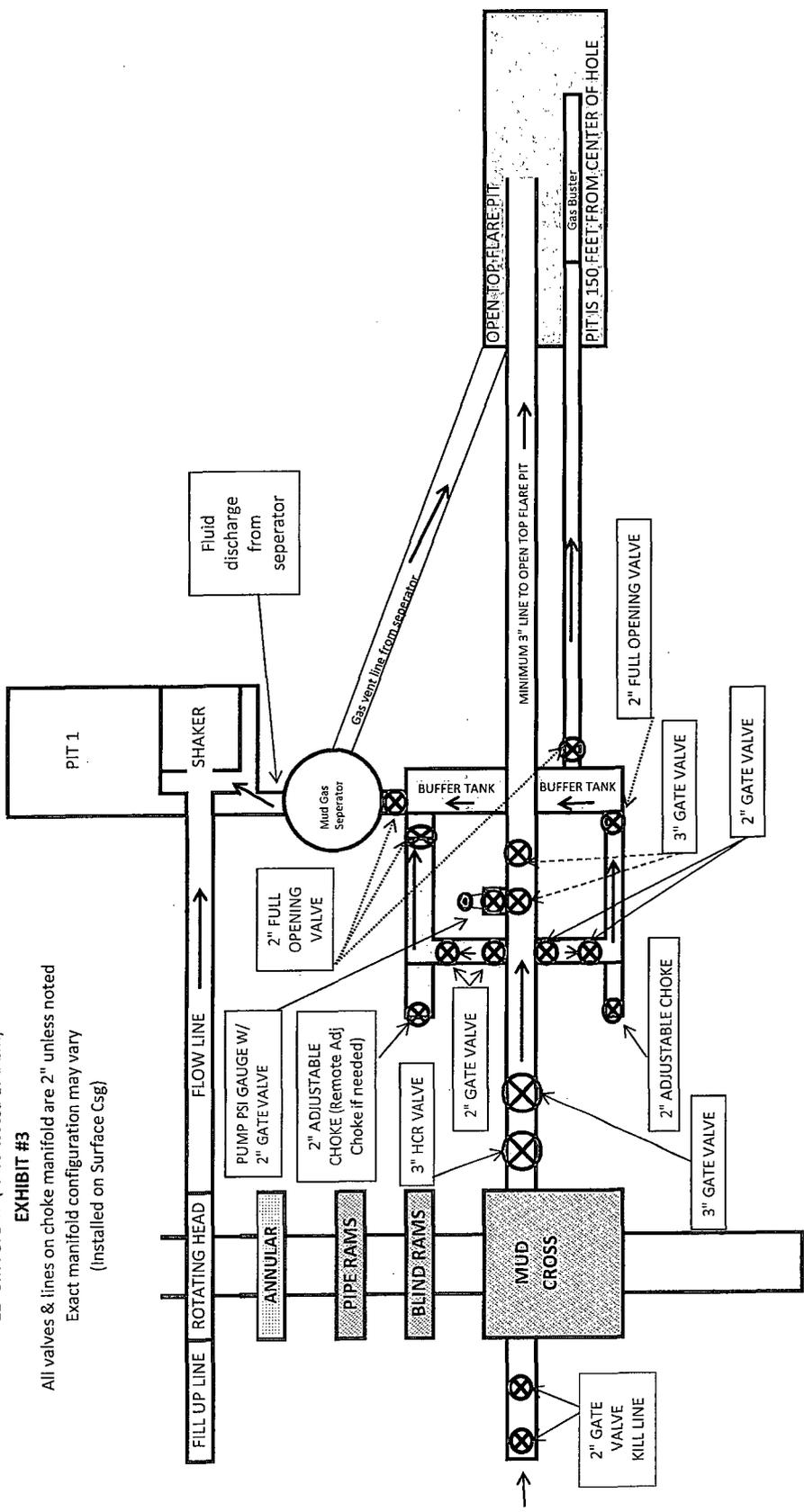
APACHE BOP AND CHOKE MANIFOLD SCHEMATIC

3M Must test BOP to 3,000psi

11" 3M PSI BOP (to be tested as a 2M)

EXHIBIT #3

All valves & lines on choke manifold are 2" unless noted
Exact manifold configuration may vary
(installed on Surface Csg)



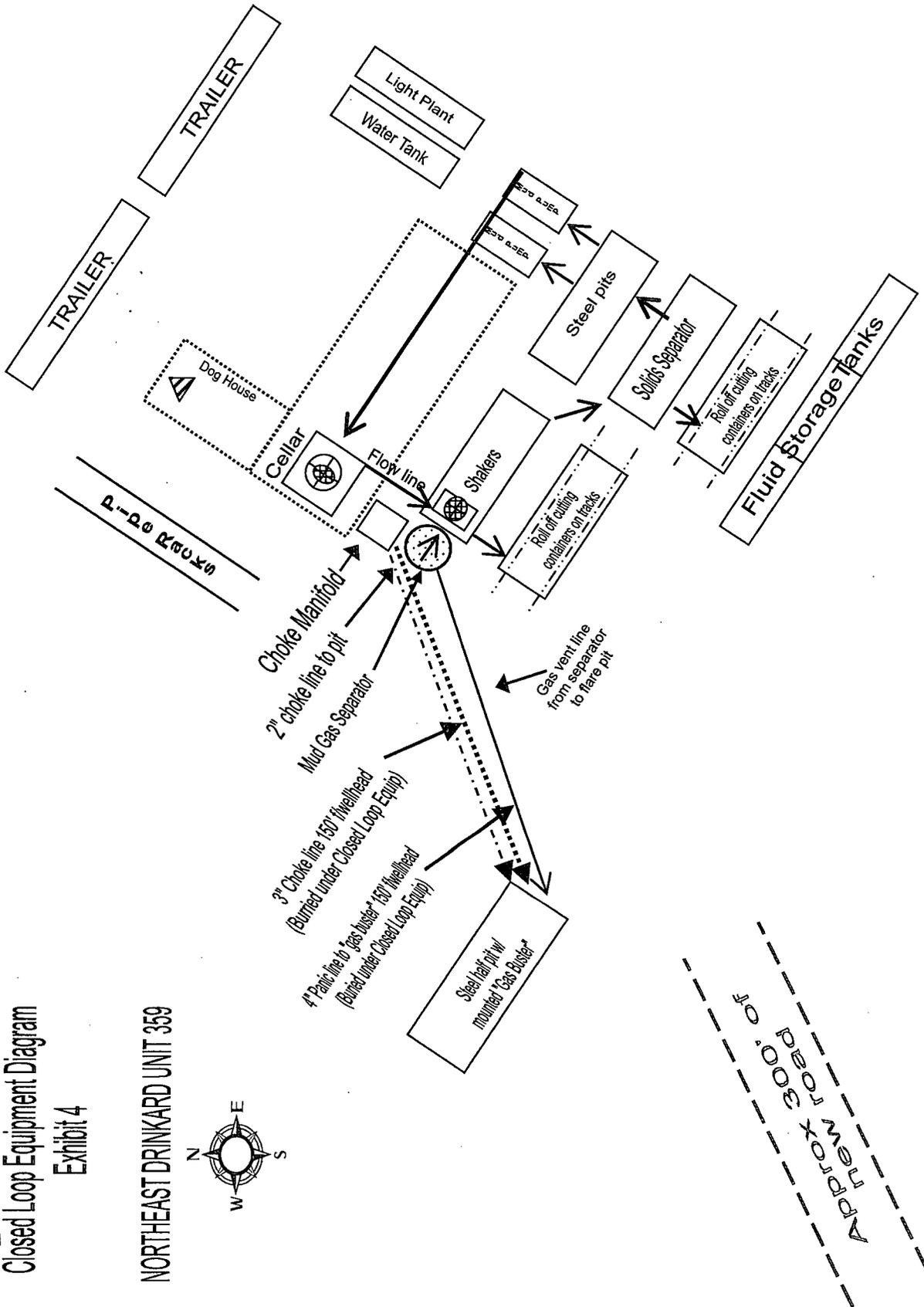
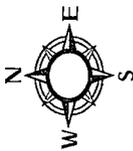
*** If H2S is encountered in quantities greater than 100ppm, Apache will shut in well & install a remote operated choke ***

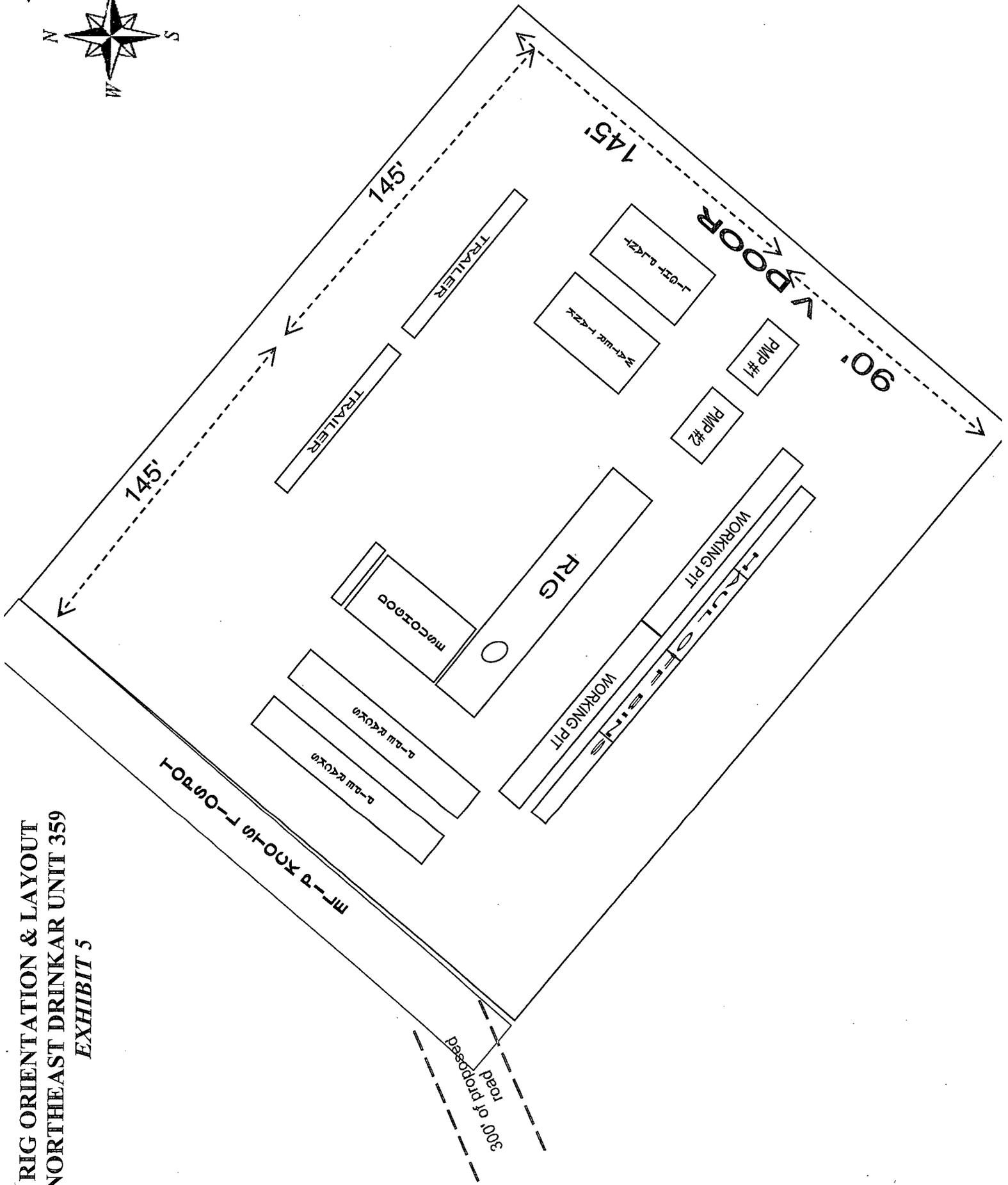
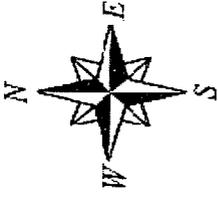
Apache

Closed Loop Equipment Diagram

Exhibit 4

NORTHEAST DRINKARD UNIT 359





**RIG ORIENTATION & LAYOUT
NORTHEAST DRINKAR UNIT 359
EXHIBIT 5**