Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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.

5 Lease Serial No.
NMNM95630

6 If Indian, Allottee or Tribe Name

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

1 Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
CROW FLATS 14 FEDERAL 4H

2. Name of Operator
CHESAPEAKE OPERATING INC
Contact: LYNDEE SONGER
E-Mail: lyndee.songer@chk.com

9. API Well No
30-015-38466-00-X1

3a. Address
OKLAHOMA CITY, OK 73154-0496

3b Phone No (include area code)
Ph: 405-935-2411

10 Field and Pool, or Exploratory
UNKNOWN
Crow Flats; Delaware

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 14 T16S R28E NESE 1980FSL 200FWL

11. County or Parish, and State
EDDY COUNTY, NM

RECEIVED
MAR 20 2012
NMOCD ARTESIA

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 recompletion 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.)

CHESAPEAKE REQUESTS PERMISSION TO CHANGE THE FOLLOWING ON THE APPROVED APD:

1. CHANGE INTERMEDIATE CASING DEPTH FROM 1900' TO 2000' (UPDATED DRILLING PLAN ATTACHED WITH CHANGES HIGHLIGHTED)

2. CHANGE LATERAL FROM CEMENTED CASING TO OPEN HOLE PACKER COMPLETION- (UPDATED DRILLING PLAN ATTACHED WITH CHANGES HIGHLIGHTED)

3. RIG CHANGE FROM PATTERSON 62 TO CACTUS 120 (RIG LAYOUT ATTACHED)

4. APPROVAL TO USE COFLEX HOSE FROM BOP TO CHOKE MANIFOLD (ATTACHED IS TEST FORM FOR THE HOSE)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Accepted for record
NMOCD
3/27/2012

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #131335 verified by the BLM Well Information System
For CHESAPEAKE OPERATING INC, sent to the Carlsbad
Committed to AFMSS for processing by KURT SIMMONS on 02/24/2012 (12KMS1077SE)

Name *(Printed/Typed)* LYNDEE SONGER — Title REGULATORY COMPLIANCE ANALYST

Signature (Electronic Submission) — Date 02/21/2012

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By — Title — Date 3/16/12

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

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

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #131335 that would not fit on the form

32. Additional remarks, continued

BLM NATIONWIDE BOND ESB000159

(CHK PN 641806)

MIDWEST

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS		**P.O. Number:** ASSET#M10712
HOSE SPECIFICATIONS		
Type: CHOKE & KILL		**Length:** 35'
I.D. 4" *INCHES*		**O.D.** 8" *INCHES*
WORKING PRESSURE 10,000 *PSI*	**TEST PRESSURE** 15,000 *PSI*	**BURST PRESSURE** *PSI*
COUPLINGS		
Type of End Fitting E4.0X64WB		
Type of Coupling: 4 1/16 10K FLANGE		
PROCEDURE		
Hose assembly pressure tested with water at ambient temperature		
TIME HELD AT TEST PRESSURE 1 *MIN.*		**ACTUAL BURST PRESSURE:** 0 *PSI*
COMMENTS: ASSET#M10712		
Date: 9/29/2010	**Tested By:** BOBBY FINK	**Approved:** MENDI JACKSON

OHSORE OIL & GAS ODER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (CFR 43, Part 3160) and the approved Application for Permit to Drill. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling and completion operations.

Approval of this application 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.

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA	KBTVD	MD
Yates	3158	457	
Queen	2445	1170	
Grayburg	2040	1575	
San Andres	1685	1930	
Glorieta	202	3413	
Tubb	-1048	4663	
Abo Shale	-1787	5402	
Wolfcamp	-2948	6563	
Plot TD	-3235	6850	
Lateral TD	-2972	6587	11106

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Water	Water Sand	150
Oil/Gas	San Andres	1930
Oil/Gas	Glorieta	3413
Oil/Gas	Wolfcamp	6563

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT

Will have a 5000 psi rig stack (see proposed schematic) for drill out below surface casing, but this system will be tested to 3000 psi working pressure and 3000 psi working pressure for the annular preventer; therefore, no shoe tests will be conducted.

Chesapeake Operating Inc.'s minimum specifications for pressure control equipment are as follows:

I. BOP, Annular, Choke Manifold Pressure Test - See Exhibit F-1 and F-2

A. Equipment
1. The equipment to be tested includes all of the following that is installed on the well:
(a) Ram-type and annular preventers
(b) Choke manifolds and valves
(c) Kill lines and valves
(d) Upper and lower kelly cock valves, inside BOP's and safety valves

B. Frequency
1. All tests shall be performed with clear water
(a) when installed
(b) before drilling out each casing string
(c) at any time that there is a repair requiring a pressure seal to be broken in the assembly
(d) at least once every 30 days while drilling

C. Frequency
1. In some drilling operations, the pressures to be used for low and high pressure testing of preventers and casing may be different from those given below due to governmental regulations or approved local practices.
2. If an individual component does not test at the low pressure, do not test to the high pressure and then drop back down to the low pressure.
3. All valves located downstream of a valve being tested must be placed in the open position.
4. All equipment will be tested with an initial "low pressure" test at 250 psi.
5. The subsequent "high pressure" test will be conducted at the rated working pressure of the equipment for all equipment except the annular preventer unless otherwise stated (see above).
6. The "high pressure" test for the annular preventer will be conducted at 70% of the rated working pressure unless otherwise stated (see above).
7. A record of all pressures will be made on a pressure-recording chart.

II. Accumulator Performance Test

A. Scope
1. The purpose of this test is to check the capabilities of the Bop control systems and to detect deficiencies in the hydraulic oil volume and recharge time.

B. Test Requency
1. The accumulator is to be tested each time the BO's are tested, or any time a major repair is performed.

C. Minimum Requirements

1. The accumulator should be of sufficient volume to supply 1.5 times the volume to close and hold all BOP equipment in sequence, without recharging and the pump turned off, and have remaining pressures of 200 psi above the precharge pressure.
2. Minimum precharge pressures for the various accumulator systems per manufacturers recommended specifications are as follows:

System Operating Pressure	Precharge Pressure
1500 psi	750 psi
2000 psi	1000 psi
3000 psi	1000 psi

3. Closing times for the annular preventer should be less than 20 seconds and for the ram-type preventers less than 10 seconds.
4. System recharge time should not exceed 10 minutes.

D. Test Procedure

1. Shut accumulator pumps off and record accumulator pressure.
2. In sequence, close the annular and one set of properly sized pipe rams, and open the HCR valve
3. Record time to close or open each element and the remaining accumulator pressure after each operation.
4. Record the remaining accumulator pressure at the end of the test sequence. Per the previous requirement, this pressure should not be less than the following pressures:

System Operating Pressure	Remaining Pressure After Test
1500 psi	950 psi
2000 psi	1200 psi
3000 psi	1200 psi

5. Turn the accumulator pumps on and record the recharge time. This time should not exceed 10 minutes.
6. Open annular and ram-type preventers. Close HCR valve.
7. Place all 4-way control valves in full open or full closed position. Do not leave in neutral position.

3. CASING PROGRAM

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	350'	17-1/2"	13-3/8"	48 #	H-40	STC	New
Shallow Intermediate	0'	2,000'	12-1/4"	9-5/8"	40 #	J-55	LTC	New
Production	0'	11,106'	8-3/4"	5-1/2"	20.0 #	L-80	LTC	New

b. Casing design subject to revision based on geologic conditions encountered.

c. Casing Safety Factors

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension
Surface	1.43	4.85	2.83
Shallow Intermediate	2.36	2.97	3.11
Production	1.28	2.54	2.27

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. CEMENTING PROGRAM

Slurry	Type	Top	Btm	Wt	Yld	%Exc	Sx
Surface				(ppg)	(sx/cu ft)	Open Hole	
Single Slurry	C + 4% Gel	0'	350'	13.5	1.72	250	458
Shallow Int							
Lead	TXI + 5% Salt	0'	1,500'	12	1.99	200	605
Tail	50C/50Poz +5% Salt	1,500'	2,000'	14.2	1.33	200	368
Production							
Lead	35/65Poz H +8% Gel	1,500'	6,150'	11.9	2.52	50	676
Tail	50/50Poz H +2% Gel	6,150'	6,900'	14.5	1.27	50	228

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Open hole packers and production casing will be left uncemented from TD of 11,106' to 6900' and the rest of the production casing will be cemented using a stage tool from 6900' to 1500'.
4. Production casing will have one centralizer on every other joint from the stage tool to KOP (horizontal type) and from KOP to intermediate casing (bowspring type).

Pilot Hole Plugging Plan:
8-3/4" Pilot Hole will be plugged back using two cement plugs. The first will be from pilot hole TD of 6850' up to 6550' using 150 sx (20% excess) of 17.0 ppg 0.99 cuft/sk yield Class H cement. The second plug will serve as a kick off plug and will be set from 6350' to 5950' using 200 sx (20% excess) of 17.0 ppg 0.99 cuft/sk yield Class H cement.

6. MUD PROGRAM

From	To	Type	Weight	F. Vis	Filtrate
60'	350'	Spud Mud	8.4 - 8.7	32 - 34	NC - NC
350'	2,000'	Brine	9.5 - 10.1	28 - 29	NC - NC
2,000'	6,146'	Cut Brine	8.6 - 8.8	28 - 29	NC - NC
6,146'	6,850'	Cut Brine	8.6 - 8.8	28 - 29	NC - NC
6,146'	6,900'	Cut Brine	8.6 - 8.9	28 - 30	NC - NC
6,900'	11,106'	Cut Brine	8.6 - 9.1	28 - 31	NC - NC

A closed system will by utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

7. TESTING, LOGGING, AND CORING

The anticipated type and amount of testing, logging, and coring are as follows:

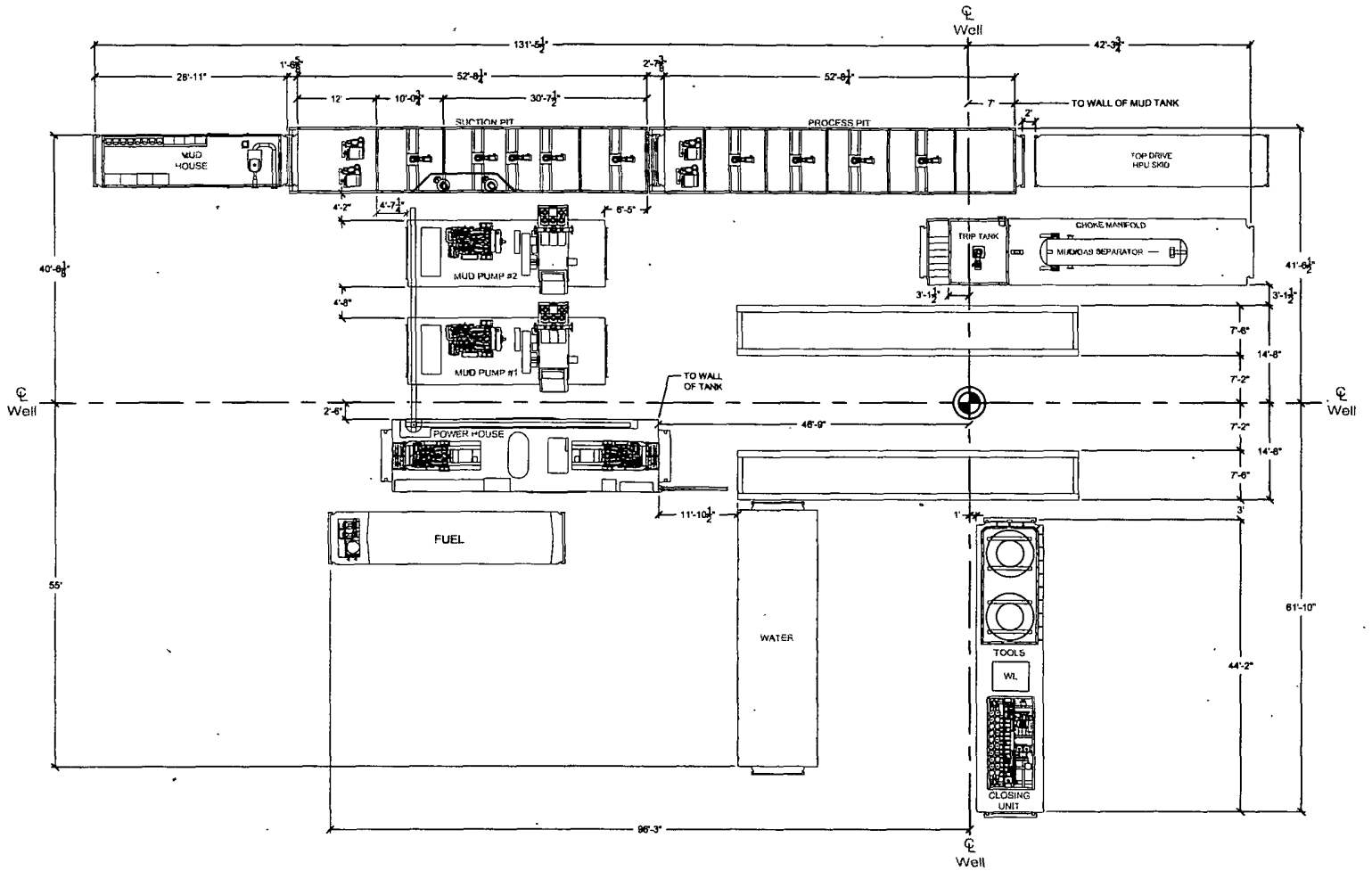
a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mud Log	2 man Mudlog	6300' to TD	On at 6300' (pilot)	Suttles
OH	Triple Combo, Spectral GR, Sonic	Pilot TD to 4800'	After Pilot	TBD
OH	GR/Neutron	4800' to Surf	After Pilot	TBD
LWD	MWD Gamma	Curve and Lateral	While Drilling	DDC

c. Core samples are not planned.
d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. No abnormal pressures or temperatures are expected. Estimated BHP is: 3100 psi
b. Hydrogen sulfide gas is not anticipated.



65'
150'
℄ Well
160'
100'

MINIMUM AREA CLEARANCE

8' 4' 0 8' 16' 24'

SCALE IN FEET (1/16"=1'-0")

SYM	DATE	REVISION	BY

TOLERANCE UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES

DECIMAL DIMENSION		
CONCENTRICITY		1 FIR.
.XX	± .1	.06 FIR.
.XXX	± .06	.010 FIR.
.XXXX	± .010	
ANGLES ± .5 DEGREES		

ACAD FILE: CAC120-A-001-00-RO

CUSTOMER INFO:

FILE:	[illegible]	
DWG BY	J.D.L.	4/14/09
CHK BY		
APP BY	J.P.S.	3/4/10

SCALE: 1/16" = 1'-0"

CACTUS Drilling Co., L.L.C.
Oklahoma City, OK, U.S.A.
Tel: 405-577-5347 Fax: 405-577-9306

TITLE:
RIG 120
DRILL SITE

SIZE B | CAC120-A001 | SHEET 1/1

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CHESAPEAKE OPERATING INC
API NO.:	30-015-38466
WELL NAME & NO.:	4H-CROW FLATS 14 FEDERAL
SURFACE HOLE FOOTAGE:	1980' FSL & 0200' FWL
BOTTOM HOLE FOOTAGE	1980' FSL & 0330' FEL
LOCATION:	Section 14, T. 16 S., R. 28 E., NMPM
COUNTY:	Eddy County, New Mexico

A. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.
Wait on cement (WOC) time prior to drilling out 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 for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

HIGH CAVE/KARST
Possible lost circulation in the Grayburg and San Andres.

1. The **13-3/8** inch surface casing shall be set at **approximately 350 feet (within the Tansill)** and cemented to the surface.

    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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

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 cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 170' in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug.

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

   ☒ **2nd stage above SF tool** cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. (A packer port system will be utilized in the lateral)

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.

Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review**. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

CRW 031612