

DISTRICT I  
1625 N. FRENCH DR., HOBBS, NM 88240

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT II  
1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION  
1220 SOUTH ST. FRANCIS DR.  
Santa Fe, New Mexico 87505

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

DISTRICT IV  
1625 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 13367	Pool Name Cotton Draw; Bone Spring
Property Code	Property Name LOTOS C FEDERAL	Well Number 912
OGRID No. 147179	Operator Name CHESAPEAKE OPERATING, INC.	Elevation 3477'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	9	24-S	31-E		660	SOUTH	1980	EAST	EDDY

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	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	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

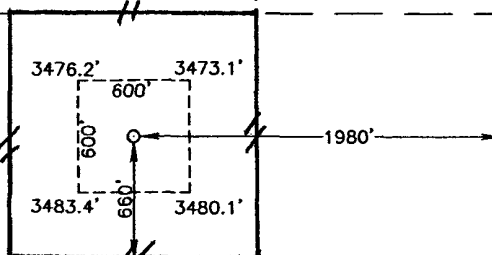
<p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=446486.7 N X=671062.1 E</p> <p>LAT.=32.226298° N LONG.=103.780152° W</p> 	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <i>[Signature]</i> Date: 11/29/06</p> <p>Printed Name: <i>[Name]</i></p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p>
	<p>OCTOBER 24, 2006</p> <p>Date Surveyed: JMD</p> <p>Signature &amp; Seal of Professional Surveyor: <i>[Signature]</i> 06.11.1676</p>
	<p>Certificate No. GARY EIDSON 12841</p>

EXHIBIT A-1

Chesapeake Operating Inc.  
Lotos C Federal 912  
660 FSL & 1980 FEL, SWSE  
of Section 9-24S-31E  
Eddy County, NM

Confidential – Tight Hole  
Lease No. NMNM 29234

#24 Attachment to Application for Permit to Drill or Re-enter

Chesapeake Operating, Inc. respectfully requests permission to drill a well to 8350' to test the Bone Spring formation. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and New Mexico Oil Conservation Division requirements.

Please find the Surface Use Plan and Drilling Plan as required by Onshore Order No. 1.

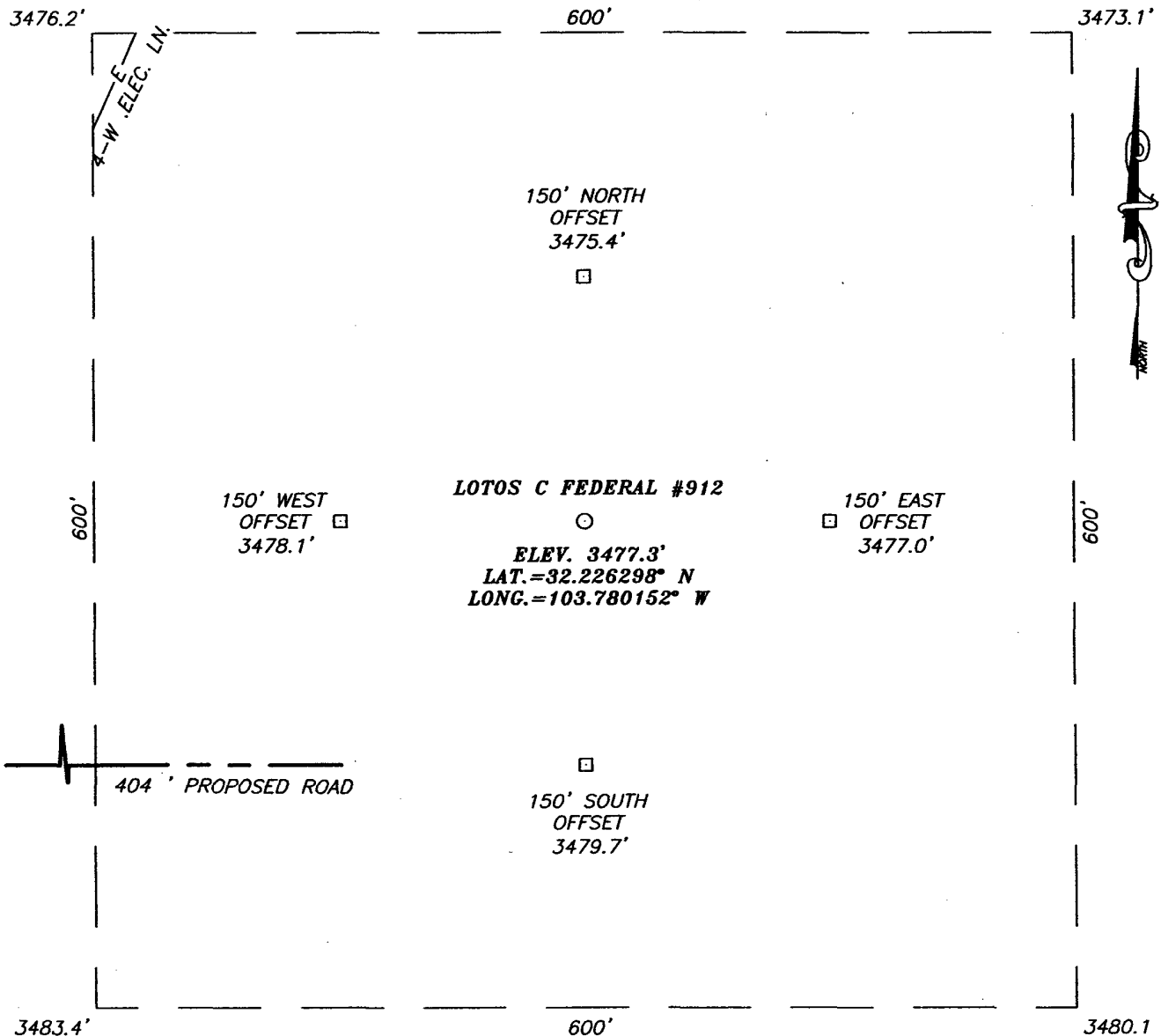
Attached are the Exhibit A-1 to A-4 Survey plats, Exhibit B 1 mile radius plat, Exhibit C Production facility, Exhibit D Forester rig #15 plat, and Exhibit F-1 to F-2 BOP & Choke Manifold.

**The Archeological Survey will follow. – Exhibit E.**

**Chesapeake Operating, Inc. has an agreement with the grazing lessee.**

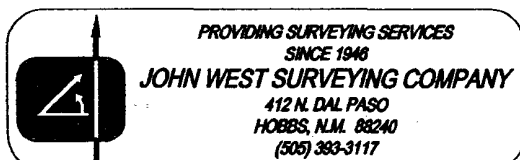
**Please be advised that Chesapeake Operating, Inc. is considered to be the Operator of the above mentioned well. Chesapeake Operating, Inc. agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the lease lands.**

SECTION 9, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY. #128 AND  
CO. RD. 798 (RED) GO WEST ON HWY. #128  
APPROX. 0.2 MILES. TURN LEFT AND GO  
SOUTHWEST APPROX 1.3 MILES. TURN RIGHT AND  
GO SOUTHWEST APPROX 0.7 MILES. TURN LEFT  
AND GO SOUTH APPROX. 0.2 MILES TURN RIGHT  
AND GO SOUTH APPROX 0.5 MILES. TURN LEFT  
AND GO WEST APPROX. 0.3 MILES. TURN LEFT  
AND GO SOUTHEAST APPROX. 175 FEET. TURN  
RIGHT AND GO SOUTHWEST APPROX. 0.25 MILES  
TO A PROPOSED ROAD SURVEY. FOLLOW ROAD  
SURVEY EAST APPROX. 550 FEET TO THIS  
LOCATION.



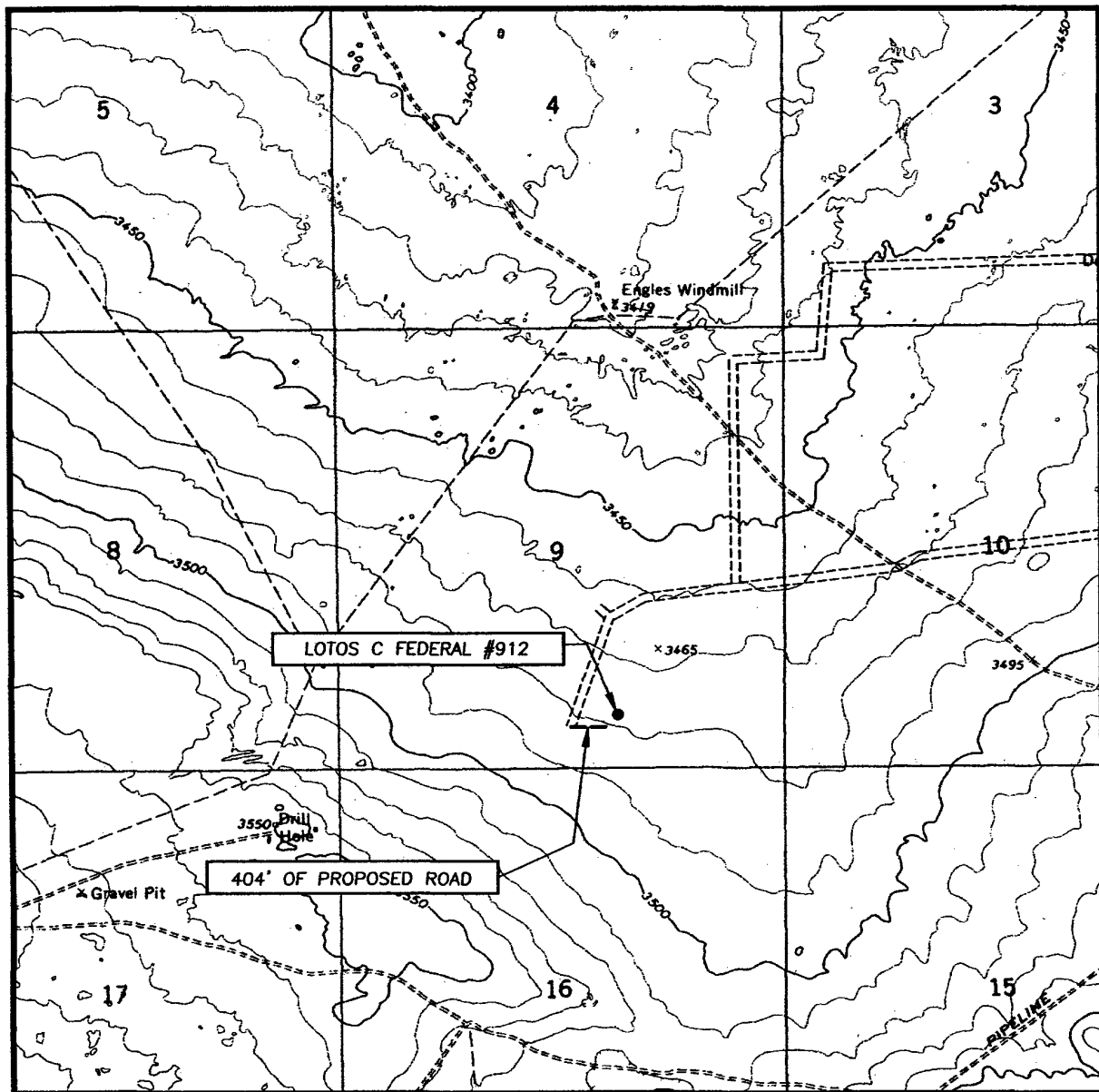
CHESAPEAKE OPERATING, INC..

LOTOS C FEDERAL #912 WELL  
LOCATED 660 FEET FROM THE SOUTH LINE  
AND 1980 FEET FROM THE EAST LINE OF SECTION 9,  
TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

Survey Date: 10/24/06		Sheet 1 of 1 Sheets	
W.O. Number: 06.11.1676		Dr By: JMD	Rev 1:N/A
Date: 10/30/06	Disk: CD#1	06111676	Scale: 1"=100'

EXHIBIT A-2

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
BIG SINKS, N.M. - 10'

SEC. 9 TWP. 24-S RGE. 31-E

SURVEY \_\_\_\_\_ N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 660' FSL & 1980' FEL

ELEVATION 3477'

OPERATOR CHESAPEAKE OPERATING, INC.

LEASE LOTOS C FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
BIG SINK, N.M.

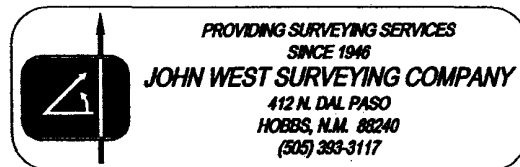


EXHIBIT A-4

DRILLING PROGRAM

Page 1

ONSHORE OIL & GAS ORDER 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:

<b>Formation</b>	<b>Subsea</b>	<b>Depth</b>
*BELL CANYON FM.	-915'	4,411'
*CHERRY CANYON FM.	-1,797'	5,293'
*BRUSHY CANYON FM.	-3,401'	6,897'
*LOWER BRUSHY "B" ZONE	-4,540'	8,036'
*LOWER BRUSHY "C" ZONE	-4,633'	8,129'
*LOWER BRUSHY "D" ZONE	-4,668'	8,164'
*BONE SPRING	-4,749'	8,245'
	<b>Total Depth:</b>	<b>8,350'</b>
*Potentially productive zones		

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:

<b>Substance</b>	<b>Formation</b>	<b>Depth</b>
Oil/Gas	Cherry Canyon	5293' – 6897'
Oil/Gas	Brushy Canyon	6897' – 8350'

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

3. BOP EQUIPMENT: 3,000 psi System

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

DRILLING PROGRAM

Page 2

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, and
  - (d) Upper and lower kelly cock valves, inside BOP's and safety valves.

B. Test Frequency

1. All tests should 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, and
  - (d) at least once every 30 days while drilling.

C. Test Pressure

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.
6. The "high pressure" test for the annular preventer will be conducted at 70% of
7. the rated working pressure.
8. A record of all pressures will be made on a pressure-recording chart.

D. Test Duration

1. In each case, the individual components should be monitored for leaks for 5 minutes, with no observable pressure decline, once the test pressure has been applied.

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 Frequency

DRILLING PROGRAM

Page 3

1. The accumulator is to be tested each time the BOP'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:
- 3.

<u>System Operating Pressures</u>	<u>Precharge Pressure</u>
1500 PSI	750 PSI
2000 PSI	1,000 PSI
3000 PSI	1,000 PSI

3. Closing times for the Hydril 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:

<u>System Pressure</u>	<u>Remaining Pressure At Conclusion of</u> <u>Test</u>
1,500 PSI	950 PSI
2,000 PSI	1,200 PSI
3,000 PSI	1,200 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.

DRILLING PROGRAM

Page 4

7. Place all 4-way control valves in full open or full closed position. Do not leave in neutral position.

4. CASING AND CEMENTING PROGRAM

- a. The proposed casing program will be as follows:

<u>Purpose</u>	<u>Interval</u>	<u>Hole Size</u>	<u>Casing Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Thread</u>	<u>Condition</u>
Surface	0' - 765'	17-1/2"	13 3/8"	48#	H-40	ST&C	new
Intermediate	0' - 4400'	11"	8-5/8"	32#	J55	LT&C	new
Production	0' - 8350'	7-7/8"	5-1/2"	17#	P-110	LT&C	new

- b. Casing design subject to revision based on geologic conditions encountered.  
c. The cementing program will be as follows:

<u>Interval</u>	<u>Type</u>	<u>Amount</u>	<u>Yield</u>	<u>Washout</u>	<u>Excess</u>
0' - 765'	Class C + Additives	480 + 200	1.74 / 1.34	25	75
0' - 4400'	50:50 Poz:C + Additives	830 + 130	2.45 / 1.34	25	75
3900' - 6350' (2 <sup>nd</sup> stage prod.)	50:50 Poz:C+ Additives	105	2.30	15	20
	Class H + Additives	260	1.18	15	20
6350' - 8350' (1 <sup>st</sup> stage prod.)	LW Poz:C (15:61:11) + Additives	305	1.57	15	20

5. MUD PROGRAM

- a. The proposed circulating mediums to be used in drilling are as follows:

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0' - 765'	FW	8.5 - 9.3	32 - 38	NC
765' - 4400'	Brine	10.0	28 - 30	NC
4400' - 8000'	FW	8.5 - 8.7	28 - 30	NC
8000' - 8350'	FW	8.6 - 8.9	30 - 32	20 - 25

An in-ground, lined pit will be utilized during the drilling of this well. 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.

6. TESTING, LOGGING AND CORING

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



ONSHORE ORDER NO. 1  
Chesapeake Operating, Inc.  
Bogle 23 Federal 1  
760 FNL 2180 FEL  
NENW of Section 23-16S-30E  
EDDY County, New Mexico

CONFIDENTIAL - TIGHT HOLE  
Lease No. OKNM 110610  
CA No. NMNM 101358  
DRILLING PROGRAM

Page 5

- a. Drill stem tests are not planned.
- b. The logging program will consist of Natural GR, Density-Neutron, PE & Dual Laterolog from TD to surface casing; Neutron-GR surface casing to surface.
- c. Cores samples are not planned.

7. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

- a. The estimated bottom hole pressure is 4175 psi. No abnormal pressures or temperatures are anticipated.
- b. Hydrogen sulfide gas is not anticipated.



# BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

WELL : Lotos C Federal 912

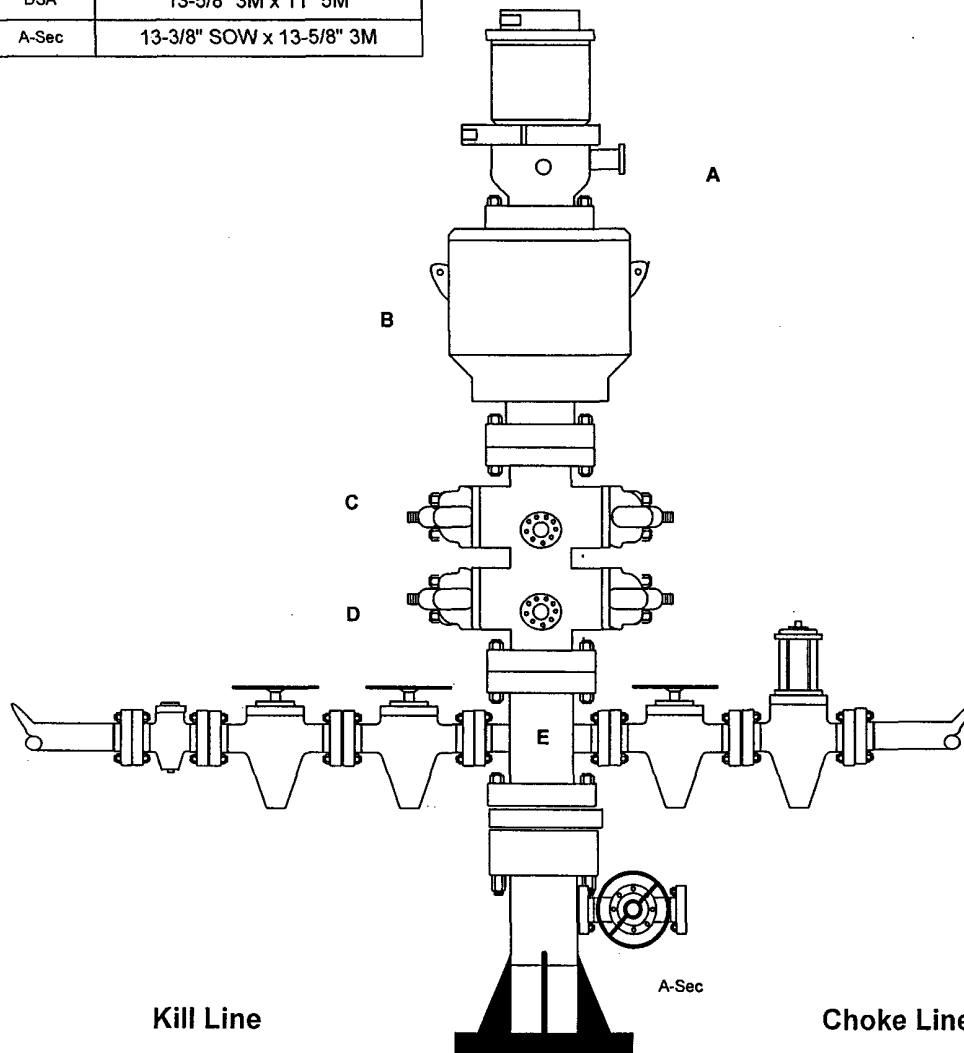
RIG : Forster Rig 15

COUNTY : Lea

STATE: New Mexico

OPERATION: Drill out below 13-3/8" Casing

	SIZE	PRESSURE	DESCRIPTION
A	11"	500 psi	Rot Head
B	11"	5000 psi	Annular
C	11"	5000 psi	Pipe Rams
D	11"	5000 psi	Blind Rams
E	11"	5000 psi	Mud Cross
DSA	13-5/8" 3M x 11" 5M		
A-Sec	13-3/8" SOW x 13-5/8" 3M		



SIZE	PRESSURE	DESCRIPTION
2"	5000 psi	Check Valve
2"	5000 psi	Gate Valve
2"	5000 psi	Gate Valve

EXHIBIT F-1

SIZE	PRESSURE	DESCRIPTION
4"	5000 psi	Gate Valve
4"	5000 psi	HCR Valve

# BLOWOUT PREVENTOR SCHEMATIC

## CHESAPEAKE OPERATING INC

WELL : Lotos C Federal 912

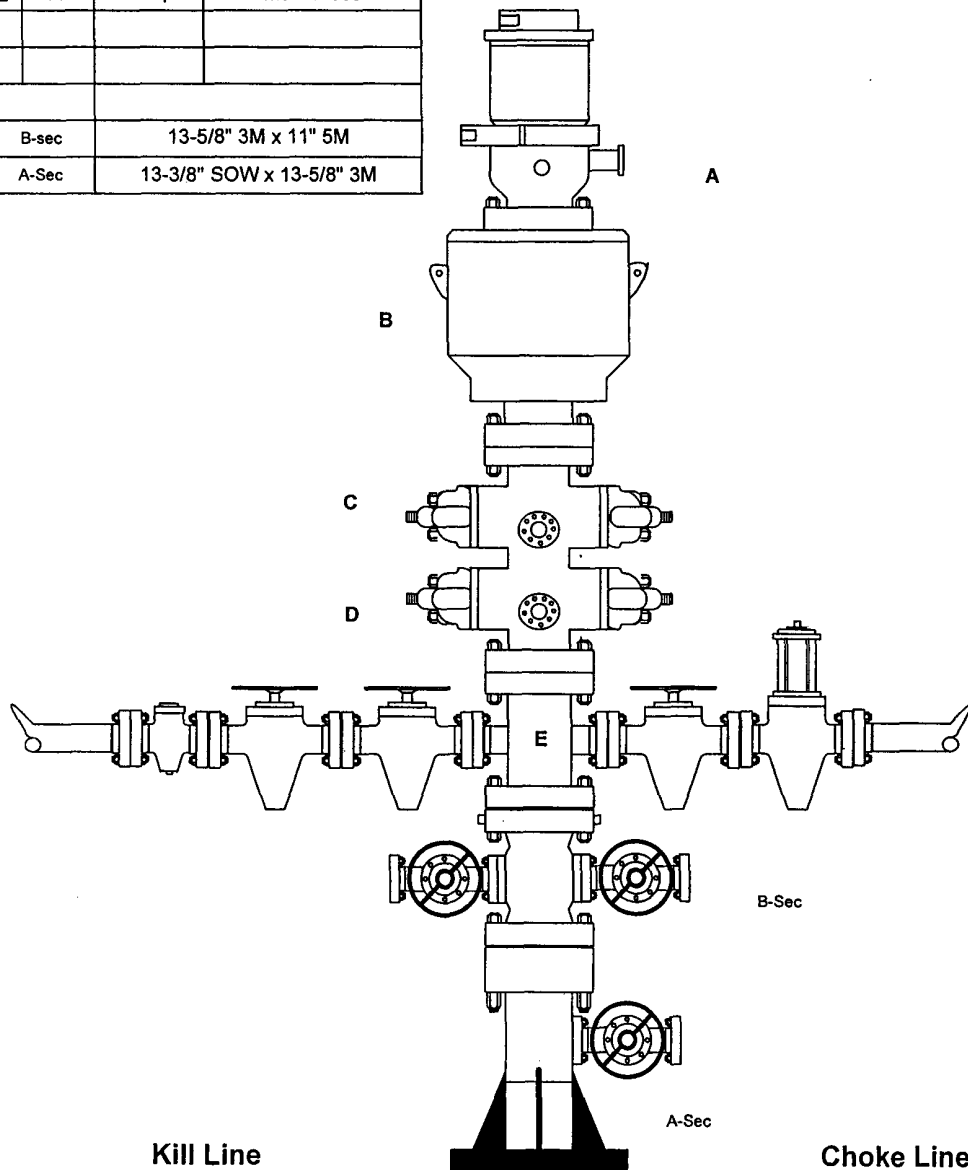
RIG : Forster Rig 15

COUNTY : Lea

STATE: New Mexico

OPERATION: Drill out below 8-5/8" Casing

SIZE	PRESSURE	DESCRIPTION
A	11"	500 psi
B	11"	5000 psi
C	11"	5000 psi
D	11"	5000 psi
E	11"	5000 psi
B-sec	13-5/8" 3M x 11" 5M	
A-Sec	13-3/8" SOW x 13-5/8" 3M	



SIZE	PRESSURE	DESCRIPTION
2"	5000 psi	Check Valve
2"	5000 psi	Gate Valve
2"	5000 psi	Gate Valve

EXHIBIT F-2

SIZE	PRESSURE	DESCRIPTION
4"	5000 psi	Gate Valve
4"	5000 psi	HCR Valve

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

1. EXISTING ROADS

- a. Existing county and lease roads will be used to enter proposed access road.
- b. Location, access, and vicinity plats attached hereto. See Exhibits A-1 to A-4.

2. PLANNED ACCESS ROADS

- a. The proposed access road 404' in length and 14' in travel way width with a maximum disturbance area of 30' will be used, and in accordance with guidelines set forth in the BLM Onshore Orders. No turnouts are expected.
- b. In order to level the location, cut and fill will be required. Please see attached Well Location and Acreage Dedication Plat – Exhibits A-1 to A-4.
- c. A locking gate will be installed at the site entrance.
- d. Any fences cut will be repaired. Cattle guards will be installed, if needed.
- e. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
- f. Driving directions are from the intersection of St. Hwy. #128 and Co. Rd. #798 (Red Rd), go West on St. Hwy. #128 approx. 0.2 miles. Turn left and go Southwest approx. 1.3 miles. Turn right and go Southwest approx. 0.7 miles. Turn left and go South approx. 0.2 miles. Turn right and go South approx. 0.5 miles. Turn left and go West approx. 0.3 miles. Turn left and go Southeast approx. 175 feet. Turn right and go Southwest approx. 0.25 miles to a proposed road survey. Follow road survey East approx. 550 feet to this location.

3. LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS OF THE PROPOSED LOCATION – see Exhibit B.

4. LOCATION OF PRODUCTION FACILITIES

Will produce to the Central Lotos Battery and the gas will be sold to Duke @ Ms #131-55-040. The gas will be measured at the Central Lotos Battery with the other Lotos C Federal wells. The measurement is off site, on lease. We will lay approx. 2010' of 3" SDR-7 poly pipe to the central battery. All flow lines and power lines will follow existing lease roads – See Exhibit C-1.

5. LOCATION AND TYPE OF WATER SUPPLY

Water will be obtained from a private water source. Chesapeake Operating, Inc. will ensure all proper notifications and filings are made with the state.

6. CONSTRUCTION MATERIALS

No construction materials will be used from Section 9-24S-31E. All material (i.e. shale) will be acquired from private or commercial sources.

7. METHODS FOR HANDLING WASTE DISPOSAL

A closed system will be 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 in an approved sanitary landfill.

8. ANCILLARY FACILITIES

None

9. WELLSITE LAYOUT

The proposed site layout plat is attached showing Forster Drilling Rig #15 orientation and equipment location - See Exhibit D. Also see Exhibit A for the size of the pad.

10. PLANS FOR RECLAMATION OF THE SURFACE

The location will be restored to as near as original condition as possible. Reclamation of the surface shall be done in strict compliance with the existing New Mexico Oil Conservation Division regulations.

Backfilling leveling, and contouring are planned as soon as the drilling rig and steel tanks are removed. Wastes and spoils materials will be buried immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible. The rehabilitation will begin after the drilling rig is remove

11. SURFACE & MINERAL OWNERSHIP

United States of America  
Department of Interior  
Bureau of Land Management

GRAZING LESSEE

Richardson Cattle Company  
P.O. Box 487  
Carlsbad, NM 88221

(Chesapeake Operating, Inc. has an agreement with the grazing lessee)

12. ADDITIONAL INFORMATION

A Class III cultural resource inventory report was prepared by Boone Archaeological Services, Carlsbad, New Mexico for the proposed location. A copy of the report has been sent to the BLM office under separate cover and is also attached for reference. See Exhibit E.

**Chesapeake Operating, Inc. agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the lease lands.**

13. OPERATOR'S REPRESENTATIVES

**Drilling and Completion Operations**

Jarvis Hensley  
District Manager – Northern Permian  
P.O. Box 18496  
Oklahoma City, OK 73154  
(405) 879-7863 (OFFICE)  
(405) 879-9529 (FAX)  
[jhensley@chkenergy.com](mailto:jhensley@chkenergy.com)

**Sr. Drilling Engineer**

Randy Patterson  
P.O. Box 14896  
Oklahoma City, OK 73154  
(405) 767-4056 (OFFICE)  
(405) 767-4225 (FAX)  
(405) 388-9002 (MOBILE)  
[rpatterson@chkenergy.com](mailto:rpatterson@chkenergy.com)

**Sr. Field Representative**

Cecil Gutierrez  
P.O. Box 11050  
Midland, TX 79705  
432-687-2992 (OFFICE)  
432-687-3675 (FAX)  
[cgutierrez@chkenergy.com](mailto:cgutierrez@chkenergy.com)

**Assett Manager**

Andrew McCalmont  
P.O. Box 18496  
Oklahoma City, OK 73154-0496  
405-879-7852 (OFFICE)  
405-879-7930 (FAX)  
[amccalmont@chkenergy.com](mailto:amccalmont@chkenergy.com)

**Regulatory Compliance**

Linda Good  
Federal Permitting Agent  
P.O. Box 18496  
Oklahoma City, OK 73154  
(405) 767-4275 (OFFICE)  
(405) 753-5468 (FAX)  
[lgood@chkenergy.com](mailto:lgood@chkenergy.com)

ONSHORE ORDER NO. 1  
Chesapeake Operating, Inc.  
Lotos C Federal 912  
660 FSL & 1980 FEL, SWSE  
of Section 9-24S-31E  
Eddy County, NM

CONFIDENTIAL – TIGHT HOLE

Lease No. NMNM 29234

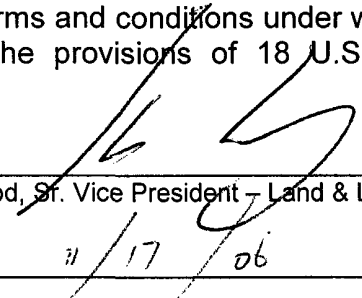
SURFACE USE PLAN

Page 4

14. CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this surface use plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed will be performed by operator (including contractors and subcontractors) submitting the APD, 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.

By:

  
Henry Hood, Sr. Vice President – Land & Legal & General Counsel

Date:

11/17/06



## SPECIAL DRILLING STIPULATIONS

### THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

Operator's Name: Chesapeake Operating, Inc. Well Name & #: Lotos C Federal # 912  
Location: 660' F S L & 1980' F E L Sec. 09, T. 24 S., R. 31 E.  
Lease: NMNM-29234 County: Eddy State: New Mexico

The Special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CRF 3165.3 AND 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

#### I. SPECIAL ENVIRONMENT REQUIREMENTS

- (X ) Lesser Prairie Chicken (stips attached) ( ) Flood plain (stips attached)  
( ) San Simon Swale (stips attached) ( ) Other

#### II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

( X ) The BLM will monitor construction of this drill site. Notify the ( X ) Carlsbad Field Office at (505) 234-5972 ( ) Hobbs Office (505) 393-3612, at least 3 working days prior to commencing construction.

( X ) Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

( ) All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately \_\_\_\_\_ inches in depth. Approximately \_\_\_\_\_ cubic yards of topsoil material will be stockpiled for reclamation.

( X ) Other: **Pits South V-Door West**

#### III. WELL COMPLETION REQUIREMENTS

( ) A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

( X ) Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at depth of ½ inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre. Seeding should be done either late in the fall (September 15 - November 15, before freeze up, or early as possible the following spring to take advantage of available ground moisture. **See attached seed mixture.**

##### ( ) A. Seed Mixture 1 (Loamy Sites)

Side Oats Grama (*Bouteloua curtipendula*) 5.0  
Sand Dropseed (*Sporobolus cryptandrus*) 1.0  
Plains lovegrass (*Eragrostis intermedia*) 0.5

##### ( ) B. Seed Mixture 2 (Sandy Sites)

Sand Dropseed (*Sporobolus cryptandrus*) 1.0  
Sand Lovegrass (*Eragrostis trichodes*) 1.0  
Plains Bristlegrass (*Setaria magrostachya*) 2.0

##### ( ) C. Seed Mixture 3 (Shallow Sites)

Side oats Grama (*Bouteloua curtipendula*) 5.0  
Green Spangletop (*Leptochloa dubia*) 2.0  
Plains Bristlegrass (*Setaria magrostachya*) 1.0

##### ( ) D. Seed Mixture 4 (Gypsum Sites)

Alkali Sacaton (*Sporobolus airoides*) 1.0  
Four-Wing Saltbush (*Atriplex canescens*) 5.0

(x ) OTHER Lesser Prairie Chicken Seed Mix

## RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6-mil plastic. Mineral material extracted from within the boundary of the APD during construction of the well pad and reserve pits and be used for the construction of this well pad and its immediate access road only, as long as that portion of the access road it is use on remains on-lease. Removal of any additional material from this location for construction or improvement of other well pads and other access or lease roads must first be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

## OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- (1) Lined as specified above and
- (2) A temporary or emergency pit may be constructed immediately adjacent to the reserve pit as long as the pit remains within the APD boundary. Mineral material removed from this pit may be used for the construction of this well pad only and its immediate access road, as long as that portion of the access road the material is used on remains on-lease. Removal of any material from the APD boundary for use on other well locations or roads must first be purchased from BLM.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be re-contoured, all trash removed, and reseeded as specified in this permit.

## CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to process by BLM.

## TRASH PIT STIPS

All trash, junk, and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

BLM Lease #: NMNM-29234  
Company Reference: Chesapeake Operating, Inc.  
Well Name and Number: Lotos C Federal # 912

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

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 09; Township 24 South, Range 31 East

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.

## CONDITIONS OF APPROVAL - DRILLING

Well Name & No. 912-Lotos C Federal  
Operator's Name: Chesapeake Operating, Inc.  
Location: 0660FSL, 1980FEL, Section 9, T-24-S, R-31-E  
Lease: NMNM-29234

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 8-5/8 inch 5-1/2 inch

C. BOP tests

2. **Although Hydrogen Sulfide is not reported, it is always a potential hazard.**

3. 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.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

7. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

### II. CASING:

1. The 13-3/8 inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite approximately 876 feet (Geo Info) and above the salt**, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

**Possible lost circulation in the Delaware and Bone Spring formations.**

**Possible water flows in Salado, Castile, Delaware, and Bone Spring formations.**

2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is **circulate cement to the surface.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement shall circulate to surface due to R-111-Potash. First stage to circulate.**

4. Whenever a casing string is cemented in the R-111-P Potash Area, cement shall be allowed to stand a minimum of twelve (12) hours under pressure and a total of twenty-four (24) hours before drilling the plug or initiating tests.

### **III. PRESSURE CONTROL:**

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 13-3/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced. **Test pressure to be held for at least 10 minutes per Onshore Order 2.III.A.2.i.ii.**

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the surface and intermediate casing shall be 3M psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the 8-5/8 inch casing shall be 3M psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.

### **IV. DRILLING MUD:**

**Fresh water mud to be used until Rustler Anhydrite is reached.**

**Engineer on call phone: 505-706-2779**

**WWI 122206**