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FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DEC 15 2008

EC

APPLICATION FOR PERMIT TO DRILL OR REENTER

BY: *og*1a. Type of Work: ☒ DRILL ☐ REENTER

CONFIDENTIAL

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone2. Name of Operator Contact: LINDA GOOD
CHESAPEAKE OPERATING, INC. E-Mail: linda.good@chk.com3a. Address
OKLAHOMA CITY, OK 73154-04963b. Phone No. (include area code)
Ph: 405-767-42755. Lease Serial No.
NMNM102035

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.
PLU ROSS RANCH 6 FEDERAL 1H9. API Well No.
*30-015-36883*10. Field and Pool, or Exploratory
POKER LAKE
WILDCAT

4. Location of Well (Report location clearly and in accordance with any State requirements.)*

At surface SWSE 350FSL ^{1880'} 2290FEL *by SN 11/12/08 CR*
At proposed prod. zone NWNE 350FNL ^{1880'} 2290FEL

11. Sec., T., R., M., or Blk. and Survey or Area

Sec 6 T26S R30E Mer NMP
SME: BLM14. Distance in miles and direction from nearest town or post office*
23 MILES EAST OF MALAGA, NM12. County or Parish
EDDY13. State
NM15. 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
962.3517. Spacing Unit dedicated to this well
160.0018. Distance from proposed location to nearest well, drilling,
completed; applied for, on this lease, ft.19. Proposed Depth *Poker Hole*
11975 MD
7565 TVD *10600 TVD*20. BLM/BIA Bond No. on file
NM263421. Elevations (Show whether DF, KB, RT, GL, etc.)
3082 GL

22. Approximate date work will start

23. Estimated duration

24. Attachments

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

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

25. Signature (Electronic Submission) *Linda Good* Name (Printed/Typed) LINDA GOOD Ph: 405-767-4275 Date 10/08/2008Title
REGULATORY COMPLIANCE SPEC.Approved by (Signature) *Don Peterson* Name (Printed/Typed) /s/ Don Peterson Date 12/6/08Title *Don Peterson* FIELD MANAGER Office CARLSBAD FIELD OFFICEApplication approval does not warrant or certify 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.

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.

APPROVAL FOR TWO YEARS

Additional Operator Remarks (see next page)

Carlsbad Controlled Water Basin

Electronic Submission #63692 verified by the BLM Well Information System
For CHESAPEAKE OPERATING, INC., sent to the Carlsbad
Committed to AFMS for processing by TESSA CISNEROS on 10/08/2008 (09TLC0021AE)SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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.*5. Lease Serial No.
NMNM102035

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
PLU ROSS RANCH 6 FEDERAL 1H9. API Well No.
30.015-3688310. Field and Pool, or Exploratory
WILDCAT; BONE SPRING

11. County or Parish, and State

EDDY COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

CHESAPEAKE OPERATING, INC.

Contact: LINDA GOOD

E-Mail: linda.good@chk.com

3a. Address

P.O. BOX 18496
OKLAHOMA CITY, OK 73154-0496

3b. Phone No. (include area code)

Ph: 405.767.4275

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

SHL Sec 6 T26S R30E SWSE 350FSL 1880FEL

BHL Sec 6 T 26 S R 30 E NWNE 350 FSL 1880 FEL

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 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
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original PD
	<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 recomple 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.)

PLEASE FIND THE ATTACHED REVISED SURVEY PLATS. LOCATION MOVED PER THE BLM.

(CHK PN 624821)

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

Electronic Submission #64712 verified by the BLM Well Information System
For CHESAPEAKE OPERATING, INC., sent to the Carlsbad

Name (Printed/Typed) LINDA GOOD

Title REGULATORY COMPLIANCE SPEC.

Signature (Electronic Submission)

Date 11/12/2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Date

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.

CARLSBAD FIELD OFFICE

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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

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

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

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

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

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

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30.015.36883	Pool Code 13354	Pool Name South Corral Canyon; Bone Spring, S
Property Code 37551	Property Name PLU ROSS RANCH "6" FEDERAL	Well Number 1H
OGRID No. 147179	Operator Name CHESAPEAKE OPERATING CO.	Elevation 3083'

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	6	26 S	30 E		350	SOUTH	1880	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
B	6	26 S	30 E		350	NORTH	1880	EAST	EDDY

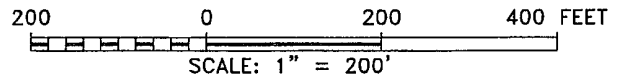
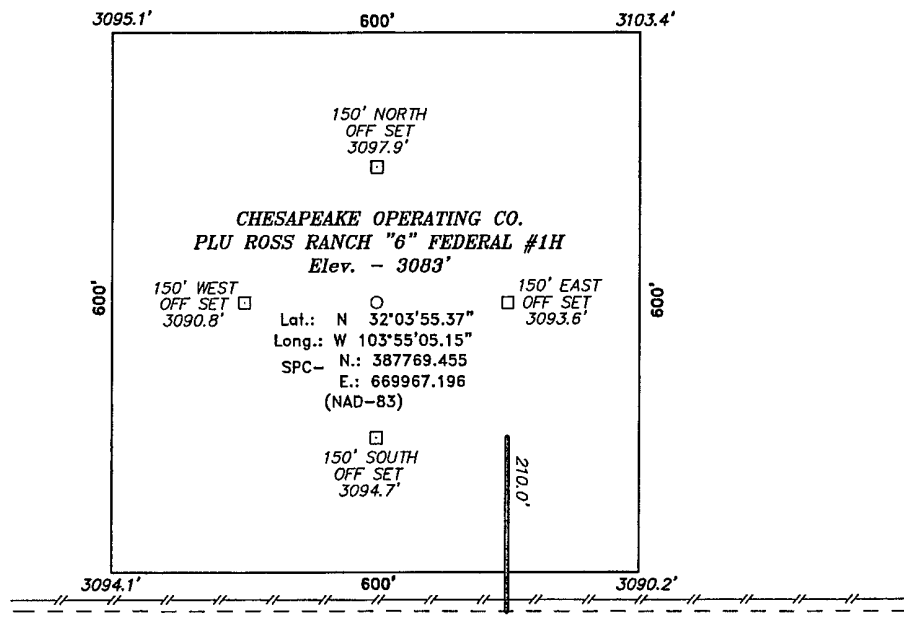
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>BOTTOM HOLE LOCATION Lat - N32°04'41.01" Long - W103°55'05.25" SPC - N.: 392382.262 E.: 669938.457 (NAD-83)</p>	<p>OPERATOR CERTIFICATION I hereby certify that the information contained 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 pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Craig Barnard</i> 11/12/08 Signature Date</p> <p>CRAIG BARNARD Printed Name</p>
<p>SURFACE LOCATION Lat - N32°03'55.37" Long - W103°55'05.15" SPC - N.: 387769.455 E.: 669967.196 (NAD-83)</p>	<p>SURVEYOR CERTIFICATION 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 18, 2008 Date Surveyed</p> <p><i>Gurf L. Jones</i> Signature of Professional Surveyor</p> <p>GURF L. JONES Printed Name</p> <p>Certificate No. Gurf L. Jones 7977</p> <p>BASIN SURVEYS</p>

Revised
EXHIBIT A-1

SECTION 6, TOWNSHIP 26 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF HWY 128 AND CO. RD. TWINWELL (787), GO SOUTH ON TWINWELL FOR 10.0 MILES TO CO. RD. BUCK JACKSON (786), ON BUCK JACKSON GO SOUTH 2.4 MILES TO A "Y", GO 5.3 MILES TO END OF BUCK JACKSON TO EL PASO ROAD, GO WEST 6.9 MILES TO PROPOSED LEASE ROAD.

BASIN SURVEYS P.O. BOX 1786—HOBBS, NEW MEXICO

W.O. Number: 20711 Drawn By: K. GOAD

Date: 10-20-2008 Disk: KJG — 20711WELL.DWG

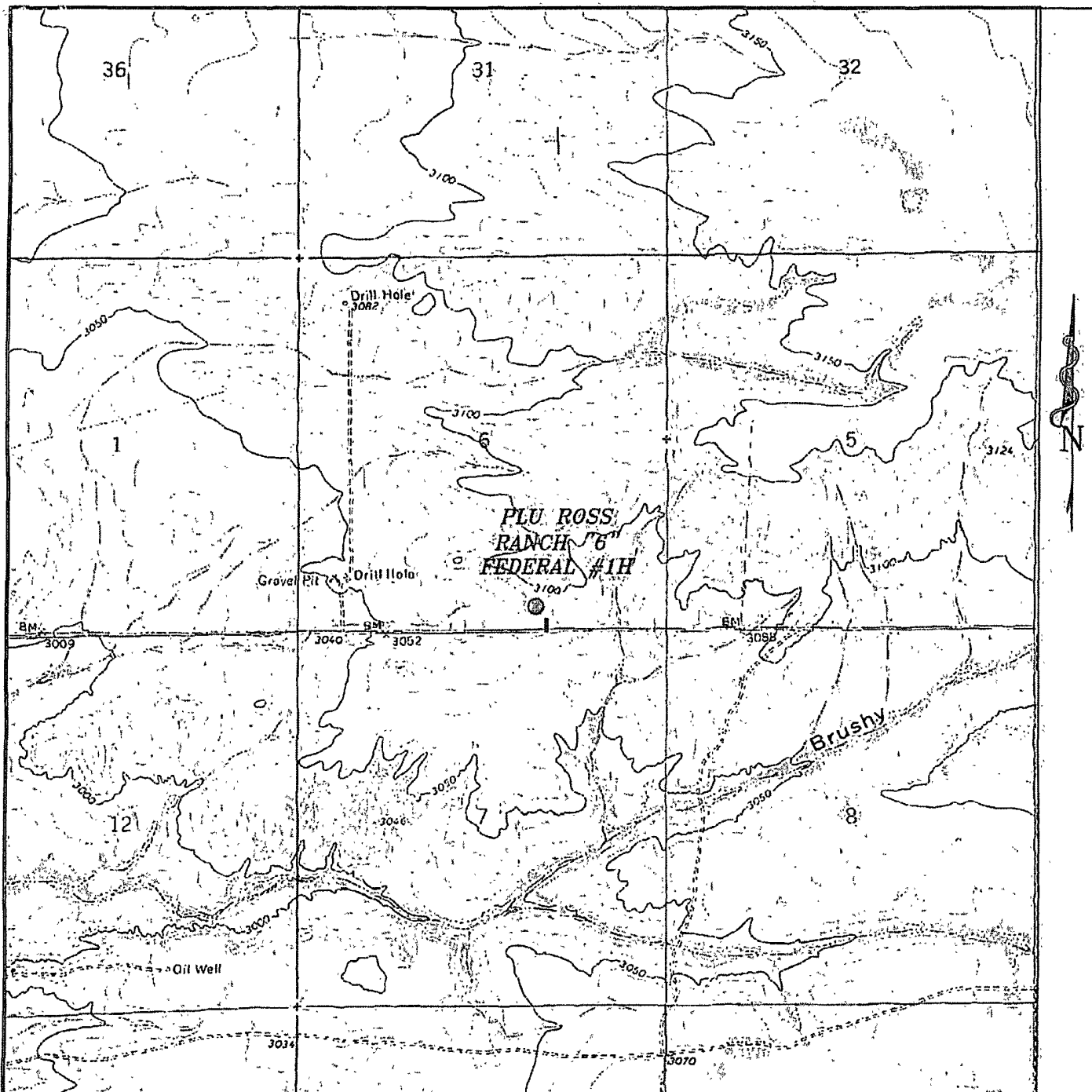
CHESAPEAKE OPERATING CO.

REF: PLU ROSS RANCH "6" FEDERAL #1H / WELL PAD TOPO

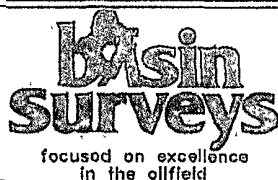
THE PLU ROSS RANCH "6" FEDERAL #1H LOCATED 350'
FROM THE SOUTH LINE AND 1880' FROM THE EAST LINE OF
SECTION 6, TOWNSHIP 26 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 10-18-2008 Sheet 1 of 1 Sheets

Revised
EXHIBIT A-2



PLU ROSS RANCH "6" FEDERAL #1H
 Located at 350' FSL AND 1880' FEL
 Section 6, Township 26 South, Range 30 East,
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basinsurveys.com

W.O. Number: KJG - 20711

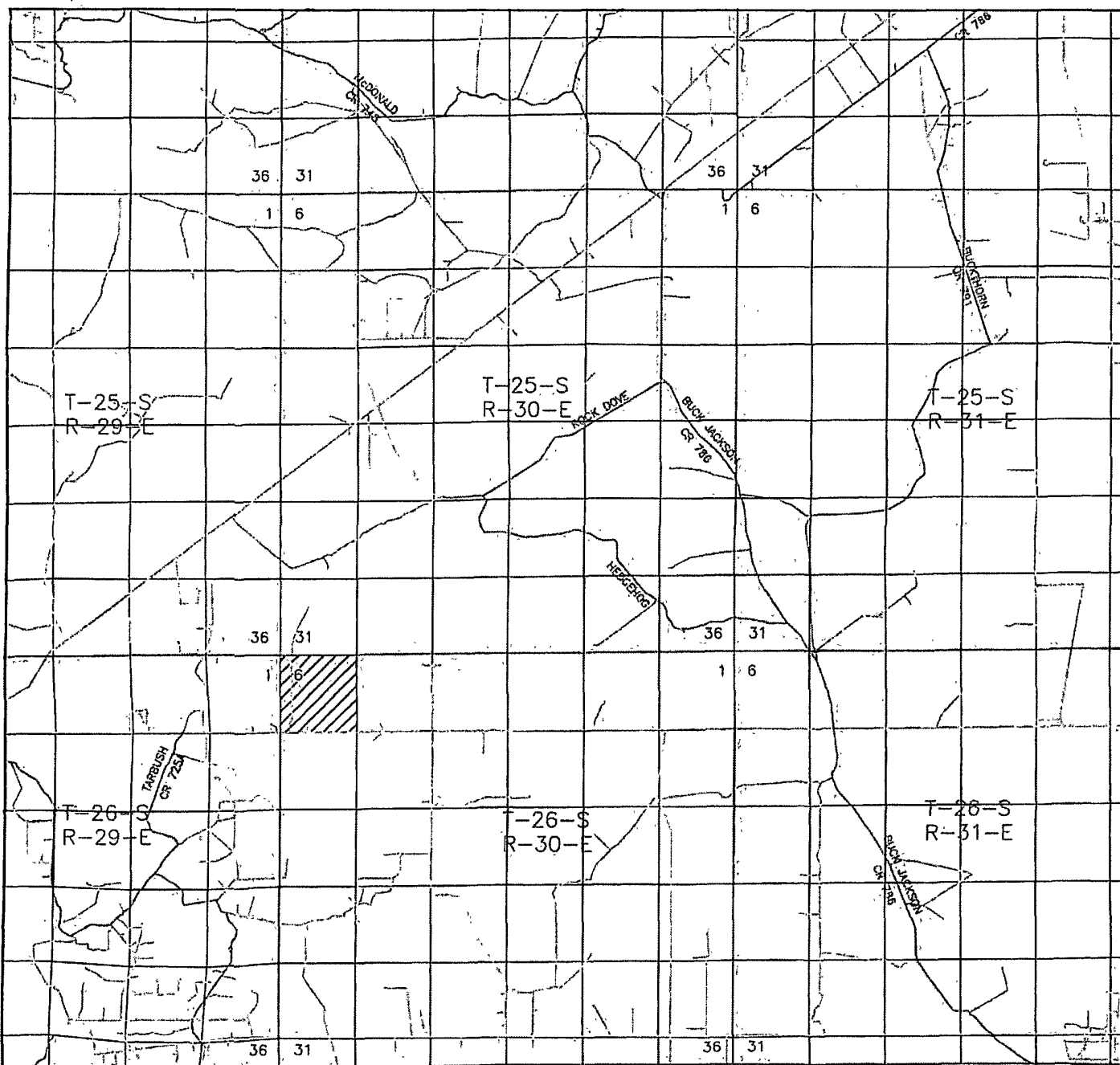
Survey Date: 10-18-2008

Scale: 1" = 2000'

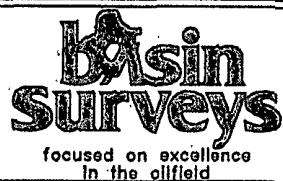
Date: 10-20-2008

**CHESAPEAKE
 OPERATING
 CO.**

Revised
EXHIBIT A-3



PLU ROSS RANCH "6" FEDERAL #1H
 Located at 350' FSL AND 1880' FEL
 Section 6, Township 26 South, Range 30 East,
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basin-surveys.com

W.O. Number: KJG - 20711

Survey Date: 10-18-2008

Scale: 1" = 2 MILES

Date: 10-20-2008

CHESAPEAKE
 OPERATING
 CO.

Revised
 EXHIBIT A-4

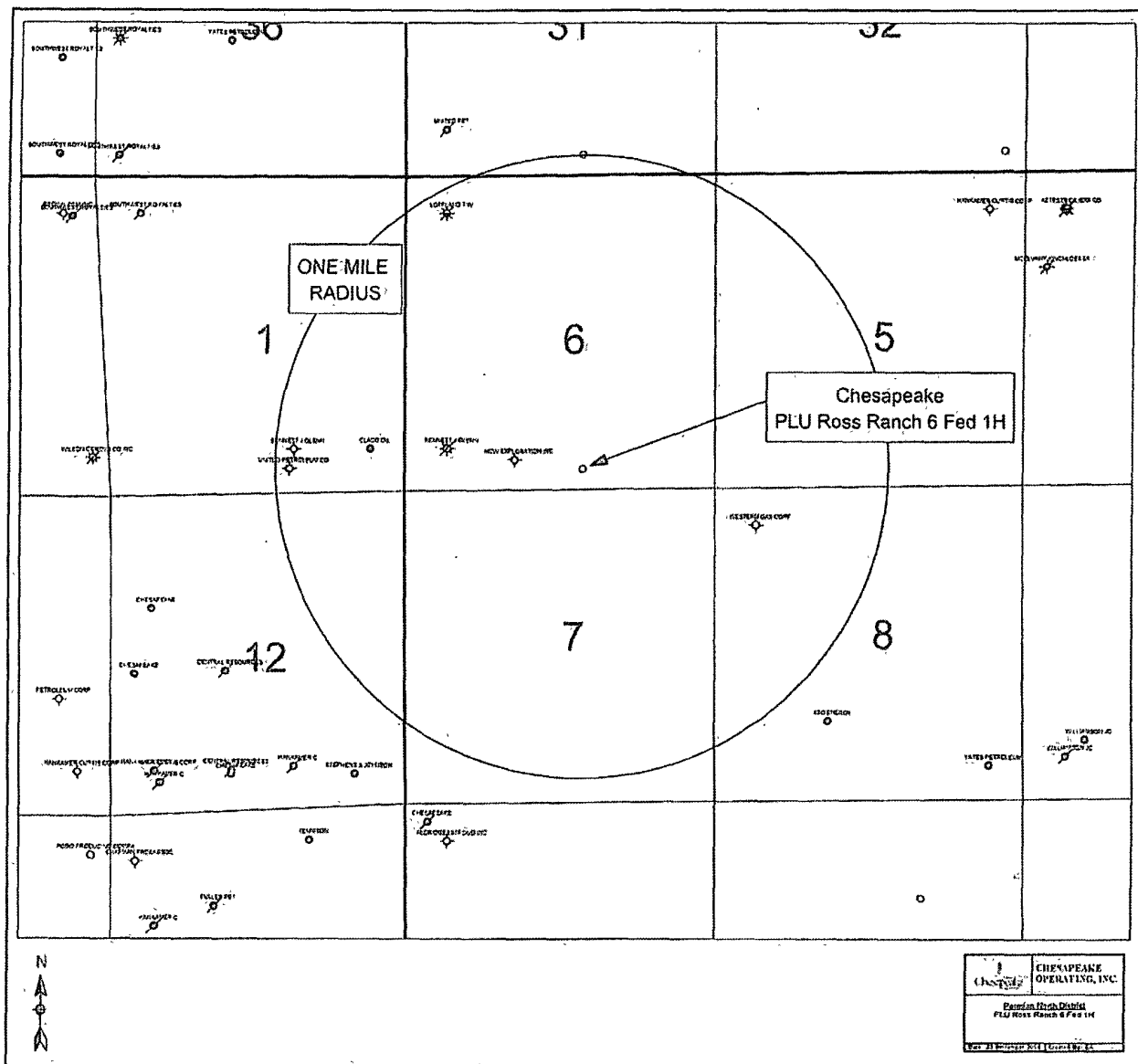


EXHIBIT B

DESIGNATION OF AGENT

The undersigned is, on the records of the Bureau of Land Management,
unit operator under the Poker Lake unit
agreement, Eddy County, New Mexico, No. 14-08-001-303
approved and effective on March 18, 1952 and hereby designates
NAME: Chesapeake Exploration
ADDRESS: 6100 N Western Ave
Oklahoma City, OK 73118

as it's agent, with full authority to act on it's behalf in complying with the terms of the unit agreement and regulations applicable thereto and on whom the authorized officer or his representative may serve written or oral instructions in securing compliance with the oil and gas operating regulations with respect to drilling, testing, and completing the Ross Ranch 6 Fed. #1H Well in the W $\frac{1}{2}$ of the E $\frac{1}{2}$, Sec. 6, T. 26S R. 30E, Eddy County, New Mexico.

It is understood that this designation of agent does not relieve the unit operator of responsibility for compliance with the terms of the unit agreement and the oil and gas operating regulations. It is also understood that this designation of agent does not constitute an assignment of any interest under the unit agreement of any lease committed thereto.

In case of default on the part of the designated agent, the unit operator will make full and prompt compliance with all regulations, lease terms, or orders of the Secretary of the Interior or his duly authorized representative.

The unit operator agrees promptly to notify the authorized officer of any change in the designated agent.

This designation of agent is deemed to be temporary and in no manner a permanent arrangement, and a designated agent may not designate another party as agent.

This designation is given only to enable the agent herein designated to drill the above specified unit well. Unless sooner terminated, this designation shall terminate when there is filed in the appropriate office of the Bureau of Land Management a completed file of all required Federal reports pertaining to the subject well. It is also understood that this designation of agent is limited to Field operations and does not include administrative actions requiring specific authorization of the unit operator.

BEPCO, L.P., a Delaware limited partnership

By: BEPCO Genpar, L.L.C., a Delaware limited liability company, general partner

9-15-08

Date

W. Frank McCreight
(Unit Operator)

W. Frank McCreight, Vice President

Chesapeake Operating Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
of Section 6-26S-30E
Eddy County, NM

Confidential – Tight Hole
Lease No. NMNM 102035

Attachment to Application for Permit to Drill or Re-enter

Chesapeake Operating, Inc. respectfully requests permission to drill a well to 11,795' 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 Capstar Rig #32 layout, Exhibit F-1 to F-3 BOP & Choke Manifold and Exhibit G Directional Drill Plan.

Exhibit E Archeological Survey will be delivered to the BLM when completed.

Chesapeake Operating, Inc. has an agreement with the surface owner.

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.

Additional Operator Remarks:

PILOT HOLE: 10600' TVD/MD.

CHESAPEAKE OPERATING, INC. RESPECTFULLY REQUESTS PERMISSION TO DRILL A WELL TO 11,975' 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 PROGRAM 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 CAPSTAR RIG #32 LAYOUT, EXHIBIT F-1 TO F-3 BOP & CHOKE MANIFOLD AND EXHIBIT G DIRECTIONAL DRILL PLAN.

EXHIBIT E ARCHAEOLOGICAL SURVEY WILL BE DELIVERED TO THE BLM WHEN COMPLETED.

CHESAPEAKE OPERATING, INC. HAS AN AGREEMENT WITH THE SURFACE OWNER.

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.

(CHK PN 624821)

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, New Mexico

CONFIDENTIAL – TIGHT HOLE
Lease Contract No. NMNM 102035

DRILLING PLAN

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:

Formation	Subsea KBTVD	KBTVD
BASE OF SALT	-309'	3,409'
BELL CANYON	-351'	3,451'
CHERRY CANYON MARKER	-1,427'	4,527'
BRUSHY CANYON	-2,481'	5,581'
LOWER BRUSHY CANYON	-3,883'	6,983'
BONE SPRING	-4,105'	7,205'
AVALON SAND TOP	-4,239'	7,339'
AVALON SAND BASE	-4,260'	7,360'
UPPER AVALON SHALE TOP	-4,363'	7,463'
MIDDLE AVALON CARBONATE	-4,566'	7,666'
LOWER AVALON SHALE	-4,694'	7,794'
LOWER AVALON SHALE BASE	-4,969'	8,069'
1 ST BONE SPRING SAND	-5,029'	8,129'
2 ND BONE SPRING CARBONATE	-5,452'	8,552'
2 ND BONE SPRING SAND	-6,255'	9,039'
3 RD BONE SPRING CARBONATE	-6,324'	9,355'
3 RD BONE SPRING SAND	-6,634'	9,734'
WOLFCAMP	-7,320'	10,420'
PILOT HOLE	TD	10,600'

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:

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, New Mexico

CONFIDENTIAL – TIGHT HOLE
Lease Contract No. NMM 102035

DRILLING PLAN

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<u>Substance</u>	<u>Formation</u>	<u>Depth</u>
Oil/Gas	Bell Canyon	3451'
Oil/Gas	Cherry Canyon	4527'
Oil/Gas	Brushy Canyon	5581'
Oil/Gas	Upr Avalon shale	7463'

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

3. BOP EQUIPMENT:

Will have a 2000 psi simplified rental stack (see proposed schematic) for drill out below surface casing; this system will be tested to 2000 psi working pressure.

Will have a 5000 psi rig stack (see proposed schematic) for drill out below intermediate casing; this system will be tested to 3000 psi working pressure.

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-3.

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.

DRILLING PLAN

Page 3

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 **10 minutes**, with no observable pressure decline, once the test pressure as 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

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.

ONSHORE ORDER NO. 1
 Chesapeake Operating, Inc.
 PLU Ross Ranch 6 Federal 1H
 SL: 350' FSL & 2290' FEL
 BL: 350' FNL & 2290' FEL
 Section 6-26S-30E
 Eddy County, New Mexico

CONFIDENTIAL – TIGHT HOLE
 Lease Contract No. NWNM 102035

DRILLING PLAN

Page 4

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

4. CASING 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	Surface – 400'	17-1/2"	13-3/8"	48.0#	H-40	STC	New
Intermediate	Surface – 3,400'	12-1/4"	9-5/8"	40.0#	J-55	LTC	New
Production	Surface – 11,975'	8-3/4" (3400'-7836')/ 8-1/2" 7836'-TD)	5-1/2"	20.0#	L-80	LTC	New

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

- c. Casing Safety Factors:

13-3/8" Surface Casing: SFb = 1.6, SFc = 3.9 and SFt = 6
 9-5/8" Intermediate Casing: SFb = 2.3, SFc = 3.4 and SFt = 3.1
 5-1/2" Production Casing: SFb = 1.8, SFc = 2.0 and SFt = 3.4

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, New Mexico

CONFIDENTIAL – TIGHT HOLE
Lease Contract No. NMNM 102035

DRILLING PLAN

Page 5

d. The cementing program will be as follows:

5. Cementing Program

← see CCA

<u>Interval</u>	<u>Type</u>	<u>Amount</u>	<u>Yield</u>	<u>Top Of Cement</u>	<u>Excess</u>
Surface	Tail: Class C 1% CaCl ₂ (Accelerator)	450 sks see CCA	1.34	Surface	100%
Intermediate	Lead: 35/65 Poz/Class C	900 sks	2.0	Surface	100%
	Tail: Class C	325 sks	1.34		100%
Production	Class H 0.5% Halad344 (Fluid Loss Control) 0.4% CFR-3 (Dispersant) 1 lbm/sk Salt 0.3% HR-7 (Retarder) 0.25 lbm D-AIR 3000 (Defoamer)	1700 sks	1.60	3,300' ↑ see CCA	40%

Final cement volumes will be determined by caliper.

Pilot Hole Plugging Plan:

The pilot hole will be plugged back using a plug of at least 210' from $\pm 10,340'$ to $10,450'$ (125 sx, Class H 14.8 ppg 1.35 yld + KCL + Retarder) covering the top of Wolfcamp and base of Bone Spring. Second plug will be the same from $\pm 8,000'$ to $8,210'$. A third 500' balanced plug will be placed from $\pm 6,890'$ to $7,390'$ (305 sx, 40% Excess, Class H 17.5 ppg 0.96yld + 0.75% CFR-3 + 3% KCL + 0.2% HR-800).

6. 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' – 400'	FW/Gel	8.4 – 9.0	28-32	NC
400' – 3,400'	Native/Brine	9.9 – 10.1	28-30	NC
3,400' - TD	FW/LSND	8.8 – 9.5	34-45	20-10

see CCA

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.

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, New Mexico

CONFIDENTIAL – TIGHT HOLE
Lease Contract No. NMNM 102035

DRILLING PLAN

Page 6

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 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.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

- a. The estimated bottom hole pressure is 4609 psi. No abnormal pressures or temperatures are anticipated.
- b. Hydrogen sulfide gas is not anticipated.

Permian District

NM - Eddy - Morrow Project

PLU Ross Ranch 6 Federal 1H

Well #1

Wellbore #1

Plan: Plan #1

Standard Planning Report

28 September, 2008

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well Well #1
Company:	Permian District	TVD Reference:	RKB @ 3096.0ft
Project:	NM - Eddy - Morrow Project	MD Reference:	RKB @ 3096.0ft
Site:	PLU Ross Ranch 6 Federal 1H	North Reference:	True
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project:	NM - Eddy - Morrow Project		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Ground Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	PLU Ross Ranch 6 Federal 1H		
Site Position:		Northing:	ft
From:	None	Easting:	ft
Position Uncertainty:	ft	Slot Radius:	in
		Latitude:	
		Longitude:	
		Grid Convergence:	0.00 °

Well:	Well #1					
Well Position	+N/-S	0.0 ft	Northing:	0.00 ft	Latitude:	30° 59' 24.51165130 N
	+E/-W	0.0 ft	Easting:	0.00 ft	Longitude:	105° 55' 44.13731823 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	3,084.0 ft

Wellbore:	Wellbore #1				
Magnetics:	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	9/28/2008	0.00	0.00	0

Design:	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	0.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,090.0	0.00	0.00	7,090.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,836.1	90.00	0.00	7,565.0	475.0	0.0	12.06	12.06	0.00	0.00	
11,974.9	90.00	0.00	7,565.0	4,613.8	0.0	0.00	0.00	0.00	0.00	

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well Well #1:
Company:	Permian District	TVD Reference:	RKB @ 3096.0ft
Project:	NM - Eddy - Morrow Project	MD Reference:	RKB @ 3096.0ft
Site:	PLU/Ross Ranch 6 Federal 1H	North Reference:	True
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
13 3/8"										
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
9 5/8"										
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00	

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well Well #1
Company:	Permian District	TVD Reference:	RKB @ 3096.0ft
Project:	NM - Eddy - Morrow Project	MD Reference:	RKB @ 3096.0ft
Site:	PLU Ross Ranch 6 Federal 1H	North Reference:	True
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,090.0	0.00	0.00	7,090.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	1.21	0.00	7,100.0	0.1	0.0	0.1	12.06	12.06	0.00	
7,200.0	13.27	0.00	7,199.0	12.7	0.0	12.7	12.06	12.06	0.00	
7,300.0	25.33	0.00	7,293.2	45.7	0.0	45.7	12.06	12.06	0.00	
7,400.0	37.39	0.00	7,378.5	97.6	0.0	97.6	12.06	12.06	0.00	
7,500.0	49.46	0.00	7,451.0	166.2	0.0	166.2	12.06	12.06	0.00	
7,600.0	61.52	0.00	7,507.5	248.5	0.0	248.5	12.06	12.06	0.00	
7,700.0	73.58	0.00	7,545.6	340.7	0.0	340.7	12.06	12.06	0.00	
7,800.0	85.64	0.00	7,563.6	438.9	0.0	438.9	12.06	12.06	0.00	
7,836.1	90.00	0.00	7,565.0	475.0	0.0	475.0	12.06	12.06	0.00	
7,900.0	90.00	0.00	7,565.0	538.9	0.0	538.9	0.00	0.00	0.00	
8,000.0	90.00	0.00	7,565.0	638.9	0.0	638.9	0.00	0.00	0.00	
8,100.0	90.00	0.00	7,565.0	738.9	0.0	738.9	0.00	0.00	0.00	
8,200.0	90.00	0.00	7,565.0	838.9	0.0	838.9	0.00	0.00	0.00	
8,300.0	90.00	0.00	7,565.0	938.9	0.0	938.9	0.00	0.00	0.00	
8,400.0	90.00	0.00	7,565.0	1,038.9	0.0	1,038.9	0.00	0.00	0.00	
8,500.0	90.00	0.00	7,565.0	1,138.9	0.0	1,138.9	0.00	0.00	0.00	
8,600.0	90.00	0.00	7,565.0	1,238.9	0.0	1,238.9	0.00	0.00	0.00	
8,700.0	90.00	0.00	7,565.0	1,338.9	0.0	1,338.9	0.00	0.00	0.00	
8,800.0	90.00	0.00	7,565.0	1,438.9	0.0	1,438.9	0.00	0.00	0.00	
8,900.0	90.00	0.00	7,565.0	1,538.9	0.0	1,538.9	0.00	0.00	0.00	
9,000.0	90.00	0.00	7,565.0	1,638.9	0.0	1,638.9	0.00	0.00	0.00	
9,100.0	90.00	0.00	7,565.0	1,738.9	0.0	1,738.9	0.00	0.00	0.00	
9,200.0	90.00	0.00	7,565.0	1,838.9	0.0	1,838.9	0.00	0.00	0.00	
9,300.0	90.00	0.00	7,565.0	1,938.9	0.0	1,938.9	0.00	0.00	0.00	
9,400.0	90.00	0.00	7,565.0	2,038.9	0.0	2,038.9	0.00	0.00	0.00	
9,500.0	90.00	0.00	7,565.0	2,138.9	0.0	2,138.9	0.00	0.00	0.00	
9,600.0	90.00	0.00	7,565.0	2,238.9	0.0	2,238.9	0.00	0.00	0.00	
9,700.0	90.00	0.00	7,565.0	2,338.9	0.0	2,338.9	0.00	0.00	0.00	
9,800.0	90.00	0.00	7,565.0	2,438.9	0.0	2,438.9	0.00	0.00	0.00	
9,900.0	90.00	0.00	7,565.0	2,538.9	0.0	2,538.9	0.00	0.00	0.00	
10,000.0	90.00	0.00	7,565.0	2,638.9	0.0	2,638.9	0.00	0.00	0.00	
10,100.0	90.00	0.00	7,565.0	2,738.9	0.0	2,738.9	0.00	0.00	0.00	
10,200.0	90.00	0.00	7,565.0	2,838.9	0.0	2,838.9	0.00	0.00	0.00	

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well Well #1
Company:	Permian District	TVD Reference:	RKB @ 3096.0ft
Project:	NM - Eddy - Morrow Project	MD Reference:	RKB @ 3096.0ft
Site:	PLU-Ross Ranch 6 Federal 1H	North Reference:	True
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

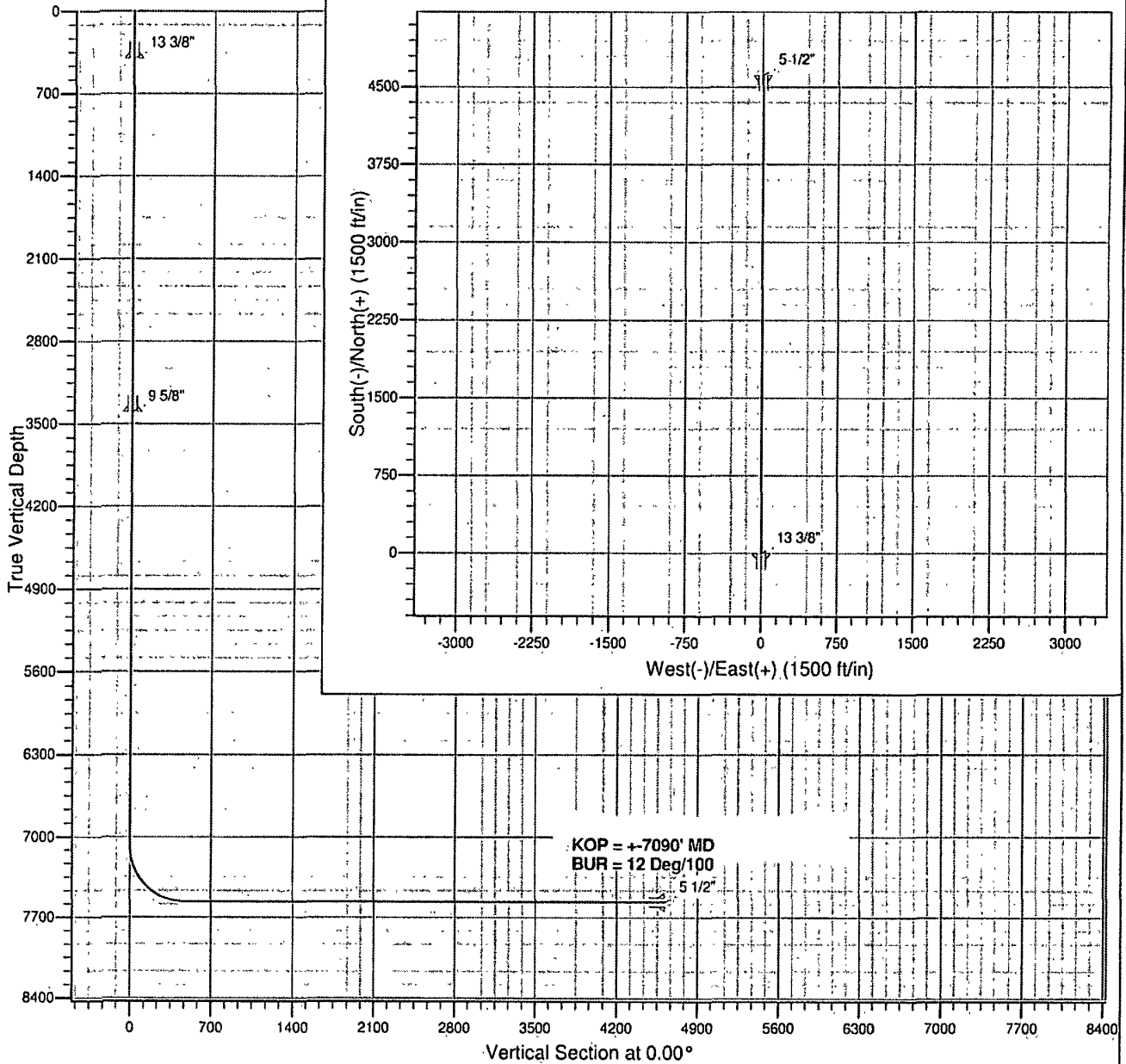
Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,300.0	90.00	0.00	7,565.0	2,938.9	0.0	2,938.9	0.00	0.00	0.00	
10,400.0	90.00	0.00	7,565.0	3,038.9	0.0	3,038.9	0.00	0.00	0.00	
10,500.0	90.00	0.00	7,565.0	3,138.9	0.0	3,138.9	0.00	0.00	0.00	
10,600.0	90.00	0.00	7,565.0	3,238.9	0.0	3,238.9	0.00	0.00	0.00	
10,700.0	90.00	0.00	7,565.0	3,338.9	0.0	3,338.9	0.00	0.00	0.00	
10,800.0	90.00	0.00	7,565.0	3,438.9	0.0	3,438.9	0.00	0.00	0.00	
10,900.0	90.00	0.00	7,565.0	3,538.9	0.0	3,538.9	0.00	0.00	0.00	
11,000.0	90.00	0.00	7,565.0	3,638.9	0.0	3,638.9	0.00	0.00	0.00	
11,100.0	90.00	0.00	7,565.0	3,738.9	0.0	3,738.9	0.00	0.00	0.00	
11,200.0	90.00	0.00	7,565.0	3,838.9	0.0	3,838.9	0.00	0.00	0.00	
11,300.0	90.00	0.00	7,565.0	3,938.9	0.0	3,938.9	0.00	0.00	0.00	
11,400.0	90.00	0.00	7,565.0	4,038.9	0.0	4,038.9	0.00	0.00	0.00	
11,500.0	90.00	0.00	7,565.0	4,138.9	0.0	4,138.9	0.00	0.00	0.00	
11,600.0	90.00	0.00	7,565.0	4,238.9	0.0	4,238.9	0.00	0.00	0.00	
11,700.0	90.00	0.00	7,565.0	4,338.9	0.0	4,338.9	0.00	0.00	0.00	
11,800.0	90.00	0.00	7,565.0	4,438.9	0.0	4,438.9	0.00	0.00	0.00	
11,900.0	90.00	0.00	7,565.0	4,538.9	0.0	4,538.9	0.00	0.00	0.00	
11,974.9	90.00	0.00	7,565.0	4,613.8	0.0	4,613.8	0.00	0.00	0.00	
5 1/2"										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
400.0	400.0	13 3/8"	13.375	17.500	
3,400.0	3,400.0	9 5/8"	9.625	12.250	
11,974.9	7,565.0	5 1/2"	5.500	8.750	

Chesapeake Operating Inc. PLU Ross Ranch 6 Federal 1H

County: Eddy, NM

Section 6-26S-30E



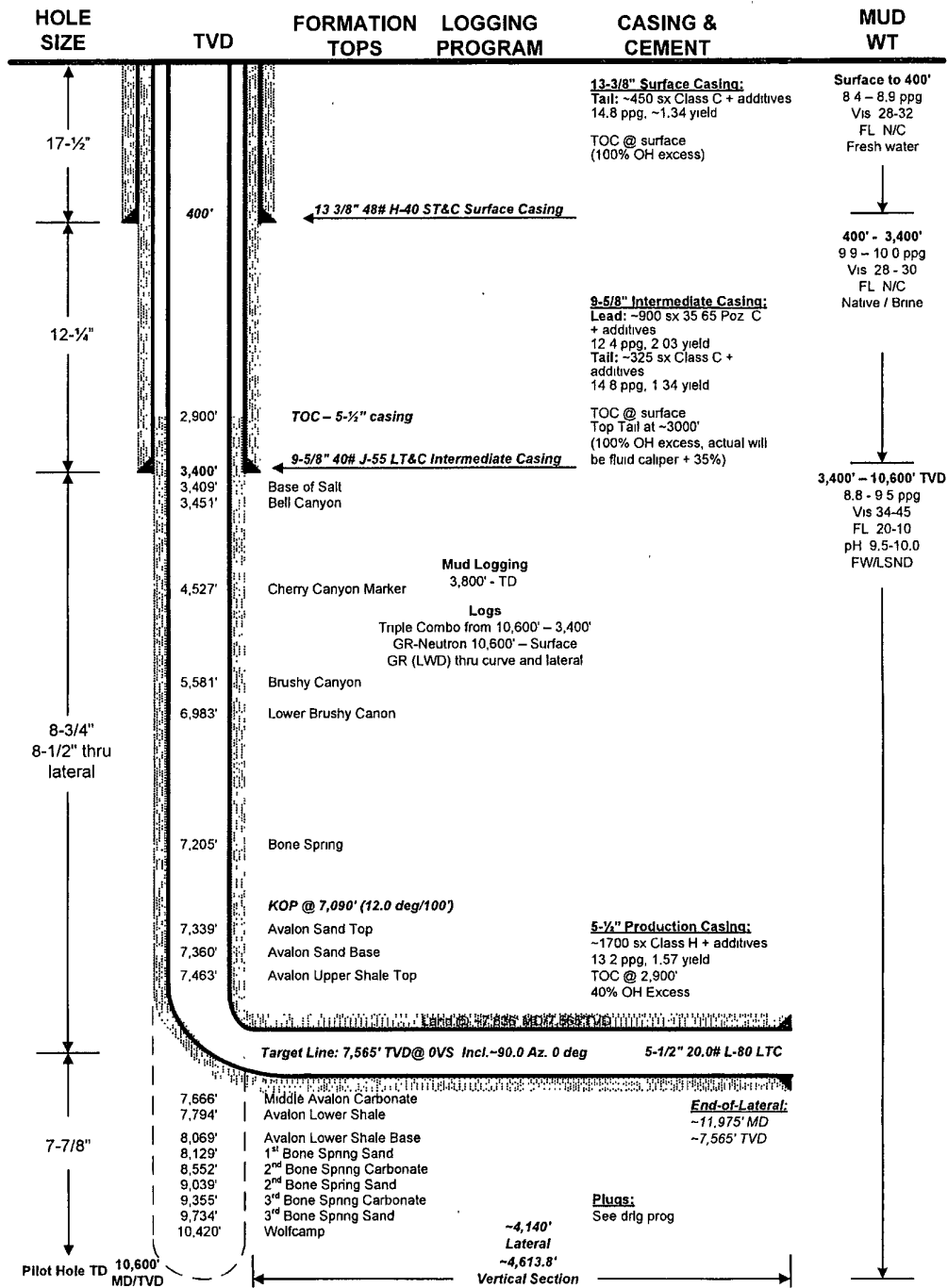
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7090.0	0.00	0.00	7090.0	0.0	0.0	0.00	0.00	0.0	
3	7836.1	90.00	0.00	7565.0	475.0	0.0	12.06	0.00	475.0	
4	11974.9	90.00	0.00	7565.0	4613.8	0.0	0.00	0.00	4613.8	

CHESAPEAKE OPERATING INC

Proposed Well Schematic (drilling)

WELL : PLU ROSS RANCH 6 FEDERAL 1H
 SHL : Section 6 - 26S - 30E, 350' FSL & 2290' FEL
 BHL : Section 6 - 26S - 30E, 350' FNL & 2290' FEL
 COUNTY : Eddy
 STATE : New Mexico
 FIELD : Delaware Basin North
 ELEVATION : GL - 3,084' RKB - 3,096' Est.



PREPARED BY: TAN

DATE: 9/28/08

APPROVED BY:

DATE:



**LOCATION SPECIFICATION AND RIG LAYOUT
FOR STEEL PITS**
(PICTURE NOT TO SCALE)

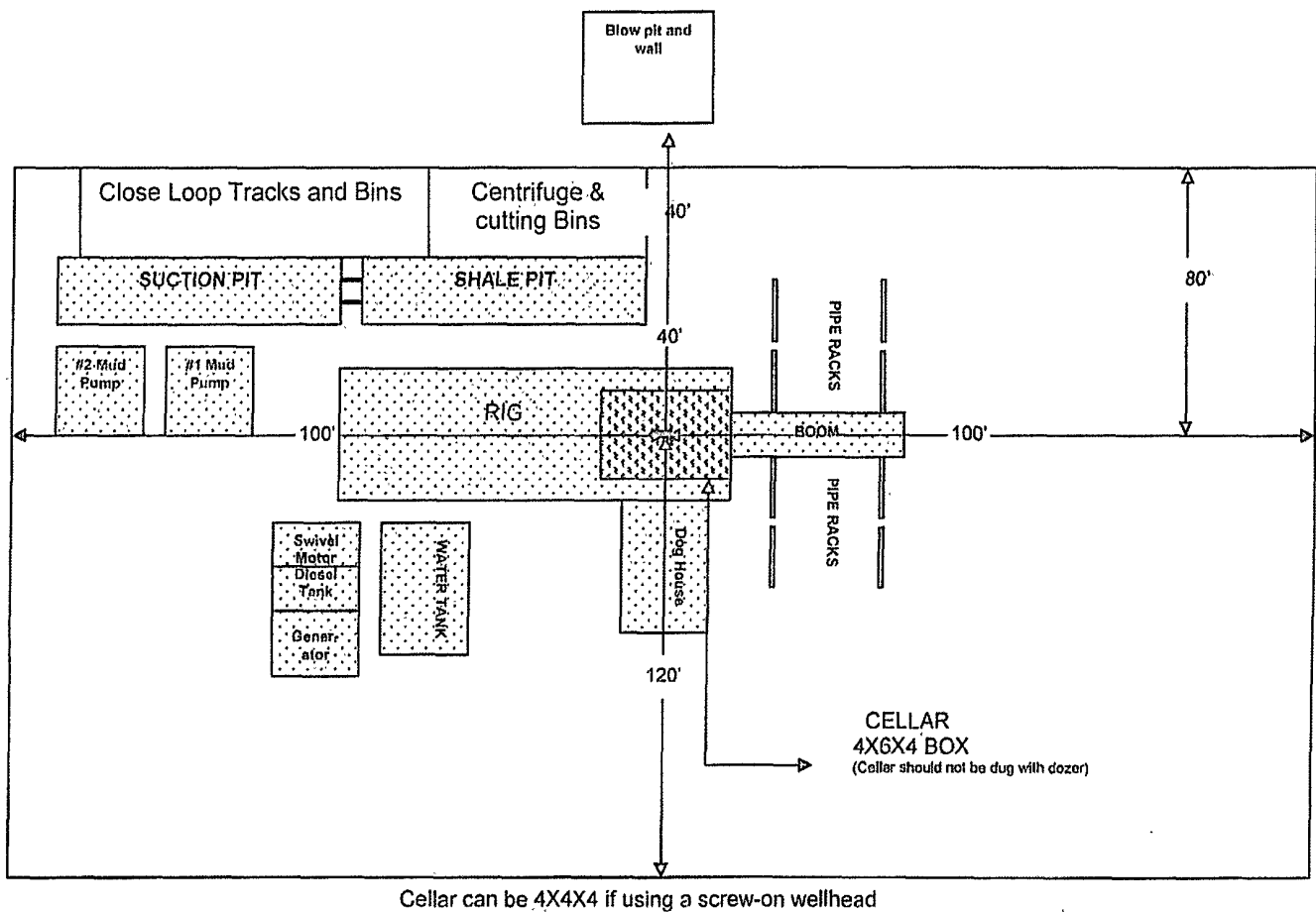


EXHIBIT D

CHESAPEAKE OPERATING, INC.

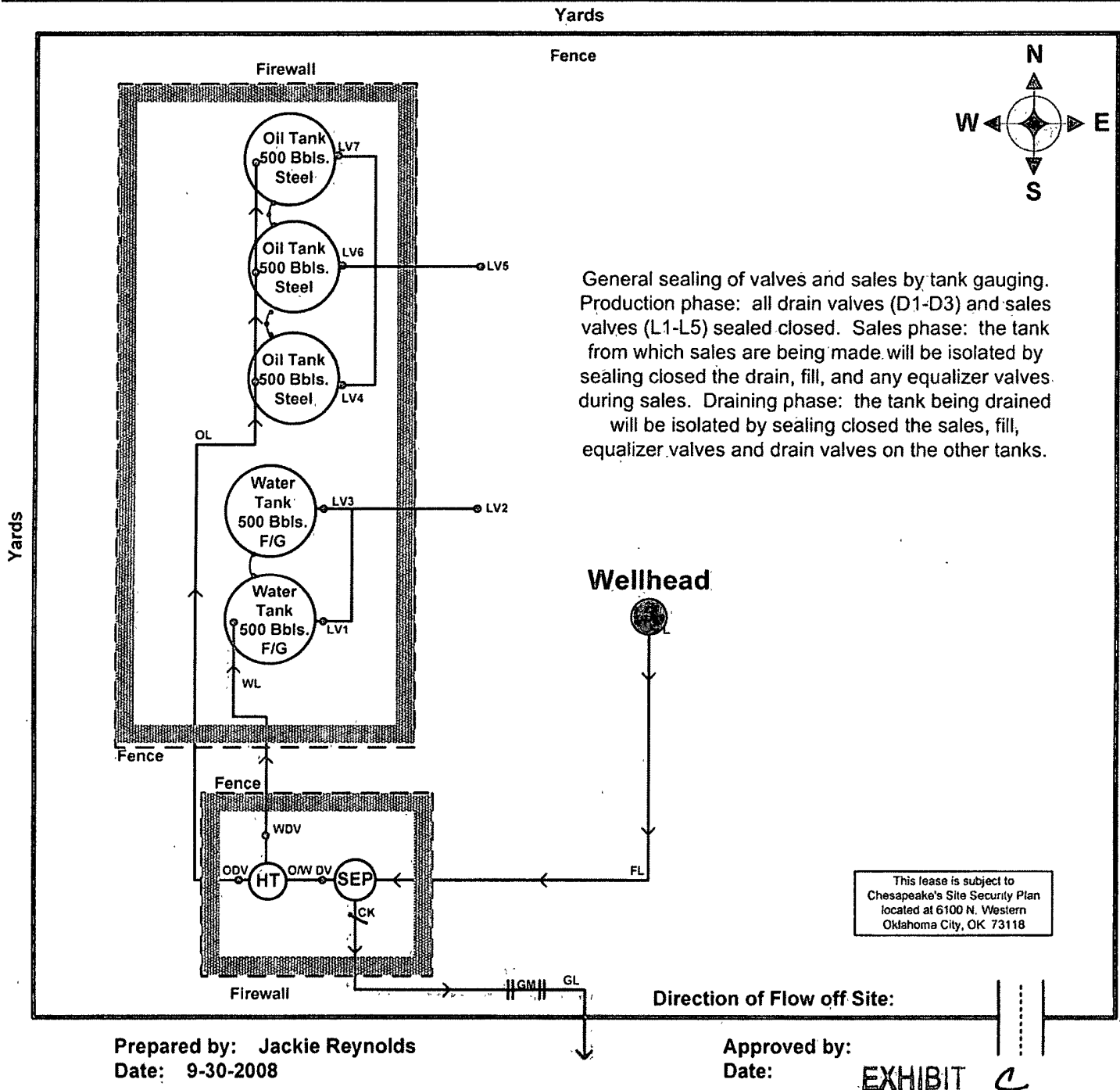


PLU Ross Ranch 6 Federal #1H

Lat: N 32°03'55.35" – Long.: W 103°55'09.91"

S06/T26S/R30E – 350 FSL & 2290 FEL

Eddy Co., New Mexico



BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

WELL : PLU Ross Ranch 6 Federal 1H

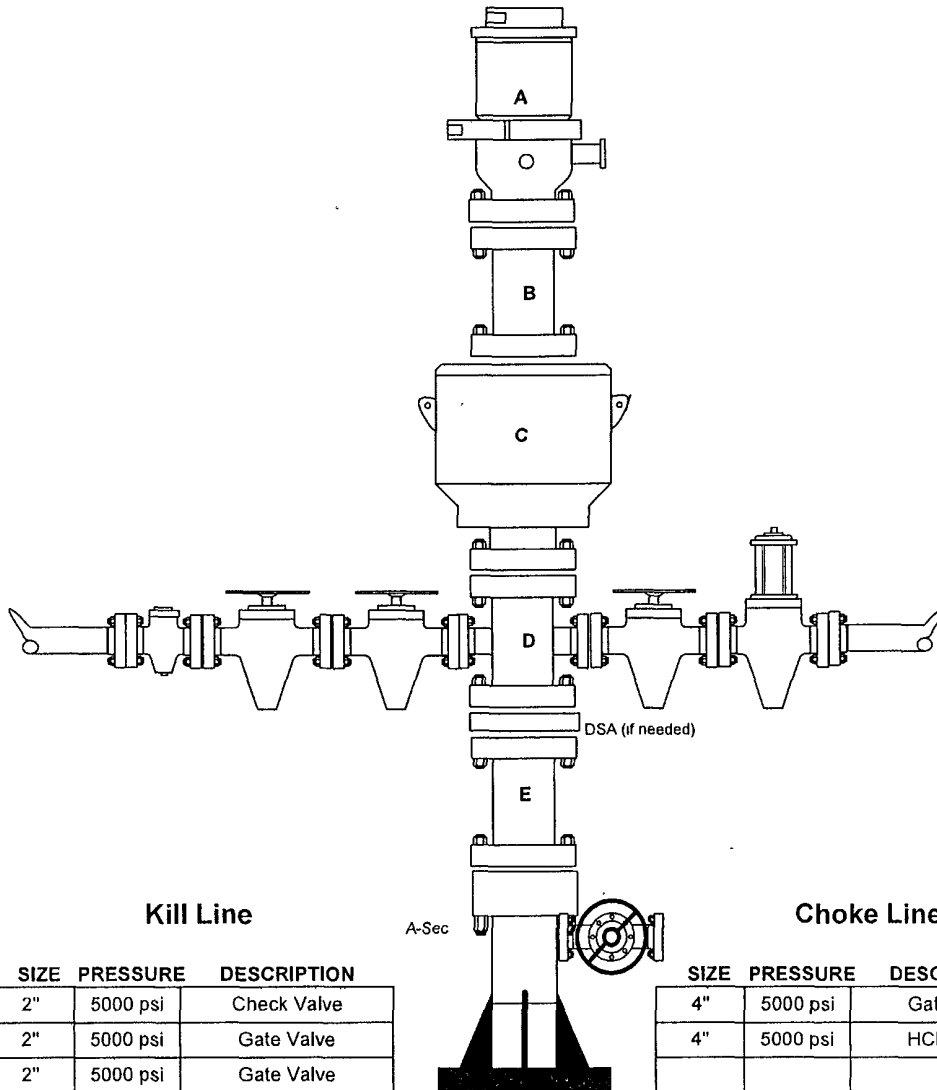
RIG : Capstar 32

COUNTY : Eddy

STATE: New Mexico

OPERATION: Drill out below 13-3/8" Casing (12-1/4" hole size)

	SIZE	PRESSURE	DESCRIPTION
A	13-5/8"	500 psi	Rot Head
B	13-5/8"	3000 psi	Spacer Spool
C	13-5/8"	3000 psi	Annular
D	13-5/8"	3000 psi	Mud Cross
E	13-5/8"	3000 psi	Spacer Spool
DSA	13-5/8" 3M x 13-5/8" 3M (if needed)		
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

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

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

WELL : PLU Ross Ranch 6 Federal 1H

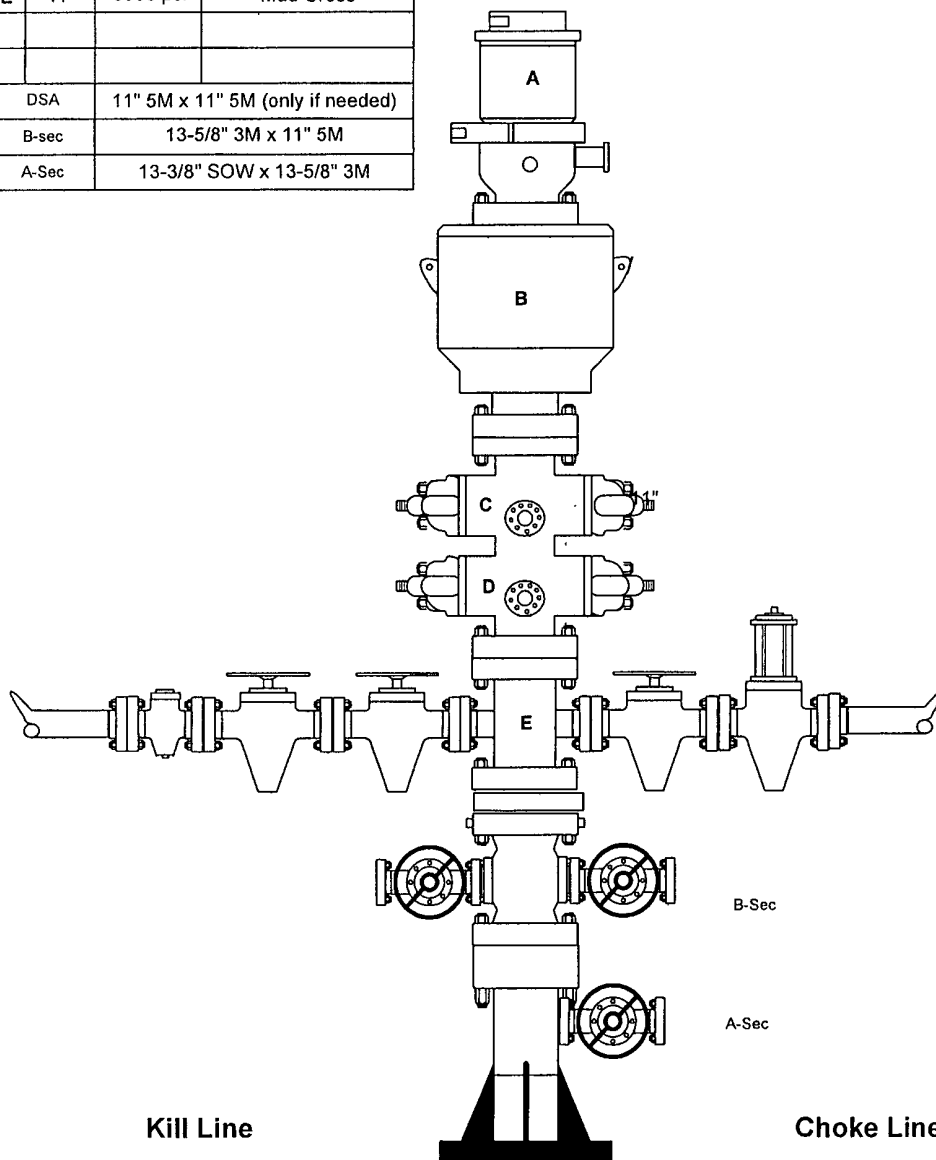
RIG : Capstar 32

COUNTY : Eddy

STATE: New Mexico

OPERATION: Drill out below 9-5/8" Casing (8-3/4"/8-1/2"/7-7/8" hole size)

	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	11" 5M x 11" 5M (only if needed)		
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

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

EXHIBIT

F-2

CHESAPEAKE OPERATING, INC.

WELL : PLU Ross Ranch 6 Federal 1H

RIG : Capstar 32

COUNTY : Eddy **STATE** : New Mexico

OPERATION: Drilling below/beyond 13-3/8" surface casing

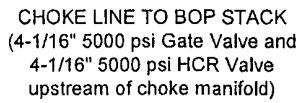


EXHIBIT F-3

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, NM

CONFIDENTIAL – TIGHT HOLE

Lease No. NMNM 102035

SURFACE USE PLAN

Page 1

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 210' 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 junction of hwy 128 and Co. Rd. Twinwell (787), go south on Twinwell for 10 miles to Co. Rd. Buck Jackson (786), on Buck Jackson go south 2.4 miles to a "Y", go 5.3 miles to end of Buck Jackson to El Paso Road, go west 6.9 miles to proposed lease road

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

4. LOCATION OF PRODUCTION FACILITIES

It is anticipated that production facilities will be located on the well pad and oil to be sold at the wellhead and/or tank battery. An allocation meter will be installed on location and CEMI will lay the gas lines from our location to the Southern Union sales meter. – See Exhibit C

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, NM

CONFIDENTIAL – TIGHT HOLE

Lease No. NMNM 102035

SURFACE USE PLAN

Page 2

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 6-26S-30E. 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 the Capstar Rig orientation and equipment location. See Exhibit D.

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 removed.

11. SURFACE & MINERAL OWNERSHIP

United States of America
Department of Interior
Bureau of Land Management

GRAZING LESSEE

H & K Farms
P.O. Box 1379
Seminole, TX 79360

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

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, NM

CONFIDENTIAL – TIGHT HOLE

Lease No. NMNM 102035

SURFACE USE PLAN

Page 3

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

Dave Bert
District Manager
P.O. Box 18496
Oklahoma City, OK 73154
(405) 879-6882 (OFFICE)
(405) 761-4699 (Cell)
dave.bert@chk.com

Sr. Drilling Engineer

Todd Nance
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(405) 810-2795 (FAX)
(405) 919-9148 (MOBILE)
todd.nance@chk.com

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432-557-3356 (Cell)
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Assett Manager

Jeff Finnell
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Regulatory Compliance

Linda Good
Regulatory Compliance Specialist
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linda.good@chk.com

Sr. Geologist

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Craig Barnard
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craig.barnard@chk.com

Justin Zerkle
Associate Landman
P.O. Box 18496
Oklahoma City, OK 73154
405-767-4925 Office
justin.zerkle@chk.com

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 112183	2a. Lead (Sponsoring) Agency: BLM-CFO	2b. Other Permitting Agency(ies): N/A	3. Lead Agency Report No.:																					
4. Title of Report: A class III archaeological survey for the PLU Ross Ranch "6" Federal 1H and proposed access road for Chesapeake Operating in T26S, R30E, Section 6. Author(s) Mary Ann Paul			5. Type of Report <input checked="" type="checkbox"/> Negative <input type="checkbox"/> Positive																					
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic study <input type="checkbox"/> Site specific visit <input type="checkbox"/> Other																								
7. Description of Undertaking (what does the project entail?): On 10/10/08 and 11/19/08, Mary Ann Paul, with Boone Archaeological Services conducted a class III archaeological survey to meet the federal and state laws for preserving and protecting cultural resources. These laws include, but are not limited to, Section 106 of the National Historic Preservation Act of 1966 and Executive Order 11593. The survey was conducted at the request of Chesapeake Operating for the proposed PLU Ross Ranch "6" Federal 1H (centered at [350' FSL, 1880' FEL] in T26S, R30E, Section 6. The proposed well pad area surveyed was 8.26 acres (+/-) in size and was 600 ft (+/-) in length x 600 ft (+/-) in width. The area to be surveyed was marked with marked wooden stakes with pink flagging and the center location was marked with a pole with a red flag and a white flag on top. The impact of the construction of the well pad is estimated to be 400 ft (+/-) x 400 ft (+/-) or 3.67 acres (+/-). The proposed road was marked with wooden stakes with orange flagging. The access road surveyed that was outside of the proposed well pad totaled .14 acres (+/-) and was 60 ft (+/-) in length and 100 ft (+/-) in width. The rest of the road (35 ft) (+/-) was surveyed inside the well pad making the total length of the proposed road 95 ft (+/-). The estimated impact area for the road is 60 ft (+/-) in length and 50 ft (+/-) in width or .07 acres (+/-). Exact construction methods for the proposed road and well pad are unknown, but it is assumed that machines capable of grading, vegetation removal, ditch excavation, pipe laying, and backfilling will be used This survey was designed to meet, or exceed, the requirements detailed in the BLM Manual Supplement H-8100-1 New Mexico, Oklahoma, and Texas, Procedures for Performing Cultural Resource Fieldwork on Public Lands in the area of New Mexico BLM Responsibilities 2002. During the course of fieldwork no cultural materials were encountered. The location plots for this project were obtained with a handheld GPS unit.																								
8. Dates of Investigation: (from: 10/10/08 to: 11/19/08)		9. Report Date: 11/20/08																						
10. Performing Agency/Consultant: Boone Archaeological Services, LLC Address: 2030 N Canal Carlsbad, NM 88220 Phone: (575) 885-1352 Principal Investigator: Danny Boone Field Supervisor: Mary Ann Paul Field Personnel Names: Mary Ann Paul		11. Performing Agency/Consultant Report No.: BAS 09-08-49 12. Applicable Cultural Resource Permit No(s): BLM 190-2920-08-K State NM-08-157																						
13. Client/Customer (project proponent): Chesapeake Operating, Inc. Contact: Linda Good Address: P.O. Box 18496 Oklahoma City, Oklahoma 73154-0496 Phone: (405) 848-8000		14. Client/Customer Project No.:																						
15. Land Ownership Status (<u>Must</u> be indicated on project map). <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Land Owner</th> <th style="width: 25%;">Acres Surveyed</th> <th style="width: 25%;">Acres in APE</th> </tr> </thead> <tbody> <tr> <td>BLM-CFO</td> <td>8.40 (+/-)</td> <td>3.74 (+/-)</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td style="text-align: right;">TOTALS</td> <td>8.40 (+/-)</td> <td>3.74 (+/-)</td> </tr> </tbody> </table>				Land Owner	Acres Surveyed	Acres in APE	BLM-CFO	8.40 (+/-)	3.74 (+/-)													TOTALS	8.40 (+/-)	3.74 (+/-)
Land Owner	Acres Surveyed	Acres in APE																						
BLM-CFO	8.40 (+/-)	3.74 (+/-)																						
TOTALS	8.40 (+/-)	3.74 (+/-)																						

BY: 

EXHIBIT E

16. Records Search(es):

Date(s) of ARMS File Review 11/17/08	Name of Reviewer(s) Mary Ann Paul	
Date(s) of NR/SR File Review	Name of Reviewer(s)	
Date(s) of Other Agency File Review 10/9/08	Name of Reviewer(s) Mary Ann Paul	Agency BLM-CFO

Findings: A review of the ARMS and BLM site databases found sites LA 12773, LA 66125, LA 66126, LA 66276, LA 66277, LA 121139, LA 122841, LA 131587, LA 132204, LA 147278, LA 147280, LA 147410, LA 147412, LA 147413, LA 147414, LA 147415, LA 147416, LA 147417, LA 147418, LA 147436, LA 147437, and LA 147591 within 1 mile of the project area.

17. Survey Data:

a. Source Graphics

☒ NAD 27 ☐ NAD 83

☐ USGS 7.5' (1:24,000) topo map

☐ Other topo map, Scale:

☒ GPS Unit

 Accuracy ☐ <1.0m

☒ 1-10m

☐ 10-100m

☐ >100m

b. USGS 7.5' Topographic Map Name

USGS Quad Code

Ross Ranch	32103-A8

c. County(ies): Eddy

17. Survey Data (continued):

d. Nearest City or Town: Malaga

e. Legal Description:

Township (N/S)	Range (E/W)	Section	1/4	1/4	1/4
26S	30E	6	SW	SE	

Projected legal description? Yes [X], No []

Unplatted []

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.): (centered at [350' FSL, 1880' FEL] in T26S, R30E, Section 6.

18. Survey Field Methods:

 Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration:

☒ block survey units [600 ft (+/-) x 600 ft (+/-)]

☒ linear survey units (l x w): 60 ft (+/-) in length and 100 ft (+/-) in width

☐ other survey units (specify):

 Scope: ☒ non-selective (all sites recorded) ☐ selective/thematic (selected sites recorded)

 Coverage Method: ☒ systematic pedestrian coverage ☐ other method (describe)

Survey Interval (m): 15 Crew Size: 1 Fieldwork Dates: 10/10/08 and 11/19/08

Survey Person Hours: 3 Recording Person Hours: 0 Total Hours: 3

Additional Narrative:

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Topography: Sloping downhill to the south, rocky area with unburned caliche.

Vegetative community: Bunch grass, prickly pear, yucca, creosote, black thorn, crown of thorns, and various grasses/forbs.

NRCS: Simona-Pajarito association: Sandy, deep soils and soils that are shallow to caliche; from wind-worked deposits

Elevation: 3,088 ft – 3,102 ft

20. a. Percent Ground Visibility: 90% b. Condition of Survey Area (grazed, bladed, undisturbed, etc.): The survey area for the proposed road has been minorly disturbed by a buried pipeline.

21. CULTURAL RESOURCE FINDINGS ☐ Yes, See Page 3 ☒ No, Discuss Why: This area probably did not contain enough resources for indigenous people to exploit.

22. Required Attachments (check all appropriate boxes):

- ☒ USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn
- ☒ Copy of NMCRIS Mapserver Map Check
- ☐ LA Site Forms - new sites (*with sketch map & topographic map*)
- ☐ LA Site Forms (update) - previously recorded & un-relocated sites (*first 2 pages minimum*)
- ☐ Historic Cultural Property Inventory Forms
- ☐ List and Description of Isolates, if applicable
- ☐ List and Description of Collections, if applicable

23. Other Attachments:

- ☐ Photographs and Log
 - ☒ Other Attachments
- (Describe): Surveyors plats

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Responsible Archaeologist: Mary Ann Paul

Signature M. A. Paul Date: 11/20/08 Title (if not PI): Field Supervisor

25. Reviewing Agency:
Reviewer's Name/Date

Accepted () Rejected ()

Tribal Consultation (if applicable): ☐ Yes ☐ No

26. SHPO
Reviewer's Name/Date:

HPD Log #:
SHPO File Location:
Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

1. NMCRIS Activity No.: 112183	2. Lead (Sponsoring) Agency: BLM-CFO	3. Lead Agency Report No.:
-----------------------------------	---	----------------------------

SURVEY RESULTS:

Sites discovered and registered: 0

Sites discovered and NOT registered: 0

Previously recorded sites revisited (site update form required): 0

Previously recorded sites not relocated (site update form required): 0

TOTAL SITES VISITED: 0

Total isolates recorded: 0 Non-selective isolate recording? ☒

Total structures recorded (new and previously recorded, including acequias): 0

MANAGEMENT SUMMARY: Archaeological clearance is recommended for the proposed well pad and road as currently staked. Should any cultural materials be encountered, all work should cease and a staff archaeologist of the BLM-CFO cultural resource management team will be notified immediately.

IF REPORT IS NEGATIVE YOU ARE DONE AT THIS POINT

SURVEY LA NUMBER LOG

Sites Discovered:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)

Previously recorded revisited sites:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)

MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required):

Previously recorded sites (Site update form required):

LA No.	Field/Agency No.	LA No.	Field/Agency No.

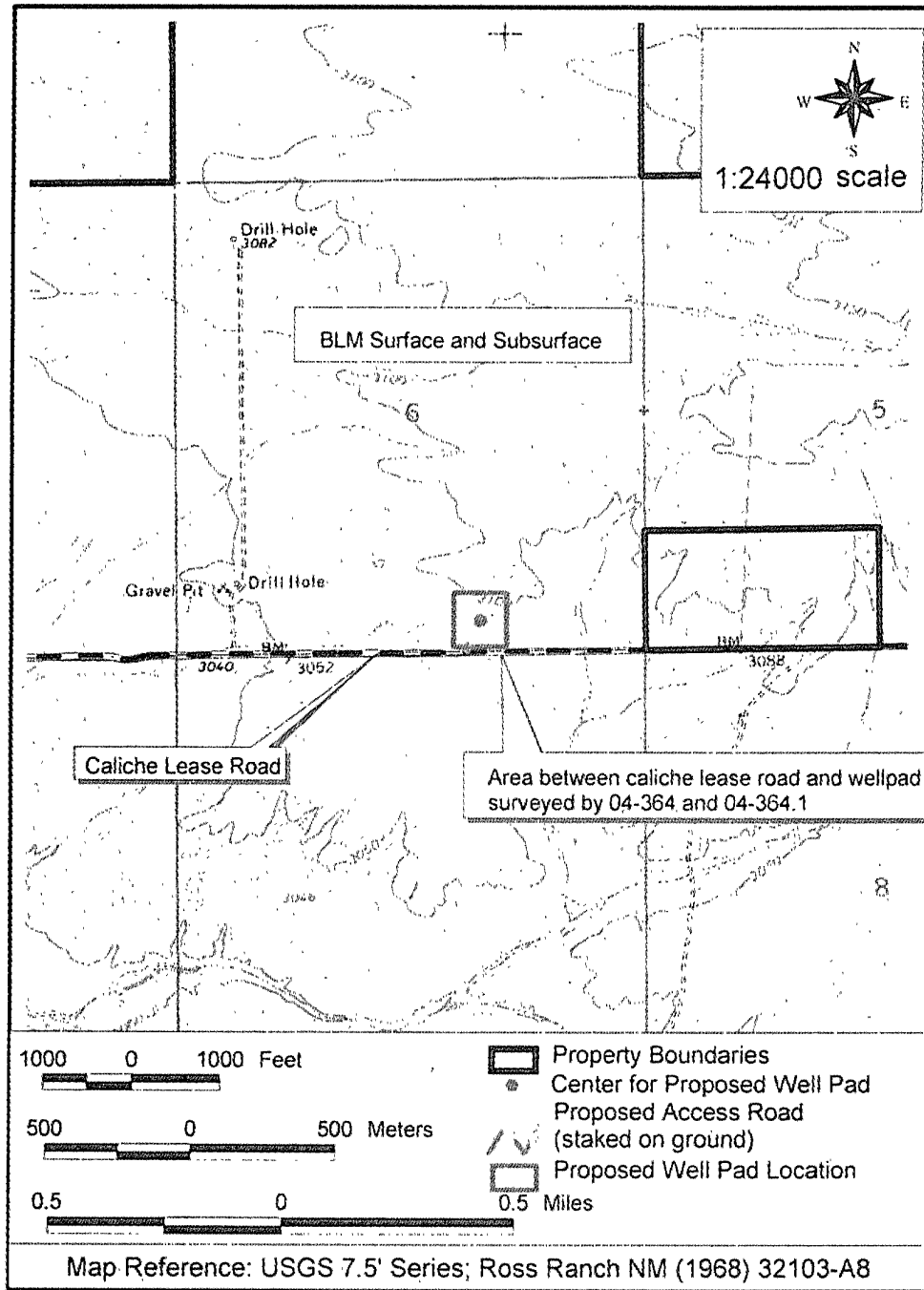
Areas outside known nearby site boundaries monitored? Yes ☐, No ☐ If no explain why:

TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s)

Excavated LA number(s)

Project Map **BAS 09-08-49**



Location Map for the proposed PLU Ross Ranch "6" Federal 1H for Chesapeake Operating in Section 6, T26S, R30E, NMPM, Eddy County, NM.

ONSHORE ORDER NO. 1
Chesapeake Operating, Inc.
PLU Ross Ranch 6 Federal 1H
SL: 350' FSL & 2290' FEL
BL: 350' FNL & 2290' FEL
Section 6-26S-30E
Eddy County, NM

CONFIDENTIAL – TIGHT HOLE
Lease No. NMMN 102035

OPERATOR CERTIFICATION

PAGE 1

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Executed this 8th day of October, 2008.

Name: Paul Hagemeyer
Paul Hagemeyer, Vice President – Regulatory Compliance

Address: P.O. Box 18496, Oklahoma City, OK 73154-0496

Telephone: 405-848-8000

Field Representative: Bud Cravey

Telephone: 432-238-7293

E-mail: bud.cravey@chk.com

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chesapeake Operating
LEASE NO.:	NMNM102035
WELL NAME & NO.:	PLU Ross Ranch 6 Federal No. 1H
SURFACE HOLE FOOTAGE:	350' FSL & 1880' FEL
BOTTOM HOLE FOOTAGE:	350' FNL & 1880' FEL
LOCATION:	Section 6, T. 26 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
 - Muffled pump jack engines
- ☒ Construction
 - V-Door change
 - Notification
 - Topsoil
 - Reserve Pit
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ Road Section Diagram
- ☒ Drilling
- ☐ Production (Post Drilling)
 - Well Structures & Facilities
- ☐ 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)

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

V Door North

VI. CONSTRUCTION

V-DOOR NORTH.

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 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 4 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

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

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 (575) 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

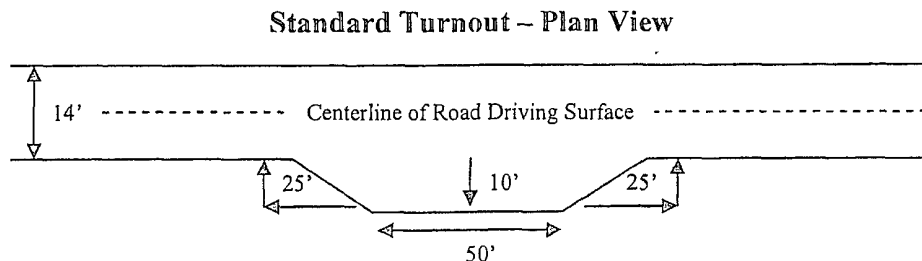
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

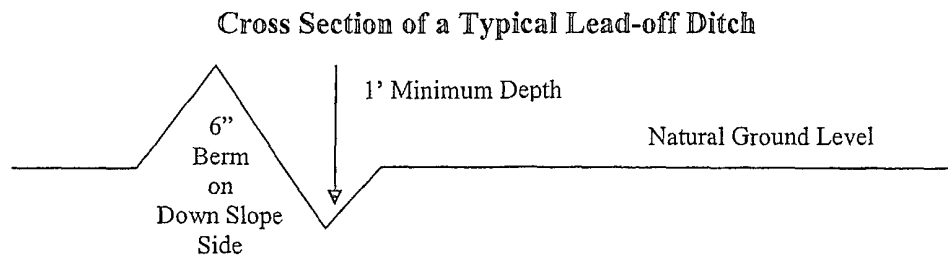
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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.



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

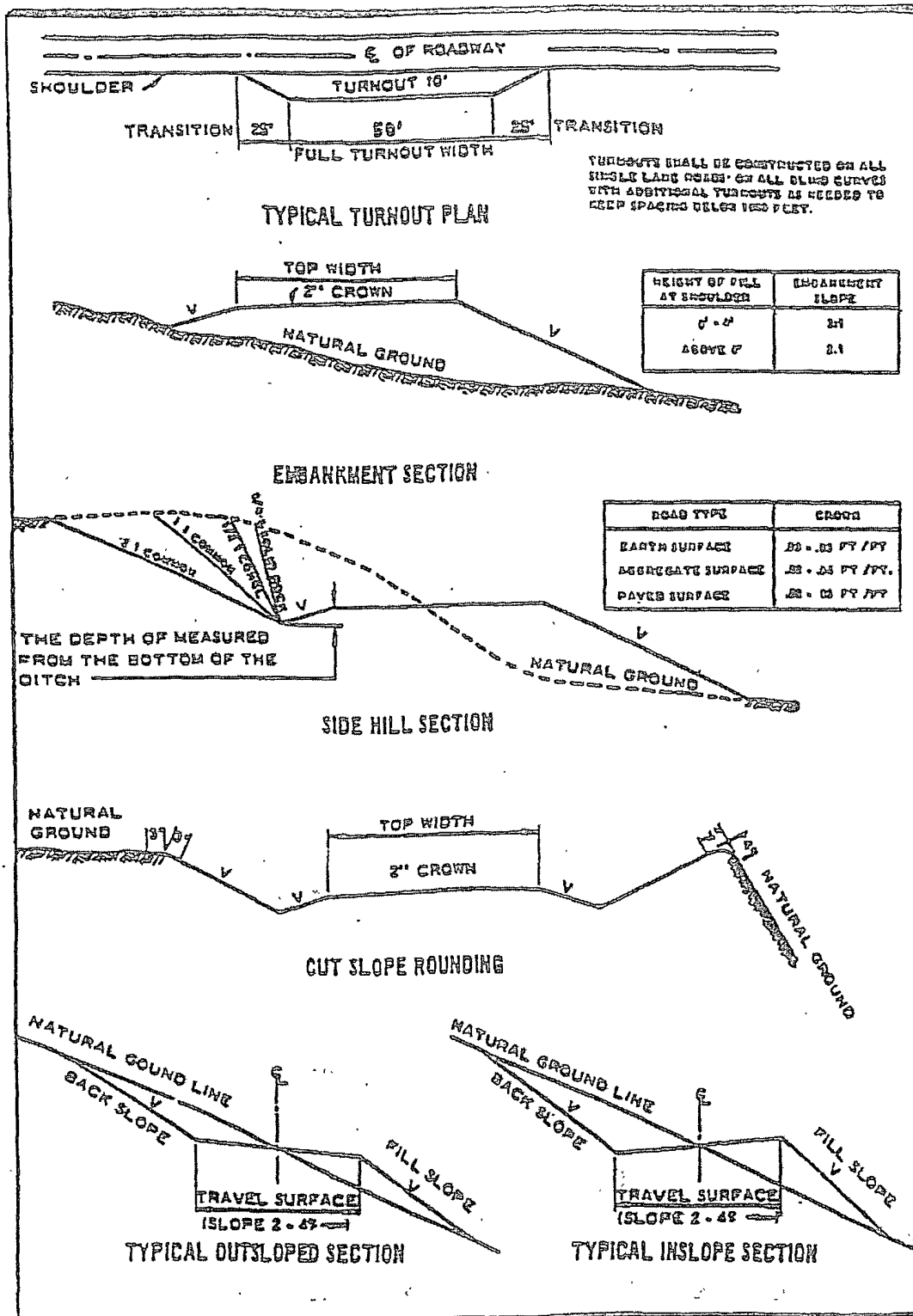
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 4 hours in advance for a representative to witness:

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

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

1. Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.
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.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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 for all casing strings. 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.
- Medium cave/karst.
- Possible lost circulation in the Delaware and Bone Spring formations.
- Possible high pressure gas burst in the Wolfcamp formation – applies to pilot hole.
1. The 13-3/8 inch surface casing shall be set at approximately 840-900 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. Fresh water mud to be used to setting depth. Due to additional length, additional cement will be required.
 - 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 is to include the lead cement slurry. This will not apply if the proposed surface casing cement program is followed.
 - 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.
 - Casing to be set in the Lamar Limestone or the Fletcher Anhydrite at approximately 3400 feet. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst concerns.
- If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.
- Plug required at bottom of pilot hole to a minimum of 50' above the top of the Wolfcamp formation and must be tagged. Tag depth to be recorded and reported on subsequent slurry with casing information. Second plug is required to be a minimum of 185 feet in length.
- Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

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

- ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi**.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8" intermediate casing shoe shall be **5000 (5M) psi. 5M system will be tested as 3M.**

4. The appropriate BLM office shall be notified a minimum of 4 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.
- e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2. **Statement applies to pilot hole.**

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented. **Applies to pilot hole until Wolfcamp plug is set.**

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

WWI 111308

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

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.

The 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.

Seed Mixture 3, for Shallow 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 (<i>Setaria magrostachya</i>)	1.0
Green Spangletop (<i>Leptochloa dubia</i>)	2.0
Side oats Grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed
(Insert Seed Mixture Here)

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.