ATS-08-148

RECEIVED

Form 3160-3
(August 2007)

OPERATOR'S COPY

FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010

EC

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JAN 1 4 2008

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM102001	
6. If Indian, Allottee or Tribe Name	
1a. Type of Work: ☒ DRILL ☐ REENTER — CONFIDENTIAL	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. DEER CANYON 24 FEDERAL 1H
2. Name of Operator CHESAPEAKE OPERATING, INC. Contact: LINDA GOOD E-Mail: lgood@chkenergy.com	9. API Well No. 30-015-36038
3a. Address PO BOX 18496 OKLAHOMA CITY, OK 73154-0496	3b. Phone No. (include area code) Ph: 405-767-4275 Fx: 405-753-5469
	10. Field and Pool, or Exploratory Undes. Buzzard Canyon; Wolfcamp
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface NWNW 1310FNL 120FWL At proposed prod. zone SENE 1980FNL 660FEL	11. Sec., T., R., M., or Blk. and Survey or Area Sec 24 T20S R21E Mer NMP
14. Distance in miles and direction from nearest town or post office* 17 MILES NW OF HOPE, NM	12. County or Parish EDDY / 13. State NM
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in Lease 647.48 / 17. Spacing Unit dedicated to this well 320.00
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 4618 TVD 9196 MD / 20. BLM/BIA Bond No. on file NM2634
21. Elevations (Show whether DF, KB, RT, GL, etc. 4360 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:

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

25. Signature (Electronic Submission)	Name (Printed/Typed) LINDA GOOD Ph: 405-767-4275	Date 11/12/2007
Title FEDERAL REGULATORY ANALYST		
Approved by (Signature)	Name (Printed/Typed)	Date 1/4/08
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application 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.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional Operator Remarks (see next page)

Roswell Controlled Water Basin

Electronic Submission #57108 verified by the BLM Well Information System
For CHESAPEAKE OPERATING, INC., sent to the Carlsbad
Committed to AFMSS for processing by TESSA CISNEROS on 11/13/2007 (08TLC0077AE)

Bureau of Land Management
Received
NOV 13 2007
Carlsbad Field Office
Carlsbad, N.M.

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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

NSL -

Additional Operator Remarks:

CHESAPEAKE OPERATING, INC. RESPECTFULLY REQUESTS PERMISSION TO DRILL A WELL TO 9300' TO TEST THE WOLFCAMP FORMATION. IF PRODUCTIVE, CASING WILL BE RUN AND THE WELL COMPLETED. IF DRY, THE WELL WILL BE PLUGGED AND AVANDONED 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.

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.

(CHK PN 615823)

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
	97127	Undes. Buzzard Canyon; Wolfcamp

Property Code	Property Name	Well Number
36949	DEER CANYON 24 FEDERAL	1H

OGRID No.	Operator Name	Elevation
147179	CHESAPEAKE OPERATING, INC.	4325'

Surface Location

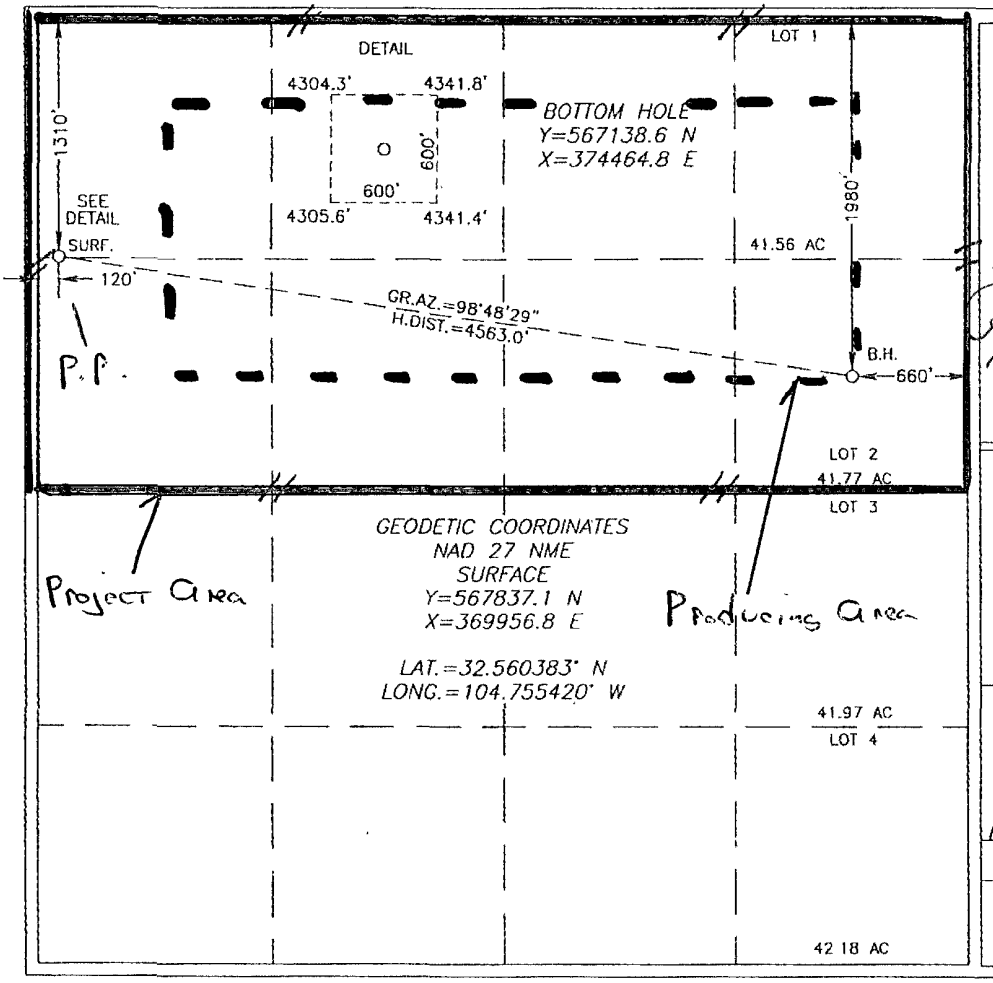
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	24	20-S	21-E		1310	NORTH	120	WEST	EDDY

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
2	24	20-S	21-E		1980	NORTH	660	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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



OPERATOR CERTIFICATION

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.

Signature — Date: 7-2-07

Printed Name: Zynda F. Townsend

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.

Date Surveyed: JUNE 21, 2007 — JR

Signature & Seal of Professional Surveyor

Ronald J. Eidson 6/29/07

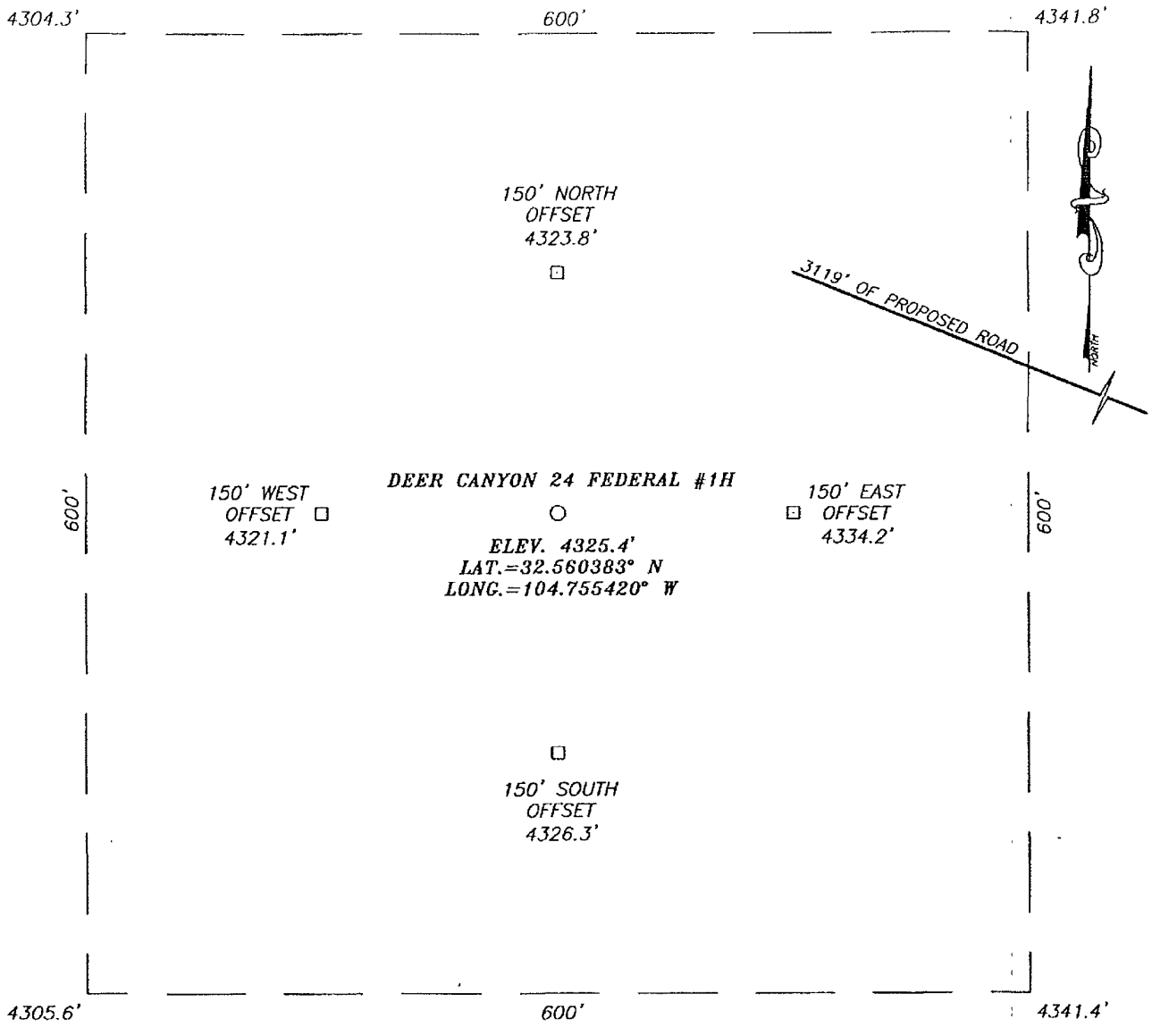
07.11.0756

Certificate No. GARY EIDSON 12641
RONALD J EIDSON 3239

EXHIBIT A-1

SECTION 24, TOWNSHIP 20 SOUTH, RANGE 21 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. #12 (ARMSTRONG RD.) AND CO RD. #24 (DEER CANYON RD.) GO SOUTHWEST ON ARMSTRONG RD. APPROX. 3.9 MILES. TURN RIGHT AND GO NORTHWEST APPROX. 0.6 MILES TO AN EXISTING DRYHOLE PAD AND PROPOSED ROAD SURVEY AT THE NWc OF EXISTING WELL PAD. FOLLOW ROAD SURVEY NORTH APPROX. 0.5 MILES. THIS LOCATION IS APPROX. 212 FEET SOUTHWEST.

100 0 100 200 Feet

Scale:1"=100'

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO

HOBBS, N.M. 88240

(505) 393-3117

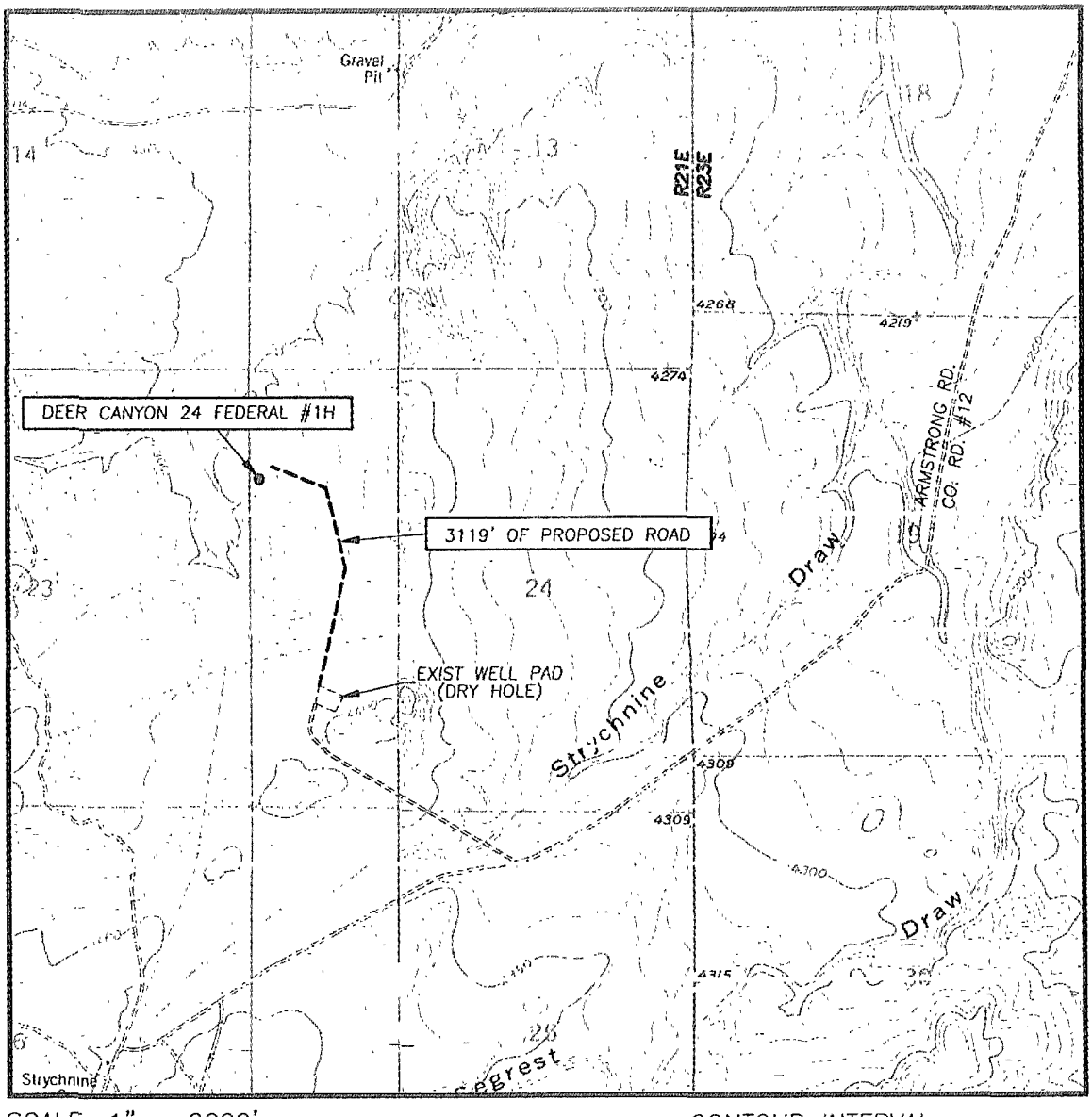
CHESAPEAKE OPERATING, INC.

DEER CANYON 24 FEDERAL #1H WELL
LOCATED 1310 FEET FROM THE NORTH LINE
AND 120 FEET FROM THE WEST LINE OF SECTION 24,
TOWNSHIP 20 SOUTH, RANGE 21 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

Survey Date: 06/21/07	Sheet 1 of 1 Sheets		
W.O. Number: 07.11.0756	Dr By: J.R.		Rev 1:N/A
Date: 06/28/07	Disk: CD #7	07110756	Scale:1"=100'

EXHIBIT A-2

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
STRYCHNINE DRAW, N.M. – 20'
BOX CANYON RANCH, N.M. – 10'

SEC. 24 TWP. 20-S RGE. 21-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1310' FNL & 120' FWL

ELEVATION 4325'

OPERATOR CHESAPEAKE OPERATING, INC.

LEASE DEER CANYON 24 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
STRYCHNINE DRAW, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

EXHIBIT A-4

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	Depth
Glorieta	2300	2075
Tubb	1490	2885
Abo	850	3525
*Wolfcamp	-236	4611
TD (vertical)		5200
TVD at BHL		Approx. 4680
MD		Approx. 9300

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

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

Substance	Formation	Depth
Oil/Gas	Wolfcamp	4661'

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

3. BOP EQUIPMENT:

Will have a 3000 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.

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

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.

System Operating Pressures	Precharge Pressure
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:

System Pressure	Remaining Pressure At Conclusion of Test
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 AND CEMENTING PROGRAM

a. The proposed casing program will be as follows:

Purpose	Interval	Hole Size	Casing Size	Weight	Grade	Thread	Condition
Surface	0-300'	17.5"	13.375"	48.0	H-40	STC	New
Intermediate	0-1500'	11.0"	8.625"	32.0	J-5	STC	New
Production	0-9006'	7.875"	5.5"	17.0	N-80	LTC	New

b. Casing design subject to revision based on geologic conditions encountered.
c. Casing Safety Factors:
13-3/8" Surface Casing: SFb = 1.44, SFc = 5.27 and SFt = 2.11
8-5/8" Intermediate Casing: SFb = 1.34, SFc = 1.95 and SFt = 2.15
5-1/2" Production Casing: SFb = 1.94, SFc = 1.44 and SFt = 1.95

d. The cementing program will be as follows:

Interval	Type	Amount	Yield	Washout	Excess
0' – 300'	35:65 Poz:C	120	2.10 1.34	0	100
	Class C (100' – sect TD)	204		0	70
0' – 1500'	35:65 Poz:C	249	2.10 1.34	0	75
	Class C (900' – sect TD)	192		0	50
1100' – 9006'	TXI LW	1313	1.26	0	20
	(1100' – sect TD)				

5. MUD PROGRAM

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

See Com →

Interval	Mud Type	Mud Weight	Viscosity	Fluid Loss
0' – 300'	water	8.4 – 9.2	28 - 32	NC
300' – 1500'	brine	9.9 – 10.1	30 – 32	NC
1500' – 9006'	water base	8.6 – 9.3	28 - 36	5 - 10

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.

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:

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 2340 psi (0.45 psi/ft @ 5,200' tvd. No abnormal pressures or temperatures are anticipated.
b. Hydrogen sulfide gas is not anticipated

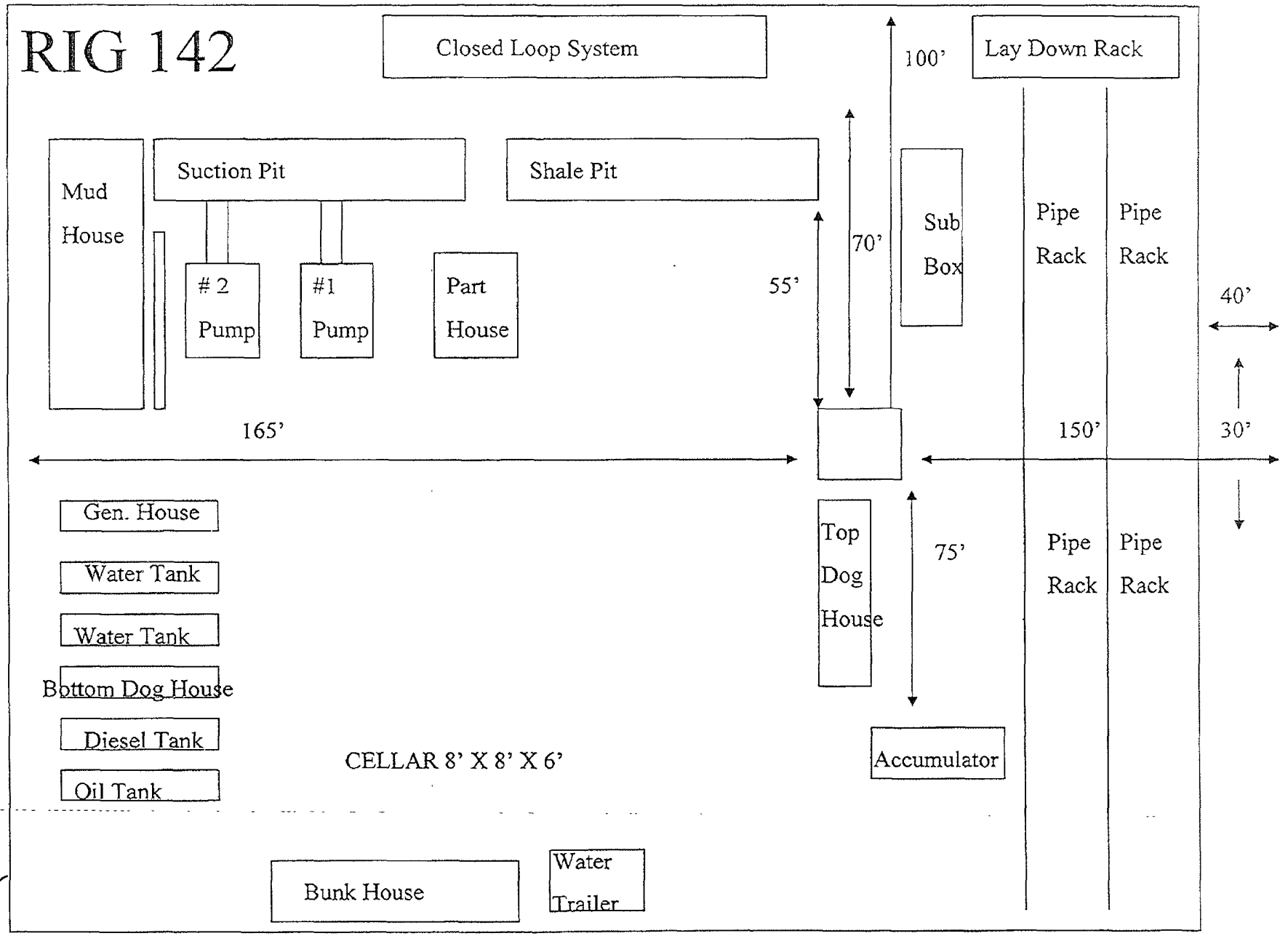

RIG 142
Closed Loop System
100'
Lay Down Rack
Mud House
Suction Pit
Shale Pit
2 Pump
#1 Pump
Part House
55'
70'
Sub Box
Pipe Rack
Pipe Rack
40'
165'
150'
30'
Gen. House
Water Tank
Water Tank
Bottom Dog House
Diesel Tank
Oil Tank
Top Dog House
75'
Pipe Rack
Pipe Rack
CELLAR 8' X 8' X 6'
Accumulator
Bunk House
Water Trailer

EXHIBIT D

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

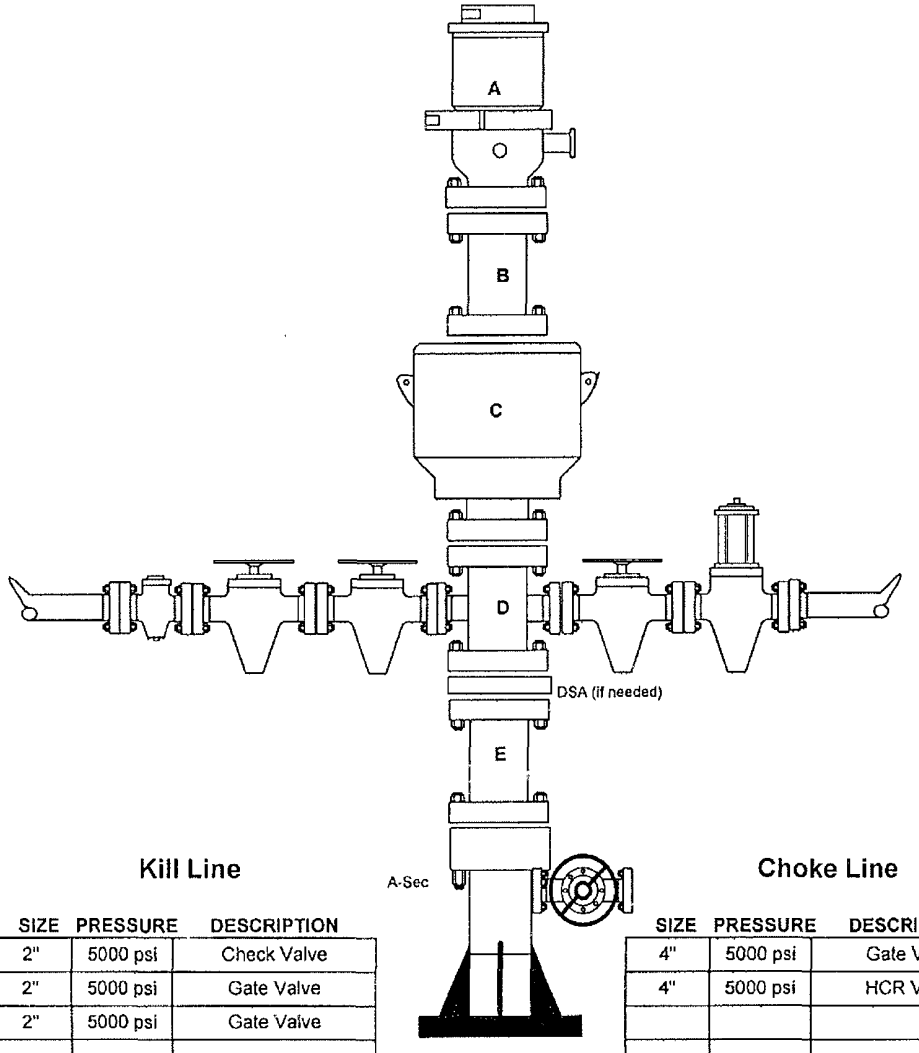
WELL : Deer Canyon 24 Fed #1H

RIG : Patterson 142

COUNTY : Eddy STATE: New Mexico

OPERATION: Drill out below 13-3/8" Casing (11" 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		



Kill Line

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

Choke Line

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

EXHIBIT F-1

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

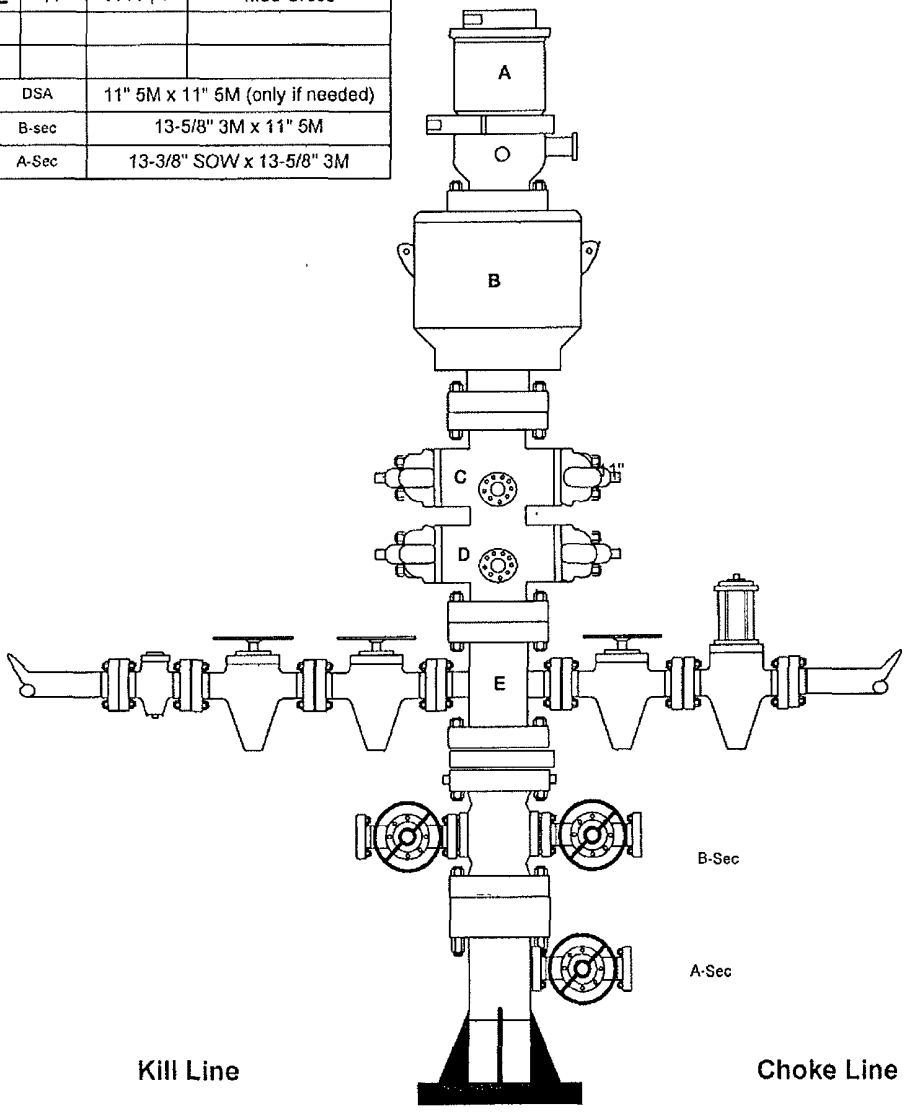
WELL : Deer Canyon 24 Fed #1H

RIG : Patterson 142

COUNTY : Eddy STATE: New Mexico

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



Kill Line

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

Choke Line

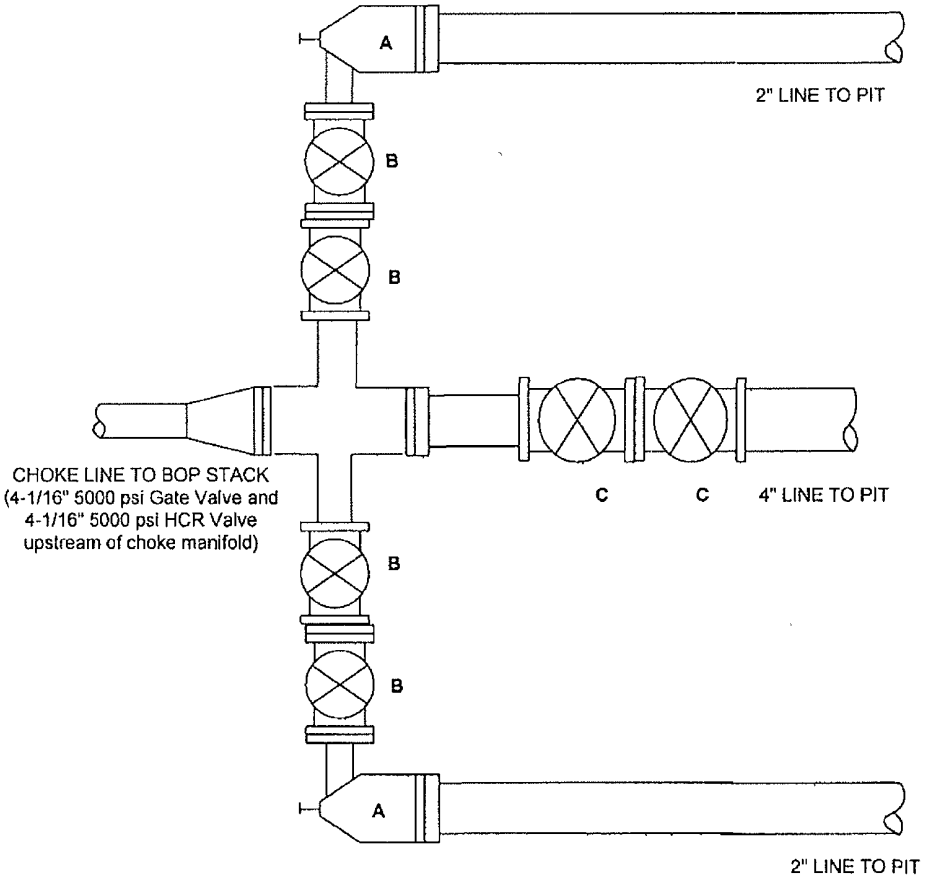
SIZE	PRESSURE	DESCRIPTION
4"	5000 psi	Gate Valve
4"	5000 psi	HCR Valve

EXHIBIT F-2

CHOKE MANIFOLD SCHEMATIC

CHESAPEAKE OPERATING, INC.

WELL : Deer Canyon 24 Fed #1H
RIG : Patterson #142
COUNTY : Eddy STATE : New Mexico
OPERATION: Drilling below/beyond 13-3/8" surface casing

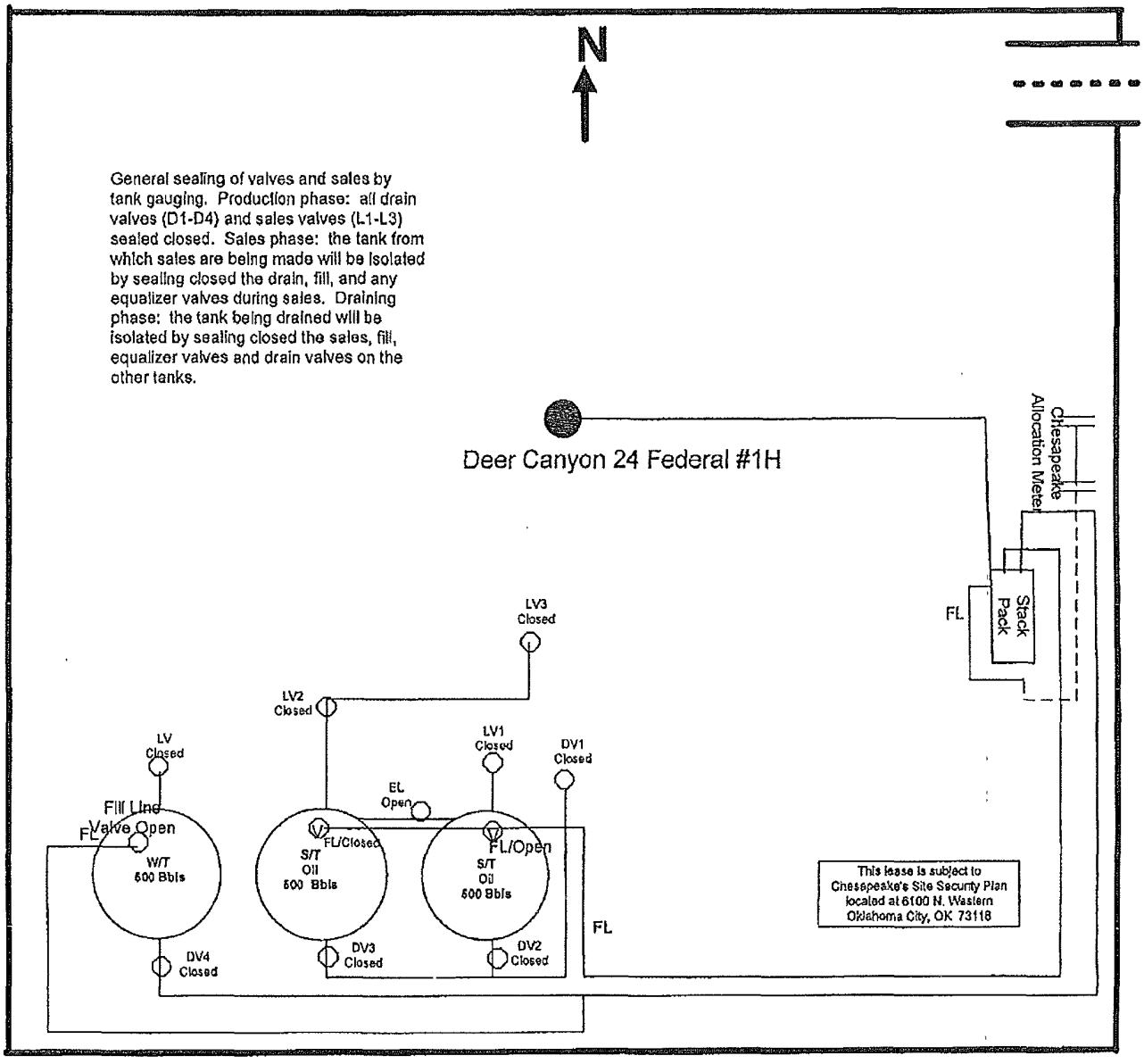


	SIZE	PRESSURE	DESCRIPTION
A	2-1/16"	5000 psi	Manual Choke
B	2-1/16"	5000 psi	Gate Valve
C	4-1/16"	5000 psi	Gate Valve

EXHIBIT F-3

CHESAPEAKE OPERATING, INC.

Deer Canyon 24 Federal #1H
1310'N & 120'W Sec. 24-20-21
Eddy County, New Mexico



Direction of Flow off Site: N

DEER CANYON 24 FEDERAL #1H

Prepared by: DEBBIE HERNANDEZ
Date: 8-22-2007

Approved by:
Date:

Revised Exhibit C

SITE DETAILS: Deer Canyon 24 Fed #1H

Site: Deer Canyon 24 Fed #1H
Design: Plan #1

Northing:
Easting:
Ground Level: 0.0
WELL @ 0.0ft (Original Well Elev)

PROJECT DETAILS: NM - Eddy - Morrow Project

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Ground Level

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	4170.0	0.00	0.00	4170.0	0.0	0.0	0.00	0.00	0.0	
3	4921.0	90.00	98.81	4648.1	-73.2	472.5	11.98	98.81	478.1	
4	9006.0	90.00	98.81	4648.1	-698.9	4509.3	0.00	0.00	4563.1	

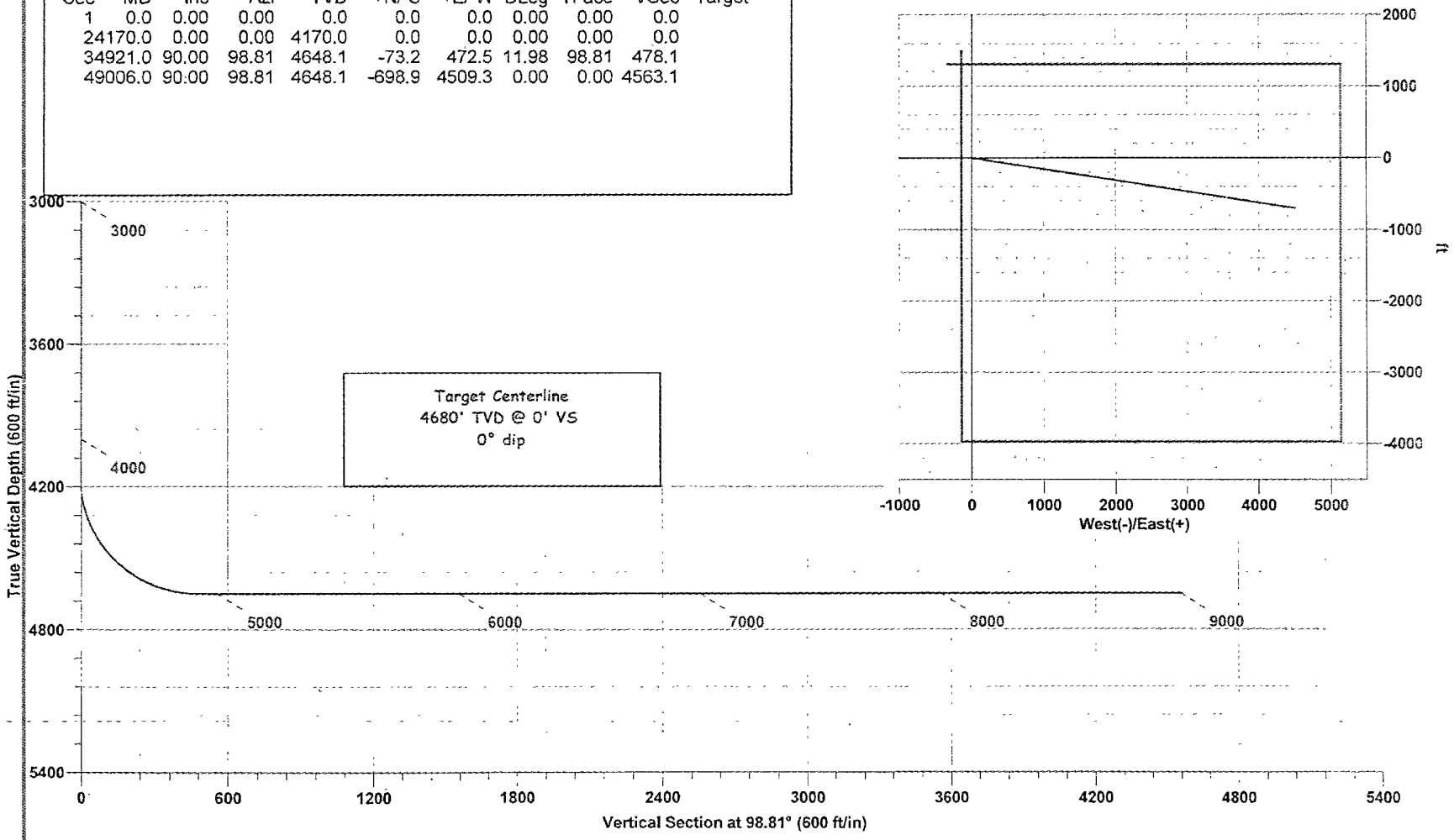
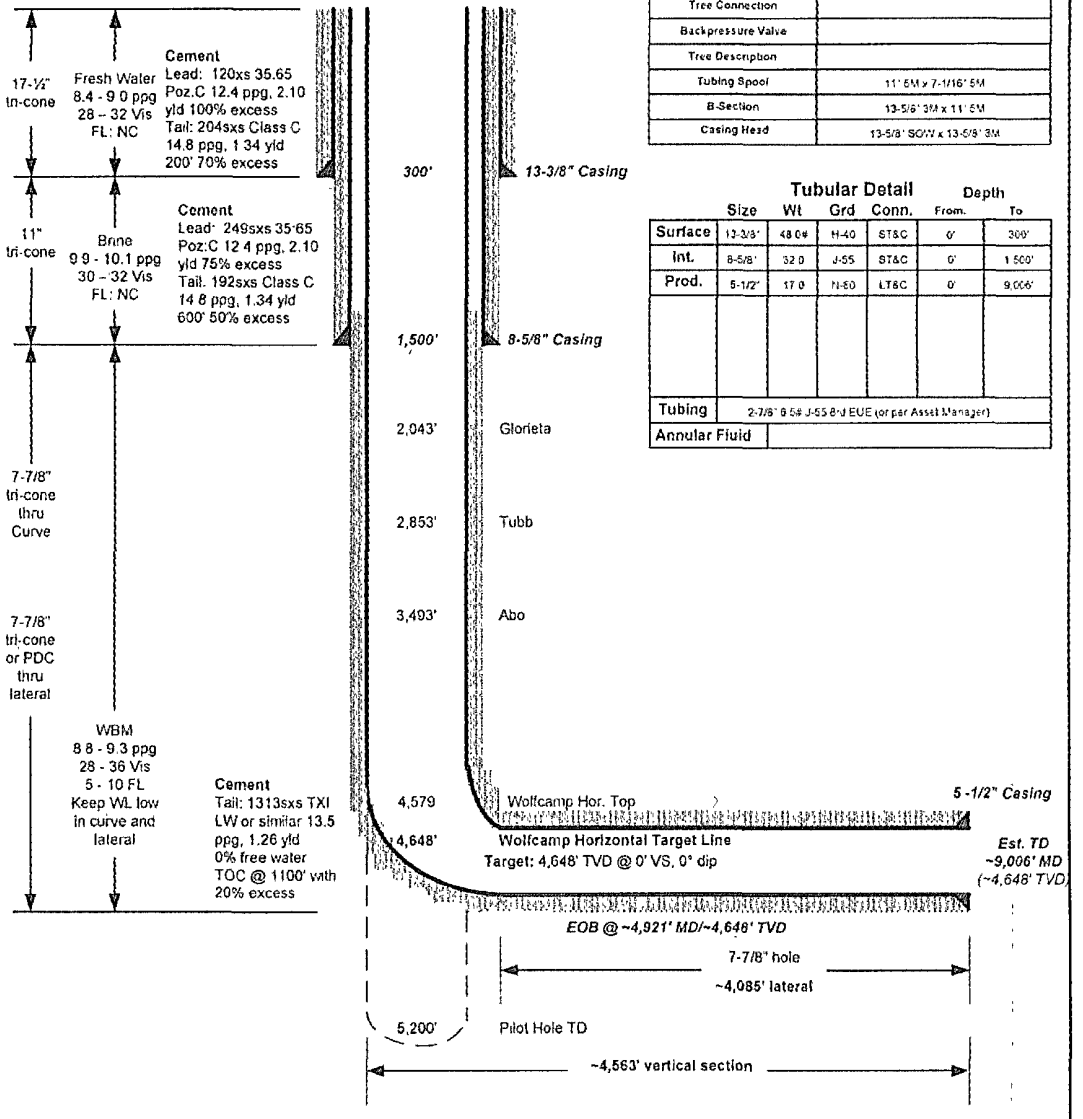


EXHIBIT 3

Chesapeake Operating Inc	Proposed Well Schematic (drilling)

Well : Deer Canyon 24 Fed #1H
Field : North Eddy – Pioneer Wolfcamp Prospect
County : Eddy State : NM
Surf Loc. : Section 24-20S-21E, 1,310' FNL & 120' FWL
BH Loc. : Section 24-20S-21E, 1,980' FNL & 660' FEL
KB Elev : 4,343' Grd Elev : 4,325'

Chesapeake ENERGY



Wellhead Equipment

Tree Connection	
Backpressure Valve	
Tree Description	
Tubing Spool	11" 5M x 7-1/16" 5M
B-Section	13-5/8" 3M x 11" 5M
Casing Head	13-5/8" SOW x 13-5/8" 3M

Tubular Detail

	Size	Wt	Grd	Conn.	Depth From.	Depth To
Surface	13-3/8"	48.0#	H-40	ST&C	0'	300'
Int.	8-5/8"	32.0	J-55	ST&C	0'	1,500'
Prod.	5-1/2"	17.0	N-80	LT&C	0'	9,006'
Tubing	2-7/8" 6.5# J-55 8rd EUE (or per Asset Manager)					
Annular Fluid						

Note: ***All Depths are TVD unless otherwise indicated***

Drawn by:	Date:		Revised by:	Date:
YHC	11/02/07		-	-

Permian District

NM - Eddy - Morrow Project
Deer Canyon 24 Fed #1H
Well #1
Wellbore #1

Plan: Plan #1

Standard Planning Report

17 December, 2007

Database:	Drilling Database	Local Co-ordinate Reference:	Well Well #1
Company:	Permian District	TVD Reference:	WELL @ 0 0ft (Original Well Elev)
Project:	NM - Eddy - Morrow Project	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Deer Canyon 24 Fed #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	Deer Canyon 24 Fed #1H				
Site Position:		Northing:	m	Latitude:	
From:	None	Easting:	m	Longitude:	
Position Uncertainty:	ft	Slot Radius:	in	Grid Convergence:	0 00 °

Well	Well #1					
Well Position	+N/-S	0.0 ft	Northing:	0 00 m	Latitude:	30° 59' 24 512 N
	+E/-W	0.0 ft	Easting:	0 00 m	Longitude:	105° 55' 44 137 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	0 0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	11/2/2007	0 00	0 00	0

Design	Plan #1				
Audit Notes:					
Version:		Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0 0	98 81	

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	
4,170 0	0 00	0.00	4,170.0	0.0	0 0	0 00	0 00	0.00	0 00	
4,921 0	90.00	98 81	4,648 1	-73 2	472 5	11.98	11.98	0 00	98 81	
9,006 0	90.00	98 81	4,648 1	-698.9	4,509 3	0 00	0 00	0 00	0.00	

Database:	Drilling Database	Local Co-ordinate Reference:	Well Well #1
Company:	Permian District	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Project:	NM - Eddy - Morrow Project	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Deer Canyon 24 Fed #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
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
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
4,170.0	0.00	0.00	4,170.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	3.60	98.81	4,200.0	-0.1	0.9	0.9	11.98	11.98	0.00
4,300.0	15.58	98.81	4,298.4	-2.7	17.4	17.6	11.98	11.98	0.00
4,400.0	27.56	98.81	4,391.2	-8.3	53.6	54.3	11.98	11.98	0.00
4,500.0	39.55	98.81	4,474.4	-16.8	108.2	109.4	11.98	11.98	0.00
4,600.0	51.53	98.81	4,544.3	-27.7	178.6	180.7	11.98	11.98	0.00
4,700.0	63.52	98.81	4,597.9	-40.6	261.8	264.9	11.98	11.98	0.00
4,800.0	75.50	98.81	4,632.9	-54.9	354.2	358.4	11.98	11.98	0.00
4,900.0	87.48	98.81	4,647.6	-70.0	451.7	457.1	11.98	11.98	0.00
4,921.0	90.00	98.81	4,648.1	-73.2	472.5	478.1	11.99	11.99	0.00
5,000.0	90.00	98.81	4,648.1	-85.3	550.5	557.1	0.00	0.00	0.00
5,100.0	90.00	98.81	4,648.1	-100.6	649.4	657.1	0.00	0.00	0.00

Database:	Drilling Database	Local Co-ordinate Reference:	Well Well #1
Company:	Permian District	TVD Reference:	WELL @ 0 0ft (Original Well Elev)
Project:	NM - Eddy - Morrow Project	MD Reference:	WELL @ 0 0ft (Original Well Elev)
Site:	Deer Canyon 24 Fed #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)
5,200 0	90 00	98.81	4,648 1	-116 0	748.2	757.1	0.00	0.00	0.00
5,300.0	90.00	98.81	4,648 1	-131 3	847 0	857.1	0.00	0 00	0 00
5,400.0	90.00	98.81	4,648 1	-146.6	945.8	957.1	0 00	0 00	0 00
5,500.0	90 00	98.81	4,648.1	-161.9	1,044.6	1,057 1	0.00	0 00	0 00
5,600.0	90.00	98.81	4,648.1	-177 2	1,143.5	1,157 1	0 00	0.00	0 00
5,700.0	90.00	98.81	4,648 1	-192 5	1,242.3	1,257.1	0.00	0.00	0 00
5,800.0	90.00	98.81	4,648 1	-207.9	1,341.1	1,357.1	0.00	0.00	0 00
5,900 0	90 00	98.81	4,648.1	-223.2	1,439 9	1,457.1	0.00	0.00	0.00
6,000 0	90 00	98.81	4,648 1	-238.5	1,538.7	1,557 1	0.00	0 00	0 00
6,100 0	90 00	98 81	4,648 1	-253.8	1,637.6	1,657.1	0.00	0 00	0 00
6,200.0	90 00	98 81	4,648 1	-269 1	1,736.4	1,757.1	0 00	0 00	0.00
6,300 0	90.00	98.81	4,648 1	-284.4	1,835.2	1,857.1	0.00	0.00	0.00
6,400.0	90.00	98 81	4,648 1	-299.7	1,934 0	1,957 1	0 00	0 00	0 00
6,500.0	90.00	98 81	4,648 1	-315.1	2,032.8	2,057 1	0.00	0.00	0.00
6,600.0	90.00	98.81	4,648 1	-330 4	2,131 7	2,157 1	0.00	0 00	0 00
6,700.0	90.00	98 81	4,648 1	-345 7	2,230.5	2,257 1	0.00	0.00	0 00
6,800.0	90.00	98 81	4,648 1	-361 0	2,329 3	2,357 1	0.00	0.00	0 00
6,900.0	90.00	98.81	4,648 1	-376 3	2,428 1	2,457 1	0.00	0.00	0.00
7,000.0	90.00	98 81	4,648 1	-391 6	2,526 9	2,557 1	0.00	0 00	0.00
7,100 0	90 00	98.81	4,648.1	-407 0	2,625 8	2,657.1	0.00	0 00	0 00
7,200.0	90 00	98.81	4,648 1	-422 3	2,724.6	2,757.1	0.00	0 00	0.00
7,300.0	90.00	98.81	4,648.1	-437.6	2,823.4	2,857 1	0 00	0.00	0.00
7,400 0	90.00	98.81	4,648 1	-452 9	2,922 2	2,957 1	0 00	0 00	0.00
7,500.0	90 00	98.81	4,648 1	-468 2	3,021.0	3,057.1	0.00	0 00	0.00
7,600.0	90 00	98 81	4,648 1	-483 5	3,119 9	3,157 1	0.00	0 00	0.00
7,700.0	90 00	98.81	4,648.1	-498 9	3,218.7	3,257 1	0 00	0.00	0.00
7,800 0	90.00	98.81	4,648.1	-514.2	3,317.5	3,357.1	0.00	0 00	0.00
7,900.0	90.00	98 81	4,648 1	-529.5	3,416 3	3,457.1	0.00	0.00	0.00
8,000 0	90 00	98.81	4,648.1	-544.8	3,515.1	3,557.1	0 00	0.00	0.00
8,100.0	90 00	98 81	4,648 1	-560 1	3,614.0	3,657.1	0 00	0 00	0 00
8,200.0	90.00	98 81	4,648.1	-575 4	3,712 8	3,757.1	0.00	0.00	0.00
8,300.0	90 00	98 81	4,648 1	-590 7	3,811 6	3,857.1	0.00	0.00	0.00
8,400.0	90 00	98 81	4,648 1	-606.1	3,910.4	3,957.1	0.00	0 00	0.00
8,500.0	90 00	98 81	4,648.1	-621 4	4,009.3	4,057 1	0.00	0 00	0 00
8,600.0	90 00	98 81	4,648.1	-636.7	4,108.1	4,157.1	0.00	0.00	0.00
8,700.0	90.00	98 81	4,648.1	-652.0	4,206.9	4,257.1	0 00	0.00	0.00
8,800.0	90 00	98 81	4,648.1	-667.3	4,305.7	4,357.1	0.00	0 00	0 00
8,900 0	90.00	98 81	4,648 1	-682 6	4,404 5	4,457.1	0.00	0 00	0.00
9,000.0	90.00	98.81	4,648.1	-698.0	4,503.4	4,557.1	0.00	0.00	0.00
9,006.0	90.00	98 81	4,648 1	-698 9	4,509 3	4,563 1	0 00	0 00	0.00

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude
Section 24	0 00	0.00	0.0	1,308 1	-138 8	399 29	-36 58	30° 59' 37.456 N	105° 55' 45.731 W
- plan misses by 1315 5ft at 0 0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W5,280.0 H5,280 0 D0.0)									

SITE DETAILS: Deer Canyon 24 Fed #1H

Site. Deer Canyon 24 Fed #1H
Design: Plan #1

Northing:
Easting:
Ground Level: 0.0
WELL @ 0.0ft (Original Well Elev)

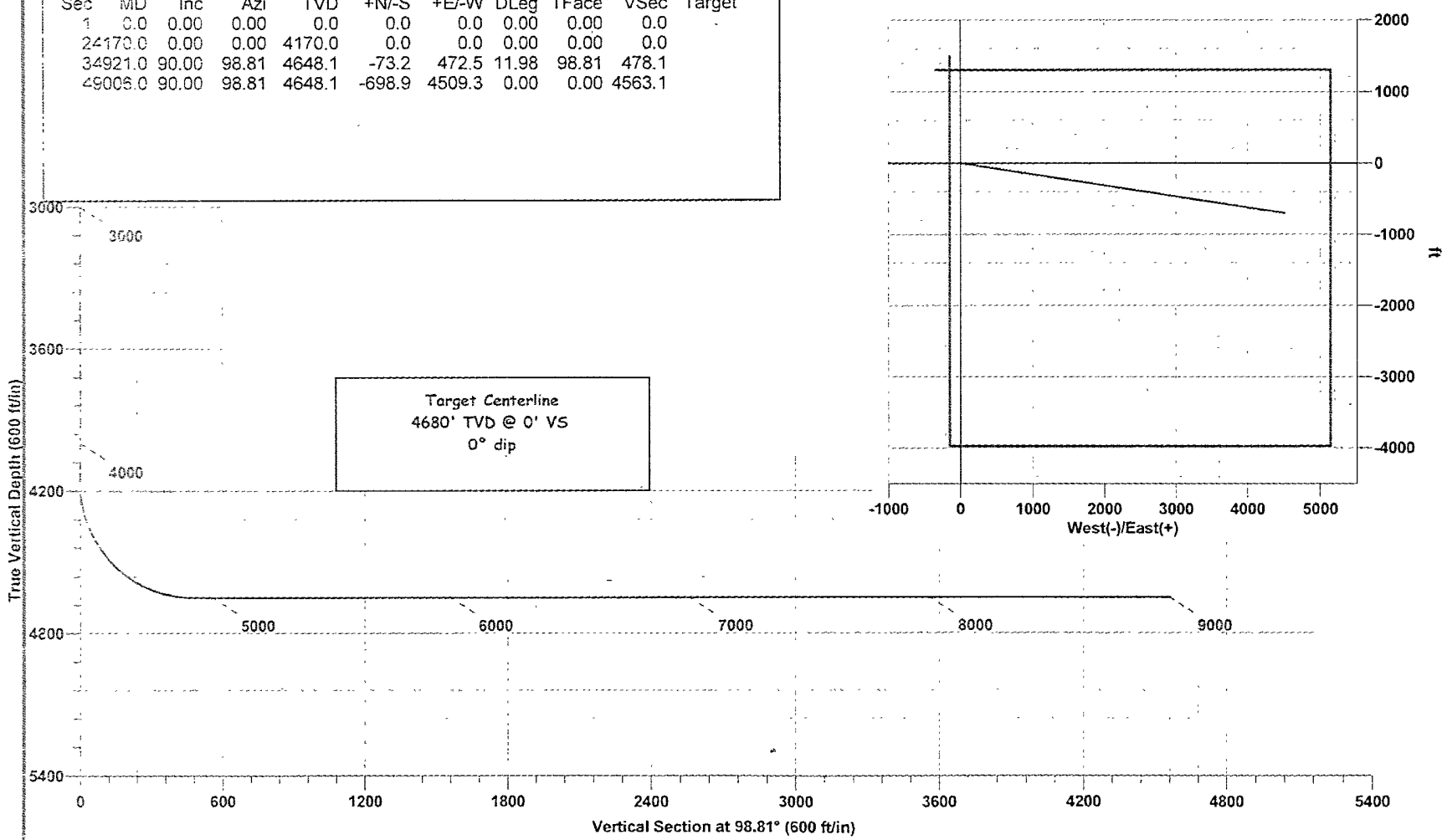
PROJECT DETAILS: NM - Eddy - Morrow Project

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Ground Level

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	4170.0	0.00	0.00	4170.0	0.0	0.0	0.00	0.00	0.0	
3	4921.0	90.00	98.81	4648.1	-73.2	472.5	11.98	98.81	478.1	
4	9006.0	90.00	98.81	4648.1	-698.9	4509.3	0.00	0.00	4563.1	



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. An existing access road 3119' 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 County Rd #12 (Armstrong Rd) and County Rd #24 (Deer Canyon Rd) go Southwest on Armstrong Rd approx. 3.9 miles. Turn right and go Northwest approx. 0.6 miles to an existing dryhole pad and proposed road survey at the Northwest corner of existing well pad. Follow road survey North approx. 0.5 miles. This location os approx. 212 feet Southwest.

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. The Chesapeake allocation meter will be on the well pad. We plan to lay 19,536' of 4" SDR 7 poly pipe on top of the ground. The gas from is well will be purchased by Agave Gas Co. and Chesapeake may tie this gas into a third party and pay transportation charges to accomplish gas sales. The gas sales line to Agave will follow existing roads to the Agave line. One county road crossing will be required. Agave will measure the gas at the connection point. – See Exhibit C

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 24-20S-21E. 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 Patterson Rig #142 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 removed.

11. SURFACE & MINERAL OWNERSHIP
United States of America
Department of Interior
Bureau of Land Management

GRAZING LESSEE
Deer Canyon Ranch, Inc.
P.O. Box 14852
Hope, NM 88250 Attn: Larry Mason

(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

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

Field Representative
Curtis Griffin
1616 W. Bender
Hobbs, NM
505-391-1462 (OFFICE)
505-391-6679 (FAX)
cgriffin@chkenergy.com

Assett Manager
Jeff Finnell
P.O. Box 18496
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405-767-4347 (OFFICE)
405-879-7930 (FAX)
jfinnell@chkenergy.com

Regulatory Compliance
Linda Good
Regulatory Analyst
P.O. Box 18496
Oklahoma City, OK 73154
(405) 767-4275 (OFFICE)
(405) 753-5468 (FAX)
lgood@chkenergy.com

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 12th day of November, 2010.

Name: Paul Hagemeier, Vice President – Regulatory Compliance

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

Telephone: 405-848-8000

Field Representative: Curtis Griffin

Telephone: 505-391-1462 Ext 6238

E-mail: cgriffin@chkenergy.com

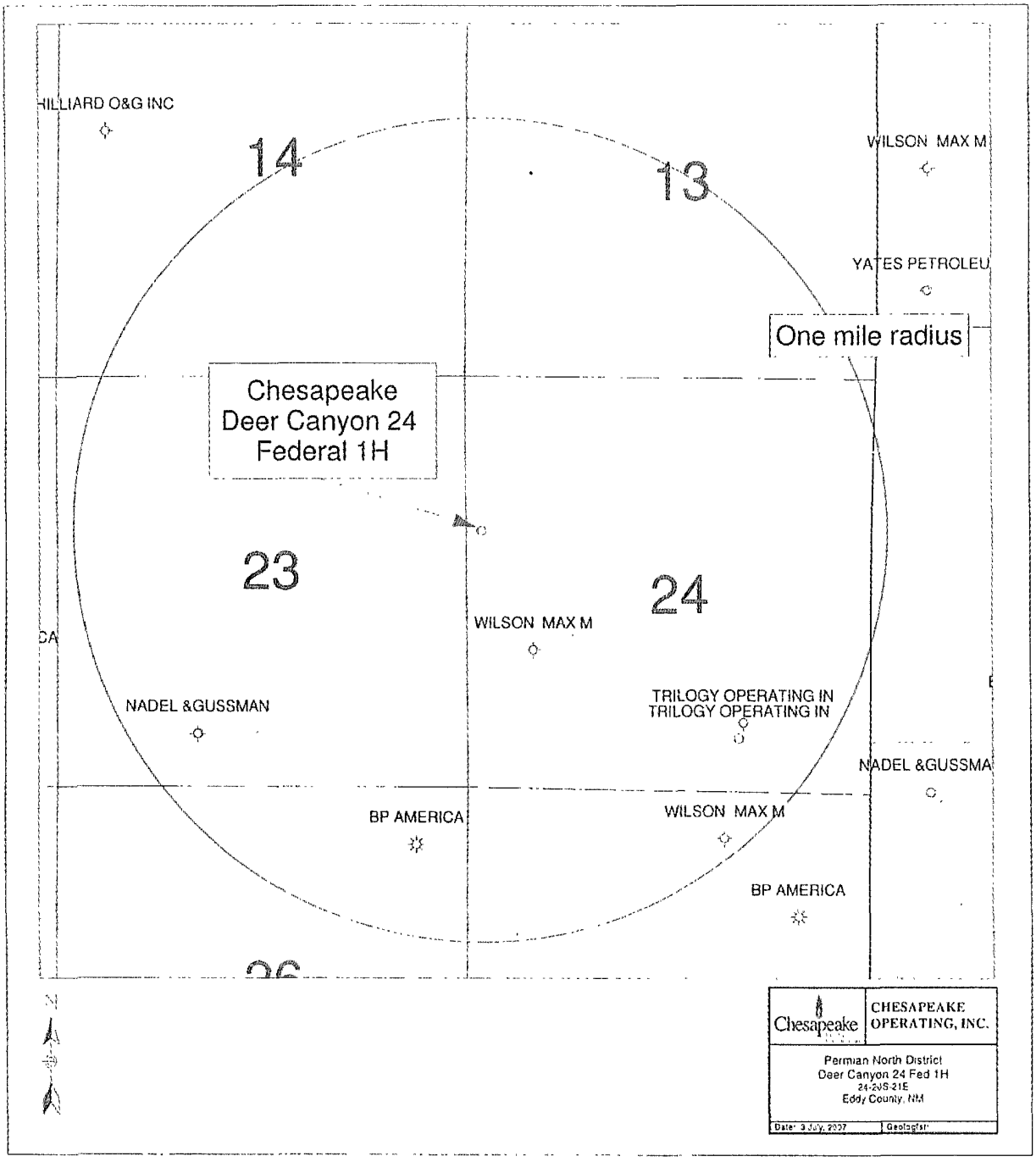
HILLIARD O&G INC
14
13
WILSON MAX M
YATES PETROLEU
One mile radius
Chesapeake
Deer Canyon 24
Federal 1H
23
24
WILSON MAX M
NADEL &GUSSMAN
TRILOGY OPERATING IN
TRILOGY OPERATING IN
NADEL &GUSSMA
BP AMERICA
WILSON MAX M
BP AMERICA
N
Chesapeake
CHESAPEAKE OPERATING, INC.
Permian North District
Deer Canyon 24 Fed 1H
24-20S-21E
Eddy County, NM
Date: 3 July, 2007
Geologist:

EXHIBIT B

Cave and Karst

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production.

Berming:
Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Use depth to the deepest expected fresh water as listed in the geologist report.

Casing:
All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a void (bit drops) of four feet or more and circulation losses greater then 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

Record Keeping:
The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence

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. **Hydrogen Sulfide has been reported in minor concentrations measuring less than 10 ppm in this area. If Hydrogen Sulfide is encountered, please report measured amounts 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

1. The **13-3/8** inch surface casing shall be set at **approximately 300** feet and cemented to the surface.

   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with 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 will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement). **Please provide WOC times to inspector for cement slurries.**

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 action will be done prior to drilling out that string.

Fresh water mud to be used to setting depth of intermediate casing.

High cave/karst.
Possible lost circulation in the San Andres, Glorietta, and Wolfcamp formations.
Possible high pressure gas in the Wolfcamp formation.

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

☒ Cement to surface. If cement does not circulate see B.1.a-d above. **Please provide WOC times to inspector for cement slurries.**

Formation below the 8-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.

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. **Please provide WOC times to inspector for cement slurries.**

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. 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.

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.

E. DRILL STEM TEST

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

Engineer on call phone (after hours): Carlsbad: (575) 706-2779

WWI 122707

Arrant, Bryan, EMNRD

From: Arrant, Bryan, EMNRD
Sent: Tuesday, January 15, 2008 2:13 PM
To: 'Shay Stricklin'
Cc: 'Linda Good'; 'Craig Barnard'
Subject: FW: DEER CANYON 24 FEDERAL 1H (615823) APPROVED APD & MEMO DISTRIBUTION

I'm sorry, I need to make myself more clear as to how the OCD picks the top of the Wolfcamp formation.
On the Trilogy Operating, Inc.'s Mad Max # 2 well its where the neutron and density begins to curve to the left.
In this case it is @ 4560'.
Not at the point where the formation changes to a limestone.
If any of your staff members have any questions, please have them call me.

Bryan Arrant
505-748-1283 ext. 103

From: Arrant, Bryan, EMNRD
Sent: Tuesday, January 15, 2008 2:01 PM
To: 'Shay Stricklin'
Cc: 'Linda Good'; 'Craig Barnard'
Subject: RE: DEER CANYON 24 FEDERAL 1H (615823) APPROVED APD & MEMO DISTRIBUTION

Hi Shay,

The API # for this well will be: 30-015-36038.

Please note that (as you may already be aware) the penetration point of the Wolfcamp is non-standard and will need a NSL approval to produce.
This is based on my review of the directional planning report.
In respect to the top of the Wolfcamp formation, the Trilogy Operating, Inc.'s Mad Max # 2 is located in the same section to the southeast of the proposed surface location. On this well, I picked the top of the Wolfcamp to be @ 4560'.
The OCD in District II picks the top of the Wolfcamp as where the anhydrite 'plays out' and where the neutron and density curves comes
together just before the formation goes into a limestone.
When we get this application scanned, I'll outline the project area and producing area for reference.
Please outline these on horizontally drilled wells in the future on the C-102s.
I intend to place this application in the Undesignated Buzzard Canyon; Wolfcamp Gas Pool, which lies directly to the west.
Thanks for your help,

Bryan G. Arrant
District II Geologist
New Mexico Oil Conservation Division
1301 West Grand Ave.
Artesia, NM 88210
505-748-1283 Ext. 103

CC: Well File

From: Shay Stricklin [mailto:shay.stricklin@chk.com]
Sent: Tuesday, January 15, 2008 10:25 AM
To: Arrant, Bryan, EMNRD
Subject: FW: DEER CANYON 24 FEDERAL 1H (615823) APPROVED APD & MEMO DISTRIBUTION

From: Linda Good

Sent: Monday, January 14, 2008 3:41 PM

To: Todd Nance; Jarvis Hensley; Curtis Blake; Curtis Griffin; Lynda Townsend; Sara Caldwell; Jeff Finnell; Keith Dudley; Shay Stricklin; Misty Baeza; Kimberly Hemmingson; Steve Steadham; Randy Rodrigue; Stacey Tubbs

Subject: DEER CANYON 24 FEDERAL 1H (615823) APPROVED APD & MEMO DISTRIBUTION

Please review the attached file.
<<Approved APD & Memo.pdf>>
Thank you,

Linda Good
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Regulatory Compliance Specialist
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Oklahoma City, OK 73154
Phone: 405-767-4275
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email: linda.good@chk.com