District I
1625 N French Dr , Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, 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, NM 87505

SEP - 5 2008
OCD-ARTESIA

Form C-144 CLEZ
July 21, 2008

For closed-loop systems that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, submit to the appropriate NMOCD District Office.

Closed-Loop System Permit or Closure Plan Application

(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

S

Type of action: ☒ Permit ☐ Closure

Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144.

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.

Operator: Chesapeake Operating, Inc. OGRID #: 147179

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

Facility or well name: Willow Lake 10 St. Com. # 1H

API Number: 30.015.36585 OCD Permit Number:

U/L or Qtr/Qtr M Section 10 Township 25 South Range 28 East County: Eddy

Center of Proposed Design: Latitude 32.138199 Longitude -104.082768 NAD: ☒ 1927 ☐ 1983

Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.

☒ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC

Operation: ☒ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) ☐ P&A

☐ Above Ground Steel Tanks or ☒ Haul-off Bins

3.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☒ Signed in compliance with 19.15.3.103 NMAC

4.

Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC

☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC

☒ Closure Plan (Please complete Box 5) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number:

☐ Previously Approved Operating and Maintenance Plan API Number:

5.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: Controlled Recovery, Incorporated Disposal Facility Permit Number: NM-01-0006

Disposal Facility Name: Sundance Disposal Disposal Facility Permit Number: NM-01-0019

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☒ No

Required for impacted areas which will not be used for future service and operations:

☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

6.

Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print). Linda Good Title: Sr. Regulatory Compliance Specialist

Signature: Linda Good Date: 9-4-08

e-mail address: linda.good@chk.com Telephone: 405-767-4275

0208480

7.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only)

OCD Representative Signature: Jim W. Gems **Approval Date:** 9-12-08

Title: District II Supervisor **OCD Permit Number:** 0208480

8.
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:** _____

9.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

10.
Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

Chesapeake Operating, Inc.'s Closed Loop System
Willow Lake 10 State Com. # 1H
Unit M, Sec. 10, T-25-S R-28-E
Eddy Co., NM
API # TBD

Equipment & Design:

Chesapeake Operating, Inc. is to use a closed loop system with roll-off steel pits.
(2) Dual Motion "King Cobra" Shale Shakers
(2) 250 bbl per/minute "Derrick DE" centrifuges
(1) 500 bbl "frac" tank" for fresh water

Operations & Maintenance:

During each and every tour, the rig's drilling crew will inspect and monitor closely the drilling fluids contained within the steel pits and visually monitor any spill which may occur.
Within 48 hours should a spill, release or leak occur, the NMOCD District II office in Artesia (505-748-1283) will be notified. Please note that notifications may be made earlier to the district office should a greater release occur.
This is in keeping with the reporting requirements of NMOCD's rule 116.

Closure:

During and after drilling operations, liquids (which apply), all drill cuttings and drilling fluids will be hauled and disposed to the Controlled Recovery, Inc.'s location.
The permit number for the CRI is: NM-01-0006
Should this facility not be available, Sundance Disposal is the alternative site.
The permit # for this facility is: NM-01-0003.

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

RECEIVED
AUG 0 4 2008
HOLLAND & HART LLP

July 30, 2008

Ms. Ocean Munds-Dry
Holland & Hart, LLP
P.O. Box 2208
Santa Fe, NM 87504

Administrative Order NSL-5889

Re: Chesapeake Operating, Inc.
Willow Lake 10 State Com. Well No. 1H
API No. 30-015-
Section 10-25S-28E
Eddy County

Dear Ms. Munds-Dry:

Reference is made to the following:

(a) your application **(administrative application reference No. pKVR08-18534020)** submitted to the New Mexico Oil Conservation Division (the Division) in Santa Fe, New Mexico, on behalf of Chesapeake Operating, Inc. (Chesapeake), on July 1, 2008, and

(b) the Division's records pertinent to this request.

Chesapeake has requested to drill the above-referenced well as a horizontal well in the Delaware formation, at a location that will be unorthodox under Division Rule 111. The proposed surface location, point of penetration and terminus of the well are as follows:

Surface Location:	350 feet from the South line and 150 feet from the West line (Unit M) of Section 10, Township 25S, Range 28E, NMPM Eddy County, New Mexico
Point of Penetration:	Same as Surface Location
Terminus	350 feet from the South line and 1670 feet from the East line (Unit O) of said Section 10.

The S/2 SW/4 and SW/4 SE/4 of Section 10 will be dedicated to the proposed well to form a project area comprising three standard 40-acre spacing units in the Southwest Willow Lake-Delaware Pool (96855). This pool is governed by statewide Rule 104.B(1), which provides for 40-acre units, with wells located at least 330 feet from a unit outer boundary. This location is unorthodox because a portion of the producing interval will be less than 330 feet from the western boundary of the project area, and therefore outside the producing area.

Your application has been duly filed under the provisions of Division Rules 104.F and 1210.A(2).

It is our understanding that you are seeking this location for engineering reasons, in order to achieve maximum penetration of the target zone in the lateral portion of the wellbore.

It is also understood that you have given due notice of this application to all operators or owners who are "affected persons," as defined in Rule 1210.A(2), in all adjoining units towards which the proposed location encroaches.

Pursuant to the authority conferred by Division Rule 104.F(2), the above-described unorthodox location is hereby approved.

This approval is subject to your being in compliance with all other applicable Division rules, including, but not limited to Division Rule 40.

Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

Sincerely,

Mark E. Fesmire, P.E.
Director

MEF/db

cc: New Mexico Oil Conservation Division - Artesia
New Mexico State Land Office - Santa Fe

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
	96855	Willow Lake; Delaware, SW

Property Code	Property Name	Well Number
	WILLOW LAKE 10 STATE COM	1H

OGRID No.	Operator Name	Elevation
147179	CHESAPEAKE OPERATING, INC.	2948'

Surface Location

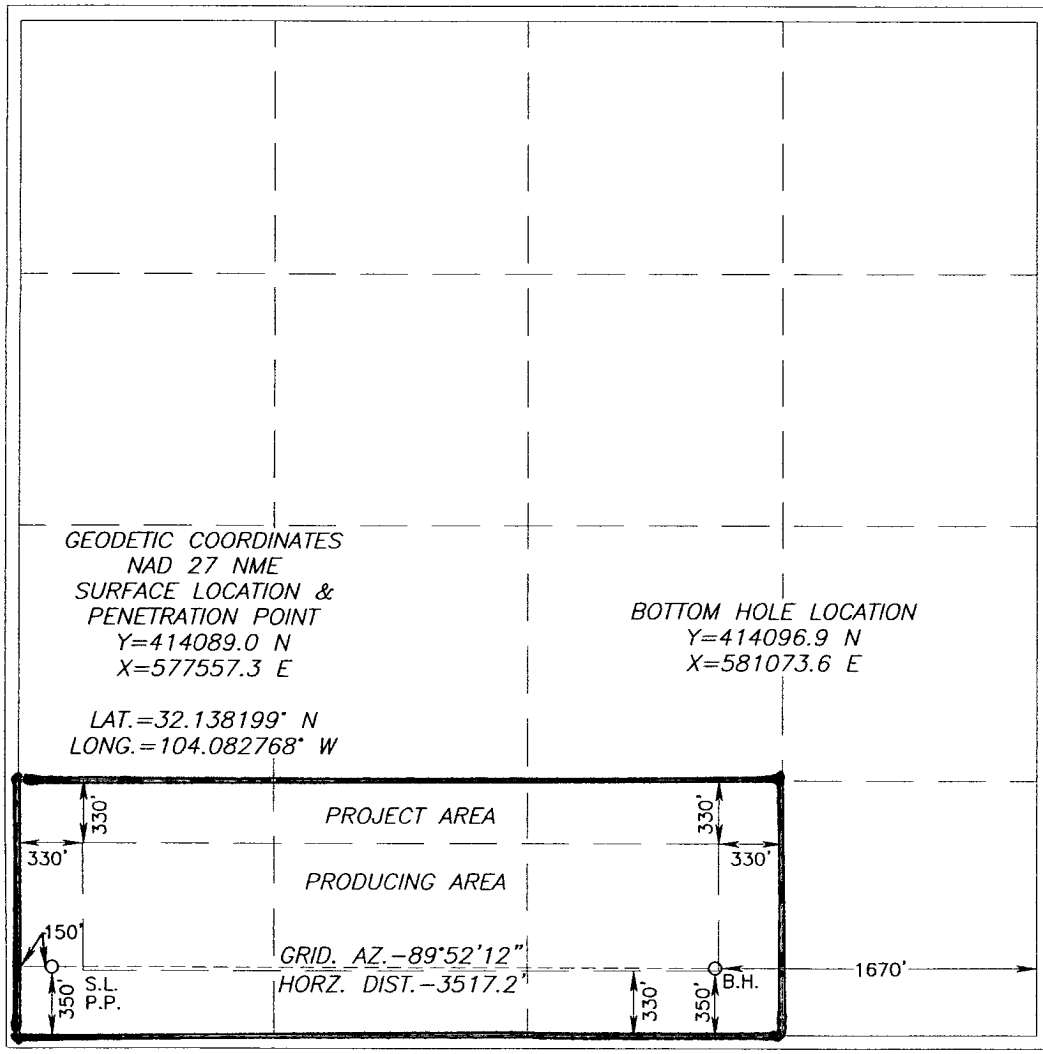
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	10	25-S	28-E		350	SOUTH	150	WEST	EDDY

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
O	10	25-S	28-E		350	SOUTH	1670	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
120			NSL-5889

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.

Justin Zerkle 8/15/08
Signature Date

Justin Zerkle
Printed Name

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.

RONALD G. EIDSON
JUNE 27, 2008
NEW MEXICO
12641
REGISTERED PROFESSIONAL SURVEYOR
08.11.1052
PROFESSIONAL

Date Surveyed DSS

Signature & Seal of Professional Surveyor

7/9/08

Certificate No. GARY EIDSON 12641
RONALD EIDSON 3239

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

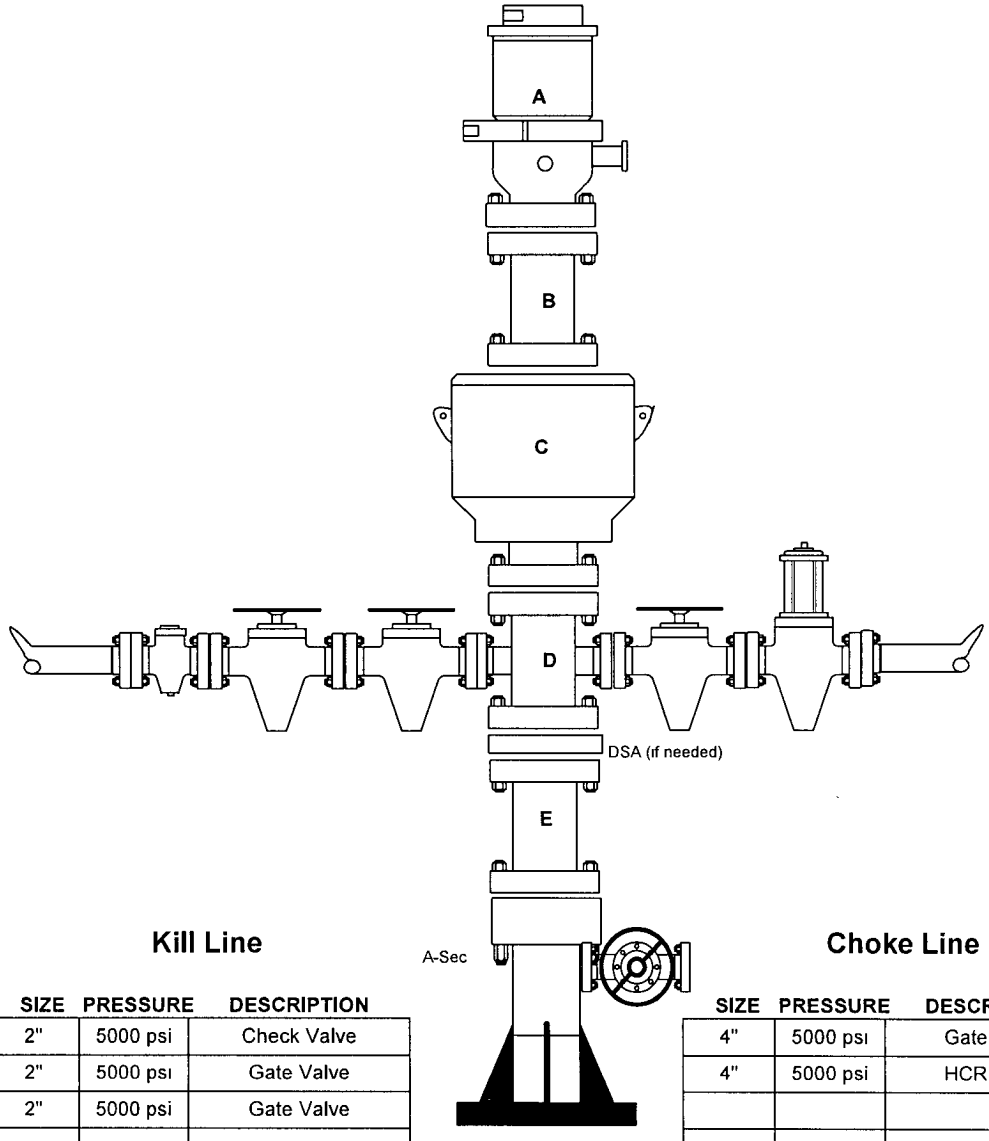
WELL : **Willow Lake 10 State Com 1H**

RIG : **Patterson 142**

COUNTY : **Eddy** **STATE: New Mexico**

OPERATION: Drill out below 13-3/8" Casing (12-¼" 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

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

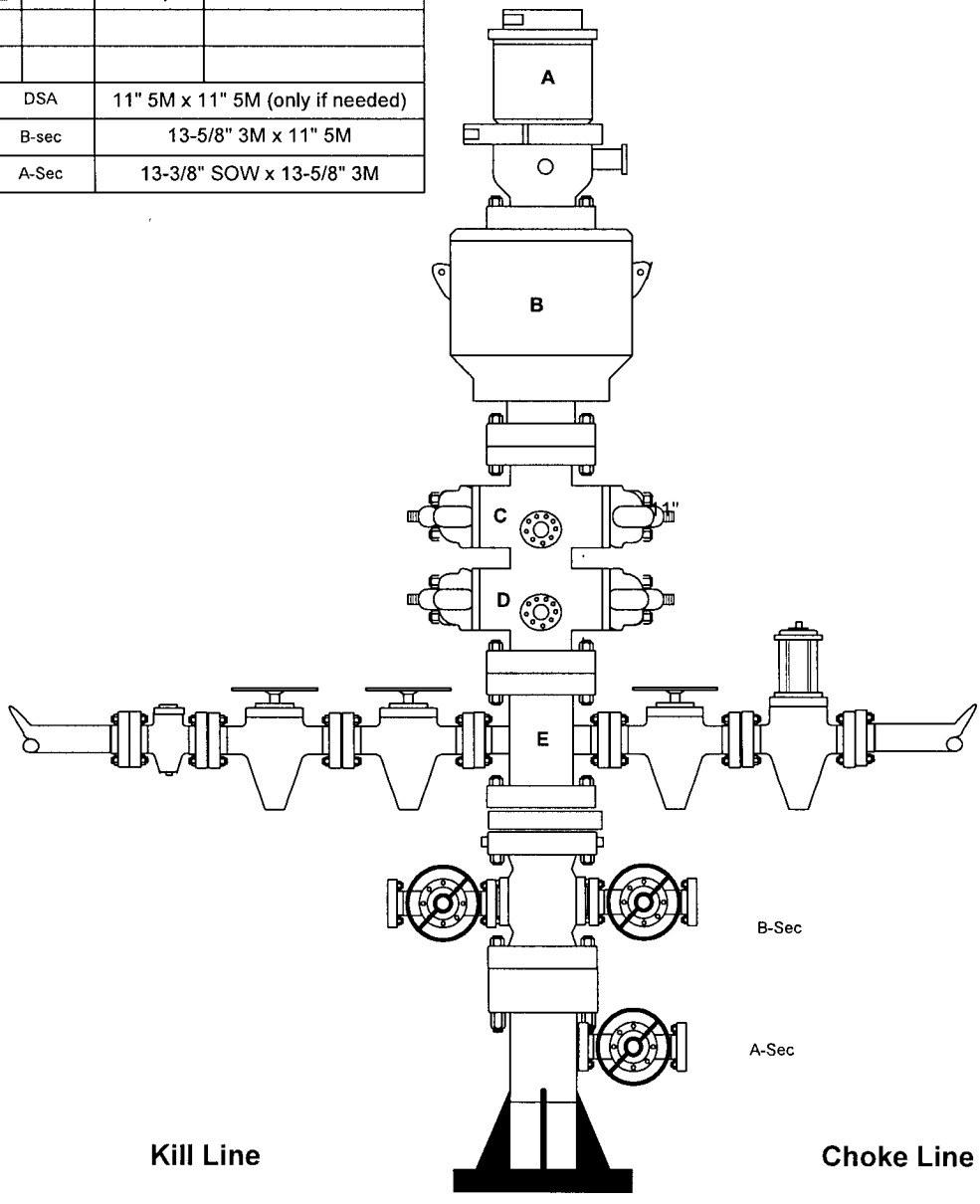
WELL : **Willow Lake 10 State Com 1H**

RIG : **Patterson 142**

COUNTY : **Eddy** **STATE: New Mexico**

OPERATION: Drill out below 9-5/8" Casing (8-3/4"/8-½" 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

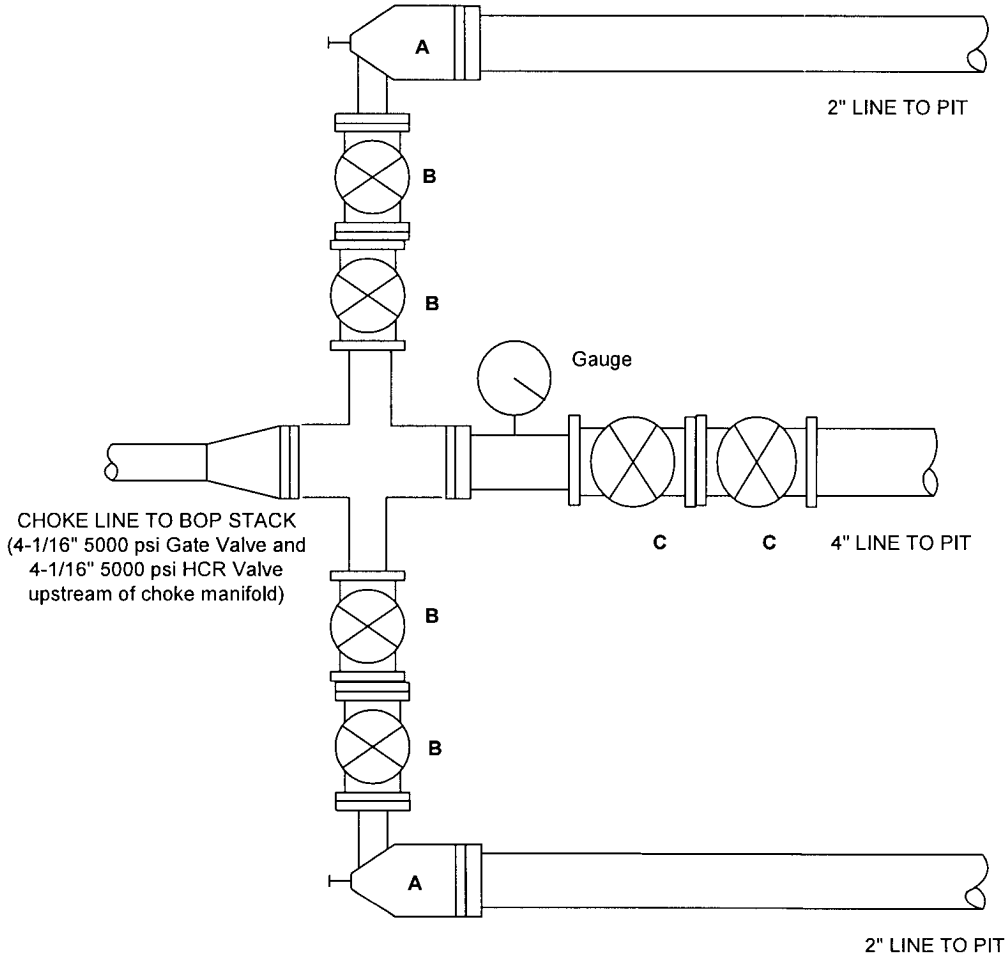
Choke Line

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

CHOKE MANIFOLD SCHEMATIC

CHESAPEAKE OPERATING, INC.

WELL : **Willow Lake 10 State Com 1H**
RIG : **Patterson 142**
COUNTY : **Eddy** **STATE** : **New Mexico**
OPERATION: **Drilling below/beyond 13-3/8" surface casing**



Choke Controls - At Least One Choke Also
Remotely Controlled From Rig Floor

	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

Permian District

NM - Eddy - Morrow Project
Willow Lake 10 State Com 1H
Well #1
Wellbore #1

Plan: Plan #1

Standard Planning Report

03 September, 2008

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:	Willow Lake 10 State Com 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 Willow Lake 10 State Com 1H

Site Position:		**Northing:**	ft	**Latitude:**	
From:	None	**Easting:**	ft	**Longitude:**	
Position Uncertainty:	ft	**Slot Radius:**	in	**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:**	0 0ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	9/3/2008	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	90 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	
4,310 0	0 00	0 00	4,310 0	0 0	0 0	0 00	0 00	0 00	0 00	
5,064 2	88 90	90 00	4,796 0	0 0	476 8	11.79	11 79	0 00	90 00	
8,105 2	88 90	90 00	4,854 4	0 0	3,517 2	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:	Willow Lake 10 State Com 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
2,515 0	0 00	0 00	2,515 0	0 0	0 0	0 0	0 00	0 00	0 00
9 5/8"									
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
4,200 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
4,310 0	0 00	0 00	4,310 0	0 0	0 0	0 0	0 00	0 00	0 00
4,400 0	10 61	90 00	4,399.5	0.0	8 3	8 3	11.79	11.79	0 00
4,500 0	22 40	90 00	4,495 2	0 0	36 7	36 7	11 79	11 79	0 00
4,600 0	34 18	90 00	4,583 1	0 0	84 0	84 0	11 79	11 79	0 00
4,700 0	45 97	90 00	4,659 5	0 0	148 2	148 2	11 79	11 79	0 00
4,800 0	57 76	90 00	4,721 1	0 0	226 8	226 8	11 79	11 79	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:	Willow Lake 10 State Com 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)
4,900 0	69 54	90 00	4,765 4	0 0	316 2	316 2	11 79	11 79	0 00
5,000 0	81 33	90 00	4,790 5	0 0	412 8	412 8	11 79	11 79	0 00
5,064 2	88 90	90 00	4,796 0	0 0	476 8	476 8	11 79	11 79	0 00
5,100 0	88 90	90 00	4,796 7	0 0	512 5	512 5	0 00	0 00	0 00
5,200 0	88 90	90 00	4,798 6	0 0	612 5	612 5	0 00	0 00	0 00
5,300 0	88 90	90 00	4,800 5	0 0	712 5	712 5	0 00	0 00	0 00
5,400 0	88 90	90 00	4,802 4	0 0	812 5	812 5	0 00	0 00	0 00
5,500 0	88 90	90 00	4,804 4	0 0	912 5	912 5	0 00	0 00	0 00
5,600 0	88 90	90 00	4,806 3	0 0	1,012 4	1,012 4	0 00	0 00	0 00
5,700 0	88 90	90 00	4,808 2	0 0	1,112 4	1,112 4	0 00	0 00	0 00
5,800.0	88 90	90 00	4,810 1	0 0	1,212 4	1,212 4	0 00	0 00	0 00
5,900 0	88 90	90 00	4,812 0	0 0	1,312 4	1,312 4	0 00	0 00	0 00
6,000 0	88 90	90 00	4,814 0	0 0	1,412 4	1,412 4	0 00	0 00	0 00
6,100 0	88 90	90 00	4,815 9	0 0	1,512 4	1,512 4	0 00	0 00	0 00
6,200 0	88 90	90 00	4,817 8	0 0	1,612 3	1,612 3	0 00	0 00	0 00
6,300 0	88 90	90 00	4,819 7	0 0	1,712 3	1,712.3	0 00	0 00	0 00
6,400 0	88 90	90 00	4,821 6	0 0	1,812 3	1,812 3	0 00	0 00	0 00
6,500 0	88 90	90 00	4,823 6	0 0	1,912 3	1,912 3	0 00	0 00	0 00
6,600 0	88 90	90 00	4,825 5	0 0	2,012 3	2,012 3	0 00	0 00	0 00
6,700 0	88.90	90 00	4,827 4	0 0	2,112 2	2,112 2	0 00	0 00	0 00
6,800 0	88 90	90 00	4,829 3	0 0	2,212 2	2,212 2	0 00	0 00	0 00
6,900 0	88 90	90 00	4,831.2	0 0	2,312 2	2,312 2	0 00	0 00	0 00
7,000 0	88 90	90 00	4,833 2	0 0	2,412 2	2,412 2	0 00	0 00	0 00
7,100 0	88 90	90 00	4,835 1	0 0	2,512 2	2,512 2	0 00	0 00	0 00
7,200 0	88 90	90 00	4,837 0	0 0	2,612.1	2,612 1	0 00	0 00	0 00
7,300 0	88 90	90 00	4,838 9	0 0	2,712 1	2,712 1	0.00	0 00	0 00
7,400 0	88 90	90 00	4,840 8	0 0	2,812 1	2,812 1	0 00	0 00	0 00
7,500 0	88 90	90 00	4,842 8	0 0	2,912 1	2,912 1	0 00	0 00	0 00
7,600 0	88 90	90 00	4,844 7	0 0	3,012 1	3,012 1	0 00	0 00	0 00
7,700 0	88 90	90 00	4,846 6	0 0	3,112 1	3,112 1	0 00	0 00	0 00
7,800 0	88 90	90 00	4,848 5	0 0	3,212 0	3,212 0	0 00	0 00	0 00
7,900 0	88 90	90 00	4,850 4	0 0	3,312 0	3,312 0	0 00	0 00	0 00
8,000 0	88 90	90 00	4,852 4	0 0	3,412 0	3,412 0	0 00	0 00	0 00
8,100 0	88 90	90 00	4,854 3	0 0	3,512 0	3,512 0	0 00	0 00	0 00
8,105 2	88 90	90 00	4,854 4	0 0	3,517 2	3,517 2	0 00	0 00	0 00
5 1/2"									

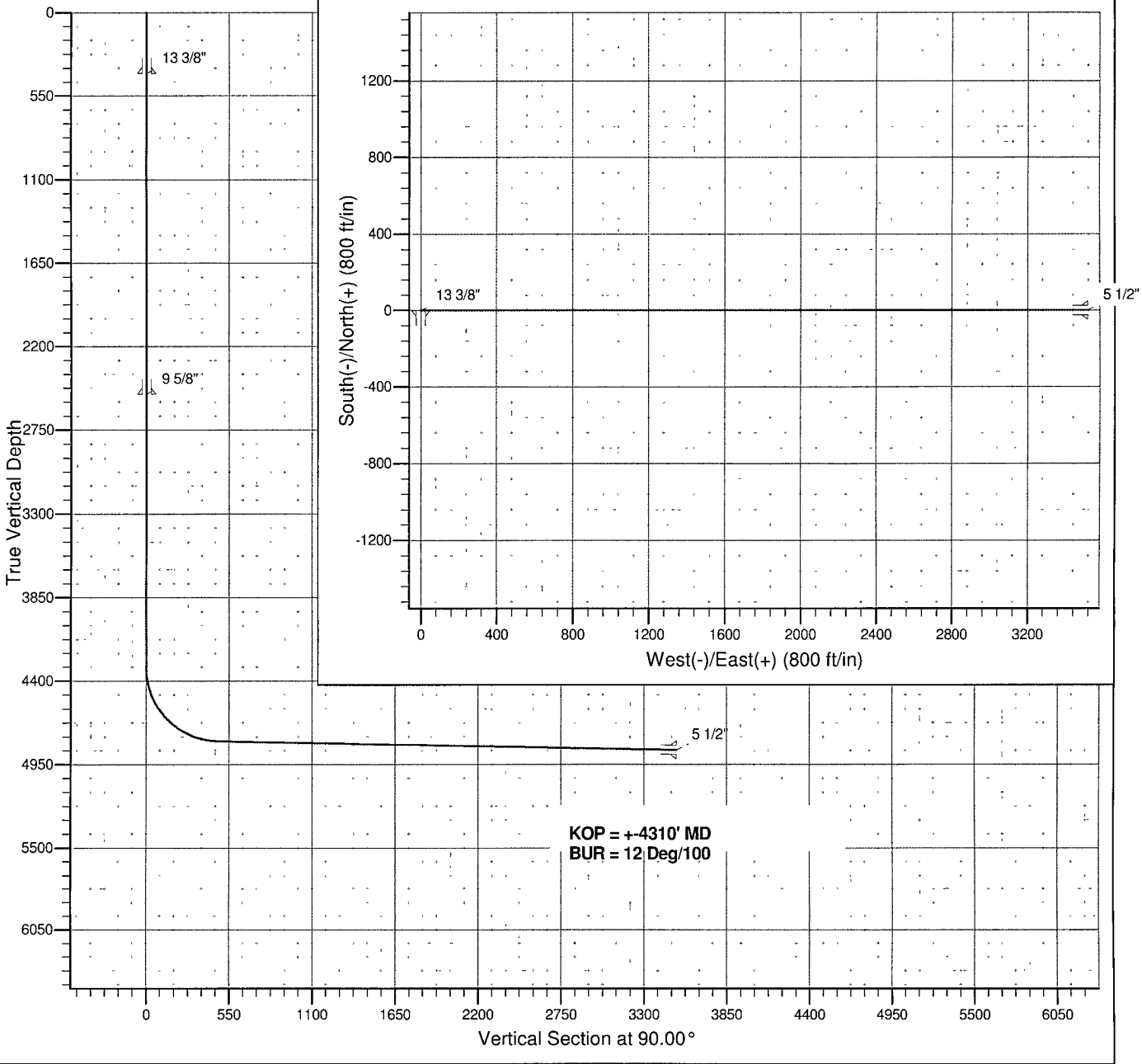
Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
400 0	400 0	13 3/8"	13 375	17 500
2,515.0	2,515 0	9 5/8"	9.625	12 250
8,105 2	4,854 4	5 1/2"	5 500	8 750

Chesapeake Operating Inc. Willow Lake 10 State Com 1H

County: Eddy, NM

Section 10-25S-28E



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	4310.0	0.00	0.00	4310.0	0.0	0.0	0.00	0.00	0.0	
3	5064.2	88.90	90.00	4796.0	0.0	476.8	11.79	90.00	476.8	
4	8105.2	88.90	90.00	4854.4	0.0	3517.2	0.00	0.00	3517.2	