Form 3160-3
(August 2007)

OPERATOR'S COPY

08-1067

FORM APPROVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED DN 624842

DEC 19 2008

APPLICATION FOR PERMIT TO DRILL OR REENTER

CONFIDENTIAL

1a. Type of Work: ☐ DRILL ☐ REENTER	5. Lease Serial No.: NMNM02862
	6. If Indian, Allottee or Tribe Name
	7. If Unit or CA Agreement, Name and No.: NMNM71016X
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone	8. Lease Name and Well No.: PLU BIG SINKS 26 FEDERAL 1H 37645
2. Name of Operator: CHESAPEAKE OPERATING, INC. Contact: LINDA GOOD E-Mail: linda.good@chk.com	9. API Well No.: 30-015-37031
3a. Address: OKLAHOMA CITY, OK 73154-0496	3b. Phone No. (include area code): Ph: 405-767-4275
	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: SWSW 150FSL 600FWL At proposed prod. zone: NWNW 350FNL 600FWL	11. Sec., T., R., M., or Blk. and Survey or Area: Sec 26 T24S R30E Mer NMP SME: BLM
14. Distance in miles and direction from nearest town or post office*: APPROXIMATELY 21 MILES EAST OF MALAGA, 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: 1920.00
	17. Spacing Unit dedicated to this well: 160.00
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth: 12545 MD 8175 TVD
	20. BLM/BIA Bond No. on file: NM2634
21. Elevations (Show whether DF, KB, RT, GL, etc.: 3340 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	Name (Printed/Typed)	Date
(Electronic Submission)	LINDA GOOD Ph: 405-767-4275	11/13/2008

Title: REGULATORY COMPLIANCE SPEC.

Approved by (Signature)	Name (Printed/Typed)	Date
		12/13/08
Title: AFM	Office: CFO	

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.

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) Vertical not orthodox — horizontal orthodox @ 8112' TVD (8200') MD

Electronic Submission #64729 verified by the BLM Well Information System
For CHESAPEAKE OPERATING, INC., sent to the Carlsbad
Committed to AFMSS for processing by TESSA CISNEROS on 11/13/2008 (09TLC0046AE)

NM2

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

Additional Operator Remarks:

PILOT HOLE: 11,200' MD/TVD.

CHESAPEAKE OPERATING, INC. RESPECTFULLY REQUESTS PERMISSION TO DRILL A WELL TO 12,545? 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 624842)

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 Big Sinks 26 Fed. #1H Well in the W½ of the W ½, Sec. 26, T. 24S 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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-37031	~~40660~~	Wildcat; Bone Spring

Property Code	Property Name	Well Number
37645	PLU BIG SINKS "26" FEDERAL	1H

OGRID No.	Operator Name	Elevation
147179	CHESAPEAKE OPERATING CO.	3342'

Surface Location

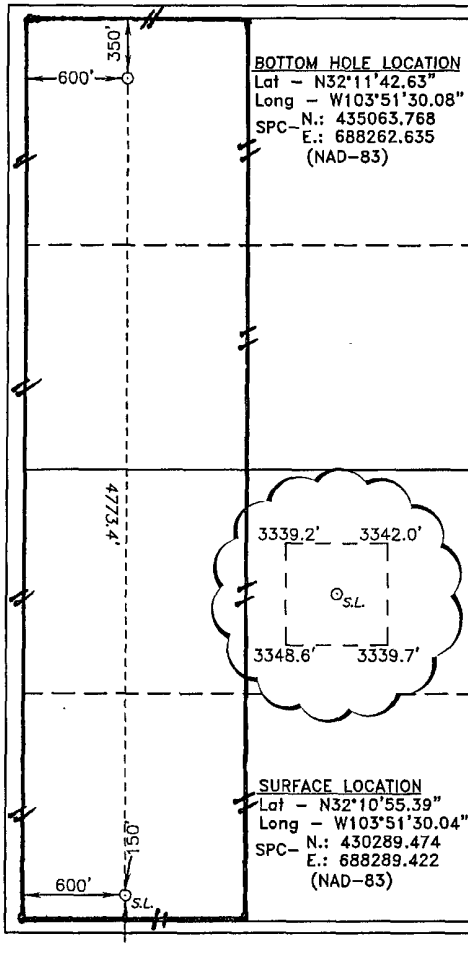
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	26	24 S	30 E		150	SOUTH	600	WEST	EDDY

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
D	26	24 S	30 E		350	NORTH	600	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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 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.

Craig Barnard 11/12/08
Signature Date

CRAIG BARNARD
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 supervison, and that the same is true and correct to the best of my belief.

OCTOBER 17, 2008
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

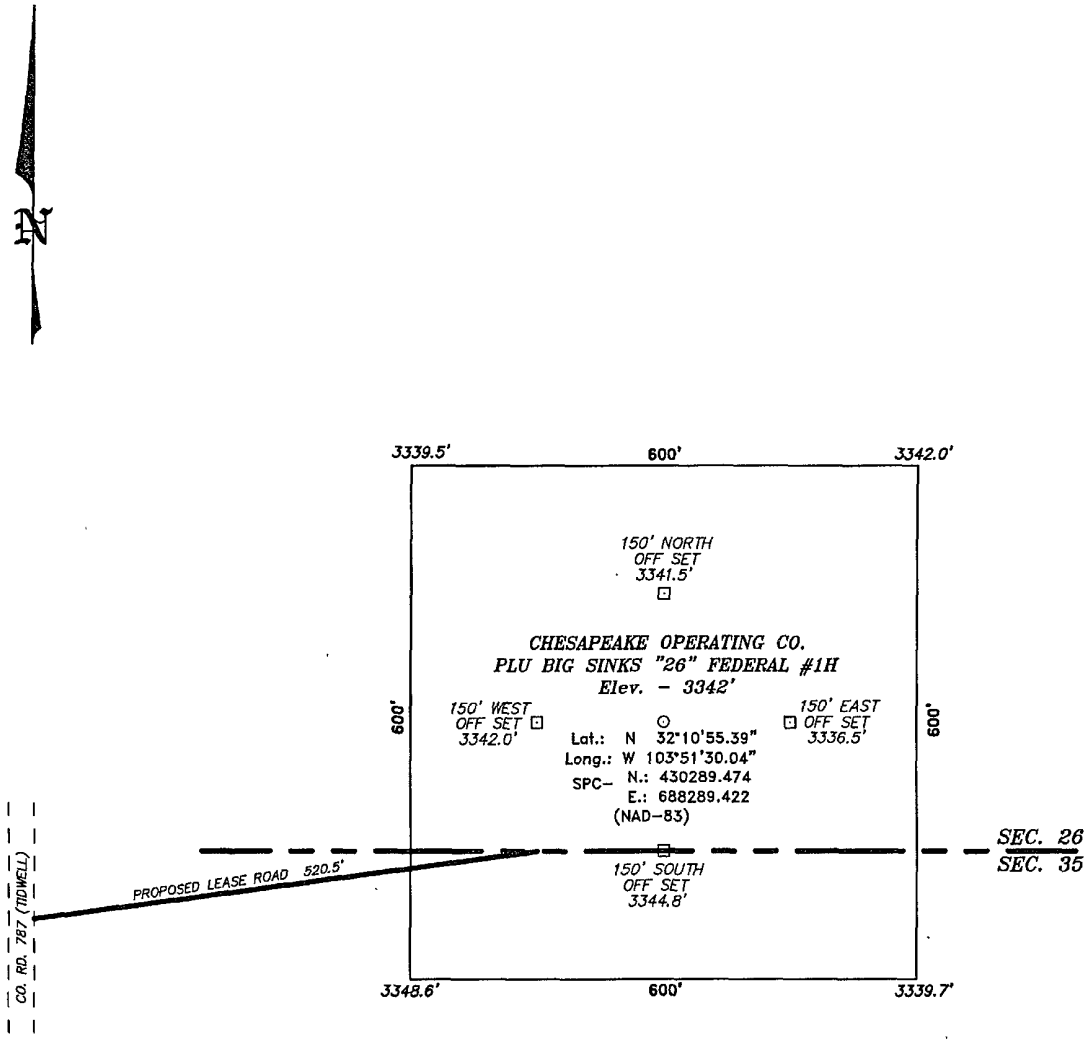
W.O. No. 20708

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

EXHIBIT A-1

SECTION 26, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF HWY 128 AND CO. RD. TWINWELL (787), GO SOUTH ON TWINWELL FOR 10.2 MILES TO PROPOSED LEASE ROAD.

CHESAPEAKE OPERATING CO.

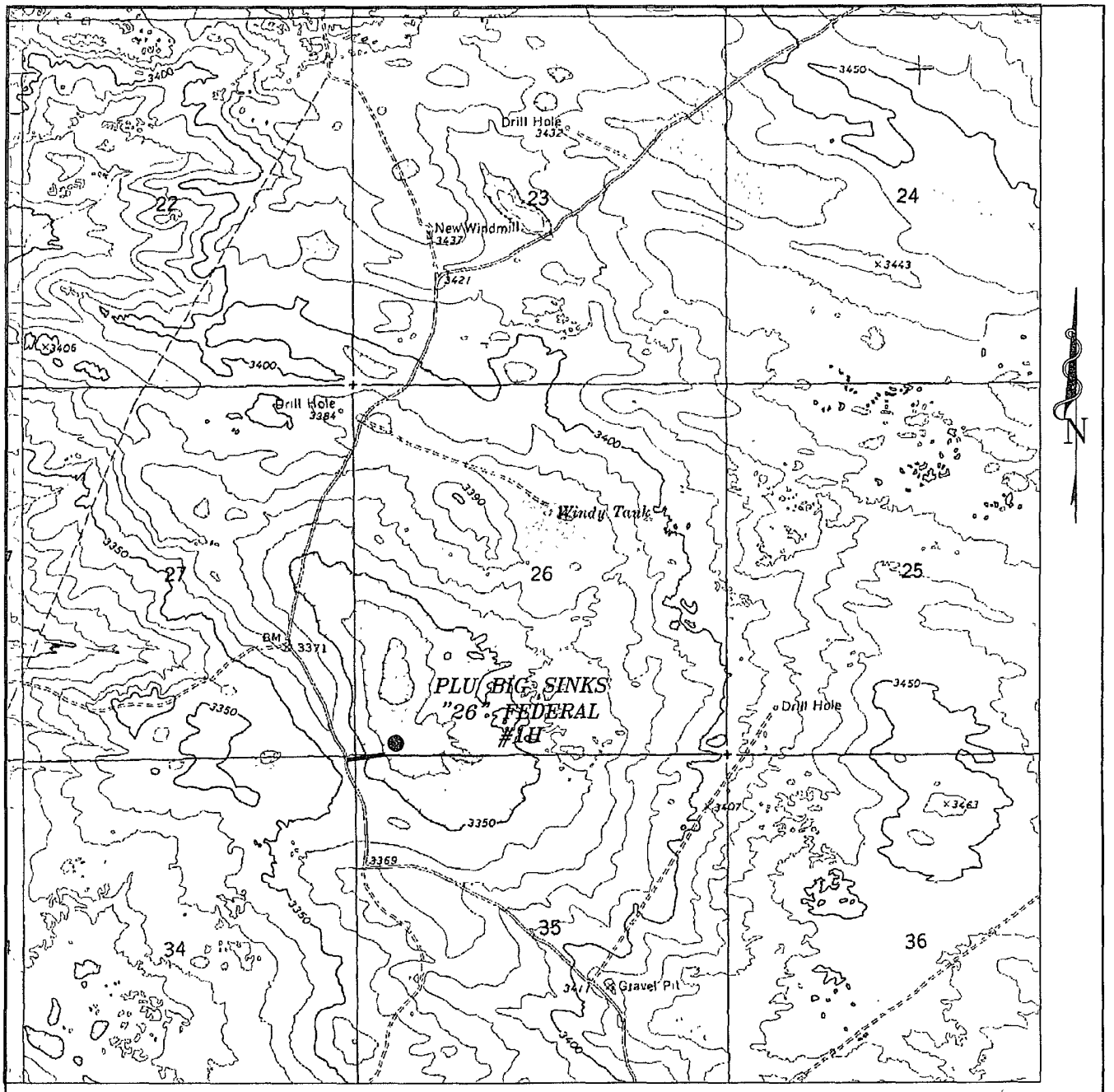
REF: PLU BIG SINKS "26" FEDERAL #1H / WELL PAD TOPO

THE PLU BIG SINKS "26" FEDERAL #1H LOCATED 150' FROM THE SOUTH LINE AND 600' FROM THE WEST LINE OF SECTION 26, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 20708	Drawn By: K. GOAD		
Date: 10-20-2008	Disk: KJG - 20708WELL.DWG	Survey Date: 10-17-2008	Sheet 1 of 1 Sheets

EXHIBIT A-2



PLU BIG SINKS "26" FEDERAL #1H
Located at 150' FSL AND 600' FWL
Section 26, Township 24 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

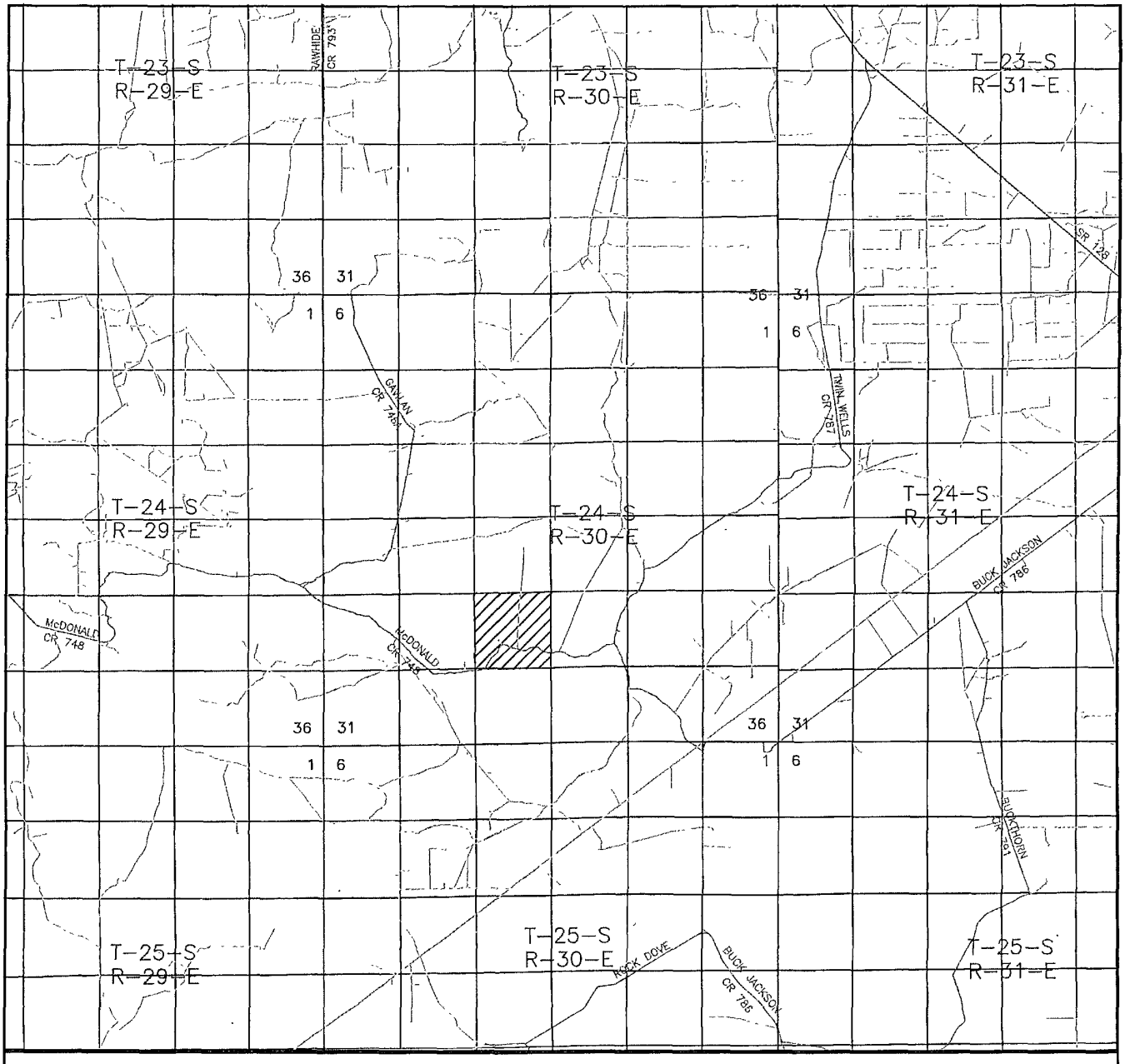
basin surveys
focused on excellence in the oilfield

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 - 20708
Survey Date:	10-17-2008
Scale:	1" = 2000'
Date:	10-20-2008

CHESAPEAKE OPERATING CO.

EXHIBIT A-3



PLU BIG SINKS "26" FEDERAL #1H
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Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number:	KJG - 20708
Survey Date:	10-17-2008
Scale:	1" = 2 MILES
Date:	10-20-2008

CHESAPEAKE OPERATING CO.

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 KBTVD	KBTVD
BASE OF SALT	-625'	3,983'
BELL CANYON	-669'	4,027'
CHERRY CANYON MARKER	-1,749'	5,107'
BRUSHY CANYON	-2,814'	6,172'
LOWER BRUSHY CANYON	-4,237'	7,595'
BONE SPRING	-4,480'	7,838'
1ST BONE SPRING SAND	-5,465'	8,823'
2ND BONE SPRING CARBONATE	-5,698'	9,056'
2ND BONE SPRING SAND	-6,144'	9,502'
3RD BONE SPRING CARBONATE	-6,518'	9,876'
3RD BONE SPRING SAND	-7,250'	10,608'
WOLFCAMP	-7,710'	11,068'
PILOT HOLE	**TD**	**11,200'**

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	Bell Canyon	4,207'
Oil/Gas	Cherry Canyon	5,107'
Oil/Gas	Brushy Canyon	6,172'
Oil/Gas	Bone Spring	7,838'

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

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

8. A record of all pressures will be made on a pressure-recording chart.

D. Test Duration

1. In each case, the individual components should be monitored for leaks for **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. Tes t 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 PROGRAM

a. The proposed casing program will be as follows:

Purpose	Interval (See COA)	Hole Size	Casing Size	Weight	Grade	Thread	Condition
Surface	Surface – ~~400~~'	17-1/2"	13-3/8"	48.0#	H-40	STC	New
Intermediate See COA	Surface – 4,000'	12-1/4"	9-5/8"	40.0#	J-55	LTC	New
Production	Surface – 12,545'	8-3/4" (4000'-8446')/ 8-1/2" 8446'-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

d. The cementing program will be as follows:

5. Cementing Program ← see COA

Interval	Type	Amount	Yield	Top Of Cement	Excess
Surface	Tail: Class C 1% CaCl2 (Accelerator)	450 sks See COA	1.34	Surface	100%
Intermediate	Lead: 35/65 Poz/Class C	1000 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)	1900 sks	1.60	3,300'	40%

Final cement volumes will be determined by caliper.

Pilot Hole Plugging Plan:

See COA

The pilot hole will be plugged back using a plug of at least 210' from ±10,880' to 11,090' (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 ±9,000' to 9,210'. A third 500' balanced plug will be placed from ±7,500' to 8,000' (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:

See COA

Interval	Mud Type	Mud Weight	Viscosity	Fluid Loss
0' – 400'	FW/Gel	8.4 – 9.0	28-32	NC
400' – 4,000'	Native/Brine	9.9 – 10.1	28-30	NC
4,000' - TD	FW/LSND	8.8 – 9.5	34-45	20-10

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.

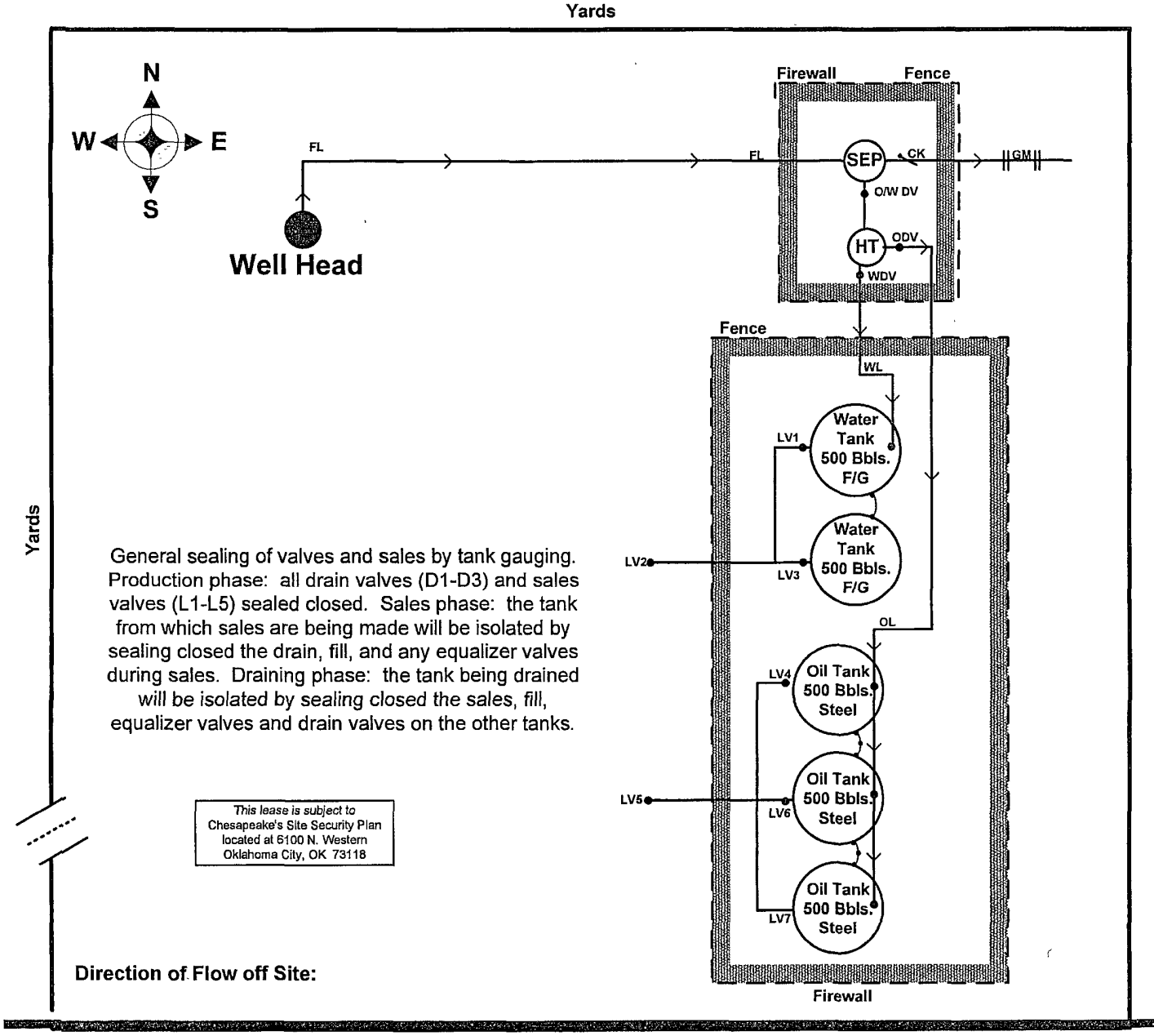
7. ABNORMAL PRESSURES AND HYDROGEN SULFIDE
   a. The estimated bottom hole pressure is 4851 psi. No abnormal pressures or temperatures are anticipated.
   b. Hydrogen sulfide gas is not anticipated.

CHESAPEAKE OPERATING, INC.

Chesapeake ENERGY

PLU Big Sinks 26 Federal #1H

Lat: N 32'10'57.39" – Long.: W 103'51'32.95"
S26/T24S/R30E – 150 FSL & 600 FWL
Eddy Co., New Mexico



General sealing of valves and sales by tank gauging. Production phase: all drain valves (D1-D3) and sales valves (L1-L5) sealed closed. Sales phase: the tank from which sales are being made will be isolated by sealing closed the drain, fill, and any equalizer valves during sales. Draining phase: the tank being drained will be isolated by sealing closed the sales, fill, equalizer valves and drain valves on the other tanks.

This lease is subject to Chesapeake's Site Security Plan located at 6100 N. Western Oklahoma City, OK 73118

Direction of Flow off Site:

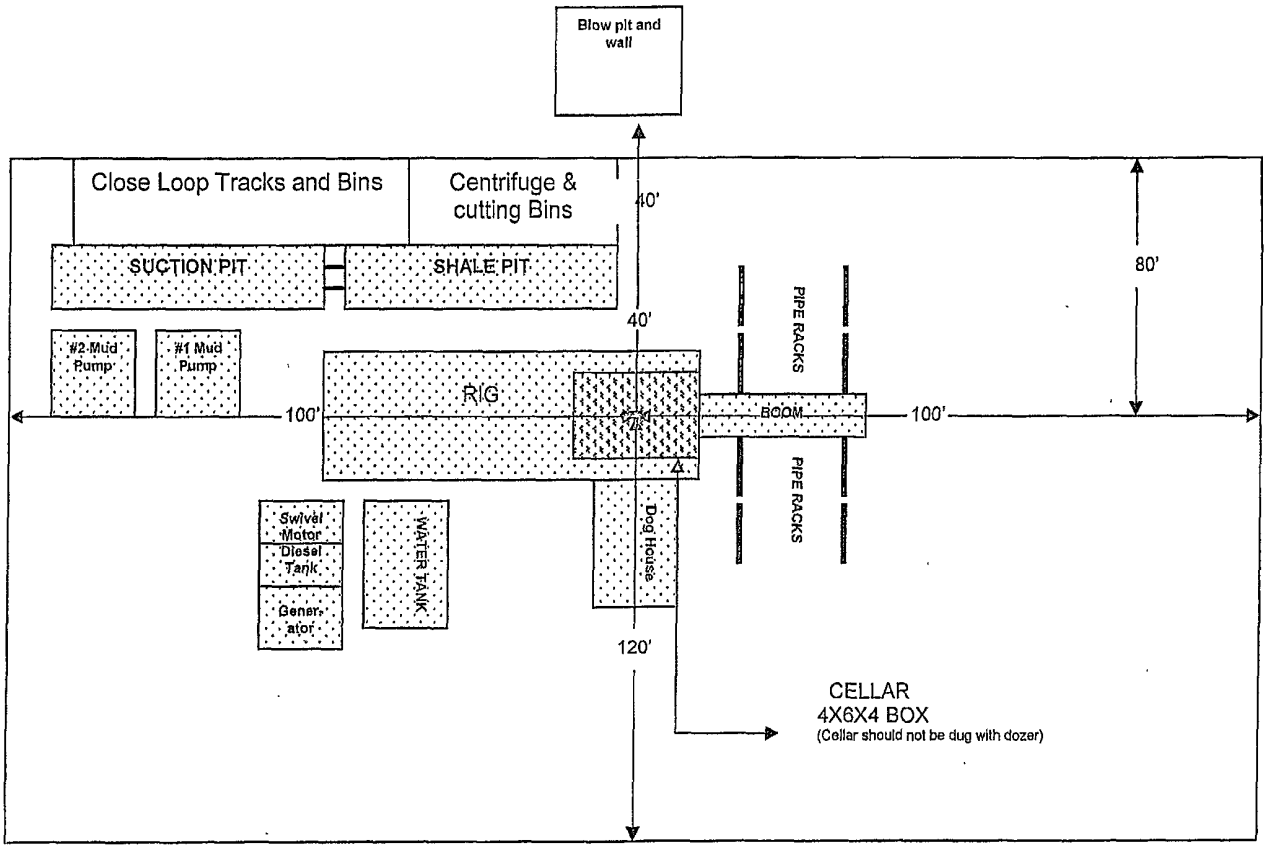
Prepared by: Jackie Reynolds
Date: 9-30-2008

Approved by:
Date:

EXHIBIT C

LOCATION SPECIFICATION AND RIG LAYOUT FOR STEEL PITS

(PICTURE NOT TO SCALE)



Cellar can be 4X4X4 if using a screw-on wellhead

EXHIBIT D

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

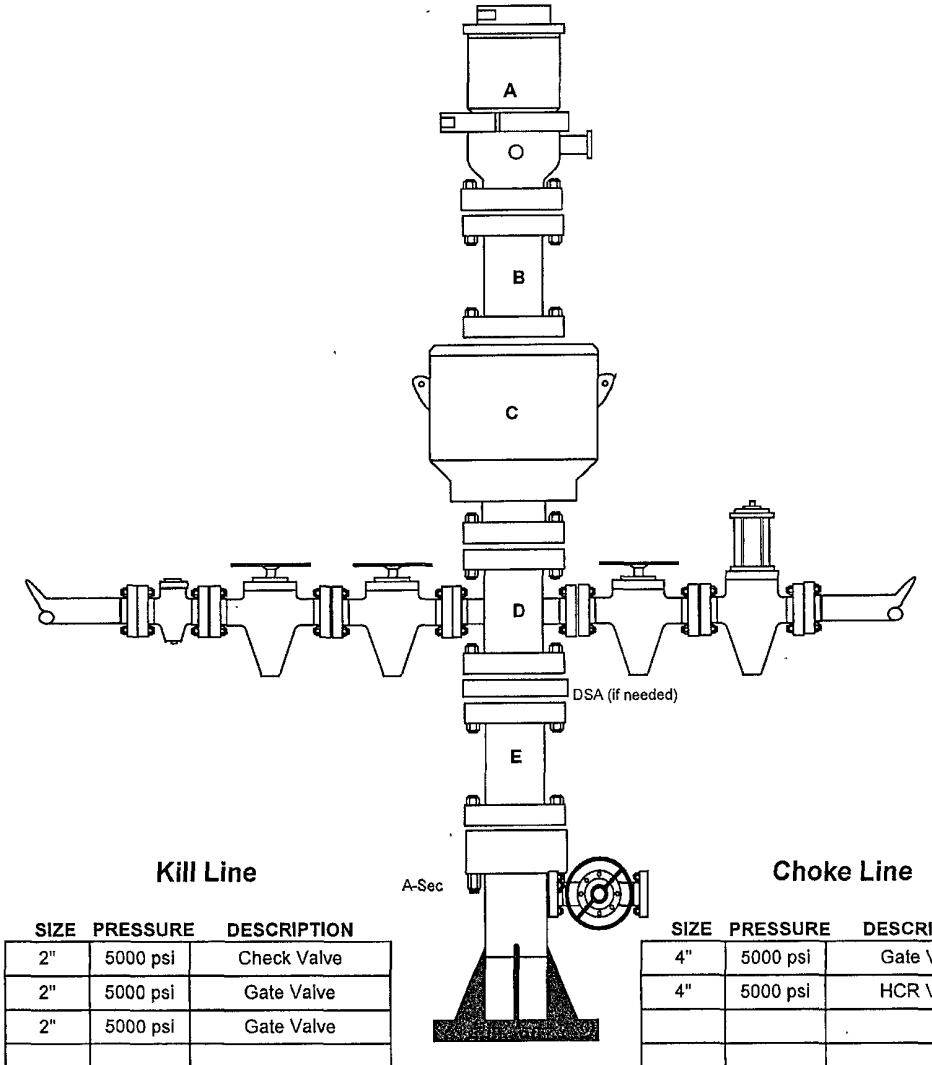
WELL : **PLU Big Sinks 26 Federal 1H**

RIG : **Capstar 32**

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

EXHIBIT F-1

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

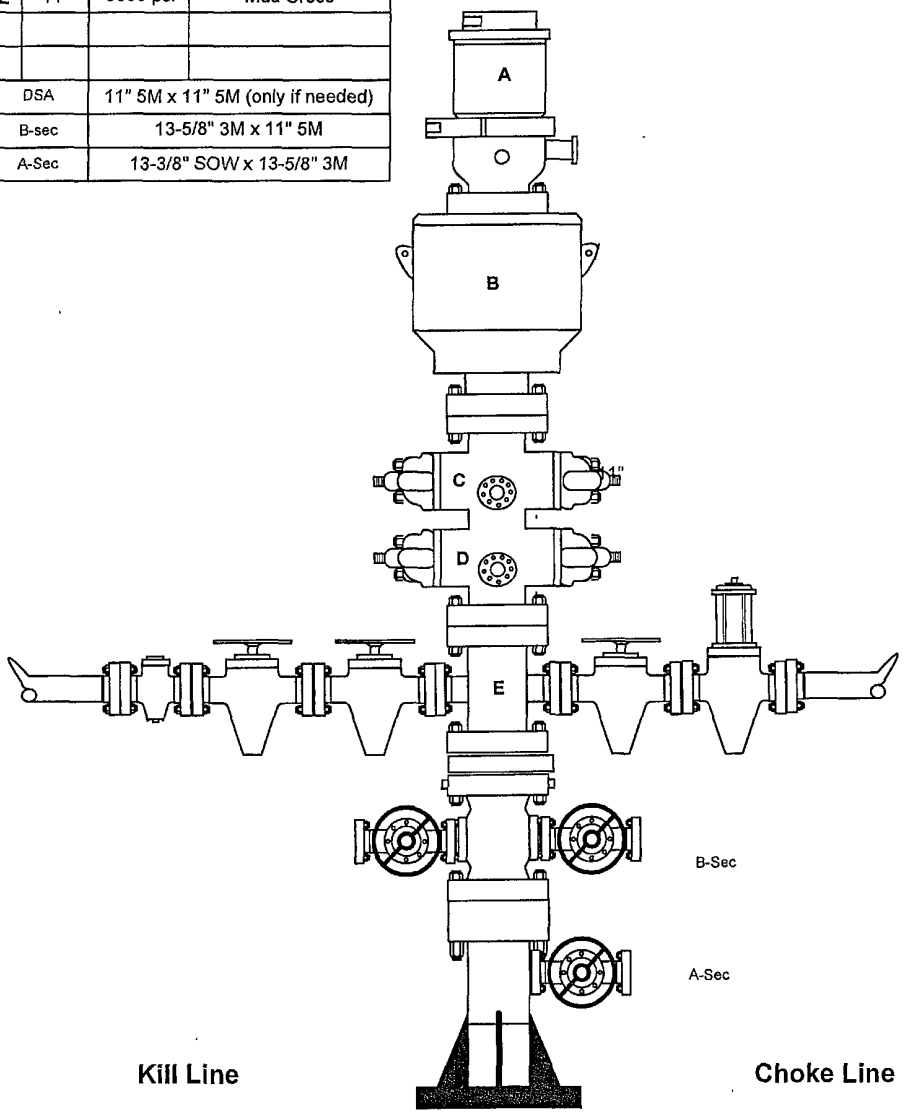
WELL : **PLU Big Sinks 26 Federal 1H**

RIG : **Capstar 32**

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

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

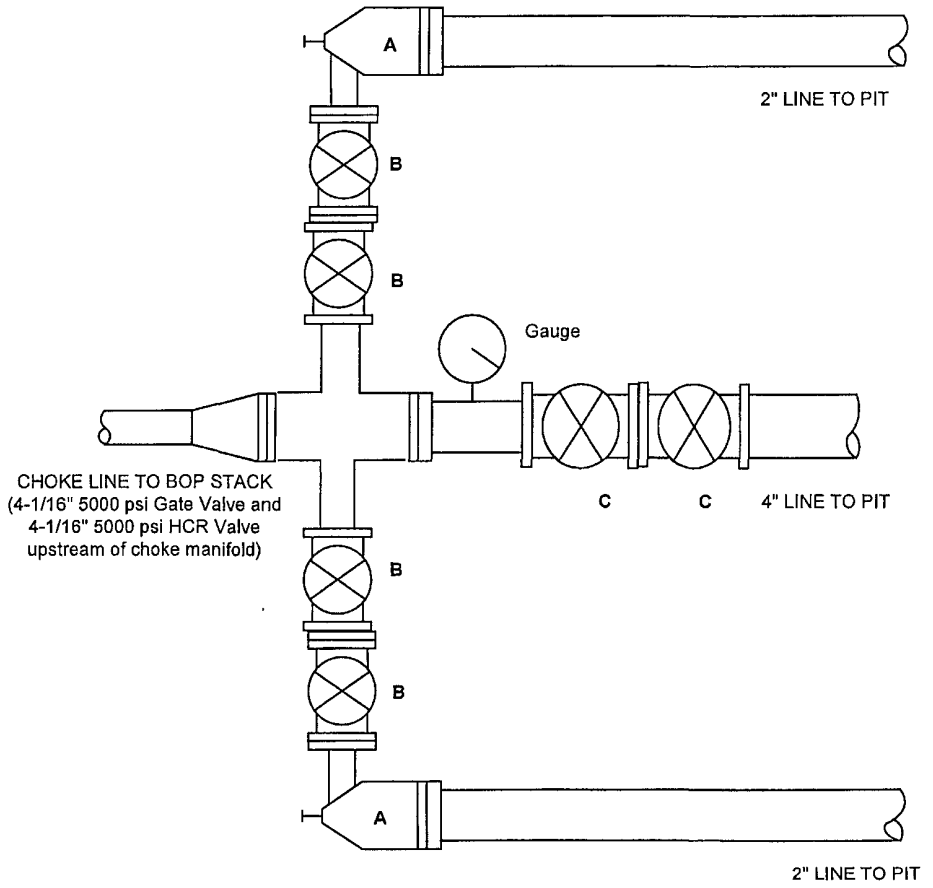
SIZE	PRESSURE	DESCRIPTION
4"	5000 psi	Gate Valve
4"	5000 psi	HCR Valve

EXHIBIT F-2

CHOKE MANIFOLD SCHEMATIC

CHESAPEAKE OPERATING, INC.

WELL : **PLU Big Sinks 26 Federal 1H**
RIG : **Capstar 32**
COUNTY : **Eddy** **STATE** : **New Mexico**
OPERATION: Drilling below/beyond 13-3/8" surface casing



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

EXHIBIT F-3

Permian District

NM - Eddy - Morrow Project
PLU Big Sinks 26 Federal 1H
Well #1
Wellbore #1

Plan: Plan #1

Standard Planning Report

06 October, 2008

EXHIBIT G

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	RKB @ 3350 0ft
Project:	NM - Eddy - Morrow Project	**MD Reference:**	RKB @ 3350.0ft
Site:	PLU Big Sinks 26 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 Big Sinks 26 Federal 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:**	3,338.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	10/6/2008	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	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	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,446.1	90.00	0.00	8,175 0	475.0	0.0	12.06	12.06	0.00	0.00	
12,544.7	90.00	0.00	8,175.0	4,573.6	0.0	0.00	0.00	0.00	0 00	

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	RKB @ 3350.0ft
Project:	NM - Eddy - Morrow Project	**MD Reference:**	RKB @ 3350.0ft
Site:	PLU Big Sinks 26 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
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
9 5/8"									
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

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	RKB @ 3350.0ft
Project:	NM - Eddy - Morrow Project	**MD Reference:**	RKB @ 3350.0ft
Site:	PLU Big Sinks 26 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
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0 00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0 0	0 0	0 0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0 0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	12 06	0.00	7,799.3	10.5	0.0	10.5	12.06	12.06	0 00
7,900.0	24.12	0.00	7,894.1	41.5	0.0	41.5	12.06	12.06	0.00
8,000.0	36.19	0.00	7,980.4	91.6	0.0	91 6	12.06	12.06	0.00
8,100.0	48.25	0.00	8,054.4	158.7	0.0	158.7	12 06	12.06	0.00
8,200.0	60.31	0.00	8,112.6	239.7	0.0	239.7	12.06	12.06	0.00
8,300.0	72.37	0.00	8,152.7	331.2	0.0	331.2	12.06	12.06	0 00
8,400.0	84.44	0.00	8,172.8	428.9	0.0	428.9	12.06	12.06	0.00
8,448.1	90 00	0.00	8,175.0	475.0	0.0	475.0	12 06	12.06	0.00
8,500.0	90.00	0.00	8,175.0	528.9	0.0	528.9	0.00	0.00	0.00
8,600.0	90.00	0.00	8,175.0	628.9	0.0	628.9	0.00	0.00	0.00
8,700.0	90.00	0.00	8,175.0	728.9	0.0	728.9	0 00	0.00	0.00
8,800 0	90.00	0.00	8,175.0	828.9	0.0	828.9	0.00	0.00	0.00
8,900.0	90.00	0.00	8,175.0	928 9	0.0	928.9	0.00	0.00	0.00
9,000.0	90.00	0.00	8,175.0	1,028.9	0 0	1,028.9	0.00	0.00	0.00
9,100.0	90.00	0.00	8,175.0	1,128.9	0 0	1,128.9	0.00	0.00	0.00
9,200.0	90.00	0.00	8,175.0	1,228.9	0.0	1,228.9	0.00	0.00	0.00
9,300.0	90.00	0.00	8,175.0	1,328.9	0 0	1,328.9	0.00	0.00	0.00
9,400.0	90.00	0.00	8,175.0	1,428.9	0.0	1,428.9	0.00	0.00	0.00
9,500.0	90.00	0 00	8,175.0	1,528.9	0.0	1,528.9	0.00	0.00	0.00
9,600.0	90.00	0.00	8,175.0	1,628.9	0.0	1,628.9	0.00	0.00	0.00
9,700.0	90 00	0.00	8,175.0	1,728 9	0.0	1,728.9	0.00	0.00	0.00
9,800.0	90.00	0.00	8,175.0	1,828.9	0 0	1,828.9	0 00	0.00	0.00
9,900.0	90.00	0.00	8,175.0	1,928.9	0.0	1,928.9	0.00	0.00	0.00
10,000.0	90.00	0.00	8,175.0	2,028.9	0.0	2,028.9	0.00	0.00	0.00
10,100.0	90.00	0 00	8,175.0	2,128 9	0.0	2,128.9	0.00	0.00	0 00
10,200.0	90.00	0.00	8,175.0	2,228.9	0.0	2,228 9	0.00	0.00	0.00
10,300.0	90.00	0.00	8,175.0	2,328.9	0.0	2,328.9	0.00	0.00	0.00

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	RKB @ 3350.0ft
Project:	NM - Eddy - Morrow Project	**MD Reference:**	RKB @ 3350.0ft
Site:	PLU Big Sinks 26 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)
10,400.0	90.00	0.00	8,175.0	2,428.9	0.0	2,428.9	0.00	0.00	0.00
10,500.0	90.00	0.00	8,175.0	2,528.9	0.0	2,528.9	0.00	0.00	0.00
10,600.0	90.00	0.00	8,175.0	2,628.9	0.0	2,628.9	0.00	0.00	0.00
10,700.0	90.00	0.00	8,175.0	2,728.9	0.0	2,728.9	0.00	0.00	0.00
10,800.0	90.00	0.00	8,175.0	2,828.9	0.0	2,828.9	0.00	0.00	0.00
10,900.0	90.00	0.00	8,175.0	2,928.9	0.0	2,928.9	0.00	0.00	0.00
11,000.0	90.00	0.00	8,175.0	3,028.9	0.0	3,028.9	0.00	0.00	0.00
11,100.0	90.00	0.00	8,175.0	3,128.9	0.0	3,128.9	0.00	0.00	0.00
11,200.0	90.00	0.00	8,175.0	3,228.9	0.0	3,228.9	0.00	0.00	0.00
11,300.0	90.00	0.00	8,175.0	3,328.9	0.0	3,328.9	0.00	0.00	0.00
11,400.0	90.00	0.00	8,175.0	3,428.9	0.0	3,428.9	0.00	0.00	0.00
11,500.0	90.00	0.00	8,175.0	3,528.9	0.0	3,528.9	0.00	0.00	0.00
11,600.0	90.00	0.00	8,175.0	3,628.9	0.0	3,628.9	0.00	0.00	0.00
11,700.0	90.00	0.00	8,175.0	3,728.9	0.0	3,728.9	0.00	0.00	0.00
11,800.0	90.00	0.00	8,175.0	3,828.9	0.0	3,828.9	0.00	0.00	0.00
11,900.0	90.00	0.00	8,175.0	3,928.9	0.0	3,928.9	0.00	0.00	0.00
12,000.0	90.00	0.00	8,175.0	4,028.9	0.0	4,028.9	0.00	0.00	0.00
12,100.0	90.00	0.00	8,175.0	4,128.9	0.0	4,128.9	0.00	0.00	0.00
12,200.0	90.00	0.00	8,175.0	4,228.9	0.0	4,228.9	0.00	0.00	0.00
12,300.0	90.00	0.00	8,175.0	4,328.9	0.0	4,328.9	0.00	0.00	0.00
12,400.0	90.00	0.00	8,175.0	4,428.9	0.0	4,428.9	0.00	0.00	0.00
12,500.0	90.00	0.00	8,175.0	4,528.9	0.0	4,528.9	0.00	0.00	0.00
12,544.7	90.00	0.00	8,175.0	4,573.6	0.0	4,573.6	0.00	0.00	0.00
5 1/2"									

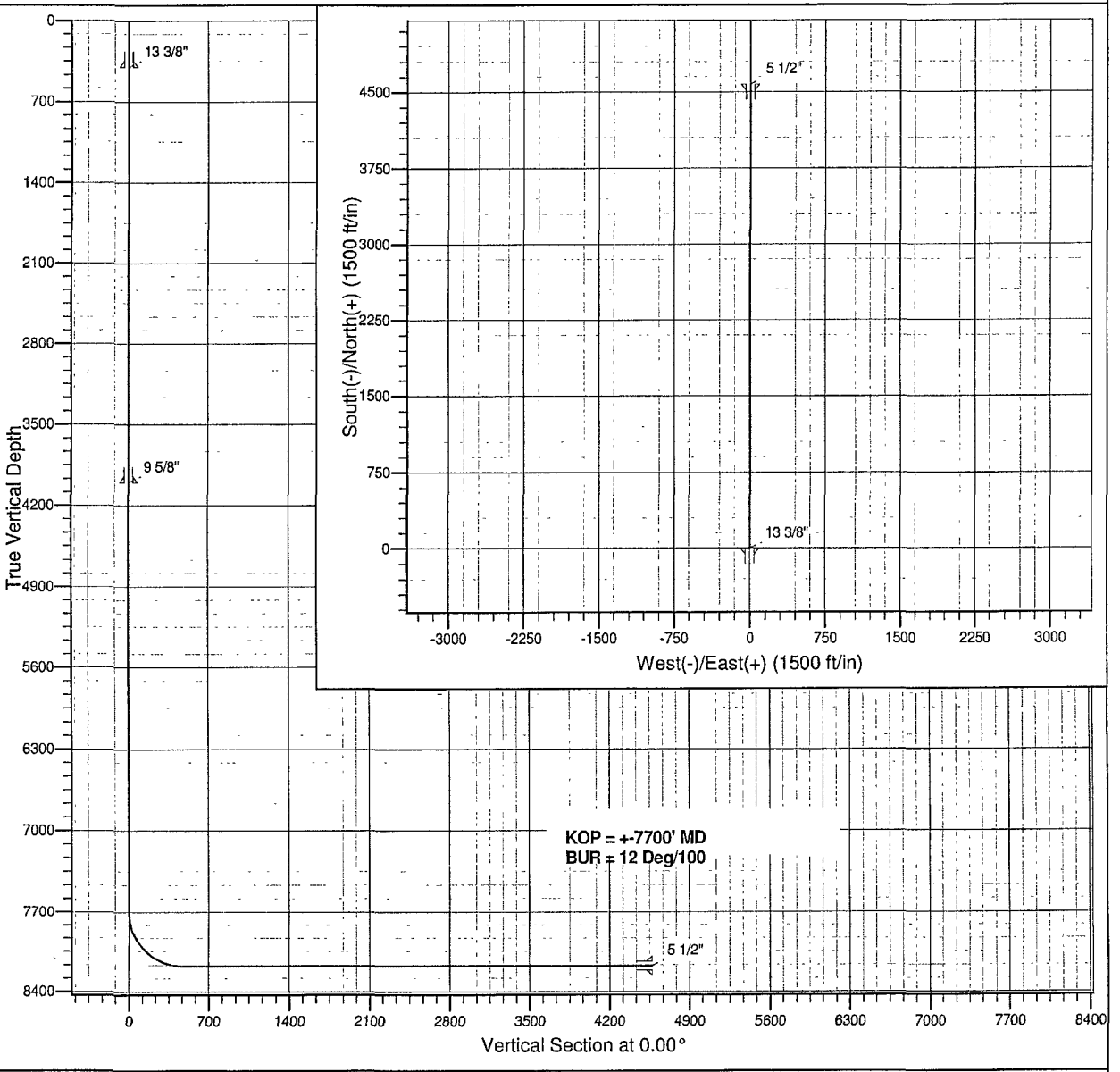
Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
400.0	400.0	13 3/8"	13.375	17.500
4,000.0	4,000.0	9 5/8"	9.625	12.250
12,544.7	8,175.0	5 1/2"	5.500	8.750

Chesapeake Operating Inc. PLU Big Sinks 26 Federal 1H

County: Eddy, NM

Section 26-24S-30E



SECTION DETAILS

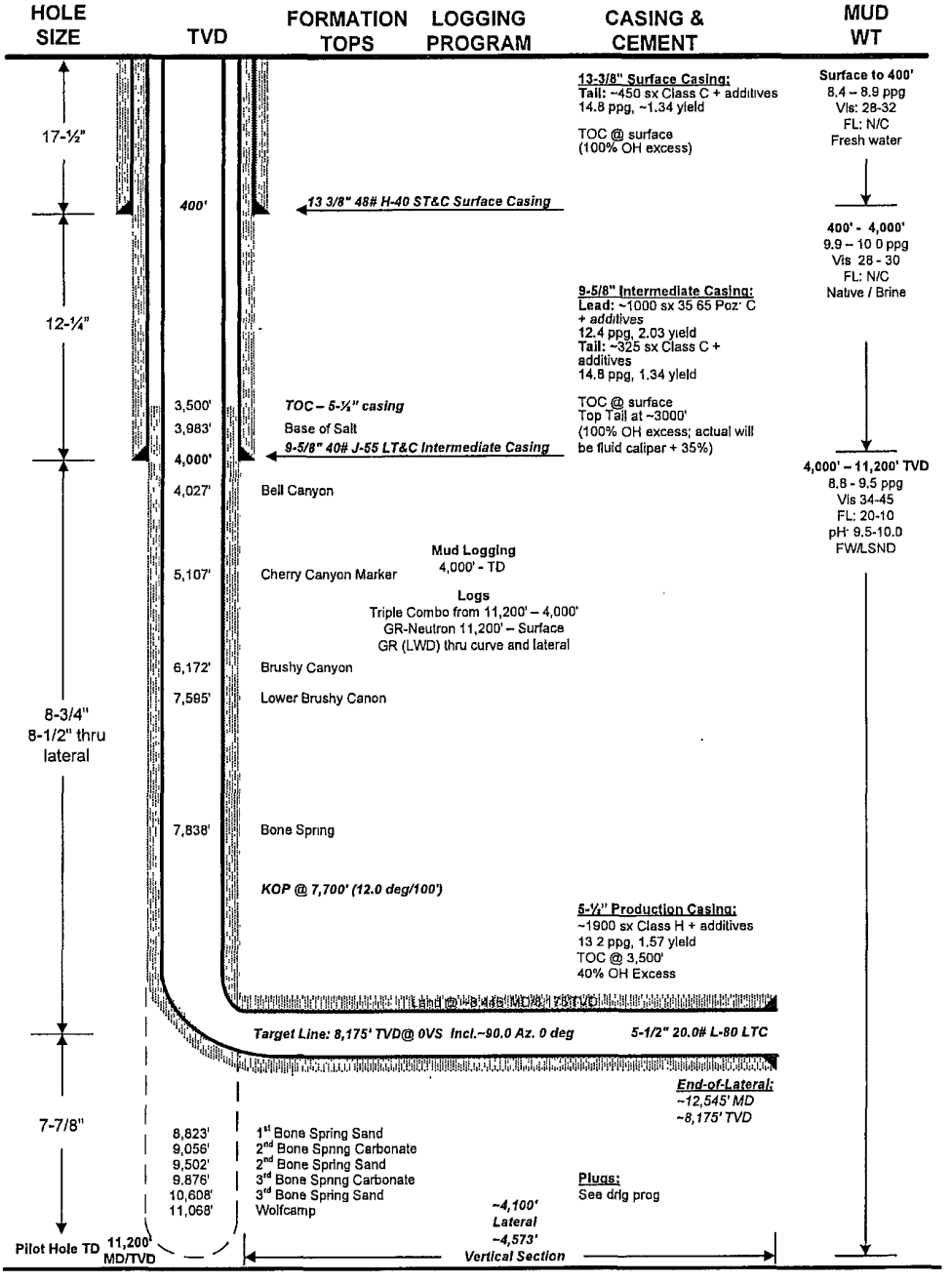
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7700.0	0.00	0.00	7700.0	0.0	0.0	0.00	0.00	0.0	
3	8446.1	90.00	0.00	8175.0	475.0	0.0	12.06	0.00	475.0	
4	12544.7	90.00	0.00	8175.0	4573.6	0.0	0.00	0.00	4573.6	

CHESAPEAKE OPERATING INC

Proposed Well Schematic (drilling)

WELL : PLU BIG SINKS 26 FEDERAL 1H
SHL : Section 26 - 24S - 30E, 350' FSL & 350' FWL
BHL : Section 26 - 24S - 30E, 350' FNL & 350' FWL

COUNTY : Eddy
STATE : New Mexico
FIELD : Delaware Basin North
ELEVATION : GL – 3,338' RKB – 3,350' Est.



PREPARED BY: TAN DATE: 10/06/08

APPROVED BY: _____ DATE: _____

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 330.9' 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 10.2 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

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 26-24S-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

Richardson Cattle Co.
P.O. Box 487
Carlsbad, NM 88221
(Chesapeake Operating, Inc. has an agreement with the grazing lessee)

12. ADDITIONAL INFORMATION

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

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

13. OPERATOR'S REPRESENTATIVES

Drilling and Completion Operations
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
P.O. Box 14896
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(405) 879-9301 (OFFICE)
(405) 810-2795 (FAX)
(405) 919-9148 (MOBILE)
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432-687-2992, x 6051 (OFFICE)
432-557-3356 (Cell)
greg.coker@chk.com

Assett Manager
Jeff Finnell
P.O. Box 18496
Oklahoma City, OK 73154-0496
405-767-4347 (OFFICE)
405-879-7930 (FAX)
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Regulatory Compliance
Linda Good
Regulatory Compliance Specialist
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linda.good@chk.com

Sr. Geologist
Lee Wescott
P.O. Box 14896
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405-810-2660 (FAX)
lee.wescott@chk.com

Craig Barnard
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405-879-8401 (Office)
craig.barnard@chk.com

Justin Zerkle
Associate Landman
P.O. Box 18496
Oklahoma City, OK 73154
405-767-4925 Office
justin.zerkle@chk.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 13th day of November, 2008.

Name: William M. Fowler, Director – 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

Chesapeake Operating Inc.
PLU Big Sinks 26 Federal 1H
SL: 150' FSL & 600' FWL
BL: 350' FNL & 600' FWL
of Section 1-26S-30E
Eddy County, NM

Confidential – Tight Hole
Lease No. NMNM02862

Attachment to Application for Permit to Drill or Re-enter

CHESAPEAKE OPERATING, INC. RESPECTFULLY REQUESTS PERMISSION TO DRILL A WELL TO 12,545' 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.

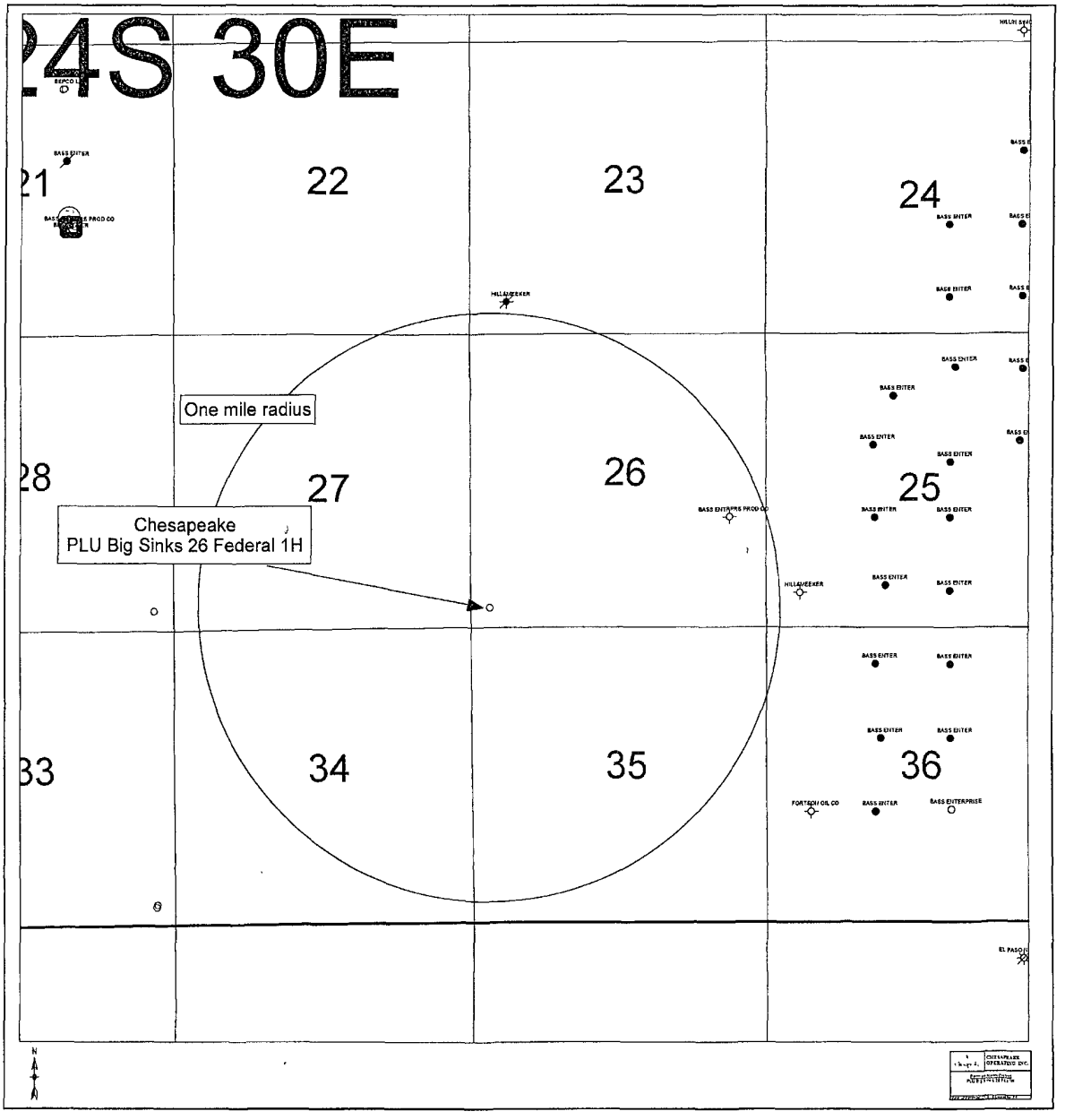

24S 30E
21
22
23
24
One mile radius
28
27
26
25
Chesapeake
PLU Big Sinks 26 Federal 1H
33
34
35
36
BASS ENTER
HILLSEEKER
FORTSON OIL CO
BASS ENTERPRISE
N

EXHIBIT B

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 112147	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 proposed PLU Big Sinks "26" Federal 1H and proposed access road for Chesapeake Operating in T24S, R30E, Section 26, Section 34, and Section 35.

Author(s) Mary Ann Paul

5. Type of Report
☒ Negative ☐ Positive

6. Investigation Type
☐ Research Design ☒ Survey/Inventory ☐ Test Excavation ☐ Excavation ☐ Collections/Non-Field Study
☐ Overview/Lit Review ☐ Monitoring ☐ Ethnographic study ☐ Site specific visit ☐ Other

7. Description of Undertaking (what does the project entail?): On 10/9/08 and 11/14/08, 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 for the proposed PLU Big Sinks "26" Federal 1H (centered at [150' FSL, 600' FWL] and proposed access road in T24S, R30E, Section 26 and, and Section 34, Section 35. Center of proposed wellpad is in Section 26.

The **final 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 **final proposed road** was marked with wooden stakes with orange flagging. The access road surveyed that was outside of the proposed well pad totaled .82 acres (+/-) and was 364 ft (+/-) in length and 100 ft (+/-) in width. The rest of the road (160 ft) (+/-) was surveyed inside the well pad making the total length of the proposed road 524 ft (+/-). The estimated impact area for the road is 364 ft (+/-) in length and 50 ft (+/-) in width or .41 acres (+/-).

The original proposed well pad area surveyed was 4.8 acres (+/-) in size and was an upside down "L" shape 600 ft (+/-) in maximum length x 240 ft (+/-) in maximum width. The rest of the area is in the final wellpad location. 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. Note: The acres surveyed were determined by an Arcview extension called XTools measuring the area of the polygon and not by length multiplied by width and then divided by 43560 because the original surveyed area was of irregular shape.

The original proposed road was marked with wooden stakes with orange flagging. The access road surveyed that was outside of the proposed well pad totaled .45 acres (+/-) and was 200 ft (+/-) in length and 100 ft (+/-) in width.

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 one cultural material was encountered. Isolated Manifestation 1 (IM1) is a whole Coca Cola Bottle (light green glass) (Table 1) manufactured in Carlsbad, NM. The location plots for this project were obtained with a handheld GPS unit.

8. Dates of Investigation: (from: 10/9/08 to: 11/14/08)	9. Report Date: 11/16/08
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 09-08-62 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.:

RECEIVED
NOV 19 2008

BY: _____

EXHIBIT E

15. Land Ownership Status *(Must be indicated on project map).*

Land Owner	Acres Surveyed	Acres in APE
BLM-CFO	14.33 (+/-)	4.08 (+/-)
TOTALS	14.33 (+/-)	4.08 (+/-)

16. Records Search(es):

Date(s) of ARMS File Review 11/16/08	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 10/8/08	Name of Reviewer(s) Mary Ann Paul	Agency BLM-CFO

Findings: A review of the ARMS and BLM site databases found sites LA 147447 within 500 ft 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

Big Sinks	32103-B7

c. County(ies): Eddy

17. Survey Data (continued):

d. Nearest City or Town: Malaga

e. Legal Description:

Township (N/S)	Range (E/W)	Section	¼ ¼ ¼
24S	30E	26	SW, SW
24S	30E	35	NW, NW; SW, NW
24S	30E	27	SE, SE
24S	30E	34	NE, NE
			, , .
			, , .
			, , .
			, , .
			, , .

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

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.): at [150' FSL, 600' FWL] in T24S, R30E, Section 26 and Section 35.

18. Survey Field Methods:

Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration: ☒ block survey units 600 ft (+/-) in length x 600 ft (+/-) in width – **final proposed well pad**

upside down "L" shape 600 ft (+/-) in maximum length x 240 ft (+/-) in maximum width – original well pad not in final area

☒ linear survey units (l x w): 364 ft (+/-) in length and 100 ft (+/-) in width – **final proposed road**

200 ft (+/-) in length and 100 ft (+/-) in width - original proposed road

☐ 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: 10/9/08 and 11/14/08

Survey Person Hours: 7 Recording Person Hours: 0 Total Hours: 7

Additional Narrative:

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

Topography: Sloping downhill to the east. South of a playa. Area with sandsheets and few dunes (1-3 ft in height).

Vegetative community: Mesquite, yucca, bunch grass, prickly pear, christmas cactus, and various grasses/forbs.

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

Elevation: 3340 ft - 3350 ft

20.a. Percent Ground Visibility: 85% b. Condition of Survey Area (grazed, bladed, undisturbed, etc.): The survey area is undisturbed.

21. CULTURAL RESOURCE FINDINGS ☒ Yes, See Page 3 ☐No, Discuss Why:

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 _____ Date: 11/16/08 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.: 112147	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: 1 Non-selective isolate recording? ☒
Total structures recorded *(new and previously recorded, including acequias)*. 0

MANAGEMENT SUMMARY: Archaeological clearance is recommended for the wellpad and access road as currently staked. Should any additional 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)*:

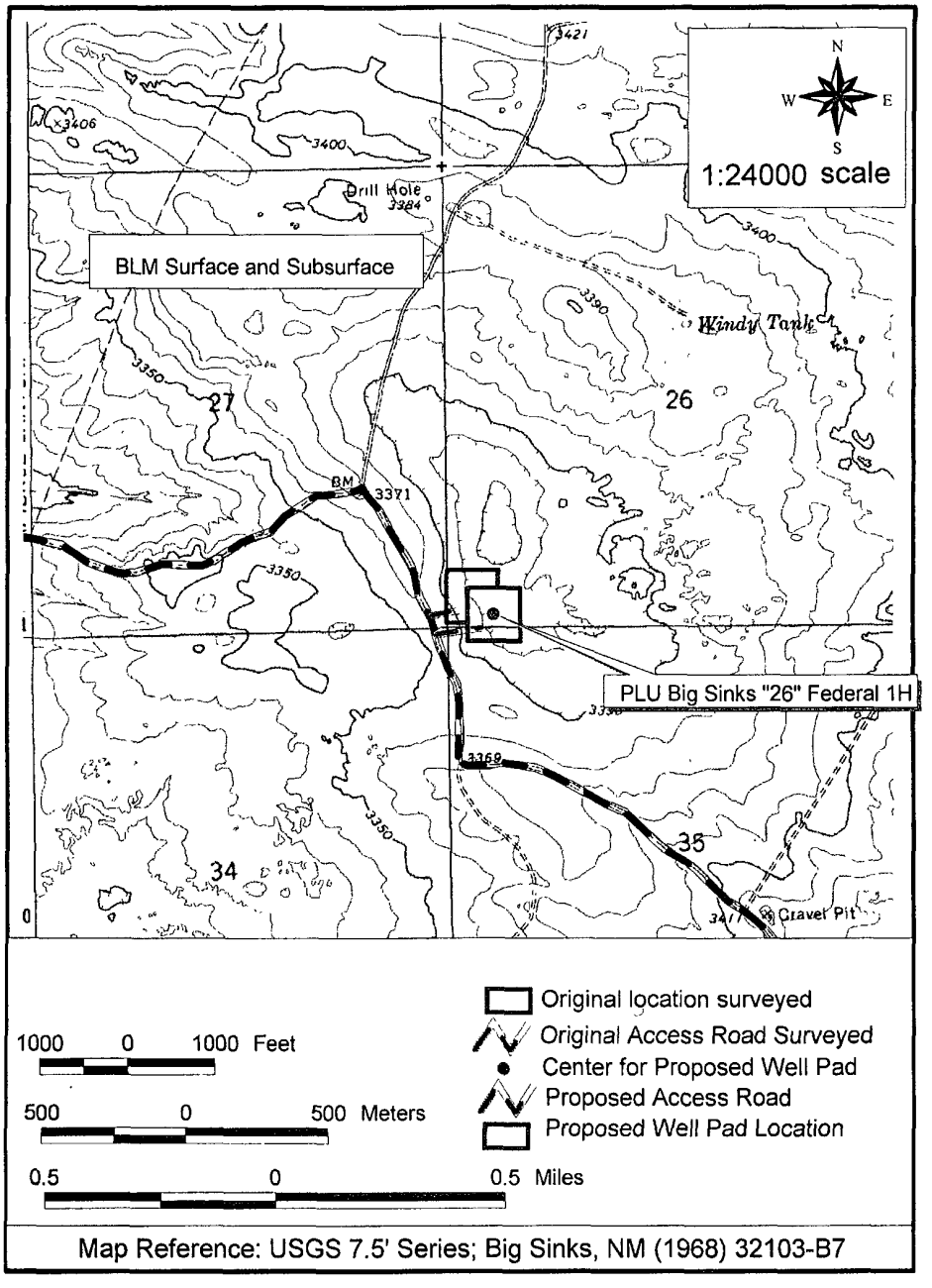
LA No.	Field/Agency No.	LA No.	Field/Agency No.

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 09-08-62



Location Map of the proposed PLU Big Sinks "26" Federal 1H
for Chesapeake Operating
in Section 26, Section, 34 and 35, T24S, R30E, NMPM, Eddy County, NM.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chesapeake Operating
LEASE NO.:	NMNM02862
WELL NAME & NO.:	PLU Big Sinks 26 Federal No 1H
SURFACE HOLE FOOTAGE:	150' FSL & 600' FWL
BOTTOM HOLE FOOTAGE	350' FNL & 600' FWL
LOCATION:	Section 26, T. 24 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.

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)

The well pad and any collection facilities that are needed will be bermed to contain/control any spills or leaks on pad.

VI. CONSTRUCTION

V-DOOR NORTHWEST.

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 8 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.

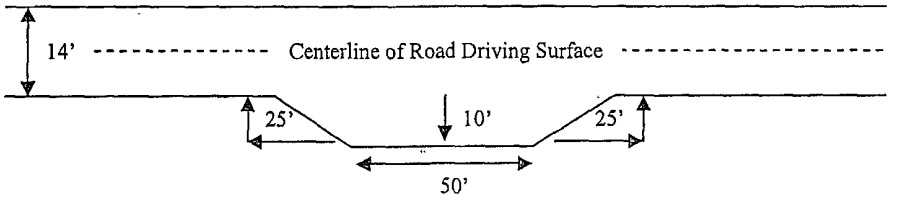
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

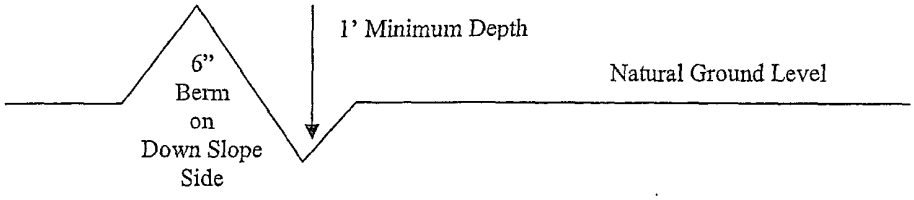
Standard Turnout – Plan View



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.

Cross Section of a Typical 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:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

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.

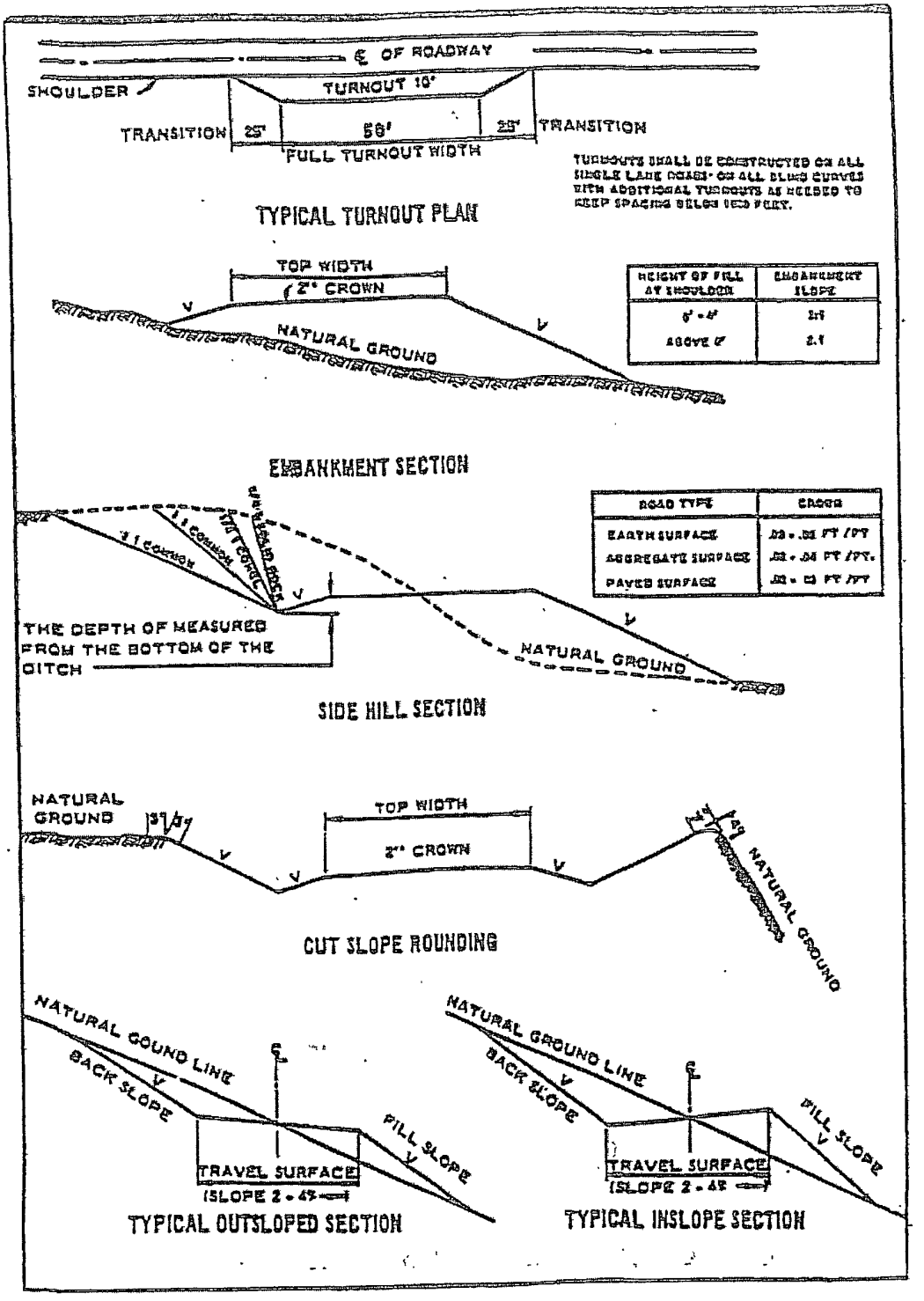
A gate shall be constructed and fastened securely to H-braces.

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 there are no measured amounts of Hydrogen Sulfide reported, it has been reported in this section from the Delaware and is always a potential hazard. If Hydrogen Sulfide is encountered, please provide measured values 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.

1. The **13-3/8** inch surface casing shall be set **at approximately 650-820 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **The Rustler Anhydrite top can vary widely in this area. 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 between 4000-4200 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 sundry with casing information. Second plug and third plugs are approved as written.

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 **500** feet into previous casing string **due to Secretary's Potash**. 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.

D. DRILL STEM TEST

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

WWI 120108

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 2, for Sandy 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 see 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:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*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.