CONFIDENTIAL

OCD-ARTESIA

RECEIVED
JUN 13 2012
NMOCD ARTESIA

SECRETARY'S POTASH

EC

Form 3160-3
(August 2007)

FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.
NMLC 068905

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No.
NMNM071016X

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
PLU BIG SINKS 14-24-30 USA 1H 39274?

2. Name of Operator CHESAPEAKE AGENT FOR BOPCO
ATTN: LYNDEE SONGER

9 API Well No.
30-015-40395

3a. Address PO BOX 18496
OKLAHOMA CITY, OK 73154-0496

3b. Phone No. *(include area code)*
405-935-2411

10 Field and Pool, or Exploratory
WILDCAT; 6-96 52430260M; BS.
~~WILDCAT BONE SPRING~~

4 Location of Well *(Report location clearly and in accordance with any State requirements *)*
At surface 50' FSL & 1980' FEL ~~SESW~~ SWSE
At proposed prod. zone 100' FNL & 1980' FEL ~~NENW~~ NWNE

11. Sec., T. R. M. or Blk. and Survey or Area
14-24S-30E
C97787

14 Distance in miles and direction from nearest town or post office*
14 miles east of Malaga

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	17 Spacing Unit dedicated to this well
150' FSL	NMLC 068905-1960 ACRES	160 acres being the W/2E/2

18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19 Proposed Depth	20 BLM/BIA Bond No. on file
PLU Big Sinks 23-24-30 USA 1H- 250' FSL	14,070' MD/9,287' TD	ESB000159

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3428' GL	10/21/2012	30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25 Signature	Name *(Printed/Typed)*	Date
Lyndee Songer	LYNDEE SONGER	03/12/2012

Title
REGULATORY COMPLIANCE TECHNICIAN II

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Jesse J. Juen	/s/ Jesse J. Juen	JUN - 4 2012

Title	Office
STATE DIRECTOR	NM STATE OFFICE

Application approval 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.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

RECEIVED
JUN 13 2012
NMOCD ARTESIA

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax (505) 476-3462

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 August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-40395	~~96403~~ 97838	~~WILDCAT; BONE SPRING~~ WILDCAT; G-06 S243026M; B.S.

Property Code	Property Name	Well Number
39274	PLU BIG SINKS 14 24 30 USA	1H

OGRID No.	Operator Name	Elevation
147179	CHESAPEAKE OPERATING CO.	3427'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	14	24 S	30 E		50	SOUTH	1980	EAST	EDDY

Bottom Hole Location If Different From Surface

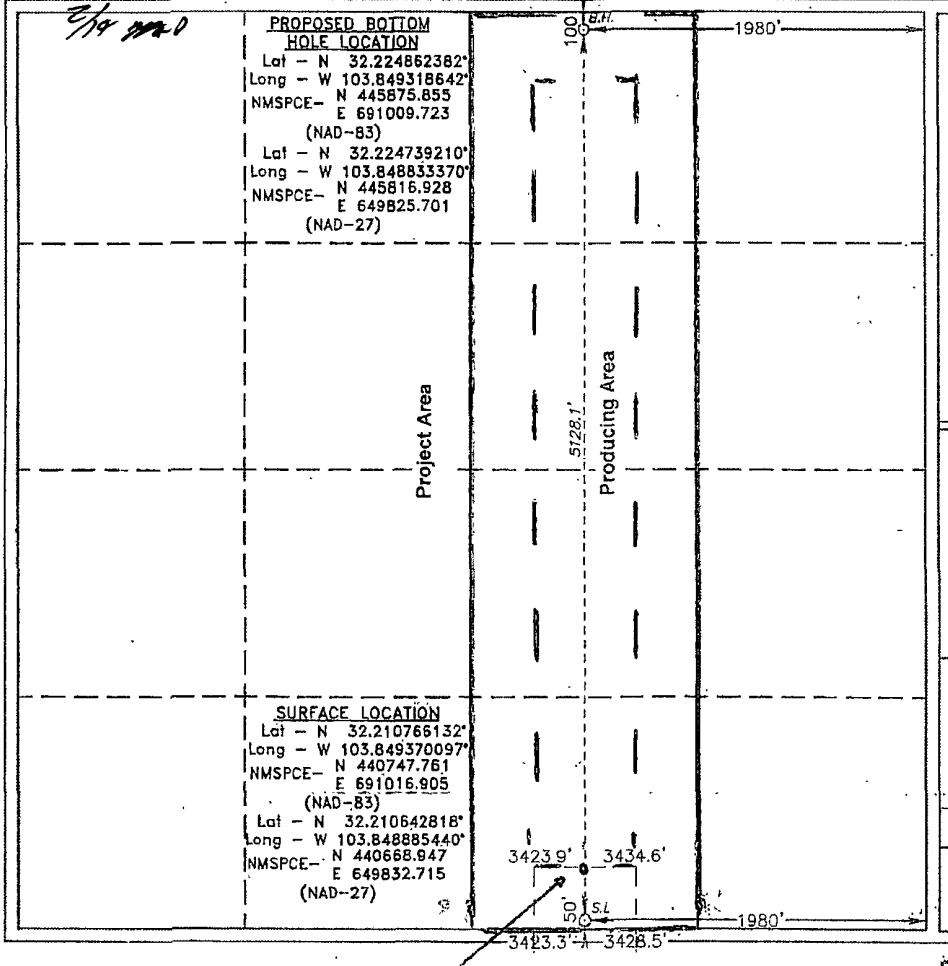
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	14	24 S	30 E		100	NORTH	1980	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
~~162.14~~			

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

160 per operator

2/19 mno



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 or has a right to drill this well at this 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.

Signature 03/12/2012 Date

Bryan Arrant
Printed Name

bryan.arrant@chk.com
Email Address

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.

MARCH 3, 2012
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

W.O. No. 26337

Certificate No. Gary L. Jones 7977

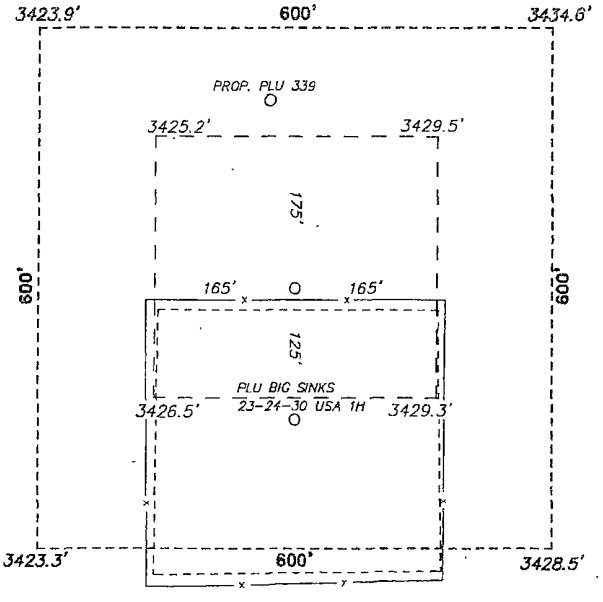
BASIN SURVEYS 26337

EXHIBIT A1

SECTION 14, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

CHESAPEAKE OPERATING CO.
PLU BIG SINKS 14 24 30 USA #1H
ELEV. - 3427'

Lat - N 32.210766132°
Long - W 103.849370097°
NMSPCE- N 440747.761
E 691016.905
(NAD-83)
Lat - N 32.210642818°
Long - W 103.848885440°
NMSPCE- N 440668.947
E 649832.715
(NAD-27)



200 0 200 400 FEET
SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF 128 AND TWIN WELLS, GO SOUTH WINDING SOUTHEAST FOR 7.7 MILES TO LEASE ROAD, ON LEASE ROAD GO 0.6 MILES WESTERLY WINDING SOUTH THENCE BACK WEST TO TO WELL PAD AND PROPOSED LOCATION.

CHESAPEAKE OPERATING CO.

REF. PLU BIG SINKS 14 24 30 USA #1H / WELL PAD TOPO

THE PLU BIG SINKS 14 24 30 USA. #1H LOCATED 50' FROM THE SOUTH LINE AND 1980' FROM THE EAST LINE OF SECTION 14, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

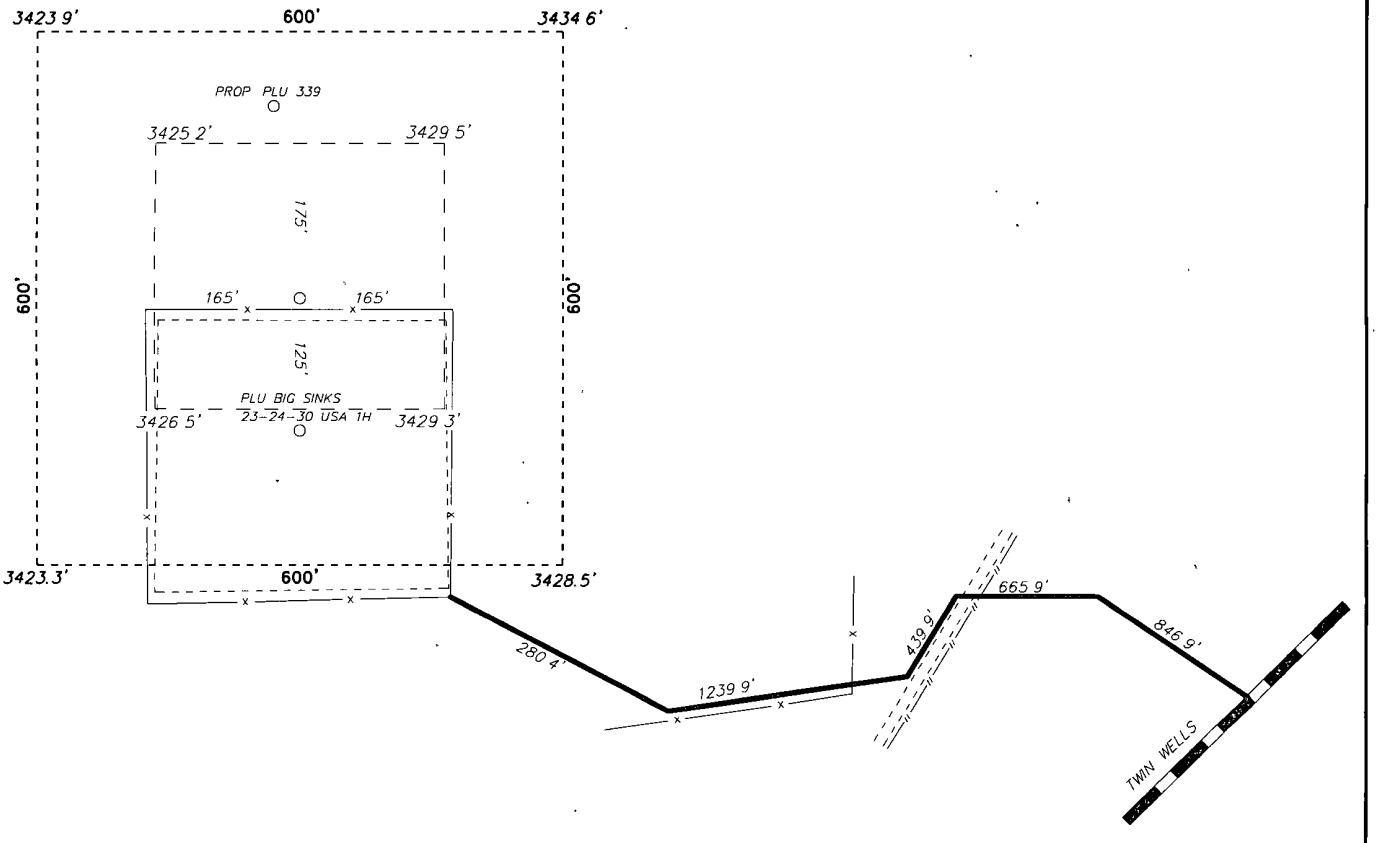
W.O. Number. 26337	Drawn By: J. SMALL		
Date: 03-09-2012	Disk: JMS 26337	Survey Date: 03-03-2012	Sheet 1 of 1 Sheets

EXHIBIT A2

SECTION 14, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**

CHESAPEAKE OPERATING CO.
PLU BIG SINKS 14 24 30 USA #1H
ELEV. - 3427'

Lat - N 32.210766132°
Long - W 103 849370097°
NMSPCE- N 440747 761
E 691016.905
(NAD-83)
Lat - N 32.210642818°
Long - W 103.848885440°
NMSPCE- N 440668 947
E 649832.715
(NAD-27)



200 0 200 400 FEET
SCALE: 1" = 200'

Directions to Location

FROM THE JUNCTION OF 128 AND TWIN WELLS, GO SOUTH WINDING SOUTHEAST FOR 7 7 MILES TO LEASE ROAD, ON LEASE ROAD GO 0 6 MILES WESTERLY WINDING SOUTH THENCE BACK WEST TO TO WELL PAD AND PROPOSED LOCATION.

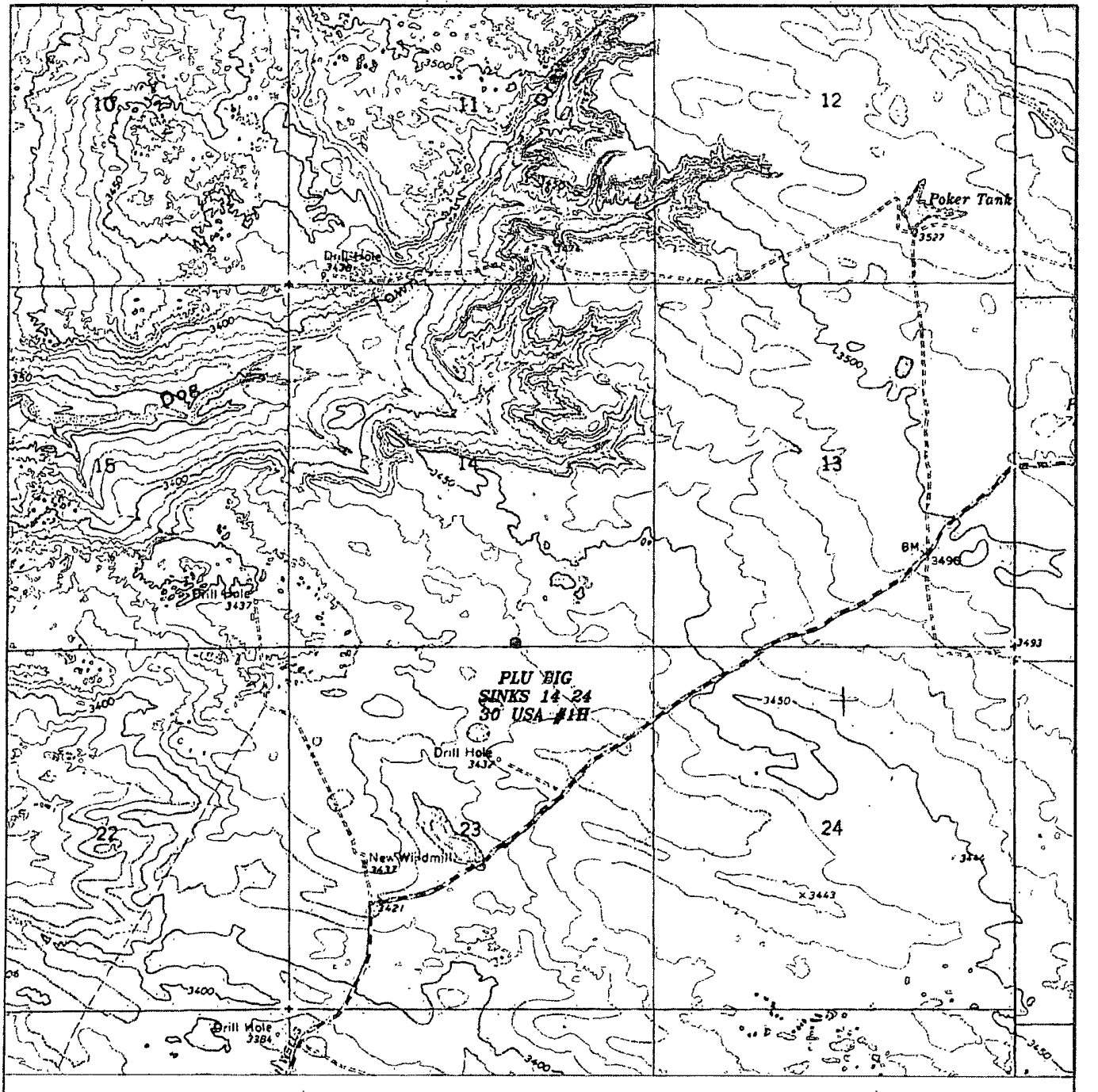
CHESAPEAKE OPERATING CO.

REF PLU BIG SINKS 14 24 30 USA #1H / WELL PAD TOPO

THE PLU BIG SINKS 14 24 30 USA #1H LOCATED 50' FROM THE SOUTH LINE AND 1980' FROM THE EAST LINE OF SECTION 14, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P O BOX 1786 - HOBBS, NEW MEXICO

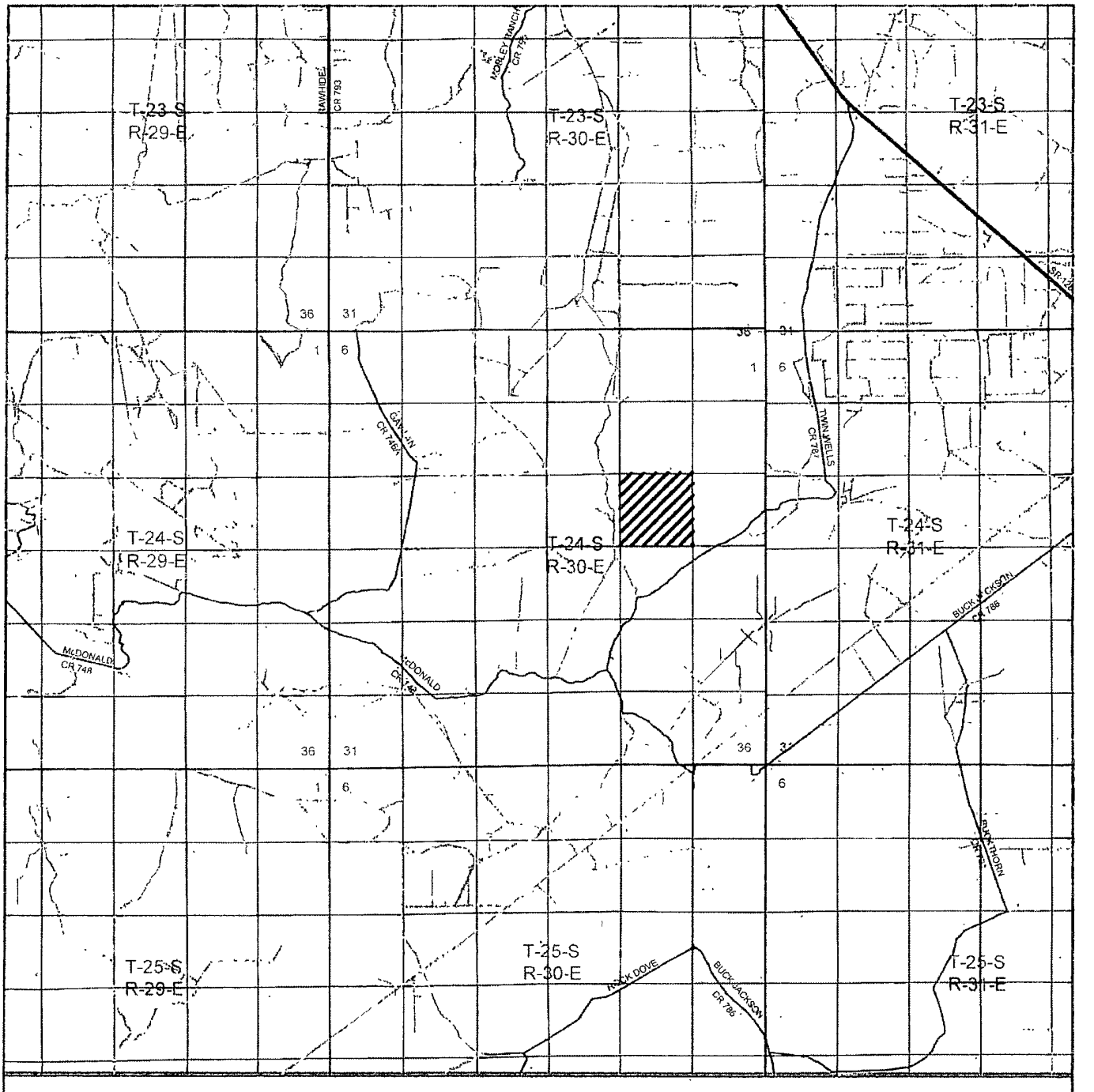
W O Number 26337	Drawn By J. SMALL		
Date 03-09-2012	Disk JMS 26337	Survey Date 03-03-2012	Sheet 1 of 1 Sheets



PLU BIG SINKS 14 24 30 USA #1H
Located 50' FSL and 1980' FEL
Section 14, 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: JMS 26337 Survey Date: 03-03-2012 Scale: 1" = 2000' Date: 03-09-2012	N	CHESAPEAKE OPERATING CO.

EXHIBIT A3



PLU BIG SINKS 14 24 30 USA #1H
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Section 14, Township 24 South, Range 30 East,
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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:	JMS 26337
Survey Date:	03-03-2012
Scale:	1" = 2 Miles
Date:	03-09-2012

N

CHESAPEAKE OPERATING CO.

EXHIBIT A4

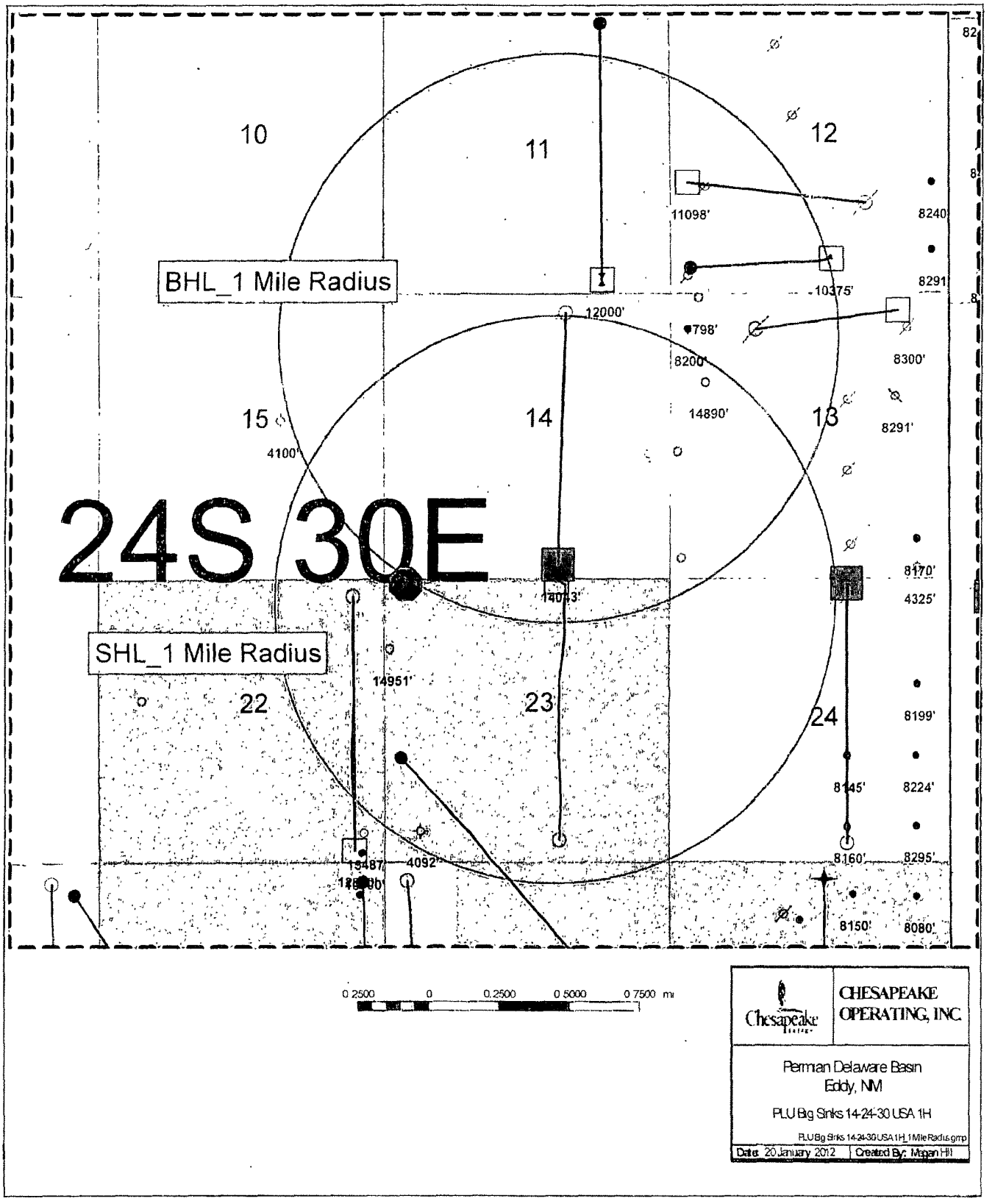
10
11
12
15
14
13
22
23
24
BHL_1 Mile Radius
SHL_1 Mile Radius
24S 30E
11098'
8240
10375'
8291
12000'
798'
8200'
8300'
14890'
8291'
4100'
8170'
4325'
14951'
8199'
8145'
8224'
4092'
8160'
8295'
8150'
8080'
0.2500 0 0.2500 0.5000 0.7500 mi
Chesapeake
CHESAPEAKE OPERATING, INC.
Permian Delaware Basin
Eddy, NM
PLU Big Snks 14-24-30 USA 1H
PLU Big Snks 14-24-30 USA 1H_1 Mile Radius.grp
Date: 20 January 2012
Created By: Megan Hill

EXHIBIT B

OHSORE OIL & GAS ODER 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	SUB-SEA	KBTVD	MD
Rustler	2938	517	
Top of Salt	2593	862	
Base of Salt	-369	3824	
Lamar	-575	4030	
Bell Canyon	-612	4067	
Cherry Canyon	-1511	4966	
Brushy Canyon	-2777	6232	
Bone Spring	-4455	7910	
Lateral TD	-5832	9287	14071

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
Water	Rustler	517
Oil/Gas	Brushy Canyon	6232
Oil/Gas	Bone Spring	7910

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

3. BOP EQUIPMENT

Will have a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. Stack will be tested as specified below Surface casing and Intermediate Casing shoes will be tested to 10.5 ppg equivalent after drilling out 10' of new formation.

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-2

A Equipment
1. The equipment to be tested includes all of the following that is installed on the well:
(a) Ram-type and annular preventers
(b) Choke manifolds and valves
(c) Kill lines and valves
(d) Upper and lower kelly cock valves, inside BOP's and safety valves

B. Frequency
1. All tests shall 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
(d) at least once every 30 days while drilling

C. Frequency
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 the rated working pressure
7. A record of all pressures will be made on a pressure-recording chart.

II. Accumulator Performance Test

A. Scope
1 The purpose of this test is to check the capabilities of the Bop control systems and to detect deficiencies in the hydraulic oil volume and recharge time

B Test Requency
1. The accumulator is to be tested each time the BO'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:

System Operating Pressure	Precharge Pressure
1500 psi	750 psi
2000 psi	1000 psi
3000 psi	1000 psi

3. Closing times for the annular preventer 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 Operating Pressure	Remaining Pressure After Test
1500 psi	950 psi
2000 psi	1200 psi
3000 psi	1200 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.

3 CASING PROGRAM

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	625'	17-1/2"	13-3/8"	48 #	H-40	STC	New
Shallow Intermediate	0'	3,925'	11"	8-5/8"	32 #	J-55	LTC	New
Production	0'	14,071'	7-7/8"	5-1/2"	20.0 #	L-80	LTC	New

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

c. Casing Safety Factors

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension
Surface	1 41	2.72	2.56
Shallow Intermediate	1.47	1.49	2.02
Production	1.21	2 09	1.8

Min SF is the smallest of a group of safety factors that include the following considerations.

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external. Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external. Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. CEMENTING PROGRAM

Slurry	Type	Top	Btm	Wt	Yld	%Exc	Sx
Surface				(ppg)	(sx/cu ft)	Open Hole	
Single Slurry	C + 4% Gel	0'	625'	13.5	1.73	200	728
Shallow Int							
Lead	TXI + 5% Salt	0'	3,425'	12	1.99	200	1217
Tail	50C/50Poz +5% Salt	3,425'	3,925'	14.2	1.37	200	290
Production							
1st Stage lead	35/65Poz H +8% Gel	4,850'	8,500'	12.4	2.11	75	525
1st Stage Tail	50/50Poz H +2% Gel	8,500'	14,071'	14.5	1.27	75	1339
2nd Stage Lead	35/65Poz C +6% Gel + 5% Salt	3,425'	4,600'	12.4	2.19	200	201
2nd Stage Tail	C	4,600'	4,850'	14.8	1.33	200	98

1. Final cement volumes will be determined by caliper
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. The production casing will be cemented in two stages with the DV tool place at: 4,850'
4. Production casing will have one centralizer on every other joint from TD to KOP (horizontal type) and from KOP to intermediate casing (bowspring type).

Pilot Hole Plugging Plan
No pilot Hole

6 MUD PROGRAM

From	To	Type	Weight	F. Vis	Filtrate
0'	625'	Spud Mud	8.4 - 8.7	32 - 34	NC - NC
625'	3,925'	Brine	9.5 - 10.1	28 - 29	NC - NC
3,925'	8,770'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC
8,770'	9,516'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC
9,516'	14,071'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC

A closed system will by 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

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

7. TESTING, LOGGING, AND CORING See COA

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 be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mud Log	2 man Mudlog	Int Cas to TD	Int Csg Drill out	Suttles
OH	Triple Combo	Curve to Int Csg	After Curve	TBD
OH	GR/Neutron	Int Cas to Surf	After Curve	TBD
LWD	MWD Gamma	Curve and Lateral	While Drilling	Ryan

c. Core samples are not planned.
d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. No abnormal pressures or temperatures are expected. Estimated BHP is: 4328 psi .
b Hydrogen sulfide gas is not anticipated.

Permian District

Poker Lake
PLU Big Sinks 14-24-30 USA 1H
Well #1

Wellbore #1

Plan: Plat

Standard Planning Report

02 February, 2012

EXHIBIT 4

Chesapeake Operating
Planning Report

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	Poker Lake	**MD Reference:**	WELL @ 0 0usft (Original Well Elev)
Site:	PLU Big Sinks 14-24-30 USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Project Poker Lake, Eddy County, NM

Map System:	US State Plane 1983	**System Datum:**	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site PLU Big Sinks 14-24-30 USA 1H

Site Position:		**Northing:**	440,848.00 usft	**Latitude:**	32.211042
From:	Map	**Easting:**	691,017.00 usft	**Longitude:**	-103.849369
Position Uncertainty:	0 0 usft	**Slot Radius:**	13 200 in	**Grid Convergence:**	0.26 °

Well Well #1

Well Position	**+N/-S**	0.0 usft	**Northing:**	440,848.00 usft	**Latitude:**	32 211042
	+E/-W	0 0 usft	**Easting:**	691,017.00 usft	**Longitude:**	-103 849369
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	0 0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/14/2011	7.64	60.14	48,569

Design Plat

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0 0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 0	0 0	0.0	359.92

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0 00	0.00	0.0	0.0	0 0	0 00	0.00	0.00	0 00	
8,769.8	0 00	0.00	8,769 8	0 0	0.0	0 00	0.00	0.00	0 00	
9,515.6	89.50	359 92	9,247.3	473 3	-0.7	12.00	12 00	0 00	359.92	
14,070.5	89.50	359 92	9,287 0	5,028 0	-7 0	0 00	0 00	0.00	0 00	BS 14-24-30 USA 1

Chesapeake Operating

Planning Report

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	Poker Lake	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	PLU Big Sinks 14-24-30 USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Planned Survey

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

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Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	Poker Lake	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	PLU Big Sinks 14-24-30 USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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	0 00	0 00	7,800 0	0 0	0.0	0 0	0 00	0 00	0.00
7,900.0	0 00	0.00	7,900 0	0 0	0.0	0 0	0.00	0.00	0 00
8,000 0	0 00	0 00	8,000 0	0 0	0 0	0 0	0 00	0.00	0 00
8,100.0	0 00	0.00	8,100 0	0.0	0 0	0 0	0 00	0.00	0 00
8,200.0	0.00	0 00	8,200.0	0.0	0 0	0 0	0 00	0 00	0 00
8,300.0	0 00	0.00	8,300 0	0 0	0 0	0.0	0 00	0.00	0.00
8,400.0	0 00	0 00	8,400 0	0 0	0 0	0 0	0 00	0.00	0.00
8,500.0	0.00	0 00	8,500.0	0.0	0 0	0 0	0 00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0 0	0.0	0 0	0.00	0 00	0.00
8,700.0	0.00	0 00	8,700 0	0 0	0 0	0 0	0.00	0.00	0.00
8,769.8	0 00	0 00	8,769 8	0 0	0 0	0 0	0 00	0.00	0 00
8,800.0	3.62	359 92	8,800 0	1 0	0 0	1 0	12.00	12.00	0.00
8,900 0	15.62	359.92	8,898 4	17 6	0 0	17 6	12 00	12 00	0.00
9,000 0	27.62	359.92	8,991 2	54.4	-0.1	54.4	12 00	12.00	0.00
9,100.0	39.62	359 92	9,074 3	109.7	-0 2	109 7	12 00	12.00	0 00
9,200.0	51 62	359 92	9,144 1	181 0	-0.3	181.0	12.00	12.00	0 00
9,300.0	63 62	359.92	9,197 6	265.3	-0.4	265.3	12.00	12 00	0 00
9,400.0	75.62	359.92	9,232 3	358.9	-0.5	358 9	12.00	12.00	0 00
9,500.0	87.62	359.92	9,246 9	457.7	-0 6	457.7	12.00	12 00	0 00
9,515.6	89 50	359 92	9,247 3	473 3	-0.7	473 3	12.00	12 00	0.00
9,600.0	89.50	359.92	9,248 0	557.7	-0.8	557.7	0.00	0.00	0 00
9,700.0	89.50	359.92	9,248.9	657.7	-0.9	657 7	0.00	0 00	0.00
9,800.0	89.50	359.92	9,249 7	757.6	-1.1	757 6	0 00	0 00	0.00
9,900.0	89.50	359.92	9,250 6	857 6	-1.2	857 6	0.00	0.00	0 00
10,000.0	89.50	359.92	9,251.5	957 6	-1.3	957.6	0.00	0.00	0.00
10,100 0	89.50	359.92	9,252 4	1,057 6	-1.5	1,057.6	0.00	0.00	0 00
10,200.0	89.50	359.92	9,253 2	1,157 6	-1.6	1,157 6	0 00	0.00	0.00
10,300 0	89 50	359.92	9,254.1	1,257.6	-1.8	1,257 6	0 00	0.00	0 00
10,400 0	89.50	359 92	9,255.0	1,357 6	-1.9	1,357.6	0.00	0.00	0 00
10,500 0	89.50	359.92	9,255.8	1,457 6	-2.0	1,457.6	0.00	0.00	0.00

Chesapeake Operating

Planning Report

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Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	Poker Lake	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	PLU Big Sinks 14-24-30 USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,600.0	89.50	359 92	9,256.7	1,557.6	-2.2	1,557.6	0.00	0.00	0 00
10,700.0	89 50	359 92	9,257 6	1,657.6	-2.3	1,657.6	0.00	0.00	0 00
10,800.0	89.50	359.92	9,258 5	1,757.6	-2.4	1,757.6	0.00	0 00	0.00
10,900 0	89.50	359 92	9,259 3	1,857 6	-2.6	1,857.6	0.00	0.00	0.00
11,000.0	89.50	359.92	9,260.2	1,957.6	-2 7	1,957 6	0 00	0 00	0.00
11,100.0	89.50	359.92	9,261.1	2,057 6	-2.9	2,057.6	0 00	0.00	0 00
11,200 0	89.50	359.92	9,262.0	2,157.6	-3 0	2,157 6	0.00	0 00	0.00
11,300.0	89.50	359.92	9,262 8	2,257 6	-3 1	2,257.6	0.00	0.00	0.00
11,400 0	89.50	359.92	9,263 7	2,357 6	-3.3	2,357 6	0 00	0 00	0 00
11,500.0	89.50	359.92	9,264.6	2,457.6	-3 4	2,457 6	0.00	0 00	0 00
11,600.0	89.50	359 92	9,265.4	2,557.6	-3 6	2,557.6	0.00	0.00	0 00
11,700 0	89 50	359 92	9,266.3	2,657.6	-3.7	2,657 6	0.00	0.00	0.00
11,800.0	89 50	359 92	9,267 2	2,757.6	-3 8	2,757 6	0.00	0 00	0 00
11,900 0	89.50	359 92	9,268.1	2,857 6	-4.0	2,857.6	0 00	0.00	0 00
12,000.0	89 50	359 92	9,268 9	2,957 6	-4.1	2,957.6	0.00	0.00	0 00
12,100.0	89 50	359 92	9,269.8	3,057 6	-4 3	3,057 6	0 00	0.00	0.00
12,200 0	89.50	359 92	9,270.7	3,157 6	-4 4	3,157.6	0 00	0.00	0.00
12,300.0	89 50	359 92	9,271.5	3,257 6	-4.5	3,257.6	0 00	0.00	0 00
12,400.0	89.50	359.92	9,272 4	3,357.5	-4.7	3,357.5	0 00	0 00	0 00
12,500.0	89.50	359 92	9,273.3	3,457.5	-4 8	3,457.5	0 00	0.00	0.00
12,600 0	89 50	359 92	9,274.2	3,557 5	-5 0	3,557 5	0.00	0.00	0.00
12,700.0	89.50	359.92	9,275.0	3,657.5	-5 1	3,657.5	0 00	0 00	0 00
12,800 0	89.50	359.92	9,275.9	3,757.5	-5 2	3,757 5	0 00	0.00	0.00
12,900 0	89.50	359 92	9,276 8	3,857 5	-5 4	3,857 5	0.00	0.00	0.00
13,000 0	89 50	359.92	9,277.7	3,957 5	-5 5	3,957 5	0.00	0.00	0 00
13,100 0	89.50	359.92	9,278.5	4,057.5	-5.6	4,057 5	0 00	0.00	0 00
13,200 0	89 50	359 92	9,279.4	4,157.5	-5.8	4,157.5	0.00	0 00	0.00
13,300.0	89.50	359 92	9,280 3	4,257 5	-5 9	4,257 5	0 00	0 00	0 00
13,400 0	89.50	359 92	9,281 1	4,357.5	-6 1	4,357 5	0.00	0 00	0 00
13,500 0	89.50	359.92	9,282.0	4,457.5	-6 2	4,457 5	0.00	0.00	0.00
13,600.0	89 50	359.92	9,282.9	4,557 5	-6 3	4,557 5	0 00	0.00	0 00
13,700 0	89 50	359 92	9,283 8	4,657 5	-6 5	4,657 5	0.00	0 00	0 00
13,800.0	89.50	359.92	9,284.6	4,757 5	-6 6	4,757.5	0.00	0 00	0 00
13,900 0	89 50	359.92	9,285.5	4,857.5	-6 8	4,857.5	0 00	0.00	0 00
14,000.0	89 50	359 92	9,286 4	4,957.5	-6 9	4,957.5	0.00	0.00	0 00
14,070.5	89 50	359.92	9,287.0	5,028.0	-7 0	5,028 0	0.00	0.00	0.00

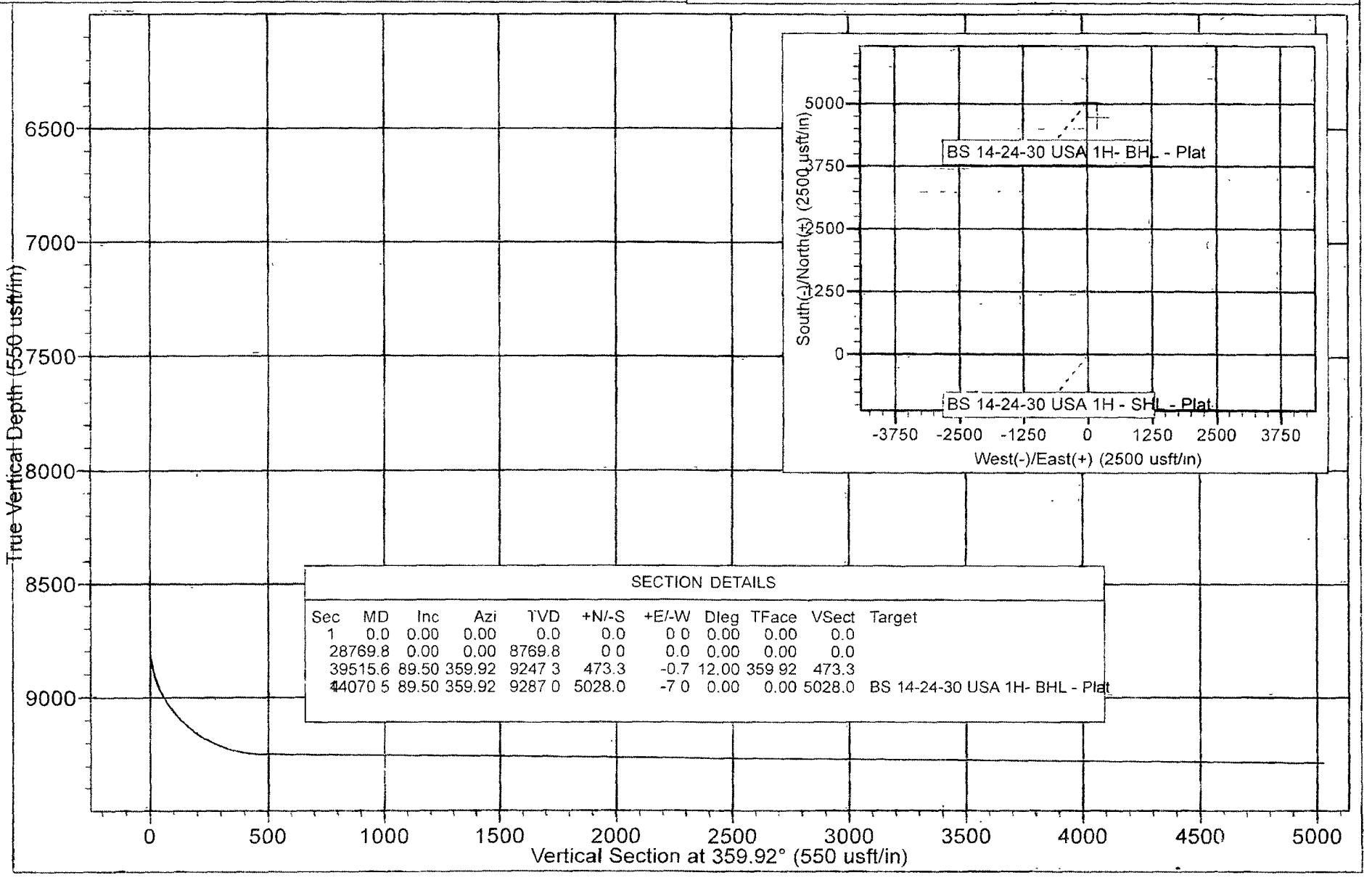
Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BS 14-24-30 USA 1H - plan misses target center by 194.8usft at 9139.6usft MD (9103.8 TVD, 136.2 N, -0 2 E) - Point	0 00	0.00	9,243 0	0 0	0.0	440,848.00	691,017.00	32.211042	-103.849369
BS 14-24-30 USA 1H - plan hits target center - Point	0 00	0.01	9,287.0	5,028 0	-7 0	445,876.00	691,010 00	32.224863	-103 849318

Project: Poker Lake
Site: PLU Big Sinks 14-24-30 USA 1H
Well: Well #1
Wellbore: Wellbore #1
Design: Plat

PROJECT DETAILS: Poker Lake

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0 0	0.00	0.00	0.0	
2	8769.8	0.00	0.00	8769.8	0 0	0.0	0.00	0.00	0.0	
3	9515.6	89.50	359.92	9247 3	473.3	-0.7	12.00	359 92	473.3	
4	14070 5	89.50	359.92	9287 0	5028.0	-7 0	0.00	0.00	5028.0	BS 14-24-30 USA 1H- BHL - Plat

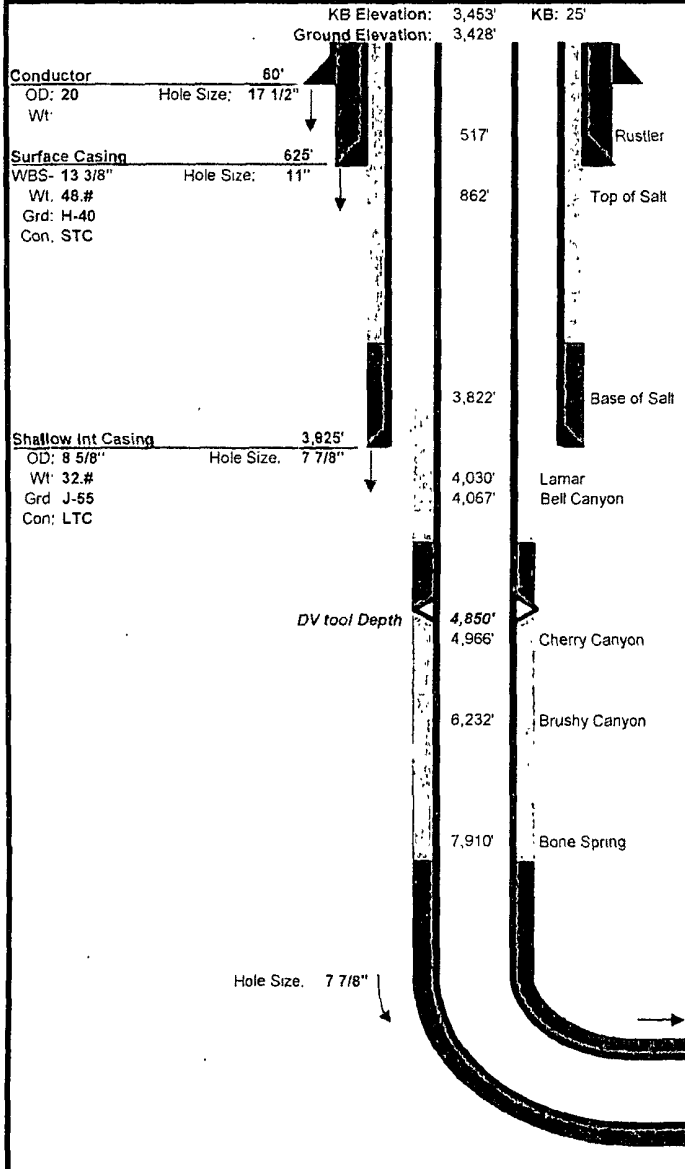
Chesapeake ENERGY

Drilling Engineer:	Chris Gray
Superintendent	Daniel Gipson
Geologist:	Chris Persellin

Well Name:	PLU Big Sinks 14-24-30 USA 1H
Target:	First Bone Spring Shale
County, State:	Eddy, NM
Surface Location:	150' FSL 1980' FEL, Section 14, Township 24S, Range 30 E
BH Location:	100' FNL 1980' FEL, Section 14, Township 24S, Range 30 E

SHL Latitude:	32 211041	SHL North:	440848
SHL Longitude.	-103 849369	SHL East:	691017
BHL Latitude:	32.22486238	BHL North	445876
BHL Longitude:	-103.8493186	BHL East:	691010
Coordinates:	NAD 83	Coordinates:	NMSPCE

Drilling Rig:	Patterson 62
Directional-Surface.	Ryan
Directional-Curve:	Ryan
Directional-Lateral:	Ryan
Drilling Mud:	Nova
Cement.	Schlumberger
Wellhead:	Sunbelt
Property Number	643075
AFE Number.	161571



Wellhead Equipment	
A Section	13-3/8" x 13-5/8" 5K SOW (Multibowl)
B Section	N/A (Multibowl)
C Section	11" 5K X 7-1/16" 10K w/10k gate valve
D Section	N/A
Required BOP Stack	13-5/8" 5K- Double, Annular, Rot Head w/orbit valve

Mud				
Depth	Type	Weight	F. Vis	FL
0' - 625'	Spud Mud	8.4 - 8.7	32 - 34	NC - NC
625' - 3,925'	Brine	9.5 - 10.1	28 - 29	NC - NC
3,925' - 8,770'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC
8,770' - 9,516'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC
9,516' - 14,071'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC

Cement							
Slurry	Top	Btm	Wt	Yld	%Exc	Bbl	Sx
Surface							
Single Slurry	0'	625'	13.5	1.73	200	224	728
Shallow Int							
Lead	0'	3,425'	12.0	1.99	200	431	1217
Tail	3,425'	3,925'	14.2	1.37	200	71	280
Production							
1st Lead	4,850'	8,500'	12.4	2.11	75	197	525
1st Tail	8,500'	14,071'	14.5	1.27	75	303	1339
2nd Lead	3,425'	4,600'	12.4	2.19	200	78	201
2nd Tail	4,600'	4,850'	14.8	1.33	200	23	98

LOGS	Type	Logs	Interval	Vendor
	Mud Log	2 man Mudlog	Int Cas to TD	Suttles
	OH	Triple Combo	Curve to Int Csg	TBD
	OH	GR/Neutron	Int Cas to Surf	TBD
	LWD	MWD Gamma	Curve and Lateral	Ryan

Directional Plan						
Target Line:	9243' @ 0' VS w/89.5 deg inclination					
Target Window:	20' above, 20' below, 50' left, 50' right					
	MD	INC	AZM	TVD	VS	DLS
KOP	8,770'	0.00	0.00	8,770'	0'	0.00
EOB	9,516'	89.50	359.92	9,247'	473'	12.00
TD	14,071'	89.50	359.92	9,287'	5,028'	0.00
Hardlines:	Lateral- 330' from parallel lease lines. Vertical- Actual Lease Lines					
Notes:	Please note SHL and BHL distance from lease lines					

Chesapeake Minimum BOPE Requirements

Wellname: PLU Big Sinks 19-24-31 USA 1H

Operation: Intermediate and Production Hole Sections

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

Permian District-Minimum Requirements

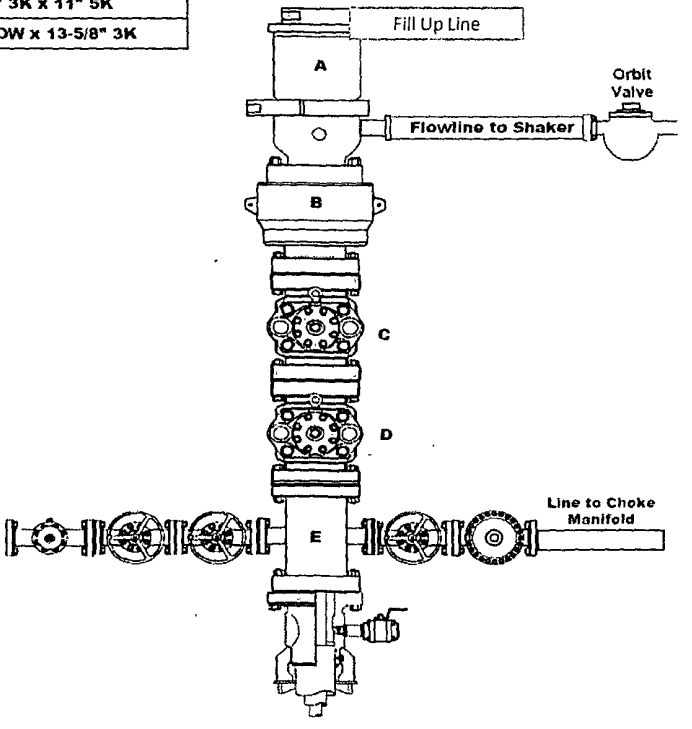
FIELD :. Avalon

OPERATION: Intermediate and Production Hole Sections

	SIZE	PRESSURE	DESCRIPTION
A		500	Rotating Head
B	13 5/8"	5,000	Annular
C	13 5/8"	5,000	Pipe Ram
D	13 5/8"	5,000	Blind Ram
E	13 5/8"	5,000	Mud Cross
F			
DSA		As required for each hole size	
C-Sec			
B-Sec		13-5/8" 3K x 11" 5K	
A-Sec		13-3/8" SOW x 13-5/8" 3K	

Test Notes.

- Pressure test to rating of BOP or wellhead every 21 days.
- Function test on trips
- H2S service trim required



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000	Check Valve
2"	5,000	Gate Valve
2"	5,000	Gate Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000	Gate Valve
3"	5,000	HCR Valve
3"	5,000	Steel Line Only

Chesapeake Minimum BOPE Requirements

Wellname: PLU Big Sinks 14-24-30 USA 1H

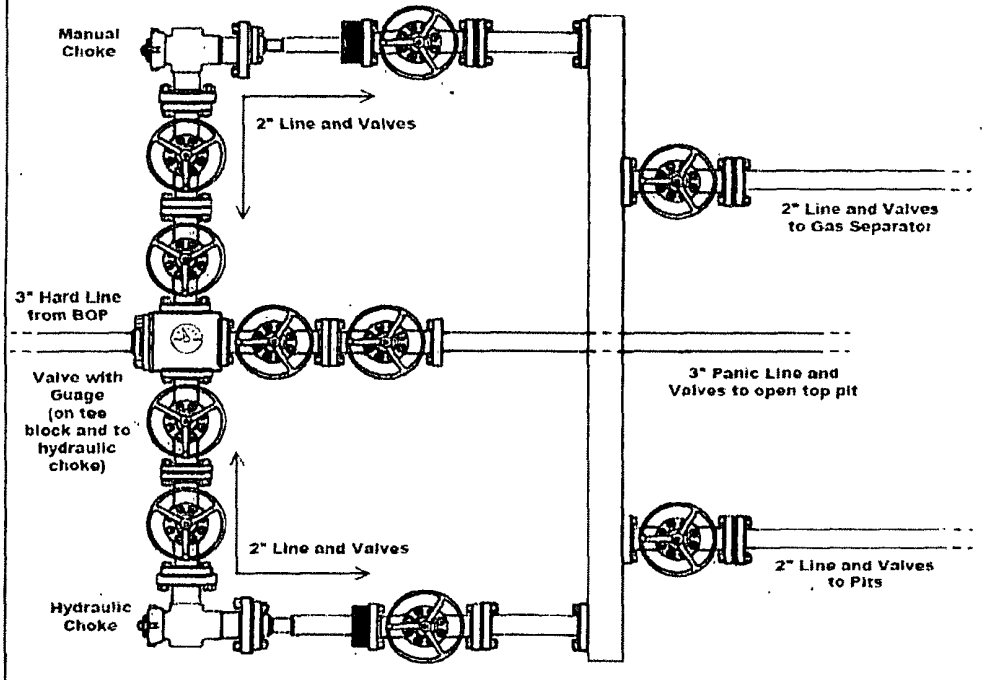
Operation: Intermediate and Production Hole Sections

CHOKE MANIFOLD SCHEMATIC

CHESAPEAKE OPERATING INC

Permian District

Avalon Minimum Requirements



Choke Manifold

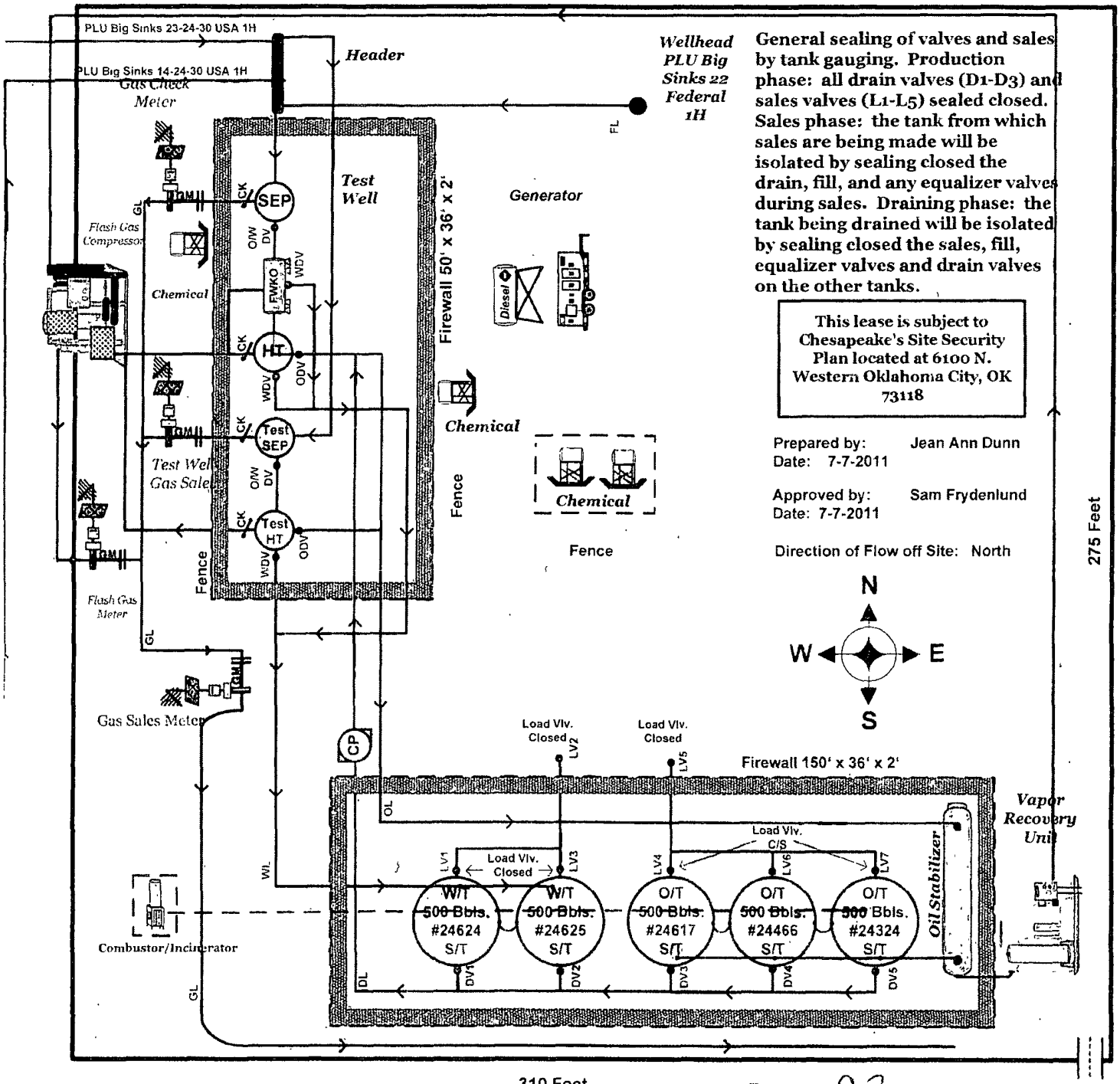
SIZE	PRESSURE	DESCRIPTION
2" or 3"	5,000	Gate Valves
3'x15'		Gas Separator
8"		Gas Separator vent line (anchored)

EXHIBIT F2

CHESAPEAKE OPERATING, INC.

PLU Big Sinks 22 Federal 1H
Property # 631298
NW NE Section 22 – T24S – R30E
175 FSL & 400 FEL
Lat.: 32.209617– Long.: -103.861064
Eddy County, New Mexico

All equipment shown here will be on location but subject to changes in positioning.



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

Prepared by: Jean Ann Dunn
Date: 7-7-2011

Approved by: Sam Frydenlund
Date: 7-7-2011

Direction of Flow off Site: North

Exhibit C2

Chesapeake Operating, Inc.'s Closed Loop System
PLU BIG SINKS 14 24 30 USA 1H
Unit O, Sec. 14, T-24-S R-30-E
Eddy Co., NM
API # TBD

Equipment & Design:

Chesapeake Operating, Inc. is to use a closed loop system with roll-off steel pits. Patterson-UTI Drilling Company has the following equipment for maintenance of their drilling mud:

(1) Derrick FLC-503 Dual Shale Shaker
(1) Derrick 3-Cone Desander
(1) Atmospheric Degasser
(5) Mud Agitators
(1) 500 bbl frac tank for fresh water
(1) 500 bbl frac tank for brine water

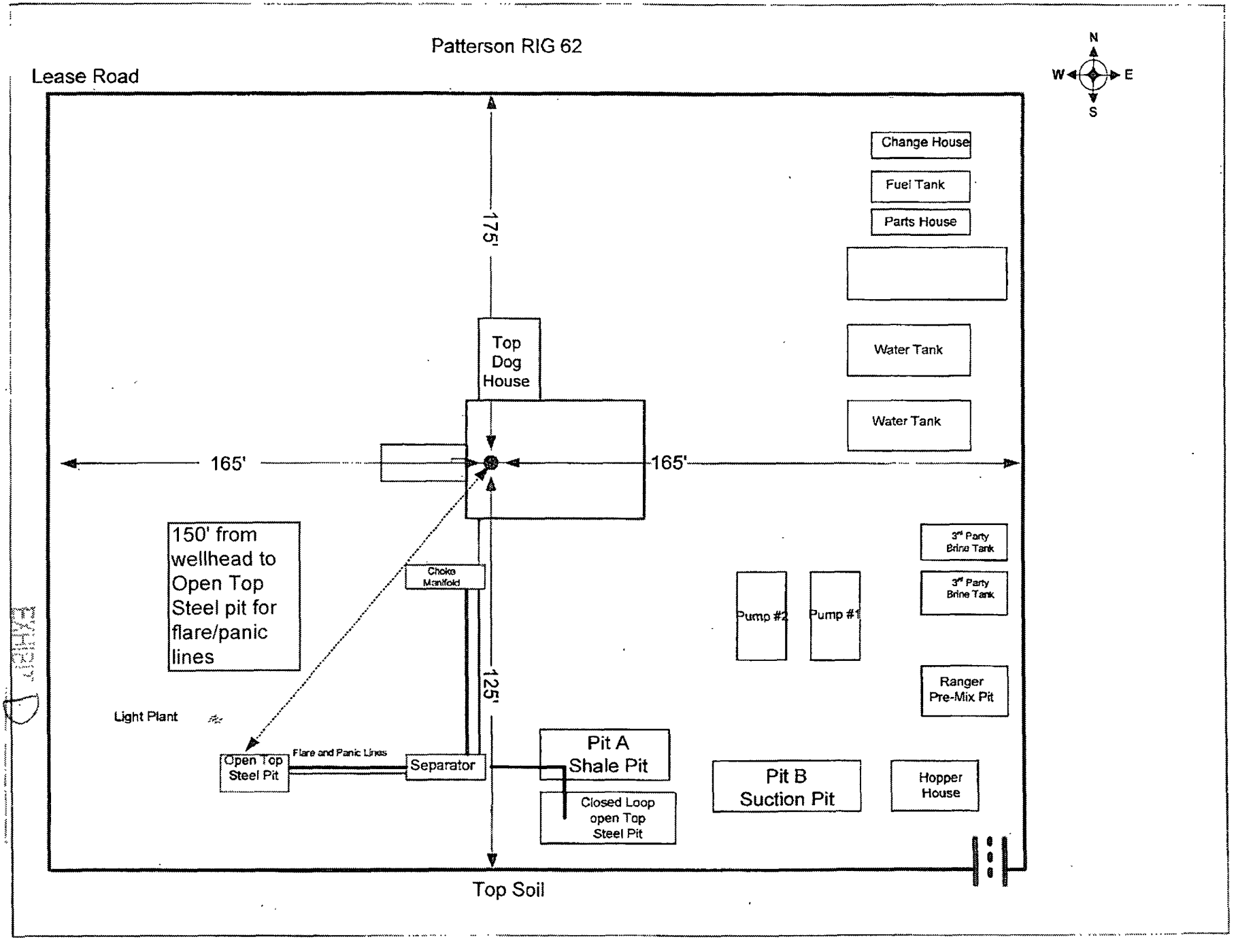
Operations & Maintenance:

During each tour, the rig's drilling crew will inspect and monitor the drilling fluids contained within the steel pits and visually monitor any spill which may occur. Should a spill, release, or leak occur; the NMOCD District II office in Artesia (575-748-1283) will be notified. Please note that notifications may be made earlier to the district office should a greater release occur per NMOCD's rules.

Closure:

During and after drilling operations, drilling fluids and cuttings will be hauled to Controlled Recovery, Inc. Permit # NM-01-0006.

The alternative disposal facility will be Sundance Disposal. Permit # NM-01-0003.


Patterson RIG 62
Lease Road
N
W
E
S
Change House
Fuel Tank
Parts House
175'
Top Dog House
Water Tank
Water Tank
165'
165'
150' from wellhead to Open Top Steel pit for flare/panic lines
Choke Manifold
3rd Party Brine Tank
3rd Party Brine Tank
Pump #2
Pump #1
125'
Ranger Pre-Mix Pit
Light Plant
Flare and Panic Lines
Open Top Steel Pit
Separator
Pit A Shale Pit
Pit B Suction Pit
Hopper House
Closed Loop open Top Steel Pit
Top Soil

ONSHORE ORDER NO. 1
Chesapeake Agent for BOPCO
PLU Big Sinks 14-24-30 USA 1H
Eddy County, NM

CONFIDENTIAL – TIGHT HOLE
OPERATOR CERTIFICATION

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 25th day of JANUARY, 2011

Name: Toby Reid - Field Superintendent

Address: 1616 W Bender Blvd Hobbs, NM 88240

Telephone: 575-725-8497

E-mail: toby.reid@chk.com

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chesapeake Operating Inc.
LEASE NO.:	LC-068905
WELL NAME & NO.:	PLU Big Sinks 14 24 30 USA # 1H
SURFACE HOLE FOOTAGE:	050' FSL & 1980' FEL
BOTTOM HOLE FOOTAGE	100' FNL & 1980' FEL
LOCATION:	Section 14, 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)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:
Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Surface disturbance that occurs from pipeline construction shall be applied for by sundry notice

Commercial Well Determination
A commercial well determination will need to be submitted, after production has been established for at least six months.

VI. CONSTRUCTION

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 in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

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

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call theCarlsbad 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 twenty (20) feet.

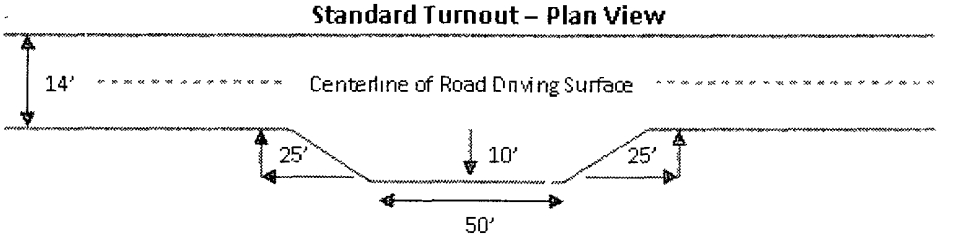
Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

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.

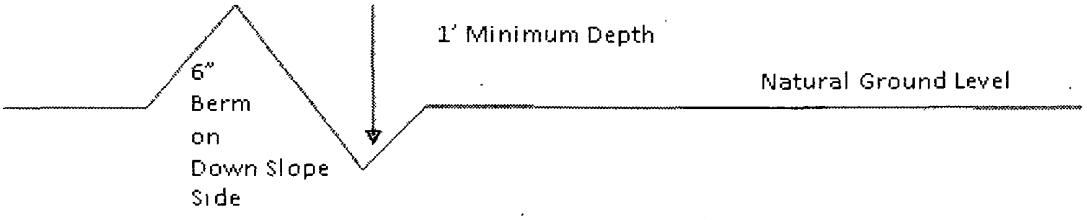
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

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.

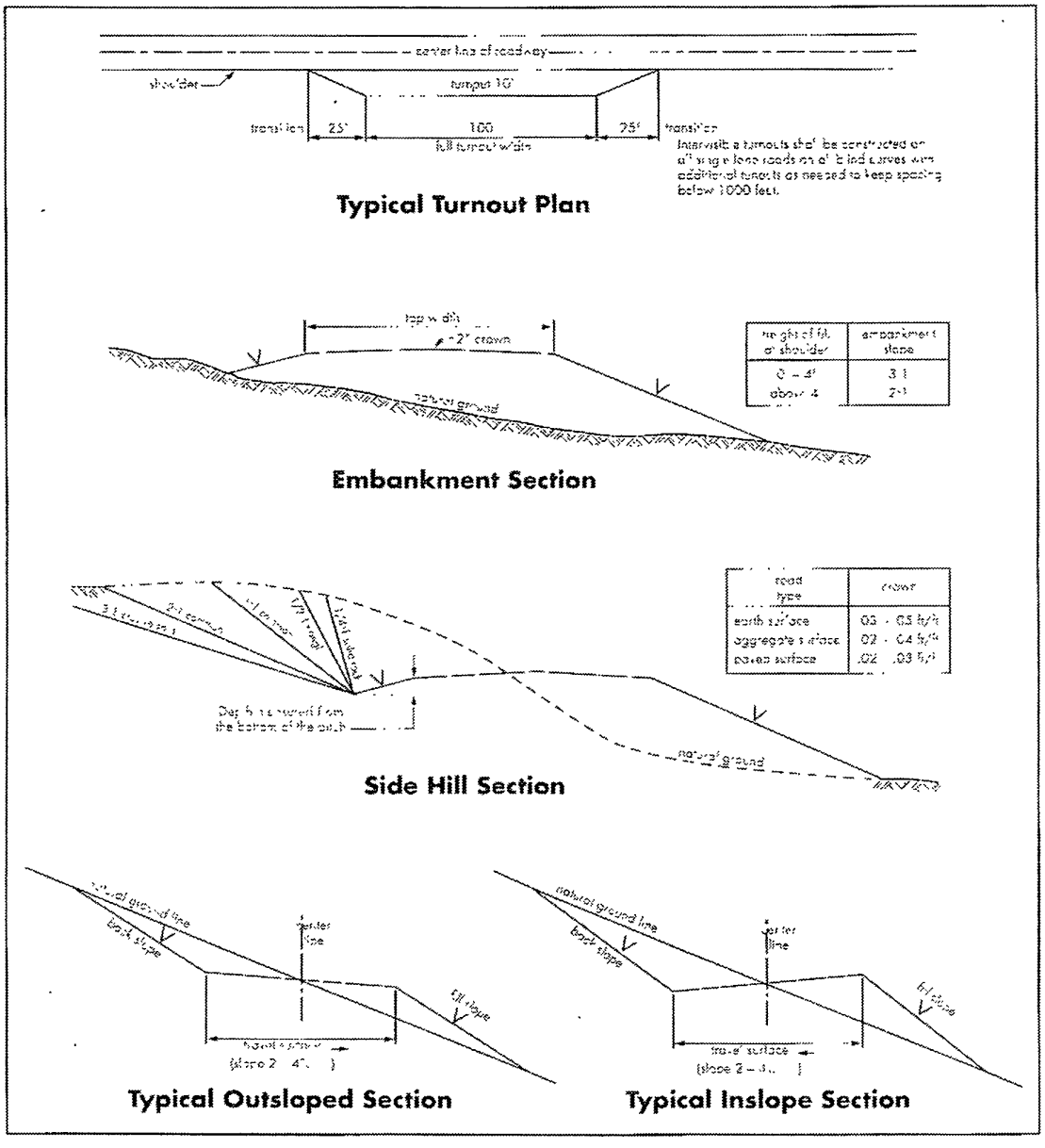
Fence Requirement

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 Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

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.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#).

Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. 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.

Secretary's Potash
Medium cave/karst
Possible water flows in the Castile, Salado, Delaware and Bone Springs Groups
Possible lost circulation in the Delaware and Bone Spring formations

1. The **13-3/8** inch surface casing shall be set at **approximately 625 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    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 **8-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

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

   a. First stage to DV tool, cement shall:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

   b. Second stage above DV tool, cement shall:

   ☒ Cement should tie-back at least **500** feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi. **Operator installing a 5M and testing as a 3M.**

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The results of the test shall be reported to the appropriate BLM office.

    d. 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.**

    e. 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.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW 051412

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

B. PIPELINES (not permitted)

C. ELECTRIC LINES (not applied for in APD)

IX. 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.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation 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 that is free of contaminants 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.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container

will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed