OCD-ARTESIA

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.: NMNM 090807

6. If Indian, Allotee or Tribe Name:

1a. Type of work: [X] DRILL [ ] REENTER

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

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No.: Osage 34 Federal Com 4H [38981]

2. Name of Operator: SM Energy Company 154903

9. API Well No.: 30-015-39786

3a. Address: 3300 N. A St. bldg. 7-200 Midland, TX 79705

3b. Phone No. *(include area code)*: (432)688-3125

10. Field and Pool, or Exploratory: Parkway Bone Spring [49622]

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

At surface: 530 FSL & 230 FWL (SL) Unit M

At proposed prod. zone: 660 FSL & 330 FEL (BHL) Unit P

UNORTHODOX LOCATION

11. Sec., T. R. M or Blk. and Survey or Area: Sec 34 - T19S - 29E

14. Distance in miles and direction from nearest town or post office*: 8 miles south of Loco Hills, 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	17. Spacing Unit dedicated to this well
230'	640	160

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
280'	10,000 - Pilot Hole 12518' MD 8139' TVD	NMB000805

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3355' GL	3 /01/2012	40 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
Title: Engineer	Malcolm Kintzing	10/06/2011

Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)*	Date DEC 12 2011
Title FIELD MANAGER	Office CARLSBAD FIELD 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)

Capitan Controlled Water Basin

RECEIVED
DEC 15 2011
NMOCD ARTESIA

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

SM Energy Company
3300 N. A Street, Suite 200
Midland, TX 79705
(432) 688-1700 (Office)
(432) 682-1701 (Fax)

I hereby certify that I or persons under my supervision have inspected the proposed drill site and the access road routes, that I am familiar with the conditions that currently exist, and that the statements made in this plan are to the best of my knowledge are true and correct, and that the work associated with the operations proposed herein will be performed by SM Energy Company, its contractors or its sub-contractors is in conformance with this plan and the terms and the conditions under which it is approved. This statement is subject to the provisions of U.S.C 1001 for filing of a false statement.

Signature: _____ Date: 8/26/11

Malcolm Kintzing
SM Energy Company
3300 N. A St. 7-200
Midland, TX 79705
Office: 432.688.3125
Cell: 432.212.2628

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on page 2.

5. Lease Serial No.
NMNM 090807

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
OSAGE 34 FEDERAL 4H

2 Name of Operator
SM ENERGY COMPANY

9. API Well No.

3a. Address
3300 N "A" ST BLDG 7-200 MIDLAND TX 79705

3b. Phone No. *(include area code)*
(432)688-1709

10. Field and Pool or Exploratory Area
PARKWAY BONE SPRING

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
AT SURFACE (M) 530' FSL & 230' FWL (SL); AT PROPORSED PROD ZONE (P) 660' FSL & 330' FEL (BHL); SEC 34-T19S-R29E

11. Country or Parish, State
EDDY COUNTY NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other CHANGE WELL NAME TO INCLUDE COM
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13 Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

THIS IS TO CHANGE WELL NAME TO OSAGE 34 FEDERAL COM 4H

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
VICKIE MARTINEZ

Title ENGINEER TECH II

Signature Vickie Martinez

Date 10/07/2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by
/s/ JD Whitlock Jr

Title FIELD MANAGER

Date DEC 12 2011

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

Office CARLSBAD FIELD OFFICE

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

(Instructions on page 2)

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 July 16, 2010

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-39786	49622	Parkway Bone Spring

Property Code	Property Name	Well Number
38981	OSAGE 34 FEDERAL COM	4H

OGRID No.	Operator Name	Elevation
154903	SM ENERGY	3355'

Surface Location

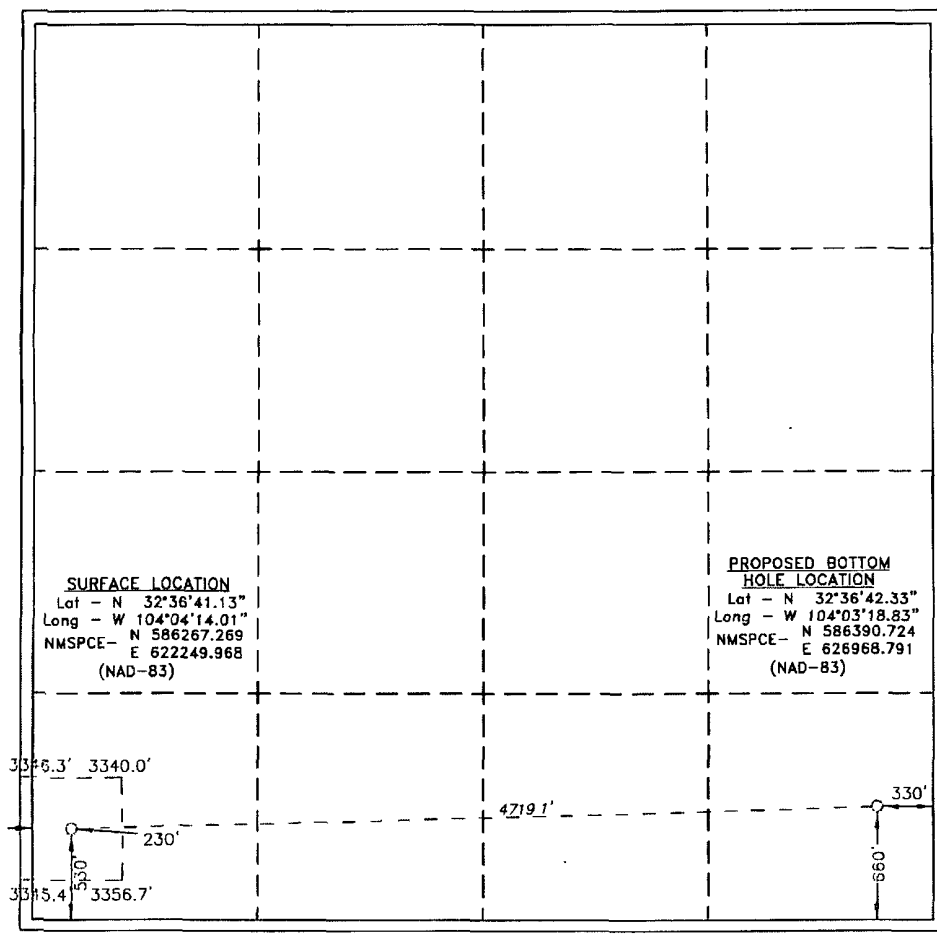
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	34	19 S	29 E		530	SOUTH	230	WEST	EDDY

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
P	34	19 S	29 E		660	SOUTH	330	EAST	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 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 8/29/11 Date

Malcolm Kintzing
Printed Name

mKintzing@SM-Energy.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.

Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES 7977 NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977

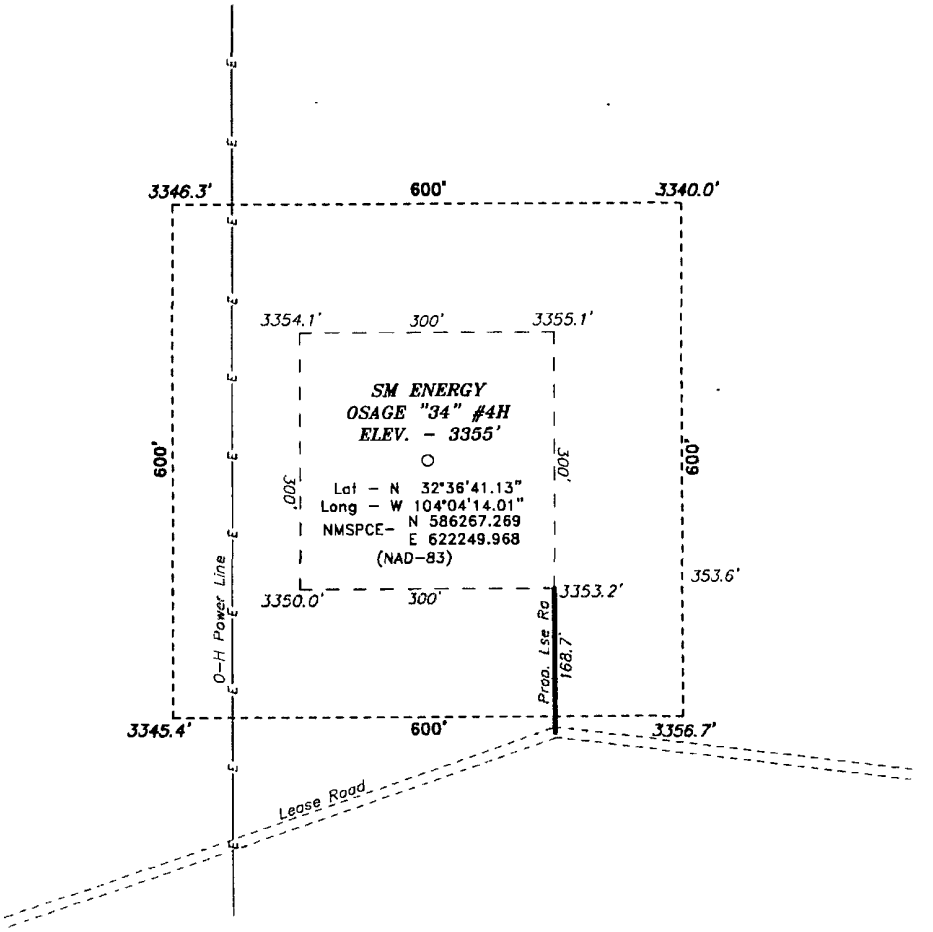
BASIN SURVEYS 24919

Exhibit A

Colt

SECTION 34, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.,

EDDY COUNTY, ***NEW MEXICO.***



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF CO. RD 235 AND STATE HWY 360; GO WESTERLY ON HWY 360 FOR APPROX. 6.0 MILES TO LEASE ROAD; THENCE SOUTHERLY ON LEASE ROAD FOR 2.9 MILES; THENCE WEST ON LEASE ROAD FOR APPROX 0.4 MILE TO PROPOSED LEASE ROAD.

SM ENERGY

REF: OSAGE "34" #4H / WELL PAD TOPO

THE OSAGE "34" #4H LOCATED 530' FROM THE SOUTH LINE AND 230' FROM THE WEST LINE OF SECTION 34, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 24919	Drawn By: K. GOAD		
Date: 07-12-2011	Disk: KJG - 24919WELL	Survey Date: 07-08-2011	Sheet 1 of 1 Sheets

Drilling program

SM Energy Company
Osage 34 Federal ~~Com~~ 4H
530 FSL & 230 FWL (SHL)
660 FSL & 330 FEL (BHL)
Sec 34-T19S-R29E
Eddy County, New Mexico

The estimated tops of geologic markers are as follows

Rustler	184'
Top of Salt	357'
Base of Salt	980'
*Yates	1279'
Capitan	2114'
*Cherry Canyon	3420'
*Brushy Canyon	4164'
*Bone Spring	5629'
*Wolfcamp	9335'

Estimated depths of anticipated fresh water, oil, or gas

Fresh water is expected at 75'and will be protected by setting surface casing at 210' and cementing to surface.

Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing as required.

Pressure and control equipment

A 2M diverter system will be installed after running 20" casing.
The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested be test by a third party as per BLM onshore oil and gas order No. 2 as a 3M system prior to drilling out the surface casing shoe. In addition to the rams and annular preventer, additional BOP accessories including a Kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi work pressure will be used.

Proposed casing and cementing program

A. Casing program: new

Hole Size	Casing Size	Casing #/foot	Grade	Setting Depth	Collar
26"	20"	94	J55	0-210'	BTC
17.5"	13 3/8" (new)	54.5	J55	0-1500'	STC
12 ¼"	9 5/8" (new)	36	J55	0-3300'	LTC
8 ¾"	7" (new)	26	P110	0-8356'	LTC
6 1/8"	4.5" (new)	11.6	P110	8,150'-12,518'	LTC

Minimum casing design factors: Collapse 1.125, Burst 1.0, Tensile strength 1.8.
*Subject to casing availability

SM Energy Company proposes drilling an 8-3/4" vertical pilot hole to 10,000 MD and plug back to KOP. The cement plug details are included below in the Cementing program.

A. Cementing Program:

I. **Surface conductor pipe:** 160 sx class C light cement 35:65 with salt and LCM additives. Yield of 2.0cuft/sx. 240 sx Class C cement with 2% CaCl2. Yield of 1.34 cuft/sx. Cmt circulated to surface w/100% excess.

II. **Surface casing:** 525 sx 35:65 Class C light cement with salt and LCM additives. Yeild at 2.0 cuft/sx. 780 sx class C cement containing 2% CaCl2. Yield 1.34 cuft/sx. Cmt circulated to surface w/100% excess.

III. **Intermediate Casing:** 550 sx 35:65 Class C light cement with salt and LCM additives. Yeild at 2.0 cuft/sx. 410 sx class C cement containing 2% CaCl2. Yield 1.34 cuft/sx. Cmt circulated to surface w/50% excess.

See COA

IV. **Deep intermediate Casing:** 451 sx Class H light cement 35:65 with fluid loss, LCM, & salt additives. Yield at 2.12 cuft/sx. 205 sx class H cement containing fluid loss additives. Yield at 1.18 cuft/sx. Cmt circulated to 2000' w/25% excess.

V. **Production Casing:** plans are to use a sliding sleeve, frac port and packer system with 4 ½" liner. No cement required.

VI. **Pilot Hole Plugs:**

i. **Plug 1:** 300 sx Class H Cement, 15.6, 1.18 cuft/sx
   1. **Top of plug** 9,000 ft
   2. **Bottom of plug** 10,000 ft

See COA

ii. **Plug 2:** 350 sx Class H Cement, 18 ppg, 0.90 cuft/sx
   1. ***Top of plug*** 7,500 ft
   2. **Bottom of plug** 8,000 ft

*SM Energy Company reserves the right to change cement designs as hole conditions may warrant.

Mud Program

Interval	mud type	weight	Viscosity	Fluid loss
0-210'	Fresh water spud mud	8.6-9.4	32-34	No Control
210'-1500'	Brine	10	28-30	No Control
1500'-3300'	Fresh water	8.4	28-30	No Control
3300'-8356'	Cut bine	8.4-8.6	28-30	No Control
8356'-TD MD	Cut brine w/polymer	8.4-8.6	32-40	No Control

Evaluation Program

I. Mud log samples will be taken after drilling out the surface casing.

II. Open hole logs will be run from pilot hole TD to intermediate casing. Open hole logs include a Dual laterolog, compensated neutron-density, Gamma Ray and Caliper.

III. Gamma Ray will be used to drill lateral hole.

IV. No Drill stem tests or coring is planned at this time

V. Additional testing may be initiated based on log evaluation and geological sample shows.

Downhole Conditions

Zones of abnormal pressure:	None anticipated
Zones of lost circulation:	Anticipated in surface and intermediate holes
Maximum bottom hole temperature:	130 degrees F
Maximum bottom hole pressure:	.433 psi/ft gradient

Anticipated Starting Date

SM Energy Company intends to drill this well early 2012 with approximately 40 days involved in drilling operations and an additional 10 days involved in completion operations on the project.

Evaluation Program

Samples:	10' Samples from surface casing to TD
Logging:	Neutron/GR LWD from 7000' to TD

Downhole Conditions

Zones of abnormal pressure:	None anticipated
Zones of lost circulation:	Anticipated in surface and intermediate holes
Maximum bottom hole temperature:	130 degrees F
Maximum bottom hole pressure:	.433 psi/ft gradient

Anticipated Starting Date

SM Energy Company intends to drill this well early 2012 with approximately 40 days involved in drilling operations and an additional 10 days involved in completion operations on the project.

SM Energy

Eddy County (NAD83)
Osage "34" #4H
Osage "34" #4H

Lateral #1

Plan: Plan #1

Standard Planning Report

22 August, 2011

SM ENERGY

Planning Report

Database:	EDM 5000 1 Black Viper	**Local Co-ordinate Reference:**	Site Osage "34" #4H
Company:	SM Energy	**TVD Reference:**	KB @ 3373 00usft (Nabors 474)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3373.00usft (Nabors 474)
Site:	Osage "34" #4H	**North Reference:**	Grid
Well:	Osage "34" #4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Plan #1		

Project	Eddy County (NAD83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Osage "34" #4H

Site Position:		**Northing:**	586,267 27 usft	**Latitude:**	32° 36' 41.131 N
From:	Map	**Easting:**	622,249.97 usft	**Longitude:**	104° 4' 14.005 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.14 °

Well Osage "34" #4H

Well Position	**+N/-S**	0.00 usft	**Northing:**	586,267 27 usft	**Latitude:**	32° 36' 41 131 N
	+E/-W	0 00 usft	**Easting:**	622,249 97 usft	**Longitude:**	104° 4' 14.005 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	3,378 00 usft	**Ground Level:**	3,355 00 usft

Wellbore Lateral #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	8/22/2011	7.82	60 45	48,776

Design Plan #1

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	7,400.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0 00	0 00	88 50

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
7,400.00	0 00	0.00	7,400 00	0.00	0 00	0 00	0 00	0 00	0 00	
7,469 24	0.00	0.00	7,469.24	0.00	0 00	0.00	0.00	0 00	0 00	
8,355.89	88.67	88.50	8,042.04	14 64	559 42	10 00	10.00	0.00	88.50	
12,517 85	88 67	88 50	8,139.00	123.46	4,718 82	0.00	0 00	0.00	0 00	PBHL#1[O"34"#4H]

Database:	EDM 5000.1 Black Viper	**Local Co-ordinate Reference:**	Site Osage "34" #4H
Company:	SM Energy	**TVD Reference:**	KB @ 3373.00usft (Nabors 474)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3373.00usft (Nabors 474)
Site:	Osage "34" #4H	**North Reference:**	Grid
Well:	Osage "34" #4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Plan #1		

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)
7,400 00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0 00
7,409.99	0.00	0.00	7,409.99	0.00	0.00	0.00	0.00	0.00	0 00
7,439.99	0.00	0 00	7,439.99	0.00	0 00	0 00	0.00	0 00	0.00
7,469.24	0.00	0.00	7,469 24	0 00	0 00	0.00	0.00	0 00	0 00
KOP Build 10.00°/100' :: TFO 88.50									
7,469 99	0.07	88.50	7,469.99	0.00	0.00	0 00	10 03	10 03	0.00
7,499.99	3.07	88 50	7,499.97	0 02	0 82	0 82	10 00	10.00	0 00
7,529 99	6.07	88 50	7,529.87	0 08	3 22	3 22	10 00	10 00	0.00
7,559.99	9.07	88 50	7,559 61	0.19	7 17	7.17	10 00	10 00	0 00
7,589.98	12 07	88.50	7,589.09	0.33	12.67	12.68	10 00	10.00	0 00
7,619 98	15.07	88 50	7,618.25	0 52	19.71	19.72	10 00	10.00	0.00
7,649.98	18 07	88.50	7,647.00	0.74	28.26	28.27	10.00	10 00	0 00
7,679.98	21 07	88.50	7,675.26	1 00	38 31	38.32	10 00	10.00	0.00
7,709.98	24 07	88 50	7,702.96	1 30	49.82	49 84	10.00	10 00	0.00
7,739 98	27 07	88.50	7,730 02	1.64	62.77	62 79	10.00	10 00	0 00
7.769 98	30 07	88 50	7,756.36	2.02	77 11	77 14	10.00	10 00	0 00
7,799.98	33 07	88.50	7,781.92	2 43	92 81	92.84	10.00	10.00	0 00
7,829.98	36.07	88 50	7,806 62	2.87	109 83	109.86	10.00	10.00	0 00
7,859 98	39 07	88 50	7,830.39	3 35	128 11	128 16	10.00	10.00	0 00
7,862.07	39.28	88.50	7,832.01	3.39	129.43	129.47	10.00	10 00	0 00
2nd Bone Spring									
7,889.98	42.07	88 50	7,853.18	3.86	147.62	147 67	10.00	10.00	0.00
7,919.98	45.07	88 50	7,874 91	4 40	168.29	168 34	10 00	10 00	0.00
7,949 98	48 07	88.50	7,895.53	4 97	190.06	190 13	10 00	10.00	0 00
7,979 98	51.07	88.50	7,914.98	5 57	212 89	212.96	10 00	10.00	0.00
8,009.98	54 07	88.50	7,933 21	6 19	236.70	236.79	10.00	10 00	0.00
8,039.98	57.07	88.50	7,950 17	6 84	261 44	261 53	10.00	10 00	0.00
8,069.98	60 07	88 50	7,965 81	7.51	287 03	287 13	10 00	10.00	0 00
8,099.98	63.07	88.50	7,980.09	8 20	313 40	313.51	10 00	10 00	0 00
8,129.98	66.07	88.50	7,992 96	8 91	340 48	340.60	10.00	10 00	0.00
8,159.98	69.07	88.50	8,004.41	9 63	368 20	368.32	10.00	10.00	0.00
8,189.98	72.07	88.50	8,014 38	10 37	396 48	396 61	10 00	10 00	0.00
8,219 98	75 07	88 50	8,022.87	11 13	425 24	425 39	10 00	10.00	0.00
8,249.98	78 07	88.50	8,029 83	11.89	454.41	454 56	10 00	10.00	0.00
8,279.98	81.07	88 50	8,035.26	12 66	483.90	484 06	10.00	10 00	0 00
8,309 98	84.07	88.50	8,039.13	13 44	513 63	513.81	10.00	10 00	0.00
8,339 98	87 07	88 50	8,041 45	14.22	543.53	543 72	10.00	10 00	0.00
8,355 89	88.67	88.50	8,042 04	14 64	559.42	559.61	10 00	10.00	0 00
EOC Hold 88.67° INC :: 88.50° AZI									
8,369 98	88.67	88 50	8,042 37	15 00	573.50	573.70	0.00	0.00	0.00
8,399 98	88.67	88 50	8,043.07	15.79	603 49	603.69	0 00	0 00	0.00
8,429 98	88 67	88.50	8,043 77	16 57	633.47	633.68	0 00	0 00	0.00
8,459 98	88 67	88.50	8,044.47	17.36	663 45	663.68	0.00	0 00	0.00
8,489.98	88 67	88 50	8,045.16	18.14	693.43	693.67	0 00	0 00	0 00
8,519.98	88 67	88 50	8,045 86	18 93	723.41	723 66	0 00	0 00	0.00
8,549.98	88 67	88.50	8,046 56	19.71	753.39	753 65	0.00	0 00	0.00
8,579 98	88 67	88.50	8,047 26	20.49	783 37	783.64	0 00	0 00	0 00
8,609 98	88 67	88.50	8,047.96	21.28	813 36	813 63	0.00	0 00	0 00
8,639.98	88 67	88 50	8,048.66	22 06	843 34	843.63	0 00	0.00	0 00
8,669 98	88.67	88 50	8,049 36	22 85	873 32	873 62	0 00	0 00	0.00
8,699 98	88 67	88 50	8,050 06	23 63	903.30	903 61	0 00	0.00	0 00
8,729 98	88.67	88 50	8,050.76	24 42	933 28	933.60	0.00	0 00	0 00
8,759.98	88 67	88 50	8,051 45	25.20	963 26	963.59	0 00	0.00	0.00

SM ENERGY

Planning Report

Database:	EDM 5000 1 Black Viper	**Local Co-ordinate Reference:**	Site Osage "34" #4H
Company:	SM Energy	**TVD Reference:**	KB @ 3373.00usft (Nabors 474)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3373 00usft (Nabors 474)
Site:	Osage "34" #4H	**North Reference:**	Grid
Well:	Osage "34" #4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Plan #1		

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)
8,789 98	88 67	88.50	8,052.15	25 99	993 25	993 59	0.00	0.00	0.00
8,819.98	88 67	88 50	8,052.85	26 77	1,023 23	1,023.58	0 00	0.00	0 00
8,849.98	88.67	88.50	8,053.55	27.55	1,053 21	1,053 57	0.00	0 00	0 00
8,879 98	88 67	88 50	8,054 25	28 34	1,083 19	1,083.56	0 00	0 00	0 00
8,909 98	88.67	88 50	8,054.95	29 12	1,113 17	1,113 55	0.00	0 00	0 00
8,939 98	88 67	88 50	8,055.65	29 91	1,143 15	1,143.54	0.00	0 00	0.00
8,969 98	88 67	88 50	8,056.35	30 69	1,173.13	1,173.54	0.00	0.00	0 00
8,999 98	88 67	88 50	8,057 05	31.48	1,203.12	1,203 53	0.00	0 00	0 00
9,029 98	88.67	88 50	8,057.74	32 26	1,233.10	1,233 52	0 00	0 00	0.00
9,059 98	88.67	88 50	8,058 44	33.04	1,263 08	1,263 51	0 00	0 00	0 00
9,089 98	88 67	88 50	8,059.14	33 83	1,293.06	1,293 50	0 00	0 00	0.00
9,119.98	88.67	88 50	8,059.84	34 61	1,323 04	1,323 50	0.00	0.00	0 00
9,149 98	88 67	88.50	8,060.54	35 40	1,353 02	1,353 49	0 00	0 00	0.00
9,179.98	88 67	88 50	8,061 24	36.18	1,383 01	1,383 48	0 00	0.00	0.00
9,209 98	88 67	88.50	8,061.94	36.97	1,412 99	1,413.47	0.00	0 00	0.00
9,239 98	88 67	88.50	8,062.64	37 75	1,442 97	1,443 46	0.00	0.00	0.00
9,269 98	88 67	88.50	8,063.34	38.54	1,472 95	1,473 45	0 00	0 00	0 00
9,299 98	88.67	88 50	8,064 03	39.32	1,502.93	1,503.45	0 00	0.00	0.00
9,329 98	88 67	88 50	8,064 73	40 10	1,532.91	1,533 44	0.00	0.00	0 00
9,359.98	88.67	88.50	8,065 43	40 89	1,562.89	1,563.43	0 00	0.00	0 00
9,389 98	88 67	88 50	8,066 13	41 67	1,592.88	1,593.42	0.00	0 00	0 00
9,419 98	88 67	88 50	8,066 83	42 46	1,622 86	1,623.41	0.00	0 00	0 00
9,449 98	88.67	88.50	8,067 53	43 24	1,652.84	1,653.41	0.00	0 00	0 00
9,479 98	88.67	88 50	8,068 23	44.03	1,682 82	1,683 40	0.00	0 00	0 00
9,509.98	88 67	88.50	8,068 93	44.81	1,712 80	1,713.39	0.00	0 00	0.00
9,539 98	88.67	88 50	8,069.63	45 60	1,742 78	1,743.38	0.00	0 00	0 00
9,569.98	88.67	88.50	8,070 32	46 38	1,772 77	1,773 37	0.00	0 00	0.00
9,599.98	88 67	88.50	8,071 02	47 16	1,802 75	1,803 36	0.00	0 00	0 00
9,629 98	88 67	88 50	8,071.72	47.95	1,832 73	1,833.36	0.00	0 00	0 00
9,659.98	88.67	88 50	8,072 42	48.73	1,862.71	1,863.35	0 00	0 00	0.00
9,689.98	88 67	88.50	8,073.12	49 52	1,892.69	1,893 34	0.00	0.00	0.00
9,719 98	88.67	88 50	8,073.82	50.30	1,922 67	1,923.33	0 00	0.00	0.00
9,749 98	88 67	88.50	8,074.52	51.09	1,952 65	1,953.32	0.00	0 00	0 00
9,779 98	88 67	88 50	8,075 22	51 87	1,982 64	1,983 31	0.00	0 00	0.00
9,809 98	88 67	88 50	8,075.92	52.65	2,012.62	2,013.31	0.00	0.00	0 00
9,839 98	88 67	88 50	8,076.61	53.44	2,042.60	2,043 30	0 00	0.00	0 00
9,869 98	88.67	88 50	8,077.31	54.22	2,072.58	2,073.29	0.00	0.00	0 00
9,899 98	88 67	88 50	8,078.01	55.01	2,102 56	2,103.28	0.00	0 00	0.00
9,929 98	88.67	88 50	8,078 71	55 79	2,132.54	2,133.27	0.00	0 00	0 00
9,959.98	88.67	88 50	8,079.41	56.58	2,162.53	2,163 27	0 00	0.00	0.00
9,989 98	88 67	88 50	8,080.11	57 36	2,192.51	2,193.26	0.00	0 00	0 00
10,019.98	88.67	88 50	8,080.81	58.15	2,222 49	2,223.25	0.00	0 00	0.00
10,049.98	88.67	88 50	8,081 51	58 93	2,252.47	2,253 24	0.00	0 00	0.00
10,079 98	88.67	88 50	8,082.21	59.71	2,282.45	2,283 23	0 00	0 00	0 00
10,109 98	88.67	88 50	8,082.90	60 50	2,312 43	2,313.22	0 00	0 00	0 00
10,139 98	88.67	88.50	8,083.60	61 28	2,342 41	2,343.22	0 00	0 00	0 00
10,169.98	88 67	88 50	8,084.30	62 07	2,372 40	2,373 21	0.00	0.00	0.00
10,199 98	88 67	88 50	8,085.00	62 85	2,402 38	2,403.20	0 00	0.00	0.00
10,229 98	88.67	88 50	8,085.70	63 64	2,432 36	2,433.19	0 00	0.00	0 00
10,259 98	88 67	88 50	8,086.40	64.42	2,462 34	2,463 18	0 00	0 00	0 00
10,289 98	88 67	88 50	8,087.10	65.20	2,492 32	2,493.18	0.00	0.00	0.00
10,319 98	88 67	88 50	8,087.80	65 99	2,522 30	2,523 17	0 00	0.00	0 00
10,349 98	88 67	88.50	8,088 50	66.77	2,552 29	2,553 16	0 00	0 00	0 00
10,379.98	88 67	88.50	8,089.20	67.56	2,582 27	2,583 15	0 00	0.00	0 00

Database:	EDM 5000 1 Black Viper	**Local Co-ordinate Reference:**	Site Osage "34" #4H
Company:	SM Energy	**TVD Reference:**	KB @ 3373 00usft (Nabors 474)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3373 00usft (Nabors 474)
Site:	Osage "34" #4H	**North Reference:**	Grid
Well:	Osage "34" #4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Plan #1		

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)
10,409 98	88 67	88 50	8,089 89	68.34	2,612 25	2,613 14	0 00	0 00	0.00
10,439 98	88 67	88.50	8,090 59	69.13	2,642 23	2,643.13	0.00	0 00	0.00
10,469.98	88.67	88.50	8,091.29	69.91	2,672 21	2,673 13	0 00	0 00	0.00
10,499.98	88.67	88 50	8,091.99	70.70	2,702 19	2,703 12	0.00	0.00	0.00
10,529.98	88.67	88.50	8,092 69	71 48	2,732 17	2,733 11	0 00	0.00	0 00
10,559 98	88 67	88.50	8,093.39	72 26	2,762 16	2,763 10	0 00	0 00	0.00
10,589 98	88.67	88 50	8,094.09	73 05	2,792 14	2,793 09	0.00	0 00	0.00
10,619 98	88 67	88 50	8,094 79	73 83	2,822 12	2,823.09	0.00	0.00	0.00
10,649 98	88 67	88 50	8,095 49	74 62	2,852 10	2,853.08	0.00	0.00	0.00
10,679 98	88 67	88.50	8,096 18	75 40	2,882 08	2,883.07	0 00	0 00	0.00
10,709.98	88.67	88.50	8,096 88	76 19	2,912 06	2,913 06	0.00	0.00	0 00
10,739 98	88 67	88.50	8,097 58	76 97	2,942.05	2,943.05	0.00	0.00	0.00
10,769 98	88 67	88.50	8,098 28	77 75	2,972 03	2,973.04	0 00	0 00	0 00
10,799 98	88.67	88 50	8,098 98	78.54	3,002 01	3,003 04	0 00	0.00	0 00
10,829 98	88.67	88.50	8,099 68	79 32	3,031 99	3,033.03	0 00	0.00	0 00
10,859.98	88.67	88 50	8,100 38	80 11	3,061 97	3,063 02	0 00	0.00	0 00
10,889.98	88.67	88 50	8,101 08	80 89	3,091 95	3,093 01	0 00	0.00	0 00
10,919 98	88 67	88 50	8,101 78	81 68	3,121 94	3,123 00	0 00	0 00	0 00
10,949.98	88 67	88 50	8,102.47	82 46	3,151 92	3,153.00	0 00	0 00	0 00
10,979 98	88.67	88 50	8,103.17	83.25	3,181 90	3,182.99	0.00	0.00	0 00
11,009 98	88 67	88 50	8,103 87	84.03	3,211.88	3,212 98	0 00	0 00	0.00
11,039 98	88 67	88 50	8,104 57	84 81	3,241 86	3,242 97	0 00	0 00	0 00
11,069 98	88 67	88 50	8,105.27	85.60	3,271 84	3,272 96	0 00	0 00	0.00
11,099 98	88.67	88 50	8,105.97	86 38	3,301 82	3,302 95	0 00	0 00	0 00
11,129 98	88 67	88 50	8,106 67	87 17	3,331 81	3,332 95	0 00	0 00	0.00
11,159.98	88 67	88 50	8,107 37	87 95	3,361.79	3,362 94	0 00	0 00	0 00
11,189 98	88 67	88 50	8,108 07	88.74	3,391.77	3,392 93	0 00	0 00	0 00
11,219 98	88 67	88 50	8,108.76	89 52	3,421.75	3,422 92	0.00	0.00	0 00
11,249.98	88.67	88 50	8,109.46	90 31	3,451.73	3,452.91	0.00	0 00	0 00
11,279.98	88 67	88 50	8,110.16	91 09	3,481 71	3,482 90	0 00	0.00	0 00
11,309.98	88.67	88.50	8,110 86	91 87	3,511 70	3,512.90	0 00	0 00	0 00
11,339 98	88 67	88 50	8,111 56	92 66	3,541.68	3,542 89	0.00	0 00	0 00
11,369 98	88.67	88 50	8,112.26	93 44	3,571 66	3,572 88	0.00	0 00	0 00
11,399 98	88 67	88 50	8,112.96	94 23	3,601 64	3,602.87	0.00	0.00	0 00
11,429.98	88 67	88 50	8,113 66	95 01	3,631 62	3,632.86	0.00	0.00	0 00
11,459 98	88 67	88.50	8,114.36	95.80	3,661.60	3,662.86	0 00	0.00	0 00
11,489.98	88.67	88 50	8,115.05	96 58	3,691 58	3,692 85	0.00	0.00	0 00
11,519 98	88 67	88 50	8,115.75	97 36	3,721 57	3,722.84	0 00	0 00	0 00
11,549 98	88 67	88 50	8,116 45	98.15	3,751 55	3,752.83	0 00	0.00	0.00
11,579 98	88 67	88 50	8,117.15	98.93	3,781 53	3,782 82	0 00	0.00	0 00
11,609 98	88 67	88 50	8,117.85	99.72	3,811 51	3,812.81	0 00	0.00	0 00
11,639 98	88 67	88 50	8,118.55	100.50	3,841 49	3,842 81	0 00	0 00	0.00
11,669 98	88 67	88 50	8,119.25	101 29	3,871.47	3,872 80	0.00	0.00	0 00
11,699.98	88 67	88 50	8,119 95	102.07	3,901 46	3,902.79	0 00	0.00	0 00
11,729.98	88 67	88.50	8,120.65	102.86	3,931 44	3,932 78	0.00	0 00	0.00
11,759 98	88 67	88 50	8,121 34	103.64	3,961 42	3,962 77	0 00	0 00	0 00
11,789 98	88 67	88 50	8,122 04	104.42	3,991.40	3,992 77	0.00	0 00	0 00
11,819 98	88 67	88 50	8,122 74	105.21	4,021.38	4,022 76	0 00	0 00	0 00
11,849.98	88.67	88.50	8,123 44	105 99	4,051 36	4,052.75	0.00	0.00	0 00
11,879 98	88 67	88 50	8,124 14	106.78	4,081 34	4,082 74	0.00	0 00	0.00
11,909.98	88 67	88 50	8,124.84	107.56	4,111 33	4,112.73	0.00	0 00	0 00
11,939 98	88.67	88 50	8,125 54	108 35	4,141 31	4,142 72	0 00	0.00	0 00
11,969 98	88 67	88.50	8,126 24	109.13	4,171 29	4,172.72	0.00	0.00	0 00
11,999.98	88 67	88 50	8,126 94	109.91	4,201 27	4,202.71	0.00	0.00	0.00

Database:	EDM 5000.1 Black Viper	**Local Co-ordinate Reference:**	Site Osage "34" #4H
Company:	SM Energy	**TVD Reference:**	KB @ 3373 00usft (Nabors 474)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3373 00usft (Nabors 474)
Site:	Osage "34" #4H	**North Reference:**	Grid
Well:	Osage "34" #4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Plan #1		

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)
12,029.98	88 67	88.50	8,127 63	110.70	4,231.25	4,232 70	0.00	0 00	0.00
12,059.98	88 67	88 50	8,128 33	111.48	4,261.23	4,262 69	0.00	0 00	0 00
12,089.98	88 67	88.50	8,129 03	112 27	4,291 22	4,292.68	0 00	0 00	0.00
12,119 98	88.67	88 50	8,129 73	113.05	4,321 20	4,322.68	0 00	0.00	0.00
12,149 98	88.67	88.50	8,130.43	113 84	4,351 18	4,352 67	0 00	0.00	0 00
12,179.98	88 67	88 50	8,131 13	114 62	4,381 16	4,382 66	0 00	0.00	0 00
12,209.98	88 67	88 50	8,131.83	115.41	4,411 14	4,412 65	0 00	0.00	0 00
12,239 98	88.67	88.50	8,132.53	116 19	4,441.12	4,442.64	0 00	0.00	0 00
12,269 98	88.67	88.50	8,133 23	116 97	4,471 10	4,472.63	0 00	0.00	0 00
12,299.98	88.67	88.50	8,133.92	117 76	4,501 09	4,502.63	0 00	0.00	0.00
12,329 98	88 67	88.50	8,134.62	118 54	4,531.07	4,532.62	0.00	0.00	0 00
12,359 98	88 67	88.50	8,135 32	119.33	4,561 05	4,562 61	0 00	0 00	0.00
12,389.98	88.67	88 50	8,136.02	120.11	4,591.03	4,592 60	0 00	0 00	0 00
12,419 98	88 67	88 50	8,136.72	120 90	4,621.01	4,622.59	0 00	0 00	0.00
12,449 98	88 67	88 50	8,137.42	121 68	4,650 99	4,652 58	0 00	0 00	0.00
12,479 98	88 67	88 50	8,138.12	122 46	4,680 98	4,682 58	0 00	0 00	0.00
12,509 98	88 67	88 50	8,138.82	123 25	4,710 96	4,712 57	0.00	0 00	0.00
12,517 85	88 67	88.50	8,139 00	123.46	4,718 82	4,720.44	0 00	0 00	0 00
PBHL#1[O"34"#4H]									

Wellbore 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
PBHL#1[O"34"#4H] - plan hits target center - Point	0.00	0 00	8,139.00	123.46	4,718 82	586,390 73	626,968 80	32° 36' 42 234 N	104° 3' 18.831 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
184.00	184 00	Rustler		-1 33	268.50
1,279.00	1,279 00	Yates		-1.33	268.50
2,114 00	2,114.00	Capitan		-1 33	268 50
2,432.00	2,432 00	Queen		-1 33	268 50
4,164.00	4,164.00	Brushy Canyon		-1 33	268 50
5,629.00	5,629 00	Bone Spring		-1 33	268.50
7,249.00	7,249.00	1st Bone Spring		-1.33	268 50
7,862.07	7,832 01	2nd Bone Spring		-1 33	268 50

Database:	EDM 5000.1 Black Viper	**Local Co-ordinate Reference:**	Site Osage "34" #4H
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Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3373.00usft (Nabors 474)
Site:	Osage "34" #4H	**North Reference:**	Grid
Well:	Osage "34" #4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Plan #1		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
7,469.24	7,469.24	0.00	0.00	KOP Build 10.00°/100' :: TFO 88.50
8,355.89	8,042.04	14.64	559.42	EOC Hold 88.67° INC 88.50° AZI
12,517.85	8,139.00	123.46	4,718.83	586390.72 N :: 626968.79 E

SM ENERGY

Osage "34" #4H
Eddy County (NAD83)
Lateral #1
530.00 FSL
230.00 FWL

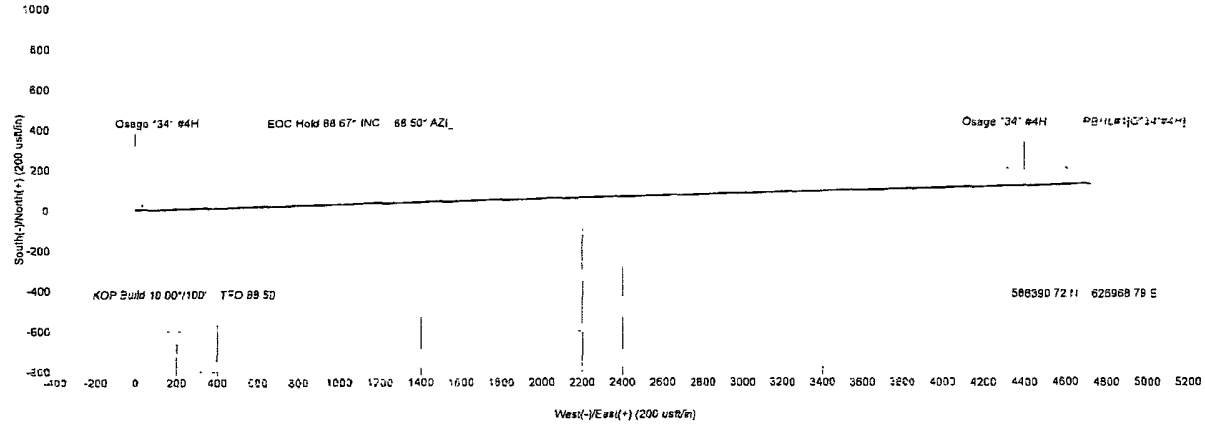
BLACK VIPER ENERGY SERVICES, LTD

Well Name Osage "34" #4H

System US State Plane 1983
Zone New Mexico Eastern Zone
System Datum Mean Sea Level
Northing 586267 27
Easting 622249 97
Ground Level 3355 00
Depth Reference KB @ 3373 00usft (Nabors 474)

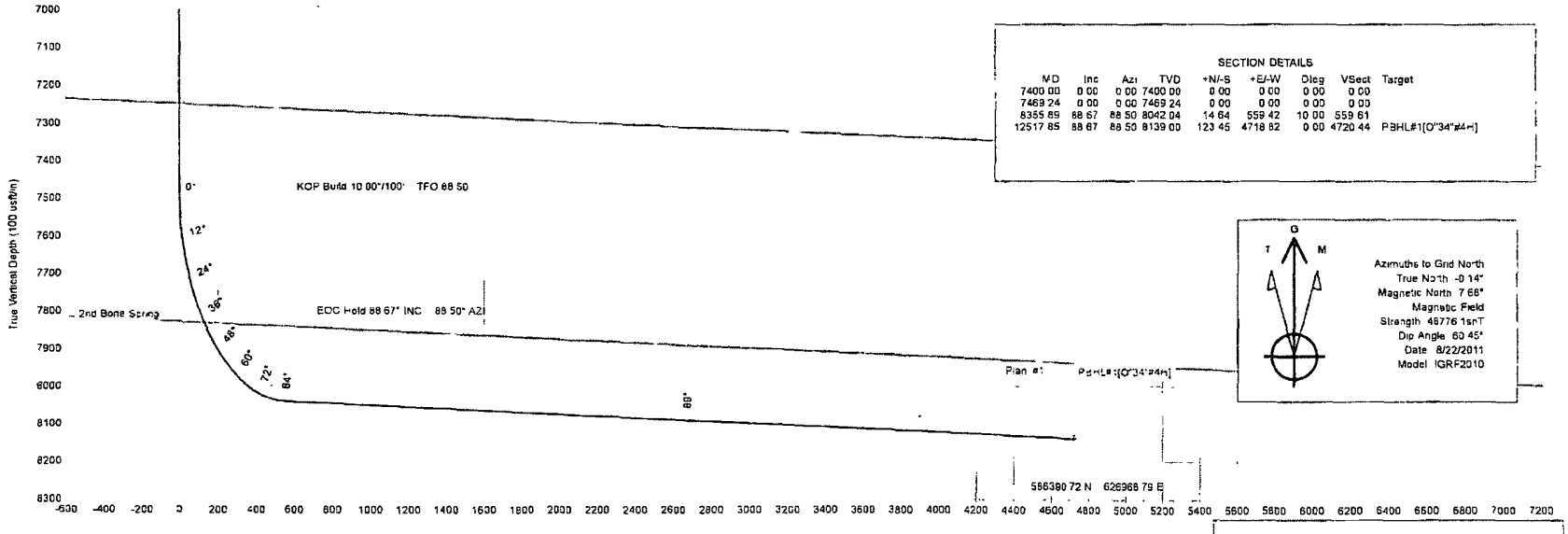
ANNOTATIONS

TVD	MD	Annotation
7469.24	7469 24	KOP Build 10 00°/100' TFO 88 50
8042 04	8355.89	EOC Hold 88 67° INC : 88.50° AZI
8139 00	12517 85	586390 72 N . 626968.79 E



SECTION DETAILS

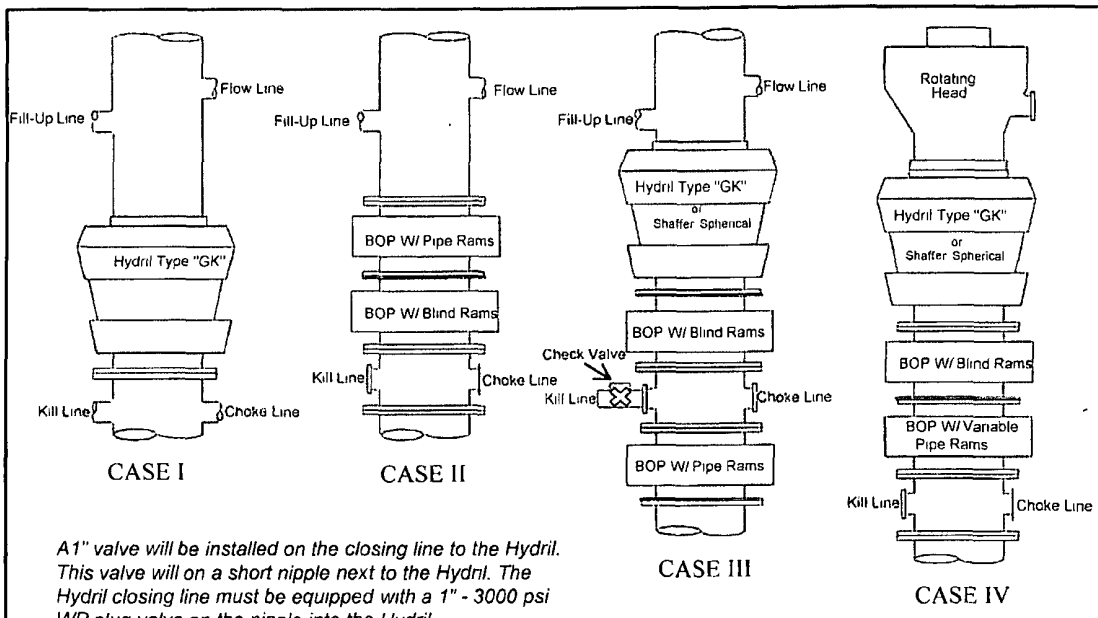
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Target
7400 00	0 00	0 00	7400 00	0 00	0 00	0 00	0 00	
7469 24	0 00	0 00	7469 24	0 00	0 00	0 00	0 00	
8355 89	88 67	88 50	8042 04	14 64	559 42	10 00	559 61	
12517 85	88 67	88 50	8139 00	123 45	4718 82	0 00	4720 44	PBHL#1[O"34"#4H]



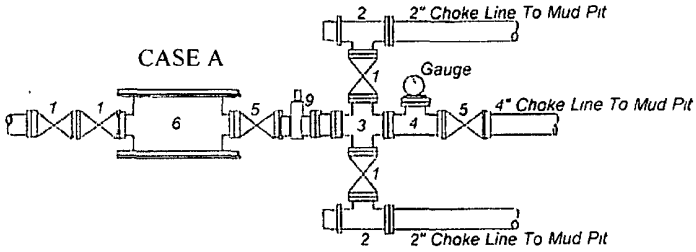
Azimuths to Grid North
True North -0 14°
Magnetic North 7 68°
Magnetic Field
Strength 48776 1snT
Dip Angle 60 45°
Date 8/22/2011
Model IGRF2010

Plan Plan #1 (Osage "34" #4H,Lateral #1)
Created By Heather Vannoy Date August 22 2011

SM Energy Company
MINIMUM BLOWOUT PREVENTER REQUIREMENTS

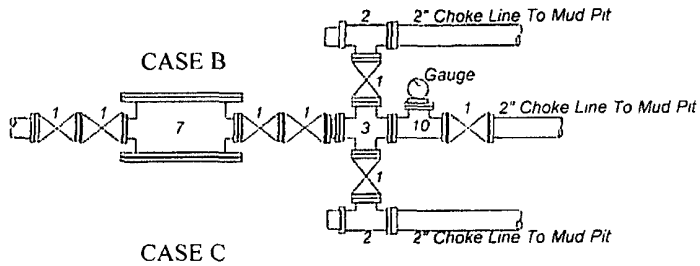


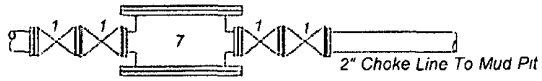
A1" valve will be installed on the closing line to the Hydril. This valve will on a short nipple next to the Hydril. The Hydril closing line must be equipped with a 1" - 3000 psi WP plug valve on the nipple into the Hydril.



BOP SIZE	BOP CASE	WORKING PRESSURE	CHOKE CASE
13-3/8"	II	2000 psi	B
9-5/8"	III	3000 psi	B

**Rotating head required*





Legend

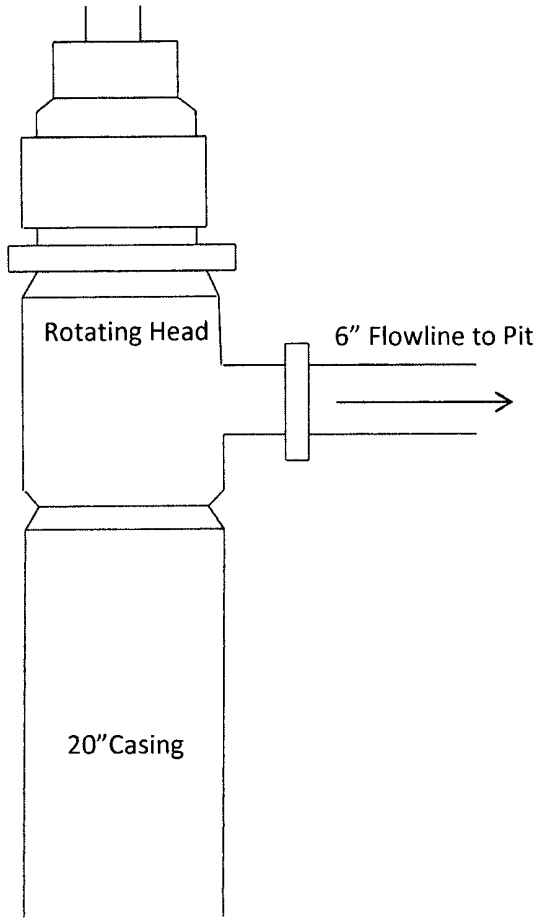
1. *2" flanged all steel valve must be either Cameron "F", Halliburton Low Torque or Shaffer Flo-Seal*
2. *2" flanged adjustable chokes, min 1" full opening & equiped with hard trim*
3. *4" x 2" flanged steel cross.*
4. *4" flanged steel tee.*
5. *4" flanged all steel valve (Type as in no 1).*
6. *Drilling Spool with 2" x 4" flanged outlet*
7. *Drilling Spool with 2" x 2" flanged outlet*
8. *2" x 2" flanged steel cross.*
9. *4" pressure operated gate valve*
10. *2" flanged steel tee.*

Notes

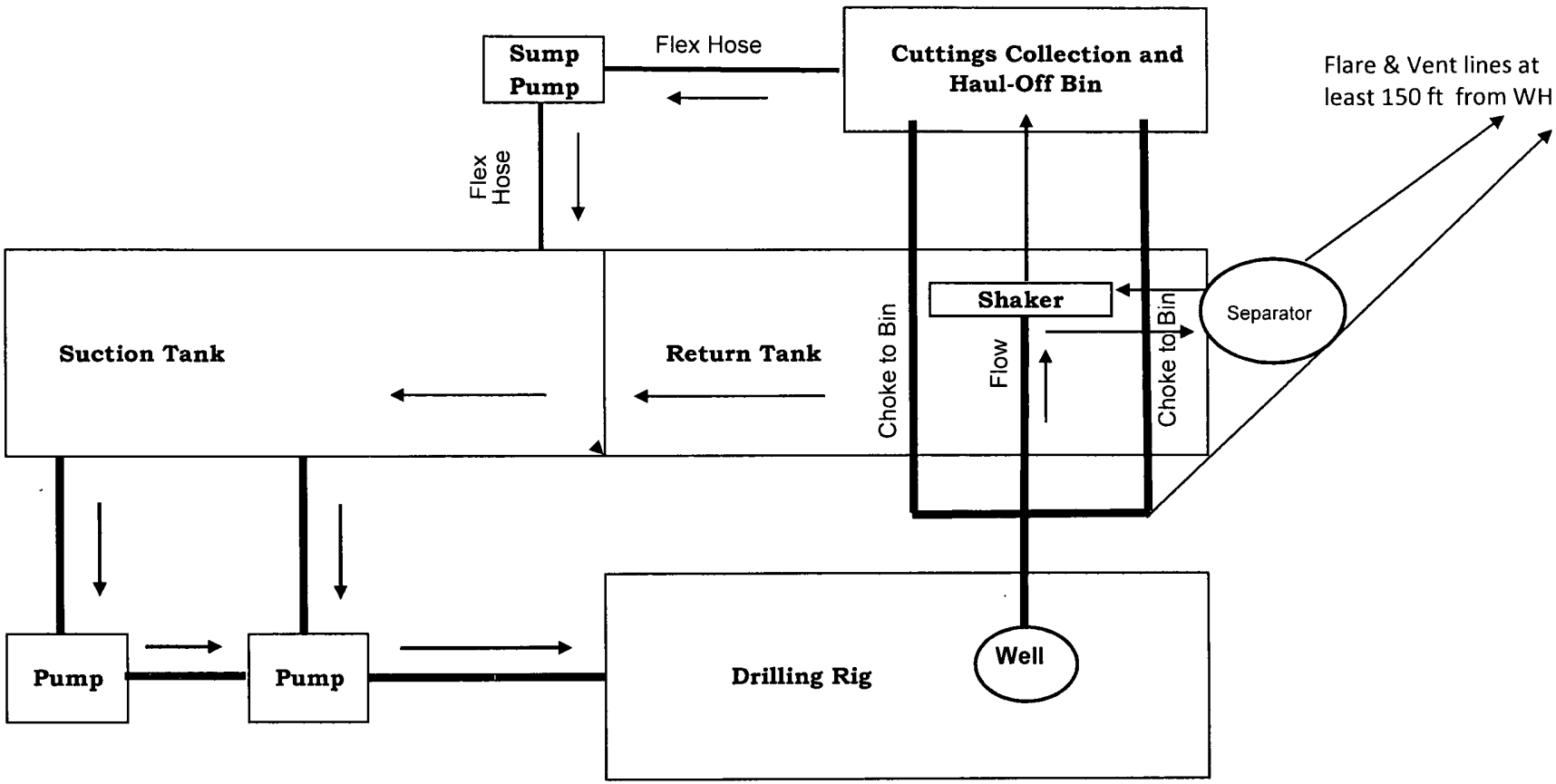
Choke manifold may be located in any convenient position. Use all steel fittings throughout. Make 90° turns with bull plugged tees only. No field welding will be permitted on any of the components of the choke manifold and related equipment upstream of the chokes. The choke spool and all lines and fittings must be at least equivalent to the test pressure of the preventers required. Independent closing control unit with clearly marked controls to be located on derrick floor near driller's position.

(10-31-96) WTXBOPS PPT

Diverter System



Choke Maniflod Schematic for Closed Loop System for H2S Environment



SM Energy Company
3300 N. A Street, Suite 200
Midland, TX 79705
(432) 688-3125 (Office)
(432) 682-1701 (Fax)

Osage 34 Federal 4H
Sec. 34-T19S-R29E
Eddy, NM
Rule 118 H2S Exposure

SM Energy Company has evaluated this well and we do not expect to encounter hydrogen sulfide. However, we will employ a third party monitoring system. We will begin monitoring prior to the Yates Formation and will continue monitoring the remainder of the well.

Please contact me if you have any additional questions.

Sincerely,

Malcolm Kintzing
Engineer

Hydrogen Sulfide Drilling Operations Plan

1. Company and Contract personnel admitted on location should be trained by a qualified H_2S safety instructor to the following:
   A. Characteristics of H_2S.
   B. Physical Effects and Hazards.
   C. Proper Use of Safety Equipment and Life Support Systems.
   D. Principle and Operation of H_2S Detectors, Warning System and Briefing.
   E. Evacuation Procedure, Routes and First Aid.
   F. Proper Use of 30 minute Pressure Demand Air Pack.

2. H_2S Detection and Alarm Systems
   A. H_2S Detectors and Audio Alarm System to be Located at Bell Nipple, End of Blooie Line (mud pit) and on Derrick floor or doghouse.

3. Windsock and/or Wind Streamers
   A. Windsock at Mud Pit Area Should be High Enough to be Visible.
   B. Windsock at Briefing Area Should be High Enough to be Visible.
   C. There Should be a Windsock at Entrance to Location.

4. Condition Flags and Signs
   A. Warning Sign on Access Road to Location.
   B. Flags to be Displayed on Sign at Entrance to Location.
      1. Green Flag, Normal Safe Condition.
      2. Yellow Flag, Indicates Potential Pressure and Danger.
      3. Red Flag, Danger H_2S Present in Dangerous Concentration Only Emergency Personnel Admitted to Location.

5. Well Control Equipment
   A. See Attached Diagram.

6. Communication
   A. While Working Under Masks Chalkboards Will be Used for Communication.
   B. Hand Signals will be Used Where Chalk Board is Inappropriate.
   C. Two Way Radio or Cell Phone will be Used to Communicate off Location in Case of Available at Most Drilling Foreman's Trailer or Living Quarters.

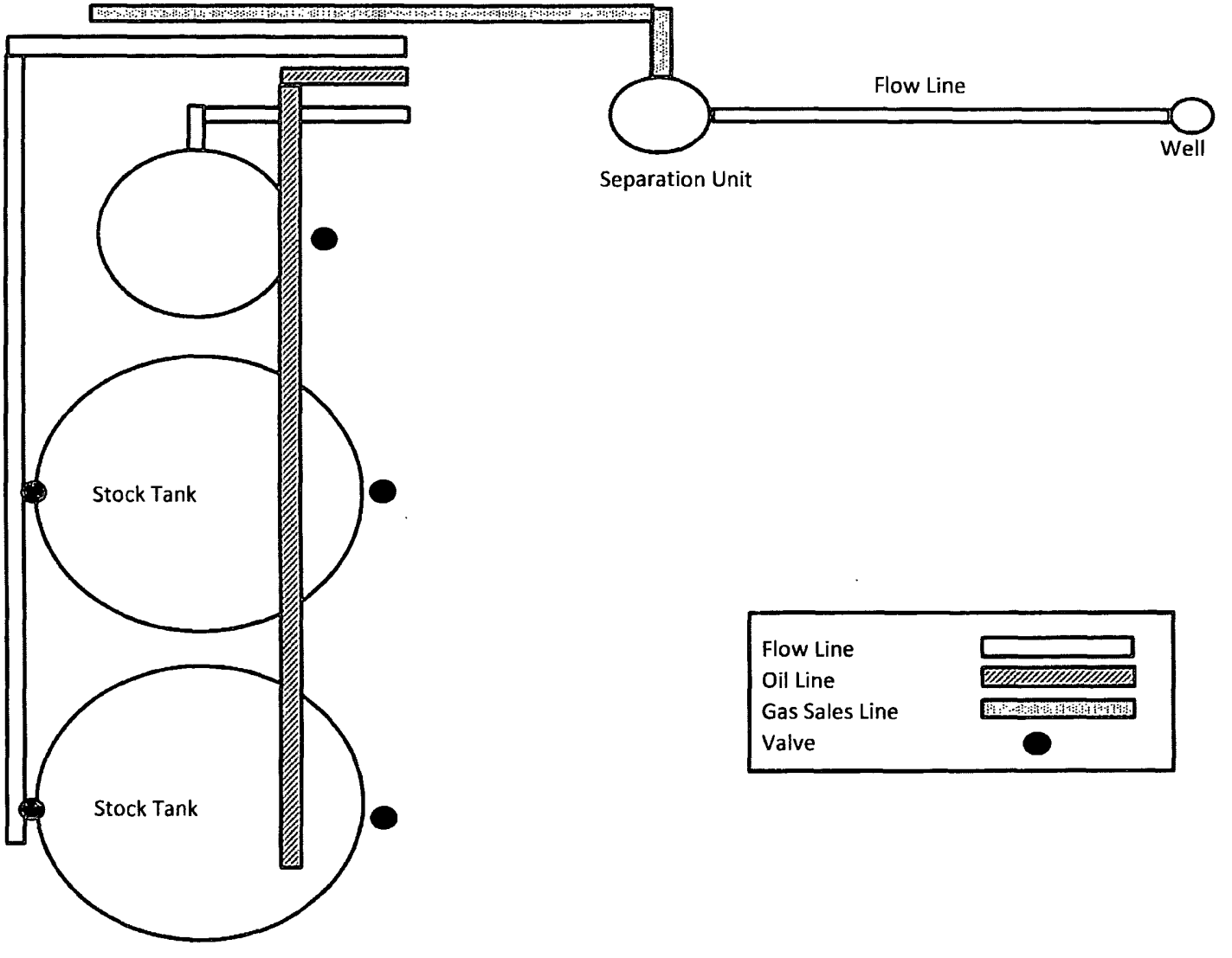
7. Drillstem Testing
   A. Exhausts will be Watered.
   B. Flare Line will be Equipped with an Electric Igniter or a propane pilot light in case gas reaches the surface.
   C. If Location is near any Dwelling a Closed DST will be Performed.

8. Drilling Contractor Supervisor will be Required to be Familiar with the Effects H_2S has on tubular goods and other mechanical equipment.

9. If H_2S Encountered, Mud system will be Altered if Necessary to Maintain Control of Formation. A Mud Gas Separator will be Brought into Service Along with H_2S Scavengers if Necessary.

Emergency Contacts

Eddy County Sheriff's Office		911 or 575-887-7551
Carlsbad Fire Department		911 or 575-885-2111
Columbia Medical Center of Carlsbad		575 or 575-677-3266
SM Energy Company (Midland office)		
Phone 432-688-1700		
Fax 432-688-1701		
Contract Pumper	Jackie Herron	575-746-7601
Field Superintend	Bill Hearne	432-230-6054
Operations Manager	Mark Bondy	432-557-9049


Flow Line
Well
Separation Unit
Stock Tank
Stock Tank
Flow Line
Oil Line
Gas Sales Line
Valve

Surface Use and Operations Plan

Osage 34 Federal ~~Com~~ 4H
1880 FSL & 330 FWL (SHL)
1980 FSL & 330 FEL (BHL)
Sec 34-T19S-R29E
Eddy County, New Mexico

The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plans, the magnitude of surface disturbance, and the procedures associated with the remediation plan.

Existing and Proposed Roads

a. Exhibit B is a reproduction of a County General Hi-way map showing existing roads.

b. Exhibit A shows the proposed well site as staked with the current and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed to BLM specifications.

c. Directions to location: from the intersection of CR 235 and State HWY 360; go westerly on HWY 360 for approximately 6 miles to lease road; thence southerly on lease road for 2.9 miles; then west on lease road for approx. 0.4 miles

d. Exhibit C shows top topography surrounding the proposed well location.

Planned Access Roads

a. Approximately 170' of new road will be required

b. The access to the location will be limited to 14' in width and will adequately drain runoff and control erosion.

Location of Existing Wells within a one mile radius (Exhibit D)

a.	Water Wells	None know
b.	Injection Wells	None know
c.	Drilling Wells	None know
d.	Producing Wells	As shown on Exhibit D
e.	Abandoned Wells	As shown on Exhibit D

Location of Existing and/ or proposed facilities

a. There are no production facilities on this location at the present time
b. In the event that the well is productive, production facilities will be located on the south side of the pad.
c. Exhibit F shows the reclamation diagram showing dimensions of reclaimed area, dimensions of remaining well pad, and proposed production facilities.
d. All production vessels on location will be painted to conform to BLM painting stipulations within 180 days of installation.

Location and Type of Water Supply

Water will be purchased locally from a commercial source and trucked over to the location access roads or piped to location in flexible lines laid on top of the ground.

Source of construction Materials

If possible construction material will be obtained from the excavation of the drill site, if additional material is required it will be obtained from a local source and transported over the location access road. The construction contractor will be responsible for paying royalties on any additional materials required.

Methods of Handling Waste

a. Drill cuts not used for evaluation purposes will be hauled off to approved disposal sites
b. Water produced during operations will be sent to an approved SWD well.
c. If hydrocarbons are produced during operations, those liquids will be stored in suitable storage containers
d. Sewage from living quarters will be drained into holding tanks and will be cleaned out periodically. A porta-potty will be provided for the rig crews. This equipment will be properly maintained during operations and removed upon completion.
e. All trash, junk and other waste material will be contained in trash cages or trash bins in order to prevent scattering. When the job is completed all contents will be remved and disposed of in an approved sanitary land fill.

Ancillary Facilities

No camps or air strips will be constructed on this location.

Well Site Layout

a. Exhibit E shows the proposed well site layout

b. Exhibit E shows the location of the required equipment for closed loop drilling operations
c. An archaeological survey is in the process of being conducted on the proposed location pad.

Plans for restoration of Surface

a. Upon completion of the proposed operations, if the well is abandoned the location and road will be ripped and reseeded. The entire location will be restored to its original condition prior to the operation. All trash and garbage will picked up and disposed of in an approved site. All restoration work will be completed within 180 days of cessation of activities.
b. The disturbed area will be restored by re seeing during the proper growing season.
c. Any additional caliche required will be obtained as described in section 6.
d. Within 90 days of completion of drilling and completion operations, all equipment not necessary for production operations will be removed. The location will be cleared of all trash and junk to insure the location is left as aesthetically pleasing as possible.

Surface Ownership

The surface is owned by the Bureau of Land Management

Other Information

a. Topography: Refer to the archaeological report
b. The primary use of the surface at the location is for grazing livestock

Operator's Representative

Through APD approval, drilling, completion and production operations

Malcolm Kintzing
Engineer
SM Energy Company
3300 N. A St. 7-200
Midland, TX 79705
O: 432-688-3125
C: 432-212-2628

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	SM ENERGY COMPANY
LEASE NO.:	NM90807
WELL NAME & NO.:	4H OSAGE 34 FEDERAL
SURFACE HOLE FOOTAGE:	530' FSL & 230' FWL
BOTTOM HOLE FOOTAGE	660' FSL & 330' FEL
LOCATION:	Section 34, T.19 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

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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)

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Tank Battery Liners and Berms:
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

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

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

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

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

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

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

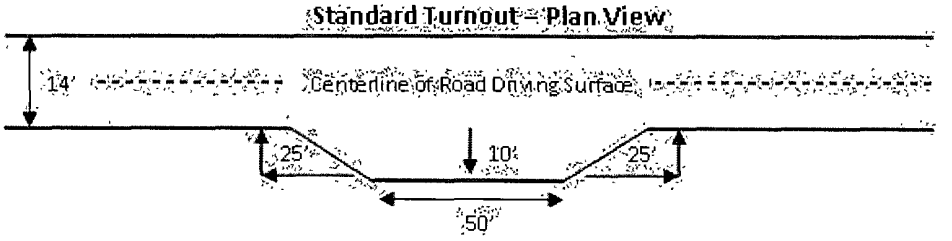
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

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

Ditching

Ditching shall be required on both sides of the road.

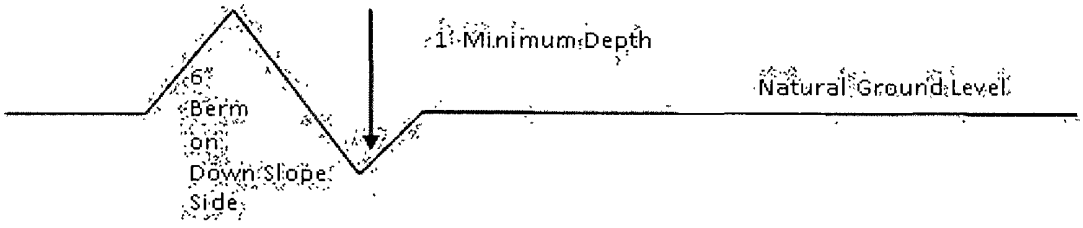
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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

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

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

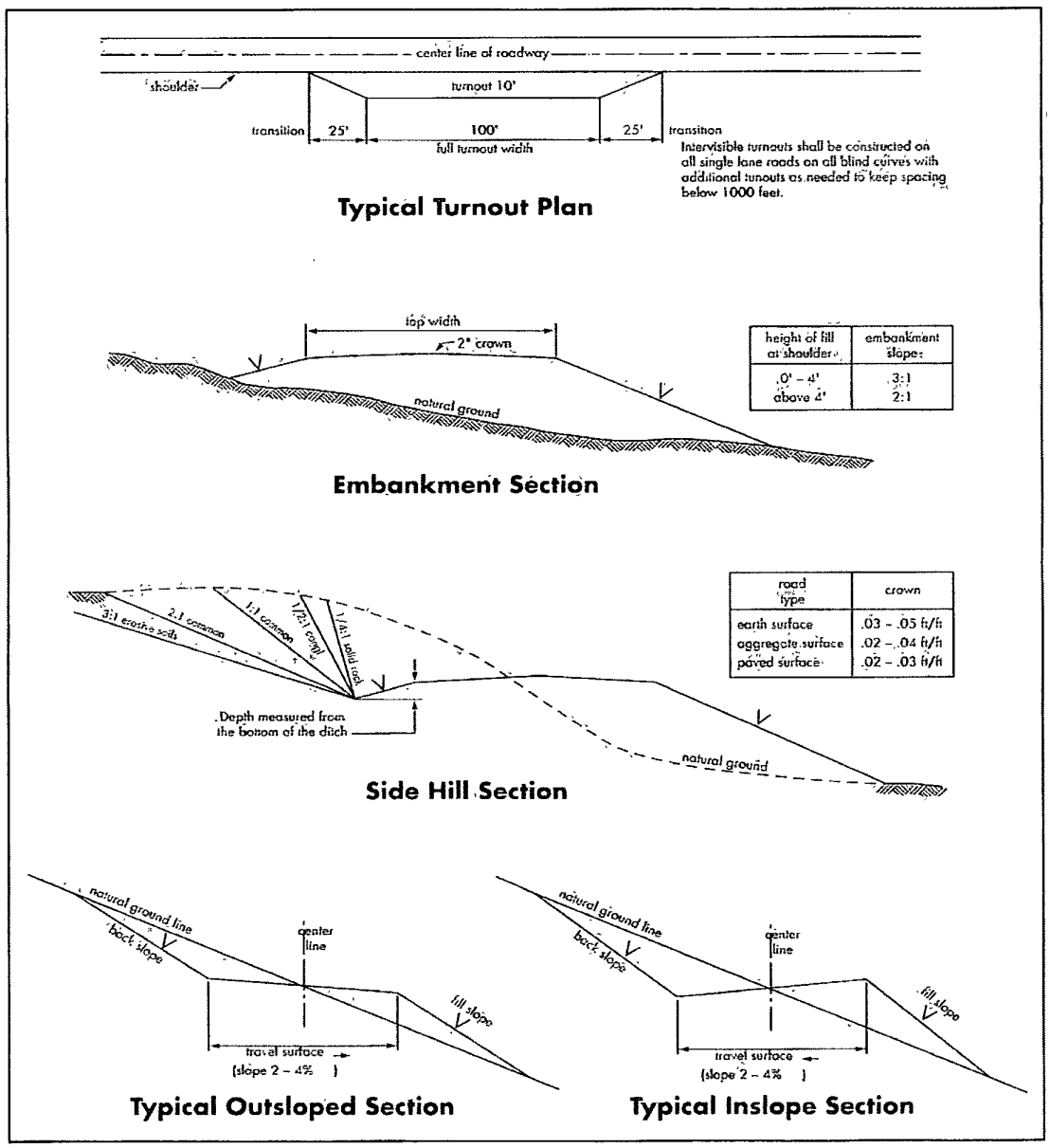
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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



3. The minimum required fill of cement behind the **9-5/8** inch 2nd intermediate casing, **which shall be set in the Base of the Capitan Reef or in the Top of the Delaware Mountain Group at approximately 3300',** 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.**

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug.

If 75% or greater lost circulation occurs while drilling the second intermediate hole, the cement on the 7 inch production casing must come to surface.

The BLM shows the Capitan Reef marker at 1685 feet. Top of cement on 7" production casing shall reach a minimum of 50 feet above that depth.

4. The minimum required fill of cement behind the **7** inch production casing is:

   ☒ Cement should tie-back a minimum of 50 feet above the Capitan Reef. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef, cave/karst. Additional cement will be required as excess calculates to negative 14%.**

5. The minimum required fill of cement behind the **4-1/2** inch production liner is:

   ☒ No cement required on the 4-1/2" segment as it utilizes a Packer/Port completion system from TD to up inside 7" casing.

6. 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. **A variance is granted for the use of a diverter on the 20" surface casing.**

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** inch first intermediate casing shoe shall be **3000 (3M)** psi.

4. 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 120911

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 applied for in APD)

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.

Seed Mixture 4, for Gypsum 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
Alkali Sacaton (Sporobolus airoides)	1.0
DWS Four-wing saltbush (Atriplex canescens)	5.0

DWS: DeWinged Seed

*Pounds of pure live seed:

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