13-403

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Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

TB 4/8/2013

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER	5. Lease Serial No.: SHL NM092167;BHL NM100332
	6. If Indian, Allotee or Tribe Name:
	7. If Unit or CA Agreement, Name and No.:
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone	8. Lease Name and Well No.: Da Vinci 7 Federal Com 2H <36558>
2. Name of Operator: Cimarex Energy Co. of Colorado <162683>	9. API Well No.: 30-015- 41259
3a. Address: 600 N. Marienfeld St. Ste. 600 Midland Tx 79701	3b. Phone No. *(include area code)*: 432-571-7800
	10. Field and Pool or Exploratory: ~~Wildcat Bone Spring~~ Cotton Draw; B.S. <97494>
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At Surface: 330' FSL & 580' FEL At proposed prod. Zone: 330' FNL & 400' FEL *Horizontal Bone Spring test*	11. Sec., T. R. M. or Blk. and Survey or Area: 7-25S-27E
14. Distance in miles and direction from nearest town or post office*: Approximately 13 miles SSW of Loving, 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): 330'	16. No of acres in lease: NM092167 878.57 acres; NM100332 478.44 acres	17. Spacing Unit dedicated to this well: 160
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1117' to the #3H	19. Proposed Depth: 12,422' MD 7,902' TVD	20. BLM/BIA Bond No. on File: NM2575; NMB000835
21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3229' GR	22. Approximate date work will start*: 05.01.13	23. Estimated duration: 35 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

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

25. Signature: Paula Brunson	Name *(Printed/Typed)*: Paula Brunson	Date: 02.15.13
Title: Regulatory Analyst		
Approved By *(Signature)*: /s/ James A. Amos	Name (Printed/Typed)	Date
Title: FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	APR 3 2013

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.

Title 18 U.S.S. 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)*

APPROVAL FOR TWO YEARS

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 15, 2009

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015- 41259	97494	Cottonwood Draw ~~Wildcat~~; Bone Spring (O)

Property Code	Property Name	Well Number
36558	DA VINCI "7" FEDERAL COM	2H

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3229'

Surface Location

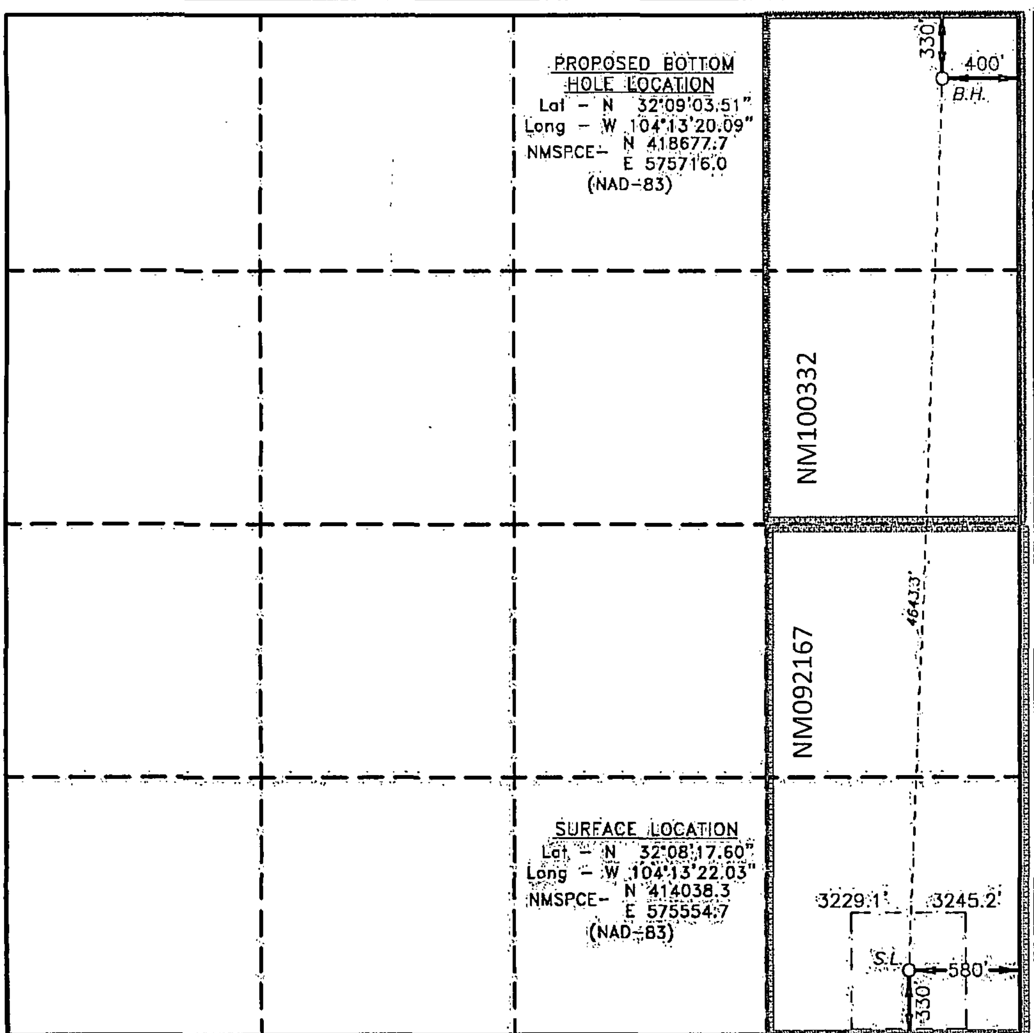
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	7	25 S	27 E		330	SOUTH	580	EAST	EDDY

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
A	7	25 S	27 E		330	NORTH	400	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.

Paula Brunson 2/15/13
Signature Date

Paula Brunson
Printed Name
pbrunson@cimarex.com

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.

NOVEMBER 30, 2011
Date Surveyed
Signature & Seal of Professional Surveyor

GARY L. JONES
W.O.

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

Operator Certification Statement
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
UL P - Sec 7-25S-27E
Eddy County, NM

Operator's Representative
Cimarex Energy Co. of Colorado
600 N. Marienfeld St., Ste. 600
Midland, TX 79701
Office Phone: (432) 571-7800

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 herein 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 false statements.

Executed this 15th day of February, 2013

NAME: Paula Brunson
Paula Brunson

TITLE: Regulatory Analyst

ADDRESS: 600 N. Marienfeld St., Ste. 600
Midland, TX 79701

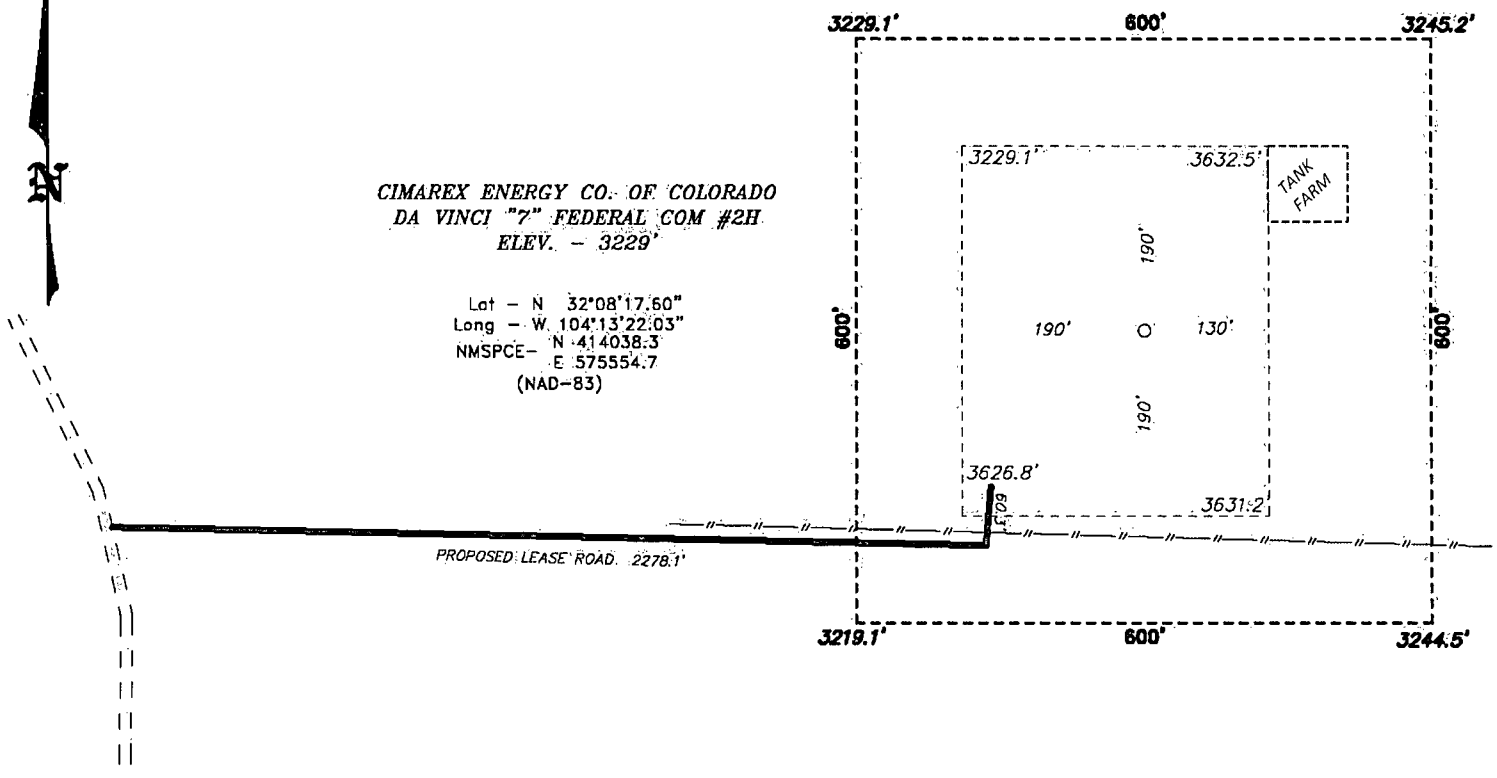
TELEPHONE: 432-571-7848

EMAIL: pbrunson@cimarex.com

Field Representative: Same as above

SECTION 7, TOWNSHIP 25 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF BLACK RIVER VILLAGE AND JOHN D FOREHAND, GO SOUTH ON JOHN D FOREHAND FOR 6.6 MILES TO LEASE ROAD, ON LEASE ROAD GO SOUTHEASTERLY 0.3 MILES TO PROPOSED LEASE ROAD.

CIMAREX ENERGY CO. OF COLORADO

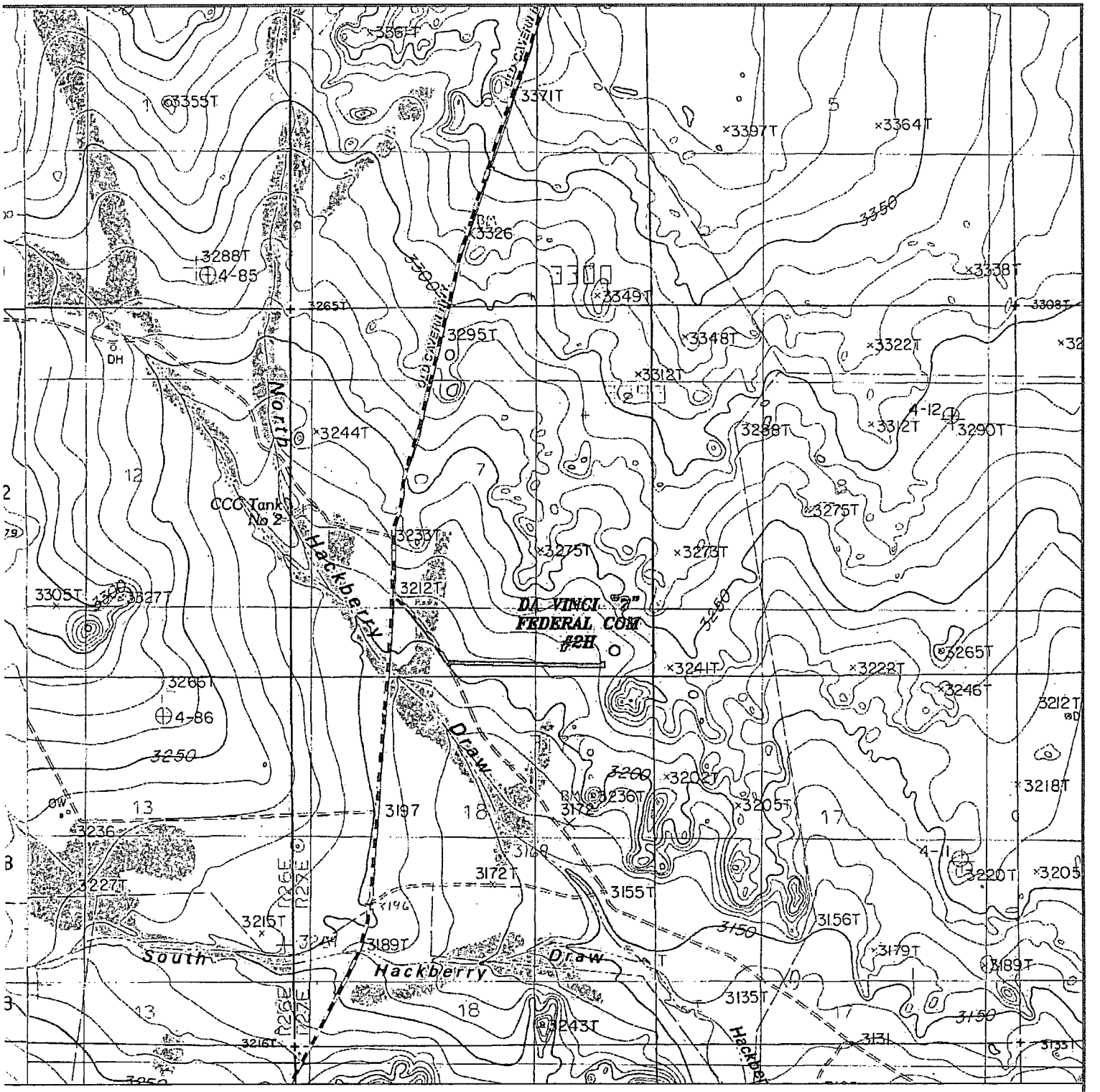
REF: DA VINCI "7" FEDERAL COM #2H / WELL PAD TOPO

THE DA VINCI "7" FEDERAL COM #2H LOCATED 330' FROM THE SOUTH LINE AND 580' FROM THE EAST LINE OF SECTION 7, TOWNSHIP 25 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 25764	Drawn By: J. SMALL		
Date: 12-06-2011	Disk: JMS 25764	Survey Date: 12-01-2011	Sheet 1 of 1 Sheets

Exhibit C-1



DA VINCI "7" FEDERAL COM #2H
Located 330' FSL and 580' FEL
Section 7, Township 25 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield

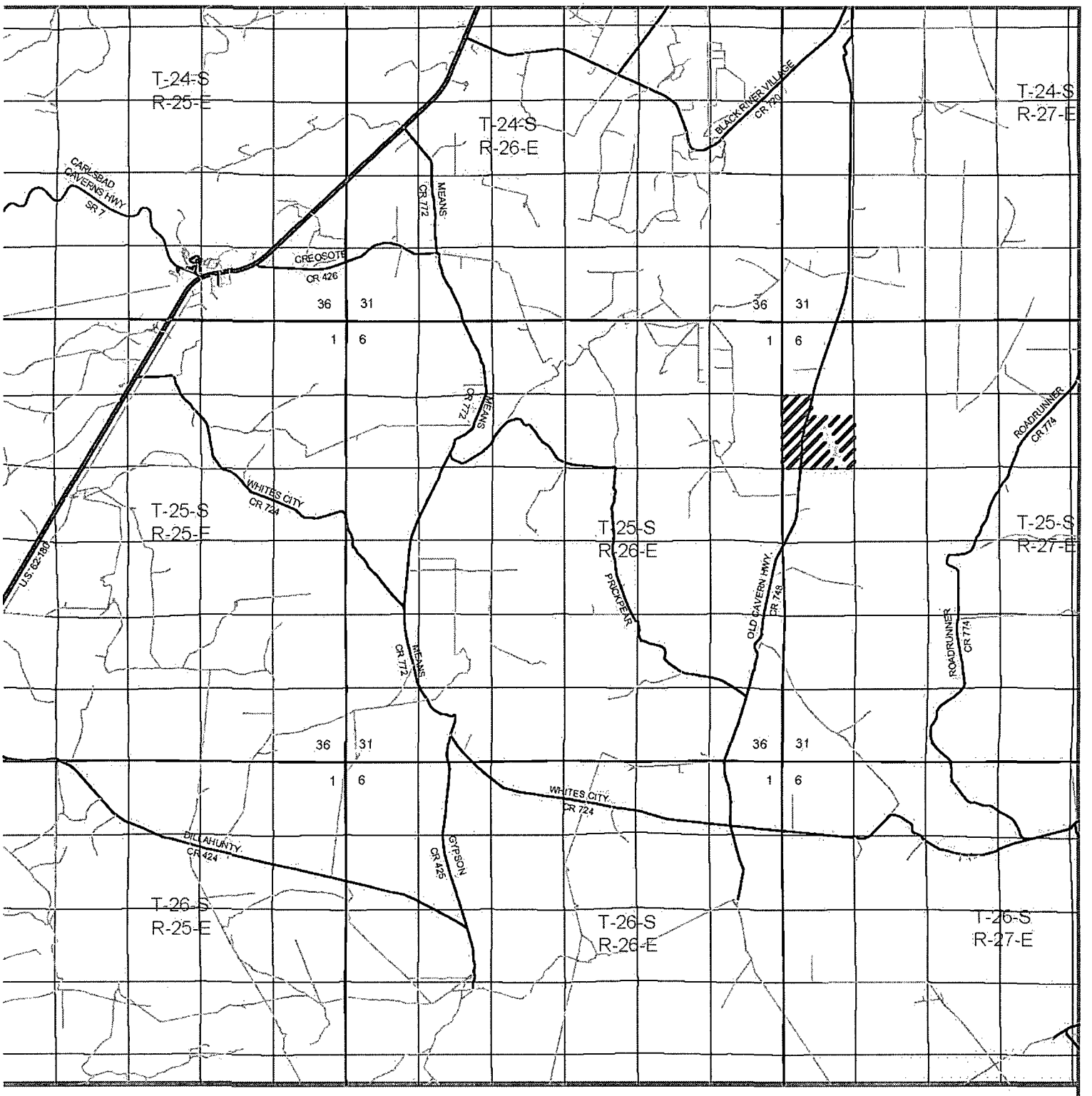
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number:	JMS 25764
Survey Date:	12-01-2011
Scale:	1" = 2000'
Date:	12-06-2011

N

CIMAREX ENERGY CO. OF COLORADO

Exhibit C



DA VINCI "7" FEDERAL COM #2H
Located 330' FSL and 580' FEL
Section 7, Township 25 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.

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(575) 392-2206 - Fax
basinsurveys.com

W.O. Number:	JMS 25764
Survey Date:	12-01-2011
Scale:	1" = 2 Miles
Date:	12-06-2011

N

CIMAREX ENERGY CO. OF COLORADO

Exhibit B

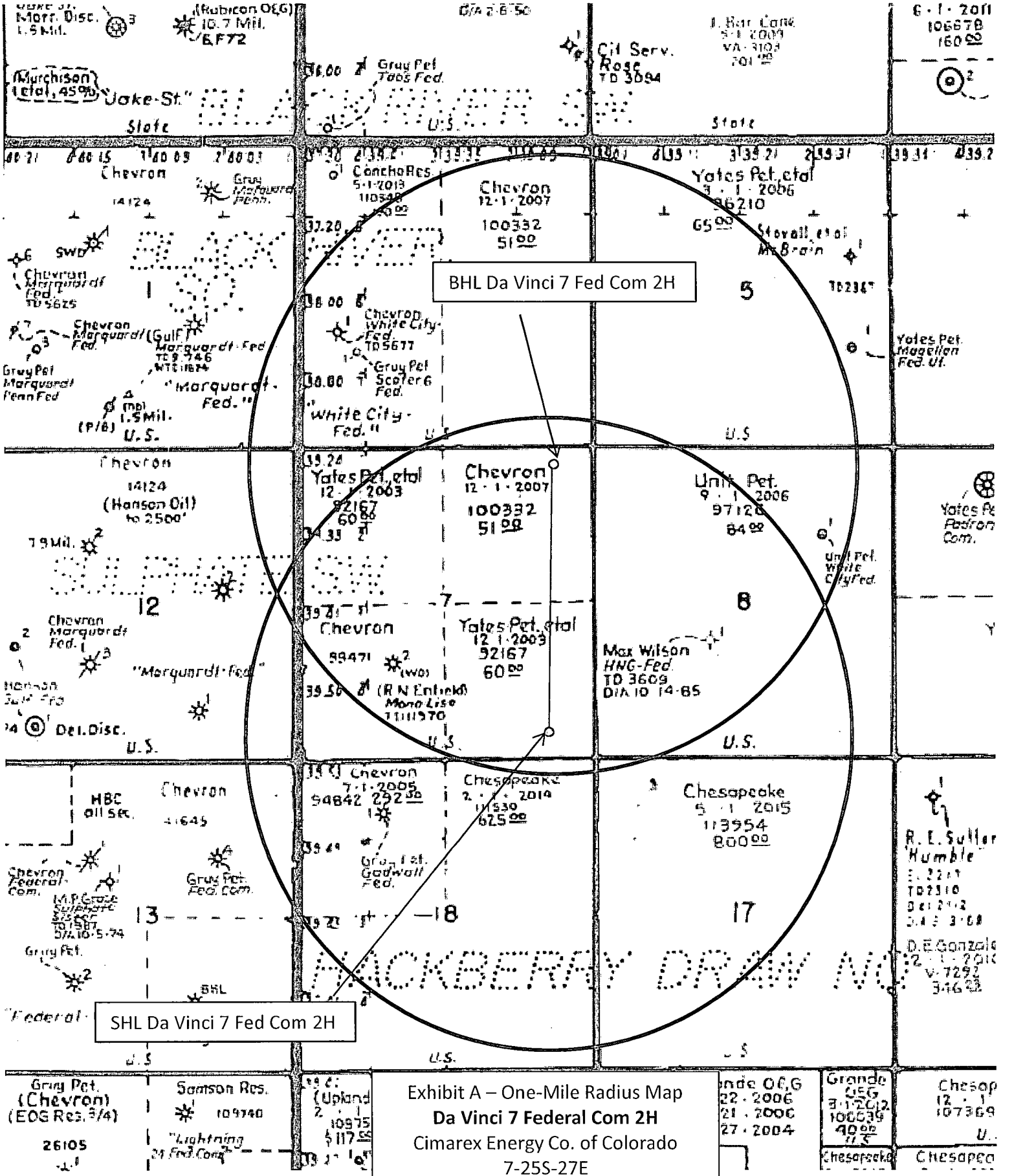


Exhibit A – One-Mile Radius Map
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

Application to Drill
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
UL P - Sec 7-25S-27E
Eddy County, NM

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

1 Location: SHL 330' FSL & 580' FEL
BHL 330' FNL & 400' FEL

2 Elevation above sea level: 3229' GR

3 Geologic name of surface formation: Quaternary Alluvium Deposits

4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.

5 Proposed drilling depth: 12,422' MD 7,902' TVD

6 Estimated tops of geological markers:

Formation	Est. Top	Bearing
Ground Water (per OSE)	20	NA
Rustler	Spotty, NA	NA
Top Salt	1232.56	NA
Base Salt	1848.56	NA
Delaware	2048.05	Hydrocarbons
Cherry Canyon	2985.69	NA
Brushy Canyon	4021.45	NA
Brushy Canyon Lower	5237.17	NA
Bone Spring	5534.87	NA
Bone Spring "A" Shale	5661.23	Hydrocarbons
Bone Spring "C" Shale	5935.97	NA
1st Bone Spring Ss	6487.83	NA
2nd Bone Spring Ss	7023.95	NA
2nd BS Ss Horz Target	7300.54	Hydrocarbons
3rd BS Limestone	7371.38	NA

7 Possible mineral bearing formation:
Shown above

8 Casing Program:

Casing Depth From (ft)	Casing Setting Depth(ft) MD	Casing Setting Depth(ft) TVD	Open Hole Size (inches)	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Conditon	SF Surface Pressure & BHP (psig)	Mud Weight (ppg)	Collapse SF (1.125)	Burst SF (1.125)	Cumulative Air Weight (lbs)	Tension SF (1.6)
Surface														
0'	450'	450'	17 1/2	13 3/8	48	H-40	ST&C	New	203	8.4	3.76	8.5	21600	14.9
Intermediate														
0'	~~2028'~~ 2020'	2028'	12 1/4	9 5/8	36	J-55	LT&C	New	913	9	2.13	3.9	73010	7.7
Production														
0'	7616'	7616'	8 3/4	5 1/2	17	P-110	LT&C	New	1817	8.4	2.25	5.9	134334	3.3
7616'	12422'	7902'	8 3/4	5 1/2	17	P-110	BT&C	New	3556	8.4	2.17	3.0	4862	112.3

See COA

Casing Design Criteria and Casing Loading Assumptions:
Surface, Intermediate and Production Casing:
Tension: A 1.6 design factor without effects of buoyancy.
Collapse: A 1.125 design factor with full internal evacuation.
Burst: A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

Drilling Plan
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
UL P - Sec 7-25S-27E
Eddy County, NM

9 Cementing Program:

Surface	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	120	1.75	13.5	208	Class C + Bentonite + Calcium Chloride + LCM
Tail	200	1.34	14.8	261	Class C + LCM

TOC: 0' 50% Excess Centralizers per Onshore Order 2.III.B.1f

Intermediate	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	460	1.88	12.9	861	35:65 (poz/C) + Salt + Bentonite + LCM + retarder
Tail	130	1.34	14.8	168	Class C + retarder + LCM

TOC: 0' 80% Excess

Production	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	720	2.4	11.9	1728	35:65 (poz/H) + salt + Sodium Metasilcate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder
Tail	1355	1.24	14.5	1681	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder

Cement volumes will be adjusted depending on hole size.
TOC: 1528' 25% Excess Centralizers every 3rd joint through the curve or legal location hardline to provide adequate cement coverage every 100' unless hole conditions require greater spacing between centralizers.

See COA

10 Pressure Control Equipment:
Exhibit "E-1". A 13⅝" 5000 PSI working pressure BOP, tested to 3000 psi on the surface casing and 5000 psi on the intermediate, consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be installed and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high on the surface casing and 250 psi low and 5000 psi high on the intermediate. Hydril will be tested to 250 psi low and 2500 psi high on the surface and intermediate casings. See COA

Cimarex Energy Co. of Colorado requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached (please see Exhibit F, F-1, F-2, F-3). The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

See COA

Application to Drill
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
UL P - Sec 7-25S-27E
Eddy County, NM

11 Proposed Mud Circulating System:

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	450'	8.4	28	NC	FW Spud Mud
450'	to	~~2028'~~ 2020'	9	30-32	NC	Brine water
~~2028'~~ 2020'	to	12422'	8.4	30-32	NC	FW/Cut Brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

The Mud Monitoring System is an electronic Pason System satisfying requirements of Onshore Order 1.

12 Proposed Drilling Plan
Pilot Hole TD: No Pilot Hole KOP: 7,616' EOC: 8065'
Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drillling lateral through the curve to TD. Run prod casing & cement.

13 Testing, Logging and Coring Program:
A. Mud logging program: 2 man unit from 2028' to TD
B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR -- Inter. Csg to TD See COA
C. No DSTs or cores are planned at this time.
D. CBL w/ CCL from as far as gravity will let it fall to TOC

14 Potential Hazards:
No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H_2S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H_2S Safety package on all wells, attached is an "H_2S Drilling Operations Plan." Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP **3556 psi** Estimated BHT **150°**

15 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.
Drilling expected to take : **35 days**
If production casing is run an additional 30 days will be required to complete and construct surface facilities.

16 Other Facets of Operations:
After running casing, cased hole gamma ray neutron collar logs will be run from TD over possible pay intervals.
Bone Spring *pay will be perforated and stimulated.*
The proposed well will be tested and potentialed as **Oil**

Cimarex Energy Co. of Colorado

Location: Eddy County, NM
Field: (Da Vanci) Sec. 7, T25S, R27E
Facility: Da Vanci 7 Fed Com No.2H

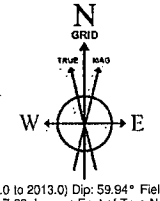
Slot: No.2H SHL
Well: No.2H
Wellbore: No.2H PWB

BAKER HUGHES

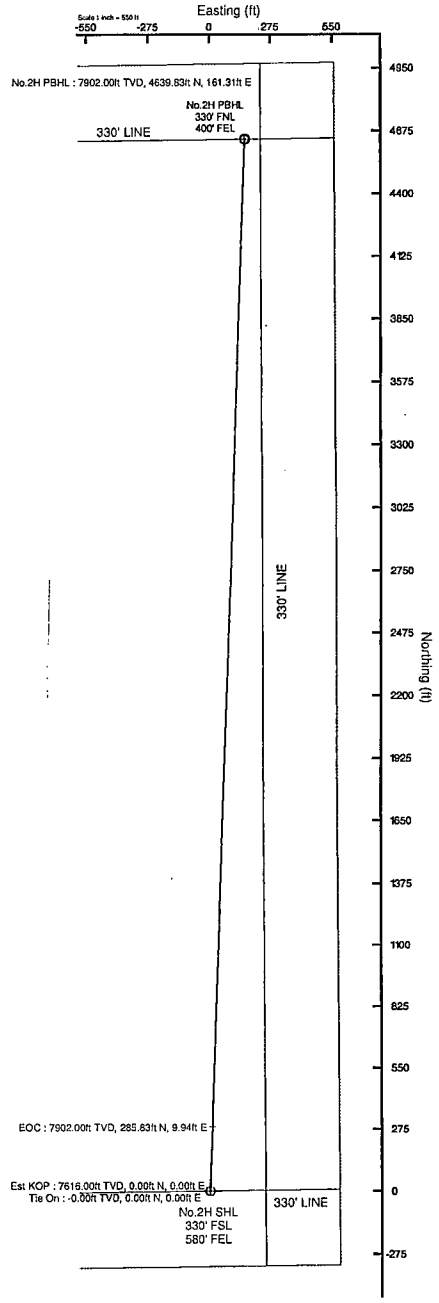
Well Profile Data

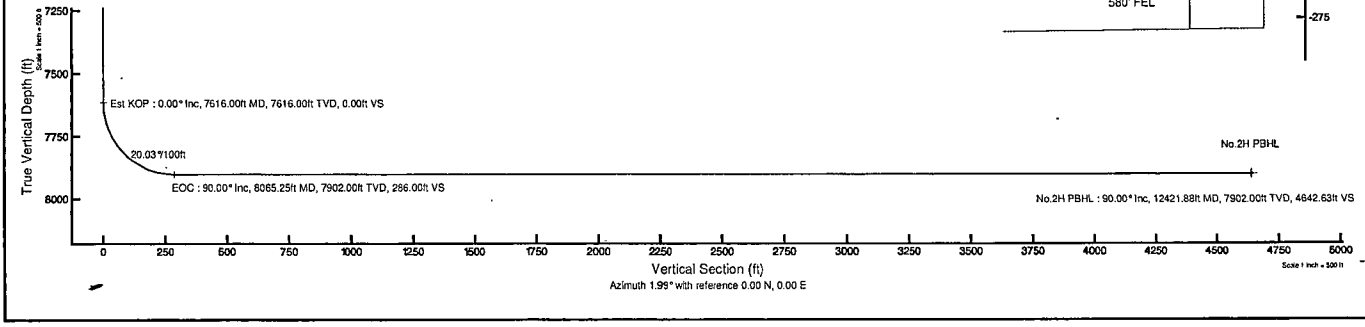
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	1.991	0.00	0.00	0.00	0.00	0.00
Est KOP	7616.00	0.000	1.991	7616.00	0.00	0.00	0.00	0.00
EOC	8065.25	90.000	1.991	7902.00	285.83	9.94	20.03	286.00
No.2H PBHL	12421.88	90.000	1.991	7902.00	4639.83	161.31	0.00	4642.63

Plot reference wellpath is Prelim_1	
True vertical depths are referenced to Rig on No.2H SHL (RT)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No.2H SHL (RT)	North Reference: Grid north
Rig on No.2H SHL (RT) to Mean Sea Level: 3229 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No.2H SHL): -3229 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentbry on 2/13/2012



BGGM (1945.0 to 2013.0) Dip: 59.94° Field: 48425.2 nT
Magnetic North is 7.88 degrees East of True North (at 2/13/2012)
Grid North is 0.06 degrees East of True North
To correct azimuth from True to Grid subtract 0.06 degrees
To correct azimuth from Magnetic to Grid add 7.82 degrees
For example: if the Magnetic North Azimuth = 90, then the Grid North Azimuth = 90 + 7.82 = 97.82





Planned Wellpath Report

Prelim_1

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co. of Colorado**	Slot	**No.2H SHL**
Area	**Eddy County, NM**	Well	**No.2H**
Field	**(Da Vanci) Sec. 7, T25S, R27E**	Wellbore	**No.2H PWB**
Facility	**Da Vanci 7 Fed Com No.2H**		

REPORT SETUP INFORMATION			
Projection System	**NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 3.0.0**
North Reference	**Grid**	User	**Gentbry**
Scale	**0.99991**	Report Generated	**2/13/2012** at **1:45:30 PM**
Convergence at slot	**0.06° East**	Database/Source file	**WA Midland/No.2H_PWB.xml**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	**East[ft]**	**Easting[US ft]**	**Northing[US ft]**	**Latitude**	**Longitude**
Slot Location	**0.00**	**0.00**	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W
Facility Reference Pt			**575554.70**	**414038.30**	32°08'17.598"N	104°13'22.026"W
Field Reference Pt			**575554.70**	**414038.30**	32°08'17.598"N	104°13'22.026"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No.2H SHL (RT) to Facility Vertical Datum	**0.00ft**
Horizontal Reference Pt	**Slot**	Rig on No.2H SHL (RT) to Mean Sea Level	**3229.00ft**
Vertical Reference Pt	**Rig on No.2H SHL (RT)**	Rig on No.2H SHL (RT) to Mud Line at Slot (No.2H SHL)	**0.00ft**
MD Reference Pt	**Rig on No.2H SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**1.99°**

Planned Wellpath Report

Prelim_1

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No.2H SHL
Area	Eddy County, NM	Well	No.2H
Field	(Da Vanci) Sec. 7, T25S, R27E	Wellbore	No.2H PWB
Facility	Da Vanci 7 Fed Com No.2H		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	1.991	0.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Tie On
100.00†	0.000	1.991	100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
200.00†	0.000	1.991	200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
300.00†	0.000	1.991	300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
400.00†	0.000	1.991	400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
500.00†	0.000	1.991	500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
600.00†	0.000	1.991	600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
700.00†	0.000	1.991	700.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
800.00†	0.000	1.991	800.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
900.00†	0.000	1.991	900.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1000.00†	0.000	1.991	1000.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1100.00†	0.000	1.991	1100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1197.00†	0.000	1.991	1197.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Top Salt
1200.00†	0.000	1.991	1200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1300.00†	0.000	1.991	1300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1400.00†	0.000	1.991	1400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1500.00†	0.000	1.991	1500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1600.00†	0.000	1.991	1600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1700.00†	0.000	1.991	1700.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1798.00†	0.000	1.991	1798.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Base Salt
1800.00†	0.000	1.991	1800.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1900.00†	0.000	1.991	1900.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
1997.00†	0.000	1.991	1997.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Delaware
2000.00†	0.000	1.991	2000.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2100.00†	0.000	1.991	2100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2200.00†	0.000	1.991	2200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2300.00†	0.000	1.991	2300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2400.00†	0.000	1.991	2400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2500.00†	0.000	1.991	2500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2600.00†	0.000	1.991	2600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2700.00†	0.000	1.991	2700.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2800.00†	0.000	1.991	2800.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2900.00†	0.000	1.991	2900.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
2947.00†	0.000	1.991	2947.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Cherry Canyon
3000.00†	0.000	1.991	3000.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3100.00†	0.000	1.991	3100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3200.00†	0.000	1.991	3200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3300.00†	0.000	1.991	3300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3400.00†	0.000	1.991	3400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3500.00†	0.000	1.991	3500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3600.00†	0.000	1.991	3600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3700.00†	0.000	1.991	3700.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3800.00†	0.000	1.991	3800.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3900.00†	0.000	1.991	3900.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
3987.00†	0.000	1.991	3987.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Brushy Canyon

Planned Wellpath Report

Prelim_1

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No.2H SHL
Area	Eddy County, NM	Well	No.2H
Field	(Da Vanci) Sec. 7, T25S, R27E	Wellbore	No.2H PWB
Facility	Da Vanci 7 Fed Com No.2H		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4000.00†	0.000	1.991	4000.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4100.00†	0.000	1.991	4100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4200.00†	0.000	1.991	4200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4300.00†	0.000	1.991	4300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4400.00†	0.000	1.991	4400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4500.00†	0.000	1.991	4500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4600.00†	0.000	1.991	4600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4700.00†	0.000	1.991	4700.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4800.00†	0.000	1.991	4800.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
4900.00†	0.000	1.991	4900.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5000.00†	0.000	1.991	5000.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5100.00†	0.000	1.991	5100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5193.00†	0.000	1.991	5193.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Brusy Canyon Lower
5200.00†	0.000	1.991	5200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5300.00†	0.000	1.991	5300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5400.00†	0.000	1.991	5400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5479.00†	0.000	1.991	5479.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Bone Spring
5500.00†	0.000	1.991	5500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5600.00†	0.000	1.991	5600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5604.00†	0.000	1.991	5604.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Bone Spring "A" Shale
5700.00†	0.000	1.991	5700.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5800.00†	0.000	1.991	5800.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5900.00†	0.000	1.991	5900.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
5938.00†	0.000	1.991	5938.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Bone Spring "C" Shale
6000.00†	0.000	1.991	6000.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6100.00†	0.000	1.991	6100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6200.00†	0.000	1.991	6200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6300.00†	0.000	1.991	6300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6400.00†	0.000	1.991	6400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6439.00†	0.000	1.991	6439.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	1st Bone Spring Ss
6500.00†	0.000	1.991	6500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6600.00†	0.000	1.991	6600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6700.00†	0.000	1.991	6700.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6800.00†	0.000	1.991	6800.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
6900.00†	0.000	1.991	6900.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7000.00†	0.000	1.991	7000.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7019.00†	0.000	1.991	7019.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	2nd Bone Spring Ss
7100.00†	0.000	1.991	7100.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7200.00†	0.000	1.991	7200.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7300.00†	0.000	1.991	7300.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7400.00†	0.000	1.991	7400.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7500.00†	0.000	1.991	7500.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7600.00†	0.000	1.991	7600.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	
7616.00	0.000	1.991	7616.00	0.00	0.00	0.00	575554.70	414038.30	32°08'17.598"N	104°13'22.026"W	0.00	Est KOP
7700.00†	16.828	1.991	7698.80	12.25	12.24	0.43	575555.13	414050.54	32°08'17.719"N	104°13'22.020"W	20.03	

Planned Wellpath Report

Prelim_1

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No.2H SHL
Area	Eddy County, NM	Well	No.2H
Field	(Da Vanci) Sec. 7, T25S, R27E	Wellbore	No.2H PWB
Facility	Da Vanci 7 Fed Com No.2H		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7757.73†	28.394	1.991	7752.00	34.41	34.38	1.20	575555.90	414072.68	32°08'17.939"N	104°13'22.011"W	20.03	Lwr 2nd Bone spring Ss
7800.00†	36.862	1.991	7787.57	57.18	57.14	1.99	575556.69	414095.44	32°08'18.164"N	104°13'22.002"W	20.03	
7900.00†	56.895	1.991	7855.57	129.79	129.72	4.51	575559.21	414168.00	32°08'18.882"N	104°13'21.972"W	20.03	
8000.00†	76.929	1.991	7894.59	221.32	221.18	7.69	575562.39	414259.46	32°08'19.787"N	104°13'21.934"W	20.03	
8065.25	90.000	1.991	7902.00	286.00	285.83	9.94	575564.64	414324.10	32°08'20.427"N	104°13'21.907"W	20.03	EOC
8100.00†	90.000	1.991	7902.00	320.75	320.56	11.14	575565.84	414358.83	32°08'20.770"N	104°13'21.892"W	0.00	
8200.00†	90.000	1.991	7902.00	420.75	420.50	14.62	575569.32	414458.76	32°08'21.759"N	104°13'21.851"W	0.00	
8300.00†	90.000	1.991	7902.00	520.75	520.44	18.09	575572.79	414558.69	32°08'22.748"N	104°13'21.809"W	0.00	
8400.00†	90.000	1.991	7902.00	620.75	620.38	21.57	575576.26	414658.62	32°08'23.737"N	104°13'21.767"W	0.00	
8500.00†	90.000	1.991	7902.00	720.75	720.32	25.04	575579.74	414758.55	32°08'24.726"N	104°13'21.726"W	0.00	
8600.00†	90.000	1.991	7902.00	820.75	820.26	28.52	575583.21	414858.48	32°08'25.715"N	104°13'21.684"W	0.00	
8700.00†	90.000	1.991	7902.00	920.75	920.20	31.99	575586.69	414958.41	32°08'26.704"N	104°13'21.643"W	0.00	
8800.00†	90.000	1.991	7902.00	1020.75	1020.14	35.46	575590.16	415058.34	32°08'27.692"N	104°13'21.601"W	0.00	
8900.00†	90.000	1.991	7902.00	1120.75	1120.08	38.94	575593.63	415158.27	32°08'28.681"N	104°13'21.559"W	0.00	
9000.00†	90.000	1.991	7902.00	1220.75	1220.02	42.41	575597.11	415258.20	32°08'29.670"N	104°13'21.518"W	0.00	
9100.00†	90.000	1.991	7902.00	1320.75	1319.95	45.89	575600.58	415358.13	32°08'30.659"N	104°13'21.476"W	0.00	
9200.00†	90.000	1.991	7902.00	1420.75	1419.89	49.36	575604.06	415458.06	32°08'31.648"N	104°13'21.435"W	0.00	
9300.00†	90.000	1.991	7902.00	1520.75	1519.83	52.84	575607.53	415557.99	32°08'32.637"N	104°13'21.393"W	0.00	
9400.00†	90.000	1.991	7902.00	1620.75	1619.77	56.31	575611.00	415657.93	32°08'33.626"N	104°13'21.351"W	0.00	
9500.00†	90.000	1.991	7902.00	1720.75	1719.71	59.78	575614.48	415757.86	32°08'34.615"N	104°13'21.310"W	0.00	
9600.00†	90.000	1.991	7902.00	1820.75	1819.65	63.26	575617.95	415857.79	32°08'35.604"N	104°13'21.268"W	0.00	
9700.00†	90.000	1.991	7902.00	1920.75	1919.59	66.73	575621.43	415957.72	32°08'36.593"N	104°13'21.227"W	0.00	
9800.00†	90.000	1.991	7902.00	2020.75	2019.53	70.21	575624.90	416057.65	32°08'37.581"N	104°13'21.185"W	0.00	
9900.00†	90.000	1.991	7902.00	2120.75	2119.47	73.68	575628.38	416157.58	32°08'38.570"N	104°13'21.143"W	0.00	
10000.00†	90.000	1.991	7902.00	2220.75	2219.41	77.16	575631.85	416257.51	32°08'39.559"N	104°13'21.102"W	0.00	
10100.00†	90.000	1.991	7902.00	2320.75	2319.35	80.63	575635.32	416357.44	32°08'40.548"N	104°13'21.060"W	0.00	
10200.00†	90.000	1.991	7902.00	2420.75	2419.29	84.11	575638.80	416457.37	32°08'41.537"N	104°13'21.019"W	0.00	
10300.00†	90.000	1.991	7902.00	2520.75	2519.23	87.58	575642.27	416557.30	32°08'42.526"N	104°13'20.977"W	0.00	
10400.00†	90.000	1.991	7902.00	2620.75	2619.17	91.05	575645.75	416657.23	32°08'43.515"N	104°13'20.935"W	0.00	
10500.00†	90.000	1.991	7902.00	2720.75	2719.11	94.53	575649.22	416757.16	32°08'44.504"N	104°13'20.894"W	0.00	
10600.00†	90.000	1.991	7902.00	2820.75	2819.05	98.00	575652.69	416857.09	32°08'45.493"N	104°13'20.852"W	0.00	
10700.00†	90.000	1.991	7902.00	2920.75	2918.99	101.48	575656.17	416957.02	32°08'46.481"N	104°13'20.810"W	0.00	
10800.00†	90.000	1.991	7902.00	3020.75	3018.93	104.95	575659.64	417056.95	32°08'47.470"N	104°13'20.769"W	0.00	
10900.00†	90.000	1.991	7902.00	3120.75	3118.87	108.43	575663.12	417156.88	32°08'48.459"N	104°13'20.727"W	0.00	
11000.00†	90.000	1.991	7902.00	3220.75	3218.81	111.90	575666.59	417256.81	32°08'49.448"N	104°13'20.686"W	0.00	
11100.00†	90.000	1.991	7902.00	3320.75	3318.75	115.38	575670.07	417356.74	32°08'50.437"N	104°13'20.644"W	0.00	
11200.00†	90.000	1.991	7902.00	3420.75	3418.69	118.85	575673.54	417456.67	32°08'51.426"N	104°13'20.602"W	0.00	
11300.00†	90.000	1.991	7902.00	3520.75	3518.63	122.32	575677.01	417556.60	32°08'52.415"N	104°13'20.561"W	0.00	
11400.00†	90.000	1.991	7902.00	3620.75	3618.57	125.80	575680.49	417656.53	32°08'53.404"N	104°13'20.519"W	0.00	
11500.00†	90.000	1.991	7902.00	3720.75	3718.51	129.27	575683.96	417756.47	32°08'54.393"N	104°13'20.478"W	0.00	
11600.00†	90.000	1.991	7902.00	3820.75	3818.45	132.75	575687.44	417856.40	32°08'55.381"N	104°13'20.436"W	0.00	
11700.00†	90.000	1.991	7902.00	3920.75	3918.39	136.22	575690.91	417956.33	32°08'56.370"N	104°13'20.394"W	0.00	
11800.00†	90.000	1.991	7902.00	4020.75	4018.32	139.70	575694.38	418056.26	32°08'57.359"N	104°13'20.353"W	0.00	
11900.00†	90.000	1.991	7902.00	4120.75	4118.26	143.17	575697.86	418156.19	32°08'58.348"N	104°13'20.311"W	0.00	
12000.00†	90.000	1.991	7902.00	4220.75	4218.20	146.65	575701.33	418256.12	32°08'59.337"N	104°13'20.270"W	0.00	

Planned Wellpath Report

Prelim_1

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No.2H SHL
Area	Eddy County, NM	Well	No.2H
Field	(Da Vanci) Sec. 7, T25S, R27E	Wellbore	No.2H PWB
Facility	Da Vanci 7 Fed Com No.2H		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12100.00†	90.000	1.991	7902.00	4320.75	4318.14	150.12	575704.81	418356.05	32°09'00.326"N	104°13'20.228"W	0.00	
12200.00†	90.000	1.991	7902.00	4420.75	4418.08	153.60	575708.28	418455.98	32°09'01.315"N	104°13'20.186"W	0.00	
12300.00†	90.000	1.991	7902.00	4520.75	4518.02	157.07	575711.76	418555.91	32°09'02.304"N	104°13'20.145"W	0.00	
12400.00†	90.000	1.991	7902.00	4620.75	4617.96	160.55	575715.23	418655.84	32°09'03.293"N	104°13'20.103"W	0.00	
12421.88	90.000	1.991	7902.00	4642.63	4639.83	161.31	575715.99	418677.70	32°09'03.509"N	104°13'20.094"W	0.00	No.2H PBHL

HOLE & CASING SECTIONS - Ref Wellbore: No.2H PWB Ref Wellpath: Prelim_1

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
12.25in Open Hole	0.00	4900.00	4900.00	0.00	4900.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	4900.00	4900.00	0.00	4900.00	0.00	0.00	0.00	0.00
8.75in Open Hole	0.00	12422.00	12422.00	0.00	NA	0.00	0.00	NA	NA

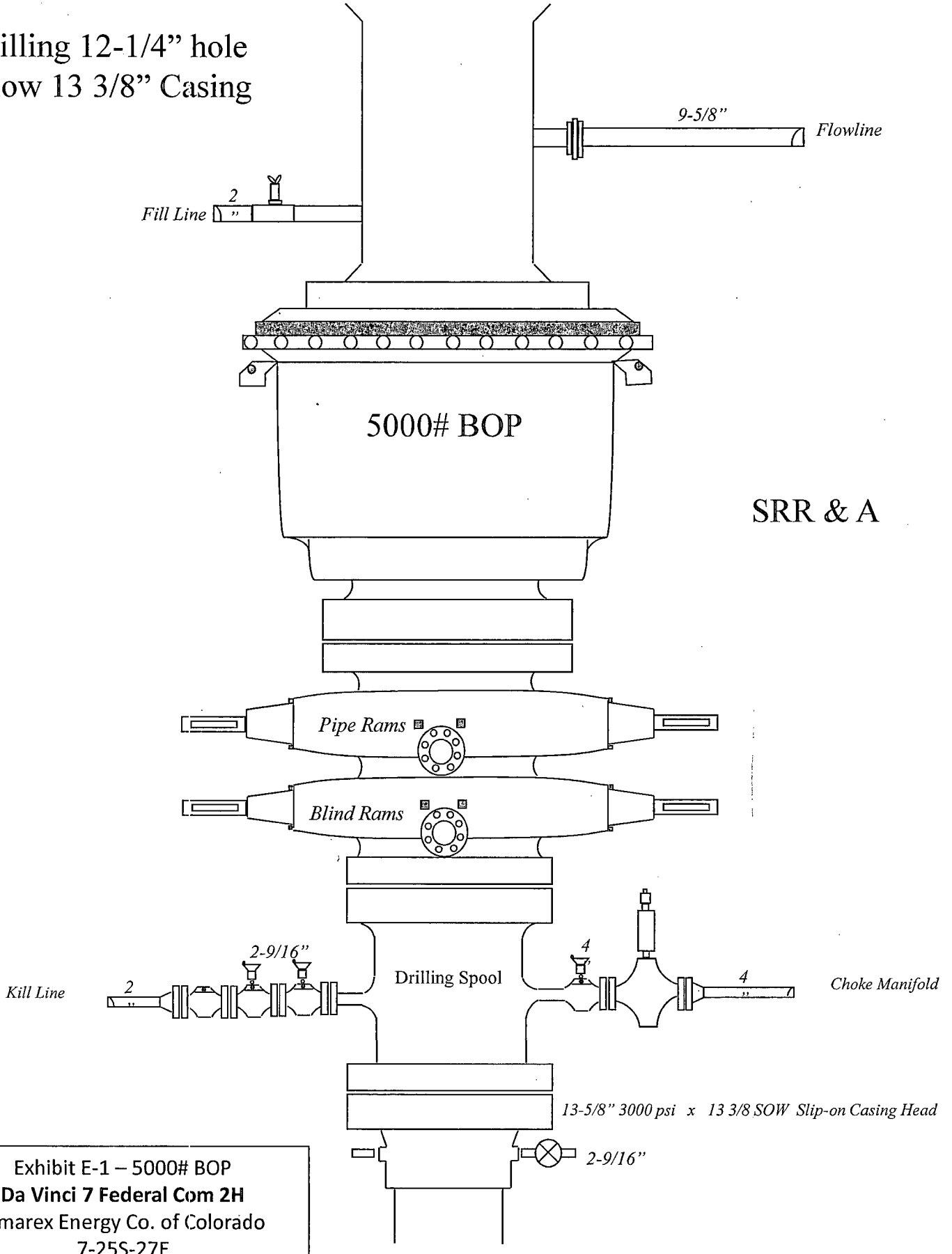
TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No.2H PBHL	12421.88	7902.00	4639.82	161.31	**575716.00**	**418677.70**	32°09'03.509"N	104°13'20.094"W	point

SURVEY PROGRAM - Ref Wellbore: No.2H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	12421.88	NaviTrak (Standard)		No.2H PWB

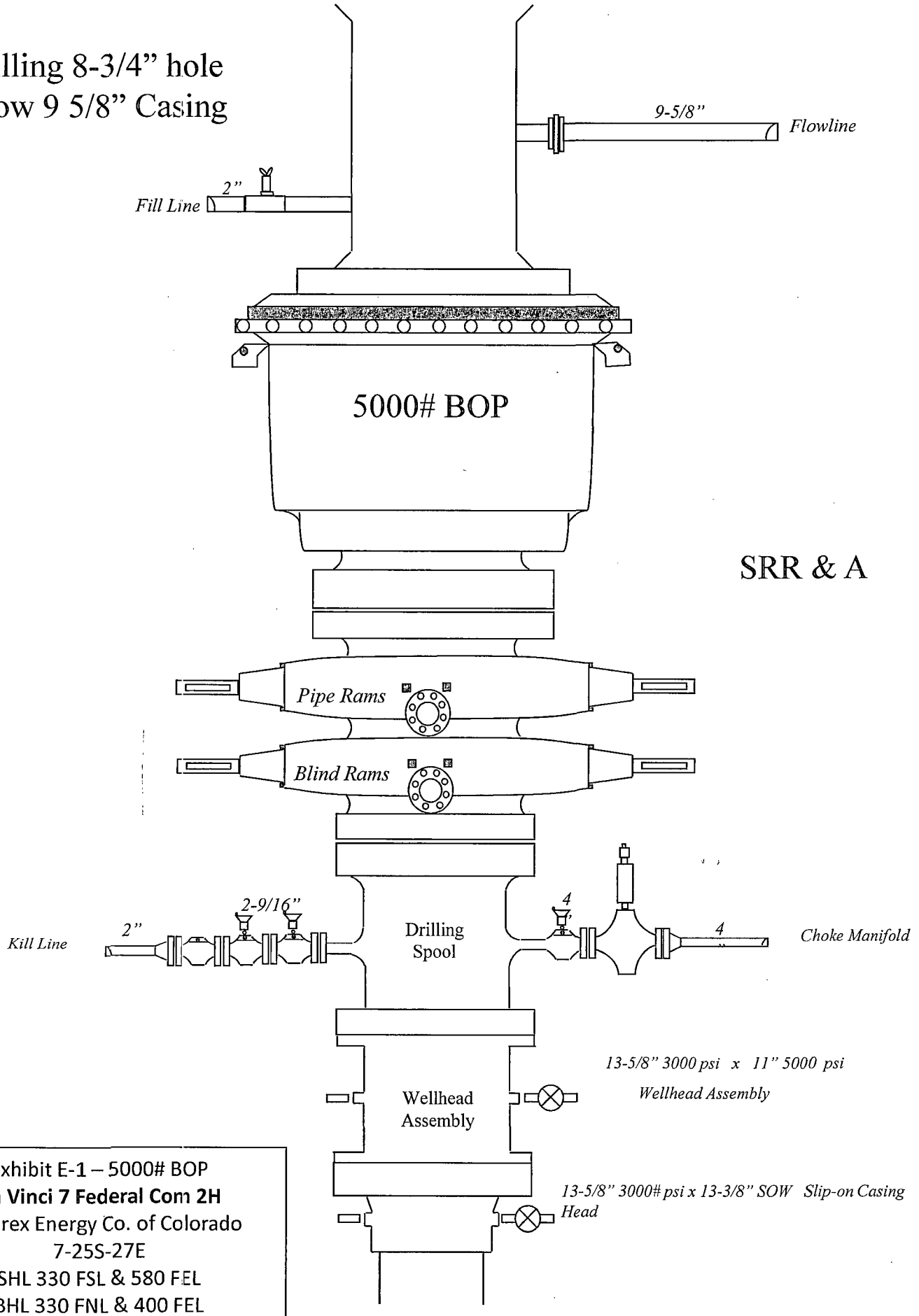
Drilling 12-1/4" hole
below 13 3/8" Casing



SRR & A

Exhibit E-1 – 5000# BOP
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

Drilling 8-3/4" hole
below 9 5/8" Casing

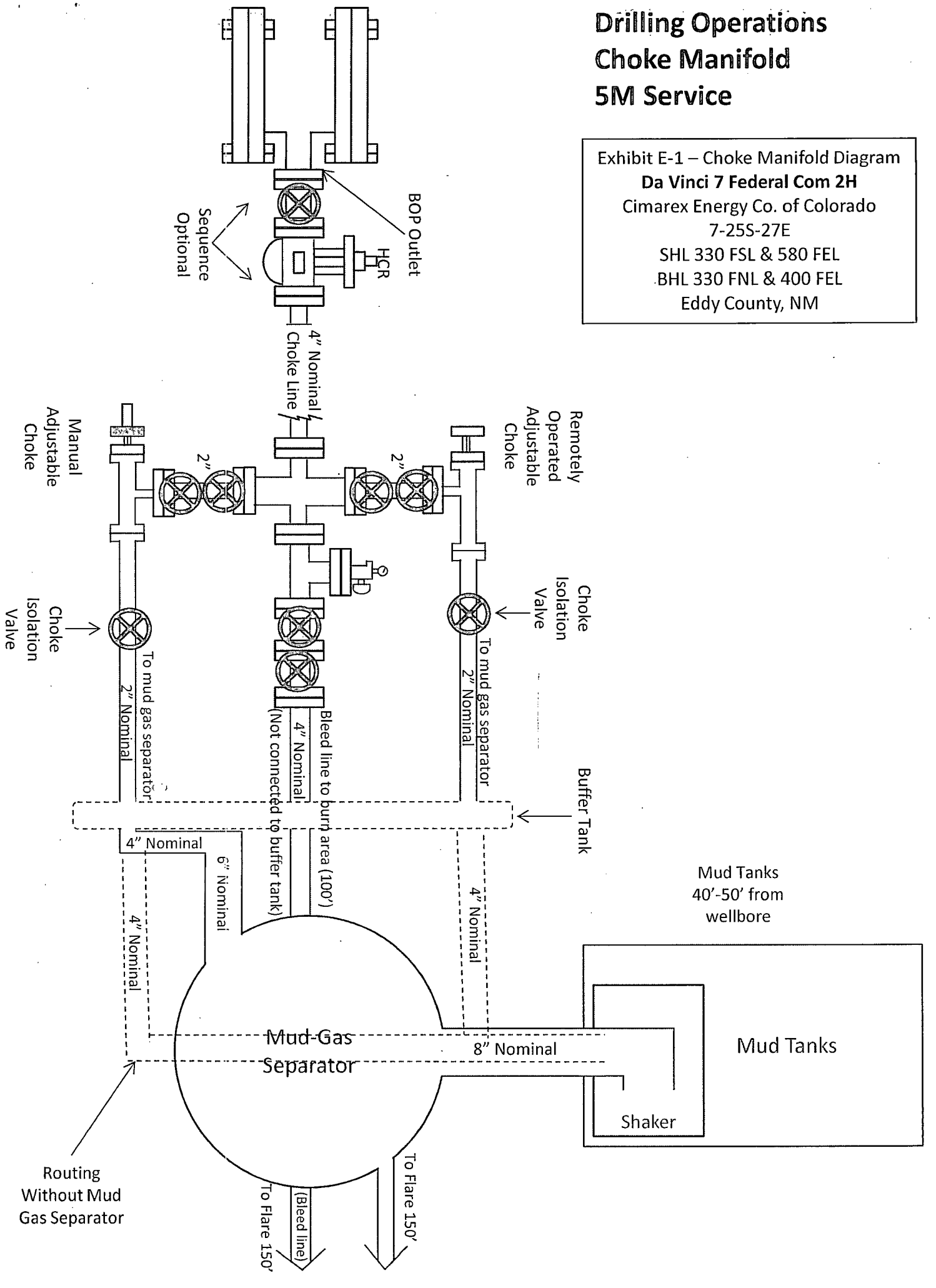


SRR & A

Exhibit E-1 – 5000# BOP
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

Drilling Operations
Choke Manifold
5M Service

Exhibit E-1 – Choke Manifold Diagram
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM



Midwest Hose & Specialty, Inc.

Exhibit F -3– Co-Flex Hose
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

Specification Sheet
Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unibolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6819

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

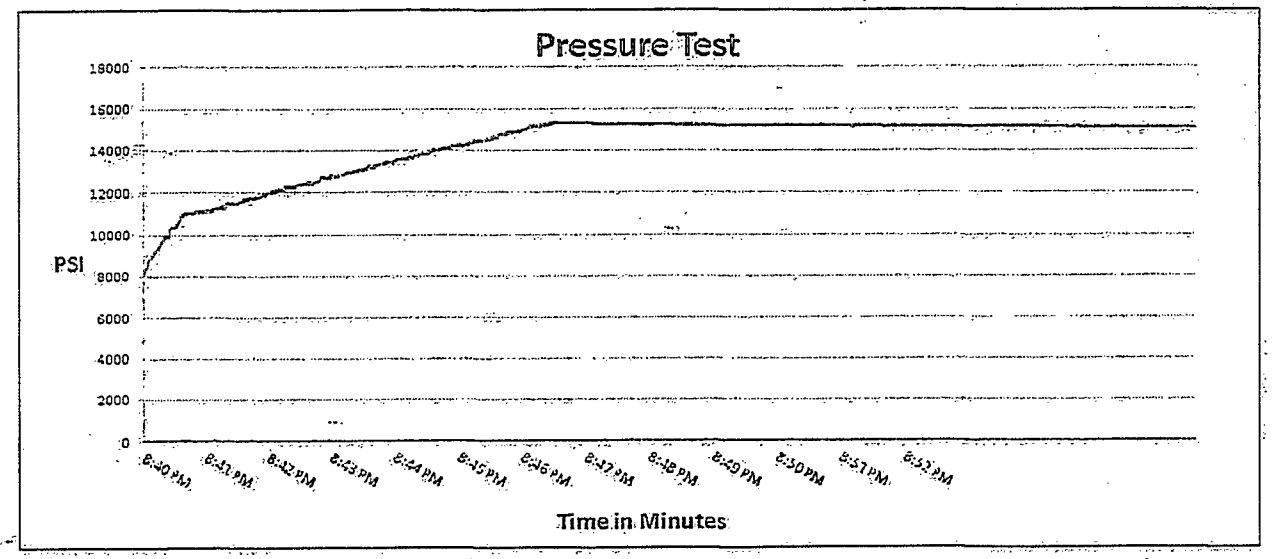
Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston **Pick Ticket #:** 94260

Hose Specifications		Verification	
Hose Type: C & K	Length: 45'	Type of Fitting: 4 1/16 10K	Coupling Method: Swage
I.D.: 4"	O.D.: 6.09"	Die Size: 6.38"	Final O.D.: 6.25"
Working Pressure: 10000 PSI	Burst Pressure: Standard Safety Multiplier Applies	Hose Serial #: 5544	Hose Assembly Serial #: 79793



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 Minutes		15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac Mcconnell

Approved By: Kim Thomas

Exhibit F-2 – Co-Flex Hose
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: DEM	PO ODYD-271

SPECIFICATIONS

Sales Order 79793	Dated: 3/8/2011

We hereby cerify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

Comments:

Approved:	Date: 3/8/2011

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	odyd-271

HOSE SPECIFICATIONS

Type:	Hose Length:
Stainless Steel Armor Choke & Kill Hose	45'ft.
I.D. 4 INCHES	O.D. 9 INCHES

WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
10,000 PSI	15,000 PSI	0 PSI

COUPLINGS

Stem Part No.	Ferrule No.
OKC OKC	OKC OKC
Type of Coupling:	
Swage-It	

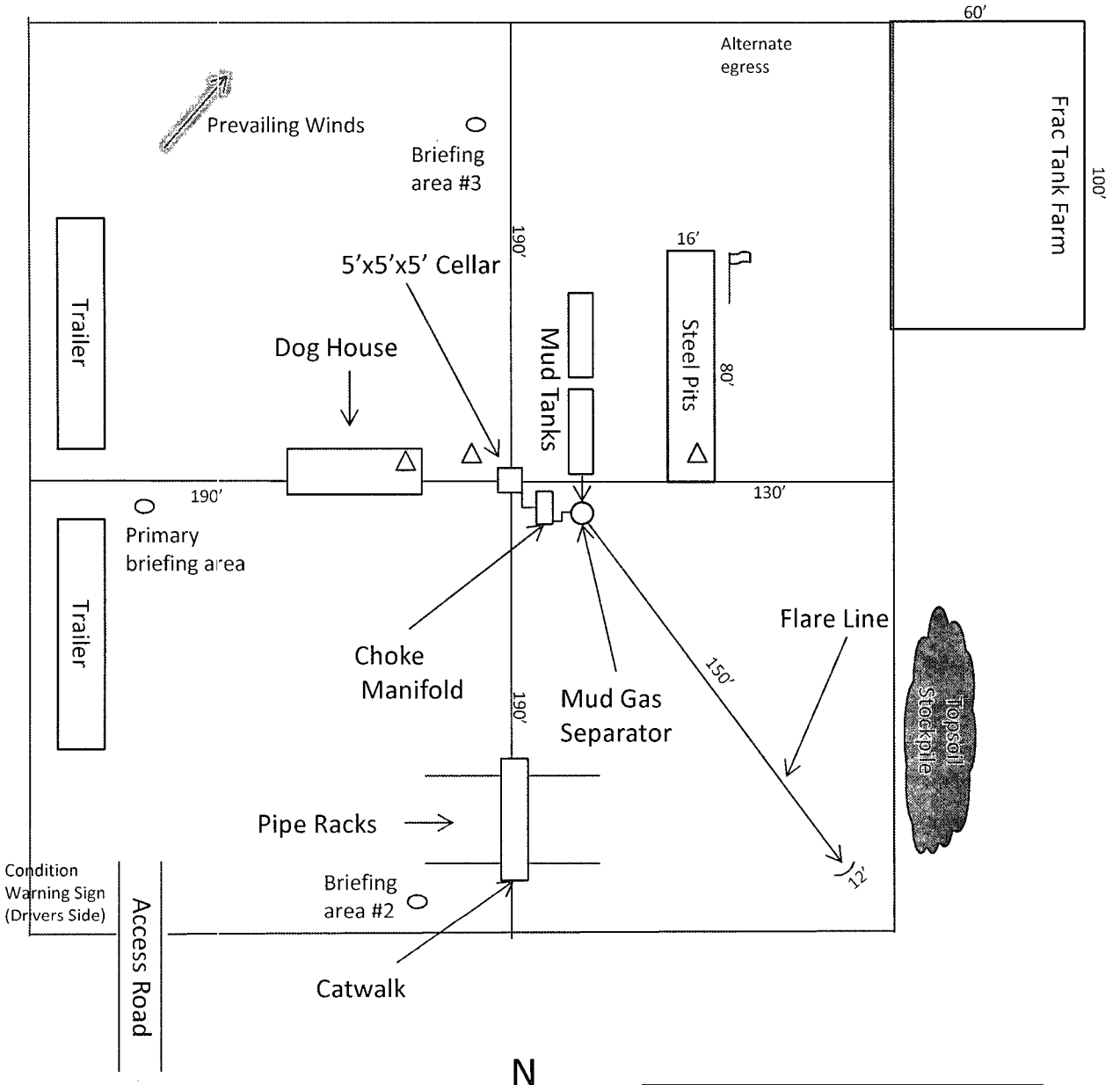
PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
15 MIN.	0 PSI
Hose Assembly Serial Number: 79793	Hose Serial Number: OKC

Comments:

Date:	Tested:	Approved:
3/8/2011	A. Jaime Luna	



Wind Direction Indicators
(wind sock or streamers)

△ • H2S Monitors
(alarms at bell nipple and shale shaker)

○ Briefing Areas

Exhibit D – Rig Diagram
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
UL P - Sec 7-25S-27E
Eddy County, NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
   A. Characteristics of H_2S
   B. Physical effects and hazards
   C. Principal and operation of H2S detectors, warning system and briefing areas.
   D. Evacuation procedure, routes and first aid.
   E. Proper use of safety equipment & life support systems
   F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

2 H_2S Detection and Alarm Systems:
   A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.
   B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:
   A. Windsock at mudpit area should be high enough to be visible.
   B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

4 Condition Flags and Signs
   A. Warning sign on access road to location.
   B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H_2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:
   A. See exhibit "E-1"

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 will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drillstem Testing:
No DSTs or cores are planned at this time.

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 is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas seperator will be brought into service along with H_2S scavengers if necessary.

H_2S Contingency Plan
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
UL P - Sec 7-25S-27E
Eddy County, NM

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must:

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with H_2S monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the response.
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training in the:
  - Detection of H_2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H_2S Contingency Plan Emergency Contacts
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
UL P - Sec 7-25S-27E
Eddy County, NM

Company Office		
Cimarex Energy Co. of Colorado	800-969-4789	
Co. Office and After-Hours Menu		

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Doug McQuitty	Drilling Superintendent	432-620-1933	806-640-2605
Scott Lucas	Drilling Superintendent	432-620-1989	432-894-5572
Conner Cromeens	Construction Foreman		432-270-0313
Roy Shirley	Construction Superintendent		432-634-2136

Artesia		
Ambulance	911	
State Police	575-746-2703	
City Police	575-746-2703	
Sheriff's Office	575-746-9888	
Fire Department	**575-746-2701**	
Local Emergency Planning Committee	575-746-2122	
New Mexico Oil Conservation Division	575-748-1283	
Carlsbad		
Ambulance	911	
State Police	575-885-3137	
City Police	575-885-2111	
Sheriff's Office	575-887-7551	
Fire Department	**575-887-3798**	
Local Emergency Planning Committee	575-887-6544	
US Bureau of Land Management	575-887-6544	
Santa Fe		
New Mexico Emergency Response Commission (Santa Fe)	505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126	
New Mexico State Emergency Operations Center	505-476-9635	
National		
National Emergency Response Center (Washington, D.C.)	800-424-8802	
Medical		
Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949	
Other		
Boots & Coots IWC	800-256-9688	or 281-931-8884
Cudd Pressure Control	432-699-0139	or 432-563-3356
Halliburton	575-746-2757	
B.J. Services	575-746-3569	

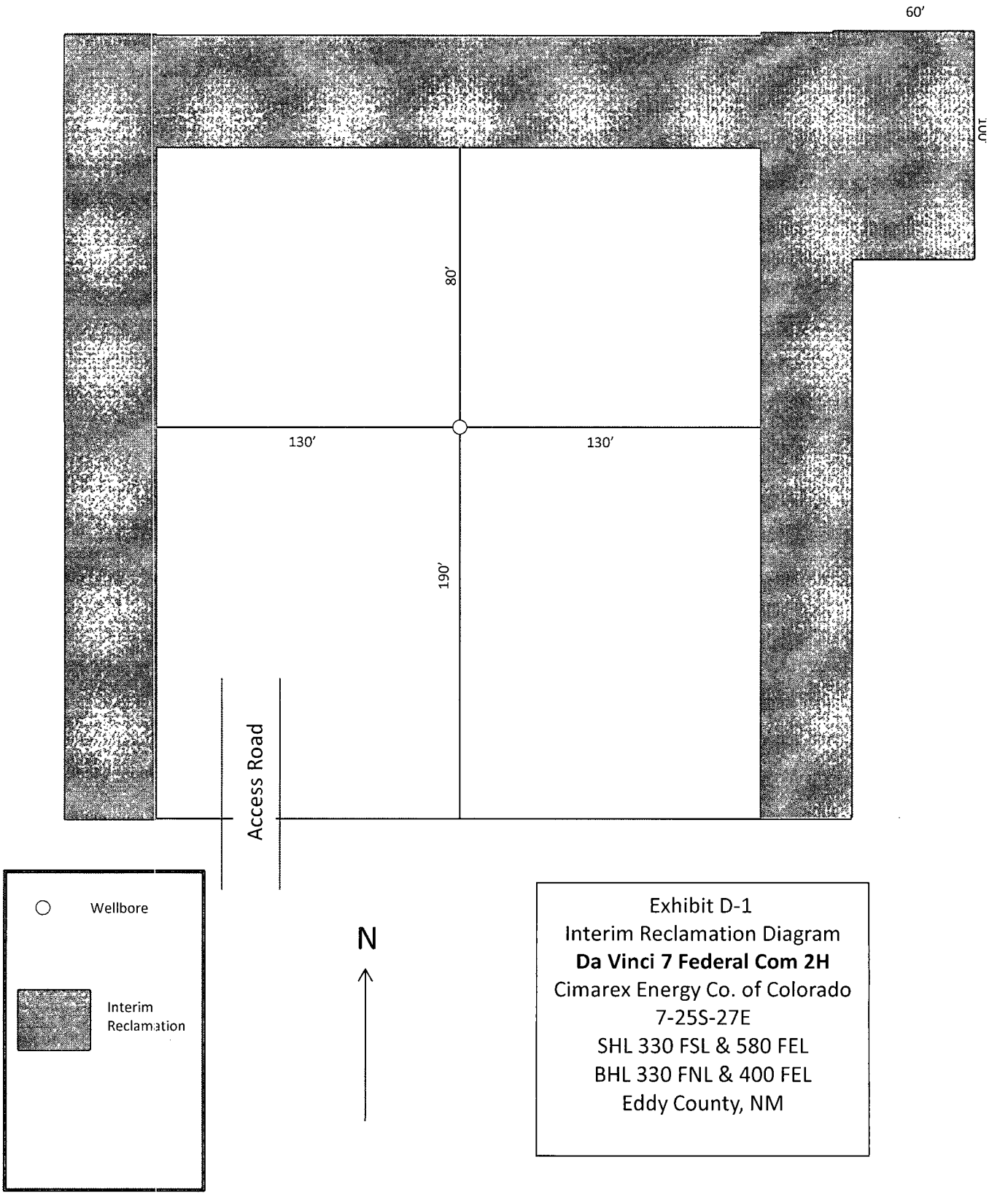


Exhibit D-1
Interim Reclamation Diagram
Da Vinci 7 Federal Com 2H
Cimarex Energy Co. of Colorado
7-25S-27E
SHL 330 FSL & 580 FEL
BHL 330 FNL & 400 FEL
Eddy County, NM

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Cimarex Energy Co. of Colorado**
LEASE NO.:	**NMNM-100332**
WELL NAME & NO.:	**Da Vinci 7 Federal Com 2H**
SURFACE HOLE FOOTAGE:	**0330' FSL & 0580' FEL**
BOTTOM HOLE FOOTAGE	**0330' FNL & 0400' FEL**
LOCATION:	**Section 07, T. 25 S., R 27 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)

Drilling:

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

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) 234-5909 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 6 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 the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

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

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

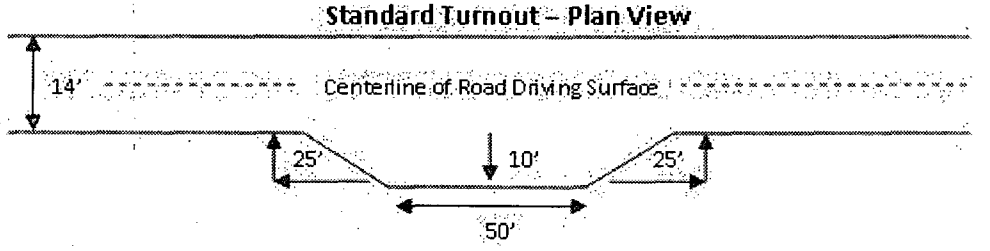
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

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

Ditching

Ditching shall be required on both sides of the road.

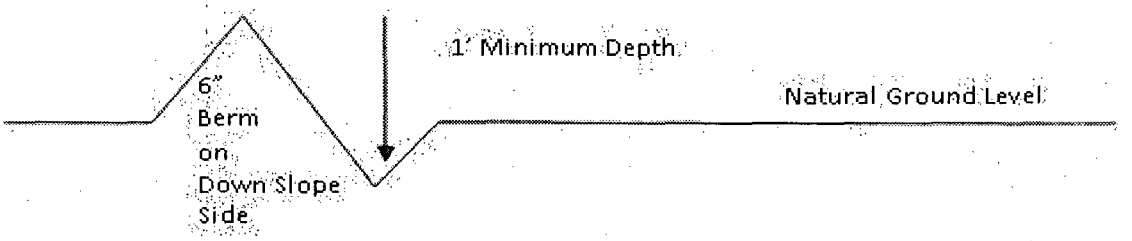
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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

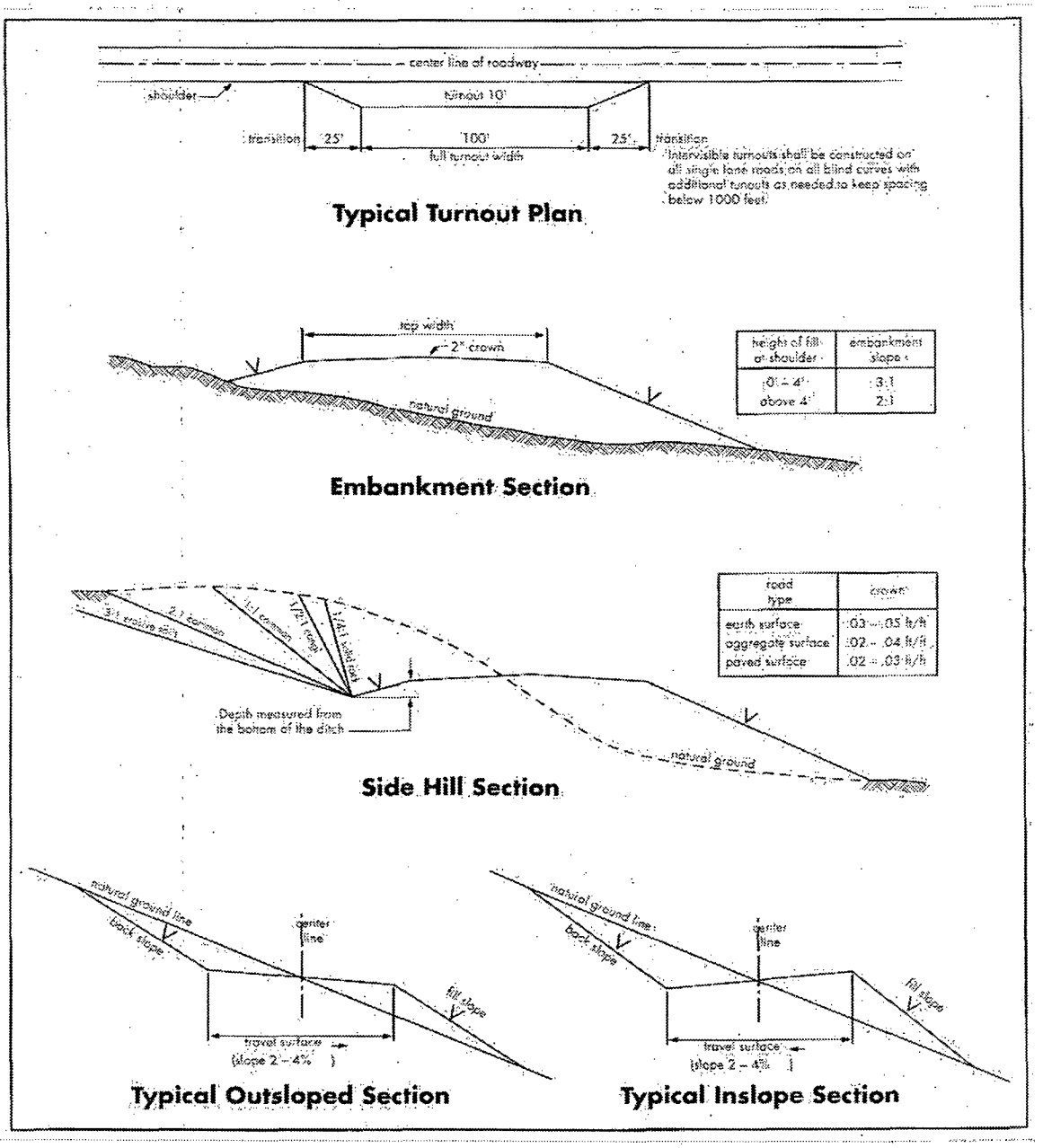
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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, 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 is 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.**

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.

Medium Cave/Karst
Possibility of lost circulation in the Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **450** feet and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    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 **9-5/8** inch intermediate casing, which shall be set at approximately **2020** feet, 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.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralization for production casing is approved as written.

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

   ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 23% - Additional cement may be required.**

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. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review**. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. 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.

   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.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

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

    a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    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 test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

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

    e. 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.**

    f. 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. This test shall be performed prior to the test at full stack pressure.

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.

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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 from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 20 feet:

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 20 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

(X) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR
OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the approved application and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b.

A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Power lines, " Raptor Research Foundation, Inc., 1981. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

9. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the

Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

10. Special Stipulations

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes with native soil from the removed poles.

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).

Seed Mixture 1, for Loamy 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 regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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 lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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