ATS-12-148

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NMOCD ARTESIA

OCD-ARTESIA

Form 3160-3
(April 2004)

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

5. Lease Serial No
SHL NM-111530, BHL NM-94892

6. If Indian, Allotee or Tribe Name

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work ☒ DRILL ☐ REENTER

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

1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8 Lease Name and Well No.
Gadwall 18 Federal Com No. 3 [34114]

2 Name of Operator
Cimarex Energy Co. of Colorado [162683]

9 API Well No.
30-015- 39964

3a. Address
600 N. Marienfeld St., Ste. 600; Midland, TX 79701

3b. Phone No. *(include area code)*
432-620-1936

10. Field and Pool, or Exploratory [97494]
COTTONWOOD DRAW; B.S.

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

At Surface 330 FNL & 810 FWL

At proposed prod Zone 330 FSL & 890 FWL *Horizontal Bone Spring Test*

11. Sec , T R. M. or Blk. and Survey or Area
18-25S-27E

14. Distance in miles and direction from nearest town or post office*

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
NM-94842 159.02 acres
NM-111530 478.86 acres

17. Spacing Unit dedicated to this well
W2W2 157.88 acres

18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. per Zone 1-25-12 DM ~~1420'~~ 856'

19. Proposed Depth
MD 12275, TVD 7748

20. BLM/BIA Bond No. on File
NM-2575

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3199' GR

22. Approximate date work will start*
04.30.11

23. Estimated duration
20-25 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
Name *(Printed/Typed)* Terri Stathem
Date 11.22.11

Title
Regulatory Analyst

Approved By *(Signature)* /s/ Don Peterson
Name (Printed/Typed)
Date FEB 15 2012

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.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.

* *(Instructions on page 2)*

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

Operator Certification Statement
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit M, Section 18
T25S-R27E, Eddy County, NM

Operator's Representative
Cimarex Energy Co. of Colorado
600 N. Marienfeld St., Ste. 600
Midland, TX 79701
Office Phone: (432) 620-1936
Terri Stathem

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 22nd day of November, 2011

NAME: Terri Stathem

TITLE: Regulatory Analyst

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

TELEPHONE: (432) 620-1936

EMAIL: tstathem@cimarex.com

Field Representative: Same as above

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

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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
30-015-39964	97494	Cottonwood Draw; B.S.

Property Code	Property Name	Well Number
34114	GADWALL "18" FEDERAL COM	3

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3201'

Surface Location

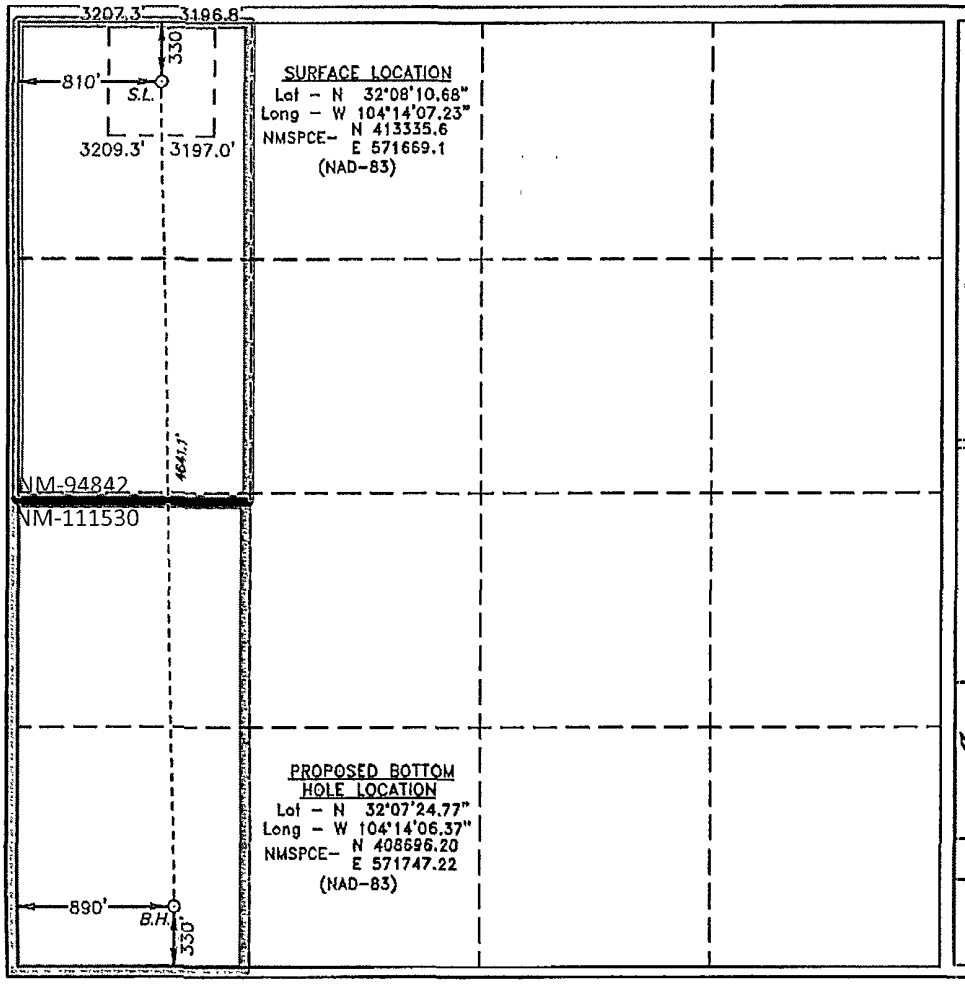
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	18	25 S	27 E		330	NORTH	810	WEST	EDDY

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
M	18	25 S	27 E		330	SOUTH	890	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
157.88			

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



SURFACE LOCATION
Lat - N 32°08'10.68"
Long - W 104°14'07.23"
NMSPCE- N 413335.6
E 571669.1
(NAD-83)

PROPOSED BOTTOM HOLE LOCATION
Lat - N 32°07'24.77"
Long - W 104°14'06.37"
NMSPCE- N 408696.20
E 571747.22
(NAD-83)

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.

Zeno Farris 1/3/2012
Signature Date

Zeno Farris
Printed Name

zfarris@cimarex.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.

JUNE 13, 2011
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL SURVEYOR

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 24959

Application to Drill
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit M, Section 18
T25S-R27E, 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 FNL & 910 FWL
   BHL 330 FSL & 890 FWL

2. Elevation above sea level: 3199' GR

3. Geologic name of surface formation: Quaternery 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: MD 12278, TVD 7748 '

6. Estimated Formation Tops

Rustler	Spotty, NA	Bone Spring "A" Shale	5580'
Top Salt	1179'	Bone Spring "C" Shale	5914'
Base Salt	1730'	1st Bone Spring Ss	6390'
Delaware	1918'	2nd Bone Spring Ss	6937'
Cherry Canyon	2926'	2nd BS Ss Lower	7683'
Brushy Canyon	3955'	3rd Bone Spr Carb "C"	7856'
Bone Spring	5428'	3rd Bone Spr Carb "B"	8040'

7. Possible mineral bearing formations:

Delaware	Oil
Bone Spring	Oil

8. Proposed drilling Plan

Drill 8¾" hole to KOP @ 7472 and drill through curve to lateral TD (12278 MD, 7748 TVD). Run cemented 5½" 17# P110 production casing from 0-12278. Use LTC from 0-7412 (60' above KOP), BTC from 7862-7922 (EOC), and LTC from 7922-12278.

9. Mud Circulating System:

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	450'	8.4 - 8.6	30-32	NC	FW spud mud
450'	to	1893'	9.9 - 10	28-29	NC	Brine
1,893'	to	12278'	8.6 - 9.2	28-30	NC	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.

10. Casing Program:

	Hole Size	Depth			Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to	450'	New	13⅜"	48#	STC	H-40
Intermediate	12¼"	0'	to	1893'	New	9⅝"	36#	LTC	J-55
Production	8¾"	0'	to	12278'	New	5½"	17#	LTC	P-110

11. Cementing Program:

Surface Casing	Lead: 280 SKS Halcem C + 4% Bentomite + 2% CaCl, 13.5ppg, 1.75 yield, 100% Excess Tail: 30 SKS Halcem C + 2% CaCl, 14.2ppg, 1.34 yield, 50% Excess **TOC 0' Centralizers per Onshore Order 2.III.B.1.f**
Intermediate	Lead: 1195 SKS EconoCem + 5% salt + 5 lbm gilsonite, 14.6ppg, 1.54 yield, 70% Excess Tail: 200 SKS HalCem + 1% CaCl, 14.8ppg, 1.34 yield, 25% Excess **TOC 0'**
Production	Lead: 935 SKS EconoCem - H + 0.2 % HR-601 2.44, 11.9 ppg, 2.44 yield, 50% Excess Tail: 1385 SKS Versacem - H + 0.5% Halad(R)-344 + 0.4% CFR-3 + 1 lbm/sk salt + 0.1% HR-601, 14.5ppg, 1.22 yield, 25% Excess **TOC 0' Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.**

According to the State Engineer, depth to ground water is approximately 19.' Fresh water zones will be protected by setting 13⅜" casing at 450' and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 1893' and5½" casing at 12278' and cementing to surface.

Collapse Factor	*Burst Factor*	*Tension Factor*
1.125	1.125	1.6

12. Pressure control Equipment:
Exhibit "E". A 13 5/8" 5000 PSI working pressure B.O.P. tested to 3000 psi 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 below 1893.' 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. Mud gas seperator will be available if drilling in H2S areas.

BOP unit will be hydraulically operated. BOP will be nippled up 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. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

Before drilling out of the surface pipe BOP's will be tested to 250 psi low and 3000 psi high by an independent service company. Hydril will be tested to 250 psi low and 1500 psi high.

13. Testing, Logging and Coring Program: See COA
    A. Mud logging program: No mud logging program.
    B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
    C. No DSTs or cores are planned at this time.

14. Potential Hazards:
No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex has encountered H_2S in a one-time encounter in an Intra-salt Pocket and while drilling and completing wells in the Delaware Mountain Group. In this regard, attached is an H_2S Drilling Operations Plan. The ROEs encountered do not meet the BLM's minimum requirements for the submission of a "Public Protection Plan" for the drilling and completion of this well. 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 **3500 psi** Estimated BHT **115°**

15. Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.
Drilling expected to take 25-35 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 total depth over possible pay intervals.
Bone Spring pay will be perforated and stimulated.
The proposed well will be tested and potentialed as **an oil well.**

CIMAREX

GREAT WHITE

Project	Eddy County (NM83E)
Site	Sec 18 - T25S - R27E
Well	Gadwall 18 Fed Com #3
Wellbore	Wellbore #1
Design	Plan #1

WELL DETAILS: Gadwall 18 Fed Com #3

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	408696.40	571732.40	32° 7' 24.770 N	104° 14' 6.539 W

SHL: 330' FSL / 905' FWL
BHL: 330' FNL / 990' FWL

G
T M

Azimuths to Grid North
Total Correction: 7.87°
Magnetic Field
Strength 48582.6snT
Dip Angle 60.01°
Date 01/19/2011
Model IGRF200510

WELLBORE TARGET DETAILS

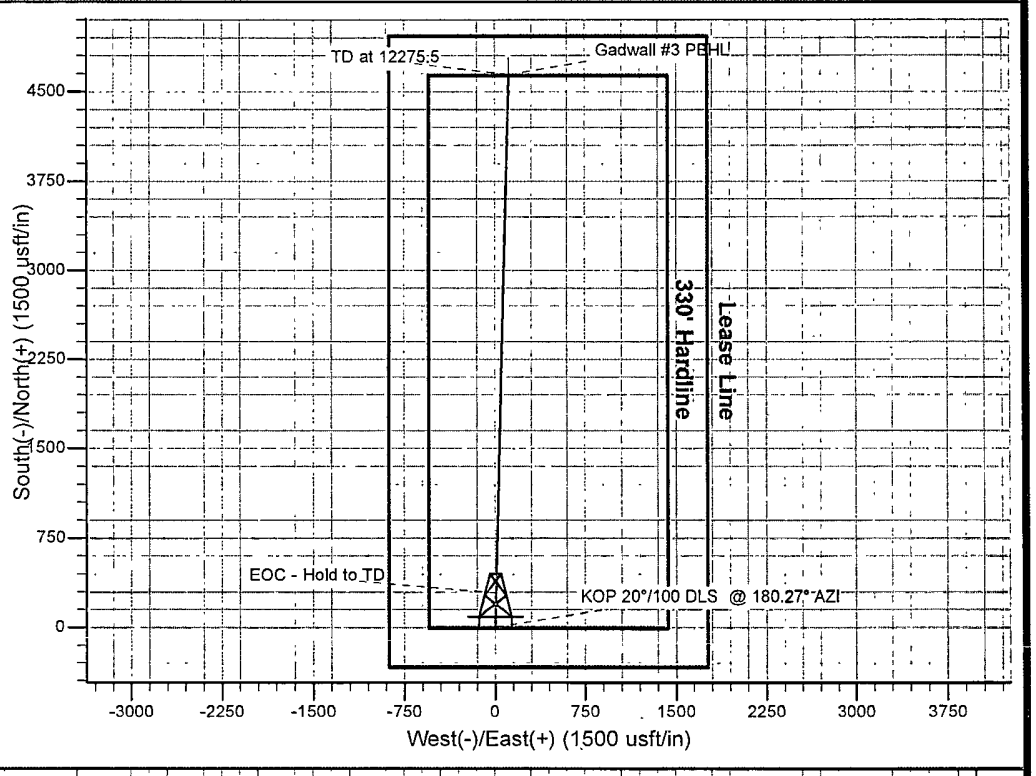
Name	TVD	+N/-S	+E/-W	Northing	Easting
Gadwall #3 PBHL	7748.0	4641.0	116.5	413337.38	571848.93

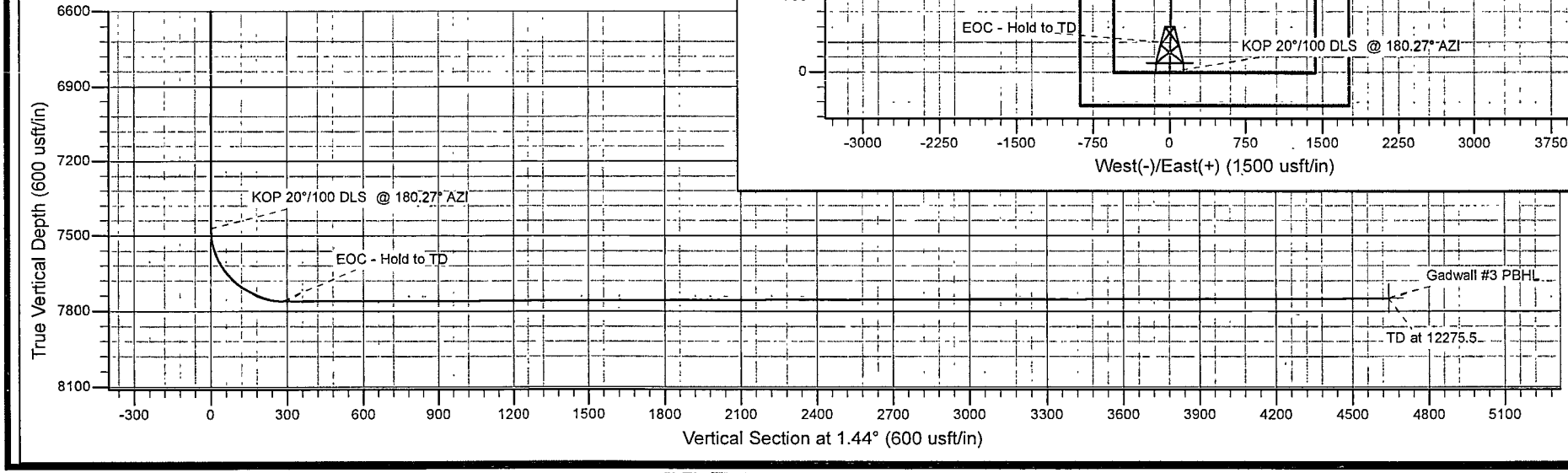
PLAN DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
7471.5	0.00	0.00	7471.5	0.0	0.0	0.00	0.00	0.0	
7922.2	90.13	1.44	7758.0	287.0	7.2	20.00	1.44	287.1	
12277.5	90.13	1.44	7748.1	4641.0	116.7	0.00	0.00	4642.4	Gadwall #3 PBHL

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSection	Departure	Annotation
7471.5	7471.5	0.00	0.00	0.0	0.0	0.0	0.0	KOP 20°/100 DLS @ 180.27° AZI
7758.0	7922.1	90.13	180.27	-287.1	-1.4	287.1	287.1	EOC - Hold to TD
	12275.5							TD at 12275.5





Cimarex Energy Co.

Eddy County (NM83E)
Sec 18 - T25S - R27E
Gadwall 18 Fed Com #3

Wellbore #1

Plan: Plan #1

Standard Planning Report

24 January, 2011

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Gadwall 18 Fed Com #3
Company:	Cimarex Energy Co.	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 18 - T25S - R27E	**North Reference:**	Grid
Well:	Gadwall 18 Fed Com #3	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Eddy County (NM83E)

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

Site Sec 18 - T25S - R27E

Site Position:		**Northing:**	413,530.80 usft	**Latitude:**	32° 8' 12.599 N
From:	Map	**Easting:**	573,169.00 usft	**Longitude:**	104° 13' 49.779 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.05 °

Well Gadwall 18 Fed Com #3

Well Position	**+N/-S**	-4,834.4 usft	**Northing:**	408,696.40 usft	**Latitude:**	32° 7' 24.770 N
	+E/-W	-1,436.6 usft	**Easting:**	571,732.40 usft	**Longitude:**	104° 14' 6.539 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	0.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	01/19/11	7.92	60.01	48,583

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	1.44

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,471.5	0.00	0.00	7,471.5	0.0	0.0	0.00	0.00	0.00	0 00	
7,922.1	90.13	1.44	7,758.0	287.0	7.2	20.00	20.00	0.00	1.44	
12,277.5	90.13	1.44	7,748.1	4,641.0	116.7	0.00	0.00	0.00	0.00	Gadwall #3 PBHL

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Gadwall 18 Fed Com #3
Company:	Cimarex Energy Co.	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 18 - T25S - R27E	**North Reference:**	Grid
Well:	Gadwall 18 Fed Com #3	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #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)
7,471.5	0.00	0.00	7,471.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP 20°/100 DLS @ 180.27° AZI									
7,475.0	0.70	1.44	7,475.0	0.0	0.0	0.0	20.00	20.00	0.00
7,500.0	5.70	1.44	7,500.0	1.4	0.0	1.4	20.00	20.00	0.00
7,525.0	10.70	1.44	7,524.7	5.0	0.1	5.0	20.00	20.00	0.00
7,550.0	15.70	1.44	7,549.0	10.7	0.3	10.7	20.00	20.00	0.00
7,575.0	20.70	1.44	7,572.8	18.5	0.5	18.5	20.00	20.00	0.00
7,600.0	25.70	1.44	7,595.7	28.3	0.7	28.3	20.00	20.00	0.00
7,625.0	30.70	1.44	7,617.8	40.1	1.0	40.1	20.00	20.00	0.00
7,650.0	35.70	1.44	7,638.7	53.8	1.4	53.8	20.00	20.00	0.00
7,675.0	40.70	1.44	7,658.3	69.3	1.7	69.3	20.00	20.00	0.00
7,700.0	45.70	1.44	7,676.5	86.4	2.2	86.4	20.00	20.00	0.00
7,725.0	50.70	1.44	7,693.2	105.0	2.6	105.0	20.00	20.00	0.00
7,750.0	55.70	1.44	7,708.2	125.0	3.1	125.0	20.00	20.00	0.00
7,775.0	60.70	1.44	7,721.3	146.2	3.7	146.3	20.00	20.00	0.00
7,800.0	65.70	1.44	7,732.6	168.5	4.2	168.6	20.00	20.00	0.00
7,825 0	70.70	1.44	7,741.9	191.7	4.8	191.8	20.00	20.00	0.00
7,850 0	75.70	1.44	7,749.1	215.7	5.4	215.7	20.00	20.00	0.00
7,875.0	80.70	1.44	7,754.2	240.1	6.0	240.2	20.00	20.00	0.00
7,900.0	85.70	1.44	7,757.2	264.9	6.7	265.0	20.00	20.00	0.00
7,922.1	90.13	1.44	7,758.0	287.0	7.2	287.1	20.00	20.00	0.00
EOC - Hold to TD									
8,000.0	90.13	1.44	7,757.8	364.9	9 2	365.0	0.00	0.00	0.00
8,100.0	90.13	1.44	7,757.6	464.8	11.7	465.0	0.00	0.00	0.00
8,200.0	90.13	1.44	7,757.3	564.8	14.2	565.0	0.00	0.00	0.00
8,300.0	90.13	1.44	7,757.1	664.8	16.7	665.0	0.00	0.00	0.00
8,400.0	90.13	1.44	7,756.9	764.7	19.2	765.0	0.00	0.00	0.00
8,500.0	90.13	1.44	7,756.7	864.7	21.7	865.0	0.00	0.00	0.00
8,600.0	90.13	1.44	7,756.4	964.7	24.2	965.0	0.00	0.00	0.00
8,700.0	90.13	1.44	7,756.2	1,064.6	26.8	1,065.0	0.00	0.00	0.00
8,800.0	90.13	1.44	7,756.0	1,164.6	29.3	1,165.0	0.00	0.00	0.00
8,900.0	90.13	1.44	7,755.8	1,264.6	31.8	1,265.0	0.00	0.00	0.00
9,000.0	90.13	1.44	7,755.5	1,364.5	34.3	1,365.0	0.00	0.00	0.00
9,100.0	90.13	1.44	7,755.3	1,464.5	36.8	1,465.0	0.00	0.00	0.00
9,200.0	90.13	1.44	7,755.1	1,564.5	39.3	1,565.0	0.00	0.00	0.00
9,300.0	90.13	1.44	7,754.9	1,664.4	41.8	1,665.0	0.00	0.00	0.00
9,400.0	90.13	1.44	7,754.6	1,764.4	44.4	1,765.0	0.00	0.00	0.00
9,500.0	90.13	1.44	7,754.4	1,864.4	46.9	1,865.0	0.00	0.00	0.00
9,600 0	90.13	1.44	7,754.2	1,964.4	49.4	1,965.0	0.00	0.00	0.00
9,700 0	90.13	1.44	7,753.9	2,064.3	51.9	2,065.0	0.00	0.00	0.00
9,800.0	90.13	1.44	7,753.7	2,164.3	54.4	2,165.0	0.00	0.00	0.00
9,900.0	90.13	1 44	7,753.5	2,264.3	56 9	2,265.0	0.00	0.00	0.00
10,000.0	90.13	1.44	7,753.3	2,364.2	59.4	2,365.0	0.00	0.00	0.00
10,100.0	90.13	1.44	7,753.0	2,464.2	61.9	2,465.0	0.00	0.00	0.00
10,200.0	90.13	1.44	7,752.8	2,564.2	64.5	2,565.0	0.00	0.00	0.00
10,300.0	90.13	1.44	7,752.6	2,664.1	67.0	2,665.0	0.00	0.00	0.00
10,400.0	90.13	1.44	7,752.4	2,764.1	69.5	2,765.0	0.00	0.00	0.00
10,500.0	90.13	1.44	7,752.1	2,864.1	72.0	2,865.0	0.00	0.00	0.00
10,600.0	90.13	1.44	7,751.9	2,964.0	74.5	2,965.0	0.00	0.00	0.00
10,700.0	90.13	1.44	7,751.7	3,064.0	77.0	3,065.0	0.00	0.00	0.00
10,800.0	90.13	1.44	7,751.4	3,164.0	79.5	3,165.0	0.00	0.00	0.00
10,900.0	90.13	1.44	7,751.2	3,263.9	82.0	3,265.0	0.00	0.00	0.00
11,000.0	90.13	1.44	7,751.0	3,363.9	84.6	3,365.0	0.00	0.00	0.00
11,100.0	90.13	1.44	7,750.8	3,463.9	87.1	3,465.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Gadwall 18 Fed Com #3
Company:	Cimarex Energy Co.	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 18 - T25S - R27E	**North Reference:**	Grid
Well:	Gadwall 18 Fed Com #3	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #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)
11,200.0	90.13	1.44	7,750.5	3,563.8	89.6	3,565.0	0.00	0.00	0.00
11,300.0	90.13	1.44	7,750.3	3,663.8	92.1	3,665.0	0.00	0.00	0.00
11,400.0	90.13	1.44	7,750.1	3,763.8	94.6	3,765.0	0.00	0.00	0.00
11,500.0	90.13	1.44	7,749.9	3,863.7	97.1	3,865.0	0.00	0.00	0.00
11,600.0	90.13	1.44	7,749.6	3,963.7	99.6	3,965.0	0.00	0.00	0.00
11,700.0	90.13	1.44	7,749.4	4,063.7	102.2	4,065.0	0.00	0.00	0.00
11,800.0	90.13	1.44	7,749.2	4,163.7	104.7	4,165.0	0.00	0.00	0.00
11,900.0	90.13	1.44	7,749.0	4,263.6	107.2	4,265.0	0.00	0.00	0.00
12,000.0	90.13	1.44	7,748.7	4,363.6	109.7	4,365.0	0.00	0.00	0.00
12,100.0	90.13	1.44	7,748.5	4,463.6	112.2	4,465.0	0.00	0.00	0.00
12,200.0	90.13	1.44	7,748.3	4,563.5	114.7	4,565.0	0.00	0.00	0.00
12,275.5	90.13	1.44	7,748.1	4,639.0	116.6	4,640.5	0.00	0.00	0.00
TD at 12275.5									
12,277.5	90.13	1.44	7,748.1	4,641.0	116.7	4,642.4	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Gadwall #3 PBHL	0.00	0.00	7,748.0	4,641.0	116.5	413,337.38	571,848.93	32° 8' 10.697 N	104° 14' 5.134 W
- plan misses target center by 0.2usft at 12277.5usft MD (7748.1 TVD, 4641.0 N, 116.7 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
7,471.5	7,471.5	0.0	0.0	KOP 20°/100 DLS @ 180.27° AZI
7,922.1	7,758.0	-287.1	-1.4	EOC - Hold to TD
12,275.5				TD at 12275.5

SR & A

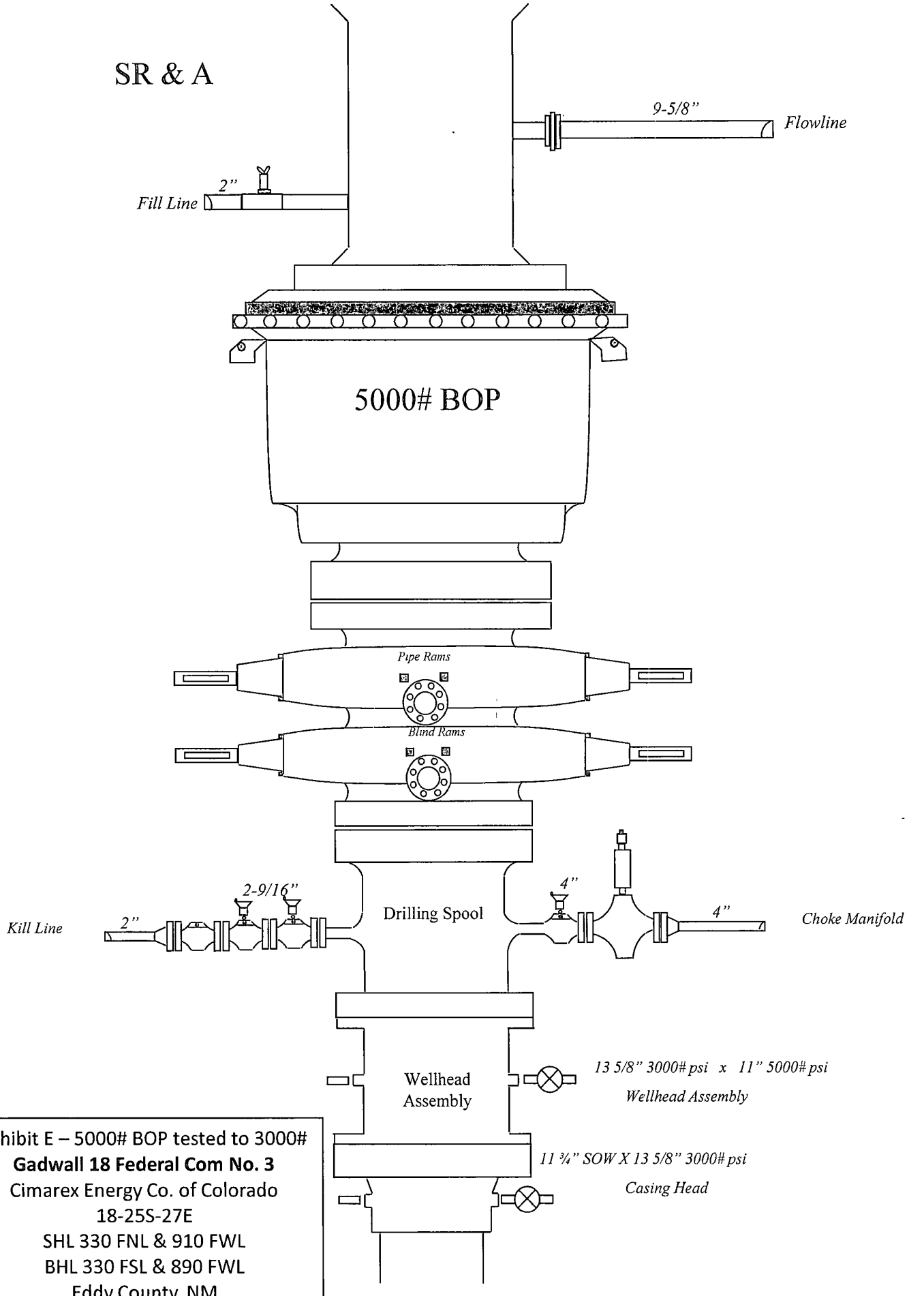
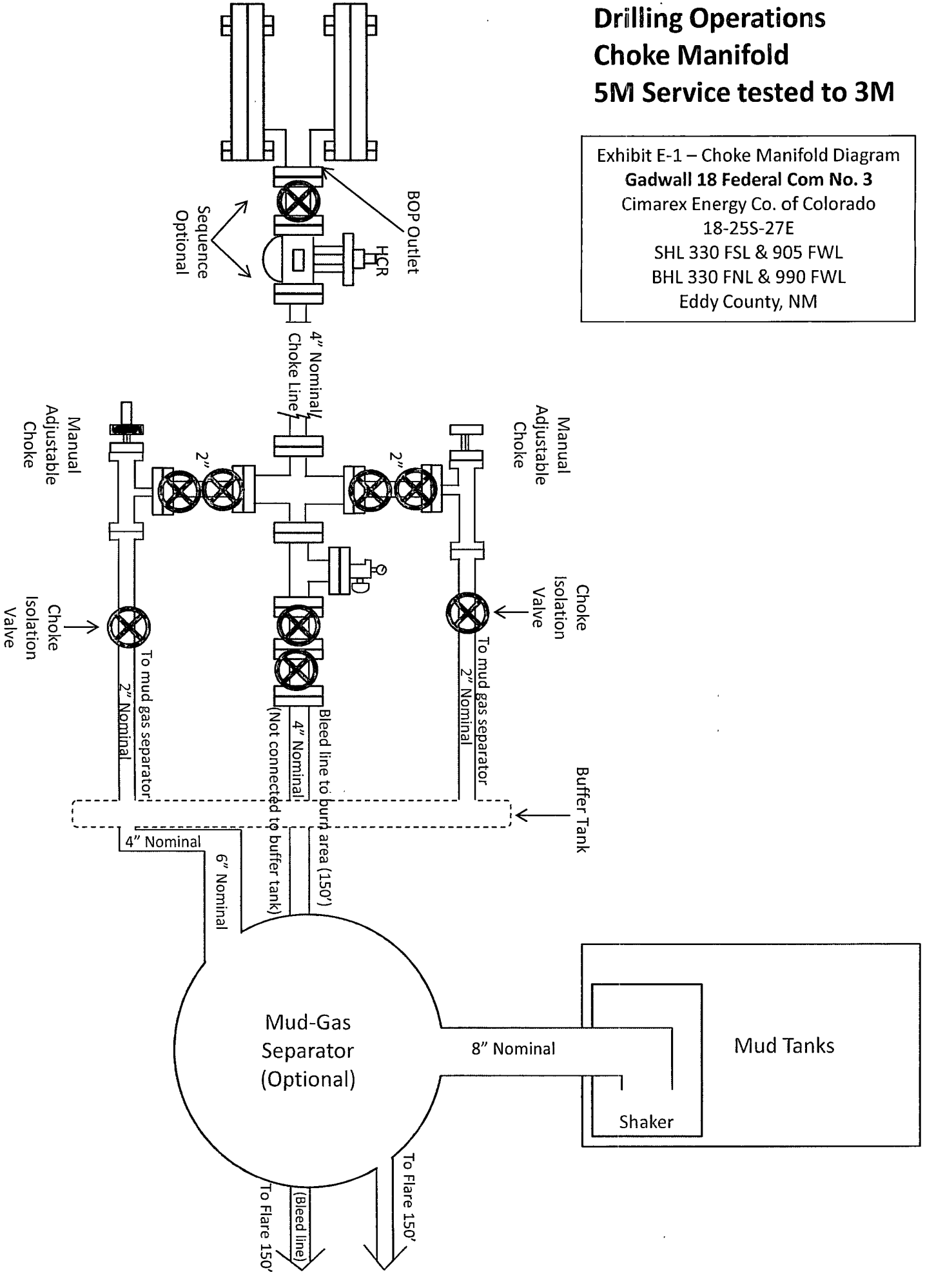


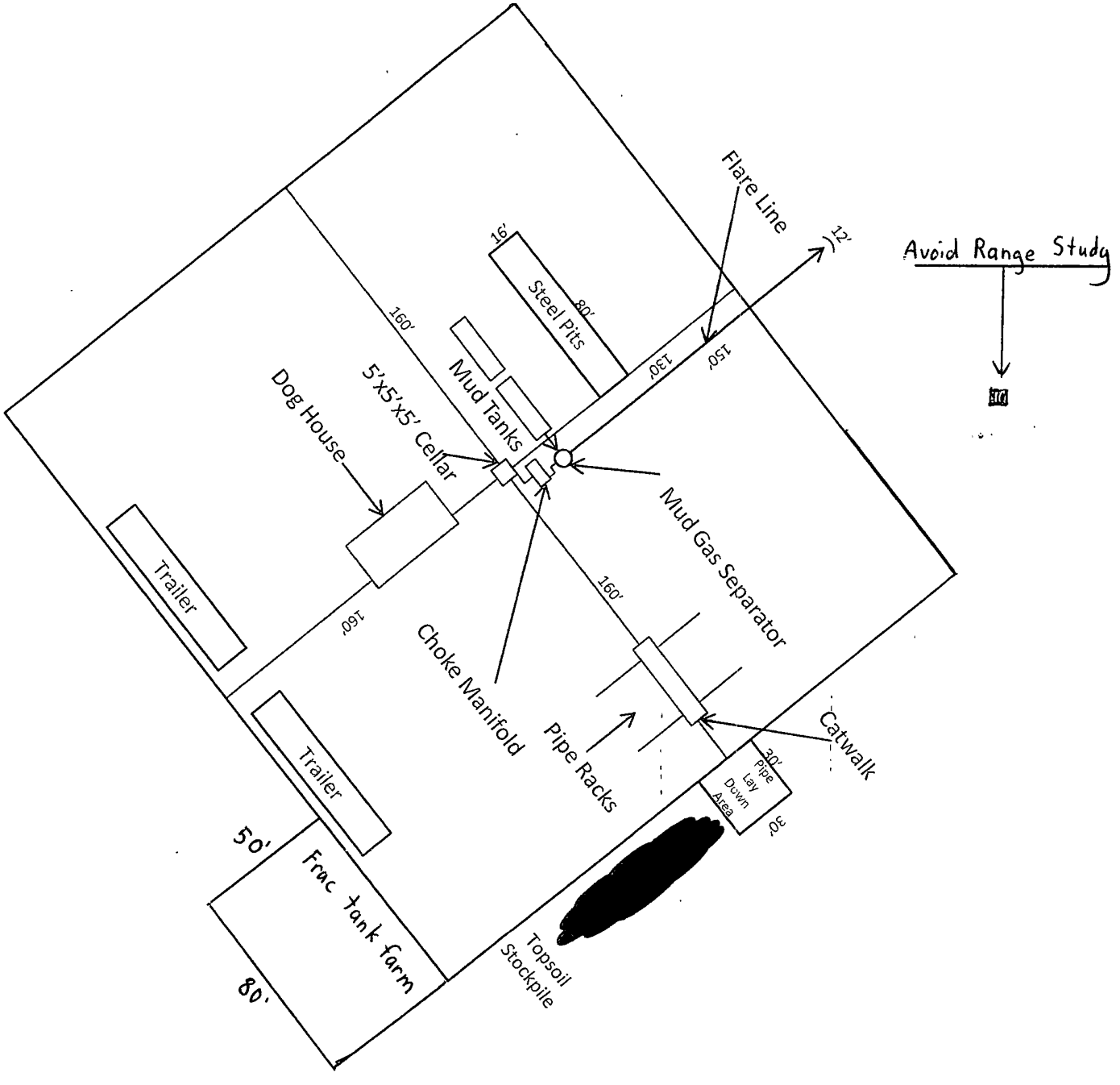
Exhibit E – 5000# BOP tested to 3000#
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
18-25S-27E
SHL 330 FNL & 910 FWL
BHL 330 FSL & 890 FWL
Eddy County, NM

Drilling Operations
Choke Manifold
5M Service tested to 3M

Exhibit E-1 – Choke Manifold Diagram
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
18-25S-27E
SHL 330 FSL & 905 FWL
BHL 330 FNL & 990 FWL
Eddy County, NM



Key 880



1"=50'

N

Exhibit D – Rig Diagram
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
18-25S-27E
SHL 330 FNL & 910 FWL
BHL 330 FSL & 890 FWL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit M, Section 18
T25S-R27E, Eddy County, NM

H_2S equipment will be rigged up at Surface. The plan should be implemented before drilling out from the surface.

1. Due to a one-time encounter on a previous well, an Intra-salt Pocket was charged with H_2S and a burnable amount of hydrocarbons.

First Potential Problem Zone:

Initial suspected problem zone	Salt Zone @ 1,333'
Potential Open Flow Capacity	1 mcf
Expected H_2S Concentration	11,000 ppm
100' ROE	6'
500' ROE	3'

Cimarex will have 24-hour H_2S Safety Supervisors on location while drilling the first 2,000' on this well.

2. Second Potential Problem Zone:

Initial suspected problem zone	Delaware Mountain Group @ 1,800'
Potential Open Flow Capacity	100 mcf
Expected H_2S Concentration	1,000 ppm
100' ROE	24'
500' ROE	11'

3. All Company and Contract personnel admitted on location must 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 areas.
   E. Evacuation procedure, routes and first aid.
   F. Proper use of 30 minute pressure demand air pack.

4. H_2S Detection and Alarm Systems:
   A. H_2S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.

5. Windsock and/or wind streamers:
   A. Windsock at mudpit area should be high enough to be visible.
   B. Windsock at briefing area should be high enough to be visible.

6. 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 emergency personnel admitted to location.

Hydrogen Sulfide Drilling Operations Plan
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit M, Section 18
T25S-R27E, Eddy County, NM

7. Well control equipment:
   A. See exhibit "E"

8. 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.

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

10. Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

11. 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.

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
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit M, Section 18
T25S-R27E, Eddy County, NM

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

Key Personnel

Name	Title	Office	Mobile
Doug Park	Drilling Manager	432-620-1934	972-333-1407
Dee Smith	Drilling Super	432-620-1933	972-882-1010
Jim Evans	Drilling Super	432-620-1929	972-465-0564
Roy Shirley	Field Super		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	

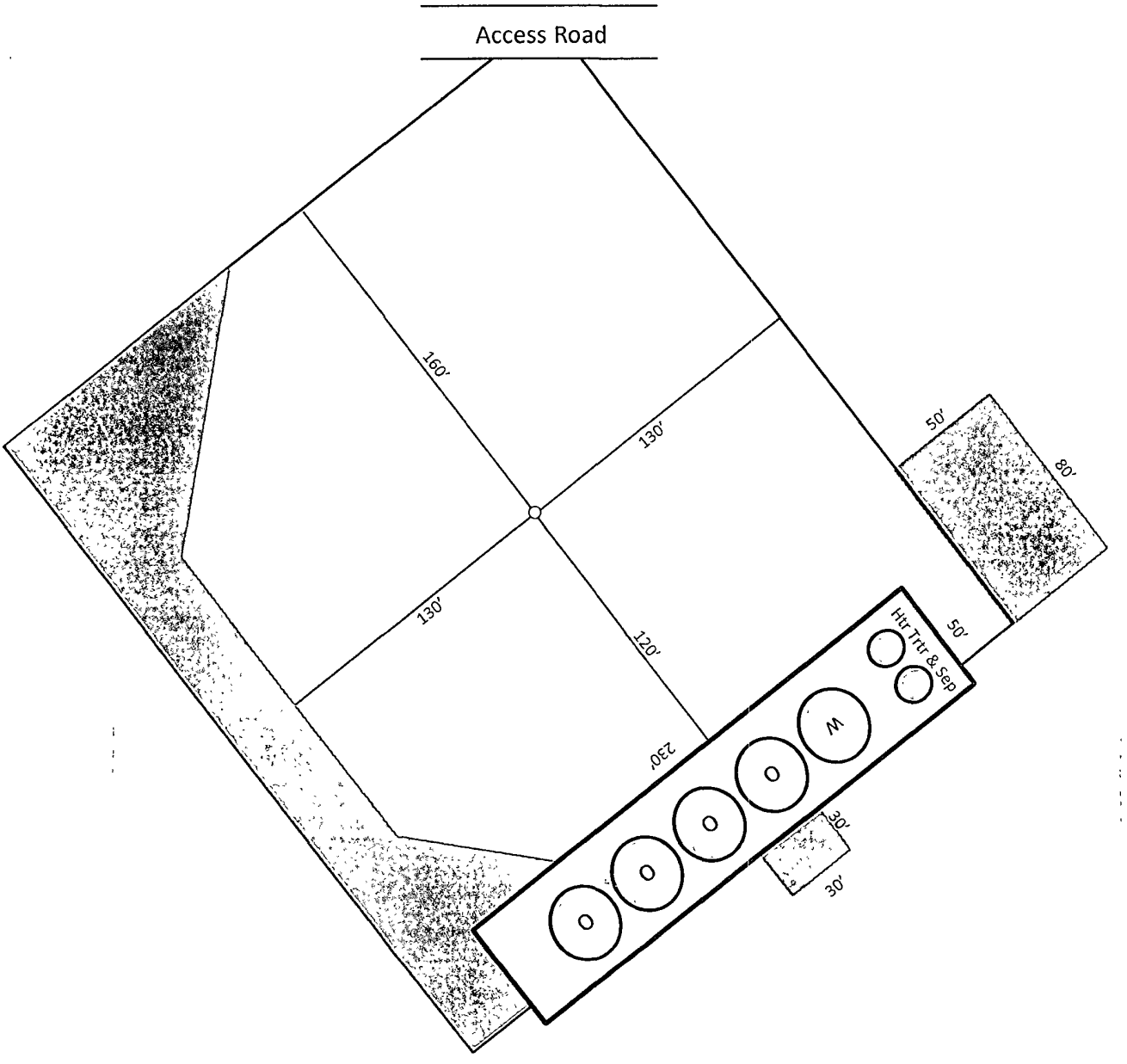


Exhibit D-1
Production Facilities Layout Diagram
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
18-25S-27E
SHL 330 FNL & 910 FWL
BHL 330 FSL & 890 FWL
Eddy County, NM

N

Production facilities

Wellbore

Interim Reclamation

Surface Use Plan
Gadwall 18 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit M, Section 18
T25S-R27E, Eddy County, NM

1. Existing Roads: Area maps, Exhibit "A" shows the proposed well site as staked. Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, and Exhibit "C-1" is a well site layout map, showing proposed road to location.
   A. The maximum width of the driving surface will be 14.' The upgraded road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.
   B. From the junction of Black River Village and John D Forehand, go South 7.8 miles to proposed lease road.

2. Planned Access Roads: 191.9' of on-lease access road is proposed.

3. Location of Existing Wells in a One-Mile Radius - Exhibit A
   A. Water wells - None known
   B. Disposal wells - None known
   C. Drilling wells - None known
   D. Producing wells - As shown on Exhibit "A"
   E. Abandoned wells - As shown on Exhibit "A"

4. Location of Proposed Production Facilities:
   If on completion this well is a producer, a tank battery will be used and the necessary production equipment will be installed at the wellsite. See production facilities layout diagram. Any changes to the facilities or off-site facilities will be accompanied by a Sundry Notice.

5. Location and Type of Water Supply:
   Water will be purchased locally from a commercial source and trucked over the access roads.

6. Source of Construction Material:
   If possible, native caliche will be obtained from the excavation of drill site. Topsoil will be pushed back from the drill site and existing caliche will be ripped and compacted. Then topsoil will be stockpiled on location as depicted on Exhibit "D" (rig layout). If additional material is needed, it will be purchased from a BLM-approved pit as near as possible to the well

7. Methods of Handling Waste Material:
   A. Drill cuttings will be seperated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state-approved disposal facility.
   B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
   C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
   D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically and hauled to a waste disposal facility. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
   E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8. Ancillary Facilities:
   A. No camps or airstrips to be constructed.

9. Well Site Layout:
   A. Exhibit "D" shows location and rig layout.
   C. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
   D. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
   E. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10. Plans for Restoration of Surface:
Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, those areas of the location not essential toproduction facilities and operations will be reclaimed and seeded per BLM requirements. Please see Production Facilities Layout Diagram, exhibit D-1.

11 Other Information
   A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
   B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
   C. An Archaeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
   D. There are no know dwellings within 1½ miles of this location.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co of Colorado
LEASE NO.:	NM111530
WELL NAME & NO.:	3 Gadwall 18 Federal Com
SURFACE HOLE FOOTAGE:	330' FNL & 810' FWL
BOTTOM HOLE FOOTAGE	330' FSL & 890' FWL
LOCATION:	Section 18, T.25S., 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)

Surface disturbance

Surface disturbance shall not exceed 130 feet to the northeast of center hole

Range Study Plot

Do not disturb the existing permanent rangeland monitoring study plot located approximately 230 feet east of the center hole. The cage and trend plot will be avoided by all construction activities.

Hydrology

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. The berm shall be a minimum of 12 inches high. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.
- Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control.

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.

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) 234-6235 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

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

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

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

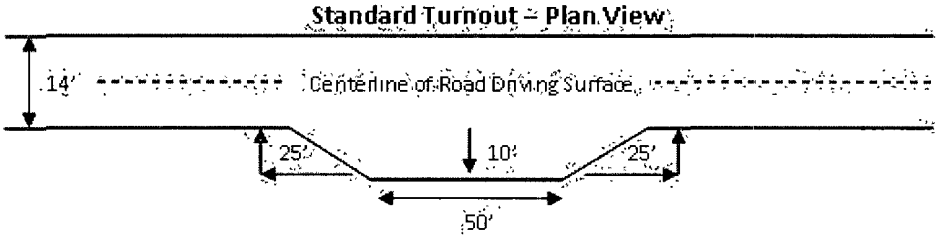
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

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

Ditching

Ditching shall be required on both sides of the road.

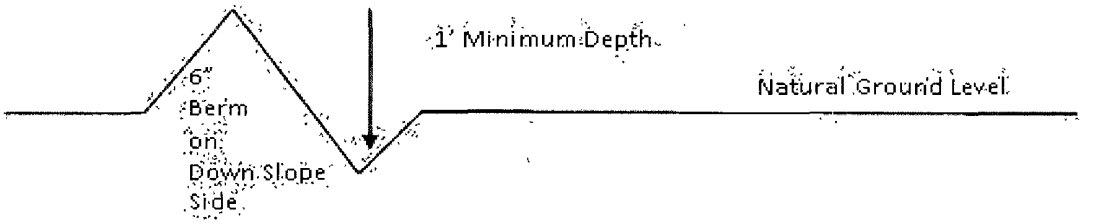
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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

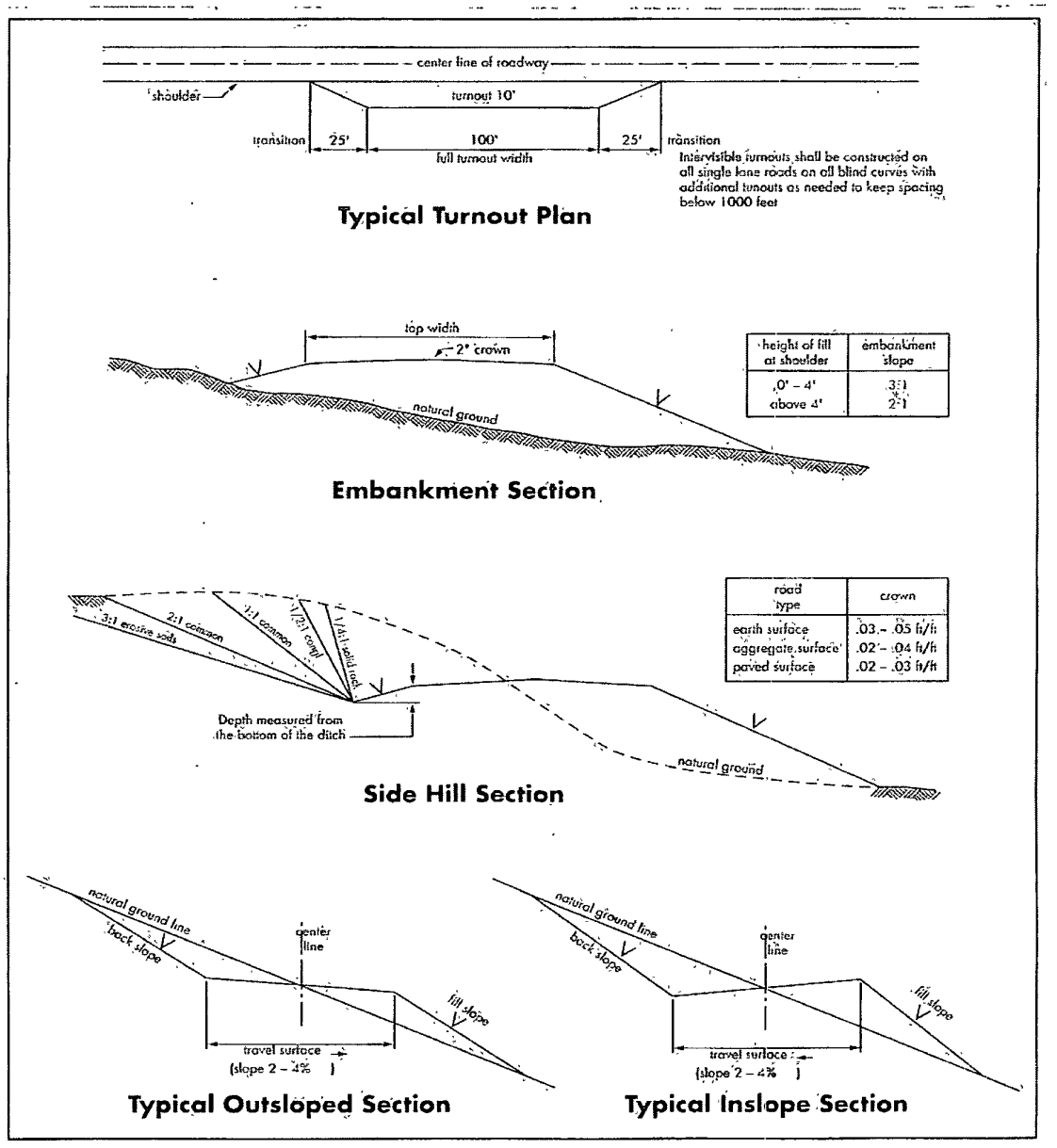
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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. **A Hydrogen Sulfide (H2S) Drilling Plan should be activated prior to drilling out the surface shoe. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

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

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

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
Possible 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 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 is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every third joint unless lateral doglegs require greater spacing between centralizers.

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

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

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

C. PRESSURE CONTROL

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

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

3. 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 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.

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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, 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