ATS-11-609

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NM-17103

6. If Indian, Allotee or Tribe Name:

1a Type of Work: [X] DRILL [ ] REENTER

7 If Unit or CA Agreement, Name and No:

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

8. Lease Name and Well No.: Lee Federal No. 20H [39062]

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

9. API Well No: 30-025- 39917

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: Avalon; Bone Spring, East [3713]

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

At Surface: 660 FSL & 330 FEL

At proposed prod. Zone: 660 FSL & 330 FWL *Horizontal Bone Spring test*

11. Sec., T. R. M or Blk. and Survey or Area: 25-20S-28E

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

12. County or Parish: ~~Lea~~ Eddy

13. State: NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line if any)	16 No of acres in lease	17. Spacing Unit dedicated to this well
330'	560 acres	S2S2 160 acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20 BLM/BIA Bond No. on File**
200'	MD 12214 TVD 7750	NM-2575
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3232' GR	10.01.11	25-30 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)*	Date
Zeno Farris		8.7.11

Title

Approved By *(Signature)*	Name (Printed/Typed)	Date
/s/ Don Peterson		FEB - 6 2012
Title: FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	

RECEIVED
FEB 08 2012
NMOCD ARTESIA

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)*

Capitan Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102
Revised July 16, 2010

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-39917	3713	Avalon; Bone Spring, E

Property Code	Property Name	Well Number
39062	LEE FEDERAL	20H

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3232

Surface Location

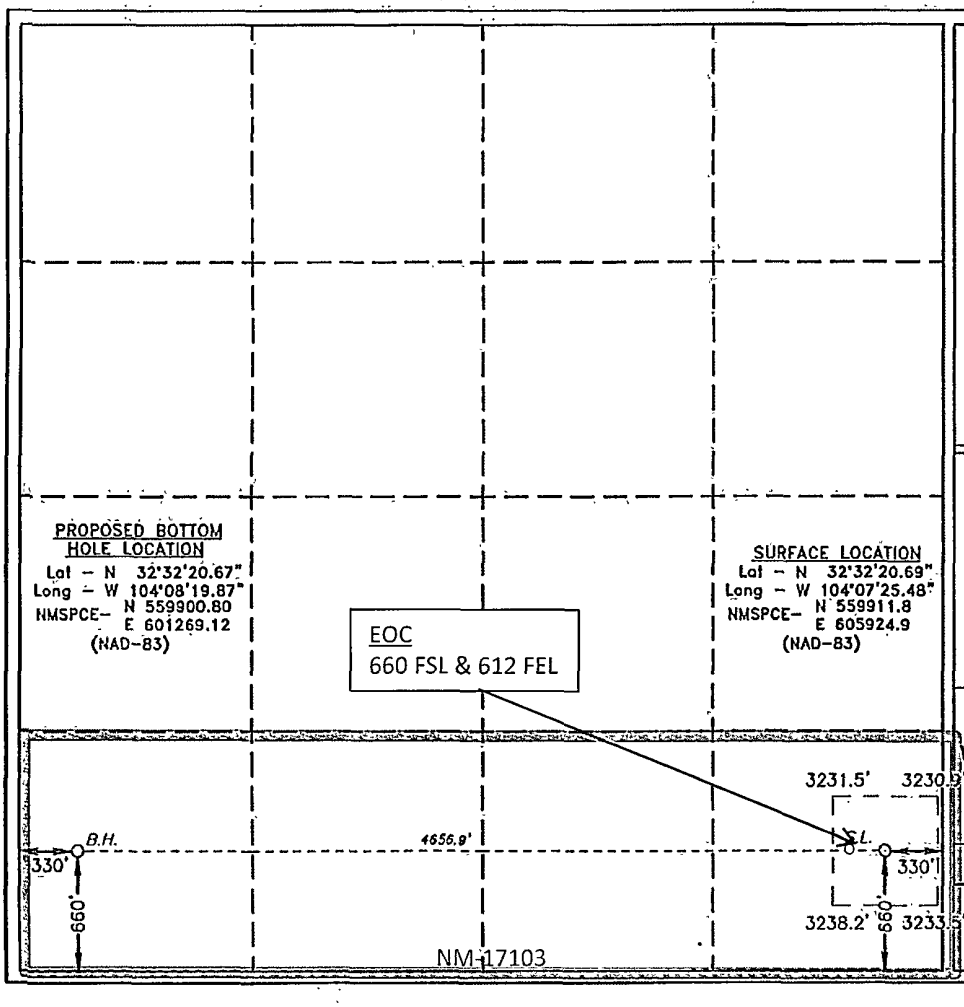
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	25	20 S	28 E		660	SOUTH	330	EAST	EDDY

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
M	25	20 S	28 E		660	SOUTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location 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 8/07/2011
Signature Date

Printed Name

Email Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

Date Surveyed

Signature & Seal of Professional Surveyor

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 24722

Application to Drill
Lee Federal No. 20H
Cimarex Energy Co. of Colorado
Unit P, Section 25
T20S-R28E, 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 660 FSL & 330 FEL
BHL 660 FSL & 330 FWL

2 Elevation above sea level: 3232' 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 12214 TVD 7750

6 Estimated tops of geological markers:

Rustler	160'
Top Salt	300'
Base Salt	750'
Tansill	820'
Capitan	1410'
Delaware Sands	2950'
Bone Spring	5500'
Avalone Shale	5900'
FBSS	6630'
SBSS	7480'
Base of BS	

7 Possible mineral bearing formation:

Bone Spring	Oil
Delaware	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 250'	8.4 - 8.6	28	NC	FW
0' to 1400'	10.0	30-32	NC	Brine water
1400' to 3000'	10.0	30-32	NC	FW, ~~Brine~~
3000' to 7394'	8.4-9.0	28-29	NC	FW and brine, use hi-vis sweeps to keep hole clean
7394' to 12214'	8.5-9.5	27-45	NC	2% KCL

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.

Proposed drilling Plan
After setting surface 1 and 2 and intermediate casing, drill 7 7/8" hole to KOP @ 7394 and then kick off lateral. Drill to TD @ 12214 MD, 7750 TVD and set 5.5" casing from 0-12214 and cement min 50' above Capitan Reef.

Application to Drill
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Cimarex Energy Co. of Colorado
Unit P, Section 25
T20S-R28E, Eddy County, NM

9 Casing & Cementing Program:

String	Hole Size	Depth			Casing OD		Weight	Collar	Grade
Surface 1	18 1/2"	0'	to	250'	New	16"	84#	STC	J-55
Surface 2	14 3/4"	0'	to	1400'	New	11 3/4"	54#	STC	J-55
Intermediate	10 5/8"	0'	to	3000'	New	8 5/8"	32#	LTC	J-55
Production	7 7/8"	0'	to	12214'	New	5 1/2"	17#	LTC	P-110

10 Cementing:

Surface Lead:350SKS Halcem C + 2% CaCl 13.5ppg 1.75yield 100% Excess
Tail:150SKS Class C + 4% D20, 1% S001, 0.2% D46, 0.125 lb/sk D130 14.2ppg 1.34 yield 25% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

Surface 2 Lead:1354SKS Econocem + 5% Salt + 5# Gilsonite 13.5ppg 1.75yield 75% Excess
Tail:610SKS Halcem + 2% CaCl 14.2ppg 1.34 yield 25% Excess
TOC Surface

Intermediate Lead:708SKS Econocem + 5% Salt + 5# Gilsonite 14.6ppg 1.54yield 70% Excess
Tail:210SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess
TOC Surface

Production Lead:750SKS Econocem H + 0.5% CFR-3 + 0.1% HR-601 11.9ppg 2.44 yield 50% Excess
Tail:750SKS Versacem H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.1% HR-601 14.5ppg 1.22 yield 25% Excess
TOC 1000' Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

According to the NM State Enginner, depth to ground water is 37 feet. Fresh water zones will be protected by setting 16" casing at 250, 11 3/4" casing at 1400 and 8 5/8" casing at 3000' and cementing to surface. Hydrocarbon zones will be protected by setting 5 1/2" production casing at 12214 and cementing to 1000.

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

11 Pressure control Equipment:
Exhibit "E". A 13⅝" 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 3000.' 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 16" surface pipe the well will be equipped with a 2M diverter system with rotating head. (See exhibit E-2). From the base of the 11 3/4" surface pipe through the running of the production casing the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

Before drilling out of the 16" surface pipe the 2M diverter system will be tested to 250 psi low and 500 psi high by rig equipment. Before drilling out of the 11 3/4" surface pipe BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high.

Application to Drill
Lee Federal No. 20H
Cimarex Energy Co. of Colorado
Unit P, Section 25
T20S-R28E, Eddy County, NM

Strata Production Company (operator) requests a variance if Cactus 115 (rig name) is used to See COA drill this well to use a co-flex line between the BOP and choke manifold.
Manufacturer: Midwest Hose & Specialty
Serial Number: 63270
Length: 35' Size: 4-1/16" Ends - flanges/clamps
WP rating: 10,000 psi Anchors required by manufacturer – Yes/No

12 Testing, Logging and Coring Program: See COA
- A. Mud logging program: 2 man unit from 3000 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:
No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Strata 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 **3500 psi** Estimated BHT **130°**

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

15 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 ENERGY Co of COLORADO

~~Strata Production Co.~~

Location: Eddy County, NM
Field: (Lee) Sec 25, T20S, R28E
Facility: Lee Federal No 20H

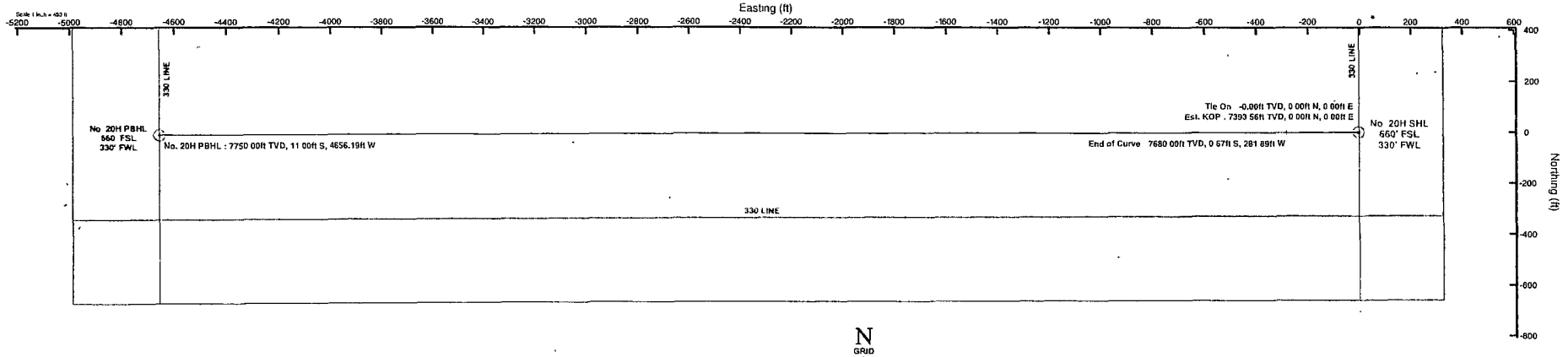
Slot: No. 20H SHL
Well: No. 20H
Wellbore: No. 20H PWB

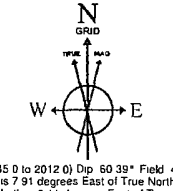
BAKER HUGHES

Well Profile Data

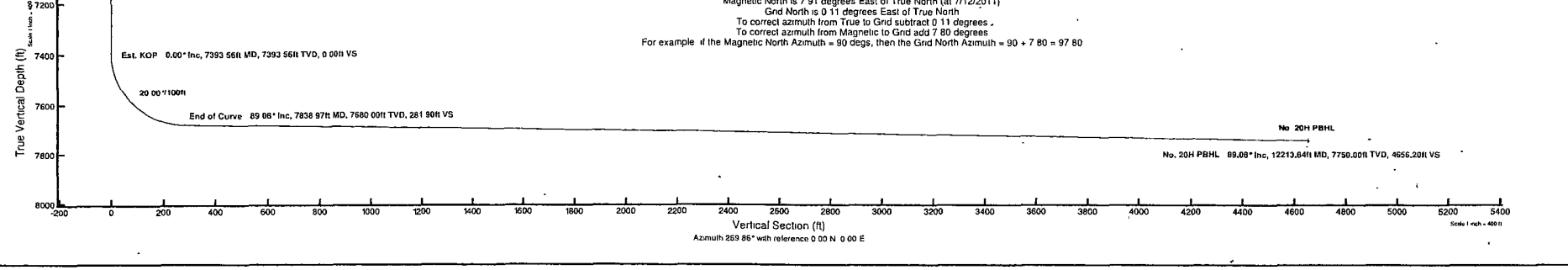
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	269.865	0.00	0.00	0.00	0.00	0.00
Est. KOP	7393.56	0.000	269.865	7393.56	0.00	0.00	0.00	0.00
End of Curve	7838.97	89.083	269.865	7680.00	-0.67	-281.89	20.00	281.90
No. 20H PBHL	12213.84	89.083	269.865	7750.00	-11.00	-4656.19	0.00	4656.20

Plot reference wellpath is Prelim_1	
True vertical depths are referenced to Rig on No. 20H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 20H SHL (KB)	North Reference: Grid north
Rig on No. 20H SHL (KB) to Mean Sea Level: 3232 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 20H SHL): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: calhphik on 7/13/2011





BGGM (1945.0 to 2012.0) Dip 60.39° Field 48789.3 nT
Magnetic North is 7.91 degrees East of True North (at 7/12/2011)
Grid North is 0.11 degrees East of True North
To correct azimuth from True to Grid subtract 0.11 degrees
To correct azimuth from Magnetic to Grid add 7.80 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.80 = 97.80



Azimuth 269.86° with reference 0.00 N, 0.00 E

Planned Wellpath Report

Prelim_1

REFERENCE WELLPATH IDENTIFICATION			
Operator	~~Strata Production Co.~~ CIMAREX ENERGY CO OF COLORADO	Slot	**No. 20H SHL**
Area	**Eddy County, NM**	Well	**No. 20H**
Field	**(Lee) Sec 25, T20S, R28E**	Wellbore	**No. 20H PWB**
Facility	**Lee Federal No. 20H**		

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	**0.999914**	Report Generated	**8/2/2011** at **10:32:32 AM**
Convergence at slot	**0.11° East**	Database/Source file	**WA Midland/No._20H_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**	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W
Facility Reference Pt			**605924.90**	**559911.80**	32°32'20.691"N	104°07'25.477"W
Field Reference Pt			**605924.90**	**559911.80**	32°32'20.691"N	104°07'25.477"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No. 20H SHL (KB) to GL	**3232.00ft**
Horizontal Reference Pt	**Slot**	Rig on No. 20H SHL (KB) to Mean Sea Level	**3232.00ft**
Vertical Reference Pt	**Rig on No. 20H SHL (KB)**	Rig on No. 20H SHL (KB) to Mud Line at Slot (No. 20H SHL)	**3232.00ft**
MD Reference Pt	**Rig on No. 20H SHL (KB)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**269.86°**

Planned Wellpath Report

Prelim_1

CIMAREX ENERGY CO OF COLORADO

REFERENCE WELLPATH IDENTIFICATION			
Operator	~~Strata Production Co.~~	Slot	No. 20H SHL
Area	Eddy County, NM	Well	No. 20H
Field	(Lee) Sec 25, T20S, R28E	Wellbore	No. 20H PWB
Facility	Lee Federal No. 20H		

WELLPATH DATA (128 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	269.865	0.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	Tie On
100.00†	0.000	269.865	100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
200.00†	0.000	269.865	200.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
300.00†	0.000	269.865	300.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
400.00†	0.000	269.865	400.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
500.00†	0.000	269.865	500.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
600.00†	0.000	269.865	600.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
700.00†	0.000	269.865	700.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
800.00†	0.000	269.865	800.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
900.00†	0.000	269.865	900.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1000.00†	0.000	269.865	1000.00	0.00	0.00	0 00	605924 90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1100.00†	0.000	269.865	1100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1200.00†	0.000	269.865	1200.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1300.00†	0.000	269.865	1300.00	0.00	0 00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1400.00†	0.000	269.865	1400.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1500.00†	0.000	269.865	1500.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0 00	
1600.00†	0 000	269.865	1600 00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1700.00†	0.000	269.865	1700.00	0.00	0 00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1800.00†	0.000	269.865	1800.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
1900.00†	0.000	269.865	1900.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2000.00†	0.000	269.865	2000.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2100.00†	0.000	269.865	2100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2200.00†	0.000	269.865	2200.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2300.00†	0.000	269.865	2300.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2400.00†	0.000	269.865	2400.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2500.00†	0.000	269.865	2500.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2600 00†	0.000	269.865	2600.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2700.00†	0.000	269.865	2700.00	0.00	0.00	0.00	605924 90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2800.00†	0.000	269.865	2800.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
2900.00†	0.000	269.865	2900.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3000.00†	0.000	269.865	3000.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3100.00†	0.000	269.865	3100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3200.00†	0.000	269.865	3200.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3300.00†	0.000	269.865	3300.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3400.00†	0.000	269.865	3400.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3500.00†	0.000	269.865	3500.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3600.00†	0.000	269.865	3600.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3700.00†	0.000	269.865	3700.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3800.00†	0.000	269.865	3800.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
3900.00†	0.000	269.865	3900.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4000.00†	0.000	269.865	4000.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4100.00†	0.000	269.865	4100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4200.00†	0.000	269.865	4200.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4300.00†	0.000	269.865	4300.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4400.00†	0.000	269.865	4400.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	

Planned Wellpath Report

Prelim_1

CIMAREX ENERGY CO OF COLORADO

REFERENCE WELLPATH IDENTIFICATION			
Operator	~~Strata Production Co.~~	Slot	No. 20H SHL
Area	Eddy County, NM	Well	No. 20H
Field	(Lee) Sec 25, T20S, R28E	Wellbore	No. 20H PWB
Facility	Lee Federal No. 20H		

WELLPATH DATA (128 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
4500.00†	0.000	269 865	4500.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4600.00†	0.000	269.865	4600.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4700.00†	0.000	269.865	4700.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4800.00†	0.000	269.865	4800.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
4900.00†	0.000	269.865	4900.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5000.00†	0.000	269.865	5000.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5100.00†	0.000	269.865	5100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5200.00†	0.000	269.865	5200 00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5300.00†	0.000	269.865	5300.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5400.00†	0.000	269.865	5400.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5500.00†	0.000	269.865	5500.00	0.00	0.00	0.00	605924.90	559911 80	32°32'20.691"N	104°07'25.477"W	0.00	
5600.00†	0.000	269.865	5600.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5700.00†	0.000	269.865	5700.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5800.00†	0.000	269.865	5800.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
5900.00†	0.000	269.865	5900.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6000.00†	0.000	269.865	6000.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6100.00†	0.000	269.865	6100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20 691"N	104°07'25.477"W	0.00	
6200.00†	0.000	269.865	6200.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6300.00†	0.000	269.865	6300.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6400.00†	0.000	269.865	6400.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6500 00†	0.000	269.865	6500.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6600.00†	0.000	269.865	6600.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6610.00†	0.000	269.865	6610.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	1st Bone Spring Shale
6700.00†	0.000	269.865	6700.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6800.00†	0.000	269.865	6800.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
6900.00†	0.000	269.865	6900.00	0.00	0.00	0.00	605924 90	559911.80	32°32'20 691"N	104°07'25.477"W	0.00	
7000.00†	0.000	269.865	7000.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
7100.00†	0.000	269.865	7100.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
7200.00†	0.000	269.865	7200.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
7300.00†	0.000	269.865	7300.00	0.00	0.00	0.00	605924.90	559911.80	32°32'20.691"N	104°07'25.477"W	0.00	
7393.56	0.000	269.865	7393.56	0.00	0.00	0.00	605924.90	559911.80	32°32'20 691"N	104°07'25.477"W	0.00	Est. KOP
7400.00†	1.288	269.865	7400.00	0 07	0.00	-0.07	605924.83	559911.80	32°32'20.691"N	104°07'25.477"W	20.00	
7410.01†	3.290	269.865	7410.00	0.47	0.00	-0.47	605924.43	559911.80	32°32'20.691"N	104°07'25.482"W	20.00	2nd Bone Spring Shale
7500.00†	21.288	269.865	7497.57	19.55	-0.05	-19.55	605905.35	559911.75	32°32'20.691"N	104°07'25.705"W	20.00	
7600.00†	41.288	269.865	7582.59	74.22	-0.17	-74.22	605853.69	559911.63	32°32'20.690"N	104°07'26.309"W	20.00	
7700.00†	61.288	269.865	7644.81	148.85	-0.35	-148.85	605776.06	559911.45	32°32'20.690"N	104°07'27.215"W	20 00	
7800.00†	81.288	269.865	7676.73	243.09	-0.57	-243.09	605681.83	559911.23	32°32'20.690"N	104°07'28.316"W	20.00	
7838.97	89.083	269.865	7680.00	281.90	-0.67	-281.89	605643.03	559911.13	32°32'20.690"N	104°07'28.769"W	20.00	End of Curve
7900.00†	89.083	269.865	7680.98	342.91	-0.81	-342.91	605582.02	559910.99	32°32'20.689"N	104°07'29.482"W	0.00	
8000.00†	89.083	269.865	7682.58	442.90	-1.05	-442.90	605482.04	559910.75	32°32'20.689"N	104°07'30.650"W	0.00	
8100.00†	89.083	269.865	7684.18	542.89	-1.28	-542.89	605382.06	559910.52	32°32'20.689"N	104°07'31.818"W	0.00	
8200.00†	89 083	269.865	7685.78	642.88	-1.52	-642.87	605282.08	559910.28	32°32'20.688"N	104°07'32.986"W	0.00	
8300.00†	89.083	269.865	7687.38	742.86	-1.76	-742.86	605182.11	559910.05	32°32'20.688"N	104°07'34.154"W	0.00	
8400.00†	89.083	269.865	7688.98	842.85	-1.99	-842.85	605082.13	559909.81	32°32'20.687"N	104°07'35.322"W	0.00	
8500.00†	89.083	269.865	7690.58	942.84	-2.23	-942.83	604982.15	559909.57	32°32'20.687"N	104°07'36.490"W	0.00	

Planned Wellpath Report

Prelim_1

CIMAREX ENERGY CO of COLORADO

REFERENCE WELLPATH IDENTIFICATION			
Operator	~~Strata Production Co.~~	Slot	No. 20H SHL
Area	Eddy County, NM	Well	No. 20H
Field	(Lee) Sec 25, T20S, R28E	Wellbore	No. 20H PWB
Facility	Lee Federal No. 20H		

WELLPATH DATA (128 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
8600.00†	89.083	269.865	7692.18	1042.82	-2.46	-1042.82	604882.17	559909.34	32°32'20.686"N	104°07'37.658"W	0.00	
8700.00†	89.083	269.865	7693.78	1142.81	-2.70	-1142.81	604782.19	559909.10	32°32'20.686"N	104°07'38.826"W	0.00	
8800.00†	89.083	269.865	7695.38	1242.80	-2.94	-1242.79	604682.21	559908.86	32°32'20.686"N	104°07'39.994"W	0.00	
8900.00†	89.083	269.865	7696.98	1342.79	-3.17	-1342.78	604582.24	559908.63	32°32'20.685"N	104°07'41.162"W	0.00	
9000.00†	89.083	269.865	7698.58	1442.77	-3.41	-1442.77	604482.26	559908.39	32°32'20.685"N	104°07'42.330"W	0.00	
9100.00†	89.083	269.865	7700.18	1542.76	-3.64	-1542.76	604382.28	559908.16	32°32'20.684"N	104°07'43.498"W	0.00	
9200.00†	89.083	269.865	7701.78	1642.75	-3.88	-1642.74	604282.30	559907.92	32°32'20.684"N	104°07'44.666"W	0.00	
9300.00†	89.083	269.865	7703.38	1742.73	-4.12	-1742.73	604182.32	559907.68	32°32'20.683"N	104°07'45.834"W	0.00	
9400.00†	89.083	269.865	7704.98	1842.72	-4.35	-1842.72	604082.35	559907.45	32°32'20.683"N	104°07'47.002"W	0.00	
9500.00†	89.083	269.865	7706.58	1942.71	-4.59	-1942.70	603982.37	559907.21	32°32'20.683"N	104°07'48.170"W	0.00	
9600.00†	89.083	269.865	7708.18	2042.70	-4.83	-2042.69	603882.39	559906.97	32°32'20.682"N	104°07'49.338"W	0.00	
9700.00†	89.083	269.865	7709.78	2142.68	-5.06	-2142.68	603782.41	559906.74	32°32'20.682"N	104°07'50.506"W	0.00	
9800.00†	89.083	269.865	7711.38	2242.67	-5.30	-2242.66	603682.43	559906.50	32°32'20.681"N	104°07'51.674"W	0.00	
9900.00†	89.083	269.865	7712.98	2342.66	-5.53	-2342.65	603582.46	559906.27	32°32'20.681"N	104°07'52.842"W	0.00	
10000.00†	89.083	269.865	7714.58	2442.64	-5.77	-2442.64	603482.48	559906.03	32°32'20.680"N	104°07'54.009"W	0.00	
10100.00†	89.083	269.865	7716.18	2542.63	-6.01	-2542.62	603382.50	559905.79	32°32'20.680"N	104°07'55.177"W	0.00	
10200.00†	89.083	269.865	7717.78	2642.62	-6.24	-2642.61	603282.52	559905.56	32°32'20.679"N	104°07'56.345"W	0.00	
10300.00†	89.083	269.865	7719.38	2742.61	-6.48	-2742.60	603182.54	559905.32	32°32'20.679"N	104°07'57.513"W	0.00	
10400.00†	89.083	269.865	7720.98	2842.59	-6.72	-2842.59	603082.56	559905.08	32°32'20.678"N	104°07'58.681"W	0.00	
10500.00†	89.083	269.865	7722.58	2942.58	-6.95	-2942.57	602982.59	559904.85	32°32'20.678"N	104°07'59.849"W	0.00	
10600.00†	89.083	269.865	7724.18	3042.57	-7.19	-3042.56	602882.61	559904.61	32°32'20.677"N	104°08'01.017"W	0.00	
10700.00†	89.083	269.865	7725.78	3142.56	-7.42	-3142.55	602782.63	559904.38	32°32'20.677"N	104°08'02.185"W	0.00	
10800.00†	89.083	269.865	7727.38	3242.54	-7.66	-3242.53	602682.65	559904.14	32°32'20.676"N	104°08'03.353"W	0.00	
10900.00†	89.083	269.865	7728.98	3342.53	-7.90	-3342.52	602582.67	559903.90	32°32'20.676"N	104°08'04.521"W	0.00	
11000.00†	89.083	269.865	7730.58	3442.52	-8.13	-3442.51	602482.70	559903.67	32°32'20.675"N	104°08'05.689"W	0.00	
11100.00†	89.083	269.865	7732.18	3542.50	-8.37	-3542.49	602382.72	559903.43	32°32'20.675"N	104°08'06.857"W	0.00	
11200.00†	89.083	269.865	7733.78	3642.49	-8.61	-3642.48	602282.74	559903.19	32°32'20.674"N	104°08'08.025"W	0.00	
11300.00†	89.083	269.865	7735.38	3742.48	-8.84	-3742.47	602182.76	559902.96	32°32'20.674"N	104°08'09.193"W	0.00	
11400.00†	89.083	269.865	7736.98	3842.47	-9.08	-3842.45	602082.78	559902.72	32°32'20.673"N	104°08'10.361"W	0.00	
11500.00†	89.083	269.865	7738.58	3942.45	-9.31	-3942.44	601982.81	559902.49	32°32'20.673"N	104°08'11.529"W	0.00	
11600.00†	89.083	269.865	7740.18	4042.44	-9.55	-4042.43	601882.83	559902.25	32°32'20.672"N	104°08'12.697"W	0.00	
11700.00†	89.083	269.865	7741.78	4142.43	-9.79	-4142.42	601782.85	559902.01	32°32'20.672"N	104°08'13.865"W	0.00	
11800.00†	89.083	269.865	7743.38	4242.41	-10.02	-4242.40	601682.87	559901.78	32°32'20.671"N	104°08'15.033"W	0.00	
11900.00†	89.083	269.865	7744.98	4342.40	-10.26	-4342.39	601582.89	559901.54	32°32'20.671"N	104°08'16.201"W	0.00	
12000.00†	89.083	269.865	7746.58	4442.39	-10.50	-4442.38	601482.92	559901.31	32°32'20.670"N	104°08'17.369"W	0.00	
12100.00†	89.083	269.865	7748.18	4542.38	-10.73	-4542.36	601382.94	559901.07	32°32'20.670"N	104°08'18.537"W	0.00	
12200.00†	89.083	269.865	7749.78	4642.36	-10.97	-4642.35	601282.96	559900.83	32°32'20.669"N	104°08'19.705"W	0.00	
12213.84	89.083	269.865	7750.00	4656.20	-11.00	-4656.19	601269.12	559900.80	32°32'20.669"N	104°08'19.866"W	0.00	No 20H PBHL

Planned Wellpath Report

Prelim_1

CIMAREX ENERGY CO OF COLORADO

REFERENCE WELLPATH IDENTIFICATION			
Operator	~~Strata Production Co.~~	Slot	**No. 20H SHL**
Area	**Eddy County, NM**	Well	**No. 20H**
Field	**(Lee) Sec 25, T20S, R28E**	Wellbore	**No. 20H PWB**
Facility	**Lee Federal No. 20H**		

HOLE & CASING SECTIONS - Ref Wellbore: No. 20H 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	3000.00	3000.00	0.00	3000.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	3000.00	3000.00	0.00	3000.00	0.00	0.00	0.00	0.00
8.75in Open Hole	3000.00	12213.85	9213.85	3000.00	NA	0.00	0.00	NA	NA
5.5in Casing	0.00	12213.85	12213.85	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. 20H PBHL	12213.84	7750.00	-11.00	-4656.19	**601269.12**	**559900.80**	32°32'20.669"N	104°08'19.866"W	point

SURVEY PROGRAM - Ref Wellbore: No. 20H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
3232.00	12213.84	NaviTrak (Standard)		No. 20H PWB

PLANNED WELLPATH REPORT (CSV version)
Prepared by Baker Hughes
Software System: WellArchitect®3.0.0

REFERENCE WELLPATH IDENTIFICATION

Operator	Strata Production Co.
Area	Eddy County, NM
Field	(Lee) Sec 25, T20S, R28E
Facility	Lee Federal No. 20H
Slot	No. 20H SHL
Well	No. 20H
Wellbore	No. 20H PWB
Wellpath	Prelim_1
Sidetrack	(none)

REPORT SETUP INFORMATION

Projection S	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
North Refer	Grid
Scale	0.999914
Convergenc	0.11° East
Software Sy	WellArchitect®
User	Gentbry
Report Gen	8/2/2011 at 10:32:32 AM
DataBase/S	WA Midland/ev5859.xml

WELLPATH I	Local North [ft]	Local East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude
Slot Locatio	0	0	605924.9	559911.8	32°32'20.69	104°07'25.477"W
Facility Refe			605924.9	559911.8	32°32'20.69	104°07'25.477"W
Field Refere			605924.9	559911.8	32°32'20.69	104°07'25.477"W

WELLPATH DATUM

Calculation	Minimum curvature
Horizontal R	Slot
Vertical Ref	Rig on No. 20H SHL (KB)

MD Referen Rig on No. 20H SHL (KB)
Field Vertica Mean Sea Level
Rig on No. 2 3232.00ft
Rig on No. 2 3232.00ft
Rig on No. 2 3232.00ft
Section Orig 0.00ft
Section Orig 0.00ft
Section Azin 269.86°

WELLPATH DATA Wellbore: No. 20H PWB Wellpath: Prelim_1 † = 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	0	269.865	0	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	Tie On
†	100	0	269.865	100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	200	0	269.865	200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	300	0	269.865	300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	400	0	269.865	400	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	500	0	269.865	500	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	600	0	269.865	600	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	700	0	269.865	700	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	800	0	269.865	800	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	900	0	269.865	900	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1000	0	269.865	1000	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1100	0	269.865	1100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1200	0	269.865	1200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1300	0	269.865	1300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1400	0	269.865	1400	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1500	0	269.865	1500	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1600	0	269.865	1600	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1700	0	269.865	1700	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1800	0	269.865	1800	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	1900	0	269.865	1900	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	2000	0	269.865	2000	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	
†	2100	0	269.865	2100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0	

†	2200	0	269.865	2200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	2300	0	269.865	2300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	2400	0	269.865	2400	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	2500	0	269.865	2500	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	2600	0	269.865	2600	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	2700	0	269.865	2700	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	2800	0	269.865	2800	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	2900	0	269.865	2900	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3000	0	269.865	3000	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3100	0	269.865	3100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3200	0	269.865	3200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3300	0	269.865	3300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3400	0	269.865	3400	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3500	0	269.865	3500	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3600	0	269.865	3600	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3700	0	269.865	3700	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3800	0	269.865	3800	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	3900	0	269.865	3900	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4000	0	269.865	4000	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4100	0	269.865	4100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4200	0	269.865	4200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4300	0	269.865	4300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4400	0	269.865	4400	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4500	0	269.865	4500	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4600	0	269.865	4600	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4700	0	269.865	4700	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4800	0	269.865	4800	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	4900	0	269.865	4900	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5000	0	269.865	5000	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5100	0	269.865	5100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5200	0	269.865	5200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5300	0	269.865	5300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5400	0	269.865	5400	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5500	0	269.865	5500	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5600	0	269.865	5600	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0

†	5700	0	269.865	5700	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5800	0	269.865	5800	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	5900	0	269.865	5900	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6000	0	269.865	6000	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6100	0	269.865	6100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6200	0	269.865	6200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6300	0	269.865	6300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6400	0	269.865	6400	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6500	0	269.865	6500	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6600	0	269.865	6600	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6610	0	269.865	6610	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0 1st Bone Sp
†	6700	0	269.865	6700	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6800	0	269.865	6800	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	6900	0	269.865	6900	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	7000	0	269.865	7000	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	7100	0	269.865	7100	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	7200	0	269.865	7200	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
†	7300	0	269.865	7300	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0
	7393.56	0	269.865	7393.56	0	0	0	605924.9	559911.8	32°32'20.69	104°07'25.4	0 Est. KOP
†	7400	1.288	269.865	7400	0.07	0	-0.07	605924.83	559911.8	32°32'20.69	104°07'25.4	20
†	7410.01	3.29	269.865	7410	0.47	0	-0.47	605924.43	559911.8	32°32'20.69	104°07'25.4	20 2nd Bone S
†	7500	21.288	269.865	7497.57	19.55	-0.05	-19.55	605905.35	559911.75	32°32'20.69	104°07'25.7	20
†	7600	41.288	269.865	7582.59	71.22	-0.17	-71.22	605853.69	559911.63	32°32'20.69	104°07'26.3	20
†	7700	61.288	269.865	7644.81	148.85	-0.35	-148.85	605776.06	559911.45	32°32'20.69	104°07'27.2	20
†	7800	81.288	269.865	7676.73	243.09	-0.57	-243.09	605681.83	559911.23	32°32'20.69	104°07'28.3	20
	7838.97	89.083	269.865	7680	281.9	-0.67	-281.89	605643.03	559911.13	32°32'20.69	104°07'28.7	20 End of Curv
†	7900	89.083	269.865	7680.98	342.91	-0.81	-342.91	605582.02	559910.99	32°32'20.68	104°07'29.4	0
†	8000	89.083	269.865	7682.58	442.9	-1.05	-442.9	605482.04	559910.75	32°32'20.68	104°07'30.6	0
†	8100	89.083	269.865	7684.18	542.89	-1.28	-542.89	605382.06	559910.52	32°32'20.68	104°07'31.8	0
†	8200	89.083	269.865	7685.78	642.88	-1.52	-642.87	605282.08	559910.28	32°32'20.68	104°07'32.9	0
†	8300	89.083	269.865	7687.38	742.86	-1.76	-742.86	605182.11	559910.05	32°32'20.68	104°07'34.1	0
†	8400	89.083	269.865	7688.98	842.85	-1.99	-842.85	605082.13	559909.81	32°32'20.68	104°07'35.3	0
†	8500	89.083	269.865	7690.58	942.84	-2.23	-942.83	604982.15	559909.57	32°32'20.68	104°07'36.4	0
†	8600	89.083	269.865	7692.18	1042.82	-2.46	-1042.82	604882.17	559909.34	32°32'20.68	104°07'37.6	0
†	8700	89.083	269.865	7693.78	1142.81	-2.7	-1142.81	604782.19	559909.1	32°32'20.68	104°07'38.8	0

†	8800	89.083	269.865	7695.38	1242.8	-2.94	-1242.79	604682.21	559908.86	32°32'20.68	104°07'39.9	0
†	8900	89.083	269.865	7696.98	1342.79	-3.17	-1342.78	604582.24	559908.63	32°32'20.68	104°07'41.1	0
†	9000	89.083	269.865	7698.58	1442.77	-3.41	-1442.77	604482.26	559908.39	32°32'20.68	104°07'42.3	0
†	9100	89.083	269.865	7700.18	1542.76	-3.64	-1542.76	604382.28	559908.16	32°32'20.68	104°07'43.4	0
†	9200	89.083	269.865	7701.78	1642.75	-3.88	-1642.74	604282.3	559907.92	32°32'20.68	104°07'44.6	0
†	9300	89.083	269.865	7703.38	1742.73	-4.12	-1742.73	604182.32	559907.68	32°32'20.68	104°07'45.8	0
†	9400	89.083	269.865	7704.98	1842.72	-4.35	-1842.72	604082.35	559907.45	32°32'20.68	104°07'47.0	0
†	9500	89.083	269.865	7706.58	1942.71	-4.59	-1942.7	603982.37	559907.21	32°32'20.68	104°07'48.1	0
†	9600	89.083	269.865	7708.18	2042.7	-4.83	-2042.69	603882.39	559906.97	32°32'20.68	104°07'49.3	0
†	9700	89.083	269.865	7709.78	2142.68	-5.06	-2142.68	603782.41	559906.74	32°32'20.68	104°07'50.5	0
†	9800	89.083	269.865	7711.38	2242.67	-5.3	-2242.66	603682.43	559906.5	32°32'20.68	104°07'51.6	0
†	9900	89.083	269.865	7712.98	2342.66	-5.53	-2342.65	603582.46	559906.27	32°32'20.68	104°07'52.8	0
†	10000	89.083	269.865	7714.58	2442.64	-5.77	-2442.64	603482.48	559906.03	32°32'20.68	104°07'54.0	0
†	10100	89.083	269.865	7716.18	2542.63	-6.01	-2542.62	603382.5	559905.79	32°32'20.68	104°07'55.1	0
†	10200	89.083	269.865	7717.78	2642.62	-6.24	-2642.61	603282.52	559905.56	32°32'20.67	104°07'56.3	0
†	10300	89.083	269.865	7719.38	2742.61	-6.48	-2742.6	603182.54	559905.32	32°32'20.67	104°07'57.5	0
†	10400	89.083	269.865	7720.98	2842.59	-6.72	-2842.59	603082.56	559905.08	32°32'20.67	104°07'58.6	0
†	10500	89.083	269.865	7722.58	2942.58	-6.95	-2942.57	602982.59	559904.85	32°32'20.67	104°07'59.8	0
†	10600	89.083	269.865	7724.18	3042.57	-7.19	-3042.56	602882.61	559904.61	32°32'20.67	104°08'01.0	0
†	10700	89.083	269.865	7725.78	3142.56	-7.42	-3142.55	602782.63	559904.38	32°32'20.67	104°08'02.1	0
†	10800	89.083	269.865	7727.38	3242.54	-7.66	-3242.53	602682.65	559904.14	32°32'20.67	104°08'03.3	0
†	10900	89.083	269.865	7728.98	3342.53	-7.9	-3342.52	602582.67	559903.9	32°32'20.67	104°08'04.5	0
†	11000	89.083	269.865	7730.58	3442.52	-8.13	-3442.51	602482.7	559903.67	32°32'20.67	104°08'05.6	0
†	11100	89.083	269.865	7732.18	3542.5	-8.37	-3542.49	602382.72	559903.43	32°32'20.67	104°08'06.8	0
†	11200	89.083	269.865	7733.78	3642.49	-8.61	-3642.48	602282.74	559903.19	32°32'20.67	104°08'08.0	0
†	11300	89.083	269.865	7735.38	3742.48	-8.84	-3742.47	602182.76	559902.96	32°32'20.67	104°08'09.1	0
†	11400	89.083	269.865	7736.98	3842.47	-9.08	-3842.45	602082.78	559902.72	32°32'20.67	104°08'10.3	0
†	11500	89.083	269.865	7738.58	3942.45	-9.31	-3942.44	601982.81	559902.49	32°32'20.67	104°08'11.5	0
†	11600	89.083	269.865	7740.18	4042.44	-9.55	-4042.43	601882.83	559902.25	32°32'20.67	104°08'12.6	0
†	11700	89.083	269.865	7741.78	4142.43	-9.79	-4142.42	601782.85	559902.01	32°32'20.67	104°08'13.8	0
†	11800	89.083	269.865	7743.38	4242.41	-10.02	-4242.4	601682.87	559901.78	32°32'20.67	104°08'15.0	0
†	11900	89.083	269.865	7744.98	4342.4	-10.26	-4342.39	601582.89	559901.54	32°32'20.67	104°08'16.2	0
†	12000	89.083	269.865	7746.58	4442.39	-10.5	-4442.38	601482.92	559901.31	32°32'20.67	104°08'17.3	0
†	12100	89.083	269.865	7748.18	4542.38	-10.73	-4542.36	601382.94	559901.07	32°32'20.67	104°08'18.5	0
†	12200	89.083	269.865	7749.78	4642.36	-10.97	-4642.35	601282.96	559900.83	32°32'20.66	104°08'19.7	0

12213.84	89.083	269.865	7750	4656.2	-11	-4656.19	601269.12	559900.8	32°32'20.66	104°08'19.8	0	No. 20H PB

HOLE AND CASING SECTIONS Ref Wellbore: No. 20H PWB Ref Wellpath: Prelim_1

String/Diam	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 Ope	0	3000	3000	0	3000	0	0	0	0
9.625in Casi	0	3000	3000	0	3000	0	0	0	0
8.75in Open	3000	12213.85	9213.85	3000	NA	0	0	NA	NA
5.5in Casing	0	12213.85	12213.85	0	NA	0	0	NA	NA

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	Comment	Design Comments
(1) No. 20H	12213.84	7750	-11	-4656.19	601269.12	559900.8	32°32'20.66	104°08'19.8	point		

SURVEY PROGRAM Ref Wellbore: No. 20H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Pos Unc Mo	Log Name/C	Wellbore
3232	12213.84	NaviTrak	(Standard)	No. 20H PWB

SR & A

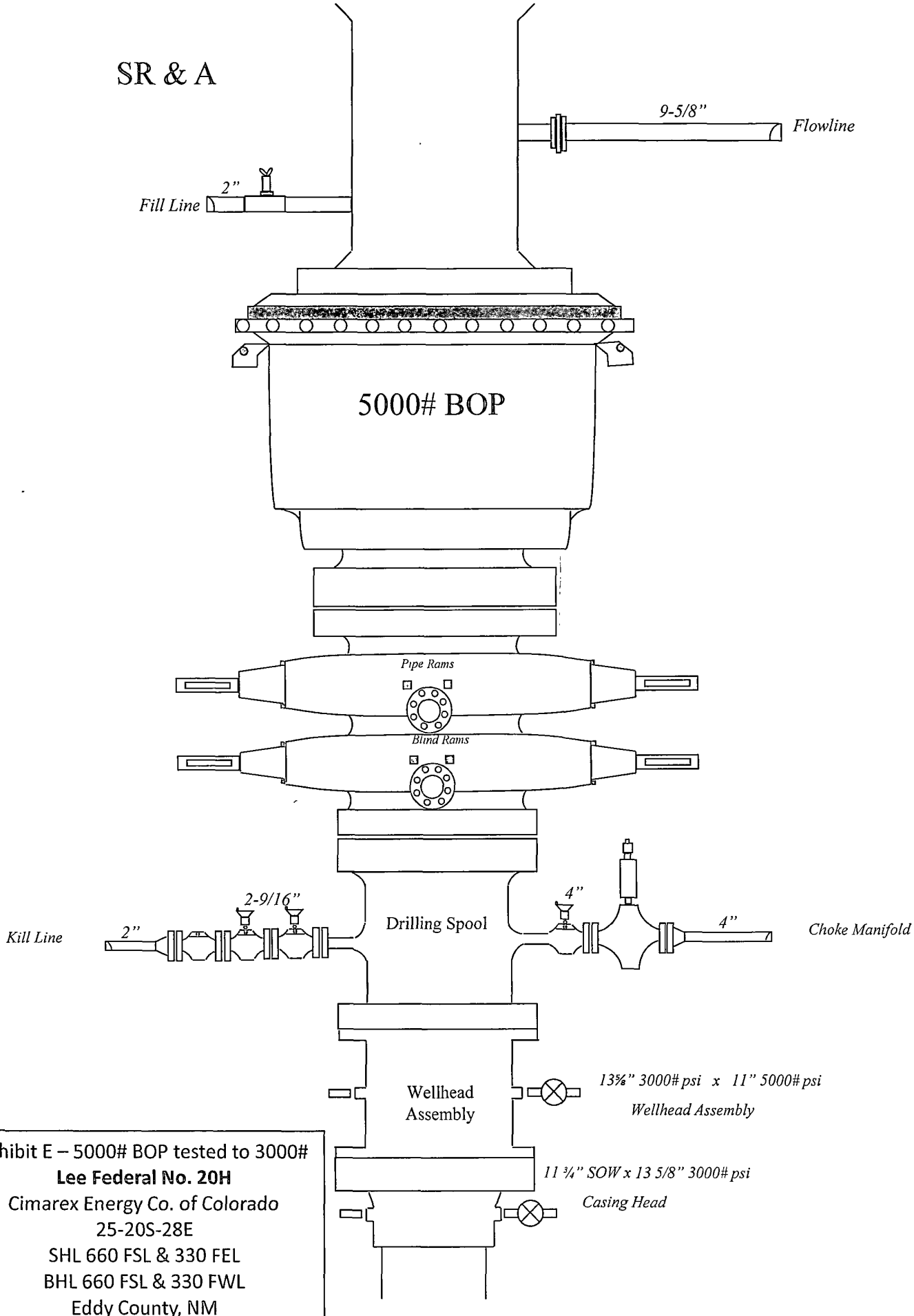
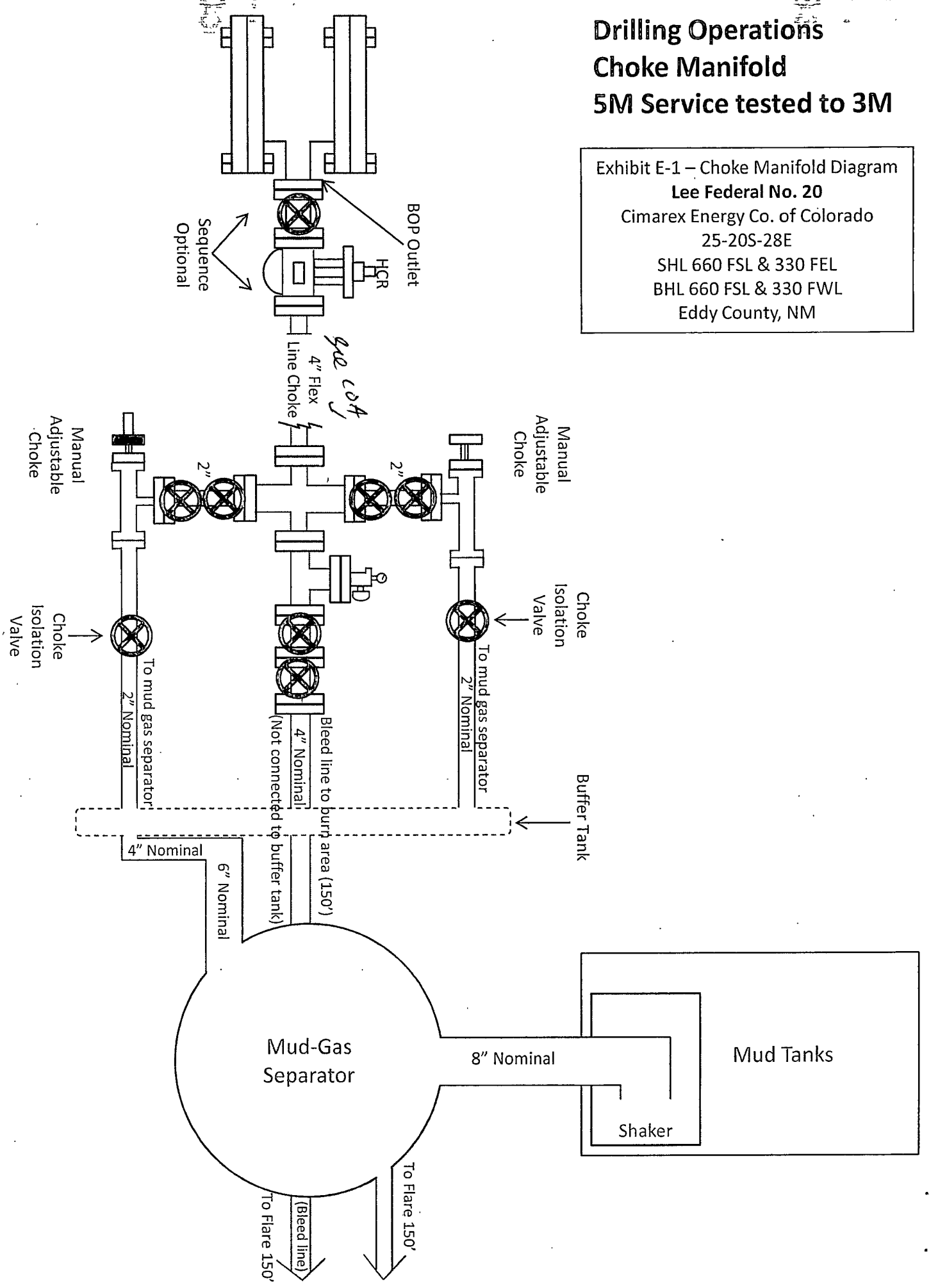


Exhibit E – 5000# BOP tested to 3000#
Lee Federal No. 20H
Cimarex Energy Co. of Colorado
25-20S-28E
SHL 660 FSL & 330 FEL
BHL 660 FSL & 330 FWL
Eddy County, NM

Drilling Operations
Choke Manifold
5M Service tested to 3M

Exhibit E-1 – Choke Manifold Diagram
Lee Federal No. 20
Cimarex Energy Co. of Colorado
25-20S-28E
SHL 660 FSL & 330 FEL
BHL 660 FSL & 330 FWL
Eddy County, NM



16" Diverter System

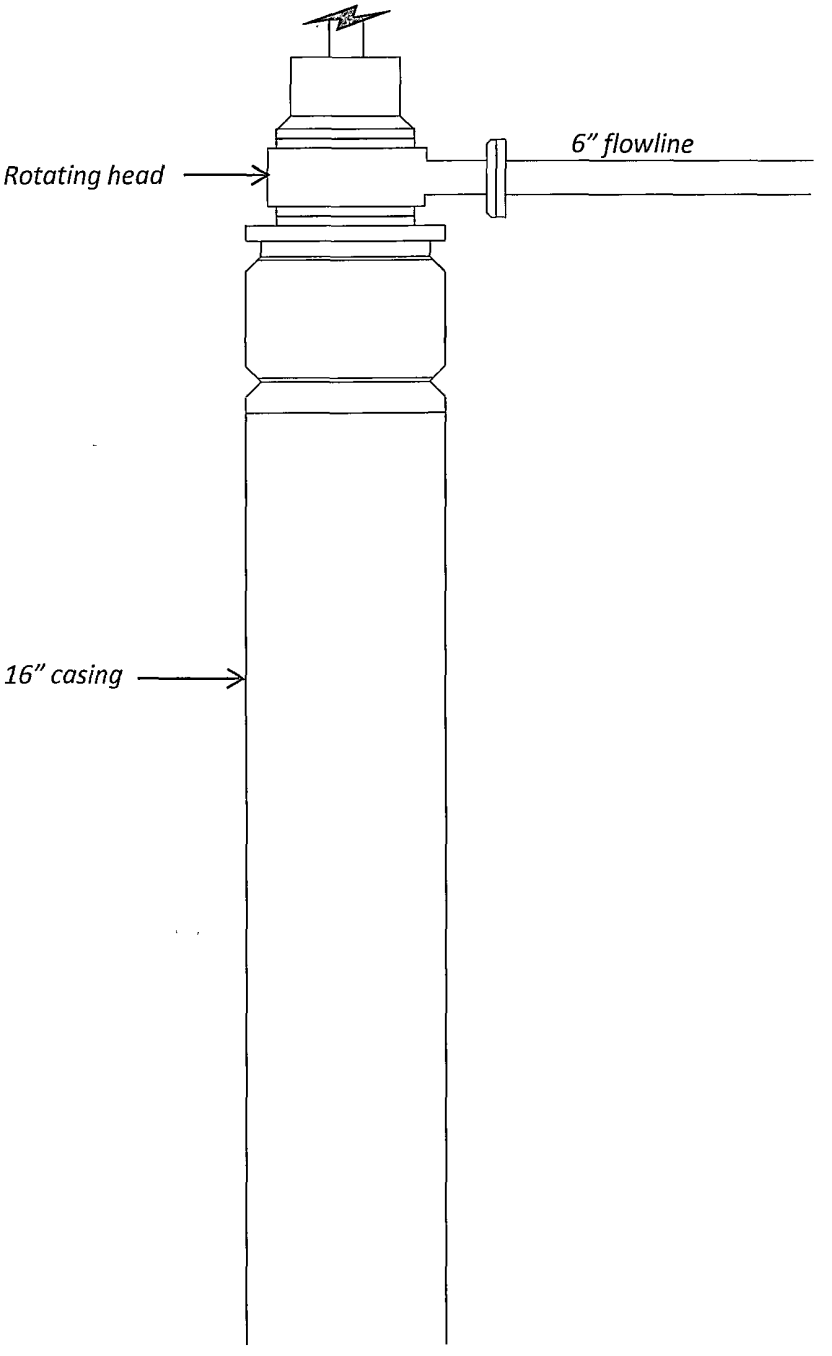


Exhibit E-2 – 20" Diverter System
Lee Federal No. 20H
Cimarex Energy Co. of Colorado
25-20S-28E
SHL 660 FSL & 330 FEL
BHL 660 FSL & 330 FWL
Eddy County, NM

MIDWEST

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS DRILLING		P.O. Number: RIG#147
HOSE SPECIFICATIONS		
Type: CHOKE & KILL		Length: 35'
I.D. 4" *INCHES*	O.D. 8"	
WORKING PRESSURE 10,000 *PSI*	TEST PRESSURE 15,000	BURST PRESSURE
COUPLINGS		
Stem Part No. E4.0X64WB	Ferrule No. FERRULE-128	
Type of Coupling: 4-1/16 10K FLANGE(BX-155)	Die Size:	
PROCEDURE		
Hose assembly pressure tested with water at ambient temperature.		
TIME HELD AT TEST PRESSURE 15 *MIN.*	ACTUAL BURST PRESSURE: 0 *PSI*	
COMMENTS: SERIAL#63270		
Date: 7/14/2010	Tested By: BOBBY FINK	Approved: BRENT BURNETT

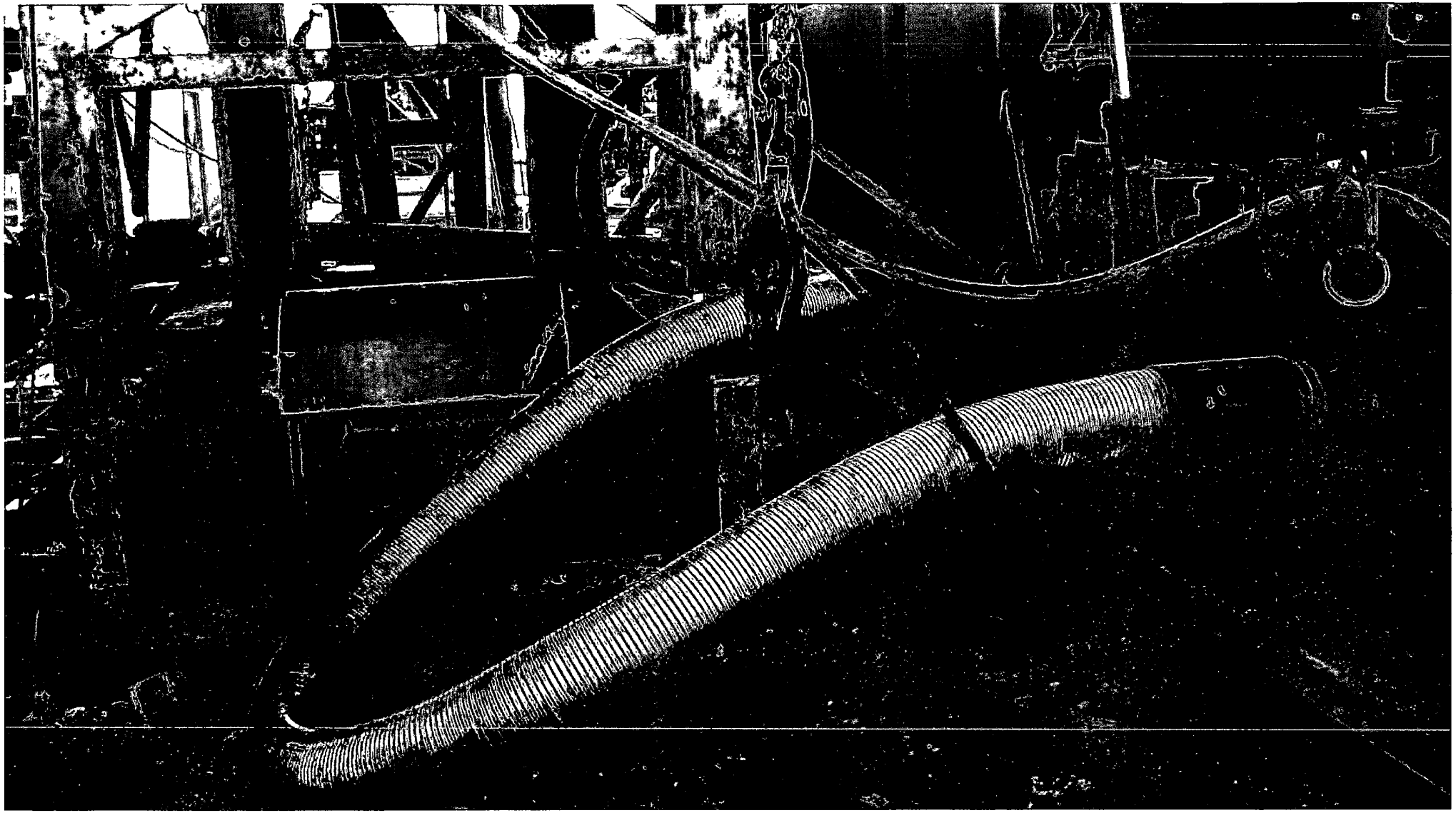
Midwest Hose
& Specialty, Inc.

Specification Sheet
Choke & Kill Hose

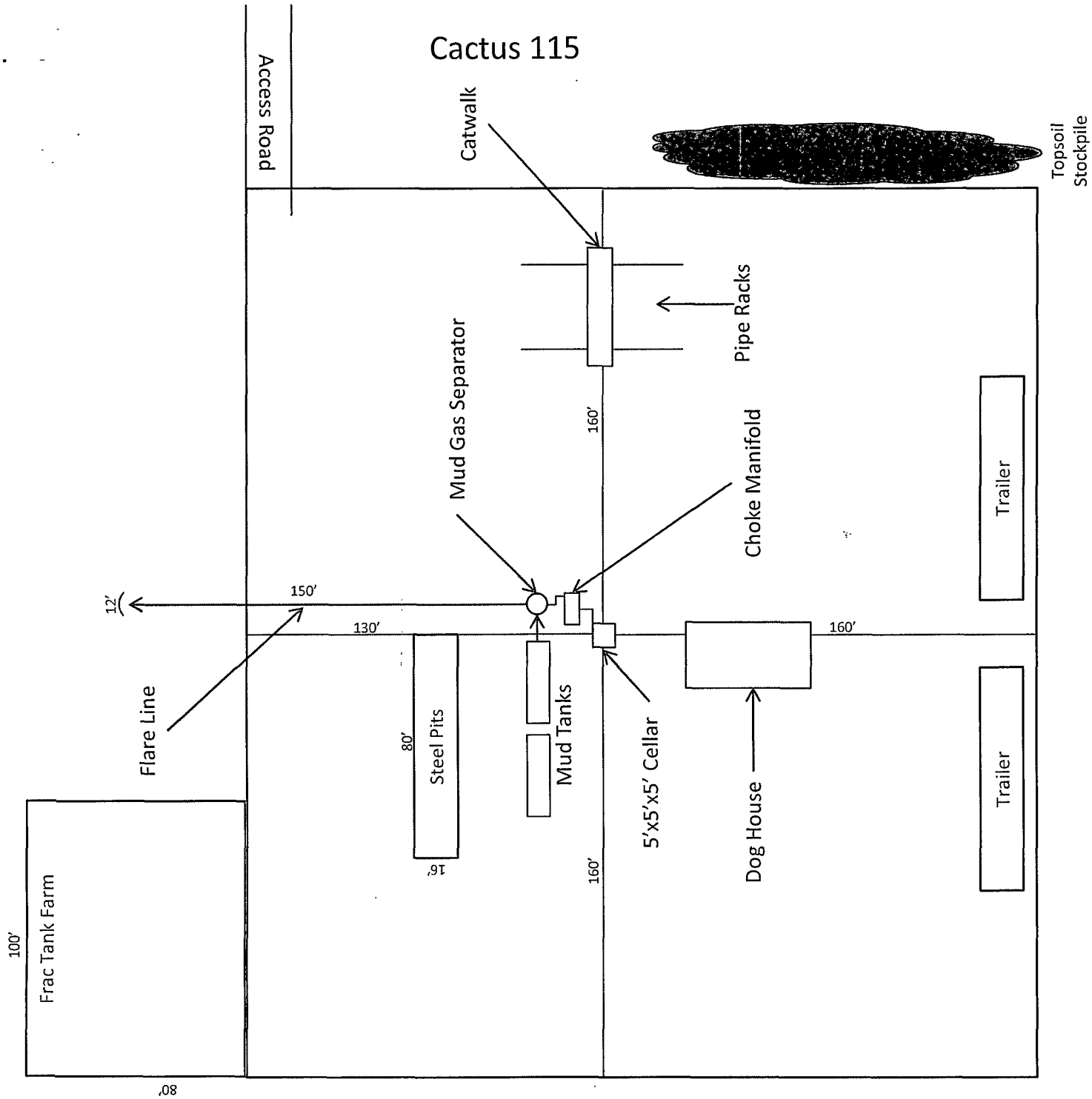
The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male 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) 670-6816



Cactus Rig 115
Serial # 63270



1"=50'

N

Exhibit D – Rig Diagram
Lee Federal No. 20H
Cimarex Energy Co of Colorado.
25-20S-28E
SHL 660 FSL & 330 FEL
BHL 660 FSL & 330 FWL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Lee Federal No. 20H
Cimarex Energy Co. of Colorado
Unit P, Section 25
T20S-R28E, Eddy County, NM

1 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.

2 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.

3 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.

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 emergency personnel admitted to location.

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

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.

See COA

H_2S Contingency Plan
Lee Federal No. 20H
Cimarex Energy Co. of Colorado
Unit P, Section 25
T20S-R28E, 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

Stata Production Company'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. Stata Production Company'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

Lee Federal No. 20H

Cimarex Energy Co. of Colorado

Unit P, Section 25

T20S-R28E, Eddy County, NM

Strata Personnel	
Frank Morgan, Drilling Superintendent	575-703-6866
Virgil Smith, Production Superintendent	575-626-0528
Sheriff's Departments	
Eddy County	575-887-1888
Lea County	575-396-3611
New Mexico State Police	**575-392-5588**
Fire Departments	**911**
Carlsbad	575-885-3125
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359
Hospitals	**911**
Carlsbad Medical Emergency	575-887-4100
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359
Agent Notifications	
Bureau of Land Management	575-393-3612 during working hours
New Mexico Oil Conservation Division	575-393-6161
Mosaic Potash - Carlsbad	575-887-2871

Bureau of Land Mgt 24 hr contact 575 361-2822 (Eddy County)

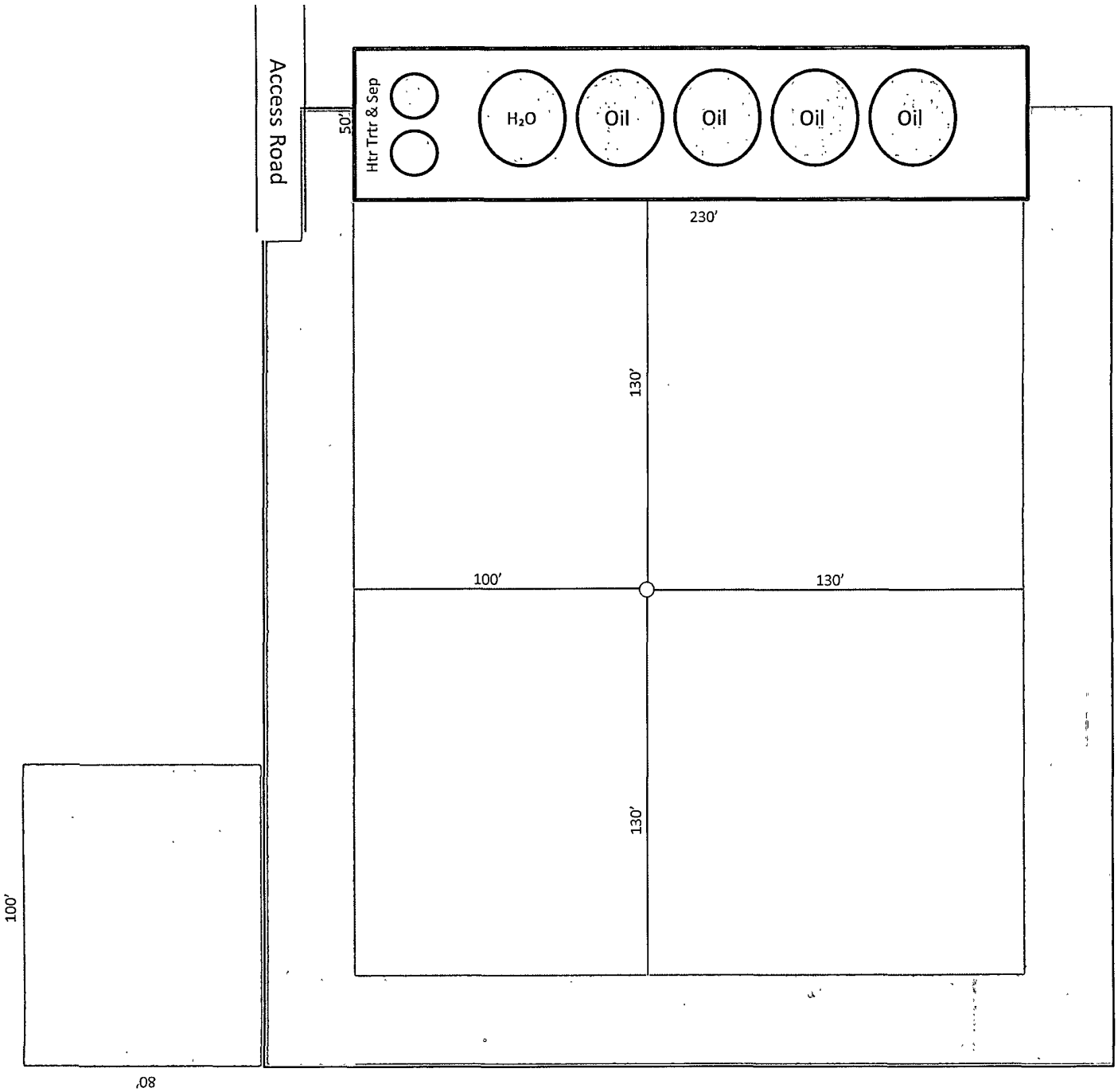


Exhibit D-1
Production Facilities Layout Diagram
Lee Federal No. 20H
Cimarex Energy Co. of Colorado
25-20S-28E
SHL 660 FSL & 330 FEL
BHL 660 FSL & 330 FWL
Eddy County, NM

1"=50'

N

Production facilities

Wellbore

Interim Reclamation

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY
LEASE NO.:	NMNM17103
WELL NAME & NO.:	Lee Federal 20H
SURFACE HOLE FOOTAGE:	660' FSL & 330' FEL
BOTTOM HOLE FOOTAGE	660' FSL & 330' FWL
LOCATION:	Section 25, T. 20 S., R. 28 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.

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

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

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

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

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call theCarlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet.

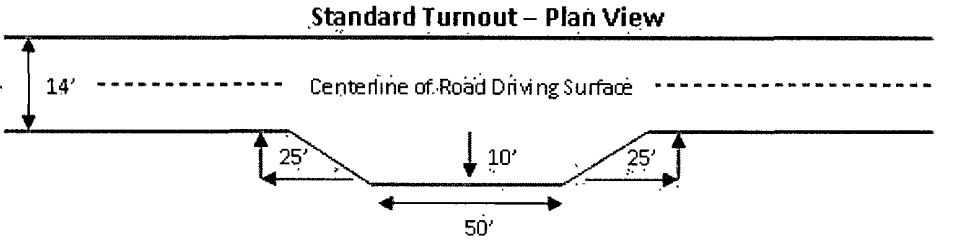
Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

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

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

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

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

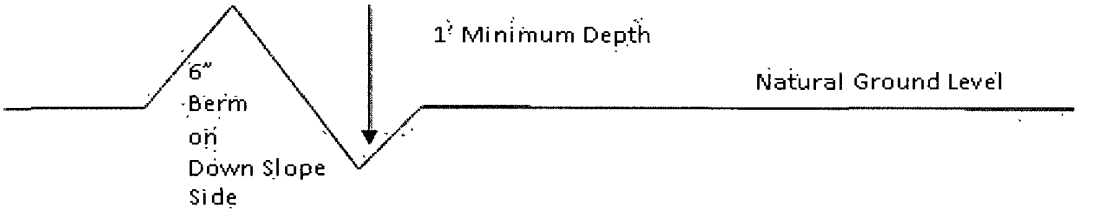


Drainage

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

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

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

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

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

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

Fence Requirement

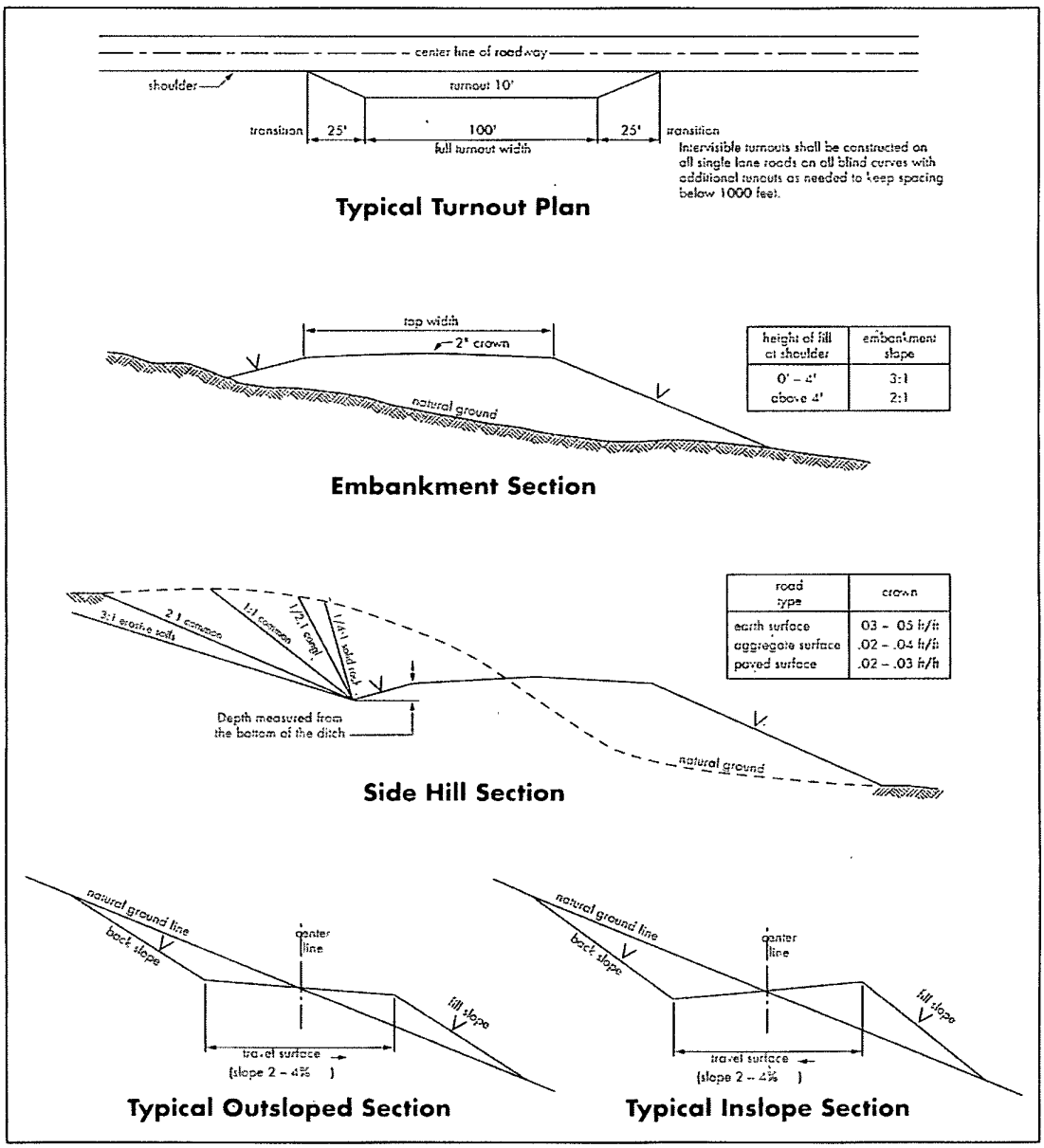
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



2. The minimum required fill of cement behind the **11-3/4** inch first intermediate casing is:

   ☒ Cement to surface. . If cement does not circulate, contact the appropriate BLM office. **Wait on Cement (WOC) time for a primary cement job is to include the lead cement slurry due to high cave/karst and Capitan Reef concerns.**

If 75% or greater lost circulation occurs while drilling the 11-3/4" first intermediate casing hole, the cement on the production casing must come to surface.

3. The minimum required fill of cement behind the **8-5/8** inch 2nd intermediate casing is:

   ☒ Cement to surface. . If cement does not circulate, contact the appropriate BLM office. **Wait on Cement (WOC) time for a primary cement job is to include the lead cement slurry due to high cave/karst and Capitan Reef concerns.**

If 75% or greater lost circulation occurs while drilling the 8-5/8" second intermediate casing hole, the cement on the production casing must come to surface.

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

   ☒ Cement to **50'** above the Capitan Reef. Operator shall provide method of verification.

5. 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 **2000 (2M)** psi. **A variance will be granted for the use of a diverter system on the 16" surface casing.**

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **11-3/4"** first intermediate casing shoe shall be **3000 (3M)** psi. **Operator will utilize 5M BOPE as a 3000 psi BOP system.**

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 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.

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.

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 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