A T5-11-496

HOBBS OCD

OCD Hobbs

MAY 0 6 2011

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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-052

6. If Indian, Allotee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.: Mallon 34 Federal No. 20H (29028)

2. Name of Operator: Cimarex Energy Co. of Colorado (162683)

9. API Well No.: 30-025- 40135

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: Quail Ridge; Bone Spring, South (50461)

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

At Surface: 380 FNL & 330 FEL (A)

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

11. Sec., T. R. M. or Blk. and Survey or Area: 34-19S-34E

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

12. County or Parish: Lea

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'	NM-052 - 1240 acres	N2N2 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**
1675'	MD 15350 TVD 10875	NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3715' GR	04.30.11	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	Zeno Farris	02.21.11

Title: Manager Operations Administration

Approved By *(Signature)*	Name (Printed/Typed)	Date
/s/ James A. Amos		MAY - 5 2011
Title FIELD MANAGER	**Office** CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached. APPROVAL FOR TWO YEARS

Title 18 U.S.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)*

KZ 05/17/11

Capitan Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

MAY 18 2011

Application to Drill
Mallon 34 Federal No. 20
Cimarex Energy Co. of Colorado
Unit A, Section 34
T19S-R34E, Eddy County, NM

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

1 Location: SHL 380 FNL & 330 FEL
BHL 660 FNL & 330 FWL

2 Elevation above sea level: 3715' 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 15350 TVD 10875

6 Estimated tops of geological markers:

Rustler	1590'	Penrose	4942'
T. Salt	1720'	Grayburg	5231'
B. Salt	3326'	Cherry Canyon	5634'
Tansill	3380'	San Andres	6055'
Yates	3575'	Brushy Canyon	6463'
7 Rivers	3872'	Bone Spring	8239'
Queen	4579'		

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 ~~1650'~~ 1885	8.4 - 8.6	30-32	May lose circ	FW gel spud mud
~~1650'~~ to 5500'	8.4 - 8.6	28-29	May lose circ	~~FW mud~~ See COA
5500' to 15350'	8.4 - 9.4	28-29	NC	FW and brine, use hi-vis sweeps to keep hole clean

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

Drill surface and intermediate holes and set casing. Drill 8¾" hole to KOP @ 10565 and drill through curve to lateral TD @ ~~15350~~ 15451 MD, ~~10875~~ 10940 TVD. Set 5½" 17# P110 LTC casing from 0-10515 (50' above KOP), BTC from 10515-11011 (EOC), and LTC from 11011-15350. Cement as shown in cementing proposal.

Application to Drill
Mallon 34 Federal No. 20
Cimarex Energy Co. of Colorado
Unit A, Section 34
T19S-R34E, Eddy County, NM

9 Casing & Cementing Program:

See COA

String	Hole Size	Depth			Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to	~~1650~~ 1685'	New	13⅜"	54.5#	STC	J-55
Intermediate	12¼"	0'	to	5500'	New	9⅝"	40#	LTC	N-80
Production	8¾"	0'	to	15350'	New	5½"	17#	LTC/BTC	P-110

10 Cementing:

Surface 1845 SKS Halcem C + 4% Bentomite + 2% CaCl, 14.2 ppg, 1.34 yield, 100% Excess
TOC Surface **Centralizers per Onshore Order 2.III.B.1.f**

Intermediate Lead: 1840 SKS EconoCem + 5% salt + 5 lbm gilsonite, 14.6ppg, 1.54 yield, 70% Excess
Tail: 200 SKS HalCem + 1% CaCl, 14.8 ppg, 1.34 yield, 25% Excess
TOC Surface

Production Lead: 820 SKS EconoCem - H + 0.2 % HR-601, 11.9 ppg, 2.44 yield, 50% Excess
Tail: 1310 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 5300 **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 125. Fresh water zones will be protected by setting 13⅜" casing at ~~1650'~~ and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 5500' and production casing at 15350' and cementing to 5300.'

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

11 Pressure control Equipment:
Exhibit "E". A 13⅝" 5000 PSI working pressure BOP 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 as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud gas seperator will be available when 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.

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
Mallon 34 Federal No. 20
Cimarex Energy Co. of Colorado
Unit A, Section 34
T19S-R34E, Eddy County, NM

12 Testing, Logging and Coring Program: See COA
- A. Mud logging program: 2 man unit from 5500 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, Cimarex does not anticipate that there will be enough H_2S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H_2S Safety package on all wells, attached is an "H_2S Drilling Operations Plan." Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP **3000 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 (operator) requests a variance if Cactus 101 (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold.
Manufacturer: Midwest Hose & Specialty
Serial Number: 59473
Length: 35' Size: 4-1/16" Ends - (flanges)/clamps
WP rating: 10,000 psi Anchors required by manufacturer – Yes/(No)

Cimarex Energy Co.

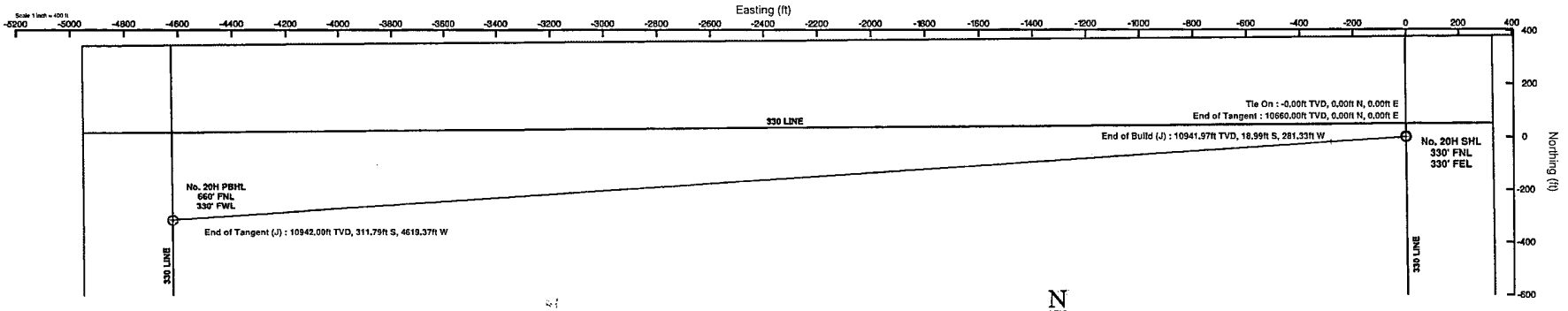
Location: Lea County, NM
Field: (Mallon) Sec 34, T19S, R34E
Facility: Mallon 34 Fed No. 20H

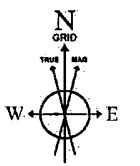
Slot: No. 20H SHL
Well: No. 20H
Wellbore: No. 20H PWB

BAKER HUGHES INTEQ

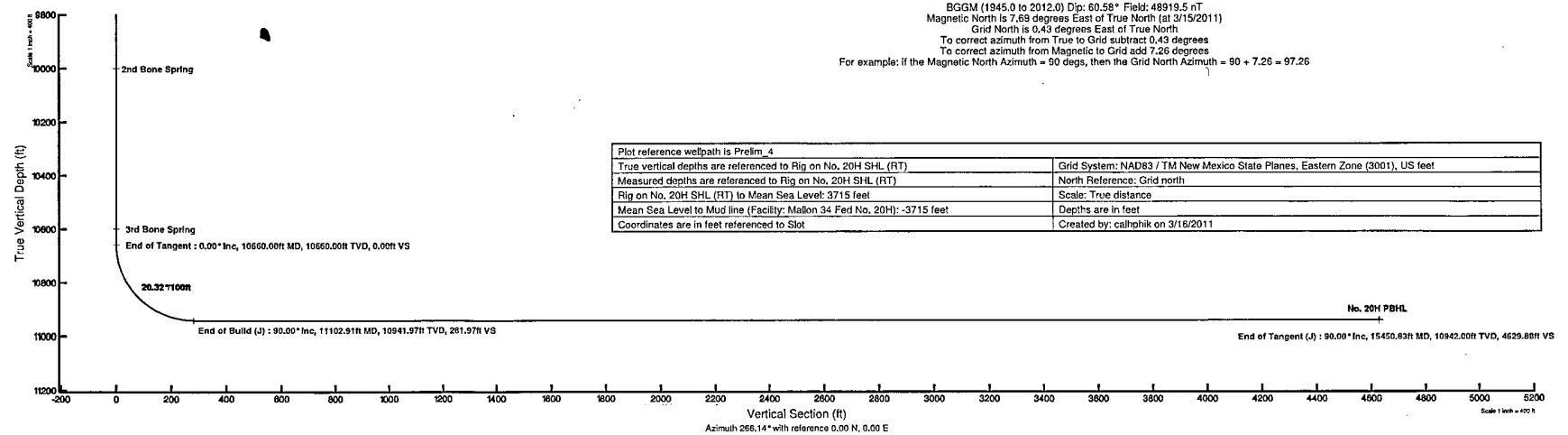
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	266.139	0.00	0.00	0.00	0.00	0.00
End of Tangent	10660.00	0.000	266.139	10660.00	0.00	0.00	0.00	0.00
End of Build (J)	11102.91	90.000	266.139	10941.97	-18.99	-281.33	20.32	281.97
End of Tangent (J)	15450.83	90.000	266.139	10942.00	-311.79	-4619.37	0.00	4629.88





BGGM (1945.0 to 2012.0) Dip: 60.58° Field: 48919.5 nT
Magnetic North is 7.69 degrees East of True North (at 3/15/2011)
Grid North is 0.43 degrees East of True North
To correct azimuth from True to Grid subtract 0.43 degrees
To correct azimuth from Magnetic to Grid add 7.26 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.26 = 97.26



Plot reference wellpath is Prelim_4	
True vertical depths are referenced to Rig on No. 20H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 20H SHL (RT)	North Reference: Grid north
Rig on No. 20H SHL (RT) to Mean Sea Level: 3715 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Mallon 34 Fed No. 20H): -3715 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: calhphik on 3/16/2011

Planned Wellpath Report

Prelim_4

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 20H SHL**
Area	**Lea County, NM**	Well	**No. 20H**
Field	**(Mallon) Sec 34, T19S, R34E**	Wellbore	**No. 20H PWB**
Facility	**Mallon 34 Fed No. 20H**		

REPORT SETUP INFORMATION			
Projection System	**NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 2.0**
North Reference	**Grid**	User	**Calhphik**
Scale	**0.999977**	Report Generated	**3/16/2011** at **7:50:24 AM**
Convergence at slot	**0.43° East**	Database/Source file	**WA Midland/No._20H_PWB.xml**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	**East[ft]**	**Easting[USft]**	**Northing[USft]**	**Latitude**	**Longitude**
Slot Location	381.51	4618.83	**785418.30**	**591279.00**	32°37'22.705"N	103°32'25.977"W
Facility Reference Pt			**780799.60**	**590897.50**	32°37'19.268"N	103°33'20.011"W
Field Reference Pt			**780804.80**	**586972.60**	32°36'40.432"N	103°33'20.286"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No. 20H SHL (RT) to Facility Vertical Datum	**0.00ft**
Horizontal Reference Pt	**Slot**	Rig on No. 20H SHL (RT) to Mean Sea Level	**3715.00ft**
Vertical Reference Pt	**Rig on No. 20H SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00ft**
MD Reference Pt	**Rig on No. 20H SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**266.14°**

CIMAREX

Planned Wellpath Report

Prelim_4

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 20H SHL
Area	Lea County, NM	Well	No. 20H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 20H PWB
Facility	Mallon 34 Fed No. 20H		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	266.139	0.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	Tie On
100.00†	0.000	266.139	100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
200.00†	0.000	266.139	200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
300.00†	0.000	266.139	300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
400.00†	0.000	266.139	400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
500.00†	0.000	266.139	500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
600.00†	0.000	266.139	600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
700.00†	0.000	266.139	700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
800.00†	0.000	266.139	800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
900.00†	0.000	266.139	900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1000.00†	0.000	266.139	1000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1100.00†	0.000	266.139	1100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1200.00†	0.000	266.139	1200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1300.00†	0.000	266.139	1300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1400.00†	0.000	266.139	1400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1500.00†	0.000	266.139	1500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1600.00†	0.000	266.139	1600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1700.00†	0.000	266.139	1700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1800.00†	0.000	266.139	1800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
1900.00†	0.000	266.139	1900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2000.00†	0.000	266.139	2000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2100.00†	0.000	266.139	2100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2200.00†	0.000	266.139	2200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2300.00†	0.000	266.139	2300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2400.00†	0.000	266.139	2400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2500.00†	0.000	266.139	2500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2600.00†	0.000	266.139	2600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2700.00†	0.000	266.139	2700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2800.00†	0.000	266.139	2800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
2900.00†	0.000	266.139	2900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3000.00†	0.000	266.139	3000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3100.00†	0.000	266.139	3100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3200.00†	0.000	266.139	3200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3300.00†	0.000	266.139	3300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3400.00†	0.000	266.139	3400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3500.00†	0.000	266.139	3500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3600.00†	0.000	266.139	3600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3700.00†	0.000	266.139	3700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3800.00†	0.000	266.139	3800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
3900.00†	0.000	266.139	3900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4000.00†	0.000	266.139	4000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4100.00†	0.000	266.139	4100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4200.00†	0.000	266.139	4200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4300.00†	0.000	266.139	4300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4400.00†	0.000	266.139	4400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	

CIMAREX

Planned Wellpath Report

Prelim_4

BAKER HUGHES
INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 20H SHL
Area	Lea County, NM	Well	No. 20H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 20H PWB
Facility	Mallon 34 Fed No. 20H		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00†	0.000	266.139	4500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4600.00†	0.000	266.139	4600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4700.00†	0.000	266.139	4700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4800.00†	0.000	266.139	4800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
4900.00†	0.000	266.139	4900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5000.00†	0.000	266.139	5000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5100.00†	0.000	266.139	5100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5200.00†	0.000	266.139	5200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5300.00†	0.000	266.139	5300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5400.00†	0.000	266.139	5400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5500.00†	0.000	266.139	5500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5600.00†	0.000	266.139	5600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5700.00†	0.000	266.139	5700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5800.00†	0.000	266.139	5800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
5900.00†	0.000	266.139	5900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6000.00†	0.000	266.139	6000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6100.00†	0.000	266.139	6100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6200.00†	0.000	266.139	6200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6300.00†	0.000	266.139	6300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6400.00†	0.000	266.139	6400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6500.00†	0.000	266.139	6500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6600.00†	0.000	266.139	6600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6700.00†	0.000	266.139	6700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6800.00†	0.000	266.139	6800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
6900.00†	0.000	266.139	6900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7000.00†	0.000	266.139	7000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7100.00†	0.000	266.139	7100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7200.00†	0.000	266.139	7200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7300.00†	0.000	266.139	7300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7400.00†	0.000	266.139	7400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7500.00†	0.000	266.139	7500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7600.00†	0.000	266.139	7600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7700.00†	0.000	266.139	7700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7800.00†	0.000	266.139	7800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
7900.00†	0.000	266.139	7900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8000.00†	0.000	266.139	8000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8100.00†	0.000	266.139	8100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8200.00†	0.000	266.139	8200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8250.00†	0.000	266.139	8250.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	Bone Spring
8300.00†	0.000	266.139	8300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8400.00†	0.000	266.139	8400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8500.00†	0.000	266.139	8500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8600.00†	0.000	266.139	8600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8700.00†	0.000	266.139	8700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
8800.00†	0.000	266.139	8800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	

Planned Wellpath Report

Prelim_4

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 20H SHL
Area	Lea County, NM	Well	No. 20H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 20H PWB
Facility	Mallon 34 Fed No. 20H		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8900.00†	0.000	266.139	8900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9000.00†	0.000	266.139	9000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9100.00†	0.000	266.139	9100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9200.00†	0.000	266.139	9200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9300.00†	0.000	266.139	9300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9400.00†	0.000	266.139	9400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9500.00†	0.000	266.139	9500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9510.00†	0.000	266.139	9510.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	1st Bone Spring
9600.00†	0.000	266.139	9600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9700.00†	0.000	266.139	9700.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9800.00†	0.000	266.139	9800.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
9900.00†	0.000	266.139	9900.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
10000.00†	0.000	266.139	10000.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	2nd Bone Spring
10100.00†	0.000	266.139	10100.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
10200.00†	0.000	266.139	10200.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
10300.00†	0.000	266.139	10300.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
10400.00†	0.000	266.139	10400.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
10500.00†	0.000	266.139	10500.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	
10600.00†	0.000	266.139	10600.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	3rd Bone Spring
10660.00	0.000	266.139	10660.00	0.00	0.00	0.00	785418.30	591279.00	32°37'22.705"N	103°32'25.977"W	0.00	End of Tangent
10700.00†	8.128	266.139	10699.87	2.83	-0.19	-2.83	785415.47	591278.81	32°37'22.703"N	103°32'26.010"W	20.32	
10800.00†	28.448	266.139	10794.32	34.05	-2.29	-33.97	785384.33	591276.71	32°37'22.685"N	103°32'26.374"W	20.32	
10900.00†	48.768	266.139	10872.05	96.12	-6.47	-95.90	785322.40	591272.53	32°37'22.648"N	103°32'27.099"W	20.32	
11000.00†	69.088	266.139	10923.39	181.32	-12.21	-180.91	785237.39	591266.79	32°37'22.597"N	103°32'28.093"W	20.32	
11100.00†	89.408	266.139	10941.95	279.05	-18.79	-278.42	785139.89	591260.21	32°37'22.539"N	103°32'29.234"W	20.32	
11102.91	90.000	266.139	10941.97	281.97	-18.99	-281.33	785136.98	591260.01	32°37'22.538"N	103°32'29.268"W	20.32	End of Build (J)
11200.00†	90.000	266.139	10941.97	379.05	-25.53	-378.19	785040.12	591253.47	32°37'22.480"N	103°32'30.401"W	0.00	
11300.00†	90.000	266.139	10941.97	479.05	-32.26	-477.97	784940.35	591246.74	32°37'22.421"N	103°32'31.568"W	0.00	
11400.00†	90.000	266.139	10941.97	579.05	-39.00	-577.74	784840.57	591240.01	32°37'22.362"N	103°32'32.735"W	0.00	
11500.00†	90.000	266.139	10941.97	679.05	-45.73	-677.51	784740.80	591233.27	32°37'22.302"N	103°32'33.902"W	0.00	
11600.00†	90.000	266.139	10941.97	779.05	-52.46	-777.29	784641.03	591226.54	32°37'22.243"N	103°32'35.069"W	0.00	
11700.00†	90.000	266.139	10941.97	879.05	-59.20	-877.06	784541.26	591219.80	32°37'22.184"N	103°32'36.236"W	0.00	
11800.00†	90.000	266.139	10941.97	979.05	-65.93	-976.83	784441.49	591213.07	32°37'22.124"N	103°32'37.403"W	0.00	
11900.00†	90.000	266.139	10941.97	1079.05	-72.67	-1076.60	784341.72	591206.34	32°37'22.065"N	103°32'38.570"W	0.00	
12000.00†	90.000	266.139	10941.97	1179.05	-79.40	-1176.38	784241.95	591199.60	32°37'22.006"N	103°32'39.737"W	0.00	
12100.00†	90.000	266.139	10941.97	1279.05	-86.13	-1276.15	784142.18	591192.87	32°37'21.947"N	103°32'40.905"W	0.00	
12200.00†	90.000	266.139	10941.98	1379.05	-92.87	-1375.92	784042.41	591186.13	32°37'21.887"N	103°32'42.072"W	0.00	
12300.00†	90.000	266.139	10941.98	1479.05	-99.60	-1475.70	783942.64	591179.40	32°37'21.828"N	103°32'43.239"W	0.00	
12400.00†	90.000	266.139	10941.98	1579.05	-106.34	-1575.47	783842.87	591172.66	32°37'21.769"N	103°32'44.406"W	0.00	
12500.00†	90.000	266.139	10941.98	1679.05	-113.07	-1675.24	783743.10	591165.93	32°37'21.709"N	103°32'45.573"W	0.00	
12600.00†	90.000	266.139	10941.98	1779.05	-119.81	-1775.02	783643.33	591159.20	32°37'21.650"N	103°32'46.740"W	0.00	
12700.00†	90.000	266.139	10941.98	1879.05	-126.54	-1874.79	783543.56	591152.46	32°37'21.591"N	103°32'47.907"W	0.00	
12800.00†	90.000	266.139	10941.98	1979.05	-133.27	-1974.56	783443.79	591145.73	32°37'21.531"N	103°32'49.074"W	0.00	
12900.00†	90.000	266.139	10941.98	2079.05	-140.01	-2074.33	783344.02	591138.99	32°37'21.472"N	103°32'50.241"W	0.00	
13000.00†	90.000	266.139	10941.98	2179.05	-146.74	-2174.11	783244.25	591132.26	32°37'21.413"N	103°32'51.408"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 20H SHL
Area	Lea County, NM	Well	No. 20H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 20H PWB
Facility	Mallon 34 Fed No. 20H		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13100.00†	90.000	266.139	10941.98	2279.05	-153.48	-2273.88	783144.48	591125.53	32°37'21.353"N	103°32'52.575"W	0.00	
13200.00†	90.000	266.139	10941.98	2379.05	-160.21	-2373.65	783044.71	591118.79	32°37'21.294"N	103°32'53.743"W	0.00	
13300.00†	90.000	266.139	10941.98	2479.05	-166.95	-2473.43	782944.93	591112.06	32°37'21.235"N	103°32'54.910"W	0.00	
13400.00†	90.000	266.139	10941.98	2579.05	-173.68	-2573.20	782845.16	591105.32	32°37'21.175"N	103°32'56.077"W	0.00	
13500.00†	90.000	266.139	10941.99	2679.05	-180.41	-2672.97	782745.39	591098.59	32°37'21.116"N	103°32'57.244"W	0.00	
13600.00†	90.000	266.139	10941.99	2779.05	-187.15	-2772.75	782645.62	591091.86	32°37'21.057"N	103°32'58.411"W	0.00	
13700.00†	90.000	266.139	10941.99	2879.05	-193.88	-2872.52	782545.85	591085.12	32°37'20.997"N	103°32'59.578"W	0.00	
13800.00†	90.000	266.139	10941.99	2979.05	-200.62	-2972.29	782446.08	591078.39	32°37'20.938"N	103°33'00.745"W	0.00	
13900.00†	90.000	266.139	10941.99	3079.05	-207.35	-3072.06	782346.31	591071.65	32°37'20.879"N	103°33'01.912"W	0.00	
14000.00†	90.000	266.139	10941.99	3179.05	-214.09	-3171.84	782246.54	591064.92	32°37'20.819"N	103°33'03.079"W	0.00	
14100.00†	90.000	266.139	10941.99	3279.05	-220.82	-3271.61	782146.77	591058.19	32°37'20.760"N	103°33'04.246"W	0.00	
14200.00†	90.000	266.139	10941.99	3379.05	-227.55	-3371.38	782047.00	591051.45	32°37'20.701"N	103°33'05.414"W	0.00	
14300.00†	90.000	266.139	10941.99	3479.05	-234.29	-3471.16	781947.23	591044.72	32°37'20.641"N	103°33'06.581"W	0.00	
14400.00†	90.000	266.139	10941.99	3579.05	-241.02	-3570.93	781847.46	591037.98	32°37'20.582"N	103°33'07.748"W	0.00	
14500.00†	90.000	266.139	10941.99	3679.05	-247.76	-3670.70	781747.69	591031.25	32°37'20.522"N	103°33'08.915"W	0.00	
14600.00†	90.000	266.139	10941.99	3779.05	-254.49	-3770.48	781647.92	591024.51	32°37'20.463"N	103°33'10.082"W	0.00	
14700.00†	90.000	266.139	10941.99	3879.05	-261.23	-3870.25	781548.15	591017.78	32°37'20.404"N	103°33'11.249"W	0.00	
14800.00†	90.000	266.139	10942.00	3979.05	-267.96	-3970.02	781448.38	591011.05	32°37'20.344"N	103°33'12.416"W	0.00	
14900.00†	90.000	266.139	10942.00	4079.05	-274.69	-4069.79	781348.61	591004.31	32°37'20.285"N	103°33'13.583"W	0.00	
15000.00†	90.000	266.139	10942.00	4179.05	-281.43	-4169.57	781248.84	590997.58	32°37'20.225"N	103°33'14.750"W	0.00	
15100.00†	90.000	266.139	10942.00	4279.05	-288.16	-4269.34	781149.07	590990.84	32°37'20.166"N	103°33'15.917"W	0.00	
15200.00†	90.000	266.139	10942.00	4379.05	-294.90	-4369.11	781049.29	590984.11	32°37'20.107"N	103°33'17.084"W	0.00	
15300.00†	90.000	266.139	10942.00	4479.05	-301.63	-4468.89	780949.52	590977.38	32°37'20.047"N	103°33'18.251"W	0.00	
15400.00†	90.000	266.139	10942.00	4579.05	-308.37	-4568.66	780849.75	590970.64	32°37'19.988"N	103°33'19.419"W	0.00	
15450.83	90.000	266.139	10942.00[1]	4629.88	-311.79	-4619.37	780799.04	590967.22	32°37'19.958"N	103°33'20.012"W	0.00	End of Tangent (J)

HOLE & CASING SECTIONS Ref Wellbore: No. 20H PWB Ref Wellpath: Prelim_4

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]
17.5in Open Hole	0.00	1700.00	1700.00	0.00	1700.00	0.00	0.00	0.00	0.00
13.375in Casing	0.00	1700.00	1700.00	0.00	1700.00	0.00	0.00	0.00	0.00
12.25in Open Hole	1700.00	5480.00	3780.00	1700.00	5480.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	5480.00	5480.00	0.00	5480.00	0.00	0.00	0.00	0.00
8.75in Open Hole	5480.00	15450.80	9970.80	5480.00	10942.00	0.00	0.00	-311.79	-4619.34
5.5in Casing	0.00	15450.80	15450.80	0.00	10942.00	0.00	0.00	-311.79	-4619.34

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 20H SHL
Area	Lea County, NM	Well	No. 20H
Field	(Mallon) Sec 34, T19S, R34E	Wellbore	No. 20H PWB
Facility	Mallon 34 Fed No. 20H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 20H PBHL	15450.83	10942.00	-311.79	-4619.37	**780799.04**	**590967.22**	32°37'19.958"N	103°33'20.012"W	point

SURVEY PROGRAM Ref Wellbore: No. 20H PWB Ref Wellpath: Prelim_4

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	15450.83	NaviTrak (Standard)		No. 20H PWB

SR & A

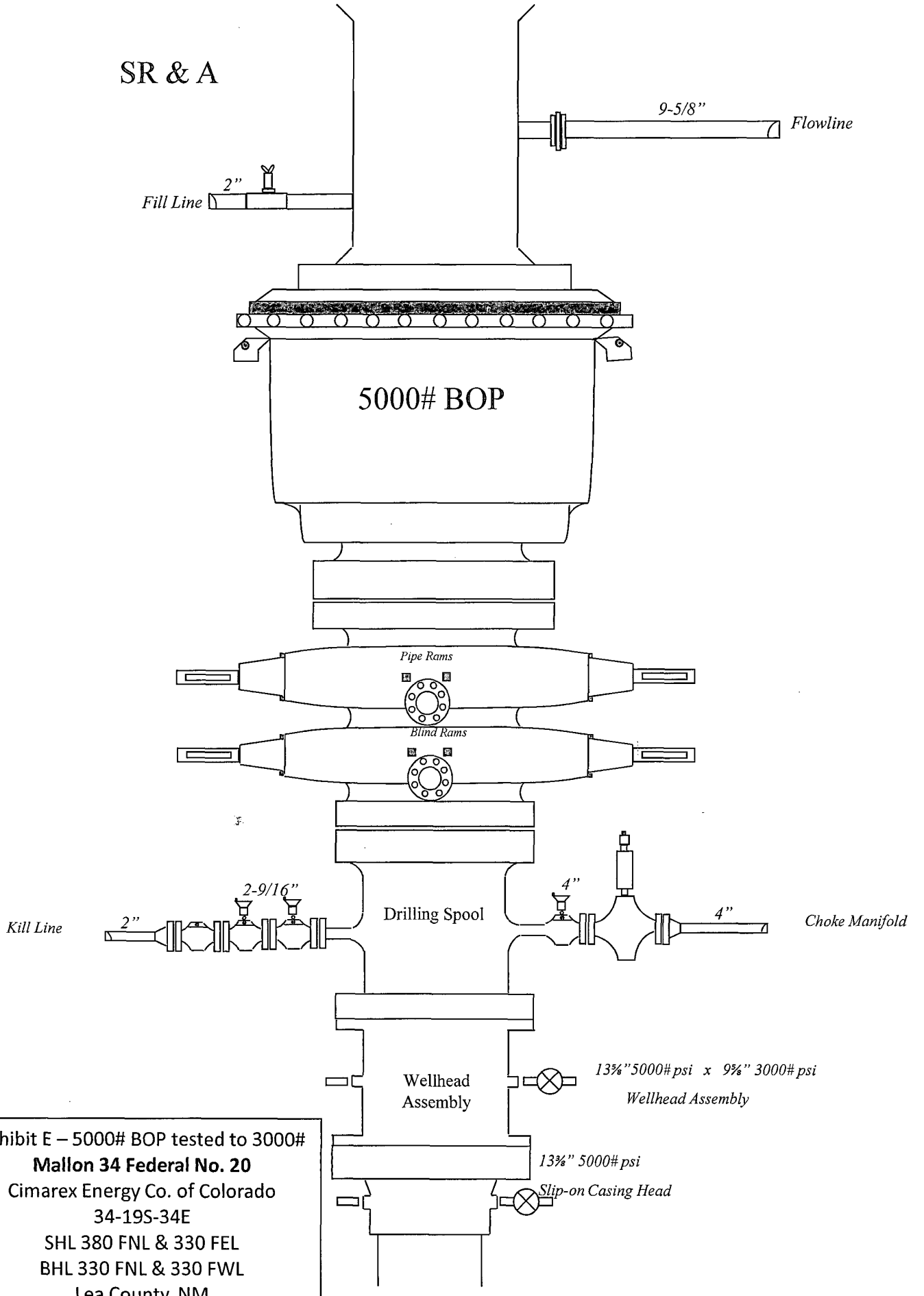
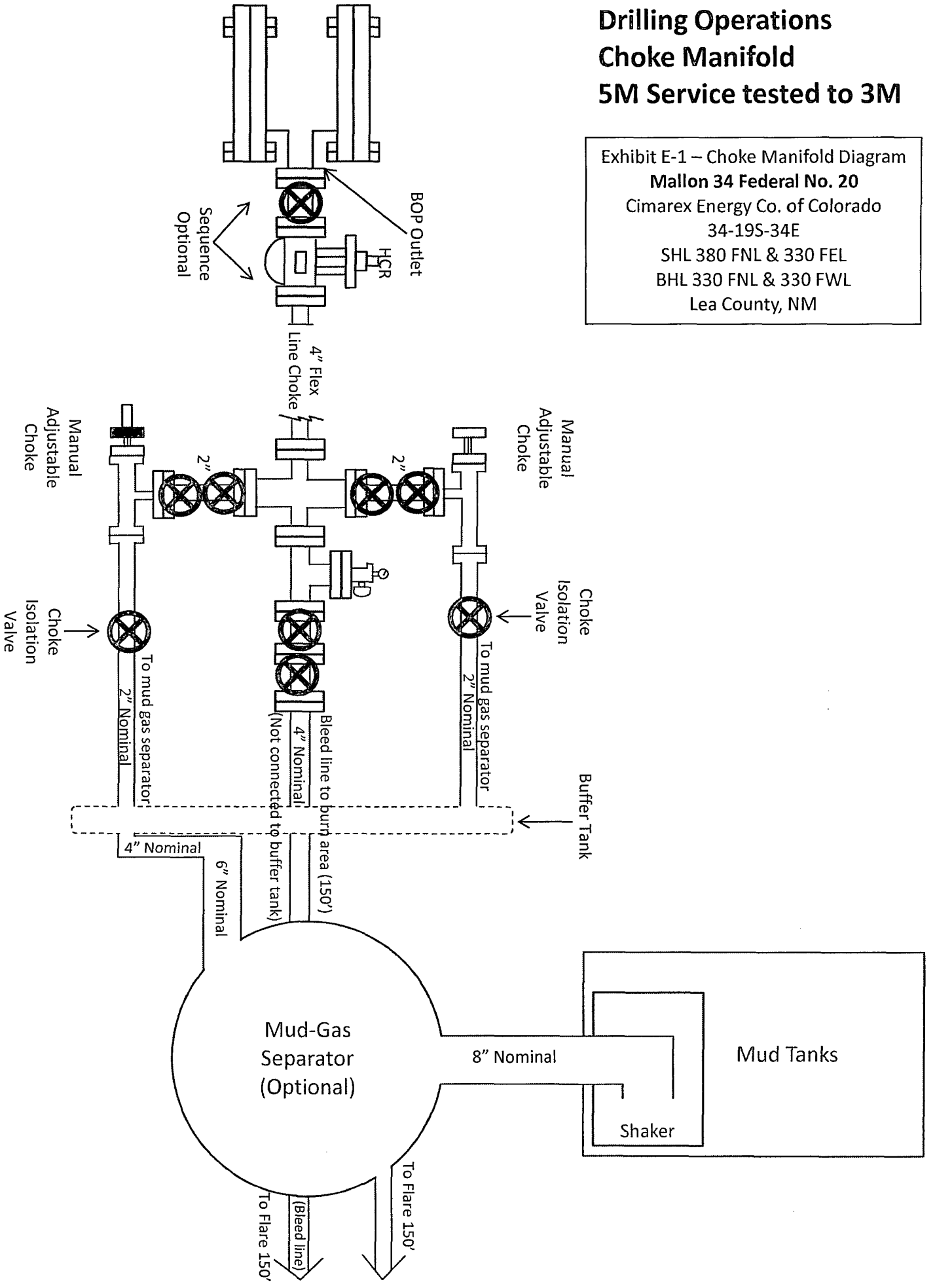
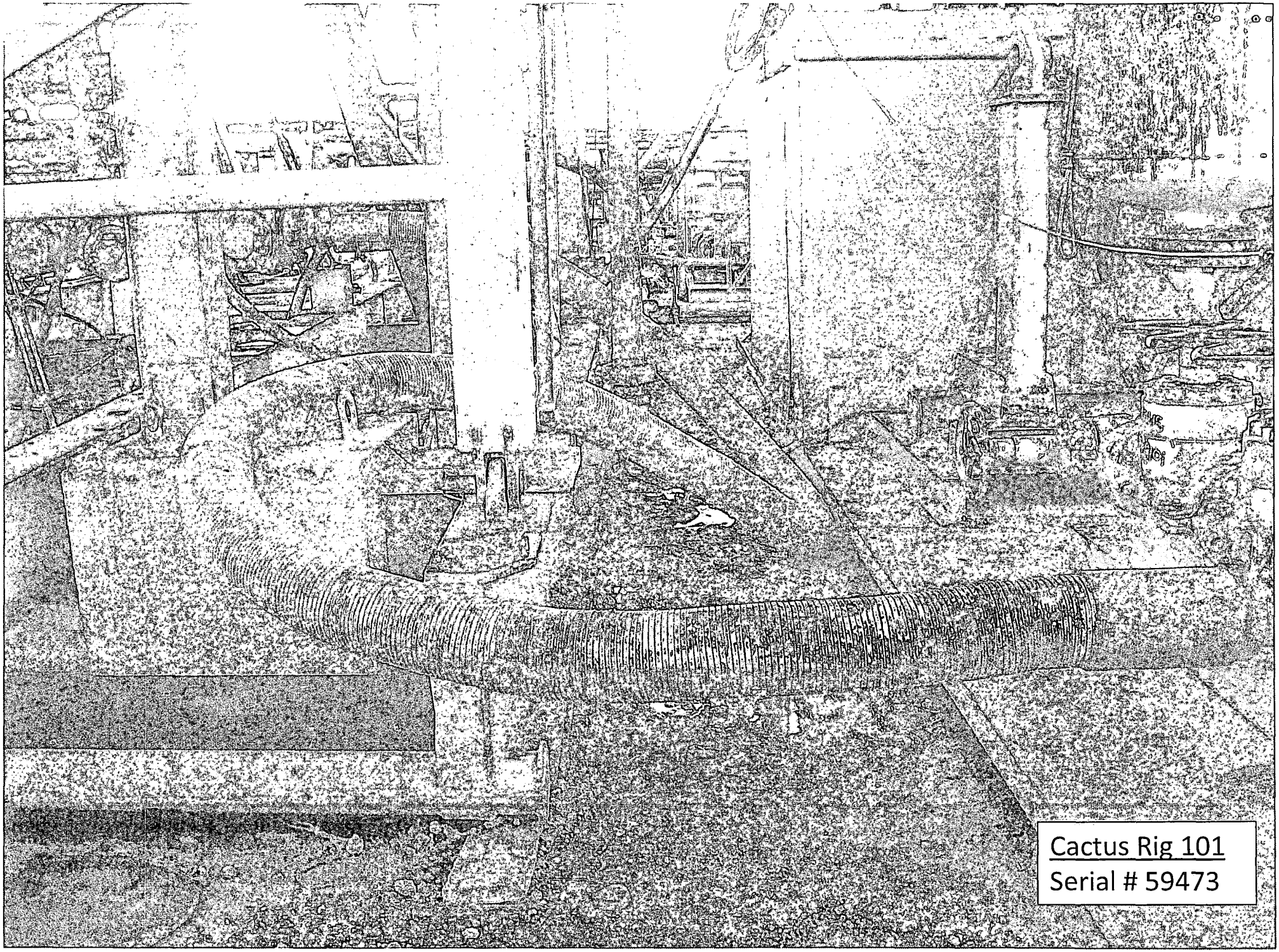


Exhibit E – 5000# BOP tested to 3000#
Mallon 34 Federal No. 20
Cimarex Energy Co. of Colorado
34-19S-34E
SHL 380 FNL & 330 FEL
BHL 330 FNL & 330 FWL
Lea County, NM

Drilling Operations
Choke Manifold
5M Service tested to 3M

Exhibit E-1 – Choke Manifold Diagram
Mallon 34 Federal No. 20
Cimarex Energy Co. of Colorado
34-19S-34E
SHL 380 FNL & 330 FEL
BHL 330 FNL & 330 FWL
Lea County, NM




Cactus Rig 101
Serial # 59473

M I D W E S T

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS		P.O. Number: Rig#101
		Asset#M5358
HOSE SPECIFICATIONS		
Type: CHOKE LINE		Length: 35'
I.D. 4" *INCHES*		O.D. 8" *INCHES*
WORKING PRESSURE 10,000 *PSI*	TEST PRESSURE 15,000 *PSI*	BURST PRESSURE *PSI*
COUPLINGS		
Type of End Fitting 4 1/16 10K FLANGE		
Type of Coupling: SWEDGED	MANUFACTURED BY MIDWEST HOSE & SPECIALTY	
PROCEDURE		
Hose assembly pressure tested with water at ambient temperature.		
TIME HELD AT TEST PRESSURE 15 *MIN.*	ACTUAL BURST PRESSURE: 0 *PSI*	
COMMENTS: s/n#59473 Asset#M5358 Hose is covered with stainless steel armour cover and wraped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes		
Date: 5/19/2010	Tested By: BOBBY FINK	Approved: MENDI JACKSON

Midwest Hose & Specialty, Inc.

HOBBS OCD

MAY 0 6 2011

RECEIVED

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