

HOBBS OCD

SECRETARY'S POTASH

Form 3160-3
(March 2012)

MAY 13 2013

OCD Hobbs

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Cimarex Energy Co.

3a. Address

600 N. Marienfeld St. Ste. 600 Midland Tx 79701

3b. Phone No. (include area code)

432-571-7800

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

At Surface

330' FNL & 660' FEL

At proposed prod. Zone

330' FSL & 660' FEL

Horizontal Bone Spring test

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

Eunice NM is approximately 20 miles East

15. Distance from proposed*

location to nearest
property or lease line, ft.
(Also to nearest drig. unit line if
any)

330'

16. No of acres in lease

1078.3

17. Spacing Unit dedicated to this well

160.35

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

N/A

19. Proposed Depth

15,376' MD 10,950' TVD

20. BLM/BIA Bond No. on File

NM2575; NMB000835

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

3646' GR

22. Approximate date work will start*

07.01.13

23. Estimated duration

35 days

24. Attachments

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

1. Well plat certified by a registered surveyor
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator Certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature

Name (Printed/Typed)

Date

Terri Stathem

2.6.13

Title

Regulatory Compliance

Approved By (Signature)

Name (Printed/Typed)

Date

Title

STATE DIRECTOR

Office

NM STATE OFFICE

MAY - 3 2013

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

Conditions of approval, if any, are attached.

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.

(Continued on page 2)

(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

Capitan Controlled Water Basin

MAY 20 2013

Application to Drill
West Grama Ridge 6 Federal #4H
 Cimarex Energy Co.
 Lot: 1 Sec. 6, 22S, 34E
 Lea Co., NM

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

- 1 Location: SHL 330' FNL & 660' FEL
 BHL 330' FSL & 660' FEL
- 2 Elevation above sea level: 3646' GR
- 3 Geologic name of surface formation: Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth: 15,376' MD 10,950' TVD
- 6 Estimated tops of geological markers:

Formation	Est. Top TVD	Bearing
Rustler	1720	NA
Top of Salt	1875	NA
Base of Salt	3700	NA
Capitan	4200	NA
Bell Canyon	5350	Hydrocarbons
Cherry Canyon	5950	NA
Bushy Canyon	7300	NA
Basal Brushy Canyon	8600	Hydrocarbons
Bone Spring	8850	NA
Avalon Shale	9340	Hydrocarbons
1st BSS	10000	Hydrocarbons

- 7 Possible mineral bearing formation:
 Shown above

7A OSE Ground Water estimated depth: 100'

- 8 Casing Program:

Casing Depth From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Open Hole Size (inches)	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	SI Surface Pressure & BHP (inside)	Mud Weight (ppg)	Collapse SF (1.125)	Burst SF (1.125)	Cumulative Air Weight (lbs)	Tension SF (1.6)
1900 Surface														
0'	1745'	1745'	17 1/2	13 3/8	54.5	J-55	ST&C	New	785	8.4	1.48	3.5	95103	5.4
Intermediate														
0'	5250'	5250'	12 1/4	9 5/8	40	HCK-55	LT&C	New	2363	10	1.55	1.7	210000	3.3
Production														
0'	10472'	10472'	8 3/4	5 1/2	17	P-110	LT&C	New	2519	8.4	1.64	4.2	186150	2.4
10472'	15376'	10950'	8 3/4	5 1/2	17	P-110	BT&C	New	4928	8.4	1.56	2.2	8126	67.2

Casing Design Criteria and Casing Loading Assumptions:

Surface, Intermediate and Production Casing:

Tension: A 1.6 design factor without effects of buoyancy.

Collapse: A 1.125 design factor with full internal evacuation.

Burst: A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

Drilling Plan
West Grama Ridge 6 Federal #4H
 Cimarex Energy Co.
 Lot: 1 Sec. 6, 22S, 34E
 Lea Co., NM

9 Cementing Program:

Surface **13 3/8**

	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	1110	1.75	13.5	1940	Class C + Bentonite + Calcium Chloride + LCM
Tail	230	1.34	14.8	303	Class C + LCM
TOC:	0'	85% Excess	Centralizers per Onshore Order 2.III.B.1f		

Intermediate **9 5/8**

	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	1110	1.88	12.9	2084	35:65 (poz/C) + Salt + Bentonite + LCM + retarder
Tail	310	1.34	14.8	411	Class C + retarder + LCM
TOC:	0'	78% Excess			

Production **See 3A 5 1/2**

	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	664	2.4	11.9	1595	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder
Tail	1394	1.24	14.5	1729	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder
Cement volumes will be adjusted depending on hole size.					
TOC:	4750' 4100'	25% Excess	No centralizers planned in the lateral section. 1 every jt from EOC to KOP. 1 every 4th joint from KOP to 500' inside previous casing.		

See COA

10 Pressure Control Equipment:

Exhibit "E-1". A 13 3/8" 5000 PSI working pressure BOP, tested to 3000 psi on the surface casing and 5000 psi on the intermediate, consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

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

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

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

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11 Proposed Mud Circulating System:

Depth		Mud Wt	Visc	Fluid Loss	Type Mud
0'	to 1745'	8.4	28	NC	FW Spud Mud
1745'	to 5250'	10	30-32	NC	Brine water
5250'	to 15376'	8.4	30-32	NC	FW/Cut Brine

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

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

12 Proposed Drilling Plan

Pilot Hole TD: No Pilot Hole

KOP: 10,472'

EOC: 11223'

Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drilling lateral through the curve to TD. Run prod casing & cement.

13 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 5250' to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / GR -- Inter. Csg to TD .
CNL / GR -- Surf to Inter. Csg
- C. No DSTs or cores are planned at this time.
- D. CBL w/ CCL from as far as gravity will let it fall to TOC

See CoA

14 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S 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 **4927.5 psi**

Estimated BHT

138°

15 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take : **35 days**

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

16 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from TD over possible pay intervals.

Bone Spring pay will be perforated and stimulated.

The proposed well will be tested and potentialized as

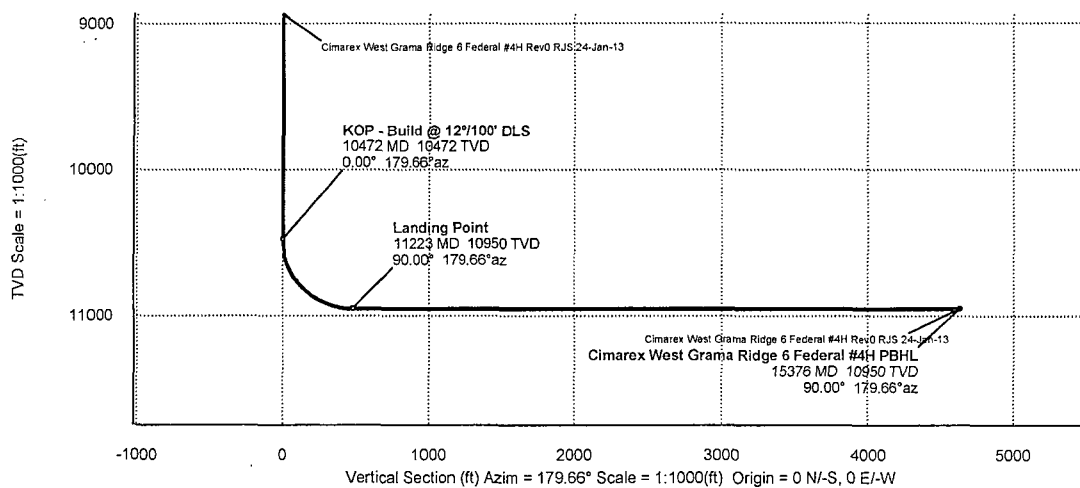
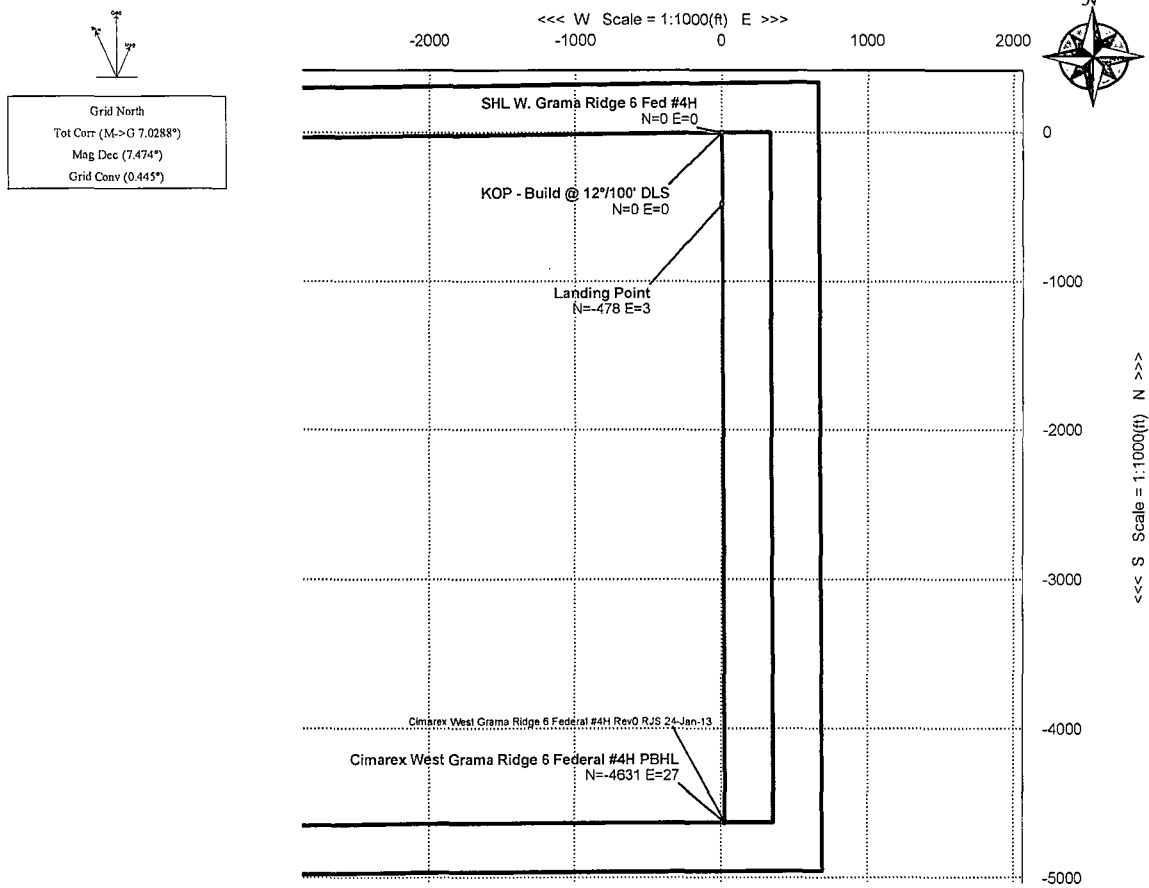
Oil



Cimarex

PATHFINDER
A Schlumberger Company

WELL				West Grama Ridge 6 Fed #4H				FIELD				NM Lea County				STRUCTURE				TBD											
Magnetic Parameters								Surface Location								Miscellaneous															
Model:		BGDM 2012		Dip:		60.300°		Date:		January 24, 2013		Lat:		N 32 25 37.858		Nothing:		520120 11 RJS		Grid Conv:		0.445°		Scale:		Fact: 0.9998432		Spot:		West Grama Ridge 6 Federal #4H Ref. Ground Level (5640ft above MSL)	
Mag Dec:		7.474°		FS:		45587.4mT		Loc:		W 103 30 8.989		Easting:		707828 72 RJS		Plan:		Rev 0 RJS 24-Jan-13		Survey Date:		January 24, 2013									



Critical Point			Critical Points					
	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL W. Grama Ridge 6 Fed #4H	0.00	0.00	179.66	0.00	0.00	0.00	0.00	
KOP - Build @ 12°/100' DLS	10472.00	0.00	179.66	10472.00	0.00	0.00	0.00	0.00
Landing Point	11222.84	90.00	179.66	10950.00	478.00	-477.99	2.84	11.99
Cimarex West Grama Ridge 6 Federal #4H PBHL	15376.21	90.00	179.66	10950.00	4631.37	-4631.29	27.48	0.00



Cimarex West Grama Ridge 6 Federal #4H Rev0 RJS 24-Jan-13 Proposal Report

(Non-Def Plan)



Report Date: January 24, 2013 - 10:32 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: TBD / Cimarex West Grama Ridge 6 Federal #4H
Well: Cimarex West Grama Ridge 6 Federal #4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex West Grama Ridge 6 Federal #4H Rev0 RJS 24-Jan-13
Survey Date: January 24, 2013
Tort / AHD / DDI / ERD Ratio: 90.000 ° / 4631.373 ft / 5.767 / 0.423
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 25' 37.69612", W 103° 30' 9.69915"
Location Grid N/E Y/X: N 520120.110 ftUS, E 797628.720 ftUS
CRS Grid Convergence Angle: 0.4454 °
Grid Scale Factor: 0.99998432

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.660 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3646.000 ft above MSL
Seabed / Ground Elevation: 3646.000 ft above MSL
Magnetic Declination: 7.474 °
Total Gravity Field Strength: 998.4810mgn (9.80665 Based)
Total Magnetic Field Strength: 48567.374 nT
Magnetic Dip Angle: 60.309 °
Declination Date: January 24, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.4454 °
Total Corr Mag North->Grid North: 7.0288 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
SHL W. Grama Ridge 6 Fed #4H	0.00	0.00	179.66	0.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	N/A
	100.00	0.00	179.66	100.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	200.00	0.00	179.66	200.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	300.00	0.00	179.66	300.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	400.00	0.00	179.66	400.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	500.00	0.00	179.66	500.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	600.00	0.00	179.66	600.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	700.00	0.00	179.66	700.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	800.00	0.00	179.66	800.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	900.00	0.00	179.66	900.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1000.00	0.00	179.66	1000.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1100.00	0.00	179.66	1100.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1200.00	0.00	179.66	1200.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1300.00	0.00	179.66	1300.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1400.00	0.00	179.66	1400.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1500.00	0.00	179.66	1500.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1600.00	0.00	179.66	1600.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1700.00	0.00	179.66	1700.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1800.00	0.00	179.66	1800.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	1900.00	0.00	179.66	1900.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2000.00	0.00	179.66	2000.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2100.00	0.00	179.66	2100.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2200.00	0.00	179.66	2200.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2300.00	0.00	179.66	2300.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2400.00	0.00	179.66	2400.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2500.00	0.00	179.66	2500.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2600.00	0.00	179.66	2600.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2700.00	0.00	179.66	2700.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	2800.00	0.00	179.66	2800.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00

Drilling Office 2.6.1166.0 ...Original Borehole\Cimarex West Grama Ridge 6 Federal #4H Rev0 RJS 24-Jan-13 2/5/2013 8:13 AM Page 2 of 4

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
	8400.00	0.00	179.66	8400.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	8500.00	0.00	179.66	8500.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	8600.00	0.00	179.66	8600.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	8700.00	0.00	179.66	8700.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	8800.00	0.00	179.66	8800.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	8900.00	0.00	179.66	8900.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9000.00	0.00	179.66	9000.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9100.00	0.00	179.66	9100.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9200.00	0.00	179.66	9200.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9300.00	0.00	179.66	9300.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9400.00	0.00	179.66	9400.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9500.00	0.00	179.66	9500.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9600.00	0.00	179.66	9600.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9700.00	0.00	179.66	9700.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9800.00	0.00	179.66	9800.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	9900.00	0.00	179.66	9900.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	10000.00	0.00	179.66	10000.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	10100.00	0.00	179.66	10100.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	10200.00	0.00	179.66	10200.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	10300.00	0.00	179.66	10300.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	10400.00	0.00	179.66	10400.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
KOP - Build @ 12°/100' DLS	10472.00	0.00	179.66	10472.00	0.00	0.00	0.00	520120.11	797628.72	N 32 25 37.70	W 103 30 9.70	0.00	0.00	0.00
	10500.00	3.36	179.66	10499.98	0.82	-0.82	0.00	520119.29	797628.72	N 32 25 37.69	W 103 30 9.70	0.82	179.66	11.99
	10600.00	15.34	179.66	10598.48	17.04	-17.04	0.10	520103.07	797628.82	N 32 25 37.53	W 103 30 9.70	17.04	179.66	11.99
	10700.00	27.33	179.66	10691.45	53.35	-53.35	0.32	520066.76	797629.04	N 32 25 37.17	W 103 30 9.70	53.35	179.66	11.99
	10800.00	39.32	179.66	10774.86	108.19	-108.19	0.64	520011.93	797629.36	N 32 25 36.63	W 103 30 9.70	108.19	179.66	11.99
	10900.00	51.30	179.66	10845.06	179.15	-179.15	1.06	519940.97	797629.78	N 32 25 35.92	W 103 30 9.70	179.15	179.66	11.99
	11000.00	63.29	179.66	10898.99	263.14	-263.14	1.56	519856.98	797630.28	N 32 25 35.09	W 103 30 9.70	263.14	179.66	11.99
	11100.00	75.28	179.66	10934.30	356.51	-356.50	2.12	519763.62	797630.84	N 32 25 34.17	W 103 30 9.71	356.51	179.66	11.99
	11200.00	87.26	179.66	10949.45	455.17	-455.16	2.70	519664.96	797631.42	N 32 25 33.19	W 103 30 9.71	455.17	179.66	11.99
Landing Point	11222.84	90.00	179.66	10950.00	478.00	-477.99	2.84	519642.13	797631.56	N 32 25 32.97	W 103 30 9.71	478.00	179.66	11.99
	11300.00	90.00	179.66	10950.00	555.16	-555.15	3.29	519564.97	797632.01	N 32 25 32.20	W 103 30 9.71	555.16	179.66	0.00
	11400.00	90.00	179.66	10950.00	655.16	-655.15	3.89	519464.97	797632.61	N 32 25 31.21	W 103 30 9.71	655.16	179.66	0.00
	11500.00	90.00	179.66	10950.00	755.16	-755.15	4.48	519364.98	797633.20	N 32 25 30.22	W 103 30 9.72	755.16	179.66	0.00
	11600.00	90.00	179.66	10950.00	855.16	-855.14	5.07	519264.98	797633.79	N 32 25 29.23	W 103 30 9.72	855.16	179.66	0.00
	11700.00	90.00	179.66	10950.00	955.16	-955.14	5.67	519164.98	797634.39	N 32 25 28.25	W 103 30 9.72	955.16	179.66	0.00
	11800.00	90.00	179.66	10950.00	1055.16	-1055.14	6.26	519064.99	797634.98	N 32 25 27.26	W 103 30 9.72	1055.16	179.66	0.00
	11900.00	90.00	179.66	10950.00	1155.16	-1155.14	6.85	518964.99	797635.57	N 32 25 26.27	W 103 30 9.72	1155.16	179.66	0.00
	12000.00	90.00	179.66	10950.00	1255.16	-1255.14	7.45	518864.99	797636.17	N 32 25 25.28	W 103 30 9.73	1255.16	179.66	0.00
	12100.00	90.00	179.66	10950.00	1355.16	-1355.14	8.04	518765.00	797636.76	N 32 25 24.29	W 103 30 9.73	1355.16	179.66	0.00
	12200.00	90.00	179.66	10950.00	1455.16	-1455.13	8.64	518665.00	797637.35	N 32 25 23.30	W 103 30 9.73	1455.16	179.66	0.00
	12300.00	90.00	179.66	10950.00	1555.16	-1555.13	9.23	518565.01	797637.95	N 32 25 22.31	W 103 30 9.73	1555.16	179.66	0.00
	12400.00	90.00	179.66	10950.00	1655.16	-1655.13	9.82	518465.01	797638.54	N 32 25 21.32	W 103 30 9.73	1655.16	179.66	0.00
	12500.00	90.00	179.66	10950.00	1755.16	-1755.13	10.42	518365.01	797639.14	N 32 25 20.33	W 103 30 9.74	1755.16	179.66	0.00
	12600.00	90.00	179.66	10950.00	1855.16	-1855.13	11.01	518265.02	797639.73	N 32 25 19.34	W 103 30 9.74	1855.16	179.66	0.00
	12700.00	90.00	179.66	10950.00	1955.16	-1955.12	11.60	518165.02	797640.32	N 32 25 18.35	W 103 30 9.74	1955.16	179.66	0.00
	12800.00	90.00	179.66	10950.00	2055.16	-2055.12	12.20	518065.02	797640.92	N 32 25 17.36	W 103 30 9.74	2055.16	179.66	0.00
	12900.00	90.00	179.66	10950.00	2155.16	-2155.12	12.79	517965.03	797641.51	N 32 25 16.37	W 103 30 9.75	2155.16	179.66	0.00
	13000.00	90.00	179.66	10950.00	2255.16	-2255.12	13.38	517865.03	797642.10	N 32 25 15.38	W 103 30 9.75	2255.16	179.66	0.00
	13100.00	90.00	179.66	10950.00	2355.16	-2355.12	13.98	517765.03	797642.70	N 32 25 14.39	W 103 30 9.75	2355.16	179.66	0.00
	13200.00	90.00	179.66	10950.00	2455.16	-2455.12	14.57	517665.04	797643.29	N 32 25 13.40	W 103 30 9.75	2455.16	179.66	0.00
	13300.00	90.00	179.66	10950.00	2555.16	-2555.11	15.16	517565.04	797643.88	N 32 25 12.41	W 103 30 9.75	2555.16	179.66	0.00
	13400.00	90.00	179.66	10950.00	2655.16	-2655.11	15.76	517465.04	797644.48	N 32 25 11.42	W 103 30 9.76	2655.16	179.66	0.00
	13500.00	90.00	179.66	10950.00	2755.16	-2755.11	16.35	517365.05	797645.07	N 32 25 10.43	W 103 30 9.76	2755.16	179.66	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS ("/100ft)
	13600.00	90.00	179.66	10950.00	2855.16	-2855.11	16.94	517265.05	797645.66	N 32 25 9.44	W 103 30 9.76	2855.16	179.66	0.00
	13700.00	90.00	179.66	10950.00	2955.16	-2955.11	17.54	517165.05	797646.26	N 32 25 8.46	W 103 30 9.76	2955.16	179.66	0.00
	13800.00	90.00	179.66	10950.00	3055.16	-3055.11	18.13	517065.06	797646.85	N 32 25 7.47	W 103 30 9.76	3055.16	179.66	0.00
	13900.00	90.00	179.66	10950.00	3155.16	-3155.10	18.72	516965.06	797647.44	N 32 25 6.48	W 103 30 9.77	3155.16	179.66	0.00
	14000.00	90.00	179.66	10950.00	3255.16	-3255.10	19.32	516865.07	797648.04	N 32 25 5.49	W 103 30 9.77	3255.16	179.66	0.00
	14100.00	90.00	179.66	10950.00	3355.16	-3355.10	19.91	516765.07	797648.63	N 32 25 4.50	W 103 30 9.77	3355.16	179.66	0.00
	14200.00	90.00	179.66	10950.00	3455.16	-3455.10	20.50	516665.07	797649.22	N 32 25 3.51	W 103 30 9.77	3455.16	179.66	0.00
	14300.00	90.00	179.66	10950.00	3555.16	-3555.10	21.10	516565.08	797649.82	N 32 25 2.52	W 103 30 9.78	3555.16	179.66	0.00
	14400.00	90.00	179.66	10950.00	3655.16	-3655.10	21.69	516465.08	797650.41	N 32 25 1.53	W 103 30 9.78	3655.16	179.66	0.00
	14500.00	90.00	179.66	10950.00	3755.16	-3755.09	22.28	516365.08	797651.00	N 32 25 0.54	W 103 30 9.78	3755.16	179.66	0.00
	14600.00	90.00	179.66	10950.00	3855.16	-3855.09	22.88	516265.09	797651.60	N 32 24 59.55	W 103 30 9.78	3855.16	179.66	0.00
	14700.00	90.00	179.66	10950.00	3955.16	-3955.09	23.47	516165.09	797652.19	N 32 24 58.56	W 103 30 9.78	3955.16	179.66	0.00
	14800.00	90.00	179.66	10950.00	4055.16	-4055.09	24.06	516065.09	797652.78	N 32 24 57.57	W 103 30 9.79	4055.16	179.66	0.00
	14900.00	90.00	179.66	10950.00	4155.16	-4155.09	24.66	515965.10	797653.38	N 32 24 56.58	W 103 30 9.79	4155.16	179.66	0.00
	15000.00	90.00	179.66	10950.00	4255.16	-4255.08	25.25	515865.10	797653.97	N 32 24 55.59	W 103 30 9.79	4255.16	179.66	0.00
	15100.00	90.00	179.66	10950.00	4355.16	-4355.08	25.84	515765.10	797654.56	N 32 24 54.60	W 103 30 9.79	4355.16	179.66	0.00
	15200.00	90.00	179.66	10950.00	4455.16	-4455.08	26.44	515665.11	797655.16	N 32 24 53.61	W 103 30 9.79	4455.16	179.66	0.00
	15300.00	90.00	179.66	10950.00	4555.16	-4555.08	27.03	515565.11	797655.75	N 32 24 52.62	W 103 30 9.80	4555.16	179.66	0.00
Cimarex West Grama Ridge 6 Federal #4H PBHL	15376.21	90.00	179.66	10950.00	4631.37	-4631.29	27.48	515488.90	797656.20	N 32 24 51.87	W 103 30 9.80	4631.37	179.66	0.00

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	15376.214	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex West Grama Ridge 6 Federal #4H Rev0

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

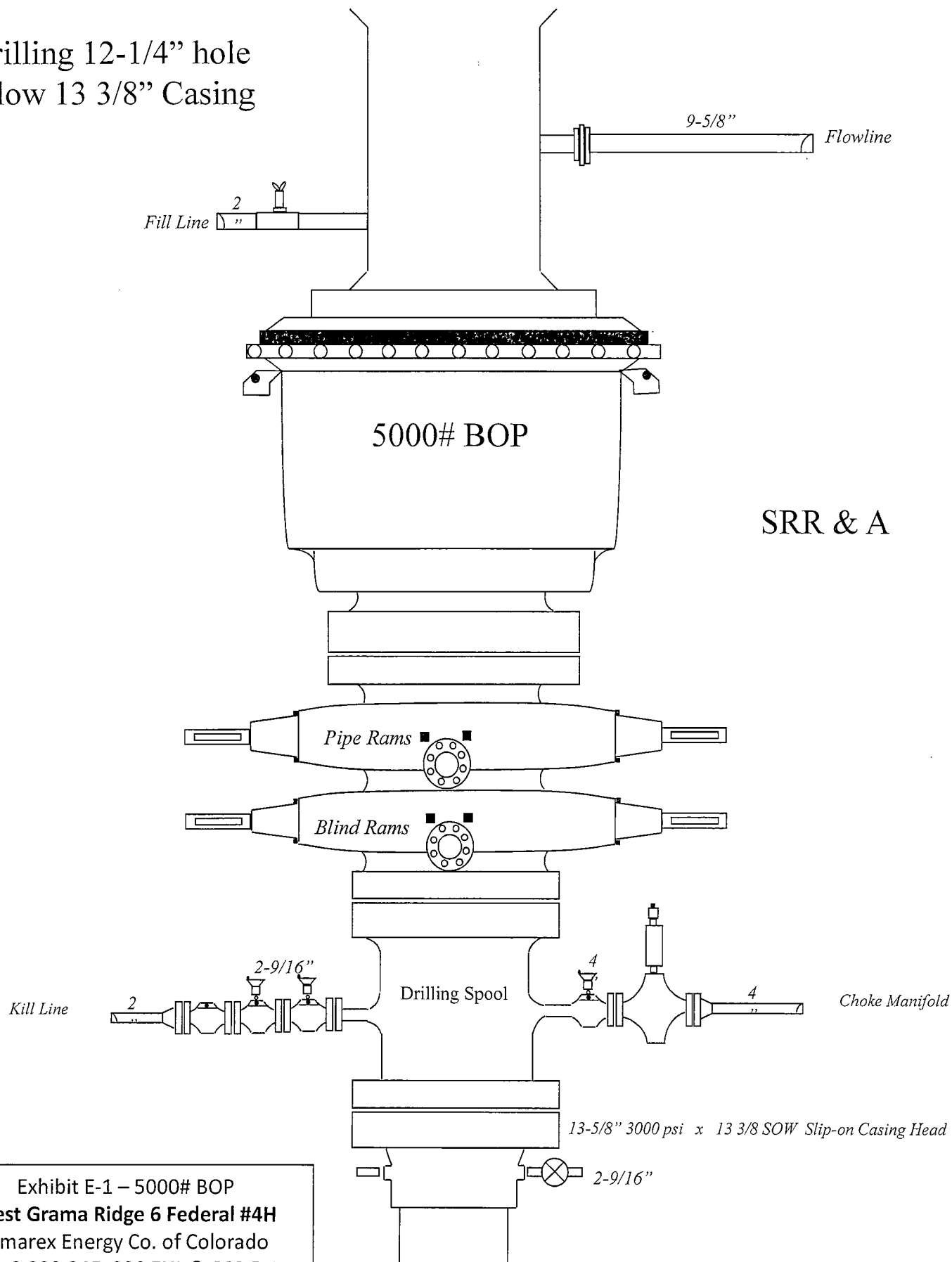
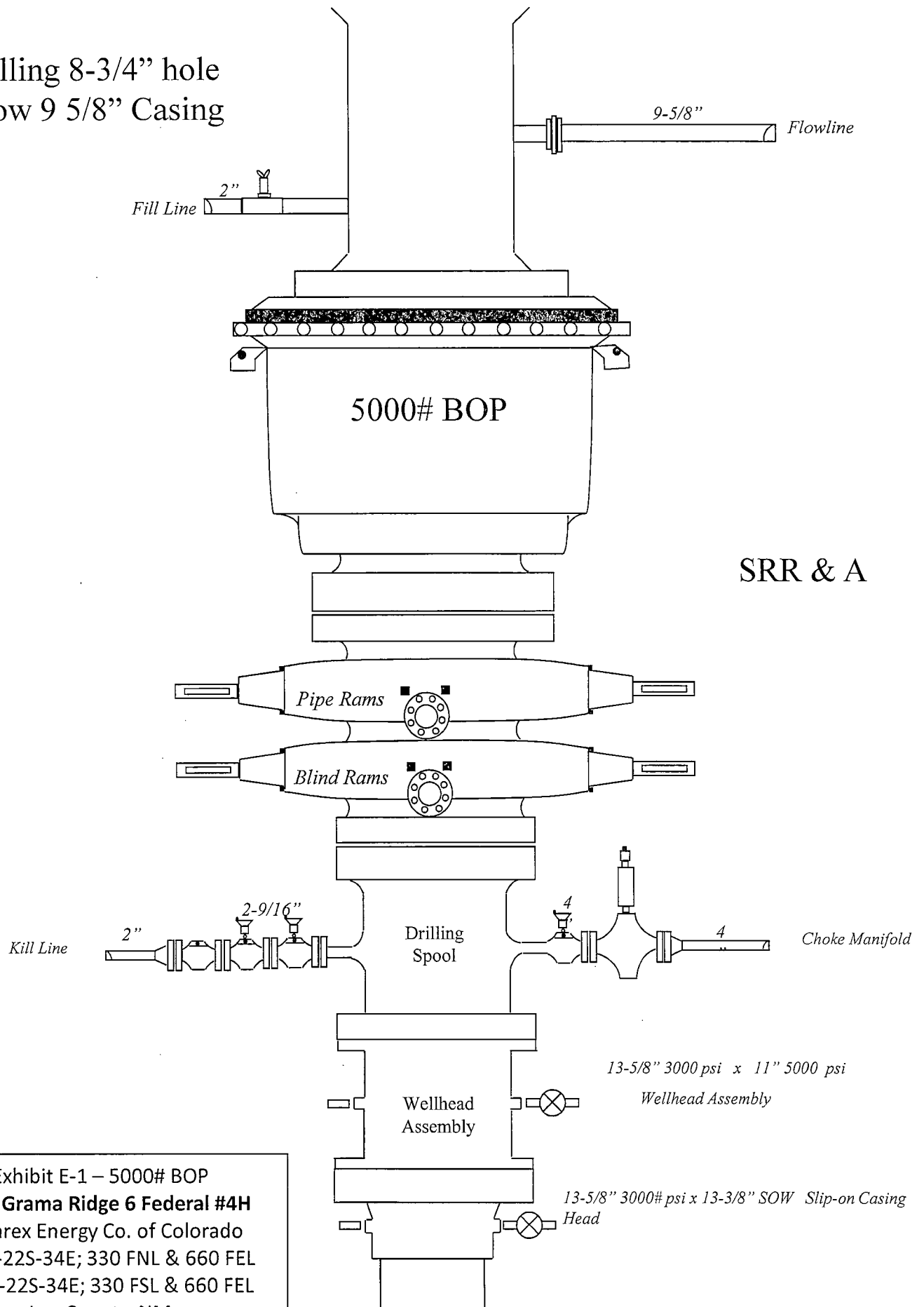


Exhibit E-1 – 5000# BOP
West Grama Ridge 6 Federal #4H
Cimarex Energy Co. of Colorado
SHL 6-22S-34E; 330 FNL & 660 FEL
BHL 6-22S-34E; 330 FSL & 660 FEL
Lea County, NM

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



SRR & A

Exhibit E-1 – 5000# BOP

West Grama Ridge 6 Federal #4H

Cimarex Energy Co. of Colorado

SHL 6-22S-34E; 330 FNL & 660 FEL

BHL 6-22S-34E; 330 FSL & 660 FEL

Lea County, NM

Exhibit E-1 – Choke Manifold Diagram
West Grama Ridge 6 Federal #4H
 Cimarex Energy Co. of Colorado
 SHL 6-22S-34E; 330 FNL & 660 FEL
 BHL 6-22S-34E; 330 FSL & 660 FEL
 Lea County, NM

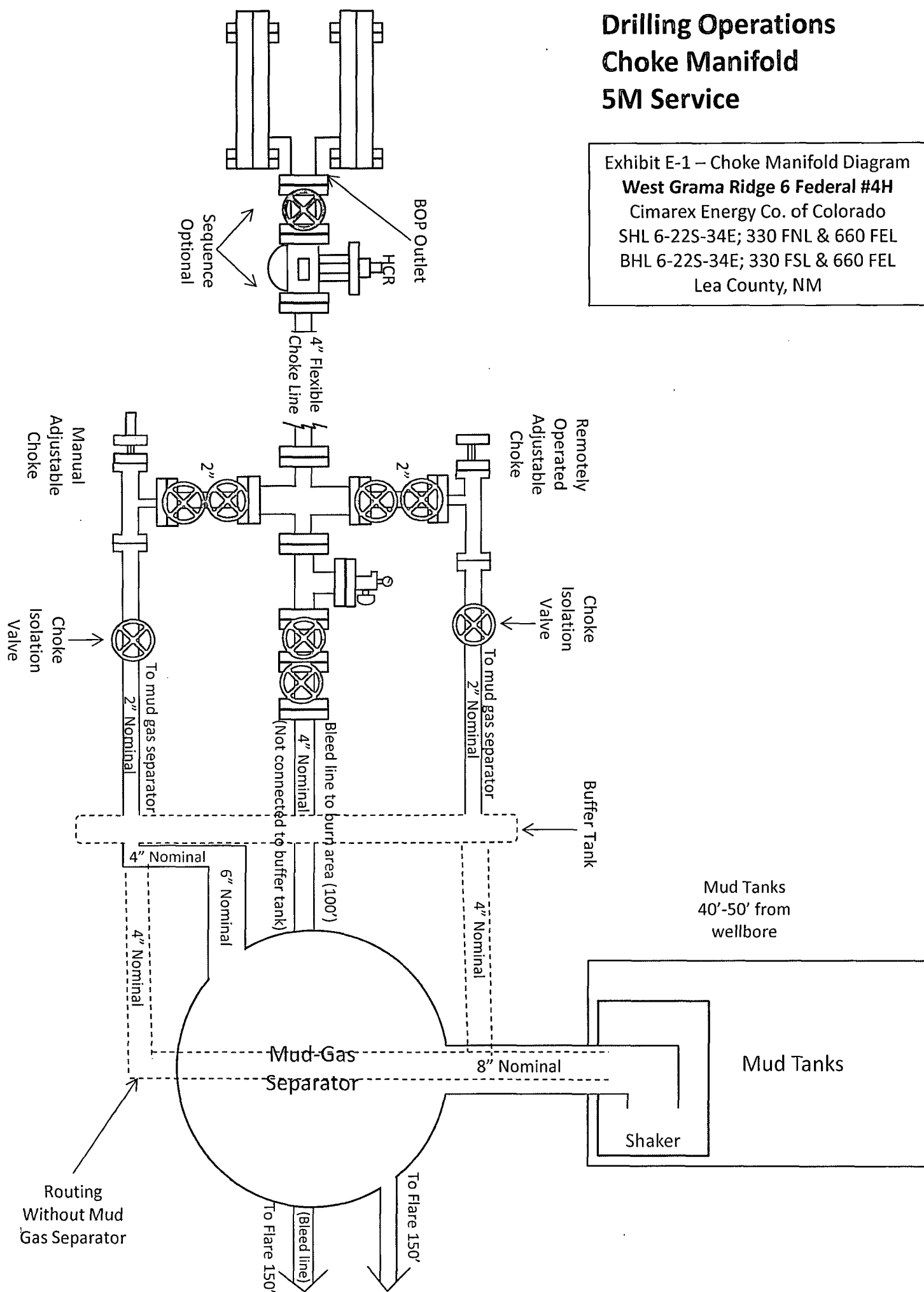
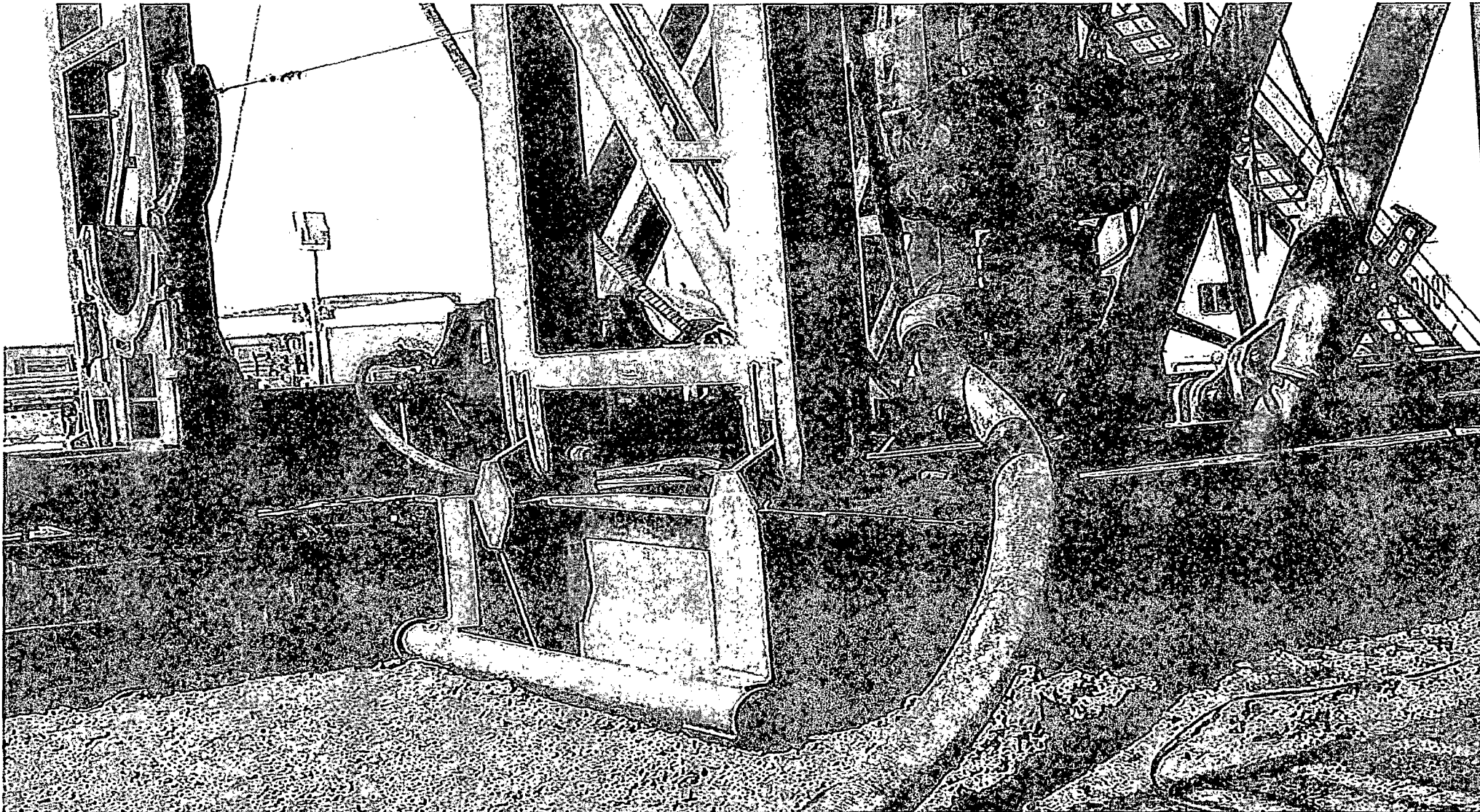


Exhibit F – Co-Flex Hose
West Grama Ridge 6 Federal #4H
Cimarex Energy Co. of Colorado
SHL 6-22S-34E; 330 FNL & 660 FEL
BHL 6-22S-34E; 330 FSL & 660 FEL
Lea County, NM



West Grama Ridge 6 Federal #4H

Cimarex Energy Co. of Colorado

SHL 6-22S-34E; 330 FNL & 660 FEL

BHL 6-22S-34E; 330 FSL & 660 FEL

Lea County, NM

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

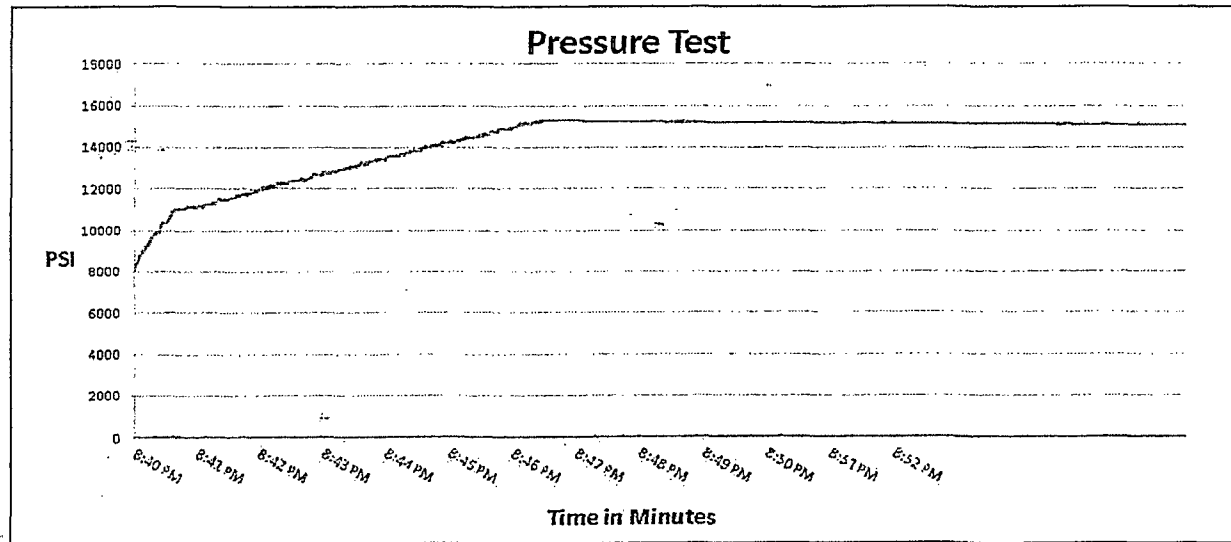
Pick Ticket #: 94260

Hose Specifications

<u>Hose Type</u>	<u>Length</u>
C & K	45'
<u>I.D.</u>	<u>O.D.</u>
4"	6.09"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiplier Applies

Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
41/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
6.38"	6.25"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
5544	79793

Test Pressure
15000 PSITime Held at Test Pressure
11 MinutesActual Burst PressurePeak Pressure
15483 PSI**Comments:** Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac McConnell

Approved By: Kim Thomas

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

West Grama Ridge 6 Federal #4H

Cimarex Energy Co. of Colorado

SHL 6-22S-34E; 330 FNL & 660 FEL

BHL 6-22S-34E; 330 FSL & 660 FEL

Lea County, NM



Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer: Oderco Inc		P.O. Number: odyd-271	
HOSE SPECIFICATIONS			
Type: Stainless Steel Armor Choke & Kill Hose		Hose Length: 45'ft.	
I.D. 4 INCHES		O.D. 9 INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI	BURST PRESSURE 0 PSI	
COUPLINGS			
Stem Part No. OKC OKC		Ferrule No. OKC OKC	
Type of Coupling: Swage-It			
PROCEDURE			
<u>Hose assembly pressure tested with water at ambient temperature.</u>			
TIME HELD AT TEST PRESSURE 15 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
Hose Assembly Serial Number: 79793		Hose Serial Number: OKC	
Comments:			
Date: 3/8/2011	Tested: <i>A. James Jones</i>	Approved: <i>Kevin [Signature]</i>	

Exhibit F-2 - Co-Flex Hose
West Grama Ridge 6 Federal #4H
Cimarex Energy Co. of Colorado
SHL 6-22S-34E; 330 FNL & 660 FEL
BHL 6-22S-34E; 330 FSL & 660 FEL
Lea County, NM



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer:

DEM

PO

ODYD-271

SPECIFICATIONS

Sales Order

79793

Dated:

3/8/2011

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

Supplier:

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

Comments:

Approved:

James Blaccon

Date:

3/8/2011



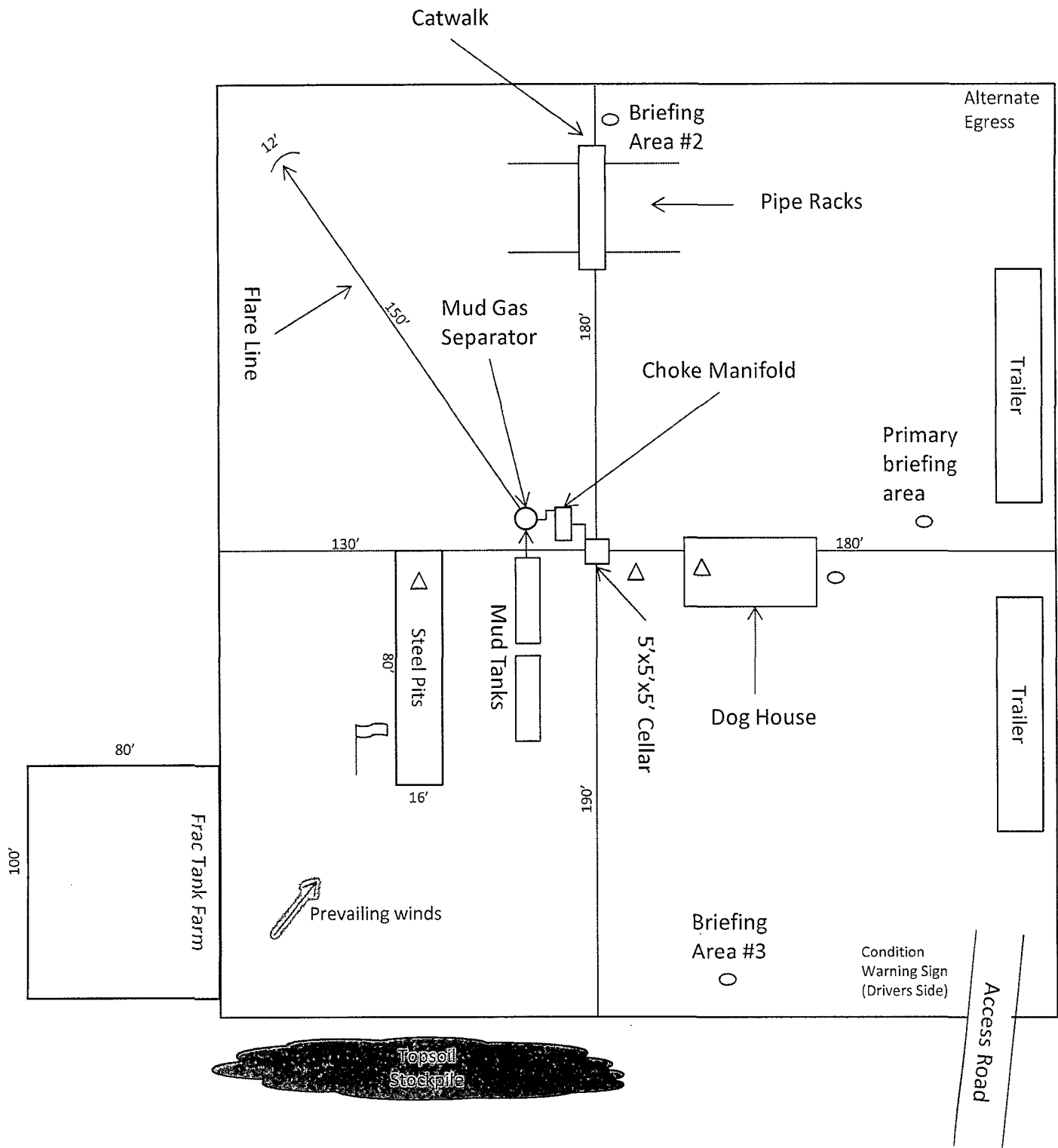
Midwest Hose
& Specialty, Inc.

Exhibit F -3- Co-Flex Hose
West Grama Ridge 6 Federal #4H
Cimarex Energy Co. of Colorado
SHL 6-22S-34E; 330 FNL & 660 FEL
BHL 6-22S-34E; 330 FSL & 660 FEL
Lea County, NM

Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium components. 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 vermiculite 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, unbolt 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)



Wind Direction Indicators
(wind sock or streamers)



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



Briefing Areas

N



Exhibit D – Rig Diagram
West Grama Ridge 6 Federal #4H
 Cimarex Energy Co. of Colorado
 SHL 6-22S-34E; 330 FNL & 660 FEL
 BHL 6-22S-34E; 330 FSL & 660 FEL
 Lea County, NM