

ATS 14-246

Form 3160-3
(March 2012)

OCD Hobbs

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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. West Grama Ridge 5 Federal 5 (313793)	
2. Name of Operator Cimarex Energy Co. (215099)		9. API Well No. 30-025-42185	
3a. Address 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103	3b. Phone No. (include area code) 918-585-1100	10. Field and Pool, or Exploratory GRAMA RIDGE, B 5, WEST (28432)	
4. Location of Well (Report location clearly and in accordance with any State requirements) At Surface 660 FWL & 330 FTL 330'N & 660'W (D) LOT 4 At proposed prod. Zone 660 FWL & 330 FTL 330'S & 660'W - per plat (M) Bone Spring		11. Sec., T. R. M. or Bk. and Survey and Area 5, 22s, 34e	
14. Distance in miles and direction from nearest town or post office* Eunice NM is approximately 30 miles East		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) 330'	16. No of acres in lease NMNM129267=1078.00 acres .30	17. Spacing Unit dedicated to this well 160.00 .46	
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 1520' - 5 Federal #6	19. Proposed Depth Pilot Hole TD: 11,400 15,383 MD 10,950 TVD	20. BLM/BIA Bond No. on File NM2575 & NMB000835 HOBBS OCD	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3659 GR	22. Approximate date work will start* 12/16/13	23. Estimated duration 35 days OCT 14 2014 RECEIVED	

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 | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan | 5. Operator Certification |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature Steve Caffey	Name (Printed/Typed) Hope Knauls	Date 11/25/13
Title FIELD MANAGER		
Approved By (Signature) Steve Caffey	Name (Printed/Typed)	Date OCT - 7 2014
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.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
OCT 15 2014

Application to Drill
West Grama Ridge 5 Federal 5
 Cimarex Energy Co.
 UL: 4, Sec. 5, 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 660 FWL & 330 FNL
 BHL 660 FWL & 330 FSL
2. **Elevation Above Sea Level:** 3,659' 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:** 15,383 MD 10,950 TVD Pilot Hole TD: 11,400
6. **Estimated Tops of Geological Markers:**

Formation	Est Top	Bearing
Rustler	1720	N/A
Salado	1875	N/A
Castille	3700	N/A
Capitan	4200	N/A
Bell Canyon	5350	N/A
Cherry Canyon	5950	N/A
Basal Brushy Canyon	8600	N/A
Bone Spring	8850	Hydrocarbons
Avalon Shale	9340	Hydrocarbons
1st BSS	10000	Hydrocarbons
2nd BSS	10600	Hydrocarbons
3rd Bs Carbonate	11150	Hydrocarbons

7. **Possible Mineral Bearing Formation:** Shown above

7A. **OSE Ground Water Estimated Depth:** 100'

8. **Casing Program:**

Name	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	BHP (psig)	Anticipated Mud Weight (ppg)	Collapse SF at Full Evacuation(1.125)	Collapse SF at 1/3 Evacuation(1.125)	Burst SF (1.125)	Cumulative Air Weight	Cumulative Bouyed Weight (lbs)	Bouyant Tension SF (1.8)
Surface	0	1750 1750	1750	17 1/2	13-3/8"	54.50	J-55	ST&C	New	755	8.3	1.50		3.63	95,375	83,289	6.17
Intermediate	0	5300 5300	5300	12 1/4	9-5/8"	40.00	J-55	LT&C	New	2756	10.0		1.30	1.43	212,000	179,634	2.89
Production	0	10472 10472	10472	8 3/4	5-1/2"	17.00	P-110	LT&C	New	4900	9.0	1.53		2.17	186,150	160,572	2.77
Production	10472	15383	10950	8 3/4	5-1/2"	17.00	P-110	BT&C	New	5124	9.0	1.46		2.08	8,126	7,009	77.89

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8A. Casing Design and Casing Loading Assumptions:

Surface	Tension	A 1.8 design factor with effects of buoyancy: 8.30 ppg.
	Collapse	A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.30 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Intermediate	Tension	A 1.8 design factor with effects of buoyancy: 10.00 ppg.
	Collapse	A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.00 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Production and/or Production Liner	Tension	A 1.8 design factor with effects of buoyancy: 9.00 ppg.
	Collapse	A 1.125 design factor with full internal evacuation of next casing string with a collapse force equal to a 9.00 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

9. Cementing Program:

Casing Type	Type	Sacks	Yield	Weight	Cubic Feet	Cement Blend
Surface	Lead	1112	1.75	13.50	1945	Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	227	1.34	14.80	303	Class C + LCM, 6.32 gps water
	TOC: 0	85% Excess				Centralizers per Onshore Order 2.III.B.1f
Intermediate	Lead	1142	1.88	12.90	2146	35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water
	Tail	292	1.34	14.80	391	Class C + retarder + LCM, 6.32 gps water
	TOC: 0	79% Excess				
Production <i>See COA</i>	Lead	636	2.40	11.90	1526	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
	Tail	1379	1.24	14.50	1709	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: 5100 <i>50' above Capitan Reef</i>	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.

Cement volumes will be adjusted depending on hole size

9a. Proposed Drilling Plan:

Pilot Hole TD: 11,400'

KOP: 10,472'

EOC: 11,222'

Set OH mechanical whipstock w/ 878 ft of 2.875 tubing and pump 30 bbls of Mudpush @ 12 ppg, followed by 412 sks Type H cement, dispersant 0.080 gals/sk, retarder 0.045 gals/sk @ 17.50 ppg, 0.94 cuft/sk, & 0% excess from pilot hole TD to KOP. KO lateral and drill through the curve to TD. Run production csg to TD and cement.

Application to Drill
West Grama Ridge 5 Federal 5

Cimarex Energy Co.
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10. Pressure Control Equipment:

Exhibit "E-1". A BOP consisting of two rams with blind rams and pipe rams, and one annular preventer. Below the surface casing, a 2M system will be used. Below the intermediate casing, a 3M system will be used. See attachments for BOP and choke manifold diagrams. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A Rotating head may be installed 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 and associated equipment will be installed, used, maintained, and tested in a manner necessary to assure well control and shall be in place and operational prior to drilling the surface casing shoe. The Annular Preventer shall be functioned at least weekly. The pipe and blind rams will be operated each trip. No abnormal pressure or temperature is expected while drilling.

BOPS will be tested by an independent service company. The ram preventers, choke manifold, and safety valves will be tested as follows: On the surface casing, pressure tests will be made to 250 psi low and 2000 psi high. On the intermediate casing, pressure tests will be made to 250 psi low and 3000 psi high.

The Annular Preventer will be tested to 250 psi low and 1000 psi high on the surface casing, and 250 low and 1500 high on the intermediate casing.

See COA

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

See COA

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1750'	8.30	28	NC	FW Spud Mud
1750' to 5300'	10.00	30-32	NC	Brine Water
5300' to 15600'	9.00	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. Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 5300 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

13. Potential Hazards: *See COA*

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: 4928 psi

Estimated BHT: 168°

14. Construction and Drilling:

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.

15. Other Facets of Operations:

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

Bone Spring pay will be perforated and stimulated.

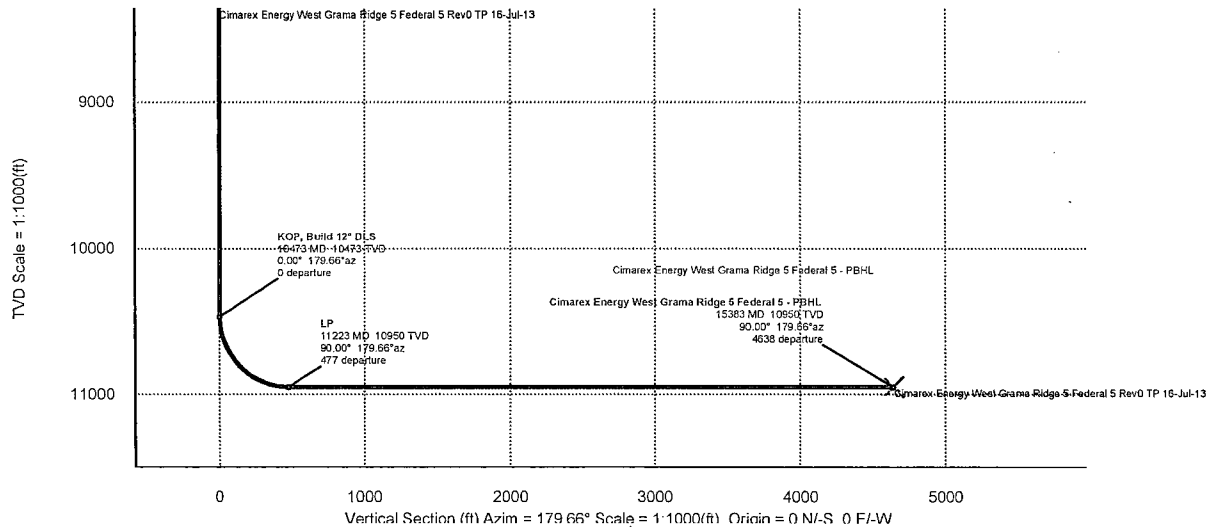
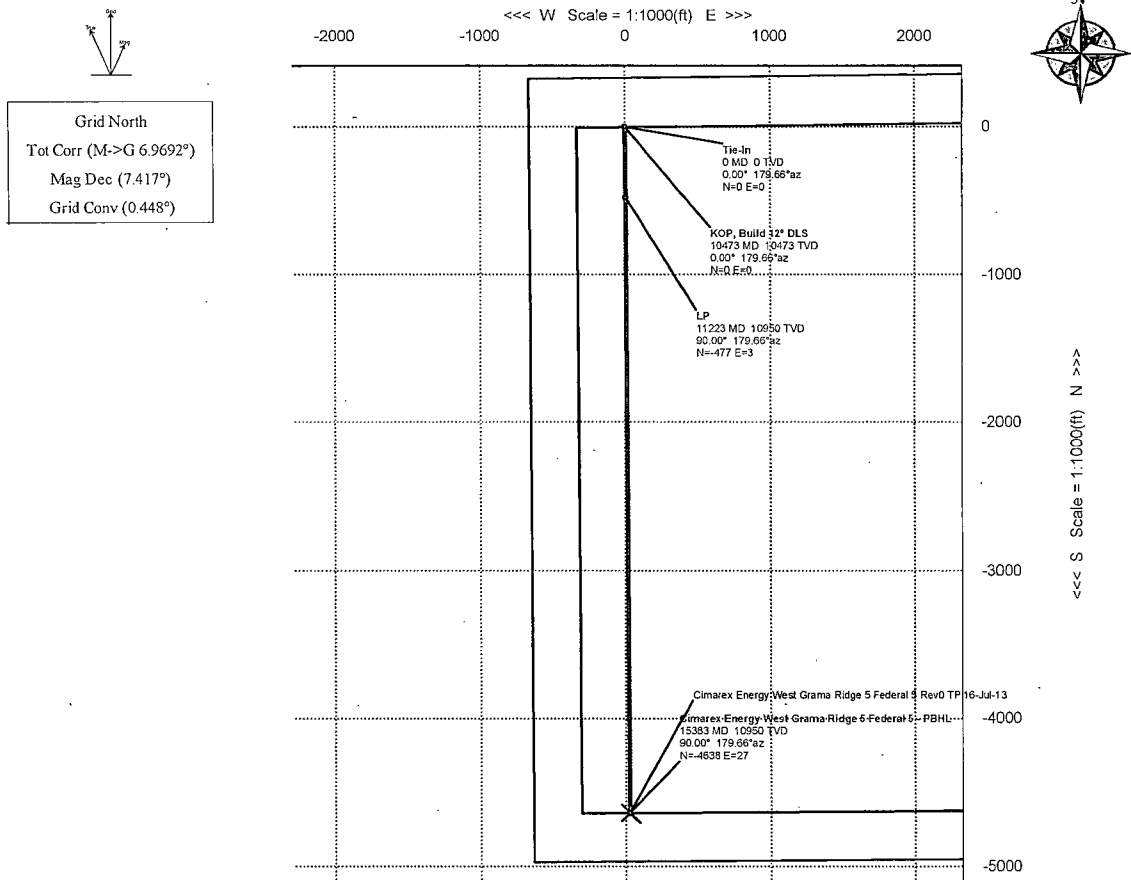
The proposed well will be tested and potential as **Oil**



Cimarex Energy

PATHFINDER
A Schlumberger Company

WELL		West Grama Ridge 5 Federal 5		FIELD		NM Lea County (NAD 83)		STRUCTURE		Cimarex Energy West Grama F	
Magnetic Parameters				Surface Location		NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous	
Model:	BGM 2012	Dp:	60.294"	Date:	July 16, 2013	Lat:	N 32 25 37.735	North:	520134.22 NUB	Grid Conv:	0.448"
Mag Dec:	7.417°	Mag Dec:	7.417°	FS:	43505.9mT	Lon:	W 103 29 44.283	East:	788349.16 NUB	Scale Fact:	0.99995309
										Jct:	
										Plan:	
										Cimarex Energy West Grama Ridge 5 Federal 5 - PBHL	
										Ground Level (3558 ft above MSL)	
										Cimarex Energy West Grama Ridge 5 Federal 5 - PBHL	



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
Tie-In	0.00	0.00	179.66	0.00	0.00	0.00	0.00	
KOP, Build 12° DLS	10472.50	0.00	179.66	10472.50	0.00	0.00	0.00	0.00
LP	11222.56	90.00	179.66	10950.00	477.50	-477.49	2.80	12.00
Cimarex Energy West Grama Ridge 5 - PBHL	15383.16	90.00	179.66	10950.00	4638.11	-4638.03	27.33	0.00

Cimarex Energy West Grama Ridge 5 Federal 5 Rev0 TP 16-Jul-13 Proposal Report (Def Plan)

Report Date: July 16, 2013 - 12:28 PM Client: Cimarex Energy Field: NM Lea County (NAD 83) Structure / Slot: Cimarex Energy West Grama Ridge 5 Federal 5 / West Grama Ridge 5 Federal 5 Well: West Grama Ridge 5 Federal 5 Borehole: Original Borehole UWI / API#: Unknown / Unknown	Survey / DLS Computation: Minimum Curvature / Lubinski Vertical Section Azimuth: 179.662 ° (Grid North) Vertical Section Origin: 0.000 ft, 0.000 ft TVD Reference Datum: Ground Level TVD Reference Elevation: 3659.000 ft above MSL Seabed / Ground Elevation: 3659.000 ft above MSL Magnetic Declination: 7.417 °	Survey Name: Cimarex Energy West Grama Ridge 5 Federal 5 Rev0 TP 16-Jul-13 Survey Date: July 16, 2013 Tort / AHD / DDI / ERD Ratio: 90.004 ° / 4638.109 ft / 5.768 / 0.424 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet Location Lat / Long: N 32° 25' 37.73485", W 103° 29' 54.28684" Location Grid N/E Y/X: N 520134.320 ftUS, E 798949.680 ftUS CRS Grid Convergence Angle: 0.4477 ° Grid Scale Factor: 0.99998509
	Total Field Strength: 48506.902 nT Magnetic Dip Angle: 60.294 ° Declination Date: July 16, 2013 Magnetic Declination Model: BGGM 2012 North Reference: Grid North Grid Convergence Used: 0.4477 ° Total Corr Mag North->Grid North: 6.9692 ° 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)
Tie-In	0.00	0.00	179.66	0.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	N/A
	100.00	0.00	179.66	100.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	200.00	0.00	179.66	200.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	300.00	0.00	179.66	300.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	400.00	0.00	179.66	400.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	500.00	0.00	179.66	500.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	600.00	0.00	179.66	600.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	700.00	0.00	179.66	700.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	800.00	0.00	179.66	800.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	900.00	0.00	179.66	900.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1000.00	0.00	179.66	1000.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1100.00	0.00	179.66	1100.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1200.00	0.00	179.66	1200.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1300.00	0.00	179.66	1300.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1400.00	0.00	179.66	1400.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1500.00	0.00	179.66	1500.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1600.00	0.00	179.66	1600.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1700.00	0.00	179.66	1700.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1800.00	0.00	179.66	1800.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	1900.00	0.00	179.66	1900.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2000.00	0.00	179.66	2000.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2100.00	0.00	179.66	2100.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2200.00	0.00	179.66	2200.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2300.00	0.00	179.66	2300.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2400.00	0.00	179.66	2400.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2500.00	0.00	179.66	2500.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2600.00	0.00	179.66	2600.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2700.00	0.00	179.66	2700.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2800.00	0.00	179.66	2800.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	2900.00	0.00	179.66	2900.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	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)
	8500.00	0.00	179.66	8500.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	8600.00	0.00	179.66	8600.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	8700.00	0.00	179.66	8700.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	8800.00	0.00	179.66	8800.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	8900.00	0.00	179.66	8900.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9000.00	0.00	179.66	9000.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9100.00	0.00	179.66	9100.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9200.00	0.00	179.66	9200.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9300.00	0.00	179.66	9300.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9400.00	0.00	179.66	9400.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9500.00	0.00	179.66	9500.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9600.00	0.00	179.66	9600.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9700.00	0.00	179.66	9700.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9800.00	0.00	179.66	9800.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	9900.00	0.00	179.66	9900.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	10000.00	0.00	179.66	10000.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	10100.00	0.00	179.66	10100.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	10200.00	0.00	179.66	10200.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	10300.00	0.00	179.66	10300.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	10400.00	0.00	179.66	10400.00	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
KOP, Build 12° DLS	10472.50	0.00	179.66	10472.50	0.00	0.00	0.00	520134.32	798949.68	N 32 25 37.73	W 103 29 54.29	0.00	0.00	0.00
	10500.00	3.30	179.66	10499.98	0.79	-0.79	0.00	520133.53	798949.68	N 32 25 37.73	W 103 29 54.29	0.79	179.66	12.00
	10600.00	15.30	179.66	10598.49	16.92	-16.92	0.10	520117.40	798949.78	N 32 25 37.57	W 103 29 54.29	16.92	179.66	12.00
	10700.00	27.30	179.66	10691.49	53.18	-53.18	0.31	520081.14	798949.99	N 32 25 37.21	W 103 29 54.29	53.18	179.66	12.00
	10800.00	39.30	179.66	10774.92	107.98	-107.97	0.63	520026.35	798950.31	N 32 25 36.67	W 103 29 54.29	107.98	179.66	12.00
	10900.00	51.30	179.66	10845.14	178.92	-178.92	1.05	519955.40	798950.73	N 32 25 35.96	W 103 29 54.29	178.92	179.66	12.00
	11000.00	63.30	179.66	10899.07	262.92	-262.91	1.54	519871.41	798951.22	N 32 25 35.13	W 103 29 54.29	262.92	179.66	12.00
	11100.00	75.29	179.66	10934.36	356.29	-356.28	2.09	519778.05	798951.77	N 32 25 34.21	W 103 29 54.29	356.29	179.66	12.00
	11200.00	87.29	179.66	10949.47	454.95	-454.95	2.67	519679.38	798952.35	N 32 25 33.23	W 103 29 54.30	454.95	179.66	12.00
LP	11222.56	90.00	179.66	10950.00	477.50	-477.49	2.80	519656.84	798952.48	N 32 25 33.01	W 103 29 54.30	477.50	179.66	12.00
	11300.00	90.00	179.66	10950.00	554.94	-554.94	3.25	519579.39	798952.93	N 32 25 32.24	W 103 29 54.30	554.94	179.66	0.00
	11400.00	90.00	179.66	10950.00	654.94	-654.93	3.84	519479.40	798953.52	N 32 25 31.25	W 103 29 54.30	654.94	179.66	0.00
	11500.00	90.00	179.66	10950.00	754.94	-754.93	4.43	519379.40	798954.11	N 32 25 30.26	W 103 29 54.30	754.94	179.66	0.00
	11600.00	90.00	179.66	10950.00	854.94	-854.93	5.01	519279.40	798954.69	N 32 25 29.28	W 103 29 54.31	854.94	179.66	0.00
	11700.00	90.00	179.66	10950.00	954.94	-954.93	5.60	519179.41	798955.28	N 32 25 28.29	W 103 29 54.31	954.94	179.66	0.00
	11800.00	90.00	179.66	10950.00	1054.94	-1054.93	6.19	519079.41	798955.87	N 32 25 27.30	W 103 29 54.31	1054.94	179.66	0.00
	11900.00	90.00	179.66	10950.00	1154.94	-1154.92	6.78	518979.41	798956.46	N 32 25 26.31	W 103 29 54.31	1154.94	179.66	0.00
	12000.00	90.00	179.66	10950.00	1254.94	-1254.92	7.36	518879.42	798957.04	N 32 25 25.32	W 103 29 54.32	1254.94	179.66	0.00
	12100.00	90.00	179.66	10950.00	1354.94	-1354.92	7.95	518779.42	798957.63	N 32 25 24.33	W 103 29 54.32	1354.94	179.66	0.00
	12200.00	90.00	179.66	10950.00	1454.94	-1454.92	8.54	518679.42	798958.22	N 32 25 23.34	W 103 29 54.32	1454.94	179.66	0.00
	12300.00	90.00	179.66	10950.00	1554.94	-1554.92	9.13	518579.43	798958.81	N 32 25 22.35	W 103 29 54.32	1554.94	179.66	0.00
	12400.00	90.00	179.66	10950.00	1654.94	-1654.92	9.72	518479.43	798959.40	N 32 25 21.36	W 103 29 54.32	1654.94	179.66	0.00
	12500.00	90.00	179.66	10950.00	1754.94	-1754.91	10.30	518379.44	798959.98	N 32 25 20.37	W 103 29 54.33	1754.94	179.66	0.00
	12600.00	90.00	179.66	10950.00	1854.94	-1854.91	10.89	518279.44	798960.57	N 32 25 19.38	W 103 29 54.33	1854.94	179.66	0.00
	12700.00	90.00	179.66	10950.00	1954.94	-1954.91	11.48	518179.44	798961.16	N 32 25 18.39	W 103 29 54.33	1954.94	179.66	0.00
	12800.00	90.00	179.66	10950.00	2054.94	-2054.91	12.07	518079.45	798961.75	N 32 25 17.40	W 103 29 54.33	2054.94	179.66	0.00
	12900.00	90.00	179.66	10950.00	2154.94	-2154.91	12.66	517979.45	798962.34	N 32 25 16.41	W 103 29 54.34	2154.94	179.66	0.00
	13000.00	90.00	179.66	10950.00	2254.94	-2254.91	13.25	517879.45	798962.93	N 32 25 15.42	W 103 29 54.34	2254.94	179.66	0.00
	13100.00	90.00	179.66	10950.00	2354.94	-2354.90	13.84	517779.46	798963.52	N 32 25 14.43	W 103 29 54.34	2354.94	179.66	0.00
	13200.00	90.00	179.66	10950.00	2454.94	-2454.90	14.43	517679.46	798964.11	N 32 25 13.44	W 103 29 54.34	2454.94	179.66	0.00
	13300.00	90.00	179.66	10950.00	2554.94	-2554.90	15.02	517579.46	798964.70	N 32 25 12.45	W 103 29 54.34	2554.94	179.66	0.00
	13400.00	90.00	179.66	10950.00	2654.94	-2654.90	15.61	517479.47	798965.29	N 32 25 11.46	W 103 29 54.35	2654.94	179.66	0.00
	13500.00	90.00	179.66	10950.00	2754.94	-2754.90	16.20	517379.47	798965.87	N 32 25 10.48	W 103 29 54.35	2754.94	179.66	0.00
	13600.00	90.00	179.66	10950.00	2854.94	-2854.90	16.79	517279.47	798966.46	N 32 25 9.49	W 103 29 54.35	2854.94	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)
	13700.00	90.00	179.66	10950.00	2954.94	-2954.89	17.38	517179.48	798967.05	N 32 25 8.50	W 103 29 54.35	2954.94	179.66	0.00
	13800.00	90.00	179.66	10950.00	3054.94	-3054.89	17.97	517079.48	798967.65	N 32 25 7.51	W 103 29 54.36	3054.94	179.66	0.00
	13900.00	90.00	179.66	10950.00	3154.94	-3154.89	18.56	516979.48	798968.24	N 32 25 6.52	W 103 29 54.36	3154.94	179.66	0.00
	14000.00	90.00	179.66	10950.00	3254.94	-3254.89	19.15	516879.49	798968.83	N 32 25 5.53	W 103 29 54.36	3254.94	179.66	0.00
	14100.00	90.00	179.66	10950.00	3354.94	-3354.89	19.74	516779.49	798969.42	N 32 25 4.54	W 103 29 54.36	3354.94	179.66	0.00
	14200.00	90.00	179.66	10950.00	3454.94	-3454.88	20.33	516679.49	798970.01	N 32 25 3.55	W 103 29 54.36	3454.94	179.66	0.00
	14300.00	90.00	179.66	10950.00	3554.94	-3554.88	20.92	516579.50	798970.60	N 32 25 2.56	W 103 29 54.37	3554.94	179.66	0.00
	14400.00	90.00	179.66	10950.00	3654.94	-3654.88	21.51	516479.50	798971.19	N 32 25 1.57	W 103 29 54.37	3654.94	179.66	0.00
	14500.00	90.00	179.66	10950.00	3754.94	-3754.88	22.10	516379.50	798971.78	N 32 25 0.58	W 103 29 54.37	3754.94	179.66	0.00
	14600.00	90.00	179.66	10950.00	3854.94	-3854.88	22.69	516279.51	798972.37	N 32 24 59.59	W 103 29 54.37	3854.94	179.66	0.00
	14700.00	90.00	179.66	10950.00	3954.94	-3954.88	23.28	516179.51	798972.96	N 32 24 58.60	W 103 29 54.38	3954.94	179.66	0.00
	14800.00	90.00	179.66	10950.00	4054.94	-4054.87	23.88	516079.51	798973.56	N 32 24 57.61	W 103 29 54.38	4054.94	179.66	0.00
	14900.00	90.00	179.66	10950.00	4154.94	-4154.87	24.47	515979.52	798974.15	N 32 24 56.62	W 103 29 54.38	4154.94	179.66	0.00
	15000.00	90.00	179.66	10950.00	4254.94	-4254.87	25.06	515879.52	798974.74	N 32 24 55.63	W 103 29 54.38	4254.94	179.66	0.00
	15100.00	90.00	179.66	10950.00	4354.94	-4354.87	25.65	515779.52	798975.33	N 32 24 54.64	W 103 29 54.38	4354.94	179.66	0.00
	15200.00	90.00	179.66	10950.00	4454.94	-4454.87	26.25	515679.53	798975.92	N 32 24 53.65	W 103 29 54.39	4454.94	179.66	0.00
	15300.00	90.00	179.66	10950.00	4554.94	-4554.87	26.84	515579.53	798976.52	N 32 24 52.66	W 103 29 54.39	4554.94	179.66	0.00
Cimarex Energy West Grama Ridge 5 Federal 5 - PBHL	15383.16	90.00	179.66	10950.00	4638.11	-4638.03	27.33	515496.37	798977.01	N 32 24 51.84	W 103 29 54.39	4638.11	179.66	0.00

Survey Type: 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	10472.000	1/100.000	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Energy West Grama Ridge 5
	10472.000	15383.164	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Energy West Grama Ridge 5

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

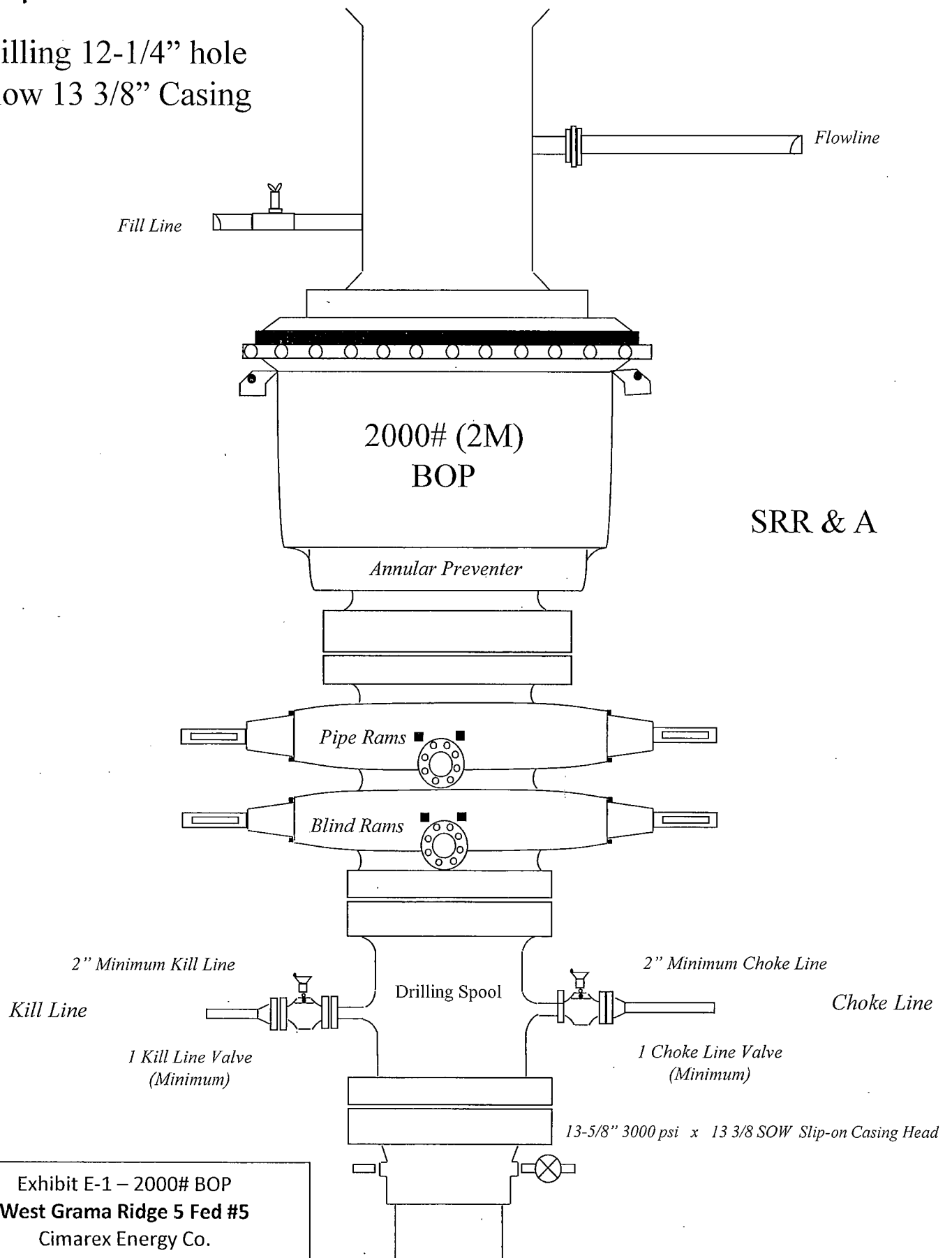


Exhibit E-1 – 2000# BOP
West Grama Ridge 5 Fed #5
Cimarex Energy Co.
5-22S-34E
SHL 330 FNL & 660 FWL
BHL 330 FSL & 660 FWL
Lea County, NM

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

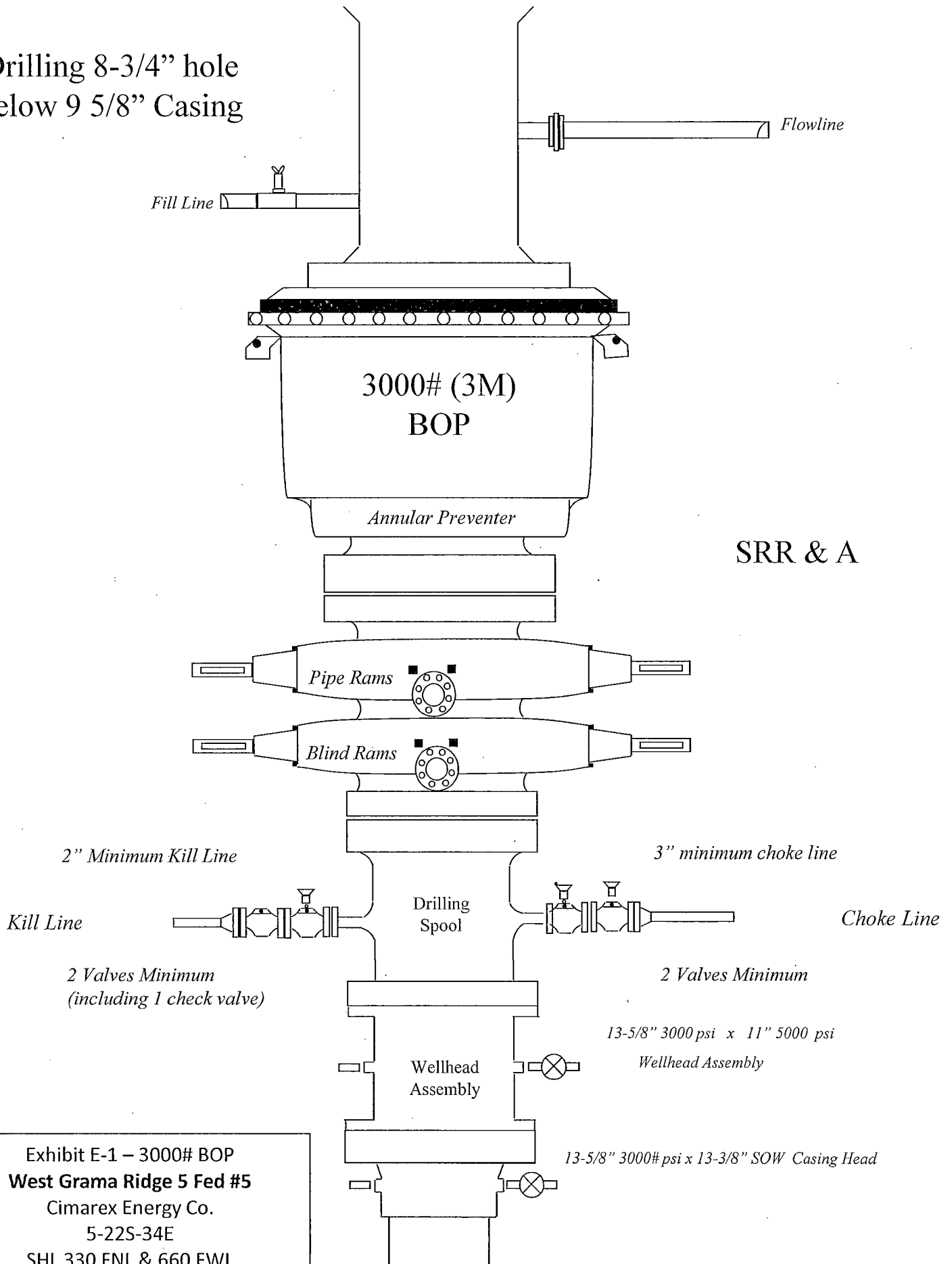


Exhibit E-1 – 3000# BOP
West Grama Ridge 5 Fed #5
Cimarex Energy Co.
5-22S-34E
SHL 330 FNL & 660 FWL
BHL 330 FSL & 660 FWL
Lea County, NM

Choke Line:
 2M System: 2" Minimum
 3M System: 3" Minimum
 OPTIONAL: 4" Flex Hose may be
 used if approved in APD

BOP Outlet

HCR
 (Optional)

2M: 1 Valve Minimum
 3M: 2 Valves Minimum
 HCR Valve is optional

Adjustable
 Choke

Choke
 Isolation
 Valve

Mud Tanks
 40'-50' from
 wellbore

Buffer Tank

Mud Tanks

Shaker

8" Nominal

To Flare 150'

Mud-Gas
 Separator

(Bleed line)

Bleed line to burn area (150')

3" Minimum
 (Not connected to buffer tank)

To mud gas separator
 2" Nominal

To mud gas separator
 2" Nominal

REMOTELY
 OPERATED
 Adjustable
 Choke

Choke
 Isolation
 Valve

Drilling Operations Choke Manifold 2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
West Grama Ridge 5 Fed #5
 Cimarex Energy Co.
 5-22S-34E
 SHL 330 FNL & 660 FWL
 BHL 330 FSL & 660 FWL
 Lea County, NM



Midwest Hose
& Specialty, Inc.

Exhibit F -3-- Co-Flex Hose
West Grama Ridge 5 Fed #5
Cimarex Energy Co.
5-22S-34E
SHL 330 FNL & 660 FWL
BHL 330 FSL & 660 FWL
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)

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

West Grama Ridge 5 Fed #5

Cimarex Energy Co.

5-22S-34E

SHL 330 FNL & 660 FWL

BHL 330 FSL & 660 FWL

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 Lee</i>



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260

Hose Specifications

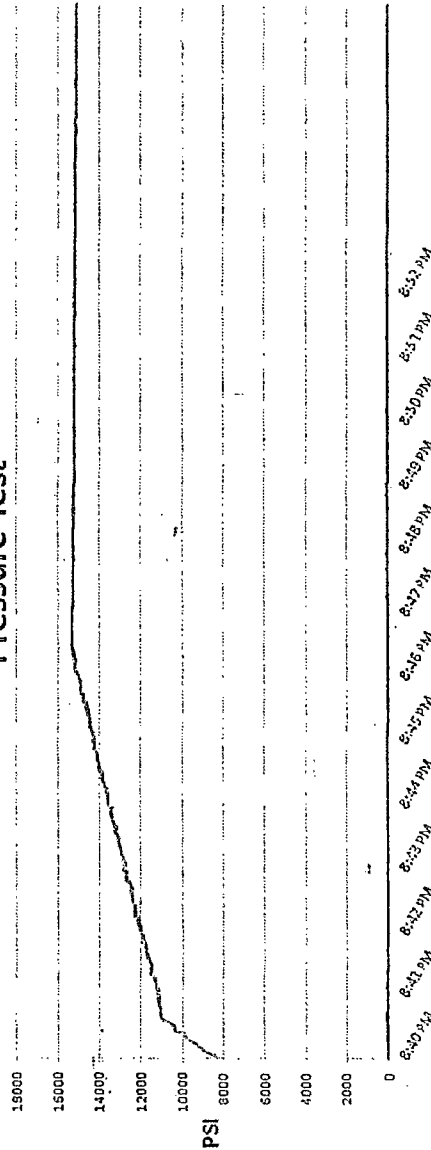
Hose Type
C&K
I.D.
4"
Working Pressure
10000 PSI

Length
45'
O.D.
6.09"
Burst Pressure
Standard Safety Multiplier Applies

Verification

Type of Fitting
41/16 10K
Die Size
6.38"
Hose Serial #
5544
Coupling Method
Swage
Final O.D.
6.75"
Hose Assembly Serial #
79793

Pressure Test



Test Pressure
15000 PSI

Time Held at Test Pressure
11 Minutes

Actual Burst Pressure

Peak Pressure
15483 PSI

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

Tested By: Zac McConnell

Approved By: Kim Thomas

[Signature]

[Signature]

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
West Grama Ridge 5 Fed #5
Cimarex Energy Co.
5-22S-34E
SHL 330 FNL & 660 FWL
BHL 330 FSL & 660 FWL
Lea County, NM

March 3, 2011

Exhibit F-2 – Co-Flex Hose
West Grama Ridge 5 Fed #5
Cimarex Energy Co.
5-22S-34E
SHL 330 FNL & 660 FWL
BHL 330 FSL & 660 FWL
Lea County, NM

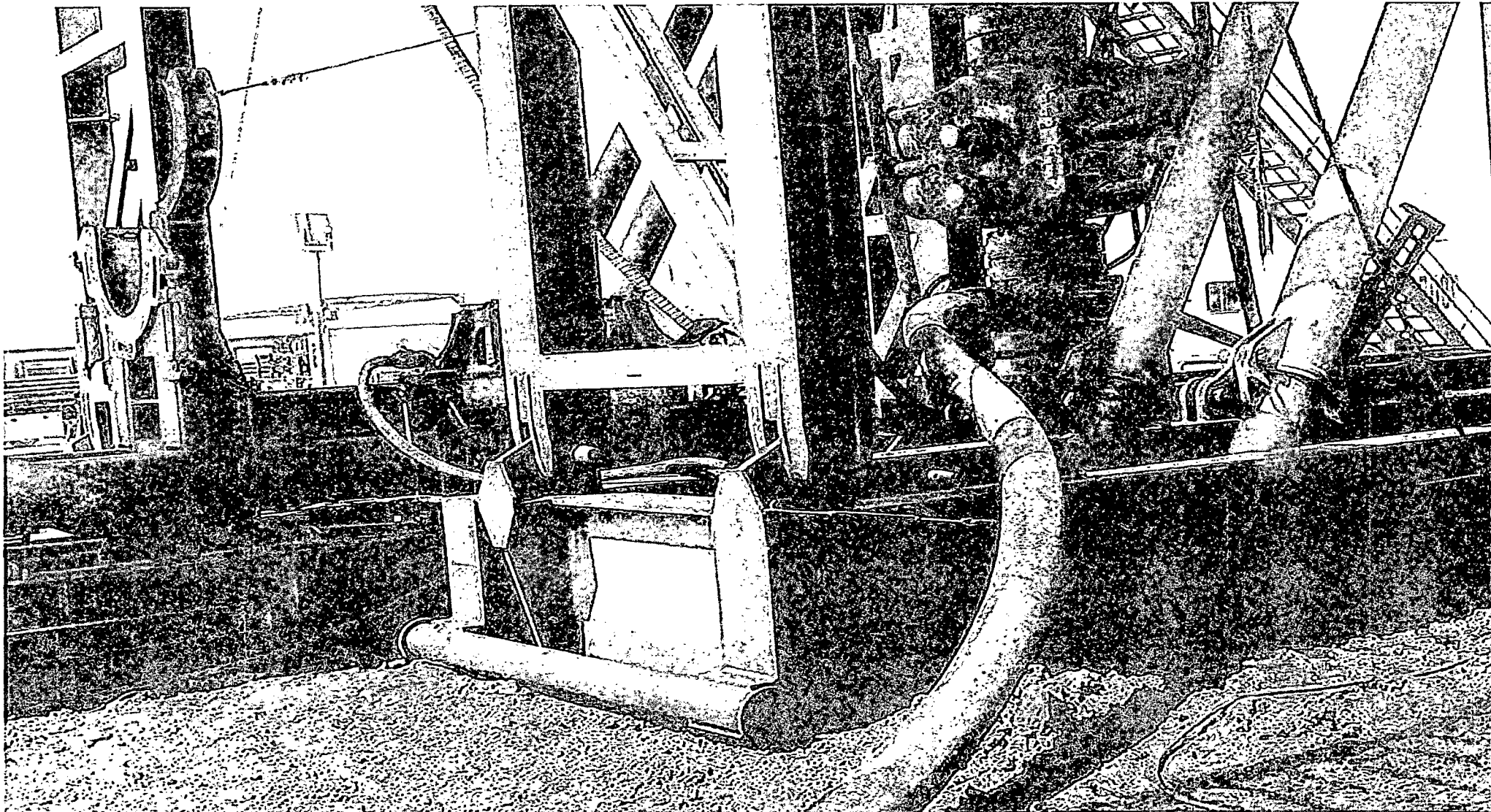


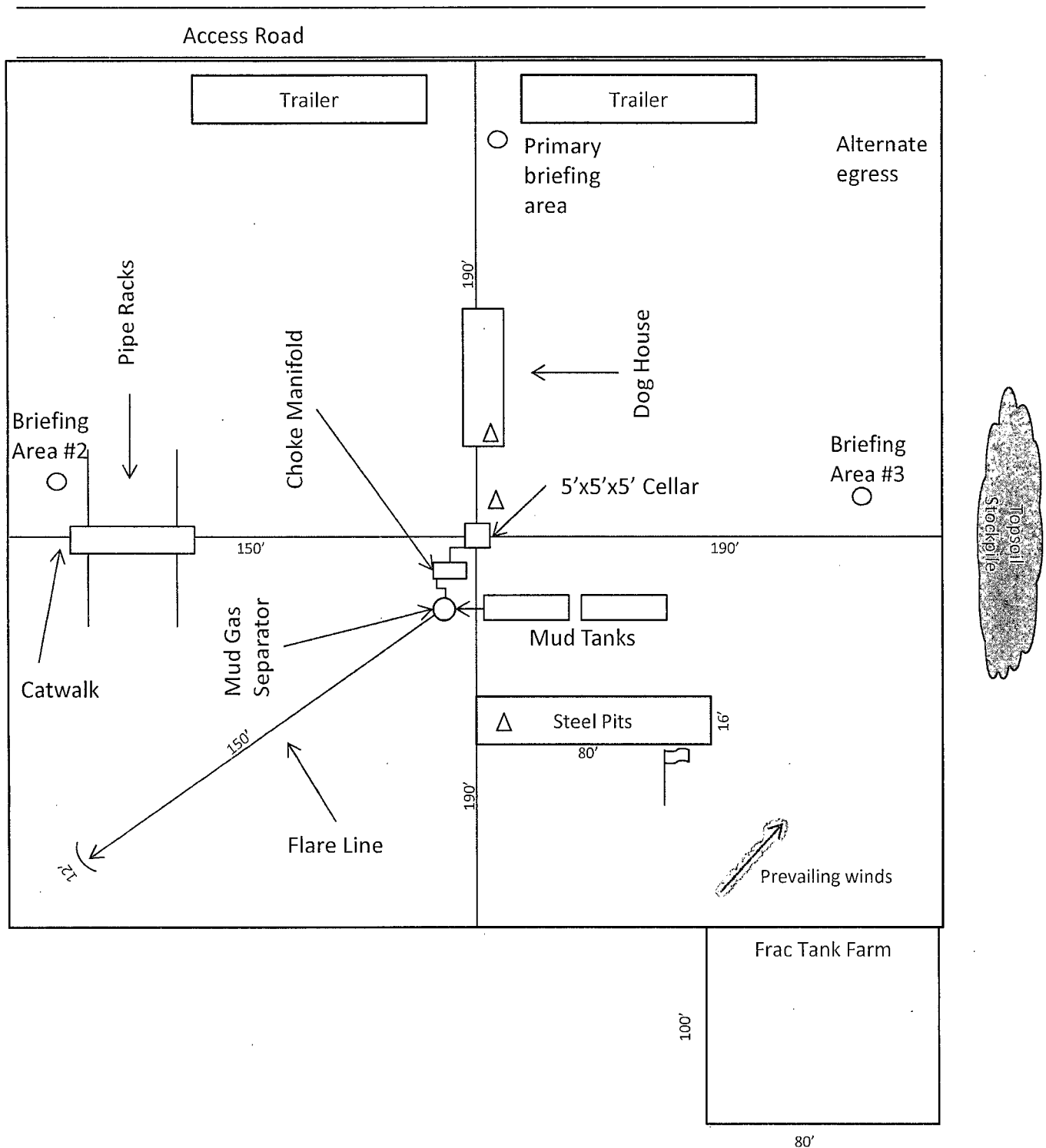
Midwest Hose & Specialty, Inc.

Certificate of Conformity

Customer:		PO
DEM		ODYD-271
SPECIFICATIONS		
Sales Order	Dated:	
79793	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:		Date:
<i>David Garcia</i>		3/8/2011

Exhibit F – Co-Flex Hose
West Grama Ridge 5 Fed #5
Cimarex Energy Co.
5-22S-34E
SHL 330 FNL & 660 FWL
BHL 330 FSL & 660 FWL
Lea County, NM





-  Wind Direction Indicators (wind sock or streamers)
-  • H2S Monitors (alarms at bell nipple and shale shaker)
-  Briefing Areas



Exhibit D – Rig Diagram
West Grama Ridge 5 Fed #5
 Cimarex Energy Co.
 5-22S-34E
 SHL 330 FNL & 660 FWL
 BHL 330 FSL & 660 FWL
 Lea County, NM

Operator Certification Statement

West Grama Ridge 5 Federal 5

Cimarex Energy Co.

UL: 4, Sec. 5, 22s, 34e

Lea Co., NM

Operator's Representative

Cimarex Energy Co. of Colorado

600 N. Marienfeld St., Ste. 600

Midland, TX 79701

Office Phone: (432) 571-7800

CERTIFICATION: I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 25 day of November, 2013

NAME: Hope Knauls
Hope Knauls

TITLE: Regulatory Compliance

ADDRESS: 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103

TELEPHONE: 918-585-1100

EMAIL: hknauls@cimarex.com

Field Representative: Same as above