

HOBBS OCD

OCD Hobbs

Form 3160-3
(April 2004)

OCT 26 2012

R-111-POTASH

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007RECEIVED UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

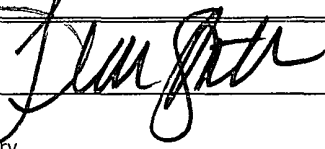
APPLICATION FOR PERMIT TO DRILL OR REENTER

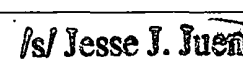
1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. NM-15906	
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Cimarex Energy Co of Colorado		7. If Unit or CA Agreement, Name and No.	
3a. Address 600 N Marienfeld St Ste 600 Midland TX 79701		8. Lease Name and Well No. Snoddy Federal No. 23H <39073>	
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30-025- 40837	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 811' FNL & 644' FEL Unit A At proposed prod. Zone 2310' FSL & 330' FWL Horizontal Bone Spring test		10. Field and Pool, or Exploratory Salt Lake; Bone Spring <53560>	
14. Distance in miles and direction from nearest town or post office* 30.5 miles ENE from Carlsbad, NM		11. Sec., T. R. M. or Blk and Survey or Area 26-20S-32E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 644'		12. County or Parish Lea	
16. No of acres in lease 640 acres		13. State NM	
17. Spacing Unit dedicated to this well Sec. 26 640 acres			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 152'		19. Proposed Depth MD 14512' TVD 9900'	
20. BLM/BIA Bond No. on File NM-2575			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3555' GR		22. Approximate date work will start* 02.01.13	
23. Estimated duration 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:

- Well plat certified by a registered surveyor
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator Certification
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature 	Name (Printed/Typed) Terri Stathem	Date 07.06.12
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Title Regulatory	Approved By (Signature) 	Name (Printed/Typed) NM STATE OFFICE	Date OCT 19 2012
Title STATE DIRECTOR	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 AS 10-30-2012

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)

SEE ATTACHED FOR
CONDITIONS OF APPROVALCapitan Controlled Water Basin
Approval Subject to General Requirements
& Special Stipulations Attached

OCT 31 2012

Drilling Plan
Snoddy Federal No. 23H
 Cimarex Energy Co of Colorado
 Unit A, Section 26
 T20S-R32E, Lea County, NM

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

- 1 **Location:** SHL 811' FNL & 644' FEL
 BHL 2310' FSL & 330' FWL
- 2 **Elevation above sea level:** 3555' 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:** MD 14512' TVD 9900'
- 6 **Estimated tops of geological markers:**

Rustler	1100'
Top Salt	1450'
Base Salt	2965'
Yates	3050'
Capitan	3410'
Delaware Sands	4700'
Brushy Canyon	6000'
Bone Spring	7900'
FBSS	8965'
SBSS	9520'
Base BS	10800'
- 7 **Possible mineral-bearing formations:**

Bone Spring	Oil
Delaware	Oil

8 **Proposed Mud Circulating System:**

See COA

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1290'	8.4 - 8.6	28	NC	FW
0' to 3065'	10.0	30-32	NC	Brine water
3065' to 4650'	8.4-8.6	30-32	NC	FW,
4650' to 9423'	8.4-9.0	28-29	NC	FW and brine, use hi-vis sweeps to keep hole clean
9423' to 14512'	8.5-9.5	27-45	NC	2% KCL

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

Proposed Drilling Plan

After setting surface 1 and 2 and intermediate casing, drill 8.75" hole to KOP @ 9423' and then kick off for 8.75" lateral. Drill to TD @ 14512' MD, 9900' TVD and set 5.5" casing from 0-14512' and cement as shown on following page.

Drilling Plan
Snoddy Federal No. 23H
 Cimarex Energy Co of Colorado
 Unit A, Section 26
 T20S-R32E, Lea County, NM

9 Casing & Cementing Program:

See COA

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface 1	18 1/2"	0' to 1290'	New 16"	84#	STC	J/K-55
Surface 2	14 3/4"	0' to 3065'	New 11 3/4"	54#	STC	J/K55
Intermediate	10 5/8"	0' to 4650'	New 8 5/8"	32#	LTC	N-80
Production	7 7/8"	0' to 14512'	New 5 1/2"	17#	LTC	P-110

10 Cementing:

Surface 1

Lead:1000SKS Halcem C + 2% CaCl 13.5ppg 1.75yield 100% Excess
 Tail:340SKS Class C + 4% D20, 1% S001, 0.2% D46, 0.125 lb/sk D130 14.2ppg 1.34 yield 25% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

Surface 2

Lead:2000SKS Econocem + 5% Salt + 5# Gilsonite 13.5ppg 1.75yield 75% Excess
 Tail:400SKS Halcem + 2% CaCl 14.2ppg 1.34 yield 25% Excess
TOC Surface

Intermediate

Lead:1000SKS Econocem + 5% Salt + 5# Gilsonite 14.6ppg 1.54yield 70% Excess
 Tail:300SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess
TOC Surface

Production

Lead:3500SKS Econocem H + 0.5% CFR-3 + 0.1% HR-601 11.9ppg 2.44 yield 50% Excess
 Tail:55SKS Versacem H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.1% HR-601 14.5ppg 1.22 yield 25% Excess
TOC Surface Centralizers every 2nd joint in the curve to provide adequate cement coverage every 100'.

See COA
 According to the NM State Enginner, depth to ground water is 40 feet. Fresh water zones will be protected by setting 16" casing at 1290, 11 3/4" casing at 3065 and 8 5/8" casing to 4650 and cementing to surface. Hydrocarbon zones will be protected by setting production casing at 14512' and cementing to surface.

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6

11 Pressure Control Equipment:

Exhibit "E". A 13 3/8" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 5200'. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud gas seperator will be available if drilling in H2S areas.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least-once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the 16" surface pipe the well will be equipped with a 2M diverter system with rotating head (See Exhibit E-1). From the base of the 11 3/4" surface pipe through the running of the production casing the well will be equipped with a 5000 psi BOP system. ** See COA*

** See COA*
 Before drilling out of the 16" surface pipe the diverter system will be tested to 250 psi low and 500 psi high by rig equipment. Before drilling out of 11 3/4" surface pipe BOP's will be tested to 250 psi low and 3000 psi high by an independent service company. Hydril will be tested to 250 psi low and 1500 psi high. Before drilling out of the intermediate pipe BOPS will be tested by an independent service company to 250 psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high.

Drilling Plan
Snoddy Federal No. 23H
Cimarex Energy Co of Colorado
Unit A, Section 26
T20S-R32E, Lea County, NM

Cimarex Energy Co of Colorado (operator) requests a variance if Cactus 115 (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold. *See COA*

Manufacturer: Midwest Hose & Specialty

Serial Number: 63270

Length: 35' Size: 4-1/16" Ends - flanges/clamps

WP rating: 10,000 psi Anchors required by manufacturer – Yes/No (No)

12 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 5200 to TD
 - B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR from Surface to TD
 - C. No DSTs or cores are planned at this time.
- * See COA*

13 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Strata does not anticipate that there will be enough 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 **4455 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 potentialized as **an oil well.**



Rig TBD

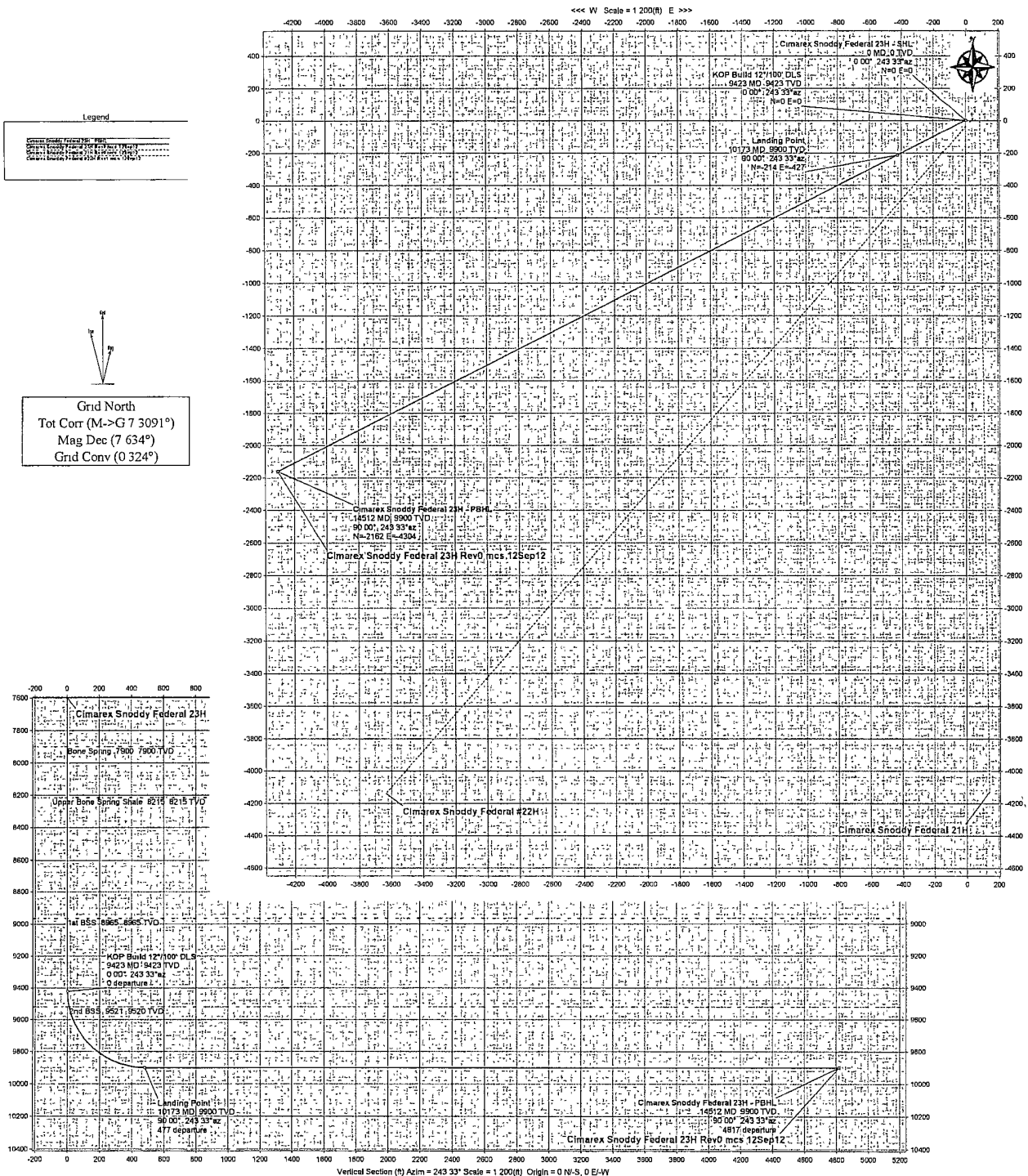
Cimarex Energy

REV 0



WELL	Cimarex Snoddy Federal 23H	FIELD	Lea County, NM (NAD 83)	STRUCTURE	Cimarex Snoddy Federal 23H
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Magnetic Parameters					Surface Location			NAD83 New Mexico State Plane Eastern Zone 11S Feet			Miscellaneous				
Model	200M 2012	Dip	90.351°	Date	September 12 2012	Lat	N 12 32 46.962	Northing	564039.60 015	Grid Conv	0.924°	Site	Snoddy Federal 23H	TY D Ref	Ground Elevation 15158 above MSL
		Mag Dec	7.634°	FB	48669 Ref	Lon	W 103 43 49.472	Easting	727115.80 015	Scale Fact	0.99998562	Plan	Rev 0 mcs 12Sep12	Survey Date	September 12 2012



Critical Points												
Comments	Survey MD	Inc	Azim	TVD	SSTVD	VS	NS	EW	Longitude	Latitude	Easting	Northing
SHL	0.00	0.00	243.33	0.00	3555.00	0.00	0.00	0.00	W 103 43 49.472 N	32 32 56 962	727115.80	564039.60
Deleware Sands	5235.00	0.00	243.33	5235.00	1680.00	0.00	0.00	0.00	W 103 43 49.472 N	32 32 56 962	727115.80	564039.60
Bone Spring	7900.00	0.00	243.33	7900.00	4345.00	0.00	0.00	0.00	W 103 43 49.472 N	32 32 56 962	727115.80	564039.60
Upper Bone Spring Shale	8215.00	0.00	243.33	8215.00	4660.00	0.00	0.00	0.00	W 103 43 49.472 N	32 32 56 962	727115.80	564039.60
1st BSS	8965.00	0.00	243.33	8965.00	5410.00	0.00	0.00	0.00	W 103 43 49.472 N	32 32 56 962	727115.80	564039.60
KOP Build 12"100' DLS	9422.50	0.00	243.33	9422.50	5867.50	0.00	0.00	0.00	W 103 43 49.472 N	32 32 56 962	727115.80	564039.60
2nd BSS	9520.69	11.78	243.33	9520.00	5965.00	10.06	-4.52	-8.99	W 103 43 49.577 N	32 32 56 918	727106.81	564035.08
Landing Point	10172.50	90.00	243.33	9899.96	6344.96	477.46	-214.31	-426.67	W 103 43 54.471 N	32 32 54.866	726689.16	563825.30
PBHL	14512.00	90.00	243.33	9900.00	6345.00	4816.97	-2162.14	-4304.46	W 103 44 39.897 N	32 32 35.807	722811.57	561877.58

Drawn By: Matt Shaffer
Date Created: September 12, 2012 02:40:55 PM
Checked By: Ryan Schneider
Checked Date: _____
Approved By: _____
Approved Date: _____



Cimarex Snoddy Federal 23H Rev0 mcs 12Sep12 Proposal Geodetic Report



(Def Plan)

Report Date: September 12, 2012 - 02 24 PM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Snoddy Federal 23H / Cimarex Snoddy Federal 23H
Well: Cimarex Snoddy Federal 23H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Snoddy Federal 23H Rev0 mcs 12Sep12
Survey Date: September 12, 2012
Tort / AHD / DDI / ERD Ratio: 90.001 ° / 4816 969 ft / 5.803 / 0.487
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 32' 56.96212", W 103° 43' 49.47201"
Location Grid N/E Y/X: N 564039 600 ftUS, E 727115 800 ftUS
CRS Grid Convergence Angle: 0.3244 °
Grid Scale Factor: 0.99994862

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 243.329 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Elevation
TVD Reference Elevation: 3555.000 ft above MSL
Seabed / Ground Elevation: 3555.000 ft above MSL
Magnetic Declination: 7.634 °
Total Gravity Field Strength: 999.1774 mgn (9.8 based)
Total Magnetic Field Strength: 48660.828 nT
Magnetic Dip Angle: 60.395 °
Declination Date: September 12, 2012
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.3244 °

Total Corr Mag North->Grid North: 7.3091 °

Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Cimarex Snoddy Federal 23H - SHL	0.00	0.00	243.33	0.00	0.00	0.00	0.00	N/A	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	100.00	0.00	243.33	100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	200.00	0.00	243.33	200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	300.00	0.00	243.33	300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	400.00	0.00	243.33	400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	500.00	0.00	243.33	500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	600.00	0.00	243.33	600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	700.00	0.00	243.33	700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	800.00	0.00	243.33	800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	900.00	0.00	243.33	900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1000.00	0.00	243.33	1000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1100.00	0.00	243.33	1100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1200.00	0.00	243.33	1200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1300.00	0.00	243.33	1300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1400.00	0.00	243.33	1400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1500.00	0.00	243.33	1500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1600.00	0.00	243.33	1600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1700.00	0.00	243.33	1700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1800.00	0.00	243.33	1800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	1900.00	0.00	243.33	1900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2000.00	0.00	243.33	2000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2100.00	0.00	243.33	2100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2200.00	0.00	243.33	2200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2300.00	0.00	243.33	2300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2400.00	0.00	243.33	2400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2500.00	0.00	243.33	2500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2600.00	0.00	243.33	2600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2700.00	0.00	243.33	2700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2800.00	0.00	243.33	2800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	2900.00	0.00	243.33	2900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3000.00	0.00	243.33	3000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3100.00	0.00	243.33	3100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3200.00	0.00	243.33	3200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3300.00	0.00	243.33	3300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3400.00	0.00	243.33	3400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3500.00	0.00	243.33	3500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3600.00	0.00	243.33	3600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3700.00	0.00	243.33	3700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3800.00	0.00	243.33	3800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	3900.00	0.00	243.33	3900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4000.00	0.00	243.33	4000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4100.00	0.00	243.33	4100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4200.00	0.00	243.33	4200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4300.00	0.00	243.33	4300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4400.00	0.00	243.33	4400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4500.00	0.00	243.33	4500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4600.00	0.00	243.33	4600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4700.00	0.00	243.33	4700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4800.00	0.00	243.33	4800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	4900.00	0.00	243.33	4900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5000.00	0.00	243.33	5000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5100.00	0.00	243.33	5100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5200.00	0.00	243.33	5200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
Delaware Sands	5235.00	0.00	243.33	5235.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5300.00	0.00	243.33	5300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5400.00	0.00	243.33	5400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5500.00	0.00	243.33	5500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5600.00	0.00	243.33	5600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5700.00	0.00	243.33	5700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5800.00	0.00	243.33	5800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	5900.00	0.00	243.33	5900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6000.00	0.00	243.33	6000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6100.00	0.00	243.33	6100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6200.00	0.00	243.33	6200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6300.00	0.00	243.33	6300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6400.00	0.00	243.33	6400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6500.00	0.00	243.33	6500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6600.00	0.00	243.33	6600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6700.00	0.00	243.33	6700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6800.00	0.00	243.33	6800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	6900.00	0.00	243.33	6900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7000.00	0.00	243.33	7000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7100.00	0.00	243.33	7100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7200.00	0.00	243.33	7200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7300.00	0.00	243.33	7300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7400.00	0.00	243.33	7400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7500.00	0.00	243.33	7500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7600.00	0.00	243.33	7600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7700.00	0.00	243.33	7700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	7800.00	0.00	243.33	7800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
Bone Spring	7900.00	0.00	243.33	7900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8000.00	0.00	243.33	8000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8100.00	0.00	243.33	8100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8200.00	0.00	243.33	8200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
Upper Bone Spring Shale	8215.00	0.00	243.33	8215.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8300.00	0.00	243.33	8300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8400.00	0.00	243.33	8400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8500.00	0.00	243.33	8500.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8600.00	0.00	243.33	8600.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8700.00	0.00	243.33	8700.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8800.00	0.00	243.33	8800.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	8900.00	0.00	243.33	8900.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
1st BSS	8965.00	0.00	243.33	8965.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	9000.00	0.00	243.33	9000.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	9100.00	0.00	243.33	9100.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	9200.00	0.00	243.33	9200.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	9300.00	0.00	243.33	9300.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	9400.00	0.00	243.33	9400.00	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
KOP Build 12"/100' DLS	9422.50	0.00	243.33	9422.50	0.00	0.00	0.00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
	9500.00	9.30	243.33	9499.66	6.28	-2.82	-5.61	12.00	564036.78	727110.19	N 32 32 56.93	W 103 43 49.54
2nd BSS	9520.69	11.78	243.33	9520.00	10.06	-4.52	-8.99	12.00	564035.08	727106.81	N 32 32 56.92	W 103 43 49.58
	9600.00	21.30	243.33	9595.94	32.62	-14.64	-29.15	12.00	564024.96	727086.66	N 32 32 56.82	W 103 43 49.81
	9700.00	33.30	243.33	9684.64	78.40	-35.19	-70.06	12.00	564004.41	727045.75	N 32 32 56.62	W 103 43 50.29
	9800.00	45.30	243.33	9761.88	141.62	-63.57	-126.55	12.00	563976.04	726989.26	N 32 32 56.34	W 103 43 50.95
	9900.00	57.30	243.33	9824.29	219.52	-98.53	-196.16	12.00	563941.07	726919.65	N 32 32 56.00	W 103 43 51.77
	10000.00	69.30	243.33	9869.14	308.69	-138.56	-275.85	12.00	563901.05	726839.96	N 32 32 55.61	W 103 43 52.70
	10100.00	81.30	243.33	9894.47	405.24	-181.89	-362.13	12.00	563857.72	726753.69	N 32 32 55.18	W 103 43 53.71
Landing Point	10172.50	90.00	243.33	9899.96	477.46	-214.31	-426.67	12.00	563825.30	726689.16	N 32 32 54.87	W 103 43 54.47
	10200.00	90.00	243.33	9899.96	504.96	-226.65	-451.24	0.00	563812.96	726664.58	N 32 32 54.74	W 103 43 54.76
	10300.00	90.00	243.33	9899.96	604.96	-271.54	-540.60	0.00	563768.08	726575.23	N 32 32 54.31	W 103 43 55.61
	10400.00	90.00	243.33	9899.96	704.96	-316.42	-629.96	0.00	563723.19	726485.87	N 32 32 53.87	W 103 43 56.85
	10500.00	90.00	243.33	9899.97	804.96	-361.31	-719.32	0.00	563678.31	726396.52	N 32 32 53.43	W 103 43 57.90
	10600.00	90.00	243.33	9899.97	904.96	-406.19	-808.68	0.00	563633.43	726307.16	N 32 32 52.99	W 103 43 58.95
	10700.00	90.00	243.33	9899.97	1004.96	-451.08	-898.04	0.00	563588.54	726217.81	N 32 32 52.55	W 103 43 59.99
	10800.00	90.00	243.33	9899.97	1104.96	-495.97	-987.40	0.00	563543.66	726128.45	N 32 32 52.11	W 103 44 1.04
	10900.00	90.00	243.33	9899.97	1204.96	-540.85	-1076.76	0.00	563498.78	726039.09	N 32 32 51.67	W 103 44 2.09
	11000.00	90.00	243.33	9899.97	1304.96	-585.74	-1166.12	0.00	563453.89	725949.74	N 32 32 51.23	W 103 44 3.13
	11100.00	90.00	243.33	9899.97	1404.96	-630.62	-1255.48	0.00	563409.01	725860.38	N 32 32 50.79	W 103 44 4.18

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	11200 00	90.00	243 33	9899 97	1504 96	-675 51	-1344 85	0 00	563364 13	725771.03	N 32 32 50 35	W 103 44 5 23
	11300 00	90 00	243 33	9899 97	1604 96	-720.39	-1434 21	0 00	563319 25	725681.67	N 32 32 49.91	W 103 44 6 27
	11400 00	90 00	243.33	9899 97	1704 96	-765.28	-1523 57	0 00	563274 36	725592.32	N 32 32 49.48	W 103 44 7.32
	11500 00	90.00	243 33	9899 97	1804.96	-810.16	-1612 93	0.00	563229 48	725502 96	N 32 32 49 04	W 103 44 8 37
	11600 00	90.00	243 33	9899 97	1904 96	-855.05	-1702 29	0 00	563184 60	725413 60	N 32 32 48 60	W 103 44 9 41
	11700 00	90 00	243 33	9899 97	2004 96	-899 94	-1791 65	0 00	563139 71	725324.25	N 32 32 48 16	W 103 44 10 46
	11800 00	90 00	243.33	9899 97	2104.96	-944 82	-1881 01	0 00	563094 83	725234 89	N 32 32 47.72	W 103 44 11 51
	11900 00	90 00	243 33	9899 97	2204.96	-989 71	-1970 37	0 00	563049 95	725145 54	N 32 32 47 28	W 103 44 12 56
	12000 00	90 00	243 33	9899 97	2304 96	-1034 59	-2059 73	0 00	563005 06	725056 18	N 32 32 46 84	W 103 44 13 60
	12100 00	90 00	243 33	9899 97	2404.96	-1079 48	-2149 09	0 00	562960 18	724966 83	N 32 32 46 40	W 103 44 14 65
	12200 00	90 00	243 33	9899 97	2504 96	-1124 36	-2238 45	0.00	562915 30	724877 47	N 32 32 45 96	W 103 44 15 70
	12300 00	90 00	243 33	9899 97	2604 96	-1169 25	-2327 81	0 00	562870 41	724788 12	N 32 32 45 52	W 103 44 16 74
	12400 00	90 00	243 33	9899 97	2704 96	-1214 14	-2417 17	0 00	562825 53	724698 76	N 32 32 45 08	W 103 44 17 79
	12500 00	90 00	243 33	9899 97	2804 96	-1259 02	-2506 53	0 00	562780 64	724609 40	N 32 32 44 64	W 103 44 18 84
	12600 00	90 00	243 33	9899 98	2904 96	-1303.91	-2595 89	0 00	562735 76	724520 05	N 32 32 44 21	W 103 44 19 88
	12700 00	90 00	243.33	9899 98	3004 96	-1348 79	-2685 25	0 00	562690.88	724430 69	N 32 32 43 77	W 103 44 20 93
	12800 00	90 00	243 33	9899 98	3104 96	-1393 68	-2774 61	0 00	562645.99	724341.34	N 32 32 43 33	W 103 44 21 98
	12900 00	90 00	243.33	9899 98	3204 96	-1438 57	-2863 97	0 00	562601 11	724251 98	N 32 32 42 89	W 103 44 23 02
	13000.00	90 00	243 33	9899 98	3304 96	-1483 45	-2953 33	0 00	562556.23	724162.63	N 32 32 42 45	W 103 44 24 07
	13100 00	90 00	243.33	9899 98	3404.96	-1528 34	-3042.69	0.00	562511 34	724073.27	N 32 32 42 01	W 103 44 25.12
	13200 00	90 00	243.33	9899.98	3504.96	-1573 23	-3132 05	0 00	562466 46	723983 92	N 32 32 41.57	W 103 44 26.16
	13300 00	90 00	243.33	9899.98	3604 96	-1618 11	-3221 41	0.00	562421 57	723894 56	N 32 32 41 13	W 103 44 27.21
	13400 00	90 00	243 33	9899 98	3704 96	-1663 00	-3310 77	0.00	562376 69	723805.21	N 32 32 40.69	W 103 44 28 26
	13500 00	90 00	243 33	9899 99	3804 96	-1707.89	-3400.13	0.00	562331 81	723715 85	N 32 32 40.25	W 103 44 29 30
	13600 00	90 00	243 33	9899 99	3904 96	-1752.77	-3489.49	0.00	562286 92	723626.50	N 32 32 39 81	W 103 44 30 35
	13700 00	90 00	243 33	9899 99	4004 96	-1797.66	-3578 85	0 00	562242.04	723537 14	N 32 32 39.37	W 103 44 31 40
	13800 00	90 00	243 33	9899 99	4104 96	-1842.54	-3668 21	0 00	562197.15	723447.79	N 32 32 38 93	W 103 44 32 44
	13900 00	90.00	243 33	9899 99	4204 96	-1887.43	-3757 57	0 00	562152 27	723358.43	N 32 32 38 50	W 103 44 33 49
	14000 00	90.00	243 33	9899 99	4304.96	-1932 32	-3846 93	0 00	562107 38	723269.08	N 32 32 38 06	W 103 44 34 54
	14100 00	90 00	243 33	9899 99	4404.96	-1977 20	-3936 29	0 00	562062 50	723179 72	N 32 32 37.62	W 103 44 35 58
	14200 00	90 00	243 33	9900 00	4504 96	-2022 09	-4025 65	0.00	562017 62	723090 37	N 32 32 37 18	W 103 44 36.63
	14300 00	90 00	243 33	9900 00	4604 96	-2066 98	-4115 01	0 00	561972 73	723001.01	N 32 32 36.74	W 103 44 37 68
	14400 00	90 00	243 33	9900 00	4704.96	-2111 87	-4204 37	0 00	561927 85	722911 66	N 32 32 36 30	W 103 44 38.73
	14500 00	90 00	243.33	9900.00	4804 96	-2156 75	-4293.73	0 00	561882 96	722822 30	N 32 32 35 86	W 103 44 39.77
Cimarex Snoddy Federal 23H - PBHL	14512 00	90 00	243 33	9900 00	4816 97	-2162 14	-4304 46	0 00	561877.58	722811.57	N 32 32 35 81	W 103 44 39 90

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	9400 000	1/100 000	30 000	30 000	SLB_NSG+MSHOT	Original Borehole / Cimarex Snoddy Federal 23H Rev0 mcs

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
		9400 000	14512 004		1/100 000	30 000	30 000	SLB_MWD-STD			Original Borehole / Cimarex Snoddy Federal 23H Rev0 mcs	



Cimarex Snoddy Federal 23H Rev0 mcs 12Sep12 Proposal Geodetic Report



(Def Plan)

Report Date: September 12, 2012 - 02 20 PM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Snoddy Federal 23H / Cimarex Snoddy Federal 23H
Well: Cimarex Snoddy Federal 23H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Snoddy Federal 23H Rev0 mcs 12Sep12
Survey Date: September 12, 2012
Tort / AHD / DDI / ERD Ratio: 90 001 ° / 4816 969 ft / 5 803 / 0 487
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 32' 56.96212", W 103° 43' 49.47201"
Location Grid N/E Y/X: N 564039 600 ftUS, E 727115 800 ftUS
CRS Grid Convergence Angle: 0 3244 °
Grid Scale Factor: 0 99994862

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 243 329 ° (Grid North)
Vertical Section Origin: 0 000 ft, 0 000 ft
TVD Reference Datum: Ground Elevation
TVD Reference Elevation: 3555 000 ft above MSL
Seabed / Ground Elevation: 3555 000 ft above MSL
Magnetic Declination: 7 634 °
Total Gravity Field Strength: 999 1774 mgn (9.8 based)
Total Magnetic Field Strength: 48660.828 nT
Magnetic Dip Angle: 60 395 °
Declination Date: September 12, 2012
Magnetic Declination Model: BGGM 2012
North Reference: Grd North
Grid Convergence Used: 0 3244 °

Total Corr Mag North->Grid North: 7 3091 °

Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Cimarex Snoddy Federal 23H - SHL	0 00	0 00	243.33	0 00	0 00	0 00	0 00	N/A	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
Delaware Sands	5235.00	0 00	243.33	5235.00	0 00	0 00	0 00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
Bone Spring	7900.00	0 00	243.33	7900.00	0 00	0 00	0 00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
Upper Bone Spring Shale	8215.00	0 00	243.33	8215.00	0 00	0 00	0 00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
1st BSS	8965.00	0.00	243.33	8965.00	0 00	0 00	0 00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
KOP Build 12°/100'	9422.50	0 00	243.33	9422.50	0 00	0 00	0 00	0.00	564039.60	727115.80	N 32 32 56.96	W 103 43 49.47
DLS	9520.69	11.78	243.33	9520.00	10.06	-4.52	-8.99	12.00	564035.08	727106.81	N 32 32 56.92	W 103 43 49.58
2nd BSS	9520.69	11.78	243.33	9520.00	10.06	-4.52	-8.99	12.00	564035.08	727106.81	N 32 32 56.92	W 103 43 49.58
Landing Point	10172.50	90.00	243.33	9899.96	477.46	-214.31	-426.67	12.00	563825.30	726689.16	N 32 32 54.87	W 103 43 54.47
Cimarex Snoddy Federal 23H - PBHL	14512.00	90.00	243.33	9900.00	4816.97	-2162.14	-4304.46	0.00	561877.58	722811.57	N 32 32 35.81	W 103 44 39.90

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	9400.000	1/100.000	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Snoddy Federal 23H Rev0 mcs

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
		9400 000	14512.004		1/100 000	30 000	30 000	SLB_MWD-STD			Original Borehole / Cimarex Snoddy Federal 23H Rev0 mcs	

SR & A

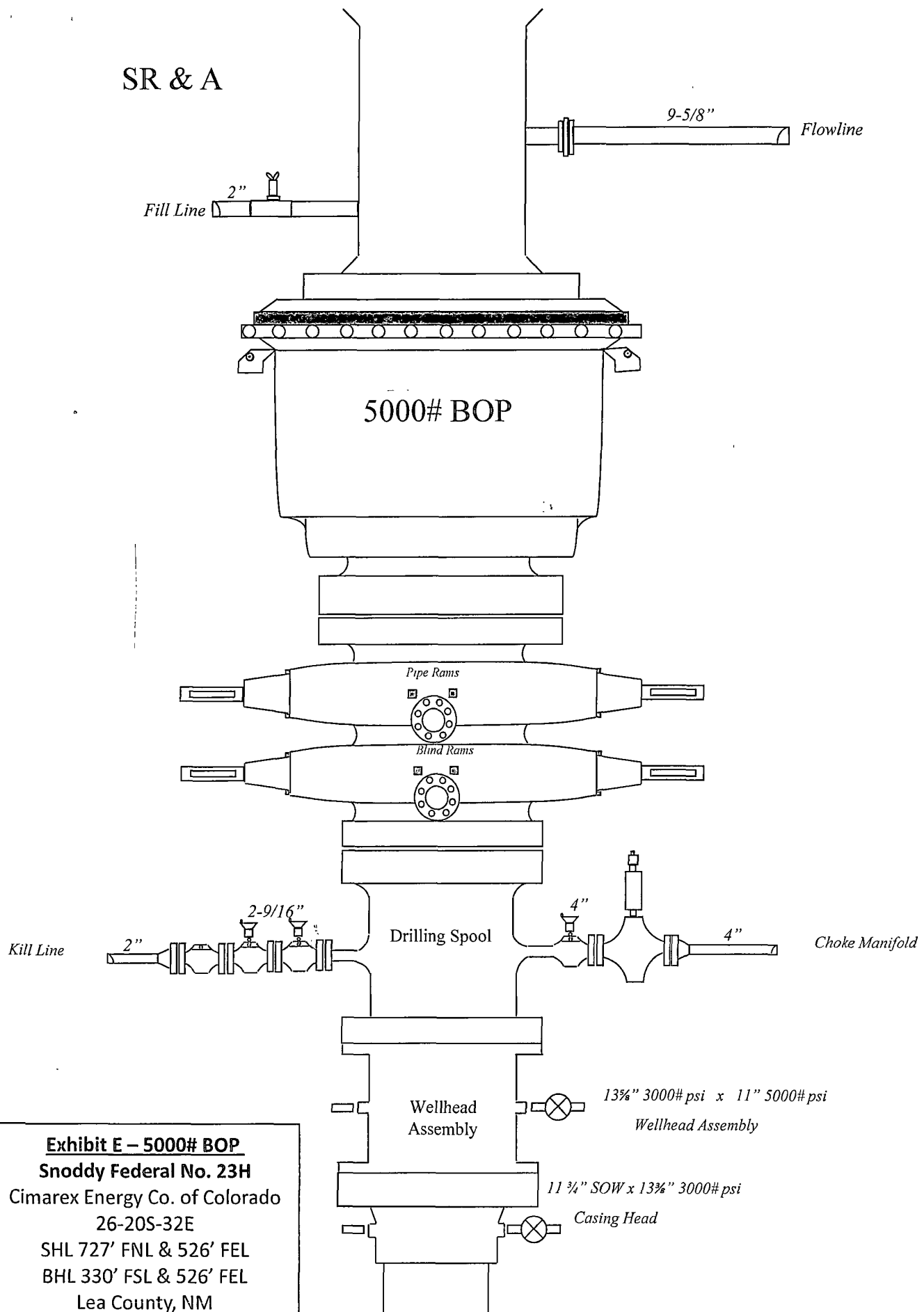


Exhibit E – 5000# BOP

Snoddy Federal No. 23H

Cimarex Energy Co. of Colorado

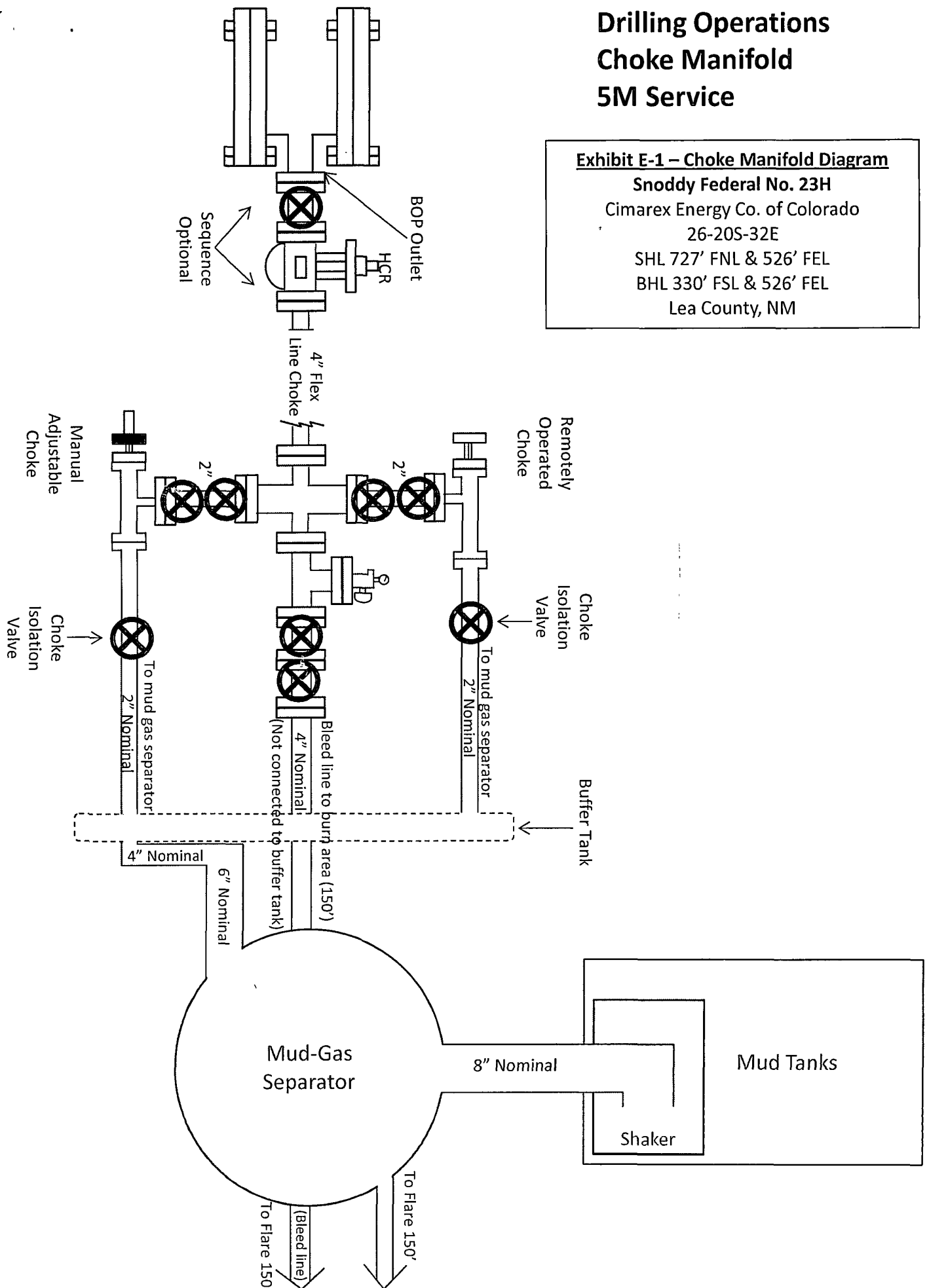
26-20S-32E

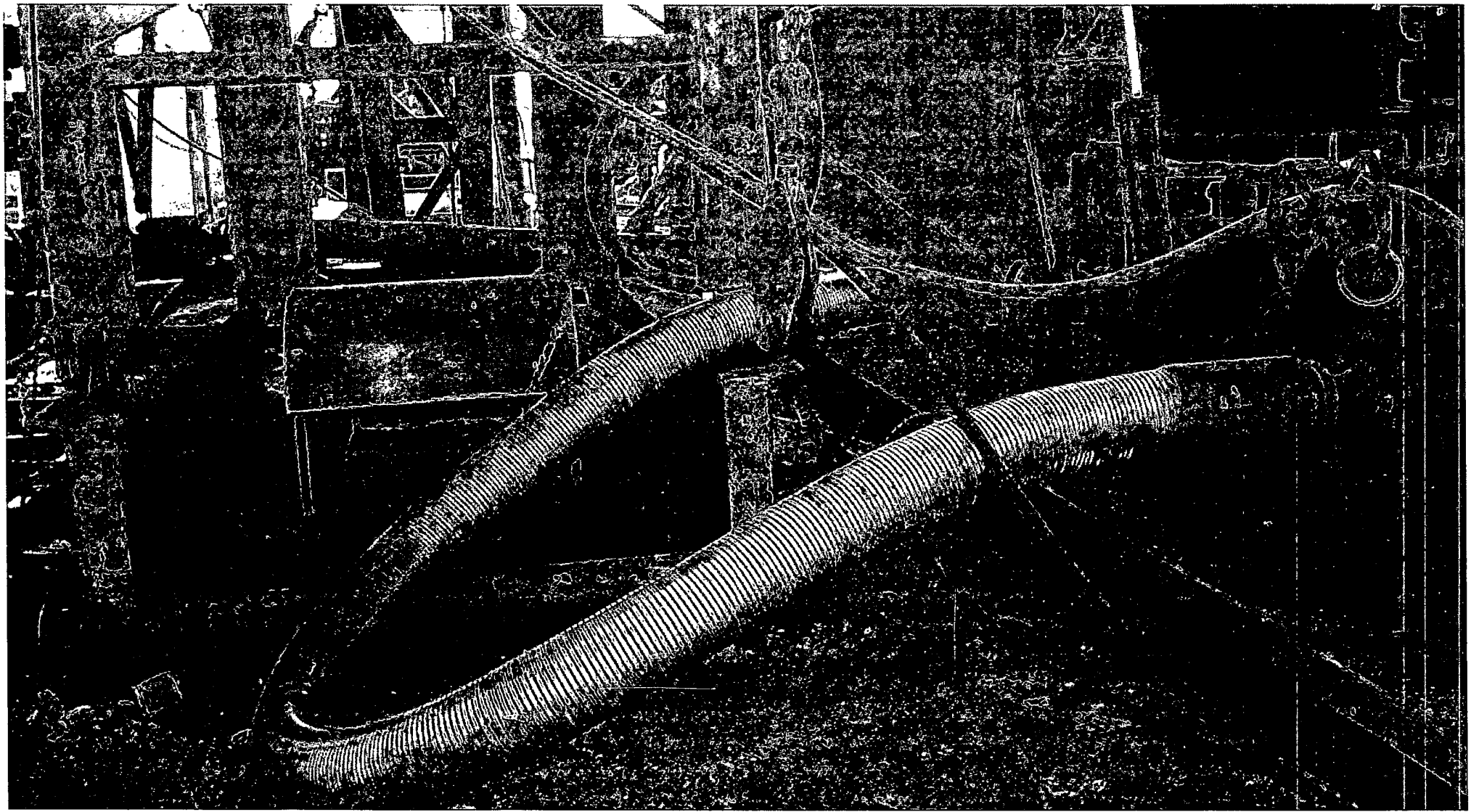
SHL 727' FNL & 526' FEL

BHL 330' FSL & 526' FEL

Lea County, NM

Lea County, NM





Cactus Rig 115
Serial # 63270

MIDWEST
HOSE AND SPECIALTY INC.

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



Midwest Hose
& Specialty, Inc.

Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium 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)

Cimarex Energy Co. of Colorado – Closed-Loop System Design Plan

Equipment List

- Primary Shakers
- Mud Cleaner – hydro-cyclones
- 1 or 2 Centrifuges (depending on well depth)
- De-watering system with pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing (may not be necessary for shallower wells)
- Drying Augur
- Sump Drying Augur
- Sump
- Cuttings Boxes
- Reserve Fluids Tank Farm
- Wire Mesh Trash Enclosure (spent motor oils kept in separate containers and later sent to approved landfill)

Operation and Maintenance

The Cimarex Zero Discharge system is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This ensures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

These closed loop operations can be monitored by our service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

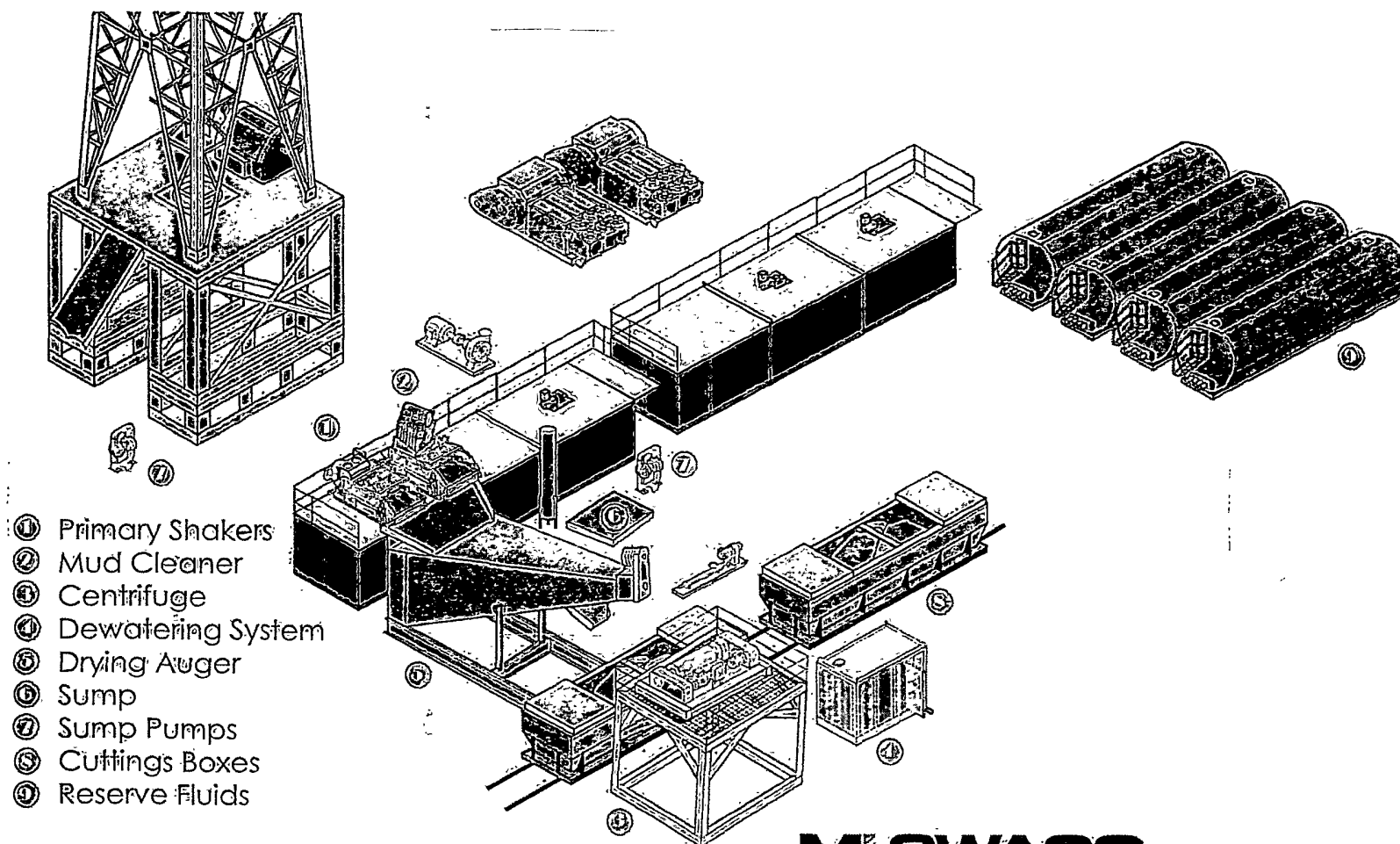
Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and tested for all regulated toxic materials. If found they are removed and disposed of per regulatory requirements.

Closure Plan

During drilling operations, all liquids, drilling fluids, and cuttings will be hauled off via CRI (Controlled Recovery Incorporated, Permit R-9166).



Closed Loop with Drying Auger and Dewatering System



MI SWACO

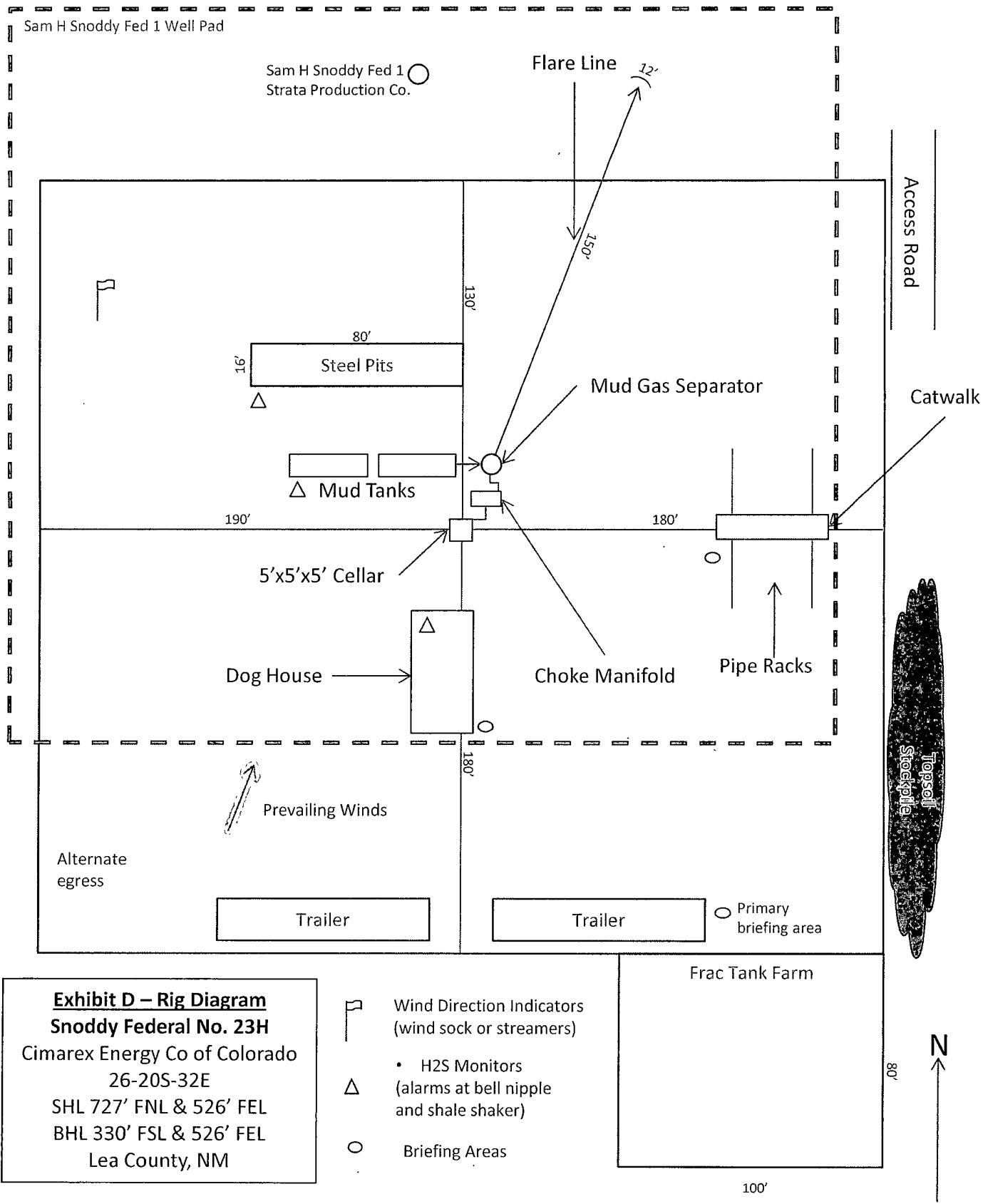


Exhibit D – Rig Diagram
Snoddy Federal No. 23H

Cimarex Energy Co of Colorado
 26-20S-32E
 SHL 727' FNL & 526' FEL
 BHL 330' FSL & 526' FEL
 Lea County, NM