

HOBBS OCD

OCT 26 2012

R-111-POTASH

OCD Hobbs

Form 3160-3
(April 2004)

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

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. 22H <39073>
3b Phone No. (include area code) 432-571-7800		9 API Well No. 30-025- 40839
4 Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 797' FNL & 596' FEL At proposed prod. Zone 330' FSL & 990' 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) 596'	16. No of acres in lease 640 acres	17. Spacing Unit dedicated to this well 640 acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50' from #20H	19 Proposed Depth MD 15246' TVD 9900'	20 BLM/BIA Bond No on File NM2575 NMB000835
21. Elevations (Show whether DF, KDB, RT, GL., etc.) 3555' GR	22 Approximate date work will start* 01.01.13	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:

- | | |
|---|--|
| 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 	Name (Printed/Typed) Terri Statham	Date 9.5.12
Title Regulatory		

Approved By (Signature) /s/ Jesse J. Juen	Name (Printed/Typed) NM STATE OFFICE	Date OCT 19 2012
Title STATE DIRECTOR		

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, (attached) APPROVAL FOR TWO YEARS
Title 18 U.S.C. 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)

Approval Subject to General Requirements
& Special Stipulations Attached

OCT 31 2012

Capitan Controlled Water Basin
SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Drilling Plan
Snoddy Federal No. 22H
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 797' FNL & 596' FEL
BHL 330' FSL & 990' 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 15246' TVD 9900'

6 **Estimated tops of geological markers:**

Water	40'	
Rustler	1100'	
Top Salt	1450'	
Base Salt	2965'	
Yates	3050'	
Capitan	3410'	
Delaware Sands	4700'	Oil
Brushy Canyon	6000'	
Bone Spring	7900'	Oil
FBSS	8965'	
SBSS	9520'	
Base BS	10800'	

7 **Proposed Mud Circulating System:**

See COA

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1290'	8.4 - 8.6	28	NC	FW
1290' to 3065'	10.0	30-32	NC	Brine water
3065' 3025' 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 15246'	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 @ 15246' MD, 9900' TVD and set 5.5" casing from 0-15246' and cement as shown on following page.

Drilling Plan
Snoddy Federal No. 22H
 Cimarex Energy Co of Colorado
 Unit A, Section 26
 T20S-R32E, Lea County, NM

8 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 15246'	New 5 1/2"	17#	LTC	P-110

9 Cementing:

Surface

16"

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 Onshore Order 2.III.B.1.f

Surface 2

11 3/4"

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

8 5/8"

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

5 1/2"

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 2800'

Centralizers every 3rd joint through the curve or legal location hardline to provide adequate cement coverage every 100' unless hole conditions require greater spacing between centralizers.

See COA

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

10 Pressure Control Equipment:

See COA

Exhibit "E". A 13 1/2" 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 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 surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

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

*See COA - Exhibit E-1 - 20" Divertor System
 Variance granted*

Drilling Plan
Snoddy Federal No. 22H
Cimarex Energy Co of Colorado
Unit A, Section 26
T20S-R32E, Lea County, NM

* 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. 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.

11 Testing, Logging and Coring Program:

* See COA

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

12 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°**

13 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.

14 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.**

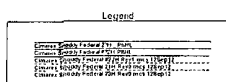
Rig TBD

Cimarex

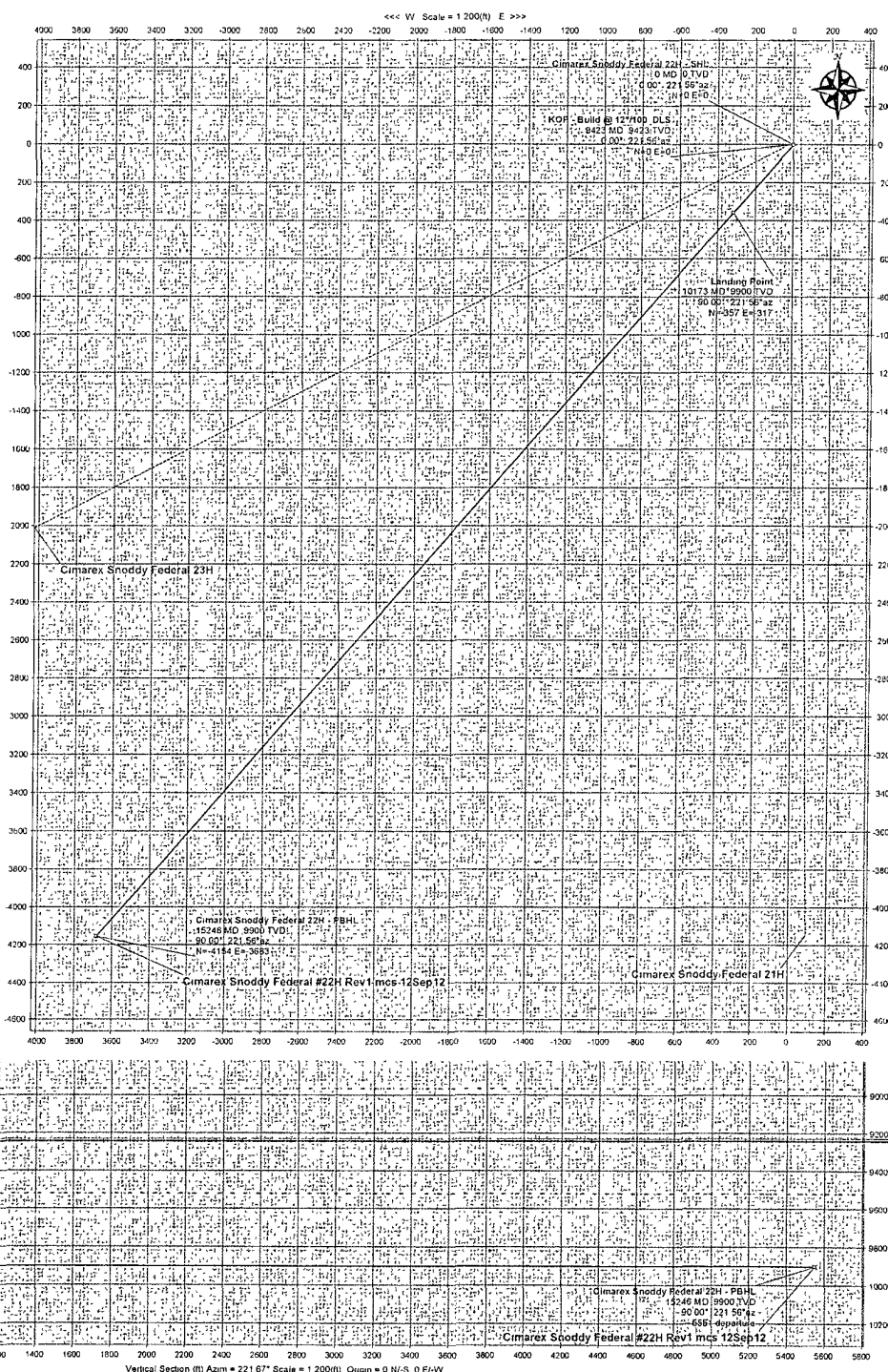
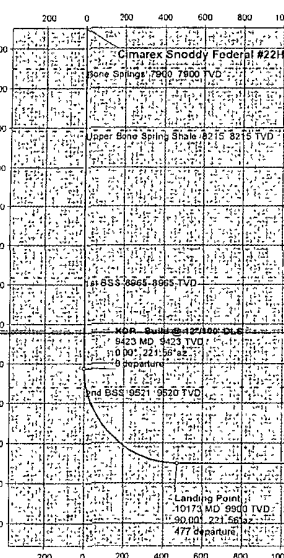
REV 1

PATHFINDER
A Schlumberger Company

WELL		FIELD		Lea County, NM (NAD 83)		STRUCTURE	
Cimarex Snoddy Federal #22H						Cimarex Snoddy Federal #22H	
Signature Parameters Mod # 1 BOGEM 3412 Date 05/19/11 Day 3:39P Date Acq 26/10/12 Time 04:05:30Z				Surface Location Loc # 33 33 33.00 Easting 96189.10 Northing 727184.33 UTM Zone 18Q		Well Information Well Name Snoddy Federal #22H Well Type Oil Well Status Active Well Depth 15550 Well Completion Interval 15550 to 15580	



Grid North
Tot Corr (M->G 7 3143°)
Mag Dec (7 639°)
Grid Conv (0 324°)



Comments	Critical Points														
	Survey MD	Inc.	Azim	TVD	SSTVD	VS	NS	EW	Longitude	Latitude	Easting	Northing	DLS	Tool Face	
SHL	0 00	0 00	221 56	0 00	-3555 00	0.00	0 00	0 00	W 103 43 48 915 N	32 32 57.099	727163 40	564053 70		221 56	
Deleware Sands	5235.00	0 00	221 56	5235 00	1680 00	0.00	0 00	0 00	W 103 43 48 915 N	32 32 57 099	727163 40	564053.70	0 00	221.56	
Bone Springs	7900 00	0 00	221 56	7900 00	4345.00	0.00	0.00	0 00	W 103 43 48.915 N	32 32 57 099	727163 40	564053 70	0 00	221 56	
Upper Bone Spring Shale	8215 00	0 00	221 56	8215.00	4660.00	0.00	0.00	0 00	W 103 43 48.915 N	32 32 57.099	727163 40	564053 70	0 00	221.56	
1st BSS	8965.00	0 00	221 56	8965.00	5410 00	0.00	0.00	0 00	W 103 43 48 915 N	32 32 57 099	727163.40	564053 70	0.00	221 56	
KOP - Build @ 12°/100' DLS	9422 50	0 00	221 56	9422 50	5867 50	0.00	0.00	0 00	W 103 43 48 915 N	32 32 57.099	727163 40	564053 70	0.00	0.00	
2nd BSS	9520 69	11 78	221 56	9520 00	5965 00	10 06	-7 53	-6 67	W 103 43 48 993 N	32 32 57 025	727156 73	564046 17	12 00	221 56	
Landing Point	10172 56	90 00	221 56	9900 00	6345 00	477 50	-357 32	-316 74	W 103 43 52 639 N	32 32 53 581	726864 66	563696 40	12 00	90 00	
PBHL	15246 35	90 00	221 56	9900 00	6345 00	5551 29	-4154 02	-3682 53	W 103 44 32 205 N	32 32 16.201	723481 06	559899 90	0 00		

Drawn By: Matt Sheller
Date Created: September 12, 2012 01:29:42 PM
Checked By: Ryan Schneider
Checked Date:
Approved By:



Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12 Proposal Geodetic Report
(Def Plan)



Report: September 12, 2012 - 01:22 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Snoddy Federal #22H / Cimarex Snoddy Federal #22H
Well: Cimarex Snoddy Federal #22H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12
Survey Date: August 26, 2012
Tort / AHD / DDI / ERD Ratio: 90 004 ° / 5551 299 ft / 5 886 / 0 561
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 32' 57 09897", W 103° 43' 48 91497"
Location Grid N/E Y/X: N 564053 700 ftUS, E 727163 400 ftUS
CRS Grid Convergence Angle: 0 3245 °
Grid Scale Factor: 0 99994864

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 221 674 ° (Grid North)
Vertical Section Origin: 0 000 ft, 0 000 ft
TVD Reference Datum: Drillsite Elevation
TVD Reference Elevation: 3555 000 ft above MSL
Seabed / Ground Elevation: 3555 000 ft above MSL
Magnetic Declination: 7 639 °
Total Gravity Field Strength: 999 1774 mgn (9 8 based)
Total Magnetic Field Strength: 48666 739 nT
Magnetic Dip Angle: 60 397 °
Declination Date: August 26, 2012
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0 3245 °
Total Corr Mag North->Grid North: 7 3143 °

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 22H - SHL	0 00	0.00	221 56	0.00	0 00	0 00	0 00	N/A	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	100 00	0 00	221 56	100.00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	200.00	0 00	221 56	200.00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	300.00	0 00	221.56	300 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	400.00	0 00	221 56	400.00	0 00	0 00	0 00	0 00	564053.70	727163 40	N 32 32 57 10	W 103 43 48 91
	500.00	0 00	221 56	500 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	600 00	0 00	221 56	600.00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	700.00	0 00	221 56	700 00	0 00	0 00	0 00	0 00	564053.70	727163 40	N 32 32 57 10	W 103 43 48 91
	800.00	0 00	221 56	800 00	0 00	0 00	0 00	0 00	564053.70	727163.40	N 32 32 57 10	W 103 43 48 91
	900.00	0 00	221 56	900 00	0 00	0 00	0 00	0 00	564053.70	727163 40	N 32 32 57 10	W 103 43 48 91
	1000.00	0 00	221 56	1000 00	0 00	0 00	0 00	0 00	564053 70	727163.40	N 32 32 57 10	W 103 43 48 91
	1100.00	0 00	221 56	1100 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	1200.00	0 00	221 56	1200 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57.10	W 103 43 48 91
	1300.00	0 00	221 56	1300 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	1400 00	0 00	221 56	1400 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	1500 00	0 00	221 56	1500 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	1600 00	0 00	221 56	1600 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	1700 00	0 00	221 56	1700 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	1800 00	0 00	221 56	1800 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57.10	W 103 43 48 91
	1900 00	0.00	221 56	1900 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57.10	W 103 43 48 91
	2000 00	0.00	221 56	2000 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57.10	W 103 43 48 91
	2100 00	0.00	221 56	2100 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	2200 00	0.00	221 56	2200 00	0 00	0 00	0 00	0 00	564053.70	727163 40	N 32 32 57.10	W 103 43 48 91
	2300 00	0.00	221 56	2300.00	0 00	0 00	0 00	0 00	564053.70	727163 40	N 32 32 57 10	W 103 43 48 91
	2400 00	0 00	221 56	2400 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91

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 ° ' ")
	2500.00	0 00	221 56	2500 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	2600 00	0 00	221 56	2600 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	2700 00	0 00	221 56	2700 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	2800 00	0 00	221 56	2800 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	2900.00	0 00	221 56	2900 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3000 00	0 00	221 56	3000 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3100 00	0 00	221 56	3100 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3200.00	0 00	221 56	3200 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3300 00	0 00	221 56	3300 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3400 00	0 00	221 56	3400 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3500 00	0 00	221 56	3500 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3600 00	0 00	221 56	3600 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
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	3800 00	0 00	221 56	3800 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	3900.00	0 00	221 56	3900 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	4000.00	0 00	221 56	4000 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	4100.00	0 00	221 56	4100 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
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	4900.00	0 00	221 56	4900 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	5000 00	0 00	221 56	5000 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	5100 00	0 00	221 56	5100 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	5200.00	0 00	221 56	5200 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
Deleware Sands	5235 00	0 00	221 56	5235 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	5300.00	0 00	221 56	5300 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	5400.00	0 00	221 56	5400 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	5500.00	0 00	221 56	5500 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	5600.00	0 00	221 56	5600 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
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	6000 00	0 00	221 56	6000 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6100 00	0 00	221 56	6100 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6200 00	0 00	221 56	6200 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6300.00	0 00	221 56	6300 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6400 00	0 00	221 56	6400 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6500 00	0 00	221 56	6500 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6600.00	0 00	221 56	6600 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6700 00	0 00	221 56	6700 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6800 00	0 00	221 56	6800 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	6900.00	0 00	221 56	6900 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	7000 00	0 00	221 56	7000 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	7100.00	0 00	221 56	7100 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91
	7200 00	0 00	221 56	7200 00	0 00	0 00	0 00	0 00	564053 70	727163 40	N 32 32 57 10	W 103 43 48 91

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 ° ' ")
	7300.00	0.00	221.56	7300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7400.00	0.00	221.56	7400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7500.00	0.00	221.56	7500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7600.00	0.00	221.56	7600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7700.00	0.00	221.56	7700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7800.00	0.00	221.56	7800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Bone Sprngs	7900.00	0.00	221.56	7900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8000.00	0.00	221.56	8000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8100.00	0.00	221.56	8100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8200.00	0.00	221.56	8200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Upper Bone Sprng Shale	8215.00	0.00	221.56	8215.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8300.00	0.00	221.56	8300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8400.00	0.00	221.56	8400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8500.00	0.00	221.56	8500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8600.00	0.00	221.56	8600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8700.00	0.00	221.56	8700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8800.00	0.00	221.56	8800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8900.00	0.00	221.56	8900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
1st BSS	8965.00	0.00	221.56	8965.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9000.00	0.00	221.56	9000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9100.00	0.00	221.56	9100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9200.00	0.00	221.56	9200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9300.00	0.00	221.56	9300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9400.00	0.00	221.56	9400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
KOP - Build @ 12°/100' DLS	9422.50	0.00	221.56	9422.50	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9500.00	9.30	221.55	9499.66	6.28	-4.70	-4.16	12.00	564049.00	727159.24	N 32 32 57.05	W 103 43 48.96
2nd BSS	9520.69	11.78	221.56	9520.00	10.06	-7.53	-6.67	12.00	564046.17	727156.73	N 32 32 57.02	W 103 43 48.99
	9600.00	21.30	221.56	9595.94	32.61	-24.40	-21.63	12.00	564029.30	727141.77	N 32 32 56.86	W 103 43 49.17
	9700.00	33.30	221.56	9684.64	78.39	-58.66	-52.00	12.00	563995.04	727111.40	N 32 32 56.52	W 103 43 49.53
	9800.00	45.30	221.56	9761.89	141.61	-105.97	-93.93	12.00	563947.74	727069.47	N 32 32 56.06	W 103 43 50.02
	9900.00	57.30	221.56	9824.30	219.51	-164.26	-145.61	12.00	563889.45	727017.80	N 32 32 55.48	W 103 43 50.63
	10000.00	69.29	221.56	9869.16	308.68	-230.99	-204.76	12.00	563822.72	726958.65	N 32 32 54.82	W 103 43 51.32
	10100.00	81.29	221.56	9894.50	405.22	-303.24	-268.80	12.00	563750.48	726894.61	N 32 32 54.11	W 103 43 52.08
Landing Point	10172.56	90.00	221.56	9900.00	477.50	-357.32	-316.74	12.00	563696.40	726846.67	N 32 32 53.58	W 103 43 52.64
	10200.00	90.00	221.56	9900.00	504.94	-377.86	-334.95	0.00	563675.86	726828.47	N 32 32 53.38	W 103 43 52.85
	10300.00	90.00	221.56	9900.00	604.94	-452.69	-401.28	0.00	563601.03	726762.14	N 32 32 52.64	W 103 43 53.63
	10400.00	90.00	221.56	9900.00	704.94	-527.52	-467.62	0.00	563526.20	726695.81	N 32 32 51.91	W 103 43 54.41
	10500.00	90.00	221.56	9900.00	804.94	-602.36	-533.95	0.00	563451.38	726629.48	N 32 32 51.17	W 103 43 55.19
	10600.00	90.00	221.56	9900.00	904.94	-677.19	-600.29	0.00	563376.55	726563.15	N 32 32 50.43	W 103 43 55.97
	10700.00	90.00	221.56	9900.00	1004.94	-752.02	-666.62	0.00	563301.72	726496.82	N 32 32 49.70	W 103 43 56.75
	10800.00	90.00	221.56	9900.00	1104.94	-826.85	-732.95	0.00	563226.89	726430.48	N 32 32 48.96	W 103 43 57.53
	10900.00	90.00	221.56	9900.00	1204.94	-901.68	-799.29	0.00	563152.07	726364.15	N 32 32 48.22	W 103 43 58.31
	11000.00	90.00	221.56	9900.00	1304.94	-976.51	-865.62	0.00	563077.24	726297.82	N 32 32 47.49	W 103 43 59.09
	11100.00	90.00	221.56	9900.00	1404.94	-1051.34	-931.96	0.00	563002.41	726231.49	N 32 32 46.75	W 103 43 59.87
	11200.00	90.00	221.56	9900.00	1504.94	-1126.17	-998.29	0.00	562927.59	726165.16	N 32 32 46.01	W 103 44 0.65
	11300.00	90.00	221.56	9900.00	1604.94	-1201.00	-1064.63	0.00	562852.76	726098.83	N 32 32 45.28	W 103 44 1.43

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 ° ' ")
	11400.00	90.00	221.56	9900.00	1704.94	-1275.84	-1130.96	0.00	562777.93	726032.50	N 32 32 44.54	W 103 44 2.21
	11500.00	90.00	221.56	9900.00	1804.94	-1350.67	-1197.30	0.00	562703.11	725966.16	N 32 32 43.80	W 103 44 2.99
	11600.00	90.00	221.56	9900.00	1904.94	-1425.50	-1263.63	0.00	562628.28	725899.83	N 32 32 43.06	W 103 44 3.77
	11700.00	90.00	221.56	9900.00	2004.94	-1500.33	-1329.97	0.00	562553.45	725833.50	N 32 32 42.33	W 103 44 4.55
	11800.00	90.00	221.56	9900.00	2104.94	-1575.16	-1396.31	0.00	562478.63	725767.17	N 32 32 41.59	W 103 44 5.33
	11900.00	90.00	221.56	9900.00	2204.94	-1649.99	-1462.64	0.00	562403.80	725700.84	N 32 32 40.85	W 103 44 6.11
	12000.00	90.00	221.56	9900.00	2304.94	-1724.82	-1528.98	0.00	562328.97	725634.50	N 32 32 40.12	W 103 44 6.89
	12100.00	90.00	221.56	9900.00	2404.94	-1799.65	-1595.31	0.00	562254.15	725568.17	N 32 32 39.38	W 103 44 7.67
	12200.00	90.00	221.56	9900.00	2504.94	-1874.48	-1661.65	0.00	562179.32	725501.84	N 32 32 38.64	W 103 44 8.45
	12300.00	90.00	221.56	9900.00	2604.94	-1949.31	-1727.99	0.00	562104.50	725435.51	N 32 32 37.91	W 103 44 9.23
	12400.00	90.00	221.56	9900.00	2704.94	-2024.14	-1794.32	0.00	562029.67	725369.17	N 32 32 37.17	W 103 44 10.01
	12500.00	90.00	221.56	9900.00	2804.94	-2098.97	-1860.66	0.00	561954.84	725302.84	N 32 32 36.43	W 103 44 10.79
	12600.00	90.00	221.56	9900.00	2904.94	-2173.80	-1926.99	0.00	561880.02	725236.51	N 32 32 35.70	W 103 44 11.57
	12700.00	90.00	221.56	9900.00	3004.94	-2248.63	-1993.33	0.00	561805.19	725170.17	N 32 32 34.96	W 103 44 12.35
	12800.00	90.00	221.56	9900.00	3104.94	-2323.46	-2059.67	0.00	561730.37	725103.84	N 32 32 34.22	W 103 44 13.13
	12900.00	90.00	221.56	9900.00	3204.94	-2398.29	-2126.01	0.00	561655.54	725037.51	N 32 32 33.49	W 103 44 13.91
	13000.00	90.00	221.56	9900.00	3304.94	-2473.11	-2192.34	0.00	561580.72	724971.17	N 32 32 32.75	W 103 44 14.69
	13100.00	90.00	221.56	9900.00	3404.94	-2547.94	-2258.68	0.00	561505.89	724904.84	N 32 32 32.01	W 103 44 15.47
	13200.00	90.00	221.56	9900.00	3504.94	-2622.77	-2325.02	0.00	561431.07	724838.51	N 32 32 31.28	W 103 44 16.25
	13300.00	90.00	221.56	9900.00	3604.94	-2697.60	-2391.35	0.00	561356.24	724772.17	N 32 32 30.54	W 103 44 17.03
	13400.00	90.00	221.56	9900.00	3704.94	-2772.43	-2457.69	0.00	561281.42	724705.84	N 32 32 29.80	W 103 44 17.81
	13500.00	90.00	221.56	9900.00	3804.94	-2847.26	-2524.03	0.00	561206.59	724639.51	N 32 32 29.07	W 103 44 18.59
	13600.00	90.00	221.56	9900.00	3904.94	-2922.09	-2590.37	0.00	561131.77	724573.17	N 32 32 28.33	W 103 44 19.37
	13700.00	90.00	221.56	9900.00	4004.94	-2996.92	-2656.70	0.00	561056.94	724506.84	N 32 32 27.59	W 103 44 20.15
	13800.00	90.00	221.56	9900.00	4104.94	-3071.74	-2723.04	0.00	560982.12	724440.50	N 32 32 26.86	W 103 44 20.93
	13900.00	90.00	221.56	9900.00	4204.94	-3146.57	-2789.38	0.00	560907.29	724374.17	N 32 32 26.12	W 103 44 21.71
	14000.00	90.00	221.56	9900.00	4304.94	-3221.40	-2855.72	0.00	560832.47	724307.83	N 32 32 25.38	W 103 44 22.49
	14100.00	90.00	221.56	9900.00	4404.94	-3296.23	-2922.06	0.00	560757.65	724241.50	N 32 32 24.65	W 103 44 23.27
	14200.00	90.00	221.56	9900.00	4504.94	-3371.06	-2988.39	0.00	560682.82	724175.17	N 32 32 23.91	W 103 44 24.05
	14300.00	90.00	221.56	9900.00	4604.94	-3445.89	-3054.73	0.00	560608.00	724108.83	N 32 32 23.17	W 103 44 24.83
	14400.00	90.00	221.56	9900.00	4704.93	-3520.71	-3121.07	0.00	560533.17	724042.50	N 32 32 22.44	W 103 44 25.61
	14500.00	90.00	221.56	9900.00	4804.93	-3595.54	-3187.41	0.00	560458.35	723976.16	N 32 32 21.70	W 103 44 26.38
	14600.00	90.00	221.56	9900.00	4904.93	-3670.37	-3253.75	0.00	560383.53	723909.83	N 32 32 20.96	W 103 44 27.16
	14700.00	90.00	221.56	9900.00	5004.93	-3745.20	-3320.09	0.00	560308.70	723843.49	N 32 32 20.23	W 103 44 27.94
	14800.00	90.00	221.56	9900.00	5104.93	-3820.02	-3386.43	0.00	560233.88	723777.15	N 32 32 19.49	W 103 44 28.72
	14900.00	90.00	221.56	9900.00	5204.93	-3894.85	-3452.77	0.00	560159.06	723710.82	N 32 32 18.75	W 103 44 29.50
	15000.00	90.00	221.56	9900.00	5304.93	-3969.68	-3519.10	0.00	560084.23	723644.48	N 32 32 18.02	W 103 44 30.28
	15100.00	90.00	221.56	9900.00	5404.93	-4044.50	-3585.44	0.00	560009.41	723578.15	N 32 32 17.28	W 103 44 31.06
	15200.00	90.00	221.56	9900.00	5504.93	-4119.33	-3651.78	0.00	559934.59	723511.81	N 32 32 16.54	W 103 44 31.84
Cimarex Snoddy Federal 22H - PBHL	15246.35	90.00	221.56	9900.00	5551.29	-4154.02	-3682.53	0.00	559899.90	723481.06	N 32 32 16.20	W 103 44 32.20

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95 000% Confidence 2 7955 sigma

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 ° ' ")
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					
	9400 000	15246 354		1/100 000	30 000	30 000	SLB_MWD-STD					



Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12 Proposal Geodetic Report



(Def Plan)

Report Date: September 12, 2012 - 01 17 PM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Snoddy Federal #22H / Cimarex Snoddy Federal #22H
 Well: Cimarex Snoddy Federal #22H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12
 Survey Date: August 26, 2012
 Tort / AHD / DDI / ERD Ratio: 90.004 ° / 5551 299 ft / 5 886 / 0 561
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 32' 57.09897", W 103° 43' 48.91497"
 Location Grid N/E Y/X: N 564053.700 ftUS, E 727163.400 ftUS
 CRS Grid Convergence Angle: 0.3245 °
 Grid Scale Factor: 0.99994864

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 221 674 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Drillsite Elevation
 TVD Reference Elevation: 3555.000 ft above MSL
 Seabed / Ground Elevation: 3555.000 ft above MSL
 Magnetic Declination: 7.639 °
 Total Gravity Field Strength: 999.1774 mgn (9.8 based)
 Total Magnetic Field Strength: 48666.739 nT
 Magnetic Dip Angle: 60.397 °
 Declination Date: August 26, 2012
 Magnetic Declination Model: BGGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.3245 °

Total Corr Mag North->Grid North: 7.3143 °

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 22H - SHL	0.00	0.00	221.56	0.00	0.00	0.00	0.00	N/A	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Deleware Sands	5235.00	0.00	221.56	5235.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Bone Springs	7900.00	0.00	221.56	7900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Upper Bone Sprngg	8215.00	0.00	221.56	8215.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Shale	8965.00	0.00	221.56	8965.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
1st BSS												
KOP - Build @ 12"/100" DLS	9422.50	0.00	221.56	9422.50	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
2nd BSS	9520.69	11.78	221.56	9520.00	10.06	-7.53	-6.67	12.00	564046.17	727156.73	N 32 32 57.02	W 103 43 48.99
Landing Point	10172.56	90.00	221.56	9900.00	477.50	-357.32	-316.74	12.00	563696.40	726846.67	N 32 32 53.58	W 103 43 52.64
Cimarex Snoddy Federal 22H - PBHL	15246.35	90.00	221.56	9900.00	5551.29	-4154.02	-3682.53	0.00	559899.90	723481.06	N 32 32 16.20	W 103 44 32.20

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 #22H Rev1 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		15246 354		1/100 000	30 000	30 000	SLB_MWD-STD	Original Borehole / Cimarex Snoddy Federal #22H Rev1 mcs			

20" Diverter System

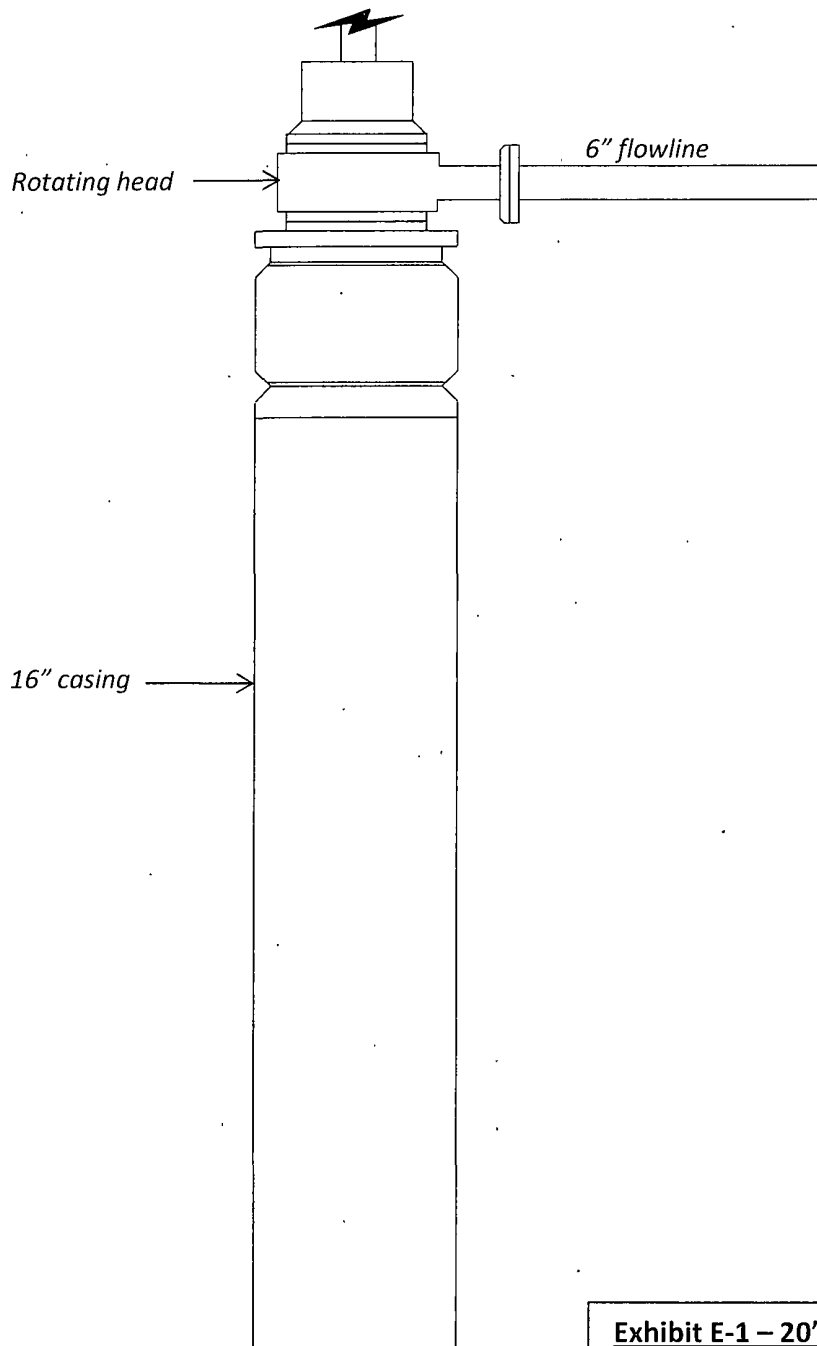


Exhibit E-1 – 20" Diverter System

Snoddy Federal No. 22

Cimarex Energy Co. of Colorado

26-20S-32E

SHL 768' FNL & 555' FEL

BHL 330' FSL & 990' FWL

Lea County, NM

SR & A

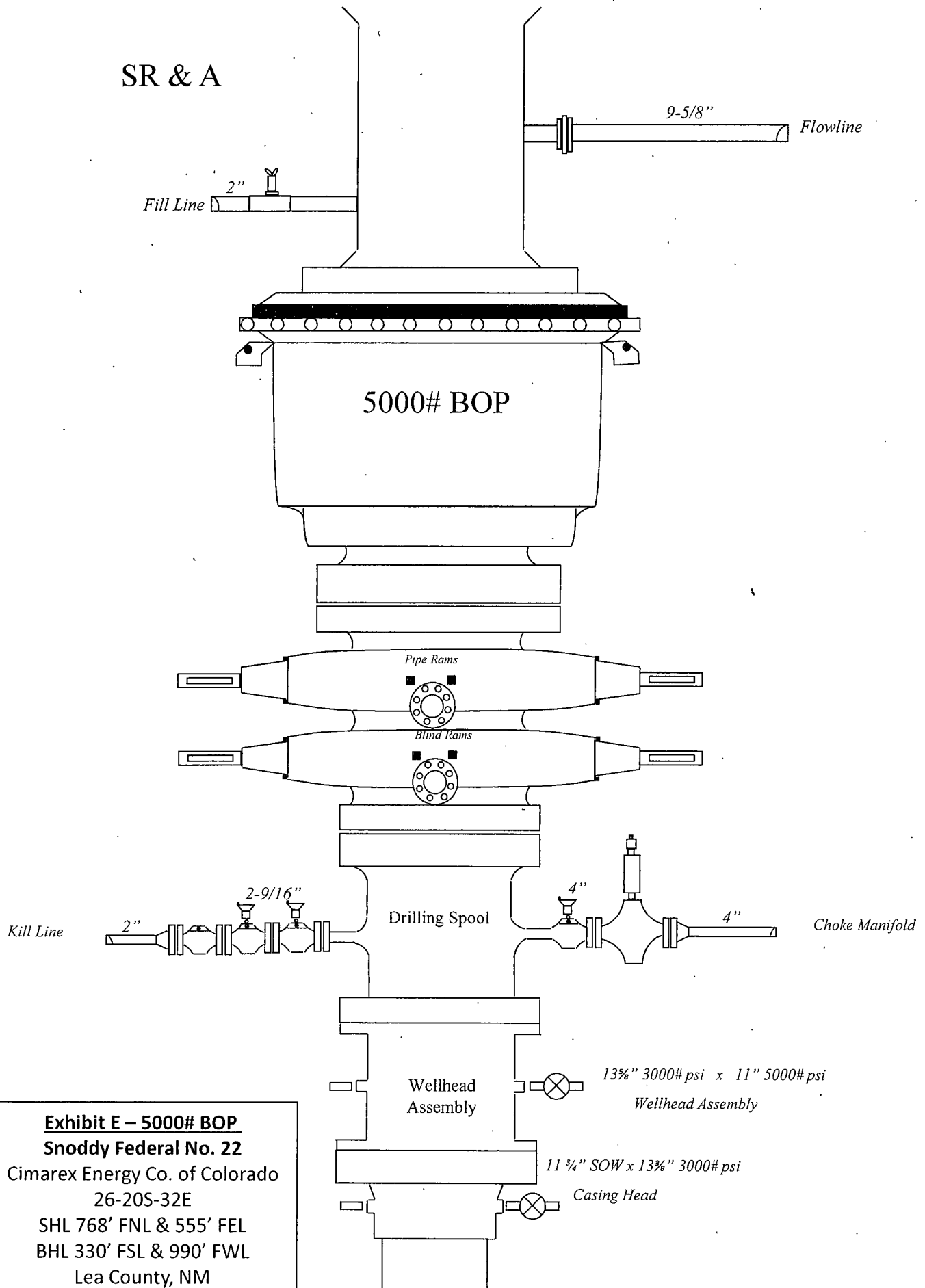


Exhibit E – 5000# BOP

Snoddy Federal No. 22

Cimarex Energy Co. of Colorado

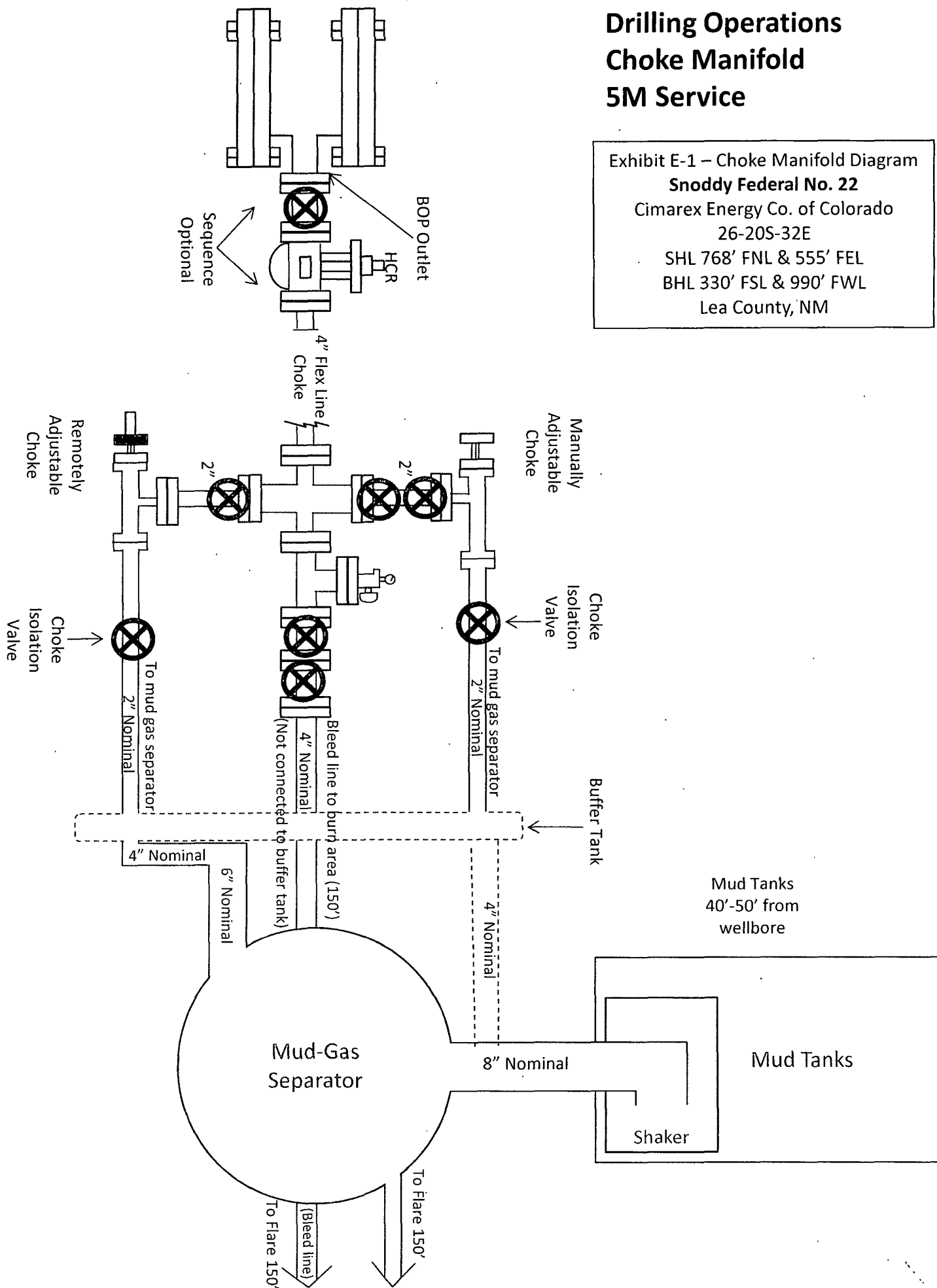
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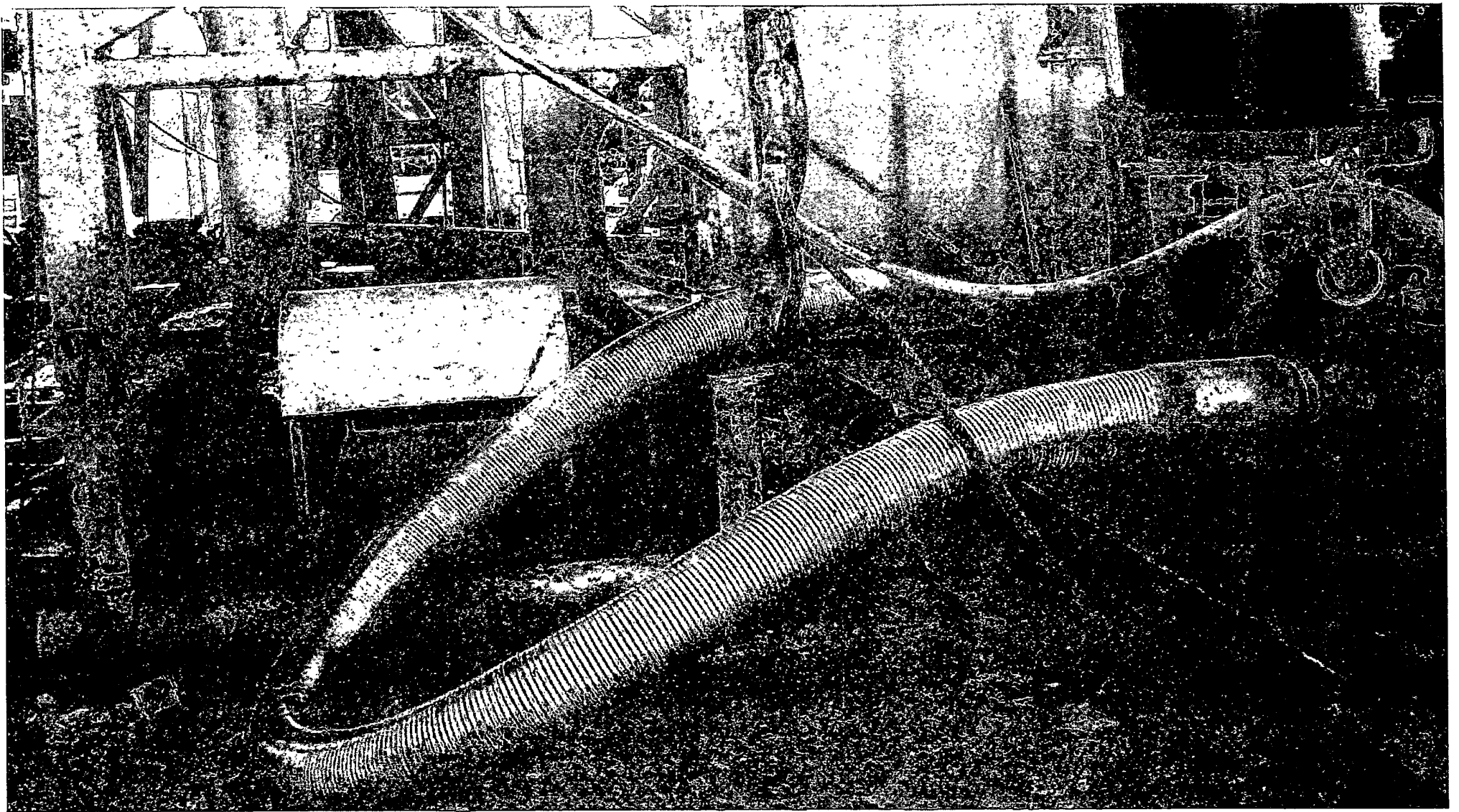
SHL 768' FNL & 555' FEL

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Lea County, NM

Exhibit E-1 – Choke Manifold Diagram
Snoddy Federal No. 22
Cimarex Energy Co. of Colorado
26-20S-32E
SHL 768' FNL & 555' FEL
BHL 330' FSL & 990' FWL
Lea County, NM





MIDWEST
HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS DRILLING		P.O. Number: RIG#147
HOSE SPECIFICATIONS		
Type: CHOKE & KILL		Length: 35'
I.D. 4" INCHES		O.D. 8"
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000	BURST PRESSURE
COUPLINGS		
Stem Part No. E4.0X64WB		Ferrule No. FERRULE-128
Type of Coupling: 4-1/16 10K FLANGE(BX-155)		Die Size:
PROCEDURE		
<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.

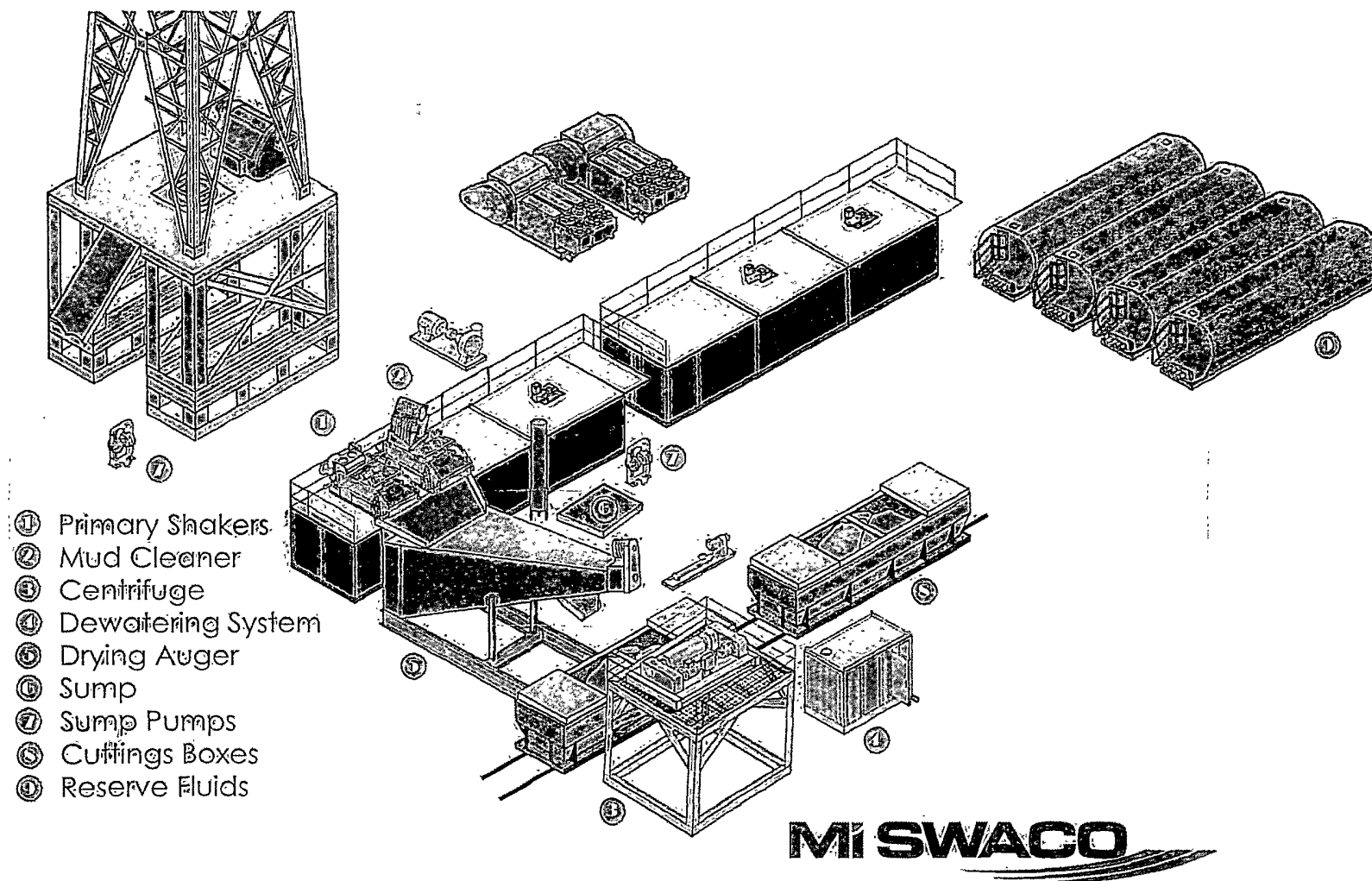
Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose 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



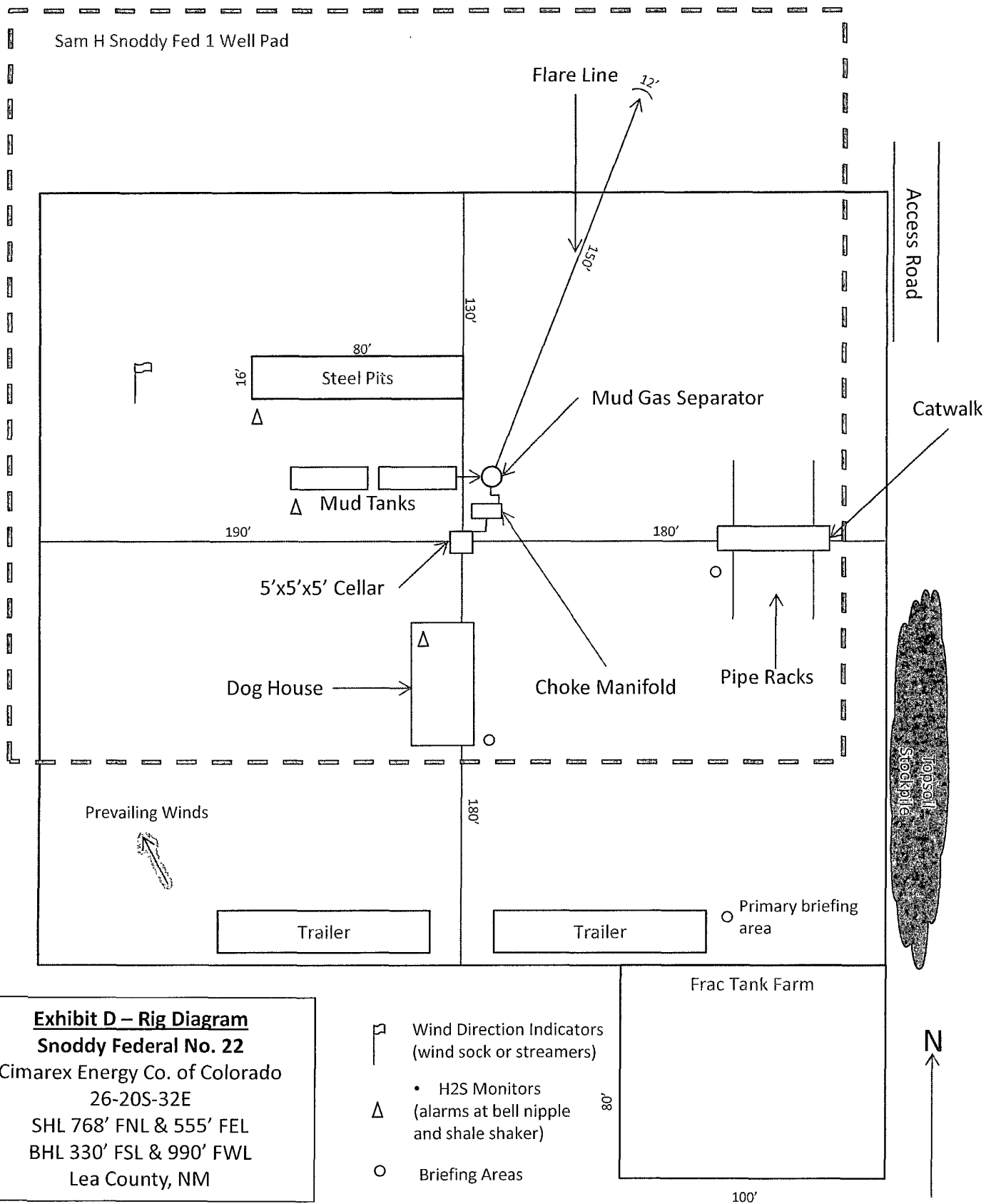


Exhibit D – Rig Diagram

Snoddy Federal No. 22

Cimarex Energy Co. of Colorado

26-20S-32E

SHL 768' FNL & 555' FEL

BHL 330' FSL & 990' FWL

Lea County, NM