



ATS-12-694

Form 3160-3
(April 2004)

OCD Artesia

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

2 Name of Operator

Cimarex Energy Co.

3a Address

600 N. Marienfeld St., Ste. 600; Midland, TX 79701

3b. Phone No. (include area code)

432-571-7800

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

At Surface 900 FSL & 2530 FEL

At proposed prod Zone 900 FSL & 2530 FEL SWD Well

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

5. Lease Serial No

NMNM0080268

6 If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No

8. Lease Name and Well No

Vermejo SWD 1

9 API Well No.

30-025-

10 Field and Pool, or Exploratory

SWD; Cisco

11 Sec., T R M or Blk. and Survey or Area

15-17S-28E

12 County or Parish

Eddy

13. State

NM

15 Distance from proposed*

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

900'

16. No of acres in lease

160

17. Spacing Unit dedicated to this well

NA

18 Distance from proposed location*

to nearest well, drilling, completed,
applied for, on this lease, ft.

151'

19 Proposed Depth

MD 9000'

TVD 9000'

20 BLM/BIA Bond No. on File

COB000011

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

3559' GR

22. Approximate date work will start*

07.10.12

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

2 A Drilling Plan

3 A Surface Use Plan (if the location is on National Forest System Lands, the
SUPO shall be filed with the appropriate Forest Service Office).4. Bond to cover the operations unless covered by an existing bond on file (see
Item 20 above)

5 Operator Certification

6. Such other site specific information and/or plans as may be required by the
authorized officer.

25. Signature

Name (Printed/Typed)

Date

Title

Terri Stathem

5.10.12

Manager Operations Administration

Approved By (Signature)

Is/ Don Peterson

Name (Printed/Typed)

Date

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

AUG 30 2012

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

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.S. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United

States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

* (Instructions on page 2)

Roswell Controlled Water Basin

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

Operator Certification Statement

Vermejo SWD #1

Cimarex Energy Co.

Unit O, Section 15

T17S-R28E, Lea County, NM

Operator's Representative

Cimarex Energy Co. of Colorado

600 N. Marienfeld St., Ste. 600

Midland, TX 79701

Office Phone: (432) 571-7800

Zeno Farris

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 10th day of May, 2012

NAME: Zeno Farris
Zeno Farris

TITLE: Manager Operations Administration

ADDRESS: 600 N. Marienfeld St., Ste. 600
Midland, TX 79701

TELEPHONE: (432) 620-1938

EMAIL: zfarris@cimarex.com

Field Representative: Same as above

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-5161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-8720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 478-3480 Fax: (505) 478-3482

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-40644	Pool Code 96099	Pool Name SWD; Cisco
Property Code 39426	Property Name VERMEJO SWD	Well Number 1
OGRIID No. 215099	Operator Name CIMAREX ENERGY CO.	Elevation 3559'

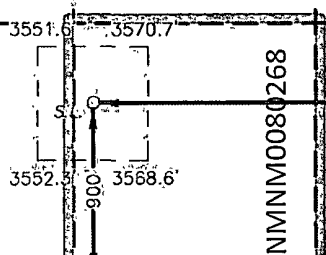
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	15	17 S	28 E		900	SOUTH	2530	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres		Joint or Infill	Consolidation Code		Order No.				

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<div><p>SURFACE LOCATION Lat - N 32°49'46.69" Long - W 104°09'48.57" NMSPC - N 665596.2 E 593506.7 (NAD-83)</p></div>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.</p> <p><i>[Signature]</i> 1/17/2012 Signature Date Terri Stathem Printed Name tstathem@cimarex.com Email Address</p>
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.</p> <p><i>[Signature]</i> 1/17/2012 Date Signature GARY L. JONES Professional Surveyor 7977 Certificate No. 2008</p>
	<p>Basin Surveys</p>

Application to Drill
Vermejo SWD #1
 Cimarex Energy Co.
 Unit O, Section 15
 T17S-R28E, Lea County, NM
Eddy

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

- 1 Location: SHL 900 FSL & 2530 FEL
 BHL 900 FSL & 2530 FEL
- 2 Elevation above sea level: 3559' 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 9000' TVD 9000'
- 6 Estimated tops of geological markers:

Rustler	160'
Top of Salt	200'
Bottom of Salt	420'
Yates	450'
Seven Rivers	676'
Queen	1450'
San Andres	1980'
Glorieta	3350'
Yeso	3650'
Tubb	4830'
Abo	5500'
Wolfcamp	6830'
Cisco	7800'
Canyon	8409'
Strawn	9250'
Atoka	9466'
- 7 Possible mineral bearing formation:
 Yates, Seven Rivers, Queen, Glorieta, Yeso, Penn (9800), Morrow - Oil

8 Proposed Mud Circulating System:

See COA

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 185'	8.4 - 9.0	28	NC	FW
185' to 2100'	10.0	30-32	NC	Brine water
2100' 9000'	8.4-9.0	28-29	NC	FW and brine, use hi-vis sweeps to keep hole clean

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

Proposed drilling Plan

Drill 8 3/4" hole to TD @ 9000'. Run 7" 26# P-110 LTC from 0-9000 and cement.

Application to Drill
Vermejo SWD #1
Cimarex Energy Co.
Unit O, Section 15
T17S-R28E, Lea County, NM

9 Casing & Cementing Program:

*See
COA*

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	17 1/2"	0' to 350' 400'	New 13 3/8"	48#	STC	H-40
Intermediate	12 1/4"	0' to 2100'	New 9 5/8"	36#	LTC	J-55
Production	8 3/4"	0' to 9000'	New 7"	26#	LTC	L-80

10 Cementing:

*See
COA*

Surface Lead: 150 sx Halcem C + 6% Bentonite + 2% CaCl, 13.5 ppg 1.75 yield
Tail: 315 sx Halcem C + 2% CaCl, 14.8 ppg, 1.34 yield, 100% Excess
TOC Surface Centralizers per Onshore Order 2.III.B.1.f

Intermediate Lead: 450 sx Econocem + 5% Salt + 5 lbm/sk Gilsonite (wt 1.88, yld 1.88)
Tail: 200 sks Halcem + 1% CaCl₂ (wt 14.8, yld 1.34) 75% Excess
TOC Surface

Production Stage 1: Lead: N/A Tail: 310 sx PVL 13.0ppg 1.44 yield 25% Excess
Stage 2: Lead: 675 SKS 50:50 H:POZ + 10% Gei 11.9 ppg 2.40 yield Tail: 100 sx 50:50 H:POZ at 14.5 ppg 1.22 yield 75% Excess
TOC 1600
DV-Tool set at 7500' or between 7500' and 500' of intermediate shoe. Cement volumes will be adjusted accordingly.

350

According to the State engineer, depth to ground water is 78.' Fresh water zones will be protected by setting 13 3/8" casing at 400' and cementing to surface. Hydrocarbon zones will be protected by setting 9 5/8" casing at 2100' and cementing to surface, and by setting 7" casing at 9000' and cementing to 1600'.

<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 5/8" 5000 PSI working pressure BOP system tested to 3000 psi consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud gas separator 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 13 5/8" casing through the running of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high.

Application to Drill
Vermejo SWD #1
Cimarex Energy Co.
Unit O, Section 15
T17S-R28E, Lea County, NM

12 Testing, Logging and Coring Program: **See COA**

- A. Mud logging program: 0
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR Surface to TD
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough 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 **4500 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.

Cisco pay will be perforated and stimulated.

The proposed well will be tested and potentialized as **SWD**

SR & A

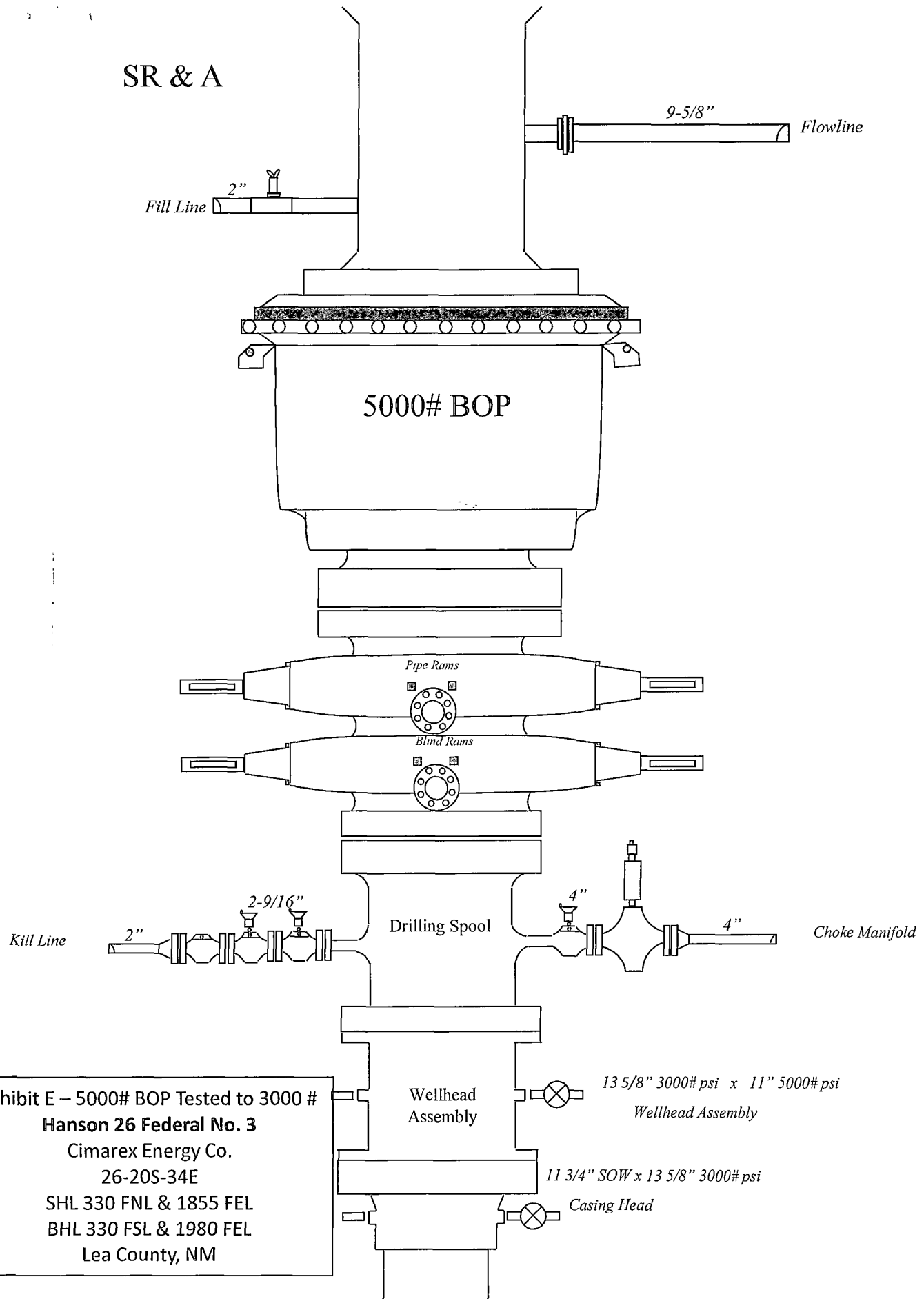
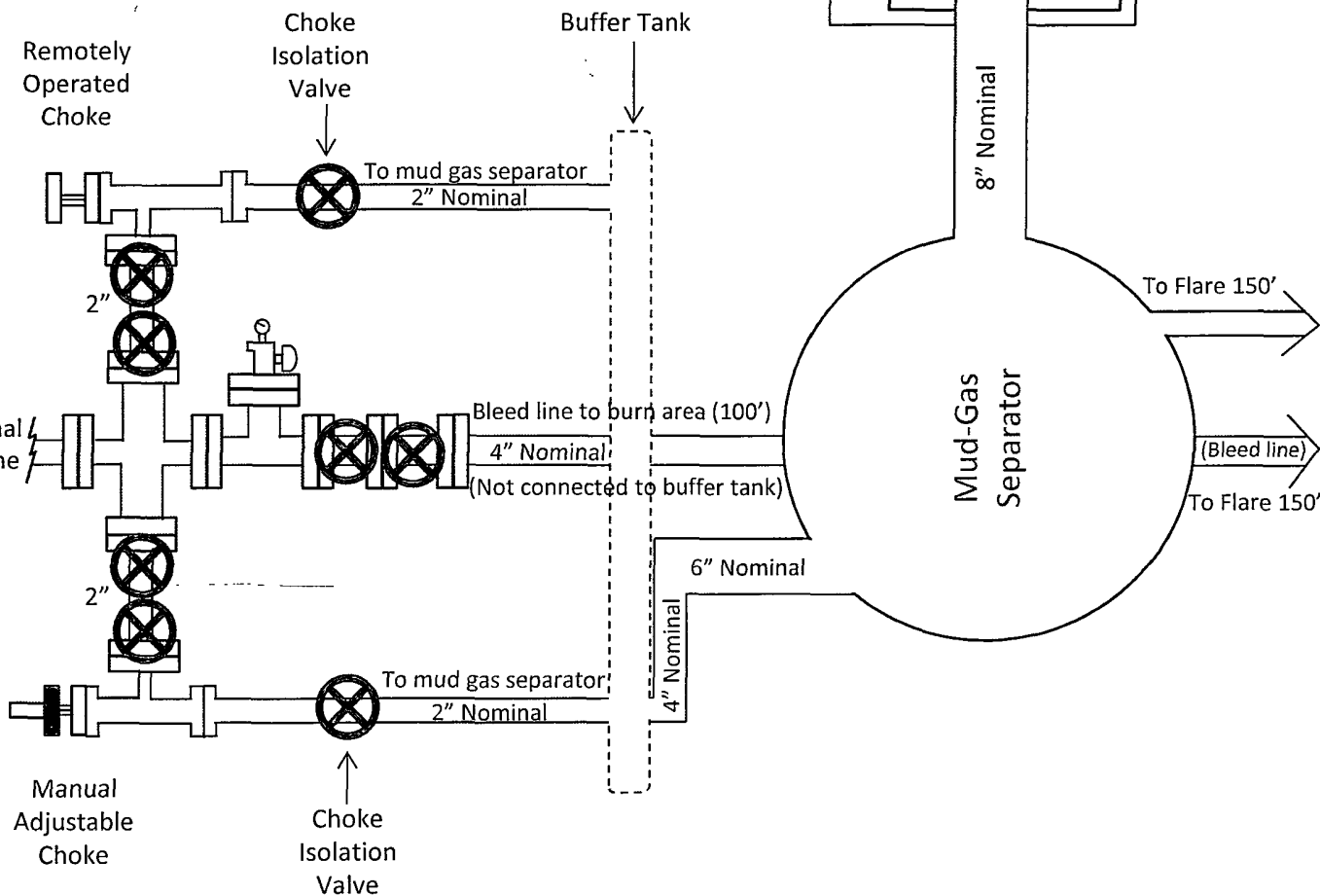
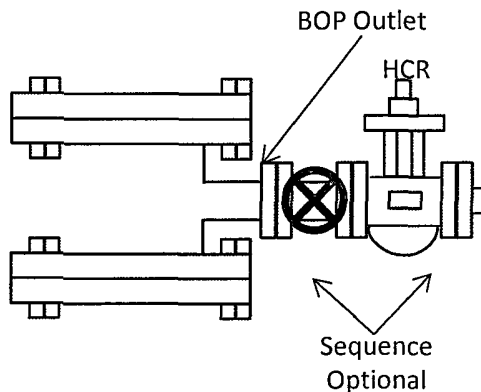


Exhibit E – 5000# BOP Tested to 3000 #
Hanson 26 Federal No. 3
Cimarex Energy Co.
26-20S-34E
SHL 330 FNL & 1855 FEL
BHL 330 FSL & 1980 FEL
Lea County, NM

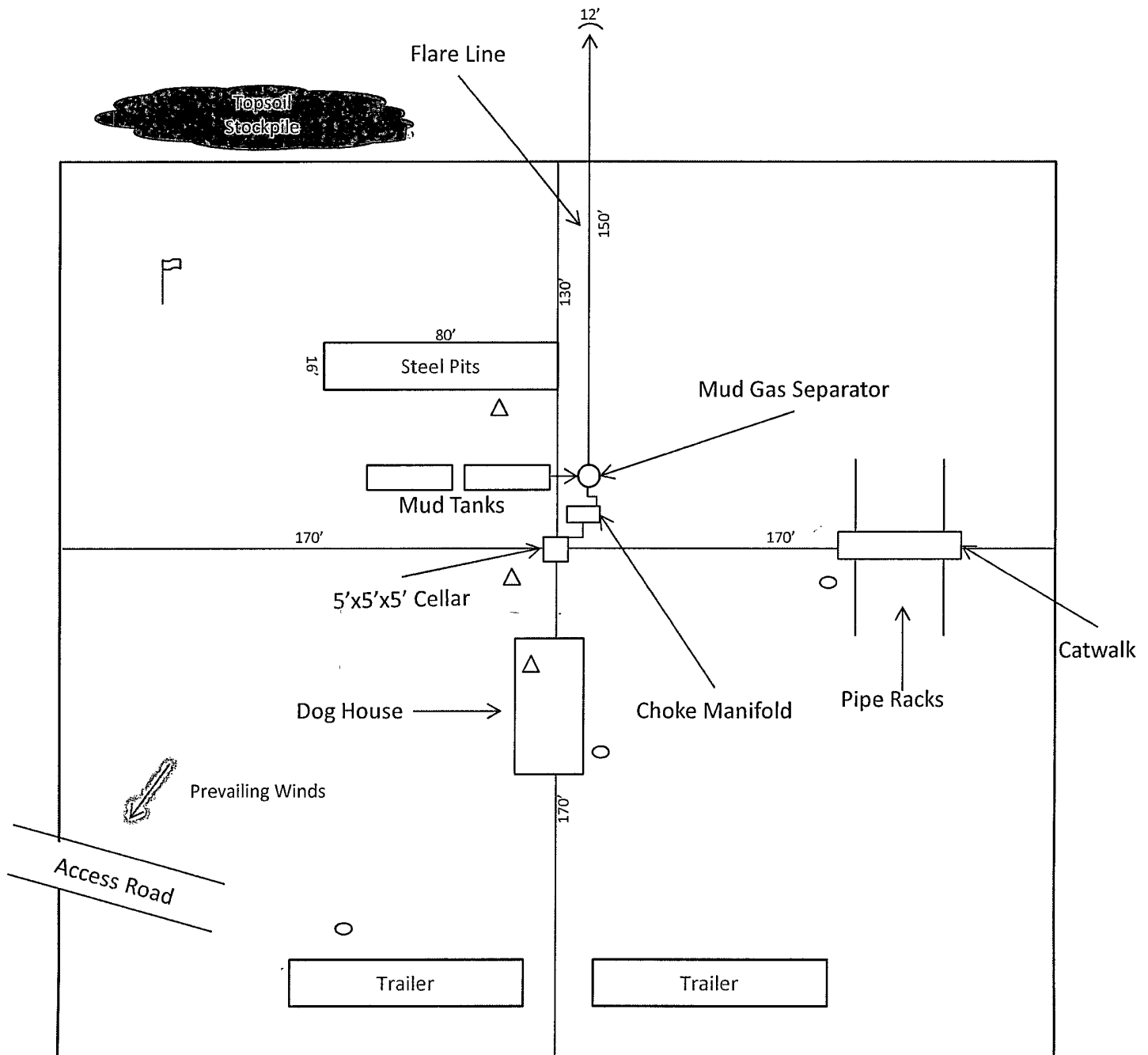
Drilling Operations Choke Manifold 5M Service Tested to 3M

Exhibit E-1 – Choke Manifold Diagram

Vermejo SWD #1
Cimarex Energy Co.
15-17S-28E
SHL 900 FSL & 2530 FEL
Eddy County, NM



Patriot 4



Wind Direction Indicators
(wind sock or streamers)



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



Briefing Areas

N



Exhibit D – Rig Diagram
Vermejo SWD #1
Cimarex Energy Co.
15-17S-28E
SHL 900 FSL & 2530 FEL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan

Vermejo SWD #1

Cimarex Energy Co.

Unit O, Section 15

T17S-R28E, Lea County, NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Proper use of safety equipment and life support systems.
 - D. Principle and operation of H₂S detectors, warning system and briefing areas.
 - E. Evacuation procedure, routes and first aid.
 - F. Proper use of 30 minute pressure demand air pack.
- 2 H₂S Detection and Alarm Systems:
 - A. H₂S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
- 3 Windsock and/or wind streamers:
 - A. Windsock at mudpit area should be high enough to be visible.
 - B. Windsock at briefing area should be high enough to be visible.
- 4 Condition Flags and Signs:
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H₂S present in dangerous concentration). Only emergency personnel admitted to location.
- 5 Well control equipment:
 - A. See exhibit "E"
- 6 Communication:
 - A. While working under masks chalkboards will be used for communication.
 - B. Hand signals will be used where chalk board is inappropriate.
 - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

H₂S Contingency Plan
Vermejo SWD #1
Cimarex Energy Co.
Unit O, Section 15
T17S-R28E, Lea County, NM

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H₂S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
 - ♦ Detection of H₂S, and
 - ♦ Measures for protection against the gas,
 - ♦ Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S Contingency Plan Emergency Contacts

Vermejo SWD #1

Cimarex Energy Co.

Unit O, Section 15

F17S-R28E, Lea County, NM

Company Office

Cimarex Energy Co. of Colorado	800-969-4789
Co. Office and After-Hours Menu	

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	918-295-1823	
Scott Lucas	Field Super		432-894-5572
Roy Shirley	Field Super		432-634-2136

Artesia

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

Santa Fe

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

National

National Emergency Response Center (Washington, D.C.)	800-424-8802
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Medical

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

Patriot 4

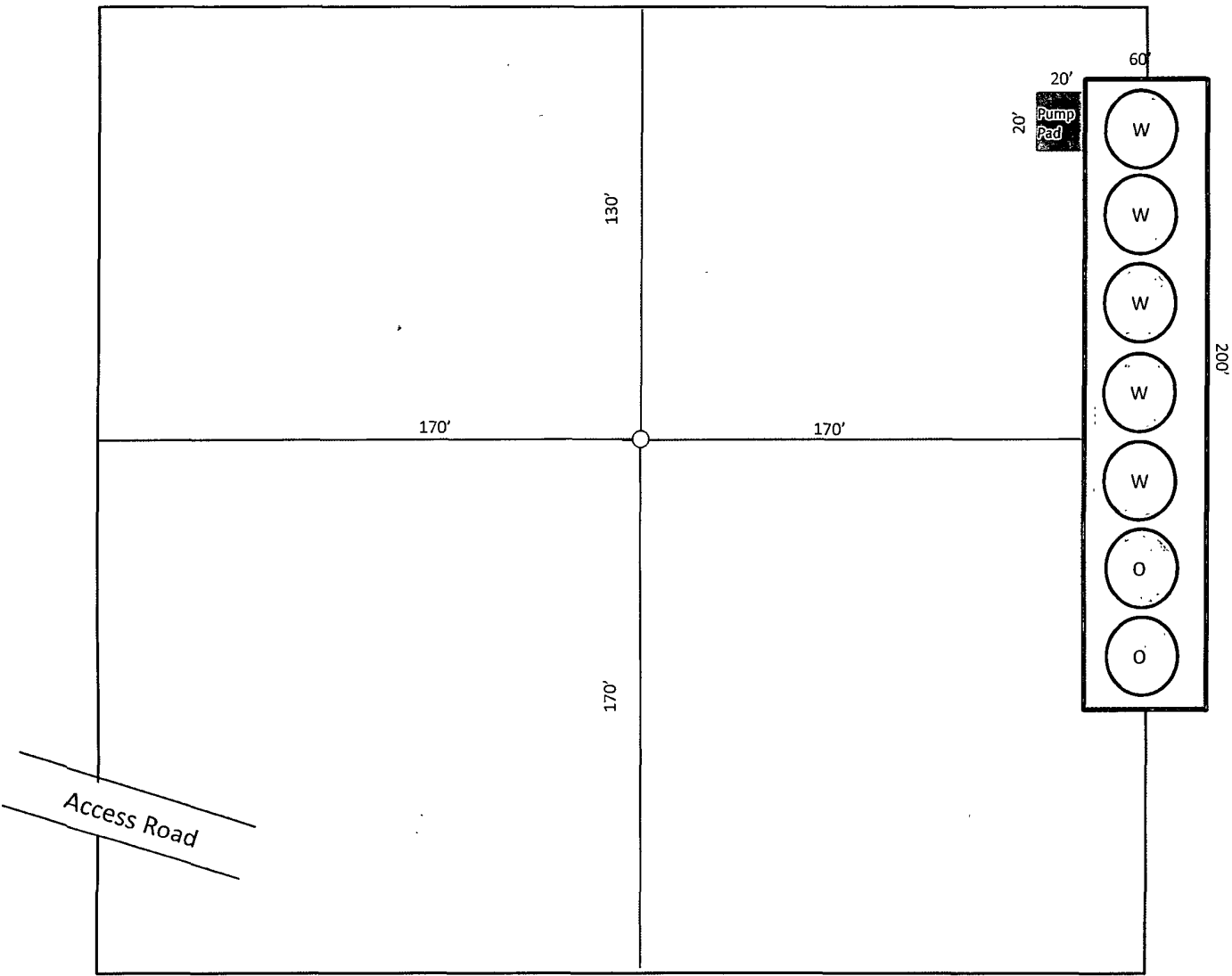
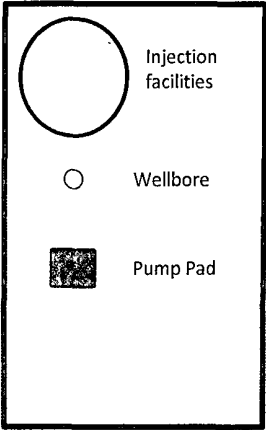


Exhibit D-1
Injection Facilities Layout Diagram
Vermejo SWD #1
Cimarex Energy Co.
15-17S-28E
SHL 900 FSL & 2530 FEL
Eddy County, NM



PECOS DISTRICT

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY
LEASE NO.:	NM080268
WELL NAME & NO.:	1-VERMEJO SWD
SURFACE HOLE FOOTAGE:	0900'/S. & 2530'/E.
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 15, T. 17 S., R. 28 E., NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - ROW**
 - Cave/Karst
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - High Cave/Karst
 - H2S – Onshore Order 6 Requirements
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**