Form 3160-3

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

ATS-07-156

~10 0 1 150

FORM APPROVED OMB NO. 1004-0136

Form 3160-3		-	1		OMB	NO. 1004-0136
(July 1992)	UNITED STATES		(Other in	structions on	Expires:	Pebruary 28, 1995
DEPA	RTMENT OF THE I	NTERIOR	reverse si		5. LEASE DESIGNATION	ON AND SERIAL NO.
	REAU OF LAND MANAG				NM-28172	
					6. IF INDIAN, ALLOTTE	S OR TRIBE NAME
	PPLICATION FOR PERMIT	TO DRILL OR I	DEEPEN		. .	
1a. TYPE OF WORK	DRILL X	DEEPEN	7		7. UNIT AGREEMENT	NAME
1b. TYPE OF WELL						
OIL }_ WELL	_ GAS [X] WELL OTI	SINGLE \(\sumbole \) HER ZONE	MULTIPLE ZONE		8. FARM OR LEASE N	VAME WELL NO
2. NAME OF OPERATOR	VILLE OII	ILK ZONE	Month Yes	x	-	
Cimarex Energy C	Co. of Colorado 16 2	183			Adrianne 6 Fed	deral No. 2 3507
3. ADDRESS AND TELEPI			Month 3 20	A NIH	7 -	<u> </u>
P.O. Box 140907	Irving TX 75014 972-401-311	1	OCD - ARTES		30-015- 30-015-	4/25
4. LOCATION OF WELL	(Report location clearly and in accordance	with any State requirement			Chosa Draw; N	
	• •		Subject to		11. SEC. T.R.M. BLO	
2250' FSL & 2080)' FWL		Like Appro		OR AREA	CR AND SURVEY
			By State	• ••	ł	50 ACE
14. DISTANCE IN MILES AND	DIRECTION FROM NEAREST TOWN OR POST OF	FICE*		· · · · · · · · · · · · · · · · · · ·	12. COUNTY OR PARIS	5S-26E sh 13 state
17 miles South of	f Carlsbad				Eddy	NM
15. DISTANCE FROM PRO LOCATION TO NE.		16. NO. OF ACRES	INLEASE	17. NO. O	F ACRES ASSIGNED	· · · · · · · · · · · · · · · · · · ·
PROPERTY OR LEA				IO IRIS VI	/ELL	
(Also to nearest drig. uni	560'	1119.6			319.64	
18. DISTANCE FROM PRO	POSED LOCATION* , DRILLING COMPLETED,	19	PROPOSED DEPTH	20.	ROTARY OR CABLE TO	ols
OR APPLIED FOR, O						
	2855'	1	2400'	ľ	Rotary	
21. ELEVATIONS (Show wi					22. APPROX. DATE W	ORK WILL START
3403' GF				***	03-01-07	
23		ASING AND CEME	NTING PROGRAM			
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT	PER FOOT		ING DEPTH	QUANTITY OF CEMENT
1 <u>7-1/2"</u>	H-40 13-3/8"	48 #	•	215'		250 sx circulate
12-1/4"	J-55 9-5/8"	40 #		1975'		750 sx circulate
6-1/8"	P-110 4-1/2"	11.6#		12400'		2040 sx circulate, TOC 0'
·						
From the base of the	surface pipe through the runni	ng of production c	asing, the well v	vill be eq	uipped with a 500	O psi BOP system. We are
eguesting a variance	e for the 13-3/8" surface casing	and BOP testing f	rom Onshore O	rder No. 1	which states the	at all casing strings below
	pe pressure tested to 0.22 psi pe	-				,
stated maximum into	ernal yield. During the running	of surface pipe an	d the drilling of	the inter	nediate hole, we	do not anticipate any
oressures greater tha	n 1000 psi and are requesting a	variance to test th	e 13-3/8" casing	g and BO	P to 1000 psi and	to use rig pumps instead of
an independent servi	ce company.	N	15 L-1	requi	red to pro	to use rig pumps instead of duce. 2.12.08 kmw
IN ABOVE SPACE, E	ESCRIBE PROPOSED PROGRAI		• •			d new productive zone.
•	epen directionally, give pertinent data on	ii brokoem in the no				
24 SIGNED	> en Fan	/ TITLE \	for One Admin	•	DATE	01-16-07

Application approved does not warrant or carefy that the applicant holds legal or equitable site A face or lights in the subject hease which would not conditions OF APPROVAL, IF ANY /S/ James Stovall TITLE

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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 will display to the SUBJECT TO ALSUBJECT TO A STATE OF THE STATE OF

Colonal Carteelled Water Basis

PERMIT No.

SEE ATTACHED FOR CONDITIONS OF APPROVA

ENERAL REQUIREMENTS

FFR

DATE

9 2007

DISTRICT I 1825 N. French Dr., Hobbs, NM 88240 DISTRICT II 1301 W. Grand Avenue, Artesia, NM 882:

State of New Mexico Energy, Minerals and Natural Resources Department

€-

Form C-102 Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies Fee Lease - 3 Copies

1301 W. Grand Avenue. Artesia, NM 88210 DISTRICT III 1000 Rio Brazos Rd., Axtec, NM 87410

DISTRICT IV

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-015-3611	8 749 DD	Pool Name Chosa Draw; Morrow	v (Gas)
Property Code	-	perty Name	Well Number
	ADRIANNE	"6" FEDERAL	2
OGRID No.	Орег	rator Name	Elevation
162683	CIMAREX ENERGY	CO. OF COLORADO	3403'

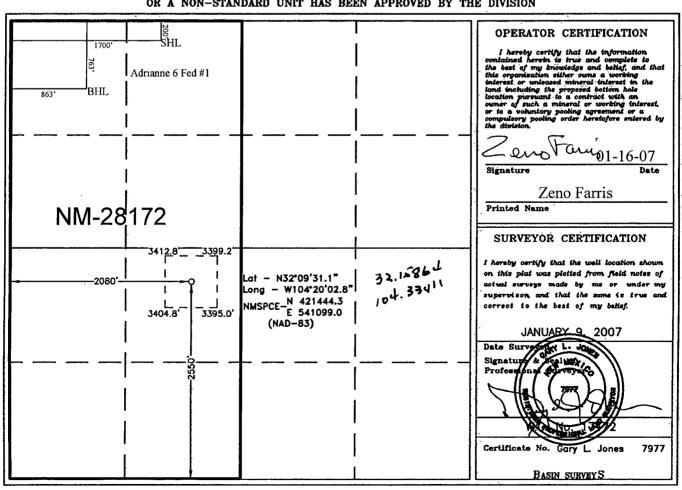
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	6	25 S	26 E		2250	SOUTH	2080	WEST	EDDY

Bottom Hole Location If Different From Surface

ſ	UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
١										
Ī	Dedicated Acres	Joint o	r Infill C	onsolidation (ode Or	der No.		····		
	319.64	Y								

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



Application to Drill

Cimarex Energy Co. of Colorado Adrianne 6 Federal No. 2 Unit K Section 6 T25S R26E Eddy 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:

2250' FSL & 2080' FWL

2 Elevation above sea level:

GR 3403'

3 Geologic name of surface formation:

Quaternery 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:

12400'

6 Estimated tops of geological markers:

Base Salt	1376	Cisco-Canyon	9871
Delaware	1636	Strawn	10178
Bone Spring	5201	Atoka	10411
1st Bone Spring Ss	6149	Morrow	10976
2nd Bone Spring Ss	6672	Middle Morrow	11394
3rd Bone Spring Ss	7981	Lower Morrow	11700
Wolfcamp	8316		

7 Possible mineral bearing formation:

Wolfcamp Oil Cisco-Canyon Oil Morrow Gas

8 Casing program:

	Hole Size	Interval	Casing OD	Weight	Thread	Collar	Grade	
	17-1/2"	0-215	13-3/8"	48#	8-R	ST&C	H-40	_
0.54	(12-1/4")	0-1975'	9-5/8"	40#	8-R	LT&C	J-55	
COV	6-1/8"	0-12400'	4-1/2"	11.6#	8-R	LT&C	P-110	

Application to Drill

Cimarex Energy Co. of Colorado Adrianne 6 Federal No. 2 Unit K Section 6 T25S R26E Eddy County, NM

9 Cementing & Setting Depth:

13-3/8"	Surface	Set 215' of 13-3/8" H-40 48 # ST&C casing. Cement with 250 Sx. Of Class "C" cement + additives, circulate cement to surface.
9-5/8"	Intermediate	Set 1975' of 9-5/8" J-55 40# LT&C casing. Cement with 750 Sx. Of Class POZ/C Cement + additives. Circulate cement to surface.
4-1/2"	Production	Set 12400' of 4-1/2" P-110 11.6# LT&C casing. Cement with 2040 Sx. Super H + additives. TOC 0'.

10 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 6000'. 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 nippled up on the 9 5/8" casing and will be 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.

11 Proposed Mud Circulating System:

Depth	Mud Wt	Viscosity	Fluid Loss	Type Mud
0 - 215'	8.4 - 8.6	30 - 32	May lose circ.	Fresh water spud mud. Add paper to control seepage and high viscosity sweeps to clean hole.
215' - 1975'	9.7 - 9.9	28 - 29	May lose circ.	Brine water. Add paper as needed to control seepage and add lime to control pH (9-10). Use high viscosity sweeps to clean hole.
1975' - 8300'	8.4 - 9.9	28 - 29	NC	Brine water. Paper for seepage. Lime for PH (9 - 9.5)
8300' - 10000'	8.45 - 8.9	28 - 29	NC	Cut brine. Caustic for pH control.
10000' - 12400'	8.9 - 9.7	29 - 45	NC	Cut Brine. Caustic for pH control.

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. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.

Application to Drill

Cimarex Energy Co. of Colorado Adrianne 6 Federal No. 2 Unit K Section 6 T25S R26E Eddy County, NM

12 Testing, Logging and Coring Program:

- A. Mud logging program: Two-man unit from 1975' to TD
- B. Electric logging program: CNL/LDT/CAL/GR, DLL/CAL/GR
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. The area has a potiential H2S hazard. An H2S drilling plan is attached. 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 6000 PSI, estimated BHT 175.

14 Anticipated Starting Date and Duration of Operations:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take <u>35-45</u> 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. The <u>Morrow</u> pay will be perforated and stimulated. The well will be tested and potentialed as a gas well.

Hydrogen Sulfide Drilling Operations Plan

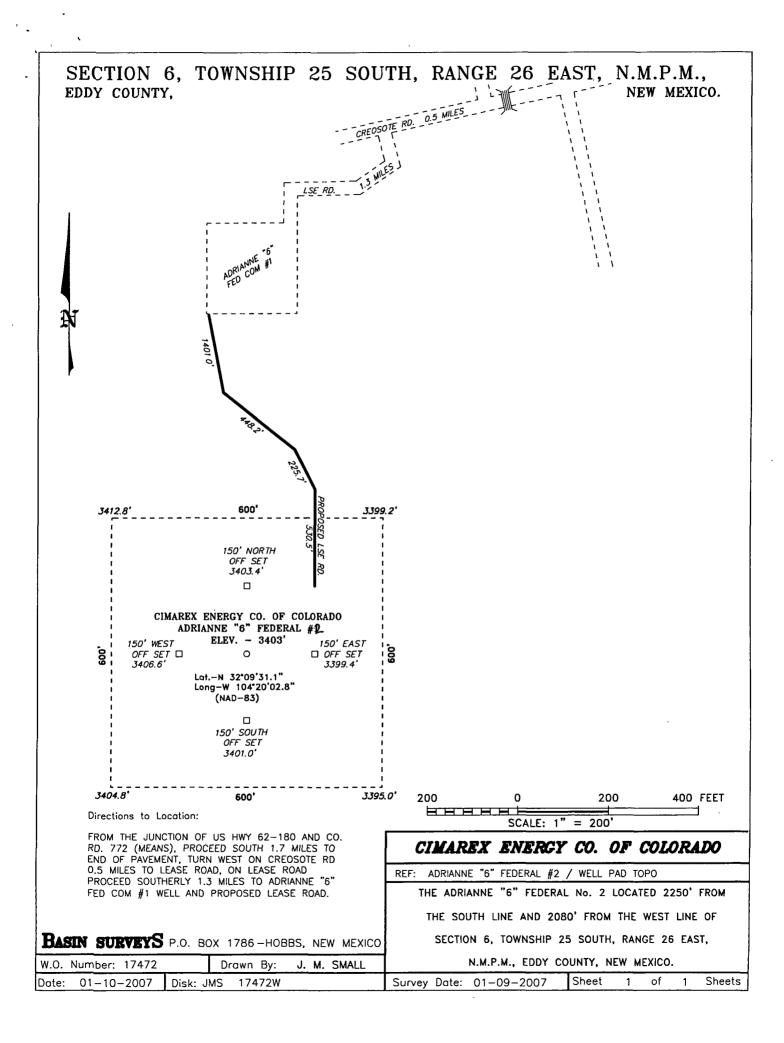
Cimarex Energy Co. of Colorado Adrianne 6 Federal No. 2 Unit K Section 6 T25S R26E Eddy County, NM

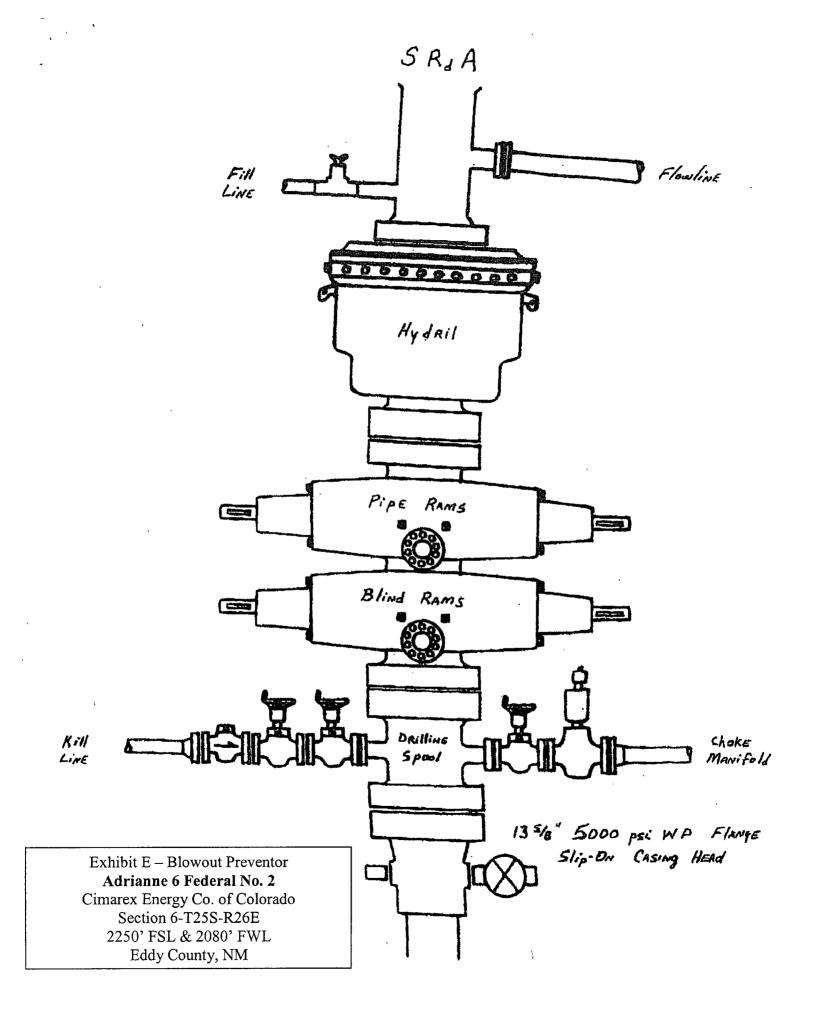
- 1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
 - A. Characteristics of H2S
 - B. Physical effects and hazards
 - C. Proper use of safety equipment and life support systems.
 - D. Principle and operation of H2S detectors, warning system and briefing
 - 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 not anticipated.

Hydrogen Sulfide Drilling Operations Plan

Cimarex Energy Co. of Colorado Adrianne 6 Federal No. 2 Unit K Section 6 T25S R26E Eddy County, NM

- 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 seperator will be brought into service along with H2S scavengers if necessary.





DRILLING OPERATIONS CHOKE MANIFOLD 5M SERVICE

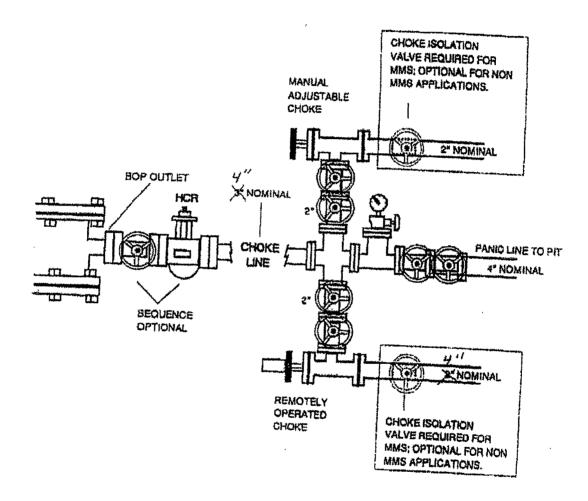


Exhibit E1 – Choke Manifold Diagram Adrianne 6 Federal No. 2

Cimarex Energy Co. of Colorado Section 6-T25S-R26E 2250' FSL & 2080' FWL Eddy County, NM

Conditions of Approval Cave and Karst

EA#: NM-080-07-0336 Lease #: NM-28172

Cimarex Energy Company of Colorado Adrianne 6 Fed. #2

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Berming:

Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

Closed Mud System:

All fluids will be in steel tanks and hauled off. A cuttings drying area will be utilized for this location. The cuttings drying area will be lined with 4 oz. felt and a layer of 20 mil. plastic. Upon completion of the well all excess fluids will be vacuumed off. The liner, the cuttings, and the excess fluids will be removed.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. See geologist report for depth.

Casing:

All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

Cementing:

All casing strings will be cemented to the surface.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a bit drops of four feet or more and circulation losses greater then 75 percent occur simultaneously while drilling in any cavebearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

Delayed Blasting:

Any blasting will be a phased and time delayed.

Abandonment Cementing:

Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

Pressure Tests:

Annual pressure tests will be performed by the Operator on all casing annuli. If the test results indicated a casing failure, remedial actions approved by the BLM will be undertaken to correct the problem.

Record Keeping:

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

CONDITIONS OF APPROVAL - DRILLING

Well Name & No.

2-Adrianne 6 Federal

Operator's Name:

Cimarex Energy Co. of Colorado

Location:

2250FSL, 2080FWL, Section 6, T-25-S, R-26-E

Lease: NM-28172

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County in sufficient time for a representative to witness:

- A. Spudding
- B. Cementing casing: <u>13-3/8</u> inch <u>9-5/8</u> inch <u>4-1/2</u> inch
- C. BOP tests
- 2. A Hydrogen Sulfide (H2S) Drilling Plan should be activated prior to drilling into the <u>Delaware</u> Formation. A copy of the plan shall be posted at the drilling site. Hydrogen Sulfide has been reported in Sec. 11 and 14 measuring 1200-1500 ppm in STVs.
- 3 Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
- 4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.
- 5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.
- 6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.
- 7. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

II. CASING:

1. The <u>13-3/8</u> inch surface casing shall be set at <u>215 feet</u>, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

Possible lost circulation in the Delaware. High cave/karst area. Possible abnormal pressures in the Wolfcamp and high pressure gas in the Pennsylvanian Section (Strawn, Atoka, and Morrow).

- 2. The minimum required fill of cement behind the <u>9-5/8</u> inch intermediate casing is <u>circulate cement to</u> the <u>surface</u>. Operator has approval to set the intermediate casing in the <u>Lamar Limestone</u> or <u>basal anhydrite at approximately 1750'</u>.
- 3. The minimum required fill of cement behind the 4-1/2 inch production casing is <u>cement shall circulate</u> to surface.

III. PRESSURE CONTROL:

- 1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 13-3/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
- 2. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the surface and intermediate casing shall be <u>2M</u> psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the <u>9-5/8</u> inch casing shall be <u>5M</u> psi.
- 3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- A variance to test the <u>BOP</u>, <u>BOPE</u>, <u>and 13-3/8" surface casing</u> to the reduced pressure of <u>1000</u> psi with the rig pumps is approved. Full pressure test required prior to drilling out of 9-5/8" casing.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.
- BOPE must be tested prior to drilling into the **Wolfcamp** Formation by an independent service company.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- 1. Recording pit level indicator to indicate volume gains and losses.
- 2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- 3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

Engineer on call phone: 505-706-2779

WWI 012207

BLM Lease #: NM-28172

Company Reference: Cimarex Energy Well # & Name: Adrianne 6 Fed. #2

STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS CARLSBAD FIELD OFFICE

A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

GENERAL REQUIREMENTS

- A. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
- B. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
- C. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
- D. If, during any phase of the construction, operation, maintenance, or termination of the road, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil of other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all

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