ATS-08-85
EA-08-168

OCD-ARTESIA

DEC 11 2007

OCD-ARTESIA

Form 3160-3
(April 2004)

FORM APPROVED
OMB No 1004-0137
Expires March 31 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

S

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No NMNM-117554	
6 If Indian, Allotee or Tribe Name	
1a Typeofwork- ☒ DRILL ☐ REENTER	7 If Unit or CA Agreement, Name and No
1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone	8, Lease Name and Well No Red Bluff Federal #3
2 Name of Operator Mack Energy Corporation	9 API Well No 30-015-35977
3a Address P O Box 960 Artesia, NM 88211-0960	3b PhoneNo *(include area code)* (505)748-1288
	10 Field and Pool, or Exploratory Loco Hills; Glorietta Yeso
4 Location of Well *(Report location clearly andinaccorounce with any State requirements*)* At surface 1150 FNL & 2310 FEL At proposed prod zone 990 FNL & 2310 FEL	11 Sec, T R M or Blk and Survey or Area Sec. 5 T17S R30E
14 Distance in miles and direction from nearest town or post office* 3 miles north of Loco Hills, NM	12 County or Parish Eddy 13 State NM
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any) 170	16 No of acres in lease 160
	17 Spacing Unit dedicated to this well 40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1320	19 Proposed Depth 6500
	20 BLM/BIA Bond No on file NMB000286
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3707' GR	22 Approximate date work will start* 11/3/07
	23 Estimated duration 12 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 Jerry W. Sherrell	Name *(Printed/Typed)* Jerry W Sherrell	Date 10/16/07
Title Production Clerk		
Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)* /s/ Don Peterson	Date DEC 07 2007
Title FOR FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U S 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)

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

Roswell Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S ST FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
	96718	Loco Hills; Glorieta Yeso

Property Code	Property Name	Well Number
36882	RED BLUFF FEDERAL	3

OGRID No.	Operator Name	Elevation
013837	MACK ENERGY CORPORATION	3707'

Surface Location

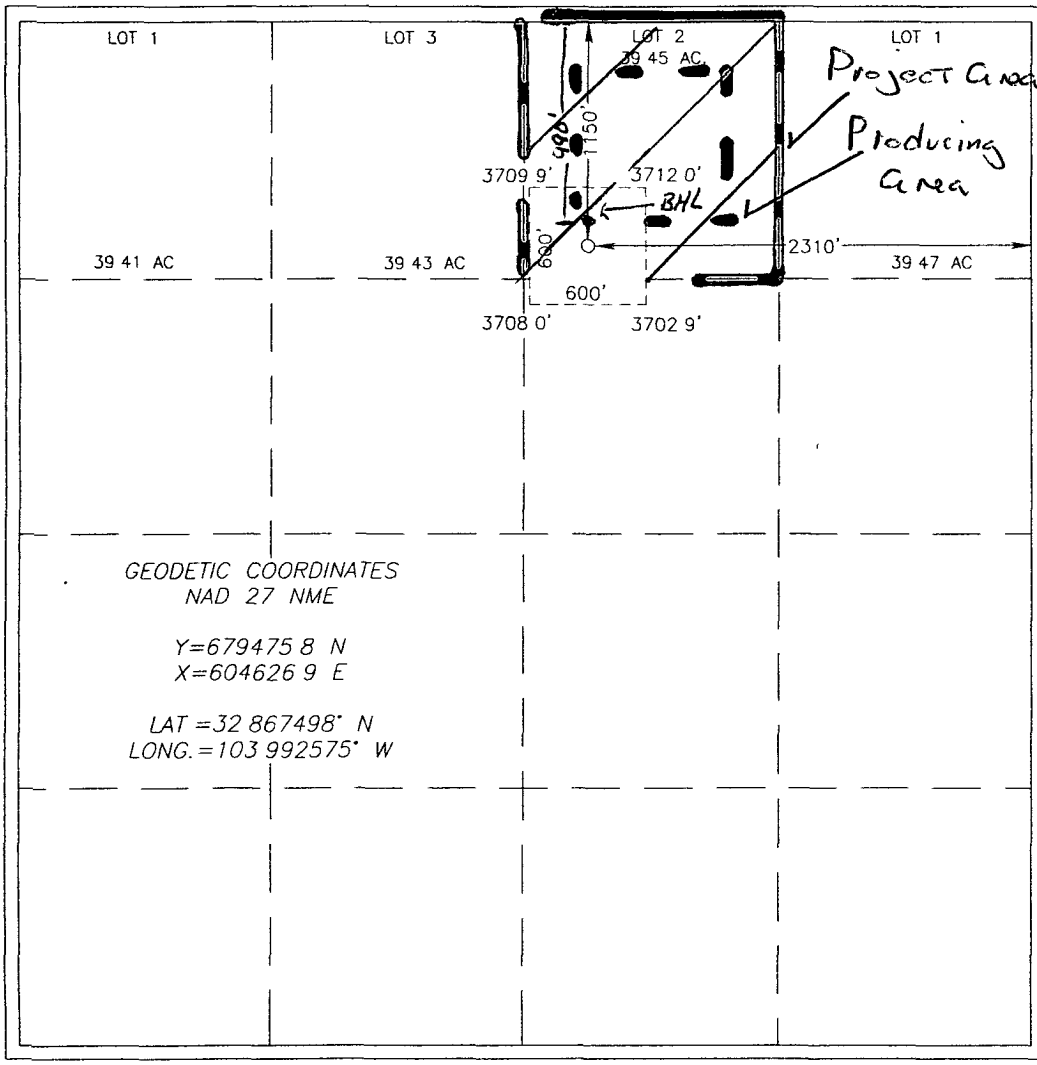
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	5	17-S	30-E		1150	NORTH	2310	EAST	EDDY

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
2	5	17S	30E		990	NORTH	2310	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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



GEODETIC COORDINATES
NAD 27 NME

Y=679475 8 N
X=604626 9 E

LAT =32 867498° N
LONG.=103 992575° W

OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division

Jerry W. Sherrell 10/16/07
Signature Date

Jerry W. Sherrell
Printed Name

SURVEYOR CERTIFICATION

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

SEPTEMBER 14, 2007
Date Surveyed AR

NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
3239

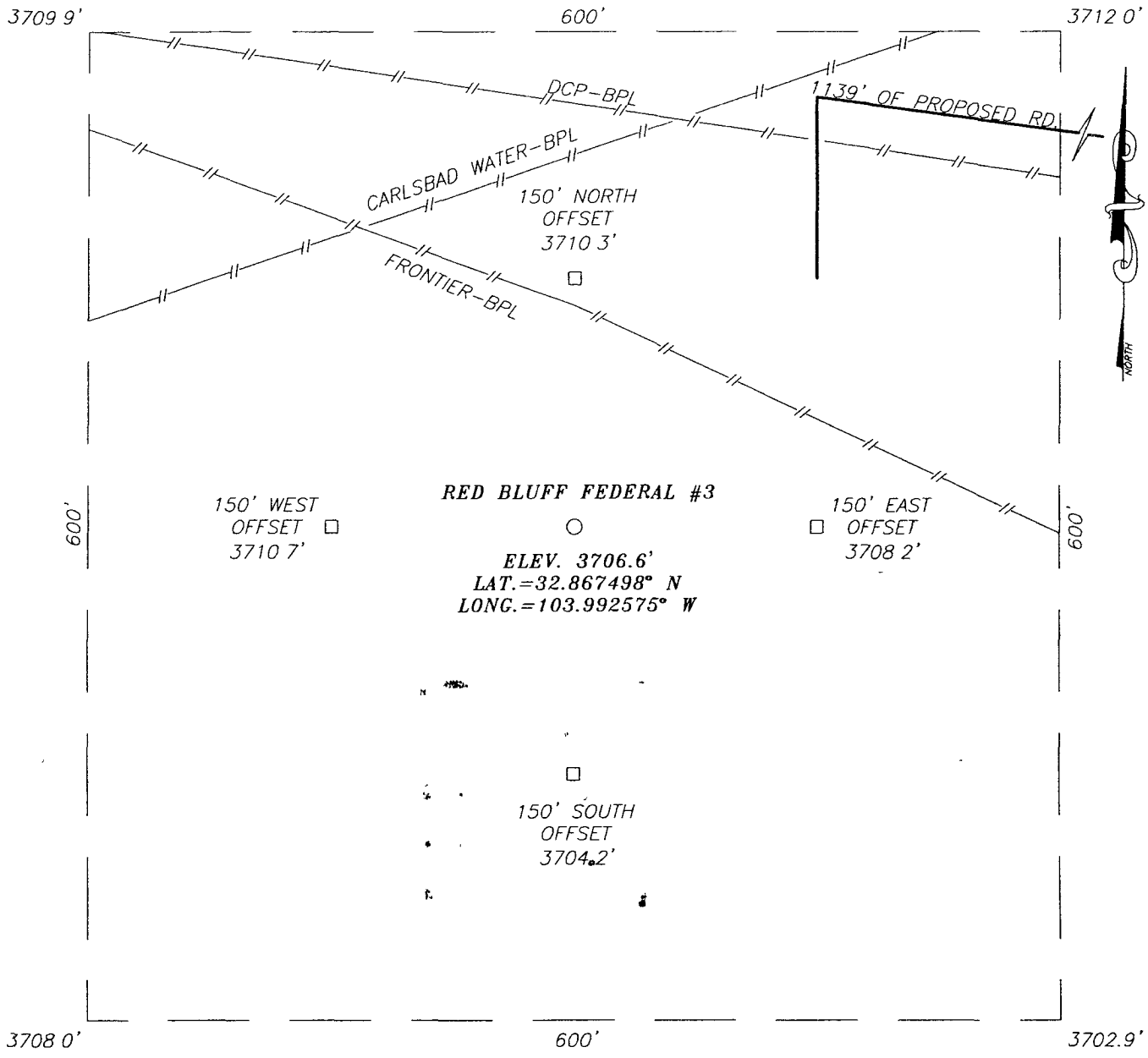
Signature & Seal of Professional Surveyor

9/25/07

Certificate No GARY EIDSON 12641
RONALD J EIDSON 3239

SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U S HWY. #82 AND CO RD #217 (HAGERMAN CUTOFF), GO NORTH ON CO RD. #217 APPROX. 3 1 MILES TO A PIPELINE R O.W AND PROPOSED ROAD SURVEY FOLLOW ROAD SURVEY WEST APPROX. 0 45 MILES TO THIS LOCATION.

100 0 100 200 Feet

Scale 1"=100'

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M 88240
(505) 393-3117

MACK ENERGY CORPORATION

RED BLUFF FEDERAL #3 WELL
LOCATED 1150 FEET FROM THE NORTH LINE
AND 2310 FEET FROM THE EAST LINE OF SECTION 5,
TOWNSHIP 17 SOUTH, RANGE 30 EAST, N M P M,
EDDY COUNTY, NEW MEXICO

Survey Date 9/14/07	Sheet 1 of 1 Sheets		
W.O Number 07 11 1193	Dr By: AR	Rev 1.N/A	
Date 9/21/07	Disk:	07111193	Scale. 1"=100'

Attached to Form 3160-3
Mack Energy Corporation
Red Bluff Federal #3
1150 FNL & 2310 FEL
NW/4 NE/4, Sec 5 T17S R30E
Eddy County, NM

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface		
Top of Salt	500'	Blinebry	4775'
Base of Salt	1025'	Tubb	5700'
Yates	1600'	Abo	6350'
Queen	2130'		
San Andres	3050'		
Glorietta	4320'		

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150'	Fresh Water
Grayburg	2580'	Oil/Gas
San Andres	3050'	Oil/Gas
Paddock	4400'	Oil/Gas
Blinebry	4775'	Oil/Gas
Tubb	5700'	Oil/Gas
Abo	6350'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 425' and circulating cement back to surface will protect the surface fresh water sand. Salt Section will be protected by setting 8 5/8" casing to 1350' and circulating cement back to surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 1/2" production casing, sufficient cement will be pumped to circulate back to surface.

4. Casing Program:

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, burst/collapse/tension
17 ½"	0-425'	13 3/8"	48#, H-40, ST&C, New, 9.22/3.943/15.78
12 ¼"	0-1350'	8 5/8"	32#, J-55, ST&C, New, 3.03/2.029/7.82
7 7/8"	0-6500'	5 1/2"	17#, J-55, LT&C, New, 1.73/1.598/2.24

5. Cement Program:

13 3/8" Surface Casing: Class C 475sx, yield 1.32.

8 5/8 Intermiate Casing: Class C 800sx, yield 1.32.

5 1/2" Production Casing: Class C 1500sx, yield 1.32.

6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The BOP will be nippled up on the 13 3/8" surface casing and tested to 1500 psi by a 3rd party. The BOP will then be nippled up on the 8 5/8" intermediate casing and tested by a 3rd party to 2000 psi and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with a minimum 2000 psi WP rating.

7. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-425'	Fresh Water	8.5	28	N.C.
425-1350'	Brine	10	30	N.C.
1350'-TD	Cut Brine	9.1	29	N.C.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

8. Auxiliary Well Control and Monitoring Equipment:

A. Kelly cock will be kept in the drill string at all times.

B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

9. Logging, Testing and Coring Program:

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. to 8 5/8 casing shoe.

B. Drill Stem test is not anticipated.

C. No conventional coring is anticipated.

D. Further testing procedures will be determined after the 5 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and estimated maximum bottom hole pressure is 2300 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is November 3, 2007. Once commenced, the drilling operation should be finished in approximately 12 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

Attachment to Exhibit #9
NOTES REGARDING THE BLOWOUT PREVENTERS
Red Bluff Federal #3
Eddy County, New Mexico

1 Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D equal to preventer bore.

2. Wear ring to be properly installed in head.

3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.

4 All fittings to be flanged.

5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.

6. All choke and fill lines to be securely anchored especially ends of choke lines.

7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.

8. Kelly cock on Kelly.

9. Extension wrenches and hands wheels to be properly installed.

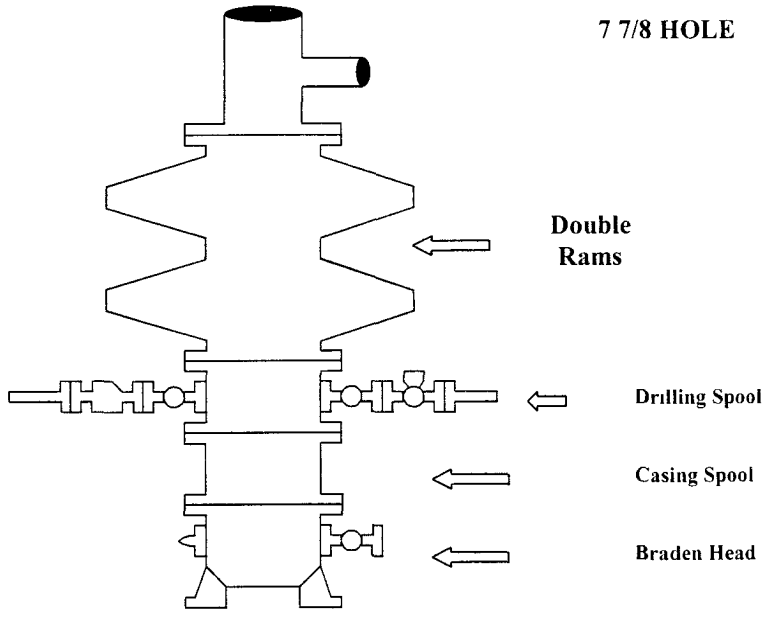
10. Blow out preventer control to be located as close to driller's position as feasible.

11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

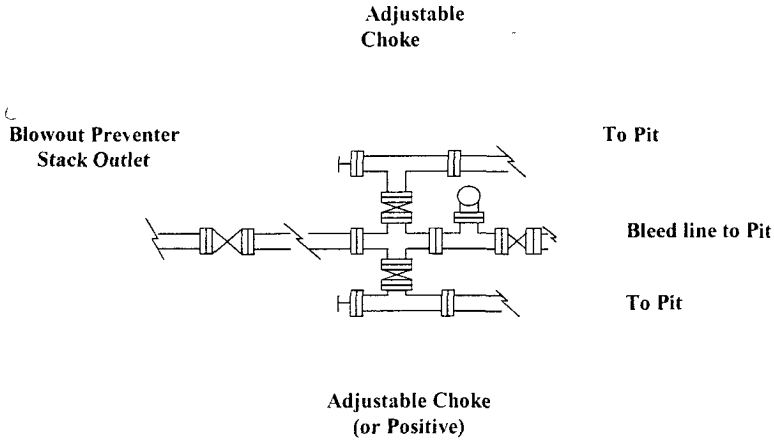
Mack Energy Corporation

Exhibit #9

BOPE Schematic



Choke Manifold Requirement (2000 psi WP minimum)
No Annular Required
See Exhibit #11 for Detail



Mack Energy Corporation

Minimum Blowout Preventer Requirements

2000 psi Working Pressure

2 MWP

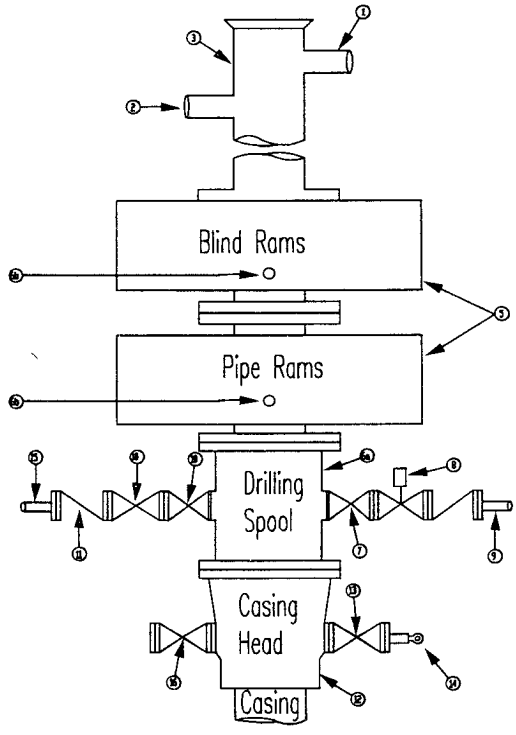
EXHIBIT #10

Stack Requirements

NO	Items	Min I D	Min Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min kill line and 3" min choke line outlets		2" Choke
6b	2" min kill line and 3" min choke line outlets in ram (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL

16	Flanged Valve	1 13/16	



CONTRACTOR'S OPTION TO FURNISH

1 All equipment and connections above bradenhead or casinghead Working pressure of preventers to be 2000 psi minimum
2 Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure
3 BOP controls, to be located near drillers' position
4 Kelly equipped with Kelly cock
5 Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used
6 Kelly saver-sub equipped with rubber casing protector at all times
7 Plug type blowout preventer tester
8 Extra set pipe rams to fit drill pipe in use on location at all times
9 Type RX ring gaskets in place of Type R

MEC TO FURNISH

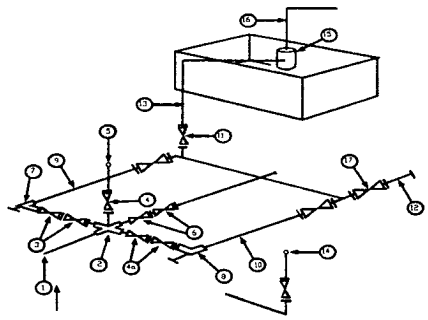
1 Bradenhead or casing head and side valves
2 Wear bushing If required

GENERAL NOTES

1 Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager
2 All connections, valves, fittings, piping, etc , subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service
3 Controls to be of standard design and each marked, showing opening and closing position
4 Chokes will be positioned so as not to hamper or delay changing of choke beans Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use
5 All valves to be equipped with hand-wheels or handles ready for immediate use
6 Choke lines must be suitably anchored
7 Handwheels and extensions to be connected and ready for use
8 Valves adjacent to drilling spool to be kept open Use outside valves except for emergency
9 All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress Hoses will be permitted
10 Casinghead connections shall not be used except in case of emergency
11 Do not use kill line for routine fill up operations

Mack Energy Corporation

Exhibit #11
MIMIMUM CHOKE MANIFOLD
3,000, 5,000, and 10,000 PSI Working Pressure
3M will be used
3 MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

*** Location of separator optional**

Below Substructure

Mimimum requirements

		3,000 MWP			5,000 MWP			10,000 MWP		
No.		**I.D.**	**NOMINAL**	**Rating**	**I.D.**	**Nominal**	**Rating**	**I.D.**	**Nominal**	**Rating**
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x5'			2' x5'			2' x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

(1) Only one required in Class 3M
(2) Gate valves only shall be used for Class 10 M
(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

1 All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating
2 All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX Use only BX for 10 MWP
3 All lines shall be securely anchored
4 Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available
5 Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge
6 Line from drilling spool to choke manifold should bee as straight as possible Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

Mack Energy Corp.

Eddy County, NM (NAD 27 NME)
Red Bluff Fed #3
Red Bluff Fed #3
Wellbore #1

Plan: Plan #1

Standard Planning Report

23 October, 2007

Scientific Drilling
Directional Drilling Operations

Database:	EDM 2003 16 Single User Db	**Local Co-ordinate Reference**	Well Red Bluff Fed #3
Company:	Mack Energy Corp	**TVD Reference:**	WELL @ 3723 00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference**	WELL @ 3723 00ft (KB Elev)
Site	Red Bluff Fed #3	**North Reference**	Grid
Well	Red Bluff Fed #3	**Survey Calculation Method**	Minimum Curvature
Wellbore:	Wellbore #1		
Design	Plan #1		

Project Eddy County, NM (NAD 27 NME)

Map System	US State Plane 1927 (Exact solution)	**System Datum**	Mean Sea Level
Geo Datum	NAD 1927 (NADCON CONUS)		
Map Zone	New Mexico East 3001		

Site Red Bluff Fed #3

Site Position		**Northing**	679,475 80 ft	**Latitude**	32° 52' 2 991 N
From:	Map	**Easting**	604,626 90 ft	**Longitude**	103° 59' 33 270 W
Position Uncertainty:	0 00 ft	**Slot Radius:**	ft	**Grid Convergence**	0 18 °

Well Red Bluff Fed #3

Well Position	**+N/-S**	0 00 ft	**Northing**	679,475 80 ft	**Latitude**	32° 52' 2 991 N
	+E/-W	0 00 ft	**Easting**	604,626 90 ft	**Longitude.**	103° 59' 33 270 W
Position Uncertainty		0 00 ft	**Wellhead Elevation**	3,723 00 ft	**Ground Level**	3,707 00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/23/2007	8 25	60 81	49,341

Design Plan #1

Audit Notes:

Version		**Phase**	PLAN	**Tie On Depth**	0 00
Vertical Section	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0 00	0 00	0 00	3 16	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,400 00	0 00	0 00	1,400 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,793 66	15 75	3 16	1,788 72	53 67	2 97	4 00	4 00	0 00	3 16	
2,024 90	15 75	3 16	2,011 28	116 33	6 43	0 00	0 00	0 00	0 00	
2,418 55	0 00	0 00	2,400 00	170 00	9 40	4 00	-4 00	0 00	180 00	TG1-RBF #3
6,518 55	0 00	0 00	6,500 00	170 00	9 40	0 00	0 00	0 00	0 00	PBHL-RBF #3

Database	EDM 2003 16 Single User Db	Local Co-ordinate Reference	Well Red Bluff Fed #3
Company	Mack Energy Corp	TVD Reference	WELL @ 3723 00ft (KB Elev)
Project	Eddy County, NM (NAD 27 NME)	MD Reference	WELL @ 3723 00ft (KB Elev)
Site	Red Bluff Fed #3	North Reference	Grid
Well	Red Bluff Fed #3	Survey Calculation Method	Minimum Curvature
Wellbore	Wellbore #1		
Design	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
South HL-RBF #3 - West HL-RBF #3									
1,350 00	0 00	0 00	1,350 00	0 00	0 00	0 00	0 00	0 00	0 00
8 5/8" Casing									
1,400 00	0 00	0 00	1,400 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start 4.0°/100'									
1,500 00	4 00	3 16	1,499 92	3 48	0 19	3 49	4 00	4 00	0 00
1,600 00	8 00	3 16	1,599 35	13 92	0 77	13 94	4 00	4 00	0 00
1,700 00	12 00	3 16	1,697 81	31 25	1 73	31 30	4 00	4 00	0 00
1,793 66	15 75	3 16	1,788 72	53 67	2 97	53 75	4 00	4 00	0 00
EOC hold 15 75°									
1,800 00	15 75	3 16	1,794 83	55 39	3 06	55 48	0 00	0 00	0 00
1,900 00	15 75	3 16	1,891 07	82 49	4 56	82 61	0 00	0 00	0 00
2,000 00	15 75	3 16	1,987 32	109 58	6 06	109 75	0 00	0 00	0 00
2,024 90	15 75	3 16	2,011 28	116 33	6 43	116 51	0 00	0 00	0 00
Start Drop 4 0°/100'									
2,100 00	12 74	3 16	2,084 07	134 78	7 45	134 98	4 00	-4 00	0 00
2,200 00	8 74	3 16	2,182 30	153 38	8 48	153 62	4 00	-4 00	0 00
2,300 00	4 74	3 16	2,281 58	165 10	9 13	165 36	4 00	-4 00	0 00
2,400 00	0 74	3 16	2,381 45	169 88	9 39	170 14	4 00	-4 00	0 00
2,418 55	0 00	0 00	2,400 00	170 00	9 40	170 26	4 00	-4 00	0 00
EOC hold 0 0° - TG1-RBF #3									
6,518 55	0 00	0 00	6,500 00	170 00	9 40	170 26	0 00	0 00	0 00
PBHL-RBF #3									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL-RBF #3 - plan hits target - Circle (radius 10 00)	0 00	0 00	6,500 00	170 00	9 40	679,645 80	604,636 30	32° 52' 4 673 N	103° 59' 33 154 W
West HL-RBF #3 - plan misses by 160 00ft at 0 00ft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W200 00 H0 00 D0 00)	0 00	0 00	0 00	160 00	-0 60	679,635 80	604,626 30	32° 52' 4 574 N	103° 59' 33 271 W
South HL-RBF #3 - plan misses by 160 00ft at 0 00ft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H200 00 D0 00)	0 00	0 00	0 00	160 00	-0 60	679,635 80	604,626 30	32° 52' 4 574 N	103° 59' 33 271 W
TG1-RBF #3 - plan hits target - Circle (radius 10 00)	0 00	0 00	2,400 00	170 00	9 40	679,645 80	604,636 30	32° 52' 4 673 N	103° 59' 33 154 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (ft)	Hole Diameter (ft)
1,350 00	1,350 00	8 5/8" Casing	8 62500	12 25000

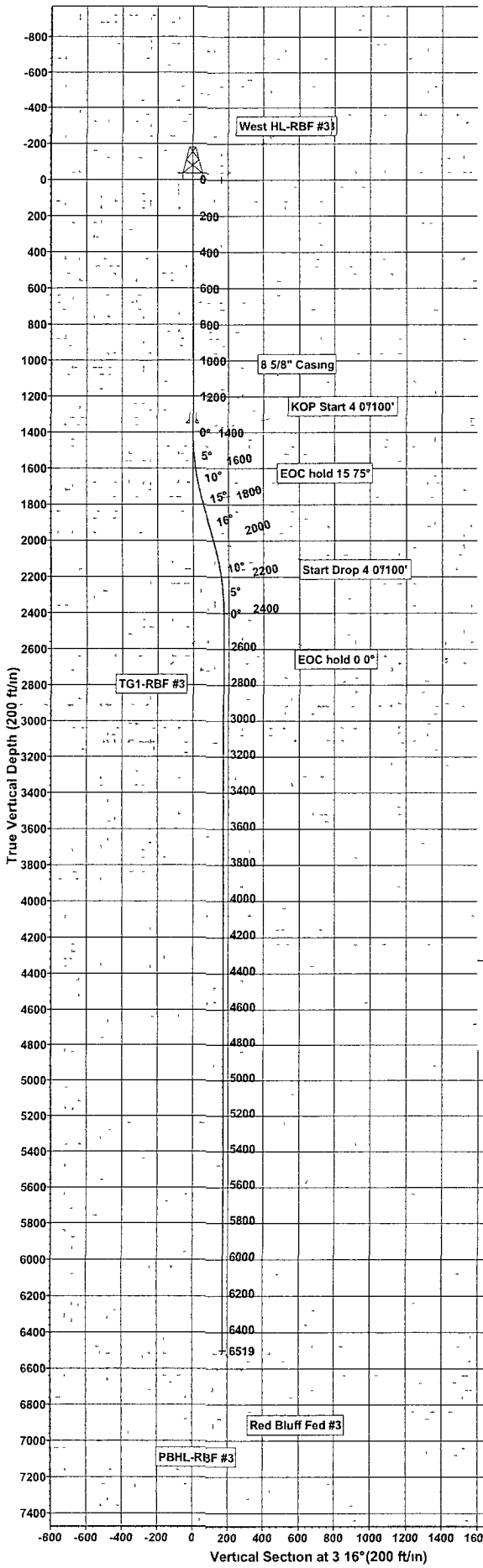
Database:	EDM 2003 16 Single User Db	**Local Co-ordinate Reference**	Well Red Bluff Fed #3
Company	Mack Energy Corp	**TVD Reference.**	WELL @ 3723 00ft (KB Elev)
Project.	Eddy County, NM (NAD 27 NME)	**MD Reference**	WELL @ 3723 00ft (KB Elev)
Site	Red Bluff Fed #3	**North Reference.**	Grid
Well.	Red Bluff Fed #3	**Survey Calculation Method.**	Minimum Curvature
Wellbore	Wellbore #1		
Design:	Plan #1		

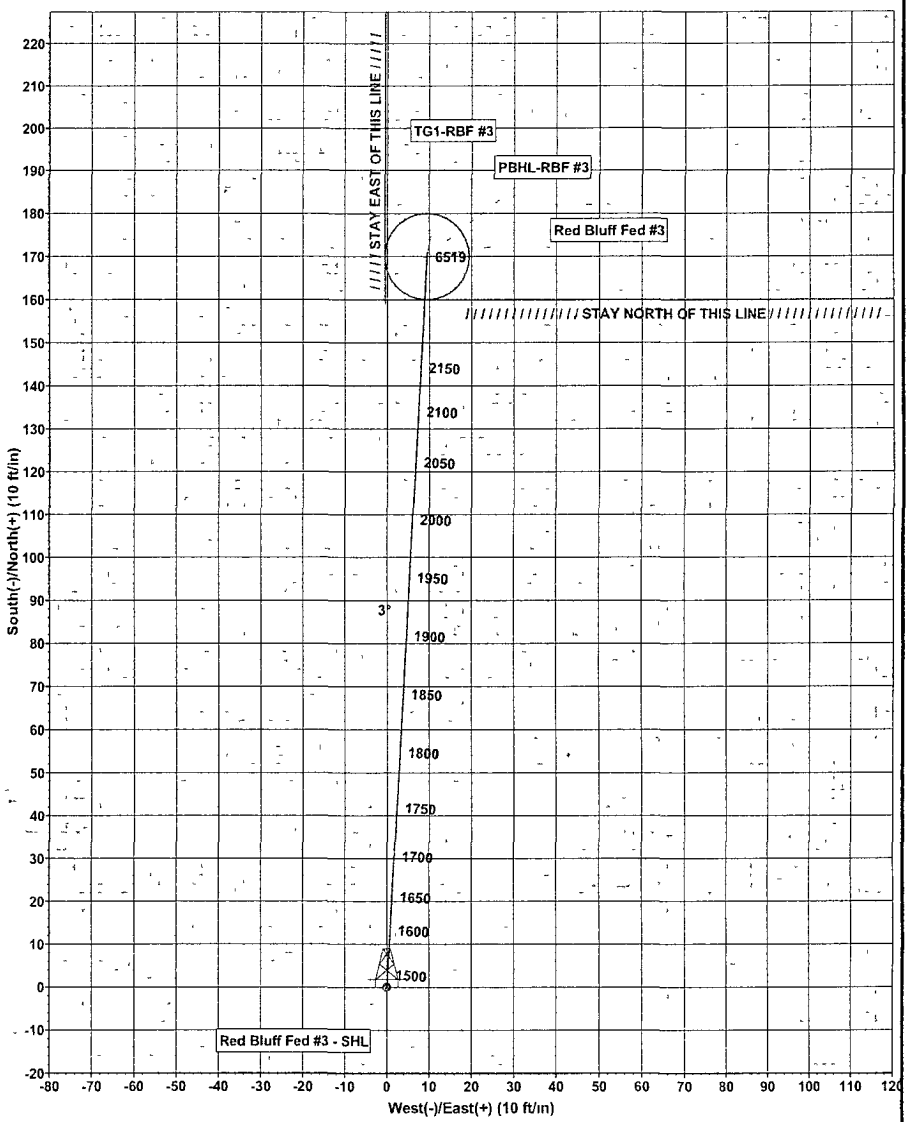
Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
1,400 00	1,400 00	0 00	0 00	KOP Start 4 0°/100'
1,793 66	1,788 72	53 67	2 97	EOC hold 15 75°
2,024 90	2,011 28	116 33	6 43	Start Drop 4 0°/100'
2,418 55	2,400 00	170 00	9 40	EOC hold 0 0°

Scientific Drilling for Mack Energy Corp.
Site: Eddy County, NM (NAD 27 NME)
Well. Red Bluff Fed #3
Wellbore: Wellbore #1
Design: Plan #1

Scientific Drilling
Directional Drilling Operations





WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
South HL-RBF #3	0 00	160 00	-0 60	679635 80	604626 30	32° 52' 4 574 N	103° 59' 33 271 W	Rectangle (Sides L0 0 0 W200 00)
West HL-RBF #3	0 00	160 00	-0 60	679635 80	604626 30	32° 52' 4 574 N	103° 59' 33 271 W	Rectangle (Sides L200 00 W0 00)
TG1-RBF #3	2400 00	170 00	9 40	679645 80	604636 30	32° 52 ' 4 673 N	103° 59' 33 154 W	Circle (Radius 10 00)
PBHL-RBF #3	6500 00	170 00	9 40	679645 80	604636 30	32° 5 2' 4 673 N	103° 59' 33 154 W	Circle (Radius 10 00)

AZIMUTH CORRECTIONS
ALL AZIMUTHS MUST BE CORRECTED TO GRID
GRID CORRECTIONS MUST BE APPLIED BEFORE PLOTTING
To convert a Magnetic Direction to a Grid Direction, Add 8.07°
To convert a True Direction to a Grid Direction, Subtract 0.18°

Azimuths to Grid North
True North -0 18°
Magnetic North 8 07°

Magnetic Field
Strength 49341 3snT
Dip Angle 60 81°
Date 10/23/2007
Model IGRF200510

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	1400 00	0 00	0 00	1400 00	0 00	0 00	0 00	0 00	0 00	
3	1793 66	15 75	3 16	1788 72	53 67	2 97	4 00	3 16	53 75	
4	2024 90	15 75	3 16	2011 28	116 33	6 43	0 00	0 00	116 51	
5	2418 55	0 00	0 00	2400 00	170 00	9 40	4 00	180 00	170 26	TG1-RBF #3
6	6518 55	0 00	0 00	6500 00	170 00	9 40	0 00	0 00	170 26	PBHL-RBF #3

WELL DETAILS Red Bluff Fed #3

Ground Level 3707 00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0 00	679475 80	604626 90	32° 52' 2 991 N	103° 59' 3 3 270 W	

PROJECT DETAILS Eddy County, NM (NAD 27 NME) Plan Plan #1 (Red Bluff Fed #3/Wellbore #1)

Geodetic System US State Plane 1927 (Exact solution) Created By Julio Pina Date 23-Oct-07
Datum NAD 1927 (NADCON CONUS)
Ellipsoid Clarke 1866
Zone New Mexico East 3001
System Datum Mean Sea Level

Checked _____ Date _____
Reviewed _____ Date _____
Approved _____ Date _____

Mack Energy Corporation

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards an characteristics of hydrogen sulfide (H2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

1. **Well Control Equipment:**

   A. Flare line

   B. Choke manifold.

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

   D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. **Protective equipment for essential personnel:**

   A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. **H2S detection and monitoring equipment:**

   A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram (Exhibit #8).

   B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

   B. All elastomers used for packing and seals shall be H2S trim.

7. **Communication:**

   A. Radio communications in company vehicles including cellular telephone and 2-way radio.

   B. Land line (telephone) communication at Office

8. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

EXHIBIT #7

WARNING

YOU ARE ENTERING AN H2S

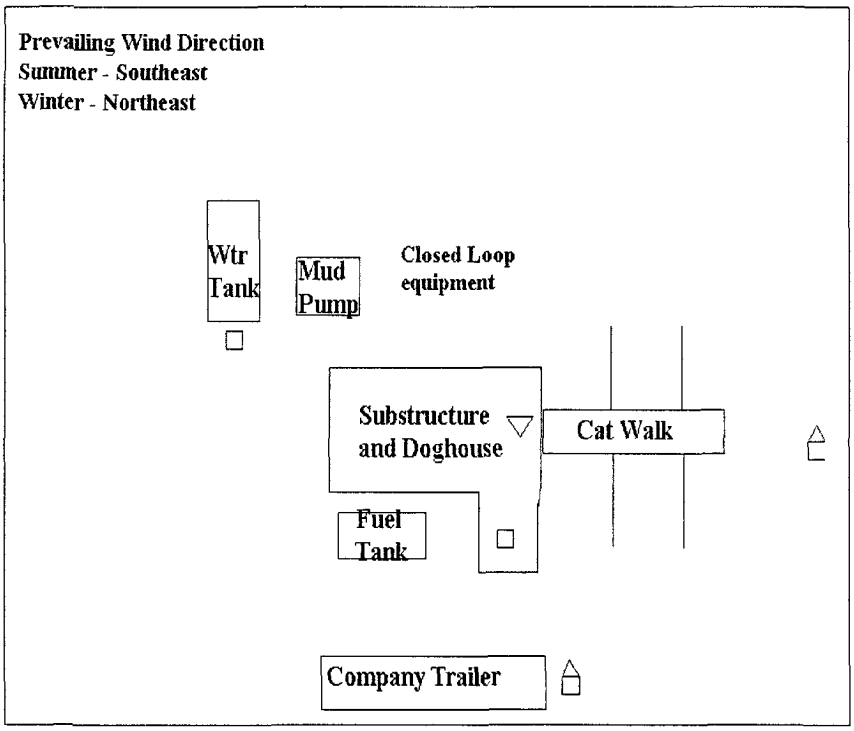
AUTHORIZED PERSONNEL ONLY

1. **BEARDS OR CONTACT LENSES NOT ALLOWED**
2. **HARD HATS REQUIRED**
3. **SMOKING IN DESIGNATED AREAS ONLY**
4. **BE WIND CONSCIOUS AT ALL TIMES**
5. **CHECK WITH MACK ENERGY FOREMAN AT OFFICE**

MACK ENERGY CORPORATION

1-505-748-1288

DRILLING LOCATION H2S SAFTY EQUIPMENT
Exhibit # 8



▽ H2S Monitors with alarms at the bell nipple

□ Wind Direction Indicators

△ Safe Briefing areas with caution signs and breathing equipment min 150 feet from

Attached to Form 3160-3
Mack Energy Corporation
Red Bluff Federal #3
1150 FNL & 2310 FEL
NW/4 NE/4, Sec 5 T17S R30E
Eddy County, NM

SURFACE USE AND OPERATING PLAN

1. Existing & Proposed Access Roads

A. The well site and elevation plat for the proposed well is shown in Exhibit #1. It was staked by John West Engineering, Hobbs, NM.

B. All roads to the location are shown in Exhibit below. The existing lease roads are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling well will be done where necessary.

C Directions to Location: From the intersection of Hwy 82 and CR 217 go north 3 1 miles to proposed road, follow proposed road west .45 mile to location.

D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

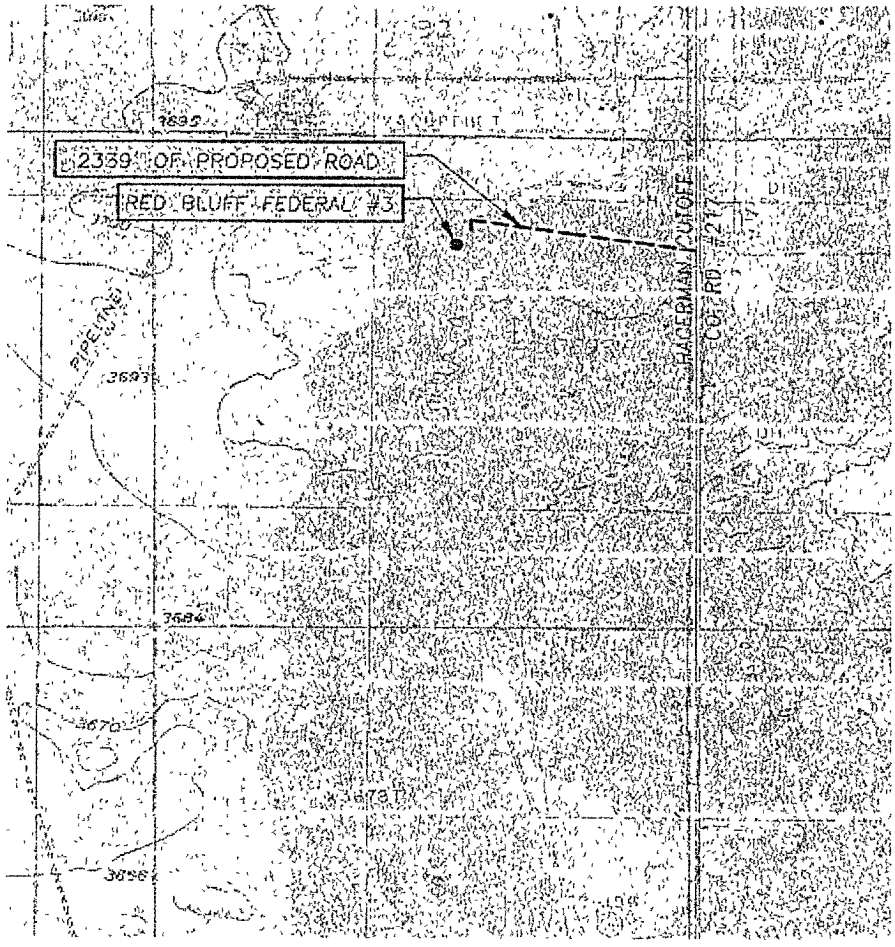


Exhibit #4

2. Proposed Access Road:

Exhibit #3 shows the 2339' of new access road to be constructed. The road will be constructed as follows.

A. The Maximum width of the running surface will be 14'. The road will be crowned and ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

B. The average grade will be less than 1%.

C. No turnouts are planned.

D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.

E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM approved caliche pit.

F. The proposed access road as shown in Exhibit #3 has been centerline flagged by John West Engineering, Hobbs, New Mexico.

3. Location of Existing Wells & Proposed flow lines for New Wells:

Exhibit #4 shows all existing wells within a one-mile radius of this well. Proposed flow lines, will stay on location the Tank Battery will be built at the Red Bluff Federal #3 location.

4. Location of Existing and/or Proposed Facilities:

A. Mack Energy Corporation does not operate a production facility on this lease.

B. If the well is productive, contemplated facilities will be as follows:

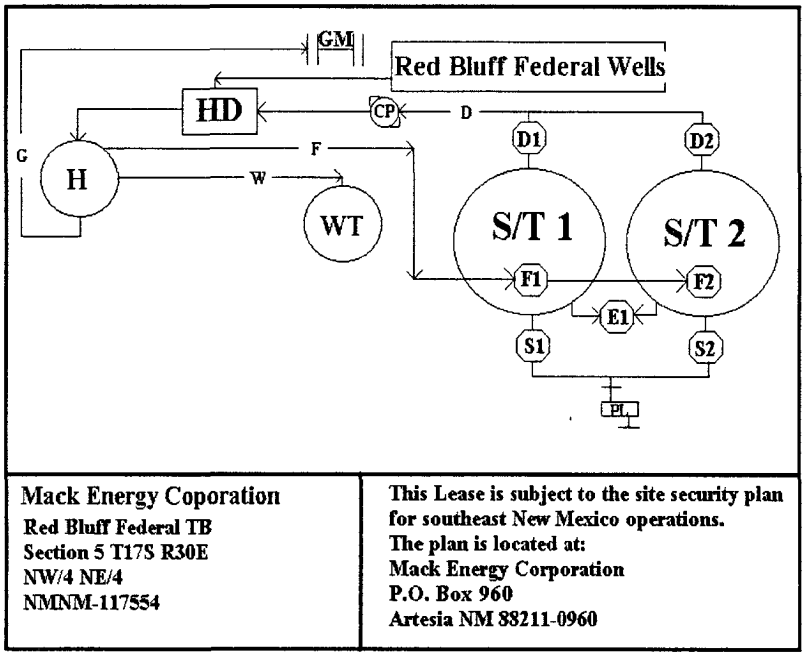
1) Yeso Completion: Will be sent to the Red Bluff Federal TB located at the #3 well. The Facility is shown in Exhibit #5.

2) The tank battery and facilities including all flow lines and piping will be installed according to API specifications.

3) Any additional caliche will be obtained from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.

4) It will be necessary to run electric power if this well is productive. Power will be run by CVE and they will send in a separate plan for power.

Exhibit #5



Mack Energy Coporation **Red Bluff Federal TB** **Section 5 T17S R30E** **NW/4 NE/4** **NMNM-117554**	**This Lease is subject to the site security plan for southeast New Mexico operations.** **The plan is located at:** **Mack Energy Corporation** **P.O. Box 960** **Artesia NM 88211-0960**

5. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Exhibit #4. If a commercial fresh water source is nearby, fasline may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

6. Source of Construction Materials:

All caliche required for construction of the drill pad and proposed new access road (approximately 2500 cubic yards) will be obtained from a BLM approved caliche pit.

7. Methods of Handling Water Disposal:

A. Drill cuttings not retained for evaluation purposes will be disposed into the steel tanks and hauled to an approved facility.

B Drilling fluids will be contained in steel tanks using a closed loop system.

C. Water produced from the well during completion will be disposed into a steel tank. After the well is permanently placed on production, produced water will be collected in tanks (fiberglass) until pumped to an approved disposal system; produced oil will be collected in steel tanks until sold.

D Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. All water and fluids will be disposed of into an approved facility. No toxic waste or hazardous chemicals will be produced by this operation.

E. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole only a dry hole marker will remain.

8. Ancillary Facilities:

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

Attached to Form 3160-3
Mack Energy Corporation
Red Bluff Federal #3
1150 FNL & 2310 FEL
NW/4 NE/4, Sec 5 T17S R30E
Eddy County, NM

9. Well Site Layout:

A. The drill pad layout, with elevations staked by John West Engineering, is shown in Exhibit #6. Dimensions of the pad are shown. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.

B. Diagram below shows the proposed orientation of location. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

See COA's

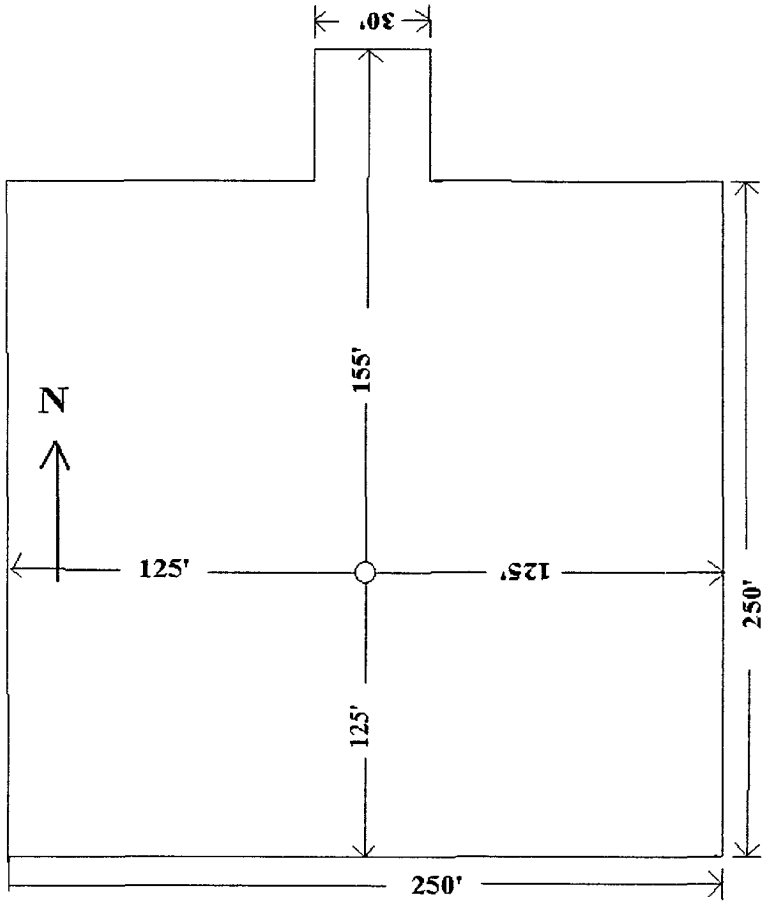


Exhibit #6

10. Plans for Restoration of the Surface:

A. Upon completion of proposed operations, if the well is completed, any additional caliche required for facilities will be obtained from a BLM approved caliche pit.

B. In the event of a dry hole. Caliche will be removed and location will be reseeded per BLM specifications.

11. Surface Ownership:

The well site and lease is located entirely on Federal surface. We have notified the surface lessee of the impending operations. According to BLM the leasee is Bogel Limited Company, Lewis Derrick, P.O. Box 460 Dexter, NM 88230.

12. Other Information:

A. The area around the well site is grassland and the topsoil is sandy. The vegetation is native scrub grass with sagebrush.

B. There is no permanent or live water in the immediate area.

C. A Cultural Resources Examination has been requested and will be forwarded to your office in the near future.

13. Lessee's and Operator's Representative:

The Mack Energy Corporation representative responsible for assuring compliance with the surface use plan is as follows:

Jerry W. Sherrell
Mack Energy Corporation
P.O. Box 960
Artesia, NM 88211-0960
Phone (505) 748-1288 (office)

CERTIFICATION

I hereby certify that I, or person under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this APD are to the best of my knowledge, true and correct, and the work associated with the operations proposed herein will be performed by Mack Energy Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions which it is approved. This statement is subject to the provisions of 18 U S.C. 1001 for the filing of a false statement.

Date: 10-16-07

Signed: Jerry W. Sherrell

Jerry W. Sherrell

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Yates** formation. **H2S has been measured in gas streams at 1600-10000 ppm and in STVs at 20-4000 ppm.**

2. 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.

B. CASING

1. The **13-3/8** inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 425** feet and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial action will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a-d above.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.

   a. The tests shall be done by an independent service company.

   b. The results of the test shall be reported to the appropriate BLM office.

   c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

   d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

   e. A variance to test the surface casing and BOP/BOPE to the reduced pressure of **1500** psi with the rig pumps is approved.

Engineer on call phone (after hours): **Carlsbad: (505) 706-2779**

WWI 110807