

11-105

OCD-HOBBSSBS OCD

Form 3160-3
(April 2004)

NOV 14 2011

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5 Lease Serial No.
NMLC-060199B

6 If Indian, Allottee or Tribe Name

7 If Unit or CA Agreement, Name and No

8. Lease Name and Well No.
Brook Federal #2 <38762>

9. API Well No.
30-025-40337

10 Field and Pool, or Exploratory
Maljamar-Yeso West <44500>

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

Sec. 30 T17S R32E

12. County or Parish
Lea

13 State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b Type of Well. ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator
Mack Energy Corporation

3a Address
P.O. Box 960 Artesia, NM 88211-0960

3b Phone No. (include area code)
<13837>
(575)748-1288

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

At surface Unit A 360 FNL & 1180 FEL

At proposed prod. zone 330 FNL & 990 FEL

UNORTHODOX
LOCATION

14 Distance in miles and direction from nearest town or post office*
3 miles SW of Maljamar, NM

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drlg unit line, if any) 330 ft

16 No. of acres in lease
80 ac

17. Spacing Unit dedicated to this well
40 ac

18 Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.
450 ft

19. Proposed Depth
7,007' MD
7,000' TVD

20. BLM/BIA Bond No on file
NMB000286

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3913' GR

22 Approximate date work will start*
06/20/2011

23. Estimated duration
15 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 6/17/11

Title
Production Clerk

Approved by (Signature)
Wesley W Ingram

Name (Printed/Typed)

Date NOV 8 2011

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)

Roswell Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

State of New Mexico NOV 14 2011
Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

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

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-40337	Pool Code 44500	Pool Name Maljamar Yeso West
Property Code 38762	Property Name BROOK FEDERAL	Well Number 2
OGRID No. 013837	Operator Name MACK ENERGY CORPORATION	Elevation 3913'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	30	17-S	32-E		360	NORTH	1180	EAST	LEA

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
A	30	17-S	32-E		330	NORTH	990	EAST	LEA
Dedicated Acres 40	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**

N 659813.9 E 663545.9 SEE DETAIL N 658494.0 E 663553.4 GRID AZ -80°48'31" HORZ DIST. -182.3' DETAIL 3921.9' 3925.1' 600' 3915.0' 3923.0' SECTION 30 SECTION 29 GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=659454.6 N X=663695.9 E LAT.=32 81 1795" N LONG =103.800529" W BOTTOM HOLE LOCATION Y=659485.3 N X=66 885 6 E	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. <i>Jerry W. Sherrell</i> 5/27/2011 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. NOVEMBER 19, 2010 Date Surveyed D. J. EIDSON LA Signature & Seal of Professional Surveyor <i>Ronald J. Eidson</i> 11/30/2010 10.11.1632 Certificate No. GARY EIDSON 12641 RONALD J. EIDSON 3239
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NOV 14 2011

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DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Rustler	690'	Blinebry	5760'
Top Salt	750'	Tubb	6810'
Base Salt	1875'		
Yates	1975'		
Seven Rivers	2355'		
Queen	2958'		
San Andres	3720'		
Glorieta	5235'		

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

Water Sand	150'	Fresh Water
Yates	1975'	Oil/Gas
San Andres	3720'	Oil/Gas
Blinebry	5760'	Oil/Gas
Tubb	6810'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 8 5/8" casing to 700' and circulating cement back to surface will protect the surface fresh water sand. Salt section and zones above producing interval will be protected by the 5 1/2" production casing set 7,007', sufficient cement will be pumped to circulate back to surface.

4. Casing Program:

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
See COA 12 1/2"	0-700'	8 5/8"	24#, J-55, ST&C, New, 4.004/5.9/7.86
7 7/8"	0-7007'	5 1/2"	17#, L-80, LT&C, New, 1.704/2.714/2.58

5. Cement Program:

8 5/8" Surface Casing: Lead 350 sx, 35:65:0, Class C + 2.0% CaCl₂ + .13#/sk Cello Flake + 3#/sk LCM-1 + 2.5% Sodium Metasilicate + 6% MPA 5, yield 1.78, excess 100%, Tail 200sx Class C 1% CaCl₂, yield 1.34.

5 1/2" Production Casing: Lead 525sx Class H + 2.55% bwow R-3 + 3#/sk LMC-1 + .005 GPS FP-6L + 4% Bwow Sodium Metasilicate, yield 2.15, excess 35%, Tail 525sx H 50:50:0 POZ Class H + 2% Sodium Chloride + 3#/sk LCM-1 + .2% FL-52 + 1% FL-62 + .05% ASA-301 + .005 gps FP-6L + .2% Sodium Metasilicate, yield 1.20.

6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (3000 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 11" BOP will be nipped up on the 8 5/8" surface casing and tested by a 3rd party to 2000 psi 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 3000 psi WP rating

7. Types and Characteristics of the Proposed Mud System:

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

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-700' 740	Fresh Water	8.5	28	N.C.
700'-TD	Brine	10	30	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: See COA

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log 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 at TD.

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

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 3,000 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 June 20, 2011. Once commenced, the drilling operation should be finished in approximately 30 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 #10
NOTES REGARDING THE BLOWOUT PREVENTERS
Brooks Federal #2
Lea 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 Corp.

Lea
Brook Federal
Brook Federal #2
OH

HOBBS OCD

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Plan: Plan #1

PathFinder X&Y Report

17 June, 2011

PATHFINDER®
A Schlumberger Company



Pathfinder

PathFinder X&Y Report

PATHFINDER
A Schlumberger Company

Company:	Mack Energy Corp	Local Co-ordinate Reference	Well: Brook Federal #2
Project:	Lea	TVD Reference:	WELL @ 3932.00ft (Original Well Elev)
Site:	Brook Federal	MD Reference:	WELL @ 3932.00ft (Original Well Elev)
Wellbore:	Brook Federal #2	North Reference:	Grid
Design:	OH	Survey Calculation Method:	Minimum Curvature
	Plan #1	Database:	1 Smith Database
Project:	Lea		
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:	Brook Federal		
Site Position:			
From:	Map	659,184.00 ft	Latitude: 32° 48' 39.726620 N
Position Uncertainty:	0.00 ft	664,867.10 ft	Longitude: 103° 47' 48.196157 W
		"	Grid Convergence: 0.29 °

Well:	Brook Federal #2		
Well Position	+N/-S	659,454.60 ft	Latitude: 32° 48' 42.462819 N
	+E/-W	663,695.90 ft	Longitude: 103° 48' 1.903013 W
Position Uncertainty	0.00 ft	Wellhead Elevation: ft	Ground Level: 3,913.00 ft

Wellbore	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2011/06/15	7.72	60.71	48,976

Design	Plan #1
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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	0.00

Survey Tool/Program	Date: 2011/06/17			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	7,007.00	Plan #1 (OH)		



Pathfinder
PathFinder X&Y Report

PATHFINDER
A Schlumberger Company

Company:	Mack Energy Corp.	Local Co-ordinate Reference:	Well: Brook Federal #2
Project:	Lea	TVD Reference:	WELL @ 3932.00ft (Original Well Elev)
Site:	Brook Federal	MD Reference:	WELL @ 3932.00ft (Original Well Elev)
Well:	Brook Federal #2	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1		1 Smith Database

Planned Survey	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	D Leg (°/100ft)	Northing (ft)	Easting (ft)
	0.00	0.00	0.00	0.00	-3,932.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	100.00	0.00	0.00	100.00	-3,832.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	200.00	0.00	0.00	200.00	-3,732.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	300.00	0.00	0.00	300.00	-3,632.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	400.00	0.00	0.00	400.00	-3,532.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	500.00	0.00	0.00	500.00	-3,432.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	600.00	0.00	0.00	600.00	-3,332.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	700.00	0.00	0.00	700.00	-3,232.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	800.00	0.00	0.00	800.00	-3,132.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	900.00	0.00	0.00	900.00	-3,032.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,000.00	0.00	0.00	1,000.00	-2,932.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,100.00	0.00	0.00	1,100.00	-2,832.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,200.00	0.00	0.00	1,200.00	-2,732.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,300.00	0.00	0.00	1,300.00	-2,632.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,400.00	0.00	0.00	1,400.00	-2,532.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,500.00	0.00	0.00	1,500.00	-2,432.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,600.00	0.00	0.00	1,600.00	-2,332.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,700.00	0.00	0.00	1,700.00	-2,232.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,800.00	0.00	0.00	1,800.00	-2,132.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	1,900.00	0.00	0.00	1,900.00	-2,032.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	2,000.00	0.00	0.00	2,000.00	-1,932.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	2,100.00	0.00	0.00	2,100.00	-1,832.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	2,200.00	0.00	0.00	2,200.00	-1,732.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	2,225.00	0.00	0.00	2,225.00	-1,707.00	0.00	0.00	0.00	0.00	659,454.60	663,695.90
	2,300.00	1.50	80.81	2,299.99	-1,632.01	0.16	0.97	0.16	2.00	659,454.76	663,696.87
	2,400.00	3.50	80.81	2,399.89	-1,532.11	0.85	5.27	0.85	2.00	659,455.45	663,701.17
	2,459.72	4.69	80.81	2,459.46	-1,472.54	1.54	9.49	1.54	2.00	659,456.14	663,705.39



Pathfinder

PathFinder X&Y Report



A Schlumberger Company

Company: Mack Energy Corp		Local Co-ordinate Reference:				Well Brook Federal #2				
Project: Lea		TVD Reference:				WELL @ 3932.00ft (Original Well Elev)				
Site: Brook Federal		MD Reference:				WELL @ 3932.00ft (Original Well Elev)				
Well: Brook Federal #2		North Reference:				Grid				
Wellbore: OH		Survey Calculation Method:				Minimum Curvature				
Design: Plan #1		Database:				1. Smith Database				
Planned Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,500.00	4.69	80.81	2,499.60	-1,432.40	2.06	12.74	2.06	0.00	659,456.66	663,708.64
2,600.00	4.69	80.81	2,599.27	-1,332.73	3.37	20.82	3.37	0.00	659,457.97	663,716.72
2,700.00	4.69	80.81	2,698.93	-1,233.07	4.68	28.90	4.68	0.00	659,459.28	663,724.80
2,800.00	4.69	80.81	2,798.60	-1,133.40	5.98	36.98	5.98	0.00	659,460.58	663,732.88
2,900.00	4.69	80.81	2,898.26	-1,033.74	7.29	45.06	7.29	0.00	659,461.89	663,740.96
3,000.00	4.69	80.81	2,997.92	-934.08	8.60	53.14	8.60	0.00	659,463.20	663,749.04
3,100.00	4.69	80.81	3,097.59	-834.41	9.91	61.22	9.91	0.00	659,464.51	663,757.12
3,200.00	4.69	80.81	3,197.25	-734.75	11.21	69.30	11.21	0.00	659,465.81	663,765.20
3,300.00	4.69	80.81	3,296.92	-635.08	12.52	77.37	12.52	0.00	659,467.12	663,773.27
3,400.00	4.69	80.81	3,396.58	-535.42	13.83	85.45	13.83	0.00	659,468.43	663,781.35
3,500.00	4.69	80.81	3,496.25	-435.75	15.14	93.53	15.14	0.00	659,469.74	663,789.43
3,600.00	4.69	80.81	3,595.91	-336.09	16.44	101.61	16.44	0.00	659,471.04	663,797.51
3,700.00	4.69	80.81	3,695.58	-236.42	17.75	109.69	17.75	0.00	659,472.35	663,805.59
3,800.00	4.69	80.81	3,795.24	-136.76	19.06	117.77	19.06	0.00	659,473.66	663,813.67
3,900.00	4.69	80.81	3,894.91	-37.09	20.37	125.85	20.37	0.00	659,474.97	663,821.75
4,000.00	4.69	80.81	3,994.57	62.57	21.67	133.93	21.67	0.00	659,476.27	663,829.83
4,100.00	4.69	80.81	4,094.23	162.23	22.98	142.01	22.98	0.00	659,477.58	663,837.91
4,200.00	4.69	80.81	4,193.90	261.90	24.29	150.09	24.29	0.00	659,478.89	663,845.99
4,300.00	4.69	80.81	4,293.56	361.56	25.60	158.17	25.60	0.00	659,480.20	663,854.07
4,400.00	4.69	80.81	4,393.23	461.23	26.90	166.24	26.90	0.00	659,481.50	663,862.14
4,500.00	4.69	80.81	4,492.89	560.89	28.21	174.32	28.21	0.00	659,482.81	663,870.22
4,572.89	4.69	80.81	4,565.54	633.54	29.16	180.21	29.16	0.00	659,483.76	663,876.11
4,600.00	4.15	80.81	4,592.57	660.57	29.50	182.28	29.50	2.00	659,484.10	663,878.18
4,700.00	2.15	80.81	4,692.41	760.41	30.38	187.70	30.38	2.00	659,484.98	663,883.60
4,807.61	0.00	0.00	4,800.00	868.00	30.70	189.70	30.70	2.00	659,485.30	663,885.60
4,900.00	0.00	0.00	4,892.39	960.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,000.00	0.00	0.00	4,992.39	1,060.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60



Pathfinder
PathFinder X&Y Report

Company: Mack Energy Corp.		Local Co-ordinate Reference: Well: Brook Federal #2								
Project: Lea		TVD Reference: WELL @ 3932.00ft (Original Well Elev)								
Site: Brook Federal		MD Reference: WELL @ 3932.00ft (Original Well Elev)								
Well: Brook Federal #2		North Reference: Grid								
Wellbore: OH		Survey Calculation Method: Minimum Curvature								
Design: Plan #1		1 Smith Database								
Planned Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	D/Leg (°/100ft)	Northing (ft)	Easting (ft)
5,100.00	0.00	0.00	5,092.39	1,160.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,200.00	0.00	0.00	5,192.39	1,260.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,300.00	0.00	0.00	5,292.39	1,360.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,400.00	0.00	0.00	5,392.39	1,460.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,500.00	0.00	0.00	5,492.39	1,560.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,600.00	0.00	0.00	5,592.39	1,660.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,700.00	0.00	0.00	5,692.39	1,760.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,800.00	0.00	0.00	5,792.39	1,860.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
5,900.00	0.00	0.00	5,892.39	1,960.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,000.00	0.00	0.00	5,992.39	2,060.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,100.00	0.00	0.00	6,092.39	2,160.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,200.00	0.00	0.00	6,192.39	2,260.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,300.00	0.00	0.00	6,292.39	2,360.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,400.00	0.00	0.00	6,392.39	2,460.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,500.00	0.00	0.00	6,492.39	2,560.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,600.00	0.00	0.00	6,592.39	2,660.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,700.00	0.00	0.00	6,692.39	2,760.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,800.00	0.00	0.00	6,792.39	2,860.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
6,900.00	0.00	0.00	6,892.39	2,960.39	30.70	189.70	30.70	0.00	659,485.30	663,885.60
7,007.61	0.00	0.00	7,000.00	3,068.00	30.70	189.70	30.70	0.00	659,485.30	663,885.60
BHL (Brook Federal #2)										



Pathfinder
PathFinder X&Y Report



Company:	Mack Energy Corp.	Local Co-ordinate Reference:	Well Brook Federal #2
Project:	Lea	TVD Reference:	WELL @ 3932 00ft (Original Well Elev)
Site:	Brook Federal	MD Reference:	WELL @ 3932 00ft (Original Well Elev)
Well:	Brook Federal #2	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	1 Smith Database

Target Name	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
-------------	------------------	----------------	-------------	---------------	---------------	------------------	-----------------	----------	-----------

BHL (Brook Federal 2) 0 00 0 00 7,000 00 30 70 189 70 659,485 30 663,885 60 32° 48' 42 757131 N 3° 47' 59 678483 W
- plan hits target center
- Point

Checked By: _____ Approved By: _____ Date: _____



Project: Lea
 Site: Brook Federal
 Well: Brook Federal #2
 Wellbore: OH
 Plan: Plan #1 (Brook Federal #2/OH)

PATHFINDER
 A Schlumberger Company

WELL DETAILS: Brook Federal #2

Ground Elevation: 3913.00
 RKB Elevation: WELL @ 3932.00ft (Original Well Elev)
 Rig Name: Original Well Elev

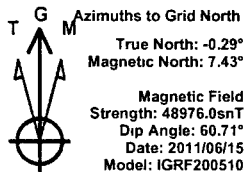
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	659454.60	663695.90	32° 48' 42.462819 N	103° 48' 1.903013 W	

SECTION DETAILS

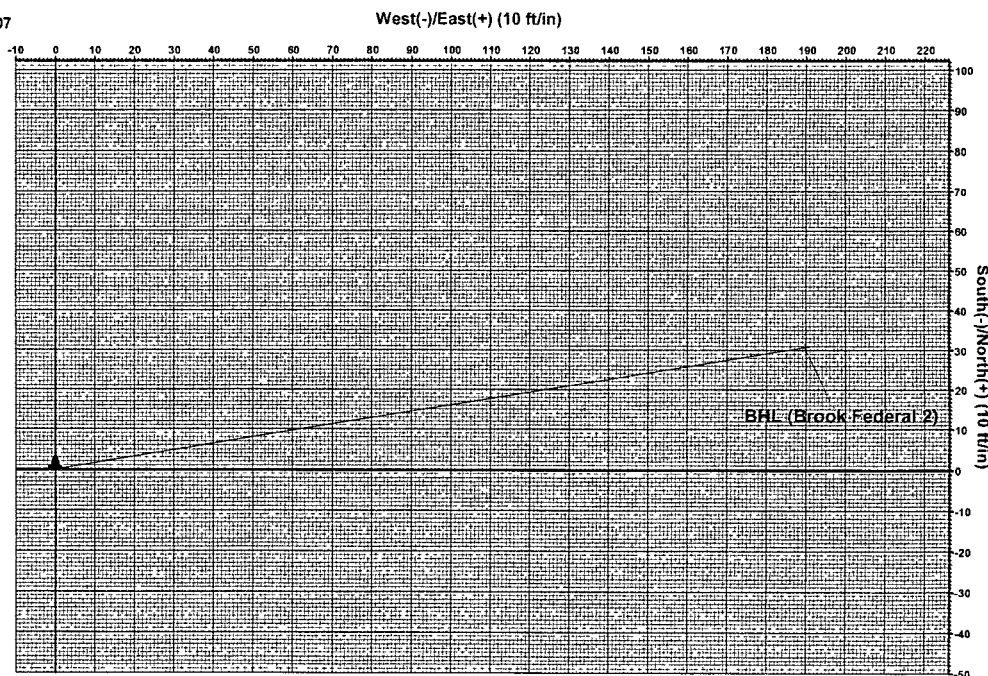
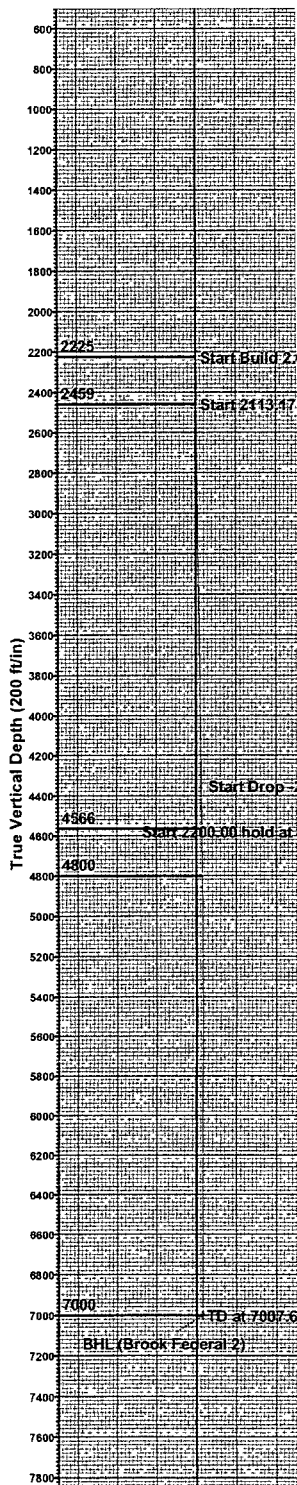
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2225.00	0.00	0.00	2225.00	0.00	0.00	0.00	0.00	0.00	
3	2459.72	4.69	80.81	2459.46	1.54	9.49	2.00	80.81	1.54	
4	4572.89	4.69	80.81	4565.54	29.16	180.21	0.00	0.00	29.16	
5	4807.61	0.00	0.00	4800.00	30.70	189.70	2.00	180.00	30.70	
6	7007.61	0.00	0.00	7000.00	30.70	189.70	0.00	0.00	30.70	BHL (Brook Federal 2)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
BHL (Brook Federal 2)	7000.00	30.70	189.70	659485.30	663885.60	Point



PROJECT DETAILS: Lea
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 System Datum: Mean Sea Level
 Local North: Grid



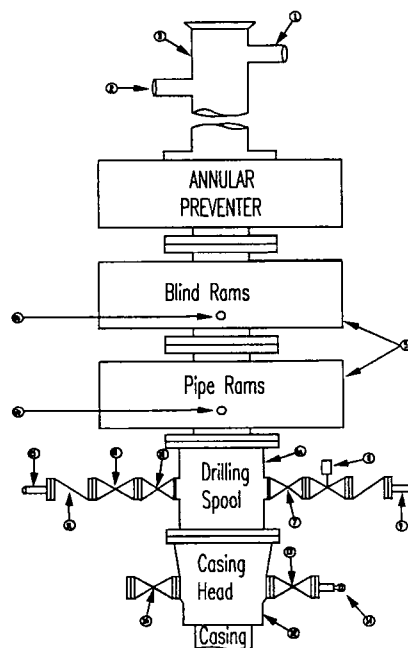
Mack Energy Corporation
Minimum Blowout Preventer Requirements
3000 psi Working Pressure
13 3/8 inch- 3 MWP
11 Inch - 3 MWP
EXHIBIT #10

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	
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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 gallons, 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. Does not use kill line for routine fill up operations.

Mack Energy Corporation

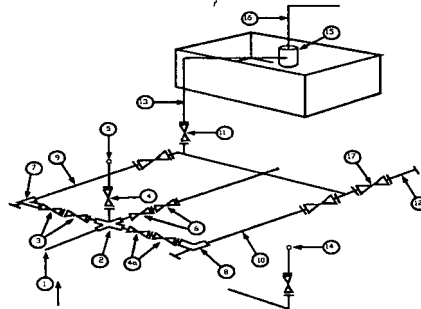
Exhibit #11

MINIMUM 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

Minimum requirements

No.		3,000 MWP			5,000 MWP			10,000 MWP		
		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

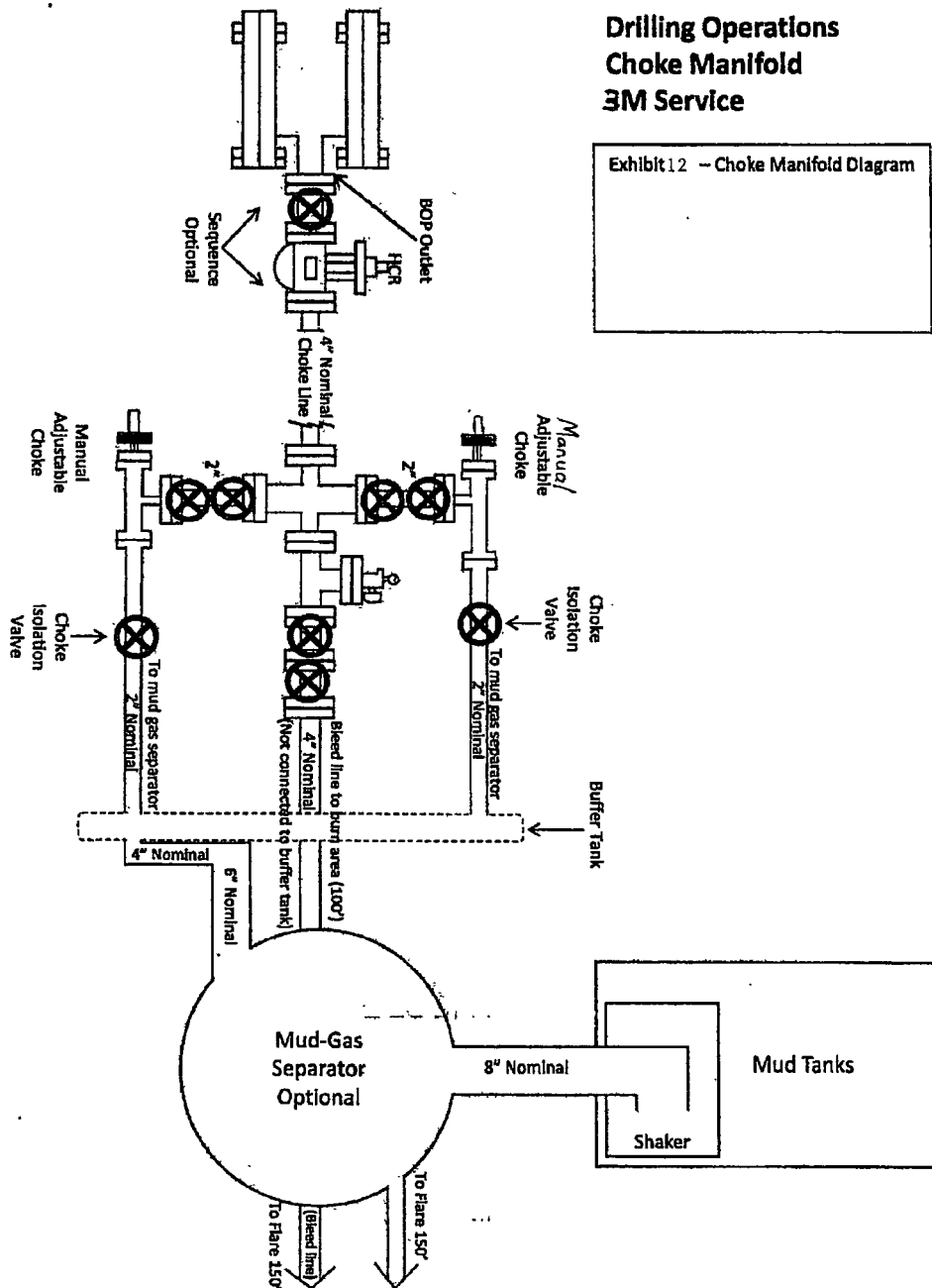
EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

- 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 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 be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

Mack Energy Corporation

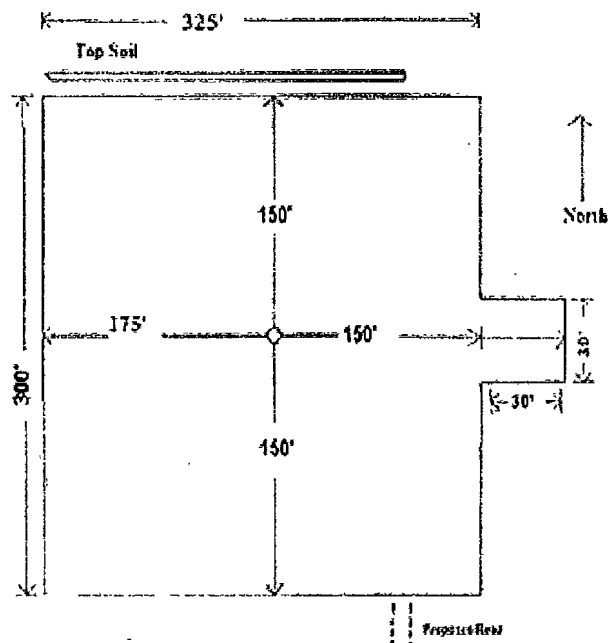
MANIFOLD SCHEMATIC

Exhibit #12



8. Well Site Layout:

- 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. The drill pad layout, is shown in Exhibit #14. 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.
- C. Diagram below shows the proposed orientation of the location. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.



Exhibit# 14