

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No.
SHL NM-89882, BHL NM-89879

6. If Indian, Allottee or Tribe Name

1a. Type of work: ☒ 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.
Razorback Federal Com #1 H

2. Name of Operator
Mack Energy Corporation

9. API Well No.
30-015-39103

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

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

10. Field and Pool, or Exploratory
San Andres

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

At surface 710 FNL & 660 FWL

At proposed prod. zone 330 FNL & 330 FEL

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

Sec. 3 T18S R31E

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

10 miles northwest 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) 230

16. No. of acres in lease

640

17. Spacing Unit dedicated to this well

160.40

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1320

19. Proposed Depth
MD 8,325'
TVD 4,275'

20. BLM/BIA Bond No. on file

NMB000286

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3754' GR

22 Approximate date work will start*
03/23/2011

23. Estimated duration
35 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

3/9/11

Title

Production Clerk

Approved by (Signature) *James A. Amos*

Name (Printed/Typed)

Date

MAY 17 2011

Title

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)

Capitan Controlled Water Basin

RECEIVED

MAY 17 2011

NMOCD ARTESIA

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

[Handwritten mark]

Attached to Form 3160-3
 Mack Energy Corporation
 Razorback Federal Com #1
 SL 710 FNL & 660 FWL, Lot # 4, Sec. 3 T18S R31E
 BL 330 FNL & 330 FEL, Lot # 1, Sec. 3 T18S R31E
 Eddy County, NM

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Rustler:	720'	Grayburg:	3577'
Top Salt:	910'	San Andres:	4110'
Base Salt:	2040'		
Yates:	2040'		
Seven Rivers:	2475'		
Queen:	3140'		

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

Water Sand	150'	Fresh Water
Grayburg	3577'	Oil/Gas
San Andres	4110'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 9 5/8" casing to 720' and circulating cement back to surface will protect the surface fresh water sand. Salt Section and zones above producing interval will be protected by setting 7" casing to 4150' and circulating cement back to surface. A 4 1/2" production casing liner will be set from 3500 to 8325', held in place with a liner hanger and peak completion packer system.

4. Casing Program:

	Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
See Com	12 1/4"	0-720' 800	9 5/8"	36#, J-55, ST&C, New, 5.62/6.835/7.04
	8 3/4"	0-4150'	7"	26#, HCP-110,LT&C, New,3.475/24.052/19.9
	6 1/8"	3500-8325'	4 1/2"	11.6# HCP-110,LT&C,New,2.148/3.236/3.563

5. Cement Program:

9 5/8" Surface Casing:, Lead 400sx Class C 2% CaCl, .13#/sx Cello-Flake, 3#/sx LCM, 1.5% sodium 100% excess 1.78yld, tail 200sx Class C 1% CaCl, excess 100% 1.34yld
 7" Intermediate Casing: Lead 300sx Class H 2.55% R-3, 5#LCM, 4%SMS, excess 35%, 2.15yld, tail 200sx Class H 50:50, 2% Salt, 3# LCM-1, 1%FL-62, 0.1% ASA-301, 0.2%SMS, excess 35%, 1.19yld.
 4 1/2" Production Casing: Set with isolation packers.

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 inch BOP will be nipped up on the 9 5/8" surface casing and tested by a 3rd party to 2000 psi. The BOP will then be nipped up on the 7" 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 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
0-720' 800	Fresh Water	8.5	28	N.C.
720-4150'	Brine	10	30	N.C.
4150'-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: 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:

Attached to Form 3160-3
Mack Energy Corporation
Razorback Federal Com #1
SL 710 FNL & 660 FWL, Lot # 4, Sec. 3 T18S R31E
BL 330 FNL & 330 FEL, Lot # 1, Sec. 3 T18S R31E
Eddy County, NM

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 2250 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. If H2S is encountered in quantities under 10ppm fans will be place in the substructure, rig floor area of drilling rig to prevent accumulation of gas. If higher levels of H2S are detected the well will be shut in and a gas separator installed with a flare line.

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 March 23, 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.

1. 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 the location. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

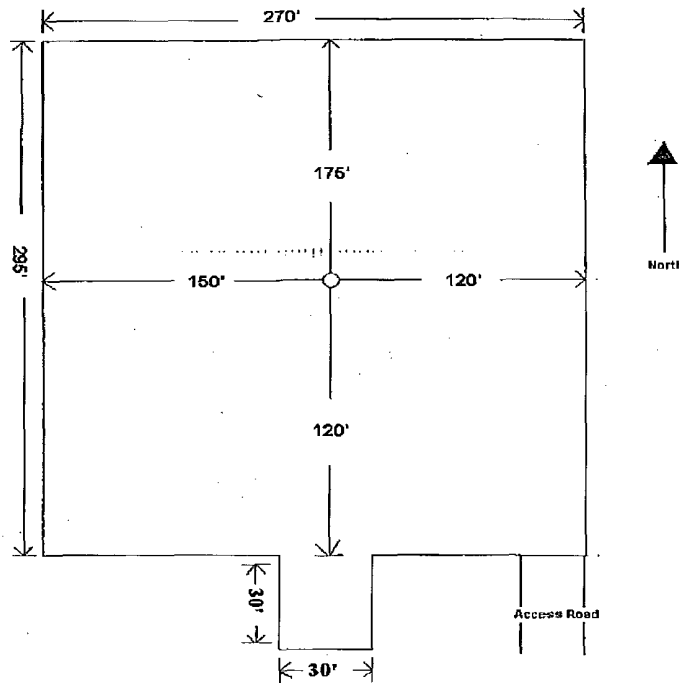
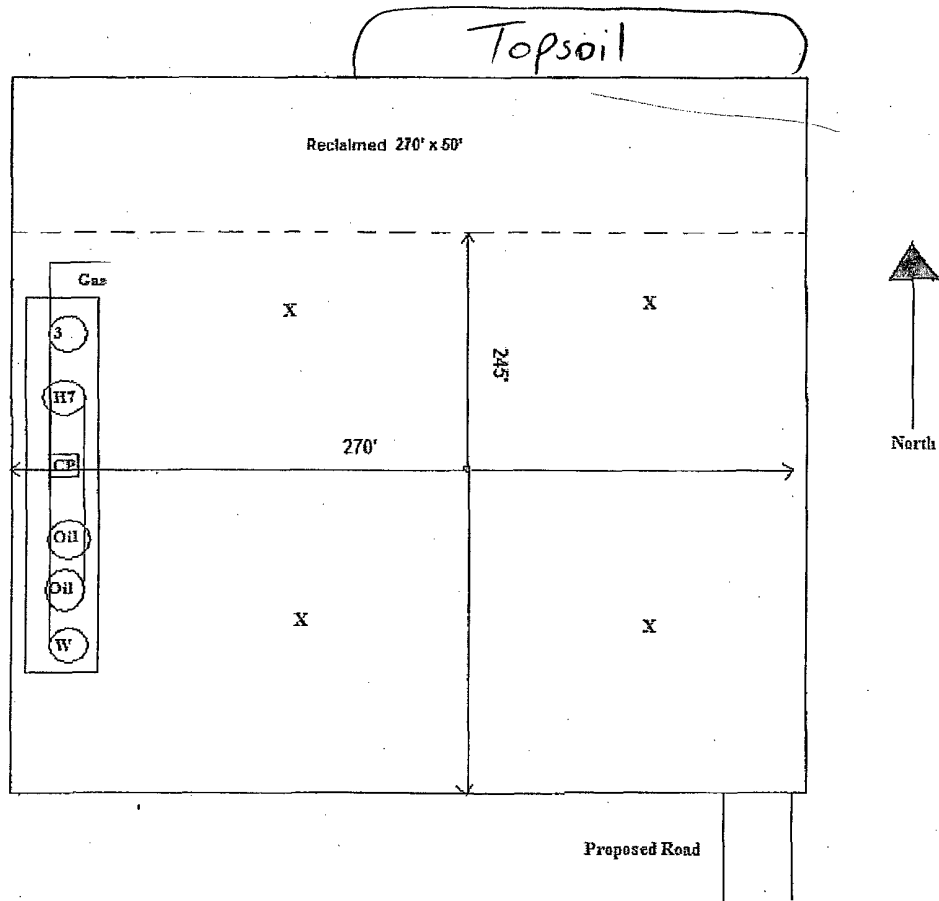


Exhibit #6

Received
3/29/11
TEN

Attached to Form 3160-3
Mack Energy Corporation
Razorback Federal Com #1
SL 710 FNL & 660 FWL, Lot # 4, Sec. 3 T18S R31E
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Eddy County, NM

- C. Diagram below show the proposed downsized well site after Interim Reclamation.
Dimensions are estimates on present conditions and are subject to change.



Received
3/29/11
TEN



Mack Energy Corporation

Eddy County (NAD27)

Razorback Federal Com

OH

OH

Plan: Design #1

Pathfinder X & Y Planning Report

31 January, 2011

PATHFINDER

A Schlumberger Company



Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well OH
Project:	Eddy County (NAD27)	TVD Reference:	WELL @ 3772.00usft (18' KB Correction)
Site:	Razorback Federal Com	MD Reference:	WELL @ 3772.00usft (18' KB Correction)
Well:	OH	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.1 Single User Db

Project:	Eddy County (NAD27)		
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:	Razorback Federal Com		
Site Position:		Northing:	648,423.200 usft
From:	Map	Easting:	644,446.100 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 46' 54.209 N
		Longitude:	103° 51' 48.029 W
		Grid Convergence:	0.25 °

Well:	OH					
Well Position	+N/-S	0.00 usft	Northing:	648,423.200 usft	Latitude:	32° 46' 54.209 N
	+E/-W	0.00 usft	Easting:	644,446.100 usft	Longitude:	103° 51' 48.029 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,754.00 usft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	01/31/11	7.80	60.68	48,989

Design:	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/S (usft)	+E/W (usft)	Direction (°)
	0.00	0.00	0.00	84.53

Survey Tool Program	Date	01/31/11		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
0.00	8,324.66	Design #1 (OH)		



Pathfinder Pathfinder X & Y Planning Report



Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well OH
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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	0.00	3,772.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
100.00	0.00	0.00	100.00	3,672.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
200.00	0.00	0.00	200.00	3,572.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
300.00	0.00	0.00	300.00	3,472.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
400.00	0.00	0.00	400.00	3,372.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
500.00	0.00	0.00	500.00	3,272.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
600.00	0.00	0.00	600.00	3,172.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
700.00	0.00	0.00	700.00	3,072.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
800.00	0.00	0.00	800.00	2,972.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
900.00	0.00	0.00	900.00	2,872.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,000.00	0.00	0.00	1,000.00	2,772.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,100.00	0.00	0.00	1,100.00	2,672.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,200.00	0.00	0.00	1,200.00	2,572.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,300.00	0.00	0.00	1,300.00	2,472.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,400.00	0.00	0.00	1,400.00	2,372.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,500.00	0.00	0.00	1,500.00	2,272.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,600.00	0.00	0.00	1,600.00	2,172.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,700.00	0.00	0.00	1,700.00	2,072.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,800.00	0.00	0.00	1,800.00	1,972.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
1,900.00	0.00	0.00	1,900.00	1,872.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,000.00	0.00	0.00	2,000.00	1,772.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,100.00	0.00	0.00	2,100.00	1,672.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,200.00	0.00	0.00	2,200.00	1,572.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,300.00	0.00	0.00	2,300.00	1,472.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,400.00	0.00	0.00	2,400.00	1,372.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,500.00	0.00	0.00	2,500.00	1,272.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,600.00	0.00	0.00	2,600.00	1,172.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	



Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well OH
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2,700.00	0.00	0.00	2,700.00	1,072.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,800.00	0.00	0.00	2,800.00	972.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
2,900.00	0.00	0.00	2,900.00	872.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,000.00	0.00	0.00	3,000.00	772.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,100.00	0.00	0.00	3,100.00	672.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,200.00	0.00	0.00	3,200.00	572.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,300.00	0.00	0.00	3,300.00	472.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,400.00	0.00	0.00	3,400.00	372.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,500.00	0.00	0.00	3,500.00	272.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,600.00	0.00	0.00	3,600.00	172.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,675.00	0.00	0.00	3,675.00	97.00	0.00	0.00	0.00	0.00	648,423.20	644,446.10	
3,700.00	2.39	84.53	3,699.99	72.01	0.05	0.52	0.52	9.55	648,423.25	644,446.62	
3,750.00	7.16	84.53	3,749.80	22.20	0.45	4.66	4.68	9.55	648,423.65	644,450.76	
3,800.00	11.94	84.53	3,799.10	-27.10	1.24	12.91	12.97	9.55	648,424.44	644,459.01	
3,850.00	16.71	84.53	3,847.53	-75.53	2.42	25.23	25.34	9.55	648,425.62	644,471.33	
3,900.00	21.49	84.53	3,894.76	-122.76	3.97	41.51	41.70	9.55	648,427.17	644,487.61	
3,950.00	26.26	84.53	3,940.47	-168.47	5.90	61.64	61.93	9.55	648,429.10	644,507.74	
4,000.00	31.04	84.53	3,984.34	-212.34	8.19	85.50	85.89	9.55	648,431.39	644,531.60	
4,050.00	35.81	84.53	4,026.06	-254.06	10.81	112.91	113.42	9.55	648,434.01	644,559.01	
4,100.00	40.58	84.53	4,065.34	-293.34	13.76	143.67	144.33	9.55	648,436.96	644,589.77	
4,150.00	45.36	84.53	4,101.92	-329.92	17.01	177.59	178.40	9.55	648,440.21	644,623.69	
4,200.00	50.13	84.53	4,135.53	-363.53	20.53	214.42	215.40	9.55	648,443.73	644,660.52	
4,250.00	54.91	84.53	4,165.94	-393.94	24.31	253.91	255.07	9.55	648,447.51	644,700.01	
4,300.00	59.68	84.53	4,192.95	-420.95	28.32	295.78	297.13	9.55	648,451.52	644,741.88	
4,350.00	64.46	84.53	4,216.36	-444.36	32.53	339.74	341.29	9.55	648,455.73	644,785.84	
4,400.00	69.23	84.53	4,236.02	-464.02	36.91	385.49	387.25	9.55	648,460.11	644,831.59	
4,450.00	74.01	84.53	4,251.78	-479.78	41.44	432.71	434.69	9.55	648,464.64	644,878.81	



Pathfinder Pathfinder X & Y Planning Report



Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well OH
Project:	Eddy County (NAD27)	TVD Reference:	WELL @ 3772.00usft (18' KB Correction)
Site:	Razorback Federal Com	MD Reference:	WELL @ 3772.00usft (18' KB Correction)
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4,500.00	78.78	84.53	4,263.54	-491.54	46.07	481.07	483.27	9.55	648,469.27	644,927.17	
4,550.00	83.56	84.53	4,271.21	-499.21	50.78	530.24	532.66	9.55	648,473.98	644,976.34	
4,600.00	88.33	84.53	4,274.75	-502.75	55.53	579.87	582.52	9.55	648,478.73	645,025.97	
4,617.48	90.00	84.53	4,275.00	-503.00	57.19	597.27	600.00	9.55	648,480.39	645,043.37	
4,700.00	90.00	84.53	4,275.00	-503.00	65.06	679.41	682.52	0.00	648,488.26	645,125.51	
4,800.00	90.00	84.53	4,275.00	-503.00	74.59	778.96	782.52	0.00	648,497.79	645,225.06	
4,900.00	90.00	84.53	4,275.00	-503.00	84.13	878.50	882.52	0.00	648,507.33	645,324.60	
5,000.00	90.00	84.53	4,275.00	-503.00	93.66	978.05	982.52	0.00	648,516.86	645,424.15	
5,100.00	90.00	84.53	4,275.00	-503.00	103.19	1,077.59	1,082.52	0.00	648,526.39	645,523.69	
5,200.00	90.00	84.53	4,275.00	-503.00	112.72	1,177.14	1,182.52	0.00	648,535.92	645,623.24	
5,300.00	90.00	84.53	4,275.00	-503.00	122.26	1,276.68	1,282.52	0.00	648,545.46	645,722.78	
5,400.00	90.00	84.53	4,275.00	-503.00	131.79	1,376.23	1,382.52	0.00	648,554.99	645,822.33	
5,500.00	90.00	84.53	4,275.00	-503.00	141.32	1,475.77	1,482.52	0.00	648,564.52	645,921.87	
5,600.00	90.00	84.53	4,275.00	-503.00	150.85	1,575.32	1,582.52	0.00	648,574.05	646,021.42	
5,700.00	90.00	84.53	4,275.00	-503.00	160.39	1,674.86	1,682.52	0.00	648,583.59	646,120.96	
5,800.00	90.00	84.53	4,275.00	-503.00	169.92	1,774.41	1,782.52	0.00	648,593.12	646,220.51	
5,900.00	90.00	84.53	4,275.00	-503.00	179.45	1,873.95	1,882.52	0.00	648,602.65	646,320.05	
6,000.00	90.00	84.53	4,275.00	-503.00	188.98	1,973.49	1,982.52	0.00	648,612.18	646,419.59	
6,100.00	90.00	84.53	4,275.00	-503.00	198.52	2,073.04	2,082.52	0.00	648,621.72	646,519.14	
6,200.00	90.00	84.53	4,275.00	-503.00	208.05	2,172.58	2,182.52	0.00	648,631.25	646,618.68	
6,300.00	90.00	84.53	4,275.00	-503.00	217.58	2,272.13	2,282.52	0.00	648,640.78	646,718.23	
6,400.00	90.00	84.53	4,275.00	-503.00	227.11	2,371.67	2,382.52	0.00	648,650.31	646,817.77	
6,500.00	90.00	84.53	4,275.00	-503.00	236.65	2,471.22	2,482.52	0.00	648,659.85	646,917.32	
6,600.00	90.00	84.53	4,275.00	-503.00	246.18	2,570.76	2,582.52	0.00	648,669.38	647,016.86	
6,700.00	90.00	84.53	4,275.00	-503.00	255.71	2,670.31	2,682.52	0.00	648,678.91	647,116.41	
6,800.00	90.00	84.53	4,275.00	-503.00	265.24	2,769.85	2,782.52	0.00	648,688.44	647,215.95	
6,900.00	90.00	84.53	4,275.00	-503.00	274.78	2,869.40	2,882.52	0.00	648,697.98	647,315.50	



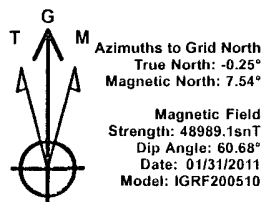
Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company:	Mack Energy Corporation	Local Co-ordinate Reference:	Well OH
Project:	Eddy County (NAD27)	TVD Reference:	WELL @ 3772.00usft (18' KB Correction)
Site:	Razorback Federal Com	MD Reference:	WELL @ 3772.00usft (18' KB Correction)
Well:	OH	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
7,000.00	90.00	84.53	4,275.00	-503.00	284.31	2,968.94	2,982.52	0.00	648,707.51	647,415.04	
7,100.00	90.00	84.53	4,275.00	-503.00	293.84	3,068.49	3,082.52	0.00	648,717.04	647,514.59	
7,200.00	90.00	84.53	4,275.00	-503.00	303.37	3,168.03	3,182.52	0.00	648,726.57	647,614.13	
7,300.00	90.00	84.53	4,275.00	-503.00	312.90	3,267.57	3,282.52	0.00	648,736.10	647,713.67	
7,400.00	90.00	84.53	4,275.00	-503.00	322.44	3,367.12	3,382.52	0.00	648,745.64	647,813.22	
7,500.00	90.00	84.53	4,275.00	-503.00	331.97	3,466.66	3,482.52	0.00	648,755.17	647,912.76	
7,600.00	90.00	84.53	4,275.00	-503.00	341.50	3,566.21	3,582.52	0.00	648,764.70	648,012.31	
7,700.00	90.00	84.53	4,275.00	-503.00	351.03	3,665.75	3,682.52	0.00	648,774.23	648,111.85	
7,800.00	90.00	84.53	4,275.00	-503.00	360.57	3,765.30	3,782.52	0.00	648,783.77	648,211.40	
7,900.00	90.00	84.53	4,275.00	-503.00	370.10	3,864.84	3,882.52	0.00	648,793.30	648,310.94	
8,000.00	90.00	84.53	4,275.00	-503.00	379.63	3,964.39	3,982.52	0.00	648,802.83	648,410.49	
8,100.00	90.00	84.53	4,275.00	-503.00	389.16	4,063.93	4,082.52	0.00	648,812.36	648,510.03	
8,200.00	90.00	84.53	4,275.00	-503.00	398.70	4,163.48	4,182.52	0.00	648,821.90	648,609.58	
8,300.00	90.00	84.53	4,275.00	-503.00	408.23	4,263.02	4,282.52	0.00	648,831.43	648,709.12	
8,324.66	90.00	84.53	4,275.00	-503.00	410.58	4,287.57	4,307.19	0.00	648,833.78	648,733.67	

Checked By: _____	Approved By: _____	Date: _____
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PATHFINDER
 A Schlumberger Company

WELLBORE TARGET DETAILS
 Name: TVD
 PBHL(RB#1) 4275.00 410.30 4287.60 Point

WELL DETAILS: OH

Ground Elevation: 3754.00
 RKB Elevation: WELL @ 3772.00usft (18" KB Correction)
 Rig Name: 18" KB Correction

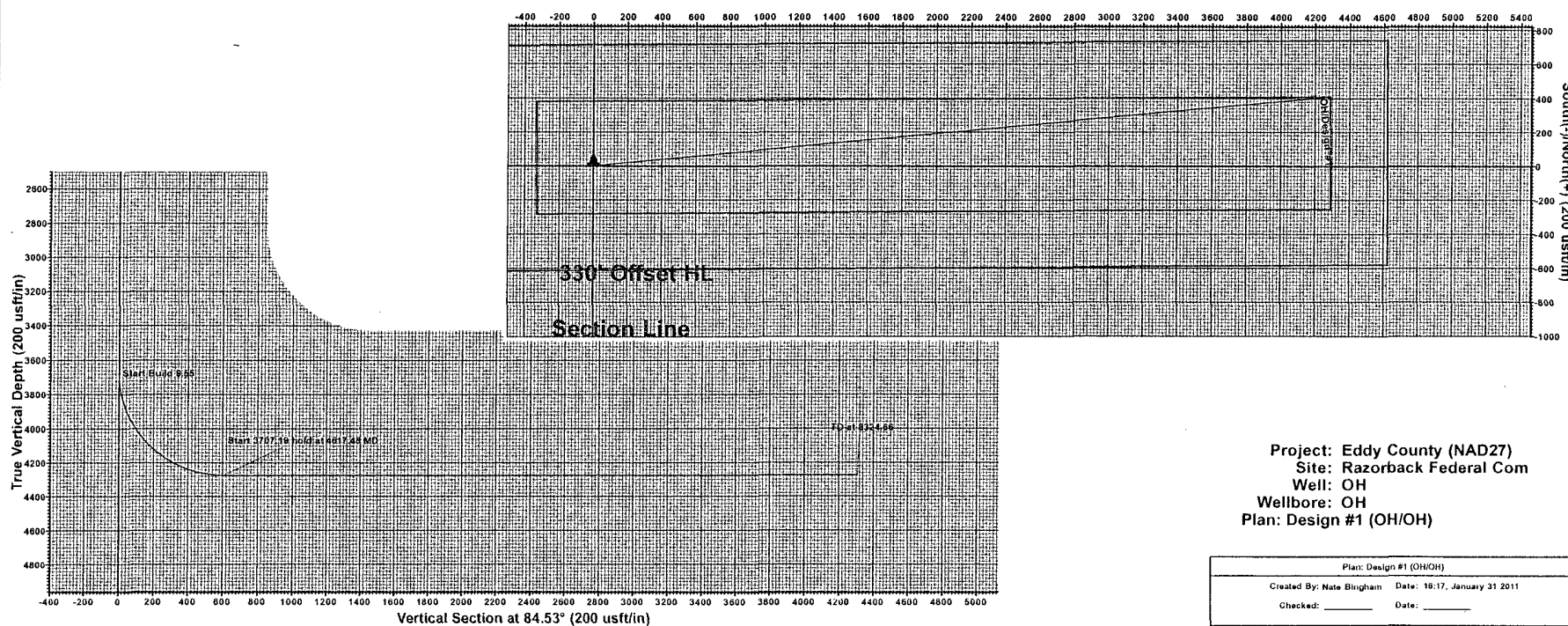
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	648423.200	644448.100	32° 46' 54.209 N	103° 51' 48.029 W	

PROJECT DETAILS: Eddy County (NAD27)
 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

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	23875.00	0.00	0.00	3675.00	0.00	0.00	0.00	0.00	0.00	
	34617.48	90.00	84.53	4275.00	57.19	597.27	9.55	84.53	600.00	
	48324.66	90.00	84.53	4275.00	410.58	4287.57	0.00	0.00	4307.19	PBHL(RB#1)

West(-)/East(+) (200 usft/in)



Project: Eddy County (NAD27)
 Site: Razorback Federal Com
 Well: OH
 Wellbore: OH
 Plan: Design #1 (OH/OH)

Plan: Design #1 (OH/OH)

Created By: Nate Bingham Date: 18:17, January 31 2011

Checked: _____ Date: _____

Well-Site Evaluation Field Form

Company Name: Mack Well Name: Razorback Fed Com 1

Location: Section 3, T. 18 S. R. 31 E. Footage 710 F.N.L. & 660 F.W.L.

Examined by Tanner Nygren Date 2/22/11

Resources Jerry Sherrell

Description & Topography: (cut & fill, etc.) Upon abandoned pad. Undulating dunes surrounding

Soils: (reseeding strips, etc.) Sandy

Cave Area: Low

Hydrogeology: (wells, playas, floodplain, drainages, erosive soils, plant indicators, etc.) Shinnery oak, dropseeds, bluestem

Wildlife: (habitat, LPC, SDL, etc.) LPC, SDL etc

Range Improvements: (fences, etc.) NA

Well Infrastructure

V-Door Direction: S Topsoil: None

Road Route: Using reclaimed road to the south

Pipeline: NA

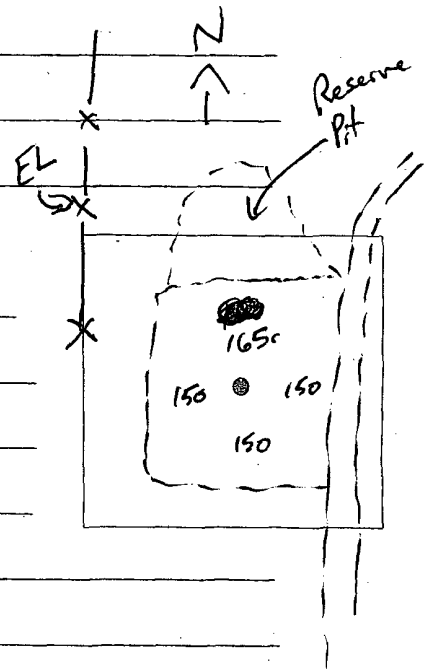
Production Facility Placement: W side

Interim Reclamation: N side

Other: (VRM, existing structures, etc.) Using abandoned pad.
Electric Line to the west

Evaluation: (Moved?) OK

COA: Place berm on NE corner on reclaimed road



Attached to Form 3160-3
Mack Energy Corporation
Razorback Federal Com #1
SL 710 FNL & 660 FWL, Lot # 4, Sec. 3 T18S R31E
BL 330 FNL & 330 FEL, Lot # 1, Sec. 3 T18S R31E
Eddy County, NM

Attachment to Exhibit #9
NOTES REGARDING THE BLOWOUT PREVENTERS
Razorback Federal Com #1
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.

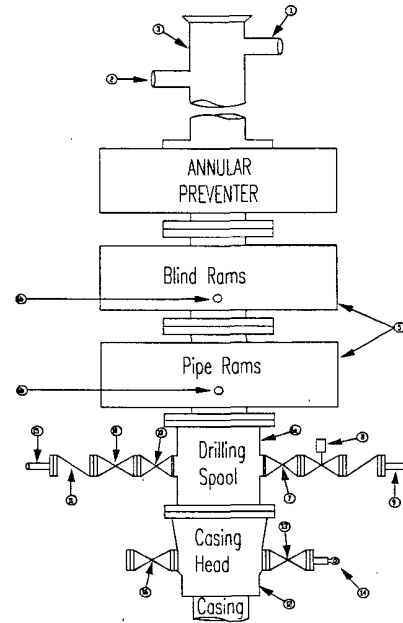
Mack Energy Corporation
Minimum Blowout Preventer Requirements
 3000 psi Working Pressure
 11 Inch-3 MWP
 EXHIBIT #10

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.

10.
ME

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

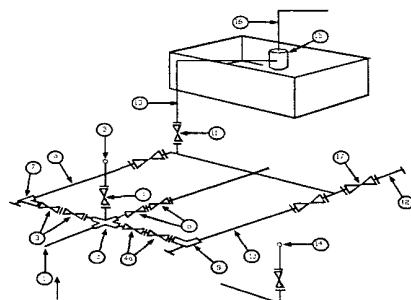
Exhibit #11

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' x 5'			2' x 5'			2' x 5'	
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

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- 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

