

Form 3160 -3
(April 2004)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, 20075. Lease Serial No.
NMLC-068677

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

1a. Type of work: ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone8. Lease Name and Well No.
Cotton Bowl Federal #1 #9. API Well No.
30-015-389862. Name of Operator
Mack Energy Corporation3a. Address
P.O. Box 960 Artesia, NM 88211-09603b. Phone No. (include area code)
(575)748-128810. Field and Pool, or Exploratory
Ishee Lake; Abo M2

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

At surface 1675 FNL & 230 FEL

At proposed prod. zone 1675 FNL & 330 FWL

UNORTHODOX
LOCATION

Sec. 8 T16S R29E

14. Distance in miles and direction from nearest town or post office*
10 miles northwest of Loco Hills, NM12. County or Parish
Eddy13. State
NM15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drlg. unit line, if any) 23016. No. of acres in lease
168017. Spacing Unit dedicated to this well
16018. Distance from proposed*
location to nearest well, drilling, completed,
applied for, on this lease, ft. 132019. Proposed Depth
MD 11,673'
TVD 7177'20. BLM/BIA Bond No. on file
NMB00028621. Elevations (Show whether DF, KDB, RT, GL, etc.)
3681' GR22. Approximate date work will start*
10/10/201023. 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

9/8/10

Title

Production Clerk

Approved by (Signature)

Is/ Don Peterson

Name (Printed/Typed)

Date APR 4 2011

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

Application approval does not warrantor certify that the applicant holds legal 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

RECEIVED

APR 11 2011

NMOCD ARTESIA

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

Attached to Form 3160-3
Mack Energy Corporation
Cotton Bowl Federal #1
SL 1675 FNL & 230 FEL, Unit H, Sec. 8 T16S R29E
BHL 1675 FNL & 330 FWL, Unit E, Sec. 8 T16S R29E
Eddy County, NM

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Yates	1450'	Tubb	5725'
Queen	2250'	Abo	6530'
San Andres	2925'	WC	7700'
Glorieta	4540'	Strawn	9725'

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

Water Sand	150'	Fresh Water
San Andres	2925'	Oil/Gas
Abo	6530'	Oil/Gas
WC	7700'	Oil/Gas

*See COA ** No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 9 5/8" casing to 450' 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 7100' and circulating cement back to surface. A 4 1/2" production casing liner will be set from 6500 to 11673', held in place with a liner hanger and peak completion packer system.

4. Casing Program:

see COA

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
12 1/4"	0-450'	9 5/8"	36#, J-55, ST&C, New, 8.992/6.910/7.04
8 3/4"	0-7100'	7"	26# 17#, HCP-110, LT&C, New, 2.578/3.711/3.547
6 1/8"	7000-10,801'	4 1/2"	11.6# HCP-110, LT&C, New, 1.485/3.863/3.563

11,672'
per operator 1/12/11

5. Cement Program:

9 5/8" Surface Casing: Class C 35:65 PozC 2%CaCl, Celloflake, 3#sx LCM, 1.5% SMS6, Lead 200sx, excess 100% yield 1.78, Class C 1% CaCl tail 400sx, excess 100% yield 1.34
7" Intermediate Casing: Class H 2.55% R-3, 5#LCM, 4%SMS, Lead 650sx, excess 35%, yield 2.15, Class H 50:50, 2% Salt, 3# LCM-1, 1%FL-62, 0.1% ASA-30I, 0.2%SMS tail 200sx, excess 35%, yield 1.19.
4 1/2" Production Casing: Set with isolation packers.

See COA X 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 BOP will be nipped up on the 9 5/8" surface casing and tested to 1000 psi using the rig pump.~~ 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. See COA X

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:

See COA X

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-450'	Fresh Water	8.5	28	N.C.
450-3050'	Brine	10	30	N.C.
3050'-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 X
- 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 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.

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 October 10, 2010. 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.

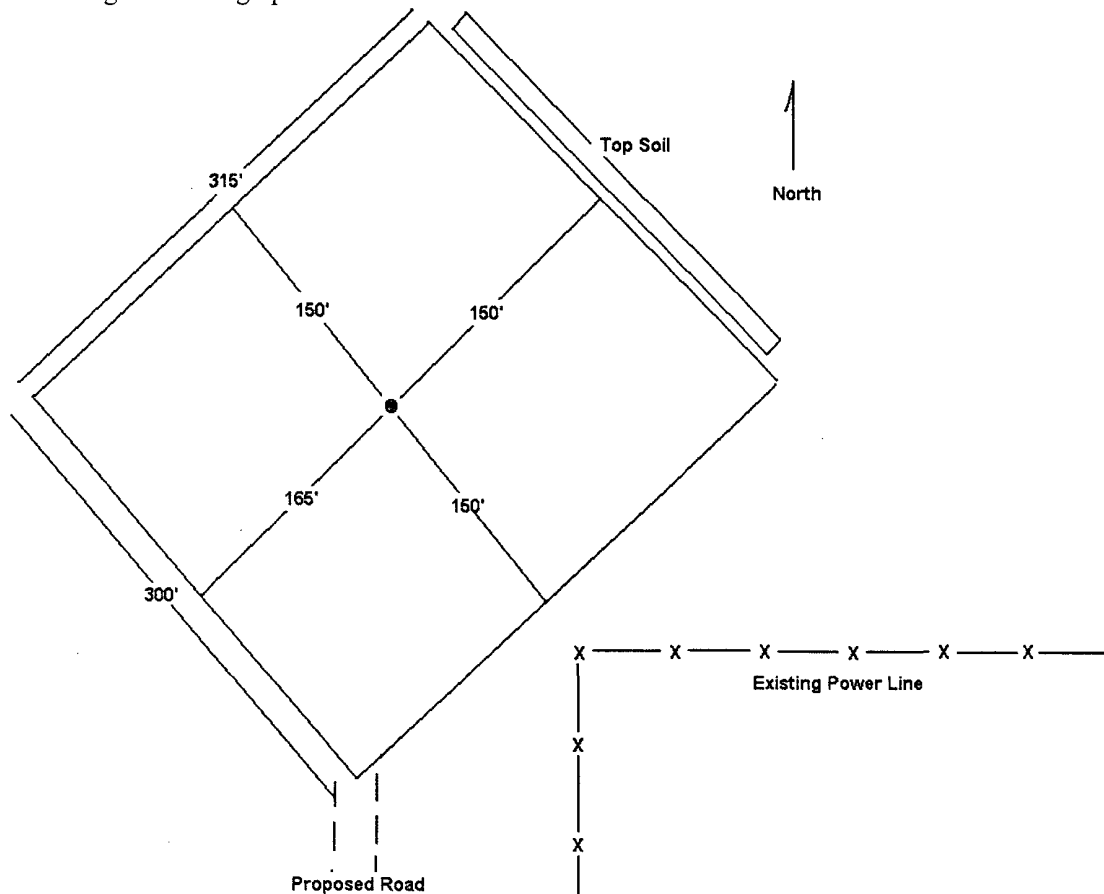


Exhibit #6



Mack Energy

Eddy County

Cotton Bowl Federal

#1H

OH

Plan: Plan #1

Pathfinder X & Y Planning Report

23 August, 2010

PATHFINDER



Pathfinder

Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3700.00ft (Original Well Elev)
Site:	Cotton Bowl Federal	MD Reference:	WELL @ 3700.00ft (Original Well Elev)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

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

Site	Cotton Bowl Federal				
Site Position:		Northing:	705,309.400 ft	Latitude:	32° 56' 19.431 N
From:	Map	Easting:	575,050.100 ft	Longitude:	104° 5' 19.347 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.13 °

Well	#1H					
Well Position	+N/-S	0.00 ft	Northing:	705,309.400 ft	Latitude:	32° 56' 19.431 N
	+E/-W	0.00 ft	Easting:	575,050.100 ft	Longitude:	104° 5' 19.347 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,681.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	12/23/2010	7.92	60.79	49,068

Design	Plan #1				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	269.99	

Survey Tool Program	Date	08/23/2010			
From	To	Survey (Wellbore)	Tool Name	Description	
(ft)	(ft)				
0.00	11,672.69	Plan #1 (OH)	MWD	MWD - Standard	



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Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland 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)
0.00	0.00	0.00	0.00	-3,700.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
100.00	0.00	0.00	100.00	-3,600.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
200.00	0.00	0.00	200.00	-3,500.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
300.00	0.00	0.00	300.00	-3,400.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
400.00	0.00	0.00	400.00	-3,300.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
500.00	0.00	0.00	500.00	-3,200.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
600.00	0.00	0.00	600.00	-3,100.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
700.00	0.00	0.00	700.00	-3,000.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
800.00	0.00	0.00	800.00	-2,900.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
900.00	0.00	0.00	900.00	-2,800.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,000.00	0.00	0.00	1,000.00	-2,700.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,100.00	0.00	0.00	1,100.00	-2,600.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,200.00	0.00	0.00	1,200.00	-2,500.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,300.00	0.00	0.00	1,300.00	-2,400.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,400.00	0.00	0.00	1,400.00	-2,300.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,500.00	0.00	0.00	1,500.00	-2,200.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,600.00	0.00	0.00	1,600.00	-2,100.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,700.00	0.00	0.00	1,700.00	-2,000.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,800.00	0.00	0.00	1,800.00	-1,900.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
1,900.00	0.00	0.00	1,900.00	-1,800.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,000.00	0.00	0.00	2,000.00	-1,700.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,100.00	0.00	0.00	2,100.00	-1,600.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,200.00	0.00	0.00	2,200.00	-1,500.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,300.00	0.00	0.00	2,300.00	-1,400.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,400.00	0.00	0.00	2,400.00	-1,300.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,500.00	0.00	0.00	2,500.00	-1,200.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,600.00	0.00	0.00	2,600.00	-1,100.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10



Pathfinder

Pathfinder X & Y Planning Report



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2,700.00	0.00	0.00	2,700.00	-1,000.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,800.00	0.00	0.00	2,800.00	-900.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
2,900.00	0.00	0.00	2,900.00	-800.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,000.00	0.00	0.00	3,000.00	-700.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,100.00	0.00	0.00	3,100.00	-600.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,200.00	0.00	0.00	3,200.00	-500.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,300.00	0.00	0.00	3,300.00	-400.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,400.00	0.00	0.00	3,400.00	-300.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,500.00	0.00	0.00	3,500.00	-200.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,600.00	0.00	0.00	3,600.00	-100.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,800.00	0.00	0.00	3,800.00	100.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
3,900.00	0.00	0.00	3,900.00	200.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,000.00	0.00	0.00	4,000.00	300.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,100.00	0.00	0.00	4,100.00	400.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,200.00	0.00	0.00	4,200.00	500.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,300.00	0.00	0.00	4,300.00	600.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,400.00	0.00	0.00	4,400.00	700.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,500.00	0.00	0.00	4,500.00	800.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,600.00	0.00	0.00	4,600.00	900.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,700.00	0.00	0.00	4,700.00	1,000.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,800.00	0.00	0.00	4,800.00	1,100.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
4,900.00	0.00	0.00	4,900.00	1,200.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
5,000.00	0.00	0.00	5,000.00	1,300.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
5,100.00	0.00	0.00	5,100.00	1,400.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
5,200.00	0.00	0.00	5,200.00	1,500.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10
5,300.00	0.00	0.00	5,300.00	1,600.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10



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5,400.00	0.00	0.00	5,400.00	1,700.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
5,500.00	0.00	0.00	5,500.00	1,800.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
5,600.00	0.00	0.00	5,600.00	1,900.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
5,700.00	0.00	0.00	5,700.00	2,000.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
5,800.00	0.00	0.00	5,800.00	2,100.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
5,900.00	0.00	0.00	5,900.00	2,200.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,000.00	0.00	0.00	6,000.00	2,300.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,100.00	0.00	0.00	6,100.00	2,400.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,200.00	0.00	0.00	6,200.00	2,500.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,300.00	0.00	0.00	6,300.00	2,600.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,400.00	0.00	0.00	6,400.00	2,700.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,500.00	0.00	0.00	6,500.00	2,800.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,600.00	0.00	0.00	6,600.00	2,900.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,677.00	0.00	0.00	6,677.00	2,977.00	0.00	0.00	0.00	0.00	705,309.40	575,050.10	
6,700.00	2.64	269.99	6,699.99	2,999.99	0.00	-0.53	0.53	11.46	705,309.40	575,049.57	
6,750.00	8.37	269.99	6,749.74	3,049.74	0.00	-5.32	5.32	11.46	705,309.40	575,044.78	
6,800.00	14.09	269.99	6,798.76	3,098.76	0.00	-15.05	15.05	11.46	705,309.40	575,035.05	
6,850.00	19.82	269.99	6,846.57	3,146.57	-0.01	-29.63	29.63	11.46	705,309.39	575,020.47	
6,900.00	25.55	269.99	6,892.68	3,192.68	-0.01	-48.91	48.91	11.46	705,309.39	575,001.19	
6,950.00	31.28	269.99	6,936.64	3,236.64	-0.01	-72.70	72.70	11.46	705,309.39	574,977.40	
7,000.00	37.01	269.99	6,978.00	3,278.00	-0.02	-100.75	100.75	11.46	705,309.38	574,949.35	
7,050.00	42.74	269.99	7,016.35	3,316.35	-0.02	-132.79	132.79	11.46	705,309.38	574,917.31	
7,100.00	48.47	269.99	7,051.32	3,351.32	-0.03	-168.51	168.51	11.46	705,309.37	574,881.59	
7,150.00	54.20	269.99	7,082.54	3,382.54	-0.04	-207.53	207.53	11.46	705,309.36	574,842.57	
7,200.00	59.93	269.99	7,109.71	3,409.71	-0.04	-249.48	249.48	11.46	705,309.36	574,800.62	
7,250.00	65.66	269.99	7,132.56	3,432.56	-0.05	-293.93	293.93	11.46	705,309.35	574,756.17	
7,300.00	71.39	269.99	7,150.86	3,450.86	-0.06	-340.44	340.44	11.46	705,309.34	574,709.66	



Pathfinder

Pathfinder X & Y Planning Report



Company: Mack Energy
Project: Eddy County
Site: Cotton Bowl Federal
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3700.00ft (Original Well Elev)
MD Reference: WELL @ 3700.00ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland 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)
7,350.00	77.12	269.99	7,164.42	3,464.42	-0.07	-388.54	388.54	11.46	705,309.33	574,661.56
7,400.00	82.85	269.99	7,173.11	3,473.11	-0.08	-437.76	437.76	11.46	705,309.32	574,612.34
7,450.00	88.58	269.99	7,176.85	3,476.85	-0.09	-487.60	487.60	11.46	705,309.31	574,562.50
7,464.32	90.22	269.99	7,177.00	3,477.00	-0.09	-501.92	501.92	11.46	705,309.31	574,548.18
7,464.53	90.22	269.99	7,177.00	3,477.00	-0.09	-502.12	502.12	0.00	705,309.31	574,547.98
7,500.00	90.22	269.99	7,176.86	3,476.86	-0.09	-537.60	537.60	0.00	705,309.31	574,512.50
7,600.00	90.22	269.99	7,176.48	3,476.48	-0.11	-637.60	637.60	0.00	705,309.29	574,412.50
7,700.00	90.22	269.99	7,176.10	3,476.10	-0.13	-737.60	737.60	0.00	705,309.27	574,312.50
7,800.00	90.22	269.99	7,175.71	3,475.71	-0.15	-837.60	837.60	0.00	705,309.25	574,212.50
7,900.00	90.22	269.99	7,175.33	3,475.33	-0.16	-937.60	937.60	0.00	705,309.24	574,112.50
7,962.40	90.22	269.99	7,175.00	3,475.00	-0.17	-1,000.00	1,000.00	0.00	705,309.23	574,050.10
TGT1(CB#1)										
8,000.00	90.22	269.99	7,174.85	3,474.85	-0.18	-1,037.60	1,037.60	0.01	705,309.22	574,012.50
8,092.18	90.23	269.99	7,174.49	3,474.49	-0.20	-1,129.78	1,129.78	0.01	705,309.20	573,920.32
8,100.00	90.23	269.99	7,174.46	3,474.46	-0.20	-1,137.59	1,137.59	0.00	705,309.20	573,912.51
8,200.00	90.23	269.99	7,174.06	3,474.06	-0.22	-1,237.59	1,237.59	0.00	705,309.18	573,812.51
8,300.00	90.23	269.99	7,173.66	3,473.66	-0.23	-1,337.59	1,337.59	0.00	705,309.17	573,712.51
8,400.00	90.23	269.99	7,173.26	3,473.26	-0.25	-1,437.59	1,437.59	0.00	705,309.15	573,612.51
8,500.00	90.23	269.99	7,172.85	3,472.85	-0.27	-1,537.59	1,537.59	0.00	705,309.13	573,512.51
8,600.00	90.23	269.99	7,172.45	3,472.45	-0.29	-1,637.59	1,637.59	0.00	705,309.11	573,412.51
8,700.00	90.23	269.99	7,172.05	3,472.05	-0.30	-1,737.59	1,737.59	0.00	705,309.10	573,312.51
8,800.00	90.23	269.99	7,171.65	3,471.65	-0.32	-1,837.59	1,837.59	0.00	705,309.08	573,212.51
8,900.00	90.23	269.99	7,171.25	3,471.25	-0.34	-1,937.59	1,937.59	0.00	705,309.06	573,112.51
8,962.41	90.23	269.99	7,171.00	3,471.00	-0.35	-2,000.00	2,000.00	0.00	705,309.05	573,050.10
TGT2(CB#1)										
8,965.25	90.29	269.99	7,170.99	3,470.99	-0.35	-2,002.84	2,002.84	2.00	705,309.05	573,047.26
9,000.00	90.29	269.99	7,170.81	3,470.81	-0.36	-2,037.59	2,037.59	0.00	705,309.04	573,012.51



Pathfinder

Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3700.00ft (Original Well Elev)
Site:	Cotton Bowl Federal	MD Reference:	WELL @ 3700.00ft (Original Well Elev)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland 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)
9,100.00	90.29	269.99	7,170.31	3,470.31	-0.37	-2,137.59	2,137.59	0.00	705,309.03	572,912.51
9,200.00	90.29	269.99	7,169.81	3,469.81	-0.39	-2,237.58	2,237.58	0.00	705,309.01	572,812.52
9,300.00	90.29	269.99	7,169.31	3,469.31	-0.41	-2,337.58	2,337.58	0.00	705,308.99	572,712.52
9,400.00	90.29	269.99	7,168.81	3,468.81	-0.43	-2,437.58	2,437.58	0.00	705,308.97	572,612.52
9,500.00	90.29	269.99	7,168.31	3,468.31	-0.44	-2,537.58	2,537.58	0.00	705,308.96	572,512.52
9,600.00	90.29	269.99	7,167.81	3,467.81	-0.46	-2,637.58	2,637.58	0.00	705,308.94	572,412.52
9,700.00	90.29	269.99	7,167.31	3,467.31	-0.48	-2,737.58	2,737.58	0.00	705,308.92	572,312.52
9,800.00	90.29	269.99	7,166.81	3,466.81	-0.50	-2,837.58	2,837.58	0.00	705,308.90	572,212.52
9,900.00	90.29	269.99	7,166.31	3,466.31	-0.51	-2,937.58	2,937.58	0.00	705,308.89	572,112.52
9,962.42	90.29	269.99	7,166.00	3,466.00	-0.52	-3,000.00	3,000.00	0.00	705,308.88	572,050.10
TGT3(CB#1)										
9,968.17	90.40	269.99	7,165.97	3,465.97	-0.52	-3,005.74	3,005.74	2.00	705,308.88	572,044.36
10,000.00	90.40	269.99	7,165.74	3,465.74	-0.53	-3,037.57	3,037.57	0.00	705,308.87	572,012.53
10,100.00	90.40	269.99	7,165.04	3,465.04	-0.55	-3,137.57	3,137.57	0.00	705,308.85	571,912.53
10,200.00	90.40	269.99	7,164.34	3,464.34	-0.57	-3,237.57	3,237.57	0.00	705,308.83	571,812.53
10,300.00	90.40	269.99	7,163.64	3,463.64	-0.58	-3,337.57	3,337.57	0.00	705,308.82	571,712.53
10,400.00	90.40	269.99	7,162.94	3,462.94	-0.60	-3,437.56	3,437.56	0.00	705,308.80	571,612.54
10,500.00	90.40	269.99	7,162.24	3,462.24	-0.62	-3,537.56	3,537.56	0.00	705,308.78	571,512.54
10,600.00	90.40	269.99	7,161.54	3,461.54	-0.63	-3,637.56	3,637.56	0.00	705,308.77	571,412.54
10,700.00	90.40	269.99	7,160.84	3,460.84	-0.65	-3,737.56	3,737.56	0.00	705,308.75	571,312.54
10,800.00	90.40	269.99	7,160.14	3,460.14	-0.67	-3,837.55	3,837.55	0.00	705,308.73	571,212.55
10,900.00	90.40	269.99	7,159.44	3,459.44	-0.69	-3,937.55	3,937.55	0.00	705,308.71	571,112.55
10,962.45	90.40	269.99	7,159.00	3,459.00	-0.70	-4,000.00	4,000.00	0.00	705,308.70	571,050.10
TGT4(CB#1)										
10,974.81	90.65	269.97	7,158.89	3,458.89	-0.70	-4,012.36	4,012.36	2.00	705,308.70	571,037.74
11,000.00	90.65	269.97	7,158.60	3,458.60	-0.72	-4,037.55	4,037.55	0.00	705,308.68	571,012.55
11,100.00	90.65	269.97	7,157.47	3,457.47	-0.77	-4,137.54	4,137.54	0.00	705,308.63	570,912.56



Pathfinder

Pathfinder X & Y Planning Report



Company: Mack Energy
Project: Eddy County
Site: Cotton Bowl Federal
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3700.00ft (Original Well Elev)
MD Reference: WELL @ 3700.00ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Planned Survey

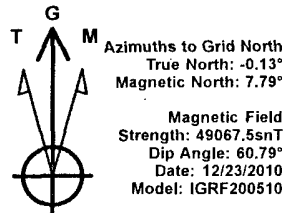
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V- Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
11,200.00	90.65	269.97	7,156.34	3,456.34	-0.83	-4,237.54	4,237.54	0.00	705,308.57	570,812.56
11,300.00	90.65	269.97	7,155.21	3,455.21	-0.89	-4,337.53	4,337.53	0.00	705,308.51	570,712.57
11,400.00	90.65	269.97	7,154.08	3,454.08	-0.94	-4,437.52	4,437.52	0.00	705,308.46	570,612.58
11,500.00	90.65	269.97	7,152.95	3,452.95	-1.00	-4,537.52	4,537.52	0.00	705,308.40	570,512.58
11,600.00	90.65	269.97	7,151.82	3,451.82	-1.06	-4,637.51	4,637.51	0.00	705,308.34	570,412.59
11,672.69	90.65	269.97	7,151.00	3,451.00	-1.10	-4,710.20	4,710.20	0.00	705,308.30	570,339.90

PBHL(CB#1)

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
TGT4(CB#1) - plan hits target center - Point	0.00	0.00	7,159.00	-0.70	-4,000.00	705,308.702	571,050.100	32° 56' 19.514 N	104° 6' 6.283 W
TGT3(CB#1) - plan hits target center - Point	0.00	0.00	7,166.00	-0.52	-3,000.00	705,308.876	572,050.100	32° 56' 19.494 N	104° 5' 54.549 W
TGT2(CB#1) - plan hits target center - Point	0.00	0.00	7,171.00	-0.35	-2,000.00	705,309.051	573,050.100	32° 56' 19.473 N	104° 5' 42.815 W
TGT1(CB#1) - plan hits target center - Point	0.00	0.00	7,175.00	-0.17	-1,000.00	705,309.225	574,050.100	32° 56' 19.452 N	104° 5' 31.081 W
PBHL(CB#1) - plan hits target center - Point	0.00	0.00	7,151.00	-1.10	-4,710.20	705,308.300	570,339.900	32° 56' 19.525 N	104° 6' 14.617 W

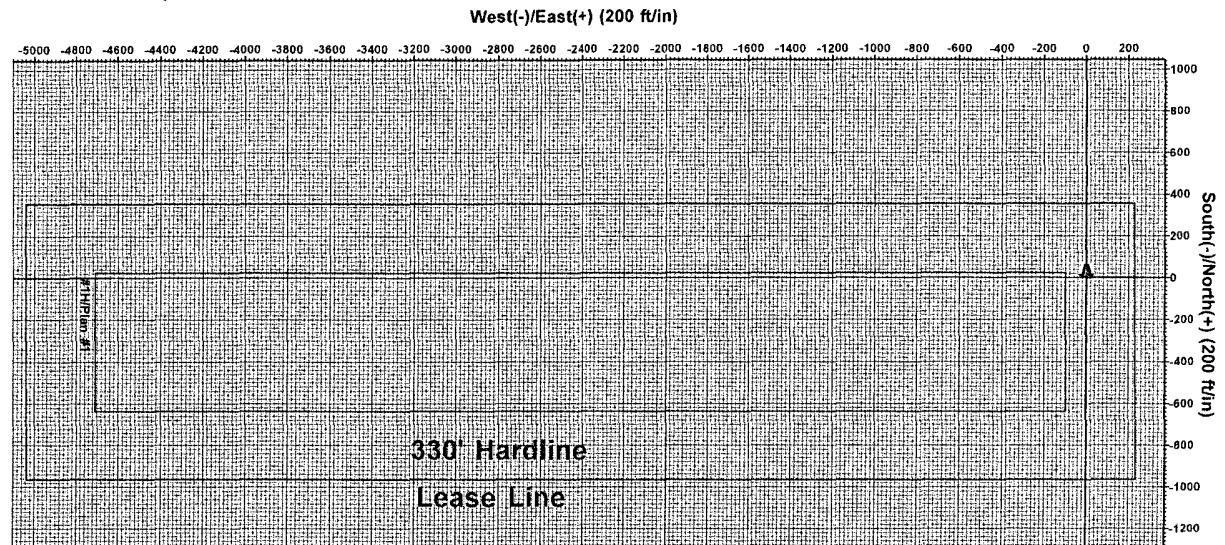
Checked By: _____ Approved By: _____ Date: _____



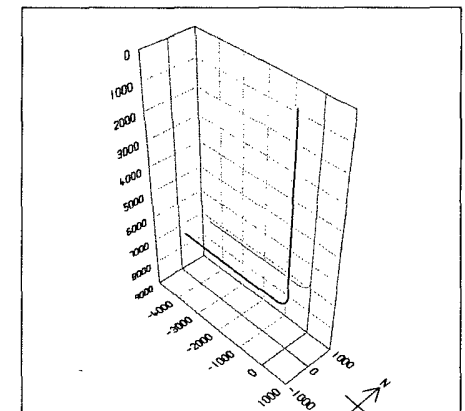
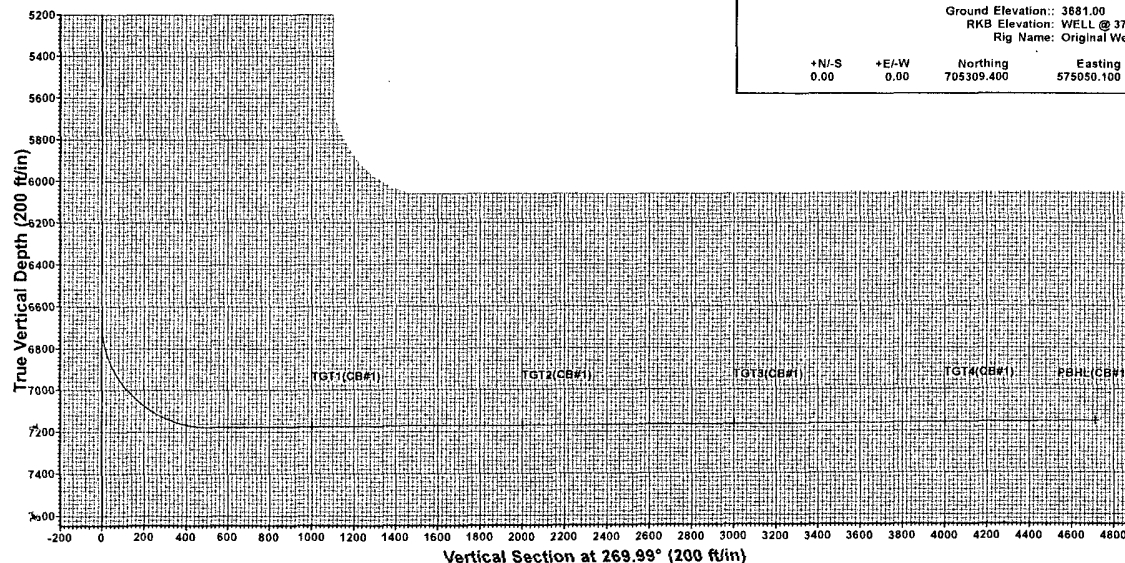
PATHFINDER

WELLBORE TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape
PBHL(CB#1)	7151.00	-1.10	-4710.20	Point
TGT4(CB#1)	7159.00	-0.70	-4000.00	Point
TGT3(CB#1)	7166.00	-0.52	-3000.00	Point
TGT2(CB#1)	7171.00	-0.35	-2000.00	Point
TGT1(CB#1)	7175.00	-0.17	-1000.00	Point

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	6677.00	0.00	0.00	6677.00	0.00	0.00	0.00	0.00	0.00		
3	7464.32	90.22	269.99	7177.00	-0.09	-501.92	11.46	269.99	501.92		
4	7464.53	90.22	269.99	7177.00	-0.09	-502.12	0.00	0.00	502.12		
5	7962.40	90.22	269.99	7175.00	-0.17	-1000.00	0.00	0.00	1000.00	TGT1(CB#1)	
6	8062.18	90.23	269.99	7174.49	-0.20	-1129.78	0.01	0.00	1129.78		
7	8962.41	90.23	269.99	7171.00	-0.35	-2000.00	0.00	0.00	2000.00	TGT2(CB#1)	
8	8965.25	90.29	269.99	7170.99	-0.35	-2002.84	2.00	0.00	2002.84		
9	9962.42	90.29	269.99	7166.00	-0.52	-3000.00	0.00	0.00	3000.00	TGT3(CB#1)	
10	9968.17	90.40	269.99	7165.97	-0.52	-3005.74	2.00	0.00	3005.74		
11	10962.45	90.40	269.99	7159.00	-0.70	-4000.00	0.00	0.00	4000.00	TGT4(CB#1)	
12	10974.81	90.65	269.97	7158.99	-0.70	-4012.36	2.00	-5.25	4012.36		
13	11672.69	90.65	269.97	7151.00	-1.10	-4710.20	0.00	0.00	4710.20	PBHL(CB#1)	



WELL DETAILS: #1H						
Ground Elevation:: 3681.00						
RKB Elevation: WELL @ 3700.00ft (Original Well Elev)						
Rig Name: Original Well Elev						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	705309.400	575050.100	32° 56' 19.431 N	104° 5' 19.347 W	

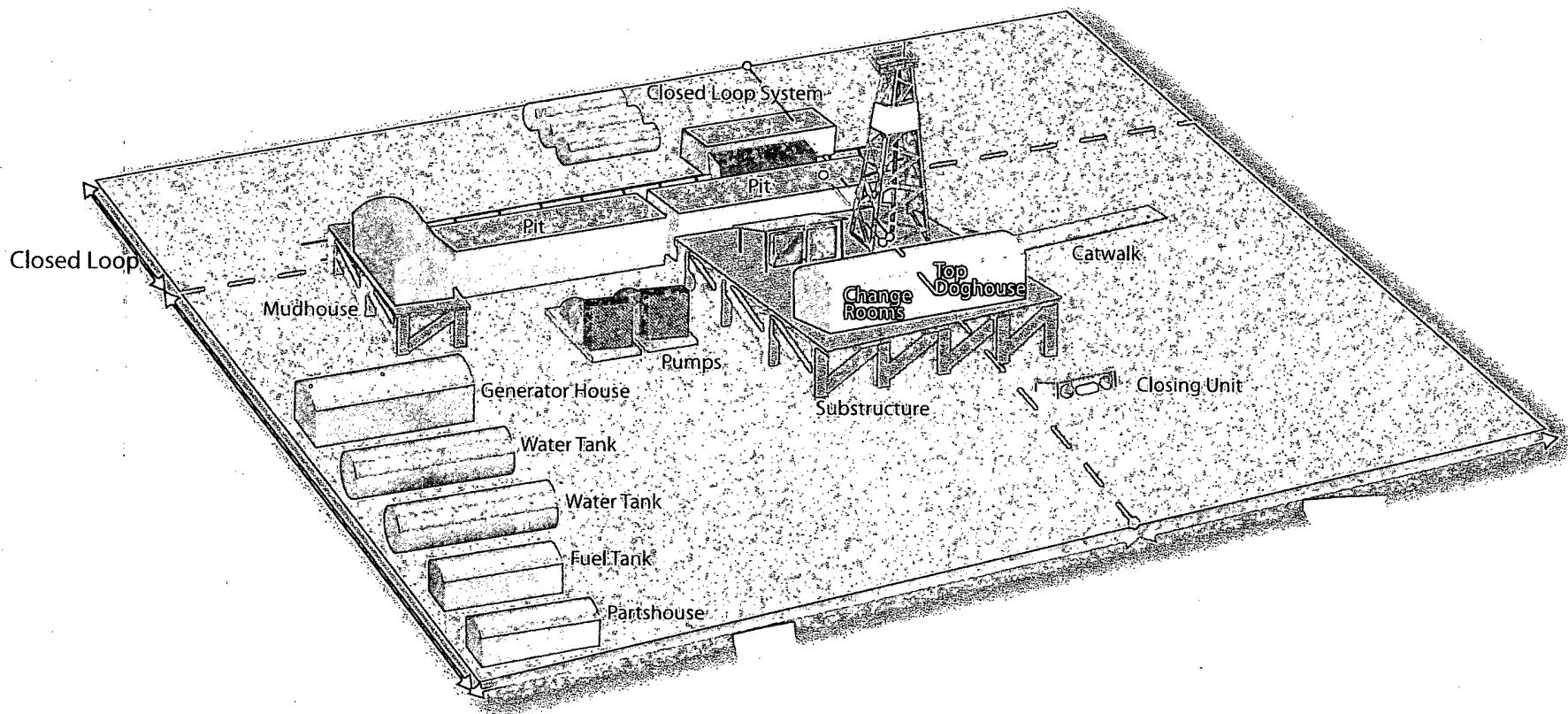


PROJECT DETAILS: Eddy County
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 System Datum: Mean Sea Level
 Local North: Grid

Plan: Plan #1 (#1H/OH)	
Created By: Nate Bingham	Date: 8:38, August 23 2010
Checked: _____	Date: _____

Location Layout

Rig #2



Silver Oak Drilling ~ 10 Blue Road, Artesia, NM 88210 ~ 575.746.4405
 info@silveroakdrilling.com ~ www.silveroakdrilling.com



Attached to Form 3160-3
Mack Energy Corporation
Cotton Bowl Federal #1
SL 1675 FNL & 230 FEL, Unit H, Sec. 8 T16S R29E
BHL 1675 FNL & 330 FWL, Unit E, Sec. 8 T16S R29E
Eddy County, NM

Attachment to Exhibit #9
NOTES REGARDING THE BLOWOUT PREVENTERS
Cotton Bowl Federal #1
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.

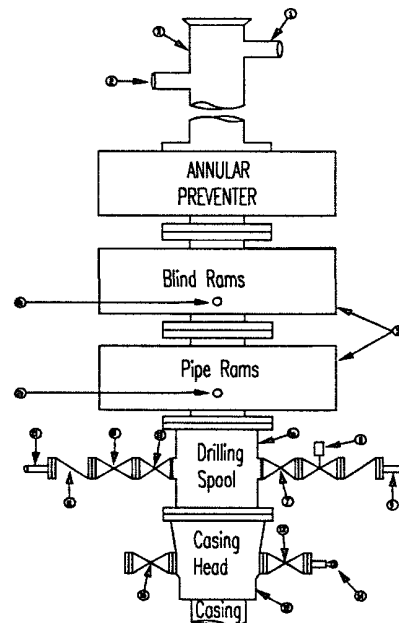
Mack Energy Corporation
Minimum Blowout Preventer Requirements
3000 psi Working Pressure
3 MWP
EXHIBIT #10

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	
----	---------------	---------	--



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

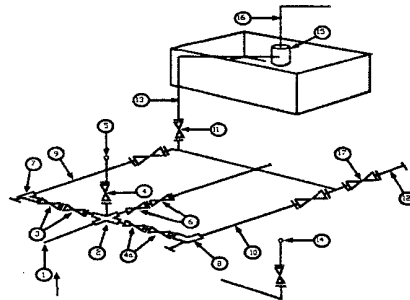
Exhibit #11

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 gauge			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

