OCD-ARTESIA

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MAY 24 2010
NMOCD ARTESIA

ATS-10-430
EA-10-621

Form 3160 -3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

APPLICATION FOR PERMIT TO DRILL OR REENTER

	5. Lease Serial No. NMNM-117550
	6. If Indian, Allotee or Tribe Name
1a. Typeofwork-. ☒ DRILL ☐ REENTER	7 If Unit or CA Agreement, Name and No.
1b. Type of Well. ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone	8, Lease Name and Well No. <38189> Candy Cane State Com #1
2. Name of Operator Mack Energy Corporation <13837>	9. API Well No. 30-015-~~25365~~ 37905
3a. Address P.O. Box 960 Artesia, NM 88211-0960	3b PhoneNo. *(include area code)* (575)748-1288
	10. Field and Pool, or Exploratory Crow Flats; Wolfcamp
4. Location of Well *(Report location clearly and inaccorounce with any State requirements*)* At surface 662 FNL & 660 FWL Unit D	11 Sec., T. R. M. or Blk and Survey or Area
At proposed prod. zone ~~965~~ FNL & ~~1202 FWL~~ 330'/E Unit A	Sec. 15 T16S R28E
14 Distance in miles and direction from nearest town or post office* 10 miles north/northeast of Loco Hills, NM	12. County or Parish ~~Chaves~~ Eddy / 13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg unit line, if any) 330	16. No. of acres in lease 160	17. Spacing Unit dedicated to this well 160
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1320	19 Proposed Depth MD 10,676' TVD 6590'	20 BLM/BIA Bond No on file NMB000286
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3588' GR	22 Approximate date work will start* 4/26/2010	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 3/29/10
Title Production Clerk		
Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)* /s/ Don Peterson	Date MAY 20 2010
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrantor certify that the applicant holds lega orequitable 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 Tide 43 U S C. Section 1212, make it a crime for any person knowirilly and willfully to make to any department or agency ofthe United States any false, fictitious or fraudulent statements or representations as to any matter within its juris iction

**(Instructions on page 2)*

Roswell Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

RECEIVED
MAR 11 2010

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210
DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
DISTRICT IV
1662 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1662 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-015-~~35365~~ 37905	97102	Crow Flats:Wolfcamp

Property Code	Property Name	Well Number
38189	CANDY CANE STATE COM	1

OGRID No.	Operator Name	Elevation
013837	MACK ENERGY CORPORATION	3588'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	15	16-S	28-E		662	NORTH	660	WEST	EDDY

#1 Bottom Hole Location If Different From Surface

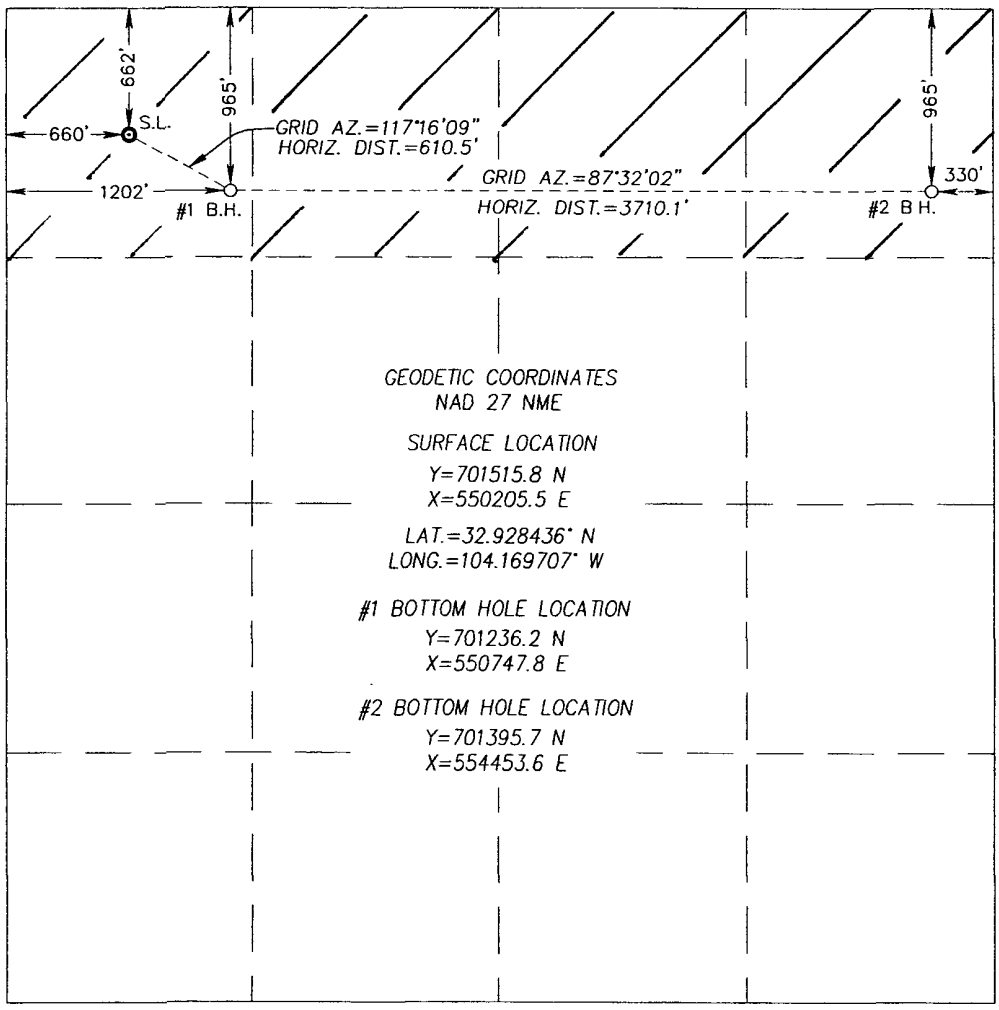
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	15	16-S	28-E		965	NORTH	1202	WEST	EDDY

#2 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	15	16-S	28-E		965	NORTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jerry W. Sherrell 3/29/10
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.

FEBRUARY 25, 2010
Date Surveyed DSS

Signature & Seal of Professional Surveyor

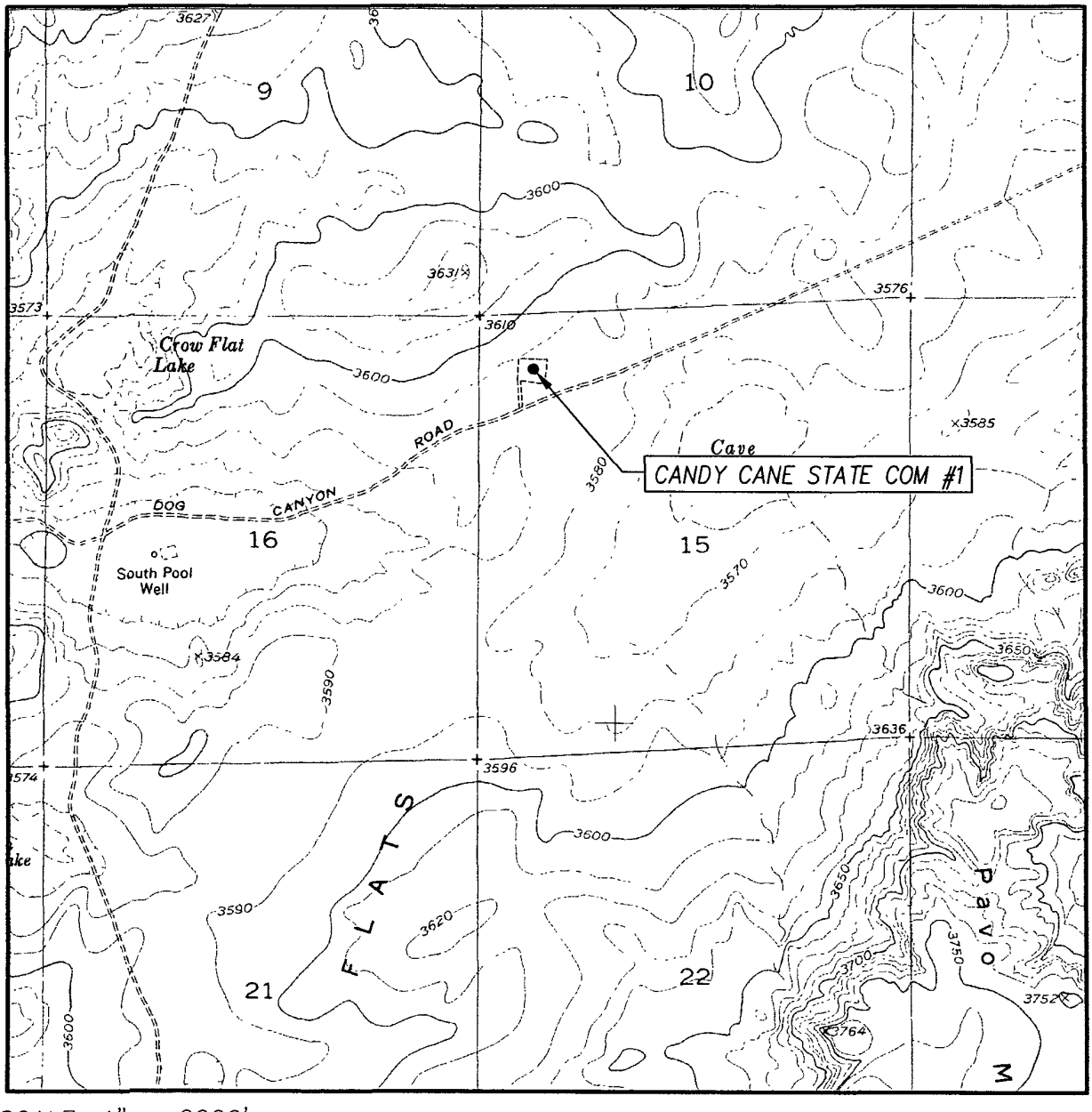
GARY G. EIDSON
NEW MEXICO
12641
REGISTERED PROFESSIONAL SURVEYOR

Gary G Eidson 3/8/10

10.11.0272

Certificate No. GARY G. EIDSON 12641
RONALD J. EIDSON 3239

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
DIAMOND MOUND, N.M. – 10'

SEC. 15 TWP. 16-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 662' FNL & 660' FWL

ELEVATION 3588'

OPERATOR MACK ENERGY CORPORATION

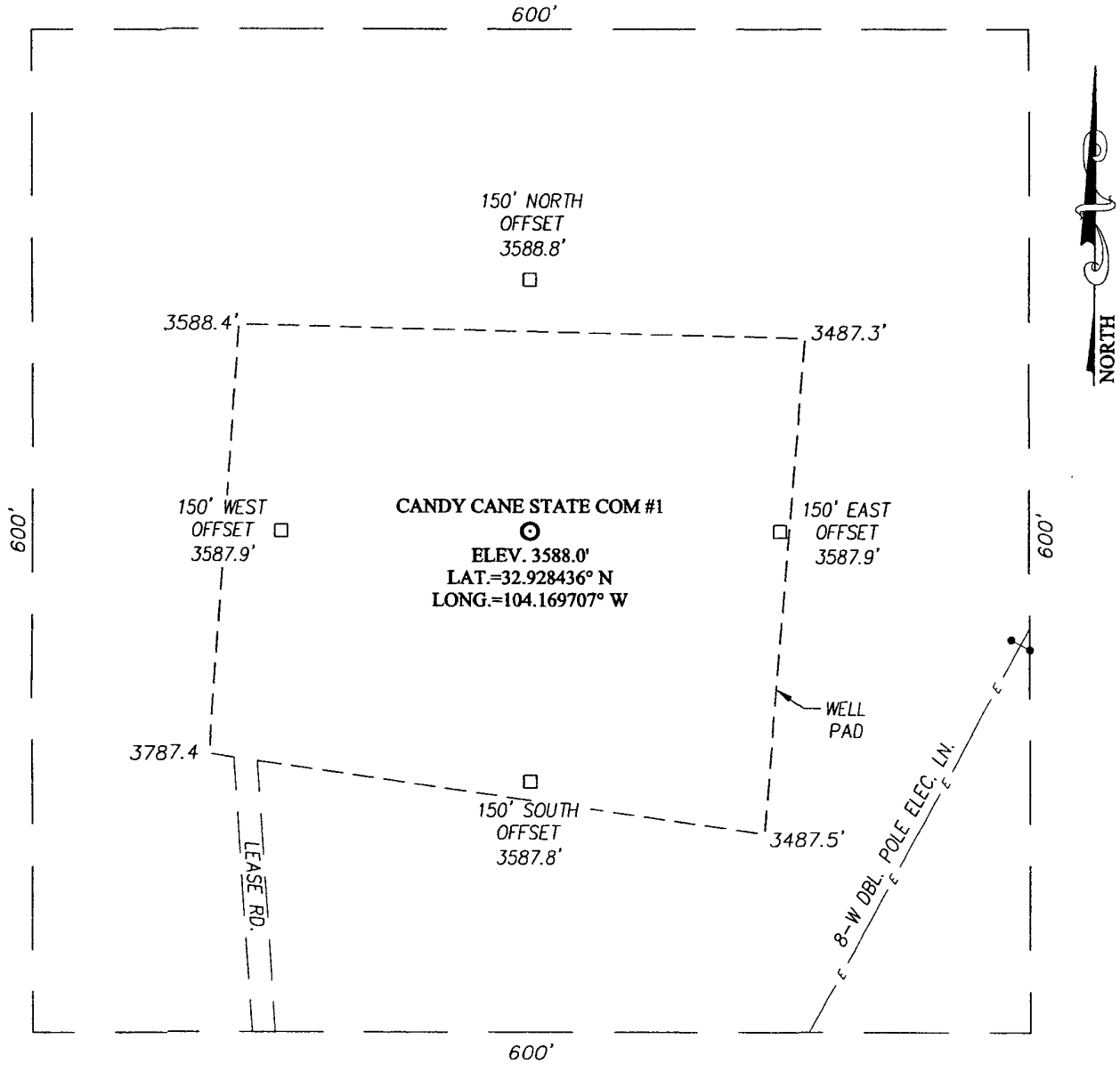
LEASE CANDY CANE STATE COM

U.S.G.S. TOPOGRAPHIC MAP
DIAMOND MOUND, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

SECTION 15, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #202 (SOUTHERN UNION RD.), GO NORTH ON CO. RD. #202 APPROX. 2.7 MILES. VEER RIGHT AND GO NORTHEAST APPROX. 1.3 MILES. VEER LEFT AND GO NORTH APPROX. 0.1 MILE. AT 3-WAY FORK VEER RIGHT AND GO NORTHEAST APPROX. 1.0 MILE. TURN RIGHT AND GO EAST APPROX. 1.0 MILE. TURN LEFT AND GO NORTHEAST APPROX. 0.5 MILES. TURN LEFT AND GO NORTH APPROX. 1.0 MILE. TURN RIGHT ON DOG CANYON RD. AND GO EAST-NORTHEAST APPROX. 1.0 MILE. TURN LEFT AND GO NORTH APPROX. 0.1 MILE TO THE CENTER OF PAD AND CASING MARKER.

100 0 100 200 Feet

Scale: 1"=100'

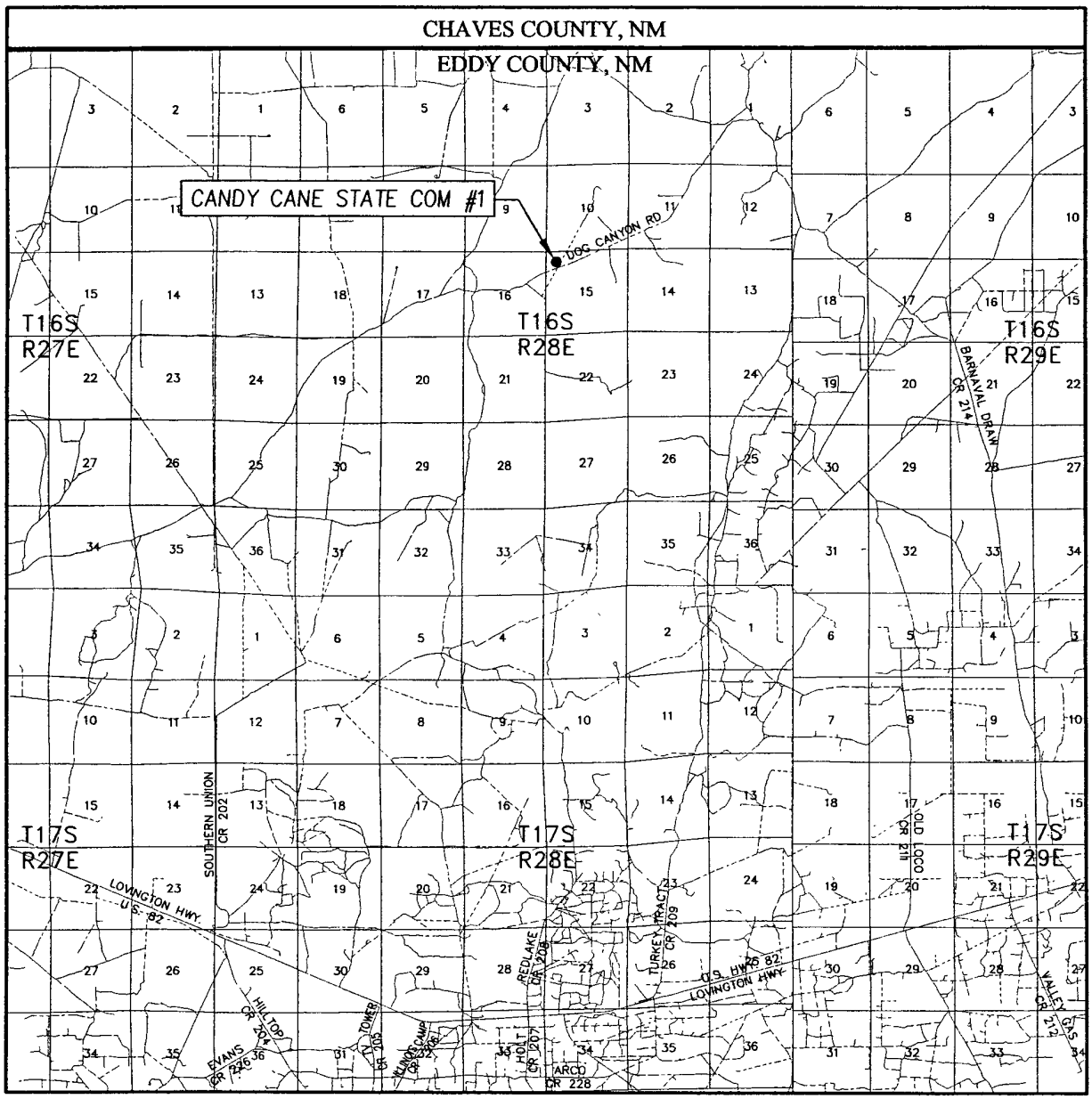
PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

MACK ENERGY CORPORATION

CANDY CANE STATE COM #1 WELL
LOCATED 662 FEET FROM THE NORTH LINE
AND 660 FEET FROM THE WEST LINE OF SECTION 15,
TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 02/25/10	Sheet 1 of 1 Sheets		
W.O. Number: 10.11.0272	Dr. By: DSS	Rev 1:	
Date: 03/05/10	Rel. W.O.:	10110272	Scale: 1"=100'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 15 TWP. 16-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 662' FNL & 660' FWL

ELEVATION 3588'

OPERATOR MACK ENERGY CORPORATION

LEASE CANDY CANE STATE COM

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

Attached to Form 3160-3
Mack Energy Corporation
Candy Cane State Com #1
SHL 662 FNL & 660 FWL Unit D, Sec. 15 T16S R28E
BHL 965 FNL & 330 FEL Unit A, Sec. 15 T16S R28E
Eddy County, NM

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
San Andres	1840'
Glorieta	3332'
Tubb	4566'
Abo	5347'
Wolfcamp	6500'

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

Water Sand	150'	Fresh Water
San Andres	1840'	Oil/Gas
Abo	5347'	Oil/Gas
Wolfcamp	6500'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities.
Existing surface casing: 13 3/8" @ 435' circ to surface.
Existing intermediate casing: 8 5/8" @ 1800'. A 7" flush joint casing will be set @ 6700' and cemented to surface. A 4 ½" liner will be set from approximately 5775' to TD using Peak packer and completion system.

4. Casing Program:

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
17 1/2"	@ 435'	13 3/8"	48#, H-40, ST&C
11"	@ 1800'	8 5/8"	24#,J-55, LT&C,
7 7/8"	1800-~~6750~~ 6700	7"	26#, P-110, Flush jt., New, 6.23/9.96/11.6
6 1/8"	~~6750~~ 5775-10,676'	4 1/2"	11.6#, P-110,Buttress,New, 1.551/4.001/3.563

5. Cement Program:

13 3/8" Surface Casing: In place.
8 5/8" Intermediate Casing: In place.
7" Intermediate Casing: Class C, 1000sx, yield 1.32.
4 1/2" Production Liner: Set with Peak packer system.

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 BOP will be nippled up on the 8 5/8" intermediate casing and tested by a 3rd party to 2000 psi and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with a minimum 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, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-380'	Fresh Water	8.5	28	N.C.
380-1800'	Brine	10	30	N.C.
1800'-TD	Cut Brine	9.1	29	N.C.

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

8. Auxiliary Well Control and Monitoring Equipment:

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

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

9. Logging, Testing and Coring Program:

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

B. Drill Stem test is not anticipated.

C. No conventional coring is anticipated.

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

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

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 3250 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 April 26, 2010. Once commenced, the drilling operation should be finished in approximately 35 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.

Jim Scroggin

From: William Herder [wpherder@msn.com]
Sent: Tuesday, February 16, 2010 5:56 PM
To: Jim Scroggin
Subject: Fw: Emailing: Technical Specifications

----- Original Message -----
From: Steve Gilbert
To: 'William Herder'
Sent: Tuesday, February 16, 2010 10:20 AM
Subject: FW: Emailing: Technical Specifications

From: Mike Syrko [mailto:msyrko@pyramidtubular.com]
Sent: Tuesday, February 16, 2010 11:38 AM
To: Steve Gilbert
Subject: Emailing: Technical Specifications

Technical Specifications

6980'

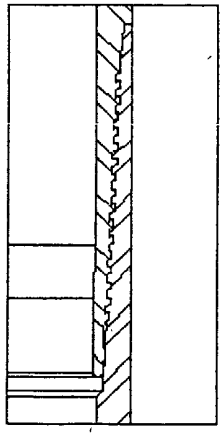
Connection Type:	Size(O.D.):	Weight (Wall):	Grade:
HD-L Casing	7 in	26.00 lb/ft (0.362 in)	P-110
standard			

	Material
P-110	Grade
110,000	Minimum Yield Strength (psi)
125,000	Minimum Ultimate Strength (psi)
	Pipe Dimensions
7.000	Nominal Pipe Body O.D. (in)
6.276	Nominal Pipe Body I.D.(in)
0.362	Nominal Wall Thickness (in)
26.00	Nominal Weight (lbs/ft)
25.69	Plain End Weight (lbs /ft)
7.549	Nominal Pipe Body Area (sq in)
	Pipe Body Performance Properties
830,000	Minimum Pipe Body Yield Strength (lbs)
6,230	Minimum Collapse Pressure (psi)
9,960	Minimum Internal Yield Pressure (psi)
9,100	Hydrostatic Test Pressure (psi)
	Connection Dimensions
7.000	Connection O.D. (in)
6.200	Connection I.D. (in)
6.151	Connection Drift Diameter (in)
3.34	Make-up Loss (in)
3.793	Critical Area (sq in)
50.2	Joint Efficiency (%)
	Connection Performance Properties

V&M

VALLOUREC & MANNESMANN TUBES

V&M Atlas Bradford
5301 Polk Street, Bldg #7
Houston, TX 77023
Phone: 713-924-2800
Fax: 713-924-2946
E-mail: VAMABsales@na.vallourec.com



417,000	(1)	Joint Strength (lbs)
474,000	(2)	Reference Minimum Parting Load (lbs)
11,600		Reference String Length (ft) 1.4 Design Factor
417,000		Compression Rating (lbs)
6,230		Collapse Pressure Rating (psi)
9,960		Internal Pressure Rating (psi)
36.2		**Maximum uniaxial bend rating [degrees/100 ft]**

Recommended Torque Values

7,000	(3)	Minimum Final Torque (ft-lbs)
8,000	(3)	Maximum Final Torque (ft-lbs)

(1) Joint strength is the elastic limit or yield strength of the connection.
(2) Reference minimum parting load is the ultimate strength or parting load of the connection.
(3) Torque values are recommended and can be affected by field conditions.

2/16/2010 12:32:54 PM

Mack Energy

Eddy County
Candy Cane State Com
#1H
OH

Plan: Plan #1

Pathfinder X & Y Planning Report

22 March, 2010

Pathfinder

Pathfinder X & Y Planning Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well #1H
Project:	Eddy County	**TVD Reference:**	WELL @ 3607.00ft (Original Well Elev)
Site:	Candy Cane State Com	**MD Reference:**	WELL @ 3607.00ft (Original Well Elev)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Project Eddy County

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 Candy Cane State Com

Site Position:		**Northing:**	701,515.800 ft	**Latitude:**	32° 55' 42.369 N
From:	Map	**Easting:**	550,205.500 ft	**Longitude:**	104° 10' 10.946 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	"	**Grid Convergence:**	0.09 °

Well #1H

Well Position	**+N/-S**	0.00 ft	**Northing:**	701,515.800 ft	**Latitude:**	32° 55' 42.369 N
	+E/-W	0.00 ft	**Easting:**	550,205.500 ft	**Longitude:**	104° 10' 10.946 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,588.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	03/22/2010	8.05	60.78	49,126

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	91.62

Survey Tool Program Date 03/22/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	10,675.57	Plan #1 (OH)	MWD	MWD - Standard

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3607.00ft (Original Well Elev)
Site:	Candy Cane State Com	MD Reference:	WELL @ 3607.00ft (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)
0.00	0.00	0.00	0.00	-3,607.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
100.00	0.00	0.00	100.00	-3,507.00	0.00	0.00	0.00	0.00	701,515 80	550,205.50
200.00	0.00	0.00	200.00	-3,407.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
300.00	0.00	0.00	300.00	-3,307.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
400.00	0.00	0.00	400.00	-3,207.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
500.00	0.00	0.00	500.00	-3,107.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
600.00	0.00	0.00	600.00	-3,007.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
700.00	0.00	0.00	700.00	-2,907.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
800.00	0.00	0 00	800.00	-2,807.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
900.00	0.00	0.00	900.00	-2,707.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,000.00	0.00	0.00	1,000.00	-2,607.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,100.00	0.00	0.00	1,100.00	-2,507.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,200.00	0.00	0.00	1,200.00	-2,407.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,300.00	0.00	0.00	1,300.00	-2,307.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,400.00	0.00	0.00	1,400.00	-2,207.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,500.00	0.00	0.00	1,500.00	-2,107.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,600.00	0.00	0.00	1,600.00	-2,007.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,700.00	0.00	0.00	1,700.00	-1,907.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,800.00	0.00	0.00	1,800.00	-1,807.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
1,900.00	0.00	0.00	1,900.00	-1,707.00	0.00	0.00	0.00	0.00	701,515 80	550,205.50
2,000.00	0.00	0.00	2,000.00	-1,607.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,100.00	0.00	0.00	2,100.00	-1,507.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,200.00	0.00	0.00	2,200.00	-1,407.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,300.00	0.00	0.00	2,300.00	-1,307.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,400.00	0.00	0.00	2,400.00	-1,207.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,500.00	0.00	0.00	2,500.00	-1,107.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,600.00	0.00	0.00	2,600.00	-1,007.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3607.00ft (Original Well Elev)
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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)
2,700.00	0.00	0.00	2,700.00	-907.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,800.00	0.00	0.00	2,800.00	-807.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
2,900.00	0.00	0.00	2,900.00	-707.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,000.00	0.00	0.00	3,000.00	-607.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,100.00	0.00	0.00	3,100.00	-507.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,200.00	0.00	0.00	3,200.00	-407.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,300.00	0.00	0.00	3,300.00	-307.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,400.00	0.00	0.00	3,400.00	-207.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,500.00	0.00	0.00	3,500.00	-107.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,600.00	0.00	0.00	3,600.00	-7.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,700.00	0.00	0.00	3,700.00	93.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,800.00	0.00	0.00	3,800.00	193.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
3,900.00	0.00	0.00	3,900.00	293.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,000.00	0.00	0.00	4,000.00	393.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,100.00	0.00	0.00	4,100.00	493.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,200.00	0.00	0.00	4,200.00	593.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,300.00	0.00	0.00	4,300.00	693.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,400.00	0.00	0.00	4,400.00	793.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,500.00	0.00	0.00	4,500.00	893.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,600.00	0.00	0.00	4,600.00	993.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,700.00	0.00	0.00	4,700.00	1,093.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,800.00	0.00	0.00	4,800.00	1,193.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
4,900.00	0.00	0.00	4,900.00	1,293.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,000.00	0.00	0.00	5,000.00	1,393.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,100.00	0.00	0.00	5,100.00	1,493.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,200.00	0.00	0.00	5,200.00	1,593.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,300.00	0.00	0.00	5,300.00	1,693.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3607.00ft (Original Well Elev)
Site:	Candy Cane State Com	MD Reference:	WELL @ 3607.00ft (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)
5,400.00	0.00	0.00	5,400.00	1,793.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,500.00	0.00	0.00	5,500.00	1,893.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,600.00	0.00	0.00	5,600.00	1,993.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,700.00	0.00	0.00	5,700.00	2,093.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,800.00	0.00	0.00	5,800.00	2,193.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,900.00	0.00	0.00	5,900.00	2,293.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
5,923.65	0.00	0.00	5,923.65	2,316.65	0.00	0.00	0.00	0.00	701,515.80	550,205.50
TGT Well Path(CC#1)										
5,975.00	0.00	0.00	5,975.00	2,368.00	0.00	0.00	0.00	0.00	701,515.80	550,205.50
6,000.00	3.00	180.00	5,999.99	2,392.99	-0.65	0.00	0.02	12.00	701,515.15	550,205.50
6,025.00	6.00	180.00	6,024.91	2,417.91	-2.62	0.00	0.07	12.00	701,513.18	550,205.50
6,050.00	9.00	180.00	6,049.69	2,442.69	-5.88	0.00	0.17	12.00	701,509.92	550,205.50
6,075.00	12.00	180.00	6,074.27	2,467.27	-10.43	0.00	0.29	12.00	701,505.37	550,205.50
6,100.00	15.00	180.00	6,098.58	2,491.58	-16.27	0.00	0.46	12.00	701,499.53	550,205.50
6,125.00	18.00	180.00	6,122.54	2,515.54	-23.37	0.00	0.66	12.00	701,492.43	550,205.50
6,141.67	20.00	180.00	6,138.30	2,531.30	-28.79	0.00	0.81	12.00	701,487.01	550,205 50
6,150.00	20.24	177.18	6,146.13	2,539.13	-31.66	0.07	0.97	12.00	701,484.14	550,205.57
6,175.00	21.23	169.17	6,169.51	2,562.51	-40.43	1.13	2.28	12.00	701,475.37	550,206.63
6,200.00	22.56	161.96	6,192.71	2,585.71	-49.44	3.47	4.87	12.00	701,466.36	550,208.97
6,225.00	24.18	155.58	6,215.66	2,608.66	-58.66	7.07	8.73	12.00	701,457.14	550,212.57
6,250.00	26.03	150.01	6,238.30	2,631.30	-68.08	11.93	13.85	12.00	701,447.72	550,217.43
6,275.00	28.07	145.16	6,260.57	2,653.57	-77.66	18.04	20.22	12.00	701,438.14	550,223.54
6,300.00	30.25	140 94	6,282.40	2,675.40	-87.38	25.37	27.83	12.00	701,428.42	550,230.87
6,325.00	32.56	137.25	6,303.74	2,696.74	-97.21	33.90	36.64	12.00	701,418.59	550,239.40
6,350.00	34.95	134.00	6,324.53	2,717.53	-107.13	43.62	46.63	12.00	701,408.67	550,249.12
6,375.00	37.43	131.13	6,344.70	2,737.70	-117.10	54.50	57.79	12.00	701,398.70	550,260.00
6,400.00	39.97	128.56	6,364.22	2,757.22	-127.10	66.50	70.07	12.00	701,388.70	550,272.00

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
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Site:	Candy Cane State Com	MD Reference:	WELL @ 3607.00ft (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)
6,425.00	42.55	126.26	6,383.01	2,776.01	-137.11	79.60	83.44	12.00	701,378.69	550,285.10
6,450.00	45.18	124.18	6,401.03	2,794.03	-147.09	93.75	97.87	12.00	701,368.71	550,299.25
6,475.00	47.85	122.27	6,418.24	2,811.24	-157.03	108.93	113.32	12.00	701,358.77	550,314.43
6,500.00	50.54	120.53	6,434.57	2,827.57	-166.88	125.08	129.75	12.00	701,348.92	550,330.58
6,525.00	53.26	118.91	6,450.00	2,843.00	-176.62	142.16	147.10	12.00	701,339.18	550,347.66
6,550.00	55.99	117.40	6,464.47	2,857.47	-186.24	160.14	165.34	12.00	701,329.56	550,365.64
6,575.00	58.75	115.99	6,477.95	2,870.95	-195.69	178.95	184.40	12.00	701,320.11	550,384.45
6,600.00	61.52	114.66	6,490.40	2,883.40	-204.96	198.54	204.25	12.00	701,310.84	550,404.04
6,625.00	64.30	113.40	6,501.78	2,894.78	-214.02	218.87	224.83	12.00	701,301.78	550,424.37
6,650.00	67.09	112.19	6,512.07	2,905.07	-222.85	239.87	246.07	12.00	701,292.95	550,445.37
6,675.00	69.89	111.04	6,521.24	2,914.24	-231.41	261.49	267.93	12.00	701,284.39	550,466.99
6,698.23	72.50	110.00	6,528.73	2,921.73	-239.12	282.09	288.73	12.00	701,276.68	550,487.59
6,700.00	72.62	109.83	6,529.26	2,922.26	-239.69	283.67	290 33	11.55	701,276.11	550,489.17
6,725.00	74.34	107.41	6,536.37	2,929.37	-247.34	306.38	313.25	11.55	701,268.46	550,511.88
6,750.00	76.09	105.04	6,542.75	2,935.75	-254.09	329.59	336.64	11.55	701,261.71	550,535.09
6,775.00	77.86	102.70	6,548.38	2,941.38	-259.93	353.24	360.44	11.55	701,255.87	550,558.74
6,800.00	79.66	100.39	6,553.25	2,946.25	-264.84	377.26	384.59	11.55	701,250.96	550,582.76
6,825.00	81.46	98.11	6,557.35	2,950.35	-268.80	401.60	409.03	11.55	701,247.00	550,607.10
6,850.00	83.28	95.85	6,560.67	2,953.67	-271.81	426.19	433.70	11.55	701,243.99	550,631.69
6,875.00	85.11	93.61	6,563.20	2,956.20	-273.86	450.97	458.53	11.55	701,241.94	550,656.47
6,900.00	86.95	91.38	6,564.93	2,957.93	-274.94	475.89	483.47	11.55	701,240.86	550,681.39
6,925.00	88.80	89.15	6,565.85	2,958.85	-275.06	500.87	508.44	11.55	701,240.74	550,706.37
6,934.95	89.53	88.27	6,566.00	2,959.00	-274.83	510 82	518.38	11.55	701,240.97	550,716.32
7,000.00	89.53	88.27	6,566.54	2,959.54	-272.87	575.83	583.31	0.01	701,242.93	550,781.33
7,026.38	89.53	88.26	6,566.75	2,959.75	-272.07	602.20	609.65	0.01	701,243.73	550,807.70
7,100.00	89.53	88.26	6,567.36	2,960.36	-269.84	675.78	683.14	0.00	701,245.96	550,881.28
7,200.00	89.53	88.26	6,568.19	2,961.19	-266.81	775.73	782.96	0.00	701,248.99	550,981.23

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Eddy County	TVD Reference:	WELL @ 3607.00ft (Original Well Elev)
Site:	Candy Cane State Com	MD Reference:	WELL @ 3607.00ft (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)
7,300.00	89.53	88.26	6,569.02	2,962.02	-263.78	875.68	882.79	0.00	701,252.02	551,081.18
7,400.00	89.53	88.26	6,569.85	2,962.85	-260.75	975.63	982.61	0.00	701,255.05	551,181.13
7,418.38	89.53	88.26	6,570.00	2,963.00	-260.19	994.00	1,000.96	0.00	701,255.61	551,199.50
TGT1@ 1000' VS (CC#1)										
7,448.91	89.72	87.52	6,570.20	2,963.20	-259.07	1,024.51	1,031.43	2.50	701,256.73	551,230.01
7,500.00	89.72	87.52	6,570.45	2,963.45	-256.86	1,075.55	1,082.38	0.00	701,258.94	551,281.05
7,600.00	89.72	87.52	6,570.95	2,963.95	-252.54	1,175.46	1,182.13	0.00	701,263.26	551,380.96
7,700.00	89.72	87.52	6,571.44	2,964.44	-248.22	1,275.37	1,281.87	0.00	701,267.58	551,480.87
7,800.00	89.72	87.52	6,571.94	2,964.94	-243.90	1,375.27	1,381.61	0.00	701,271.90	551,580.77
7,900.00	89.72	87.52	6,572.43	2,965.43	-239.58	1,475.18	1,481.36	0.00	701,276.22	551,680.68
8,000.00	89.72	87.52	6,572.92	2,965.92	-235.26	1,575.08	1,581.10	0.00	701,280.54	551,780.58
8,100.00	89.72	87.52	6,573.42	2,966.42	-230.95	1,674.99	1,680.85	0.00	701,284.85	551,880.49
8,200.00	89.72	87.52	6,573.91	2,966.91	-226.63	1,774.89	1,780.59	0.00	701,289.17	551,980.39
8,300.00	89.72	87.52	6,574.41	2,967.41	-222.31	1,874.80	1,880.33	0.00	701,293.49	552,080.30
8,400.00	89.72	87.52	6,574.90	2,967.90	-217.99	1,974.70	1,980.08	0.00	701,297.81	552,180.20
8,420.32	89.72	87.52	6,575.00	2,968.00	-217.11	1,995.00	2,000.34	0.00	701,298.69	552,200.50
TGT2@ 2000' VS (CC#1)										
8,422.54	89.77	87.53	6,575.01	2,968.01	-217.01	1,997.22	2,002.55	2.50	701,298.79	552,202.72
8,500.00	89.77	87.53	6,575.32	2,968.32	-213.68	2,074.61	2,079.82	0.00	701,302.12	552,280.11
8,600.00	89.77	87.53	6,575.72	2,968.72	-209.38	2,174.52	2,179.57	0.00	701,306.42	552,380.02
8,700.00	89.77	87.53	6,576.12	2,969.12	-205.08	2,274.42	2,279.31	0.00	701,310.72	552,479.92
8,800.00	89.77	87.53	6,576.51	2,969.51	-200.78	2,374.33	2,379.06	0.00	701,315.02	552,579.83
8,900.00	89.77	87.53	6,576.91	2,969.91	-196.48	2,474.24	2,478.80	0.00	701,319.32	552,679.74
9,000.00	89.77	87.53	6,577.31	2,970.31	-192.18	2,574.14	2,578.55	0.00	701,323.62	552,779.64
9,100.00	89.77	87.53	6,577.71	2,970.71	-187.87	2,674.05	2,678.29	0.00	701,327.93	552,879.55
9,200.00	89.77	87.53	6,578.11	2,971.11	-183.57	2,773.96	2,778.04	0.00	701,332.23	552,979.46
9,300.00	89.77	87.53	6,578.51	2,971.51	-179.27	2,873.86	2,877.78	0.00	701,336.53	553,079.36

Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
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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)
9,400.00	89.77	87.53	6,578.91	2,971.91	-174.97	2,973.77	2,977.53	0.00	701,340.83	553,179.27
9,423.25	89.77	87.53	6,579.00	2,972.00	-173.97	2,997.00	3,000.72	0.00	701,341.83	553,202.50
TGT3@ 3000' VS (CC#1)										
9,430.15	89.60	87.53	6,579.04	2,972.04	-173.67	3,003.89	3,007.60	2.50	701,342.13	553,209.39
9,500.00	89.60	87.53	6,579.53	2,972.53	-170.67	3,073.68	3,077.27	0.00	701,345.13	553,279.18
9,600.00	89.60	87.53	6,580.23	2,973.23	-166.37	3,173.58	3,177.01	0.00	701,349.43	553,379.08
9,700.00	89.60	87.53	6,580.93	2,973.93	-162.07	3,273.49	3,276.76	0.00	701,353.73	553,478.99
9,800.00	89.60	87.53	6,581.63	2,974.63	-157.76	3,373.39	3,376.50	0.00	701,358.04	553,578.89
9,900.00	89.60	87.53	6,582.33	2,975.33	-153.46	3,473.30	3,476.25	0.00	701,362.34	553,678.80
10,000.00	89.60	87.53	6,583.02	2,976.02	-149.16	3,573.20	3,575.99	0.00	701,366.64	553,778.70
10,100.00	89.60	87.53	6,583.72	2,976.72	-144.86	3,673.11	3,675.73	0.00	701,370.94	553,878 61
10,200.00	89.60	87.53	6,584.42	2,977.42	-140.56	3,773.01	3,775.48	0.00	701,375.24	553,978.51
10,300.00	89.60	87.53	6,585.12	2,978.12	-136.26	3,872.92	3,875.22	0.00	701,379.54	554,078.42
10,400.00	89.60	87.53	6,585.82	2,978.82	-131.95	3,972.82	3,974.96	0.00	701,383.85	554,178.32
10,425.20	89.60	87.53	6,586.00	2,979.00	-130.87	3,998.00	4,000.10	0.00	701,384.93	554,203.50
TGT4@ 4000' VS (CC#1)										
10,446.71	89.06	87.53	6,586.25	2,979.25	-129.94	4,019.48	4,021.55	2.50	701,385.86	554,224.98
10,500.00	89.06	87.53	6,587.12	2,980.12	-127.65	4,072.72	4,074.70	0.00	701,388.15	554,278.22
10,600.00	89.06	87.53	6,588.76	2,981.76	-123.35	4,172.61	4,174.43	0.00	701,392.45	554,378.11
10,675.57	89.06	87.53	6,590.00	2,983.00	-120.10	4,248.10	4,249 80	0.00	701,395.70	554,453.60
PBHL(CC#1)										

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Well:	#1H	North Reference:	Grid
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Design:	Plan #1	Database:	Midland Database

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
TGT1@ 1000' VS (CC - plan hits target center - Point	0.00	0.00	6,570.00	-260.19	994.00	701,255.610	551,199.500	32° 55' 39.779 N	104° 9' 59.289 W
TGT2@ 2000' VS (CC - plan hits target center - Point	0.00	0.00	6,575.00	-217.11	1,995.00	701,298.690	552,200.500	32° 55' 40.189 N	104° 9' 47.543 W
TGT3@ 3000' VS (CC - plan hits target center - Point	0.00	0.00	6,579.00	-173.97	2,997.00	701,341.830	553,202.500	32° 55' 40.600 N	104° 9' 35.786 W
TGT Well Path(CC#1) - plan misses target center by 610.14ft at 5923.65ft MD (5923.65 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	5,923.65	-279.60	542.30	701,236.200	550,747.800	32° 55' 39.594 N	104° 10' 4.589 W
TGT4@ 4000' VS (CC - plan hits target center - Point	0.00	0.00	6,586.00	-130.87	3,998.00	701,384.930	554,203.500	32° 55' 41.010 N	104° 9' 24.041 W
PBHL(CC#1) - plan hits target center - Point	0.00	0.00	6,590.00	-120.10	4,248.10	701,395.700	554,453.600	32° 55' 41.113 N	104° 9' 21.106 W

Checked By: _____ Approved By: _____ Date: _____

MACK Energy Corporation

G
T M

Azimuths to Grid North
True North: -0.09°
Magnetic North: 7.96°

Magnetic Field
Strength: 49125.7snT
Dip Angle: 60.78°
Date: 03/22/2010
Model: IGRF200510

PATHFINDER

WELL DETAILS: #1H

Ground Elevation 3588.00
RKB Elevation WELL @ 3607.00ft (Original Well Elev)
Rig Name Original Well Elev

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	701515.800	550205.500	32° 55' 42.369 N	104° 10' 10.946 W	

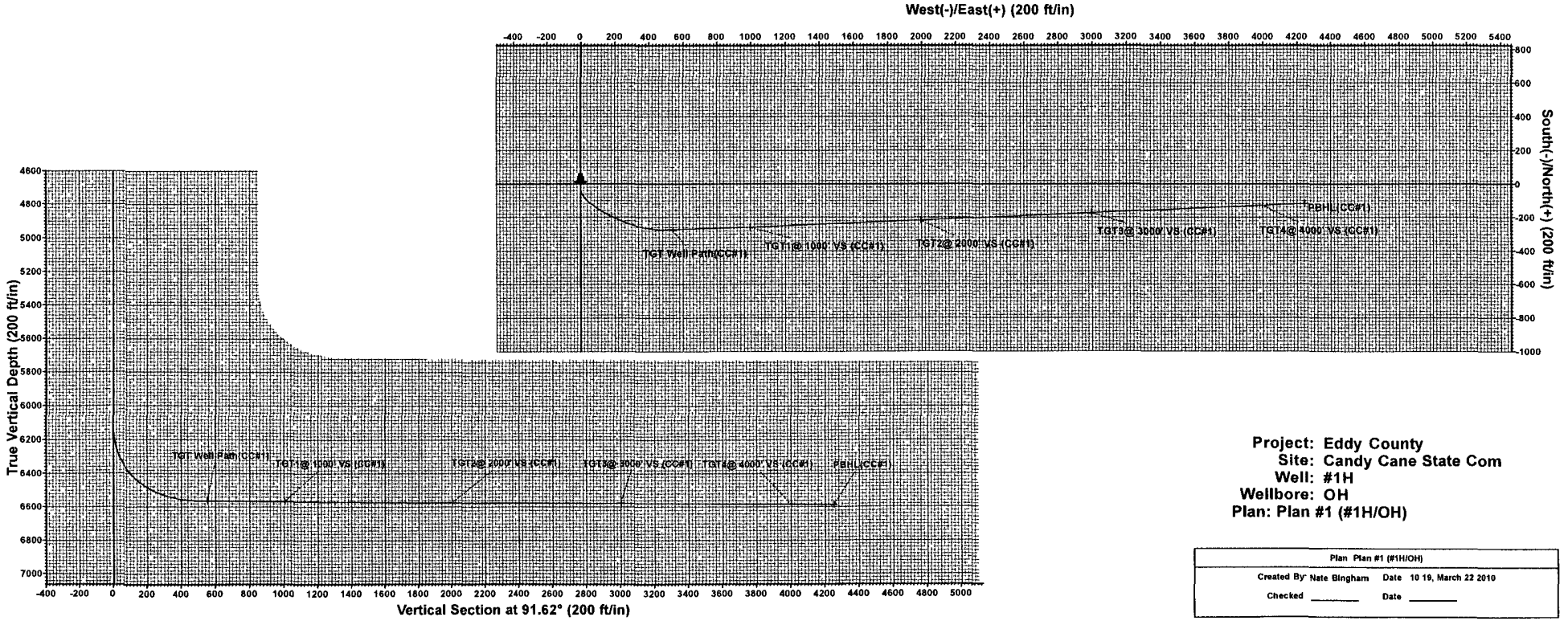
PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
TGT Well Path(CC#1)	6566.00	-279.60	542.30	Point
TGT1@ 1000' VS (CC#1)	6570.00	-260.19	994.00	Point
TGT2@ 2000' VS (CC#1)	6575.00	-217.11	1995.00	Point
TGT3@ 3000' VS (CC#1)	6579.00	-173.97	2997.00	Point
TGT4@ 4000' VS (CC#1)	6586.00	-130.87	3998.00	Point
PBHL(CC#1)	6590.00	-120.10	4248.10	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	5975.00	0.00	0.00	5975.00	0.00	0.00	0.00	0.00	0.00	
3	6141.67	20.00	180.00	6138.30	-28.79	0.00	12.00	180.00	0.81	
4	6698.23	72.50	110.00	6528.73	-239.12	282.09	12.00	-77.20	288.73	
5	6934.95	89.53	88.27	6566.00	-274.83	510.82	11.55	-53.75	518.38	
6	7026.38	89.53	88.26	6566.75	-272.07	602.20	0.01	-124.54	609.65	
7	7418.38	89.53	88.26	6570.00	-260.19	994.00	0.00	0.00	1000.96	TGT1@ 1000' VS (CC#1)
8	7448.91	89.72	87.52	6570.20	-259.07	1024.51	2.50	-75.47	1031.43	
9	8420.32	89.72	87.52	6575.00	-217.11	1995.00	0.00	0.00	2000.34	TGT2@ 2000' VS (CC#1)
10	8422.54	89.77	87.53	6575.01	-217.01	1997.22	2.50	10.70	2002.55	
11	9423.25	89.77	87.53	6579.00	-173.97	2997.00	0.00	0.00	3000.72	TGT3@ 3000' VS (CC#1)
12	9430.15	89.60	87.53	6579.04	-173.67	3003.89	2.50	-179.94	3007.60	
13	10425.20	89.60	87.53	6586.00	-130.87	3998.00	0.00	0.00	4000.10	TGT4@ 4000' VS (CC#1)
14	10446.71	89.06	87.53	6586.25	-129.94	4019.48	2.50	-179.96	4021.55	
15	10675.57	89.06	87.53	6590.00	-120.10	4248.10	0.00	0.00	4249.80	PBHL(CC#1)



Project: Eddy County
Site: Candy Cane State Com
Well: #1H
Wellbore: OH
Plan: Plan #1 (#1H/OH)

Plan: Plan #1 (#1H/OH)
Created By: Nate Bingham Date: 10:19, March 22 2010
Checked _____ Date _____

Attachment to Exhibit #9
NOTES REGARDING THE BLOWOUT PREVENTERS
Candy Cane State Com #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

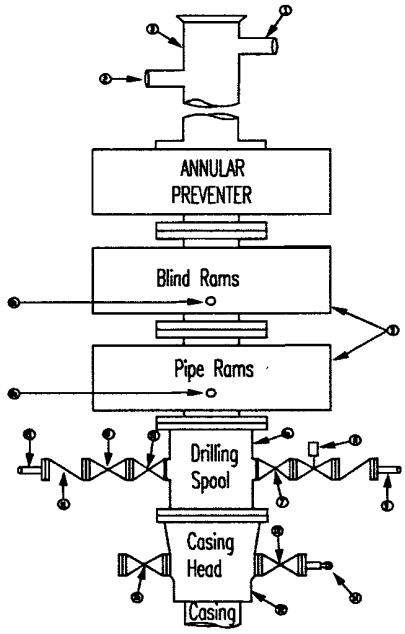
3000 psi Working Pressure

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:

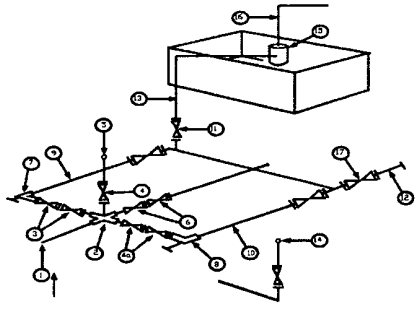
1. Bradenhead or casing head and side valves.
2. Wear bushing. If required.

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



Mud Pit

Reserve Pit

*** Location of separator optional**

Below Substructure

Mimimum requirements

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

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

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

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

Mack Energy Corporation
Onshore Order #6
Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

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

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

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

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

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

II. H2S SAFETY EQUIPMENT AND SYSTEMS

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

1. **Well Control Equipment:**

   A. Flare line.

   B. Choke manifold.

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

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

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

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

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

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

4. **Visual warning systems:**

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

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

5. **Mud program:**

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

6. **Metallurgy:**

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

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

7. **Communication:**

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

   B. Land line (telephone) communication at Office.

8. **Well testing:**

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

   B. There will be no drill stem testing.

EXHIBIT #7

WARNING

YOU ARE ENTERING AN H2S

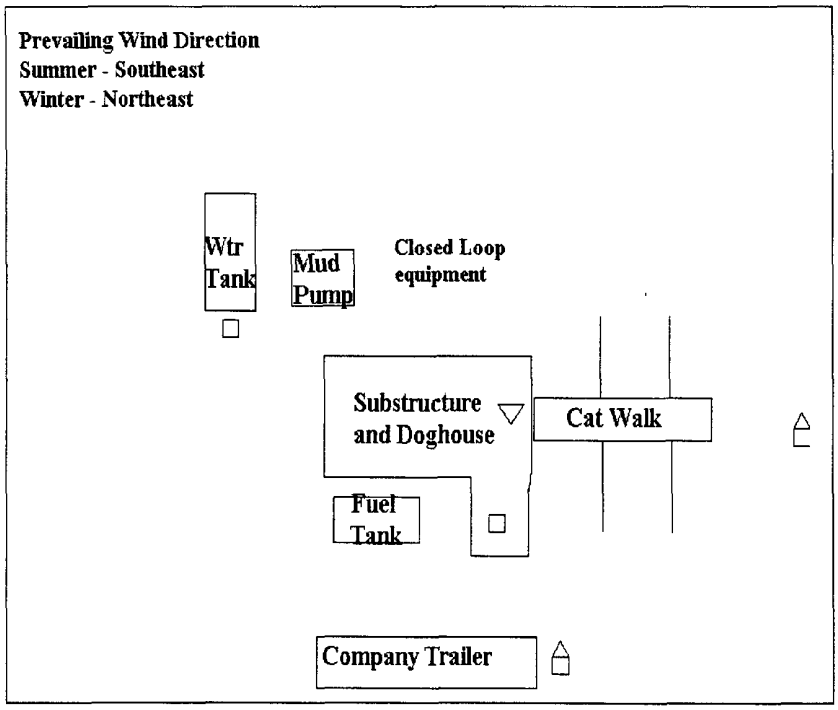
AUTHORIZED PERSONNEL ONLY

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

MACK ENERGY CORPORATION

1-575-748-1288

DRILLING LOCATION H2S SAFTY EQUIPMENT
Exhibit # 8



▽ H2S Monitors with alarms at the bell nipple

□ Wind Direction Indicators

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

Mack Energy Corporation Call List, Eddy County

Artesia (575)	Cellular	Office	Home
Jim Krogman	746-5515	748-1288	746-2674
Lonnie Archer	746-7889	748-1288	365-2998
Donald Archer	748-7875	748-1288	748-2287
Chris Davis	746-7132	748-1288	
Kevin Garrett	746-7423	748-1288	

Agency Call List (575)

Artesia

State Police....746-2703
City Police....746-2703
Sheriff's Office....746-9888
Ambulance....911
Fire Department....746-2701
LEPC (Local Emergency Planning Committee....746-2122
NMOCD....748-1283

Carlsbad

State Police....885-3137
City Police....885-2111
Sheriff's Office....887-7551
Ambulance....911
Fire Department....885-2111
LEPC (Local Emergency Planning Committee....887-3798
Bureau of Land Management....887-6544
New Mexico Emergency Response Commission....(505)476-9690
24 Hour....(505)827-9126
Natonal Emergency Response Center (Washington)....(800)424-8802

Emergency Services

Boots & Coots IWC....1-800-256-9688 or (281)931-8884
Cudd pressure Control....(915)699-0139 or (915)563-3356
Halliburton....746-2757
B. J. Services....746-3569

Flight For Life-Lubbock, TX....(806)743-9911
Aerocare-Lubbock, TX....(806)747-8923
Med Flight Air Amb-Albuquerque, NM....(505)842-4433
Lifeguard Air Med Svc. Albuquerque, NM....(505)272-3115

Attached to Form 3160-3
Mack Energy Corporation
Candy Cane State Com #1
SHL 662 FNL & 660 FWL Unit D, Sec. 15 T16S R28E
BHL 965 FNL & 330 FEL Unit A, Sec. 15 T16S R28E
Eddy County, NM

SURFACE USE AND OPERATING PLAN

1. Existing & Proposed Access Roads

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

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

C. Directions to Location: From the intersection of Hwy 82 and CR 202 go North on CR 202 2.7 miles, turn right/NE 1.3 miles, turn left/North 0.1 mile, go right/NE 1.0 mile, right/East 1.0 mile, left/NE 0.5 mile, left/North 1.0 mile, right on Dog Canyon Rd/ East-NE 1.0 mile, left/North 0.1 mile to location.

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

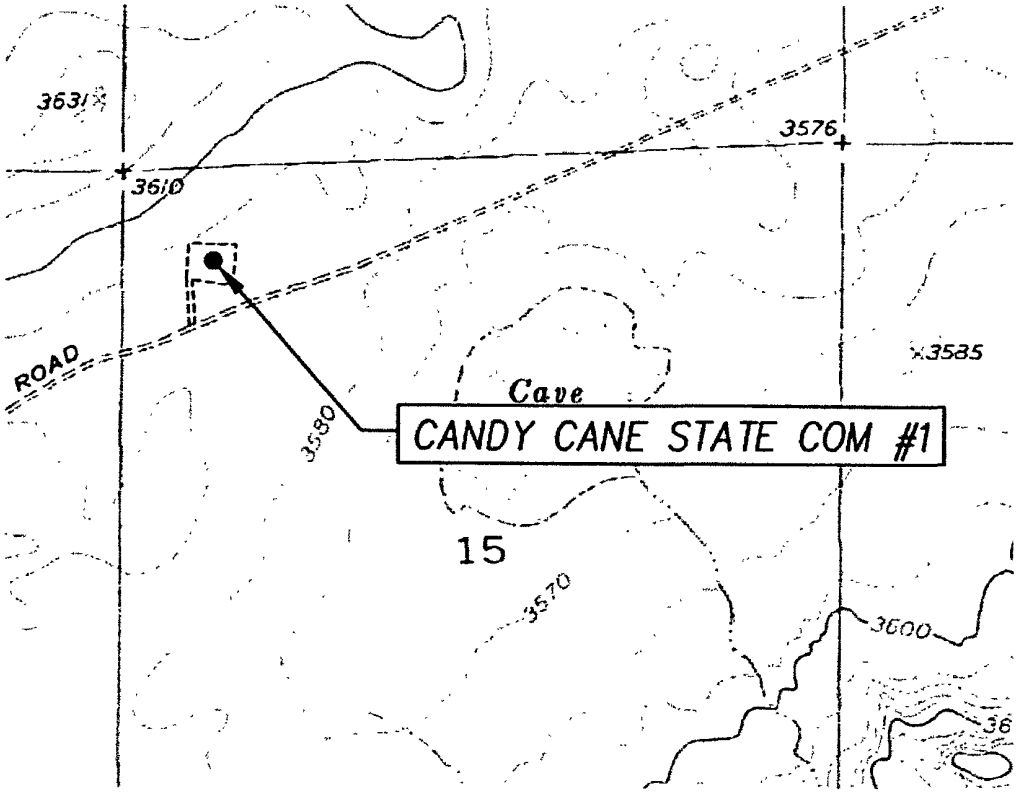


Exhibit #4

2. Proposed Access Road:

Exhibit #3 shows the 0' of new access road to be constructed. The road will be constructed as follows:

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

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

C. No turnouts are planned.

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

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

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

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

Exhibit #4 shows all existing wells within a one-mile radius of this well. Proposed flow lines, will stay on location production facility will be constructed.

4. Location of Existing and/or Proposed Facilities:

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

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

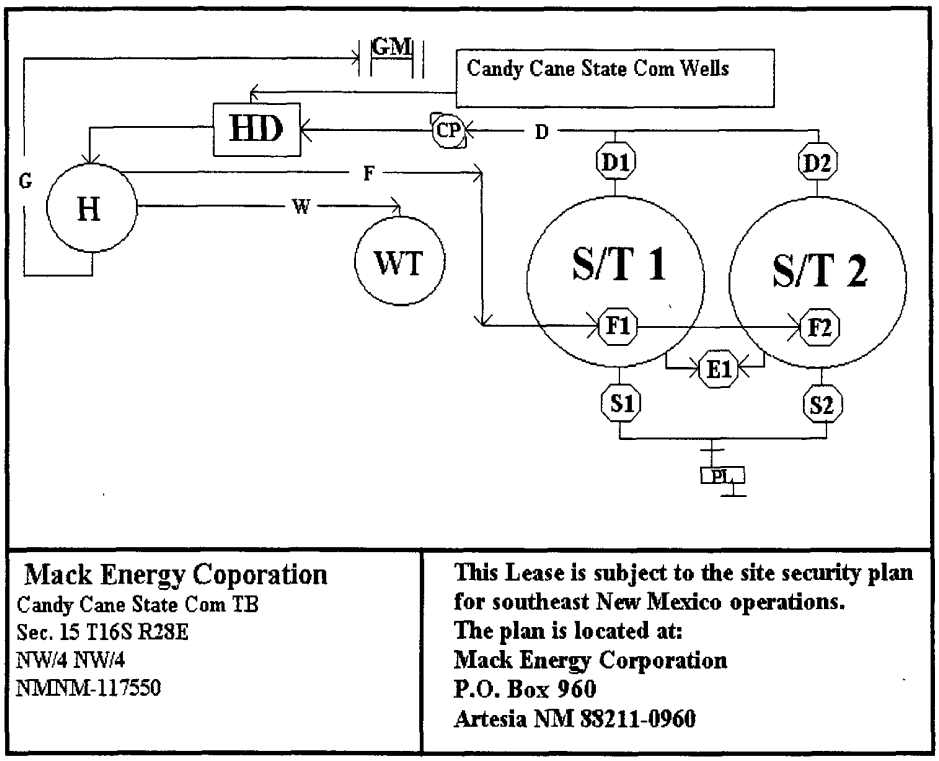
1) Wolfcamp Completion: Will be sent to the Candy Cane State Com TB located at the #1 well. The Facility is shown in Exhibit #5.

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

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

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

Exhibit #5



A. If the well is productive, rehabilitation plans are as follows:

1) Topsoil removed from the drill site will be used to recontour the surrounding area to the original natural level, as nearly as possible, and reseeded as per BLM specifications.

5. Location and Type of Water Supply:

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

6. Source of Construction Materials:

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

7. Methods of Handling Water Disposal:

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

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

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

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

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

8. Ancillary Facilities:

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

9. Well Site Layout:

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

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

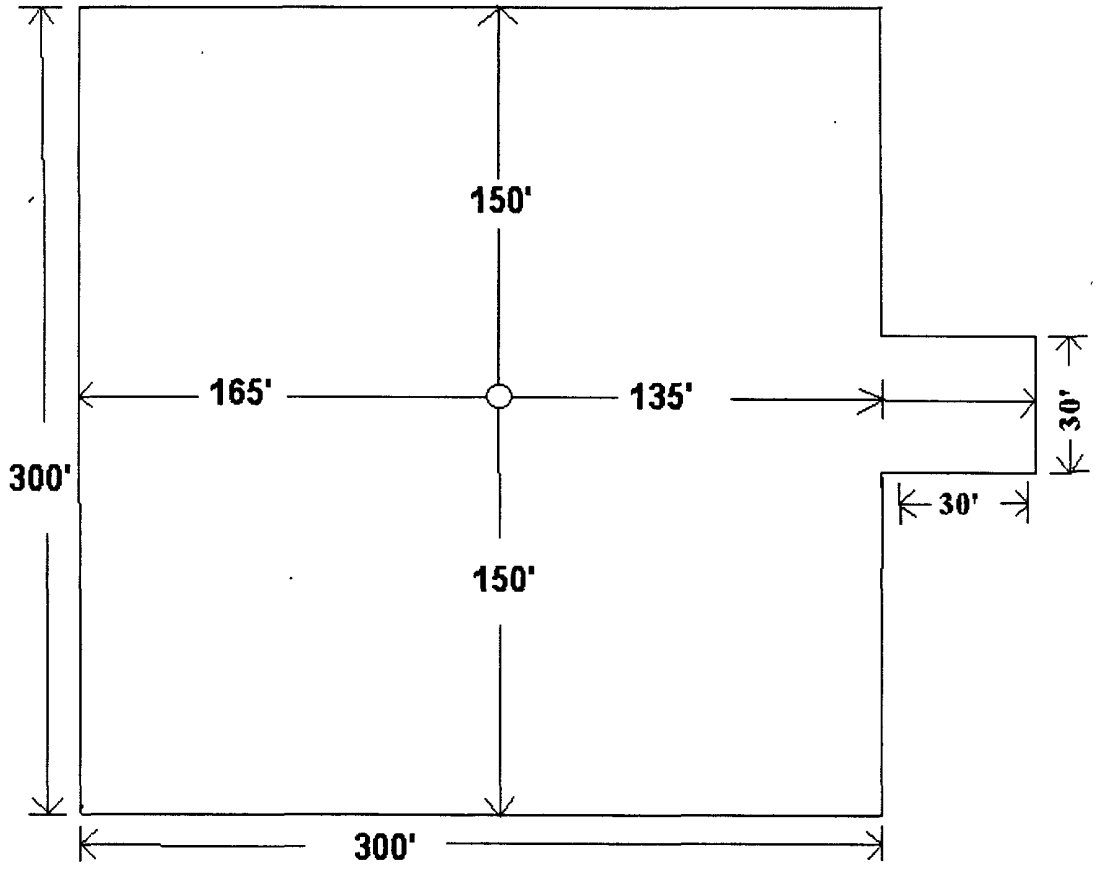


Exhibit #6

Attached to Form 3160-3
Mack Energy Corporation
Candy Cane State Com #1
SHL 662 FNL & 660 FWL Unit D, Sec. 15 T16S R28E
BHL 965 FNL & 330 FEL Unit A, Sec. 15 T16S R28E
Eddy County, NM

10. Plans for Restoration of the Surface:

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

B. In the event of a dry hole. Topsoil removed from the drill site will be used to recontour the area to its original natural level and reseeded as per BLM specifications.

11. Surface Ownership:

The well site is located on State Trust Lands. We have notified the surface owner of the impending operations.

12. Other Information:

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

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

C. A Cultural Resources Examination is not needed, due to the fact that this is an existing location.

13. Lessee's and Operator's Representative:

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

Jerry W. Sherrell
Mack Energy Corporation
P.O. Box 960
Artesia, NM 88211-0960
Phone (575) 748-1288 (office)

CERTIFICATION

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

Date: 3-29-2010 Signed: Jerry W. Sherrell

Jerry W. Sherrell

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MACK ENERGY CORPORATION
LEASE NO.:	NM117550
WELL NAME & NO.:	CANDY CANE STATE COM # 1
SURFACE HOLE FOOTAGE:	662' FNL & 660' FWL
BOTTOM HOLE FOOTAGE	965' FNL & 330' FEL
LOCATION:	Section 15, T. 16 S., R 28 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

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

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

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

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. V-DOOR DIRECTION: not stipulated

C. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

D. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

E. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call theCarlsbad Field Office at (575) 234-5972.

F. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

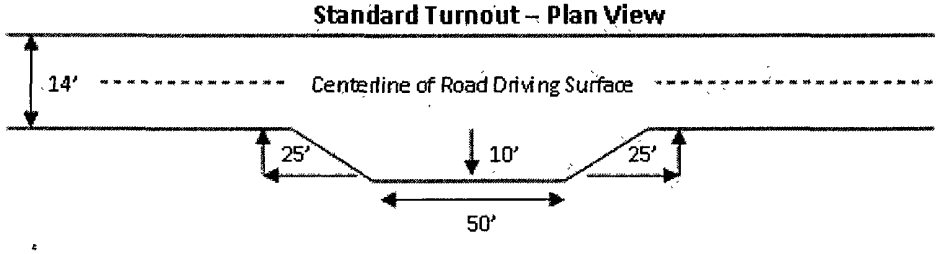
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

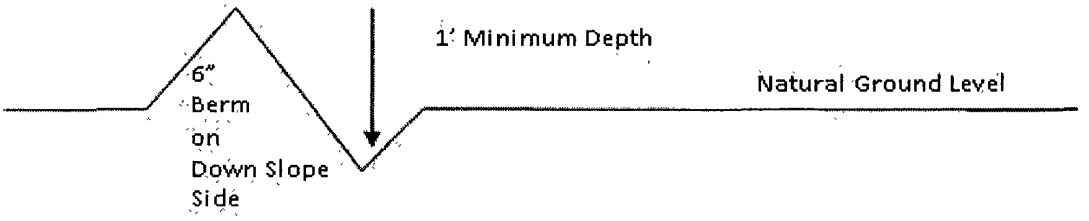
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

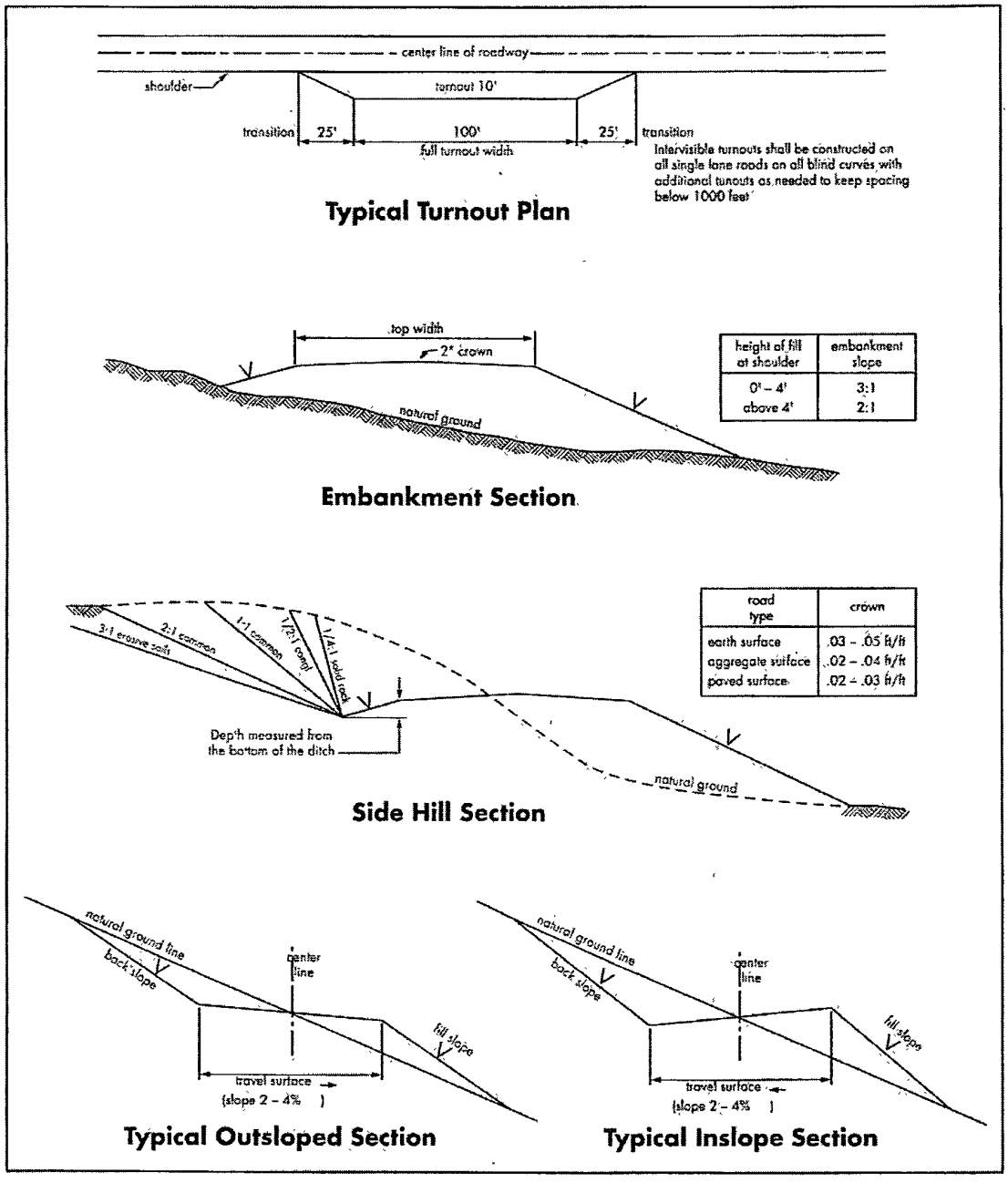
A gate shall be constructed and fastened securely to H-braces.

Fence Requirement
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



I. DRILLING – RE-ENTRY &ADDITION OF HORIZONTAL LEG

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. BOPE test
b. CIT test

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Hydrogen Sulfide has been reported as a hazard, but no measurements have been recorded. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies.**

B. CASING – Re-entry

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

High cave/karst
Possible lost circulation in the Grayburg and San Andres Formations.

1. **The 13-3/8 inch surface casing is set at 435 feet with cement circulated to surface.**

2. **The 8-5/8 inch intermediate casing is set at 1800 feet with cement circulated to surface.**

   A CIT is to be performed on this casing per Onshore Oil and Gas Order 2.III.B.1.h prior to drilling the shoe plug.

3. The minimum required fill of cement behind the **7** inch production casing is:

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

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:

   ☒ No cement required: Operator is using the Peak packer completion system.

C. PRESSURE CONTROL

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

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8** inch intermediate casing shoe shall be **2,000 (2M)** psi. **Operator is using a 3M and testing as a 2M.**

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. Casing cut-off and BOP installation will not be initiated until the cement has had a minimum of 8 hours setup time for a water basin. The casing shall remain stationary and under pressure for at least eight hours after the operator places the cement. In the potash area, the minimum time is 12 hours and the casing shall remain stationary and under pressure during this time period. Casing shall be under pressure if the operator uses some acceptable means of holding pressure or if the operator employs one or more float valves to hold the cement in place. Testing the BOP/BOPE against a plug can commence after meeting the above conditions plus the BOP installation time.

    b. The tests shall be done by an independent service company using a test plug.

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

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

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

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

RGH 043010

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

C. ELECTRIC LINES

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared; these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed