Form 3160-5 (August 2007)

HOBBS OCD

FEB 25 2013

RECEIVED

OCD-Artesia FEB 1 2013

NMOCD ARTESIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

RECEIVED

HOBBS OCD

FEB 25 2013

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMLC-060199 KB
	6. If Indian, Allottee or Tribe Name
	7. If Unit of CA/Agreement, Name and/or No.
	8. Well Name and No. Brook Federal #5
2. Name of Operator: Mack Energy Corporation	9. API Well No. 30-025-40357
3a. Address: P.O. Box 960 Artesia, NM 88210-0960	3b. Phone No. *(include area code)*: (575) 748-1288
	10. Field and Pool or Exploratory Area: Baish Wolfcamp
4. Location of Well *(Footage, Sec., T,R,M, or Survey Description)*: SL 1700 FNL & 10 FEL Sec. 30 T17S R32E BHL 1650 FNL & 330 FEL Sec. 30 T17S R32E	11. Country or Parish, State: Eddy, NM CGA

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change TD Depth/Casing
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Mack Energy proposes to change TD depth to 10,500'. Proposed change to casing, cement program.

Proposed Casing See COA

Hole	Depth	Mud Wieght	Casing	WT	Collar	Grade	Collapse	Burst	Tension
17 1/2	0-760' 780'	8.5#	13 3/8	48#	ST&C	H-40	1.950	3.353	3.46
12 1/4	0-2100'	10#	8 5/8	24#	ST&C	J-55	1.218	6.313	5.90
7 7/8	0-10500'	9.0-9.2#	5 1/2	17#	LT&C	L-80	1.212	2.364	2.580

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Proposed Cement

13 3/8-100% excess Lead 475sx Class C, 4%PF20, 2%PF1, .125#/sxPF29, .2%PF46(13.5 wt, 1.75 yld). Tail 200sx Class C, 1%PF1(14.8 wt, 1.33 yld).

8 5/8-100% excess Lead 675sx Class C, 4%PF20, 2%PF1, .125#/sxPF29, .2%PF46(12.9 wt, 1.98 yld). Tail 200sx Class C, 1%PF1(14.8 wt, 1.34 yld).

5 1/2-35% excess Lead 525sx 35/65/POZ H + 5%PF44 + 6%PF20 + .25#sxPF46 + 3#/sxPF42 + .6%PF13 + .125#/sxPF29(12.6 wt, 2.05 yld). Tail 850sx PVL + 1.3%PF44 + PF174 + .5%PF606 + .1% PF153 + .6% PF13(13.0 wt, 1.47 yld).

SUBJECT TO LIKE APPROVAL BY STATE

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*: Jerry W. Sherrell

Title: Production Clerk

Signature: Jerry W. Sherrell

Date: 1/11/13

APPROVED

JAN 31 2013

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title MAR 01 2013

Office

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

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for my 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)

MAR 04 2013

HOBBS OCD

FEB 25 2013

RECEIVED

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-40357	4480	Baishj Wolfcamp

Property Code	Property Name	Well Number
38762	BROOK FEDERAL	5

OGRID No.	Operator Name	Elevation
013837	MACK ENERGY CORPORATION	3921

Surface Location

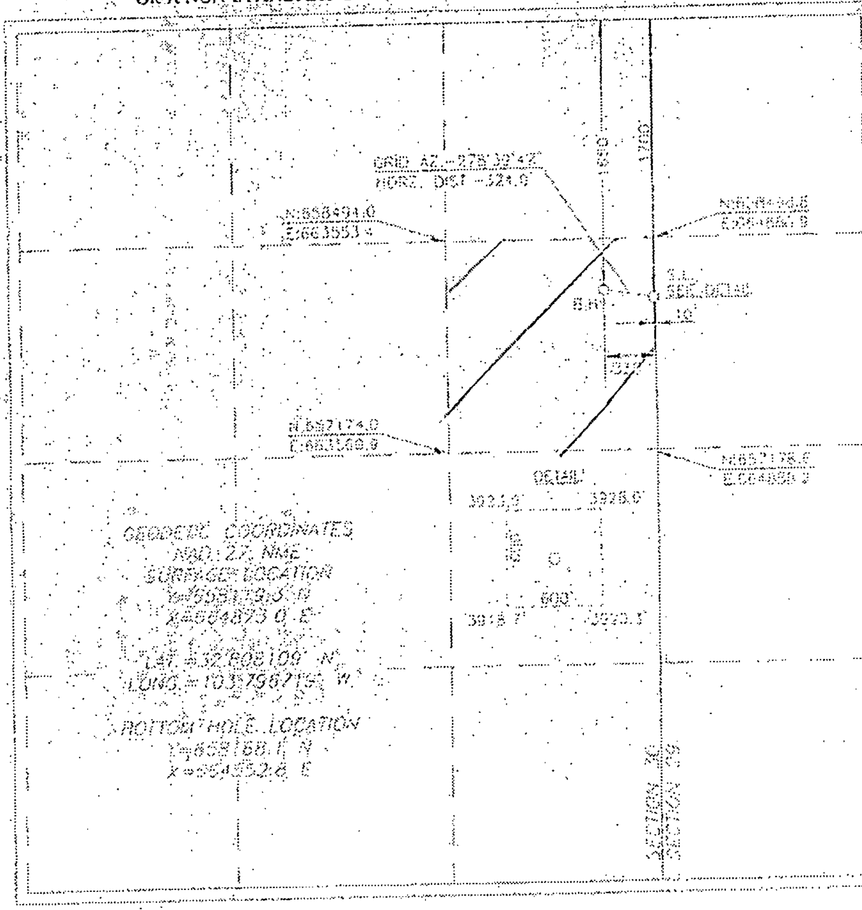
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	30	17-S	32-E		1700	NORTH	10	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	30	17-S	32-E		1650	NORTH	330	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



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.

Signature: Jerry W. Sherrell Date: 5/27/10

Printed Name: Jerry W. Sherrell

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.

Date Surveyed: NOVEMBER 2010

Signature & Seal of Professional Surveyor: 3/30/2010

Certificate No. RONALD J. EIDSON 12641

SCANNED

Mack Energy Corp

Lea County
Brook Federal #5
Federal #2
#2

Plan: Plan #1

MEC Survey Report

29 January, 2013

MEC

MEC Survey Report

Company:	Mack Energy Corp	**Local Co-ordinate Reference:**	Site Brook Federal #5
Project:	Lea County	**TVD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Site:	Brook Federal #5	**MD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Well:	Federal #2	**North Reference:**	Grid
Wellbore:	#2	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1 Single User Db

Project Lea 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 Brook Federal #5

Site Position:		**Northing:**	658,119.30 usft	**Latitude:**	32° 48' 29.191 N
From:	Map	**Easting:**	664,873.00 usft	**Longitude:**	103° 47' 48.190 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.29 °

Well Federal #2

Well Position	**+N/-S**	0.0 usft	**Northing:**	658,119.30 usft	**Latitude:**	32° 48' 29.191 N
	+E/-W	0.0 usft	**Easting:**	664,873.00 usft	**Longitude:**	103° 47' 48.190 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,922.0 usft

Wellbore #2

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	1/29/2013	7.53	60.67	48,818

Design Plan #1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	273.94

Survey Tool Program **Date** 1/29/2013

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.0	10,523.3	Plan #1 (#2)		

Company:	Mack Energy Corp	**Local Co-ordinate Reference:**	Site Brook Federal #5
Project:	Lea County	**TVD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Site:	Brook Federal #5	**MD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Well:	Federal #2	**North Reference:**	Grid
Wellbore:	#2	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
2,175.0	0.00	0.00	2,175.0	0.0	0.0	0.0	0.00	658,119.30	664,873.00
2,200.0	0.50	273.94	2,200.0	0.0	-0.1	0.1	2.00	658,119.31	664,872.89
2,300.0	2.50	273.94	2,300.0	0.2	-2.7	2.7	2.00	658,119.49	664,870.28
2,400.0	4.50	273.94	2,399.8	0.6	-8.8	8.8	2.00	658,119.91	664,864.19
2,500.0	6.50	273.94	2,499.3	1.3	-18.4	18.4	2.00	658,120.57	664,854.63

Company:	Mack Energy Corp	**Local Co-ordinate Reference:**	Site Brook Federal #5
Project:	Lea County	**TVD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Site:	Brook Federal #5	**MD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Well:	Federal #2	**North Reference:**	Grid
Wellbore:	#2	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,582.4	8.15	273.94	2,581.0	2.0	-28.8	28.9	2.00	658,121.29	664,844.15
2,600.0	8.15	273.94	2,598.5	2.2	-31.3	31.4	0.00	658,121.46	664,841.66
2,700.0	8.15	273.94	2,697.4	3.1	-45.5	45.6	0.00	658,122.44	664,827.52
2,800.0	8.15	273.94	2,796.4	4.1	-59.6	59.8	0.00	658,123.41	664,813.38
2,900.0	8.15	273.94	2,895.4	5.1	-73.8	73.9	0.00	658,124.39	664,799.25
3,000.0	8.15	273.94	2,994.4	6.1	-87.9	88.1	0.00	658,125.36	664,785.11
3,100.0	8.15	273.94	3,093.4	7.0	-102.0	102.3	0.00	658,126.33	664,770.97
3,200.0	8.15	273.94	3,192.4	8.0	-116.2	116.4	0.00	658,127.31	664,756.83
3,300.0	8.15	273.94	3,291.4	9.0	-130.3	130.6	0.00	658,128.28	664,742.69
3,400.0	8.15	273.94	3,390.4	10.0	-144.4	144.8	0.00	658,129.26	664,728.55
3,500.0	8.15	273.94	3,489.4	10.9	-158.6	159.0	0.00	658,130.23	664,714.42
3,600.0	8.15	273.94	3,588.4	11.9	-172.7	173.1	0.00	658,131.21	664,700.28
3,700.0	8.15	273.94	3,687.3	12.9	-186.9	187.3	0.00	658,132.18	664,686.14
3,800.0	8.15	273.94	3,786.3	13.9	-201.0	201.5	0.00	658,133.16	664,672.00
3,900.0	8.15	273.94	3,885.3	14.8	-215.1	215.6	0.00	658,134.13	664,657.86
4,000.0	8.15	273.94	3,984.3	15.8	-229.3	229.8	0.00	658,135.11	664,643.72
4,100.0	8.15	273.94	4,083.3	16.8	-243.4	244.0	0.00	658,136.08	664,629.59
4,200.0	8.15	273.94	4,182.3	17.8	-257.6	258.2	0.00	658,137.06	664,615.45
4,300.0	8.15	273.94	4,281.3	18.7	-271.7	272.3	0.00	658,138.03	664,601.31
4,400.0	8.15	273.94	4,380.3	19.7	-285.8	286.5	0.00	658,139.01	664,587.17
4,500.0	8.15	273.94	4,479.3	20.7	-300.0	300.7	0.00	658,139.98	664,573.03
4,600.0	8.15	273.94	4,578.3	21.7	-314.1	314.9	0.00	658,140.96	664,558.89
4,615.9	8.15	273.94	4,594.0	21.8	-316.4	317.1	0.00	658,141.11	664,556.65
4,700.0	6.47	273.94	4,677.4	22.5	-327.0	327.8	2.00	658,141.85	664,545.98
4,800.0	4.47	273.94	4,777.0	23.2	-336.5	337.3	2.00	658,142.50	664,536.48
4,900.0	2.47	273.94	4,876.8	23.6	-342.6	343.4	2.00	658,142.92	664,530.45
5,000.0	0.47	273.94	4,976.7	23.8	-345.1	345.9	2.00	658,143.09	664,527.89

Company:	Mack Energy Corp	**Local Co-ordinate Reference:**	Site Brook Federal #5
Project:	Lea County	**TVD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Site:	Brook Federal #5	**MD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Well:	Federal #2	**North Reference:**	Grid
Wellbore:	#2	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,023.3	0.00	0.00	5,000.0	23.8	-345.2	346.0	2.00	658,143.10	664,527.80
5,100.0	0.00	0.00	5,076.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,200.0	0.00	0.00	5,176.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,300.0	0.00	0.00	5,276.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,400.0	0.00	0.00	5,376.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,500.0	0.00	0.00	5,476.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,600.0	0.00	0.00	5,576.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,700.0	0.00	0.00	5,676.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,800.0	0.00	0.00	5,776.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
5,900.0	0.00	0.00	5,876.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,000.0	0.00	0.00	5,976.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,100.0	0.00	0.00	6,076.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,200.0	0.00	0.00	6,176.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,300.0	0.00	0.00	6,276.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,400.0	0.00	0.00	6,376.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,500.0	0.00	0.00	6,476.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,600.0	0.00	0.00	6,576.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,700.0	0.00	0.00	6,676.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,800.0	0.00	0.00	6,776.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
6,900.0	0.00	0.00	6,876.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,000.0	0.00	0.00	6,976.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,100.0	0.00	0.00	7,076.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,200.0	0.00	0.00	7,176.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,300.0	0.00	0.00	7,276.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,400.0	0.00	0.00	7,376.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,500.0	0.00	0.00	7,476.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,600.0	0.00	0.00	7,576.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80

Company:	Mack Energy Corp	**Local Co-ordinate Reference:**	Site Brook Federal #5
Project:	Lea County	**TVD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Site:	Brook Federal #5	**MD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Well:	Federal #2	**North Reference:**	Grid
Wellbore:	#2	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
7,700.0	0.00	0.00	7,676.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,800.0	0.00	0.00	7,776.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
7,900.0	0.00	0.00	7,876.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,000.0	0.00	0.00	7,976.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,100.0	0.00	0.00	8,076.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,200.0	0.00	0.00	8,176.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,300.0	0.00	0.00	8,276.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,400.0	0.00	0.00	8,376.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,500.0	0.00	0.00	8,476.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,600.0	0.00	0.00	8,576.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,700.0	0.00	0.00	8,676.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,800.0	0.00	0.00	8,776.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
8,900.0	0.00	0.00	8,876.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,000.0	0.00	0.00	8,976.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,100.0	0.00	0.00	9,076.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,200.0	0.00	0.00	9,176.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,300.0	0.00	0.00	9,276.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,400.0	0.00	0.00	9,376.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,500.0	0.00	0.00	9,476.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,600.0	0.00	0.00	9,576.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,700.0	0.00	0.00	9,676.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,800.0	0.00	0.00	9,776.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
9,900.0	0.00	0.00	9,876.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
10,000.0	0.00	0.00	9,976.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
10,100.0	0.00	0.00	10,076.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
10,200.0	0.00	0.00	10,176.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
10,300.0	0.00	0.00	10,276.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80

MEC

MEC Survey Report

Company:	Mack Energy Corp	**Local Co-ordinate Reference:**	Site Brook Federal #5
Project:	Lea County	**TVD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Site:	Brook Federal #5	**MD Reference:**	WELL @ 3941.0usft (Original Well Elev)
Well:	Federal #2	**North Reference:**	Grid
Wellbore:	#2	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1 Single User Db

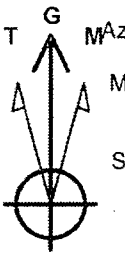
Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,400.0	0.00	0.00	10,376.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
10,500.0	0.00	0.00	10,476.7	23.8	-345.2	346.0	0.00	658,143.10	664,527.80
10,523.3	0.00	0.00	10,500.0	23.8	-345.2	346.0	0.00	658,143.10	664,527.80

Checked By: _____ Approved By: _____ Date: _____

MACK Energy Corporation

SITE DETAILS: Brook Federal #5	
Site Centre Northing:	658119.30
Easting:	664873.00
Positional Uncertainity:	0.0
Convergence:	0.29
Local North:	Grid



Azimuths to Grid North
True North: -0.29°
Magnetic North: 7.23°

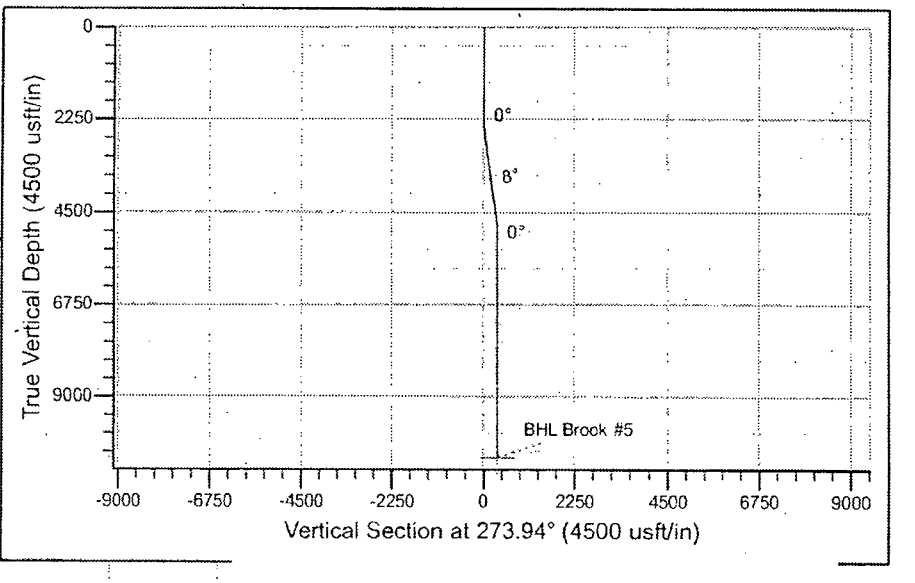
Magnetic Field
Strength: 48818.3snT
Dip Angle: 60.67°
Date: 1/29/2013
Model: IGRF200510

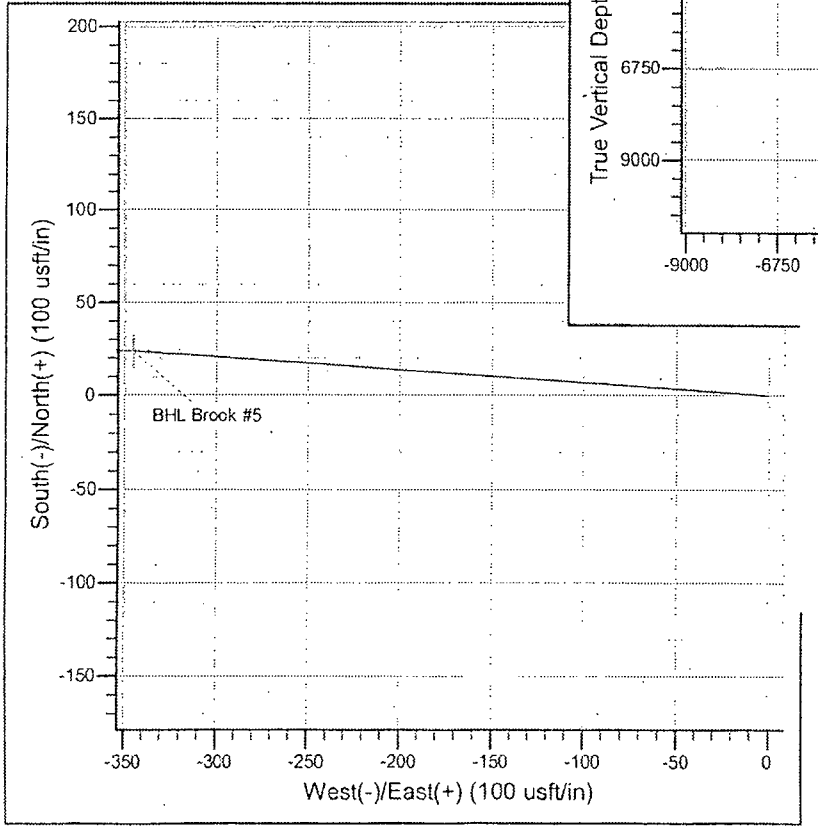
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2175.0	0.00	0.00	2175.0	0.0	0.0	0.00	0.00	0.0	
3	2582.4	8.15	273.94	2581.0	2.0	-28.8	2.00	273.94	28.9	
4	4615.9	8.15	273.94	4594.0	21.8	-316.4	0.00	0.00	317.1	
5	5023.3	0.00	0.00	5000.0	23.8	-345.2	2.00	180.00	346.0	
6	10523.3	0.00	0.00	10500.0	23.8	-345.2	0.00	0.00	346.0	BHL Brook #5

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BHL Brook #5	10500.0 - plan hits target center	23.8	-345.2	658143.10	664527.80	32° 48' 29.441 N	103° 47' 52.233 W	Point





1650FNL and 330FEL are hard lines.
The well can be south, west, or southwest of these hard lines but not north, east, or northeast. From the BHL the well is 25' south of the north hardline and 25' west of the east hardline.
Note the BHL has been changed to give a buffer from what is on the plat.

CONDITIONS OF APPROVAL

Sundry dated January 11, 2013

OPERATOR'S NAME:	Mack Energy Corporation
LEASE NO.:	LC-060199B
WELL NAME & NO.:	Brook Federal #5
SURFACE HOLE FOOTAGE:	1700' FNL & 0010' FEL
BOTTOM HOLE FOOTAGE	1650' FNL & 0330' FEL
LOCATION:	Section 30, T. 17 S., R. 32 E., NMPM
COUNTY:	Lea County, New Mexico

Original COA still applies with the following changes

A. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. 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

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water and brine flows in the Salado and Artesia groups.
Possible high pressure gas pockets in Wolfcamp Formation.

1. The **13-3/8** inch surface casing shall be set at **approximately 780 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

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

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

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

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

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

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

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

B. 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 surface casing shoe shall be **2000 (2M)** psi. **Operator installing a 3M system, but testing as a 2M.**

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. 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 **3000 (3M)** psi.

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

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

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

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

    e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

Proposed mud weight may not be adequate for drilling through Wolfcamp.

JAM 013113