PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 27 2016
RECEIVED

30-005-64194

October 30, 2014

Mack Energy Corporation
PO Box 960
Artesia, NM 88211-0960

RE: Calgary Federal #6
2310' FNL & 1995' FEL
Sec. 24, T15S, R28E
Chaves County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 30th day of October, 2014.

Notary Public

OFFICIAL SEAL
REGINIA L. GARNER
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires Aug. 30, 2016

CALGARY FED #6

Date	Depth	Deviation	Direction
10/24/2014	177	0.7	358
10/24/2014	384	0.4	50
10/26/2014	479	2.6	70.4
10/26/2014	662	10.6	306.3
10/26/2014	849	10.4	281.3
10/26/2014	1038	15.1	265.9
10/26/2014	1226	14.6	270.1
10/26/2014	1413	15.3	271.5
10/26/2014	1600	15.7	269.7
10/27/2014	1976	12.1	271.5
10/27/2014	2164	7.4	275.4
10/27/2014	2350	4.6	91.8
10/27/2014	2538	4.2	103.8
10/27/2014	2725	0.4	174.8
10/27/2014	3100	1.1	107.7
10/27/2014	3288	1.1	111.2
10/28/2014	3393	0.9	200.1

NM OIL CONSERVATION
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Mack Energy

Chavez County (NAD83)
Calgary Federal
#6

OH

Survey: MWD #1

Standard Survey Report

28 October, 2014

Wellplanning

Survey Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well #6
Project:	Chavez County (NAD83)	**TVD Reference:**	WELL @ 3741.1usft (Original Well Elev)
Site:	Calgary Federal	**MD Reference:**	WELL @ 3741.1usft (Original Well Elev)
Well:	#6	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Project Chavez County (NAD83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Calgary Federal

Site Position:		**Northing:**	728,462.31 usft	**Latitude:**	33° 0' 8.258 N
From:	Map	**Easting:**	618,073.95 usft	**Longitude:**	104° 4' 58.894 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.14 °

Well #6

Well Position	**+N/-S**	0.0 usft	**Northing:**	728,462.31 usft	**Latitude:**	33° 0' 8.258 N
	+E/-W	0.0 usft	**Easting:**	618,073.95 usft	**Longitude:**	104° 4' 58.894 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,723.6 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/13/2014	7.47	60.73	48,692

Design OH

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	275.02

Survey Program **Date** 10/28/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
177.0	3,398.0	MWD #1 (OH)	MWD	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
177.0	0.70	358.00	177.0	1.1	0.0	0.1	0.40	0.40	0.00
384.0	0.40	50.00	384.0	2.8	0.5	-0.2	0.27	-0.14	25.12
479.0	2.60	70.40	478.9	3.7	2.8	-2.4	2.35	2.32	21.47
662.0	10.60	306.30	661.0	15.1	-6.9	8.2	6.69	4.37	-67.81
849.0	10.40	281.30	845.0	28.6	-37.4	39.7	2.42	-0.11	-13.37
1,038.0	15.10	265.90	1,029.3	30.2	-78.7	81.0	3.05	2.49	-8.15
1,226.0	14.60	270.10	1,211.0	28.5	-126.8	128.8	0.63	-0.27	2.23
1,413.0	15.30	271.50	1,391.7	29.2	-175.0	176.9	0.42	0.37	0.75
1,600.0	15.70	269.70	1,571.9	29.7	-225.0	226.7	0.33	0.21	-0.96

Wellplanning

Survey Report

Company:	Mack Energy	**Local Co-ordinate Reference:**	Well #6
Project:	Chavez County (NAD83)	**TVD Reference:**	WELL @ 3741.1usft (Original Well Elev)
Site:	Calgary Federal	**MD Reference:**	WELL @ 3741.1usft (Original Well Elev)
Well:	#6	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,787.0	15.80	275.40	1,751.9	32.0	-275.7	277.4	0.83	0.05	3.05
1,976.0	12.10	271.50	1,935.3	34.9	-321.1	322.9	2.02	-1.96	-2.06
2,164.0	7.40	275.40	2,120.5	36.6	-352.9	354.7	2.52	-2.50	2.07
2,226.0	5.60	277.50	2,182.1	37.3	-359.8	361.7	2.93	-2.90	3.39
2,243.7	4.15	278.41	2,199.8	37.6	-361.3	363.2	8.22	-8.20	5.12
VP(CF#6)									
2,350.0	4.60	91.80	2,305.9	38.0	-360.9	362.8	8.22	0.43	163.14
2,538.0	4.20	103.80	2,493.4	36.1	-346.6	348.5	0.53	-0.21	6.38
2,725.0	0.40	174.80	2,680.2	33.8	-339.9	341.6	2.19	-2.03	37.97
2,913.0	0.50	104.90	2,868.2	33.0	-339.1	340.7	0.28	0.05	-37.18
3,100.0	1.10	107.70	3,055.2	32.2	-336.6	338.1	0.32	0.32	1.50
3,288.0	1.10	111.20	3,243.2	31.0	-333.2	334.6	0.04	0.00	1.86
3,398.0	0.90	200.10	3,353.1	29.8	-332.5	333.8	1.28	-0.18	80.82

Checked By: _____ Approved By: _____ Date: _____