

NM OIL CONSERVATION ARTESIA DISTRICT

JUL 31 2014
CD-ARTESIA

RECEIVED

Form 3160-4
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other		5. Lease Serial No. NMNM122617	
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr. Other _____		6. If Indian, Allottee or Tribe Name	
2. Name of Operator MACK ENERGY CORPORATION E-Mail: JERRY@MEC.COM		7. Unit or CA Agreement Name and No.	
3. Address P.O. BOX 960 ARTESIA, NM 88210		8. Lease Name and Well No. TAMANO FEDERAL 1	
3a. Phone No. (include area code) Ph: 575-748-1288		9. API Well No. 30-015-37321	
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface SWSW 1250FSL 200FWL At top prod interval reported below SESE 905FSL 455FEL At total depth SWSW 918FSL 644FWL		10. Field and Pool, or Exploratory MALJAMAR; GB SAN ANDRES	
14. Date Spudded 09/30/2013		11. Sec., T., R., M., or Block and Survey or Area Sec 36 T17S R31E Mer	
15. Date T.D. Reached 10/20/2013		12. County or Parish EDDY	
16. Date Completed ☐ D & A ☒ Ready to Prod. 03/26/2014		13. State NM	
17. Elevations (DF, KB, RT, GL)* 3810 GL			
18. Total Depth: MD 8754 TVD 3972	19. Plug Back T.D.: MD 6559 TVD 4207	20. Depth Bridge Plug Set: MD TVD	
21. Type Electric & Other Mechanical Logs Run (Submit copy of each) CNL, DLL, FDC, GR		22. Was well cored? ☒ No ☐ Yes (Submit analysis) Was DST run? ☒ No ☐ Yes (Submit analysis) Directional Survey? ☐ No ☒ Yes (Submit analysis)	

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
8.750	5.500 L-80	17.0		6600		1400		500	0
17.500	13.375 H-40	48.0	0	967		710		0	0
12.250	9.625 J-55	40.0	0	2146		800		0	0

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.875	3695							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
MALJAMAR; GB SAN ANDRES	4553	6523	4553 TO 5383	0.420	96	OPEN
B)			5442 TO 5826	0.420	96	OPEN
C)			5890 TO 6256	0.420	96	OPEN
D)			6321 TO 6523	0.420	48	OPEN

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
4553 TO 5121	109GALS 15%ACID, 22191GALS SLICKWATER, 45868# 100 MESH, 439144# WHITESAND 40/70
5179 TO 5641	4000GALS 15%ACID, 31025GALS SLICKWATER, 42461# 100 MESH, 448265# WHITESAND 40/70
5699 TO 6055	3875GALS 15%ACID, 30692GALS SLICKWATER, 44548# 100 MESH, 440912# WHITESAND 40/70
6119 TO 6523	3131GALS 15%ACID, 31175GALS SLICKWATER, 41979# 100 MESH, 436505# WHITESAND 40/70

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
04/23/2014	04/30/2014	24	→	63.0	44.0	1260.0	37.0	0.60	ELECTRIC PUMPING UNIT
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
			→	63	44	1260	698	POW	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
			→						

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #253100 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

ACCEPTED FOR RECORD
 JUL 24 2014
[Signature]
 BUREAU OF LAND MANAGEMENT
 CARLSBAD FIELD OFFICE

Already in system

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

29. Disposition of Gas(Sold, used for fuel, vented, etc.)

SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
GRAYBURG	4022	4051	OIL/GAS/WATER	GRAYBURG	3761
SAN ANDRES	4906	6523	OIL/GAS/WATER	SAN ANDRES	4358

Closest offset
Antelope STATE #6
30-015-32442

32. Additional remarks (include plugging procedure):

2/25/2014 Perf 6321-5223' w/ 48 holes.
3/24/2014 Frac w/ 24bbls 15% Acid, 15,948 bbls Slick Water, 21,442# 100 Mesh, 219,259# White Sand 40/70. Set plug @ 6300'. Perf 6119-6256' w/ 48 holes. Frac w/ 50.7 bbls 15% Acid, 15,810 bbls Slick Water, 20,537# 100 Mesh, 217,246# White Sand 40/70. Set plug 6080'. Perf 5890-6055' w/ 48holes. Frac w/ 47.6 bbls 15% Acid, 15204 bbls Slick Water, 23,738# 100 Mesh, 218,759# White Sand 40/70. Perf 5699-5826' w/ 48 holes.
3/25/2014 Frac w/ 44.7bbls 15% Acid, 15510bbls Slick water, 20810# 100 Mesh, 222153# White Sand 40/70. Set Plug @ 5670'. Perf 5442-5641' w/ 48 holes. Frac w/ 47.6 bbls 15%

33. Circle enclosed attachments:

1. Electrical/Mechanical Logs (1 full set req'd.)
2. Geologic Report
3. DST Report
4. Directional Survey
5. Sundry Notice for plugging and cement verification
6. Core Analysis
7. Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

Electronic Submission #253100 Verified by the BLM Well Information System.
For MACK ENERGY CORPORATION, sent to the Carlsbad

Name (please print) DEANA WEAVER

Title PRODUCTION CLERK

Signature (Electronic Submission)

Date 07/15/2014

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL **

Additional data for transaction #253100 that would not fit on the form

32. Additional remarks, continued

Acid, 15793 bbls Slick Water, 22382# 100 Mesh, 220,265# White Sand 40/70. Set Plug @ 5400' Perf 5179-5383' w/ 48 holes. Frac w/ 47.6 bbls 15% Acid, 15527 bbls Slick Water, 20,079# 100 Mesh, 228,000 White Sand 40/70. Set Plug @ 5160'. Perf 4906-5121' w/ 48 holes.

3/26/2014 Frac w/ 48 bbls 15% Acid, 13825 bbls Slick Water, 22182# 100 Mesh, 245,278# White Sand 40/70. Set Plug @ 4870'. Perf 4553-4797' w/ 48 holes. Frac w/ 61 bbls 15% Acid, 11160 bbls Slick Water, 23686# 100 Mesh, 193866# White Sand 40/70.

4/7/2014-4/8/2014 Drilled Out Plugs.

4/9/2014 RIH w/ 112jts 2 7/8 J-55, 6.5# tubing @ 3695', Stator pump.

Note: Well - Open Hole From

6600' To 8755'

Casing could not get to MTD of 8754'

Note when running 5254' of 5 1/2" Buttress

Follow by 3500' of 5 1/2" LTC

Casing could not get to TD- stop @ 6600'

Thus- 0-1346' - 5 1/2 LTC

1346-6600' - 5 1/2 Buttress

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (505) 393-6161 Fax (505) 393-6170

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (505) 748-1283 Fax (505) 748-9720

DISTRICT III
1000 Rio Hondo Road, Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

DIAMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-37321	Pool Code 43329	Pool Name Maljamar; Grayburg-San Andres
Property Code 37871	Property Name TAMANO FEDERAL	Well Number 1
GRID No. 013837	Operator Name MACK ENERGY CORPORATION	Elevation 3815'

UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	36	17-S	31-E		1250	SOUTH	200	WEST	EDDY

Bottom Hole #1 Location If Different From Surface

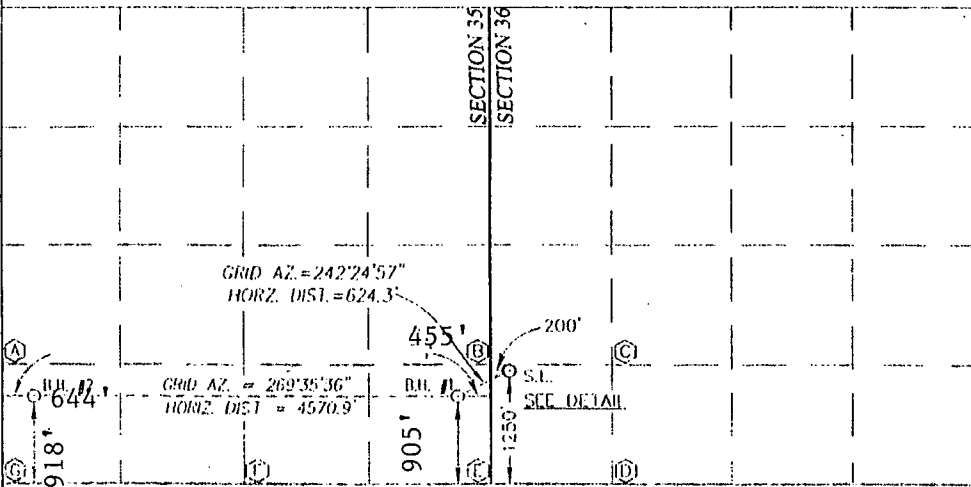
UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	35	17-S	31-E		905	SOUTH	455	EAST	EDDY

Bottom Hole #2 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
M	35	17-S	31-E		918	SOUTH	644	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
-----------------	-----------------	--------------------	-----------

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

CORNER COORDINATES TABLE Ⓐ -- Y=650485.5 N, X=649054.5 E Ⓔ -- Y=649203.2 N, X=654341.5 E Ⓑ -- Y=650523.7 N, X=654333.9 E Ⓕ -- Y=649183.7 N, X=651703.1 E Ⓒ -- Y=650532.8 N, X=655653.7 E Ⓖ -- Y=649165.7 N, X=649061.7 E Ⓓ -- Y=649212.8 N, X=655661.2 E		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. <i>Deana Weaver</i> 7.15.14 Signature Date Deana Weaver Printed Name dweaver@mec.com E-mail Address
		
GEODETIC COORDINATES NAD 27 NMC BOTTOM HOLE #1 LOCATION Y=650165.3 N X=653981.0 E BOTTOM HOLE #2 LOCATION Y=650132.9 N X=649411.3 E	SCALE: 1"=2000' 3809.7' 3814.6' 600' 600' 3809.3' 3814.7' DETAIL	
GEODETIC COORDINATES NAD 27 NMC SURFACE LOCATION Y=650454.3 N X=654534.2 E LAT. = 32.787180° N LONG. = 103.830487° W		

PathFinder – a Schlumberger company

Survey Report

MACK ENERGY CORPORATION

TAMANO FEDERAL #1

EDDY COUNTY, NM

API#: 30-015-37321 Rig: SILVER OAK DRILLING #6

PathFinder Office Supervisor: Joe Hogan

PathFinder Field Engineers: Ricky Deleon

Daniel Harrison

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.47.13.8481 N LON:103.49.49.7524 W

GRID Reference:NAD27 new mexico east Transverse Mercator

Ref GRID Coord: X: 654534.2000 Y: 650454.3000

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.19°EAST TO GRID

Vertical Section Plane: 266.41

Survey Vert. Reference: 17.50' Rotary Bushing To Ground

Altitude:3810.00' Ground To MSL

Survey Calculations by RX5 V6.04D using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)	TEMP (F)
THE FOLLOWING ARE SCIENTIFIC GYRO SURVEYS.											
100.00	0.44	279.74	100.00	0.00	0.40	0.04 N	0.40 W	0.40@	275.90	0.00	0.00
200.00	0.41	256.15	199.99	100.00	1.12	0.02 N	1.13 W	1.13@	271.06	0.18	0.00
300.00	0.37	236.09	299.99	100.00	1.75	0.24 S	1.74 W	1.76@	262.00	0.14	0.00
400.00	0.56	235.91	399.99	100.00	2.45	0.70 S	2.42 W	2.51@	253.86	0.19	0.00
500.00	0.68	243.82	499.98	100.00	3.42	1.23 S	3.35 W	3.57@	249.78	0.15	0.00
600.00	0.73	224.61	599.98	100.00	4.45	1.95 S	4.33 W	4.75@	245.77	0.24	0.00
700.00	0.77	238.26	699.97	100.00	5.51	2.76 S	5.35 W	6.02@	242.74	0.18	0.00
800.00	0.88	229.78	799.96	100.00	6.72	3.61 S	6.51 W	7.44@	241.01	0.16	0.00
900.00	0.89	232.39	899.95	100.00	7.98	4.58 S	7.71 W	8.97@	239.31	0.04	0.00
1000.00	0.80	233.19	999.93	100.00	9.21	5.47 S	8.89 W	10.43@	238.39	0.09	0.00
1100.00	1.16	224.41	1099.92	100.00	10.55	6.61 S	10.15 W	12.11@	236.93	0.39	0.00
1200.00	1.87	224.10	1199.88	100.00	12.51	8.50 S	12.00 W	14.70@	234.67	0.71	0.00
1300.00	3.19	221.13	1299.78	100.00	15.67	11.77 S	14.96 W	19.04@	231.80	1.33	0.00
1400.00	4.64	217.84	1399.55	100.00	20.30	17.06 S	19.27 W	25.74@	228.48	1.47	0.00
1500.00	6.37	218.17	1499.08	100.00	26.68	24.62 S	25.18 W	35.22@	225.65	1.73	0.00
1600.00	8.19	215.84	1598.27	100.00	34.89	34.75 S	32.78 W	47.78@	223.33	1.84	0.00
1700.00	9.67	216.42	1697.06	100.00	44.82	47.29 S	41.94 W	63.21@	221.57	1.48	0.00
1800.00	11.31	215.37	1795.38	100.00	56.39	62.04 S	52.60 W	81.34@	220.29	1.65	0.00
1900.00	12.34	214.85	1893.26	100.00	69.19	78.81 S	64.39 W	101.77@	219.25	1.04	0.00
2000.00	13.88	213.28	1990.65	100.00	83.04	97.61 S	77.07 W	124.37@	218.30	1.58	0.00
**	TIED INTO SCIENTIFIC GYRO SURVEY AT 2064'MD.										
2064.00	15.55	213.24	2052.55	64.00	92.78	111.20 S	85.99 W	140.57@	217.71	2.61	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.											
2203.00	16.62	213.31	2186.11	139.00	115.89	143.40 S	107.12 W	178.99@	216.76	0.77	90.18
2296.00	14.68	213.43	2275.65	93.00	130.97	164.35 S	120.92 W	204.04@	216.34	2.09	90.18
2390.00	13.01	213.90	2366.92	94.00	144.58	183.07 S	133.38 W	226.51@	216.08	1.78	93.80

PathFinder – a Schlumberger company

Survey Report

MACK ENERGY CORPORATION

TAMANO FEDERAL #1

EDDY COUNTY, NM

API#: 30-015-37321

Rig: SILVER OAK DRILLING #6

Page 02/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)	TEMP (F)
2484.00	12.05	213.85	2458.68	94.00	156.99	200.00 S	144.75 W	246.89@	215.89	1.02	93.80
2578.00	10.55	215.91	2550.86	94.00	168.43	215.12 S	155.26 W	265.30@	215.82	1.65	93.80
2672.00	9.15	216.05	2643.47	94.00	178.67	228.14 S	164.71 W	281.38@	215.83	1.49	97.41
2766.00	7.74	216.90	2736.45	94.00	187.55	239.24 S	172.91 W	295.18@	215.86	1.51	97.41
2860.00	6.68	223.66	2829.70	94.00	195.67	248.26 S	180.48 W	306.93@	216.02	1.44	97.41
2955.00	5.98	220.40	2924.12	95.00	203.17	256.02 S	187.50 W	317.34@	216.22	0.83	97.41
3049.00	5.28	223.11	3017.67	94.00	209.72	262.91 S	193.63 W	326.52@	216.37	0.80	97.41
3141.00	3.87	232.62	3109.38	92.00	215.38	267.89 S	198.99 W	333.71@	216.61	1.74	97.41
3235.00	2.64	242.36	3203.22	94.00	219.99	270.82 S	203.43 W	338.71@	216.91	1.43	101.02
3330.00	1.93	270.09	3298.15	95.00	223.59	271.83 S	206.97 W	341.66@	217.29	1.36	101.02
3424.00	1.67	270.73	3392.10	94.00	226.53	271.81 S	209.92 W	343.44@	217.68	0.28	101.02
3519.00	1.76	248.36	3487.06	95.00	229.30	272.33 S	212.66 W	345.53@	217.99	0.71	101.02
3614.00	1.67	261.15	3582.02	95.00	232.06	273.08 S	215.39 W	347.80@	218.26	0.41	104.64
3707.00	1.93	270.22	3674.97	93.00	234.98	273.28 S	218.29 W	349.76@	218.62	0.41	101.02
3745.00	2.20	272.91	3712.95	38.00	236.34	273.24 S	219.66 W	350.59@	218.80	0.75	97.41
3776.00	3.69	266.00	3743.91	31.00	237.93	273.28 S	221.25 W	351.62@	218.99	4.93	97.41
3807.00	5.54	256.66	3774.81	31.00	240.40	273.70 S	223.70 W	353.49@	219.26	6.42	97.41
3838.00	7.03	253.12	3805.62	31.00	243.72	274.59 S	226.97 W	356.26@	219.58	4.96	97.41
3869.00	8.79	252.65	3836.32	31.00	247.87	275.85 S	231.05 W	359.83@	219.95	5.68	101.02
3901.00	10.99	253.25	3867.85	32.00	253.21	277.46 S	236.30 W	364.45@	220.42	6.88	97.41
3932.00	14.07	254.11	3898.10	31.00	259.78	279.34 S	242.76 W	370.09@	220.99	9.95	101.02
3962.00	17.94	254.62	3926.94	30.00	267.86	281.57 S	250.73 W	377.02@	221.68	12.91	101.02
3993.00	21.98	254.70	3956.07	31.00	278.22	284.37 S	260.93 W	385.94@	222.54	13.03	104.64
4024.00	25.68	254.83	3984.42	31.00	290.49	287.66 S	273.01 W	396.59@	223.50	11.94	104.64
4055.00	28.58	255.41	4012.01	31.00	304.35	291.28 S	286.67 W	408.69@	224.54	9.39	104.64
4086.00	31.39	256.30	4038.85	31.00	319.58	295.06 S	301.70 W	422.00@	225.64	9.18	104.64
4117.00	33.68	255.99	4064.99	31.00	335.98	299.06 S	317.88 W	436.44@	226.75	7.41	104.64
4148.00	36.14	255.47	4090.41	31.00	353.42	303.43 S	335.07 W	452.05@	227.84	7.99	104.64

PathFinder – a Schlumberger company

Survey Report

MACK ENERGY CORPORATION

TAMANO FEDERAL #1

EDDY COUNTY, NM

API#: 30-015-37321

Rig: SILVER OAK DRILLING #6

Page 03/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)	TEMP (F)
4178.00	39.39	255.58	4114.12	30.00	371.45	308.02 S	352.86 W	468.39@	228.88	10.84	104.64
4209.00	42.47	255.90	4137.54	31.00	391.41	313.02 S	372.54 W	486.59@	229.96	9.96	104.64
4240.00	45.99	256.08	4159.75	31.00	412.67	318.26 S	393.52 W	506.11@	231.04	11.36	108.25
4271.00	49.15	257.33	4180.66	31.00	435.23	323.51 S	415.78 W	526.82@	232.11	10.62	108.30
4302.00	52.32	258.57	4200.28	31.00	458.96	328.52 S	439.25 W	548.51@	233.21	10.68	108.25
4333.00	54.78	260.48	4218.70	31.00	483.72	333.04 S	463.77 W	570.96@	234.32	9.36	108.25
4364.00	57.16	262.25	4236.04	31.00	509.30	336.89 S	489.17 W	593.96@	235.44	9.02	108.25
4395.00	59.53	263.95	4252.31	31.00	535.64	340.06 S	515.36 W	617.44@	236.58	8.96	108.25
4426.00	61.47	265.89	4267.58	31.00	562.61	342.44 S	542.24 W	641.32@	237.73	8.30	108.25
4457.00	63.31	267.75	4281.95	31.00	590.08	343.96 S	569.66 W	665.45@	238.88	7.97	108.30
4488.00	65.42	269.03	4295.36	31.00	618.01	344.74 S	597.60 W	689.91@	240.02	7.76	108.25
4519.00	67.71	269.91	4307.69	31.00	646.41	345.01 S	626.03 W	714.81@	241.14	7.83	108.25
4550.00	70.08	271.04	4318.85	31.00	675.25	344.76 S	654.95 W	740.15@	242.24	8.37	108.25
4581.00	73.25	272.12	4328.60	31.00	704.56	343.95 S	684.36 W	765.93@	243.32	10.75	108.25
4612.00	76.15	272.62	4336.78	31.00	734.29	342.71 S	714.23 W	792.20@	244.37	9.48	108.25
4642.00	78.88	272.91	4343.26	30.00	763.40	341.30 S	743.49 W	818.08@	245.34	9.15	108.25
4672.30	80.90	273.14	4348.58	30.30	793.03	339.73 S	773.27 W	844.61@	246.28	6.71	108.25
4704.00	83.89	273.19	4352.78	31.70	824.23	337.99 S	804.64 W	872.75@	247.22	9.43	108.25
4735.00	86.70	273.03	4355.32	31.00	854.91	336.31 S	835.49 W	900.64@	248.07	9.08	108.25
4766.00	89.25	272.71	4356.41	31.00	885.69	334.76 S	866.43 W	928.85@	248.87	8.29	108.25
4797.00	91.98	272.43	4356.08	31.00	916.51	333.37 S	897.39 W	957.32@	249.62	8.85	108.25
4828.00	93.39	272.71	4354.63	31.00	947.29	331.99 S	928.33 W	985.90@	250.32	4.64	108.25
4899.00	94.31	272.76	4349.86	71.00	1017.70	328.60 S	999.09 W	1051.74@	251.79	1.30	101.02
4961.00	94.65	272.30	4345.02	62.00	1079.16	325.88 S	1060.84 W	1109.76@	252.92	0.92	101.02
5054.00	95.04	271.93	4337.16	93.00	1171.37	322.46 S	1153.44 W	1197.67@	254.38	0.58	104.64
5146.00	93.98	271.42	4329.93	92.00	1262.70	319.78 S	1245.12 W	1285.52@	255.60	1.28	104.64
5239.00	94.71	270.74	4322.88	93.00	1355.12	318.03 S	1337.83 W	1375.11@	256.63	1.07	108.25
5332.00	93.70	270.70	4316.06	93.00	1447.61	316.86 S	1430.57 W	1465.24@	257.51	1.09	104.64

PathFinder – a Schlumberger company

Survey Report

MACK ENERGY CORPORATION

TAMANO FEDERAL #1

EDDY COUNTY, NM

API#: 30-015-37321

Rig: SILVER OAK DRILLING #6

Page 04/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)	TEMP (F)
5425.00	94.03	270.60	4309.80	93.00	1540.14	315.81 S	1523.35 W	1555.75@	258.29	0.37	104.64
5517.00	94.14	270.56	4303.24	92.00	1631.66	314.88 S	1615.12 W	1645.52@	258.97	0.13	104.64
5610.00	94.48	270.58	4296.25	93.00	1724.16	313.96 S	1707.85 W	1736.47@	259.58	0.37	104.64
5703.00	94.71	270.24	4288.80	93.00	1816.63	313.29 S	1800.55 W	1827.60@	260.13	0.44	101.02
5796.00	95.15	270.48	4280.81	93.00	1909.07	312.71 S	1893.20 W	1918.85@	260.62	0.54	104.64
5889.00	95.33	270.31	4272.32	93.00	2001.45	312.07 S	1985.81 W	2010.18@	261.07	0.27	104.64
5981.00	95.33	270.42	4263.77	92.00	2092.84	311.49 S	2077.41 W	2100.63@	261.47	0.12	104.64
6074.00	95.55	270.20	4254.95	93.00	2185.20	310.99 S	2169.99 W	2192.16@	261.84	0.33	104.64
6167.00	95.49	270.37	4246.01	93.00	2277.56	310.53 S	2262.56 W	2283.77@	262.19	0.19	104.64
6260.00	95.61	270.57	4237.01	93.00	2369.89	309.77 S	2355.12 W	2375.40@	262.51	0.25	104.64
6353.00	96.06	269.72	4227.56	93.00	2462.21	309.54 S	2447.63 W	2467.13@	262.79	1.03	104.64
6446.00	96.17	269.91	4217.65	93.00	2554.52	309.83 S	2540.11 W	2558.93@	263.05	0.24	104.64
6538.00	96.29	270.09	4207.67	92.00	2645.80	309.83 S	2631.56 W	2649.74@	263.29	0.23	104.64
6631.00	96.17	269.88	4197.58	93.00	2738.07	309.86 S	2724.01 W	2741.58@	263.51	0.26	104.64
6723.00	96.40	270.43	4187.50	92.00	2829.32	309.61 S	2815.46 W	2832.43@	263.72	0.64	104.64
6780.00	96.62	270.59	4181.04	57.00	2885.81	309.11 S	2872.09 W	2888.67@	263.86	0.48	101.02
6842.00	95.38	269.67	4174.56	62.00	2947.34	308.97 S	2933.75 W	2949.97@	263.99	2.49	104.64
6935.00	94.43	268.93	4166.61	93.00	3039.88	310.10 S	3026.40 W	3042.24@	264.15	1.29	101.02
7027.00	94.43	268.68	4159.50	92.00	3131.52	312.01 S	3118.10 W	3133.67@	264.29	0.27	104.64
7119.00	94.32	268.61	4152.48	92.00	3223.18	314.18 S	3209.81 W	3225.15@	264.41	0.14	104.64
7213.00	94.14	268.55	4145.55	94.00	3316.86	316.51 S	3303.52 W	3318.65@	264.53	0.20	104.64
7306.00	94.37	268.58	4138.65	93.00	3409.54	318.83 S	3396.24 W	3411.17@	264.64	0.25	104.64
7398.00	95.04	268.60	4131.10	92.00	3501.16	321.08 S	3487.90 W	3502.65@	264.74	0.73	108.25
7491.00	95.88	268.67	4122.26	93.00	3593.67	323.29 S	3580.45 W	3595.02@	264.84	0.91	104.64
7582.00	97.30	269.16	4111.81	91.00	3683.98	325.00 S	3670.83 W	3685.19@	264.94	1.65	101.02
7674.00	97.19	268.72	4100.21	92.00	3775.15	326.69 S	3762.08 W	3776.24@	265.04	0.49	104.64
7767.00	97.13	268.77	4088.62	93.00	3867.35	328.71 S	3854.33 W	3868.33@	265.13	0.08	104.64
7860.00	96.84	268.73	4077.31	93.00	3959.59	330.73 S	3946.62 W	3960.45@	265.21	0.31	108.25

PathFinder – a Schlumberger company

Survey Report

MACK ENERGY CORPORATION

TAMANO FEDERAL #1

EDDY COUNTY, NM

API#: 30-015-37321

Rig: SILVER OAK DRILLING #6

Page 05/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)	TEMP (F)
						(ft)	(ft)	(ft)	(deg)		
7952.00	95.94	268.66	4067.07	92.00	4050.94	332.81 S	4038.03 W	4051.72@	265.29	0.98	104.64
8045.00	97.01	269.02	4056.58	93.00	4143.26	334.68 S	4130.41 W	4143.95@	265.37	1.21	108.25
8138.00	96.79	269.22	4045.41	93.00	4235.49	336.10 S	4222.73 W	4236.08@	265.45	0.32	108.25
8230.00	96.28	269.98	4034.94	92.00	4326.75	336.73 S	4314.13 W	4327.25@	265.54	0.99	111.87
8323.00	96.67	270.70	4024.45	93.00	4418.93	336.19 S	4406.53 W	4419.34@	265.64	0.88	111.87
8416.00	96.28	270.47	4013.96	93.00	4511.10	335.24 S	4498.93 W	4511.41@	265.74	0.49	108.25
8508.00	97.13	270.68	4003.22	92.00	4602.22	334.33 S	4590.30 W	4602.46@	265.83	0.95	111.87
8601.00	97.25	270.53	3991.58	93.00	4694.25	333.35 S	4682.56 W	4694.41@	265.93	0.21	111.87
8694.00	97.24	270.66	3979.85	93.00	4786.26	332.39 S	4774.81 W	4786.37@	266.02	0.14	111.87
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 8755'MD.											
8755.00	97.24	270.66	3972.17	61.00	4846.60	331.70 S	4835.32 W	4846.69@	266.08	0.00	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder – a Schlumberger company and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.