

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD
Hobbs

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

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.
NMNM113418

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other _____

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

2. Name of Operator
CHEVRON MIDCONTINENT LP
Contact: BRITANY M CORTEZ
E-Mail: BCORTEZ@CHEVRON.COM

8. Lease Name and Well No.
MADERA 17 FEDERAL 1H

3. Address 15 SMITH ROAD
MIDLAND, TX 79705

3a. Phone No. (include area code)
Ph: 432-687-7415

9. API Well No.
30-025-41199-00-SY

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

At surface NENE 330FNL 380FEL

At top prod interval reported below SESE 485FSL 333FEL

At total depth SESE 485FSL 333FEL

10. Field and Pool, or Exploratory
ANTELOPE RIDGE

11. Sec., T., R., M., or Block and Survey
or Area Sec 17 T24S R34E Mer NMP

12. County or Parish
LEA

13. State
NM

14. Date Spudded
05/31/2015

15. Date T.D. Reached
06/19/2015

16. Date Completed
☐ D & A ☒ Ready to Prod.
07/14/2015

17. Elevations (DF, KB, RT, GL)*
3561 GL

18. Total Depth: MD
TVD 15226

19. Plug Back T.D.: MD
TVD 15291

20. Depth Bridge Plug Set: MD
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
CCL CBL

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 Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17.500	13.375 H-40	48.0	0	1293		1394		0	
12.250	9.625 HCK-55	40.0	0	5207		1685		0	
8.750	5.500 P-110	20.0	0	15417		2240		4917	

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	10338							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) BONE SPRING NORTH	11464	15226	11464 TO 15226			
B)						
C)						
D)						

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

Depth Interval	Amount and Type of Material
11464 TO 15226	CLEAN VOLUME: 1,988,458 GAL; TOTAL PROP: 3,812,964 LBS

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
08/11/2015	08/21/2015	24	→	619.0	660.0	987.0			FLUWS FROM WELL
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
			→	619	660	987	1066	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 #316005 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

Reclamation Area
2/11/2016

FEB 15 2016

ACCEPTED FOR RECORD
JAN 22 2016
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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.)
CAPTURED

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
BELL CANYON	5326		SAND/ SHALE	BELL CANYON	5326
CHERRY CANYON	6233		SAND / SHALE	CHERRY CANYON	6233
BRUSHY CANYON	7603		SAND/ SHALE	BRUSHY CANYON	7603
BONE SPRING LIME	9016		LIMESTONE	BONE SPRING LIME	9016
AVALON	9076		SHALE	AVALON	9076
BONE SPRING 1ST	10016		SAND/ SHALE	BONE SPRING 1ST	10016
BONE SPRING 2ND	10599		SAND/ SHALE	BONE SPRING 2ND	10559

32. Additional remarks (include plugging procedure):
See Attached tops and lithology

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 #316005 Verified by the BLM Well Information System.
For CHEVRON MIDCONTINENT LP, sent to the Hobbs
Committed to AFMSS for processing by LINDA JIMENEZ on 10/01/2015 (16LJ0016SE)

Name (please print) BRITANY M CORTEZTitle REGULATORY SPECIALIST

Signature _____ (Electronic Submission)

Date 09/10/2015

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.

**** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ****

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1410114

ENERGY COMPANY Chevron

WELL NAME Madera 17 Federal 1H

COUNTY & STATE

Lea County

API WELL NUMBER

30-025-41199

PROPOSED DIRECTION

179.51°

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
1,308. ft	1,307.96 ft	0.80	260.70	-2.12 ft	-1.91 ft	Gyro

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
3-Jun-15	1,469.00 ft	0.70	275.40

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
19-Jun-15	15,373.00 ft	89.94	178.33

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
19-Jun-15	15,430.00 ft	89.94	178.33

August Holt

PRINT YOUR NAME ABOVE

August Holt

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.58
DECLINATION OR GRID	GRID

6/19/2015

TODAY'S DATE

MWD SUPERVISOR 1

Rick Reed

DIRECTIONAL DRILLER 1

Craig Cannon

MWD SUPERVISOR 2

August Holt

DIRECTIONAL DRILLER 2

Justi Jackson

12329 Cutten Rd.,

Houston, Texas 777066

(713)337-0600 (Voice), (713)337-0599 (Fax)



Chevron

Lea County, NM (NAD27 NME)

Madera 17 Federal

1H

OH / Job #1410114

Survey: Phoenix MWD Surveys

Standard Survey Report

19 August, 2015





Phoenix Technology Services

Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well 1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3585.50usft (Ensign 153)
Site:	Madera 17 Federal	MD Reference:	KB @ 3585.50usft (Ensign 153)
Well:	1H	North Reference:	Grid
Wellbore:	OH / Job #1410114	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Ensign 153)	Database:	Compass 5000 GCR

Project	Lea County, NM (NAD27 NME)		
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	Madera 17 Federal				
Site Position:		Northing:	446,173.20 usft	Latitude:	32° 13' 25.66151 N
From:	Map	Easting:	762,588.30 usft	Longitude:	103° 29' 3.13581 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	1H					
Well Position	+N/-S	0.00 usft	Northing:	446,173.19 usft	Latitude:	32° 13' 25.66136 N
	+E/-W	0.00 usft	Easting:	762,588.30 usft	Longitude:	103° 29' 3.13581 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,561.00 usft	

Wellbore	OH / Job #1410114					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)	
	HDGM	5/28/15	7.03	60.02	48,346	

Design	Surveys (Ensign 153)					
Audit Notes:						
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)		
	0.00	0.00	0.00	179.51		

Survey Program	Date 6/21/15				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
274.00	1,275.00	Teledrift MWD Surveys (OH / Job #141011)	MWD	MWD - Standard	
1,308.00	15,430.00	Phoenix MWD Surveys (OH / Job #141011)	PHX+MWD+HDGM	PHX+MWD+HDGM	

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)
1,275.00	0.90	253.80	1,274.96	-2.01	-1.43	1.99	0.00	0.00	0.00
Tie-In to Teledrift									
1,308.00	0.80	260.70	1,307.96	-2.12	-1.91	2.10	0.43	-0.30	20.91
First Phoenix Survey									
1,469.00	0.70	275.40	1,468.95	-2.21	-4.00	2.17	0.13	-0.06	9.13
1,647.00	0.79	292.58	1,646.93	-1.63	-6.21	1.58	0.13	0.05	9.65
1,826.00	0.63	291.21	1,825.92	-0.80	-8.27	0.73	0.09	-0.09	-0.77
2,004.00	0.64	277.78	2,003.91	-0.31	-10.17	0.23	0.08	0.01	-7.54
2,183.00	0.84	272.12	2,182.89	-0.13	-12.47	0.02	0.12	0.11	-3.16



Phoenix Technology Services Survey Report



Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Madera 17 Federal
Well: 1H
Wellbore: OH / Job #1410114
Design: Surveys (Ensign 153)

Local Co-ordinate Reference: Well 1H
TVD Reference: KB @ 3585.50usft (Ensign 153)
MD Reference: KB @ 3585.50usft (Ensign 153)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
2,362.00	1.09	271.54	2,361.87	-0.04	-15.48	-0.10	0.14	0.14	-0.32
2,541.00	1.26	281.34	2,540.83	0.40	-19.11	-0.56	0.15	0.09	5.47
2,720.00	0.70	292.68	2,719.80	1.21	-22.05	-1.39	0.33	-0.31	6.34
2,899.00	0.64	312.41	2,898.79	2.30	-23.80	-2.50	0.13	-0.03	11.02
3,079.00	0.69	310.42	3,078.78	3.68	-25.37	-3.90	0.03	0.03	-1.11
3,258.00	0.56	327.55	3,257.77	5.12	-26.66	-5.35	0.13	-0.07	9.57
3,437.00	0.74	327.64	3,436.76	6.83	-27.74	-7.07	0.10	0.10	0.05
3,616.00	0.61	338.61	3,615.74	8.70	-28.71	-8.94	0.10	-0.07	6.13
3,795.00	0.37	342.36	3,794.74	10.14	-29.23	-10.38	0.14	-0.13	2.09
3,973.00	0.20	116.69	3,972.74	10.54	-29.13	-10.79	0.30	-0.10	75.47
4,153.00	0.78	149.49	4,152.73	9.35	-28.23	-9.59	0.35	0.32	18.22
4,332.00	1.11	158.26	4,331.70	6.69	-26.97	-6.92	0.20	0.18	4.90
4,511.00	1.11	115.06	4,510.67	4.34	-24.75	-4.55	0.46	0.00	-24.13
4,690.00	1.53	130.06	4,689.63	2.07	-21.35	-2.25	0.30	0.23	8.38
4,869.00	1.35	147.80	4,868.57	-1.25	-18.40	1.10	0.27	-0.10	9.91
5,048.00	1.50	146.05	5,047.52	-4.98	-15.97	4.84	0.09	0.08	-0.98
5,147.00	1.34	139.91	5,146.49	-6.94	-14.50	6.82	0.22	-0.16	-6.20
5,377.00	1.15	146.00	5,376.43	-10.91	-11.48	10.81	0.10	-0.08	2.65
5,557.00	1.18	138.88	5,556.39	-13.81	-9.25	13.73	0.08	0.02	-3.96
5,736.00	1.01	149.92	5,735.36	-16.56	-7.25	16.50	0.15	-0.09	6.17
5,915.00	0.52	120.70	5,914.35	-18.34	-5.76	18.29	0.34	-0.27	-16.32
6,094.00	0.76	22.61	6,093.34	-17.66	-4.60	17.62	0.55	0.13	-54.80
6,273.00	0.66	15.64	6,272.32	-15.57	-3.87	15.54	0.07	-0.06	-3.89
6,451.00	0.57	10.05	6,450.31	-13.71	-3.44	13.68	0.06	-0.05	-3.14
6,631.00	0.62	358.42	6,630.30	-11.85	-3.31	11.83	0.07	0.03	-6.46
6,810.00	0.63	353.02	6,809.29	-9.91	-3.45	9.88	0.03	0.01	-3.02
6,989.00	0.62	338.95	6,988.28	-8.03	-3.92	8.00	0.09	-0.01	-7.86
7,168.00	0.70	319.57	7,167.27	-6.29	-4.98	6.25	0.13	0.04	-10.83
7,347.00	0.80	323.47	7,346.26	-4.46	-6.43	4.40	0.06	0.06	2.18
7,526.00	0.42	299.52	7,525.25	-3.13	-7.75	3.06	0.25	-0.21	-13.38
7,705.00	0.53	299.07	7,704.24	-2.40	-9.04	2.33	0.06	0.06	-0.25
7,884.00	0.95	306.90	7,883.22	-1.11	-10.95	1.02	0.24	0.23	4.37
8,062.00	0.98	304.38	8,061.20	0.64	-13.39	-0.75	0.03	0.02	-1.42
8,241.00	0.57	318.59	8,240.18	2.17	-15.24	-2.30	0.25	-0.23	7.94
8,420.00	0.26	319.22	8,419.18	3.14	-16.09	-3.28	0.17	-0.17	0.35
8,598.00	0.25	309.25	8,597.18	3.69	-16.66	-3.84	0.03	-0.01	-5.60
8,777.00	0.37	264.88	8,776.17	3.89	-17.54	-4.04	0.14	0.07	-24.79
8,956.00	0.91	263.72	8,955.16	3.68	-19.52	-3.85	0.30	0.30	-0.65
9,135.00	0.52	34.58	9,134.16	4.20	-20.48	-4.37	0.73	-0.22	73.11
9,323.00	0.55	298.47	9,322.15	5.33	-20.79	-5.51	0.42	0.02	-51.12
9,501.00	0.90	290.48	9,500.14	6.22	-22.85	-6.42	0.20	0.20	-4.49
9,680.00	0.95	94.65	9,679.13	6.60	-22.68	-6.79	1.02	0.03	91.72
9,859.00	0.72	172.80	9,858.11	5.36	-21.06	-5.54	0.60	-0.13	43.66



Phoenix Technology Services Survey Report



Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Madera 17 Federal
Well: 1H
Wellbore: OH / Job #1410114
Design: Surveys (Ensign 153)

Local Co-ordinate Reference: Well 1H
TVD Reference: KB @ 3585.50usft (Ensign 153)
MD Reference: KB @ 3585.50usft (Ensign 153)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
10,038.00	2.04	188.73	10,037.06	1.10	-21.41	-1.28	0.76	0.74	8.90
10,217.00	0.82	150.95	10,216.00	-3.17	-21.27	2.99	0.83	-0.68	-21.11
10,287.00	0.78	132.25	10,286.00	-3.93	-20.67	3.76	0.38	-0.06	-26.71
10,374.00	2.82	160.47	10,372.95	-6.35	-19.52	6.18	2.49	2.34	32.44
10,419.00	7.95	173.44	10,417.74	-10.49	-18.79	10.32	11.64	11.40	28.82
10,464.00	12.80	180.15	10,461.99	-18.57	-18.45	18.41	11.09	10.78	14.91
10,509.00	17.78	177.54	10,505.38	-30.42	-18.17	30.27	11.17	11.07	-5.80
10,553.00	25.24	176.24	10,546.29	-46.52	-17.26	46.37	16.99	16.95	-2.95
10,598.00	31.73	176.86	10,585.82	-67.93	-15.98	67.79	14.44	14.42	1.38
10,643.00	37.94	179.37	10,622.74	-93.61	-15.18	93.47	14.16	13.80	5.58
10,688.00	42.06	180.00	10,657.21	-122.52	-15.03	122.39	9.20	9.16	1.40
10,733.00	46.14	178.00	10,689.52	-153.83	-14.46	153.70	9.58	9.07	-4.44
10,777.00	49.02	178.42	10,719.19	-186.29	-13.45	186.17	6.58	6.55	0.95
10,822.00	50.87	176.78	10,748.15	-220.70	-12.00	220.59	4.97	4.11	-3.64
10,866.00	52.99	176.64	10,775.28	-255.28	-10.02	255.18	4.82	4.82	-0.32
10,911.00	57.73	175.96	10,800.85	-292.21	-7.62	292.14	10.61	10.53	-1.51
10,956.00	63.77	176.17	10,822.83	-331.36	-4.93	331.31	13.43	13.42	0.47
11,001.00	70.68	177.47	10,840.24	-372.77	-2.64	372.73	15.58	15.36	2.89
11,046.00	75.18	178.24	10,853.45	-415.74	-1.03	415.72	10.13	10.00	1.71
11,090.00	78.69	179.07	10,863.39	-458.58	-0.03	458.57	8.19	7.98	1.89
11,135.00	80.19	180.05	10,871.64	-502.82	0.31	502.80	3.96	3.33	2.18
11,167.00	82.44	180.28	10,876.47	-534.45	0.22	534.43	7.07	7.03	0.72
11,212.00	84.07	180.58	10,881.76	-579.14	-0.12	579.11	3.68	3.62	0.67
11,301.00	85.33	181.04	10,889.98	-667.74	-1.37	667.71	1.51	1.42	0.52
11,391.00	86.54	180.57	10,896.36	-757.51	-2.63	757.46	1.44	1.34	-0.52
11,480.00	87.93	180.18	10,900.65	-846.40	-3.22	846.34	1.62	1.56	-0.44
11,569.00	89.05	180.14	10,903.00	-935.37	-3.46	935.30	1.26	1.26	-0.04
11,659.00	88.88	180.57	10,904.62	-1,025.35	-4.02	1,025.28	0.51	-0.19	0.48
11,748.00	89.78	180.66	10,905.66	-1,114.34	-4.98	1,114.26	1.02	1.01	0.10
11,839.00	89.58	181.22	10,906.17	-1,205.32	-6.47	1,205.23	0.65	-0.22	0.62
11,928.00	89.36	180.45	10,906.99	-1,294.31	-7.77	1,294.20	0.90	-0.25	-0.87
12,017.00	89.41	180.12	10,907.95	-1,383.30	-8.21	1,383.18	0.37	0.06	-0.37
12,107.00	89.89	180.36	10,908.50	-1,473.30	-8.59	1,473.17	0.60	0.53	0.27
12,197.00	89.55	179.33	10,908.94	-1,563.30	-8.34	1,563.17	1.21	-0.38	-1.14
12,286.00	89.50	178.17	10,909.68	-1,652.27	-6.40	1,652.16	1.30	-0.06	-1.30
12,375.00	88.66	178.62	10,911.11	-1,741.23	-3.91	1,741.13	1.07	-0.94	0.51
12,465.00	88.86	177.84	10,913.05	-1,831.16	-1.13	1,831.08	0.89	0.22	-0.87
12,554.00	89.52	178.12	10,914.31	-1,920.10	2.01	1,920.04	0.81	0.74	0.31
12,644.00	88.83	179.07	10,915.61	-2,010.06	4.21	2,010.02	1.30	-0.77	1.06
12,733.00	88.10	179.69	10,917.99	-2,099.02	5.18	2,098.99	1.08	-0.82	0.70
12,823.00	88.21	179.70	10,920.89	-2,188.97	5.66	2,188.94	0.12	0.12	0.01
12,912.00	89.94	179.43	10,922.33	-2,277.95	6.33	2,277.93	1.97	1.94	-0.30
13,001.00	91.04	179.44	10,921.56	-2,366.94	7.21	2,366.92	1.24	1.24	0.01
13,091.00	90.31	179.69	10,920.50	-2,456.94	7.89	2,456.91	0.86	-0.81	0.28



Phoenix Technology Services Survey Report



Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Madera 17 Federal
Well: 1H
Wellbore: OH / Job #1410114
Design: Surveys (Ensign 153)

Local Co-ordinate Reference: Well 1H
TVD Reference: KB @ 3585.50usft (Ensign 153)
MD Reference: KB @ 3585.50usft (Ensign 153)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
13,180.00	89.75	180.52	10,920.46	-2,545.93	7.73	2,545.91	1.12	-0.63	0.93
13,270.00	89.39	181.01	10,921.13	-2,635.92	6.53	2,635.88	0.68	-0.40	0.54
13,359.00	88.22	180.29	10,922.99	-2,724.90	5.52	2,724.84	1.54	-1.31	-0.81
13,449.00	87.62	178.98	10,926.26	-2,814.83	6.09	2,814.78	1.60	-0.67	-1.46
13,538.00	88.29	178.62	10,929.43	-2,903.76	7.95	2,903.72	0.85	0.75	-0.40
13,627.00	89.89	177.71	10,930.85	-2,992.69	10.80	2,992.68	2.07	1.60	-1.02
13,717.00	90.86	178.17	10,930.26	-3,082.63	14.04	3,082.64	1.19	1.08	0.51
13,806.00	91.09	178.89	10,928.74	-3,171.59	16.32	3,171.61	0.85	0.26	0.81
13,895.00	90.84	179.10	10,927.24	-3,260.56	17.88	3,260.60	0.37	-0.28	0.24
13,984.00	90.45	179.63	10,926.24	-3,349.55	18.87	3,349.59	0.74	-0.44	0.60
14,074.00	90.00	180.75	10,925.89	-3,439.55	18.57	3,439.58	1.34	-0.50	1.24
14,163.00	88.69	180.14	10,926.91	-3,528.54	17.88	3,528.56	1.62	-1.47	-0.69
14,253.00	89.30	179.50	10,928.48	-3,618.52	18.16	3,618.55	0.98	0.68	-0.71
14,342.00	89.52	178.58	10,929.40	-3,707.51	19.65	3,707.54	1.06	0.25	-1.03
14,432.00	88.83	178.92	10,930.70	-3,797.47	21.62	3,797.52	0.85	-0.77	0.38
14,521.00	89.30	178.65	10,932.15	-3,886.44	23.50	3,886.50	0.61	0.53	-0.30
14,611.00	90.06	179.11	10,932.65	-3,976.42	25.26	3,976.49	0.99	0.84	0.51
14,700.00	89.83	179.47	10,932.74	-4,065.42	26.36	4,065.49	0.48	-0.26	0.40
14,789.00	88.88	179.79	10,933.74	-4,154.41	26.94	4,154.49	1.13	-1.07	0.36
14,879.00	88.91	179.32	10,935.47	-4,244.39	27.64	4,244.47	0.52	0.03	-0.52
14,968.00	89.36	178.84	10,936.82	-4,333.36	29.07	4,333.46	0.74	0.51	-0.54
15,058.00	89.81	177.85	10,937.47	-4,423.32	31.67	4,423.43	1.21	0.50	-1.10
15,147.00	90.67	177.25	10,937.10	-4,512.24	35.47	4,512.38	1.18	0.97	-0.67
15,237.00	90.45	177.37	10,936.22	-4,602.14	39.69	4,602.31	0.28	-0.24	0.13
15,253.00	90.40	177.45	10,936.10	-4,618.12	40.42	4,618.30	0.59	-0.31	0.49
HL Crossing: 15253' MD									
15,326.00	90.17	177.81	10,935.74	-4,691.06	43.44	4,691.26	0.59	-0.31	0.49
15,373.00	89.94	178.33	10,935.69	-4,738.03	45.02	4,738.24	1.21	-0.49	1.11
Final Phoenix Survey									
15,430.00	89.94	178.33	10,935.75	-4,795.01	46.68	4,795.23	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,275.00	1,274.96	-2.01	-1.43	Tie-in to Teledrift
1,308.00	1,307.96	-2.12	-1.91	First Phoenix Survey
15,253.00	10,936.10	-4,618.12	40.42	HL Crossing 15253' MD
15,373.00	10,935.69	-4,738.03	45.02	Final Phoenix Survey
15,430.00	10,935.75	-4,795.01	46.68	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

Well	FmTop Abbrev	FM Top Name	MD	TVDSS	TVD
Madera 17 Fed 1H	LMAR	Lamar	Limestone		
Madera 17 Fed 1H	BLCN	Bell Canyon	Sand Shale	5,326	-1,740
Madera 17 Fed 1H	CRCN	Cherry Canyon	Sand Shale	6,233	-2,647
Madera 17 Fed 1H	BYCN	Brushy Canyon	Sand Shale	7,603	-4,016
Madera 17 Fed 1H	BSGL	Bone Spring Lime	Limestone	9,016	-5,430
Madera 17 Fed 1H	AVLN	Avalon	Shale	9,076	-5,490
Madera 17 Fed 1H	FBSG	First Bone Spring	Sand Shale	10,016	-6,429
Madera 17 Fed 1H	SBSG	Second Bone Spring	Sand Shale	10,599	-7,001