



NM OIL CONSERVATION

MAY 17 2016

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Apache Corporation

Lea County, NM (NAD27 NME)
Chipotle State Com
2H

OH / Job #1514789

Design: Surveys (Nomac 22)

Standard Survey Report

20 January, 2016

*final survey
mwp w/
gyro
tie on*



Company:	Apache Corporation	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	GL + KB @ 4371.00usft (Nomac 22)
Site:	Chipotle State Com	MD Reference:	GL + KB @ 4371.00usft (Nomac 22)
Well:	2H	North Reference:	Grid
Wellbore:	OH / Job #1514789	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 22)	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	Chipotle State Com		
Site Position:		Northing:	691,301.80 usft
From:	Map	Easting:	665,344.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 53' 57.50632 N
		Longitude:	103° 47' 40.68879 W
		Grid Convergence:	0.29 °

Well	2H		
Well Position	+N/-S	0.00 usft	Northing: 691,301.80 usft
	+E/-W	0.00 usft	Easting: 665,344.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 53' 57.50632 N
		Longitude:	103° 47' 40.68879 W
		Ground Level:	4,349.00 usft

Wellbore	OH / Job #1514789		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/22/2015	7.37	60.88	48,592

Design	Surveys (Nomac 22)		
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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	179.67

Survey Program		Date	1/20/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	5,642.00	Phoenix Gyro Surveys (OH / Job #151478	PHX_SPT_GTD	PHX Continuous north-seeking gyro	
5,704.00	13,370.00	Phoenix MWD Surveys (OH / Job #151478	PHX+MWD+HDGM	PHX+OWSG 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.42	153.34	100.00	-0.33	0.16	0.33	0.42	0.42	0.00
200.00	0.15	167.31	200.00	-0.78	0.36	0.78	0.28	-0.27	13.97
300.00	0.05	94.43	300.00	-0.91	0.43	0.92	0.14	-0.10	-72.88
400.00	0.44	182.48	400.00	-1.30	0.46	1.30	0.44	0.39	88.05
500.00	0.40	299.78	500.00	-1.51	0.14	1.51	0.72	-0.04	117.30
600.00	0.15	127.23	599.99	-1.42	-0.06	1.42	0.55	-0.25	-172.55
700.00	0.17	122.47	699.99	-1.58	0.17	1.58	0.02	0.02	-4.76
800.00	0.14	173.91	799.99	-1.78	0.31	1.78	0.14	-0.03	51.44
900.00	0.05	296.22	899.99	-1.88	0.28	1.88	0.17	-0.09	122.31

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Well:	2H	North Reference:	Grid
Wellbore:	OH / Job #1514789	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 22)	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)
1,000.00	0.38	231.12	999.99	-2.07	-0.02	2.07	0.36	0.33	-65.10
1,100.00	0.36	214.40	1,099.99	-2.54	-0.45	2.53	0.11	-0.02	-16.72
1,200.00	0.30	249.66	1,199.99	-2.89	-0.88	2.88	0.21	-0.06	35.26
1,300.00	0.26	303.53	1,299.99	-2.85	-1.31	2.84	0.26	-0.04	53.87
1,400.00	0.38	34.74	1,399.99	-2.45	-1.31	2.45	0.46	0.12	91.21
1,500.00	0.32	167.46	1,499.99	-2.45	-1.06	2.45	0.64	-0.06	132.72
1,600.00	0.09	56.62	1,599.99	-2.68	-0.94	2.68	0.36	-0.23	-110.84
1,700.00	0.14	134.34	1,699.99	-2.73	-0.78	2.72	0.15	0.05	77.72
1,800.00	0.31	42.08	1,799.99	-2.61	-0.51	2.61	0.35	0.17	-92.26
1,900.00	0.05	210.49	1,899.98	-2.45	-0.35	2.44	0.36	-0.26	168.41
2,000.00	0.48	97.03	1,999.98	-2.54	0.04	2.54	0.50	0.43	-113.46
2,100.00	0.45	89.15	2,099.98	-2.58	0.85	2.59	0.07	-0.03	-7.88
2,200.00	0.54	65.94	2,199.98	-2.38	1.67	2.39	0.22	0.09	-23.21
2,300.00	0.61	57.90	2,299.97	-1.91	2.55	1.92	0.11	0.07	-8.04
2,400.00	0.85	92.81	2,399.96	-1.66	3.74	1.68	0.49	0.24	34.91
2,500.00	0.81	86.15	2,499.95	-1.65	5.19	1.68	0.10	-0.04	-6.66
2,600.00	0.64	78.89	2,599.95	-1.50	6.44	1.53	0.19	-0.17	-7.26
2,700.00	0.59	84.85	2,699.94	-1.34	7.50	1.38	0.08	-0.05	5.96
2,800.00	0.46	87.62	2,799.94	-1.28	8.42	1.33	0.13	-0.13	2.77
2,900.00	0.68	53.77	2,899.93	-0.91	9.30	0.96	0.39	0.22	-33.85
3,000.00	0.57	113.19	2,999.93	-0.76	10.23	0.81	0.63	-0.11	59.42
3,100.00	0.36	147.60	3,099.92	-1.22	10.86	1.28	0.34	-0.21	34.41
3,200.00	0.08	236.13	3,199.92	-1.52	10.97	1.58	0.37	-0.28	88.53
3,300.00	0.11	183.63	3,299.92	-1.66	10.91	1.72	0.09	0.03	-52.50
3,400.00	0.20	45.11	3,399.92	-1.63	11.02	1.69	0.29	0.09	-138.52
3,500.00	0.38	49.38	3,499.92	-1.29	11.40	1.36	0.18	0.18	4.27
3,600.00	0.32	5.86	3,599.92	-0.80	11.68	0.86	0.27	-0.06	-43.52
3,700.00	0.30	153.27	3,699.92	-0.75	11.82	0.82	0.60	-0.02	147.41
3,800.00	0.53	163.53	3,799.92	-1.43	12.07	1.50	0.24	0.23	10.26
3,900.00	0.57	205.15	3,899.91	-2.32	11.99	2.39	0.39	0.04	41.62
4,000.00	0.44	186.39	3,999.91	-3.16	11.74	3.22	0.21	-0.13	-18.76
4,100.00	0.81	214.20	4,099.90	-4.12	11.30	4.19	0.47	0.37	27.81
4,200.00	0.69	198.59	4,199.89	-5.28	10.71	5.34	0.24	-0.12	-15.61
4,300.00	0.53	224.93	4,299.89	-6.17	10.19	6.23	0.32	-0.16	26.34
4,400.00	0.55	250.29	4,399.88	-6.66	9.41	6.72	0.24	0.02	25.36
4,500.00	0.34	204.53	4,499.88	-7.10	8.84	7.15	0.40	-0.21	-45.76
4,600.00	0.37	240.82	4,599.88	-7.52	8.43	7.57	0.22	0.03	36.29
4,700.00	0.36	226.91	4,699.88	-7.90	7.92	7.94	0.09	-0.01	-13.91
4,800.00	0.64	184.05	4,799.87	-8.67	7.65	8.71	0.45	0.28	-42.86
4,900.00	0.52	168.20	4,899.87	-9.67	7.71	9.71	0.20	-0.12	-15.85
5,000.00	0.46	183.28	4,999.86	-10.51	7.78	10.56	0.14	-0.06	15.08
5,100.00	0.14	271.93	5,099.86	-10.91	7.63	10.95	0.48	-0.32	88.65
5,200.00	0.26	116.33	5,199.86	-11.01	7.71	11.05	0.39	0.12	-155.60

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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)
5,300.00	0.27	167.69	5,299.86	-11.34	7.97	11.38	0.23	0.01	51.36
5,400.00	0.53	171.54	5,399.86	-12.02	8.08	12.07	0.26	0.26	3.85
5,500.00	0.57	159.78	5,499.85	-12.95	8.32	13.00	0.12	0.04	-11.76
5,600.00	0.59	224.76	5,599.85	-13.78	8.13	13.83	0.62	0.02	64.98
5,642.00	0.53	163.47	5,641.85	-14.12	8.04	14.17	1.36	-0.14	-145.93
Tie In to Phoenix Gyro Surveys									
5,704.00	1.20	172.80	5,703.84	-15.04	8.20	15.09	1.10	1.08	15.05
First Phoenix MWD Survey									
5,735.00	3.50	176.40	5,734.81	-16.31	8.30	16.35	7.43	7.42	11.61
5,766.00	7.20	178.80	5,765.67	-19.19	8.40	19.24	11.95	11.94	7.74
5,797.00	10.70	179.90	5,796.29	-24.02	8.44	24.06	11.30	11.29	3.55
5,828.00	14.50	181.90	5,826.54	-30.78	8.32	30.82	12.34	12.26	6.45
5,859.00	17.90	183.20	5,856.30	-39.41	7.93	39.46	11.03	10.97	4.19
5,891.00	21.40	183.30	5,886.44	-50.15	7.32	50.20	10.94	10.94	0.31
5,922.00	25.20	181.70	5,914.90	-62.40	6.79	62.44	12.43	12.26	-5.16
5,953.00	28.90	179.00	5,942.51	-76.49	6.73	76.53	12.57	11.94	-8.71
5,984.00	32.60	176.70	5,969.15	-92.33	7.34	92.37	12.52	11.94	-7.42
6,015.00	35.80	175.20	5,994.78	-109.70	8.58	109.75	10.67	10.32	-4.84
6,046.00	39.30	175.20	6,019.36	-128.53	10.16	128.58	11.29	11.29	0.00
6,078.00	43.00	175.60	6,043.45	-149.51	11.85	149.58	11.59	11.56	1.25
6,109.00	46.80	177.00	6,065.40	-171.35	13.25	171.42	12.67	12.26	4.52
6,140.00	50.00	177.70	6,085.98	-194.50	14.32	194.58	10.46	10.32	2.26
6,171.00	53.40	178.10	6,105.19	-218.81	15.21	218.89	11.01	10.97	1.29
6,202.00	56.40	178.80	6,123.02	-244.16	15.89	244.24	9.85	9.68	2.26
6,233.00	59.70	179.70	6,139.42	-270.46	16.23	270.54	10.93	10.65	2.90
6,264.00	63.40	179.90	6,154.18	-297.71	16.33	297.80	11.95	11.94	0.65
6,295.00	67.00	180.70	6,167.18	-325.84	16.18	325.93	11.85	11.61	2.58
6,326.00	70.50	181.30	6,178.42	-354.73	15.67	354.81	11.43	11.29	1.94
6,357.00	73.20	181.90	6,188.07	-384.17	14.85	384.25	8.90	8.71	1.94
6,389.00	76.70	181.50	6,196.38	-415.05	13.93	415.13	11.00	10.94	-1.25
6,420.00	79.80	181.00	6,202.69	-445.39	13.27	445.46	10.12	10.00	-1.61
6,451.00	82.30	181.20	6,207.52	-476.01	12.68	476.07	8.09	8.06	0.65
6,483.00	85.20	180.90	6,211.00	-507.81	12.10	507.87	9.11	9.06	-0.94
6,548.00	88.80	180.90	6,214.40	-572.70	11.08	572.75	5.54	5.54	0.00
6,636.00	88.60	181.10	6,216.40	-660.66	9.54	660.71	0.32	-0.23	0.23
6,729.00	88.30	181.60	6,218.91	-753.60	7.35	753.63	0.63	-0.32	0.54
6,823.00	88.70	182.10	6,221.37	-847.52	4.32	847.53	0.68	0.43	0.53
6,917.00	88.70	180.50	6,223.51	-941.47	2.19	941.47	1.70	0.00	-1.70
7,010.00	88.90	180.70	6,225.45	-1,034.44	1.21	1,034.43	0.30	0.22	0.22
7,104.00	88.90	180.70	6,227.26	-1,128.42	0.07	1,128.40	0.00	0.00	0.00
7,198.00	88.80	181.10	6,229.15	-1,222.39	-1.41	1,222.36	0.44	-0.11	0.43
7,291.00	89.20	181.60	6,230.77	-1,315.35	-3.60	1,315.31	0.69	0.43	0.54
7,384.00	89.10	182.00	6,232.15	-1,408.29	-6.52	1,408.23	0.44	-0.11	0.43
7,478.00	88.80	180.20	6,233.87	-1,502.26	-8.33	1,502.18	1.94	-0.32	-1.91

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Well:	2H	North Reference:	Grid
Wellbore:	OH / Job #1514789	Survey Calculation Method:	Minimum Curvature
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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)
7,570.00	88.60	180.50	6,235.96	-1,594.23	-8.89	1,594.15	0.39	-0.22	0.33
7,664.00	88.30	180.60	6,238.50	-1,688.19	-9.79	1,688.11	0.34	-0.32	0.11
7,757.00	89.20	179.70	6,240.53	-1,781.17	-10.03	1,781.08	1.37	0.97	-0.97
7,850.00	89.50	179.00	6,241.58	-1,874.15	-8.98	1,874.07	0.82	0.32	-0.75
7,944.00	89.40	178.90	6,242.49	-1,968.13	-7.26	1,968.06	0.15	-0.11	-0.11
8,037.00	89.10	179.30	6,243.70	-2,061.11	-5.80	2,061.05	0.54	-0.32	0.43
8,130.00	89.80	179.20	6,244.60	-2,154.10	-4.58	2,154.04	0.76	0.75	-0.11
8,222.00	90.10	179.30	6,244.68	-2,246.09	-3.37	2,246.04	0.34	0.33	0.11
8,315.00	90.70	179.70	6,244.03	-2,339.09	-2.56	2,339.03	0.78	0.65	0.43
8,371.00	90.80	179.90	6,243.30	-2,395.08	-2.37	2,395.03	0.40	0.18	0.36
8,465.00	91.00	180.20	6,241.82	-2,489.07	-2.45	2,489.02	0.38	0.21	0.32
8,559.00	90.20	179.10	6,240.83	-2,583.06	-1.87	2,583.01	1.45	-0.85	-1.17
8,654.00	91.40	179.20	6,239.51	-2,678.04	-0.47	2,677.99	1.27	1.26	0.11
8,748.00	90.20	179.20	6,238.20	-2,772.02	0.85	2,771.98	1.28	-1.28	0.00
8,843.00	91.00	179.30	6,237.20	-2,867.01	2.09	2,866.97	0.85	0.84	0.11
8,937.00	89.80	179.90	6,236.54	-2,961.00	2.75	2,960.97	1.43	-1.28	0.64
9,031.00	90.20	180.10	6,236.54	-3,055.00	2.75	3,054.96	0.48	0.43	0.21
9,126.00	90.40	180.60	6,236.05	-3,150.00	2.17	3,149.96	0.57	0.21	0.53
9,220.00	88.50	180.40	6,236.95	-3,243.98	1.35	3,243.94	2.03	-2.02	-0.21
9,314.00	88.80	180.40	6,239.16	-3,337.95	0.69	3,337.90	0.32	0.32	0.00
9,408.00	89.30	181.10	6,240.72	-3,431.93	-0.54	3,431.87	0.92	0.53	0.74
9,502.00	89.10	181.40	6,242.03	-3,525.90	-2.59	3,525.83	0.38	-0.21	0.32
9,597.00	88.60	179.60	6,243.94	-3,620.87	-3.42	3,620.79	1.97	-0.53	-1.89
9,689.00	89.30	180.00	6,245.63	-3,712.86	-3.10	3,712.78	0.88	0.76	0.43
9,784.00	88.70	178.70	6,247.29	-3,807.83	-2.02	3,807.76	1.51	-0.63	-1.37
9,878.00	88.60	177.60	6,249.50	-3,901.76	1.01	3,901.70	1.17	-0.11	-1.17
9,972.00	88.80	177.90	6,251.63	-3,995.66	4.70	3,995.62	0.38	0.21	0.32
10,066.00	88.80	178.50	6,253.60	-4,089.59	7.65	4,089.57	0.64	0.00	0.64
10,160.00	88.80	179.10	6,255.57	-4,183.55	9.62	4,183.54	0.64	0.00	0.64
10,254.00	88.50	179.60	6,257.78	-4,277.52	10.69	4,277.51	0.62	-0.32	0.53
10,347.00	89.30	179.30	6,259.57	-4,370.50	11.58	4,370.49	0.92	0.86	-0.32
10,441.00	89.30	179.80	6,260.72	-4,464.49	12.32	4,464.48	0.53	0.00	0.53
10,535.00	89.10	179.50	6,262.03	-4,558.48	12.89	4,558.47	0.38	-0.21	-0.32
10,630.00	89.10	179.70	6,263.52	-4,653.46	13.56	4,653.46	0.21	0.00	0.21
10,724.00	89.90	179.30	6,264.34	-4,747.45	14.38	4,747.46	0.95	0.85	-0.43
10,818.00	90.20	179.30	6,264.26	-4,841.45	15.52	4,841.46	0.32	0.32	0.00
10,912.00	90.50	178.90	6,263.69	-4,935.43	17.00	4,935.45	0.53	0.32	-0.43
11,007.00	90.80	178.00	6,262.61	-5,030.39	19.57	5,030.42	1.00	0.32	-0.95
11,100.00	91.30	177.20	6,260.91	-5,123.29	23.46	5,123.34	1.01	0.54	-0.86
11,195.00	90.30	177.60	6,259.58	-5,218.18	27.77	5,218.26	1.13	-1.05	0.42
11,288.00	90.60	177.10	6,258.85	-5,311.08	32.07	5,311.18	0.63	0.32	-0.54
11,382.00	89.40	177.20	6,258.85	-5,404.96	36.75	5,405.09	1.28	-1.28	0.11
11,476.00	89.30	177.10	6,259.91	-5,498.84	41.42	5,498.99	0.15	-0.11	-0.11

Company:	Apache Corporation	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	GL + KB @ 4371.00usft (Nomac 22)
Site:	Chipotle State Com	MD Reference:	GL + KB @ 4371.00usft (Nomac 22)
Well:	2H	North Reference:	Grid
Wellbore:	OH / Job #1514789	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 22)	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)
11,570.00	89.80	177.80	6,260.65	-5,592.74	45.60	5,592.91	0.92	0.53	0.74
11,665.00	89.50	177.60	6,261.23	-5,687.67	49.41	5,687.86	0.38	-0.32	-0.21
11,759.00	90.40	179.10	6,261.32	-5,781.62	52.12	5,781.83	1.86	0.96	1.60
11,823.00	90.90	178.30	6,260.59	-5,845.60	53.57	5,845.81	1.47	0.78	-1.25
11,887.00	90.90	177.80	6,259.58	-5,909.56	55.75	5,909.78	0.78	0.00	-0.78
11,982.00	90.80	179.90	6,258.17	-6,004.52	57.66	6,004.75	2.21	-0.11	2.21
12,077.00	91.70	179.90	6,256.10	-6,099.50	57.82	6,099.73	0.95	0.95	0.00
12,171.00	91.90	180.60	6,253.15	-6,193.45	57.41	6,193.68	0.77	0.21	0.74
12,266.00	89.30	181.40	6,252.15	-6,288.42	55.75	6,288.64	2.86	-2.74	0.84
12,360.00	90.00	181.40	6,252.73	-6,382.39	53.46	6,382.59	0.74	0.74	0.00
12,455.00	89.40	182.00	6,253.23	-6,477.35	50.64	6,477.53	0.89	-0.63	0.63
12,550.00	90.40	181.90	6,253.39	-6,572.29	47.41	6,572.45	1.06	1.05	-0.11
12,644.00	88.30	181.50	6,254.46	-6,666.24	44.62	6,666.38	2.27	-2.23	-0.43
12,739.00	89.10	181.40	6,256.61	-6,761.18	42.22	6,761.31	0.85	0.84	-0.11
12,834.00	88.00	181.60	6,259.02	-6,856.12	39.73	6,856.23	1.18	-1.16	0.21
12,929.00	89.40	181.20	6,261.17	-6,951.06	37.41	6,951.16	1.53	1.47	-0.42
13,023.00	90.60	181.30	6,261.17	-7,045.04	35.36	7,045.13	1.28	1.28	0.11
13,118.00	91.10	181.20	6,259.76	-7,140.00	33.29	7,140.08	0.54	0.53	-0.11
13,213.00	90.70	180.80	6,258.27	-7,234.98	31.63	7,235.04	0.60	-0.42	-0.42
13,311.00	92.20	180.60	6,255.79	-7,332.94	30.43	7,332.99	1.54	1.53	-0.20
Final Phoenix MWD Survey									
13,370.00	92.20	180.60	6,253.53	-7,391.89	29.81	7,391.94	0.00	0.00	0.00
Projection to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,642.00	5,641.85	-14.12	8.04	Tie In to Phoenix Gyro Surveys
5,704.00	5,703.84	-15.04	8.20	First Phoenix MWD Survey
13,311.00	6,255.79	-7,332.94	30.43	Final Phoenix MWD Survey
13,370.00	6,253.53	-7,391.89	29.81	Projection to TD

NM OIL CONSERVATION

MAY 17 2016



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TECHNOLOGY SERVICES

Company: Apache
Well: Chipotle State Com # 2H
Location: Lea Co., New Mexico
Rig: Normac 22

Job Number: 1610027
Grid Corr.: -0.29
Lat: 32.90
Long: -103.79

Date: 01/05/16
Calculation Method: Minimum Curvature
Proposed Azimuth: 22 Feet
RKB - MSL in feet: Surface
Tie Info:

Gyro

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
Enter Tie-In Survey on Line 10													
TIE IN	0			0	0	0	0	0					
Gyro	100.00	0.42	153.34	100	100.00	-0.33	0.33 S	0.16 E	0.37	153.34	0.42	0.42	153.34
	200.00	0.15	167.31	100	200.00	-0.78	0.78 S	0.36 E	0.86	155.44	0.28	-0.27	13.97
	300.00	0.05	94.43	100	300.00	-0.91	0.91 S	0.43 E	1.01	154.81	0.14	-0.10	-72.88
	400.00	0.44	182.48	100	400.00	-1.30	1.30 S	0.46 E	1.38	160.65	0.44	0.39	88.05
	500.00	0.40	299.78	100	500.00	-1.51	1.51 S	0.14 E	1.52	174.81	0.72	-0.04	117.30
	600.00	0.15	127.23	100	599.99	-1.42	1.42 S	0.06 W	1.42	182.49	0.55	-0.25	-172.55
	700.00	0.17	122.47	100	699.99	-1.58	1.58 S	0.17 E	1.58	173.92	0.02	0.02	-4.76
	800.00	0.14	173.91	100	799.99	-1.78	1.78 S	0.31 E	1.80	170.23	0.14	-0.03	51.44
	900.00	0.05	296.22	100	899.99	-1.88	1.88 S	0.28 E	1.90	171.53	0.17	-0.09	122.31
	1000.00	0.38	231.12	100	999.99	-2.07	2.07 S	0.02 W	2.07	180.48	0.36	0.33	-65.10
	1100.00	0.36	214.40	100	1099.99	-2.54	2.54 S	0.45 W	2.58	190.13	0.11	-0.02	-16.72
	1200.00	0.30	249.66	100	1199.99	-2.89	2.89 S	0.88 W	3.02	196.89	0.21	-0.06	35.26
	1300.00	0.26	303.53	100	1299.99	-2.85	2.85 S	1.31 W	3.14	204.69	0.26	-0.04	53.87
	1400.00	0.38	34.74	100	1399.99	-2.45	2.45 S	1.31 W	2.78	208.12	0.46	0.12	-268.79
	1500.00	0.32	167.46	100	1499.99	-2.45	2.45 S	1.06 W	2.67	203.39	0.64	-0.06	132.72
	1600.00	0.09	56.62	100	1599.99	-2.68	2.68 S	0.94 W	2.84	199.21	0.36	-0.23	-110.84
	1700.00	0.14	134.34	100	1699.99	-2.73	2.73 S	0.78 W	2.84	196.01	0.15	0.05	77.72
	1800.00	0.31	42.08	100	1799.98	-2.61	2.61 S	0.51 W	2.66	191.13	0.35	0.17	-92.26
	1900.00	0.05	210.49	100	1899.98	-2.45	2.45 S	0.35 W	2.47	188.24	0.36	-0.26	168.41
	2000.00	0.48	97.03	100	1999.98	-2.54	2.54 S	0.04 E	2.54	179.11	0.50	0.43	-113.46
	2100.00	0.45	89.15	100	2099.98	-2.58	2.58 S	0.85 E	2.72	161.82	0.07	-0.03	-7.88
	2200.00	0.54	65.94	100	2199.98	-2.38	2.38 S	1.67 E	2.91	144.96	0.22	0.09	-23.21
	2300.00	0.61	57.90	100	2299.97	-1.91	1.91 S	2.55 E	3.19	126.78	0.11	0.07	-8.04
	2400.00	0.85	92.81	100	2399.96	-1.66	1.66 S	3.74 E	4.10	113.93	0.49	0.24	34.91
	2500.00	0.81	86.15	100	2499.95	-1.65	1.65 S	5.19 E	5.45	107.64	0.10	-0.04	-6.66
	2600.00	0.64	78.89	100	2599.94	-1.50	1.50 S	6.44 E	6.61	103.06	0.19	-0.17	-7.26
	2700.00	0.59	84.85	100	2699.94	-1.34	1.34 S	7.50 E	7.62	100.13	0.08	-0.05	5.96



PHOENIX

TECHNOLOGY SERVICES

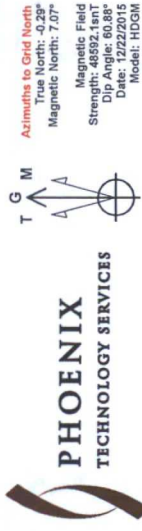
Company: Apache
Well: Chipotle State Com # 2H
Location: Lea Co., New Mexico
Rig: Nomac 22

Job Number: 1610027
Grid Corr.: -0.29
Lat: 32.90
Long: -103.79

Calculation Method: Minimum Curvature
Proposed Azimuth: 22 Feet
RKB - MSL in feet: Surface
Tie Into:

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
	2800.00	0.46	87.62	100	2799.93	-1.28	1.28 S	8.42 E	8.51	98.64	0.13	-0.13	2.77
	2900.00	0.68	53.77	100	2899.93	-0.91	0.91 S	9.30 E	9.34	95.60	0.39	0.22	-33.85
	3000.00	0.57	113.19	100	2999.93	-0.76	0.76 S	10.23 E	10.26	94.23	0.63	-0.11	59.42
	3100.00	0.36	147.60	100	3099.92	-1.22	1.22 S	10.86 E	10.93	96.40	0.34	-0.21	34.41
	3200.00	0.08	236.13	100	3199.92	-1.52	1.52 S	10.97 E	11.07	97.90	0.37	-0.28	88.53
	3300.00	0.11	183.63	100	3299.92	-1.66	1.66 S	10.91 E	11.03	98.64	0.09	0.03	-52.50
	3400.00	0.20	45.11	100	3399.92	-1.63	1.63 S	11.02 E	11.14	98.41	0.29	0.09	-138.52
	3500.00	0.38	49.38	100	3499.92	-1.29	1.29 S	11.40 E	11.47	96.46	0.18	0.18	4.27
	3600.00	0.32	5.86	100	3599.92	-0.80	0.80 S	11.68 E	11.71	93.90	0.27	-0.06	-43.52
	3700.00	0.30	153.27	100	3699.92	-0.75	0.75 S	11.82 E	11.85	93.64	0.60	-0.02	147.41
	3800.00	0.53	163.53	100	3799.91	-1.43	1.43 S	12.07 E	12.16	96.75	0.24	0.23	10.26
	3900.00	0.57	205.15	100	3899.91	-2.32	2.32 S	11.99 E	12.22	100.96	0.39	0.04	41.62
	4000.00	0.44	186.39	100	3999.91	-3.16	3.16 S	11.74 E	12.16	105.04	0.21	-0.13	-18.76
	4100.00	0.81	214.20	100	4099.90	-4.12	4.12 S	11.30 E	12.03	110.04	0.47	0.37	27.81
	4200.00	0.69	198.59	100	4199.89	-5.28	5.28 S	10.71 E	11.94	116.23	0.24	-0.12	-15.61
	4300.00	0.53	224.93	100	4299.89	-6.17	6.17 S	10.19 E	11.92	121.21	0.32	-0.16	26.34
	4400.00	0.55	250.29	100	4399.88	-6.66	6.66 S	9.41 E	11.53	125.30	0.24	0.02	25.36
	4500.00	0.34	204.53	100	4499.88	-7.10	7.10 S	8.84 E	11.33	128.76	0.40	-0.21	-45.76
	4600.00	0.37	240.82	100	4599.88	-7.52	7.52 S	8.43 E	11.30	131.74	0.22	0.03	36.29
	4700.00	0.36	226.91	100	4699.88	-7.90	7.90 S	7.92 E	11.18	134.91	0.09	-0.01	-13.91
	4800.00	0.64	184.05	100	4799.87	-8.67	8.67 S	7.65 E	11.56	138.56	0.45	0.28	-42.86
	4900.00	0.52	168.20	100	4899.87	-9.67	9.67 S	7.71 E	12.36	141.44	0.20	-0.12	-15.85
	5000.00	0.46	183.28	100	4999.86	-10.51	10.51 S	7.78 E	13.08	143.51	0.14	-0.06	15.08
	5100.00	0.14	271.93	100	5099.86	-10.91	10.91 S	7.63 E	13.31	145.03	0.48	-0.32	88.65
	5200.00	0.26	116.33	100	5199.86	-11.01	11.01 S	7.71 E	13.44	144.98	0.39	0.12	-155.60
	5300.00	0.27	167.69	100	5299.86	-11.34	11.34 S	7.97 E	13.86	144.91	0.23	0.01	51.36
	5400.00	0.53	171.54	100	5399.86	-12.02	12.02 S	8.08 E	14.49	146.09	0.26	0.26	3.85
	5500.00	0.57	159.78	100	5499.85	-12.95	12.95 S	8.32 E	15.39	147.27	0.12	0.04	-11.76
	5600.00	0.59	224.76	100	5599.85	-13.78	13.78 S	8.13 E	16.00	149.45	0.62	0.02	64.98
	5642.00	0.53	163.47	42	5641.85	-14.12	14.12 S	8.04 E	16.25	150.36	1.36	-0.14	-145.93

Project: Lea County, NM (NAD27 NME)
Site: Chipotle State Com
Well: 2H
Wellbore: OH / Job #1514789
Design: Plan #6 01-05-16
Rig: Nomac 22



WELL DETAILS

Ground Level:	4348.00	Latitude:	32° 53' 57.50332 N	Longitude:	103° 47' 40.68878 W
East:	665344.00	Local Origin:	Well 2H, Grid North		

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	-E/W	Dieg	V/Sed	Target	Annotation
1	5642.00	0.53	183.47	5641.85	-14.12	8.04	0.00	14.17		Tie In to Phoenix Gyro Surveys
2	5643.78	89.65	180.80	5643.00	-489.50	2.87	12.33	489.50		KOP: Begin 12.00°/100' Build
3	5640.38	89.65	179.67	5640.38	-546.09	2.74	2.00	489.50		LP: Hold 89.65° Inc. Begin 2.00°/100' Turn
4	5640.38	89.65	179.67	5640.38	-546.09	2.74	2.00	489.50		Hold 179.67° Azim
5	5640.38	89.65	179.67	5640.38	-546.09	2.74	2.00	489.50		Hold 179.67° Azim

DESIGN TARGET DETAILS

Name	TVD	+N/S	-E/W	North	East	Latitude	Longitude	Shape
BHL v5 Chipotle State Com #2H	5642.56	-7392.20	42.40	663909.60	665386.40	32° 53' 44.39521 N	103° 47' 40.63418 W	Point

FORMATION TOP DETAILS

TVDP	MDP	Formation	DipAngle	DipDir
1208.02	1208.03	Rustler	0.35	179.67
1363.02	1363.03	Salado	0.35	179.67
2341.01	2341.04	Tansil	0.35	179.67
2505.01	2505.06	Yates	0.35	179.67
2584.01	2584.07	Seven Rivers	0.35	179.67
3813.01	3813.10	Grayburn	0.35	179.67
4155.03	4155.13	San Andres	0.35	179.67
5654.09	5654.24	Glorieta	0.35	179.67

