

Occidental Petroleum

Weld County, CO (UTM-NAD83)

BERRY FARMS 8-8HZ PAD

BERRY FARMS 8-4HZ

OH

Design: OH

Standard Survey Report

21 March, 2023



Project: Weld County, CO (UTM-NAD83)
Site: BERRY FARMS 8-8HZ PAD
Well: BERRY FARMS 8-4HZ
Wellbore: OH
Design: OH
Lat: 40.243721
Long: -104.908182
GL: 4817.00
KB: PD 461 @ 4837.00usft



Azimuths to True North
Magnetic North: 7.98°
Magnetic Field
Strength: 51722.0nT
Dip Angle: 66.43°
Date: 12/31/2022
Model: HDGM2022_FILE

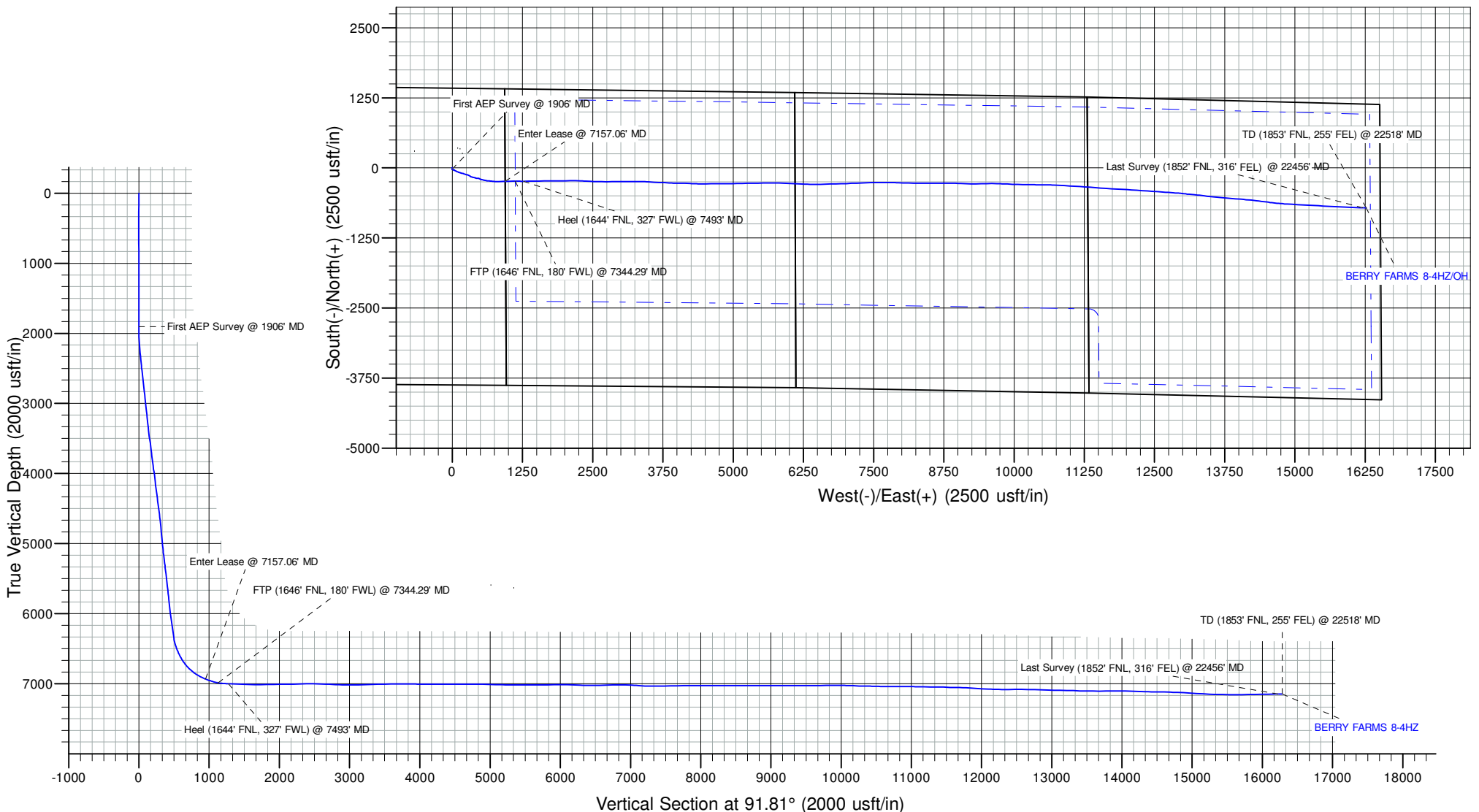
WELL DETAILS: BERRY FARMS 8-4HZ

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14615497.19	1666038.61	40.243721	-104.908182

SHL: 1423' FNL, 939' FEL - Sec 8-T3N-R67W
Heel: 1644' FNL, 327' FWL - Sec 9-T3N-R67W
BHL: 1853' FNL, 255' FEL - Sec 11-T3N-R67W

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
1906.00	0.15	133.68	1905.45	-22.69	-2.35	-1.63	37.42	First AEP Survey @ 1906' MD
7157.06	67.70	88.98	6934.44	-239.26	940.49	947.58	1020.78	Enter Lease @ 7157.06' MD
7344.29	79.61	90.10	6987.38	-235.35	1119.69	1126.57	1199.85	FTP (1646' FNL, 180' FWL) @ 7344.29' MD
7493.00	88.52	90.20	7001.85	-238.08	1267.52	1274.41	1347.49	Heel (1644' FNL, 327' FWL) @ 7493' MD
22456.00	91.24	91.94	7149.03	-709.92	16205.70	16220.03	16305.86	Last Survey (1852' FNL, 316' FEL) @ 22456' MD
22518.00	91.24	MD 91.94	7147.69	-712.02	16267.65	16282.02	16367.85	TD (1853' FNL, 255' FEL) @ 22518' MD



Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-4HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Project	Weld County, CO (UTM-NAD83)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	BERRY FARMS 8-8HZ PAD				
Site Position:		Northing:	14,615,497.59 usft	Latitude:	40.243722
From:	Lat/Long	Easting:	1,665,993.52 usft	Longitude:	-104.908344
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well		BERRY FARMS 8-4HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,615,497.19 usft	Latitude:	40.243721
	+E/-W	0.00 usft	Easting:	1,666,038.61 usft	Longitude:	-104.908183
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,817.00 usft
Grid Convergence:		0.06 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2022_FILE	12/31/2022	7.98	66.43	51,722.00000000

Design	OH				
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	91.81	

Survey Program	Date	3/21/2023			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
7.00	1,815.00	Surface MWD (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,906.00	22,518.00	MWD Surveys (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	

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	
7.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	
86.00	0.81	309.18	86.00	0.35	-0.43	-0.44	1.03	1.03	0.00	
178.00	0.81	270.95	177.99	0.77	-1.59	-1.61	0.58	0.00	-41.55	
270.00	0.10	223.49	269.99	0.73	-2.29	-2.31	0.81	-0.77	-51.59	
360.00	0.61	209.58	359.98	0.25	-2.58	-2.59	0.57	0.57	-15.46	
449.00	1.95	181.06	448.96	-1.67	-2.85	-2.79	1.62	1.51	-32.04	
539.00	2.32	195.78	538.90	-4.96	-3.37	-3.21	0.73	0.41	16.36	
628.00	2.14	165.91	627.83	-8.30	-3.45	-3.19	1.31	-0.20	-33.56	

Survey Report

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Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-4HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

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)
718.00	2.33	169.65	717.77	-11.73	-2.72	-2.34	0.27	0.21	4.16
807.00	2.59	165.28	806.68	-15.46	-1.88	-1.39	0.36	0.29	-4.91
897.00	2.81	165.65	896.58	-19.56	-0.82	-0.20	0.25	0.24	0.41
987.00	1.52	156.41	986.52	-22.79	0.21	0.93	1.48	-1.43	-10.27
1,076.00	0.83	238.84	1,075.50	-24.21	0.13	0.89	1.83	-0.78	92.62
1,166.00	0.51	226.86	1,165.50	-24.82	-0.72	0.06	0.39	-0.36	-13.31
1,255.00	0.50	89.42	1,254.50	-25.09	-0.62	0.17	1.06	-0.01	-154.43
1,345.00	0.81	101.35	1,344.49	-25.21	0.39	1.19	0.37	0.34	13.26
1,434.00	0.62	295.08	1,433.49	-25.13	0.57	1.37	1.60	-0.21	-186.82
1,523.00	0.59	294.05	1,522.48	-24.74	-0.28	0.50	0.04	-0.03	-1.16
1,613.00	1.43	303.60	1,612.47	-23.92	-1.64	-0.88	0.95	0.93	10.61
1,703.00	0.50	6.69	1,702.46	-22.91	-2.53	-1.80	1.43	-1.03	70.10
1,792.00	0.03	296.89	1,791.45	-22.52	-2.50	-1.79	0.55	-0.53	-78.43
1,815.00	0.12	142.35	1,814.45	-22.53	-2.49	-1.78	0.64	0.39	-671.91
1,906.00	0.15	133.68	1,905.45	-22.69	-2.35	-1.63	0.04	0.03	-9.53
First AEP Survey @ 1906' MD									
1,998.00	1.54	106.10	1,997.44	-23.12	-1.08	-0.34	1.53	1.51	-29.98
2,093.00	3.21	118.44	2,092.36	-24.74	2.49	3.27	1.83	1.76	12.99
2,186.00	4.46	120.76	2,185.15	-27.83	7.89	8.76	1.35	1.34	2.49
2,280.00	5.38	112.95	2,278.80	-31.42	15.09	16.07	1.21	0.98	-8.31
2,372.00	6.65	114.70	2,370.29	-35.32	23.90	25.00	1.39	1.38	1.90
2,464.00	6.18	115.43	2,461.72	-39.68	33.21	34.45	0.52	-0.51	0.79
2,556.00	8.41	117.50	2,552.97	-44.91	43.65	45.05	2.44	2.42	2.25
2,650.00	7.74	117.72	2,646.03	-51.03	55.35	56.94	0.71	-0.71	0.23
2,744.00	6.80	119.95	2,739.28	-56.75	65.78	67.54	1.04	-1.00	2.37
2,837.00	7.21	112.89	2,831.58	-61.77	75.92	77.84	1.02	0.44	-7.59
2,929.00	5.75	113.21	2,922.99	-65.83	85.48	87.52	1.59	-1.59	0.35
3,022.00	6.52	107.18	3,015.46	-69.23	94.81	96.95	1.08	0.83	-6.48
3,114.00	6.87	113.15	3,106.84	-72.93	104.86	107.11	0.85	0.38	6.49
3,207.00	5.81	117.66	3,199.27	-77.31	114.14	116.52	1.26	-1.14	4.85
3,300.00	5.95	107.56	3,291.78	-80.94	122.90	125.40	1.12	0.15	-10.86
3,393.00	7.23	100.20	3,384.16	-83.44	133.26	135.83	1.65	1.38	-7.91
3,485.00	7.78	110.72	3,475.38	-86.66	144.78	147.45	1.61	0.60	11.43
3,578.00	8.43	105.24	3,567.45	-90.68	157.25	160.03	1.08	0.70	-5.89
3,670.00	7.61	104.85	3,658.55	-94.02	169.64	172.53	0.89	-0.89	-0.42
3,764.00	6.54	103.83	3,751.83	-96.89	180.86	183.83	1.15	-1.14	-1.09
3,856.00	7.80	106.14	3,843.11	-99.88	191.94	195.00	1.40	1.37	2.51
3,948.00	8.83	109.59	3,934.15	-103.98	204.59	207.77	1.24	1.12	3.75
4,041.00	7.16	108.77	4,026.24	-108.24	216.81	220.12	1.80	-1.80	-0.88
4,135.00	6.72	110.75	4,119.55	-112.07	227.49	230.92	0.53	-0.47	2.11
4,227.00	8.23	106.21	4,210.77	-115.82	238.85	242.39	1.76	1.64	-4.93
4,319.00	7.11	104.29	4,301.94	-119.06	250.69	254.33	1.25	-1.22	-2.09
4,413.00	8.53	102.50	4,395.07	-122.01	263.14	266.86	1.53	1.51	-1.90

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-4HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

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)
4,505.00	7.24	103.77	4,486.19	-124.87	275.43	279.24	1.41	-1.40	1.38
4,598.00	7.81	117.05	4,578.40	-129.13	286.75	290.69	1.96	0.61	14.28
4,690.00	6.73	118.18	4,669.66	-134.52	297.07	301.17	1.18	-1.17	1.23
4,782.00	5.79	117.21	4,761.11	-139.19	305.95	310.19	1.03	-1.02	-1.05
4,875.00	6.79	126.33	4,853.55	-144.59	314.55	318.96	1.52	1.08	9.81
4,999.00	7.41	119.25	4,976.60	-152.84	327.43	332.10	0.86	0.50	-5.71
5,091.00	5.84	122.48	5,067.98	-158.26	336.56	341.39	1.75	-1.71	3.51
5,184.00	7.50	101.46	5,160.36	-162.00	346.50	351.44	3.15	1.78	-22.60
5,277.00	7.71	102.35	5,252.55	-164.54	358.54	363.56	0.26	0.23	0.96
5,369.00	5.48	99.22	5,343.93	-166.57	368.91	373.98	2.45	-2.42	-3.40
5,461.00	7.27	103.30	5,435.36	-168.61	378.91	384.05	2.01	1.95	4.43
5,553.00	7.69	106.91	5,526.58	-171.74	390.46	395.69	0.68	0.46	3.92
5,646.00	5.88	99.57	5,618.92	-174.34	401.12	406.42	2.15	-1.95	-7.89
5,740.00	7.26	112.17	5,712.31	-177.38	411.37	416.76	2.11	1.47	13.40
5,832.00	5.95	120.21	5,803.70	-181.98	420.87	426.41	1.74	-1.42	8.74
5,924.00	7.31	97.39	5,895.10	-185.13	430.80	436.43	3.19	1.48	-24.80
6,016.00	7.08	92.66	5,986.37	-186.15	442.27	447.92	0.69	-0.25	-5.14
6,108.00	6.88	90.98	6,077.69	-186.50	453.44	459.10	0.31	-0.22	-1.83
6,201.00	8.30	92.52	6,169.87	-186.89	465.71	471.39	1.54	1.53	1.66
6,293.00	8.01	112.83	6,260.96	-189.67	478.26	484.01	3.13	-0.32	22.08
6,386.00	9.11	116.95	6,352.93	-195.53	490.79	496.73	1.35	1.18	4.43
6,478.00	18.09	108.72	6,442.26	-203.43	510.86	517.03	9.96	9.76	-8.95
6,571.00	23.40	102.25	6,529.21	-211.99	542.61	549.03	6.21	5.71	-6.96
6,663.00	28.07	104.28	6,612.07	-221.21	581.46	588.15	5.17	5.08	2.21
6,755.00	34.74	94.62	6,690.60	-228.67	628.65	635.55	9.06	7.25	-10.50
6,846.00	42.95	96.96	6,761.41	-234.53	685.36	692.43	9.16	9.02	2.57
6,939.00	50.67	93.10	6,825.03	-240.32	752.84	760.06	8.83	8.30	-4.15
7,031.00	58.89	88.46	6,878.06	-241.19	827.90	835.10	9.84	8.93	-5.04
7,124.00	65.61	89.42	6,921.34	-239.69	910.14	917.26	7.28	7.23	1.03
7,157.06	67.70	88.98	6,934.44	-239.26	940.49	947.58	6.45	6.33	-1.34
Enter Lease @ 7157.06' MD									
7,216.00	71.44	88.22	6,955.01	-237.91	995.70	1,002.71	6.45	6.34	-1.29
7,308.00	76.99	88.87	6,980.02	-235.67	1,084.16	1,091.07	6.07	6.03	0.71
7,344.29	79.61	90.10	6,987.38	-235.35	1,119.69	1,126.57	7.95	7.22	3.39
FTP (1646' FNL, 180' FWL) @ 7344.29' MD									
7,400.00	83.64	91.95	6,995.50	-236.34	1,174.79	1,181.67	7.95	7.23	3.32
7,493.00	88.52	90.20	7,001.85	-238.08	1,267.52	1,274.41	5.57	5.25	-1.88
Heel (1644' FNL, 327' FWL) @ 7493' MD									
7,586.00	87.68	88.47	7,004.94	-237.00	1,360.46	1,367.27	2.07	-0.90	-1.86
7,679.00	88.53	89.60	7,008.01	-235.43	1,453.39	1,460.10	1.52	0.91	1.22
7,771.00	88.68	89.11	7,010.25	-234.40	1,545.36	1,551.99	0.56	0.16	-0.53
7,863.00	88.59	88.52	7,012.44	-232.50	1,637.31	1,643.84	0.65	-0.10	-0.64
7,955.00	90.80	90.29	7,012.93	-231.54	1,729.30	1,735.75	3.08	2.40	1.92
8,048.00	91.29	89.39	7,011.24	-231.28	1,822.28	1,828.68	1.10	0.53	-0.97

Survey Report

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Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-4HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

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)	
8,141.00	90.17	90.49	7,010.05	-231.18	1,915.27	1,921.62	1.69	-1.20	1.18	
8,235.00	89.93	86.89	7,009.97	-229.03	2,009.23	2,015.46	3.84	-0.26	-3.83	
8,327.00	91.06	89.40	7,009.17	-226.06	2,101.17	2,107.26	2.99	1.23	2.73	
8,420.00	91.53	91.94	7,007.07	-227.14	2,194.13	2,200.21	2.78	0.51	2.73	
8,512.00	92.87	91.80	7,003.54	-230.14	2,286.01	2,292.14	1.46	1.46	-0.15	
8,605.00	90.68	93.36	7,000.66	-234.33	2,378.87	2,385.08	2.89	-2.35	1.68	
8,698.00	88.97	92.71	7,000.94	-239.25	2,471.73	2,478.05	1.97	-1.84	-0.70	
8,790.00	88.05	91.68	7,003.34	-242.77	2,563.63	2,570.02	1.50	-1.00	-1.12	
8,883.00	87.09	90.85	7,007.28	-244.83	2,656.52	2,662.93	1.36	-1.03	-0.89	
8,976.00	88.48	89.69	7,010.87	-245.26	2,749.45	2,755.82	1.95	1.49	-1.25	
9,069.00	86.99	89.54	7,014.55	-244.64	2,842.37	2,848.68	1.61	-1.60	-0.16	
9,161.00	88.42	90.10	7,018.23	-244.35	2,934.29	2,940.55	1.67	1.55	0.61	
9,254.00	90.64	89.65	7,019.00	-244.15	3,027.28	3,033.49	2.44	2.39	-0.48	
9,346.00	91.56	89.11	7,017.23	-243.15	3,119.26	3,125.38	1.16	1.00	-0.59	
9,440.00	92.58	88.79	7,013.83	-241.43	3,213.18	3,219.20	1.14	1.09	-0.34	
9,532.00	91.55	90.83	7,010.52	-241.13	3,305.12	3,311.08	2.48	-1.12	2.22	
9,625.00	91.62	91.80	7,007.95	-243.26	3,398.05	3,404.04	1.05	0.08	1.04	
9,719.00	90.38	93.97	7,006.31	-247.99	3,491.91	3,498.00	2.66	-1.32	2.31	
9,813.00	90.15	92.70	7,005.87	-253.46	3,585.75	3,591.97	1.37	-0.24	-1.35	
9,906.00	90.84	92.78	7,005.07	-257.90	3,678.64	3,684.95	0.75	0.74	0.09	
9,998.00	89.58	92.50	7,004.73	-262.14	3,770.54	3,776.94	1.40	-1.37	-0.30	
10,091.00	90.14	93.75	7,004.96	-267.21	3,863.40	3,869.91	1.47	0.60	1.34	
10,184.00	88.45	90.92	7,006.10	-271.00	3,956.30	3,962.89	3.54	-1.82	-3.04	
10,276.00	88.81	90.76	7,008.30	-272.35	4,048.27	4,054.85	0.43	0.39	-0.17	
10,368.00	89.50	91.15	7,009.66	-273.88	4,140.24	4,146.83	0.86	0.75	0.42	
10,460.00	90.12	91.98	7,009.96	-276.39	4,232.21	4,238.83	1.13	0.67	0.90	
10,554.00	91.72	93.26	7,008.45	-280.69	4,326.09	4,332.80	2.18	1.70	1.36	
10,649.00	90.41	90.27	7,006.69	-283.61	4,421.02	4,427.77	3.44	-1.38	-3.15	
10,741.00	89.52	89.23	7,006.74	-283.21	4,513.01	4,519.71	1.49	-0.97	-1.13	
10,835.00	89.36	89.46	7,007.66	-282.14	4,607.00	4,613.62	0.30	-0.17	0.24	
10,928.00	90.36	88.75	7,007.89	-280.69	4,699.99	4,706.51	1.32	1.08	-0.76	
11,021.00	89.29	89.52	7,008.18	-279.28	4,792.98	4,799.41	1.42	-1.15	0.83	
11,115.00	89.33	89.50	7,009.31	-278.48	4,886.97	4,893.32	0.05	0.04	-0.02	
11,207.00	89.01	89.91	7,010.64	-278.00	4,978.96	4,985.25	0.57	-0.35	0.45	
11,299.00	88.62	89.42	7,012.54	-277.47	5,070.93	5,077.17	0.68	-0.42	-0.53	
11,392.00	87.75	88.60	7,015.49	-275.86	5,163.87	5,170.01	1.29	-0.94	-0.88	
11,485.00	89.26	89.66	7,017.91	-274.45	5,256.83	5,262.87	1.98	1.62	1.14	
11,578.00	89.74	88.80	7,018.73	-273.20	5,349.81	5,355.77	1.06	0.52	-0.92	
11,671.00	89.98	87.40	7,018.95	-270.12	5,442.76	5,448.57	1.53	0.26	-1.51	
11,764.00	90.25	89.68	7,018.77	-267.75	5,535.72	5,541.42	2.47	0.29	2.45	
11,856.00	90.44	88.86	7,018.21	-266.58	5,627.71	5,633.32	0.91	0.21	-0.89	
11,949.00	90.61	91.25	7,017.36	-266.66	5,720.70	5,726.27	2.58	0.18	2.57	
12,041.00	90.75	91.71	7,016.27	-269.04	5,812.66	5,818.26	0.52	0.15	0.50	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-4HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

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)	
12,134.00	92.14	92.24	7,013.92	-272.24	5,905.58	5,911.23	1.60	1.49	0.57	
12,227.00	88.99	93.09	7,013.01	-276.57	5,998.46	6,004.20	3.51	-3.39	0.91	
12,319.00	88.44	92.66	7,015.07	-281.18	6,090.32	6,096.16	0.76	-0.60	-0.47	
12,412.00	88.35	92.18	7,017.67	-285.11	6,183.20	6,189.12	0.52	-0.10	-0.52	
12,504.00	87.91	92.05	7,020.68	-288.50	6,275.09	6,281.07	0.50	-0.48	-0.14	
12,597.00	89.43	90.89	7,022.83	-290.88	6,368.03	6,374.04	2.06	1.63	-1.25	
12,690.00	89.84	89.86	7,023.43	-291.49	6,461.02	6,467.01	1.19	0.44	-1.11	
12,783.00	90.48	89.26	7,023.17	-290.78	6,554.02	6,559.93	0.94	0.69	-0.65	
12,875.00	92.06	88.93	7,021.13	-289.33	6,645.98	6,651.80	1.75	1.72	-0.36	
12,968.00	90.20	88.57	7,019.29	-287.30	6,738.94	6,744.65	2.04	-2.00	-0.39	
13,061.00	91.11	88.01	7,018.23	-284.52	6,831.89	6,837.47	1.15	0.98	-0.60	
13,153.00	88.38	88.56	7,018.64	-281.77	6,923.84	6,929.28	3.03	-2.97	0.60	
13,245.00	87.66	87.83	7,021.82	-278.87	7,015.74	7,021.04	1.11	-0.78	-0.79	
13,337.00	85.69	87.30	7,027.16	-274.97	7,107.49	7,112.63	2.22	-2.14	-0.58	
13,429.00	86.95	87.08	7,033.06	-270.47	7,199.19	7,204.14	1.39	1.37	-0.24	
13,522.00	89.63	88.15	7,035.84	-266.60	7,292.06	7,296.84	3.10	2.88	1.15	
13,614.00	90.77	89.16	7,035.51	-264.44	7,384.03	7,388.70	1.66	1.24	1.10	
13,706.00	91.79	88.34	7,033.46	-262.44	7,475.98	7,480.54	1.42	1.11	-0.89	
13,798.00	90.92	90.35	7,031.28	-261.39	7,567.95	7,572.43	2.38	-0.95	2.18	
13,891.00	90.45	89.41	7,030.17	-261.19	7,660.94	7,665.37	1.13	-0.51	-1.01	
13,984.00	91.52	90.82	7,028.57	-261.38	7,753.92	7,758.31	1.90	1.15	1.52	
14,076.00	90.69	90.20	7,026.80	-262.20	7,845.90	7,850.27	1.13	-0.90	-0.67	
14,168.00	89.40	92.16	7,026.73	-264.09	7,937.87	7,942.25	2.55	-1.40	2.13	
14,260.00	89.61	91.55	7,027.52	-267.07	8,029.82	8,034.25	0.70	0.23	-0.66	
14,353.00	89.50	91.73	7,028.24	-269.73	8,122.78	8,127.25	0.23	-0.12	0.19	
14,444.00	89.73	91.06	7,028.85	-271.95	8,213.75	8,218.24	0.78	0.25	-0.74	
14,537.00	90.22	90.25	7,028.90	-273.01	8,306.74	8,311.22	1.02	0.53	-0.87	
14,630.00	90.09	89.67	7,028.64	-272.95	8,399.74	8,404.17	0.64	-0.14	-0.62	
14,723.00	90.19	88.98	7,028.42	-271.85	8,492.73	8,497.08	0.75	0.11	-0.74	
14,816.00	91.82	89.69	7,026.79	-270.77	8,585.71	8,589.98	1.91	1.75	0.76	
14,909.00	88.67	90.40	7,026.39	-270.84	8,678.70	8,682.92	3.47	-3.39	0.76	
15,002.00	89.59	90.02	7,027.80	-271.18	8,771.68	8,775.87	1.07	0.99	-0.41	
15,094.00	89.85	91.43	7,028.25	-272.35	8,863.67	8,867.85	1.56	0.28	1.53	
15,187.00	89.95	91.24	7,028.41	-274.52	8,956.65	8,960.85	0.23	0.11	-0.20	
15,279.00	90.11	92.24	7,028.36	-277.31	9,048.60	9,052.85	1.10	0.17	1.09	
15,373.00	89.72	92.11	7,028.50	-280.88	9,142.54	9,146.85	0.44	-0.41	-0.14	
15,465.00	90.01	91.16	7,028.72	-283.50	9,234.50	9,238.84	1.08	0.32	-1.03	
15,558.00	90.38	90.00	7,028.40	-284.44	9,327.49	9,331.82	1.31	0.40	-1.25	
15,651.00	89.68	87.46	7,028.35	-282.38	9,420.46	9,424.68	2.83	-0.75	-2.73	
15,743.00	89.86	87.08	7,028.72	-278.00	9,512.35	9,516.39	0.46	0.20	-0.41	
15,835.00	90.70	91.61	7,028.27	-276.95	9,604.32	9,608.28	5.01	0.91	4.92	
15,927.00	91.65	91.38	7,026.39	-279.35	9,696.27	9,700.26	1.06	1.03	-0.25	
16,020.00	89.73	92.75	7,025.27	-282.70	9,789.20	9,793.24	2.54	-2.06	1.47	
16,112.00	89.79	92.30	7,025.65	-286.75	9,881.11	9,885.23	0.49	0.07	-0.49	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-4HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

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)
16,204.00	90.91	91.90	7,025.09	-290.12	9,973.04	9,977.23	1.29	1.22	-0.43
16,297.00	87.69	91.78	7,026.23	-293.11	10,065.97	10,070.21	3.46	-3.46	-0.13
16,389.00	88.06	91.20	7,029.64	-295.50	10,157.88	10,162.14	0.75	0.40	-0.63
16,481.00	88.39	90.74	7,032.49	-297.06	10,249.82	10,254.09	0.62	0.36	-0.50
16,573.00	89.91	91.86	7,033.85	-299.14	10,341.78	10,346.07	2.05	1.65	1.22
16,666.00	87.40	90.09	7,036.04	-300.72	10,434.73	10,439.03	3.30	-2.70	-1.90
16,758.00	88.21	89.59	7,039.56	-300.47	10,526.66	10,530.90	1.03	0.88	-0.54
16,851.00	90.22	91.10	7,040.83	-301.03	10,619.65	10,623.86	2.70	2.16	1.62
16,943.00	89.72	93.30	7,040.88	-304.56	10,711.57	10,715.85	2.45	-0.54	2.39
17,035.00	90.44	92.98	7,040.75	-309.60	10,803.43	10,807.82	0.86	0.78	-0.35
17,129.00	88.95	93.42	7,041.25	-314.85	10,897.28	10,901.79	1.65	-1.59	0.47
17,221.00	90.32	93.36	7,041.84	-320.29	10,989.12	10,993.75	1.49	1.49	-0.07
17,313.00	88.32	93.69	7,042.93	-325.94	11,080.93	11,085.70	2.20	-2.17	0.36
17,405.00	89.56	94.23	7,044.63	-332.29	11,172.70	11,177.62	1.47	1.35	0.59
17,497.00	88.72	93.34	7,046.01	-338.37	11,264.48	11,269.55	1.33	-0.91	-0.97
17,591.00	89.90	94.21	7,047.15	-344.55	11,358.27	11,363.48	1.56	1.26	0.93
17,684.00	87.92	94.10	7,048.92	-351.29	11,451.00	11,456.39	2.13	-2.13	-0.12
17,777.00	88.08	94.07	7,052.16	-357.91	11,543.71	11,549.26	0.18	0.17	-0.03
17,868.00	88.96	93.58	7,054.51	-363.98	11,634.48	11,640.17	1.11	0.97	-0.54
17,962.00	87.72	94.26	7,057.23	-370.40	11,728.21	11,734.06	1.50	-1.32	0.72
18,053.00	86.50	93.39	7,061.82	-376.47	11,818.89	11,824.89	1.65	-1.34	-0.96
18,146.00	86.74	93.18	7,067.31	-381.79	11,911.58	11,917.70	0.34	0.26	-0.23
18,240.00	87.17	93.32	7,072.30	-387.11	12,005.30	12,011.53	0.48	0.46	0.15
18,332.00	86.62	93.70	7,077.28	-392.73	12,096.99	12,103.36	0.73	-0.60	0.41
18,425.00	88.65	93.77	7,081.12	-398.79	12,189.71	12,196.22	2.18	2.18	0.08
18,517.00	89.83	94.13	7,082.34	-405.12	12,281.48	12,288.15	1.34	1.28	0.39
18,611.00	90.50	93.57	7,082.07	-411.43	12,375.26	12,382.09	0.93	0.71	-0.60
18,705.00	90.86	93.14	7,080.95	-416.93	12,469.10	12,476.04	0.60	0.38	-0.46
18,798.00	88.34	93.59	7,081.60	-422.39	12,561.93	12,569.00	2.75	-2.71	0.48
18,890.00	89.13	94.87	7,083.63	-429.18	12,653.65	12,660.89	1.63	0.86	1.39
18,982.00	88.29	93.87	7,085.70	-436.19	12,745.36	12,752.78	1.42	-0.91	-1.09
19,075.00	88.81	94.94	7,088.06	-443.33	12,838.05	12,845.65	1.28	0.56	1.15
19,168.00	88.34	92.84	7,090.37	-449.63	12,930.80	12,938.55	2.31	-0.51	-2.26
19,261.00	88.85	97.76	7,092.65	-458.22	13,023.35	13,031.32	5.32	0.55	5.29
19,353.00	88.43	95.57	7,094.84	-468.89	13,114.70	13,122.96	2.42	-0.46	-2.38
19,446.00	88.32	94.93	7,097.47	-477.40	13,207.27	13,215.76	0.70	-0.12	-0.69
19,538.00	88.76	97.19	7,099.82	-487.11	13,298.72	13,307.47	2.50	0.48	2.46
19,631.00	88.20	97.36	7,102.29	-498.88	13,390.94	13,400.01	0.63	-0.60	0.18
19,724.00	88.71	95.97	7,104.79	-509.67	13,483.27	13,492.64	1.59	0.55	-1.49
19,816.00	89.85	95.66	7,105.95	-518.99	13,574.79	13,584.41	1.28	1.24	-0.34
19,909.00	89.77	94.55	7,106.26	-527.27	13,667.42	13,677.25	1.20	-0.09	-1.19
20,002.00	90.78	95.06	7,105.81	-535.06	13,760.09	13,770.12	1.22	1.09	0.55
20,095.00	89.81	94.63	7,105.33	-542.91	13,852.75	13,862.99	1.14	-1.04	-0.46

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-4HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-4HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

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)	
20,187.00	90.55	94.48	7,105.04	-550.22	13,944.46	13,954.88	0.82	0.80	-0.16	
20,280.00	88.41	94.35	7,105.89	-557.37	14,037.18	14,047.78	2.31	-2.30	-0.14	
20,373.00	88.85	95.52	7,108.11	-565.37	14,129.80	14,140.61	1.34	0.47	1.26	
20,465.00	88.04	96.38	7,110.61	-574.91	14,221.27	14,232.34	1.28	-0.88	0.93	
20,557.00	87.59	95.90	7,114.12	-584.74	14,312.68	14,324.01	0.71	-0.49	-0.52	
20,650.00	88.90	96.97	7,116.96	-595.16	14,405.05	14,416.66	1.82	1.41	1.15	
20,743.00	89.83	98.06	7,117.99	-607.32	14,497.24	14,509.19	1.54	1.00	1.17	
20,835.00	88.40	96.22	7,119.42	-618.75	14,588.51	14,600.77	2.53	-1.55	-2.00	
20,928.00	88.91	95.88	7,121.60	-628.55	14,680.96	14,693.49	0.66	0.55	-0.37	
21,021.00	87.15	94.63	7,124.79	-637.06	14,773.51	14,786.26	2.32	-1.89	-1.34	
21,113.00	86.89	93.55	7,129.58	-643.62	14,865.15	14,878.07	1.21	-0.28	-1.17	
21,205.00	86.60	93.48	7,134.80	-649.25	14,956.83	14,969.88	0.32	-0.32	-0.08	
21,297.00	86.75	93.02	7,140.14	-654.45	15,048.53	15,061.69	0.53	0.16	-0.50	
21,389.00	86.61	92.87	7,145.47	-659.17	15,140.25	15,153.52	0.22	-0.15	-0.16	
21,482.00	87.78	93.54	7,150.02	-664.37	15,232.99	15,246.38	1.45	1.26	0.72	
21,574.00	88.24	93.21	7,153.21	-669.78	15,324.78	15,338.29	0.62	0.50	-0.36	
21,667.00	88.41	93.13	7,155.93	-674.92	15,417.60	15,431.22	0.20	0.18	-0.09	
21,759.00	89.08	92.95	7,157.94	-679.80	15,509.45	15,523.18	0.75	0.73	-0.20	
21,851.00	90.54	92.64	7,158.25	-684.28	15,601.33	15,615.16	1.62	1.59	-0.34	
21,944.00	91.67	92.75	7,156.46	-688.66	15,694.21	15,708.13	1.22	1.22	0.12	
22,036.00	90.80	93.09	7,154.47	-693.34	15,786.07	15,800.09	1.02	-0.95	0.37	
22,129.00	90.71	92.22	7,153.25	-697.65	15,878.96	15,893.07	0.94	-0.10	-0.94	
22,222.00	91.13	92.12	7,151.75	-701.17	15,971.88	15,986.06	0.46	0.45	-0.11	
22,316.00	90.05	92.38	7,150.79	-704.86	16,065.80	16,080.05	1.18	-1.15	0.28	
22,407.00	90.97	91.92	7,149.98	-708.27	16,156.73	16,171.04	1.13	1.01	-0.51	
22,456.00	91.24	91.94	7,149.03	-709.92	16,205.70	16,220.03	0.55	0.55	0.04	
Last Survey (1852' FNL, 316' FEL) @ 22456' MD										
22,518.00	91.24	91.94	7,147.69	-712.02	16,267.65	16,282.02	0.00	0.00	0.00	
TD (1853' FNL, 255' FEL) @ 22518' MD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,906.00	1,905.45	-22.69	-2.35	First AEP Survey @ 1906' MD	
7,157.06	6,934.44	-239.26	940.49	Enter Lease @ 7157.06' MD	
7,344.29	6,987.38	-235.35	1,119.69	FTP (1646' FNL, 180' FWL) @ 7344.29' MD	
7,493.00	7,001.85	-238.08	1,267.52	Heel (1644' FNL, 327' FWL) @ 7493' MD	
22,456.00	7,149.03	-709.92	16,205.70	Last Survey (1852' FNL, 316' FEL) @ 22456' MD	
22,518.00	7,147.69	-712.02	16,267.65	TD (1853' FNL, 255' FEL) @ 22518' MD	

Checked By: _____ Approved By: _____ Date: _____