

Occidental Petroleum

Weld County, CO (UTM-NAD83)

BERRY FARMS 8-8HZ PAD

BERRY FARMS 8-2HZ

OH

Design: OH

Standard Survey Report

21 March, 2023



Project: Weld County, CO (UTM-NAD83)
Site: BERRY FARMS 8-8HZ PAD
Well: BERRY FARMS 8-2HZ
Wellbore: OH
Design: OH
Lat: 40.243721
Long: -104.908290
GL: 4817.00
KB: PD 461 @ 4837.00usft



Azimuths to True North
Magnetic North: 7.96°
Magnetic Field
Strength: 51722.0nT
Dip Angle: 66.43°
Date: 12/31/2022
Model: HDGM2022_FILE

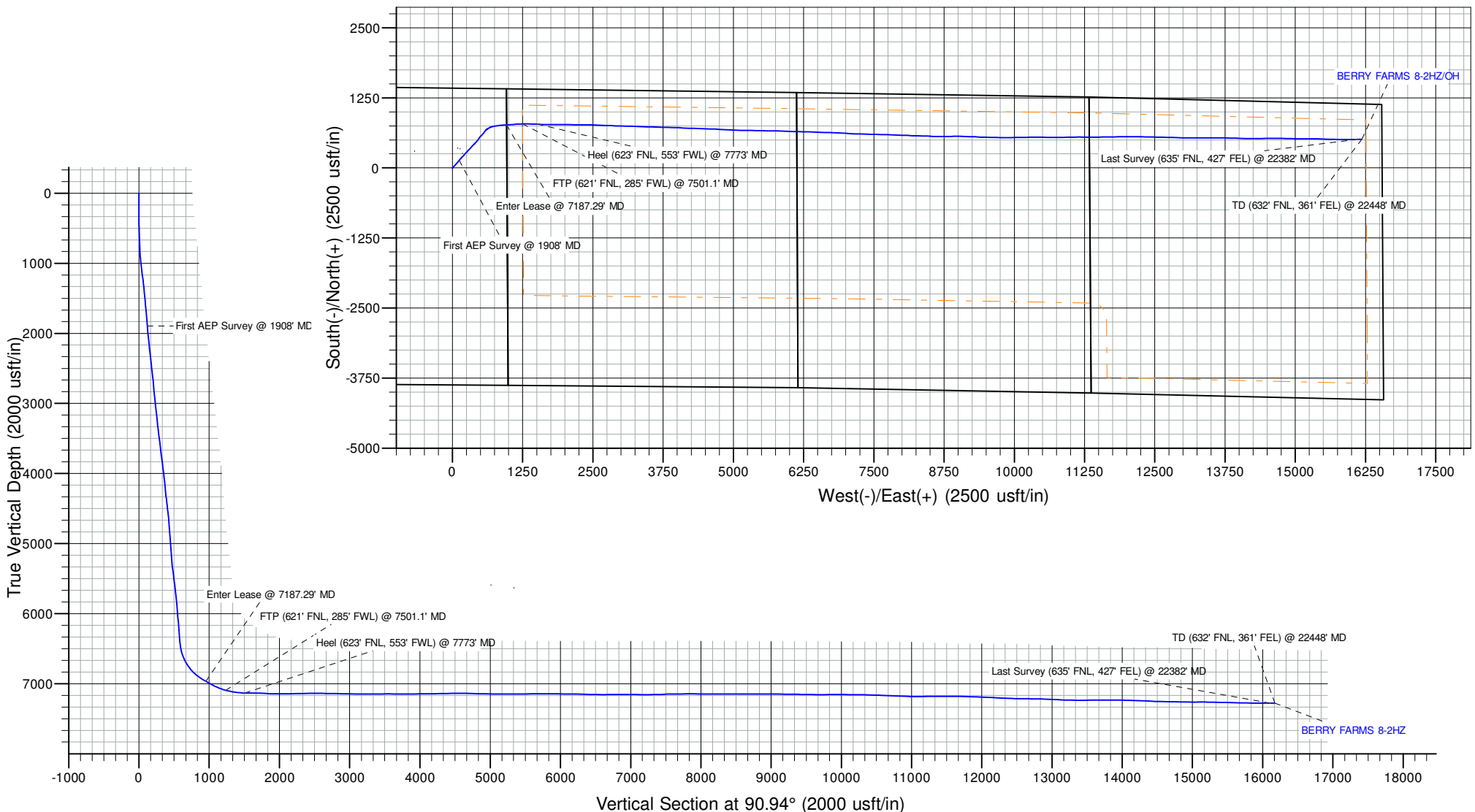
WELL DETAILS: BERRY FARMS 8-2HZ

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14615497.36	1666008.62	40.243721	-104.908290

SHL: 1423' FNL, 969' FEL - Sec 8-T3N-R67W
Heel: 623' FNL, 553' FWL - Sec 9-T3N-R67W
BHL: 632' FNL, 361' FEL - Sec 11-T3N-R67W

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1908.00	7.23	37.27	1894.44	136.34	121.17	118.91	187.36	First AEP Survey @ 1908' MD
7187.29	59.82	86.98	6966.51	767.99	963.81	951.08	1295.04	Enter Lease @ 7187.29' MD
7501.10	75.20	89.50	7094.66	785.29	1248.66	1235.61	1580.24	FTP (621' FNL, 285' FWL) @ 7501.1' MD
7773.00	90.96	92.36	7132.43	780.05	1517.21	1504.21	1848.78	Heel (623' FNL, 553' FWL) @ 7773' MD
22382.00	90.25	88.70	7279.37	510.26	16117.62	16107.08	16454.41	Last Survey (635' FNL, 427' FEL) @ 22382' MD
22448.00	90.25	88.70	7279.09	511.75	16183.60	16173.03	16520.41	TD (632' FNL, 361' FEL) @ 22448' MD



Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-2HZ
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 8-2HZ	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 8-2HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,615,497.36 usft	Latitude:	40.243721
	+E/-W	0.00 usft	Easting:	1,666,008.62 usft	Longitude:	-104.908290
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	90.94	

Survey Program	Date	3/21/2023			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
7.00	1,824.00	Surface MWD (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,908.00	22,448.00	MWD (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	0.40	307.85	86.00	0.17	-0.22	-0.22	0.51	0.51	0.00	
178.00	0.30	144.97	178.00	0.17	-0.33	-0.34	0.75	-0.11	-177.04	
270.00	0.62	178.08	270.00	-0.53	-0.18	-0.17	0.44	0.35	35.99	
360.00	0.92	142.78	359.99	-1.59	0.28	0.30	0.61	0.33	-39.22	
449.00	1.17	61.02	448.98	-1.72	1.50	1.53	1.55	0.28	-91.87	
539.00	2.44	38.17	538.93	0.23	3.49	3.49	1.60	1.41	-25.39	
628.00	3.02	35.96	627.83	3.62	6.04	5.98	0.66	0.65	-2.48	

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 8-2HZ	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	3.36	39.51	717.69	7.58	9.11	8.98	0.44	0.38	3.94
807.00	3.25	46.79	806.54	11.32	12.61	12.42	0.49	-0.12	8.18
897.00	5.72	41.10	896.26	16.44	17.41	17.14	2.79	2.74	-6.32
987.00	8.95	45.51	985.51	24.73	25.36	24.95	3.64	3.59	4.90
1,076.00	11.08	45.65	1,073.15	35.56	36.41	35.83	2.39	2.39	0.16
1,166.00	11.77	40.68	1,161.37	48.57	48.58	47.78	1.34	0.77	-5.52
1,255.00	10.57	39.92	1,248.68	61.71	59.74	58.72	1.36	-1.35	-0.85
1,345.00	8.92	39.50	1,337.38	73.43	69.47	68.26	1.84	-1.83	-0.47
1,434.00	9.10	41.09	1,425.28	84.06	78.49	77.10	0.35	0.20	1.79
1,523.00	8.29	40.06	1,513.26	94.27	87.24	85.69	0.93	-0.91	-1.16
1,613.00	8.52	39.03	1,602.29	104.42	95.62	93.89	0.31	0.26	-1.14
1,703.00	8.28	38.47	1,691.33	114.67	103.85	101.95	0.28	-0.27	-0.62
1,792.00	7.67	39.20	1,779.47	124.29	111.59	109.53	0.69	-0.69	0.82
1,824.00	7.90	39.09	1,811.17	127.65	114.32	112.22	0.72	0.72	-0.34
1,908.00	7.23	37.27	1,894.44	136.34	121.17	118.91	0.85	-0.80	-2.17
First AEP Survey @ 1908' MD									
2,001.00	8.25	43.79	1,986.59	145.81	129.33	126.92	1.45	1.10	7.01
2,095.00	9.05	43.80	2,079.52	156.02	139.11	136.53	0.85	0.85	0.01
2,189.00	8.27	36.92	2,172.45	166.76	148.29	145.53	1.38	-0.83	-7.32
2,282.00	9.67	44.71	2,264.32	177.66	157.80	154.87	1.99	1.51	8.38
2,375.00	9.21	44.06	2,356.06	188.56	168.47	165.36	0.51	-0.49	-0.70
2,467.00	8.75	42.88	2,446.93	198.98	178.36	175.07	0.54	-0.50	-1.28
2,558.00	10.19	41.42	2,536.69	210.09	188.39	184.92	1.60	1.58	-1.60
2,653.00	9.32	41.64	2,630.31	222.14	199.06	195.39	0.92	-0.92	0.23
2,746.00	8.20	39.49	2,722.23	232.88	208.28	204.44	1.25	-1.20	-2.31
2,840.00	8.22	42.52	2,815.26	243.01	217.09	213.07	0.46	0.02	3.22
2,932.00	9.05	42.96	2,906.22	253.15	226.47	222.28	0.91	0.90	0.48
3,024.00	8.90	43.06	2,997.09	263.65	236.26	231.90	0.16	-0.16	0.11
3,117.00	10.17	47.34	3,088.81	274.47	247.21	242.67	1.56	1.37	4.60
3,209.00	8.10	46.17	3,179.64	284.46	257.86	253.15	2.26	-2.25	-1.27
3,303.00	9.09	37.50	3,272.58	294.94	267.15	262.28	1.73	1.05	-9.22
3,395.00	10.20	42.61	3,363.28	306.70	277.09	272.02	1.52	1.21	5.55
3,488.00	10.36	42.54	3,454.79	318.92	288.32	283.05	0.17	0.17	-0.08
3,580.00	11.19	45.44	3,545.17	331.28	300.28	294.80	1.08	0.90	3.15
3,673.00	10.46	42.78	3,636.51	343.81	312.44	306.76	0.95	-0.78	-2.86
3,766.00	9.58	40.41	3,728.09	355.90	323.19	317.31	1.04	-0.95	-2.55
3,859.00	11.49	42.15	3,819.52	368.66	334.42	328.33	2.08	2.05	1.87
3,951.00	9.66	39.86	3,909.96	381.38	345.52	339.22	2.04	-1.99	-2.49
4,044.00	10.18	47.07	4,001.57	392.97	356.54	350.04	1.45	0.56	7.75
4,137.00	8.48	45.02	4,093.34	403.41	367.41	360.74	1.86	-1.83	-2.20
4,229.00	8.29	44.79	4,184.35	412.91	376.88	370.05	0.21	-0.21	-0.25
4,322.00	9.32	44.29	4,276.26	423.06	386.86	379.87	1.11	1.11	-0.54
4,415.00	11.41	41.22	4,367.73	435.37	398.18	390.99	2.32	2.25	-3.30

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Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-2HZ	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)	
4,508.00	10.06	41.50	4,459.10	448.38	409.63	402.22	1.45	-1.45	0.30	
4,601.00	8.85	39.86	4,550.84	459.95	419.59	411.99	1.33	-1.30	-1.76	
4,693.00	8.66	37.70	4,641.77	470.87	428.37	420.58	0.41	-0.21	-2.35	
4,785.00	8.16	44.87	4,732.78	480.97	437.21	429.26	1.26	-0.54	7.79	
4,878.00	6.83	43.04	4,824.98	489.69	445.64	437.55	1.45	-1.43	-1.97	
5,001.00	6.81	34.02	4,947.12	501.08	454.71	446.43	0.87	-0.02	-7.33	
5,093.00	7.12	34.63	5,038.44	510.30	461.00	452.57	0.35	0.34	0.66	
5,186.00	7.23	31.23	5,130.71	520.04	467.31	458.72	0.47	0.12	-3.66	
5,278.00	8.74	33.12	5,221.82	530.85	474.13	465.36	1.67	1.64	2.05	
5,370.00	10.27	37.46	5,312.55	543.21	482.94	473.97	1.84	1.66	4.72	
5,463.00	10.98	43.85	5,403.96	556.18	494.12	484.93	1.48	0.76	6.87	
5,555.00	9.60	41.84	5,494.48	568.21	505.31	495.92	1.55	-1.50	-2.18	
5,648.00	9.01	49.36	5,586.26	578.74	516.01	506.44	1.45	-0.63	8.09	
5,741.00	9.18	45.83	5,678.09	588.65	526.85	517.13	0.63	0.18	-3.80	
5,834.00	9.51	41.43	5,769.86	599.58	537.26	527.35	0.85	0.35	-4.73	
5,926.00	9.25	38.21	5,860.63	611.09	546.86	536.76	0.64	-0.28	-3.50	
6,018.00	8.85	40.49	5,951.48	622.28	556.03	545.75	0.58	-0.43	2.48	
6,110.00	7.71	34.80	6,042.52	632.73	564.15	553.69	1.52	-1.24	-6.18	
6,203.00	7.81	35.16	6,134.67	643.02	571.35	560.72	0.12	0.11	0.39	
6,295.00	7.70	37.21	6,225.83	653.04	578.67	567.88	0.32	-0.12	2.23	
6,387.00	7.57	33.22	6,317.01	663.01	585.72	574.77	0.59	-0.14	-4.34	
6,480.00	8.72	41.74	6,409.08	673.40	593.77	582.64	1.79	1.24	9.16	
6,572.00	12.71	52.30	6,499.46	684.80	606.43	595.11	4.82	4.34	11.48	
6,664.00	22.53	57.48	6,587.05	700.50	629.36	617.78	10.80	10.67	5.63	
6,756.00	30.71	63.01	6,669.24	720.68	665.22	653.30	9.28	8.89	6.01	
6,848.00	34.87	75.89	6,746.65	737.78	711.73	699.53	8.81	4.52	14.00	
6,940.00	42.46	81.38	6,818.46	748.86	768.04	755.65	9.05	8.25	5.97	
7,033.00	52.49	81.67	6,881.24	758.94	835.75	823.18	10.79	10.78	0.31	
7,125.00	57.43	87.94	6,934.08	765.63	910.69	898.01	7.74	5.37	6.82	
7,187.29	59.82	86.98	6,966.51	767.99	963.81	951.08	4.05	3.83	-1.54	
Enter Lease @ 7187.29' MD										
7,217.00	60.96	86.54	6,981.19	769.45	989.60	976.84	4.05	3.84	-1.48	
7,309.00	63.07	85.02	7,024.36	775.44	1,070.61	1,057.75	2.72	2.29	-1.65	
7,402.00	67.60	86.17	7,063.16	781.91	1,154.86	1,141.87	5.00	4.87	1.24	
7,494.00	74.76	89.39	7,092.82	785.23	1,241.80	1,228.76	8.46	7.78	3.50	
7,501.10	75.20	89.50	7,094.66	785.29	1,248.66	1,235.61	6.45	6.26	1.60	
FTP (621' FNL, 285' FWL) @ 7501.1' MD										
7,588.00	80.65	90.86	7,112.83	785.01	1,333.61	1,320.55	6.45	6.27	1.56	
7,680.00	81.99	91.48	7,126.72	783.16	1,424.53	1,411.49	1.60	1.46	0.67	
7,773.00	90.96	92.36	7,132.43	780.05	1,517.21	1,504.21	9.69	9.65	0.95	
Heel (623' FNL, 553' FWL) @ 7773' MD										
7,865.00	88.44	90.84	7,132.91	777.48	1,609.16	1,596.19	3.20	-2.74	-1.65	
7,957.00	87.84	89.43	7,135.90	777.26	1,701.11	1,688.13	1.66	-0.65	-1.53	
8,049.00	87.58	91.11	7,139.57	776.83	1,793.03	1,780.04	1.85	-0.28	1.83	

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 8-2HZ	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)	
8,143.00	88.58	90.61	7,142.72	775.42	1,886.96	1,873.99	1.19	1.06	-0.53	
8,237.00	90.32	90.85	7,143.63	774.22	1,980.95	1,967.98	1.87	1.85	0.26	
8,329.00	90.50	90.84	7,142.97	772.86	2,072.94	2,059.98	0.20	0.20	-0.01	
8,421.00	90.68	90.63	7,142.02	771.68	2,164.92	2,151.97	0.30	0.20	-0.23	
8,514.00	90.48	90.45	7,141.08	770.81	2,257.92	2,244.97	0.29	-0.22	-0.19	
8,606.00	90.81	90.04	7,140.04	770.41	2,349.91	2,336.95	0.57	0.36	-0.45	
8,699.00	89.99	92.14	7,139.39	768.64	2,442.88	2,429.94	2.42	-0.88	2.26	
8,791.00	90.21	92.23	7,139.23	765.14	2,534.82	2,521.92	0.26	0.24	0.10	
8,885.00	89.03	91.68	7,139.86	761.93	2,628.76	2,615.90	1.38	-1.26	-0.59	
8,977.00	90.10	92.34	7,140.56	758.70	2,720.70	2,707.88	1.37	1.16	0.72	
9,071.00	88.90	92.05	7,141.38	755.10	2,814.62	2,801.86	1.31	-1.28	-0.31	
9,163.00	88.45	92.10	7,143.50	751.77	2,906.54	2,893.81	0.49	-0.49	0.05	
9,255.00	88.55	91.91	7,145.91	748.56	2,998.45	2,985.76	0.23	0.11	-0.21	
9,348.00	88.51	91.86	7,148.30	745.50	3,091.37	3,078.72	0.07	-0.04	-0.05	
9,442.00	90.26	91.55	7,149.31	742.70	3,185.32	3,172.70	1.89	1.86	-0.33	
9,534.00	90.09	91.48	7,149.02	740.27	3,277.28	3,264.70	0.20	-0.18	-0.08	
9,627.00	91.03	92.09	7,148.12	737.37	3,370.23	3,357.68	1.20	1.01	0.66	
9,721.00	90.85	92.11	7,146.57	733.93	3,464.16	3,451.65	0.19	-0.19	0.02	
9,814.00	89.99	91.70	7,145.89	730.84	3,557.10	3,544.63	1.02	-0.92	-0.44	
9,908.00	89.14	91.38	7,146.61	728.31	3,651.06	3,638.63	0.97	-0.90	-0.34	
10,000.00	88.99	91.01	7,148.11	726.39	3,743.03	3,730.61	0.43	-0.16	-0.40	
10,092.00	90.96	91.93	7,148.15	724.03	3,835.00	3,822.60	2.36	2.14	1.00	
10,185.00	90.99	90.57	7,146.56	722.00	3,927.96	3,915.59	1.46	0.03	-1.46	
10,277.00	90.82	93.57	7,145.11	718.68	4,019.88	4,007.55	3.27	-0.18	3.26	
10,369.00	90.56	92.62	7,144.00	713.71	4,111.73	4,099.47	1.07	-0.28	-1.03	
10,462.00	90.78	92.16	7,142.92	709.84	4,204.65	4,192.44	0.55	0.24	-0.49	
10,556.00	90.82	91.69	7,141.60	706.68	4,298.58	4,286.41	0.50	0.04	-0.50	
10,650.00	91.02	92.05	7,140.09	703.61	4,392.52	4,380.39	0.44	0.21	0.38	
10,742.00	90.13	92.22	7,139.17	700.19	4,484.45	4,472.36	0.98	-0.97	0.18	
10,837.00	90.74	91.69	7,138.45	696.94	4,579.39	4,567.34	0.85	0.64	-0.56	
10,930.00	89.36	93.42	7,138.37	692.80	4,672.30	4,660.30	2.38	-1.48	1.86	
11,023.00	88.39	93.30	7,140.19	687.35	4,765.12	4,753.20	1.05	-1.04	-0.13	
11,116.00	88.86	92.59	7,142.43	682.57	4,857.97	4,846.12	0.92	0.51	-0.76	
11,209.00	88.62	92.43	7,144.47	678.50	4,950.85	4,939.06	0.31	-0.26	-0.17	
11,301.00	88.79	92.02	7,146.55	674.93	5,042.76	5,031.01	0.48	0.18	-0.45	
11,393.00	88.89	91.95	7,148.41	671.74	5,134.69	5,122.98	0.13	0.11	-0.08	
11,487.00	89.63	90.42	7,149.63	669.80	5,228.66	5,216.96	1.81	0.79	-1.63	
11,579.00	90.16	91.58	7,149.80	668.19	5,320.64	5,308.96	1.39	0.58	1.26	
11,673.00	90.96	90.73	7,148.88	666.30	5,414.62	5,402.96	1.24	0.85	-0.90	
11,766.00	90.90	90.70	7,147.37	665.14	5,507.60	5,495.94	0.07	-0.06	-0.03	
11,858.00	90.83	90.88	7,145.98	663.87	5,599.58	5,587.93	0.21	-0.08	0.20	
11,951.00	90.76	90.64	7,144.69	662.64	5,692.56	5,680.92	0.27	-0.08	-0.26	
12,043.00	90.81	91.24	7,143.43	661.13	5,784.54	5,772.91	0.65	0.05	0.65	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-2HZ
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 8-2HZ	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)	
12,136.00	89.34	92.56	7,143.31	658.05	5,877.48	5,865.90	2.12	-1.58	1.42	
12,228.00	88.89	91.97	7,144.73	654.41	5,969.40	5,957.86	0.81	-0.49	-0.64	
12,321.00	89.05	91.73	7,146.40	651.41	6,062.33	6,050.83	0.31	0.17	-0.26	
12,413.00	88.84	91.49	7,148.09	648.82	6,154.28	6,142.81	0.35	-0.23	-0.26	
12,505.00	89.19	90.95	7,149.67	646.87	6,246.25	6,234.80	0.70	0.38	-0.59	
12,599.00	88.46	92.36	7,151.60	644.15	6,340.19	6,328.77	1.69	-0.78	1.50	
12,692.00	88.97	92.56	7,153.69	640.16	6,433.08	6,421.71	0.59	0.55	0.22	
12,784.00	88.29	91.42	7,155.89	636.97	6,524.99	6,513.66	1.44	-0.74	-1.24	
12,876.00	90.93	92.16	7,156.51	634.09	6,616.94	6,605.64	2.98	2.87	0.80	
12,969.00	90.82	91.19	7,155.09	631.38	6,709.89	6,698.62	1.05	-0.12	-1.04	
13,062.00	91.60	93.19	7,153.13	627.82	6,802.79	6,791.58	2.31	0.84	2.15	
13,154.00	88.82	93.15	7,152.79	622.74	6,894.64	6,883.50	3.02	-3.02	-0.04	
13,247.00	89.06	92.79	7,154.51	617.92	6,987.50	6,976.42	0.47	0.26	-0.39	
13,339.00	89.32	92.74	7,155.81	613.48	7,079.38	7,068.37	0.29	0.28	-0.05	
13,431.00	88.93	92.08	7,157.22	609.61	7,171.29	7,160.32	0.83	-0.42	-0.72	
13,523.00	90.74	91.58	7,157.48	606.67	7,263.24	7,252.31	2.04	1.97	-0.54	
13,616.00	91.56	91.35	7,155.62	604.30	7,356.19	7,345.29	0.92	0.88	-0.25	
13,708.00	91.78	91.28	7,152.93	602.19	7,448.13	7,437.24	0.25	0.24	-0.08	
13,800.00	92.14	91.58	7,149.79	599.89	7,540.04	7,529.19	0.51	0.39	0.33	
13,892.00	90.32	91.46	7,147.81	597.45	7,631.99	7,621.16	1.98	-1.98	-0.13	
13,986.00	91.17	91.36	7,146.59	595.14	7,725.95	7,715.15	0.91	0.90	-0.11	
14,078.00	90.42	92.26	7,145.31	592.23	7,817.89	7,807.12	1.27	-0.82	0.98	
14,170.00	89.22	92.67	7,145.60	588.28	7,909.80	7,899.09	1.38	-1.30	0.45	
14,262.00	89.59	92.69	7,146.56	583.98	8,001.70	7,991.04	0.40	0.40	0.02	
14,354.00	89.96	91.96	7,146.92	580.24	8,093.62	8,083.01	0.89	0.40	-0.79	
14,446.00	90.70	92.12	7,146.39	576.97	8,185.56	8,174.99	0.82	0.80	0.17	
14,538.00	88.49	91.14	7,147.04	574.35	8,277.51	8,266.98	2.63	-2.40	-1.07	
14,631.00	89.11	91.71	7,148.99	572.04	8,370.46	8,359.95	0.91	0.67	0.61	
14,725.00	90.19	92.28	7,149.56	568.77	8,464.40	8,453.93	1.30	1.15	0.61	
14,817.00	91.06	92.81	7,148.56	564.68	8,556.31	8,545.89	1.11	0.95	0.58	
14,911.00	89.86	91.39	7,147.80	561.24	8,650.24	8,639.87	1.98	-1.28	-1.51	
15,003.00	89.65	89.46	7,148.20	560.56	8,742.23	8,731.86	2.11	-0.23	-2.10	
15,096.00	89.79	87.79	7,148.65	562.79	8,835.20	8,824.78	1.80	0.15	-1.80	
15,188.00	90.39	89.08	7,148.51	565.30	8,927.16	8,916.69	1.55	0.65	1.40	
15,281.00	90.08	90.88	7,148.13	565.33	9,020.16	9,009.67	1.96	-0.33	1.94	
15,374.00	89.15	92.36	7,148.75	562.70	9,113.11	9,102.66	1.88	-1.00	1.59	
15,467.00	89.10	92.30	7,150.17	558.92	9,206.03	9,195.62	0.08	-0.05	-0.06	
15,559.00	89.37	92.21	7,151.40	555.30	9,297.95	9,287.58	0.31	0.29	-0.10	
15,653.00	90.01	91.59	7,151.91	552.19	9,391.89	9,381.57	0.95	0.68	-0.66	
15,745.00	88.36	92.09	7,153.22	549.23	9,483.83	9,473.54	1.87	-1.79	0.54	
15,837.00	88.90	91.70	7,155.42	546.19	9,575.75	9,565.51	0.72	0.59	-0.42	
15,929.00	89.42	91.51	7,156.77	543.62	9,667.71	9,657.49	0.60	0.57	-0.21	
16,021.00	90.77	91.04	7,156.61	541.57	9,759.68	9,749.48	1.55	1.47	-0.51	
16,113.00	90.83	89.29	7,155.33	541.30	9,851.67	9,841.46	1.90	0.07	-1.90	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-2HZ
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 8-2HZ	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)	
16,205.00	90.39	89.25	7,154.35	542.48	9,943.66	9,933.42	0.48	-0.48	-0.04	
16,298.00	88.99	89.09	7,154.85	543.82	10,036.64	10,026.37	1.52	-1.51	-0.17	
16,391.00	89.48	88.83	7,156.09	545.51	10,129.62	10,119.31	0.60	0.53	-0.28	
16,483.00	89.51	88.76	7,156.90	547.45	10,221.60	10,211.24	0.08	0.03	-0.08	
16,575.00	88.48	90.17	7,158.52	548.30	10,313.57	10,303.19	1.90	-1.12	1.53	
16,667.00	88.35	90.10	7,161.06	548.09	10,405.54	10,395.15	0.16	-0.14	-0.08	
16,759.00	88.89	90.13	7,163.28	547.90	10,497.51	10,487.11	0.59	0.59	0.03	
16,852.00	87.36	90.65	7,166.32	547.27	10,590.46	10,580.05	1.74	-1.65	0.56	
16,945.00	87.66	90.16	7,170.36	546.61	10,683.37	10,672.96	0.62	0.32	-0.53	
17,037.00	87.45	89.80	7,174.29	546.65	10,775.28	10,764.86	0.45	-0.23	-0.39	
17,131.00	87.84	89.26	7,178.15	547.42	10,869.20	10,858.76	0.71	0.41	-0.57	
17,223.00	87.78	88.93	7,181.66	548.87	10,961.12	10,950.64	0.36	-0.07	-0.36	
17,315.00	89.94	87.91	7,183.49	551.41	11,053.06	11,042.53	2.60	2.35	-1.11	
17,407.00	90.67	90.52	7,183.01	552.67	11,145.04	11,134.48	2.95	0.79	2.84	
17,499.00	91.57	90.37	7,181.21	551.95	11,237.02	11,226.45	0.99	0.98	-0.16	
17,592.00	89.54	90.40	7,180.31	551.33	11,330.01	11,319.44	2.18	-2.18	0.03	
17,686.00	90.02	89.59	7,180.67	551.33	11,424.01	11,413.42	1.00	0.51	-0.86	
17,778.00	90.63	88.98	7,180.15	552.48	11,516.00	11,505.38	0.94	0.66	-0.66	
17,870.00	89.23	90.25	7,180.26	553.10	11,607.99	11,597.36	2.05	-1.52	1.38	
17,963.00	88.79	89.92	7,181.86	552.96	11,700.98	11,690.33	0.59	-0.47	-0.35	
18,055.00	88.12	88.46	7,184.35	554.26	11,792.93	11,782.25	1.75	-0.73	-1.59	
18,148.00	88.57	90.38	7,187.03	555.20	11,885.88	11,875.18	2.12	0.48	2.06	
18,241.00	87.33	88.92	7,190.36	555.77	11,978.82	11,968.09	2.06	-1.33	-1.57	
18,333.00	87.39	90.44	7,194.60	556.28	12,070.72	12,059.97	1.65	0.07	1.65	
18,427.00	87.10	89.60	7,199.11	556.25	12,164.61	12,153.84	0.94	-0.31	-0.89	
18,519.00	87.30	91.20	7,203.61	555.61	12,256.49	12,245.73	1.75	0.22	1.74	
18,612.00	87.63	90.78	7,207.72	554.00	12,349.39	12,338.64	0.57	0.35	-0.45	
18,707.00	87.85	90.31	7,211.47	553.10	12,444.31	12,433.56	0.55	0.23	-0.49	
18,799.00	89.06	91.82	7,213.95	551.39	12,536.25	12,525.52	2.10	1.32	1.64	
18,892.00	89.65	91.70	7,215.00	548.54	12,629.20	12,618.50	0.65	0.63	-0.13	
18,984.00	88.24	91.74	7,216.69	545.77	12,721.14	12,710.48	1.53	-1.53	0.04	
19,077.00	89.25	91.67	7,218.73	543.01	12,814.08	12,803.45	1.09	1.09	-0.08	
19,170.00	87.54	91.06	7,221.33	540.79	12,907.01	12,896.40	1.95	-1.84	-0.66	
19,262.00	87.30	90.38	7,225.47	539.64	12,998.91	12,988.31	0.78	-0.26	-0.74	
19,355.00	87.64	90.48	7,229.58	538.94	13,091.82	13,081.21	0.38	0.37	0.11	
19,448.00	87.55	90.12	7,233.48	538.45	13,184.73	13,174.13	0.40	-0.10	-0.39	
19,540.00	89.60	89.82	7,235.77	538.50	13,276.70	13,266.08	2.25	2.23	-0.33	
19,632.00	89.82	89.97	7,236.23	538.67	13,368.70	13,358.06	0.29	0.24	0.16	
19,726.00	90.15	89.99	7,236.26	538.70	13,462.70	13,452.05	0.35	0.35	0.02	
19,818.00	90.82	89.70	7,235.48	538.95	13,554.70	13,544.03	0.79	0.73	-0.32	
19,910.00	90.74	91.46	7,234.23	538.02	13,646.68	13,636.02	1.91	-0.09	1.91	
20,003.00	89.99	91.44	7,233.63	535.67	13,739.65	13,729.01	0.81	-0.81	-0.02	
20,097.00	90.30	91.25	7,233.40	533.46	13,833.62	13,823.01	0.39	0.33	-0.20	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-2HZ
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 8-2HZ	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)	
20,189.00	89.12	91.78	7,233.86	531.03	13,925.58	13,915.00	1.41	-1.28	0.58	
20,282.00	89.31	90.91	7,235.14	528.85	14,018.55	14,007.99	0.96	0.20	-0.94	
20,375.00	87.74	90.84	7,237.53	527.43	14,111.50	14,100.95	1.69	-1.69	-0.08	
20,467.00	87.52	89.90	7,241.34	526.83	14,203.42	14,192.87	1.05	-0.24	-1.02	
20,559.00	87.60	89.87	7,245.25	527.02	14,295.34	14,284.77	0.09	0.09	-0.03	
20,652.00	87.78	89.57	7,249.00	527.47	14,388.26	14,377.67	0.38	0.19	-0.32	
20,745.00	88.05	89.79	7,252.38	527.99	14,481.20	14,470.59	0.37	0.29	0.24	
20,837.00	88.63	89.49	7,255.05	528.57	14,573.16	14,562.53	0.71	0.63	-0.33	
20,930.00	89.48	89.10	7,256.58	529.71	14,666.14	14,655.47	1.01	0.91	-0.42	
21,022.00	88.45	92.12	7,258.24	528.74	14,758.11	14,747.45	3.47	-1.12	3.28	
21,115.00	88.90	91.62	7,260.40	525.70	14,851.03	14,840.41	0.72	0.48	-0.54	
21,206.00	89.49	91.28	7,261.67	523.40	14,941.99	14,931.39	0.75	0.65	-0.37	
21,298.00	90.05	90.94	7,262.04	521.62	15,033.97	15,023.39	0.71	0.61	-0.37	
21,390.00	90.65	90.43	7,261.48	520.52	15,125.96	15,115.39	0.86	0.65	-0.55	
21,483.00	88.67	90.95	7,262.03	519.40	15,218.95	15,208.38	2.20	-2.13	0.56	
21,576.00	88.48	90.01	7,264.35	518.62	15,311.92	15,301.35	1.03	-0.20	-1.01	
21,668.00	89.01	90.29	7,266.36	518.38	15,403.90	15,393.32	0.65	0.58	0.30	
21,760.00	88.15	92.16	7,268.64	516.41	15,495.84	15,485.28	2.24	-0.93	2.03	
21,852.00	88.53	91.51	7,271.31	513.47	15,587.75	15,577.23	0.82	0.41	-0.71	
21,945.00	88.60	91.01	7,273.63	511.42	15,680.70	15,670.20	0.54	0.08	-0.54	
22,037.00	88.77	90.82	7,275.75	509.95	15,772.67	15,762.18	0.28	0.18	-0.21	
22,131.00	89.08	90.48	7,277.51	508.89	15,866.64	15,856.16	0.49	0.33	-0.36	
22,223.00	89.39	89.86	7,278.74	508.61	15,958.63	15,948.14	0.75	0.34	-0.67	
22,317.00	89.80	89.43	7,279.40	509.20	16,052.63	16,042.12	0.63	0.44	-0.46	
22,382.00	90.25	88.70	7,279.37	510.26	16,117.62	16,107.08	1.32	0.69	-1.12	
Last Survey (635' FNL, 427' FEL) @ 22382' MD										
22,448.00	90.25	88.70	7,279.09	511.75	16,183.60	16,173.03	0.00	0.00	0.00	
TD (632' FNL, 361' FEL) @ 22448' MD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,908.00	1,894.44	136.34	121.17	First AEP Survey @ 1908' MD	
7,187.29	6,966.51	767.99	963.81	Enter Lease @ 7187.29' MD	
7,501.10	7,094.66	785.29	1,248.66	FTP (621' FNL, 285' FWL) @ 7501.1' MD	
7,773.00	7,132.43	780.05	1,517.21	Heel (623' FNL, 553' FWL) @ 7773' MD	
22,382.00	7,279.37	510.26	16,117.62	Last Survey (635' FNL, 427' FEL) @ 22382' MD	
22,448.00	7,279.09	511.75	16,183.60	TD (632' FNL, 361' FEL) @ 22448' MD	

Checked By: _____	Approved By: _____	Date: _____
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