

# Occidental Petroleum

Project: Weld County, CO (UTM-NAD83)  
 Site: 4N-68W-13 SBJ 22-13HZ PAD  
 Well: SBJ 13-13HZ  
 Wellbore: Plan C  
 Design: Surveys

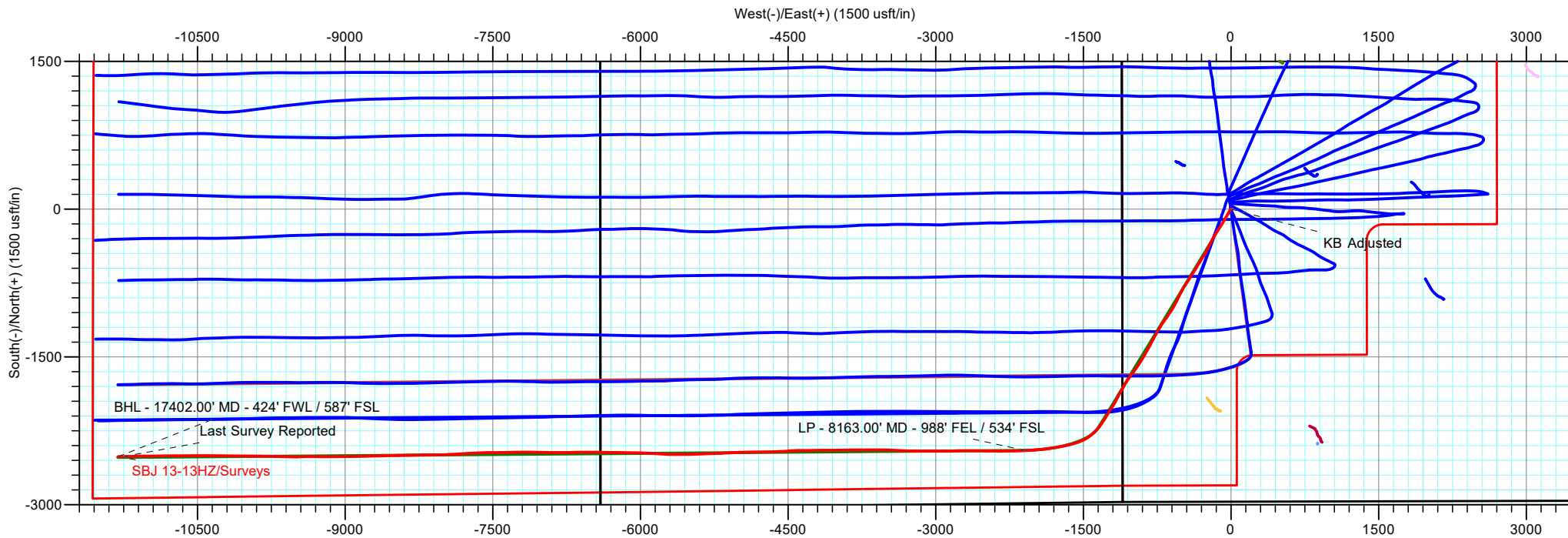
PROJECT DETAILS: Weld County, CO (UTM-NAD83)  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Zone 13N (108 W to 102 W)



**ACTUAL LINE CALLS**  
**SHL: 2320' FNL, 1099' FWL**  
**LP: 534' FSL, 988' FEL**  
**TOE: 587' FSL, 424' FWL**

**SHL: Sec 13-T4N-R68W**  
**Heel: Sec 14-T4N-R68W**  
**BHL: Sec 15-T4N-R68W**

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation	
15.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	KB Adjusted	
8163.00	96.39	266.93	7073.68	-2449.33	-2089.84	2109.01	3403.87	LP - 8163.00' MD - 988' FEL / 534' FSL	
17346.00	95.14	268.39	6524.02	-2510.73	-11250.44	11269.82	12567.36	Last Survey Reported	
17402.00	95.14	268.39	6519.00	-2512.29	-11306.20	11325.58	12623.14	BHL - 17402.00' MD - 424' FWL / 587' FSL	



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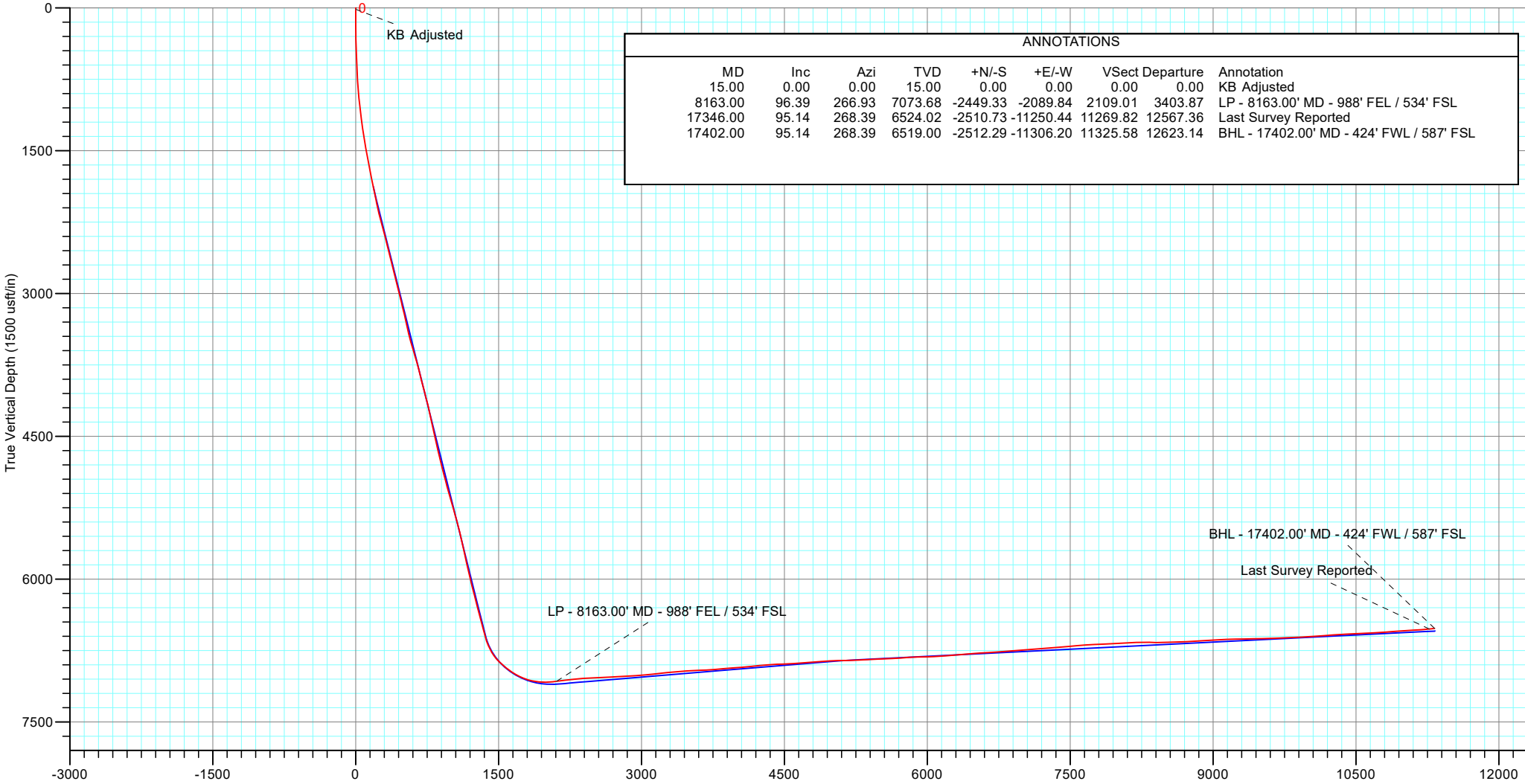
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8163.00	96.39	266.93	7073.68	-2449.33	-2089.84	2109.01	3403.87	LP - 8163.00' MD - 988' FEL / 534' FSL
17346.00	95.14	268.39	6524.02	-2510.73	-11250.44	11269.82	12567.36	Last Survey Reported
17402.00	95.14	268.39	6519.00	-2512.29	-11306.20	11325.58	12623.14	BHL - 17402.00' MD - 424' FWL / 587' FSL

# **Occidental Petroleum**

**Weld County, CO (UTM-NAD83)**

**4N-68W-13 SBJ 22-13HZ PAD**

**SBJ 13-13HZ**

**Plan C**

**Design: Surveys**

## **Standard Survey Report**

**17 January, 2022**

## Survey Report

<b>Company:</b> Occidental Petroleum	<b>Local Co-ordinate Reference:</b> Well SBJ 13-13HZ
<b>Project:</b> Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b> GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Site:</b> 4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b> GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Well:</b> SBJ 13-13HZ	<b>North Reference:</b> True
<b>Wellbore:</b> Plan C	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Surveys	<b>Database:</b> EDM 5000.1 Single User Db

<b>Project</b> Weld County, CO (UTM-NAD83)	
<b>Map System:</b> Universal Transverse Mercator (US Survey Fee	<b>System Datum:</b> Mean Sea Level
<b>Geo Datum:</b> North American Datum 1983	
<b>Map Zone:</b> Zone 13N (108 W to 102 W)	

<b>Site</b> 4N-68W-13 SBJ 22-13HZ PAD		
<b>Site Position:</b>	<b>Northing:</b> 14,641,145.55 usft	<b>Latitude:</b> 40.314181
<b>From:</b> Lat/Long	<b>Easting:</b> 1,652,517.50 usft	<b>Longitude:</b> -104.956591
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13.200 in	

<b>Well</b> SBJ 13-13HZ		
<b>Well Position</b> <b>+N/-S</b> 0.00 usft	<b>Northing:</b> 14,641,328.33 usft	<b>Latitude:</b> 40.314683
<b>+E/-W</b> 0.00 usft	<b>Easting:</b> 1,652,465.28 usft	<b>Longitude:</b> -104.956778
<b>Position Uncertainty</b> 3.28 usft	<b>Wellhead Elevation:</b> usft	<b>Ground Level:</b> 4,859.00 usft
<b>Grid Convergence:</b> 0.03 °		

<b>Wellbore</b> Plan C					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IFR	10/6/2021	7.86	66.48	51,857.90000000

<b>Design</b> Surveys					
<b>Audit Notes:</b>					
<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b> 0.00			
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	269.55	

<b>Survey Program</b>		<b>Date</b> 1/17/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
15.00	1,928.00	Survey #1 (Plan C)	APC_ISCWSA REV 2 MM Fixed:v2:standard declination	
2,020.00	17,402.00	Survey #2 (Plan C)	APC_ISCWSA REV 2 MM Fixed:v2:Rockies, crustal dec + 3-axis correction	

<b>Survey</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>KB Adjusted</b>										
99.00	0.57	263.35	99.00	-0.05	-0.42	0.42	0.68	0.68	0.00	
185.00	0.85	343.95	184.99	0.52	-1.02	1.01	1.10	0.33	93.72	
274.00	0.71	266.60	273.99	1.12	-1.75	1.74	1.10	-0.16	-86.91	
366.00	2.27	218.45	365.96	-0.34	-3.45	3.45	2.04	1.70	-52.34	
456.00	3.73	212.58	455.83	-4.21	-6.14	6.17	1.66	1.62	-6.52	
546.00	4.85	204.45	545.58	-10.14	-9.29	9.37	1.41	1.24	-9.03	

## Survey Report

<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-13HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
636.00	5.60	209.46	635.20	-17.42	-13.02	13.16	0.97	0.83	5.57
726.00	6.35	209.88	724.71	-25.56	-17.66	17.86	0.83	0.83	0.47
815.00	7.41	211.58	813.07	-34.72	-23.12	23.39	1.21	1.19	1.91
905.00	9.04	210.12	902.14	-45.78	-29.71	30.07	1.83	1.81	-1.62
995.00	11.76	213.39	990.66	-59.56	-38.30	38.77	3.09	3.02	3.63
1,085.00	13.33	209.55	1,078.51	-76.24	-48.47	49.07	1.97	1.74	-4.27
1,175.00	14.23	208.00	1,165.92	-95.04	-58.78	59.52	1.08	1.00	-1.72
1,265.00	15.06	210.95	1,252.99	-114.83	-69.99	70.89	1.24	0.92	3.28
1,355.00	16.96	212.91	1,339.50	-135.88	-83.13	84.20	2.19	2.11	2.18
1,445.00	17.75	211.71	1,425.40	-158.57	-97.48	98.72	0.96	0.88	-1.33
1,535.00	17.70	212.78	1,511.13	-181.75	-112.09	113.52	0.37	-0.06	1.19
1,624.00	17.64	212.46	1,595.93	-204.50	-126.66	128.26	0.13	-0.07	-0.36
1,714.00	20.09	211.47	1,681.09	-229.19	-142.05	143.84	2.75	2.72	-1.10
1,804.00	22.95	210.49	1,764.81	-257.50	-159.02	161.04	3.20	3.18	-1.09
1,865.00	23.22	209.63	1,820.92	-278.20	-171.00	173.18	0.71	0.44	-1.41
1,928.00	23.22	209.63	1,878.82	-299.79	-183.28	185.63	0.00	0.00	0.00
2,020.00	22.35	206.67	1,963.64	-331.19	-200.10	202.70	1.56	-0.95	-3.22
2,112.00	25.05	206.81	2,047.88	-364.21	-216.74	219.59	2.94	2.93	0.15
2,206.00	25.49	207.27	2,132.88	-399.95	-234.98	238.12	0.51	0.47	0.49
2,298.00	26.52	211.68	2,215.57	-435.03	-254.84	258.25	2.38	1.12	4.79
2,390.00	26.60	211.74	2,297.86	-470.03	-276.47	280.15	0.09	0.09	0.07
2,482.00	26.69	211.73	2,380.09	-505.12	-298.17	302.13	0.10	0.10	-0.01
2,575.00	25.86	210.61	2,463.48	-540.34	-319.48	323.71	1.04	-0.89	-1.20
2,667.00	25.41	211.79	2,546.43	-574.38	-340.09	344.60	0.74	-0.49	1.28
2,759.00	25.29	213.41	2,629.57	-607.56	-361.31	366.07	0.77	-0.13	1.76
2,851.00	22.78	211.88	2,713.59	-639.10	-381.54	386.55	2.81	-2.73	-1.66
2,944.00	24.12	211.53	2,798.91	-670.58	-400.99	406.25	1.45	1.44	-0.38
3,036.00	24.61	211.29	2,882.71	-702.98	-420.77	426.28	0.54	0.53	-0.26
3,129.00	24.23	215.66	2,967.40	-735.03	-441.96	447.71	1.98	-0.41	4.70
3,220.00	25.16	212.81	3,050.08	-766.47	-463.32	469.33	1.66	1.02	-3.13
3,313.00	26.25	209.53	3,133.88	-800.98	-484.17	490.45	1.93	1.17	-3.53
3,405.00	25.67	208.06	3,216.59	-836.27	-503.58	510.13	0.94	-0.63	-1.60
3,590.00	26.22	205.73	3,382.95	-908.44	-540.17	547.29	0.63	0.30	-1.26
3,682.00	28.86	206.86	3,464.52	-946.57	-559.03	566.44	2.93	2.87	1.23
3,775.00	29.97	209.36	3,545.53	-986.84	-580.56	588.29	1.78	1.19	2.69
3,867.00	30.08	213.19	3,625.20	-1,026.16	-604.45	612.49	2.09	0.12	4.16
3,960.00	27.43	213.73	3,706.72	-1,063.49	-629.10	637.44	2.86	-2.85	0.58
4,053.00	23.55	214.04	3,790.65	-1,096.71	-651.41	660.00	4.17	-4.17	0.33
4,146.00	22.98	215.99	3,876.09	-1,126.80	-672.48	681.31	1.03	-0.61	2.10
4,239.00	24.03	215.73	3,961.37	-1,156.86	-694.20	703.27	1.13	1.13	-0.28
4,332.00	24.74	212.91	4,046.08	-1,188.57	-715.83	725.15	1.47	0.76	-3.03
4,426.00	26.57	211.08	4,130.81	-1,223.09	-737.38	746.96	2.12	1.95	-1.95
4,519.00	24.89	208.84	4,214.59	-1,258.05	-757.56	767.41	2.09	-1.81	-2.41

## Survey Report

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<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,612.00	23.66	208.12	4,299.36	-1,291.65	-775.79	785.91	1.36	-1.32	-0.77
4,705.00	24.26	208.25	4,384.35	-1,324.94	-793.63	804.01	0.65	0.65	0.14
4,797.00	26.04	206.12	4,467.63	-1,359.73	-811.47	822.12	2.17	1.93	-2.32
4,911.00	26.12	207.71	4,570.02	-1,404.41	-834.15	845.16	0.62	0.07	1.39
5,004.00	25.02	211.13	4,653.92	-1,439.37	-853.84	865.12	1.98	-1.18	3.68
5,096.00	23.92	211.20	4,737.65	-1,471.98	-873.56	885.10	1.20	-1.20	0.08
5,188.00	25.65	209.20	4,821.17	-1,505.32	-892.94	904.74	2.09	1.88	-2.17
5,281.00	26.52	212.60	4,904.71	-1,540.38	-913.95	926.02	1.86	0.94	3.66
5,374.00	24.66	214.36	4,988.58	-1,573.89	-936.09	948.42	2.16	-2.00	1.89
5,467.00	26.55	214.00	5,072.44	-1,607.14	-958.66	971.25	2.04	2.03	-0.39
5,560.00	24.31	216.56	5,156.43	-1,639.76	-981.69	994.54	2.68	-2.41	2.75
5,653.00	25.03	218.94	5,240.94	-1,670.44	-1,005.46	1,018.55	1.32	0.77	2.56
5,746.00	26.07	216.18	5,324.85	-1,702.24	-1,029.89	1,043.23	1.70	1.12	-2.97
5,840.00	26.46	213.48	5,409.15	-1,736.38	-1,053.64	1,067.24	1.34	0.41	-2.87
5,933.00	25.92	209.17	5,492.61	-1,771.41	-1,074.97	1,088.85	2.13	-0.58	-4.63
6,027.00	24.41	208.40	5,577.68	-1,806.44	-1,094.23	1,108.38	1.64	-1.61	-0.82
6,120.00	24.47	209.98	5,662.35	-1,840.02	-1,112.99	1,127.41	0.71	0.06	1.70
6,213.00	24.22	208.77	5,747.08	-1,873.43	-1,131.80	1,146.48	0.60	-0.27	-1.30
6,307.00	25.08	207.90	5,832.52	-1,907.94	-1,150.40	1,165.35	0.99	0.91	-0.93
6,400.00	25.43	207.10	5,916.63	-1,943.13	-1,168.72	1,183.95	0.53	0.38	-0.86
6,495.00	24.51	210.78	6,002.75	-1,978.22	-1,188.10	1,203.60	1.90	-0.97	3.87
6,588.00	25.88	213.35	6,086.90	-2,011.75	-1,209.13	1,224.89	1.88	1.47	2.76
6,680.00	25.16	212.19	6,169.93	-2,045.08	-1,230.59	1,246.61	0.95	-0.78	-1.26
6,773.00	25.10	212.93	6,254.13	-2,078.36	-1,251.84	1,268.13	0.34	-0.06	0.80
6,866.00	25.01	211.49	6,338.38	-2,111.69	-1,272.83	1,289.38	0.66	-0.10	-1.55
6,958.00	26.03	213.50	6,421.40	-2,145.10	-1,294.13	1,310.94	1.45	1.11	2.18
7,050.00	26.32	214.49	6,503.97	-2,178.75	-1,316.83	1,333.90	0.57	0.32	1.08
7,142.00	21.87	213.95	6,587.93	-2,209.79	-1,337.96	1,355.27	4.84	-4.84	-0.59
7,235.00	28.65	227.25	6,672.06	-2,239.35	-1,364.05	1,381.60	9.47	7.29	14.30
7,327.00	35.87	226.49	6,749.80	-2,272.92	-1,399.84	1,417.65	7.86	7.85	-0.83
7,420.00	44.17	232.54	6,820.99	-2,311.47	-1,445.42	1,463.53	9.85	8.92	6.51
7,512.00	50.94	246.55	6,883.21	-2,345.31	-1,503.86	1,522.23	13.40	7.36	15.23
7,604.00	52.64	251.21	6,940.13	-2,371.31	-1,571.27	1,589.84	4.39	1.85	5.07
7,698.00	58.82	257.27	6,993.07	-2,392.24	-1,645.98	1,664.71	8.46	6.57	6.45
7,791.00	67.39	259.53	7,035.11	-2,408.84	-1,727.15	1,746.02	9.47	9.22	2.43
7,884.00	75.90	261.22	7,064.37	-2,423.55	-1,814.10	1,833.08	9.31	9.15	1.82
7,977.00	84.20	265.15	7,080.43	-2,434.37	-1,904.96	1,924.02	9.85	8.92	4.23
8,070.00	93.87	264.71	7,081.99	-2,442.58	-1,997.47	2,016.59	10.41	10.40	-0.47
8,163.00	96.39	266.93	7,073.68	-2,449.33	-2,089.84	2,109.01	3.60	2.71	2.39
8,165.89	96.43	266.97	7,073.35	-2,449.48	-2,092.71	2,111.88	1.98	1.47	1.33
<b>SBJ 13-13HZ LP</b>									
8,255.00	97.74	268.16	7,062.36	-2,453.24	-2,181.05	2,200.25	1.98	1.47	1.34
8,349.00	95.10	269.91	7,051.85	-2,454.81	-2,274.44	2,293.65	3.36	-2.81	1.86
8,442.00	94.60	270.96	7,043.99	-2,454.11	-2,367.10	2,386.30	1.25	-0.54	1.13

## Survey Report

<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-13HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,534.00	92.52	270.51	7,038.28	-2,452.93	-2,458.91	2,478.10	2.31	-2.26	-0.49	
8,626.00	92.36	270.95	7,034.36	-2,451.76	-2,550.82	2,570.00	0.51	-0.17	0.48	
8,719.00	92.96	270.37	7,030.04	-2,450.69	-2,643.71	2,662.88	0.90	0.65	-0.62	
8,812.00	93.12	269.13	7,025.11	-2,451.09	-2,736.58	2,755.75	1.34	0.17	-1.33	
8,905.00	92.54	268.10	7,020.52	-2,453.34	-2,829.44	2,848.62	1.27	-0.62	-1.11	
8,997.00	94.15	269.66	7,015.15	-2,455.13	-2,921.26	2,940.45	2.43	1.75	1.70	
9,091.00	96.29	269.95	7,006.60	-2,455.45	-3,014.86	3,034.05	2.30	2.28	0.31	
9,183.00	94.91	270.56	6,997.62	-2,455.05	-3,106.42	3,125.60	1.64	-1.50	0.66	
9,276.00	95.84	270.32	6,988.91	-2,454.33	-3,199.01	3,218.18	1.03	1.00	-0.26	
9,366.00	96.60	272.50	6,979.16	-2,452.13	-3,288.44	3,307.60	2.55	0.84	2.42	
9,459.00	95.02	272.15	6,969.74	-2,448.38	-3,380.89	3,400.01	1.74	-1.70	-0.38	
9,553.00	92.44	272.49	6,963.63	-2,444.58	-3,474.60	3,493.69	2.77	-2.74	0.36	
9,646.00	91.91	270.54	6,960.10	-2,442.13	-3,567.50	3,586.57	2.17	-0.57	-2.10	
9,739.00	92.74	269.10	6,956.33	-2,442.42	-3,660.42	3,679.49	1.79	0.89	-1.55	
9,832.00	94.97	269.52	6,950.07	-2,443.54	-3,753.19	3,772.27	2.44	2.40	0.45	
9,925.00	95.39	269.83	6,941.68	-2,444.06	-3,845.81	3,864.89	0.56	0.45	0.33	
10,018.00	93.96	268.80	6,934.10	-2,445.17	-3,938.49	3,957.57	1.89	-1.54	-1.11	
10,110.00	94.71	269.77	6,927.14	-2,446.32	-4,030.22	4,049.31	1.33	0.82	1.05	
10,205.00	96.07	270.07	6,918.22	-2,446.45	-4,124.80	4,143.88	1.47	1.43	0.32	
10,299.00	95.34	269.18	6,908.88	-2,447.06	-4,218.33	4,237.42	1.22	-0.78	-0.95	
10,391.00	94.36	269.29	6,901.10	-2,448.29	-4,309.99	4,329.09	1.07	-1.07	0.12	
10,484.00	92.81	269.33	6,895.28	-2,449.40	-4,402.80	4,421.90	1.67	-1.67	0.04	
10,577.00	91.71	265.24	6,891.61	-2,453.81	-4,495.60	4,514.73	4.55	-1.18	-4.40	
10,669.00	94.35	267.17	6,886.75	-2,459.89	-4,587.26	4,606.44	3.55	2.87	2.10	
10,762.00	94.08	269.20	6,879.91	-2,462.82	-4,679.95	4,699.15	2.20	-0.29	2.18	
10,855.00	94.17	269.33	6,873.22	-2,464.01	-4,772.71	4,791.91	0.17	0.10	0.14	
10,949.00	94.44	269.11	6,866.17	-2,465.29	-4,866.43	4,885.64	0.37	0.29	-0.23	
11,041.00	92.72	268.44	6,860.42	-2,467.25	-4,958.23	4,977.45	2.01	-1.87	-0.73	
11,063.43	92.61	268.27	6,859.38	-2,467.90	-4,980.63	4,999.85	0.92	-0.51	-0.77	
<b>SBJ 13-13HZ 5000' VS</b>										
11,133.00	92.25	267.73	6,856.43	-2,470.32	-5,050.09	5,069.33	0.92	-0.51	-0.77	
11,227.00	91.18	266.63	6,853.62	-2,474.95	-5,143.93	5,163.21	1.63	-1.14	-1.17	
11,321.00	90.84	268.86	6,851.96	-2,478.65	-5,237.84	5,257.14	2.40	-0.36	2.37	
11,413.00	93.14	268.11	6,848.77	-2,481.08	-5,329.74	5,349.06	2.63	2.50	-0.82	
11,506.00	93.75	266.69	6,843.18	-2,485.29	-5,422.48	5,441.83	1.66	0.66	-1.53	
11,598.00	92.26	269.42	6,838.36	-2,488.40	-5,514.28	5,533.66	3.38	-1.62	2.97	
11,691.00	91.54	268.73	6,835.27	-2,489.90	-5,607.22	5,626.60	1.07	-0.77	-0.74	
11,785.00	95.23	272.99	6,829.72	-2,488.50	-5,701.01	5,720.38	5.99	3.93	4.53	
11,877.00	93.58	273.00	6,822.66	-2,483.71	-5,792.61	5,811.94	1.79	-1.79	0.01	
11,969.00	91.77	272.91	6,818.36	-2,478.97	-5,884.38	5,903.67	1.97	-1.97	-0.10	
12,062.00	90.93	272.64	6,816.17	-2,474.47	-5,977.25	5,996.50	0.95	-0.90	-0.29	
12,155.00	92.36	270.82	6,813.50	-2,471.66	-6,070.16	6,089.38	2.49	1.54	-1.96	
12,248.00	94.26	270.73	6,808.13	-2,470.41	-6,162.99	6,182.20	2.05	2.04	-0.10	

## Survey Report

<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-13HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,341.00	94.77	270.79	6,800.81	-2,469.18	-6,255.69	6,274.89	0.55	0.55	0.06	
12,433.00	94.92	270.74	6,793.04	-2,467.95	-6,347.36	6,366.54	0.17	0.16	-0.05	
12,525.00	95.06	270.12	6,785.04	-2,467.27	-6,439.01	6,458.18	0.69	0.15	-0.67	
12,618.00	93.28	270.21	6,778.28	-2,467.00	-6,531.75	6,550.93	1.92	-1.91	0.10	
12,711.00	94.50	269.95	6,771.97	-2,466.87	-6,624.54	6,643.71	1.34	1.31	-0.28	
12,803.00	93.62	269.19	6,765.45	-2,467.56	-6,716.30	6,735.48	1.26	-0.96	-0.83	
12,895.00	93.76	269.65	6,759.53	-2,468.49	-6,808.11	6,827.29	0.52	0.15	0.50	
12,987.00	94.51	269.56	6,752.90	-2,469.12	-6,899.87	6,919.05	0.82	0.82	-0.10	
13,080.00	95.66	271.81	6,744.65	-2,468.02	-6,992.49	7,011.65	2.71	1.24	2.42	
13,173.00	94.07	270.59	6,736.77	-2,466.08	-7,085.13	7,104.28	2.15	-1.71	-1.31	
13,267.00	93.56	269.86	6,730.51	-2,465.71	-7,178.92	7,198.06	0.95	-0.54	-0.78	
13,360.00	94.55	269.13	6,723.94	-2,466.52	-7,271.68	7,290.82	1.32	1.06	-0.78	
13,455.00	94.66	268.70	6,716.31	-2,468.32	-7,366.35	7,385.51	0.47	0.12	-0.45	
13,548.00	95.14	269.45	6,708.37	-2,469.81	-7,459.00	7,478.17	0.95	0.52	0.81	
13,642.00	95.56	269.50	6,699.60	-2,470.67	-7,552.59	7,571.76	0.45	0.45	0.05	
13,735.00	93.44	267.66	6,692.30	-2,472.97	-7,645.26	7,664.45	3.01	-2.28	-1.98	
13,827.00	92.43	266.88	6,687.59	-2,477.35	-7,737.04	7,756.25	1.39	-1.10	-0.85	
13,919.00	92.52	265.97	6,683.62	-2,483.08	-7,828.77	7,848.03	0.99	0.10	-0.99	
14,011.00	92.92	267.39	6,679.25	-2,488.40	-7,920.51	7,939.81	1.60	0.43	1.54	
14,104.00	93.89	268.65	6,673.73	-2,491.61	-8,013.29	8,032.61	1.71	1.04	1.35	
14,197.00	93.24	269.14	6,667.95	-2,493.40	-8,106.09	8,125.42	0.87	-0.70	0.53	
14,289.00	90.03	269.91	6,665.32	-2,494.16	-8,198.04	8,217.37	3.59	-3.49	0.84	
14,381.00	89.44	268.76	6,665.75	-2,495.23	-8,290.03	8,309.37	1.40	-0.64	-1.25	
14,474.00	89.56	268.16	6,666.56	-2,497.73	-8,382.99	8,402.35	0.66	0.13	-0.65	
14,568.00	91.24	269.02	6,665.90	-2,500.04	-8,476.95	8,496.33	2.01	1.79	0.91	
14,661.00	92.64	269.45	6,662.76	-2,501.28	-8,569.89	8,589.27	1.57	1.51	0.46	
14,754.00	92.28	268.10	6,658.76	-2,503.27	-8,662.78	8,682.17	1.50	-0.39	-1.45	
14,846.00	93.08	268.93	6,654.46	-2,505.65	-8,754.65	8,774.06	1.25	0.87	0.90	
14,939.00	93.08	268.65	6,649.47	-2,507.61	-8,847.49	8,866.91	0.30	0.00	-0.30	
15,031.00	93.20	268.09	6,644.43	-2,510.22	-8,939.32	8,958.76	0.62	0.13	-0.61	
15,124.00	94.29	269.86	6,638.35	-2,511.88	-9,032.10	9,051.55	2.23	1.17	1.90	
15,217.00	92.23	270.61	6,633.06	-2,511.50	-9,124.94	9,144.38	2.36	-2.22	0.81	
15,308.00	91.09	270.44	6,630.43	-2,510.67	-9,215.90	9,235.33	1.27	-1.25	-0.19	
15,401.00	90.33	270.14	6,629.27	-2,510.20	-9,308.89	9,328.32	0.88	-0.82	-0.32	
15,494.00	90.96	268.93	6,628.23	-2,510.95	-9,401.88	9,421.31	1.47	0.68	-1.30	
15,588.00	91.21	268.72	6,626.45	-2,512.88	-9,495.84	9,515.28	0.35	0.27	-0.22	
15,680.00	91.91	271.33	6,623.94	-2,512.84	-9,587.80	9,607.24	2.94	0.76	2.84	
15,774.00	92.59	271.47	6,620.25	-2,510.55	-9,681.70	9,701.12	0.74	0.72	0.15	
15,868.00	92.49	271.31	6,616.09	-2,508.27	-9,775.58	9,794.97	0.20	-0.11	-0.17	
15,961.00	93.19	271.27	6,611.48	-2,506.18	-9,868.44	9,887.82	0.75	0.75	-0.04	
16,053.00	93.62	270.99	6,606.01	-2,504.37	-9,960.26	9,979.62	0.56	0.47	-0.30	
16,145.00	93.48	270.12	6,600.32	-2,503.48	-10,052.08	10,071.43	0.96	-0.15	-0.95	
16,238.00	93.90	269.92	6,594.33	-2,503.44	-10,144.88	10,164.23	0.50	0.45	-0.22	
16,330.00	94.36	269.79	6,587.71	-2,503.68	-10,236.64	10,255.99	0.52	0.50	-0.14	

## Survey Report

<b>Company:</b> Occidental Petroleum	<b>Local Co-ordinate Reference:</b> Well SBJ 13-13HZ
<b>Project:</b> Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b> GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Site:</b> 4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b> GE 4859 + 20' KB @ 4879.00usft (PD 461)
<b>Well:</b> SBJ 13-13HZ	<b>North Reference:</b> True
<b>Wellbore:</b> Plan C	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Surveys	<b>Database:</b> EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,424.00	93.45	270.32	6,581.30	-2,503.59	-10,330.42	10,349.77	1.12	-0.97	0.56
16,518.00	92.08	270.73	6,576.77	-2,502.73	-10,424.31	10,443.64	1.52	-1.46	0.44
16,611.00	92.71	270.43	6,572.88	-2,501.78	-10,517.22	10,536.55	0.75	0.68	-0.32
16,704.00	93.42	270.26	6,567.91	-2,501.23	-10,610.09	10,629.40	0.78	0.76	-0.18
16,796.00	92.61	268.52	6,563.07	-2,502.20	-10,701.95	10,721.27	2.08	-0.88	-1.89
16,889.00	95.24	269.36	6,556.71	-2,503.92	-10,794.71	10,814.04	2.97	2.83	0.90
16,982.00	93.11	269.76	6,549.94	-2,504.63	-10,887.45	10,906.79	2.33	-2.29	0.43
17,075.00	93.74	269.75	6,544.38	-2,505.03	-10,980.28	10,999.62	0.68	0.68	-0.01
17,168.00	93.93	268.50	6,538.16	-2,506.45	-11,073.06	11,092.41	1.36	0.20	-1.34
17,260.00	94.60	268.79	6,531.32	-2,508.62	-11,164.78	11,184.14	0.79	0.73	0.32
17,346.00	95.14	268.39	6,524.02	-2,510.73	-11,250.44	11,269.82	0.78	0.63	-0.47
<b>Last Survey Reported</b>									
17,402.00	95.14	268.39	6,519.00	-2,512.29	-11,306.20	11,325.58	0.00	0.00	0.00
<b>BHL - 17402.00' MD - 424' FWL / 587' FSL - SBJ 13-13HZ BHL</b>									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
15.00	15.00	0.00	0.00	KB Adjusted	
17,346.00	6,524.02	-2,510.73	-11,250.44	Last Survey Reported	
17,402.00	6,519.00	-2,512.29	-11,306.20	BHL - 17402.00' MD - 424' FWL / 587' FSL	

Checked By: _____	Approved By: _____	Date: _____
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