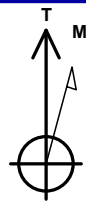


# Occidental Petroleum

Project: Weld County, CO (UTM-NAD83)  
 Site: 4N-68W-11 (S&B 5-11HZ Pad)  
 Well: Bake 11-24HZ  
 Wellbore: OH  
 Design: OH



Azimuths to True North  
 Magnetic North: 7.98°

Magnetic Field  
 Strength: 51922.4nT  
 Dip Angle: 66.58°  
 Date: 3/8/2021  
 Model: IGRF2020

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)

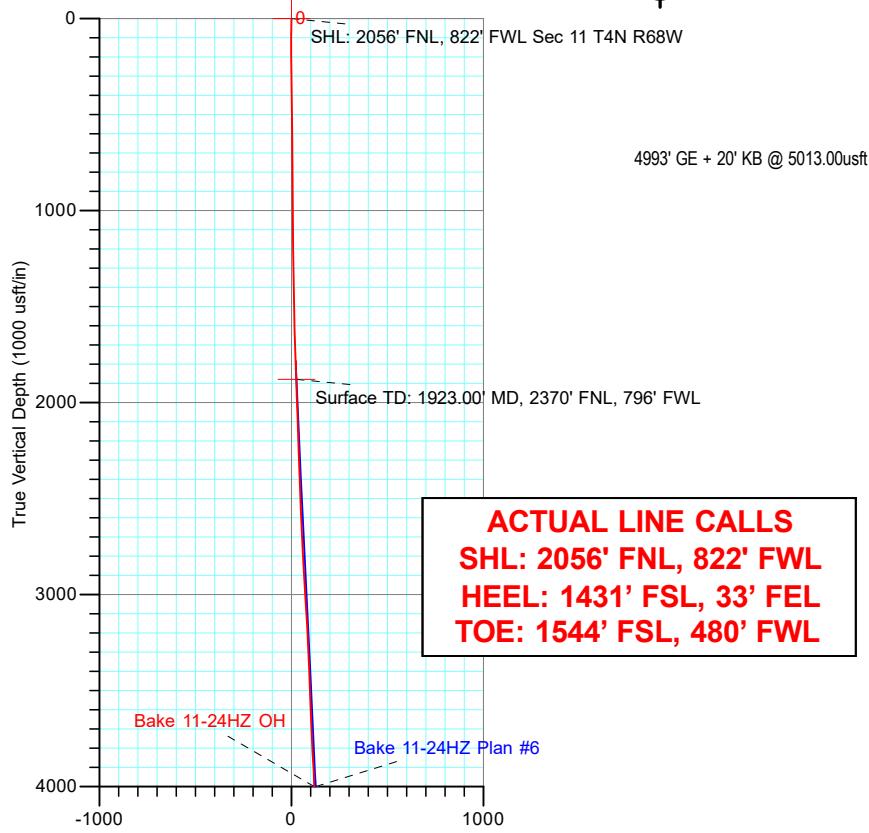


## DESIGN TARGET DETAILS

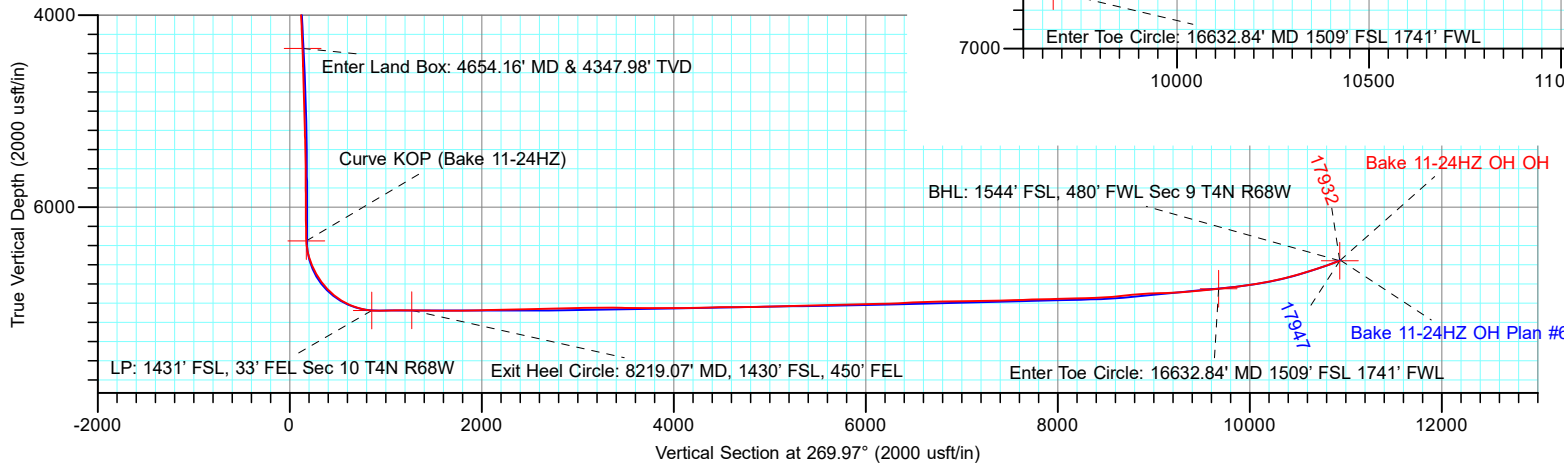
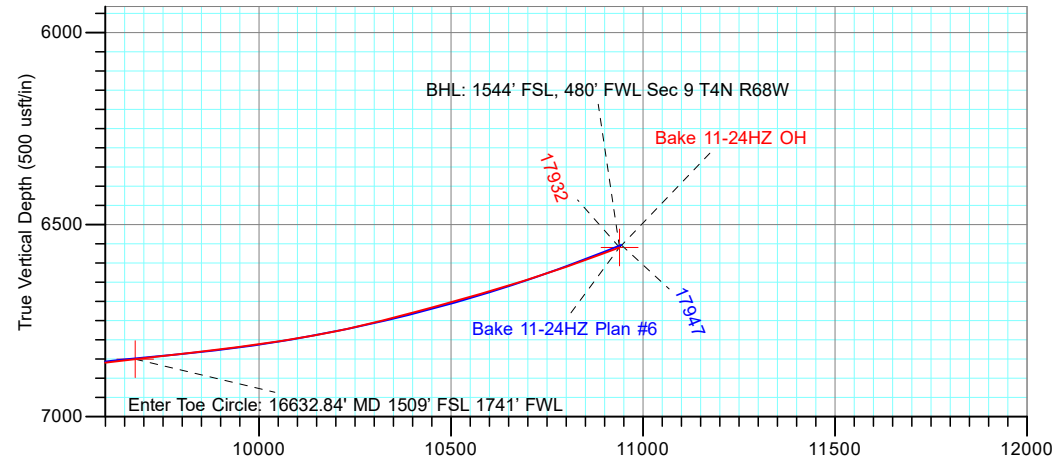
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL: 1544' FSL, 480' FWL Sec 9 T4N R68W	6559.64	-1863.18	-10938.38	40.324756	-105.016071
Curve KOP (Bake 11-24HZ)	6353.31	-1856.54	-171.95	40.324781	-104.977443
Enter Land Box: 4654.16' MD & 4347.98' TVD	4347.98	-1475.78	-133.35	40.325826	-104.977304
Enter Toe Circle: 16632.84' MD 1509' FSL 1741' FWL	6850.58	-1864.63	-9676.87	40.324753	-105.011545
Exit Heel Circle: 8219.07' MD, 1430' FSL, 450' FEL	7075.79	-1847.74	-1270.67	40.324805	-104.981385
LP: 1431' FSL, 33' FEL Sec 10 T4N R68W	7077.44	-1848.04	-853.70	40.324804	-104.979889
SHL: 2056' FNL, 822' FWL Sec 11 T4N R68W	0.00	0.00	0.00	40.329879	-104.976826
Surface TD: 1923.00' MD, 2370' FNL, 796' FWL	1879.89	-314.41	-26.28	40.329016	-104.976920

## ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1923.00	21.45	185.00	1880.01	-314.14	-26.05	26.22	316.46	Surface TD
4654.16	25.26	184.21	4347.98	-1475.78	-133.35	134.12	1483.92	Enter Land Box
6720.00	3.63	255.16	6353.31	-1856.54	-171.95	172.92	1871.27	KOP
7802.00	86.76	270.94	7077.44	-1848.04	-853.70	854.66	2552.29	LP 1431' FSL, 33' FEL (40.324804, -104.979889)
8219.07	89.73	268.67	7075.79	-1847.74	-1270.67	1271.64	2969.29	Exit Heel Circle
16632.84	96.59	268.85	6850.58	-1864.63	-9676.87	9677.84	11376.97	Enter Toe Circle
17932.00	110.42	269.85	6559.64	-1863.18	-10938.38	10939.35	12638.69	BHL 1544' FSL, 480' FWL (40.324756, -105.016071)



**ACTUAL LINE CALLS**  
**SHL: 2056' FNL, 822' FWL**  
**HEEL: 1431' FSL, 33' FEL**  
**TOE: 1544' FSL, 480' FWL**



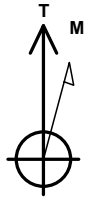
**TOTAL DIRECTIONAL SERVICES LLC**  
 671 Academy Ct, Windsor, CO 80550  
 Phone: (970) 460-9402

Design: OH (Bake 11-24HZ/OH)  
 4N-68W-11 (S&B 5-11HZ Pad)  
 Created By: Dustin Ault Date: 11:47, August 17 2021  
 Date: \_\_\_\_\_  
 Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# Occidental Petroleum

Project: Weld County, CO (UTM-NAD83)  
 Site: 4N-68W-11 (S&B 5-11HZ Pad)  
 Well: Bake 11-24HZ  
 Wellbore: OH  
 Design: OH

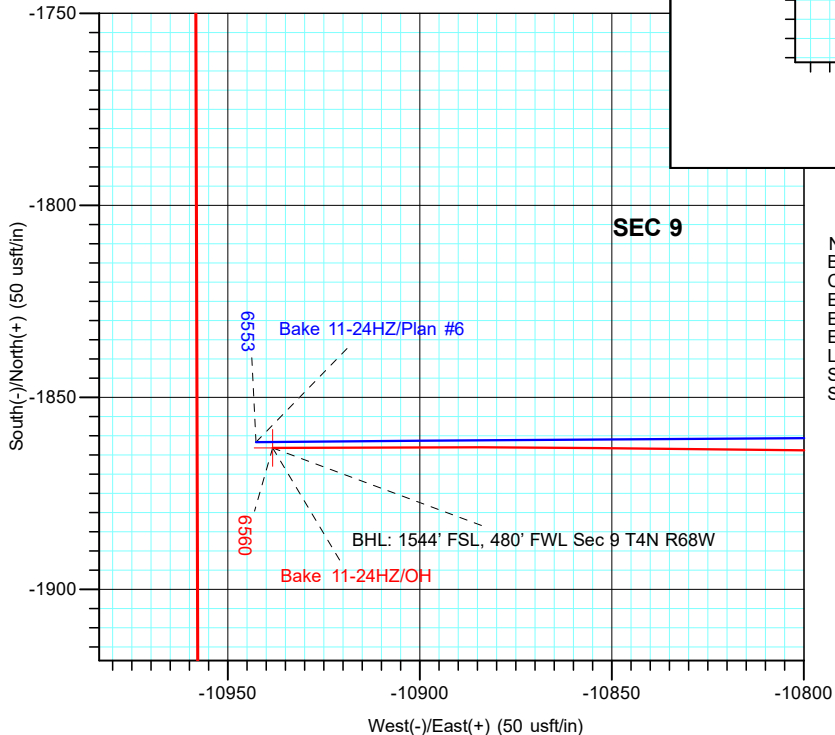
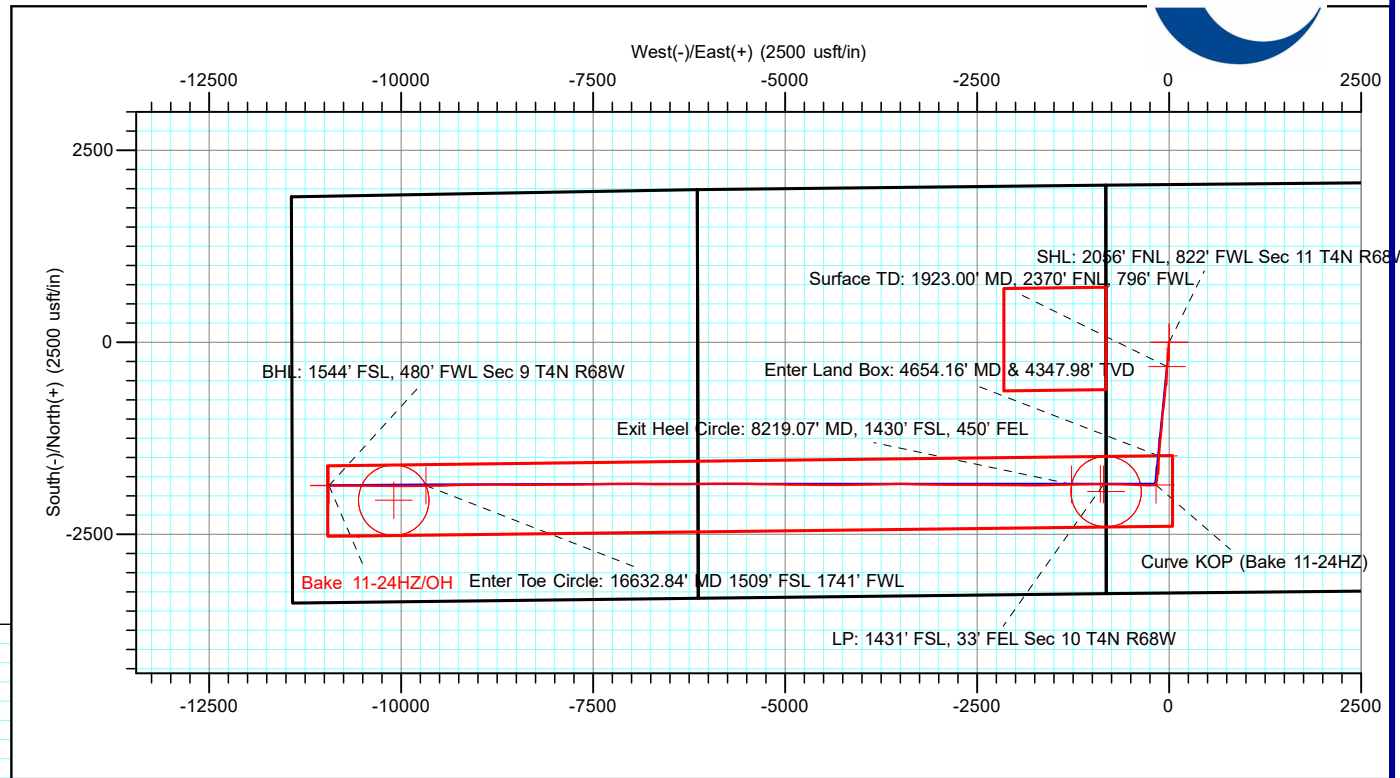
PROJECT DETAILS: Weld County, CO (UTM-NAD83)  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Zone 13N (108 W to 102 W)



Azimuths to True North  
 Magnetic North: 7.98°

Magnetic Field  
 Strength: 51922.4nT  
 Dip Angle: 66.58°  
 Date: 3/8/2021  
 Model: IGRF2020

**ACTUAL LINE CALLS**  
**SHL: 2056' FNL, 822' FWL**  
**HEEL: 1431' FSL, 33' FEL**  
**TOE: 1544' FSL, 480' FWL**



### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL: 1544' FSL, 480' FWL Sec 9 T4N R68W	6559.64	-1863.18	-10938.38	14644993.98	1635937.34	40.324756	-105.016071
Curve KOP (Bake 11-24HZ)	6353.31	-1856.54	-171.95	14645003.44	1646703.76	40.324781	-104.977443
Enter Land Box: 4654.16' MD & 4347.98' TVD	4347.98	-1475.78	-133.35	14645384.21	1646742.27	40.325826	-104.977304
Enter Toe Circle: 16632.84' MD 1509' FSL 1741' FWL	6850.58	-1864.63	-9676.87	14644992.86	1637198.85	40.324753	-105.011545
Exit Heel Circle: 8219.07' MD, 1430' FSL, 450' FEL	7075.79	-1847.74	-1270.67	14645011.95	1645605.04	40.324805	-104.981385
LP: 1431' FSL, 33' FEL Sec 10 T4N R68W	7077.44	-1848.04	-853.70	14645011.76	1646022.02	40.324804	-104.979889
SHL: 2056' FNL, 822' FWL Sec 11 T4N R68W	0.00	0.00	0.00	14646860.03	1646875.23	40.329879	-104.976826
Surface TD: 1923.00' MD, 2370' FNL, 796' FWL	1879.89	-314.41	-26.28	14646545.61	1646849.03	40.329016	-104.976920

### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1923.00	21.45	185.00	1880.01	-314.14	-26.05	26.22	316.46	Surface TD
4654.16	25.26	184.21	4347.98	-1475.78	-133.35	134.12	1483.92	Enter Land Box
6720.00	3.63	255.16	6353.31	-1856.54	-171.95	172.92	1871.27	KOP
7802.00	86.76	270.94	7077.44	-1848.04	-853.70	854.66	2552.29	LP 1431' FSL, 33' FEL (40.324804, -104.979889)
8219.07	89.73	268.67	7075.79	-1847.74	-1270.67	1271.64	2969.29	Exit Heel Circle
16632.84	96.59	268.85	6850.58	-1864.63	-9676.87	9677.84	11376.97	Enter Toe Circle
17932.00	110.42	269.85	6559.64	-1863.18	-10938.38	10939.35	12638.69	BHL 1544' FSL, 480' FWL (40.324756, -105.016071)



**TOTAL DIRECTIONAL SERVICES LLC**  
 671 Academy Ct, Windsor, CO 80550  
 Phone: (970) 460-9402

Design: OH (Bake 11-24HZ/OH)  
 4N-68W-11 (S&B 5-11HZ Pad)  
 Created By: Dustin Ault  
 Date: 11:55, August 17 2021  
 Approved: \_\_\_\_\_ Date: \_\_\_\_\_



# Occidental Petroleum

Weld County, CO (UTM-NAD83)

4N-68W-11 (S&B 5-11HZ Pad)

Bake 11-24HZ

OH

Design: OH

## Standard Survey Report

17 August, 2021





# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Bake 11-24HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Site:</b>	4N-68W-11 (S&B 5-11HZ Pad)	<b>MD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Well:</b>	Bake 11-24HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.15 Single User Db

<b>Project</b>	Weld County, CO (UTM-NAD83)		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<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-11 (S&B 5-11HZ Pad)				
<b>Site Position:</b>		<b>Northing:</b>	14,647,020.58 usft	<b>Latitude:</b>	40.330320
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,646,741.13 usft	<b>Longitude:</b>	-104.977307
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.01 °

<b>Well</b>	Bake 11-24HZ					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	14,646,860.02 usft	<b>Latitude:</b>	40.329879
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,646,875.23 usft	<b>Longitude:</b>	-104.976826
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	4,993.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	3/8/2021	7.98	66.58	51,922.37413810

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	269.97	

<b>Survey Program</b>	<b>Date</b>	8/17/2021			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
97.00	1,858.00	Survey #1 - MWD+IFR (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,858.00	17,874.00	Survey #2 - MWD+IFR+MS (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	
17,932.00	17,932.00	Survey #3 - Proj to TD (OH)	APC_BLIND	OWSG BLIND	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Bake 11-24HZ - 460' Circle 2 - SHL: 2056' FNL, 822' FWL Sec 11 T4N R68W</b>										
97.00	0.32	83.76	97.00	0.03	0.27	-0.27	0.33	0.33	0.00	
180.00	0.39	238.09	180.00	-0.09	0.26	-0.26	0.83	0.08	185.94	
265.00	0.44	231.59	265.00	-0.45	-0.24	0.24	0.08	0.06	-7.65	
354.00	1.79	207.03	353.98	-1.90	-1.14	1.14	1.58	1.52	-27.60	
444.00	1.43	203.80	443.94	-4.18	-2.23	2.24	0.41	-0.40	-3.59	
534.00	2.87	197.01	533.88	-7.36	-3.35	3.35	1.62	1.60	-7.54	
624.00	3.06	187.56	623.76	-11.90	-4.32	4.33	0.58	0.21	-10.50	



# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Bake 11-24HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Site:</b>	4N-68W-11 (S&B 5-11HZ Pad)	<b>MD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Well:</b>	Bake 11-24HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.15 Single User Db

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)	
714.00	4.67	188.58	713.55	-17.90	-5.18	5.19	1.79	1.79	1.13	
804.00	6.30	186.71	803.13	-26.43	-6.31	6.32	1.82	1.81	-2.08	
894.00	7.80	183.18	892.45	-37.43	-7.22	7.24	1.73	1.67	-3.92	
984.00	9.46	181.32	981.43	-50.93	-7.73	7.76	1.87	1.84	-2.07	
1,074.00	10.48	180.66	1,070.07	-66.51	-8.00	8.03	1.14	1.13	-0.73	
1,163.00	11.81	182.74	1,157.39	-83.70	-8.53	8.57	1.56	1.49	2.34	
1,253.00	14.18	182.21	1,245.08	-103.92	-9.39	9.45	2.64	2.63	-0.59	
1,343.00	13.80	184.10	1,332.41	-125.64	-10.58	10.65	0.66	-0.42	2.10	
1,433.00	16.46	185.01	1,419.28	-149.05	-12.46	12.54	2.97	2.96	1.01	
1,523.00	16.24	185.38	1,505.64	-174.28	-14.76	14.85	0.27	-0.24	0.41	
1,613.00	18.86	183.28	1,591.45	-201.34	-16.77	16.88	2.99	2.91	-2.33	
1,703.00	21.97	184.52	1,675.78	-232.65	-18.93	19.05	3.49	3.46	1.38	
1,792.00	21.76	184.46	1,758.38	-265.70	-21.53	21.66	0.24	-0.24	-0.07	
1,858.00	22.00	185.94	1,819.63	-290.19	-23.76	23.91	0.91	0.36	2.24	
1,923.00	21.45	185.00	1,880.01	-314.14	-26.05	26.22	1.00	-0.84	-1.45	
<b>Surface TD - Surface TD: 1923.00' MD, 2370' FNL, 796' FWL</b>										
2,011.00	20.72	183.65	1,962.12	-345.71	-28.44	28.63	1.00	-0.83	-1.53	
2,104.00	21.68	184.65	2,048.82	-379.25	-30.88	31.08	1.10	1.03	1.08	
2,197.00	23.57	185.31	2,134.66	-414.89	-34.00	34.22	2.05	2.03	0.71	
2,290.00	26.65	183.70	2,218.86	-454.22	-37.07	37.30	3.39	3.31	-1.73	
2,383.00	27.02	182.63	2,301.85	-496.14	-39.38	39.64	0.65	0.40	-1.15	
2,475.00	26.96	185.41	2,383.83	-537.78	-42.31	42.59	1.37	-0.07	3.02	
2,569.00	26.76	184.80	2,467.69	-580.08	-46.09	46.39	0.36	-0.21	-0.65	
2,663.00	24.37	184.12	2,552.48	-620.52	-49.25	49.58	2.56	-2.54	-0.72	
2,755.00	24.84	185.46	2,636.13	-658.69	-52.45	52.80	0.79	0.51	1.46	
2,848.00	25.65	186.28	2,720.25	-698.14	-56.51	56.88	0.95	0.87	0.88	
2,941.00	25.26	186.21	2,804.22	-737.87	-60.86	61.25	0.42	-0.42	-0.08	
3,035.00	24.34	186.32	2,889.55	-777.07	-65.16	65.57	0.98	-0.98	0.12	
3,129.00	24.67	186.75	2,975.08	-815.80	-69.60	70.03	0.40	0.35	0.46	
3,222.00	24.93	189.44	3,059.51	-854.41	-75.10	75.55	1.24	0.28	2.89	
3,314.00	25.50	187.23	3,142.74	-893.19	-80.77	81.24	1.20	0.62	-2.40	
3,407.00	25.31	187.86	3,226.75	-932.74	-86.01	86.50	0.36	-0.20	0.68	
3,500.00	25.68	182.71	3,310.70	-972.57	-89.68	90.19	2.42	0.40	-5.54	
3,592.00	26.68	183.21	3,393.26	-1,013.10	-91.78	92.31	1.11	1.09	0.54	
3,685.00	28.79	183.95	3,475.58	-1,056.29	-94.49	95.05	2.30	2.27	0.80	
3,779.00	27.91	185.10	3,558.30	-1,100.79	-98.01	98.58	1.10	-0.94	1.22	
3,873.00	28.11	184.41	3,641.29	-1,144.78	-101.67	102.27	0.41	0.21	-0.73	
3,966.00	26.46	186.59	3,723.94	-1,187.21	-105.73	106.35	2.07	-1.77	2.34	
4,058.00	23.96	184.86	3,807.17	-1,226.19	-109.66	110.31	2.83	-2.72	-1.88	
4,152.00	23.75	187.77	3,893.15	-1,263.97	-113.84	114.50	1.27	-0.22	3.10	
4,244.00	25.60	184.78	3,976.75	-1,302.13	-118.00	118.68	2.43	2.01	-3.25	
4,336.00	24.62	184.53	4,060.05	-1,341.05	-121.17	121.87	1.07	-1.07	-0.27	
4,430.00	26.83	186.03	4,144.73	-1,381.67	-124.95	125.67	2.45	2.35	1.60	



# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Bake 11-24HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Site:</b>	4N-68W-11 (S&B 5-11HZ Pad)	<b>MD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Well:</b>	Bake 11-24HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.15 Single User Db

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)	
4,523.00	23.81	184.95	4,228.79	-1,421.25	-128.77	129.52	3.28	-3.25	-1.16	
4,616.00	25.09	184.87	4,313.44	-1,459.60	-132.07	132.83	1.38	1.38	-0.09	
4,654.16	25.26	184.21	4,347.98	-1,475.78	-133.35	134.12	0.86	0.45	-1.73	
<b>Enter Land Box - Enter Land Box: 4654.16' MD &amp; 4347.98' TVD</b>										
4,709.00	25.51	183.28	4,397.52	-1,499.24	-134.89	135.67	0.86	0.46	-1.70	
4,801.00	26.94	184.18	4,480.05	-1,539.81	-137.54	138.35	1.61	1.55	0.98	
4,895.00	25.28	182.99	4,564.46	-1,581.09	-140.14	140.97	1.85	-1.77	-1.27	
5,013.00	21.39	181.39	4,672.79	-1,627.78	-141.98	142.83	3.34	-3.30	-1.36	
5,105.00	18.69	184.03	4,759.21	-1,659.26	-143.42	144.29	3.09	-2.93	2.87	
5,201.00	16.36	189.30	4,850.75	-1,687.96	-146.68	147.57	2.93	-2.43	5.49	
5,293.00	16.40	187.91	4,939.02	-1,713.61	-150.57	151.46	0.43	0.04	-1.51	
5,385.00	13.23	187.42	5,027.95	-1,736.92	-153.71	154.62	3.45	-3.45	-0.53	
5,478.00	13.29	185.91	5,118.47	-1,758.10	-156.19	157.11	0.38	0.06	-1.62	
5,571.00	11.66	184.12	5,209.27	-1,778.11	-157.96	158.90	1.80	-1.75	-1.92	
5,664.00	10.61	187.90	5,300.52	-1,795.96	-159.82	160.76	1.37	-1.13	4.06	
5,756.00	8.21	188.70	5,391.28	-1,810.85	-161.97	162.92	2.61	-2.61	0.87	
5,849.00	6.94	189.41	5,483.46	-1,822.96	-163.90	164.85	1.37	-1.37	0.76	
5,942.00	4.94	185.18	5,575.96	-1,832.49	-165.18	166.14	2.20	-2.15	-4.55	
6,036.00	3.75	189.50	5,669.69	-1,839.55	-166.05	167.01	1.31	-1.27	4.60	
6,130.00	3.31	183.95	5,763.51	-1,845.29	-166.75	167.71	0.59	-0.47	-5.90	
6,222.00	1.23	190.02	5,855.43	-1,848.91	-167.10	168.07	2.27	-2.26	6.60	
6,316.00	1.28	181.01	5,949.41	-1,850.96	-167.29	168.26	0.22	0.05	-9.59	
6,408.00	1.46	181.34	6,041.38	-1,853.15	-167.34	168.31	0.20	0.20	0.36	
6,501.00	0.94	282.48	6,134.37	-1,854.17	-168.11	169.08	2.02	-0.56	108.75	
6,593.00	0.98	223.54	6,226.36	-1,854.58	-169.39	170.36	1.03	0.04	-64.07	
6,686.00	1.33	221.35	6,319.34	-1,855.97	-170.65	171.62	0.38	0.38	-2.35	
6,720.00	3.63	255.16	6,353.31	-1,856.54	-171.95	172.92	7.72	6.75	99.45	
<b>KOP - Curve KOP (Bake 11-24HZ)</b>										
6,779.00	8.10	264.31	6,411.99	-1,857.43	-177.89	178.87	7.72	7.58	15.50	
6,872.00	15.13	269.34	6,503.03	-1,858.22	-196.57	197.55	7.63	7.56	5.41	
6,966.00	22.04	265.87	6,592.07	-1,859.63	-226.47	227.44	7.44	7.35	-3.69	
7,058.00	27.77	271.41	6,675.50	-1,860.35	-265.15	266.12	6.72	6.23	6.02	
7,152.00	34.28	273.32	6,756.01	-1,858.28	-313.52	314.49	7.00	6.93	2.03	
7,244.00	40.98	271.93	6,828.83	-1,855.76	-369.60	370.57	7.34	7.28	-1.51	
7,336.00	47.63	272.37	6,894.63	-1,853.33	-433.78	434.75	7.24	7.23	0.48	
7,429.00	55.78	270.92	6,952.22	-1,851.29	-506.68	507.64	8.85	8.76	-1.56	
7,522.00	62.97	272.04	6,999.56	-1,849.20	-586.62	587.59	7.80	7.73	1.20	
7,615.00	70.35	269.76	7,036.39	-1,847.90	-671.94	672.90	8.25	7.94	-2.45	
7,708.00	75.95	269.54	7,063.33	-1,848.45	-760.91	761.87	6.03	6.02	-0.24	
7,802.00	86.76	270.94	7,077.44	-1,848.04	-853.70	854.66	11.59	11.50	1.49	
<b>LP 1431' FSL, 33' FEL (40.324804, -104.979889) - LP: 1431' FSL, 33' FEL Sec 10 T4N R68W</b>										
7,843.69	88.74	270.81	7,079.08	-1,847.41	-895.34	896.31	4.75	4.74	-0.30	
<b>LP (Bake 11-24HZ)</b>										
7,894.00	91.12	270.66	7,079.14	-1,846.76	-945.65	946.62	4.75	4.74	-0.30	



# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Bake 11-24HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Site:</b>	4N-68W-11 (S&B 5-11HZ Pad)	<b>MD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Well:</b>	Bake 11-24HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.15 Single User Db

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)	
7,987.00	91.35	270.13	7,077.14	-1,846.12	-1,038.63	1,039.59	0.62	0.25	-0.57	
8,081.00	90.00	269.92	7,076.03	-1,846.08	-1,132.62	1,133.58	1.45	-1.44	-0.22	
8,173.00	90.29	269.12	7,075.80	-1,846.85	-1,224.61	1,225.58	0.92	0.32	-0.87	
8,219.07	89.73	268.67	7,075.79	-1,847.74	-1,270.67	1,271.64	1.57	-1.23	-0.98	
<b>Exit Heel Circle - Exit Heel Circle: 8219.07' MD, 1430' FSL, 450' FEL</b>										
8,266.00	89.15	268.21	7,076.25	-1,849.02	-1,317.58	1,318.55	1.57	-1.23	-0.98	
8,359.00	89.76	266.88	7,077.14	-1,853.00	-1,410.49	1,411.46	1.57	0.66	-1.43	
8,451.00	88.59	267.04	7,078.46	-1,857.88	-1,502.35	1,503.32	1.28	-1.27	0.17	
8,543.00	89.92	269.66	7,079.66	-1,860.53	-1,594.29	1,595.27	3.19	1.45	2.85	
8,636.00	89.55	268.72	7,080.09	-1,861.84	-1,687.28	1,688.26	1.09	-0.40	-1.01	
8,728.00	92.06	270.82	7,078.80	-1,862.21	-1,779.26	1,780.24	3.56	2.73	2.28	
8,822.00	91.09	271.15	7,076.21	-1,860.59	-1,873.21	1,874.18	1.09	-1.03	0.35	
8,915.00	91.24	269.63	7,074.32	-1,859.96	-1,966.19	1,967.16	1.64	0.16	-1.63	
9,009.00	91.01	271.56	7,072.48	-1,858.99	-2,060.16	2,061.13	2.07	-0.24	2.05	
9,101.00	91.16	270.47	7,070.73	-1,857.36	-2,152.13	2,153.10	1.20	0.16	-1.18	
9,195.00	91.48	269.38	7,068.57	-1,857.48	-2,246.10	2,247.07	1.21	0.34	-1.16	
9,289.00	91.37	271.22	7,066.23	-1,856.99	-2,340.06	2,341.04	1.96	-0.12	1.96	
9,381.00	91.79	270.42	7,063.69	-1,855.67	-2,432.02	2,432.99	0.98	0.46	-0.87	
9,474.00	90.40	270.73	7,061.92	-1,854.74	-2,525.00	2,525.97	1.53	-1.49	0.33	
9,567.00	90.86	270.31	7,060.89	-1,853.89	-2,617.99	2,618.96	0.67	0.49	-0.45	
9,660.00	91.20	270.15	7,059.22	-1,853.52	-2,710.97	2,711.94	0.40	0.37	-0.17	
9,753.00	91.38	270.35	7,057.13	-1,853.12	-2,803.95	2,804.92	0.29	0.19	0.22	
9,848.00	91.22	269.82	7,054.97	-1,852.97	-2,898.92	2,899.89	0.58	-0.17	-0.56	
9,942.00	92.38	269.96	7,052.02	-1,853.15	-2,992.87	2,993.84	1.24	1.23	0.15	
10,036.00	92.31	271.34	7,048.17	-1,852.09	-3,086.79	3,087.75	1.47	-0.07	1.47	
10,128.00	90.57	271.98	7,045.86	-1,849.42	-3,178.71	3,179.68	2.02	-1.89	0.70	
10,222.00	89.31	272.39	7,045.96	-1,845.84	-3,272.64	3,273.61	1.41	-1.34	0.44	
10,316.00	88.91	271.68	7,047.42	-1,842.50	-3,366.57	3,367.54	0.87	-0.43	-0.76	
10,409.00	88.45	270.83	7,049.56	-1,840.47	-3,459.52	3,460.49	1.04	-0.49	-0.91	
10,501.00	89.82	268.23	7,050.95	-1,841.22	-3,551.50	3,552.46	3.19	1.49	-2.83	
10,596.00	89.09	267.72	7,051.86	-1,844.58	-3,646.44	3,647.40	0.94	-0.77	-0.54	
10,689.00	90.24	269.50	7,052.40	-1,846.83	-3,739.40	3,740.37	2.28	1.24	1.91	
10,782.00	89.40	268.75	7,052.69	-1,848.25	-3,832.39	3,833.36	1.21	-0.90	-0.81	
10,875.00	90.11	268.91	7,053.09	-1,850.15	-3,925.37	3,926.34	0.78	0.76	0.17	
10,968.00	89.84	268.46	7,053.13	-1,852.29	-4,018.34	4,019.31	0.56	-0.29	-0.48	
11,061.00	91.15	269.42	7,052.33	-1,854.01	-4,111.32	4,112.29	1.75	1.41	1.03	
11,153.00	91.68	268.96	7,050.05	-1,855.31	-4,203.28	4,204.25	0.76	0.58	-0.50	
11,246.00	91.59	268.64	7,047.40	-1,857.26	-4,296.22	4,297.20	0.36	-0.10	-0.34	
11,339.00	91.30	271.80	7,045.06	-1,856.90	-4,389.18	4,390.15	3.41	-0.31	3.40	
11,432.00	90.64	270.85	7,043.48	-1,854.75	-4,482.14	4,483.11	1.24	-0.71	-1.02	
11,524.00	90.36	270.85	7,042.68	-1,853.38	-4,574.13	4,575.10	0.30	-0.30	0.00	
11,617.00	90.29	270.74	7,042.15	-1,852.09	-4,667.12	4,668.09	0.14	-0.08	-0.12	
11,709.00	90.08	269.82	7,041.85	-1,851.64	-4,759.11	4,760.08	1.03	-0.23	-1.00	
11,802.00	91.52	270.26	7,040.55	-1,851.58	-4,852.10	4,853.07	1.62	1.55	0.47	



# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Bake 11-24HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Site:</b>	4N-68W-11 (S&B 5-11HZ Pad)	<b>MD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Well:</b>	Bake 11-24HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.15 Single User Db

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)	
11,894.00	91.77	270.48	7,037.91	-1,850.98	-4,944.06	4,945.03	0.36	0.27	0.24	
11,987.00	91.21	270.87	7,035.50	-1,849.89	-5,037.02	5,037.99	0.73	-0.60	0.42	
12,081.00	91.14	271.37	7,033.57	-1,848.05	-5,130.99	5,131.95	0.54	-0.07	0.53	
12,175.00	91.20	270.21	7,031.65	-1,846.76	-5,224.96	5,225.92	1.24	0.06	-1.23	
12,267.00	91.59	271.37	7,029.41	-1,845.49	-5,316.92	5,317.88	1.33	0.42	1.26	
12,360.00	91.58	270.96	7,026.84	-1,843.60	-5,409.86	5,410.83	0.44	-0.01	-0.44	
12,454.00	91.94	271.73	7,023.95	-1,841.39	-5,503.79	5,504.76	0.90	0.38	0.82	
12,546.00	91.74	270.30	7,021.00	-1,839.76	-5,595.73	5,596.69	1.57	-0.22	-1.55	
12,638.00	91.44	270.36	7,018.44	-1,839.23	-5,687.69	5,688.65	0.33	-0.33	0.07	
12,730.00	91.51	270.06	7,016.07	-1,838.90	-5,779.66	5,780.62	0.33	0.08	-0.33	
12,824.00	91.42	268.97	7,013.67	-1,839.69	-5,873.62	5,874.59	1.16	-0.10	-1.16	
12,917.00	91.19	269.30	7,011.55	-1,841.10	-5,966.59	5,967.55	0.43	-0.25	0.35	
13,010.00	91.39	269.90	7,009.46	-1,841.75	-6,059.56	6,060.53	0.68	0.22	0.65	
13,102.00	91.15	269.00	7,007.42	-1,842.63	-6,151.54	6,152.50	1.01	-0.26	-0.98	
13,196.00	91.26	269.39	7,005.44	-1,843.95	-6,245.51	6,246.47	0.43	0.12	0.41	
13,288.00	92.08	268.66	7,002.76	-1,845.51	-6,337.45	6,338.42	1.19	0.89	-0.79	
13,381.00	94.17	268.89	6,997.69	-1,847.50	-6,430.29	6,431.25	2.26	2.25	0.25	
13,474.00	92.84	271.05	6,992.01	-1,847.55	-6,523.11	6,524.07	2.72	-1.43	2.32	
13,569.00	92.18	270.16	6,987.85	-1,846.54	-6,618.01	6,618.97	1.17	-0.69	-0.94	
13,661.00	91.02	270.51	6,985.28	-1,846.01	-6,709.97	6,710.93	1.32	-1.26	0.38	
13,755.00	92.30	271.43	6,982.55	-1,844.42	-6,803.91	6,804.88	1.68	1.36	0.98	
13,847.00	88.40	271.03	6,981.99	-1,842.44	-6,895.87	6,896.84	4.26	-4.24	-0.43	
13,940.00	91.07	270.39	6,982.42	-1,841.29	-6,988.85	6,989.82	2.95	2.87	-0.69	
14,033.00	91.42	270.24	6,980.40	-1,840.78	-7,081.83	7,082.79	0.41	0.38	-0.16	
14,125.00	91.29	270.03	6,978.23	-1,840.56	-7,173.80	7,174.77	0.27	-0.14	-0.23	
14,218.00	91.37	268.87	6,976.07	-1,841.45	-7,266.77	7,267.74	1.25	0.09	-1.25	
14,311.00	91.54	269.19	6,973.71	-1,843.03	-7,359.73	7,360.69	0.39	0.18	0.34	
14,404.00	91.44	268.80	6,971.29	-1,844.66	-7,452.68	7,453.65	0.43	-0.11	-0.42	
14,497.00	91.35	269.01	6,969.02	-1,846.44	-7,545.64	7,546.61	0.25	-0.10	0.23	
14,590.00	91.69	268.87	6,966.56	-1,848.16	-7,638.59	7,639.56	0.40	0.37	-0.15	
14,682.00	91.80	268.70	6,963.76	-1,850.11	-7,730.53	7,731.50	0.22	0.12	-0.18	
14,775.00	91.41	270.28	6,961.15	-1,850.93	-7,823.48	7,824.45	1.75	-0.42	1.70	
14,868.00	91.70	269.51	6,958.63	-1,851.10	-7,916.45	7,917.42	0.88	0.31	-0.83	
14,962.00	91.55	269.91	6,955.96	-1,851.58	-8,010.41	8,011.38	0.45	-0.16	0.43	
15,148.00	91.09	268.38	6,951.68	-1,854.35	-8,196.33	8,197.30	0.86	-0.25	-0.82	
15,240.00	92.45	270.90	6,948.83	-1,854.93	-8,288.28	8,289.25	3.11	1.48	2.74	
15,335.00	92.95	270.42	6,944.36	-1,853.84	-8,383.17	8,384.14	0.73	0.53	-0.51	
15,428.00	92.35	270.06	6,940.06	-1,853.45	-8,476.07	8,477.03	0.75	-0.65	-0.39	
15,520.00	94.99	271.43	6,934.17	-1,852.26	-8,567.86	8,568.83	3.23	2.87	1.49	
15,613.00	97.05	269.78	6,924.42	-1,851.28	-8,660.33	8,661.30	2.83	2.22	-1.77	
15,707.00	95.44	271.45	6,914.19	-1,850.27	-8,753.76	8,754.73	2.46	-1.71	1.78	
15,801.00	94.50	270.89	6,906.05	-1,848.36	-8,847.39	8,848.36	1.16	-1.00	-0.60	
15,894.00	92.05	268.81	6,900.73	-1,848.61	-8,940.22	8,941.19	3.45	-2.63	-2.24	



# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Bake 11-24HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Site:</b>	4N-68W-11 (S&B 5-11HZ Pad)	<b>MD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Well:</b>	Bake 11-24HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.15 Single User Db

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)	
15,986.00	91.77	268.48	6,897.67	-1,850.78	-9,032.15	9,033.11	0.47	-0.30	-0.36	
16,079.00	92.05	268.78	6,894.57	-1,853.00	-9,125.07	9,126.04	0.44	0.30	0.32	
16,170.00	93.20	268.70	6,890.40	-1,855.00	-9,215.95	9,216.92	1.27	1.26	-0.09	
16,263.00	94.17	267.14	6,884.42	-1,858.37	-9,308.69	9,309.66	1.97	1.04	-1.68	
16,356.00	95.33	268.84	6,876.72	-1,861.62	-9,401.31	9,402.28	2.21	1.25	1.83	
16,448.00	94.30	269.16	6,869.00	-1,863.22	-9,492.97	9,493.94	1.17	-1.12	0.35	
16,540.00	95.99	270.12	6,860.75	-1,863.80	-9,584.59	9,585.57	2.11	1.84	1.04	
16,632.84	96.59	268.85	6,850.58	-1,864.63	-9,676.87	9,677.85	1.50	0.65	-1.37	
<b>Enter Toe Circle - Enter Toe Circle: 16632.84' MD 1509' FSL 1741' FWL</b>										
16,633.00	96.59	268.85	6,850.56	-1,864.63	-9,677.03	9,678.00	1.51	0.65	-1.38	
16,725.00	96.22	266.96	6,840.30	-1,867.97	-9,768.39	9,769.36	2.08	-0.40	-2.05	
16,820.00	97.21	270.91	6,829.18	-1,869.73	-9,862.70	9,863.68	4.26	1.04	4.16	
16,912.00	96.83	268.84	6,817.94	-1,869.93	-9,954.00	9,954.98	2.27	-0.41	-2.25	
17,004.00	99.15	270.55	6,805.15	-1,870.42	-10,045.10	10,046.08	3.12	2.52	1.86	
17,097.00	100.20	272.43	6,789.52	-1,868.03	-10,136.74	10,137.72	2.29	1.13	2.02	
17,191.00	101.67	270.90	6,771.69	-1,865.35	-10,228.99	10,229.97	2.24	1.56	-1.63	
17,285.00	104.58	269.83	6,750.34	-1,864.76	-10,320.52	10,321.50	3.29	3.10	-1.14	
17,377.00	104.98	269.70	6,726.87	-1,865.13	-10,409.48	10,410.45	0.46	0.43	-0.14	
17,470.00	105.60	269.83	6,702.35	-1,865.49	-10,499.18	10,500.16	0.68	0.67	0.14	
17,562.00	106.31	270.21	6,677.06	-1,865.46	-10,587.64	10,588.61	0.87	0.77	0.41	
17,654.00	107.13	270.45	6,650.59	-1,864.96	-10,675.75	10,676.72	0.93	0.89	0.26	
17,748.00	108.35	270.52	6,621.95	-1,864.20	-10,765.27	10,766.25	1.30	1.30	0.07	
17,842.00	110.14	270.77	6,590.97	-1,863.20	-10,854.01	10,854.98	1.92	1.90	0.27	
17,874.00	110.42	269.85	6,579.88	-1,863.04	-10,884.02	10,885.00	2.84	0.88	-2.88	
17,932.00	110.42	269.85	6,559.64	-1,863.18	-10,938.38	10,939.35	0.00	0.00	0.00	
<b>BHL 1544' FSL, 480' FWL (40.324756, -105.016071) - BHL: 1544' FSL, 480' FWL Sec 9 T4N R68W - Bake 11-24HZ - 460' Circle - PBHL (Bake</b>										



# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Bake 11-24HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Site:</b>	4N-68W-11 (S&B 5-11HZ Pad)	<b>MD Reference:</b>	4993' GE + 20' KB @ 5013.00usft
<b>Well:</b>	Bake 11-24HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.15 Single User Db

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL: 2056' FNL, 822' FV - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,646,860.02	1,646,875.23	40.329879	-104.976826	
Surface TD: 1923.00' MI - actual wellpath misses target center by 0.37usft at 1923.00usft MD (1880.01 TVD, -314.14 N, -26.05 E) - Point	0.00	0.00	1,879.89	-314.41	-26.28	14,646,545.61	1,646,849.03	40.329016	-104.976921	
Enter Land Box: 4654.16' - actual wellpath hits target center - Point	0.00	0.00	4,347.98	-1,475.78	-133.35	14,645,384.21	1,646,742.26	40.325827	-104.977305	
Curve KOP (Bake 11-24) - actual wellpath hits target center - Point	0.00	0.00	6,353.31	-1,856.54	-171.95	14,645,003.44	1,646,703.76	40.324781	-104.977443	
BHL: 1544' FSL, 480' FV - actual wellpath hits target center - Point	0.00	0.00	6,559.64	-1,863.18	-10,938.38	14,644,993.98	1,635,937.33	40.324756	-105.016071	
Enter Toe Circle: 16632. - actual wellpath misses target center by 0.01usft at 16632.84usft MD (6850.58 TVD, -1864.63 N, -9676.87 E) - Point	0.00	0.00	6,850.58	-1,864.63	-9,676.87	14,644,992.86	1,637,198.84	40.324754	-105.011545	
Exit Heel Circle: 8219.07 - actual wellpath hits target center - Point	0.00	0.00	7,075.79	-1,847.74	-1,270.67	14,645,011.95	1,645,605.04	40.324805	-104.981385	
LP: 1431' FSL, 33' FEL - actual wellpath hits target center - Point	0.00	0.00	7,077.44	-1,848.04	-853.70	14,645,011.76	1,646,022.01	40.324804	-104.979889	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment	
1,923.00	1,880.01	-314.14	-26.05	Surface TD	
4,654.16	4,347.98	-1,475.78	-133.35	Enter Land Box	
6,720.00	6,353.31	-1,856.54	-171.95	KOP	
7,802.00	7,077.44	-1,848.04	-853.70	LP 1431' FSL, 33' FEL (40.324804, -104.979889)	
8,219.07	7,075.79	-1,847.74	-1,270.67	Exit Heel Circle	
16,632.84	6,850.58	-1,864.63	-9,676.87	Enter Toe Circle	
17,932.00	6,559.64	-1,863.18	-10,938.38	BHL 1544' FSL, 480' FWL (40.324756, -105.016071)	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_