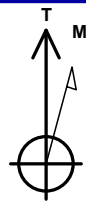


Occidental Petroleum

Project: Weld County, CO (UTM-NAD83)
 Site: 4N-68W-11 (S&B 5-11HZ Pad)
 Well: Bake 11-22HZ
 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)

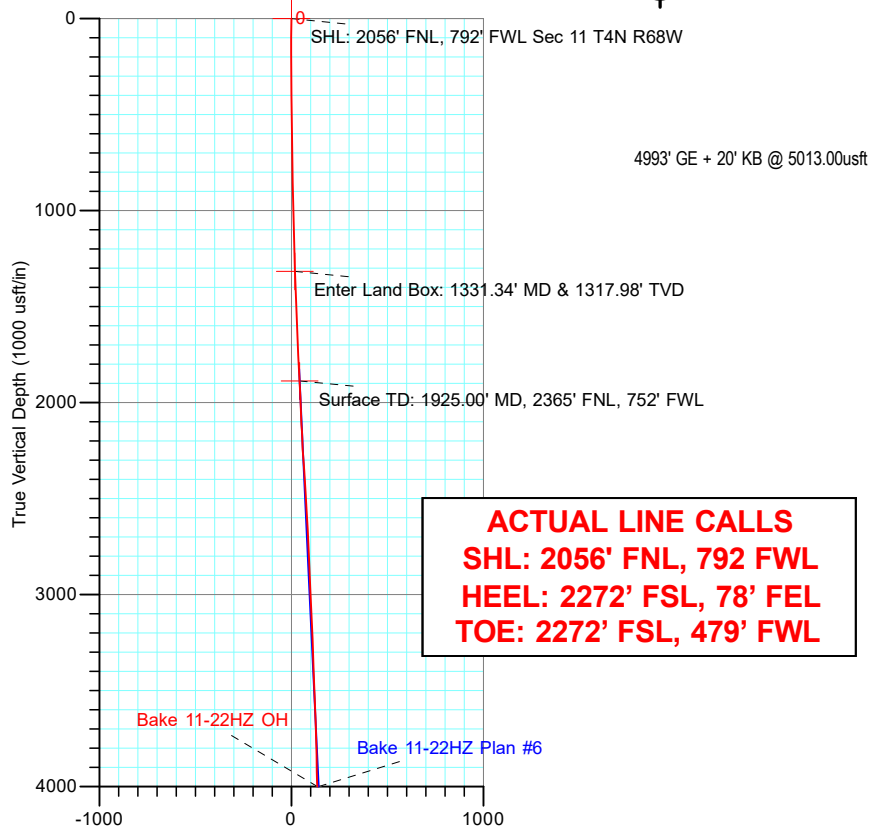


DESIGN TARGET DETAILS

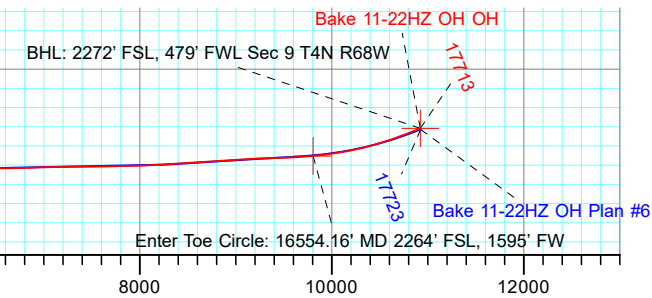
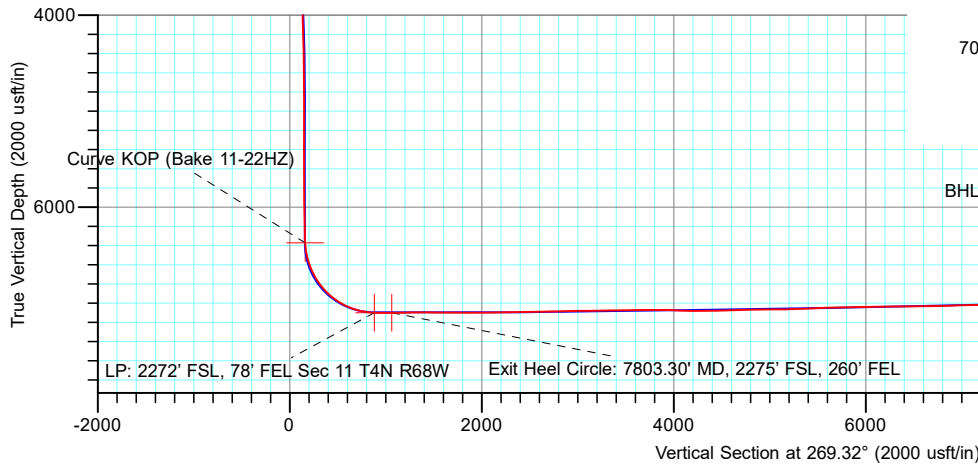
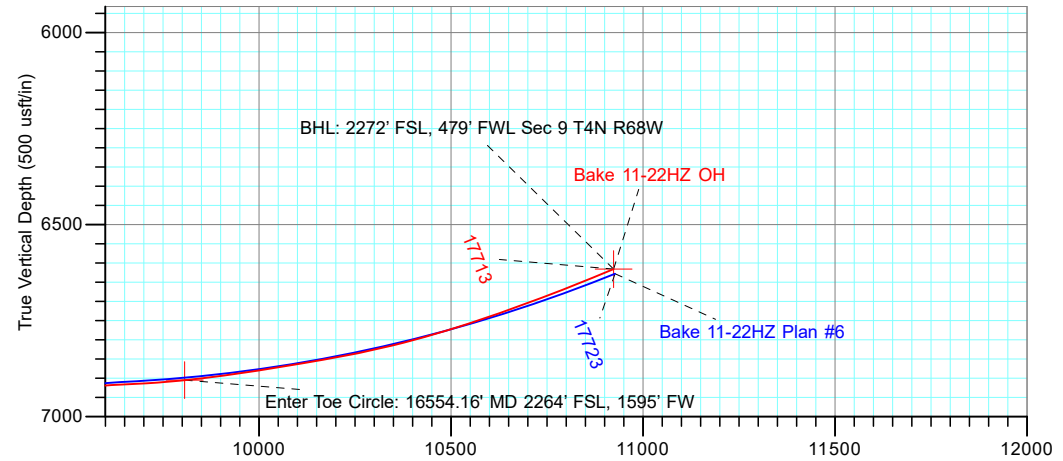
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL: 2272' FSL, 479' FWL Sec 9 T4N R68W	6616.49	-1119.21	-10911.43	40.326799	-105.016083
Curve KOP (Bake 11-22HZ)	6372.43	-990.18	-149.99	40.327160	-104.977471
Enter Land Box: 1331.34' MD & 1317.98' TVD	1317.98	-146.32	-16.46	40.329477	-104.976992
Enter Toe Circle: 16554.16' MD 2264' FSL, 1595' FW	6905.49	-1101.18	-9794.49	40.326850	-105.012075
Exit Heel Circle: 7803.30' MD, 2275' FSL, 260' FEL	7101.61	-993.84	-1050.91	40.327150	-104.980704
LP: 2272' FSL, 78' FEL Sec 11 T4N R68W	7100.54	-1003.25	-869.90	40.327124	-104.980054
SHL: 2056' FNL, 792' FWL Sec 11 T4N R68W	0.00	0.00	0.00	40.329879	-104.976933
Surface TD: 1925.00' MD, 2365' FNL, 752' FWL	1888.30	-309.35	-39.72	40.329030	-104.977076

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSection	Departure	Annotation
1331.34	15.92	184.67	1317.98	-146.32	-16.46	18.19	147.91	Enter Land Box
1925.00	14.65	188.97	1888.34	-309.19	-39.69	43.36	311.93	Surface TD
6495.00	2.80	268.80	6372.43	-990.18	-149.99	161.73	1026.91	KOP
7622.00	87.33	272.86	7100.54	-1003.25	-869.90	881.74	1747.35	LP 2272' FSL, 78' FEL (40.327124, -104.980054)
7803.30	91.54	272.32	7101.61	-993.84	-1050.91	1062.63	1928.60	Exit Heel Circle
16554.16	95.99	268.85	6905.49	-1101.18	-9794.49	9806.86	10674.93	Enter Toe Circle
17713.00	112.08	269.96	6616.49	-1119.21	-10911.43	10923.95	11792.14	BHL 2272' FSL, 479' FWL (40.326799, -105.016083)



ACTUAL LINE CALLS
SHL: 2056' FNL, 792' FWL
HEEL: 2272' FSL, 78' FEL
TOE: 2272' FSL, 479' FWL



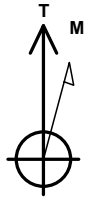
TOTAL DIRECTIONAL SERVICES LLC
 671 Academy Ct, Windsor, CO 80550
 Phone: (970) 460-9402

Design: OH (Bake 11-22HZ/OH)
 4N-68W-11 (S&B 5-11HZ Pad)
 Created By: Dustin Ault Date: 13:42, August 16 2021
 Date: _____
 Approved: _____ Date: _____

Occidental Petroleum

Project: Weld County, CO (UTM-NAD83)
 Site: 4N-68W-11 (S&B 5-11HZ Pad)
 Well: Bake 11-22HZ
 Wellbore: OH
 Design: OH

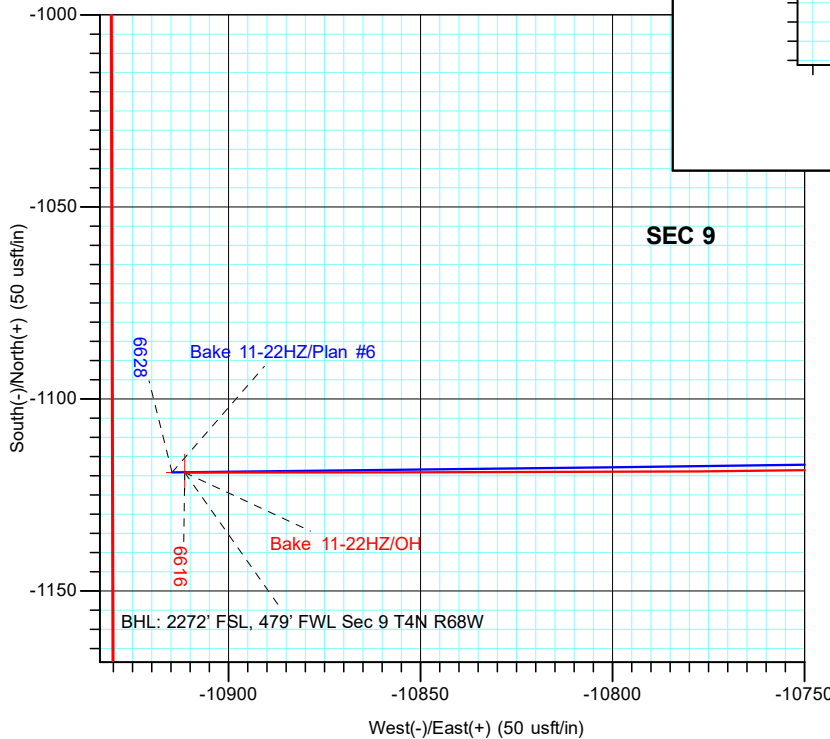
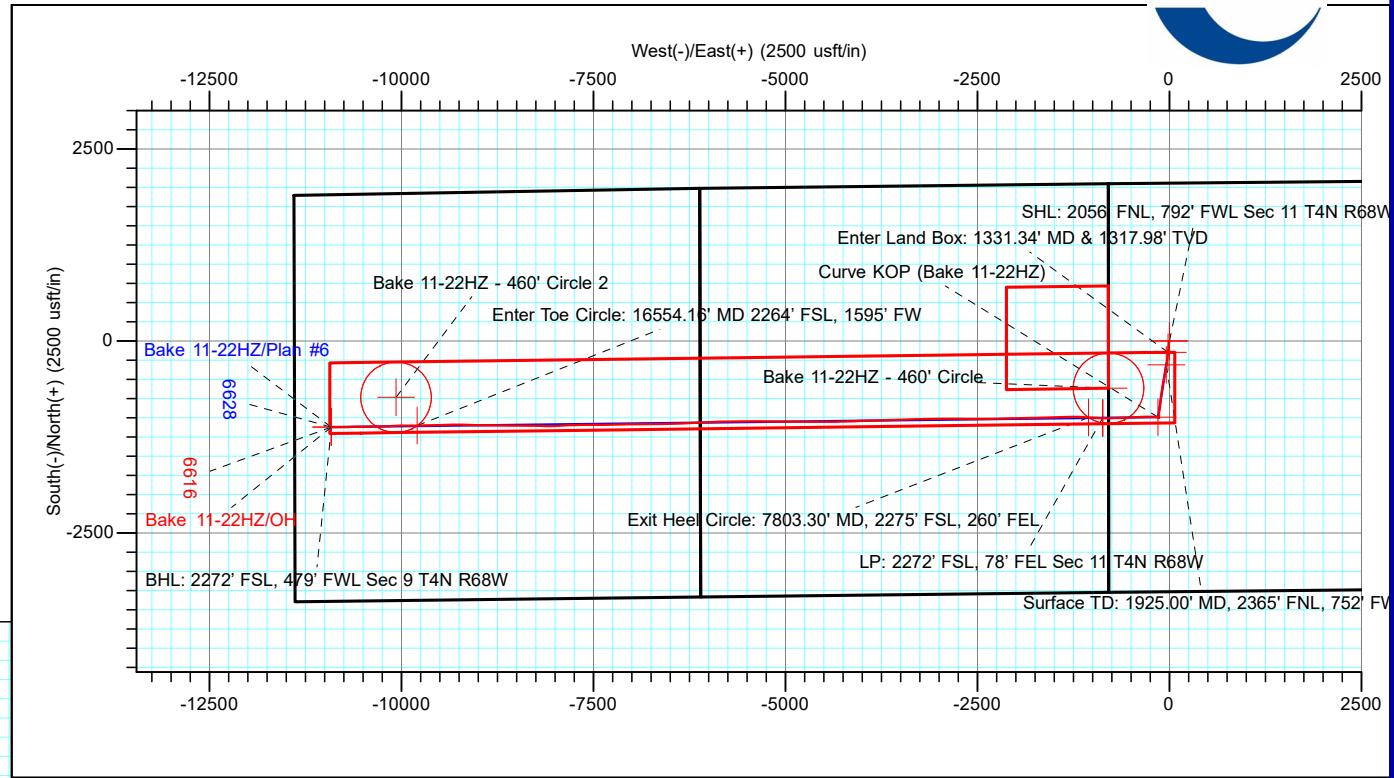
PROJECT DETAILS: Weld County, CO (UTM-NAD83)
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Zone 13N (108 W to 102 W)



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, 792' FWL
HEEL: 2272' FSL, 78' FEL
TOE: 2272' FSL, 479' FWL



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL: 2272' FSL, 479' FWL Sec 9 T4N R68W	6616.49	-1119.21	-10911.43	14645737.96	1635934.27	40.326799	-105.016083
Curve KOP (Bake 11-22HZ)	6372.43	-990.18	-149.99	14645869.80	1646695.68	40.327160	-104.977471
Enter Land Box: 1331.34' MD & 1317.98' TVD	1317.98	-146.32	-16.46	14646713.69	1646828.99	40.329477	-104.976992
Enter Toe Circle: 16554.16' MD 2264' FSL, 1595' FW	6905.49	-1101.18	-9794.49	14645756.28	1637051.21	40.326850	-105.012075
Exit Heel Circle: 7803.30' MD, 2275' FSL, 260' FEL	7101.61	-993.84	-1050.91	14645865.90	1645794.76	40.327150	-104.980704
LP: 2272' FSL, 78' FEL Sec 11 T4N R68W	7100.54	-1003.25	-869.90	14645856.54	1645975.77	40.327124	-104.980054
SHL: 2056' FNL, 792' FWL Sec 11 T4N R68W	0.00	0.00	0.00	14646860.02	1646845.41	40.329879	-104.976933
Surface TD: 1925.00' MD, 2365' FNL, 752' FWL	1888.30	-309.35	-39.72	14646550.66	1646805.77	40.329030	-104.977076

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1331.34	15.92	184.67	1317.98	-146.32	-16.46	18.19	147.91	Enter Land Box
1925.00	14.65	188.97	1888.34	-309.19	-39.69	43.36	311.93	Surface TD
6495.00	2.80	268.80	6372.43	-990.18	-149.99	161.73	1026.91	KOP
7622.00	87.33	272.86	7100.54	-1003.25	-869.90	881.74	1747.35	LP 2272' FSL, 78' FEL (40.327124, -104.980054)
7803.30	91.54	272.32	7101.61	-993.84	-1050.91	1062.63	1928.60	Exit Heel Circle
16554.16	95.99	268.85	6905.49	-1101.18	-9794.49	9806.86	10674.93	Enter Toe Circle
17713.00	112.08	269.96	6616.49	-1119.21	-10911.43	10923.95	11792.14	BHL 2272' FSL, 479' FWL (40.326799, -105.016083)



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

Design: OH (Bake 11-22HZ/OH)
 4N-68W-11 (S&B 5-11HZ Pad)
 Created By: Dustin Ault
 Date: 13:42, August 16 2021
 Approved: _____ Date: _____



Occidental Petroleum

Weld County, CO (UTM-NAD83)

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

Bake 11-22HZ

OH

Design: OH

Standard Survey Report

16 August, 2021





Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Bake 11-22HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4993' GE + 20' KB @ 5013.00usft
Site:	4N-68W-11 (S&B 5-11HZ Pad)	MD Reference:	4993' GE + 20' KB @ 5013.00usft
Well:	Bake 11-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.15 Single User Db

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

Site	4N-68W-11 (S&B 5-11HZ Pad)				
Site Position:		Northing:	14,647,020.58 usft	Latitude:	40.330320
From:	Lat/Long	Easting:	1,646,741.13 usft	Longitude:	-104.977307
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.01 °

Well	Bake 11-22HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,646,860.02 usft	Latitude:	40.329879
	+E/-W	0.00 usft	Easting:	1,646,845.41 usft	Longitude:	-104.976933
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,993.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/8/2021	7.98	66.58	51,922.36284058

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	269.32	

Survey Program	Date	8/16/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
97.00	1,860.00	Survey #1 - MWD+IFR (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,860.00	17,655.00	Survey #2 - MWD+IFR+MS (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	
17,713.00	17,713.00	Survey #3 - Proj to TD (OH)	APC_BLIND	OWSG BLIND	

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	0.00
SHL (Bake 11-22HZ) - SHL: 2056' FNL, 792' FWL Sec 11 T4N R68W										
0.18	0.00	153.97	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bake 11-22HZ - 460' Circle										
97.00	0.10	153.97	97.00	-0.08	0.04	-0.04	0.10	0.10	0.00	
180.00	0.24	196.58	180.00	-0.31	0.02	-0.02	0.22	0.17	51.34	
265.00	0.65	204.85	265.00	-0.92	-0.23	0.24	0.49	0.48	9.73	
354.00	1.50	207.90	353.98	-2.40	-0.99	1.02	0.96	0.96	3.43	



Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Bake 11-22HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4993' GE + 20' KB @ 5013.00usft
Site:	4N-68W-11 (S&B 5-11HZ Pad)	MD Reference:	4993' GE + 20' KB @ 5013.00usft
Well:	Bake 11-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
444.00	1.92	191.56	443.94	-4.92	-1.84	1.90	0.71	0.47	-18.16	
534.00	3.05	187.22	533.85	-8.77	-2.45	2.55	1.27	1.26	-4.82	
624.00	5.69	185.20	623.59	-15.59	-3.15	3.34	2.94	2.93	-2.24	
714.00	7.62	183.74	712.97	-25.99	-3.95	4.26	2.15	2.14	-1.62	
804.00	8.94	189.51	802.04	-38.84	-5.49	5.95	1.73	1.47	6.41	
894.00	10.19	187.45	890.78	-53.64	-7.68	8.32	1.44	1.39	-2.29	
984.00	11.03	188.07	979.24	-70.05	-9.92	10.75	0.94	0.93	0.69	
1,074.00	12.16	185.66	1,067.41	-88.01	-12.06	13.11	1.37	1.26	-2.68	
1,163.00	12.81	182.58	1,154.30	-107.20	-13.43	14.70	1.05	0.73	-3.46	
1,253.00	12.71	185.27	1,242.08	-127.02	-14.79	16.30	0.67	-0.11	2.99	
1,331.34	15.92	184.67	1,317.98	-146.32	-16.46	18.19	4.10	4.10	-0.77	
Enter Land Box - Enter Land Box: 1331.34' MD & 1317.98' TVD										
1,343.00	16.40	184.60	1,329.18	-149.55	-16.72	18.49	4.11	4.10	-0.60	
1,433.00	15.96	186.81	1,415.61	-174.51	-19.21	21.28	0.84	-0.49	2.46	
1,523.00	16.95	189.55	1,501.93	-199.73	-22.85	25.22	1.40	1.10	3.04	
1,613.00	16.02	189.18	1,588.23	-224.93	-27.01	29.68	1.04	-1.03	-0.41	
1,703.00	16.66	187.08	1,674.59	-249.99	-30.58	33.54	0.97	0.71	-2.33	
1,792.00	16.09	189.46	1,759.98	-274.82	-34.18	37.44	0.99	-0.64	2.67	
1,860.00	14.96	188.99	1,825.50	-292.78	-37.10	40.57	1.67	-1.66	-0.69	
1,925.00	14.65	188.97	1,888.34	-309.19	-39.69	43.36	0.48	-0.48	-0.04	
Surface TD - Surface TD: 1925.00' MD, 2365' FNL, 752' FWL										
2,018.00	14.20	188.93	1,978.41	-332.07	-43.29	47.23	0.48	-0.48	-0.04	
2,111.00	14.93	188.16	2,068.42	-355.20	-46.77	50.98	0.81	0.78	-0.83	
2,204.00	16.49	189.74	2,157.95	-380.07	-50.70	55.21	1.74	1.68	1.70	
2,296.00	16.21	189.10	2,246.22	-405.61	-54.94	59.75	0.36	-0.30	-0.70	
2,389.00	18.08	191.78	2,335.09	-432.56	-59.94	65.07	2.18	2.01	2.88	
2,482.00	18.17	191.87	2,423.47	-460.88	-65.87	71.33	0.10	0.10	0.10	
2,575.00	16.47	189.86	2,512.26	-488.06	-71.11	76.90	1.94	-1.83	-2.16	
2,669.00	15.25	189.99	2,602.68	-513.37	-75.53	81.62	1.30	-1.30	0.14	
2,762.00	15.55	191.47	2,692.34	-537.63	-80.14	86.51	0.53	0.32	1.59	
2,855.00	15.05	189.33	2,782.04	-561.76	-84.57	91.23	0.81	-0.54	-2.30	
2,947.00	14.53	185.68	2,870.99	-585.03	-87.65	94.59	1.16	-0.57	-3.97	
3,041.00	14.55	190.77	2,961.99	-608.36	-91.02	98.24	1.36	0.02	5.41	
3,136.00	14.43	188.51	3,053.97	-631.79	-95.01	102.50	0.61	-0.13	-2.38	
3,228.00	14.49	189.12	3,143.05	-654.50	-98.53	106.29	0.18	0.07	0.66	
3,321.00	14.43	189.09	3,233.11	-677.43	-102.20	110.23	0.07	-0.06	-0.03	
3,413.00	15.38	186.76	3,322.01	-700.86	-105.45	113.76	1.22	1.03	-2.53	
3,507.00	14.75	186.68	3,412.78	-725.12	-108.31	116.91	0.67	-0.67	-0.09	
3,599.00	17.02	187.84	3,501.26	-750.10	-111.51	120.40	2.49	2.47	1.26	
3,692.00	17.08	186.97	3,590.17	-777.14	-115.02	124.24	0.28	0.06	-0.94	
3,785.00	15.70	185.26	3,679.39	-803.23	-117.83	127.36	1.57	-1.48	-1.84	
3,879.00	14.74	185.44	3,770.09	-827.80	-120.13	129.95	1.02	-1.02	0.19	
3,972.00	12.29	180.28	3,860.52	-849.48	-121.30	131.38	2.93	-2.63	-5.55	
4,065.00	11.25	189.10	3,951.57	-868.33	-122.79	133.08	2.23	-1.12	9.48	



Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Bake 11-22HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4993' GE + 20' KB @ 5013.00usft
Site:	4N-68W-11 (S&B 5-11HZ Pad)	MD Reference:	4993' GE + 20' KB @ 5013.00usft
Well:	Bake 11-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
4,158.00	8.92	190.06	4,043.12	-884.39	-125.48	135.97	2.51	-2.51	1.03	
4,251.00	9.97	191.58	4,134.86	-899.38	-128.36	139.02	1.16	1.13	1.63	
4,343.00	10.26	188.83	4,225.43	-915.28	-131.21	142.07	0.61	0.32	-2.99	
4,437.00	8.70	188.28	4,318.14	-930.59	-133.52	144.56	1.66	-1.66	-0.59	
4,530.00	8.47	181.16	4,410.11	-944.39	-134.67	145.87	1.17	-0.25	-7.66	
4,623.00	7.24	182.83	4,502.23	-957.10	-135.10	146.45	1.35	-1.32	1.80	
4,715.00	6.49	181.70	4,593.57	-968.08	-135.54	147.02	0.83	-0.82	-1.23	
4,807.00	4.64	192.69	4,685.14	-976.91	-136.51	148.10	2.31	-2.01	11.95	
4,902.00	3.89	195.04	4,779.87	-983.77	-138.19	149.86	0.81	-0.79	2.47	
5,019.00	2.34	181.94	4,896.70	-989.99	-139.30	151.04	1.45	-1.32	-11.20	
5,112.00	0.54	164.72	4,989.66	-992.31	-139.25	151.02	1.97	-1.94	-18.52	
5,207.00	0.77	182.52	5,084.66	-993.38	-139.16	150.94	0.32	0.24	18.74	
5,392.00	0.77	219.08	5,269.64	-995.59	-140.00	151.81	0.26	0.00	19.76	
5,485.00	0.84	95.47	5,362.64	-996.14	-139.72	151.53	1.53	0.08	-132.91	
5,577.00	0.68	83.49	5,454.63	-996.14	-138.50	150.32	0.24	-0.17	-13.02	
5,671.00	0.49	119.70	5,548.63	-996.28	-137.60	149.41	0.43	-0.20	38.52	
5,763.00	0.37	215.18	5,640.62	-996.71	-137.43	149.25	0.70	-0.13	103.78	
5,856.00	0.77	359.91	5,733.62	-996.34	-137.60	149.42	1.18	0.43	155.62	
5,949.00	0.66	327.82	5,826.61	-995.26	-137.89	149.69	0.44	-0.12	-34.51	
6,043.00	0.90	304.95	5,920.61	-994.38	-138.78	150.57	0.41	0.26	-24.33	
6,137.00	1.23	298.23	6,014.59	-993.48	-140.28	152.06	0.37	0.35	-7.15	
6,229.00	1.70	297.10	6,106.56	-992.39	-142.36	154.13	0.51	0.51	-1.23	
6,323.00	1.71	285.88	6,200.52	-991.37	-144.95	156.71	0.35	0.01	-11.94	
6,414.00	1.30	296.18	6,291.49	-990.54	-147.18	158.93	0.54	-0.45	11.32	
6,495.00	2.80	268.81	6,372.43	-990.18	-149.99	161.73	2.17	1.86	-33.80	
KOP - Curve KOP (Bake 11-22HZ)										
6,507.00	3.05	267.14	6,384.42	-990.20	-150.60	162.34	2.17	2.05	-13.87	
6,600.00	10.91	274.48	6,476.66	-989.63	-161.86	173.60	8.49	8.45	7.89	
6,693.00	16.97	274.63	6,566.88	-987.85	-184.19	195.90	6.52	6.52	0.16	
6,786.00	23.62	271.29	6,654.06	-986.33	-216.38	228.07	7.26	7.15	-3.59	
6,878.00	30.27	272.15	6,736.02	-985.05	-258.02	269.70	7.24	7.23	0.93	
6,972.00	37.25	266.71	6,814.14	-985.79	-310.18	321.85	8.09	7.43	-5.79	
7,065.00	45.70	267.06	6,883.76	-989.12	-371.62	383.34	9.09	9.09	0.38	
7,159.00	51.20	268.06	6,946.08	-992.09	-441.88	453.62	5.90	5.85	1.06	
7,251.00	58.61	268.23	6,998.94	-994.52	-517.06	528.83	8.06	8.05	0.18	
7,343.00	67.99	266.81	7,040.23	-998.11	-599.08	610.88	10.29	10.20	-1.54	
7,436.00	73.93	267.23	7,070.56	-1,002.67	-686.83	698.68	6.40	6.39	0.45	
7,529.00	80.78	269.54	7,090.91	-1,005.21	-777.48	789.36	7.75	7.37	2.48	
7,614.43	86.80	272.59	7,100.15	-1,003.61	-862.35	874.20	7.89	7.04	3.57	
LP (Bake 11-22HZ)										
7,622.00	87.33	272.86	7,100.54	-1,003.25	-869.90	881.75	7.88	7.05	3.54	
LP 2272' FSL, 78' FEL (40.327124, -104.980054) - LP: 2272' FSL, 78' FEL Sec 11 T4N R68W										
7,714.00	89.92	273.36	7,102.75	-998.26	-961.73	973.51	2.87	2.82	0.54	
7,803.30	91.54	272.32	7,101.61	-993.84	-1,050.91	1,062.63	2.15	1.81	-1.17	



Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Bake 11-22HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4993' GE + 20' KB @ 5013.00usft
Site:	4N-68W-11 (S&B 5-11HZ Pad)	MD Reference:	4993' GE + 20' KB @ 5013.00usft
Well:	Bake 11-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
Exit Heel Circle - Exit Heel Circle: 7803.30' MD, 2275' FSL, 260' FEL									
7,808.00	91.62	272.26	7,101.48	-993.66	-1,055.60	1,067.32	2.16	1.81	-1.17
7,901.00	91.90	272.97	7,098.63	-989.42	-1,148.46	1,160.12	0.82	0.30	0.76
7,994.00	89.99	271.22	7,097.09	-986.02	-1,241.38	1,252.99	2.79	-2.05	-1.88
8,087.00	89.46	268.19	7,097.54	-986.50	-1,334.36	1,345.98	3.31	-0.57	-3.26
8,179.00	89.57	268.01	7,098.32	-989.55	-1,426.31	1,437.95	0.23	0.12	-0.20
8,272.00	89.84	268.03	7,098.80	-992.76	-1,519.25	1,530.93	0.29	0.29	0.02
8,366.00	90.30	267.70	7,098.68	-996.26	-1,613.19	1,624.90	0.60	0.49	-0.35
8,458.00	89.39	267.78	7,098.93	-999.89	-1,705.11	1,716.86	0.99	-0.99	0.09
8,550.00	89.94	269.53	7,099.47	-1,002.05	-1,797.08	1,808.85	1.99	0.60	1.90
8,642.00	89.79	269.02	7,099.69	-1,003.21	-1,889.07	1,900.85	0.58	-0.16	-0.55
8,735.00	90.16	268.87	7,099.73	-1,004.92	-1,982.06	1,993.85	0.43	0.40	-0.16
8,829.00	90.67	267.89	7,099.05	-1,007.58	-2,076.02	2,087.83	1.18	0.54	-1.04
8,921.00	90.59	269.15	7,098.03	-1,009.96	-2,167.98	2,179.81	1.37	-0.09	1.37
9,015.00	90.96	269.24	7,096.76	-1,011.28	-2,261.96	2,273.80	0.41	0.39	0.10
9,108.00	91.89	270.04	7,094.45	-1,011.86	-2,354.93	2,366.77	1.32	1.00	0.86
9,202.00	91.24	269.37	7,091.88	-1,012.35	-2,448.89	2,460.73	0.99	-0.69	-0.71
9,296.00	91.75	269.62	7,089.43	-1,013.17	-2,542.86	2,554.70	0.60	0.54	0.27
9,388.00	90.62	270.75	7,087.53	-1,012.88	-2,634.83	2,646.67	1.74	-1.23	1.23
9,480.00	90.94	270.41	7,086.27	-1,011.95	-2,726.82	2,738.64	0.51	0.35	-0.37
9,574.00	91.70	271.04	7,084.11	-1,010.76	-2,820.79	2,832.58	1.05	0.81	0.67
9,666.00	90.45	268.97	7,082.38	-1,010.75	-2,912.76	2,924.55	2.63	-1.36	-2.25
9,760.00	90.73	268.93	7,081.42	-1,012.47	-3,006.74	3,018.55	0.30	0.30	-0.04
9,854.00	90.90	269.54	7,080.08	-1,013.73	-3,100.72	3,112.54	0.67	0.18	0.65
9,948.00	90.81	268.95	7,078.68	-1,014.97	-3,194.70	3,206.52	0.63	-0.10	-0.63
10,042.00	90.47	267.70	7,077.63	-1,017.71	-3,288.66	3,300.50	1.38	-0.36	-1.33
10,135.00	91.12	268.16	7,076.34	-1,021.07	-3,381.59	3,393.47	0.86	0.70	0.49
10,229.00	91.77	268.23	7,073.96	-1,024.03	-3,475.51	3,487.42	0.70	0.69	0.07
10,322.00	89.76	269.10	7,072.72	-1,026.20	-3,568.47	3,580.40	2.36	-2.16	0.94
10,416.00	89.94	267.80	7,072.97	-1,028.74	-3,662.43	3,674.38	1.40	0.19	-1.38
10,508.00	89.92	269.11	7,073.08	-1,031.22	-3,754.40	3,766.37	1.42	-0.02	1.42
10,602.00	90.57	267.92	7,072.68	-1,033.66	-3,848.36	3,860.36	1.44	0.69	-1.27
10,696.00	88.20	268.34	7,073.69	-1,036.72	-3,942.30	3,954.33	2.56	-2.52	0.45
10,789.00	87.63	267.23	7,077.07	-1,040.32	-4,035.17	4,047.23	1.34	-0.61	-1.19
10,882.00	89.37	268.32	7,079.51	-1,043.92	-4,128.06	4,140.16	2.21	1.87	1.17
10,974.00	89.62	268.49	7,080.32	-1,046.48	-4,220.02	4,232.14	0.33	0.27	0.18
11,067.00	89.94	267.55	7,080.67	-1,049.70	-4,312.96	4,325.12	1.07	0.34	-1.01
11,160.00	90.79	270.39	7,080.08	-1,051.37	-4,405.94	4,418.10	3.19	0.91	3.05
11,252.00	91.44	270.19	7,078.29	-1,050.90	-4,497.92	4,510.07	0.74	0.71	-0.22
11,345.00	91.85	269.42	7,075.62	-1,051.22	-4,590.88	4,603.03	0.94	0.44	-0.83
11,438.00	92.39	270.18	7,072.18	-1,051.54	-4,683.81	4,695.96	1.00	0.58	0.82
11,531.00	91.30	270.86	7,069.19	-1,050.70	-4,776.76	4,788.89	1.38	-1.17	0.73
11,624.00	91.11	270.58	7,067.23	-1,049.53	-4,869.73	4,881.84	0.36	-0.20	-0.30



Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Bake 11-22HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4993' GE + 20' KB @ 5013.00usft
Site:	4N-68W-11 (S&B 5-11HZ Pad)	MD Reference:	4993' GE + 20' KB @ 5013.00usft
Well:	Bake 11-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
11,716.00	90.72	271.61	7,065.76	-1,047.77	-4,961.70	4,973.79	1.20	-0.42	1.12	
11,809.00	89.99	271.50	7,065.19	-1,045.25	-5,054.66	5,066.71	0.79	-0.78	-0.12	
11,901.00	90.93	270.38	7,064.45	-1,043.74	-5,146.65	5,158.67	1.59	1.02	-1.22	
11,994.00	91.50	270.16	7,062.48	-1,043.30	-5,239.62	5,251.64	0.66	0.61	-0.24	
12,088.00	92.17	270.01	7,059.47	-1,043.16	-5,333.57	5,345.58	0.73	0.71	-0.16	
12,182.00	92.63	270.04	7,055.53	-1,043.12	-5,427.49	5,439.49	0.49	0.49	0.03	
12,274.00	92.86	269.49	7,051.12	-1,043.50	-5,519.38	5,531.38	0.65	0.25	-0.60	
12,367.00	91.47	269.45	7,047.61	-1,044.36	-5,612.31	5,624.31	1.50	-1.49	-0.04	
12,460.00	91.32	268.46	7,045.35	-1,046.06	-5,705.27	5,717.28	1.08	-0.16	-1.06	
12,553.00	91.02	267.81	7,043.45	-1,049.08	-5,798.20	5,810.24	0.77	-0.32	-0.70	
12,644.00	91.02	267.92	7,041.83	-1,052.47	-5,889.12	5,901.20	0.12	0.00	0.12	
12,736.00	91.07	268.57	7,040.15	-1,055.29	-5,981.06	5,993.16	0.71	0.05	0.71	
12,831.00	89.80	267.15	7,039.43	-1,058.84	-6,075.99	6,088.13	2.01	-1.34	-1.49	
12,924.00	91.13	266.86	7,038.67	-1,063.69	-6,168.86	6,181.05	1.46	1.43	-0.31	
13,017.00	91.51	267.29	7,036.53	-1,068.44	-6,261.71	6,273.95	0.62	0.41	0.46	
13,109.00	90.88	268.18	7,034.61	-1,072.07	-6,353.62	6,365.89	1.19	-0.68	0.97	
13,202.00	90.43	267.20	7,033.55	-1,075.82	-6,446.53	6,458.85	1.16	-0.48	-1.05	
13,295.00	90.03	269.78	7,033.18	-1,078.27	-6,539.49	6,551.83	2.81	-0.43	2.77	
13,387.00	90.46	269.42	7,032.78	-1,078.91	-6,631.49	6,643.83	0.61	0.47	-0.39	
13,481.00	90.64	268.69	7,031.88	-1,080.46	-6,725.47	6,737.82	0.80	0.19	-0.78	
13,575.00	91.69	269.69	7,029.97	-1,081.79	-6,819.44	6,831.80	1.54	1.12	1.06	
13,667.00	92.26	269.83	7,026.80	-1,082.18	-6,911.38	6,923.74	0.64	0.62	0.15	
13,761.00	92.46	268.99	7,022.93	-1,083.15	-7,005.30	7,017.66	0.92	0.21	-0.89	
13,854.00	91.33	269.71	7,019.85	-1,084.20	-7,098.24	7,110.61	1.44	-1.22	0.77	
13,946.00	91.06	268.49	7,017.93	-1,085.64	-7,190.21	7,202.58	1.36	-0.29	-1.33	
14,039.00	90.21	267.34	7,016.90	-1,089.03	-7,283.14	7,295.55	1.54	-0.91	-1.24	
14,132.00	89.58	270.08	7,017.07	-1,091.12	-7,376.10	7,388.53	3.02	-0.68	2.95	
14,225.00	91.02	270.12	7,016.59	-1,090.96	-7,469.10	7,481.52	1.55	1.55	0.04	
14,318.00	90.54	269.68	7,015.32	-1,091.12	-7,562.09	7,574.51	0.70	-0.52	-0.47	
14,410.00	91.40	269.10	7,013.76	-1,092.10	-7,654.07	7,666.49	1.13	0.93	-0.63	
14,504.00	92.16	269.54	7,010.84	-1,093.22	-7,748.02	7,760.45	0.93	0.81	0.47	
14,596.00	90.27	267.08	7,008.89	-1,095.93	-7,839.95	7,852.40	3.37	-2.05	-2.67	
14,688.00	91.42	266.88	7,007.54	-1,100.78	-7,931.81	7,944.31	1.27	1.25	-0.22	
14,782.00	92.43	267.68	7,004.38	-1,105.23	-8,025.65	8,038.20	1.37	1.07	0.85	
14,874.00	93.34	271.24	6,999.75	-1,106.10	-8,117.51	8,130.07	3.99	0.99	3.87	
14,968.00	93.59	270.58	6,994.06	-1,104.61	-8,211.33	8,223.86	0.75	0.27	-0.70	
15,062.00	94.14	270.43	6,987.73	-1,103.78	-8,305.11	8,317.62	0.61	0.59	-0.16	
15,155.00	92.53	271.20	6,982.32	-1,102.46	-8,397.94	8,410.43	1.92	-1.73	0.83	
15,247.00	92.67	271.38	6,978.14	-1,100.39	-8,489.82	8,502.28	0.25	0.15	0.20	
15,341.00	93.17	270.42	6,973.36	-1,098.92	-8,583.68	8,596.12	1.15	0.53	-1.02	
15,434.00	93.46	270.21	6,967.98	-1,098.41	-8,676.53	8,688.95	0.38	0.31	-0.23	
15,526.00	95.10	270.32	6,961.11	-1,097.98	-8,768.27	8,780.68	1.79	1.78	0.12	
15,620.00	94.92	271.26	6,952.90	-1,096.69	-8,861.90	8,874.29	1.01	-0.19	1.00	
15,714.00	93.01	271.11	6,946.40	-1,094.75	-8,955.65	8,968.01	2.04	-2.03	-0.16	



Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Bake 11-22HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4993' GE + 20' KB @ 5013.00usft
Site:	4N-68W-11 (S&B 5-11HZ Pad)	MD Reference:	4993' GE + 20' KB @ 5013.00usft
Well:	Bake 11-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
15,807.00	93.28	270.43	6,941.30	-1,093.51	-9,048.50	9,060.84	0.79	0.29	-0.73
15,900.00	93.33	272.11	6,935.94	-1,091.45	-9,141.32	9,153.63	1.80	0.05	1.81
15,992.00	91.87	270.58	6,931.77	-1,089.29	-9,233.19	9,245.47	2.30	-1.59	-1.66
16,085.00	91.84	269.30	6,928.76	-1,089.39	-9,326.14	9,338.41	1.38	-0.03	-1.38
16,176.00	92.20	268.48	6,925.55	-1,091.15	-9,417.07	9,429.35	0.98	0.40	-0.90
16,269.00	92.40	267.94	6,921.82	-1,094.05	-9,509.95	9,522.26	0.62	0.22	-0.58
16,362.00	92.11	268.77	6,918.16	-1,096.72	-9,602.84	9,615.17	0.94	-0.31	0.89
16,454.00	93.38	268.58	6,913.75	-1,098.85	-9,694.70	9,707.06	1.40	1.38	-0.21
16,547.00	95.89	268.72	6,906.24	-1,101.03	-9,787.37	9,799.74	2.70	2.70	0.15
16,554.16	95.99	268.85	6,905.49	-1,101.18	-9,794.49	9,806.87	2.22	1.38	1.74
Enter Toe Circle - Enter Toe Circle: 16554.16' MD 2264' FSL, 1595' FW									
16,639.00	97.16	270.33	6,895.78	-1,101.79	-9,878.76	9,891.14	2.22	1.38	1.75
16,731.00	99.27	269.71	6,882.64	-1,101.76	-9,969.81	9,982.19	2.39	2.29	-0.67
16,826.00	98.83	268.25	6,867.69	-1,103.43	-10,063.61	10,076.00	1.59	-0.46	-1.54
16,918.00	100.28	267.07	6,852.42	-1,107.13	-10,154.26	10,166.68	2.02	1.58	-1.28
17,011.00	101.19	267.88	6,835.10	-1,111.16	-10,245.54	10,258.00	1.30	0.98	0.87
17,104.00	103.89	269.15	6,814.91	-1,113.51	-10,336.28	10,348.77	3.19	2.90	1.37
17,198.00	106.04	269.09	6,790.63	-1,114.91	-10,427.07	10,439.57	2.29	2.29	-0.06
17,292.00	107.56	269.47	6,763.47	-1,116.04	-10,517.05	10,529.56	1.66	1.62	0.40
17,384.00	109.59	269.63	6,734.16	-1,116.72	-10,604.25	10,616.76	2.21	2.21	0.17
17,477.00	110.16	268.86	6,702.54	-1,117.88	-10,691.70	10,704.22	0.99	0.61	-0.83
17,569.00	111.23	269.72	6,670.03	-1,118.94	-10,777.76	10,790.28	1.46	1.16	0.93
17,655.00	112.08	269.96	6,638.30	-1,119.17	-10,857.69	10,870.21	1.02	0.99	0.28
17,711.70	112.08	269.96	6,616.98	-1,119.21	-10,910.23	10,922.75	0.00	0.00	0.00
PBHL (Bake 11-22HZ)									
17,713.00	112.08	269.96	6,616.49	-1,119.21	-10,911.43	10,923.95	0.00	0.00	0.00
BHL 2272' FSL, 479' FWL (40.326799, -105.016083) - BHL: 2272' FSL, 479' FWL Sec 9 T4N R68W - Bake 11-22HZ - 460' Circle 2									



Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Bake 11-22HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4993' GE + 20' KB @ 5013.00usft
Site:	4N-68W-11 (S&B 5-11HZ Pad)	MD Reference:	4993' GE + 20' KB @ 5013.00usft
Well:	Bake 11-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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, 792' FV - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,646,860.02	1,646,845.41	40.329879	-104.976933	
Enter Land Box: 1331.34 - actual wellpath hits target center - Point	0.00	0.00	1,317.98	-146.32	-16.46	14,646,713.69	1,646,828.98	40.329477	-104.976992	
Surface TD: 1925.00' MI - actual wellpath misses target center by 0.17usft at 1925.00usft MD (1888.34 TVD, -309.19 N, -39.69 E) - Point	0.00	0.00	1,888.30	-309.35	-39.72	14,646,550.65	1,646,805.77	40.329030	-104.977076	
Curve KOP (Bake 11-22) - actual wellpath hits target center - Point	0.00	0.00	6,372.43	-990.18	-149.99	14,645,869.80	1,646,695.67	40.327160	-104.977471	
BHL: 2272' FSL, 479' FV - actual wellpath misses target center by 0.01usft at 17713.00usft MD (6616.49 TVD, -1119.21 N, -10911.43 E) - Point	0.00	0.00	6,616.49	-1,119.21	-10,911.43	14,645,737.96	1,635,934.27	40.326799	-105.016083	
Enter Toe Circle: 16554. - actual wellpath hits target center - Point	0.00	0.00	6,905.49	-1,101.18	-9,794.49	14,645,756.28	1,637,051.20	40.326850	-105.012075	
LP: 2272' FSL, 78' FEL - actual wellpath hits target center - Point	0.00	0.00	7,100.54	-1,003.25	-869.90	14,645,856.54	1,645,975.77	40.327124	-104.980054	
Exit Heel Circle: 7803.30 - actual wellpath hits target center - Point	0.00	0.00	7,101.61	-993.84	-1,050.91	14,645,865.90	1,645,794.75	40.327150	-104.980704	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,331.34	1,317.98	-146.32	-16.46	Enter Land Box	
1,925.00	1,888.34	-309.19	-39.69	Surface TD	
6,495.00	6,372.43	-990.18	-149.99	KOP	
7,622.00	7,100.54	-1,003.25	-869.90	LP 2272' FSL, 78' FEL (40.327124, -104.980054)	
7,803.30	7,101.61	-993.84	-1,050.91	Exit Heel Circle	
16,554.16	6,905.49	-1,101.18	-9,794.49	Enter Toe Circle	
17,713.00	6,616.49	-1,119.21	-10,911.43	BHL 2272' FSL, 479' FWL (40.326799, -105.016083)	

Checked By: _____ Approved By: _____ Date: _____