



# **Occidental Petroleum**

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

**Prowant 4-18HZ**

**Prowant 18-10HZ**

**OH**

**Design: OH**

## **Standard Survey Report**

**09 March, 2020**





# Total Directional Services

## Survey Report



<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well Prowant 18-10HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	4939' GE + 8' KB @ 4947.00usft
<b>Site:</b>	Prowant 4-18HZ	<b>MD Reference:</b>	4939' GE + 8' KB @ 4947.00usft
<b>Well:</b>	Prowant 18-10HZ	<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)		

Site		Prowant 4-18HZ							
Site Position:		Northing:	14,674,247.77	usft	Latitude:	40.405074			
From:	Map	Easting:	1,656,579.10	usft	Longitude:	-104.941943			
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.04	°

Well	Prowant 18-10HZ					
Well Position	+N-S	0.00 usft	Northing:	14,674,193.43 usft	Latitude:	40.404925
	+E-W	0.00 usft	Easting:	1,656,455.81 usft	Longitude:	-104.942386
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,939.00 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	2/20/2020	8.08	66.68	52,075.77637127

<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	269.03	

<b>Survey Program</b>	<b>Date</b>	3/9/2020			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
118.00	1,821.00	Survey #1 - Surface MWD+IFR (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,889.00	1,889.00	Survey #2 - Surface Proj to TD (OH)	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
<b>SHL (Prowant 18-10HZ)</b>									
118.00	0.47	206.30	118.00	-0.43	-0.21	0.22	0.40	0.40	0.00
213.00	0.98	189.95	212.99	-1.58	-0.53	0.55	0.57	0.54	-17.21
308.00	1.72	182.46	307.96	-3.81	-0.73	0.79	0.80	0.78	-7.88
403.00	2.59	192.43	402.90	-7.33	-1.25	1.38	0.99	0.92	10.49
498.00	3.58	176.56	497.76	-12.39	-1.54	1.75	1.37	1.04	-16.71
593.00	5.41	177.04	592.46	-19.82	-1.13	1.46	1.93	1.93	0.51
688.00	7.30	177.08	686.87	-30.32	-0.59	1.10	1.99	1.99	0.04
784.00	8.63	175.40	781.95	-43.59	0.30	0.44	1.41	1.39	-1.75



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<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
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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)	
879.00	10.09	175.41	875.68	-58.99	1.54	-0.54	1.54	1.54	0.01	
974.00	11.85	176.03	968.94	-77.02	2.88	-1.57	1.86	1.85	0.65	
1,069.00	13.11	177.62	1,061.69	-97.52	4.00	-2.35	1.37	1.33	1.67	
1,164.00	13.29	177.54	1,154.18	-119.19	4.92	-2.90	0.19	0.19	-0.08	
1,259.00	13.45	179.02	1,246.61	-141.15	5.58	-3.19	0.40	0.17	1.56	
1,354.00	13.79	178.43	1,338.94	-163.51	6.07	-3.31	0.39	0.36	-0.62	
1,449.00	13.99	181.14	1,431.16	-186.31	6.16	-3.00	0.72	0.21	2.85	
1,543.00	13.72	183.91	1,522.43	-208.79	5.17	-1.63	0.76	-0.29	2.95	
1,638.00	13.14	183.92	1,614.83	-230.80	3.66	0.24	0.61	-0.61	0.01	
1,733.00	13.13	182.32	1,707.34	-252.36	2.49	1.78	0.38	-0.01	-1.68	
1,821.00	13.10	179.74	1,793.05	-272.32	2.13	2.48	0.67	-0.03	-2.93	
1,889.00	13.10	179.74	1,859.28	-287.73	2.20	2.67	0.00	0.00	0.00	
PBHL (Prowant 18-10HZ) - Heel (Prowant 18-10HZ)										

Checked By: _____	Approved By: _____	Date: _____
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