

OCCIDENTAL PERMIAN LTD

SOUTH HOBBS UNIT

SEC. 6, T19S, R38E

SHU 294

SHU 294

Survey: SHU294 Surveys

Standard Survey Report

28 February, 2018

**HOBBS OCD
MAY 01 2018
RECEIVED**

GeoGuidance Drilling

Survey Report

Company: OCCIDENTAL PERMIAN LTD
Project: SOUTH HOBBS UNIT
Site: SEC. 6, T19S, R38E
Well: SHU 294
Wellbore: SHU 294
Design: SHU 294

Local Co-ordinate Reference: Well SHU 294
TVD Reference: SHU 294 @ 3636.20usft (TRINIDAD 435)
MD Reference: SHU 294 @ 3636.20usft (TRINIDAD 435)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project SOUTH HOBBS UNIT

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site SEC. 6, T19S, R38E

Site Position: **From:** Map **Northing:** 616,000.00 usft **Latitude:** 32.688235
Easting: 853,000.00 usft **Longitude:** -103.185984
Position Uncertainty: 0.00 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.62 °

Well SHU 294, SUR. N 614059.06 E 852950.56

Well Position **+N/-S** 0.00 usft **Northing:** 614,059.06 usft **Latitude:** 32.682903
+E/-W 0.00 usft **Easting:** 852,950.56 usft **Longitude:** -103.186213
Position Uncertainty 0.00 usft **Wellhead Elevation:** 3,636.20 usft **Ground Level:** 3,618.70 usft

Wellbore SHU 294

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/18/2018	6.74	60.54	48,188

Design SHU 294

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	0.00

Survey Program Date 2/28/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
191.00	1,576.00	Multi Shot Surveys (SHU 294)	EMS+IGRF	OWSG EMS + IGRF or WMM
2,000.00	5,566.00	SHU294 Surveys (SHU 294)	MWD+IGRF	OWSG MWD + IGRF or WMM

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)
1,576.00	0.10	40.54	1,576.00	0.96	-0.48	0.96	0.00	0.00	0.00
1,747.00	0.18	111.98	1,747.00	0.98	-0.13	0.98	0.10	0.05	41.78
1,999.00	0.30	35.29	1,999.00	1.37	0.62	1.37	0.12	0.05	-30.43
2,124.00	0.48	56.74	2,123.99	1.92	1.24	1.92	0.18	0.14	17.16
2,312.00	0.40	11.39	2,311.99	3.00	2.03	3.00	0.18	-0.04	-24.12
2,502.00	0.40	8.93	2,501.98	4.30	2.27	4.30	0.01	0.00	-1.29
2,690.00	0.60	41.98	2,689.98	5.68	3.03	5.68	0.18	0.11	17.58
2,878.00	0.70	27.50	2,877.96	7.43	4.22	7.43	0.10	0.05	-7.70
3,065.00	0.75	41.63	3,064.95	9.36	5.56	9.36	0.10	0.03	7.56
3,254.00	0.88	29.54	3,253.93	11.55	7.09	11.55	0.11	0.07	-6.40

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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)
3,443.00	1.58	39.12	3,442.89	14.83	9.45	14.83	0.38	0.37	5.07
3,632.00	2.20	44.40	3,631.78	19.45	13.64	19.45	0.34	0.33	2.79
3,821.00	1.32	58.33	3,820.69	23.18	18.03	23.18	0.51	-0.47	7.37
4,010.00	0.88	50.11	4,009.66	25.25	20.99	25.25	0.25	-0.23	-4.35
4,199.00	0.88	59.47	4,198.63	26.92	23.36	26.92	0.08	0.00	4.95
4,388.00	1.20	54.90	4,387.60	28.80	26.23	28.80	0.17	0.17	-2.42
4,575.00	1.10	62.20	4,574.57	30.76	29.42	30.76	0.09	-0.05	3.90
4,764.00	0.48	32.66	4,763.55	32.27	31.45	32.27	0.38	-0.33	-15.63
4,954.00	1.10	9.40	4,953.53	34.74	32.17	34.74	0.36	0.33	-12.24
5,143.00	1.10	12.40	5,142.49	38.30	32.86	38.30	0.03	0.00	1.59
5,332.00	1.20	1.30	5,331.46	42.05	33.30	42.05	0.13	0.05	-5.87
5,404.00	1.20	1.30	5,403.44	43.56	33.33	43.56	0.00	0.00	0.00
5,494.00	1.10	13.90	5,493.42	45.34	33.56	45.34	0.30	-0.11	14.00
5,566.00	1.10	13.90	5,565.41	46.68	33.89	46.68	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____