



OCCIDENTAL PERMIAN LTD

**NORTH HOBBS UNIT
SEC. 24, T18S, R37E
NHU 24-668
NHU 24-668**

HOBBS OCD
AUG 01 2016

Survey: Survey #1

Final Survey Report

22 March, 2016





GeoGuidance Drilling
Final Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well NHU 24-668
Project:	NORTH HOBBS UNIT	TVD Reference:	NHU 24-668 @ 3685.40usft (H&P 340)
Site:	SEC. 24, T18S, R37E	MD Reference:	NHU 24-668 @ 3685.40usft (H&P 340)
Well:	NHU 24-668	North Reference:	Grid
Wellbore:	NHU 24-668	Survey Calculation Method:	Minimum Curvature
Design:	NHU 24-668	Database:	TEXAS

Project	NORTH HOBBS UNIT		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	SEC. 24, T18S, R37E		
Site Position:		Northing:	632,000.00 usft
From:	Map	Easting:	847,000.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 43' 56.5824 N
		Longitude:	103° 12' 17.7425 W
		Grid Convergence:	0.61 °

Well	NHU 24-668, SUR. N 632704.14 E 849180.97					
Well Position	+N/-S	0.00 usft	Northing:	632,704.14 usft	Latitude:	32° 44' 3.3183 N
	+E/-W	0.00 usft	Easting:	849,180.97 usft	Longitude:	103° 11' 52.1264 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,685.40 usft	Ground Level:	3,668.90 usft	

Wellbore	NHU 24-668				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/26/2016	6.95	60.61	48,414

Design	NHU 24-668			
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	301.07

Survey Program	Date 3/22/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
127.00	4,811.00	Survey #1 (NHU 24-668)	MWD+IGRF	OWSG MWD + IGRF or WMM



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Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	V. Sec (usft)
0.00	0.00	0.00	0.00	3,685.40	0.00	0.00	632,704.14	849,180.97	0.00	0.00
127.00	0.40	47.34	127.00	3,558.40	0.30	0.33	632,704.44	849,181.30	0.31	-0.12
280.00	0.53	153.34	280.00	3,405.40	0.03	1.04	632,704.17	849,182.01	0.49	-0.87
402.00	0.40	90.20	401.99	3,283.41	-0.48	1.72	632,703.66	849,182.69	0.41	-1.71
584.00	4.00	305.40	583.86	3,101.54	3.20	-2.83	632,707.34	849,178.14	2.38	4.07
765.00	7.70	305.00	763.88	2,921.52	13.82	-17.91	632,717.96	849,163.06	2.04	22.47
945.00	9.60	299.50	941.83	2,743.57	28.13	-40.85	632,732.27	849,140.12	1.15	49.51
1,124.00	12.30	298.00	1,117.55	2,567.85	44.43	-70.68	632,748.57	849,110.29	1.52	83.47
1,304.00	14.50	295.80	1,292.64	2,392.76	63.24	-107.91	632,767.38	849,073.06	1.25	125.06
1,473.00	16.79	299.19	1,455.38	2,230.02	84.36	-148.27	632,788.50	849,032.70	1.46	170.53
1,656.00	17.27	302.66	1,630.36	2,055.04	111.91	-194.21	632,816.05	848,986.76	0.61	224.11
1,836.00	20.17	307.72	1,800.83	1,884.57	145.32	-241.27	632,849.46	848,939.70	1.85	281.65
2,017.00	20.48	310.27	1,970.56	1,714.84	184.88	-290.11	632,889.02	848,890.86	0.52	343.91
2,197.00	20.87	307.85	2,138.97	1,546.43	224.91	-339.46	632,929.05	848,841.51	0.52	406.83
2,376.00	19.79	308.42	2,306.82	1,378.58	263.31	-388.38	632,967.45	848,792.59	0.61	468.55
2,556.00	19.20	308.70	2,476.50	1,208.90	300.75	-435.35	633,004.89	848,745.62	0.33	528.11
2,713.00	18.90	306.22	2,624.90	1,060.50	331.91	-476.01	633,036.05	848,704.96	0.55	579.02
2,893.00	17.99	304.55	2,795.65	889.75	364.90	-522.43	633,069.04	848,658.54	0.58	635.80
3,073.00	17.49	300.95	2,967.10	718.30	394.58	-568.52	633,098.72	848,612.45	0.67	690.60
3,253.00	15.38	302.00	3,139.74	545.66	421.14	-611.97	633,125.28	848,569.00	1.18	741.52
3,433.00	14.55	299.28	3,313.63	371.77	444.85	-651.93	633,148.99	848,529.04	0.60	787.99
3,613.00	15.16	296.99	3,487.62	197.78	466.59	-692.63	633,170.73	848,488.34	0.47	834.06
3,792.00	18.24	298.05	3,659.05	26.35	490.39	-738.22	633,194.53	848,442.75	1.73	885.40
3,972.00	19.91	299.30	3,829.16	-143.76	518.64	-789.81	633,222.78	848,391.16	0.96	944.16
4,152.00	19.08	300.95	3,998.84	-313.44	548.77	-841.77	633,252.91	848,339.20	0.55	1,004.22
4,332.00	18.90	301.83	4,169.04	-483.64	579.28	-891.77	633,283.42	848,289.20	0.19	1,062.79
4,512.00	16.70	300.77	4,340.41	-655.01	607.89	-938.77	633,312.03	848,242.20	1.24	1,117.81



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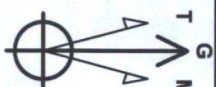
Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	V. Sec (usft)
4,692.00	14.51	299.10	4,513.77	-828.37	632.09	-980.70	633,336.23	848,200.27	1.24	1,166.21
4,761.00	14.68	299.81	4,580.54	-895.14	640.64	-995.83	633,344.78	848,185.14	0.36	1,183.59
4,811.00	14.68	299.81	4,628.91	-943.51	646.94	-1,006.83	633,351.08	848,174.14	0.00	1,196.26

Checked By: _____	Approved By: _____	Date: _____
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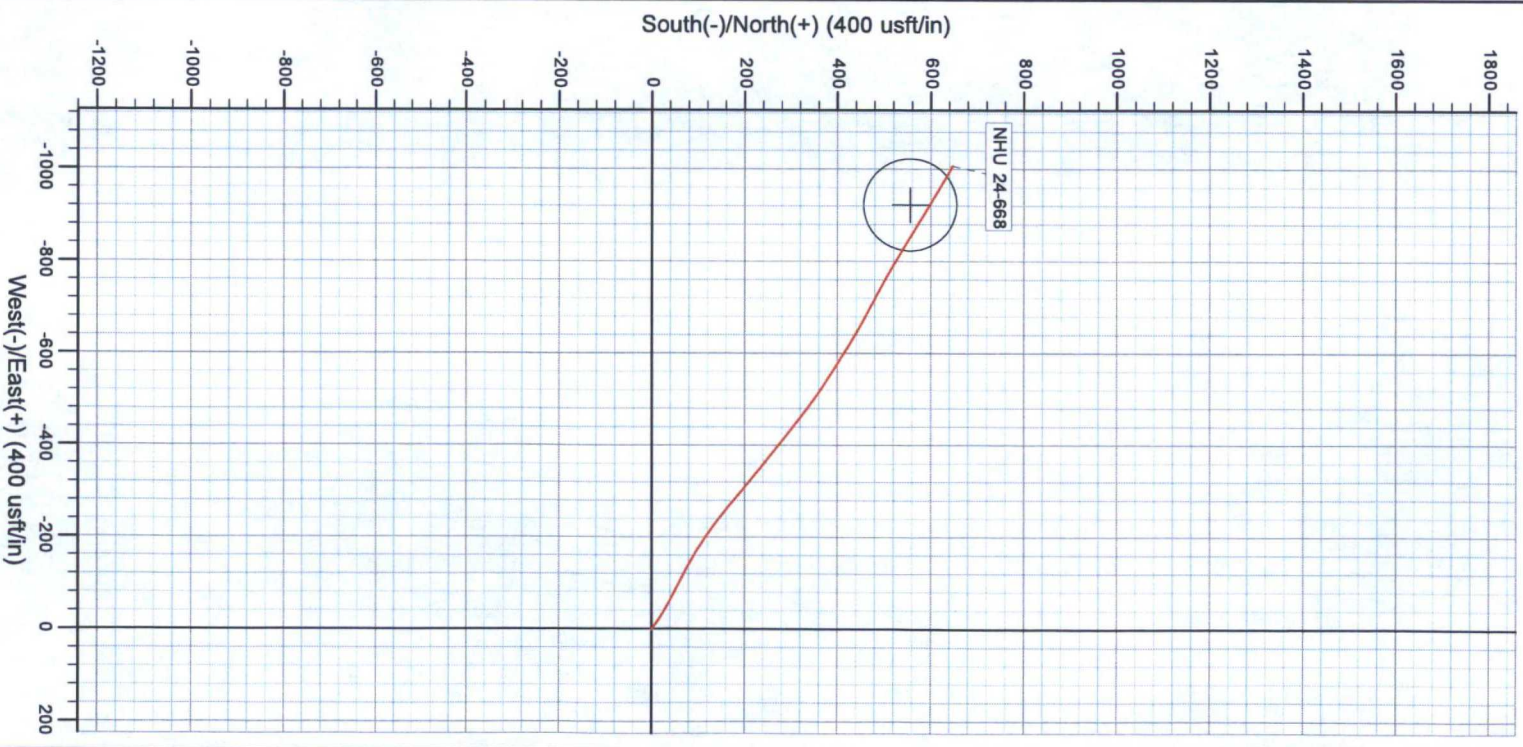
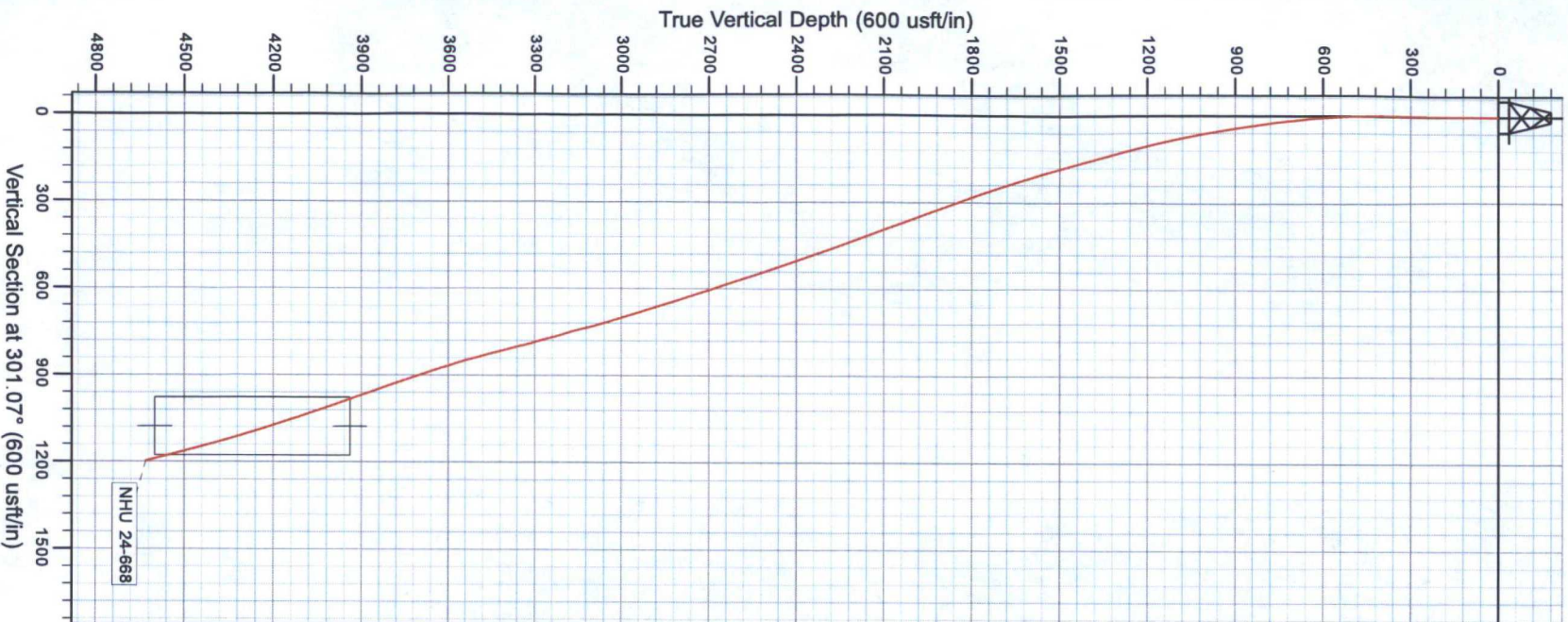


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Project: NORTH HOBBS UNIT
Site: SEC. 24, T18S, R37E
Well: NHU 24-668
Wellpath: NHU 24-668
Design: NHU 24-668



Azimuths to Grid North
True North: -0.61°
Magnetic North: 6.34°
Magnetic Field
Strength: 48414.0nT
Dip Angle: 60.61°
Date: 2/26/2016
Model: IGRF2015



FINAL PLOT