

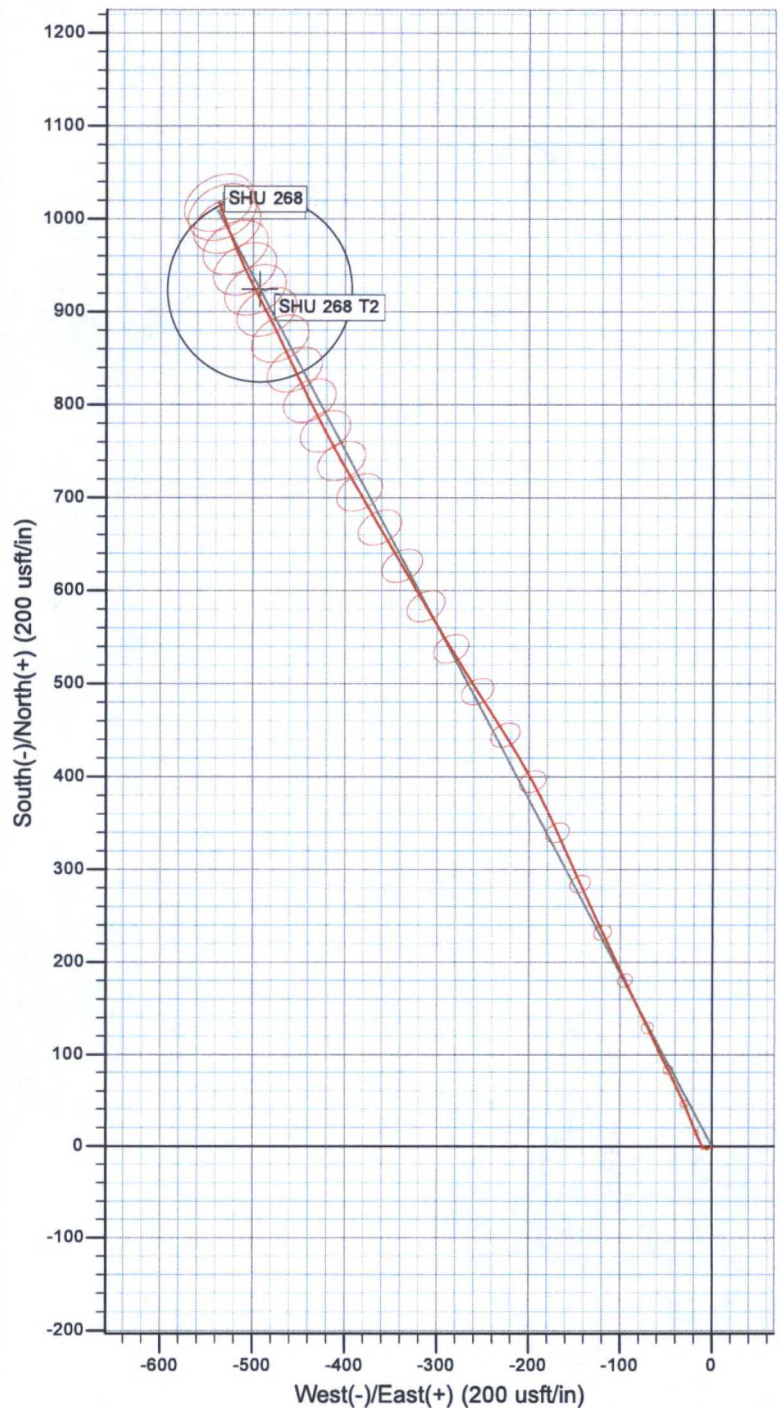
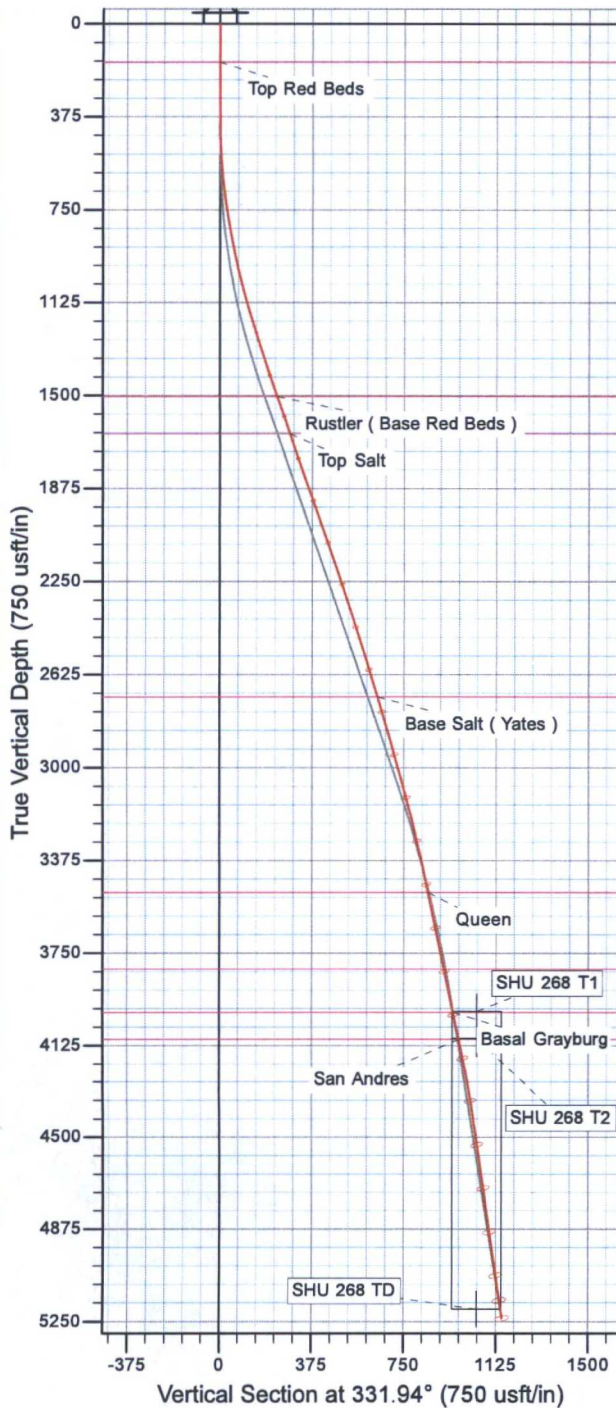


OCCIDENTAL PERMIAN LTD

Project: SOUTH HOBBS UNIT
 Site: SEC. 9, T19S, R38E
 Well: SHU 268
 Wellpath: SHU 268
 Design: SHU 268



Azimuths to Grid North
 True North: -0.64°
 Magnetic North: 6.29°
 Magnetic Field
 Strength: 48380.8snT
 Dip Angle: 60.57°
 Date: 3/21/2016
 Model: IGRF2015



LEGEND

- △ SHU 268, SHU 268, 032116 V1 V0
- SHU 268
- SHU 268 Surveys

SECTION DETAILS

No plan data is available



HOBBS OCD

SEP 13 2016

RECEIVED

OCCIDENTAL PERMIAN LTD

SOUTH HOBBS UNIT

SEC. 9, T19S, R38E

SHU 268

SHU 268

Survey: SHU 268 Surveys

Standard Survey Report

13 May, 2016





GEOGUIDANCE DRILLING

Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well SHU 268
Project:	SOUTH HOBBS UNIT	TVD Reference:	SHU 268 @ 3616.3usft (H&P 340)
Site:	SEC. 9, T19S, R38E	MD Reference:	SHU 268 @ 3616.3usft (H&P 340)
Well:	SHU 268	North Reference:	Grid
Wellbore:	SHU 268	Survey Calculation Method:	Minimum Curvature
Design:	SHU 268	Database:	EDM 5000.1 Single User Db

Project	SOUTH 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. 9, T19S, R38E		
Site Position:		Northing:	612,000.00 usft
From:	Map	Easting:	863,000.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 36.987 N
		Longitude:	103° 9' 13.072 W
		Grid Convergence:	0.64 °

Well	SHU 268, SUR. N 613648.73 E 862392.13		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	3,616.3 usft
		Latitude:	32° 40' 53.366 N
		Longitude:	103° 9' 19.968 W
		Ground Level:	3,599.8 usft

Wellbore	SHU 268		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	3/21/2016	6.92
			Dip Angle (°)
			60.57
			Field Strength (nT)
			48,381

Design	SHU 268		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			331.94

Survey Program	Date 5/13/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
162.0	5,390.0	SHU 268 Surveys (SHU 268)	MWD+IGRF
			Description
			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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
162.0	1.14	238.76	162.0	-0.8	-1.4	-0.1	0.70	0.70	0.00
344.0	1.40	239.70	343.9	-2.9	-4.8	-0.3	0.14	0.14	0.52
526.0	2.50	315.30	525.9	-1.2	-9.6	3.4	1.40	0.60	41.54
708.0	8.70	338.90	706.9	14.5	-17.3	20.9	3.56	3.41	12.97
904.0	11.10	336.40	900.0	45.6	-30.2	54.5	1.24	1.22	-1.28
1,084.0	15.30	333.40	1,075.2	82.7	-47.8	95.5	2.36	2.33	-1.67
1,264.0	17.70	334.40	1,247.8	128.7	-70.2	146.6	1.34	1.33	0.56
1,444.0	19.16	334.65	1,418.5	180.0	-94.7	203.4	0.81	0.81	0.14
1,620.0	18.76	334.43	1,585.0	231.7	-119.3	260.5	0.23	-0.23	-0.13



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Well:	SHU 268	North Reference:	Grid
Wellbore:	SHU 268	Survey Calculation Method:	Minimum Curvature
Design:	SHU 268	Database:	EDM 5000.1 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)
1,799.0	19.07	335.22	1,754.3	284.2	-144.0	318.5	0.22	0.17	0.44
1,979.0	20.35	336.41	1,923.8	339.6	-168.8	379.1	0.75	0.71	0.66
2,159.0	19.51	331.05	2,093.0	394.5	-195.9	440.3	1.12	-0.47	-2.98
2,338.0	18.37	327.40	2,262.3	444.5	-225.6	498.3	0.92	-0.64	-2.04
2,518.0	17.58	327.18	2,433.5	491.2	-255.6	553.7	0.44	-0.44	-0.12
2,698.0	17.58	328.63	2,605.1	537.3	-284.5	607.9	0.24	0.00	0.81
2,878.0	16.88	329.38	2,777.0	583.0	-311.9	661.2	0.41	-0.39	0.42
3,057.0	16.00	329.24	2,948.7	626.5	-337.8	711.8	0.49	-0.49	-0.08
3,237.0	14.81	329.60	3,122.3	667.7	-362.1	759.5	0.66	-0.66	0.20
3,417.0	13.36	329.90	3,296.8	705.5	-384.2	803.3	0.81	-0.81	0.17
3,597.0	11.60	330.08	3,472.6	739.2	-403.6	842.2	0.98	-0.98	0.10
3,777.0	11.88	331.85	3,648.8	771.2	-421.4	878.8	0.25	0.16	0.98
3,957.0	11.93	333.64	3,824.9	804.2	-438.4	915.9	0.21	0.03	0.99
4,137.0	11.91	334.03	4,001.1	837.6	-454.8	953.1	0.05	-0.01	0.22
4,317.0	11.78	334.65	4,177.2	870.9	-470.8	990.0	0.10	-0.07	0.34
4,496.0	8.96	331.84	4,353.3	899.7	-485.2	1,022.2	1.60	-1.58	-1.57
4,676.0	8.13	332.76	4,531.3	923.4	-497.7	1,048.9	0.47	-0.46	0.51
4,856.0	8.04	334.19	4,709.5	946.0	-509.0	1,074.2	0.12	-0.05	0.79
5,036.0	8.08	337.95	4,887.7	969.1	-519.2	1,099.4	0.29	0.02	2.09
5,215.0	8.39	340.05	5,064.9	993.0	-528.4	1,124.8	0.24	0.17	1.17
5,318.0	8.58	340.27	5,166.7	1,007.3	-533.5	1,139.9	0.19	0.18	0.21
5,390.0	8.58	340.27	5,237.9	1,017.4	-537.2	1,150.5	0.00	0.00	0.00
Projected to TD									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
155.0	155.0	Top Red Beds		0.00	
1,535.5	1,505.0	Rustler (Base Red Beds)		0.00	
1,694.0	1,655.0	Top Salt		0.00	
2,813.1	2,715.0	Base Salt (Yates)		0.00	
3,630.1	3,505.0	Queen		0.00	
3,946.8	3,815.0	Grayburg		0.00	
4,125.7	3,990.0	Basal Grayburg		0.00	
4,238.1	4,100.0	San Andres		0.00	

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	Comment
		+N/-S (usft)	+E/-W (usft)
5,390.0	5,237.9	1,017.4	-537.2
Projected to TD			



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Checked By: _____ Approved By: _____ Date: _____