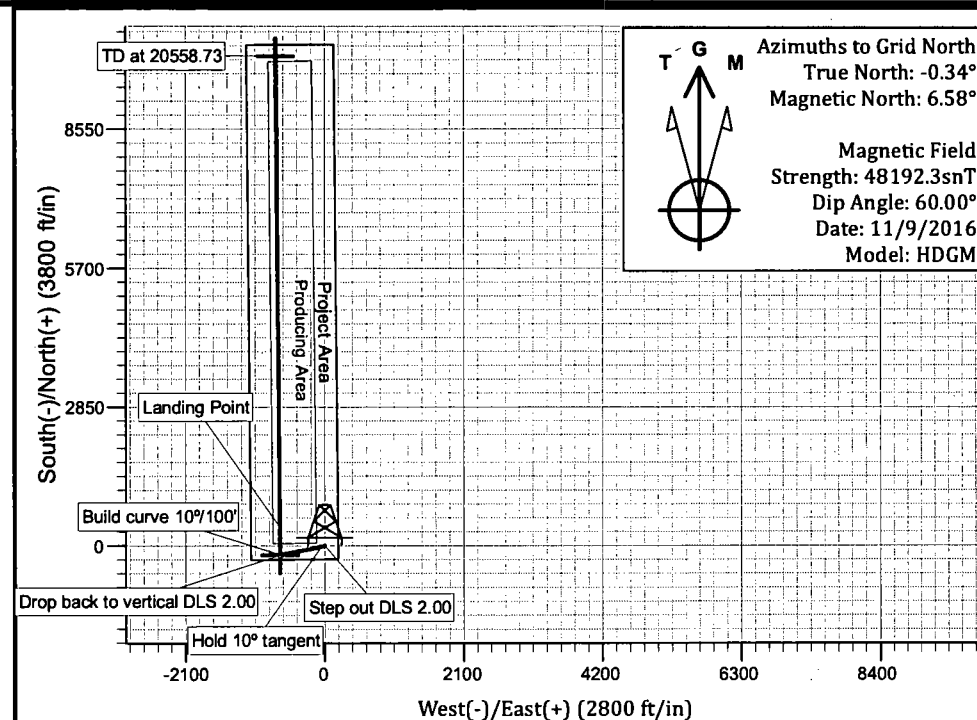
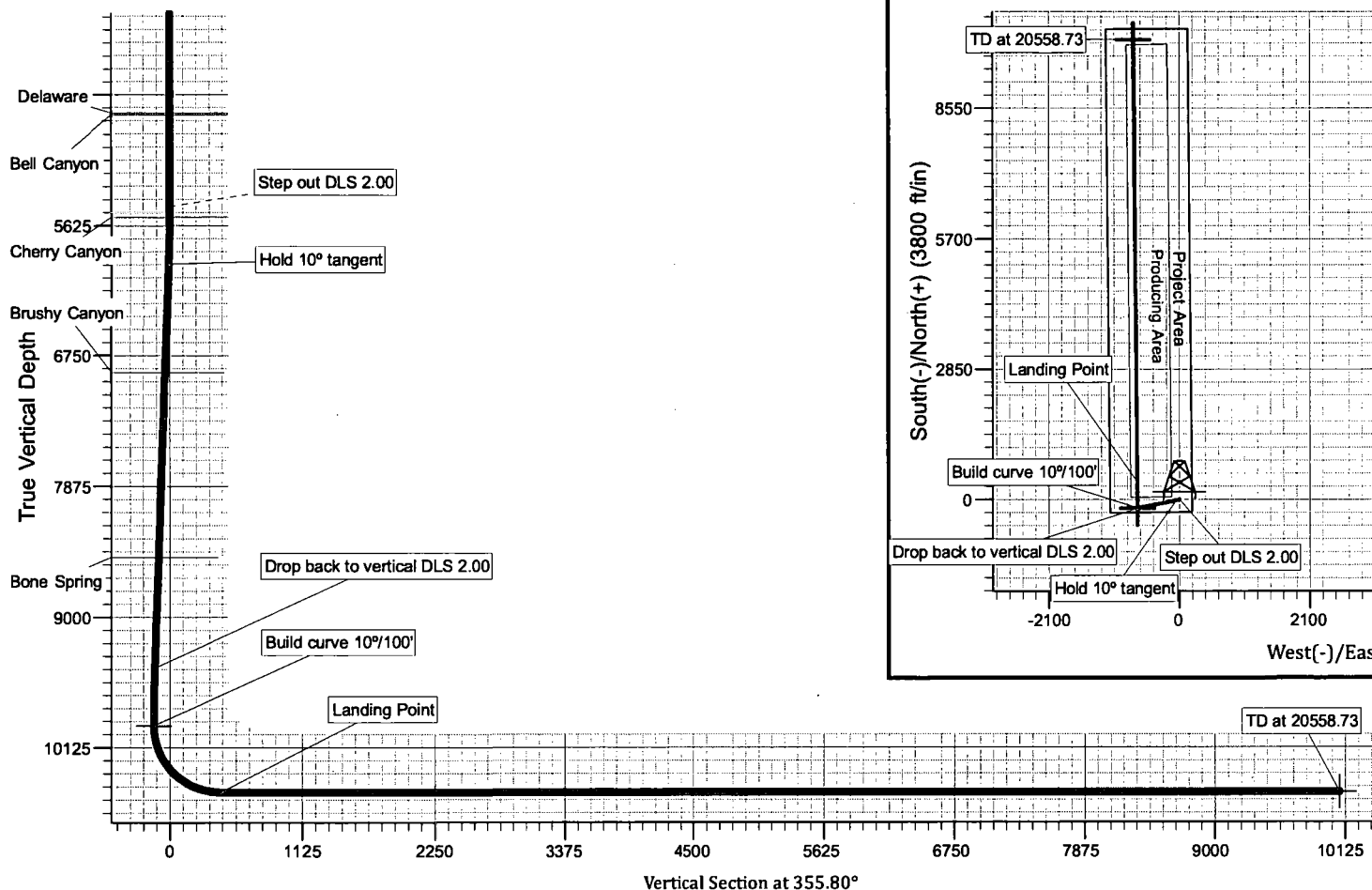




Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: Mesa Verde 17-8 Fed Com
Well: Mesa Verde 17-8 Fed Com 1H
Wellbore: WB00
Design: Permitting Plan

WELL DETAILS: Mesa Verde 17-8 Fed Com 1H

Ground Level: 3564.80 WELL @ 3591.30ft (Original Well Elev)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 441055.96 736694.09 32° 12' 39.462178 N 103° 42' 6.053516 W



Azimuths to Grid North
True North: -0.34°
Magnetic North: 6.58°
Magnetic Field
Strength: 48192.3snT
Dip Angle: 60.00°
Date: 11/9/2016
Model: HDGM

PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
5462.00	5462.00	0.00	0.00	0.00	0.00	0.00	0.00	Step out DLS 2.00
5959.30	5961.84	10.00	254.42	-11.68	-41.90	-8.58	43.49	Hold 10° tangent
9439.74	9495.92	10.00	254.42	-176.48	-632.84	-129.65	656.98	Drop back to vertical DLS 2.00
9937.04	9995.76	0.00	359.65	-188.16	-674.73	-138.24	700.48	Build curve 10°/100'
10510.00	10895.76	90.00	359.65	384.79	-678.27	433.43	1273.44	Landing Point
10510.00	20558.73	90.00	359.65	10047.57	-737.88	10074.63	10936.41	TD at 20558.73

OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)

Mesa Verde 17-8 Fed Com

Mesa Verde 17-8 Fed Com 1H

WB00

Plan: Permitting Plan

Standard Planning Report

14 November, 2016

HOBBS OCD
NOV 14 2017
RECEIVED

Oxy Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Mesa Verde 17-8 Fed Com 1H
Company:	OXY	TVD Reference:	WELL @ 3591.30ft (Original Well Elev)
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	WELL @ 3591.30ft (Original Well Elev)
Site:	Mesa Verde 17-8 Fed Com	North Reference:	Grid
Well:	Mesa Verde 17-8 Fed Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Project	PRD NM DIRECTIONAL PLANS (NAD 1983)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	Mesa Verde 17-8 Fed Com		
Site Position:		Northing:	441,093.32 usft
From:	Map	Easting:	739,872.60 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	32° 12' 39.645531 N
		Longitude:	103° 41' 29.055109 W
		Grid Convergence:	0.34 °

Well	Mesa Verde 17-8 Fed Com 1H		
Well Position	+N/-S	-37.36 ft	Northing: 441,055.96 usft
	+E/-W	-3,178.66 ft	Easting: 736,694.09 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,564.80 ft
		Latitude:	32° 12' 39.462178 N
		Longitude:	103° 42' 6.053516 W
		Ground Level:	3,564.80 ft

Wellbore	WB00		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	11/9/2016	6.92
			Dip Angle (°)
			60.00
			Field Strength (nT)
			48,192

Design	Permitting Plan		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)
	0.00	0.00	0.00
			Direction (°)
			355.80

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,462.00	0.00	0.00	5,462.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,961.84	10.00	254.42	5,959.30	-11.68	-41.90	2.00	2.00	0.00	254.42	
9,495.92	10.00	254.42	9,439.74	-176.48	-632.84	0.00	0.00	0.00	0.00	
9,995.76	0.00	359.65	9,937.04	-188.16	-674.73	2.00	-2.00	0.00	180.00	MV_178_KOP
10,895.76	90.00	359.65	10,510.00	384.79	-678.27	10.00	10.00	0.00	-0.35	
20,558.73	90.00	359.65	10,510.00	10,047.57	-737.88	0.00	0.00	0.00	0.00	MV_178_BHL

Oxy Planning Report

Database:	HOPSP	Local Co-ordinate Reference:	Well Mesa Verde 17-8 Fed Com 1H
Company:	OXY	TVD Reference:	WELL @ 3591.30ft (Original Well Elev)
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	WELL @ 3591.30ft (Original Well Elev)
Site:	Mesa Verde 17-8 Fed Com	North Reference:	Grid
Well:	Mesa Verde 17-8 Fed Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
903.00	0.00	0.00	903.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
3,287.00	0.00	0.00	3,287.00	0.00	0.00	0.00	0.00	0.00	0.00
Castile									
4,657.00	0.00	0.00	4,657.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									
4,672.00	0.00	0.00	4,672.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon									
5,462.00	0.00	0.00	5,462.00	0.00	0.00	0.00	0.00	0.00	0.00
Step out DLS 2.00									
5,500.00	0.76	254.42	5,500.00	-0.07	-0.24	-0.05	2.00	2.00	0.00
5,549.01	1.74	254.42	5,549.00	-0.35	-1.27	-0.26	2.00	2.00	0.00
Cherry Canyon									
5,600.00	2.76	254.42	5,599.95	-0.89	-3.20	-0.66	2.00	2.00	0.00
5,700.00	4.76	254.42	5,699.73	-2.65	-9.52	-1.95	2.00	2.00	0.00
5,800.00	6.76	254.42	5,799.22	-5.35	-19.18	-3.93	2.00	2.00	0.00
5,900.00	8.76	254.42	5,898.30	-8.98	-32.19	-6.59	2.00	2.00	0.00
5,961.84	10.00	254.42	5,959.30	-11.68	-41.90	-8.58	2.00	2.00	0.00
Hold 10° tangent									
6,000.00	10.00	254.42	5,996.89	-13.46	-48.28	-9.89	0.00	0.00	0.00
6,100.00	10.00	254.42	6,095.37	-18.13	-65.00	-13.32	0.00	0.00	0.00
6,200.00	10.00	254.42	6,193.85	-22.79	-81.72	-16.74	0.00	0.00	0.00
6,300.00	10.00	254.42	6,292.33	-27.45	-98.44	-20.17	0.00	0.00	0.00
6,400.00	10.00	254.42	6,390.82	-32.11	-115.16	-23.59	0.00	0.00	0.00
6,500.00	10.00	254.42	6,489.30	-36.78	-131.88	-27.02	0.00	0.00	0.00
6,600.00	10.00	254.42	6,587.78	-41.44	-148.60	-30.45	0.00	0.00	0.00
6,700.00	10.00	254.42	6,686.26	-46.10	-165.33	-33.87	0.00	0.00	0.00
6,800.00	10.00	254.42	6,784.74	-50.77	-182.05	-37.30	0.00	0.00	0.00
6,900.00	10.00	254.42	6,883.22	-55.43	-198.77	-40.72	0.00	0.00	0.00
6,907.90	10.00	254.42	6,891.00	-55.80	-200.09	-40.99	0.00	0.00	0.00
Brushy Canyon									
7,000.00	10.00	254.42	6,981.71	-60.09	-215.49	-44.15	0.00	0.00	0.00
7,100.00	10.00	254.42	7,080.19	-64.76	-232.21	-47.57	0.00	0.00	0.00
7,200.00	10.00	254.42	7,178.67	-69.42	-248.93	-51.00	0.00	0.00	0.00
7,300.00	10.00	254.42	7,277.15	-74.08	-265.65	-54.43	0.00	0.00	0.00
7,400.00	10.00	254.42	7,375.63	-78.74	-282.37	-57.85	0.00	0.00	0.00
7,500.00	10.00	254.42	7,474.12	-83.41	-299.10	-61.28	0.00	0.00	0.00
7,600.00	10.00	254.42	7,572.60	-88.07	-315.82	-64.70	0.00	0.00	0.00
7,700.00	10.00	254.42	7,671.08	-92.73	-332.54	-68.13	0.00	0.00	0.00
7,800.00	10.00	254.42	7,769.56	-97.40	-349.26	-71.55	0.00	0.00	0.00
7,900.00	10.00	254.42	7,868.04	-102.06	-365.98	-74.98	0.00	0.00	0.00
8,000.00	10.00	254.42	7,966.52	-106.72	-382.70	-78.41	0.00	0.00	0.00
8,100.00	10.00	254.42	8,065.01	-111.38	-399.42	-81.83	0.00	0.00	0.00
8,200.00	10.00	254.42	8,163.49	-116.05	-416.14	-85.26	0.00	0.00	0.00
8,300.00	10.00	254.42	8,261.97	-120.71	-432.86	-88.68	0.00	0.00	0.00
8,400.00	10.00	254.42	8,360.45	-125.37	-449.59	-92.11	0.00	0.00	0.00
8,500.00	10.00	254.42	8,458.93	-130.04	-466.31	-95.53	0.00	0.00	0.00
8,524.44	10.00	254.42	8,483.00	-131.18	-470.39	-96.37	0.00	0.00	0.00
Bone Spring									
8,600.00	10.00	254.42	8,557.41	-134.70	-483.03	-98.96	0.00	0.00	0.00

Oxy Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Mesa Verde 17-8 Fed Com 1H
Company:	OXY	TVD Reference:	WELL @ 3591.30ft (Original Well Elev)
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	WELL @ 3591.30ft (Original Well Elev)
Site:	Mesa Verde 17-8 Fed Com	North Reference:	Grid
Well:	Mesa Verde 17-8 Fed Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,700.00	10.00	254.42	8,655.90	-139.36	-499.75	-102.39	0.00	0.00	0.00
8,800.00	10.00	254.42	8,754.38	-144.03	-516.47	-105.81	0.00	0.00	0.00
8,900.00	10.00	254.42	8,852.86	-148.69	-533.19	-109.24	0.00	0.00	0.00
9,000.00	10.00	254.42	8,951.34	-153.35	-549.91	-112.66	0.00	0.00	0.00
9,100.00	10.00	254.42	9,049.82	-158.01	-566.63	-116.09	0.00	0.00	0.00
9,200.00	10.00	254.42	9,148.31	-162.68	-583.36	-119.51	0.00	0.00	0.00
9,300.00	10.00	254.42	9,246.79	-167.34	-600.08	-122.94	0.00	0.00	0.00
9,400.00	10.00	254.42	9,345.27	-172.00	-616.80	-126.37	0.00	0.00	0.00
9,495.92	10.00	254.42	9,439.74	-176.48	-632.84	-129.65	0.00	0.00	0.00
Drop back to vertical DLS 2.00									
9,500.00	9.92	254.42	9,443.75	-176.67	-633.52	-129.79	2.00	-2.00	0.00
9,600.00	7.92	254.42	9,542.54	-180.83	-648.44	-132.85	2.00	-2.00	0.00
9,700.00	5.92	254.42	9,641.81	-184.06	-660.04	-135.23	2.00	-2.00	0.00
9,800.00	3.92	254.42	9,741.43	-186.36	-668.29	-136.92	2.00	-2.00	0.00
9,900.00	1.92	254.42	9,841.30	-187.73	-673.19	-137.92	2.00	-2.00	0.00
9,995.76	0.00	0.00	9,937.04	-188.16	-674.73	-138.24	2.00	-2.00	0.00
Build curve 10°/100' - MV_178_KOP									
10,000.00	0.42	359.65	9,941.28	-188.14	-674.73	-138.22	10.00	10.00	0.00
10,100.00	10.42	359.65	10,040.71	-178.70	-674.79	-128.80	10.00	10.00	0.00
10,200.00	20.42	359.65	10,136.98	-152.14	-674.96	-102.30	10.00	10.00	0.00
10,300.00	30.42	359.65	10,227.18	-109.27	-675.22	-59.52	10.00	10.00	0.00
10,400.00	40.42	359.65	10,308.57	-51.38	-675.58	-1.76	10.00	10.00	0.00
10,500.00	50.42	359.65	10,378.66	19.76	-676.02	69.22	10.00	10.00	0.00
10,600.00	60.42	359.65	10,435.34	101.99	-676.52	151.27	10.00	10.00	0.00
10,700.00	70.42	359.65	10,476.88	192.82	-677.08	241.89	10.00	10.00	0.00
10,800.00	80.42	359.65	10,502.01	289.47	-677.68	338.33	10.00	10.00	0.00
10,895.76	90.00	359.65	10,510.00	384.79	-678.27	433.43	10.00	10.00	0.00
Landing Point									
10,900.00	90.00	359.65	10,510.00	389.03	-678.29	437.66	0.00	0.00	0.00
11,000.00	90.00	359.65	10,510.00	489.03	-678.91	537.44	0.00	0.00	0.00
11,100.00	90.00	359.65	10,510.00	589.02	-679.53	637.21	0.00	0.00	0.00
11,200.00	90.00	359.65	10,510.00	689.02	-680.14	736.99	0.00	0.00	0.00
11,300.00	90.00	359.65	10,510.00	789.02	-680.76	836.76	0.00	0.00	0.00
11,400.00	90.00	359.65	10,510.00	889.02	-681.38	936.54	0.00	0.00	0.00
11,500.00	90.00	359.65	10,510.00	989.02	-682.00	1,036.31	0.00	0.00	0.00
11,600.00	90.00	359.65	10,510.00	1,089.01	-682.61	1,136.08	0.00	0.00	0.00
11,700.00	90.00	359.65	10,510.00	1,189.01	-683.23	1,235.86	0.00	0.00	0.00
11,800.00	90.00	359.65	10,510.00	1,289.01	-683.85	1,335.63	0.00	0.00	0.00
11,900.00	90.00	359.65	10,510.00	1,389.01	-684.46	1,435.41	0.00	0.00	0.00
12,000.00	90.00	359.65	10,510.00	1,489.01	-685.08	1,535.18	0.00	0.00	0.00
12,100.00	90.00	359.65	10,510.00	1,589.00	-685.70	1,634.96	0.00	0.00	0.00
12,200.00	90.00	359.65	10,510.00	1,689.00	-686.31	1,734.73	0.00	0.00	0.00
12,300.00	90.00	359.65	10,510.00	1,789.00	-686.93	1,834.51	0.00	0.00	0.00
12,400.00	90.00	359.65	10,510.00	1,889.00	-687.55	1,934.28	0.00	0.00	0.00
12,500.00	90.00	359.65	10,510.00	1,989.00	-688.16	2,034.06	0.00	0.00	0.00
12,600.00	90.00	359.65	10,510.00	2,089.00	-688.78	2,133.83	0.00	0.00	0.00
12,700.00	90.00	359.65	10,510.00	2,188.99	-689.40	2,233.61	0.00	0.00	0.00
12,800.00	90.00	359.65	10,510.00	2,288.99	-690.01	2,333.38	0.00	0.00	0.00
12,900.00	90.00	359.65	10,510.00	2,388.99	-690.63	2,433.16	0.00	0.00	0.00
13,000.00	90.00	359.65	10,510.00	2,488.99	-691.25	2,532.93	0.00	0.00	0.00
13,100.00	90.00	359.65	10,510.00	2,588.99	-691.87	2,632.71	0.00	0.00	0.00
13,200.00	90.00	359.65	10,510.00	2,688.98	-692.48	2,732.48	0.00	0.00	0.00
13,300.00	90.00	359.65	10,510.00	2,788.98	-693.10	2,832.25	0.00	0.00	0.00

Oxy Planning Report

Database: HOPSP
Company: OXY
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: Mesa Verde 17-8 Fed Com
Well: Mesa Verde 17-8 Fed Com 1H
Wellbore: WB00
Design: Permitting Plan

Local Co-ordinate Reference: Well Mesa Verde 17-8 Fed Com 1H
TVD Reference: WELL @ 3591.30ft (Original Well Elev)
MD Reference: WELL @ 3591.30ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.00	90.00	359.65	10,510.00	2,888.98	-693.72	2,932.03	0.00	0.00	0.00
13,500.00	90.00	359.65	10,510.00	2,988.98	-694.33	3,031.80	0.00	0.00	0.00
13,600.00	90.00	359.65	10,510.00	3,088.98	-694.95	3,131.58	0.00	0.00	0.00
13,700.00	90.00	359.65	10,510.00	3,188.97	-695.57	3,231.35	0.00	0.00	0.00
13,800.00	90.00	359.65	10,510.00	3,288.97	-696.18	3,331.13	0.00	0.00	0.00
13,900.00	90.00	359.65	10,510.00	3,388.97	-696.80	3,430.90	0.00	0.00	0.00
14,000.00	90.00	359.65	10,510.00	3,488.97	-697.42	3,530.68	0.00	0.00	0.00
14,100.00	90.00	359.65	10,510.00	3,588.97	-698.03	3,630.45	0.00	0.00	0.00
14,200.00	90.00	359.65	10,510.00	3,688.96	-698.65	3,730.23	0.00	0.00	0.00
14,300.00	90.00	359.65	10,510.00	3,788.96	-699.27	3,830.00	0.00	0.00	0.00
14,400.00	90.00	359.65	10,510.00	3,888.96	-699.88	3,929.78	0.00	0.00	0.00
14,500.00	90.00	359.65	10,510.00	3,988.96	-700.50	4,029.55	0.00	0.00	0.00
14,600.00	90.00	359.65	10,510.00	4,088.96	-701.12	4,129.33	0.00	0.00	0.00
14,700.00	90.00	359.65	10,510.00	4,188.96	-701.74	4,229.10	0.00	0.00	0.00
14,800.00	90.00	359.65	10,510.00	4,288.95	-702.35	4,328.88	0.00	0.00	0.00
14,900.00	90.00	359.65	10,510.00	4,388.95	-702.97	4,428.65	0.00	0.00	0.00
15,000.00	90.00	359.65	10,510.00	4,488.95	-703.59	4,528.42	0.00	0.00	0.00
15,100.00	90.00	359.65	10,510.00	4,588.95	-704.20	4,628.20	0.00	0.00	0.00
15,200.00	90.00	359.65	10,510.00	4,688.95	-704.82	4,727.97	0.00	0.00	0.00
15,300.00	90.00	359.65	10,510.00	4,788.94	-705.44	4,827.75	0.00	0.00	0.00
15,400.00	90.00	359.65	10,510.00	4,888.94	-706.05	4,927.52	0.00	0.00	0.00
15,500.00	90.00	359.65	10,510.00	4,988.94	-706.67	5,027.30	0.00	0.00	0.00
15,600.00	90.00	359.65	10,510.00	5,088.94	-707.29	5,127.07	0.00	0.00	0.00
15,700.00	90.00	359.65	10,510.00	5,188.94	-707.90	5,226.85	0.00	0.00	0.00
15,800.00	90.00	359.65	10,510.00	5,288.93	-708.52	5,326.62	0.00	0.00	0.00
15,900.00	90.00	359.65	10,510.00	5,388.93	-709.14	5,426.40	0.00	0.00	0.00
16,000.00	90.00	359.65	10,510.00	5,488.93	-709.75	5,526.17	0.00	0.00	0.00
16,100.00	90.00	359.65	10,510.00	5,588.93	-710.37	5,625.95	0.00	0.00	0.00
16,200.00	90.00	359.65	10,510.00	5,688.93	-710.99	5,725.72	0.00	0.00	0.00
16,300.00	90.00	359.65	10,510.00	5,788.92	-711.61	5,825.50	0.00	0.00	0.00
16,400.00	90.00	359.65	10,510.00	5,888.92	-712.22	5,925.27	0.00	0.00	0.00
16,500.00	90.00	359.65	10,510.00	5,988.92	-712.84	6,025.05	0.00	0.00	0.00
16,600.00	90.00	359.65	10,510.00	6,088.92	-713.46	6,124.82	0.00	0.00	0.00
16,700.00	90.00	359.65	10,510.00	6,188.92	-714.07	6,224.59	0.00	0.00	0.00
16,800.00	90.00	359.65	10,510.00	6,288.92	-714.69	6,324.37	0.00	0.00	0.00
16,900.00	90.00	359.65	10,510.00	6,388.91	-715.31	6,424.14	0.00	0.00	0.00
17,000.00	90.00	359.65	10,510.00	6,488.91	-715.92	6,523.92	0.00	0.00	0.00
17,100.00	90.00	359.65	10,510.00	6,588.91	-716.54	6,623.69	0.00	0.00	0.00
17,200.00	90.00	359.65	10,510.00	6,688.91	-717.16	6,723.47	0.00	0.00	0.00
17,300.00	90.00	359.65	10,510.00	6,788.91	-717.77	6,823.24	0.00	0.00	0.00
17,400.00	90.00	359.65	10,510.00	6,888.90	-718.39	6,923.02	0.00	0.00	0.00
17,500.00	90.00	359.65	10,510.00	6,988.90	-719.01	7,022.79	0.00	0.00	0.00
17,600.00	90.00	359.65	10,510.00	7,088.90	-719.62	7,122.57	0.00	0.00	0.00
17,700.00	90.00	359.65	10,510.00	7,188.90	-720.24	7,222.34	0.00	0.00	0.00
17,800.00	90.00	359.65	10,510.00	7,288.90	-720.86	7,322.12	0.00	0.00	0.00
17,900.00	90.00	359.65	10,510.00	7,388.89	-721.48	7,421.89	0.00	0.00	0.00
18,000.00	90.00	359.65	10,510.00	7,488.89	-722.09	7,521.67	0.00	0.00	0.00
18,100.00	90.00	359.65	10,510.00	7,588.89	-722.71	7,621.44	0.00	0.00	0.00
18,200.00	90.00	359.65	10,510.00	7,688.89	-723.33	7,721.22	0.00	0.00	0.00
18,300.00	90.00	359.65	10,510.00	7,788.89	-723.94	7,820.99	0.00	0.00	0.00
18,400.00	90.00	359.65	10,510.00	7,888.89	-724.56	7,920.77	0.00	0.00	0.00
18,500.00	90.00	359.65	10,510.00	7,988.88	-725.18	8,020.54	0.00	0.00	0.00
18,600.00	90.00	359.65	10,510.00	8,088.88	-725.79	8,120.31	0.00	0.00	0.00
18,700.00	90.00	359.65	10,510.00	8,188.88	-726.41	8,220.09	0.00	0.00	0.00

Oxy Planning Report

Database: HOPSP
Company: OXY
Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: Mesa Verde 17-8 Fed Com
Well: Mesa Verde 17-8 Fed Com 1H
Wellbore: WB00
Design: Permitting Plan

Local Co-ordinate Reference: Well Mesa Verde 17-8 Fed Com 1H
TVD Reference: WELL @ 3591.30ft (Original Well Elev)
MD Reference: WELL @ 3591.30ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
18,800.00	90.00	359.65	10,510.00	8,288.88	-727.03	8,319.86	0.00	0.00	0.00
18,900.00	90.00	359.65	10,510.00	8,388.88	-727.64	8,419.64	0.00	0.00	0.00
19,000.00	90.00	359.65	10,510.00	8,488.87	-728.26	8,519.41	0.00	0.00	0.00
19,100.00	90.00	359.65	10,510.00	8,588.87	-728.88	8,619.19	0.00	0.00	0.00
19,200.00	90.00	359.65	10,510.00	8,688.87	-729.49	8,718.96	0.00	0.00	0.00
19,300.00	90.00	359.65	10,510.00	8,788.87	-730.11	8,818.74	0.00	0.00	0.00
19,400.00	90.00	359.65	10,510.00	8,888.87	-730.73	8,918.51	0.00	0.00	0.00
19,500.00	90.00	359.65	10,510.00	8,988.86	-731.35	9,018.29	0.00	0.00	0.00
19,600.00	90.00	359.65	10,510.00	9,088.86	-731.96	9,118.06	0.00	0.00	0.00
19,700.00	90.00	359.65	10,510.00	9,188.86	-732.58	9,217.84	0.00	0.00	0.00
19,800.00	90.00	359.65	10,510.00	9,288.86	-733.20	9,317.61	0.00	0.00	0.00
19,900.00	90.00	359.65	10,510.00	9,388.86	-733.81	9,417.39	0.00	0.00	0.00
20,000.00	90.00	359.65	10,510.00	9,488.85	-734.43	9,517.16	0.00	0.00	0.00
20,100.00	90.00	359.65	10,510.00	9,588.85	-735.05	9,616.94	0.00	0.00	0.00
20,200.00	90.00	359.65	10,510.00	9,688.85	-735.66	9,716.71	0.00	0.00	0.00
20,300.00	90.00	359.65	10,510.00	9,788.85	-736.28	9,816.48	0.00	0.00	0.00
20,400.00	90.00	359.65	10,510.00	9,888.85	-736.90	9,916.26	0.00	0.00	0.00
20,500.00	90.00	359.65	10,510.00	9,988.85	-737.51	10,016.03	0.00	0.00	0.00
20,558.73	90.00	359.65	10,510.00	10,047.57	-737.88	10,074.63	0.00	0.00	0.00

TD at 20558.73 - MV_178_BHL

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
MV_178_KOP - plan hits target center - Point	0.00	0.00	9,937.04	-188.16	-674.73	440,867.81	736,019.39	32° 12' 37.639510 N	103° 42' 13.919427
MV_178_BHL - plan hits target center - Point	0.00	0.00	10,510.00	10,047.57	-737.88	451,103.04	735,956.25	32° 14' 18.925531 N	103° 42' 13.956411

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
903.00	903.00	Rustler			
1,000.00	1,000.00	Salado			
3,287.00	3,287.00	Castile			
4,657.00	4,657.00	Delaware			
4,672.00	4,672.00	Bell Canyon			
5,549.01	5,549.00	Cherry Canyon			
6,907.90	6,891.00	Brushy Canyon			
8,524.44	8,483.00	Bone Spring			

Oxy Planning Report

Database:	HOPSP	Local Co-ordinate Reference:	Well Mesa Verde 17-8 Fed Com 1H
Company:	OXY	TVD Reference:	WELL @ 3591.30ft (Original Well Elev)
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	WELL @ 3591.30ft (Original Well Elev)
Site:	Mesa Verde 17-8 Fed Com	North Reference:	Grid
Well:	Mesa Verde 17-8 Fed Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB00		
Design:	Permitting Plan		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,462.00	5,462.00	0.00	0.00	Step out DLS 2.00
5,961.84	5,959.30	-11.68	-41.90	Hold 10° tangent
9,495.92	9,439.74	-176.48	-632.84	Drop back to vertical DLS 2.00
9,995.76	9,937.04	-188.16	-674.73	Build curve 10°/100'
10,895.76	10,510.00	384.79	-678.27	Landing Point
20,558.73	10,510.00	10,047.57	-737.88	TD at 20558.73