

OXY

**PRD NM DIRECTIONAL PLANS (NAD 1983)
STERLING SILVER MDP1 33-4 FED COM
STERLING SILVER MDP1 33-4 FED COM 177H**

Wellbore #1

Plan: Permitting Plan

Standard Planning Report

22 May, 2019

Oxy

Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well STERLING SILVER MDP1 33-4 FED COM 177H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB=26.5' @ 3413.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB=26.5' @ 3413.00ft
Site:	STERLING SILVER MDP1 33-4 FED COM	North Reference:	Grid
Well:	STERLING SILVER MDP1 33-4 FED COM 177H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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:	STERLING SILVER MDP1 33-4 FED COM		
Site Position:		Northing:	461,634.30 usft
From:	Map	Easting:	709,709.04 usft
Position Uncertainty:	50.00 ft	Slot Radius:	13.200 in
		Latitude:	32° 16' 4.557918 N
		Longitude:	103° 47' 18.930890 W
		Grid Convergence:	0.29 °

Well:	STERLING SILVER MDP1 33-4 FED COM 177H		
Well Position	+N/-S	30.34 ft	Northing: 461,664.64 usft
	+E/-W	1,669.95 ft	Easting: 711,378.89 usft
Position Uncertainty	2.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	32° 16' 4.773856 N
		Longitude:	103° 46' 59.480648 W
		Ground Level:	3,386.50 ft

Wellbore:	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	HDGM	5/22/2019	6.80
			Dip Angle
			59.97
			Field Strength
			47,954

Design:	Permitting Plan		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction:
			175.77

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)	JFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,075.00	0.00	0.00	5,075.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,574.90	10.00	49.73	5,572.37	28.12	33.19	2.00	2.00	0.00	49.73	
10,330.12	10.00	49.73	10,255.37	561.80	663.08	0.00	0.00	0.00	0.00	
11,235.55	10.00	179.74	11,154.54	533.77	723.92	2.00	0.00	14.36	154.66	
12,032.26	89.67	179.74	11,628.00	-27.19	726.48	10.00	10.00	0.00	0.00	FTP (Sterling Silver)
22,484.27	89.67	179.74	11,688.00	-10,478.92	774.28	0.00	0.00	0.00	0.00	PBHL (Sterling)

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Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB=26.5' @ 3413.00ft
Site:	STERLING SILVER MDP1 33-4 FED COM	North Reference:	Grid
Well:	STERLING SILVER MDP1 33-4 FED COM 177H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,075.00	0.00	0.00	5,075.00	0.00	0.00	0.00	0.00	0.00	0.00

Oxy

Planning Report

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Site:	STERLING SILVER MDP1 33-4 FED COM	North Reference:	Grid
Well:	STERLING SILVER MDP1 33-4 FED COM 177H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)
5,100.00	0.50	49.73	5,100.00	0.07	0.08	-0.06	2.00	2.00	0.00
5,200.00	2.50	49.73	5,199.96	1.76	2.08	-1.60	2.00	2.00	0.00
5,300.00	4.50	49.73	5,299.77	5.71	6.74	-5.20	2.00	2.00	0.00
5,400.00	6.50	49.73	5,399.30	11.90	14.05	-10.84	2.00	2.00	0.00
5,500.00	8.50	49.73	5,498.44	20.34	24.01	-18.52	2.00	2.00	0.00
5,574.90	10.00	49.73	5,572.37	28.12	33.19	-25.60	2.00	2.00	0.00
5,600.00	10.00	49.73	5,597.09	30.94	36.52	-28.17	0.00	0.00	0.00
5,700.00	10.00	49.73	5,695.57	42.16	49.76	-38.38	0.00	0.00	0.00
5,800.00	10.00	49.73	5,794.05	53.39	63.01	-48.60	0.00	0.00	0.00
5,900.00	10.00	49.73	5,892.53	64.61	76.26	-58.81	0.00	0.00	0.00
6,000.00	10.00	49.73	5,991.01	75.83	89.50	-69.03	0.00	0.00	0.00
6,100.00	10.00	49.73	6,089.49	87.06	102.75	-79.25	0.00	0.00	0.00
6,200.00	10.00	49.73	6,187.97	98.28	116.00	-89.46	0.00	0.00	0.00
6,300.00	10.00	49.73	6,286.46	109.50	129.24	-99.68	0.00	0.00	0.00
6,400.00	10.00	49.73	6,384.94	120.72	142.49	-109.90	0.00	0.00	0.00
6,500.00	10.00	49.73	6,483.42	131.95	155.73	-120.11	0.00	0.00	0.00
6,600.00	10.00	49.73	6,581.90	143.17	168.98	-130.33	0.00	0.00	0.00
6,700.00	10.00	49.73	6,680.38	154.39	182.23	-140.55	0.00	0.00	0.00
6,800.00	10.00	49.73	6,778.86	165.62	195.47	-150.76	0.00	0.00	0.00
6,900.00	10.00	49.73	6,877.34	176.84	208.72	-160.98	0.00	0.00	0.00
7,000.00	10.00	49.73	6,975.83	188.06	221.97	-171.20	0.00	0.00	0.00
7,100.00	10.00	49.73	7,074.31	199.29	235.21	-181.41	0.00	0.00	0.00
7,200.00	10.00	49.73	7,172.79	210.51	248.46	-191.63	0.00	0.00	0.00
7,300.00	10.00	49.73	7,271.27	221.73	261.70	-201.85	0.00	0.00	0.00
7,400.00	10.00	49.73	7,369.75	232.96	274.95	-212.06	0.00	0.00	0.00
7,500.00	10.00	49.73	7,468.23	244.18	288.20	-222.28	0.00	0.00	0.00
7,600.00	10.00	49.73	7,566.71	255.40	301.44	-232.50	0.00	0.00	0.00
7,700.00	10.00	49.73	7,665.19	266.62	314.69	-242.71	0.00	0.00	0.00
7,800.00	10.00	49.73	7,763.68	277.85	327.94	-252.93	0.00	0.00	0.00
7,900.00	10.00	49.73	7,862.16	289.07	341.18	-263.14	0.00	0.00	0.00
8,000.00	10.00	49.73	7,960.64	300.29	354.43	-273.36	0.00	0.00	0.00
8,100.00	10.00	49.73	8,059.12	311.52	367.67	-283.58	0.00	0.00	0.00
8,200.00	10.00	49.73	8,157.60	322.74	380.92	-293.79	0.00	0.00	0.00
8,300.00	10.00	49.73	8,256.08	333.96	394.17	-304.01	0.00	0.00	0.00
8,400.00	10.00	49.73	8,354.56	345.19	407.41	-314.23	0.00	0.00	0.00
8,500.00	10.00	49.73	8,453.05	356.41	420.66	-324.44	0.00	0.00	0.00
8,600.00	10.00	49.73	8,551.53	367.63	433.91	-334.66	0.00	0.00	0.00
8,700.00	10.00	49.73	8,650.01	378.85	447.15	-344.88	0.00	0.00	0.00
8,800.00	10.00	49.73	8,748.49	390.08	460.40	-355.09	0.00	0.00	0.00
8,900.00	10.00	49.73	8,846.97	401.30	473.64	-365.31	0.00	0.00	0.00
9,000.00	10.00	49.73	8,945.45	412.52	486.89	-375.53	0.00	0.00	0.00
9,100.00	10.00	49.73	9,043.93	423.75	500.14	-385.74	0.00	0.00	0.00
9,200.00	10.00	49.73	9,142.42	434.97	513.38	-395.96	0.00	0.00	0.00
9,300.00	10.00	49.73	9,240.90	446.19	526.63	-406.18	0.00	0.00	0.00
9,400.00	10.00	49.73	9,339.38	457.42	539.87	-416.39	0.00	0.00	0.00
9,500.00	10.00	49.73	9,437.86	468.64	553.12	-426.61	0.00	0.00	0.00
9,600.00	10.00	49.73	9,536.34	479.86	566.37	-436.82	0.00	0.00	0.00
9,700.00	10.00	49.73	9,634.82	491.09	579.61	-447.04	0.00	0.00	0.00
9,800.00	10.00	49.73	9,733.30	502.31	592.86	-457.26	0.00	0.00	0.00
9,900.00	10.00	49.73	9,831.78	513.53	606.11	-467.47	0.00	0.00	0.00
10,000.00	10.00	49.73	9,930.27	524.75	619.35	-477.69	0.00	0.00	0.00
10,100.00	10.00	49.73	10,028.75	535.98	632.60	-487.91	0.00	0.00	0.00

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Company:	ENGINEERING DESIGNS	TVD Reference:	RKB=26.5' @ 3413.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB=26.5' @ 3413.00ft
Site:	STERLING SILVER MDP1 33-4 FED COM	North Reference:	Grid
Well:	STERLING SILVER MDP1 33-4 FED COM 177H	Survey Calculation Method:	Minimum Curvature
Wellbore Design:	Wellbore #1 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)
10,200.00	10.00	49.73	10,127.23	547.20	645.84	-498.12	0.00	0.00	0.00
10,300.00	10.00	49.73	10,225.71	558.42	659.09	-508.34	0.00	0.00	0.00
10,330.12	10.00	49.73	10,255.37	561.80	663.08	-511.42	0.00	0.00	0.00
10,400.00	8.76	53.66	10,324.32	568.88	671.99	-517.81	2.00	-1.78	5.63
10,500.00	7.08	61.61	10,423.37	576.32	683.54	-524.38	2.00	-1.68	7.95
10,600.00	5.61	74.03	10,522.75	580.59	693.66	-527.90	2.00	-1.46	12.43
10,700.00	4.57	93.47	10,622.37	581.70	702.34	-528.36	2.00	-1.04	19.44
10,800.00	4.27	119.35	10,722.08	579.63	709.57	-525.77	2.00	-0.30	25.88
10,900.00	4.86	143.59	10,821.77	574.39	715.33	-520.12	2.00	0.59	24.23
11,000.00	6.08	160.37	10,921.32	565.99	719.63	-511.42	2.00	1.22	16.78
11,100.00	7.64	170.98	11,020.60	554.44	722.45	-499.69	2.00	1.56	10.61
11,200.00	9.36	177.87	11,119.50	539.74	723.79	-484.94	2.00	1.72	6.89
11,235.55	10.00	179.74	11,154.54	533.77	723.92	-478.97	2.00	1.79	5.26
11,300.00	16.45	179.74	11,217.26	519.03	723.98	-464.27	10.00	10.00	0.00
11,400.00	26.45	179.74	11,310.21	482.52	724.15	-427.85	10.00	10.00	0.00
11,500.00	36.45	179.74	11,395.42	430.42	724.39	-375.87	10.00	10.00	0.00
11,600.00	46.45	179.74	11,470.28	364.31	724.69	-309.92	10.00	10.00	0.00
11,700.00	56.45	179.74	11,532.53	286.21	725.05	-232.00	10.00	10.00	0.00
11,800.00	66.45	179.74	11,580.27	198.49	725.46	-144.49	10.00	10.00	0.00
11,900.00	76.45	179.74	11,612.05	103.80	725.89	-50.03	10.00	10.00	0.00
12,000.00	86.45	179.74	11,626.91	5.04	726.34	48.49	10.00	10.00	0.00
12,032.26	89.67	179.74	11,628.00	-27.19	726.48	80.65	10.00	10.00	0.00
12,100.00	89.67	179.74	11,628.39	-94.93	726.79	148.23	0.00	0.00	0.00
12,200.00	89.67	179.74	11,628.96	-194.93	727.25	247.99	0.00	0.00	0.00
12,300.00	89.67	179.74	11,629.54	-294.93	727.71	347.75	0.00	0.00	0.00
12,400.00	89.67	179.74	11,630.11	-394.92	728.16	447.51	0.00	0.00	0.00
12,500.00	89.67	179.74	11,630.69	-494.92	728.62	547.26	0.00	0.00	0.00
12,600.00	89.67	179.74	11,631.26	-594.92	729.08	647.02	0.00	0.00	0.00
12,700.00	89.67	179.74	11,631.83	-694.92	729.54	746.78	0.00	0.00	0.00
12,800.00	89.67	179.74	11,632.41	-794.91	729.99	846.54	0.00	0.00	0.00
12,900.00	89.67	179.74	11,632.98	-894.91	730.45	946.30	0.00	0.00	0.00
13,000.00	89.67	179.74	11,633.56	-994.91	730.91	1,046.06	0.00	0.00	0.00
13,100.00	89.67	179.74	11,634.13	-1,094.90	731.37	1,145.82	0.00	0.00	0.00
13,200.00	89.67	179.74	11,634.70	-1,194.90	731.82	1,245.58	0.00	0.00	0.00
13,300.00	89.67	179.74	11,635.28	-1,294.90	732.28	1,345.34	0.00	0.00	0.00
13,400.00	89.67	179.74	11,635.85	-1,394.90	732.74	1,445.10	0.00	0.00	0.00
13,500.00	89.67	179.74	11,636.43	-1,494.89	733.19	1,544.86	0.00	0.00	0.00
13,600.00	89.67	179.74	11,637.00	-1,594.89	733.65	1,644.61	0.00	0.00	0.00
13,700.00	89.67	179.74	11,637.57	-1,694.89	734.11	1,744.37	0.00	0.00	0.00
13,800.00	89.67	179.74	11,638.15	-1,794.89	734.57	1,844.13	0.00	0.00	0.00
13,900.00	89.67	179.74	11,638.72	-1,894.88	735.02	1,943.89	0.00	0.00	0.00
14,000.00	89.67	179.74	11,639.30	-1,994.88	735.48	2,043.65	0.00	0.00	0.00
14,100.00	89.67	179.74	11,639.87	-2,094.88	735.94	2,143.41	0.00	0.00	0.00
14,200.00	89.67	179.74	11,640.44	-2,194.87	736.40	2,243.17	0.00	0.00	0.00
14,300.00	89.67	179.74	11,641.02	-2,294.87	736.85	2,342.93	0.00	0.00	0.00
14,400.00	89.67	179.74	11,641.59	-2,394.87	737.31	2,442.69	0.00	0.00	0.00
14,500.00	89.67	179.74	11,642.17	-2,494.87	737.77	2,542.45	0.00	0.00	0.00
14,600.00	89.67	179.74	11,642.74	-2,594.86	738.22	2,642.21	0.00	0.00	0.00
14,700.00	89.67	179.74	11,643.31	-2,694.86	738.68	2,741.97	0.00	0.00	0.00
14,800.00	89.67	179.74	11,643.89	-2,794.86	739.14	2,841.72	0.00	0.00	0.00
14,900.00	89.67	179.74	11,644.46	-2,894.86	739.60	2,941.48	0.00	0.00	0.00
15,000.00	89.67	179.74	11,645.04	-2,994.85	740.05	3,041.24	0.00	0.00	0.00

Oxy Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well STERLING SILVER MDP1 33-4 FED COM 177H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB=26.5' @ 3413.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB=26.5' @ 3413.00ft
Site:	STERLING SILVER MDP1 33-4 FED COM	North Reference:	Grid
Well:	STERLING SILVER MDP1 33-4 FED COM 177H	Survey Calculation Method:	Minimum Curvature
Wellbore Design:	Wellbore #1 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)	
15,100.00	89.67	179.74	11,645.61	-3,094.85	740.51	3,141.00	0.00	0.00	0.00	
15,200.00	89.67	179.74	11,646.18	-3,194.85	740.97	3,240.76	0.00	0.00	0.00	
15,300.00	89.67	179.74	11,646.76	-3,294.85	741.43	3,340.52	0.00	0.00	0.00	
15,400.00	89.67	179.74	11,647.33	-3,394.84	741.88	3,440.28	0.00	0.00	0.00	
15,500.00	89.67	179.74	11,647.91	-3,494.84	742.34	3,540.04	0.00	0.00	0.00	
15,600.00	89.67	179.74	11,648.48	-3,594.84	742.80	3,639.80	0.00	0.00	0.00	
15,700.00	89.67	179.74	11,649.06	-3,694.83	743.25	3,739.56	0.00	0.00	0.00	
15,800.00	89.67	179.74	11,649.63	-3,794.83	743.71	3,839.32	0.00	0.00	0.00	
15,900.00	89.67	179.74	11,650.20	-3,894.83	744.17	3,939.08	0.00	0.00	0.00	
16,000.00	89.67	179.74	11,650.78	-3,994.83	744.63	4,038.83	0.00	0.00	0.00	
16,100.00	89.67	179.74	11,651.35	-4,094.82	745.08	4,138.59	0.00	0.00	0.00	
16,200.00	89.67	179.74	11,651.93	-4,194.82	745.54	4,238.35	0.00	0.00	0.00	
16,300.00	89.67	179.74	11,652.50	-4,294.82	746.00	4,338.11	0.00	0.00	0.00	
16,400.00	89.67	179.74	11,653.07	-4,394.82	746.46	4,437.87	0.00	0.00	0.00	
16,500.00	89.67	179.74	11,653.65	-4,494.81	746.91	4,537.63	0.00	0.00	0.00	
16,600.00	89.67	179.74	11,654.22	-4,594.81	747.37	4,637.39	0.00	0.00	0.00	
16,700.00	89.67	179.74	11,654.80	-4,694.81	747.83	4,737.15	0.00	0.00	0.00	
16,800.00	89.67	179.74	11,655.37	-4,794.80	748.28	4,836.91	0.00	0.00	0.00	
16,900.00	89.67	179.74	11,655.94	-4,894.80	748.74	4,936.67	0.00	0.00	0.00	
17,000.00	89.67	179.74	11,656.52	-4,994.80	749.20	5,036.43	0.00	0.00	0.00	
17,100.00	89.67	179.74	11,657.09	-5,094.80	749.66	5,136.19	0.00	0.00	0.00	
17,200.00	89.67	179.74	11,657.67	-5,194.79	750.11	5,235.94	0.00	0.00	0.00	
17,300.00	89.67	179.74	11,658.24	-5,294.79	750.57	5,335.70	0.00	0.00	0.00	
17,400.00	89.67	179.74	11,658.81	-5,394.79	751.03	5,435.46	0.00	0.00	0.00	
17,500.00	89.67	179.74	11,659.39	-5,494.79	751.49	5,535.22	0.00	0.00	0.00	
17,600.00	89.67	179.74	11,659.96	-5,594.78	751.94	5,634.98	0.00	0.00	0.00	
17,700.00	89.67	179.74	11,660.54	-5,694.78	752.40	5,734.74	0.00	0.00	0.00	
17,800.00	89.67	179.74	11,661.11	-5,794.78	752.86	5,834.50	0.00	0.00	0.00	
17,900.00	89.67	179.74	11,661.68	-5,894.78	753.31	5,934.26	0.00	0.00	0.00	
18,000.00	89.67	179.74	11,662.26	-5,994.77	753.77	6,034.02	0.00	0.00	0.00	
18,100.00	89.67	179.74	11,662.83	-6,094.77	754.23	6,133.78	0.00	0.00	0.00	
18,200.00	89.67	179.74	11,663.41	-6,194.77	754.69	6,233.54	0.00	0.00	0.00	
18,300.00	89.67	179.74	11,663.98	-6,294.76	755.14	6,333.30	0.00	0.00	0.00	
18,400.00	89.67	179.74	11,664.55	-6,394.76	755.60	6,433.05	0.00	0.00	0.00	
18,500.00	89.67	179.74	11,665.13	-6,494.76	756.06	6,532.81	0.00	0.00	0.00	
18,600.00	89.67	179.74	11,665.70	-6,594.76	756.52	6,632.57	0.00	0.00	0.00	
18,700.00	89.67	179.74	11,666.28	-6,694.75	756.97	6,732.33	0.00	0.00	0.00	
18,800.00	89.67	179.74	11,666.85	-6,794.75	757.43	6,832.09	0.00	0.00	0.00	
18,900.00	89.67	179.74	11,667.42	-6,894.75	757.89	6,931.85	0.00	0.00	0.00	
19,000.00	89.67	179.74	11,668.00	-6,994.75	758.34	7,031.61	0.00	0.00	0.00	
19,100.00	89.67	179.74	11,668.57	-7,094.74	758.80	7,131.37	0.00	0.00	0.00	
19,200.00	89.67	179.74	11,669.15	-7,194.74	759.26	7,231.13	0.00	0.00	0.00	
19,300.00	89.67	179.74	11,669.72	-7,294.74	759.72	7,330.89	0.00	0.00	0.00	
19,400.00	89.67	179.74	11,670.29	-7,394.73	760.17	7,430.65	0.00	0.00	0.00	
19,500.00	89.67	179.74	11,670.87	-7,494.73	760.63	7,530.41	0.00	0.00	0.00	
19,600.00	89.67	179.74	11,671.44	-7,594.73	761.09	7,630.16	0.00	0.00	0.00	
19,700.00	89.67	179.74	11,672.02	-7,694.73	761.54	7,729.92	0.00	0.00	0.00	
19,800.00	89.67	179.74	11,672.59	-7,794.72	762.00	7,829.68	0.00	0.00	0.00	
19,900.00	89.67	179.74	11,673.17	-7,894.72	762.46	7,929.44	0.00	0.00	0.00	
20,000.00	89.67	179.74	11,673.74	-7,994.72	762.92	8,029.20	0.00	0.00	0.00	
20,100.00	89.67	179.74	11,674.31	-8,094.72	763.37	8,128.96	0.00	0.00	0.00	
20,200.00	89.67	179.74	11,674.89	-8,194.71	763.83	8,228.72	0.00	0.00	0.00	

Oxy

Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well STERLING SILVER MDP1 33-4 FED COM 177H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB=26.5' @ 3413.00ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB=26.5' @ 3413.00ft
Site:	STERLING SILVER MDP1 33-4 FED COM	North Reference:	Grid
Well:	STERLING SILVER MDP1 33-4 FED COM 177H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)	
20,300.00	89.67	179.74	11,675.46	-8,294.71	764.29	8,328.48	0.00	0.00	0.00	
20,400.00	89.67	179.74	11,676.04	-8,394.71	764.75	8,428.24	0.00	0.00	0.00	
20,500.00	89.67	179.74	11,676.61	-8,494.71	765.20	8,528.00	0.00	0.00	0.00	
20,600.00	89.67	179.74	11,677.18	-8,594.70	765.66	8,627.76	0.00	0.00	0.00	
20,700.00	89.67	179.74	11,677.76	-8,694.70	766.12	8,727.52	0.00	0.00	0.00	
20,800.00	89.67	179.74	11,678.33	-8,794.70	766.57	8,827.27	0.00	0.00	0.00	
20,900.00	89.67	179.74	11,678.91	-8,894.69	767.03	8,927.03	0.00	0.00	0.00	
21,000.00	89.67	179.74	11,679.48	-8,994.69	767.49	9,026.79	0.00	0.00	0.00	
21,100.00	89.67	179.74	11,680.05	-9,094.69	767.95	9,126.55	0.00	0.00	0.00	
21,200.00	89.67	179.74	11,680.63	-9,194.69	768.40	9,226.31	0.00	0.00	0.00	
21,300.00	89.67	179.74	11,681.20	-9,294.68	768.86	9,326.07	0.00	0.00	0.00	
21,400.00	89.67	179.74	11,681.78	-9,394.68	769.32	9,425.83	0.00	0.00	0.00	
21,500.00	89.67	179.74	11,682.35	-9,494.68	769.78	9,525.59	0.00	0.00	0.00	
21,600.00	89.67	179.74	11,682.92	-9,594.68	770.23	9,625.35	0.00	0.00	0.00	
21,700.00	89.67	179.74	11,683.50	-9,694.67	770.69	9,725.11	0.00	0.00	0.00	
21,800.00	89.67	179.74	11,684.07	-9,794.67	771.15	9,824.87	0.00	0.00	0.00	
21,900.00	89.67	179.74	11,684.65	-9,894.67	771.60	9,924.63	0.00	0.00	0.00	
22,000.00	89.67	179.74	11,685.22	-9,994.67	772.06	10,024.38	0.00	0.00	0.00	
22,100.00	89.67	179.74	11,685.79	-10,094.66	772.52	10,124.14	0.00	0.00	0.00	
22,200.00	89.67	179.74	11,686.37	-10,194.66	772.98	10,223.90	0.00	0.00	0.00	
22,300.00	89.67	179.74	11,686.94	-10,294.66	773.43	10,323.66	0.00	0.00	0.00	
22,400.00	89.67	179.74	11,687.52	-10,394.65	773.89	10,423.42	0.00	0.00	0.00	
22,484.27	89.67	179.74	11,688.00	-10,478.92	774.28	10,507.48	0.00	0.00	0.00	

Design Targets										
Target Name	hit/miss-target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Sterling Silver - plan hits target center - Point)		0.00	0.00	11,628.00	-27.19	726.48	461,637.45	712,105.33	32° 16' 4.467867 N	103° 46' 51.021567
PBHL (Sterling Silver - plan hits target center - Point)		0.00	0.00	11,688.00	-10,478.92	774.28	451,186.35	712,153.12	32° 14' 21.045976 N	103° 46' 51.091352

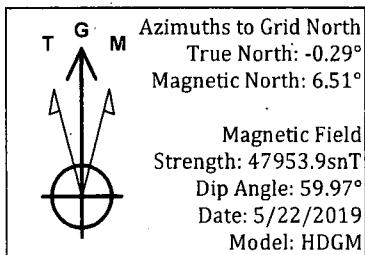
Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
5,075.00	5,075.00	0.00	0.00	Build 2.00°/100'	
5,574.90	5,572.37	28.12	33.19	Hold 10.00° Tangent	
10,330.12	10,255.37	561.80	663.08	Turn 2.00°/100'	
11,235.55	11,154.55	533.77	723.92	KOP, Build 10.00°/100'	
12,032.26	11,628.00	-27.19	726.48	Landing Point	
22,484.26	11,688.00	-10,478.91	774.28	TD at 22484.26' MD	



Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
 Site: STERLING SILVER MDP1 33-4 FED COM
 Well: STERLING SILVER MDP1 33-4 FED COM 177H
 Wellbore: Wellbore #1
 Design: Permitting Plan

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



WELL DETAILS: STERLING SILVER MDP1 33-4 FED COM 177H

+N/-S	+E/-W	North	Ground Level	Easting	Latitude	Longitude
0.00	0.00	461664.64	3386.50	711378.89	32° 16' 4.773856 N	103° 46' 59.480648 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5075.00	0.00	0.00	5075.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
5574.90	10.00	49.73	5572.37	28.12	33.19	2.00	49.73	-25.60	Hold 10.00° Tangent
10330.12	10.00	49.73	10255.37	561.80	663.08	0.00	0.00	-511.42	Turn 2.00°/100'
11235.55	10.00	179.74	11154.54	533.77	723.92	2.00	154.66	-478.97	KOP, Build 10.00°/100'
12032.26	89.67	179.74	11628.00	-27.19	726.48	10.00	0.00	80.65	Landing Point
22484.26	89.67	179.74	11688.00	-10478.92	774.28	0.00	0.00	10507.48	TD at 22484.26' MD

