

Minimum Radius of Curvature

API: 30-015-53277 **Well: Vanadium 32 State 005H** **Wellhead Location N+/S- : 32.269759**
Operator: Occidental **Area: New Mexico** **E+/W- : -103.797303**
Rig: **Type: U-Lateral** **Magnetic Declination: 6.67**
TD: 22,700' **Plane of Proposal: 179.68**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
0.00	0.00	0.00		0.0	0.00	0.00	0.00	0.00	0.00			
24	0.00	0.00	24	24.0	32.85	0.00	0.00	0.00	#DIV/0!	0.00		
100	0.54	47.40	76	100.0	32.61	0.24	0.26	0.36	47.40	0.71	0.12	62.37
200	0.66	55.71	100	200.0	31.97	0.89	1.09	1.40	50.80	0.15	0.12	8.31
300	0.64	59.55	100	300.0	31.37	1.49	2.04	2.53	53.84	0.05	-0.02	3.84
400	0.70	58.60	100	400.0	30.77	2.09	3.05	3.70	55.49	0.06	0.06	-0.95
500	0.74	61.71	100	500.0	30.15	2.72	4.14	4.95	56.68	0.06	0.04	3.11
600	0.84	66.58	100	600.0	29.56	3.32	5.38	6.32	58.34	0.12	0.10	4.87
700	0.79	64.68	100	700.0	28.98	3.90	6.67	7.73	59.68	0.06	-0.05	-1.90
800	0.60	66.53	100	799.9	28.49	4.41	7.78	8.94	60.47	0.19	-0.19	1.85
900	0.48	65.22	100	899.9	28.11	4.79	8.64	9.88	60.99	0.12	-0.12	-1.31
1000	0.41	55.43	100	999.9	27.73	5.17	9.31	10.65	60.97	0.10	-0.07	-9.79
1100	0.32	43.86	100	1099.9	27.33	5.57	9.80	11.27	60.38	0.12	-0.09	-11.57
1200	0.22	27.73	100	1199.9	26.96	5.94	10.08	11.71	59.48	0.12	-0.10	-16.13
1300	0.18	24.02	100	1299.9	26.65	6.26	10.24	12.00	58.56	0.04	-0.04	-3.71
1400	0.13	16.92	100	1399.9	26.40	6.51	10.33	12.21	57.79	0.05	-0.05	-7.10
1500	0.07	350.95	100	1499.9	26.23	6.68	10.36	12.32	57.18	0.07	-0.06	334.03
1600	0.06	294.11	100	1599.9	26.15	6.76	10.30	12.32	56.72	0.06	-0.01	-56.84
1700	0.07	309.14	100	1699.9	26.09	6.82	10.20	12.27	56.24	0.02	0.01	15.03
1800	0.09	290.34	100	1799.9	26.02	6.89	10.08	12.21	55.67	0.03	0.02	-18.80
1900	0.07	256.89	100	1899.9	26.01	6.90	9.95	12.11	55.26	0.05	-0.02	-33.45
2000	0.13	309.93	100	1999.9	25.95	6.96	9.80	12.02	54.63	0.10	0.06	53.04
2100	0.19	301.12	100	2099.9	25.79	7.12	9.57	11.93	53.38	0.06	0.06	-8.81
2200	0.24	294.54	100	2199.9	25.61	7.29	9.24	11.77	51.74	0.06	0.05	-6.58
2300	0.26	288.81	100	2299.9	25.45	7.45	8.84	11.56	49.87	0.03	0.02	-5.73
2400	0.28	292.34	100	2399.9	25.28	7.62	8.40	11.34	47.79	0.03	0.02	3.53
2500	0.28	286.25	100	2499.9	25.12	7.78	7.94	11.11	45.58	0.03	0.00	-6.09
2600	0.27	276.08	100	2599.9	25.02	7.87	7.47	10.85	43.49	0.05	-0.01	-10.17
2700	0.24	269.68	100	2699.9	24.99	7.89	7.02	10.57	41.66	0.04	-0.03	-6.40
2800	0.16	242.92	100	2799.9	25.06	7.83	6.69	10.30	40.51	0.12	-0.08	-26.76
2900	0.14	235.50	100	2899.9	25.19	7.70	6.46	10.05	40.03	0.03	-0.02	-7.42
3000	0.17	241.32	100	2999.9	25.33	7.56	6.23	9.80	39.52	0.03	0.03	5.82
3100	0.16	257.86	100	3099.9	25.43	7.46	5.97	9.55	38.67	0.05	-0.01	16.54
3200	0.06	330.12	100	3199.9	25.41	7.47	5.80	9.46	37.84	0.15	-0.10	72.26
3300	0.20	65.94	100	3299.9	25.29	7.59	5.94	9.64	38.04	0.21	0.14	-264.18
3400	0.97	110.28	100	3399.9	25.52	7.37	6.89	10.09	43.09	0.84	0.77	44.34
3500	1.47	115.23	100	3499.9	26.37	6.53	8.85	10.99	53.58	0.51	0.50	4.95
3600	1.60	117.39	100	3599.9	27.57	5.34	11.25	12.45	64.61	0.14	0.13	2.16
3700	2.19	126.28	100	3699.8	29.36	3.56	14.03	14.47	75.74	0.66	0.59	8.89
3800	2.53	138.44	100	3799.7	32.16	0.78	17.03	17.05	87.37	0.60	0.34	12.16
3900	2.49	161.70	100	3899.6	35.89	-2.93	19.18	19.40	98.69	1.01	-0.04	23.26
4000	2.11	174.34	100	3999.5	39.79	-6.83	20.04	21.17	108.81	0.63	-0.38	12.64
4100	1.99	179.34	100	4099.5	43.36	-10.39	20.24	22.75	117.18	0.22	-0.12	5.00
4200	1.69	178.92	100	4199.4	46.57	-13.60	20.29	24.43	123.84	0.30	-0.30	-0.42
4300	1.23	163.63	100	4299.4	49.07	-16.11	20.62	26.17	128.00	0.60	-0.46	-15.29
4400	0.06	110.95	100	4399.4	50.12	-17.16	20.97	27.10	129.29	1.19	-1.17	-52.68
4500	0.04	217.38	100	4499.4	50.17	-17.20	21.00	27.15	129.33	0.08	-0.02	106.43
4600	0.15	247.03	100	4599.4	50.25	-17.28	20.86	27.09	129.65	0.12	0.11	29.65
4700	0.20	242.17	100	4699.4	50.38	-17.42	20.58	26.96	130.24	0.05	0.05	-4.86
4800	0.22	271.52	100	4799.4	50.45	-17.49	20.24	26.75	130.84	0.11	0.02	29.35
4900	0.22	280.89	100	4899.4	50.41	-17.45	19.85	26.43	131.31	0.04	0.00	9.37
5000	0.15	262.08	100	4999.4	50.39	-17.43	19.54	26.18	131.74	0.09	-0.07	-18.81
5100	0.29	308.45	100	5099.4	50.25	-17.29	19.21	25.85	132.00	0.22	0.14	46.37
5200	0.41	315.21	100	5199.4	49.84	-16.88	18.76	25.24	131.99	0.13	0.12	6.76
5300	0.42	328.28	100	5299.4	49.27	-16.32	18.31	24.53	131.70	0.09	0.01	13.07
5400	0.47	337.95	100	5399.4	48.57	-15.62	17.97	23.81	131.01	0.09	0.05	9.67
5500	0.51	336.10	100	5499.4	47.78	-14.84	17.63	23.04	130.08	0.04	0.04	-1.85
5600	0.54	339.12	100	5599.4	46.94	-13.99	17.28	22.24	128.99	0.04	0.03	3.02

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
5700	0.52	334.45	100	5699.4	46.08	-13.14	16.92	21.42	127.83	0.05	-0.02	-4.67
5800	0.52	341.79	100	5799.4	45.24	-12.30	16.58	20.65	126.56	0.07	0.00	7.34
5900	0.55	347.85	100	5899.4	44.34	-11.40	16.34	19.92	124.90	0.06	0.03	6.06
6000	0.58	347.25	100	5999.4	43.38	-10.44	16.13	19.21	122.91	0.03	0.03	-0.60
6100	0.67	348.76	100	6099.3	42.31	-9.37	15.90	18.46	120.51	0.09	0.09	1.51
6200	0.72	351.10	100	6199.3	41.11	-8.18	15.69	17.69	117.52	0.06	0.05	2.34
6300	0.61	15.48	100	6299.3	39.98	-7.04	15.74	17.24	114.11	0.30	-0.11	-335.62
6400	0.53	8.54	100	6399.3	39.01	-6.07	15.95	17.06	110.84	0.11	-0.08	-6.94
6500	0.54	345.50	100	6499.3	38.10	-5.16	15.90	16.71	107.97	0.21	0.01	336.96
6600	0.55	343.75	100	6599.3	37.18	-4.24	15.65	16.21	105.17	0.02	0.01	-1.75
6700	0.13	9.82	100	6699.3	36.60	-3.67	15.53	15.96	103.29	0.44	-0.42	-333.93
6800	0.18	236.18	100	6799.3	36.58	-3.64	15.42	15.84	103.30	0.29	0.05	226.36
6900	0.07	63.70	100	6899.3	36.64	-3.70	15.34	15.78	103.57	0.25	-0.11	-172.48
7000	0.23	92.63	100	6999.3	36.62	-3.69	15.60	16.03	103.30	0.17	0.16	28.93
7100	0.05	359.00	100	7099.3	36.59	-3.65	15.80	16.21	103.02	0.24	-0.18	266.37
7200	0.05	205.04	100	7199.3	36.58	-3.65	15.78	16.20	103.02	0.10	0.00	-153.96
7300	0.16	115.99	100	7299.3	36.69	-3.75	15.89	16.32	103.28	0.17	0.11	-89.05
7400	5.91	102.76	100	7399.1	37.91	-4.95	21.04	21.61	103.23	5.75	5.75	-13.23
7500	11.55	103.06	100	7497.9	41.40	-8.35	35.82	36.78	103.12	5.64	5.64	0.30
7600	11.14	103.41	100	7596.0	46.01	-12.85	54.97	56.45	103.16	0.42	-0.41	0.35
7700	10.72	103.77	100	7694.2	50.57	-17.31	73.40	75.41	103.27	0.43	-0.42	0.36
7800	10.31	104.12	100	7792.5	55.06	-21.70	91.11	93.66	103.40	0.41	-0.41	0.35
7900	9.90	104.48	100	7890.9	59.49	-26.04	108.12	111.21	103.54	0.41	-0.41	0.36
8000	9.48	104.83	100	7989.5	63.84	-30.29	124.40	128.03	103.69	0.42	-0.42	0.35
8100	9.07	105.19	100	8088.2	68.10	-34.47	139.97	144.15	103.83	0.41	-0.41	0.36
8200	8.66	105.54	100	8187.0	72.26	-38.55	154.83	159.55	103.98	0.41	-0.41	0.35
8300	8.25	105.90	100	8285.9	76.32	-42.53	168.98	174.25	104.13	0.41	-0.41	0.36
8400	7.83	106.25	100	8384.9	80.27	-46.40	182.42	188.23	104.27	0.42	-0.42	0.35
8500	7.42	106.61	100	8484.1	84.09	-50.15	195.15	201.49	104.41	0.41	-0.41	0.36
8600	7.01	106.96	100	8583.3	87.79	-53.78	207.17	214.04	104.55	0.41	-0.41	0.35
8700	6.60	107.32	100	8682.6	91.34	-57.27	218.50	225.88	104.69	0.41	-0.41	0.36
8800	6.18	107.67	100	8781.9	94.74	-60.62	229.11	236.99	104.82	0.42	-0.42	0.35
8900	5.77	108.03	100	8881.4	97.99	-63.81	239.02	247.39	104.95	0.41	-0.41	0.36
9000	5.34	107.30	100	8980.9	101.11	-66.87	248.66	257.49	105.05	0.10	0.07	-0.73
9100	5.90	106.57	100	9080.4	104.14	-69.85	258.44	267.71	105.12	0.10	0.06	-0.73
9200	5.97	105.85	100	9179.8	107.09	-72.74	268.37	278.05	105.17	0.10	0.07	-0.72
9300	6.03	105.12	100	9279.3	109.93	-75.53	278.44	288.50	105.18	0.10	0.06	-0.73
9400	6.10	104.39	100	9378.7	112.68	-78.22	288.66	299.07	105.16	0.10	0.07	-0.73
9500	6.17	103.66	100	9478.1	115.33	-80.81	299.03	309.75	105.12	0.10	0.07	-0.73
9600	6.23	102.93	100	9577.6	117.87	-83.29	309.54	320.55	105.06	0.10	0.06	-0.73
9700	6.30	102.20	100	9677.0	120.30	-85.67	320.19	331.45	104.98	0.11	0.07	-0.73
9800	6.37	101.48	100	9776.3	122.63	-87.93	330.99	342.47	104.88	0.11	0.07	-0.72
9900	6.43	100.75	100	9875.7	124.84	-90.08	341.93	353.59	104.76	0.10	0.06	-0.73
10000	6.50	100.02	100	9975.1	126.93	-92.11	353.00	364.82	104.62	0.11	0.07	-0.73
10100	6.56	99.29	100	10074.4	128.90	-94.01	364.21	376.15	104.47	0.10	0.06	-0.73
10200	6.63	98.56	100	10173.8	130.74	-95.80	375.56	387.58	104.31	0.11	0.07	-0.73
10265	6.63	136.86	65	10238.4	134.07	-99.09	381.84	394.49	104.55	6.68	0.00	58.92
10360	5.90	157.68	95	10332.8	142.63	-107.61	387.44	402.11	105.52	2.50	-0.77	21.92
10455	6.78	190.90	95	10427.3	152.66	-117.64	388.24	405.67	106.86	3.91	0.93	34.97
10550	7.40	204.73	95	10521.5	163.70	-128.71	384.62	405.58	108.50	1.91	0.65	14.56
10645	7.64	202.52	95	10615.7	175.06	-140.10	379.64	404.66	110.26	0.40	0.25	-2.33
10686	7.54	202.54	41	10656.4	180.05	-145.10	377.56	404.48	111.02	0.24	-0.24	0.05
10714	7.02	202.95	28	10684.1	183.32	-148.37	376.19	404.39	111.52	1.87	-1.86	1.46
10809	5.37	194.77	95	10778.6	192.94	-158.02	372.80	404.90	112.97	1.97	-1.74	-8.61
10897	5.54	153.74	88	10866.2	200.74	-165.81	373.62	408.76	113.93	4.34	0.19	-46.63
10904	5.66	150.90	7	10873.2	201.35	-166.41	373.94	409.30	113.99	4.31	1.71	-40.57
10998	17.99	151.27	94	10965.0	218.24	-183.26	383.21	424.77	115.56	13.12	13.12	0.39
11093	25.78	165.16	95	11053.2	251.22	-216.16	395.58	450.79	118.65	9.79	8.20	14.62

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11187	34.17	168.70	94	11134.5	297.01	-261.89	406.01	483.15	122.82	9.12	8.93	3.77
11282	46.41	168.67	95	11206.8	357.20	-322.02	418.04	527.69	127.61	12.88	12.88	-0.03
11376	57.23	169.72	94	11264.9	429.75	-394.50	431.82	584.89	132.41	11.54	11.51	1.12
11389	58.14	169.60	13	11272.0	440.86	-405.59	433.85	593.91	133.07	6.86	6.82	-0.90
11471	63.70	168.93	82	11311.7	511.02	-475.68	447.14	652.84	136.77	6.85	6.81	-0.82
11565	73.72	171.07	94	11345.8	597.25	-561.82	462.28	727.56	140.55	10.87	10.66	2.28
11660	80.50	173.45	95	11366.9	689.02	-653.53	474.72	807.75	144.01	7.54	7.14	2.51
11725	85.80	175.03	65	11374.7	753.24	-717.72	481.18	864.09	146.16	8.50	8.15	2.43
11754	88.16	175.73	29	11376.2	782.12	-746.58	483.52	889.48	147.07	8.49	8.14	2.41
11848	83.13	177.30	94	11383.4	875.67	-840.10	489.22	972.16	149.79	5.60	-5.35	1.67
11941	85.20	177.51	93	11392.8	968.11	-932.52	493.41	1055.01	152.12	2.24	2.23	0.23
12034	88.02	177.07	93	11398.3	1060.86	-1025.24	497.79	1139.70	154.10	3.07	3.03	-0.47
12222	87.70	180.67	188	11405.3	1248.67	-1213.04	501.50	1312.62	157.54	1.92	-0.17	1.91
12409	89.93	185.56	187	11409.2	1435.23	-1399.66	491.34	1483.39	160.66	2.87	1.19	2.61
12503	89.98	183.87	94	11409.3	1528.86	-1493.34	483.61	1569.69	162.06	1.80	0.05	-1.80
12598	90.21	183.22	95	11409.1	1623.65	-1588.15	477.74	1658.45	163.26	0.73	0.24	-0.68
12692	89.00	181.00	94	11409.8	1717.55	-1682.08	474.28	1747.67	164.25	2.69	-1.29	-2.36
12787	89.95	177.30	95	11410.6	1812.53	-1777.05	475.69	1839.62	165.01	4.02	1.00	-3.89
12882	90.82	176.89	95	11410.0	1907.43	-1871.92	480.50	1932.61	165.60	1.01	0.92	-0.43
12976	91.11	178.75	94	11408.4	2001.36	-1965.84	484.08	2024.56	166.17	2.00	0.31	1.98
13071	91.02	179.74	95	11406.7	2096.34	-2060.81	485.33	2117.19	166.75	1.05	-0.09	1.04
13260	91.27	181.72	189	11402.9	2285.26	-2249.75	482.92	2301.00	167.88	1.06	0.13	1.05
13450	91.12	182.87	190	11398.9	2475.02	-2439.55	475.32	2485.43	168.97	0.61	-0.08	0.61
13545	90.77	184.99	95	11397.3	2569.74	-2534.31	468.81	2577.31	169.52	2.26	-0.37	2.23
13639	89.92	185.13	94	11396.8	2663.32	-2627.94	460.52	2667.99	170.06	0.92	-0.90	0.15
13733	90.55	185.27	94	11396.4	2756.88	-2721.55	452.00	2758.83	170.57	0.69	0.67	0.15
13828	89.36	185.02	95	11396.5	2851.45	-2816.17	443.48	2850.87	171.05	1.28	-1.25	-0.26
13923	88.86	183.98	95	11397.9	2946.10	-2910.86	436.02	2943.34	171.48	1.21	-0.53	-1.09
14017	89.27	182.80	94	11399.5	3039.89	-3004.68	430.47	3035.36	171.85	1.33	0.44	-1.26
14111	88.89	180.20	94	11401.0	3133.82	-3098.63	428.01	3128.05	172.14	2.79	-0.40	-2.77
14206	89.10	180.65	95	11402.7	3228.80	-3193.61	427.30	3222.07	172.38	0.52	0.22	0.47
14300	89.50	182.08	94	11403.8	3322.75	-3287.58	425.06	3314.94	172.63	1.58	0.43	1.52
14395	89.05	181.94	95	11405.0	3417.66	-3382.51	421.73	3408.70	172.89	0.50	-0.47	-0.15
14490	89.31	181.32	95	11406.4	3512.60	-3477.46	419.03	3502.62	173.13	0.71	0.27	-0.65
14584	89.17	179.77	94	11407.6	3606.58	-3571.45	418.14	3595.84	173.32	1.66	-0.15	-1.65
14774	89.10	179.86	190	11410.5	3796.55	-3761.43	418.75	3784.66	173.65	0.06	-0.04	0.05
14869	89.17	178.59	95	11411.9	3891.54	-3856.40	420.03	3879.21	173.78	1.34	0.07	-1.34
14963	89.06	179.38	94	11413.4	3985.52	-3950.38	421.70	3972.82	173.91	0.85	-0.12	0.84
15058	89.32	178.66	95	11414.7	4080.50	-4045.35	423.32	4067.44	174.03	0.81	0.27	-0.76
15247	89.18	178.87	189	11417.2	4269.46	-4234.29	427.40	4255.81	174.24	0.13	-0.07	0.11
15342	90.44	180.45	95	11417.5	4364.46	-4329.29	427.96	4350.39	174.35	2.13	1.33	1.66
15436	90.14	181.18	94	11417.0	4458.44	-4423.27	426.62	4443.80	174.49	0.84	-0.32	0.78
15531	90.30	181.50	95	11416.7	4553.40	-4518.25	424.40	4538.14	174.63	0.38	0.17	0.34
15552	90.64	181.31	21	11416.5	4574.39	-4539.24	423.89	4558.99	174.67	1.85	1.62	-0.90
15626	91.85	180.64	74	11414.9	4648.35	-4613.21	422.63	4632.53	174.77	1.87	1.64	-0.91
15720	92.68	185.56	94	11411.2	4742.08	-4706.97	417.55	4725.45	174.93	5.30	0.88	5.23
15815	92.07	187.72	95	11407.2	4836.29	-4801.25	406.58	4818.43	175.16	2.36	-0.64	2.27
15910	92.43	193.20	95	11403.5	4929.51	-4894.56	389.35	4910.02	175.45	5.78	0.38	5.77
16004	91.31	198.07	94	11400.4	5019.81	-4985.00	364.04	4998.28	175.82	5.31	-1.19	5.18
16099	91.09	204.08	95	11398.4	5108.20	-5073.59	329.90	5084.30	176.28	6.33	-0.23	6.33
16116	90.66	204.68	17	11398.2	5123.64	-5089.07	322.88	5099.30	176.37	4.34	-2.53	3.53
16194	88.67	207.41	78	11398.6	5193.52	-5159.14	288.64	5167.21	176.80	4.33	-2.55	3.50
16289	88.85	213.86	95	11400.7	5274.93	-5240.82	240.27	5246.32	177.38	6.79	0.19	6.79
16384	90.33	221.14	95	11401.4	5349.92	-5316.13	182.48	5319.26	178.03	7.82	1.56	7.66
16478	90.01	232.02	94	11401.1	5414.05	-5380.64	114.30	5381.86	178.78	11.58	-0.34	11.57
16573	90.01	238.42	95	11401.1	5467.77	-5434.81	36.32	5434.93	179.62	6.74	0.00	6.74
16668	90.78	247.74	95	11400.4	5510.26	-5477.77	-48.29	5477.98	180.51	9.84	0.81	9.81
16762	91.08	255.63	94	11398.9	5539.27	-5507.28	-137.45	5508.99	181.43	8.40	0.32	8.39

Minimum Radius of Curvature

API: 30-015-53277 **Well: Vanadium 32 State 005H** **Wellhead Location N+S-: 32.269759**
Operator: Occidental **Area: New Mexico** **E+W-: -103.797303**
Rig: **Type: U-Lateral** **Magnetic Declination: 6.67**
TD: 22,700' **Plane of Proposal: 179.68**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
16857	90.66	260.69	95	11397.4	5558.24	-5526.76	-230.39	5531.56	182.39	5.34	-0.44	5.33
16952	90.20	265.58	95	11396.7	5569.06	-5538.11	-324.67	5547.62	183.36	5.17	-0.48	5.15
17047	90.11	269.29	95	11396.5	5572.78	-5542.36	-419.56	5558.22	184.33	3.91	-0.09	3.91
17141	89.55	269.05	94	11396.7	5573.62	-5543.73	-513.55	5567.46	185.29	0.65	-0.60	-0.26
17236	89.90	269.63	95	11397.2	5574.18	-5544.82	-608.54	5578.11	186.26	0.71	0.37	0.61
17330	89.40	271.26	94	11397.8	5572.93	-5544.09	-702.54	5588.43	187.22	1.81	-0.53	1.73
17425	90.93	277.66	95	11397.5	5565.02	-5536.71	-797.20	5593.80	188.19	6.93	1.61	6.74
17520	89.61	283.64	95	11397.1	5546.95	-5519.16	-890.51	5590.54	189.17	6.45	-1.39	6.29
17614	89.37	287.21	94	11397.9	5521.45	-5494.16	-981.11	5581.07	190.12	3.81	-0.26	3.80
17709	91.10	291.50	95	11397.5	5489.47	-5462.69	-1070.72	5566.63	191.09	4.87	1.82	4.52
17804	90.76	299.35	95	11396.0	5448.24	-5421.94	-1156.44	5543.89	192.04	8.27	-0.36	8.26
17898	90.75	307.57	94	11394.7	5396.03	-5370.16	-1234.78	5510.29	192.95	8.74	-0.01	8.74
17993	92.07	313.67	95	11392.4	5333.83	-5308.36	-1306.84	5466.86	193.83	6.57	1.39	6.42
18087	92.12	318.70	94	11388.9	5265.70	-5240.60	-1371.85	5417.18	194.67	5.35	0.05	5.35
18182	92.25	327.45	95	11385.3	5189.57	-5164.78	-1428.83	5358.78	195.46	9.20	0.14	9.21
18277	92.24	331.37	95	11381.6	5107.60	-5083.08	-1477.13	5293.36	196.20	4.12	-0.01	4.13
18372	92.29	341.92	95	11377.8	5020.37	-4996.06	-1514.70	5220.63	196.87	11.10	0.05	11.11
18467	92.79	346.89	95	11373.6	4928.85	-4904.68	-1540.21	5140.83	197.43	5.25	0.53	5.23
18561	92.50	355.50	94	11369.3	4836.06	-4811.97	-1554.57	5056.85	197.90	9.15	-0.31	9.16
18656	91.71	355.47	95	11365.8	4741.38	-4717.33	-1562.04	4969.22	198.32	0.83	-0.83	-0.03
18751	90.63	359.27	95	11363.8	4646.50	-4622.47	-1566.40	4880.66	198.72	4.16	-1.14	4.00
18846	89.80	358.08	95	11363.5	4551.51	-4527.50	-1568.60	4791.53	199.11	1.53	-0.87	-1.25
18940	90.01	356.28	94	11363.6	4457.61	-4433.61	-1573.22	4704.46	199.54	1.93	0.22	-1.91
19035	89.25	359.84	95	11364.2	4362.66	-4338.69	-1576.44	4616.21	199.97	3.83	-0.80	3.75
19130	89.46	356.95	95	11365.3	4267.70	-4243.74	-1579.10	4528.01	200.41	3.05	0.22	-3.04
19319	89.55	357.49	189	11367.0	4078.89	-4054.97	-1588.26	4354.92	201.39	0.29	0.05	0.29
19414	89.66	356.52	95	11367.6	3983.99	-3960.10	-1593.23	4268.58	201.92	1.03	0.12	-1.02
19509	89.67	359.97	95	11368.2	3889.04	-3865.16	-1596.14	4181.76	202.44	3.63	0.01	3.63
19603	89.57	359.71	94	11368.8	3795.04	-3771.17	-1596.40	4095.14	202.94	0.30	-0.11	-0.28
19698	90.19	359.07	95	11369.0	3700.04	-3676.17	-1597.41	4008.24	203.49	0.94	0.65	-0.67
19792	90.27	359.50	94	11368.6	3606.05	-3582.18	-1598.58	3922.69	204.05	0.47	0.09	0.46
19887	90.22	359.55	95	11368.2	3511.05	-3487.19	-1599.37	3836.46	204.64	0.07	-0.05	0.05
19982	90.21	359.18	95	11367.8	3416.05	-3392.19	-1600.42	3750.78	205.26	0.39	-0.01	-0.39
20076	90.16	359.69	94	11367.5	3322.05	-3298.20	-1601.35	3666.39	205.90	0.55	-0.05	0.54
20171	90.08	0.57	95	11367.3	3227.06	-3203.20	-1601.13	3581.08	206.56	0.93	-0.08	-378.02
20265	90.78	1.01	94	11366.6	3133.08	-3109.21	-1599.84	3496.67	207.23	0.88	0.74	0.47
20360	90.68	0.99	95	11365.4	3038.11	-3014.23	-1598.18	3411.71	207.93	0.11	-0.11	-0.02
20455	90.70	0.77	95	11364.3	2943.14	-2919.25	-1596.72	3327.39	208.68	0.23	0.02	-0.23
20549	91.16	0.61	94	11362.8	2849.16	-2825.27	-1595.59	3244.70	209.46	0.52	0.49	-0.17
20738	90.66	0.87	189	11359.8	2660.22	-2636.31	-1593.15	3080.30	211.14	0.30	-0.26	0.14
20833	90.99	359.78	95	11358.4	2565.24	-2541.32	-1592.61	2999.12	212.07	1.20	0.35	377.80
20928	90.81	0.89	95	11356.9	2470.26	-2446.34	-1592.05	2918.77	213.06	1.18	-0.19	-377.78
21023	90.59	0.59	95	11355.7	2375.28	-2351.35	-1590.83	2838.94	214.08	0.39	-0.23	-0.32
21117	90.69	0.06	94	11354.7	2281.29	-2257.36	-1590.29	2761.29	215.16	0.57	0.11	-0.56
21212	91.72	0.71	95	11352.7	2186.32	-2162.39	-1589.66	2683.83	216.32	1.28	1.08	0.68
21307	90.67	0.55	95	11350.7	2091.36	-2067.41	-1588.61	2607.28	217.54	1.12	-1.11	-0.17
21402	90.66	0.35	95	11349.6	1996.37	-1972.42	-1587.87	2532.15	218.84	0.21	-0.01	-0.21
21496	90.64	1.74	94	11348.5	1902.41	-1878.45	-1586.15	2458.55	220.18	1.48	-0.02	1.48
21591	90.59	1.33	95	11347.5	1807.46	-1783.49	-1583.61	2385.09	221.60	0.43	-0.05	-0.43
21686	91.11	358.21	95	11346.1	1712.49	-1688.51	-1583.99	2315.19	223.17	3.33	0.55	375.66
21781	89.28	358.72	95	11345.8	1617.51	-1593.55	-1586.53	2248.66	224.87	2.00	-1.93	0.54
21876	89.93	357.97	95	11346.4	1522.54	-1498.59	-1589.28	2184.39	226.68	1.04	0.68	-0.79
21970	91.00	2.26	94	11345.7	1428.57	-1404.62	-1589.09	2120.89	228.53	4.70	1.14	-378.41
22065	90.47	0.88	95	11344.5	1333.63	-1309.67	-1586.49	2057.22	230.46	1.56	-0.56	-1.45
22159	90.87	2.96	94	11343.4	1239.72	-1215.73	-1583.34	1996.24	232.48	2.25	0.43	2.21
22349	90.43	0.20	190	11341.2	1049.85	-1025.83	-1578.10	1882.21	236.97	1.47	-0.23	-1.45
22538	90.24	1.12	189	11340.1	860.89	-836.85	-1575.92	1784.33	242.03	0.50	-0.10	0.49
22633	90.72	1.02	95	11339.3	765.92	-741.87	-1574.15	1740.21	244.77	0.52	0.51	-0.11

Minimum Radius of Curvature

API: 30-015-53277 Well: Vanadium 32 State 005H Wellhead Location N+/S- : 32.269759
 Operator: Occidental Area: New Mexico E+/W- : -103.797303
 Rig: Type: U-Lateral Magnetic Declination: 6.67
 TD: 22,700' Plane of Proposal: 179.68

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
22649	90.56	1.22	16	11339.1	749.92	-725.88	-1573.84	1733.16	245.24	1.60	-1.00	1.25
22668	90.36	1.45	19	11339.0	730.93	-706.88	-1573.39	1724.89	245.81	1.60	-1.05	1.21
22700	90.36	1.45	32	11338.8	698.95	-674.89	-1572.58	1711.29	246.77	0.00	0.00	0.00