

SITE DETAILS: Grenemyer Pad

Site Centre Northing: 1248189.26
Easting: 3175594.84
Positional Uncertainty: 0.0
Convergence: 0.41
Local North: Grid

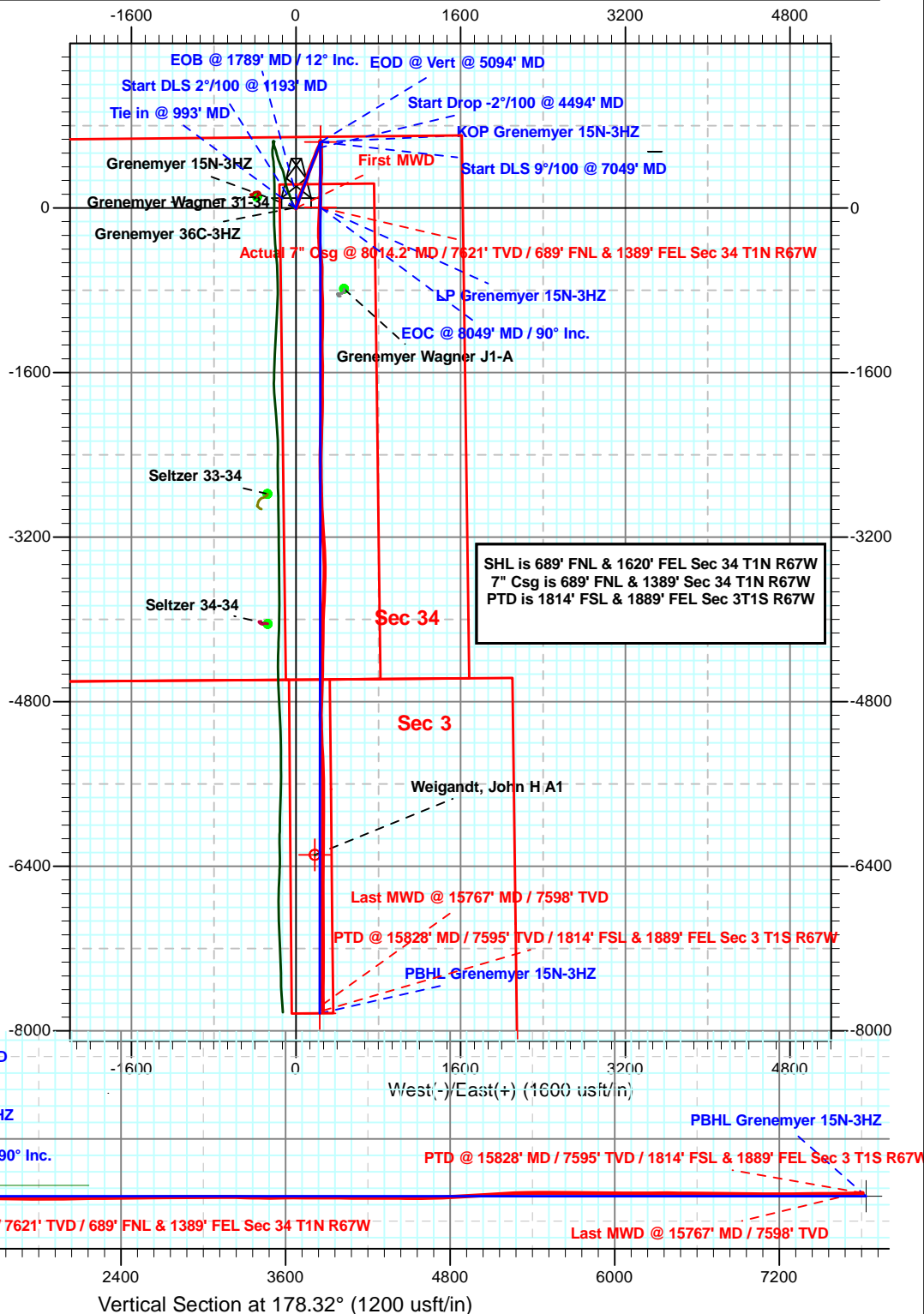
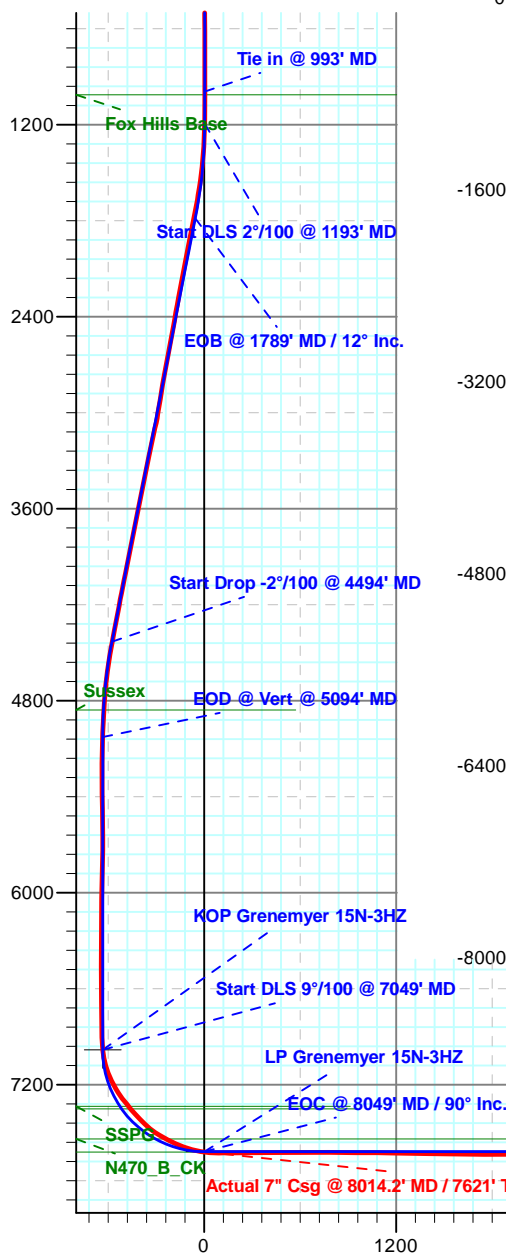


Azimuths to Grid North
Convergence: 0.41°
Total Correction: 8.13°

Magnetic Field
Strength: 52640.2snT
Dip Angle: 66.63°
Date: 1/21/2014
Model: IGRF2010

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
993.0	0.31	306.21	993.0	-4.0	-0.9	0.00	0.00	4.0	
1193.0	0.31	306.21	1193.0	-3.4	-1.7	0.00	0.00	3.3	
1788.8	12.00	20.43	1784.4	55.8	18.6	2.00	75.63	-55.2	
4494.4	12.00	20.43	4430.9	582.8	215.0	0.00	0.00	-576.3	
5094.3	0.00	0.00	5026.4	641.5	236.8	2.00	180.00	-634.2	
7049.3	0.00	0.00	6981.4	641.5	236.8	0.00	0.00	-634.2	KOP Grenemyer 15N-3HZ
8049.3	90.00	180.05	7618.0	4.8	236.3	9.00	180.05	2.1	
15884.6	90.00	180.05	7618.0	-7830.5	229.7	0.00	0.00	7833.8	PBHL Grenemyer 15N-3HZ





Anadarko

**Weld Co., Co (NAD 83)
Grenemyer Pad
Grenemyer 15N-3HZ**

Wellbore #1

Design: OH

Survey Report - Geographic

17 March, 2014



Company:	Anadarko	Local Co-ordinate Reference:	Well Grenemyer 15N-3HZ
Project:	Weld Co., Co (NAD 83)	TVD Reference:	Well @ 5068.0usft (Xtreme 23)
Site:	Grenemyer Pad	MD Reference:	Well @ 5068.0usft (Xtreme 23)
Well:	Grenemyer 15N-3HZ	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Weld Co., Co (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Grenemyer Pad		
Site Position:		Northing:	1,248,189.25 usft
From:	Lat/Long	Easting:	3,175,594.84 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	40° 0' 46.663 N
		Longitude:	104° 52' 23.142 W
		Grid Convergence:	0.41 °

Well	Grenemyer 15N-3HZ		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	40° 0' 46.663 N
		Longitude:	104° 52' 22.757 W
		Ground Level:	5,052.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/21/2014	8.54	66.63	52,640

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	178.32	

Survey Program	Date	3/17/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
16.0	15,828.0	Survey #2 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,248,189.46	3,175,624.81	40° 0' 46.663 N	104° 52' 22.757 W	
16.0	0.00	0.00	16.0	0.0	0.0	1,248,189.46	3,175,624.81	40° 0' 46.663 N	104° 52' 22.757 W	
First MWD										
116.0	0.76	208.33	116.0	-0.6	-0.3	1,248,188.87	3,175,624.50	40° 0' 46.657 N	104° 52' 22.761 W	
216.0	0.66	190.28	216.0	-1.7	-0.7	1,248,187.72	3,175,624.08	40° 0' 46.646 N	104° 52' 22.766 W	
316.0	0.52	174.45	316.0	-2.8	-0.8	1,248,186.71	3,175,624.02	40° 0' 46.636 N	104° 52' 22.767 W	
416.0	0.30	151.22	416.0	-3.4	-0.6	1,248,186.02	3,175,624.19	40° 0' 46.629 N	104° 52' 22.765 W	
516.0	0.29	175.72	516.0	-3.9	-0.5	1,248,185.54	3,175,624.34	40° 0' 46.624 N	104° 52' 22.763 W	
616.0	0.22	161.38	616.0	-4.3	-0.4	1,248,185.11	3,175,624.42	40° 0' 46.620 N	104° 52' 22.762 W	
716.0	0.05	267.15	716.0	-4.5	-0.4	1,248,184.92	3,175,624.44	40° 0' 46.618 N	104° 52' 22.762 W	
816.0	0.06	311.94	816.0	-4.5	-0.5	1,248,184.96	3,175,624.35	40° 0' 46.619 N	104° 52' 22.763 W	
916.0	0.20	330.32	916.0	-4.3	-0.6	1,248,185.14	3,175,624.23	40° 0' 46.620 N	104° 52' 22.765 W	

Company:	Anadarko	Local Co-ordinate Reference:	Well Grenemyer 15N-3HZ
Project:	Weld Co., Co (NAD 83)	TVD Reference:	Well @ 5068.0usft (Xtreme 23)
Site:	Grenemyer Pad	MD Reference:	Well @ 5068.0usft (Xtreme 23)
Well:	Grenemyer 15N-3HZ	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,009.0	0.31	306.21	1,009.0	-4.0	-0.9	1,248,185.43	3,175,623.94	40° 0' 46.623 N	104° 52' 22.768 W
1,173.0	0.70	252.80	1,173.0	-4.1	-2.2	1,248,185.40	3,175,622.63	40° 0' 46.623 N	104° 52' 22.785 W
1,267.0	2.30	13.60	1,266.9	-2.4	-2.3	1,248,187.06	3,175,622.52	40° 0' 46.640 N	104° 52' 22.786 W
1,360.0	5.10	17.40	1,359.7	3.4	-0.6	1,248,192.82	3,175,624.20	40° 0' 46.696 N	104° 52' 22.764 W
1,454.0	6.70	18.50	1,453.2	12.6	2.4	1,248,202.01	3,175,627.19	40° 0' 46.787 N	104° 52' 22.725 W
1,548.0	8.10	19.40	1,546.5	24.0	6.3	1,248,213.46	3,175,631.13	40° 0' 46.900 N	104° 52' 22.673 W
1,641.0	10.00	20.30	1,638.3	37.8	11.3	1,248,227.21	3,175,636.11	40° 0' 47.035 N	104° 52' 22.608 W
1,735.0	12.10	19.00	1,730.5	54.7	17.3	1,248,244.18	3,175,642.15	40° 0' 47.203 N	104° 52' 22.529 W
1,828.0	11.80	17.80	1,821.5	73.0	23.4	1,248,262.45	3,175,648.23	40° 0' 47.383 N	104° 52' 22.449 W
1,922.0	11.30	13.90	1,913.6	91.1	28.6	1,248,280.54	3,175,653.38	40° 0' 47.561 N	104° 52' 22.381 W
2,019.0	12.50	24.70	2,008.6	109.9	35.2	1,248,299.31	3,175,660.05	40° 0' 47.746 N	104° 52' 22.294 W
2,111.0	12.00	19.90	2,098.5	127.9	42.7	1,248,317.35	3,175,667.46	40° 0' 47.924 N	104° 52' 22.197 W
2,203.0	11.30	21.50	2,188.6	145.3	49.2	1,248,334.73	3,175,674.02	40° 0' 48.095 N	104° 52' 22.111 W
2,295.0	11.10	20.40	2,278.8	162.0	55.6	1,248,351.41	3,175,680.41	40° 0' 48.260 N	104° 52' 22.027 W
2,388.0	10.00	16.60	2,370.2	178.1	61.0	1,248,367.54	3,175,685.84	40° 0' 48.419 N	104° 52' 21.956 W
2,479.0	11.30	21.00	2,459.7	194.0	66.5	1,248,383.44	3,175,691.29	40° 0' 48.575 N	104° 52' 21.885 W
2,572.0	11.80	23.20	2,550.8	211.2	73.5	1,248,400.69	3,175,698.31	40° 0' 48.745 N	104° 52' 21.793 W
2,664.0	10.90	22.20	2,641.0	227.9	80.5	1,248,417.39	3,175,705.30	40° 0' 48.910 N	104° 52' 21.702 W
2,756.0	11.80	20.60	2,731.2	244.8	87.1	1,248,434.25	3,175,711.89	40° 0' 49.076 N	104° 52' 21.615 W
2,849.0	11.10	23.40	2,822.3	261.9	94.0	1,248,451.36	3,175,718.80	40° 0' 49.245 N	104° 52' 21.525 W
2,942.0	9.90	24.50	2,913.8	277.4	100.9	1,248,466.85	3,175,725.67	40° 0' 49.397 N	104° 52' 21.435 W
3,034.0	10.40	17.30	3,004.3	292.5	106.6	1,248,481.98	3,175,731.42	40° 0' 49.546 N	104° 52' 21.360 W
3,127.0	13.00	15.70	3,095.4	310.6	111.9	1,248,500.07	3,175,736.74	40° 0' 49.725 N	104° 52' 21.290 W
3,218.0	12.80	16.00	3,184.1	330.2	117.5	1,248,519.61	3,175,742.29	40° 0' 49.918 N	104° 52' 21.217 W
3,310.0	12.10	14.50	3,273.9	349.3	122.7	1,248,538.74	3,175,747.52	40° 0' 50.106 N	104° 52' 21.148 W
3,402.0	12.70	21.80	3,363.8	368.0	128.9	1,248,557.47	3,175,753.69	40° 0' 50.291 N	104° 52' 21.067 W
3,494.0	11.80	22.50	3,453.7	386.1	136.2	1,248,575.55	3,175,761.04	40° 0' 50.469 N	104° 52' 20.971 W
3,585.0	12.70	22.40	3,542.6	403.9	143.6	1,248,593.40	3,175,768.41	40° 0' 50.645 N	104° 52' 20.874 W
3,670.0	11.80	21.00	3,625.7	420.7	150.3	1,248,610.15	3,175,775.09	40° 0' 50.810 N	104° 52' 20.787 W
3,755.0	13.20	24.10	3,708.7	437.7	157.4	1,248,627.12	3,175,782.17	40° 0' 50.977 N	104° 52' 20.695 W
3,841.0	11.80	19.60	3,792.6	454.9	164.3	1,248,644.37	3,175,789.13	40° 0' 51.147 N	104° 52' 20.604 W
3,926.0	12.10	25.00	3,875.8	471.2	171.0	1,248,660.63	3,175,795.81	40° 0' 51.307 N	104° 52' 20.516 W
4,011.0	13.00	21.30	3,958.8	488.2	178.2	1,248,677.61	3,175,803.05	40° 0' 51.475 N	104° 52' 20.422 W
4,096.0	11.80	16.90	4,041.8	505.4	184.2	1,248,694.84	3,175,809.05	40° 0' 51.645 N	104° 52' 20.343 W
4,181.0	12.00	20.10	4,125.0	522.0	189.8	1,248,711.45	3,175,814.61	40° 0' 51.808 N	104° 52' 20.270 W
4,267.0	10.90	18.70	4,209.3	538.1	195.5	1,248,727.55	3,175,820.29	40° 0' 51.967 N	104° 52' 20.196 W
4,352.0	12.00	24.50	4,292.6	553.7	201.7	1,248,743.20	3,175,826.53	40° 0' 52.121 N	104° 52' 20.114 W
4,437.0	12.50	25.00	4,375.6	570.1	209.3	1,248,759.58	3,175,834.08	40° 0' 52.283 N	104° 52' 20.015 W
4,523.0	12.00	25.90	4,459.7	586.6	217.1	1,248,776.06	3,175,841.92	40° 0' 52.445 N	104° 52' 19.913 W
4,608.0	9.90	26.10	4,543.1	601.1	224.2	1,248,790.57	3,175,848.99	40° 0' 52.588 N	104° 52' 19.821 W
4,693.0	8.30	25.20	4,627.0	613.2	230.0	1,248,802.69	3,175,854.82	40° 0' 52.707 N	104° 52' 19.745 W
4,779.0	4.90	16.00	4,712.5	622.4	233.7	1,248,811.84	3,175,858.48	40° 0' 52.797 N	104° 52' 19.697 W
4,864.0	4.20	8.80	4,797.2	628.9	235.1	1,248,818.40	3,175,859.96	40° 0' 52.862 N	104° 52' 19.677 W
4,949.0	3.50	5.50	4,882.0	634.6	235.9	1,248,824.06	3,175,860.68	40° 0' 52.918 N	104° 52' 19.668 W
5,035.0	3.20	3.40	4,967.9	639.6	236.3	1,248,829.07	3,175,861.07	40° 0' 52.967 N	104° 52' 19.662 W
5,120.0	1.40	18.90	5,052.8	643.0	236.7	1,248,832.42	3,175,861.55	40° 0' 53.001 N	104° 52' 19.656 W
5,206.0	0.90	24.50	5,138.8	644.6	237.4	1,248,834.03	3,175,862.17	40° 0' 53.016 N	104° 52' 19.648 W
5,291.0	0.70	72.80	5,223.8	645.3	238.1	1,248,834.79	3,175,862.94	40° 0' 53.024 N	104° 52' 19.638 W
5,376.0	0.90	114.50	5,308.8	645.2	239.2	1,248,834.67	3,175,864.05	40° 0' 53.023 N	104° 52' 19.623 W
5,462.0	0.70	142.30	5,394.7	644.5	240.2	1,248,833.97	3,175,864.98	40° 0' 53.016 N	104° 52' 19.611 W
5,547.0	0.70	186.40	5,479.7	643.6	240.4	1,248,833.04	3,175,865.24	40° 0' 53.006 N	104° 52' 19.608 W
5,633.0	0.90	170.40	5,565.7	642.4	240.5	1,248,831.86	3,175,865.30	40° 0' 52.995 N	104° 52' 19.608 W
5,718.0	0.90	184.40	5,650.7	641.1	240.5	1,248,830.53	3,175,865.36	40° 0' 52.982 N	104° 52' 19.607 W
5,803.0	1.20	339.00	5,735.7	641.2	240.2	1,248,830.70	3,175,864.99	40° 0' 52.983 N	104° 52' 19.612 W
5,888.0	1.40	329.30	5,820.7	643.0	239.3	1,248,832.42	3,175,864.14	40° 0' 53.000 N	104° 52' 19.622 W

Company:	Anadarko	Local Co-ordinate Reference:	Well Grenemyer 15N-3HZ
Project:	Weld Co., Co (NAD 83)	TVD Reference:	Well @ 5068.0usft (Xtreme 23)
Site:	Grenemyer Pad	MD Reference:	Well @ 5068.0usft (Xtreme 23)
Well:	Grenemyer 15N-3HZ	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,974.0	1.40	334.40	5,906.7	644.8	238.3	1,248,834.27	3,175,863.15	40° 0' 53.019 N	104° 52' 19.635 W
6,059.0	1.10	328.90	5,991.7	646.4	237.5	1,248,835.91	3,175,862.28	40° 0' 53.035 N	104° 52' 19.646 W
6,145.0	1.10	325.20	6,077.6	647.8	236.6	1,248,837.29	3,175,861.38	40° 0' 53.049 N	104° 52' 19.657 W
6,230.0	0.70	322.80	6,162.6	648.9	235.8	1,248,838.38	3,175,860.60	40° 0' 53.059 N	104° 52' 19.667 W
6,315.0	0.70	318.20	6,247.6	649.7	235.1	1,248,839.18	3,175,859.94	40° 0' 53.067 N	104° 52' 19.676 W
6,401.0	0.70	357.90	6,333.6	650.6	234.8	1,248,840.09	3,175,859.57	40° 0' 53.077 N	104° 52' 19.680 W
6,486.0	1.40	118.90	6,418.6	650.7	235.6	1,248,840.11	3,175,860.46	40° 0' 53.077 N	104° 52' 19.669 W
6,571.0	1.20	100.20	6,503.6	650.0	237.4	1,248,839.45	3,175,862.25	40° 0' 53.070 N	104° 52' 19.646 W
6,657.0	1.40	99.20	6,589.6	649.7	239.4	1,248,839.12	3,175,864.17	40° 0' 53.067 N	104° 52' 19.621 W
6,742.0	0.90	106.40	6,674.5	649.3	241.0	1,248,838.77	3,175,865.84	40° 0' 53.063 N	104° 52' 19.600 W
6,827.0	0.90	155.60	6,759.5	648.5	241.9	1,248,837.97	3,175,866.75	40° 0' 53.055 N	104° 52' 19.588 W
6,913.0	1.40	158.40	6,845.5	646.9	242.6	1,248,836.38	3,175,867.42	40° 0' 53.039 N	104° 52' 19.580 W
6,956.0	1.40	150.30	6,888.5	646.0	243.1	1,248,835.44	3,175,867.87	40° 0' 53.030 N	104° 52' 19.574 W
6,998.0	1.40	142.10	6,930.5	645.1	243.6	1,248,834.58	3,175,868.44	40° 0' 53.021 N	104° 52' 19.567 W
7,041.0	5.10	171.30	6,973.4	642.8	244.2	1,248,832.28	3,175,869.05	40° 0' 52.999 N	104° 52' 19.559 W
7,083.0	9.00	180.20	7,015.1	637.7	244.5	1,248,827.15	3,175,869.32	40° 0' 52.948 N	104° 52' 19.556 W
7,126.0	13.90	185.80	7,057.2	629.2	244.0	1,248,818.64	3,175,868.79	40° 0' 52.864 N	104° 52' 19.564 W
7,169.0	18.70	186.40	7,098.5	617.2	242.7	1,248,806.64	3,175,867.50	40° 0' 52.745 N	104° 52' 19.582 W
7,211.0	21.60	185.00	7,137.9	602.8	241.3	1,248,792.25	3,175,866.07	40° 0' 52.603 N	104° 52' 19.601 W
7,254.0	26.50	181.10	7,177.2	585.3	240.4	1,248,774.76	3,175,865.20	40° 0' 52.430 N	104° 52' 19.614 W
7,297.0	30.30	179.50	7,215.0	564.9	240.3	1,248,754.32	3,175,865.11	40° 0' 52.228 N	104° 52' 19.617 W
7,340.0	33.30	178.60	7,251.5	542.2	240.7	1,248,731.66	3,175,865.49	40° 0' 52.005 N	104° 52' 19.614 W
7,382.0	36.10	177.20	7,286.1	518.3	241.6	1,248,707.77	3,175,866.38	40° 0' 51.768 N	104° 52' 19.605 W
7,424.0	38.70	179.90	7,319.4	492.8	242.2	1,248,682.28	3,175,867.01	40° 0' 51.516 N	104° 52' 19.599 W
7,467.0	40.60	179.30	7,352.5	465.4	242.4	1,248,654.84	3,175,867.20	40° 0' 51.245 N	104° 52' 19.599 W
7,510.0	41.90	179.20	7,384.9	437.0	242.8	1,248,626.49	3,175,867.57	40° 0' 50.965 N	104° 52' 19.597 W
7,552.0	43.30	179.20	7,415.8	408.6	243.2	1,248,598.07	3,175,867.97	40° 0' 50.684 N	104° 52' 19.595 W
7,595.0	46.30	181.30	7,446.3	378.3	243.0	1,248,567.78	3,175,867.82	40° 0' 50.385 N	104° 52' 19.599 W
7,638.0	50.90	182.70	7,474.7	346.1	241.9	1,248,535.55	3,175,866.68	40° 0' 50.066 N	104° 52' 19.617 W
7,680.0	56.10	183.60	7,499.7	312.4	240.0	1,248,501.85	3,175,864.82	40° 0' 49.734 N	104° 52' 19.644 W
7,723.0	60.20	182.30	7,522.4	275.9	238.1	1,248,465.39	3,175,862.95	40° 0' 49.373 N	104° 52' 19.671 W
7,766.0	62.60	182.00	7,543.0	238.2	236.7	1,248,427.66	3,175,861.53	40° 0' 49.001 N	104° 52' 19.693 W
7,808.0	65.10	180.70	7,561.5	200.5	235.8	1,248,389.97	3,175,860.65	40° 0' 48.628 N	104° 52' 19.708 W
7,851.0	67.60	180.20	7,578.7	161.1	235.5	1,248,350.59	3,175,860.34	40° 0' 48.239 N	104° 52' 19.715 W
7,893.0	70.00	181.30	7,593.9	122.0	235.0	1,248,311.44	3,175,859.83	40° 0' 47.852 N	104° 52' 19.725 W
7,936.0	74.60	182.00	7,607.0	81.0	233.8	1,248,270.50	3,175,858.65	40° 0' 47.448 N	104° 52' 19.744 W
7,979.0	80.80	182.30	7,616.1	39.1	232.3	1,248,228.54	3,175,857.07	40° 0' 47.033 N	104° 52' 19.768 W
8,014.2	84.12	182.40	7,620.7	4.2	230.8	1,248,193.68	3,175,855.64	40° 0' 46.689 N	104° 52' 19.790 W
Actual 7" Csg @ 8014.2' MD / 7621' TVD / 689' FNL & 1389' FEL Sec 34 T1N R67W									
8,049.0	87.40	182.50	7,623.3	-30.4	229.3	1,248,159.01	3,175,854.15	40° 0' 46.346 N	104° 52' 19.812 W
8,134.0	89.20	182.00	7,625.8	-115.3	226.0	1,248,074.12	3,175,850.82	40° 0' 45.507 N	104° 52' 19.863 W
8,219.0	90.80	181.80	7,625.8	-200.3	223.2	1,247,989.17	3,175,848.00	40° 0' 44.668 N	104° 52' 19.907 W
8,305.0	90.60	178.10	7,624.8	-286.3	223.3	1,247,903.19	3,175,848.08	40° 0' 43.818 N	104° 52' 19.913 W
8,390.0	90.80	175.10	7,623.7	-371.1	228.3	1,247,818.35	3,175,853.12	40° 0' 42.980 N	104° 52' 19.856 W
8,476.0	90.10	174.10	7,623.1	-456.7	236.4	1,247,732.74	3,175,861.21	40° 0' 42.133 N	104° 52' 19.760 W
8,561.0	89.00	174.90	7,623.7	-541.3	244.5	1,247,648.14	3,175,869.36	40° 0' 41.296 N	104° 52' 19.663 W
8,646.0	90.80	182.30	7,623.9	-626.2	246.6	1,247,563.22	3,175,871.43	40° 0' 40.457 N	104° 52' 19.644 W
8,732.0	90.30	180.00	7,623.1	-712.2	244.9	1,247,477.25	3,175,869.70	40° 0' 39.608 N	104° 52' 19.674 W
8,817.0	90.10	177.10	7,622.8	-797.2	247.0	1,247,392.29	3,175,871.86	40° 0' 38.768 N	104° 52' 19.654 W
8,910.0	88.70	178.50	7,623.7	-890.1	250.6	1,247,299.37	3,175,875.42	40° 0' 37.849 N	104° 52' 19.617 W
9,002.0	90.30	179.70	7,624.5	-982.1	252.1	1,247,207.39	3,175,876.87	40° 0' 36.940 N	104° 52' 19.607 W
9,095.0	88.70	180.60	7,625.4	-1,075.1	251.8	1,247,114.39	3,175,876.63	40° 0' 36.021 N	104° 52' 19.618 W
9,187.0	88.50	181.30	7,627.6	-1,167.0	250.3	1,247,022.44	3,175,875.10	40° 0' 35.113 N	104° 52' 19.646 W
9,280.0	88.70	180.70	7,629.9	-1,260.0	248.7	1,246,929.48	3,175,873.48	40° 0' 34.194 N	104° 52' 19.676 W
9,373.0	89.20	180.40	7,631.6	-1,353.0	247.8	1,246,836.50	3,175,872.59	40° 0' 33.275 N	104° 52' 19.696 W

Company:	Anadarko	Local Co-ordinate Reference:	Well Grenemyer 15N-3HZ
Project:	Weld Co., Co (NAD 83)	TVD Reference:	Well @ 5068.0usft (Xtreme 23)
Site:	Grenemyer Pad	MD Reference:	Well @ 5068.0usft (Xtreme 23)
Well:	Grenemyer 15N-3HZ	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,466.0	90.10	178.80	7,632.1	-1,446.0	248.4	1,246,743.51	3,175,873.24	40° 0' 32.356 N	104° 52' 19.696 W
9,558.0	89.70	179.30	7,632.3	-1,537.9	249.9	1,246,651.52	3,175,874.76	40° 0' 31.447 N	104° 52' 19.684 W
9,651.0	89.20	180.90	7,633.2	-1,630.9	249.8	1,246,558.53	3,175,874.60	40° 0' 30.528 N	104° 52' 19.695 W
9,743.0	89.20	180.20	7,634.5	-1,722.9	248.9	1,246,466.54	3,175,873.72	40° 0' 29.619 N	104° 52' 19.715 W
9,835.0	89.20	180.00	7,635.8	-1,814.9	248.7	1,246,374.55	3,175,873.56	40° 0' 28.710 N	104° 52' 19.725 W
9,928.0	90.30	180.00	7,636.2	-1,907.9	248.7	1,246,281.55	3,175,873.56	40° 0' 27.791 N	104° 52' 19.734 W
10,020.0	92.40	180.60	7,634.0	-1,999.9	248.3	1,246,189.58	3,175,873.07	40° 0' 26.882 N	104° 52' 19.748 W
10,111.0	90.60	182.00	7,631.6	-2,090.8	246.2	1,246,098.65	3,175,871.01	40° 0' 25.984 N	104° 52' 19.783 W
10,203.0	91.70	182.20	7,629.8	-2,182.7	242.8	1,246,006.73	3,175,867.64	40° 0' 25.075 N	104° 52' 19.835 W
10,295.0	89.00	180.70	7,629.2	-2,274.7	240.5	1,245,914.77	3,175,865.31	40° 0' 24.167 N	104° 52' 19.873 W
10,387.0	91.00	181.50	7,629.2	-2,366.7	238.7	1,245,822.79	3,175,863.55	40° 0' 23.258 N	104° 52' 19.904 W
10,478.0	90.80	179.30	7,627.8	-2,457.6	238.1	1,245,731.81	3,175,862.91	40° 0' 22.359 N	104° 52' 19.920 W
10,563.0	90.30	180.00	7,627.0	-2,542.6	238.6	1,245,646.82	3,175,863.43	40° 0' 21.519 N	104° 52' 19.921 W
10,648.0	91.10	179.30	7,625.9	-2,627.6	239.1	1,245,561.83	3,175,863.95	40° 0' 20.679 N	104° 52' 19.922 W
10,734.0	90.60	179.00	7,624.7	-2,713.6	240.4	1,245,475.85	3,175,865.22	40° 0' 19.829 N	104° 52' 19.914 W
10,819.0	89.90	177.40	7,624.3	-2,798.6	243.1	1,245,390.89	3,175,867.89	40° 0' 18.989 N	104° 52' 19.887 W
10,904.0	89.70	178.50	7,624.6	-2,883.5	246.1	1,245,305.95	3,175,870.93	40° 0' 18.150 N	104° 52' 19.856 W
10,990.0	90.60	177.90	7,624.4	-2,969.5	248.8	1,245,219.99	3,175,873.64	40° 0' 17.300 N	104° 52' 19.829 W
11,075.0	90.60	176.90	7,623.5	-3,054.4	252.7	1,245,135.08	3,175,877.49	40° 0' 16.461 N	104° 52' 19.787 W
11,160.0	90.80	176.00	7,622.4	-3,139.2	257.9	1,245,050.26	3,175,882.75	40° 0' 15.622 N	104° 52' 19.727 W
11,246.0	88.30	175.30	7,623.1	-3,224.9	264.5	1,244,964.51	3,175,889.28	40° 0' 14.774 N	104° 52' 19.651 W
11,331.0	88.20	176.90	7,625.7	-3,309.7	270.2	1,244,879.75	3,175,895.06	40° 0' 13.936 N	104° 52' 19.585 W
11,416.0	89.40	177.90	7,627.5	-3,394.6	274.1	1,244,794.86	3,175,898.91	40° 0' 13.097 N	104° 52' 19.543 W
11,502.0	89.90	179.70	7,628.0	-3,480.6	275.9	1,244,708.89	3,175,900.71	40° 0' 12.247 N	104° 52' 19.528 W
11,587.0	91.70	180.90	7,626.8	-3,565.6	275.5	1,244,623.90	3,175,900.27	40° 0' 11.407 N	104° 52' 19.541 W
11,672.0	89.20	181.80	7,626.2	-3,650.5	273.4	1,244,538.93	3,175,898.26	40° 0' 10.568 N	104° 52' 19.575 W
11,758.0	89.60	181.30	7,627.1	-3,736.5	271.1	1,244,452.97	3,175,895.94	40° 0' 9.719 N	104° 52' 19.612 W
11,843.0	90.10	182.70	7,627.3	-3,821.4	268.2	1,244,368.02	3,175,892.97	40° 0' 8.879 N	104° 52' 19.658 W
11,928.0	89.70	183.60	7,627.4	-3,906.3	263.5	1,244,283.15	3,175,888.30	40° 0' 8.041 N	104° 52' 19.726 W
12,013.0	89.90	182.30	7,627.7	-3,991.2	259.1	1,244,198.27	3,175,883.93	40° 0' 7.202 N	104° 52' 19.790 W
12,099.0	89.70	180.70	7,628.0	-4,077.2	256.9	1,244,112.30	3,175,881.67	40° 0' 6.353 N	104° 52' 19.827 W
12,184.0	89.70	180.20	7,628.5	-4,162.2	256.2	1,244,027.31	3,175,881.01	40° 0' 5.513 N	104° 52' 19.843 W
12,269.0	90.40	181.30	7,628.4	-4,247.1	255.1	1,243,942.32	3,175,879.89	40° 0' 4.673 N	104° 52' 19.865 W
12,354.0	89.60	180.60	7,628.4	-4,332.1	253.7	1,243,857.33	3,175,878.49	40° 0' 3.833 N	104° 52' 19.891 W
12,440.0	89.70	180.90	7,628.9	-4,418.1	252.5	1,243,771.34	3,175,877.36	40° 0' 2.984 N	104° 52' 19.913 W
12,525.0	90.40	180.20	7,628.8	-4,503.1	251.7	1,243,686.34	3,175,876.54	40° 0' 2.144 N	104° 52' 19.931 W
12,610.0	89.70	181.50	7,628.8	-4,588.1	250.5	1,243,601.35	3,175,875.28	40° 0' 1.304 N	104° 52' 19.955 W
12,695.0	90.40	183.00	7,628.7	-4,673.0	247.1	1,243,516.42	3,175,871.95	40° 0' 0.465 N	104° 52' 20.006 W
12,781.0	92.00	182.20	7,626.9	-4,758.9	243.2	1,243,430.53	3,175,868.05	39° 59' 59.616 N	104° 52' 20.064 W
12,866.0	93.40	181.30	7,622.9	-4,843.8	240.6	1,243,345.67	3,175,865.45	39° 59' 58.778 N	104° 52' 20.105 W
12,951.0	94.10	180.00	7,617.3	-4,928.6	239.7	1,243,260.86	3,175,864.49	39° 59' 57.940 N	104° 52' 20.125 W
13,037.0	94.00	179.30	7,611.3	-5,014.4	240.2	1,243,175.08	3,175,865.01	39° 59' 57.092 N	104° 52' 20.126 W
13,122.0	94.00	178.10	7,605.3	-5,099.2	242.1	1,243,090.31	3,175,866.94	39° 59' 56.254 N	104° 52' 20.109 W
13,207.0	92.20	177.60	7,600.7	-5,184.0	245.3	1,243,005.50	3,175,870.12	39° 59' 55.416 N	104° 52' 20.076 W
13,292.0	92.00	176.40	7,597.6	-5,268.8	249.8	1,242,920.67	3,175,874.57	39° 59' 54.577 N	104° 52' 20.026 W
13,378.0	91.50	177.10	7,595.0	-5,354.6	254.6	1,242,834.85	3,175,879.44	39° 59' 53.729 N	104° 52' 19.972 W
13,463.0	90.40	178.10	7,593.6	-5,439.5	258.2	1,242,749.94	3,175,883.00	39° 59' 52.889 N	104° 52' 19.934 W
13,548.0	89.20	179.20	7,593.9	-5,524.5	260.2	1,242,664.97	3,175,885.00	39° 59' 52.050 N	104° 52' 19.916 W
13,634.0	89.40	179.70	7,594.9	-5,610.5	261.0	1,242,578.98	3,175,885.83	39° 59' 51.200 N	104° 52' 19.913 W
13,719.0	89.40	178.50	7,595.8	-5,695.5	262.3	1,242,493.99	3,175,887.16	39° 59' 50.360 N	104° 52' 19.903 W
13,804.0	90.10	180.70	7,596.2	-5,780.5	262.9	1,242,409.00	3,175,887.76	39° 59' 49.520 N	104° 52' 19.903 W
13,890.0	89.60	180.40	7,596.4	-5,866.5	262.1	1,242,323.01	3,175,886.93	39° 59' 48.670 N	104° 52' 19.922 W
13,975.0	88.90	180.00	7,597.5	-5,951.4	261.8	1,242,238.01	3,175,886.63	39° 59' 47.830 N	104° 52' 19.933 W
14,060.0	89.20	180.40	7,598.9	-6,036.4	261.5	1,242,153.03	3,175,886.34	39° 59' 46.990 N	104° 52' 19.945 W
14,145.0	90.30	180.60	7,599.3	-6,121.4	260.8	1,242,068.03	3,175,885.59	39° 59' 46.150 N	104° 52' 19.962 W

Company:	Anadarko	Local Co-ordinate Reference:	Well Grenemyer 15N-3HZ
Project:	Weld Co., Co (NAD 83)	TVD Reference:	Well @ 5068.0usft (Xtreme 23)
Site:	Grenemyer Pad	MD Reference:	Well @ 5068.0usft (Xtreme 23)
Well:	Grenemyer 15N-3HZ	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,231.0	90.80	180.90	7,598.5	-6,207.4	259.7	1,241,982.04	3,175,884.47	39° 59' 45.301 N	104° 52' 19.984 W
14,316.0	90.40	180.70	7,597.6	-6,292.4	258.5	1,241,897.06	3,175,883.28	39° 59' 44.461 N	104° 52' 20.007 W
14,401.0	89.70	180.00	7,597.5	-6,377.4	257.9	1,241,812.06	3,175,882.76	39° 59' 43.621 N	104° 52' 20.022 W
14,487.0	89.60	180.70	7,598.0	-6,463.4	257.4	1,241,726.06	3,175,882.24	39° 59' 42.771 N	104° 52' 20.036 W
14,572.0	89.90	180.60	7,598.4	-6,548.4	256.5	1,241,641.07	3,175,881.27	39° 59' 41.931 N	104° 52' 20.057 W
14,657.0	89.40	180.00	7,598.9	-6,633.4	256.0	1,241,556.07	3,175,880.83	39° 59' 41.091 N	104° 52' 20.070 W
14,742.0	88.90	179.90	7,600.2	-6,718.4	256.1	1,241,471.08	3,175,880.90	39° 59' 40.251 N	104° 52' 20.077 W
14,828.0	89.00	179.70	7,601.8	-6,804.4	256.4	1,241,385.10	3,175,881.20	39° 59' 39.402 N	104° 52' 20.081 W
14,913.0	89.20	179.20	7,603.1	-6,889.3	257.2	1,241,300.11	3,175,882.02	39° 59' 38.562 N	104° 52' 20.078 W
14,999.0	89.60	179.30	7,604.0	-6,975.3	258.3	1,241,214.12	3,175,883.14	39° 59' 37.712 N	104° 52' 20.071 W
15,084.0	90.30	181.10	7,604.1	-7,060.3	258.0	1,241,129.13	3,175,882.85	39° 59' 36.872 N	104° 52' 20.083 W
15,170.0	89.40	178.80	7,604.3	-7,146.3	258.1	1,241,043.14	3,175,882.92	39° 59' 36.022 N	104° 52' 20.090 W
15,255.0	90.60	179.70	7,604.3	-7,231.3	259.2	1,240,958.15	3,175,884.04	39° 59' 35.182 N	104° 52' 20.083 W
15,340.0	90.30	180.90	7,603.6	-7,316.3	258.8	1,240,873.15	3,175,883.59	39° 59' 34.342 N	104° 52' 20.097 W
15,426.0	90.60	180.00	7,603.0	-7,402.3	258.1	1,240,787.16	3,175,882.91	39° 59' 33.492 N	104° 52' 20.113 W
15,511.0	90.10	180.40	7,602.4	-7,487.3	257.8	1,240,702.16	3,175,882.62	39° 59' 32.652 N	104° 52' 20.125 W
15,597.0	90.40	180.40	7,602.1	-7,573.3	257.2	1,240,616.16	3,175,882.02	39° 59' 31.803 N	104° 52' 20.140 W
15,682.0	91.00	179.50	7,601.0	-7,658.3	257.3	1,240,531.17	3,175,882.09	39° 59' 30.963 N	104° 52' 20.147 W
15,767.0	92.90	179.50	7,598.1	-7,743.2	258.0	1,240,446.23	3,175,882.83	39° 59' 30.123 N	104° 52' 20.145 W
Last MWD @ 15767' MD / 7598' TVD									
15,828.0	92.90	179.50	7,595.0	-7,804.1	258.6	1,240,385.31	3,175,883.36	39° 59' 29.521 N	104° 52' 20.144 W
PTD @ 15828' MD / 7595' TVD / 1814' FSL & 1889' FEL Sec 3 T1S R67W									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
16.0	16.0	0.0	0.0	First MWD
8,014.2	7,620.7	4.2	230.8	Actual 7" Csg @ 8014.2' MD / 7621' TVD / 689' FNL & 1389' FEL Sec 3
15,767.0	7,598.1	-7,743.2	258.0	Last MWD @ 15767' MD / 7598' TVD
15,828.0	7,595.0	-7,804.1	258.6	PTD @ 15828' MD / 7595' TVD / 1814' FSL & 1889' FEL Sec 3 T1S R6

Checked By: _____	Approved By: _____	Date: _____
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Job Number: CO14073AN

Company: IDS

Lease/Well: Grenemyer 15N-3HZ

Location: Weld/CO

Rig Name: Xtreme 23

RKB:

G.L. or M.S.L.:

State/Country: CO/USA

Declination: 7.72

Grid: .41

File name: C:\WINSERVE\C14073AN.SVY

Date/Time: 20-Mar-14 / 16:27

Curve Name: Grenemyer 15N-3HZ - As Drilled

Integrity Directional Services

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 178.32

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>Course Length FT</i>	<i>C L O S U R E Distance FT</i>	<i>Direction Deg</i>	<i>Dogleg Severity Deg/100</i>
Tied Into Surface										
.00	.00	.00	.00	.00	.00	.00		.00	.00	.00
First MWD Survey										
16.00	.00	.00	16.00	.00	.00	.00	16.00	.00	.00	.00
116.00	.76	208.33	116.00	-.58	-.31	.57	100.00	.66	208.33	.76
216.00	.66	190.28	215.99	-1.73	-.73	1.71	100.00	1.88	202.89	.24
316.00	.52	174.45	315.98	-2.75	-.79	2.73	100.00	2.86	196.04	.21
416.00	.30	151.22	415.98	-3.43	-.62	3.41	100.00	3.49	190.25	.27
516.00	.29	175.72	515.98	-3.92	-.48	3.90	100.00	3.94	186.94	.13
616.00	.22	161.38	615.98	-4.35	-.40	4.34	100.00	4.37	185.20	.09
716.00	.05	267.15	715.98	-4.53	-.38	4.52	100.00	4.55	184.77	.24
816.00	.06	311.94	815.98	-4.50	-.46	4.49	100.00	4.52	185.85	.04
916.00	.20	330.32	915.98	-4.31	-.59	4.30	100.00	4.35	187.74	.14
1009.00	.31	306.21	1008.98	-4.02	-.87	4.00	93.00	4.12	192.19	.16
1173.00	.70	252.80	1172.97	-4.06	-2.18	3.99	164.00	4.61	208.29	.35
1267.00	2.30	13.60	1266.95	-2.40	-2.29	2.33	94.00	3.31	223.71	2.90
1360.00	5.10	17.40	1359.75	3.36	-.61	-3.38	93.00	3.42	349.65	3.02
1454.00	6.70	18.50	1453.24	12.55	2.38	-12.48	94.00	12.77	10.72	1.71
1548.00	8.10	19.40	1546.46	24.00	6.32	-23.80	94.00	24.82	14.74	1.49
1641.00	10.00	20.30	1638.30	37.75	11.29	-37.41	93.00	39.41	16.65	2.05
1735.00	12.10	19.00	1730.55	54.72	17.33	-54.19	94.00	57.40	17.57	2.25
1828.00	11.80	17.80	1821.53	73.00	23.41	-72.28	93.00	76.66	17.78	.42
1922.00	11.30	15.90	1913.63	91.00	28.87	-90.12	94.00	95.47	17.60	.67

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Course Length FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100
2019.00	12.50	24.70	2008.55	109.68	35.87	-108.58	97.00	115.40	18.11	2.24
2111.00	12.00	19.90	2098.46	127.72	43.28	-126.40	92.00	134.86	18.72	1.23
2203.00	11.30	21.50	2188.56	145.10	49.84	-143.58	92.00	153.42	18.96	.84
2295.00	11.10	20.40	2278.81	161.79	56.23	-160.07	92.00	171.28	19.17	.32
2388.00	10.00	16.60	2370.24	177.92	61.66	-176.03	93.00	188.30	19.11	1.40
2479.00	11.30	21.00	2459.67	193.81	67.11	-191.76	91.00	205.10	19.10	1.68
2572.00	11.80	23.20	2550.79	211.06	74.12	-208.80	93.00	223.70	19.35	.72
2664.00	10.90	22.20	2640.99	227.76	81.11	-225.28	92.00	241.77	19.60	1.00
2756.00	11.80	20.60	2731.19	244.62	87.71	-241.94	92.00	259.87	19.73	1.04
2849.00	11.10	23.40	2822.34	261.74	94.61	-258.85	93.00	278.31	19.87	.96
2942.00	9.90	24.50	2913.78	277.23	101.48	-274.13	93.00	295.22	20.11	1.31
3034.00	10.40	17.30	3004.34	292.35	107.23	-289.08	92.00	311.40	20.14	1.48
3127.00	13.00	15.70	3095.40	310.44	112.56	-307.01	93.00	330.22	19.93	2.82
3218.00	12.80	16.00	3184.11	329.98	118.11	-326.38	91.00	350.48	19.69	.23
3310.00	12.10	14.50	3273.94	349.12	123.33	-345.35	92.00	370.26	19.46	.84
3402.00	12.70	21.80	3363.80	367.84	129.50	-363.89	92.00	389.97	19.40	1.82
3494.00	11.80	22.50	3453.71	385.92	136.86	-381.75	92.00	409.47	19.53	.99
3585.00	12.70	22.40	3542.63	403.77	144.23	-399.37	91.00	428.76	19.66	.99
3670.00	11.80	21.00	3625.70	420.52	150.91	-415.92	85.00	446.78	19.74	1.11
3755.00	13.20	24.10	3708.68	437.50	157.98	-432.68	85.00	465.15	19.86	1.83
3841.00	11.80	19.60	3792.64	454.74	164.94	-449.71	86.00	483.73	19.94	1.98
3926.00	12.10	25.00	3875.80	471.01	171.62	-465.77	85.00	501.30	20.02	1.36
4011.00	13.00	21.30	3958.77	487.99	178.86	-482.53	85.00	519.73	20.13	1.42
4096.00	11.80	16.90	4041.79	505.21	184.86	-499.58	85.00	537.97	20.10	1.80
4181.00	12.00	20.10	4124.96	521.83	190.43	-516.02	85.00	555.49	20.05	.81
4267.00	10.90	18.70	4209.25	537.92	196.10	-531.94	86.00	572.56	20.03	1.32
4352.00	12.00	24.50	4292.56	553.58	202.35	-547.41	85.00	589.40	20.08	1.87
4437.00	12.50	25.00	4375.63	569.96	209.90	-563.56	85.00	607.38	20.22	.60
4523.00	12.00	25.90	4459.67	586.43	217.74	-579.80	86.00	625.55	20.37	.62
4608.00	9.90	26.10	4543.11	600.95	224.81	-594.10	85.00	641.62	20.51	2.47
4693.00	8.30	25.20	4627.04	613.06	230.64	-606.03	85.00	655.01	20.62	1.89
4779.00	4.90	16.00	4712.46	622.21	234.30	-615.07	86.00	664.86	20.63	4.13
4864.00	4.20	8.80	4797.19	628.77	235.77	-621.59	85.00	671.53	20.55	1.06
4949.00	3.50	5.50	4882.00	634.43	236.50	-627.23	85.00	677.08	20.44	.86
5035.00	3.20	3.40	4967.86	639.44	236.89	-632.22	86.00	681.91	20.33	.38
5120.00	1.40	18.90	5052.78	642.79	237.37	-635.56	85.00	685.22	20.27	2.22
5206.00	.90	24.50	5138.77	644.40	237.99	-637.15	86.00	686.94	20.27	.60
5291.00	.70	72.80	5223.76	645.16	238.76	-637.89	85.00	687.93	20.31	.80
5376.00	.90	114.50	5308.75	645.04	239.86	-637.73	85.00	688.19	20.40	.71
5462.00	.70	142.30	5394.74	644.34	240.80	-637.01	86.00	687.87	20.49	.50
5547.00	.70	186.40	5479.74	643.42	241.06	-636.07	85.00	687.09	20.54	.62
5633.00	.90	170.40	5565.73	642.23	241.11	-634.88	86.00	686.00	20.58	.35
5718.00	.90	184.40	5650.72	640.91	241.17	-633.56	85.00	684.78	20.62	.26
5803.00	1.20	339.00	5735.71	641.07	240.80	-633.74	85.00	684.81	20.59	2.41
5888.00	1.40	329.30	5820.69	642.79	239.96	-635.48	85.00	686.12	20.47	.35

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Course Length FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100
5974.00	1.40	334.40	5906.67	644.65	238.96	-637.36	86.00	687.51	20.34	.14
6059.00	1.10	328.90	5991.65	646.28	238.09	-639.02	85.00	688.74	20.22	.38
6145.00	1.10	325.20	6077.63	647.67	237.20	-640.43	86.00	689.73	20.11	.08
6230.00	.70	322.80	6162.62	648.75	236.42	-641.54	85.00	690.48	20.02	.47
6315.00	.70	318.20	6247.61	649.55	235.76	-642.36	85.00	691.01	19.95	.07
6401.00	.70	357.90	6333.61	650.47	235.39	-643.29	86.00	691.75	19.89	.55
6486.00	1.40	118.90	6418.60	650.48	236.28	-643.28	85.00	692.07	19.96	2.19
6571.00	1.20	100.20	6503.58	649.82	238.06	-642.56	85.00	692.06	20.12	.55
6657.00	1.40	99.20	6589.55	649.50	239.99	-642.18	86.00	692.42	20.28	.23
6742.00	.90	106.40	6674.54	649.14	241.65	-641.78	85.00	692.66	20.42	.61
6827.00	.90	155.60	6759.53	648.35	242.57	-640.96	85.00	692.24	20.51	.88
6913.00	1.40	158.40	6845.51	646.75	243.23	-639.34	86.00	690.98	20.61	.58
6956.00	1.40	150.30	6888.50	645.81	243.69	-638.39	43.00	690.26	20.67	.46
6998.00	1.40	142.10	6930.49	644.96	244.26	-637.52	42.00	689.66	20.74	.48
7041.00	5.10	171.30	6973.41	642.65	244.87	-635.20	43.00	687.72	20.86	9.16
7083.00	9.00	180.20	7015.09	637.52	245.14	-630.06	42.00	683.03	21.03	9.62
7126.00	13.90	185.80	7057.22	629.01	244.61	-621.57	43.00	674.90	21.25	11.67
7169.00	18.70	186.40	7098.48	617.02	243.32	-609.62	43.00	663.26	21.52	11.17
7211.00	21.60	185.00	7137.90	602.62	241.89	-595.27	42.00	649.36	21.87	7.00
7254.00	26.40	181.10	7177.18	585.17	241.02	-577.85	43.00	632.86	22.39	11.75
7297.00	30.30	179.50	7215.01	564.76	240.93	-557.45	43.00	614.00	23.10	9.24
7340.00	33.30	178.60	7251.55	542.10	241.31	-534.80	43.00	593.39	24.00	7.06
7382.00	36.10	177.20	7286.08	518.21	242.20	-510.89	42.00	572.02	25.05	6.93
7424.00	38.70	179.90	7319.45	492.72	242.82	-485.39	42.00	549.31	26.24	7.32
7467.00	40.60	179.30	7352.55	465.28	243.02	-457.96	43.00	524.93	27.58	4.51
7510.00	41.90	179.20	7384.88	436.93	243.39	-429.61	43.00	500.15	29.12	3.03
7552.00	43.30	179.20	7415.80	408.51	243.79	-401.19	42.00	475.72	30.83	3.33
7595.00	46.30	181.30	7446.31	378.22	243.64	-370.91	43.00	449.90	32.79	7.78
7638.00	50.90	182.70	7474.74	345.99	242.50	-338.73	43.00	422.51	35.03	10.97
7680.00	56.10	183.60	7499.71	312.29	240.64	-305.11	42.00	394.25	37.62	12.50
7723.00	60.20	182.30	7522.40	275.83	238.77	-268.71	43.00	364.81	40.88	9.87
7766.00	62.60	182.00	7542.98	238.10	237.35	-231.04	43.00	336.20	44.91	5.61
7808.00	65.10	180.70	7561.49	200.42	236.47	-193.40	42.00	309.97	49.72	6.57
7851.00	67.60	180.20	7578.74	161.03	236.16	-154.04	43.00	285.84	55.71	5.91
7893.00	70.00	181.30	7593.92	121.88	235.65	-114.92	42.00	265.30	62.65	6.21
7936.00	74.60	182.00	7607.00	80.94	234.46	-74.04	43.00	248.04	70.95	10.81
7979.00	80.80	182.30	7616.15	38.98	232.89	-32.14	43.00	236.13	80.50	14.43
8049.00	87.40	182.50	7623.34	-30.55	229.97	37.28	70.00	231.99	97.57	9.43
8134.00	89.20	182.00	7625.86	-115.44	226.64	122.04	85.00	254.34	116.99	2.20
8219.00	90.80	181.80	7625.86	-200.39	223.82	206.87	85.00	300.42	131.84	1.90
8305.00	90.60	178.10	7624.81	-286.37	223.89	292.81	86.00	363.51	141.98	4.31
8390.00	90.80	175.10	7623.77	-371.20	228.93	377.76	85.00	436.12	148.34	3.54
8476.00	90.10	174.10	7623.10	-456.82	237.03	463.57	86.00	514.65	152.58	1.42
8561.00	89.00	174.90	7623.77	-541.42	245.17	548.38	85.00	594.35	155.64	1.60
8646.00	90.80	182.30	7623.91	-626.33	247.25	633.31	85.00	673.37	158.46	8.96

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Course Length FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100
8732.00	90.30	180.00	7623.09	-712.31	245.52	719.20	86.00	753.43	160.98	2.74
8817.00	90.10	177.10	7622.79	-797.27	247.67	804.19	85.00	834.85	162.74	3.42
8910.00	88.70	178.50	7623.77	-890.19	251.24	897.18	93.00	924.97	164.24	2.13
9002.00	90.30	179.70	7624.57	-982.17	252.69	989.16	92.00	1014.16	165.57	2.17
9095.00	88.70	180.60	7625.38	-1075.16	252.44	1082.10	93.00	1104.40	166.79	1.97
9187.00	88.50	181.30	7627.63	-1167.12	250.92	1173.98	92.00	1193.79	167.87	.79
9280.00	88.70	180.70	7629.90	-1260.08	249.30	1266.85	93.00	1284.51	168.81	.68
9373.00	89.20	180.40	7631.61	-1353.06	248.40	1359.76	93.00	1375.67	169.60	.63
9466.00	90.10	178.80	7632.17	-1446.05	249.05	1452.73	93.00	1467.34	170.23	1.97
9558.00	89.70	179.30	7632.33	-1538.04	250.58	1544.73	92.00	1558.32	170.75	.70
9651.00	89.20	180.90	7633.23	-1631.03	250.42	1637.67	93.00	1650.14	171.27	1.80
9743.00	89.20	180.20	7634.51	-1723.02	249.53	1729.59	92.00	1740.99	171.76	.76
9835.00	89.20	180.00	7635.80	-1815.01	249.37	1821.54	92.00	1832.06	172.18	.22
9928.00	90.30	180.00	7636.20	-1908.01	249.37	1914.50	93.00	1924.23	172.55	1.18
10020.00	92.40	180.60	7634.03	-1999.97	248.89	2006.41	92.00	2015.40	172.91	2.37
10111.00	90.60	182.00	7631.65	-2090.91	246.83	2097.25	91.00	2105.43	173.27	2.51
10203.00	91.70	182.20	7629.81	-2182.83	243.46	2189.03	92.00	2196.37	173.64	1.22
10295.00	89.00	180.70	7629.24	-2274.79	241.13	2280.88	92.00	2287.53	173.95	3.36
10387.00	91.00	181.50	7629.24	-2366.77	239.36	2372.77	92.00	2378.84	174.23	2.34
10478.00	90.80	179.30	7627.81	-2457.75	238.73	2463.69	91.00	2469.32	174.45	2.43
10563.00	90.30	180.00	7627.00	-2542.74	239.25	2548.66	85.00	2553.97	174.62	1.01
10648.00	91.10	179.30	7625.96	-2627.73	239.77	2633.63	85.00	2638.65	174.79	1.25
10734.00	90.60	179.00	7624.68	-2713.71	241.04	2719.61	86.00	2724.40	174.92	.68
10819.00	89.90	177.40	7624.31	-2798.67	243.71	2804.61	85.00	2809.26	175.02	2.05
10904.00	89.70	178.50	7624.61	-2883.61	246.75	2889.61	85.00	2894.15	175.11	1.32
10990.00	90.60	177.90	7624.38	-2969.57	249.45	2975.60	86.00	2980.03	175.20	1.26
11075.00	90.60	176.90	7623.49	-3054.47	253.31	3060.59	85.00	3064.96	175.26	1.18
11160.00	90.80	176.00	7622.46	-3139.30	258.57	3145.54	85.00	3149.93	175.29	1.08
11246.00	88.30	175.30	7623.13	-3225.05	265.09	3231.43	86.00	3235.92	175.30	3.02
11331.00	88.20	176.90	7625.73	-3309.81	270.87	3316.33	85.00	3320.87	175.32	1.89
11416.00	89.40	177.90	7627.51	-3394.70	274.73	3401.29	85.00	3405.80	175.37	1.84
11502.00	89.90	179.70	7628.03	-3480.67	276.53	3487.29	86.00	3491.64	175.46	2.17
11587.00	91.70	180.90	7626.85	-3565.66	276.08	3572.22	85.00	3576.33	175.57	2.54
11672.00	89.20	181.80	7626.18	-3650.63	274.08	3657.09	85.00	3660.90	175.71	3.13
11758.00	89.60	181.30	7627.08	-3736.59	271.76	3742.95	86.00	3746.46	175.84	.74
11843.00	90.10	182.70	7627.30	-3821.53	268.79	3827.77	85.00	3830.98	175.98	1.75
11928.00	89.70	183.60	7627.45	-3906.41	264.12	3912.47	85.00	3915.32	176.13	1.16
12013.00	89.90	182.30	7627.75	-3991.29	259.74	3997.19	85.00	3999.73	176.28	1.55
12099.00	89.70	180.70	7628.05	-4077.26	257.49	4083.05	86.00	4085.38	176.39	1.87
12184.00	89.70	180.20	7628.49	-4162.25	256.83	4167.99	85.00	4170.17	176.47	.59
12269.00	90.40	181.30	7628.42	-4247.24	255.71	4252.92	85.00	4254.93	176.55	1.53
12354.00	89.60	180.60	7628.42	-4332.23	254.30	4337.82	85.00	4339.69	176.64	1.25
12440.00	89.70	180.90	7628.94	-4418.22	253.18	4423.75	86.00	4425.47	176.72	.37
12525.00	90.40	180.20	7628.87	-4503.22	252.36	4508.68	85.00	4510.28	176.79	1.16
12610.00	89.70	181.50	7628.79	-4588.21	251.10	4593.59	85.00	4595.07	176.87	1.74

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Course Length FT	C L O S U R E Distance FT	Direction Deg	Dogleg Severity Deg/100
12695.00	90.40	183.00	7628.72	-4673.14	247.76	4678.39	85.00	4679.70	176.97	1.95
12781.00	92.00	182.20	7626.92	-4759.03	243.86	4764.13	86.00	4765.27	177.07	2.08
12866.00	93.40	181.30	7622.92	-4843.89	241.27	4848.88	85.00	4849.89	177.15	1.96
12951.00	94.10	180.00	7617.36	-4928.70	240.31	4933.63	85.00	4934.55	177.21	1.73
13037.00	94.00	179.30	7611.28	-5014.48	240.83	5019.39	86.00	5020.26	177.25	.82
13122.00	94.00	178.10	7605.35	-5099.25	242.76	5104.18	85.00	5105.03	177.27	1.41
13207.00	92.20	177.60	7600.76	-5184.06	245.94	5189.05	85.00	5189.89	177.28	2.20
13292.00	92.00	176.40	7597.64	-5268.89	250.39	5273.96	85.00	5274.83	177.28	1.43
13378.00	91.50	177.10	7595.01	-5354.71	255.26	5359.89	86.00	5360.79	177.27	1.00
13463.00	90.40	178.10	7593.61	-5439.62	258.82	5444.87	85.00	5445.77	177.28	1.75
13548.00	89.20	179.20	7593.90	-5524.59	260.82	5529.87	85.00	5530.75	177.30	1.92
13634.00	89.40	179.70	7594.95	-5610.58	261.65	5615.84	86.00	5616.68	177.33	.63
13719.00	89.40	178.50	7595.84	-5695.57	262.98	5700.83	85.00	5701.63	177.36	1.41
13804.00	90.10	180.70	7596.21	-5780.56	263.57	5785.80	85.00	5786.56	177.39	2.72
13890.00	89.60	180.40	7596.44	-5866.55	262.75	5871.73	86.00	5872.43	177.44	.68
13975.00	88.90	180.00	7597.55	-5951.54	262.45	5956.68	85.00	5957.33	177.48	.95
14060.00	89.20	180.40	7598.96	-6036.53	262.15	6041.62	85.00	6042.22	177.51	.59
14145.00	90.30	180.60	7599.33	-6121.53	261.41	6126.56	85.00	6127.11	177.55	1.32
14231.00	90.80	180.90	7598.51	-6207.52	260.29	6212.48	86.00	6212.97	177.60	.68
14316.00	90.40	180.70	7597.62	-6292.50	259.10	6297.39	85.00	6297.83	177.64	.53
14401.00	89.70	180.00	7597.54	-6377.50	258.58	6382.34	85.00	6382.74	177.68	1.16
14487.00	89.60	180.70	7598.07	-6463.50	258.06	6468.28	86.00	6468.65	177.71	.82
14572.00	89.90	180.60	7598.44	-6548.49	257.09	6553.21	85.00	6553.53	177.75	.37
14657.00	89.40	180.00	7598.96	-6633.49	256.65	6638.16	85.00	6638.45	177.78	.92
14742.00	88.90	179.90	7600.22	-6718.48	256.72	6723.11	85.00	6723.38	177.81	.60
14828.00	89.00	179.70	7601.79	-6804.46	257.02	6809.07	86.00	6809.31	177.84	.26
14913.00	89.20	179.20	7603.13	-6889.45	257.84	6894.04	85.00	6894.27	177.86	.63
14999.00	89.60	179.30	7604.03	-6975.43	258.96	6980.03	86.00	6980.24	177.87	.48
15084.00	90.30	181.10	7604.10	-7060.43	258.67	7064.98	85.00	7065.17	177.90	2.27
15170.00	89.40	178.80	7604.33	-7146.42	258.74	7150.94	86.00	7151.11	177.93	2.87
15255.00	90.60	179.70	7604.33	-7231.41	259.85	7235.92	85.00	7236.08	177.94	1.76
15340.00	90.30	180.90	7603.66	-7316.41	259.41	7320.87	85.00	7321.00	177.97	1.46
15426.00	90.60	180.00	7602.99	-7402.40	258.73	7406.80	86.00	7406.92	178.00	1.10
15511.00	90.10	180.40	7602.47	-7487.40	258.44	7491.76	85.00	7491.86	178.02	.75
15597.00	90.40	180.40	7602.09	-7573.40	257.84	7577.70	86.00	7577.78	178.05	.35
15682.00	91.00	179.50	7601.05	-7658.39	257.91	7662.66	85.00	7662.73	178.07	1.27
Last MWD Survey										
15767.00	92.90	179.50	7598.16	-7743.33	258.65	7747.59	85.00	7747.65	178.09	2.24
Straight Line Projection to TD										
15828.00	92.90	179.50	7595.08	-7804.25	259.18	7808.50	61.00	7808.55	178.10	.00