



COG Operating LLC

Lea County, NM (NAD-27 2015)

Sneed 9 Federal Com #23H

API #: 30-025-41410

SHL: 1650' FNL, 330' FWL, Sec 9, T17S, R32E, Unit E

PP: 1673' FNL, 330' FWL, Sec 9, T17S, R32E, Unit E

BHL: 1672' FNL, 969' FWL, Sec 10, T17S, R32E, Unit E

Design: BHL: 1670' FNL, 970' FWL, Sec 10, T17S, R32E, Unit E

Standard Survey Report

21 April, 2016



Company: COG Operating LLC
Project: Lea County, NM (NAD-27 2015)
Site: Sneed 9 Federal Com #23H
Well: SHL 1650' FNL, 330' FWL Sec 9, T17S, R32E, Unit E
Wellbore: BHL 1670' FNL, 970' FWL, Sec 10, T17S R32E, Unit E
Design: BHL 1670' FNL, 970' FWL, Sec 10, T17S R32E, Unit E

Local Co-ordinate Reference: Site Sneed 9 Federal Com #23H
TVD Reference: KB @ 4098.00usft (Patriot 6)
MD Reference: KB @ 4098.00usft (Patriot 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project Lea County, NM (NAD-27 2015)

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site Sneed 9 Federal Com #23H

Site Position: Northing: 674,029.10 usft Latitude: 32° 51' 6.336 N
From: Map Easting: 670,397.30 usft Longitude: 103° 46' 42.486 W
Position Uncertainty: 0.00 usft Slot Radius: 13.20 in Grid Convergence: 0.30 °

Well SHL 1650' FNL, 330' FWL, Sec 9, T17S, R32E, Unit E

Well Position +N-S 0.00 usft Northing: 674,029.10 usft Latitude: 32° 51' 6.336 N
+E-W 0.00 usft Easting: 670,397.30 usft Longitude: 103° 46' 42.486 W
Position Uncertainty 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 4,080.00 usft

Wellbore BHL 1670' FNL, 970' FWL, Sec 10, T17S, R32E, Unit E

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/22/2016	7.23	60.62	48,412

Design BHL 1670' FNL, 970' FWL, Sec 10, T17S, R32E, Unit E

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.00	0.00	0.00	90.02

Survey Program Date 4/21/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	2,120.00	VES Gyro #1 (BHL 1670' FNL, 970' FWL,	VES-ISCWSA-GYRO-3	Blaxial Semi-Cont. Gyro
2,311.00	12,351.00	TDS MWD #2 (BHL 1670' FNL 970' FWL	MWD	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.68	120.07	100.00	-0.30	0.51	0.51	0.68	0.68	0.00
200.00	0.49	78.30	199.99	-0.51	1.45	1.45	0.45	-0.19	-41.77
300.00	0.49	127.87	299.99	-0.68	2.20	2.20	0.41	0.00	49.57
400.00	0.58	121.92	399.99	-1.21	2.97	2.97	0.11	0.09	-5.95
500.00	0.27	136.63	499.98	-1.65	3.56	3.56	0.33	-0.31	14.71
600.00	0.10	85.35	599.98	-1.82	3.81	3.81	0.22	-0.17	-51.28



TDS
Survey Report



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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
700.00	0.14	14.53	699.98	-1.69	3.93	3.93	0.14	0.04	-70.82
800.00	0.12	8.96	799.98	-1.47	3.97	3.97	0.02	-0.02	-5.57
900.00	0.31	336.03	899.98	-1.12	3.88	3.88	0.22	0.19	-32.93
1,000.00	0.34	324.34	999.98	-0.63	3.60	3.60	0.07	0.03	-11.69
1,100.00	0.47	10.61	1,099.98	0.01	3.50	3.50	0.34	0.13	46.27
1,200.00	0.48	29.35	1,199.97	0.78	3.78	3.78	0.15	0.01	18.74
1,300.00	0.61	42.53	1,299.97	1.54	4.35	4.35	0.18	0.13	13.18
1,400.00	0.60	48.23	1,399.96	2.28	5.10	5.10	0.06	-0.01	5.70
1,500.00	0.63	39.32	1,499.96	3.05	5.84	5.83	0.10	0.03	-8.91
1,600.00	0.36	39.57	1,599.95	3.72	6.38	6.38	0.27	-0.27	0.25
1,700.00	0.41	54.40	1,699.95	4.17	6.87	6.87	0.11	0.05	14.83
1,800.00	0.67	64.14	1,799.95	4.64	7.69	7.69	0.27	0.26	9.74
1,900.00	1.09	62.10	1,899.94	5.34	9.06	9.06	0.42	0.42	-2.04
2,000.00	1.29	62.96	1,999.91	6.29	10.90	10.90	0.20	0.20	0.86
2,120.00	1.81	71.10	2,119.67	7.52	13.90	13.90	0.47	0.43	6.78
Tie-In to VES Gyro									
2,311.00	1.80	90.40	2,310.78	8.48	19.75	19.75	0.32	-0.01	10.10
First TDS MWD Survey									
2,343.00	1.90	91.10	2,342.76	8.46	20.78	20.78	0.32	0.31	2.19
2,438.00	2.20	275.30	2,437.74	8.60	20.54	20.54	4.31	0.32	-185.05
2,533.00	3.40	263.00	2,532.62	8.43	15.93	15.93	1.41	1.26	-12.95
2,628.00	3.10	267.00	2,627.47	7.95	10.57	10.57	0.40	-0.32	4.21
2,723.00	4.00	288.30	2,722.29	7.72	4.69	4.69	0.95	0.95	1.37
2,818.00	4.70	274.80	2,817.01	7.93	-2.50	-2.50	0.89	0.74	6.63
2,914.00	4.90	273.30	2,912.68	8.48	-10.51	-10.52	0.24	0.21	-1.35
3,009.00	6.00	269.50	3,007.25	8.67	-19.53	-19.53	1.22	1.16	-4.00
3,104.00	5.80	266.10	3,101.74	8.30	-29.28	-29.29	0.42	-0.21	-3.58
3,199.00	5.50	261.80	3,196.28	7.33	-38.58	-38.58	0.55	-0.32	-4.53
3,295.00	5.70	259.10	3,291.83	5.77	-47.81	-47.81	0.34	0.21	-2.81
3,390.00	6.10	256.10	3,386.32	3.66	-57.35	-57.35	0.53	0.42	-3.16
3,485.00	7.30	262.10	3,480.67	1.62	-68.22	-68.22	1.46	1.26	6.32
3,574.00	6.60	261.60	3,569.02	0.10	-78.88	-78.88	0.79	-0.79	-0.56
3,669.00	6.20	261.50	3,663.43	-1.48	-89.36	-89.36	0.42	-0.42	-0.11
3,764.00	6.20	260.40	3,757.67	-3.07	-99.49	-99.49	0.13	0.00	-1.16
3,859.00	6.20	260.30	3,852.31	-4.79	-109.61	-109.60	0.01	0.00	-0.11
3,954.00	6.20	259.30	3,946.76	-6.61	-119.70	-119.70	0.11	0.00	-1.05
4,049.00	6.00	259.40	4,041.22	-8.48	-129.62	-129.62	0.21	-0.21	0.11
4,144.00	6.30	259.00	4,135.67	-10.38	-139.62	-139.62	0.32	0.32	-0.42
4,239.00	7.20	263.10	4,230.02	-12.09	-150.65	-150.64	1.07	0.95	4.32
4,334.00	7.50	267.00	4,324.24	-13.13	-162.75	-162.75	0.61	0.32	4.11
4,429.00	7.50	273.00	4,418.42	-13.13	-175.13	-175.13	0.82	0.00	6.32
4,525.00	7.30	274.70	4,513.62	-12.31	-187.47	-187.46	0.31	-0.21	1.77

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KB @ 4098.00usft (Patriot 6)
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Survey Calculation Method:

Minimum Curvature

Database:

EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,620.00	7.30	275.40	4,607.85	-11.24	-199.49	-199.49	0.09	0.00	0.74
4,715.00	7.60	265.80	4,702.06	-11.14	-211.77	-211.76	1.35	0.32	-10.11
4,811.00	6.50	260.30	4,797.33	-12.52	-223.45	-223.45	1.34	-1.15	-5.73
4,906.00	6.40	259.40	4,891.73	-14.40	-233.96	-233.95	0.15	-0.11	-0.95
5,002.00	6.70	258.60	4,987.10	-16.49	-244.71	-244.70	0.33	0.31	-0.83
5,097.00	5.20	262.00	5,081.59	-18.18	-254.40	-254.40	1.62	-1.58	3.58
5,192.00	5.20	264.30	5,176.20	-19.21	-262.95	-262.94	0.22	0.00	2.42
5,287.00	5.10	259.70	5,270.81	-20.39	-271.39	-271.38	0.45	-0.11	-4.84
5,383.00	5.30	258.60	5,366.42	-22.03	-279.93	-279.93	0.23	0.21	-1.15
5,478.00	5.00	258.10	5,461.04	-23.75	-288.29	-288.28	0.32	-0.32	-0.53
5,573.00	5.30	255.50	5,555.65	-25.70	-296.59	-296.58	0.40	0.32	-2.74
5,668.00	3.40	261.60	5,650.37	-27.21	-303.62	-303.61	2.06	-2.00	6.42
5,763.00	1.80	286.60	5,745.28	-27.20	-307.84	-307.83	2.03	-1.68	26.32
5,795.00	1.00	335.60	5,777.27	-26.80	-308.43	-308.43	4.28	-2.50	153.13
5,827.00	3.30	65.00	5,809.25	-26.16	-307.72	-307.71	10.74	7.19	279.38
5,859.00	7.60	82.60	5,841.10	-25.49	-304.78	-304.77	14.26	13.44	55.00
5,890.00	12.00	86.60	5,871.64	-25.04	-299.53	-299.52	14.35	14.19	12.90
5,922.00	16.20	86.20	5,902.67	-24.55	-291.75	-291.74	13.13	13.13	-1.25
5,954.00	19.90	83.60	5,933.09	-23.64	-281.88	-281.87	11.83	11.56	-8.13
5,985.00	23.10	84.10	5,961.93	-22.43	-270.58	-270.58	10.34	10.32	1.61
6,017.00	26.30	85.20	5,991.00	-21.19	-257.27	-257.27	10.10	10.00	3.44
6,049.00	28.90	87.40	6,019.35	-20.25	-242.48	-242.47	8.73	8.13	6.88
6,081.00	31.40	88.60	6,047.02	-19.69	-226.42	-226.41	8.04	7.81	3.75
6,112.00	34.20	89.40	6,073.08	-19.40	-209.63	-209.62	9.14	9.03	2.58
6,144.00	36.60	89.80	6,099.16	-19.28	-191.10	-191.09	7.53	7.50	1.25
6,176.00	38.90	90.50	6,124.46	-19.33	-171.51	-171.50	7.31	7.19	2.19
6,208.00	41.10	91.00	6,148.97	-19.60	-150.94	-150.93	6.95	6.88	1.56
6,239.00	43.30	91.10	6,171.93	-19.98	-130.12	-130.12	7.10	7.10	0.32
6,271.00	45.70	91.20	6,194.76	-20.43	-107.70	-107.69	7.50	7.50	0.31
6,303.00	48.10	91.00	6,216.62	-20.88	-84.34	-84.33	7.51	7.50	-0.63
6,334.00	50.60	91.00	6,236.81	-21.29	-60.83	-60.82	8.06	8.06	0.00
6,366.00	53.20	91.40	6,256.56	-21.82	-35.65	-35.64	8.18	8.13	1.25
6,398.00	55.50	91.40	6,275.21	-22.46	-9.66	-9.65	7.19	7.19	0.00
6,409.70	56.30	91.25	6,281.76	-22.68	0.03	0.04	6.95	6.87	-1.27
As-Drilled PP									
6,430.00	57.70	91.00	6,292.82	-23.01	17.05	17.06	6.95	6.88	-1.24
6,461.00	60.20	90.70	6,308.81	-23.41	43.60	43.61	8.11	8.06	-0.97
6,493.00	62.70	90.70	6,324.10	-23.75	71.71	71.71	7.81	7.81	0.00
6,525.00	65.10	90.90	6,338.18	-24.15	100.44	100.45	7.52	7.50	0.63
6,556.00	68.00	91.00	6,350.51	-24.62	128.87	128.88	9.36	9.35	0.32
6,588.00	70.70	90.80	6,361.80	-25.09	158.81	158.82	8.46	8.44	-0.63
6,620.00	73.80	90.40	6,371.55	-25.41	189.28	189.29	9.76	9.69	-1.25



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6,652.00	77.00	89.70	6,379.62	-25.44	220.24	220.25	10.22	10.00	-2.19
6,683.00	80.00	89.50	6,385.80	-25.23	250.62	250.62	9.70	9.68	-0.65
6,715.00	83.20	89.20	6,390.47	-24.87	282.27	282.28	10.04	10.00	-0.94
6,747.00	86.70	89.00	6,393.29	-24.37	314.13	314.14	10.96	10.94	-0.83
6,779.00	88.30	88.30	6,394.68	-23.61	346.09	346.10	5.46	5.00	-2.19
6,810.00	88.70	88.10	6,395.49	-22.64	377.07	377.07	1.44	1.29	-0.85
6,905.00	89.30	88.80	6,397.15	-20.07	472.02	472.02	0.97	0.63	0.74
7,000.00	90.20	89.10	6,397.57	-18.33	567.00	567.00	1.00	0.95	0.32
7,095.00	88.80	88.70	6,398.40	-16.51	661.97	661.98	1.53	-1.47	-0.42
7,191.00	89.50	88.70	6,399.82	-14.33	757.94	757.94	0.73	0.73	0.00
7,286.00	90.90	88.50	6,399.49	-12.01	852.91	852.91	1.49	1.47	-0.21
7,381.00	90.10	89.70	6,398.66	-10.51	947.89	947.89	1.52	-0.84	1.26
7,476.00	88.70	90.40	6,399.65	-10.60	1,042.88	1,042.89	1.65	-1.47	0.74
7,571.00	89.70	90.30	6,400.98	-11.18	1,137.87	1,137.87	1.06	1.05	-0.11
7,667.00	90.50	90.00	6,400.81	-11.43	1,233.87	1,233.87	0.89	0.83	-0.31
7,703.00	91.10	89.50	6,400.31	-11.27	1,269.86	1,269.87	2.17	1.67	-1.39
7,798.00	90.20	90.60	6,399.23	-11.35	1,364.86	1,364.86	1.50	-0.95	1.16
7,894.00	90.40	90.90	6,398.73	-12.61	1,460.85	1,460.85	0.38	0.21	0.31
7,989.00	90.50	90.50	6,397.98	-13.77	1,555.84	1,555.84	0.43	0.11	-0.42
8,084.00	89.50	90.30	6,397.98	-14.44	1,650.83	1,650.84	1.07	-1.05	-0.21
8,179.00	89.60	90.00	6,398.73	-14.68	1,745.83	1,745.83	0.33	0.11	-0.32
8,274.00	89.60	90.40	6,399.39	-15.02	1,840.83	1,840.83	0.42	0.00	0.42
8,369.00	88.70	90.20	6,400.80	-15.51	1,935.81	1,935.82	0.97	-0.95	-0.21
8,464.00	90.90	90.50	6,401.13	-16.09	2,030.80	2,030.81	2.34	2.32	0.32
8,560.00	90.50	90.60	6,399.96	-17.01	2,126.79	2,126.80	0.43	-0.42	0.10
8,655.00	89.70	90.10	6,399.80	-17.59	2,221.79	2,221.80	0.99	-0.84	-0.53
8,750.00	89.20	89.40	6,400.71	-17.18	2,316.78	2,316.79	0.91	-0.53	-0.74
8,845.00	91.30	89.70	6,400.29	-16.43	2,411.77	2,411.78	2.23	2.21	0.32
8,941.00	90.90	89.40	6,398.45	-15.68	2,507.75	2,507.76	0.52	-0.42	-0.31
9,036.00	89.90	89.30	6,397.79	-14.60	2,602.74	2,602.75	1.06	-1.05	-0.11
9,131.00	88.70	89.00	6,398.95	-13.19	2,697.72	2,697.73	1.30	-1.26	-0.32
9,226.00	90.60	89.50	6,399.53	-11.95	2,792.71	2,792.71	2.07	2.00	0.53
9,321.00	89.60	90.20	6,399.36	-11.70	2,887.71	2,887.71	1.28	-1.05	0.74
9,416.00	88.40	90.20	6,401.02	-12.03	2,982.69	2,982.69	1.26	-1.26	0.00
9,511.00	90.30	90.40	6,402.10	-12.53	3,077.68	3,077.68	2.01	2.00	0.21
9,606.00	90.50	89.70	6,401.43	-12.61	3,172.68	3,172.68	0.77	0.21	-0.74
9,702.00	90.00	89.40	6,401.01	-11.86	3,268.67	3,268.68	0.61	-0.52	-0.31
9,797.00	89.20	88.90	6,401.68	-10.45	3,363.66	3,363.66	0.99	-0.84	-0.53
9,892.00	91.70	89.50	6,400.93	-9.12	3,458.64	3,458.64	2.71	2.63	0.63
9,987.00	91.30	89.60	6,398.45	-8.38	3,553.60	3,553.60	0.43	-0.42	0.11
10,082.00	90.90	89.90	6,396.62	-7.96	3,648.58	3,648.59	0.53	-0.42	0.32
10,177.00	89.80	89.50	6,396.04	-7.47	3,743.58	3,743.58	1.23	-1.16	-0.42



TDS
Survey Report



Company: COG Operating LLC
Project: Lea County, NM (NAD-27 2015)
Site: Sneed 9 Federal Com #23H
Well: SHL: 1850' FNL, 330' FWL, Sec 9, T17S, R32E, Unit E
Wellbore: BHL: 1670' FNL, 970' FWL, Sec 10, T17S, R32E, Unit E
Design: BHL 1670' FNL, 970' FWL, Sec 10, T17S, R32E, Unit E

Local Co-ordinate Reference: Site Sneed 9 Federal Com #23H
TVD Reference: KB @ 4098.00usft (Patriot 6)
MD Reference: KB @ 4098.00usft (Patriot 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,272.00	88.80	89.40	6,397.20	-6.55	3,838.57	3,838.57	1.06	-1.05	-0.11
10,367.00	88.30	89.50	6,399.61	-5.64	3,933.53	3,933.53	0.54	-0.53	0.11
10,463.00	90.40	90.00	6,400.69	-5.22	4,029.52	4,029.52	2.25	2.19	0.52
10,558.00	89.70	90.40	6,400.61	-5.56	4,124.52	4,124.52	0.85	-0.74	0.42
10,653.00	88.40	90.30	6,402.19	-6.14	4,219.50	4,219.50	1.37	-1.37	-0.11
10,749.00	90.30	90.80	6,403.28	-7.06	4,315.48	4,315.48	2.05	1.98	0.52
10,844.00	90.70	90.00	6,402.45	-7.72	4,410.48	4,410.48	0.94	0.42	-0.84
10,939.00	90.50	90.30	6,401.45	-7.97	4,505.47	4,505.47	0.38	-0.21	0.32
11,034.00	90.00	90.30	6,401.04	-8.47	4,600.47	4,600.47	0.53	-0.53	0.00
11,129.00	89.30	89.60	6,401.62	-8.38	4,695.47	4,695.47	1.04	-0.74	-0.74
11,224.00	88.80	89.10	6,403.19	-7.31	4,790.45	4,790.45	0.74	-0.53	-0.53
11,319.00	90.80	89.50	6,403.52	-6.15	4,885.43	4,885.44	2.15	2.11	0.42
11,415.00	90.20	89.80	6,402.69	-5.56	4,981.43	4,981.43	0.70	-0.63	0.31
11,509.00	89.40	89.90	6,403.01	-5.31	5,075.43	5,075.43	0.86	-0.85	0.11
11,605.00	88.70	89.50	6,404.61	-4.81	5,171.41	5,171.41	0.84	-0.73	-0.42
11,700.00	90.80	89.80	6,405.02	-4.23	5,266.40	5,266.40	2.23	2.21	0.32
11,795.00	91.20	89.90	6,403.36	-3.98	5,361.39	5,361.39	0.43	0.42	0.11
11,890.00	90.90	89.40	6,401.62	-3.40	5,456.37	5,456.37	0.61	-0.32	-0.53
11,985.00	90.40	89.30	6,400.54	-2.32	5,551.36	5,551.36	0.54	-0.53	-0.11
12,080.00	89.30	90.10	6,400.79	-1.83	5,646.35	5,646.35	1.43	-1.16	0.84
12,175.00	89.50	89.90	6,401.79	-1.83	5,741.35	5,741.35	0.30	0.21	-0.21
12,271.00	91.60	90.30	6,400.87	-1.99	5,837.34	5,837.34	2.23	2.19	0.42
Final MWD Survey									
12,351.00	91.60	90.30	6,398.63	-2.41	5,917.31	5,917.31	0.00	0.00	0.00
Projection to Bit/TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,120.00	2,119.87	7.52	13.90	Tie-In to VES Gyro
2,311.00	2,310.78	8.48	19.75	First TDS MWD Survey
6,409.70	6,281.76	-22.68	0.03	As-Drilled PP
12,271.00	6,400.87	-1.99	5,837.34	Final MWD Survey
12,351.00	6,398.63	-2.41	5,917.31	Projection to Bit/TD

Checked By: _____ Approved By: _____ Date: _____



Company: Concho
Lease/Well: Sneed 9 Federal Com No /023H

Rig Name: Patriot 6
State/County: New Mexico/Lea
VS-Azi: 0.00 Degrees
Latitude: 32.85176, Longitude: -103.77947
Grid North = True North -0.30 degs (NAD 27)
Grid Correction Applied = -0.30 degs



Depth Reference : RKB = 16 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 7/6/2016 / 13:23

VES Survey International
Midland, TX
432-563-5444

Surveyor: Andrew Askew
Sneed 9 Federal Com No 023H / API 30-025-41410

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N-S FT	+E-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	----
100.00	0.68	120.07	100.00	-0.30	0.51	-0.30	0.59	120.07	0.68
200.00	0.49	78.30	199.99	-0.51	1.45	-0.51	1.53	109.31	0.45
300.00	0.49	127.87	299.99	-0.68	2.21	-0.68	2.31	107.22	0.41
400.00	0.58	121.92	399.99	-1.22	2.98	-1.22	3.22	112.22	0.10
500.00	0.27	136.63	499.98	-1.66	3.57	-1.66	3.94	114.88	0.33
600.00	0.10	85.35	599.98	-1.82	3.82	-1.82	4.23	115.49	0.22
700.00	0.14	14.53	699.98	-1.70	3.93	-1.70	4.28	113.35	0.14
800.00	0.12	8.96	799.98	-1.47	3.98	-1.47	4.24	110.32	0.02
900.00	0.31	336.03	899.98	-1.11	3.88	-1.11	4.04	106.02	0.22
1000.00	0.34	324.34	999.98	-0.62	3.60	-0.62	3.65	99.84	0.07
1100.00	0.47	10.61	1099.98	0.02	3.50	0.02	3.50	89.74	0.34
1200.00	0.48	29.35	1199.97	0.78	3.78	0.78	3.86	78.31	0.16
1300.00	0.61	42.53	1299.97	1.54	4.35	1.54	4.61	70.47	0.18
1400.00	0.60	48.23	1399.96	2.29	5.10	2.29	5.59	65.85	0.06
1500.00	0.63	39.32	1499.96	3.07	5.85	3.07	6.60	62.32	0.10
1600.00	0.36	39.57	1599.95	3.73	6.40	3.73	7.41	59.72	0.28
1700.00	0.41	54.40	1699.95	4.18	6.89	4.18	8.06	58.72	0.11
1800.00	0.67	64.14	1799.95	4.65	7.70	4.65	9.00	58.90	0.28

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.09	62.10	1899.93	5.35	9.08	5.35	10.54	59.49	0.42
2000.00	1.29	62.96	1999.91	6.31	10.92	6.31	12.61	59.99	0.20
2120.00	1.81	71.10	2119.87	7.54	13.92	7.54	15.83	61.57	0.47