

EXTRACTION OIL & GAS

Broomfield County

Sec 7-T1S-R68W

LIVINGSTON S19-25-9N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

05 December, 2017



Project: Broomfield County
Site: Sec 7-T1S-R68W
Well: LIVINGSTON S19-25-9N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1

PROJECT DETAILS: Broomfield County

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 8.27°

Magnetic Field
Strength: 52086.1snT
Dip Angle: 66.46°
Date: 12/4/2017
Model: IGRF2015

WELL DETAILS: LIVINGSTON S19-25-9N

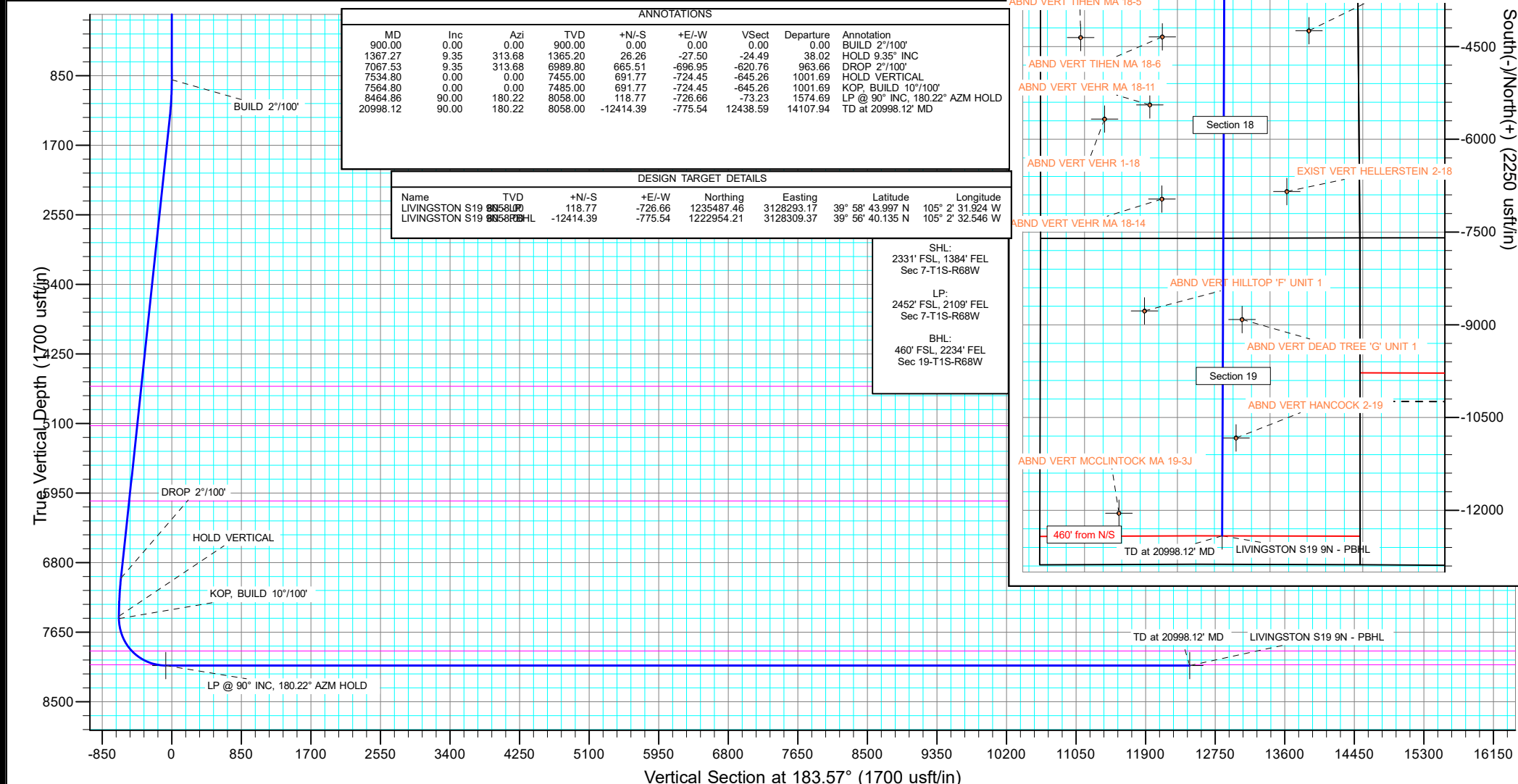
	+N/-S	+E/-W	Northing	Easting	5311.00	Latitude	Longitude	Slot
	0.00	0.00	1235372.46	3129020.44		39° 58' 42.823 N	105° 2' 22.589 W	

SECTION DETAILS

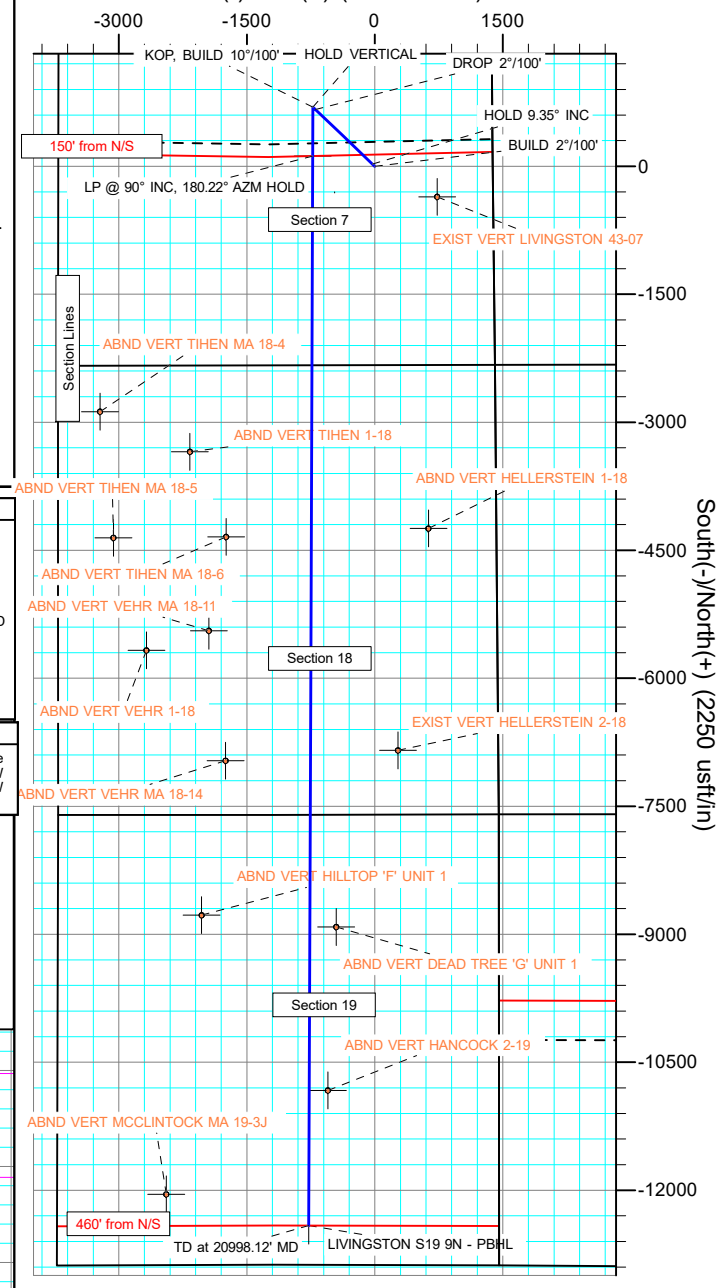
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
3	1367.27	9.35	313.68	1365.20	26.26	-27.50	2.00	313.68	-24.49	
4	7067.53	9.35	313.68	6989.80	665.51	-696.95	0.00	0.00	-620.76	
5	7534.80	0.00	0.00	7455.00	691.77	-724.45	2.00	180.00	-645.26	
6	7564.80	0.00	0.00	7485.00	691.77	-724.45	0.00	0.00	-645.26	
7	8464.86	90.00	180.22	8058.00	118.77	-726.66	10.00	180.22	-73.23	LIVINGSTON S19 9N - LP
8	20998.12	90.00	180.22	8058.00	-12414.39	-775.54	0.00	0.00	12438.59	LIVINGSTON S19 9N - PBHL

FORMATION TOP DETAILS

TVDPth	MDPath	Formation
4646.00	4692.20	PARKMAN
5127.00	5179.67	SUSSEX
6047.00	6112.04	SHANNON
7880.00	8000.62	NIOBRARA
8048.00	8357.65	NIO B TARGET



West(-)/East(+) (2250 usft/in)



TD at 20998.12' MD LIVINGSTON S19 9N - PBHL

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Broomfield County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 7-T1S-R68W			
Site Position:		Northing:	1,238,329.25 usft	Latitude:	39° 59' 11.974 N
From:	Lat/Long	Easting:	3,130,366.41 usft	Longitude:	105° 2' 5.099 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.30 °

Well	LIVINGSTON S19-25-9N					
Well Position	+N/-S	-2,949.69 usft	Northing:	1,235,372.46 usft	Latitude:	39° 58' 42.823 N
	+E/-W	-1,361.47 usft	Easting:	3,129,020.44 usft	Longitude:	105° 2' 22.589 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,311.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/4/2017	8.27	66.46	52,086.14217403

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	183.57

Plan Survey Tool Program	Date	12/5/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,998.10	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,367.27	9.35	313.68	1,365.20	26.26	-27.50	2.00	2.00	0.00	313.68	
7,067.53	9.35	313.68	6,989.80	665.51	-696.95	0.00	0.00	0.00	0.00	
7,534.80	0.00	0.00	7,455.00	691.77	-724.45	2.00	-2.00	0.00	180.00	
7,564.80	0.00	0.00	7,485.00	691.77	-724.45	0.00	0.00	0.00	0.00	
8,464.86	90.00	180.22	8,058.00	118.77	-726.66	10.00	10.00	-19.97	180.22	LIVINGSTON S19 9N
20,998.12	90.00	180.22	8,058.00	-12,414.39	-775.54	0.00	0.00	0.00	0.00	LIVINGSTON S19 9N

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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
BUILD 2°/100'									
1,000.00	2.00	313.68	999.98	1.21	-1.26	-1.12	2.00	2.00	0.00
1,100.00	4.00	313.68	1,099.84	4.82	-5.05	-4.50	2.00	2.00	0.00
1,200.00	6.00	313.68	1,199.45	10.84	-11.35	-10.11	2.00	2.00	0.00
1,300.00	8.00	313.68	1,298.70	19.25	-20.16	-17.96	2.00	2.00	0.00
1,367.27	9.35	313.68	1,365.20	26.26	-27.50	-24.49	2.00	2.00	0.00
HOLD 9.35° INC									
1,400.00	9.35	313.68	1,397.50	29.93	-31.34	-27.92	0.00	0.00	0.00
1,500.00	9.35	313.68	1,496.17	41.14	-43.09	-38.38	0.00	0.00	0.00
1,600.00	9.35	313.68	1,594.84	52.36	-54.83	-48.84	0.00	0.00	0.00
1,700.00	9.35	313.68	1,693.51	63.57	-66.58	-59.30	0.00	0.00	0.00
1,800.00	9.35	313.68	1,792.19	74.79	-78.32	-69.76	0.00	0.00	0.00
1,900.00	9.35	313.68	1,890.86	86.00	-90.06	-80.22	0.00	0.00	0.00
2,000.00	9.35	313.68	1,989.53	97.22	-101.81	-90.68	0.00	0.00	0.00
2,100.00	9.35	313.68	2,088.21	108.43	-113.55	-101.14	0.00	0.00	0.00
2,200.00	9.35	313.68	2,186.88	119.65	-125.30	-111.60	0.00	0.00	0.00
2,300.00	9.35	313.68	2,285.55	130.86	-137.04	-122.06	0.00	0.00	0.00
2,400.00	9.35	313.68	2,384.22	142.07	-148.79	-132.52	0.00	0.00	0.00
2,500.00	9.35	313.68	2,482.90	153.29	-160.53	-142.98	0.00	0.00	0.00
2,600.00	9.35	313.68	2,581.57	164.50	-172.27	-153.44	0.00	0.00	0.00
2,700.00	9.35	313.68	2,680.24	175.72	-184.02	-163.90	0.00	0.00	0.00
2,800.00	9.35	313.68	2,778.91	186.93	-195.76	-174.36	0.00	0.00	0.00
2,900.00	9.35	313.68	2,877.59	198.15	-207.51	-184.82	0.00	0.00	0.00
3,000.00	9.35	313.68	2,976.26	209.36	-219.25	-195.28	0.00	0.00	0.00
3,100.00	9.35	313.68	3,074.93	220.58	-231.00	-205.74	0.00	0.00	0.00
3,200.00	9.35	313.68	3,173.61	231.79	-242.74	-216.20	0.00	0.00	0.00
3,300.00	9.35	313.68	3,272.28	243.00	-254.48	-226.66	0.00	0.00	0.00
3,400.00	9.35	313.68	3,370.95	254.22	-266.23	-237.12	0.00	0.00	0.00
3,500.00	9.35	313.68	3,469.62	265.43	-277.97	-247.59	0.00	0.00	0.00
3,600.00	9.35	313.68	3,568.30	276.65	-289.72	-258.05	0.00	0.00	0.00
3,700.00	9.35	313.68	3,666.97	287.86	-301.46	-268.51	0.00	0.00	0.00
3,800.00	9.35	313.68	3,765.64	299.08	-313.20	-278.97	0.00	0.00	0.00
3,900.00	9.35	313.68	3,864.32	310.29	-324.95	-289.43	0.00	0.00	0.00
4,000.00	9.35	313.68	3,962.99	321.51	-336.69	-299.89	0.00	0.00	0.00
4,100.00	9.35	313.68	4,061.66	332.72	-348.44	-310.35	0.00	0.00	0.00
4,200.00	9.35	313.68	4,160.33	343.93	-360.18	-320.81	0.00	0.00	0.00
4,300.00	9.35	313.68	4,259.01	355.15	-371.93	-331.27	0.00	0.00	0.00
4,400.00	9.35	313.68	4,357.68	366.36	-383.67	-341.73	0.00	0.00	0.00
4,500.00	9.35	313.68	4,456.35	377.58	-395.41	-352.19	0.00	0.00	0.00
4,600.00	9.35	313.68	4,555.02	388.79	-407.16	-362.65	0.00	0.00	0.00
4,692.20	9.35	313.68	4,646.00	399.13	-417.99	-372.29	0.00	0.00	0.00
PARKMAN									
4,700.00	9.35	313.68	4,653.70	400.01	-418.90	-373.11	0.00	0.00	0.00

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Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,800.00	9.35	313.68	4,752.37	411.22	-430.65	-383.57	0.00	0.00	0.00
4,900.00	9.35	313.68	4,851.04	422.44	-442.39	-394.03	0.00	0.00	0.00
5,000.00	9.35	313.68	4,949.72	433.65	-454.14	-404.49	0.00	0.00	0.00
5,100.00	9.35	313.68	5,048.39	444.86	-465.88	-414.95	0.00	0.00	0.00
5,179.67	9.35	313.68	5,127.00	453.80	-475.24	-423.28	0.00	0.00	0.00
SUSSEX									
5,200.00	9.35	313.68	5,147.06	456.08	-477.62	-425.41	0.00	0.00	0.00
5,300.00	9.35	313.68	5,245.73	467.29	-489.37	-435.87	0.00	0.00	0.00
5,400.00	9.35	313.68	5,344.41	478.51	-501.11	-446.33	0.00	0.00	0.00
5,500.00	9.35	313.68	5,443.08	489.72	-512.86	-456.79	0.00	0.00	0.00
5,600.00	9.35	313.68	5,541.75	500.94	-524.60	-467.25	0.00	0.00	0.00
5,700.00	9.35	313.68	5,640.42	512.15	-536.35	-477.71	0.00	0.00	0.00
5,800.00	9.35	313.68	5,739.10	523.36	-548.09	-488.17	0.00	0.00	0.00
5,900.00	9.35	313.68	5,837.77	534.58	-559.83	-498.63	0.00	0.00	0.00
6,000.00	9.35	313.68	5,936.44	545.79	-571.58	-509.09	0.00	0.00	0.00
6,100.00	9.35	313.68	6,035.12	557.01	-583.32	-519.55	0.00	0.00	0.00
6,112.04	9.35	313.68	6,047.00	558.36	-584.74	-520.81	0.00	0.00	0.00
SHANNON									
6,200.00	9.35	313.68	6,133.79	568.22	-595.07	-530.02	0.00	0.00	0.00
6,300.00	9.35	313.68	6,232.46	579.44	-606.81	-540.48	0.00	0.00	0.00
6,400.00	9.35	313.68	6,331.13	590.65	-618.55	-550.94	0.00	0.00	0.00
6,500.00	9.35	313.68	6,429.81	601.87	-630.30	-561.40	0.00	0.00	0.00
6,600.00	9.35	313.68	6,528.48	613.08	-642.04	-571.86	0.00	0.00	0.00
6,700.00	9.35	313.68	6,627.15	624.29	-653.79	-582.32	0.00	0.00	0.00
6,800.00	9.35	313.68	6,725.82	635.51	-665.53	-592.78	0.00	0.00	0.00
6,900.00	9.35	313.68	6,824.50	646.72	-677.28	-603.24	0.00	0.00	0.00
7,000.00	9.35	313.68	6,923.17	657.94	-689.02	-613.70	0.00	0.00	0.00
7,067.53	9.35	313.68	6,989.80	665.51	-696.95	-620.76	0.00	0.00	0.00
DROP 2°/100'									
7,100.00	8.70	313.68	7,021.87	669.03	-700.63	-624.04	2.00	-2.00	0.00
7,200.00	6.70	313.68	7,120.97	678.27	-710.32	-632.67	2.00	-2.00	0.00
7,300.00	4.70	313.68	7,220.47	685.13	-717.50	-639.06	2.00	-2.00	0.00
7,400.00	2.70	313.68	7,320.25	689.58	-722.16	-643.21	2.00	-2.00	0.00
7,500.00	0.70	313.68	7,420.21	691.62	-724.30	-645.12	2.00	-2.00	0.00
7,534.80	0.00	0.00	7,455.00	691.77	-724.45	-645.26	2.00	-2.00	0.00
HOLD VERTICAL									
7,564.80	0.00	0.00	7,485.00	691.77	-724.45	-645.26	0.00	0.00	0.00
KOP, BUILD 10°/100'									
7,600.00	3.52	180.22	7,520.18	690.69	-724.45	-644.18	10.00	10.00	0.00
7,650.00	8.52	180.22	7,569.89	685.45	-724.47	-638.94	10.00	10.00	0.00
7,700.00	13.52	180.22	7,618.95	675.89	-724.51	-629.40	10.00	10.00	0.00
7,750.00	18.52	180.22	7,667.00	662.10	-724.56	-615.63	10.00	10.00	0.00
7,800.00	23.52	180.22	7,713.66	644.17	-724.63	-597.74	10.00	10.00	0.00
7,850.00	28.52	180.22	7,758.57	622.25	-724.72	-575.85	10.00	10.00	0.00
7,900.00	33.52	180.22	7,801.41	596.49	-724.82	-550.14	10.00	10.00	0.00
7,950.00	38.52	180.22	7,841.84	567.10	-724.93	-520.79	10.00	10.00	0.00
8,000.00	43.52	180.22	7,879.55	534.29	-725.06	-488.05	10.00	10.00	0.00
8,000.62	43.58	180.22	7,880.00	533.87	-725.06	-487.62	10.00	10.00	0.00
NIOBRARA									
8,050.00	48.52	180.22	7,914.26	498.33	-725.20	-452.14	10.00	10.00	0.00
8,100.00	53.52	180.22	7,945.71	459.47	-725.35	-413.35	10.00	10.00	0.00
8,150.00	58.52	180.22	7,973.65	418.03	-725.51	-371.98	10.00	10.00	0.00
8,200.00	63.52	180.22	7,997.87	374.30	-725.68	-328.33	10.00	10.00	0.00

Planning Report

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Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,250.00	68.52	180.22	8,018.19	328.63	-725.85	-282.74	10.00	10.00	0.00	
8,300.00	73.52	180.22	8,034.45	281.37	-726.04	-235.55	10.00	10.00	0.00	
8,350.00	78.51	180.22	8,046.53	232.87	-726.22	-187.14	10.00	10.00	0.00	
8,357.65	79.28	180.22	8,048.00	225.36	-726.25	-179.64	10.00	10.00	0.00	
NIO B TARGET										
8,400.00	83.51	180.22	8,054.33	183.50	-726.41	-137.85	10.00	10.00	0.00	
8,450.00	88.51	180.22	8,057.81	133.63	-726.61	-88.07	10.00	10.00	0.00	
8,464.86	90.00	180.22	8,058.00	118.77	-726.66	-73.23	10.00	10.00	0.00	
LP @ 90° INC, 180.22° AZM HOLD										
8,500.00	90.00	180.22	8,058.00	83.64	-726.80	-38.16	0.00	0.00	0.00	
8,600.00	90.00	180.22	8,058.00	-16.36	-727.19	61.67	0.00	0.00	0.00	
8,700.00	90.00	180.22	8,058.00	-116.36	-727.57	161.50	0.00	0.00	0.00	
8,800.00	90.00	180.22	8,058.00	-216.36	-727.96	261.33	0.00	0.00	0.00	
8,900.00	90.00	180.22	8,058.00	-316.36	-728.34	361.16	0.00	0.00	0.00	
9,000.00	90.00	180.22	8,058.00	-416.36	-728.73	460.99	0.00	0.00	0.00	
9,100.00	90.00	180.22	8,058.00	-516.36	-729.12	560.81	0.00	0.00	0.00	
9,200.00	90.00	180.22	8,058.00	-616.36	-729.50	660.64	0.00	0.00	0.00	
9,300.00	90.00	180.22	8,058.00	-716.36	-729.89	760.47	0.00	0.00	0.00	
9,400.00	90.00	180.22	8,058.00	-816.36	-730.28	860.30	0.00	0.00	0.00	
9,500.00	90.00	180.22	8,058.00	-916.36	-730.66	960.13	0.00	0.00	0.00	
9,600.00	90.00	180.22	8,058.00	-1,016.36	-731.05	1,059.96	0.00	0.00	0.00	
9,700.00	90.00	180.22	8,058.00	-1,116.35	-731.43	1,159.79	0.00	0.00	0.00	
9,800.00	90.00	180.22	8,058.00	-1,216.35	-731.82	1,259.62	0.00	0.00	0.00	
9,900.00	90.00	180.22	8,057.99	-1,316.35	-732.21	1,359.44	0.00	0.00	0.00	
10,000.00	90.00	180.22	8,057.99	-1,416.35	-732.59	1,459.27	0.00	0.00	0.00	
10,100.00	90.00	180.22	8,057.99	-1,516.35	-732.98	1,559.10	0.00	0.00	0.00	
10,200.00	90.00	180.22	8,057.99	-1,616.35	-733.36	1,658.93	0.00	0.00	0.00	
10,300.00	90.00	180.22	8,057.99	-1,716.35	-733.75	1,758.76	0.00	0.00	0.00	
10,400.00	90.00	180.22	8,057.99	-1,816.35	-734.14	1,858.59	0.00	0.00	0.00	
10,500.00	90.00	180.22	8,057.99	-1,916.35	-734.52	1,958.42	0.00	0.00	0.00	
10,600.00	90.00	180.22	8,057.99	-2,016.35	-734.91	2,058.25	0.00	0.00	0.00	
10,700.00	90.00	180.22	8,057.99	-2,116.35	-735.30	2,158.07	0.00	0.00	0.00	
10,800.00	90.00	180.22	8,057.99	-2,216.35	-735.68	2,257.90	0.00	0.00	0.00	
10,900.00	90.00	180.22	8,057.99	-2,316.35	-736.07	2,357.73	0.00	0.00	0.00	
11,000.00	90.00	180.22	8,057.99	-2,416.35	-736.45	2,457.56	0.00	0.00	0.00	
11,100.00	90.00	180.22	8,057.99	-2,516.34	-736.84	2,557.39	0.00	0.00	0.00	
11,200.00	90.00	180.22	8,057.99	-2,616.34	-737.23	2,657.22	0.00	0.00	0.00	
11,300.00	90.00	180.22	8,057.99	-2,716.34	-737.61	2,757.05	0.00	0.00	0.00	
11,400.00	90.00	180.22	8,057.99	-2,816.34	-738.00	2,856.88	0.00	0.00	0.00	
11,500.00	90.00	180.22	8,057.99	-2,916.34	-738.39	2,956.71	0.00	0.00	0.00	
11,600.00	90.00	180.22	8,057.99	-3,016.34	-738.77	3,056.53	0.00	0.00	0.00	
11,700.00	90.00	180.22	8,057.99	-3,116.34	-739.16	3,156.36	0.00	0.00	0.00	
11,800.00	90.00	180.22	8,057.99	-3,216.34	-739.54	3,256.19	0.00	0.00	0.00	
11,900.00	90.00	180.22	8,057.99	-3,316.34	-739.93	3,356.02	0.00	0.00	0.00	
12,000.00	90.00	180.22	8,057.99	-3,416.34	-740.32	3,455.85	0.00	0.00	0.00	
12,100.00	90.00	180.22	8,057.99	-3,516.34	-740.70	3,555.68	0.00	0.00	0.00	
12,200.00	90.00	180.22	8,057.99	-3,616.34	-741.09	3,655.51	0.00	0.00	0.00	
12,300.00	90.00	180.22	8,057.99	-3,716.34	-741.48	3,755.34	0.00	0.00	0.00	
12,400.00	90.00	180.22	8,057.99	-3,816.33	-741.86	3,855.16	0.00	0.00	0.00	
12,500.00	90.00	180.22	8,057.99	-3,916.33	-742.25	3,954.99	0.00	0.00	0.00	
12,600.00	90.00	180.22	8,057.98	-4,016.33	-742.63	4,054.82	0.00	0.00	0.00	
12,700.00	90.00	180.22	8,057.98	-4,116.33	-743.02	4,154.65	0.00	0.00	0.00	
12,800.00	90.00	180.22	8,057.98	-4,216.33	-743.41	4,254.48	0.00	0.00	0.00	
12,900.00	90.00	180.22	8,057.98	-4,316.33	-743.79	4,354.31	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
13,000.00	90.00	180.22	8,057.98	-4,416.33	-744.18	4,454.14	0.00	0.00	0.00	
13,100.00	90.00	180.22	8,057.98	-4,516.33	-744.57	4,553.97	0.00	0.00	0.00	
13,200.00	90.00	180.22	8,057.98	-4,616.33	-744.95	4,653.79	0.00	0.00	0.00	
13,300.00	90.00	180.22	8,057.98	-4,716.33	-745.34	4,753.62	0.00	0.00	0.00	
13,400.00	90.00	180.22	8,057.98	-4,816.33	-745.72	4,853.45	0.00	0.00	0.00	
13,500.00	90.00	180.22	8,057.98	-4,916.33	-746.11	4,953.28	0.00	0.00	0.00	
13,600.00	90.00	180.22	8,057.98	-5,016.33	-746.50	5,053.11	0.00	0.00	0.00	
13,700.00	90.00	180.22	8,057.98	-5,116.33	-746.88	5,152.94	0.00	0.00	0.00	
13,800.00	90.00	180.22	8,057.98	-5,216.32	-747.27	5,252.77	0.00	0.00	0.00	
13,900.00	90.00	180.22	8,057.98	-5,316.32	-747.66	5,352.60	0.00	0.00	0.00	
14,000.00	90.00	180.22	8,057.98	-5,416.32	-748.04	5,452.42	0.00	0.00	0.00	
14,100.00	90.00	180.22	8,057.98	-5,516.32	-748.43	5,552.25	0.00	0.00	0.00	
14,200.00	90.00	180.22	8,057.98	-5,616.32	-748.81	5,652.08	0.00	0.00	0.00	
14,300.00	90.00	180.22	8,057.98	-5,716.32	-749.20	5,751.91	0.00	0.00	0.00	
14,400.00	90.00	180.22	8,057.98	-5,816.32	-749.59	5,851.74	0.00	0.00	0.00	
14,500.00	90.00	180.22	8,057.98	-5,916.32	-749.97	5,951.57	0.00	0.00	0.00	
14,600.00	90.00	180.22	8,057.98	-6,016.32	-750.36	6,051.40	0.00	0.00	0.00	
14,700.00	90.00	180.22	8,057.98	-6,116.32	-750.75	6,151.23	0.00	0.00	0.00	
14,800.00	90.00	180.22	8,057.98	-6,216.32	-751.13	6,251.05	0.00	0.00	0.00	
14,900.00	90.00	180.22	8,057.98	-6,316.32	-751.52	6,350.88	0.00	0.00	0.00	
15,000.00	90.00	180.22	8,057.98	-6,416.32	-751.90	6,450.71	0.00	0.00	0.00	
15,100.00	90.00	180.22	8,057.98	-6,516.31	-752.29	6,550.54	0.00	0.00	0.00	
15,200.00	90.00	180.22	8,057.97	-6,616.31	-752.68	6,650.37	0.00	0.00	0.00	
15,300.00	90.00	180.22	8,057.97	-6,716.31	-753.06	6,750.20	0.00	0.00	0.00	
15,400.00	90.00	180.22	8,057.97	-6,816.31	-753.45	6,850.03	0.00	0.00	0.00	
15,500.00	90.00	180.22	8,057.97	-6,916.31	-753.84	6,949.86	0.00	0.00	0.00	
15,600.00	90.00	180.22	8,057.97	-7,016.31	-754.22	7,049.69	0.00	0.00	0.00	
15,700.00	90.00	180.22	8,057.97	-7,116.31	-754.61	7,149.51	0.00	0.00	0.00	
15,800.00	90.00	180.22	8,057.97	-7,216.31	-754.99	7,249.34	0.00	0.00	0.00	
15,900.00	90.00	180.22	8,057.97	-7,316.31	-755.38	7,349.17	0.00	0.00	0.00	
16,000.00	90.00	180.22	8,057.97	-7,416.31	-755.77	7,449.00	0.00	0.00	0.00	
16,100.00	90.00	180.22	8,057.97	-7,516.31	-756.15	7,548.83	0.00	0.00	0.00	
16,200.00	90.00	180.22	8,057.97	-7,616.31	-756.54	7,648.66	0.00	0.00	0.00	
16,300.00	90.00	180.22	8,057.97	-7,716.31	-756.93	7,748.49	0.00	0.00	0.00	
16,400.00	90.00	180.22	8,057.97	-7,816.30	-757.31	7,848.32	0.00	0.00	0.00	
16,500.00	90.00	180.22	8,057.97	-7,916.30	-757.70	7,948.14	0.00	0.00	0.00	
16,600.00	90.00	180.22	8,057.97	-8,016.30	-758.08	8,047.97	0.00	0.00	0.00	
16,700.00	90.00	180.22	8,057.97	-8,116.30	-758.47	8,147.80	0.00	0.00	0.00	
16,800.00	90.00	180.22	8,057.97	-8,216.30	-758.86	8,247.63	0.00	0.00	0.00	
16,900.00	90.00	180.22	8,057.97	-8,316.30	-759.24	8,347.46	0.00	0.00	0.00	
17,000.00	90.00	180.22	8,057.97	-8,416.30	-759.63	8,447.29	0.00	0.00	0.00	
17,100.00	90.00	180.22	8,057.97	-8,516.30	-760.02	8,547.12	0.00	0.00	0.00	
17,200.00	90.00	180.22	8,057.97	-8,616.30	-760.40	8,646.95	0.00	0.00	0.00	
17,300.00	90.00	180.22	8,057.97	-8,716.30	-760.79	8,746.77	0.00	0.00	0.00	
17,400.00	90.00	180.22	8,057.97	-8,816.30	-761.17	8,846.60	0.00	0.00	0.00	
17,500.00	90.00	180.22	8,057.97	-8,916.30	-761.56	8,946.43	0.00	0.00	0.00	
17,600.00	90.00	180.22	8,057.97	-9,016.30	-761.95	9,046.26	0.00	0.00	0.00	
17,700.00	90.00	180.22	8,057.97	-9,116.30	-762.33	9,146.09	0.00	0.00	0.00	
17,800.00	90.00	180.22	8,057.97	-9,216.29	-762.72	9,245.92	0.00	0.00	0.00	
17,900.00	90.00	180.22	8,057.96	-9,316.29	-763.11	9,345.75	0.00	0.00	0.00	
18,000.00	90.00	180.22	8,057.96	-9,416.29	-763.49	9,445.58	0.00	0.00	0.00	
18,100.00	90.00	180.22	8,057.96	-9,516.29	-763.88	9,545.40	0.00	0.00	0.00	
18,200.00	90.00	180.22	8,057.96	-9,616.29	-764.26	9,645.23	0.00	0.00	0.00	
18,300.00	90.00	180.22	8,057.96	-9,716.29	-764.65	9,745.06	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
18,400.00	90.00	180.22	8,057.96	-9,816.29	-765.04	9,844.89	0.00	0.00	0.00	
18,500.00	90.00	180.22	8,057.96	-9,916.29	-765.42	9,944.72	0.00	0.00	0.00	
18,600.00	90.00	180.22	8,057.96	-10,016.29	-765.81	10,044.55	0.00	0.00	0.00	
18,700.00	90.00	180.22	8,057.96	-10,116.29	-766.20	10,144.38	0.00	0.00	0.00	
18,800.00	90.00	180.22	8,057.96	-10,216.29	-766.58	10,244.21	0.00	0.00	0.00	
18,900.00	90.00	180.22	8,057.96	-10,316.29	-766.97	10,344.03	0.00	0.00	0.00	
19,000.00	90.00	180.22	8,057.96	-10,416.29	-767.35	10,443.86	0.00	0.00	0.00	
19,100.00	90.00	180.22	8,057.96	-10,516.28	-767.74	10,543.69	0.00	0.00	0.00	
19,200.00	90.00	180.22	8,057.96	-10,616.28	-768.13	10,643.52	0.00	0.00	0.00	
19,300.00	90.00	180.22	8,057.96	-10,716.28	-768.51	10,743.35	0.00	0.00	0.00	
19,400.00	90.00	180.22	8,057.96	-10,816.28	-768.90	10,843.18	0.00	0.00	0.00	
19,500.00	90.00	180.22	8,057.96	-10,916.28	-769.28	10,943.01	0.00	0.00	0.00	
19,600.00	90.00	180.22	8,057.96	-11,016.28	-769.67	11,042.84	0.00	0.00	0.00	
19,700.00	90.00	180.22	8,057.96	-11,116.28	-770.06	11,142.66	0.00	0.00	0.00	
19,800.00	90.00	180.22	8,057.96	-11,216.28	-770.44	11,242.49	0.00	0.00	0.00	
19,900.00	90.00	180.22	8,057.96	-11,316.28	-770.83	11,342.32	0.00	0.00	0.00	
20,000.00	90.00	180.22	8,057.96	-11,416.28	-771.22	11,442.15	0.00	0.00	0.00	
20,100.00	90.00	180.22	8,057.96	-11,516.28	-771.60	11,541.98	0.00	0.00	0.00	
20,200.00	90.00	180.22	8,057.96	-11,616.28	-771.99	11,641.81	0.00	0.00	0.00	
20,300.00	90.00	180.22	8,057.96	-11,716.28	-772.37	11,741.64	0.00	0.00	0.00	
20,400.00	90.00	180.22	8,057.96	-11,816.28	-772.76	11,841.47	0.00	0.00	0.00	
20,500.00	90.00	180.22	8,057.96	-11,916.27	-773.15	11,941.30	0.00	0.00	0.00	
20,600.00	90.00	180.22	8,057.95	-12,016.27	-773.53	12,041.12	0.00	0.00	0.00	
20,700.00	90.00	180.22	8,057.95	-12,116.27	-773.92	12,140.95	0.00	0.00	0.00	
20,800.00	90.00	180.22	8,057.95	-12,216.27	-774.31	12,240.78	0.00	0.00	0.00	
20,900.00	90.00	180.22	8,057.95	-12,316.27	-774.69	12,340.61	0.00	0.00	0.00	
20,998.12	90.00	180.22	8,058.00	-12,414.39	-775.54	12,438.59	0.00	0.00	0.00	
TD at 20998.12' MD										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
LIVINGSTON S19 9N - I	0.00	0.00	8,058.00	118.77	-726.66	1,235,487.45	3,128,293.17	39° 58' 43.997 N	105° 2' 31.924 W
- plan hits target center									
- Point									
LIVINGSTON S19 9N - I	0.00	0.00	8,058.00	-12,414.39	-775.54	1,222,954.21	3,128,309.37	39° 56' 40.135 N	105° 2' 32.546 W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,692.20	4,646.00	PARKMAN				
5,179.67	5,127.00	SUSSEX				
6,112.04	6,047.00	SHANNON				
8,000.62	7,880.00	NIOBRARA				
8,357.65	8,048.00	NIO B TARGET				

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
900.00	900.00	0.00	0.00	BUILD 2°/100'
1,367.27	1,365.20	26.26	-27.50	HOLD 9.35° INC
7,067.53	6,989.80	665.51	-696.95	DROP 2°/100'
7,534.80	7,455.00	691.77	-724.45	HOLD VERTICAL
7,564.80	7,485.00	691.77	-724.45	KOP, BUILD 10°/100'
8,464.86	8,058.00	118.77	-726.66	LP @ 90° INC, 180.22° AZM HOLD
20,998.12	8,058.00	-12,414.39	-775.54	TD at 20998.12' MD