

EXTRACTION OIL & GAS

Broomfield County

Sec 7-T1S-R68W

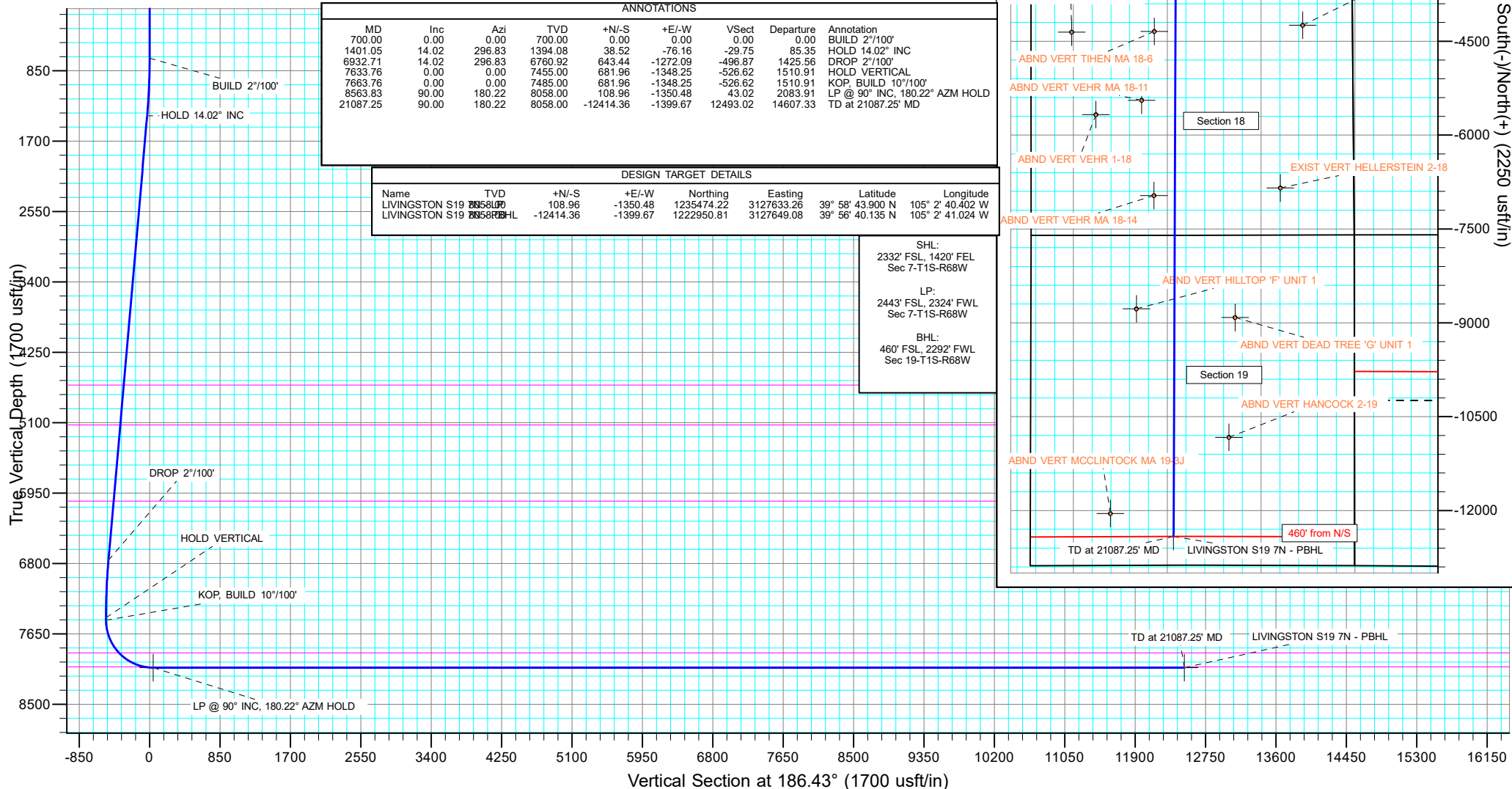
LIVINGSTON S19-25-7N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

05 December, 2017



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-7N
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 S19-25-7N	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 S19-25-7N				
Well Position	+N/-S	-2,949.69 usft	Northing:	1,235,372.27 usft	Latitude:	39° 58' 42.823 N
	+E/-W	-1,397.62 usft	Easting:	3,128,984.29 usft	Longitude:	105° 2' 23.053 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	52,086.12827902

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	186.43

Plan Survey Tool Program	Date	12/5/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,087.23	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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,401.05	14.02	296.83	1,394.08	38.52	-76.16	2.00	2.00	0.00	296.83	
6,932.71	14.02	296.83	6,760.92	643.44	-1,272.09	0.00	0.00	0.00	0.00	
7,633.76	0.00	0.00	7,455.00	681.96	-1,348.25	2.00	-2.00	0.00	180.00	
7,663.76	0.00	0.00	7,485.00	681.96	-1,348.25	0.00	0.00	0.00	0.00	
8,563.83	90.00	180.22	8,058.00	108.96	-1,350.48	10.00	10.00	-19.97	180.22	LIVINGSTON S19 7N
21,087.25	90.00	180.22	8,058.00	-12,414.36	-1,399.67	0.00	0.00	0.00	0.00	LIVINGSTON S19 7N

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-7N
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 S19-25-7N	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
BUILD 2°/100'									
800.00	2.00	296.83	799.98	0.79	-1.56	-0.61	2.00	2.00	0.00
900.00	4.00	296.83	899.84	3.15	-6.23	-2.43	2.00	2.00	0.00
1,000.00	6.00	296.83	999.45	7.08	-14.00	-5.47	2.00	2.00	0.00
1,100.00	8.00	296.83	1,098.70	12.58	-24.88	-9.72	2.00	2.00	0.00
1,200.00	10.00	296.83	1,197.47	19.64	-38.84	-15.17	2.00	2.00	0.00
1,300.00	12.00	296.83	1,295.62	28.26	-55.86	-21.82	2.00	2.00	0.00
1,401.05	14.02	296.83	1,394.08	38.52	-76.16	-29.75	2.00	2.00	0.00
HOLD 14.02° INC									
1,500.00	14.02	296.83	1,490.08	49.34	-97.55	-38.10	0.00	0.00	0.00
1,600.00	14.02	296.83	1,587.10	60.28	-119.17	-46.55	0.00	0.00	0.00
1,700.00	14.02	296.83	1,684.12	71.22	-140.79	-54.99	0.00	0.00	0.00
1,800.00	14.02	296.83	1,781.14	82.15	-162.41	-63.44	0.00	0.00	0.00
1,900.00	14.02	296.83	1,878.16	93.09	-184.03	-71.88	0.00	0.00	0.00
2,000.00	14.02	296.83	1,975.18	104.02	-205.65	-80.33	0.00	0.00	0.00
2,100.00	14.02	296.83	2,072.20	114.96	-227.27	-88.77	0.00	0.00	0.00
2,200.00	14.02	296.83	2,169.22	125.89	-248.89	-97.22	0.00	0.00	0.00
2,300.00	14.02	296.83	2,266.24	136.83	-270.51	-105.66	0.00	0.00	0.00
2,400.00	14.02	296.83	2,363.26	147.76	-292.13	-114.11	0.00	0.00	0.00
2,500.00	14.02	296.83	2,460.28	158.70	-313.75	-122.55	0.00	0.00	0.00
2,600.00	14.02	296.83	2,557.30	169.63	-335.37	-130.99	0.00	0.00	0.00
2,700.00	14.02	296.83	2,654.32	180.57	-356.99	-139.44	0.00	0.00	0.00
2,800.00	14.02	296.83	2,751.34	191.51	-378.61	-147.88	0.00	0.00	0.00
2,900.00	14.02	296.83	2,848.37	202.44	-400.23	-156.33	0.00	0.00	0.00
3,000.00	14.02	296.83	2,945.39	213.38	-421.85	-164.77	0.00	0.00	0.00
3,100.00	14.02	296.83	3,042.41	224.31	-443.47	-173.22	0.00	0.00	0.00
3,200.00	14.02	296.83	3,139.43	235.25	-465.09	-181.66	0.00	0.00	0.00
3,300.00	14.02	296.83	3,236.45	246.18	-486.71	-190.11	0.00	0.00	0.00
3,400.00	14.02	296.83	3,333.47	257.12	-508.33	-198.55	0.00	0.00	0.00
3,500.00	14.02	296.83	3,430.49	268.05	-529.95	-207.00	0.00	0.00	0.00
3,600.00	14.02	296.83	3,527.51	278.99	-551.57	-215.44	0.00	0.00	0.00
3,700.00	14.02	296.83	3,624.53	289.92	-573.19	-223.88	0.00	0.00	0.00
3,800.00	14.02	296.83	3,721.55	300.86	-594.81	-232.33	0.00	0.00	0.00
3,900.00	14.02	296.83	3,818.57	311.80	-616.43	-240.77	0.00	0.00	0.00
4,000.00	14.02	296.83	3,915.59	322.73	-638.05	-249.22	0.00	0.00	0.00
4,100.00	14.02	296.83	4,012.61	333.67	-659.67	-257.66	0.00	0.00	0.00
4,200.00	14.02	296.83	4,109.63	344.60	-681.29	-266.11	0.00	0.00	0.00
4,300.00	14.02	296.83	4,206.65	355.54	-702.91	-274.55	0.00	0.00	0.00
4,400.00	14.02	296.83	4,303.67	366.47	-724.52	-283.00	0.00	0.00	0.00
4,500.00	14.02	296.83	4,400.70	377.41	-746.14	-291.44	0.00	0.00	0.00
4,600.00	14.02	296.83	4,497.72	388.34	-767.76	-299.89	0.00	0.00	0.00
4,700.00	14.02	296.83	4,594.74	399.28	-789.38	-308.33	0.00	0.00	0.00
4,752.84	14.02	296.83	4,646.00	405.06	-800.81	-312.79	0.00	0.00	0.00
PARKMAN									
4,800.00	14.02	296.83	4,691.76	410.21	-811.00	-316.77	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-7N
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 S19-25-7N	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)	
4,900.00	14.02	296.83	4,788.78	421.15	-832.62	-325.22	0.00	0.00	0.00	
5,000.00	14.02	296.83	4,885.80	432.09	-854.24	-333.66	0.00	0.00	0.00	
5,100.00	14.02	296.83	4,982.82	443.02	-875.86	-342.11	0.00	0.00	0.00	
5,200.00	14.02	296.83	5,079.84	453.96	-897.48	-350.55	0.00	0.00	0.00	
5,248.61	14.02	296.83	5,127.00	459.27	-907.99	-354.66	0.00	0.00	0.00	
SUSSEX										
5,300.00	14.02	296.83	5,176.86	464.89	-919.10	-359.00	0.00	0.00	0.00	
5,400.00	14.02	296.83	5,273.88	475.83	-940.72	-367.44	0.00	0.00	0.00	
5,500.00	14.02	296.83	5,370.90	486.76	-962.34	-375.89	0.00	0.00	0.00	
5,600.00	14.02	296.83	5,467.92	497.70	-983.96	-384.33	0.00	0.00	0.00	
5,700.00	14.02	296.83	5,564.94	508.63	-1,005.58	-392.78	0.00	0.00	0.00	
5,800.00	14.02	296.83	5,661.96	519.57	-1,027.20	-401.22	0.00	0.00	0.00	
5,900.00	14.02	296.83	5,758.98	530.50	-1,048.82	-409.66	0.00	0.00	0.00	
6,000.00	14.02	296.83	5,856.01	541.44	-1,070.44	-418.11	0.00	0.00	0.00	
6,100.00	14.02	296.83	5,953.03	552.38	-1,092.06	-426.55	0.00	0.00	0.00	
6,196.86	14.02	296.83	6,047.00	562.97	-1,113.00	-434.73	0.00	0.00	0.00	
SHANNON										
6,200.00	14.02	296.83	6,050.05	563.31	-1,113.68	-435.00	0.00	0.00	0.00	
6,300.00	14.02	296.83	6,147.07	574.25	-1,135.30	-443.44	0.00	0.00	0.00	
6,400.00	14.02	296.83	6,244.09	585.18	-1,156.92	-451.89	0.00	0.00	0.00	
6,500.00	14.02	296.83	6,341.11	596.12	-1,178.54	-460.33	0.00	0.00	0.00	
6,600.00	14.02	296.83	6,438.13	607.05	-1,200.16	-468.78	0.00	0.00	0.00	
6,700.00	14.02	296.83	6,535.15	617.99	-1,221.78	-477.22	0.00	0.00	0.00	
6,800.00	14.02	296.83	6,632.17	628.92	-1,243.40	-485.67	0.00	0.00	0.00	
6,900.00	14.02	296.83	6,729.19	639.86	-1,265.02	-494.11	0.00	0.00	0.00	
6,932.71	14.02	296.83	6,760.92	643.44	-1,272.09	-496.87	0.00	0.00	0.00	
DROP 2°/100'										
7,000.00	12.68	296.83	6,826.40	650.45	-1,285.95	-502.29	2.00	-2.00	0.00	
7,100.00	10.68	296.83	6,924.32	659.58	-1,304.01	-509.34	2.00	-2.00	0.00	
7,200.00	8.68	296.83	7,022.90	667.17	-1,319.00	-515.20	2.00	-2.00	0.00	
7,300.00	6.68	296.83	7,121.99	673.19	-1,330.92	-519.85	2.00	-2.00	0.00	
7,400.00	4.68	296.83	7,221.50	677.66	-1,339.74	-523.30	2.00	-2.00	0.00	
7,500.00	2.68	296.83	7,321.29	680.55	-1,345.46	-525.53	2.00	-2.00	0.00	
7,600.00	0.68	296.83	7,421.24	681.87	-1,348.07	-526.55	2.00	-2.00	0.00	
7,633.76	0.00	0.00	7,455.00	681.96	-1,348.25	-526.62	2.00	-2.00	0.00	
HOLD VERTICAL										
7,663.76	0.00	0.00	7,485.00	681.96	-1,348.25	-526.62	0.00	0.00	0.00	
KOP, BUILD 10°/100'										
7,700.00	3.62	180.22	7,521.22	680.81	-1,348.25	-525.48	10.00	10.00	0.00	
7,750.00	8.62	180.22	7,570.92	675.48	-1,348.28	-520.18	10.00	10.00	0.00	
7,800.00	13.62	180.22	7,619.96	665.84	-1,348.31	-510.59	10.00	10.00	0.00	
7,850.00	18.62	180.22	7,667.98	651.96	-1,348.37	-496.80	10.00	10.00	0.00	
7,900.00	23.62	180.22	7,714.60	633.95	-1,348.44	-478.89	10.00	10.00	0.00	
7,950.00	28.62	180.22	7,759.48	611.94	-1,348.52	-457.01	10.00	10.00	0.00	
8,000.00	33.62	180.22	7,802.27	586.11	-1,348.62	-431.33	10.00	10.00	0.00	
8,050.00	38.62	180.22	7,842.65	556.64	-1,348.74	-402.03	10.00	10.00	0.00	
8,099.58	43.58	180.22	7,880.00	524.06	-1,348.86	-369.64	10.00	10.00	0.00	
NIOBRARA										
8,100.00	43.62	180.22	7,880.30	523.77	-1,348.87	-369.36	10.00	10.00	0.00	
8,150.00	48.62	180.22	7,914.95	487.74	-1,349.01	-333.54	10.00	10.00	0.00	
8,200.00	53.62	180.22	7,946.32	448.83	-1,349.16	-294.86	10.00	10.00	0.00	
8,250.00	58.62	180.22	7,974.19	407.33	-1,349.32	-253.60	10.00	10.00	0.00	
8,300.00	63.62	180.22	7,998.33	363.57	-1,349.49	-210.09	10.00	10.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-7N
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 S19-25-7N	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)	
8,350.00	68.62	180.22	8,018.56	317.86	-1,349.67	-164.65	10.00	10.00	0.00	
8,400.00	73.62	180.22	8,034.74	270.57	-1,349.85	-117.64	10.00	10.00	0.00	
8,450.00	78.62	180.22	8,046.73	222.04	-1,350.04	-69.40	10.00	10.00	0.00	
8,456.62	79.28	180.22	8,048.00	215.55	-1,350.06	-62.94	10.00	10.00	0.00	
NIO B TARGET										
8,500.00	83.62	180.22	8,054.45	172.66	-1,350.23	-20.30	10.00	10.00	0.00	
8,550.00	88.62	180.22	8,057.83	122.79	-1,350.42	29.27	10.00	10.00	0.00	
8,563.83	90.00	180.22	8,058.00	108.96	-1,350.48	43.02	10.00	10.00	0.00	
LP @ 90° INC, 180.22° AZM HOLD										
8,600.00	90.00	180.22	8,058.00	72.79	-1,350.62	78.98	0.00	0.00	0.00	
8,700.00	90.00	180.22	8,058.00	-27.21	-1,351.01	178.39	0.00	0.00	0.00	
8,800.00	90.00	180.22	8,058.00	-127.21	-1,351.40	277.81	0.00	0.00	0.00	
8,900.00	90.00	180.22	8,058.00	-227.21	-1,351.79	377.22	0.00	0.00	0.00	
9,000.00	90.00	180.22	8,058.00	-327.21	-1,352.18	476.63	0.00	0.00	0.00	
9,100.00	90.00	180.22	8,058.00	-427.21	-1,352.56	576.05	0.00	0.00	0.00	
9,200.00	90.00	180.22	8,058.00	-527.20	-1,352.95	675.46	0.00	0.00	0.00	
9,300.00	90.00	180.22	8,058.00	-627.20	-1,353.34	774.87	0.00	0.00	0.00	
9,400.00	90.00	180.22	8,058.00	-727.20	-1,353.73	874.29	0.00	0.00	0.00	
9,500.00	90.00	180.22	8,058.00	-827.20	-1,354.12	973.70	0.00	0.00	0.00	
9,600.00	90.00	180.22	8,058.00	-927.20	-1,354.51	1,073.11	0.00	0.00	0.00	
9,700.00	90.00	180.22	8,058.00	-1,027.20	-1,354.90	1,172.53	0.00	0.00	0.00	
9,800.00	90.00	180.22	8,058.00	-1,127.20	-1,355.29	1,271.94	0.00	0.00	0.00	
9,900.00	90.00	180.22	8,058.00	-1,227.20	-1,355.68	1,371.35	0.00	0.00	0.00	
10,000.00	90.00	180.22	8,058.00	-1,327.20	-1,356.06	1,470.77	0.00	0.00	0.00	
10,100.00	90.00	180.22	8,058.00	-1,427.20	-1,356.45	1,570.18	0.00	0.00	0.00	
10,200.00	90.00	180.22	8,058.00	-1,527.20	-1,356.84	1,669.59	0.00	0.00	0.00	
10,300.00	90.00	180.22	8,058.00	-1,627.20	-1,357.23	1,769.01	0.00	0.00	0.00	
10,400.00	90.00	180.22	8,058.00	-1,727.20	-1,357.62	1,868.42	0.00	0.00	0.00	
10,500.00	90.00	180.22	8,058.00	-1,827.20	-1,358.01	1,967.83	0.00	0.00	0.00	
10,600.00	90.00	180.22	8,057.99	-1,927.19	-1,358.40	2,067.25	0.00	0.00	0.00	
10,700.00	90.00	180.22	8,057.99	-2,027.19	-1,358.79	2,166.66	0.00	0.00	0.00	
10,800.00	90.00	180.22	8,057.99	-2,127.19	-1,359.18	2,266.07	0.00	0.00	0.00	
10,900.00	90.00	180.22	8,057.99	-2,227.19	-1,359.56	2,365.49	0.00	0.00	0.00	
11,000.00	90.00	180.22	8,057.99	-2,327.19	-1,359.95	2,464.90	0.00	0.00	0.00	
11,100.00	90.00	180.22	8,057.99	-2,427.19	-1,360.34	2,564.31	0.00	0.00	0.00	
11,200.00	90.00	180.22	8,057.99	-2,527.19	-1,360.73	2,663.72	0.00	0.00	0.00	
11,300.00	90.00	180.22	8,057.99	-2,627.19	-1,361.12	2,763.14	0.00	0.00	0.00	
11,400.00	90.00	180.22	8,057.99	-2,727.19	-1,361.51	2,862.55	0.00	0.00	0.00	
11,500.00	90.00	180.22	8,057.99	-2,827.19	-1,361.90	2,961.96	0.00	0.00	0.00	
11,600.00	90.00	180.22	8,057.99	-2,927.19	-1,362.29	3,061.38	0.00	0.00	0.00	
11,700.00	90.00	180.22	8,057.99	-3,027.19	-1,362.68	3,160.79	0.00	0.00	0.00	
11,800.00	90.00	180.22	8,057.99	-3,127.19	-1,363.07	3,260.20	0.00	0.00	0.00	
11,900.00	90.00	180.22	8,057.99	-3,227.18	-1,363.45	3,359.62	0.00	0.00	0.00	
12,000.00	90.00	180.22	8,057.99	-3,327.18	-1,363.84	3,459.03	0.00	0.00	0.00	
12,100.00	90.00	180.22	8,057.99	-3,427.18	-1,364.23	3,558.44	0.00	0.00	0.00	
12,200.00	90.00	180.22	8,057.99	-3,527.18	-1,364.62	3,657.86	0.00	0.00	0.00	
12,300.00	90.00	180.22	8,057.99	-3,627.18	-1,365.01	3,757.27	0.00	0.00	0.00	
12,400.00	90.00	180.22	8,057.99	-3,727.18	-1,365.40	3,856.68	0.00	0.00	0.00	
12,500.00	90.00	180.22	8,057.99	-3,827.18	-1,365.79	3,956.10	0.00	0.00	0.00	
12,600.00	90.00	180.22	8,057.99	-3,927.18	-1,366.18	4,055.51	0.00	0.00	0.00	
12,700.00	90.00	180.22	8,057.99	-4,027.18	-1,366.57	4,154.92	0.00	0.00	0.00	
12,800.00	90.00	180.22	8,057.99	-4,127.18	-1,366.95	4,254.34	0.00	0.00	0.00	
12,900.00	90.00	180.22	8,057.99	-4,227.18	-1,367.34	4,353.75	0.00	0.00	0.00	
13,000.00	90.00	180.22	8,057.99	-4,327.18	-1,367.73	4,453.16	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-7N
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 S19-25-7N	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)
13,100.00	90.00	180.22	8,057.99	-4,427.18	-1,368.12	4,552.58	0.00	0.00	0.00
13,200.00	90.00	180.22	8,057.99	-4,527.17	-1,368.51	4,651.99	0.00	0.00	0.00
13,300.00	90.00	180.22	8,057.99	-4,627.17	-1,368.90	4,751.40	0.00	0.00	0.00
13,400.00	90.00	180.22	8,057.99	-4,727.17	-1,369.29	4,850.82	0.00	0.00	0.00
13,500.00	90.00	180.22	8,057.99	-4,827.17	-1,369.68	4,950.23	0.00	0.00	0.00
13,600.00	90.00	180.22	8,057.99	-4,927.17	-1,370.07	5,049.64	0.00	0.00	0.00
13,700.00	90.00	180.22	8,057.99	-5,027.17	-1,370.46	5,149.06	0.00	0.00	0.00
13,800.00	90.00	180.22	8,057.99	-5,127.17	-1,370.84	5,248.47	0.00	0.00	0.00
13,900.00	90.00	180.22	8,057.99	-5,227.17	-1,371.23	5,347.88	0.00	0.00	0.00
14,000.00	90.00	180.22	8,057.99	-5,327.17	-1,371.62	5,447.30	0.00	0.00	0.00
14,100.00	90.00	180.22	8,057.99	-5,427.17	-1,372.01	5,546.71	0.00	0.00	0.00
14,200.00	90.00	180.22	8,057.99	-5,527.17	-1,372.40	5,646.12	0.00	0.00	0.00
14,300.00	90.00	180.22	8,057.99	-5,627.17	-1,372.79	5,745.54	0.00	0.00	0.00
14,400.00	90.00	180.22	8,057.98	-5,727.17	-1,373.18	5,844.95	0.00	0.00	0.00
14,500.00	90.00	180.22	8,057.98	-5,827.16	-1,373.57	5,944.36	0.00	0.00	0.00
14,600.00	90.00	180.22	8,057.98	-5,927.16	-1,373.96	6,043.78	0.00	0.00	0.00
14,700.00	90.00	180.22	8,057.98	-6,027.16	-1,374.34	6,143.19	0.00	0.00	0.00
14,800.00	90.00	180.22	8,057.98	-6,127.16	-1,374.73	6,242.60	0.00	0.00	0.00
14,900.00	90.00	180.22	8,057.98	-6,227.16	-1,375.12	6,342.02	0.00	0.00	0.00
15,000.00	90.00	180.22	8,057.98	-6,327.16	-1,375.51	6,441.43	0.00	0.00	0.00
15,100.00	90.00	180.22	8,057.98	-6,427.16	-1,375.90	6,540.84	0.00	0.00	0.00
15,200.00	90.00	180.22	8,057.98	-6,527.16	-1,376.29	6,640.26	0.00	0.00	0.00
15,300.00	90.00	180.22	8,057.98	-6,627.16	-1,376.68	6,739.67	0.00	0.00	0.00
15,400.00	90.00	180.22	8,057.98	-6,727.16	-1,377.07	6,839.08	0.00	0.00	0.00
15,500.00	90.00	180.22	8,057.98	-6,827.16	-1,377.46	6,938.50	0.00	0.00	0.00
15,600.00	90.00	180.22	8,057.98	-6,927.16	-1,377.85	7,037.91	0.00	0.00	0.00
15,700.00	90.00	180.22	8,057.98	-7,027.16	-1,378.23	7,137.32	0.00	0.00	0.00
15,800.00	90.00	180.22	8,057.98	-7,127.16	-1,378.62	7,236.74	0.00	0.00	0.00
15,900.00	90.00	180.22	8,057.98	-7,227.15	-1,379.01	7,336.15	0.00	0.00	0.00
16,000.00	90.00	180.22	8,057.98	-7,327.15	-1,379.40	7,435.56	0.00	0.00	0.00
16,100.00	90.00	180.22	8,057.98	-7,427.15	-1,379.79	7,534.98	0.00	0.00	0.00
16,200.00	90.00	180.22	8,057.98	-7,527.15	-1,380.18	7,634.39	0.00	0.00	0.00
16,300.00	90.00	180.22	8,057.98	-7,627.15	-1,380.57	7,733.80	0.00	0.00	0.00
16,400.00	90.00	180.22	8,057.98	-7,727.15	-1,380.96	7,833.22	0.00	0.00	0.00
16,500.00	90.00	180.22	8,057.98	-7,827.15	-1,381.35	7,932.63	0.00	0.00	0.00
16,600.00	90.00	180.22	8,057.98	-7,927.15	-1,381.73	8,032.04	0.00	0.00	0.00
16,700.00	90.00	180.22	8,057.98	-8,027.15	-1,382.12	8,131.46	0.00	0.00	0.00
16,800.00	90.00	180.22	8,057.98	-8,127.15	-1,382.51	8,230.87	0.00	0.00	0.00
16,900.00	90.00	180.22	8,057.98	-8,227.15	-1,382.90	8,330.28	0.00	0.00	0.00
17,000.00	90.00	180.22	8,057.98	-8,327.15	-1,383.29	8,429.70	0.00	0.00	0.00
17,100.00	90.00	180.22	8,057.98	-8,427.15	-1,383.68	8,529.11	0.00	0.00	0.00
17,200.00	90.00	180.22	8,057.98	-8,527.14	-1,384.07	8,628.52	0.00	0.00	0.00
17,300.00	90.00	180.22	8,057.98	-8,627.14	-1,384.46	8,727.94	0.00	0.00	0.00
17,400.00	90.00	180.22	8,057.98	-8,727.14	-1,384.85	8,827.35	0.00	0.00	0.00
17,500.00	90.00	180.22	8,057.98	-8,827.14	-1,385.23	8,926.76	0.00	0.00	0.00
17,600.00	90.00	180.22	8,057.98	-8,927.14	-1,385.62	9,026.18	0.00	0.00	0.00
17,700.00	90.00	180.22	8,057.98	-9,027.14	-1,386.01	9,125.59	0.00	0.00	0.00
17,800.00	90.00	180.22	8,057.98	-9,127.14	-1,386.40	9,225.00	0.00	0.00	0.00
17,900.00	90.00	180.22	8,057.98	-9,227.14	-1,386.79	9,324.42	0.00	0.00	0.00
18,000.00	90.00	180.22	8,057.98	-9,327.14	-1,387.18	9,423.83	0.00	0.00	0.00
18,100.00	90.00	180.22	8,057.98	-9,427.14	-1,387.57	9,523.24	0.00	0.00	0.00
18,200.00	90.00	180.22	8,057.97	-9,527.14	-1,387.96	9,622.66	0.00	0.00	0.00
18,300.00	90.00	180.22	8,057.97	-9,627.14	-1,388.35	9,722.07	0.00	0.00	0.00
18,400.00	90.00	180.22	8,057.97	-9,727.14	-1,388.74	9,821.48	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-7N
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 S19-25-7N	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)	
18,500.00	90.00	180.22	8,057.97	-9,827.13	-1,389.12	9,920.90	0.00	0.00	0.00	
18,600.00	90.00	180.22	8,057.97	-9,927.13	-1,389.51	10,020.31	0.00	0.00	0.00	
18,700.00	90.00	180.22	8,057.97	-10,027.13	-1,389.90	10,119.72	0.00	0.00	0.00	
18,800.00	90.00	180.22	8,057.97	-10,127.13	-1,390.29	10,219.14	0.00	0.00	0.00	
18,900.00	90.00	180.22	8,057.97	-10,227.13	-1,390.68	10,318.55	0.00	0.00	0.00	
19,000.00	90.00	180.22	8,057.97	-10,327.13	-1,391.07	10,417.96	0.00	0.00	0.00	
19,100.00	90.00	180.22	8,057.97	-10,427.13	-1,391.46	10,517.37	0.00	0.00	0.00	
19,200.00	90.00	180.22	8,057.97	-10,527.13	-1,391.85	10,616.79	0.00	0.00	0.00	
19,300.00	90.00	180.22	8,057.97	-10,627.13	-1,392.24	10,716.20	0.00	0.00	0.00	
19,400.00	90.00	180.22	8,057.97	-10,727.13	-1,392.62	10,815.61	0.00	0.00	0.00	
19,500.00	90.00	180.22	8,057.97	-10,827.13	-1,393.01	10,915.03	0.00	0.00	0.00	
19,600.00	90.00	180.22	8,057.97	-10,927.13	-1,393.40	11,014.44	0.00	0.00	0.00	
19,700.00	90.00	180.22	8,057.97	-11,027.13	-1,393.79	11,113.85	0.00	0.00	0.00	
19,800.00	90.00	180.22	8,057.97	-11,127.12	-1,394.18	11,213.27	0.00	0.00	0.00	
19,900.00	90.00	180.22	8,057.97	-11,227.12	-1,394.57	11,312.68	0.00	0.00	0.00	
20,000.00	90.00	180.22	8,057.97	-11,327.12	-1,394.96	11,412.09	0.00	0.00	0.00	
20,100.00	90.00	180.22	8,057.97	-11,427.12	-1,395.35	11,511.51	0.00	0.00	0.00	
20,200.00	90.00	180.22	8,057.97	-11,527.12	-1,395.74	11,610.92	0.00	0.00	0.00	
20,300.00	90.00	180.22	8,057.97	-11,627.12	-1,396.13	11,710.33	0.00	0.00	0.00	
20,400.00	90.00	180.22	8,057.97	-11,727.12	-1,396.51	11,809.75	0.00	0.00	0.00	
20,500.00	90.00	180.22	8,057.97	-11,827.12	-1,396.90	11,909.16	0.00	0.00	0.00	
20,600.00	90.00	180.22	8,057.97	-11,927.12	-1,397.29	12,008.57	0.00	0.00	0.00	
20,700.00	90.00	180.22	8,057.97	-12,027.12	-1,397.68	12,107.99	0.00	0.00	0.00	
20,800.00	90.00	180.22	8,057.97	-12,127.12	-1,398.07	12,207.40	0.00	0.00	0.00	
20,900.00	90.00	180.22	8,057.97	-12,227.12	-1,398.46	12,306.81	0.00	0.00	0.00	
21,000.00	90.00	180.22	8,057.97	-12,327.12	-1,398.85	12,406.23	0.00	0.00	0.00	
21,087.25	90.00	180.22	8,058.00	-12,414.36	-1,399.67	12,493.02	0.00	0.00	0.00	
TD at 21087.25' 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 7N - I	0.00	0.00	8,058.00	-12,414.36	-1,399.67	1,222,950.81	3,127,649.08	39° 56' 40.135 N		105° 2' 41.024 W
- plan hits target center										
- Point										
LIVINGSTON S19 7N - I	0.00	0.00	8,058.00	108.96	-1,350.48	1,235,474.22	3,127,633.26	39° 58' 43.900 N		105° 2' 40.402 W
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,752.84	4,646.00	PARKMAN				
5,248.61	5,127.00	SUSSEX				
6,196.86	6,047.00	SHANNON				
8,099.58	7,880.00	NIOBRARA				
8,456.62	8,048.00	NIO B TARGET				

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-7N
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 S19-25-7N	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)	
700.00	700.00	0.00	0.00	BUILD 2°/100'
1,401.05	1,394.08	38.52	-76.16	HOLD 14.02° INC
6,932.71	6,760.92	643.44	-1,272.09	DROP 2°/100'
7,633.76	7,455.00	681.96	-1,348.25	HOLD VERTICAL
7,663.76	7,485.00	681.96	-1,348.25	KOP, BUILD 10°/100'
8,563.83	8,058.00	108.96	-1,350.48	LP @ 90° INC, 180.22° AZM HOLD
21,087.25	8,058.00	-12,414.36	-1,399.67	TD at 21087.25' MD