

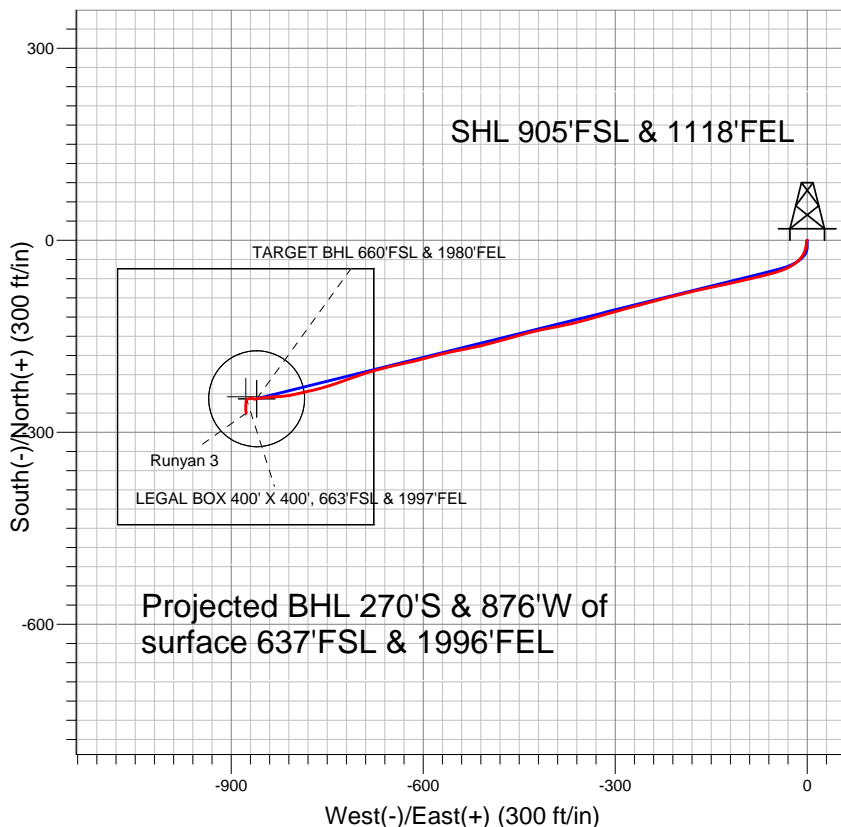
Well Name: **Runyan 3**

Surface Location: Runyan Well Pad Sec.17-T3N-R68W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 5046.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1323705.91	3133668.73	40.220980	-105.021320	
RKB - 13' WELL @ 5059.0ft (RKB - 13')						

Top Operating Company



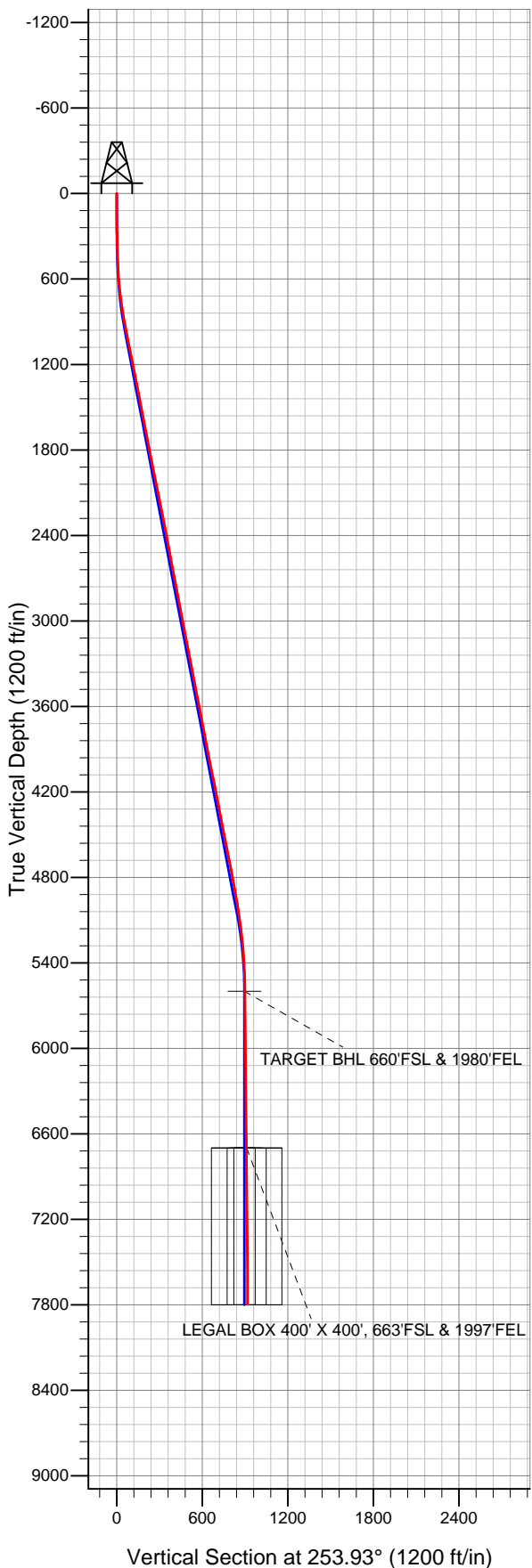
LEGEND

- ◆ Runyan 3, Wellbore #1, Plan #1 (1-03-12) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7882'MD & 7798'TVD @ 917'VS
1.1 deg Inc 164.9 deg AZ

Project: SEC.17-T3N-R68W
Site: Runyan Well Pad Sec.17-T3N-R68W
Well: Runyan 3
Plan: Wellbore #1





Directional

Top Operating Company

SEC.17-T3N-R68W

Runyan Well Pad Sec.17-T3N-R68W

Runyan 3

Wellbore #1

Survey: Survey #1

Standard Survey Report

20 February, 2013

Company:	Top Operating Company	Local Co-ordinate Reference:	Well Runyan 3
Project:	SEC.17-T3N-R68W	TVD Reference:	WELL @ 5059.0ft (RKB - 13')
Site:	Runyan Well Pad Sec.17-T3N-R68W	MD Reference:	WELL @ 5059.0ft (RKB - 13')
Well:	Runyan 3	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,370.0	11.10	257.90	1,357.2	-69.4	-129.1	143.3	0.18	-0.16	0.47
1,498.0	11.00	257.90	1,482.8	-74.6	-153.1	167.8	0.08	-0.08	0.00
1,627.0	11.00	257.30	1,609.4	-79.9	-177.2	192.3	0.09	0.00	-0.47
1,755.0	10.70	256.80	1,735.1	-85.3	-200.6	216.4	0.25	-0.23	-0.39
1,883.0	10.90	254.90	1,860.9	-91.1	-223.9	240.4	0.32	0.16	-1.48
2,011.0	12.00	255.20	1,986.3	-97.7	-248.4	265.8	0.86	0.86	0.23
2,139.0	11.50	254.70	2,111.6	-104.4	-273.6	291.8	0.40	-0.39	-0.39
2,267.0	11.20	254.70	2,237.1	-111.1	-297.9	317.0	0.23	-0.23	0.00
2,396.0	10.50	253.30	2,363.8	-117.8	-321.3	341.3	0.58	-0.54	-1.09
2,524.0	10.40	254.30	2,489.7	-124.2	-343.6	364.5	0.16	-0.08	0.78
2,654.0	10.90	256.50	2,617.4	-130.3	-366.8	388.5	0.50	0.38	1.69
2,783.0	10.60	260.30	2,744.2	-135.1	-390.4	412.5	0.60	-0.23	2.95
2,911.0	10.90	258.00	2,869.9	-139.6	-413.8	436.3	0.41	0.23	-1.80
3,039.0	10.90	254.70	2,995.6	-145.4	-437.3	460.5	0.49	0.00	-2.58
3,167.0	11.10	254.00	3,121.3	-151.9	-460.8	484.9	0.19	0.16	-0.55
3,295.0	11.10	254.70	3,246.9	-158.6	-484.6	509.5	0.11	0.00	0.55
3,424.0	10.60	256.10	3,373.6	-164.7	-508.1	533.8	0.44	-0.39	1.09
3,552.0	11.00	260.00	3,499.3	-169.7	-531.5	557.7	0.65	0.31	3.05
3,681.0	11.50	257.90	3,625.8	-174.5	-556.2	582.8	0.50	0.39	-1.63
3,809.0	10.70	256.30	3,751.4	-180.0	-580.2	607.4	0.67	-0.63	-1.25
3,937.0	10.40	254.00	3,877.3	-186.0	-602.9	630.8	0.40	-0.23	-1.80
4,065.0	11.10	258.00	4,003.0	-191.7	-626.0	654.6	0.80	0.55	3.13
4,194.0	11.40	256.60	4,129.6	-197.3	-650.6	679.8	0.31	0.23	-1.09
4,322.0	11.30	255.20	4,255.0	-203.4	-675.0	704.9	0.23	-0.08	-1.09
4,451.0	10.40	250.50	4,381.7	-210.5	-698.2	729.2	0.98	-0.70	-3.64
4,577.0	11.40	249.60	4,505.5	-218.7	-720.6	753.0	0.81	0.79	-0.71
4,705.0	11.40	251.90	4,630.9	-227.0	-744.5	778.2	0.36	0.00	1.80
4,834.0	11.00	258.20	4,757.5	-233.5	-768.6	803.2	1.00	-0.31	4.88
4,962.0	10.10	255.40	4,883.3	-238.8	-791.5	826.6	0.81	-0.70	-2.19
5,091.0	9.30	261.60	5,010.5	-243.2	-812.7	848.3	1.02	-0.62	4.81
5,219.0	7.70	268.60	5,137.1	-244.9	-831.5	866.8	1.49	-1.25	5.47
5,347.0	5.70	263.70	5,264.2	-245.8	-846.4	881.4	1.62	-1.56	-3.83
5,475.0	3.30	260.50	5,391.8	-247.1	-856.4	891.3	1.88	-1.88	-2.50
5,603.0	1.70	255.20	5,519.7	-248.2	-861.8	896.9	1.26	-1.25	-4.14
5,683.3	0.81	269.53	5,599.9	-248.5	-863.6	898.6	1.16	-1.10	17.85
TARGET BHL 660'FSL & 1980'FEL									
5,732.0	0.40	309.20	5,648.6	-248.4	-864.0	899.0	1.16	-0.85	81.43
5,860.0	0.60	288.60	5,776.6	-247.9	-865.0	899.8	0.21	0.16	-16.09
5,989.0	0.50	286.30	5,905.6	-247.5	-866.2	900.9	0.08	-0.08	-1.78
6,117.0	0.60	269.50	6,033.6	-247.4	-867.4	902.0	0.15	0.08	-13.13
6,245.0	0.50	277.90	6,161.6	-247.3	-868.6	903.1	0.10	-0.08	6.56
6,374.0	0.70	267.90	6,290.6	-247.3	-870.0	904.4	0.17	0.16	-7.75
6,502.0	0.70	253.60	6,418.6	-247.5	-871.5	906.0	0.14	0.00	-11.17
6,630.0	0.60	249.80	6,546.6	-248.0	-872.9	907.4	0.09	-0.08	-2.97
6,758.0	0.50	245.60	6,674.6	-248.4	-874.0	908.6	0.08	-0.08	-3.28
6,783.3	0.50	246.84	6,699.9	-248.5	-874.2	908.9	0.04	0.00	4.92
TARGET CIRCLE 660'FSL & 1980'FEL									
6,783.4	0.50	246.85	6,700.0	-248.5	-874.2	908.9	0.04	0.00	4.92
LEGAL BOX 400' X 400', 663'FSL & 1997'FEL									
6,886.0	0.50	251.90	6,802.6	-248.8	-875.1	909.7	0.04	0.00	4.92
7,015.0	0.40	234.70	6,931.6	-249.3	-876.0	910.7	0.13	-0.08	-13.33
7,143.0	1.30	189.50	7,059.6	-251.0	-876.6	911.8	0.83	0.70	-35.31
7,272.0	1.60	184.40	7,188.5	-254.2	-876.9	913.0	0.25	0.23	-3.95
7,400.0	1.70	179.30	7,316.5	-257.9	-877.1	914.2	0.14	0.08	-3.98

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7,528.0	1.80	181.20	7,444.4	-261.8	-877.1	915.3	0.09	0.08	1.48	
7,657.0	1.50	175.60	7,573.4	-265.5	-877.0	916.2	0.26	-0.23	-4.34	
7,785.0	1.10	171.70	7,701.3	-268.4	-876.7	916.7	0.32	-0.31	-3.05	
7,838.0	1.10	164.90	7,754.3	-269.4	-876.5	916.8	0.25	0.00	-12.83	
7,882.0	1.10	164.90	7,798.3	-270.2	-876.3	916.8	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____