

Well Name: **Nelson 33-32D**

Surface Location: Nelson 33-32D Pad Sec.32-T7N-R66W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

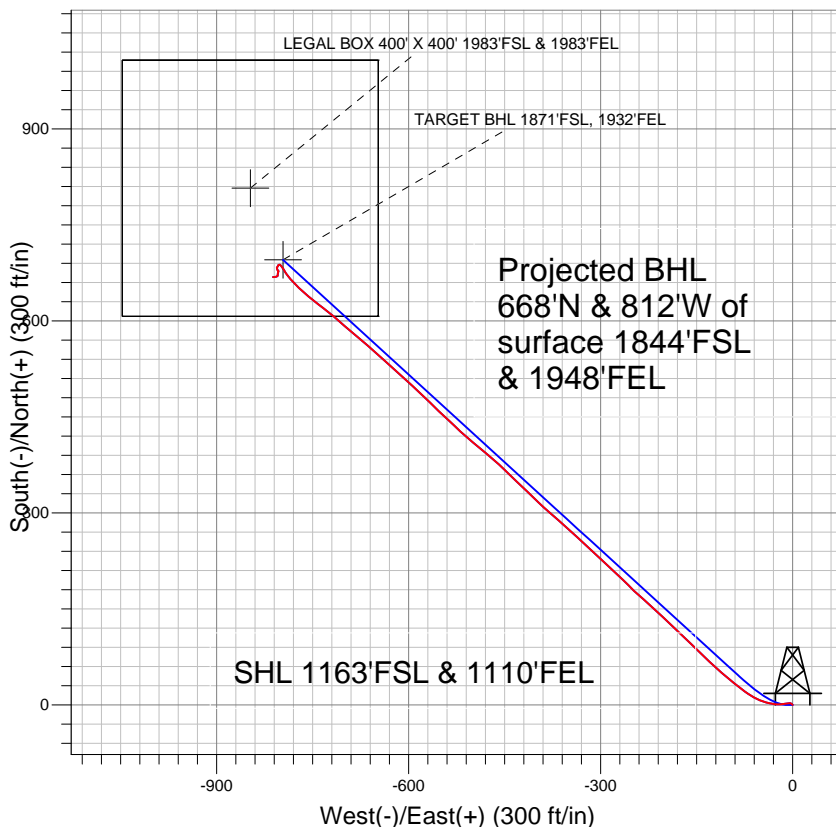
Ground Elevation: 4860.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1435592.14	3195173.82	40.526980	-104.797900

Original Well Elev WELL @ 4873.0ft (Original Well Elev)

Slot

## PETROLEUM DEVELOPMENT CORP Weld County CO

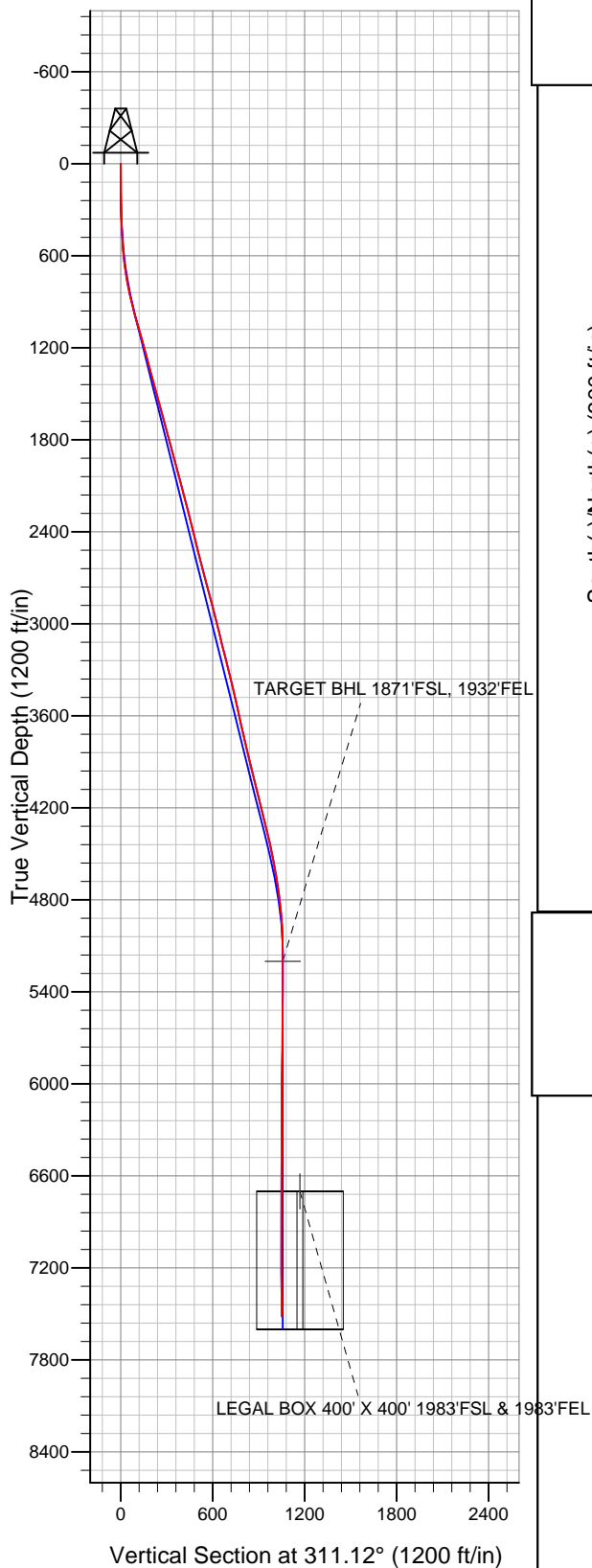


### LEGEND

- Nelson 33-32D, Wellbore #1, Plan #2 (1-31-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7642'MD & 7515'TVD @ 1050'VS  
0.7 deg Inc 273.7 deg AZ



Project: SEC.32-T7N-R66W  
Site: Nelson 33-32D Pad Sec.32-T7N-R66W  
Well: Nelson 33-32D  
Plan: Wellbore #1



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.32-T7N-R66W**

**Nelson 33-32D Pad Sec.32-T7N-R66W**

**Nelson 33-32D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**13 June, 2011**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nelson 33-32D
<b>Project:</b>	SEC.32-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4873.0ft (Original Well Elev)
<b>Site:</b>	Nelson 33-32D Pad Sec.32-T7N-R66W	<b>MD Reference:</b>	WELL @ 4873.0ft (Original Well Elev)
<b>Well:</b>	Nelson 33-32D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.32-T7N-R66W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Nelson 33-32D Pad Sec.32-T7N-R66W				
Site Position:		Northing:	1,435,592.16ft	Latitude:	40.526980
From:	Lat/Long	Easting:	3,195,173.82ft	Longitude:	-104.797900
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.45 °

Well	Nelson 33-32D					
Well Position	+N-S	0.0 ft	Northing:	1,435,592.14 ft	Latitude:	40.526980
	+E-W	0.0 ft	Easting:	3,195,173.82 ft	Longitude:	-104.797900
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,860.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/20/2011	8.90	67.15	53,202

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	311.12	

<b>Survey Program</b>	<b>Date</b> 6/13/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
180.0	7,642.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
180.0	0.80	304.00	180.0	0.7	-1.0	1.2	0.44	0.44	0.00
271.0	1.10	321.70	271.0	1.7	-2.1	2.7	0.46	0.33	19.45
361.0	2.10	276.70	360.9	2.6	-4.3	4.9	1.70	1.11	-50.00
452.0	4.60	256.00	451.8	1.9	-9.5	8.4	3.01	2.75	-22.75
545.0	6.00	267.40	544.4	0.8	-18.0	14.1	1.88	1.51	12.26
638.0	7.70	275.40	636.7	1.2	-29.0	22.6	2.09	1.83	8.60
733.0	10.30	286.70	730.6	4.2	-43.5	35.5	3.30	2.74	11.89
826.0	11.90	298.90	821.8	11.2	-59.9	52.5	3.05	1.72	13.12
904.0	13.60	306.20	897.9	20.5	-74.3	69.5	3.00	2.18	9.36
989.0	15.40	308.30	980.2	33.4	-91.2	90.7	2.21	2.12	2.47
1,084.0	15.90	311.40	1,071.7	49.9	-110.9	116.3	1.03	0.53	3.26

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Nelson 33-32D
<b>Project:</b>	SEC.32-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4873.0ft (Original Well Elev)
<b>Site:</b>	Nelson 33-32D Pad Sec.32-T7N-R66W	<b>MD Reference:</b>	WELL @ 4873.0ft (Original Well Elev)
<b>Well:</b>	Nelson 33-32D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,179.0	15.60	313.30	1,163.1	67.2	-129.9	142.1	0.63	-0.32	2.00
1,274.0	15.30	314.10	1,254.7	84.7	-148.2	167.4	0.39	-0.32	0.84
1,369.0	15.20	314.30	1,346.3	102.1	-166.1	192.3	0.12	-0.11	0.21
1,464.0	15.10	313.90	1,438.0	119.4	-184.0	217.1	0.15	-0.11	-0.42
1,559.0	15.00	313.30	1,529.8	136.4	-201.8	241.8	0.19	-0.11	-0.63
1,654.0	14.80	311.50	1,621.6	152.9	-219.9	266.2	0.53	-0.21	-1.89
1,749.0	15.70	311.90	1,713.2	169.5	-238.5	291.2	0.95	0.95	0.42
1,844.0	14.80	315.30	1,804.9	186.7	-256.6	316.1	1.34	-0.95	3.58
1,938.0	15.70	312.40	1,895.6	203.8	-274.5	340.8	1.25	0.96	-3.09
2,033.0	15.10	313.60	1,987.2	221.0	-292.9	366.0	0.72	-0.63	1.26
2,128.0	14.90	314.20	2,078.9	238.1	-310.6	390.6	0.27	-0.21	0.63
2,223.0	14.90	311.00	2,170.7	254.6	-328.6	415.0	0.87	0.00	-3.37
2,318.0	14.10	312.20	2,262.7	270.4	-346.4	438.8	0.90	-0.84	1.26
2,413.0	13.90	313.80	2,354.9	286.1	-363.2	461.8	0.46	-0.21	1.68
2,508.0	13.30	308.40	2,447.2	300.8	-380.0	484.1	1.48	-0.63	-5.68
2,603.0	14.00	314.80	2,539.5	315.6	-396.7	506.4	1.75	0.74	6.74
2,698.0	15.10	313.70	2,631.5	332.3	-413.8	530.3	1.19	1.16	-1.16
2,793.0	14.90	314.00	2,723.3	349.3	-431.6	554.8	0.23	-0.21	0.32
2,887.0	14.90	313.40	2,814.1	366.0	-449.0	579.0	0.16	0.00	-0.64
2,982.0	14.90	311.60	2,905.9	382.5	-467.0	603.4	0.49	0.00	-1.89
3,077.0	13.70	310.10	2,998.0	397.9	-484.8	626.9	1.32	-1.26	-1.58
3,172.0	13.60	309.20	3,090.3	412.2	-502.0	649.3	0.25	-0.11	-0.95
3,267.0	15.00	313.90	3,182.3	427.8	-519.6	672.7	1.91	1.47	4.95
3,361.0	13.90	312.60	3,273.4	443.8	-536.6	696.2	1.22	-1.17	-1.38
3,456.0	13.20	312.90	3,365.7	459.0	-553.0	718.4	0.74	-0.74	0.32
3,551.0	13.50	314.30	3,458.2	474.1	-568.9	740.3	0.46	0.32	1.47
3,646.0	12.80	313.50	3,550.7	489.1	-584.4	761.9	0.76	-0.74	-0.84
3,741.0	13.20	313.70	3,643.2	503.8	-599.9	783.3	0.42	0.42	0.21
3,836.0	12.20	311.00	3,735.9	517.9	-615.3	804.1	1.22	-1.05	-2.84
3,931.0	12.70	311.70	3,828.7	531.4	-630.7	824.6	0.55	0.53	0.74
4,026.0	13.60	312.60	3,921.2	545.9	-646.7	846.2	0.97	0.95	0.95
4,121.0	14.30	310.80	4,013.4	561.2	-663.8	869.1	0.87	0.74	-1.89
4,216.0	14.50	309.30	4,105.4	576.4	-681.9	892.7	0.45	0.21	-1.58
4,311.0	13.90	312.20	4,197.5	591.6	-699.6	916.0	0.98	-0.63	3.05
4,406.0	13.80	310.00	4,289.7	606.5	-716.7	938.8	0.56	-0.11	-2.32
4,500.0	13.30	307.70	4,381.1	620.3	-733.8	960.8	0.78	-0.53	-2.45
4,595.0	11.50	308.20	4,473.9	632.9	-749.9	981.1	1.90	-1.89	0.53
4,690.0	10.50	311.50	4,567.1	644.4	-763.9	999.3	1.24	-1.05	3.47
4,785.0	9.50	316.40	4,660.7	655.9	-775.7	1,015.7	1.38	-1.05	5.16
4,880.0	7.90	317.40	4,754.6	666.3	-785.6	1,030.0	1.69	-1.68	1.05
4,975.0	6.20	330.20	4,848.9	675.6	-792.5	1,041.4	2.43	-1.79	13.47
5,070.0	4.40	325.50	4,943.5	683.1	-797.2	1,049.7	1.95	-1.89	-4.95
5,164.0	1.50	313.70	5,037.3	686.9	-800.1	1,054.5	3.14	-3.09	-12.55
5,259.0	1.50	260.20	5,132.3	687.5	-802.2	1,056.5	1.42	0.00	-56.32
5,326.5	0.90	229.87	5,199.8	687.0	-803.5	1,057.1	1.27	-0.89	-44.92
TARGET BHL 1871°FSL, 1932°FEL									
5,354.0	0.80	207.20	5,227.3	686.7	-803.7	1,057.1	1.27	-0.36	-82.48
5,449.0	0.50	191.60	5,322.3	685.7	-804.1	1,056.7	0.36	-0.32	-16.42
5,544.0	0.80	211.10	5,417.3	684.8	-804.6	1,056.4	0.39	0.32	20.53
5,639.0	0.50	237.80	5,512.3	684.0	-805.2	1,056.4	0.44	-0.32	28.11
5,734.0	1.00	190.90	5,607.3	682.9	-805.8	1,056.1	0.79	0.53	-49.37
5,829.0	1.40	164.30	5,702.3	681.0	-805.6	1,054.7	0.71	0.42	-28.00
5,924.0	0.80	136.10	5,797.2	679.4	-804.8	1,053.1	0.83	-0.63	-29.68

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<b>Well:</b>	Nelson 33-32D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
6,019.0	0.70	141.60	5,892.2	678.5	-804.0	1,051.9	0.13	-0.11	5.79
6,114.0	0.30	143.70	5,987.2	677.8	-803.5	1,051.1	0.42	-0.42	2.21
6,209.0	0.10	192.70	6,082.2	677.5	-803.4	1,050.8	0.26	-0.21	51.58
6,302.0	0.40	147.50	6,175.2	677.2	-803.2	1,050.4	0.36	0.32	-48.60
6,397.0	0.40	239.10	6,270.2	676.7	-803.3	1,050.2	0.60	0.00	96.42
6,492.0	0.50	219.10	6,365.2	676.2	-803.9	1,050.3	0.19	0.11	-21.05
6,587.0	0.50	169.00	6,460.2	675.5	-804.0	1,050.0	0.45	0.00	-52.74
6,682.0	0.70	182.10	6,555.2	674.5	-804.0	1,049.3	0.25	0.21	13.79
6,777.0	0.80	195.30	6,650.2	673.3	-804.2	1,048.6	0.21	0.11	13.89
6,825.4	0.64	189.33	6,698.6	672.7	-804.3	1,048.3	0.36	-0.33	-12.34
<b>LEGAL BOX 400' X 400' 1983'FSL &amp; 1983'FEL</b>									
6,872.0	0.50	180.10	6,745.2	672.3	-804.4	1,048.1	0.36	-0.30	-19.80
6,967.0	0.50	162.00	6,840.2	671.4	-804.2	1,047.4	0.17	0.00	-19.05
7,062.0	0.50	190.00	6,935.2	670.6	-804.2	1,046.9	0.25	0.00	29.47
7,157.0	0.50	227.20	7,030.2	670.0	-804.6	1,046.7	0.34	0.00	39.16
7,252.0	0.80	237.30	7,125.2	669.3	-805.4	1,046.9	0.34	0.32	10.63
7,347.0	1.20	257.60	7,220.2	668.7	-806.9	1,047.7	0.56	0.42	21.37
7,442.0	1.20	266.90	7,315.1	668.5	-808.9	1,049.0	0.20	0.00	9.79
7,537.0	0.80	264.30	7,410.1	668.4	-810.6	1,050.2	0.42	-0.42	-2.74
7,642.0	0.70	273.70	7,515.1	668.3	-811.9	1,051.2	0.15	-0.10	8.95

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_