



US ROCKIES WATTENBERG PLANNING

Project: WELD-NAD83-UTMFT13N

Site: Wilson Ranch 9-26HZ Pad 4N-68W-26

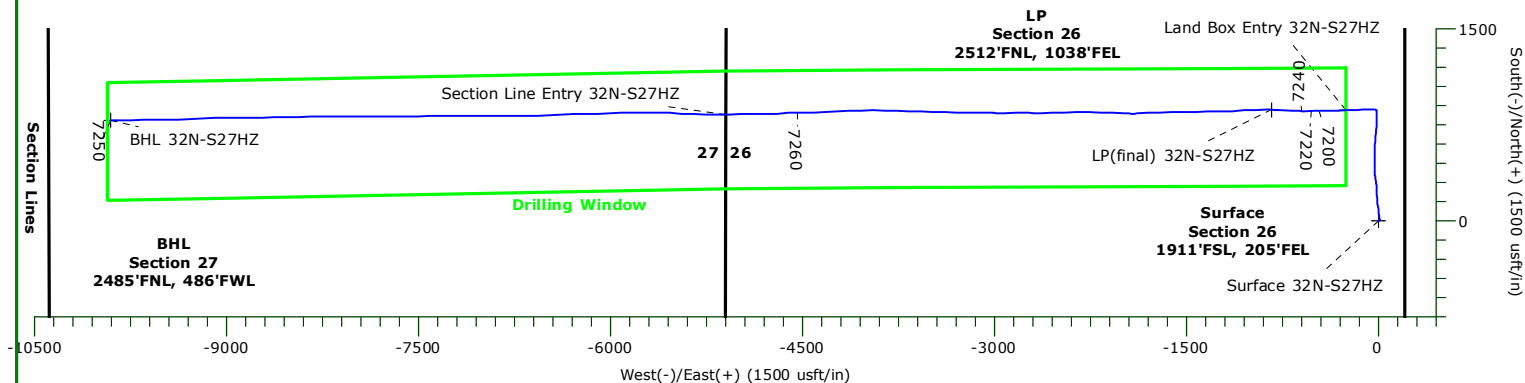
Well: Wilson Ranch 32N-S27HZ

Wellbore: Original Hole

Design: Original Hole

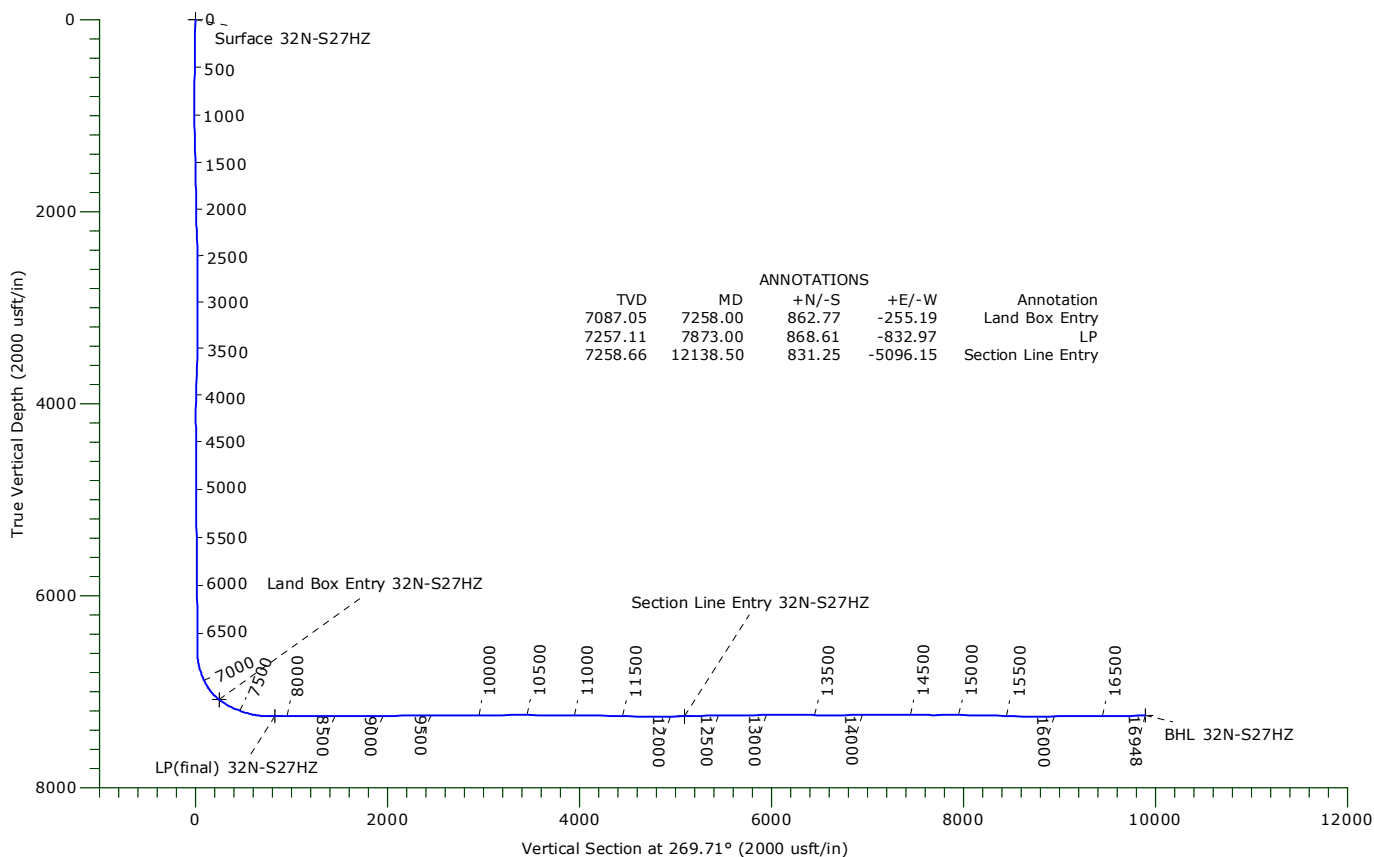


Precision
Directional Services



LEGEND

Original Hole



WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Surface 32N-S27HZ	0.00	0.00	0.00	14629653.15	1651167.15	40.282624°N	104.961453°W	Point
Land Box Entry 32N-S27HZ	7087.05	862.77	-255.19	14630515.81	1650911.59	40.284993°N	104.962368°W	Point
BHL 32N-S27HZ	7250.07	784.57	-9903.76	14630433.42	1641263.06	40.284773°N	104.996965°W	Point
LP(final) 32N-S27HZ	7257.11	868.61	-832.97	14630521.40	1650333.81	40.285009°N	104.964440°W	Point
Section Line Entry 32N-S27HZ	7258.66	831.25	-5096.15	14630482.18	1646070.64	40.284905°N	104.979726°W	Point

Precision Drilling Corporation

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Wilson Ranch 32N-S27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Site:	Wilson Ranch 9-26HZ Pad 4N-68W-26	MD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Well:	Wilson Ranch 32N-S27HZ	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Compass_US

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Wilson Ranch 9-26HZ Pad 4N-68W-26				
Site Position:		Northing:	14,629,668.44 usft	Latitude:	40.282666°N
From:	Lat/Long	Easting:	1,651,167.14 usft	Longitude:	104.961453°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.02 °

Well	Wilson Ranch 32N-S27HZ					
Well Position	+N-S	0.00 usft	Northing:	14,629,653.15 usft	Latitude:	40.282624°N
	+E-W	0.00 usft	Easting:	1,651,167.15 usft	Longitude:	104.961453°W
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,041.00 usft

Wellbore	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/02/15	8.36	66.77	52,577

Design	Original Hole				
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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	269.71

Survey Program		Date	12/28/15	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
13.00	1,801.00	Survey #1 (Original Hole)	APC_ISCWSA REV 2 MW Fixed:v2:standard declination	
1,935.00	16,882.00	Survey #2 (Original Hole)	APC_ISCWSA REV 2 MW Fixed:v2:Rockies, crustal dec + 3-axis correction	
16,948.00	16,948.00	Survey #3 (Original Hole)	APC_BLIND	OWSG BLIND

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
Surface 32N-S27HZ										
	13.00	0.00	0.00	13.00	0.00	0.00	0.00	0.00	0.00	0.00
	129.00	0.43	141.53	129.00	-0.34	0.27	-0.27	0.37	0.37	0.00
	219.00	0.36	107.98	219.00	-0.69	0.75	-0.75	0.26	-0.08	-37.28
	307.00	0.33	96.43	307.00	-0.81	1.26	-1.26	0.09	-0.03	-13.13
	383.00	0.57	90.72	382.99	-0.84	1.86	-1.86	0.32	0.32	-7.51
	473.00	1.13	110.12	472.98	-1.15	3.14	-3.14	0.69	0.62	21.56
	563.00	1.39	78.88	562.96	-1.24	5.05	-5.04	0.80	0.29	-34.71

Precision Drilling Corporation

Survey Report

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Site:	Wilson Ranch 9-26HZ Pad 4N-68W-26	MD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Well:	Wilson Ranch 32N-S27HZ	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Compass_US

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)	
653.00	2.02	31.16	652.93	0.33	6.94	-6.94	1.66	0.70	-53.02	
743.00	3.21	16.44	742.83	4.10	8.47	-8.49	1.51	1.32	-16.36	
833.00	3.79	1.18	832.67	9.49	9.25	-9.29	1.21	0.64	-16.96	
923.00	4.56	355.77	922.43	16.03	9.04	-9.12	0.96	0.86	-6.01	
1,013.00	5.88	351.70	1,012.05	24.16	8.11	-8.24	1.52	1.47	-4.52	
1,103.00	7.06	352.40	1,101.48	34.21	6.72	-6.89	1.31	1.31	0.78	
1,193.00	8.49	352.91	1,190.65	46.28	5.17	-5.40	1.59	1.59	0.57	
1,283.00	9.39	351.59	1,279.55	60.14	3.27	-3.58	1.03	1.00	-1.47	
1,373.00	10.88	355.60	1,368.15	75.87	1.55	-1.93	1.83	1.66	4.46	
1,463.00	11.78	350.67	1,456.39	93.41	-0.60	0.12	1.47	1.00	-5.48	
1,553.00	12.97	351.55	1,544.30	112.46	-3.57	3.00	1.34	1.32	0.98	
1,643.00	13.96	353.40	1,631.83	133.24	-6.30	5.63	1.20	1.10	2.06	
1,733.00	14.83	354.52	1,719.00	155.49	-8.65	7.86	1.01	0.97	1.24	
1,801.00	14.37	355.96	1,784.80	172.57	-10.07	9.20	0.86	-0.68	2.12	
1,935.00	14.23	358.90	1,914.65	205.62	-11.56	10.52	0.55	-0.10	2.19	
2,029.00	16.07	359.60	2,005.38	230.19	-11.87	10.71	1.97	1.96	0.74	
2,123.00	15.00	355.93	2,095.95	255.33	-12.83	11.54	1.55	-1.14	-3.90	
2,216.00	13.96	349.12	2,186.00	278.35	-15.80	14.39	2.14	-1.12	-7.32	
2,309.00	14.59	352.40	2,276.13	300.98	-19.47	17.94	1.10	0.68	3.53	
2,402.00	15.41	355.00	2,365.96	324.90	-22.09	20.45	1.14	0.88	2.80	
2,494.00	14.65	352.04	2,454.82	348.60	-24.77	23.01	1.17	-0.83	-3.22	
2,587.00	16.19	0.55	2,544.48	373.22	-26.27	24.39	2.94	1.66	9.15	
2,680.00	16.00	359.21	2,633.83	399.00	-26.33	24.31	0.45	-0.20	-1.44	
2,770.00	15.64	357.80	2,720.42	423.52	-26.96	24.82	0.59	-0.40	-1.57	
2,862.00	15.09	354.90	2,809.14	447.84	-28.50	26.24	1.03	-0.60	-3.15	
2,957.00	15.43	357.21	2,900.79	472.78	-30.22	27.83	0.73	0.36	2.43	
3,050.00	16.33	5.72	2,990.25	498.16	-29.52	27.00	2.68	0.97	9.15	
3,144.00	15.50	3.10	3,080.65	523.85	-27.52	24.87	1.17	-0.88	-2.79	
3,236.00	15.24	0.13	3,169.36	548.21	-26.83	24.05	0.90	-0.28	-3.23	
3,330.00	14.41	357.41	3,260.23	572.25	-27.33	24.43	1.15	-0.88	-2.89	
3,423.00	14.31	2.70	3,350.33	595.30	-27.31	24.30	1.41	-0.11	5.69	
3,516.00	14.63	6.30	3,440.38	618.45	-25.48	22.35	1.03	0.34	3.87	
3,610.00	12.84	3.78	3,531.69	640.67	-23.49	20.25	2.01	-1.90	-2.68	
3,703.00	13.13	5.00	3,622.31	661.51	-21.89	18.54	0.43	0.31	1.31	
3,796.00	14.17	4.77	3,712.68	683.38	-20.02	16.56	1.12	1.12	-0.25	
3,889.00	17.07	7.70	3,802.24	708.25	-17.24	13.66	3.23	3.12	3.15	
3,981.00	17.25	6.39	3,890.14	735.19	-13.92	10.20	0.46	0.20	-1.42	
4,074.00	14.69	2.36	3,979.55	760.68	-11.90	8.05	3.00	-2.75	-4.33	
4,167.00	12.48	359.59	4,069.94	782.51	-11.48	7.52	2.48	-2.38	-2.98	
4,260.00	10.39	358.41	4,161.09	800.95	-11.79	7.73	2.26	-2.25	-1.27	
4,353.00	9.21	356.81	4,252.73	816.76	-12.43	8.30	1.30	-1.27	-1.72	
4,445.00	8.11	355.12	4,343.68	830.58	-13.40	9.19	1.23	-1.20	-1.84	
4,539.00	7.20	353.71	4,436.85	843.04	-14.61	10.34	0.99	-0.97	-1.50	

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Survey Report

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Site:	Wilson Ranch 9-26HZ Pad 4N-68W-26	MD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Well:	Wilson Ranch 32N-S27HZ	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Compass_US

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)
4,633.00	4.80	3.54	4,530.33	852.82	-15.01	10.69	2.77	-2.55	10.46
4,726.00	2.28	10.67	4,623.14	858.52	-14.43	10.08	2.75	-2.71	7.67
4,820.00	1.03	7.49	4,717.10	861.20	-13.97	9.61	1.33	-1.33	-3.38
4,913.00	1.08	352.43	4,810.09	862.90	-13.98	9.61	0.30	0.05	-16.19
5,006.00	1.07	336.92	4,903.07	864.56	-14.43	10.05	0.31	-0.01	-16.68
5,101.00	0.78	321.75	4,998.06	865.89	-15.18	10.80	0.40	-0.31	-15.97
5,194.00	0.77	314.93	5,091.05	866.83	-16.01	11.63	0.10	-0.01	-7.33
5,289.00	0.64	293.14	5,186.04	867.49	-16.95	12.56	0.31	-0.14	-22.94
5,383.00	0.59	288.20	5,280.04	867.84	-17.90	13.50	0.08	-0.05	-5.26
5,475.00	0.40	278.37	5,372.03	868.04	-18.66	14.27	0.23	-0.21	-10.68
5,569.00	0.56	285.52	5,466.03	868.21	-19.43	15.04	0.18	0.17	7.61
5,662.00	0.78	275.43	5,559.02	868.39	-20.50	16.10	0.27	0.24	-10.85
5,847.00	0.39	286.45	5,744.01	868.69	-22.36	17.96	0.22	-0.21	5.96
5,940.00	0.42	316.98	5,837.01	869.03	-22.89	18.49	0.23	0.03	32.83
6,033.00	0.56	311.51	5,930.01	869.58	-23.47	19.06	0.16	0.15	-5.88
6,125.00	0.59	292.13	6,022.00	870.05	-24.24	19.84	0.21	0.03	-21.07
6,218.00	0.36	219.53	6,115.00	870.01	-24.87	20.47	0.64	-0.25	-78.06
6,310.00	0.28	220.42	6,207.00	869.61	-25.20	20.80	0.09	-0.09	0.97
6,403.00	0.17	261.91	6,300.00	869.42	-25.48	21.08	0.20	-0.12	44.61
6,496.00	0.25	304.58	6,393.00	869.52	-25.79	21.39	0.18	0.09	45.88
6,588.00	0.34	300.58	6,485.00	869.77	-26.19	21.79	0.10	0.10	-4.35
6,680.00	0.22	321.48	6,576.99	870.05	-26.53	22.13	0.17	-0.13	22.72
6,773.00	7.47	271.42	6,669.73	870.34	-32.70	28.29	7.88	7.80	-53.83
6,866.00	16.21	266.46	6,760.66	869.68	-51.73	47.33	9.45	9.40	-5.33
6,960.00	21.43	270.63	6,849.61	869.06	-82.02	77.62	5.73	5.55	4.44
7,053.00	28.81	268.29	6,933.76	868.58	-121.46	117.07	8.01	7.94	-2.52
7,146.00	40.33	266.26	7,010.21	865.94	-174.07	169.69	12.45	12.39	-2.18
7,241.00	51.00	268.67	7,076.51	863.07	-241.85	237.48	11.38	11.23	2.54
7,257.99	52.38	268.78	7,087.04	862.77	-255.18	250.81	8.14	8.13	0.65
Land Box Entry 32N-S27HZ									
7,336.00	58.72	269.24	7,131.15	861.67	-319.47	315.10	8.14	8.13	0.59
7,431.00	66.48	268.44	7,174.84	859.94	-403.73	399.37	8.20	8.17	-0.84
7,525.00	70.79	269.49	7,209.07	858.38	-491.23	486.88	4.70	4.59	1.12
7,619.00	75.38	269.83	7,236.42	857.85	-581.14	576.79	4.90	4.88	0.36
7,713.00	83.32	273.61	7,253.78	860.66	-673.38	669.02	9.32	8.45	4.02
7,807.00	90.94	273.29	7,258.48	866.30	-767.03	762.63	8.11	8.11	-0.34
7,873.00	91.43	270.72	7,257.12	868.61	-832.97	828.56	3.96	0.75	-3.89
LP(final) 32N-S27HZ									
7,902.00	91.65	269.59	7,256.33	868.69	-861.96	857.55	3.96	0.75	-3.90
7,996.00	89.87	268.48	7,255.09	867.10	-955.93	951.53	2.23	-1.89	-1.18
8,090.00	90.60	266.55	7,254.70	863.03	-1,049.84	1,045.45	2.20	0.78	-2.05
8,184.00	88.44	267.02	7,255.49	857.76	-1,143.68	1,139.32	2.35	-2.30	0.50
8,278.00	89.75	269.37	7,256.97	854.80	-1,237.61	1,233.27	2.86	1.39	2.50
8,373.00	90.65	269.29	7,256.64	853.69	-1,332.60	1,328.27	0.95	0.95	-0.08

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Well:	Wilson Ranch 32N-S27HZ	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Compass_US

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)
8,466.00	90.40	268.12	7,255.79	851.58	-1,425.57	1,421.25	1.29	-0.27	-1.26
8,559.00	90.37	270.35	7,255.17	850.34	-1,518.56	1,514.23	2.40	-0.03	2.40
8,653.00	90.57	267.09	7,254.39	848.24	-1,612.52	1,608.20	3.47	0.21	-3.47
8,747.00	89.39	266.82	7,254.43	843.25	-1,706.38	1,702.09	1.29	-1.26	-0.29
8,839.00	88.50	269.40	7,256.12	840.22	-1,798.31	1,794.03	2.97	-0.97	2.80
8,932.00	88.74	268.68	7,258.36	838.66	-1,891.27	1,887.00	0.82	0.26	-0.77
9,024.00	91.09	272.87	7,258.50	839.90	-1,983.23	1,978.96	5.22	2.55	4.55
9,119.00	91.65	271.94	7,256.23	843.89	-2,078.12	2,073.82	1.14	0.59	-0.98
9,212.00	92.46	271.08	7,252.89	846.34	-2,171.03	2,166.72	1.27	0.87	-0.92
9,305.00	90.20	270.90	7,250.73	847.94	-2,263.98	2,259.66	2.44	-2.43	-0.19
9,400.00	89.68	269.25	7,250.83	848.07	-2,358.98	2,354.66	1.82	-0.55	-1.74
9,494.00	90.27	267.39	7,250.87	845.31	-2,452.93	2,448.62	2.08	0.63	-1.98
9,588.00	88.65	267.33	7,251.76	840.98	-2,546.83	2,542.54	1.72	-1.72	-0.06
9,682.00	91.00	270.22	7,252.05	838.97	-2,640.79	2,636.51	3.96	2.50	3.07
9,775.00	90.53	271.27	7,250.80	840.18	-2,733.77	2,729.48	1.24	-0.51	1.13
9,868.00	90.06	269.37	7,250.33	840.70	-2,826.76	2,822.47	2.10	-0.51	-2.04
9,963.00	89.77	269.47	7,250.47	839.74	-2,921.76	2,917.47	0.32	-0.31	0.11
10,057.00	90.28	271.62	7,250.43	840.63	-3,015.75	3,011.45	2.35	0.54	2.29
10,150.00	90.21	271.01	7,250.03	842.77	-3,108.72	3,104.42	0.66	-0.08	-0.66
10,243.00	91.58	270.68	7,248.58	844.14	-3,201.70	3,197.38	1.52	1.47	-0.35
10,335.00	91.56	271.95	7,246.05	846.25	-3,293.64	3,289.31	1.38	-0.02	1.38
10,429.00	89.72	271.59	7,245.01	849.15	-3,387.58	3,383.24	1.99	-1.96	-0.38
10,523.00	88.58	271.61	7,246.40	851.78	-3,481.53	3,477.18	1.21	-1.21	0.02
10,617.00	88.93	271.33	7,248.44	854.19	-3,575.48	3,571.11	0.48	0.37	-0.30
10,711.00	89.87	272.00	7,249.43	856.92	-3,669.43	3,665.05	1.23	1.00	0.71
10,804.00	90.63	271.56	7,249.02	859.81	-3,762.39	3,757.99	0.94	0.82	-0.47
10,898.00	88.52	270.60	7,249.72	861.58	-3,856.36	3,851.95	2.47	-2.24	-1.02
10,992.00	89.53	270.62	7,251.32	862.58	-3,950.34	3,945.93	1.07	1.07	0.02
11,086.00	89.83	268.71	7,251.84	862.03	-4,044.33	4,039.92	2.06	0.32	-2.03
11,180.00	89.39	268.60	7,252.48	859.83	-4,138.31	4,133.90	0.48	-0.47	-0.12
11,273.00	89.28	266.16	7,253.56	855.57	-4,231.20	4,226.81	2.63	-0.12	-2.62
11,367.00	89.31	267.51	7,254.72	850.39	-4,325.04	4,320.68	1.44	0.03	1.44
11,461.00	88.52	268.68	7,256.50	847.26	-4,418.97	4,414.63	1.50	-0.84	1.24
11,555.00	88.14	268.33	7,259.24	844.81	-4,512.90	4,508.57	0.55	-0.40	-0.37
11,649.00	89.04	267.45	7,261.55	841.35	-4,606.81	4,602.49	1.34	0.96	-0.94
11,743.00	89.94	268.14	7,262.39	837.73	-4,700.73	4,696.43	1.21	0.96	0.73
11,836.00	90.76	269.88	7,261.82	836.13	-4,793.71	4,789.42	2.07	0.88	1.87
11,929.00	90.39	268.46	7,260.89	834.78	-4,886.69	4,882.41	1.58	-0.40	-1.53
12,022.00	90.57	269.61	7,260.11	833.21	-4,979.68	4,975.39	1.25	0.19	1.24
12,115.00	90.79	268.63	7,259.00	831.79	-5,072.66	5,068.38	1.08	0.24	-1.05
12,138.50	90.89	268.74	7,258.66	831.25	-5,096.15	5,091.88	0.64	0.44	0.46
Section Line Entry 32N-S27HZ									
12,208.00	91.20	269.06	7,257.39	829.91	-5,165.62	5,161.36	0.64	0.44	0.46

Precision Drilling Corporation

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Wilson Ranch 32N-S27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Site:	Wilson Ranch 9-26HZ Pad 4N-68W-26	MD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Well:	Wilson Ranch 32N-S27HZ	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Compass_US

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)
12,301.00	91.94	271.77	7,254.84	830.58	-5,258.58	5,254.31	3.02	0.80	2.91
12,394.00	90.26	272.33	7,253.05	833.91	-5,351.50	5,347.21	1.90	-1.81	0.60
12,487.00	90.47	271.68	7,252.46	837.16	-5,444.44	5,440.13	0.73	0.23	-0.70
12,581.00	90.93	271.87	7,251.31	840.07	-5,538.38	5,534.06	0.53	0.49	0.20
12,675.00	90.35	270.03	7,250.26	841.63	-5,632.36	5,628.03	2.05	-0.62	-1.96
12,769.00	90.47	269.80	7,249.59	841.49	-5,726.36	5,722.03	0.28	0.13	-0.24
12,863.00	90.87	269.65	7,248.49	841.04	-5,820.35	5,816.02	0.45	0.43	-0.16
12,957.00	90.38	269.47	7,247.47	840.32	-5,914.34	5,910.01	0.56	-0.52	-0.19
13,050.00	90.62	268.98	7,246.65	839.06	-6,007.33	6,003.01	0.59	0.26	-0.53
13,142.00	92.63	268.91	7,244.05	837.37	-6,099.27	6,094.96	2.19	2.18	-0.08
13,235.00	91.59	268.72	7,240.62	835.45	-6,192.19	6,187.88	1.14	-1.12	-0.20
13,327.00	87.95	268.55	7,240.99	833.26	-6,284.15	6,279.85	3.96	-3.96	-0.18
13,420.00	87.23	267.13	7,244.90	829.75	-6,377.00	6,372.71	1.71	-0.77	-1.53
13,515.00	88.37	267.65	7,248.55	825.43	-6,471.82	6,467.56	1.32	1.20	0.55
13,610.00	90.37	269.62	7,249.59	823.17	-6,566.78	6,562.53	2.95	2.11	2.07
13,704.00	90.00	269.38	7,249.29	822.35	-6,660.78	6,656.53	0.47	-0.39	-0.26
13,797.00	91.04	269.70	7,248.45	821.60	-6,753.77	6,749.52	1.17	1.12	0.34
13,891.00	90.16	270.08	7,247.46	821.42	-6,847.76	6,843.52	1.02	-0.94	0.40
13,986.00	91.28	269.66	7,246.27	821.21	-6,942.75	6,938.51	1.26	1.18	-0.44
14,081.00	91.82	271.23	7,243.70	821.94	-7,037.71	7,033.46	1.75	0.57	1.65
14,175.00	90.07	270.21	7,242.15	823.13	-7,131.69	7,127.43	2.15	-1.86	-1.09
14,270.00	90.03	269.86	7,242.06	823.18	-7,226.69	7,222.43	0.37	-0.04	-0.37
14,363.00	88.75	268.49	7,243.05	821.84	-7,319.67	7,315.42	2.02	-1.38	-1.47
14,457.00	89.87	268.03	7,244.19	818.99	-7,413.62	7,409.38	1.29	1.19	-0.49
14,549.00	89.25	268.35	7,244.89	816.08	-7,505.57	7,501.34	0.76	-0.67	0.35
14,642.00	88.27	270.05	7,246.91	814.79	-7,598.53	7,594.31	2.11	-1.05	1.83
14,735.00	89.80	269.93	7,248.47	814.77	-7,691.52	7,687.29	1.65	1.65	-0.13
14,829.00	91.13	269.50	7,247.71	814.30	-7,785.51	7,781.29	1.49	1.41	-0.46
14,923.00	90.57	270.07	7,246.31	813.95	-7,879.50	7,875.28	0.85	-0.60	0.61
15,016.00	88.12	270.32	7,247.38	814.27	-7,972.48	7,968.26	2.65	-2.63	0.27
15,108.00	88.76	270.61	7,249.88	815.01	-8,064.45	8,060.22	0.76	0.70	0.32
15,203.00	89.15	270.01	7,251.62	815.53	-8,159.43	8,155.20	0.75	0.41	-0.63
15,296.00	90.10	269.67	7,252.22	815.27	-8,252.43	8,248.19	1.08	1.02	-0.37
15,389.00	88.35	269.50	7,253.48	814.59	-8,345.41	8,341.18	1.89	-1.88	-0.18
15,481.00	88.47	268.48	7,256.03	812.97	-8,437.36	8,433.14	1.12	0.13	-1.11
15,575.00	88.89	269.78	7,258.20	811.55	-8,531.32	8,527.10	1.45	0.45	1.38
15,669.00	88.69	268.35	7,260.19	810.01	-8,625.29	8,621.08	1.54	-0.21	-1.52
15,761.00	89.52	269.31	7,261.62	808.13	-8,717.25	8,713.05	1.38	0.90	1.04
15,854.00	90.37	269.25	7,261.71	806.97	-8,810.25	8,806.05	0.92	0.91	-0.06
15,947.00	91.08	269.28	7,260.53	805.77	-8,903.23	8,899.04	0.76	0.76	0.03
16,041.00	91.97	269.44	7,258.03	804.72	-8,997.19	8,993.00	0.96	0.95	0.17
16,135.00	90.04	269.16	7,256.38	803.57	-9,091.16	9,086.98	2.07	-2.05	-0.30
16,228.00	90.96	267.97	7,255.57	801.25	-9,184.13	9,179.95	1.62	0.99	-1.28
16,323.00	89.48	266.76	7,255.21	796.88	-9,279.02	9,274.87	2.01	-1.56	-1.27

Precision Drilling Corporation

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Wilson Ranch 32N-S27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Site:	Wilson Ranch 9-26HZ Pad 4N-68W-26	MD Reference:	5041'GL+20'KB @ 5061.00usft (PD460)
Well:	Wilson Ranch 32N-S27HZ	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Compass_US

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)
16,416.00	89.56	268.51	7,255.99	793.04	-9,371.94	9,367.80	1.88	0.09	1.88
16,508.00	89.43	269.30	7,256.80	791.28	-9,463.92	9,459.79	0.87	-0.14	0.86
16,601.00	90.10	269.43	7,257.18	790.25	-9,556.91	9,552.79	0.73	0.72	0.14
16,695.00	90.42	268.92	7,256.75	788.90	-9,650.90	9,646.78	0.64	0.34	-0.54
16,789.00	91.20	268.89	7,255.42	787.10	-9,744.87	9,740.76	0.83	0.83	-0.03
16,882.00	92.23	269.17	7,252.64	785.53	-9,837.81	9,833.71	1.15	1.11	0.30
16,948.00	92.23	269.17	7,250.07	784.57	-9,903.76	9,899.66	0.00	0.00	0.00
BHL 32N-S27HZ									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Surface 32N-S27HZ - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,629,653.15	1,651,167.15	40.282624°N	104.961453°W
Land Box Entry 32N-S - actual wellpath hits target center - Point	0.00	0.00	7,087.05	862.77	-255.19	14,630,515.81	1,650,911.59	40.284993°N	104.962368°W
BHL 32N-S27HZ - actual wellpath hits target center - Point	0.00	0.00	7,250.07	784.57	-9,903.76	14,630,433.41	1,641,263.05	40.284773°N	104.996965°W
LP(final) 32N-S27HZ - actual wellpath hits target center - Point	0.00	0.00	7,257.12	868.61	-832.97	14,630,521.39	1,650,333.81	40.285009°N	104.964440°W
Section Line Entry 32I - actual wellpath hits target center - Point	0.00	0.00	7,258.66	831.25	-5,096.15	14,630,482.18	1,646,070.64	40.284905°N	104.979727°W

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
7,258.00	7,087.05	862.77	-255.19	Land Box Entry
7,873.00	7,257.12	868.61	-832.97	LP
12,138.50	7,258.66	831.25	-5,096.15	Section Line Entry