



US ROCKIES WATTENBERG PLANNING

Project: WELD-NAD83-UTMFT13N

Site: Wilson Ranch 16-26HZ Pad

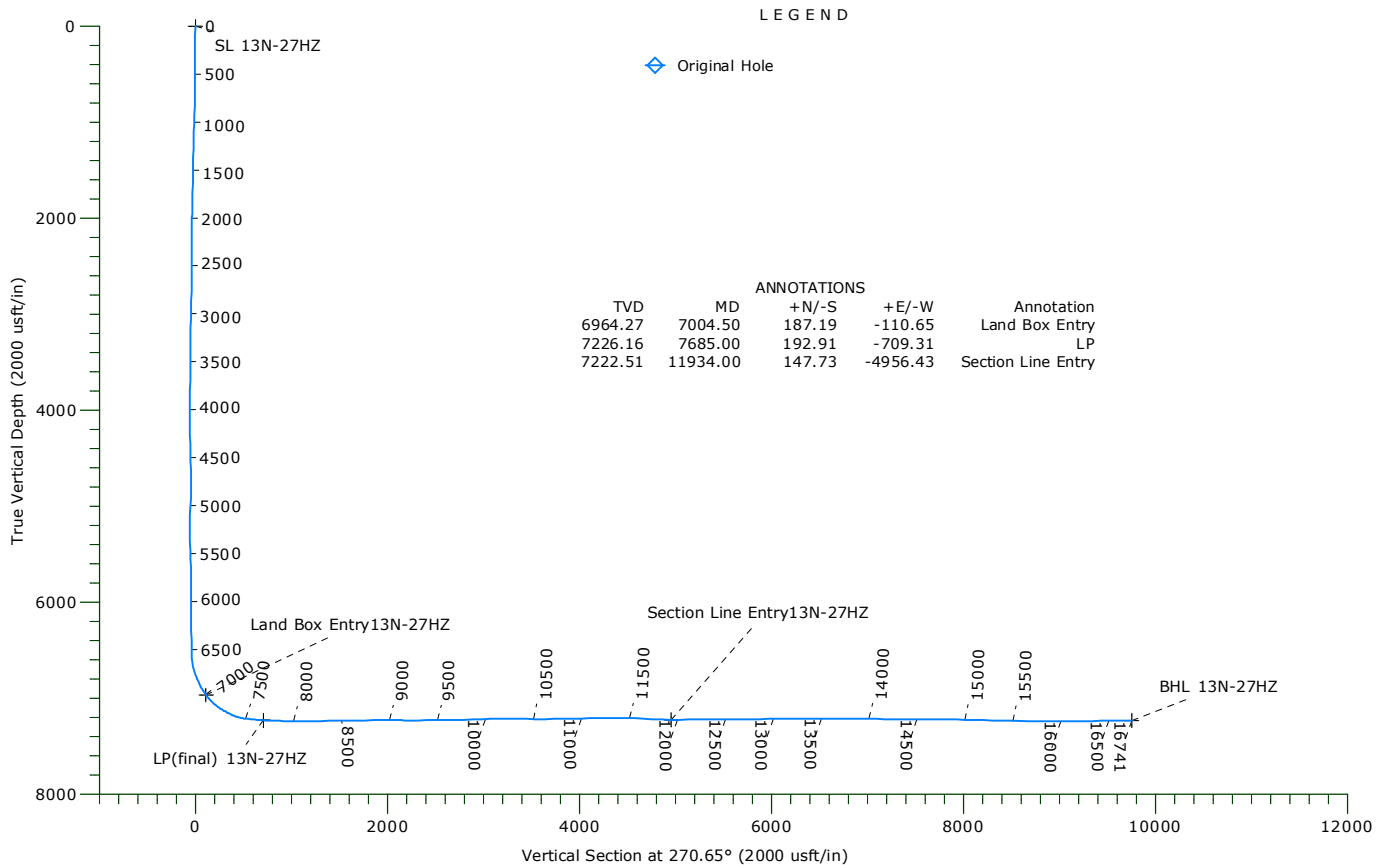
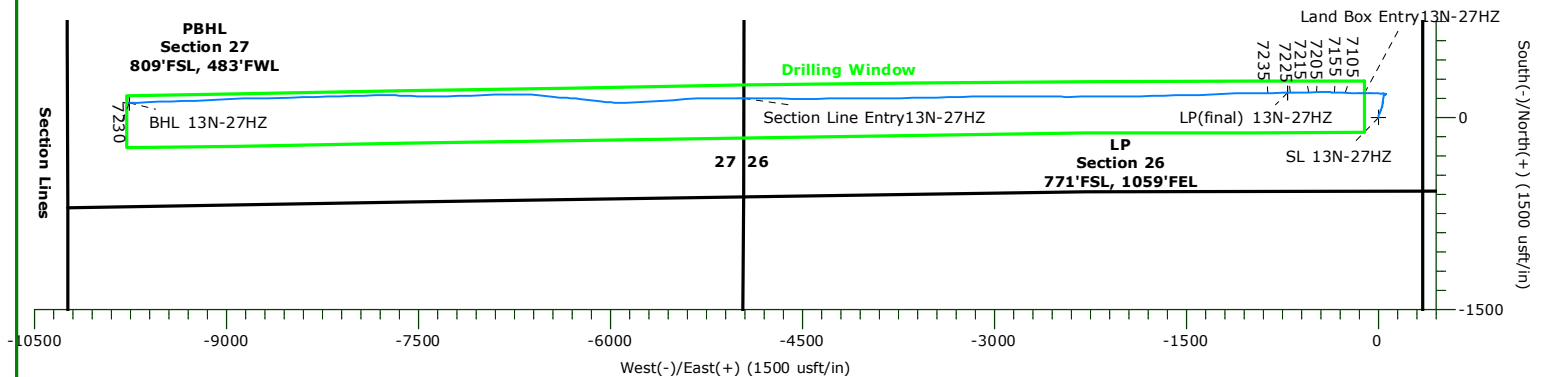
Well: Wilson Ranch 13N-27HZ

Wellbore: Original Hole

Design: Original Hole



Precision
Directional Services



WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 13N-27HZ	0.00	0.00	0.00	14628320.63	1651023.54	40.278965°N	104.961970°W	Point
Land Box Entry13N-27HZ	6964.27	187.19	-110.65	14628507.77	1650912.80	40.279479°N	104.962367°W	Point
Section Line Entry13N-27HZ	7222.51	147.73	-4956.43	14628466.23	1646067.04	40.279369°N	104.979741°W	Point
LP(final) 13N-27HZ	7226.16	192.91	-709.31	14628513.24	1650314.14	40.279495°N	104.964513°W	Point
BHL 13N-27HZ	7230.13	112.03	-9756.97	14628428.48	1641266.52	40.279267°N	104.996953°W	Point

Precision Drilling Corporation

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Wilson Ranch 13N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Site:	Wilson Ranch 16-26HZ Pad	MD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Well:	Wilson Ranch 13N-27HZ	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 16-26HZ Pad		
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Site Position:		Northing:	14,628,290.77 usft	Latitude:	40.278883°N
From:	Lat/Long	Easting:	1,651,023.27 usft	Longitude:	104.961971°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.02 °

Well	Wilson Ranch 13N-27HZ				
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Well Position	+N-S	0.00 usft	Northing:	14,628,320.63 usft	Latitude:	40.278965°N
	+E-W	0.00 usft	Easting:	1,651,023.53 usft	Longitude:	104.961970°W
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,072.00 usft

Wellbore	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/04/15	8.38	66.77	52,592

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	270.65

Survey Program		Date	11/16/15	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
96.00	1,786.00	Survey #1 (Original Hole)	APC_ISCWSA REV 2 MW	Fixed:v2:standard declination
1,930.00	16,675.00	Survey #2 (Original Hole)	APC_ISCWSA REV 2 MW	Fixed:v2:Rockies, crustal dec + 3-axis correction
16,741.00	16,741.00	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
SL 13N-27HZ										
	96.00	0.24	108.57	96.00	-0.06	0.19	-0.19	0.25	0.25	0.00
	187.00	0.24	87.56	187.00	-0.12	0.56	-0.56	0.10	0.00	-23.09
	276.00	0.31	147.33	276.00	-0.31	0.88	-0.88	0.32	0.08	67.16
	382.00	0.50	23.25	382.00	-0.13	1.22	-1.22	0.68	0.18	-117.06
	472.00	0.71	357.51	471.99	0.79	1.35	-1.34	0.38	0.23	-28.60
	562.00	1.87	4.30	561.97	2.81	1.43	-1.40	1.30	1.29	7.54
	652.00	2.78	13.48	651.89	6.40	2.05	-1.98	1.09	1.01	10.20

Precision Drilling Corporation

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Wilson Ranch 13N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Site:	Wilson Ranch 16-26HZ Pad	MD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Well:	Wilson Ranch 13N-27HZ	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)
742.00	3.74	5.31	741.75	11.44	2.83	-2.70	1.18	1.07	-9.08
832.00	4.53	16.39	831.51	17.78	4.11	-3.90	1.24	0.88	12.31
922.00	5.18	24.44	921.19	24.88	6.79	-6.51	1.04	0.72	8.94
1,012.00	4.41	23.55	1,010.88	31.76	9.85	-9.49	0.86	-0.86	-0.99
1,102.00	4.50	20.50	1,100.60	38.23	12.47	-12.04	0.28	0.10	-3.39
1,192.00	4.75	18.81	1,190.31	45.07	14.91	-14.40	0.32	0.28	-1.88
1,282.00	5.30	21.26	1,279.96	52.47	17.62	-17.02	0.66	0.61	2.72
1,373.00	4.42	27.64	1,370.64	59.49	20.77	-20.09	1.13	-0.97	7.01
1,463.00	4.54	16.80	1,460.36	65.98	23.41	-22.66	0.95	0.13	-12.04
1,553.00	4.20	12.85	1,550.10	72.60	25.17	-24.35	0.50	-0.38	-4.39
1,643.00	4.34	7.08	1,639.85	79.19	26.32	-25.42	0.50	0.16	-6.41
1,733.00	3.86	22.70	1,729.62	85.37	27.91	-26.94	1.35	-0.53	17.36
1,786.00	3.68	27.48	1,782.51	88.52	29.39	-28.38	0.68	-0.34	9.02
1,930.00	2.69	17.80	1,926.29	95.84	32.55	-31.46	0.78	-0.69	-6.72
2,024.00	4.87	9.81	2,020.08	101.87	33.91	-32.75	2.38	2.32	-8.50
2,117.00	5.10	1.23	2,112.73	109.89	34.67	-33.42	0.84	0.25	-9.23
2,211.00	4.20	351.78	2,206.42	117.48	34.26	-32.93	1.25	-0.96	-10.05
2,305.00	4.69	11.79	2,300.14	124.65	34.56	-33.14	1.72	0.52	21.29
2,398.00	4.62	5.00	2,392.83	132.10	35.66	-34.16	0.60	-0.08	-7.30
2,492.00	4.53	355.32	2,486.54	139.57	35.69	-34.10	0.83	-0.10	-10.30
2,586.00	5.32	19.08	2,580.20	147.39	36.81	-35.13	2.31	0.84	25.28
2,680.00	5.53	14.53	2,673.78	155.89	39.37	-37.60	0.51	0.22	-4.84
2,774.00	4.84	7.02	2,767.39	164.21	40.99	-39.13	1.03	-0.73	-7.99
2,867.00	4.57	33.09	2,860.09	171.21	43.49	-41.55	2.30	-0.29	28.03
2,959.00	4.21	28.75	2,951.82	177.24	47.12	-45.11	0.53	-0.39	-4.72
3,052.00	1.50	86.60	3,044.71	180.31	49.98	-47.93	3.91	-2.91	62.20
3,144.00	1.58	55.80	3,136.68	181.09	52.23	-50.17	0.89	0.09	-33.48
3,237.00	0.81	206.96	3,229.67	181.23	52.99	-50.93	2.50	-0.83	162.54
3,329.00	0.35	249.88	3,321.66	180.55	52.43	-50.38	0.66	-0.50	46.65
3,422.00	0.41	200.46	3,414.66	180.14	52.05	-50.00	0.35	0.06	-53.14
3,514.00	0.61	58.42	3,506.66	180.09	52.35	-50.30	1.05	0.22	-154.39
3,608.00	0.18	344.97	3,600.66	180.50	52.74	-50.69	0.62	-0.46	-78.14
3,701.00	0.54	72.38	3,693.66	180.77	53.12	-51.06	0.60	0.39	93.99
3,795.00	0.80	93.64	3,787.65	180.86	54.20	-52.14	0.38	0.28	22.62
3,888.00	0.56	85.63	3,880.64	180.86	55.30	-53.24	0.28	-0.26	-8.61
3,982.00	0.59	26.80	3,974.64	181.32	55.97	-53.91	0.60	0.03	-62.59
4,077.00	0.25	257.38	4,069.64	181.71	55.99	-53.93	0.81	-0.36	-136.23
4,170.00	0.66	247.14	4,162.64	181.46	55.30	-53.24	0.45	0.44	-11.01
4,264.00	0.56	249.08	4,256.63	181.09	54.37	-52.31	0.11	-0.11	2.06
4,357.00	0.19	193.30	4,349.63	180.77	53.91	-51.86	0.52	-0.40	-59.98
4,449.00	0.32	250.54	4,441.63	180.54	53.63	-51.58	0.29	0.14	62.22
4,542.00	1.25	266.99	4,534.62	180.40	52.38	-50.33	1.02	1.00	17.69
4,634.00	1.93	267.67	4,626.58	180.29	49.83	-47.78	0.74	0.74	0.74

Precision Drilling Corporation

Survey Report

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Site:	Wilson Ranch 16-26HZ Pad	MD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Well:	Wilson Ranch 13N-27HZ	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)
4,727.00	0.94	214.44	4,719.56	179.59	47.83	-45.79	1.68	-1.06	-57.24
4,819.00	1.85	56.71	4,811.54	179.79	48.65	-46.60	2.98	0.99	-171.45
4,911.00	1.70	69.79	4,903.50	181.07	51.17	-49.11	0.47	-0.16	14.22
5,004.00	1.05	38.81	4,996.47	182.21	53.00	-50.93	1.04	-0.70	-33.31
5,096.00	1.11	66.07	5,088.46	183.23	54.34	-52.26	0.56	0.07	29.63
5,188.00	0.30	45.25	5,180.45	183.76	55.32	-53.24	0.91	-0.88	-22.63
5,281.00	0.39	340.13	5,273.45	184.23	55.39	-53.30	0.41	0.10	-70.02
5,373.00	0.56	279.08	5,365.45	184.60	54.84	-52.74	0.55	0.18	-66.36
5,465.00	0.37	268.86	5,457.44	184.66	54.10	-52.00	0.22	-0.21	-11.11
5,558.00	1.21	278.16	5,550.43	184.79	52.83	-50.73	0.91	0.90	10.00
5,651.00	1.56	268.16	5,643.41	184.89	50.59	-48.49	0.46	0.38	-10.75
5,743.00	1.31	286.39	5,735.38	185.15	48.33	-46.22	0.56	-0.27	19.82
5,837.00	0.90	259.98	5,829.36	185.32	46.57	-44.46	0.68	-0.44	-28.10
5,930.00	0.72	256.95	5,922.35	185.07	45.28	-43.18	0.20	-0.19	-3.26
6,025.00	0.14	281.51	6,017.35	184.95	44.59	-42.49	0.63	-0.61	25.85
6,118.00	0.76	300.84	6,110.34	185.29	43.95	-41.84	0.68	0.67	20.78
6,212.00	0.29	337.58	6,204.34	185.83	43.32	-41.21	0.59	-0.50	39.09
6,306.00	0.60	270.24	6,298.34	186.05	42.74	-40.62	0.59	0.33	-71.64
6,401.00	0.70	298.61	6,393.33	186.33	41.73	-39.61	0.35	0.11	29.86
6,494.00	0.54	242.48	6,486.33	186.40	40.84	-38.73	0.65	-0.17	-60.35
6,587.00	4.63	267.27	6,579.21	186.02	36.70	-34.59	4.46	4.40	26.66
6,679.00	12.70	270.35	6,670.09	185.91	22.86	-20.75	8.78	8.77	3.35
6,772.00	19.42	274.96	6,759.41	187.31	-2.80	4.92	7.35	7.23	4.96
6,866.00	25.65	271.84	6,846.20	189.31	-38.74	40.88	6.75	6.63	-3.32
6,959.00	33.50	266.65	6,927.03	188.46	-84.56	86.69	8.87	8.44	-5.58
7,004.50	36.61	267.73	6,964.27	187.19	-110.65	112.77	6.96	6.83	2.37
Land Box Entry13N-27HZ									
7,051.00	39.79	268.68	7,000.81	186.30	-139.39	141.49	6.96	6.85	2.05
7,146.00	51.17	273.96	7,067.33	188.16	-206.94	209.06	12.61	11.98	5.56
7,240.00	58.44	273.47	7,121.48	193.12	-283.55	285.72	7.75	7.73	-0.52
7,334.00	65.00	271.24	7,165.99	196.47	-366.21	368.41	7.28	6.98	-2.37
7,429.00	74.97	269.08	7,198.47	196.66	-455.35	457.55	10.71	10.49	-2.27
7,524.00	84.49	269.53	7,215.39	195.53	-548.71	550.89	10.03	10.02	0.47
7,619.00	87.12	269.06	7,222.34	194.37	-643.44	645.61	2.81	2.77	-0.49
7,685.00	86.23	268.41	7,226.16	192.91	-709.31	711.46	1.67	-1.35	-0.99
LP(final) 13N-27HZ									
7,713.00	85.85	268.13	7,228.10	192.07	-737.23	739.37	1.67	-1.35	-0.99
7,806.00	87.37	268.75	7,233.60	189.54	-830.03	832.13	1.76	1.63	0.67
7,900.00	88.85	269.71	7,236.70	188.28	-923.97	926.05	1.88	1.57	1.02
7,995.00	89.29	269.54	7,238.24	187.66	-1,018.96	1,021.02	0.50	0.46	-0.18
8,089.00	90.30	269.33	7,238.58	186.73	-1,112.95	1,115.00	1.10	1.07	-0.22
8,184.00	89.99	266.77	7,238.34	183.50	-1,207.89	1,209.89	2.71	-0.33	-2.69
8,279.00	90.97	267.94	7,237.54	179.11	-1,302.78	1,304.73	1.61	1.03	1.23
8,373.00	91.33	267.08	7,235.65	175.03	-1,396.67	1,398.57	0.99	0.38	-0.91

Precision Drilling Corporation

Survey Report

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Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Site:	Wilson Ranch 16-26HZ Pad	MD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Well:	Wilson Ranch 13N-27HZ	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)
8,465.00	90.47	269.75	7,234.21	172.49	-1,488.61	1,490.47	3.05	-0.93	2.90
8,560.00	90.88	268.90	7,233.09	171.37	-1,583.60	1,585.44	0.99	0.43	-0.89
8,653.00	92.29	268.99	7,230.52	169.66	-1,676.55	1,678.36	1.52	1.52	0.10
8,745.00	90.75	268.41	7,228.08	167.57	-1,768.49	1,770.27	1.79	-1.67	-0.63
8,837.00	90.73	269.68	7,226.89	166.04	-1,860.46	1,862.23	1.38	-0.02	1.38
8,930.00	91.39	269.21	7,225.17	165.14	-1,953.44	1,955.19	0.87	0.71	-0.51
9,023.00	89.09	268.88	7,224.78	163.59	-2,046.42	2,048.15	2.50	-2.47	-0.35
9,116.00	87.98	269.67	7,227.16	162.41	-2,139.38	2,141.09	1.46	-1.19	0.85
9,208.00	89.71	269.56	7,229.01	161.79	-2,231.36	2,233.05	1.88	1.88	-0.12
9,300.00	90.70	269.39	7,228.68	160.95	-2,323.35	2,325.03	1.09	1.08	-0.18
9,394.00	91.19	269.72	7,227.13	160.22	-2,417.34	2,419.00	0.63	0.52	0.35
9,487.00	89.53	271.35	7,226.55	161.09	-2,510.32	2,511.99	2.50	-1.78	1.75
9,582.00	91.04	271.45	7,226.07	163.41	-2,605.29	2,606.98	1.59	1.59	0.11
9,676.00	91.28	270.52	7,224.17	165.02	-2,699.26	2,700.96	1.02	0.26	-0.99
9,771.00	91.14	269.46	7,222.16	165.01	-2,794.24	2,795.93	1.13	-0.15	-1.12
9,865.00	91.86	269.87	7,219.70	164.46	-2,888.20	2,889.88	0.88	0.77	0.44
9,959.00	91.05	267.87	7,217.32	162.60	-2,982.15	2,983.80	2.29	-0.86	-2.13
10,054.00	90.93	270.73	7,215.68	161.44	-3,077.12	3,078.75	3.01	-0.13	3.01
10,147.00	89.61	268.84	7,215.24	161.10	-3,170.11	3,171.73	2.48	-1.42	-2.03
10,241.00	89.74	269.09	7,215.77	159.40	-3,264.09	3,265.69	0.30	0.14	0.27
10,335.00	90.18	269.27	7,215.84	158.05	-3,358.08	3,359.66	0.51	0.47	0.19
10,429.00	89.92	268.06	7,215.75	155.86	-3,452.05	3,453.60	1.32	-0.28	-1.29
10,523.00	89.17	269.03	7,216.50	153.48	-3,546.02	3,547.53	1.30	-0.80	1.03
10,617.00	91.15	269.43	7,216.24	152.21	-3,640.00	3,641.50	2.15	2.11	0.43
10,710.00	91.67	268.57	7,213.95	150.59	-3,732.96	3,734.43	1.08	0.56	-0.92
10,804.00	90.98	270.36	7,211.78	149.71	-3,826.93	3,828.38	2.04	-0.73	1.90
10,898.00	91.05	269.59	7,210.11	149.67	-3,920.91	3,922.36	0.82	0.07	-0.82
10,992.00	90.35	269.55	7,208.96	148.97	-4,014.90	4,016.33	0.75	-0.74	-0.04
11,086.00	91.25	269.26	7,207.65	147.99	-4,108.89	4,110.30	1.01	0.96	-0.31
11,179.00	90.96	269.57	7,205.86	147.04	-4,201.86	4,203.26	0.46	-0.31	0.33
11,273.00	90.18	269.59	7,204.92	146.35	-4,295.86	4,297.24	0.83	-0.83	0.02
11,367.00	91.31	269.03	7,203.70	145.22	-4,389.84	4,391.20	1.34	1.20	-0.60
11,461.00	88.14	270.54	7,204.15	144.87	-4,483.82	4,485.18	3.74	-3.37	1.61
11,555.00	87.21	270.18	7,207.96	145.46	-4,577.74	4,579.10	1.06	-0.99	-0.38
11,650.00	87.60	270.44	7,212.26	145.97	-4,672.64	4,674.00	0.49	0.41	0.27
11,742.00	87.03	269.92	7,216.57	146.26	-4,764.54	4,765.89	0.84	-0.62	-0.57
11,835.00	88.29	270.44	7,220.37	146.55	-4,857.46	4,858.81	1.47	1.35	0.56
11,927.00	89.16	270.89	7,222.42	147.62	-4,949.43	4,950.79	1.06	0.95	0.49
11,934.00	89.28	270.88	7,222.51	147.73	-4,956.43	4,957.79	1.79	1.78	-0.08
Section Line Entry13N-27HZ									
12,020.00	90.82	270.82	7,222.43	149.01	-5,042.42	5,043.78	1.79	1.78	-0.08
12,112.00	90.83	269.88	7,221.11	149.57	-5,134.41	5,135.77	1.02	0.01	-1.02
12,205.00	91.76	269.50	7,219.01	149.07	-5,227.38	5,228.73	1.08	1.00	-0.41

Precision Drilling Corporation

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Wilson Ranch 13N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Site:	Wilson Ranch 16-26HZ Pad	MD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Well:	Wilson Ranch 13N-27HZ	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)
12,299.00	90.21	267.81	7,217.39	146.86	-5,321.33	5,322.66	2.44	-1.65	-1.80
12,392.00	90.09	266.18	7,217.15	141.98	-5,414.20	5,415.46	1.76	-0.13	-1.75
12,485.00	90.26	265.63	7,216.86	135.34	-5,506.96	5,508.14	0.62	0.18	-0.59
12,578.00	90.03	266.62	7,216.63	129.06	-5,599.75	5,600.85	1.09	-0.25	1.06
12,670.00	89.98	265.67	7,216.62	122.87	-5,691.54	5,692.57	1.03	-0.05	-1.03
12,763.00	90.05	265.67	7,216.60	115.85	-5,784.27	5,785.22	0.08	0.08	0.00
12,856.00	90.68	270.35	7,216.00	112.62	-5,877.19	5,878.09	5.08	0.68	5.03
12,948.00	90.22	273.20	7,215.28	115.47	-5,969.13	5,970.06	3.14	-0.50	3.10
13,041.00	90.38	276.33	7,214.79	123.20	-6,061.80	6,062.81	3.37	0.17	3.37
13,133.00	90.34	277.08	7,214.22	133.94	-6,153.17	6,154.29	0.82	-0.04	0.82
13,226.00	91.10	276.25	7,213.05	144.73	-6,245.53	6,246.77	1.21	0.82	-0.89
13,318.00	89.74	272.65	7,212.37	151.87	-6,337.23	6,338.55	4.18	-1.48	-3.91
13,413.00	90.34	275.33	7,212.31	158.48	-6,431.99	6,433.38	2.89	0.63	2.82
13,505.00	90.28	276.02	7,211.81	167.57	-6,523.54	6,525.02	0.75	-0.07	0.75
13,599.00	90.78	275.21	7,210.94	176.77	-6,617.09	6,618.66	1.01	0.53	-0.86
13,694.00	90.82	270.45	7,209.61	181.46	-6,711.93	6,713.56	5.01	0.04	-5.01
13,787.00	90.83	267.78	7,208.27	180.02	-6,804.90	6,806.51	2.87	0.01	-2.87
13,882.00	89.39	267.10	7,208.09	175.78	-6,899.81	6,901.36	1.68	-1.52	-0.72
13,977.00	87.62	267.83	7,210.57	171.58	-6,994.68	6,996.17	2.02	-1.86	0.77
14,071.00	88.42	268.65	7,213.82	168.70	-7,088.57	7,090.03	1.22	0.85	0.87
14,165.00	88.83	269.57	7,216.07	167.24	-7,182.53	7,183.97	1.07	0.44	0.98
14,258.00	89.58	269.19	7,217.36	166.23	-7,275.52	7,276.94	0.90	0.81	-0.41
14,350.00	90.01	268.90	7,217.69	164.70	-7,367.51	7,368.90	0.56	0.47	-0.32
14,444.00	89.60	271.02	7,218.01	164.63	-7,461.50	7,462.89	2.30	-0.44	2.26
14,539.00	90.50	272.05	7,217.93	167.18	-7,556.46	7,557.87	1.44	0.95	1.08
14,632.00	90.55	272.03	7,217.08	170.49	-7,649.40	7,650.84	0.06	0.05	-0.02
14,724.00	88.97	269.48	7,217.46	171.70	-7,741.38	7,742.83	3.26	-1.72	-2.77
14,817.00	88.97	270.12	7,219.13	171.37	-7,834.36	7,835.80	0.69	0.00	0.69
14,910.00	88.95	268.06	7,220.82	169.90	-7,927.33	7,928.75	2.21	-0.02	-2.22
15,005.00	88.67	268.68	7,222.80	167.20	-8,022.27	8,023.65	0.72	-0.29	0.65
15,098.00	88.63	268.82	7,224.99	165.17	-8,115.23	8,116.58	0.16	-0.04	0.15
15,191.00	88.83	268.57	7,227.05	163.05	-8,208.18	8,209.50	0.34	0.22	-0.27
15,286.00	88.37	268.31	7,229.37	160.46	-8,303.11	8,304.40	0.56	-0.48	-0.27
15,381.00	87.15	268.38	7,233.08	157.72	-8,398.00	8,399.25	1.29	-1.28	0.07
15,475.00	89.47	269.06	7,235.85	155.62	-8,491.93	8,493.15	2.57	2.47	0.72
15,563.00	90.13	268.29	7,236.51	151.28	-8,679.88	8,681.03	0.54	0.35	-0.41
15,757.00	89.73	268.36	7,236.62	148.53	-8,773.83	8,774.96	0.43	-0.43	0.07
15,852.00	89.39	268.01	7,237.35	145.52	-8,868.78	8,869.86	0.51	-0.36	-0.37
15,946.00	90.09	267.69	7,237.78	141.99	-8,962.72	8,963.75	0.82	0.74	-0.34
16,040.00	90.06	266.29	7,237.66	137.06	-9,056.58	9,057.56	1.49	-0.03	-1.49
16,134.00	89.71	267.32	7,237.85	131.82	-9,150.44	9,151.34	1.16	-0.37	1.10
16,228.00	89.49	268.88	7,238.50	128.70	-9,244.38	9,245.24	1.68	-0.23	1.66
16,323.00	91.58	269.35	7,237.62	127.24	-9,339.36	9,340.20	2.25	2.20	0.49
16,417.00	91.83	268.56	7,234.82	125.52	-9,433.30	9,434.12	0.88	0.27	-0.84

Precision Drilling Corporation

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Wilson Ranch 13N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Site:	Wilson Ranch 16-26HZ Pad	MD Reference:	5072'GL+20'KB @ 5092.00usft (PD460)
Well:	Wilson Ranch 13N-27HZ	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)
16,509.00	90.95	267.93	7,232.59	122.71	-9,525.23	9,526.01	1.18	-0.96	-0.68
16,603.00	90.16	267.24	7,231.68	118.74	-9,619.14	9,619.87	1.12	-0.84	-0.73
16,675.00	90.81	267.20	7,231.07	115.25	-9,691.05	9,691.74	0.90	0.90	-0.06
16,741.00	90.81	267.20	7,230.13	112.03	-9,756.97	9,757.61	0.00	0.00	0.00
BHL 13N-27HZ									

Design Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SL 13N-27HZ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	14,628,320.63	1,651,023.53	40.278965°N	104.961970°W
- Point										
Land Box Entry13N-2'	- actual wellpath hits target center	0.00	0.00	6,964.27	187.19	-110.65	14,628,507.77	1,650,912.80	40.279479°N	104.962367°W
- Point										
Section Line Entry13N	- actual wellpath hits target center	0.00	0.00	7,222.51	147.73	-4,956.43	14,628,466.23	1,646,067.04	40.279369°N	104.979741°W
- Point										
LP(final) 13N-27HZ	- actual wellpath hits target center	0.00	0.00	7,226.17	192.91	-709.31	14,628,513.24	1,650,314.14	40.279495°N	104.964513°W
- Point										
BHL 13N-27HZ	- actual wellpath hits target center	0.00	0.00	7,230.13	112.03	-9,756.97	14,628,428.47	1,641,266.52	40.279267°N	104.996953°W
- Point										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	+N/-S (usft)	+E/-W (usft)	Comment
7,004.50	6,964.27	187.19	-110.65		Land Box Entry
7,685.00	7,226.16	192.91	-709.31		LP
11,934.00	7,222.51	147.73	-4,956.43		Section Line Entry