



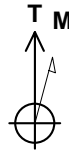
Well: 70 Ranch 10-16-1L
Site: Section 03-T04N-R63W
Project: Weld County, Colorado
Wellbore: Original Hole
Design: plan1

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
70 Ranch 10-16-1L SL 260 FSL 1211 FWL	24.00	-29.27	-3.7914649116.15	1799402.38	40.33466988	-104.42950382	
70 Ranch 10-16-1L BHL 470 FSL 1555 FWL	6310.00	-10386.40	400.8014638761.87	1799873.71	40.30622967	-104.42805260	
70 Ranch 10-16-1L LP 470 FNL 1555 FWL	6310.00	-742.08	329.2914648405.51	1799740.04	40.33271256	-104.42830871	

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	2050.56	5.06	120.92	2050.50	-1.15	1.91	10.00	1.22	Begin 5.06° tangent
4	5779.45	5.06	120.92	5764.87	-170.04	283.85	0.00	180.86	Begin 10°/100' build/turn
5	6653.16	90.00	179.58	6310.00	-742.08	329.29	10.00	754.22	LP Begin 90° lateral
6	16297.75	90.00	179.58	6310.00	-10386.40	400.80	0.00	10394.13	PBHL/TD 16297.75 MD/6310.00 TVD



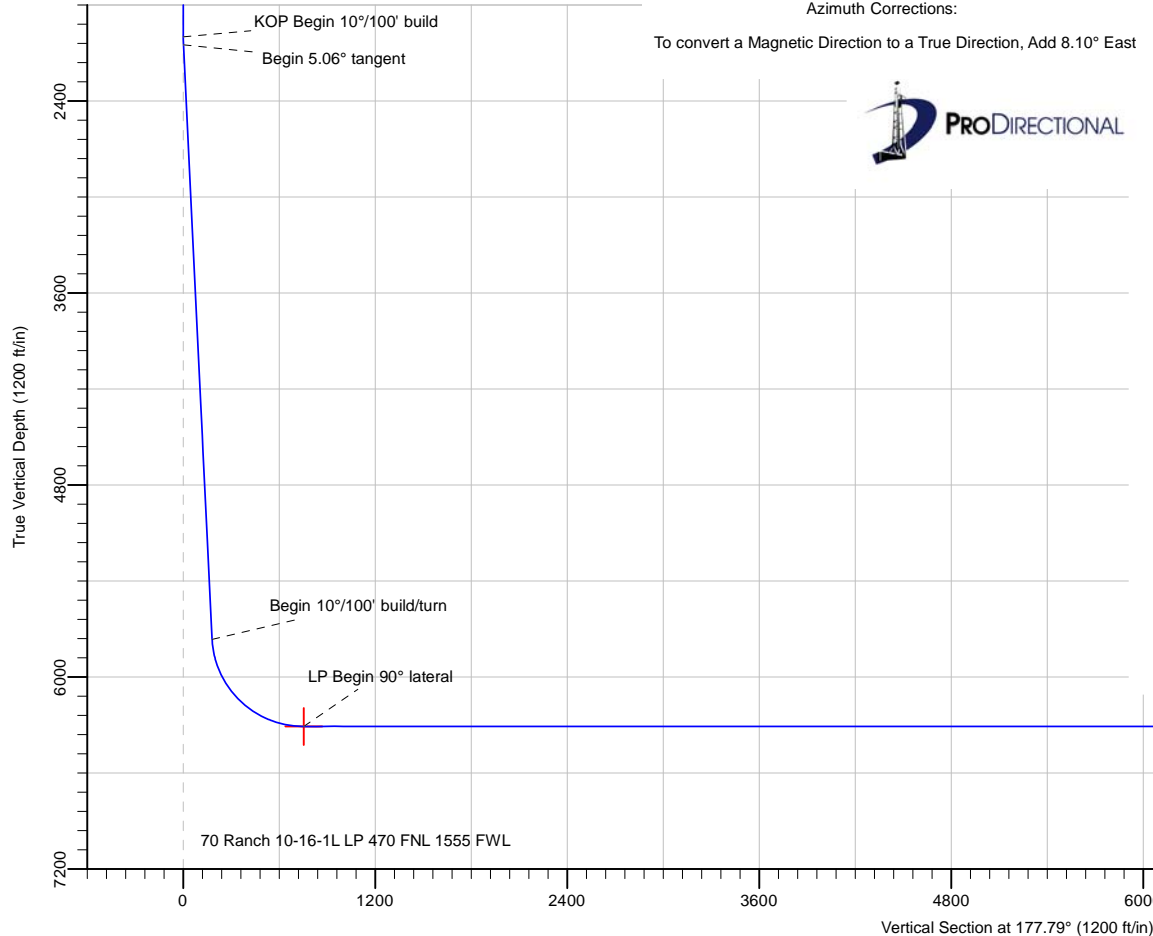
Azimuths to True North
Magnetic North: 8.10°

Magnetic Field
Strength: 52228.3snT
Dip Angle: 66.90°
Date: 5/21/2018
Model: HDGM

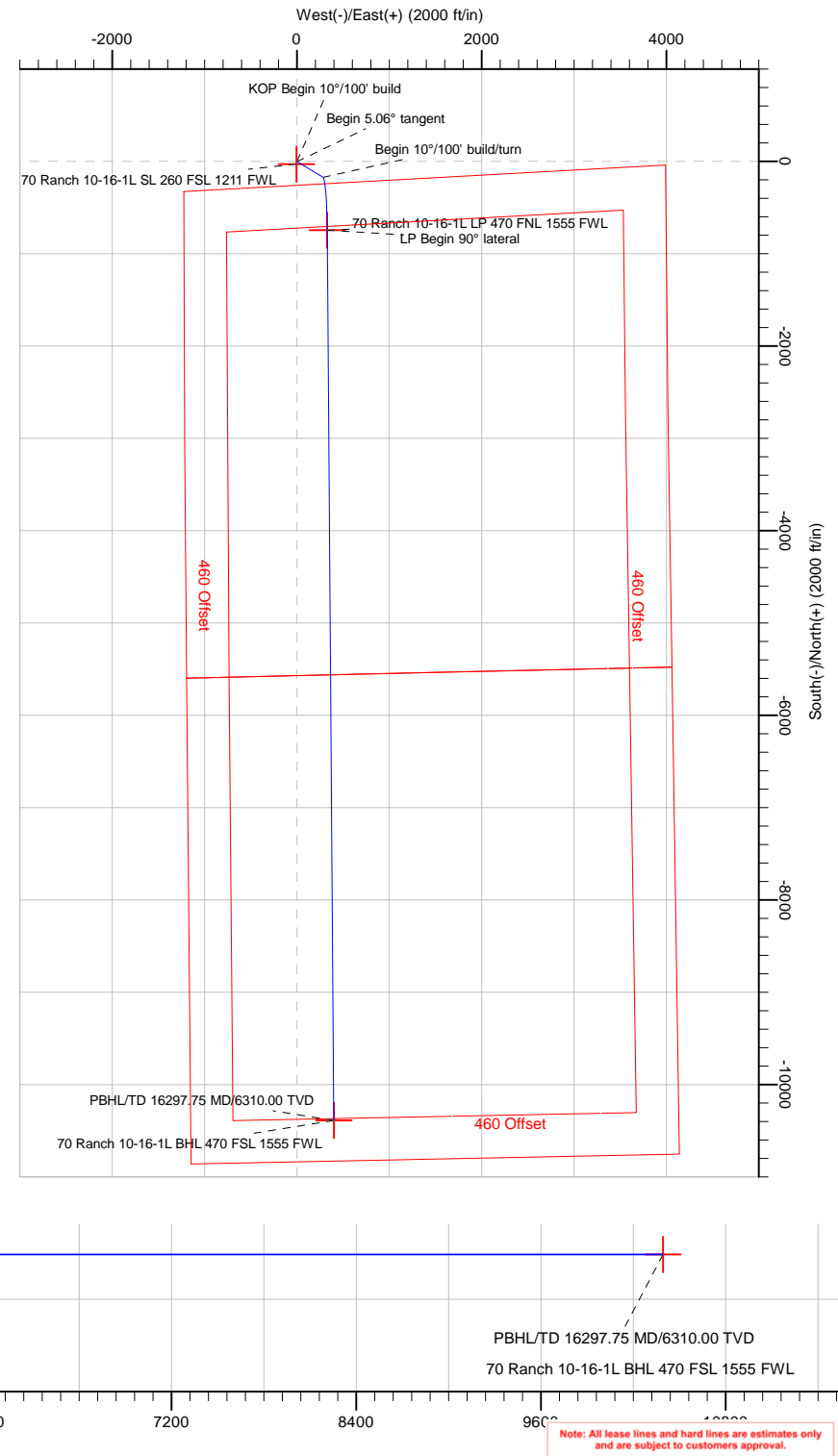
70 Ranch 10-16-1L Surf loc: 260 FSL 1211 FWL Section 03-T04N-R63W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4596+24 @ 4620.00ft			
Northing	Easting	Latitude	Longitude
14649145.45	1799405.98	40.33475027	-104.42949023

Azimuth Corrections:

To convert a Magnetic Direction to a True Direction, Add 8.10° East



Date: 2:57, May 21 2018



Note: All lease lines and hard lines are estimates only and are subject to customers approval.

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 03-T04N-R63W			
Site Position:		Northing:	14,650,244.32 usft	Latitude:	40.33774036
From:	Map	Easting:	1,800,940.24 usft	Longitude:	-104.42395937
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	70 Ranch 10-16-1L, Surf loc: 260 FSL 1211 FWL Section 03-T04N-R63W					
Well Position	+N/-S	-1,088.86 ft	Northing:	14,649,145.45 usft	Latitude:	40.33475026
	+E/-W	-1,541.38 ft	Easting:	1,799,405.98 usft	Longitude:	-104.42949024
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,596.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.30000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	177.79

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,297.75	plan1 (Original Hole)	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,050.56	5.06	120.92	2,050.50	-1.15	1.91	10.00	10.00	0.00	120.92	
5,779.45	5.06	120.92	5,764.87	-170.04	283.85	0.00	0.00	0.00	0.00	
6,653.16	90.00	179.58	6,310.00	-742.08	329.29	10.00	9.72	6.71	58.75	70 Ranch 10-16-1L LI
16,297.75	90.00	179.58	6,310.00	-10,386.40	400.80	0.00	0.00	0.00	0.00	70 Ranch 10-16-1L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned 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)
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
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 10°/100' build									
2,050.56	5.06	120.92	2,050.50	-1.15	1.91	1.22	10.00	10.00	0.00
Begin 5.06° tangent									
2,100.00	5.06	120.92	2,099.74	-3.39	5.65	3.60	0.00	0.00	0.00
2,200.00	5.06	120.92	2,199.35	-7.91	13.21	8.42	0.00	0.00	0.00
2,300.00	5.06	120.92	2,298.96	-12.44	20.77	13.24	0.00	0.00	0.00
2,400.00	5.06	120.92	2,398.57	-16.97	28.33	18.05	0.00	0.00	0.00
2,500.00	5.06	120.92	2,498.19	-21.50	35.89	22.87	0.00	0.00	0.00
2,600.00	5.06	120.92	2,597.80	-26.03	43.46	27.69	0.00	0.00	0.00
2,700.00	5.06	120.92	2,697.41	-30.56	51.02	32.51	0.00	0.00	0.00
2,800.00	5.06	120.92	2,797.02	-35.09	58.58	37.32	0.00	0.00	0.00
2,900.00	5.06	120.92	2,896.63	-39.62	66.14	42.14	0.00	0.00	0.00
3,000.00	5.06	120.92	2,996.24	-44.15	73.70	46.96	0.00	0.00	0.00
3,100.00	5.06	120.92	3,095.85	-48.68	81.26	51.78	0.00	0.00	0.00
3,200.00	5.06	120.92	3,195.46	-53.21	88.82	56.59	0.00	0.00	0.00
3,300.00	5.06	120.92	3,295.07	-57.74	96.38	61.41	0.00	0.00	0.00
3,400.00	5.06	120.92	3,394.68	-62.27	103.94	66.23	0.00	0.00	0.00
3,500.00	5.06	120.92	3,494.29	-66.80	111.50	71.05	0.00	0.00	0.00
3,600.00	5.06	120.92	3,593.90	-71.33	119.06	75.86	0.00	0.00	0.00
3,700.00	5.06	120.92	3,693.52	-75.86	126.62	80.68	0.00	0.00	0.00
3,800.00	5.06	120.92	3,793.13	-80.38	134.19	85.50	0.00	0.00	0.00
3,900.00	5.06	120.92	3,892.74	-84.91	141.75	90.32	0.00	0.00	0.00
4,000.00	5.06	120.92	3,992.35	-89.44	149.31	95.13	0.00	0.00	0.00
4,100.00	5.06	120.92	4,091.96	-93.97	156.87	99.95	0.00	0.00	0.00
4,200.00	5.06	120.92	4,191.57	-98.50	164.43	104.77	0.00	0.00	0.00
4,300.00	5.06	120.92	4,291.18	-103.03	171.99	109.59	0.00	0.00	0.00
4,400.00	5.06	120.92	4,390.79	-107.56	179.55	114.40	0.00	0.00	0.00
4,500.00	5.06	120.92	4,490.40	-112.09	187.11	119.22	0.00	0.00	0.00
4,600.00	5.06	120.92	4,590.01	-116.62	194.67	124.04	0.00	0.00	0.00
4,700.00	5.06	120.92	4,689.62	-121.15	202.23	128.86	0.00	0.00	0.00
4,800.00	5.06	120.92	4,789.23	-125.68	209.79	133.68	0.00	0.00	0.00
4,900.00	5.06	120.92	4,888.85	-130.21	217.36	138.49	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned 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)
5,000.00	5.06	120.92	4,988.46	-134.74	224.92	143.31	0.00	0.00	0.00
5,100.00	5.06	120.92	5,088.07	-139.27	232.48	148.13	0.00	0.00	0.00
5,200.00	5.06	120.92	5,187.68	-143.80	240.04	152.95	0.00	0.00	0.00
5,300.00	5.06	120.92	5,287.29	-148.33	247.60	157.76	0.00	0.00	0.00
5,400.00	5.06	120.92	5,386.90	-152.86	255.16	162.58	0.00	0.00	0.00
5,500.00	5.06	120.92	5,486.51	-157.38	262.72	167.40	0.00	0.00	0.00
5,600.00	5.06	120.92	5,586.12	-161.91	270.28	172.22	0.00	0.00	0.00
5,700.00	5.06	120.92	5,685.73	-166.44	277.84	177.03	0.00	0.00	0.00
5,779.45	5.06	120.92	5,764.87	-170.04	283.85	180.86	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,800.00	6.37	136.97	5,785.32	-171.34	285.40	182.22	10.00	6.39	78.06
5,900.00	15.29	163.53	5,883.49	-188.08	292.95	199.24	10.00	8.92	26.56
6,000.00	25.04	170.26	5,977.26	-221.67	300.28	233.09	10.00	9.74	6.73
6,100.00	34.92	173.36	6,063.78	-271.08	307.19	282.72	10.00	9.88	3.10
6,200.00	44.85	175.22	6,140.42	-334.81	313.45	346.65	10.00	9.93	1.86
6,300.00	54.80	176.52	6,204.86	-410.92	318.88	422.91	10.00	9.95	1.30
6,400.00	64.76	177.53	6,255.13	-497.11	323.32	509.20	10.00	9.96	1.01
6,500.00	74.73	178.39	6,289.71	-590.74	326.63	602.90	10.00	9.97	0.86
6,600.00	84.70	179.17	6,307.54	-688.99	328.71	701.15	10.00	9.97	0.78
6,653.16	90.00	179.58	6,310.00	-742.08	329.29	754.22	10.00	9.97	0.76
LP Begin 90° lateral									
6,700.00	90.00	179.58	6,310.00	-788.91	329.63	801.03	0.00	0.00	0.00
6,800.00	90.00	179.58	6,310.00	-888.91	330.37	900.99	0.00	0.00	0.00
6,900.00	90.00	179.58	6,310.00	-988.90	331.12	1,000.94	0.00	0.00	0.00
7,000.00	90.00	179.58	6,310.00	-1,088.90	331.86	1,100.89	0.00	0.00	0.00
7,100.00	90.00	179.58	6,310.00	-1,188.90	332.60	1,200.84	0.00	0.00	0.00
7,200.00	90.00	179.58	6,310.00	-1,288.90	333.34	1,300.79	0.00	0.00	0.00
7,300.00	90.00	179.58	6,310.00	-1,388.89	334.08	1,400.74	0.00	0.00	0.00
7,400.00	90.00	179.58	6,310.00	-1,488.89	334.82	1,500.69	0.00	0.00	0.00
7,500.00	90.00	179.58	6,310.00	-1,588.89	335.56	1,600.65	0.00	0.00	0.00
7,600.00	90.00	179.58	6,310.00	-1,688.89	336.31	1,700.60	0.00	0.00	0.00
7,700.00	90.00	179.58	6,310.00	-1,788.88	337.05	1,800.55	0.00	0.00	0.00
7,800.00	90.00	179.58	6,310.00	-1,888.88	337.79	1,900.50	0.00	0.00	0.00
7,900.00	90.00	179.58	6,310.00	-1,988.88	338.53	2,000.45	0.00	0.00	0.00
8,000.00	90.00	179.58	6,310.00	-2,088.87	339.27	2,100.40	0.00	0.00	0.00
8,100.00	90.00	179.58	6,310.00	-2,188.87	340.01	2,200.35	0.00	0.00	0.00
8,200.00	90.00	179.58	6,310.00	-2,288.87	340.75	2,300.31	0.00	0.00	0.00
8,300.00	90.00	179.58	6,310.00	-2,388.87	341.50	2,400.26	0.00	0.00	0.00
8,400.00	90.00	179.58	6,310.00	-2,488.86	342.24	2,500.21	0.00	0.00	0.00
8,500.00	90.00	179.58	6,310.00	-2,588.86	342.98	2,600.16	0.00	0.00	0.00
8,600.00	90.00	179.58	6,310.00	-2,688.86	343.72	2,700.11	0.00	0.00	0.00
8,700.00	90.00	179.58	6,310.00	-2,788.86	344.46	2,800.06	0.00	0.00	0.00
8,800.00	90.00	179.58	6,310.00	-2,888.85	345.20	2,900.02	0.00	0.00	0.00
8,900.00	90.00	179.58	6,310.00	-2,988.85	345.94	2,999.97	0.00	0.00	0.00
9,000.00	90.00	179.58	6,310.00	-3,088.85	346.69	3,099.92	0.00	0.00	0.00
9,100.00	90.00	179.58	6,310.00	-3,188.84	347.43	3,199.87	0.00	0.00	0.00
9,200.00	90.00	179.58	6,310.00	-3,288.84	348.17	3,299.82	0.00	0.00	0.00
9,300.00	90.00	179.58	6,310.00	-3,388.84	348.91	3,399.77	0.00	0.00	0.00
9,400.00	90.00	179.58	6,310.00	-3,488.84	349.65	3,499.72	0.00	0.00	0.00
9,500.00	90.00	179.58	6,310.00	-3,588.83	350.39	3,599.68	0.00	0.00	0.00
9,600.00	90.00	179.58	6,310.00	-3,688.83	351.13	3,699.63	0.00	0.00	0.00
9,700.00	90.00	179.58	6,310.00	-3,788.83	351.88	3,799.58	0.00	0.00	0.00
9,800.00	90.00	179.58	6,310.00	-3,888.83	352.62	3,899.53	0.00	0.00	0.00
9,900.00	90.00	179.58	6,310.00	-3,988.82	353.36	3,999.48	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned 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)
10,000.00	90.00	179.58	6,310.00	-4,088.82	354.10	4,099.43	0.00	0.00	0.00
10,100.00	90.00	179.58	6,310.00	-4,188.82	354.84	4,199.38	0.00	0.00	0.00
10,200.00	90.00	179.58	6,310.00	-4,288.81	355.58	4,299.34	0.00	0.00	0.00
10,300.00	90.00	179.58	6,310.00	-4,388.81	356.32	4,399.29	0.00	0.00	0.00
10,400.00	90.00	179.58	6,310.00	-4,488.81	357.07	4,499.24	0.00	0.00	0.00
10,500.00	90.00	179.58	6,310.00	-4,588.81	357.81	4,599.19	0.00	0.00	0.00
10,600.00	90.00	179.58	6,310.00	-4,688.80	358.55	4,699.14	0.00	0.00	0.00
10,700.00	90.00	179.58	6,310.00	-4,788.80	359.29	4,799.09	0.00	0.00	0.00
10,800.00	90.00	179.58	6,310.00	-4,888.80	360.03	4,899.04	0.00	0.00	0.00
10,900.00	90.00	179.58	6,310.00	-4,988.80	360.77	4,999.00	0.00	0.00	0.00
11,000.00	90.00	179.58	6,310.00	-5,088.79	361.52	5,098.95	0.00	0.00	0.00
11,100.00	90.00	179.58	6,310.00	-5,188.79	362.26	5,198.90	0.00	0.00	0.00
11,200.00	90.00	179.58	6,310.00	-5,288.79	363.00	5,298.85	0.00	0.00	0.00
11,300.00	90.00	179.58	6,310.00	-5,388.78	363.74	5,398.80	0.00	0.00	0.00
11,400.00	90.00	179.58	6,310.00	-5,488.78	364.48	5,498.75	0.00	0.00	0.00
11,500.00	90.00	179.58	6,310.00	-5,588.78	365.22	5,598.71	0.00	0.00	0.00
11,600.00	90.00	179.58	6,310.00	-5,688.78	365.96	5,698.66	0.00	0.00	0.00
11,700.00	90.00	179.58	6,310.00	-5,788.77	366.71	5,798.61	0.00	0.00	0.00
11,800.00	90.00	179.58	6,310.00	-5,888.77	367.45	5,898.56	0.00	0.00	0.00
11,900.00	90.00	179.58	6,310.00	-5,988.77	368.19	5,998.51	0.00	0.00	0.00
12,000.00	90.00	179.58	6,310.00	-6,088.76	368.93	6,098.46	0.00	0.00	0.00
12,100.00	90.00	179.58	6,310.00	-6,188.76	369.67	6,198.41	0.00	0.00	0.00
12,200.00	90.00	179.58	6,310.00	-6,288.76	370.41	6,298.37	0.00	0.00	0.00
12,300.00	90.00	179.58	6,310.00	-6,388.76	371.15	6,398.32	0.00	0.00	0.00
12,400.00	90.00	179.58	6,310.00	-6,488.75	371.90	6,498.27	0.00	0.00	0.00
12,500.00	90.00	179.58	6,310.00	-6,588.75	372.64	6,598.22	0.00	0.00	0.00
12,600.00	90.00	179.58	6,310.00	-6,688.75	373.38	6,698.17	0.00	0.00	0.00
12,700.00	90.00	179.58	6,310.00	-6,788.75	374.12	6,798.12	0.00	0.00	0.00
12,800.00	90.00	179.58	6,310.00	-6,888.74	374.86	6,898.07	0.00	0.00	0.00
12,900.00	90.00	179.58	6,310.00	-6,988.74	375.60	6,998.03	0.00	0.00	0.00
13,000.00	90.00	179.58	6,310.00	-7,088.74	376.34	7,097.98	0.00	0.00	0.00
13,100.00	90.00	179.58	6,310.00	-7,188.73	377.09	7,197.93	0.00	0.00	0.00
13,200.00	90.00	179.58	6,310.00	-7,288.73	377.83	7,297.88	0.00	0.00	0.00
13,300.00	90.00	179.58	6,310.00	-7,388.73	378.57	7,397.83	0.00	0.00	0.00
13,400.00	90.00	179.58	6,310.00	-7,488.73	379.31	7,497.78	0.00	0.00	0.00
13,500.00	90.00	179.58	6,310.00	-7,588.72	380.05	7,597.73	0.00	0.00	0.00
13,600.00	90.00	179.58	6,310.00	-7,688.72	380.79	7,697.69	0.00	0.00	0.00
13,700.00	90.00	179.58	6,310.00	-7,788.72	381.53	7,797.64	0.00	0.00	0.00
13,800.00	90.00	179.58	6,310.00	-7,888.72	382.28	7,897.59	0.00	0.00	0.00
13,900.00	90.00	179.58	6,310.00	-7,988.71	383.02	7,997.54	0.00	0.00	0.00
14,000.00	90.00	179.58	6,310.00	-8,088.71	383.76	8,097.49	0.00	0.00	0.00
14,100.00	90.00	179.58	6,310.00	-8,188.71	384.50	8,197.44	0.00	0.00	0.00
14,200.00	90.00	179.58	6,310.00	-8,288.70	385.24	8,297.39	0.00	0.00	0.00
14,300.00	90.00	179.58	6,310.00	-8,388.70	385.98	8,397.35	0.00	0.00	0.00
14,400.00	90.00	179.58	6,310.00	-8,488.70	386.72	8,497.30	0.00	0.00	0.00
14,500.00	90.00	179.58	6,310.00	-8,588.70	387.47	8,597.25	0.00	0.00	0.00
14,600.00	90.00	179.58	6,310.00	-8,688.69	388.21	8,697.20	0.00	0.00	0.00
14,700.00	90.00	179.58	6,310.00	-8,788.69	388.95	8,797.15	0.00	0.00	0.00
14,800.00	90.00	179.58	6,310.00	-8,888.69	389.69	8,897.10	0.00	0.00	0.00
14,900.00	90.00	179.58	6,310.00	-8,988.69	390.43	8,997.06	0.00	0.00	0.00
15,000.00	90.00	179.58	6,310.00	-9,088.68	391.17	9,097.01	0.00	0.00	0.00
15,100.00	90.00	179.58	6,310.00	-9,188.68	391.91	9,196.96	0.00	0.00	0.00
15,200.00	90.00	179.58	6,310.00	-9,288.68	392.66	9,296.91	0.00	0.00	0.00
15,300.00	90.00	179.58	6,310.00	-9,388.67	393.40	9,396.86	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned 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)
15,400.00	90.00	179.58	6,310.00	-9,488.67	394.14	9,496.81	0.00	0.00	0.00
15,500.00	90.00	179.58	6,310.00	-9,588.67	394.88	9,596.76	0.00	0.00	0.00
15,600.00	90.00	179.58	6,310.00	-9,688.67	395.62	9,696.72	0.00	0.00	0.00
15,700.00	90.00	179.58	6,310.00	-9,788.66	396.36	9,796.67	0.00	0.00	0.00
15,800.00	90.00	179.58	6,310.00	-9,888.66	397.11	9,896.62	0.00	0.00	0.00
15,900.00	90.00	179.58	6,310.00	-9,988.66	397.85	9,996.57	0.00	0.00	0.00
16,000.00	90.00	179.58	6,310.00	-10,088.65	398.59	10,096.52	0.00	0.00	0.00
16,100.00	90.00	179.58	6,310.00	-10,188.65	399.33	10,196.47	0.00	0.00	0.00
16,200.00	90.00	179.58	6,310.00	-10,288.65	400.07	10,296.42	0.00	0.00	0.00
16,297.75	90.00	179.58	6,310.00	-10,386.40	400.80	10,394.13	0.00	0.00	0.00
PBHL/TD 16297.75 MD/6310.00 TVD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
70 Ranch 10-16-1L SL 2 - plan misses target center by 29.52ft at 24.00ft MD (24.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.37	24.00	-29.27	-3.79	14,649,116.15	1,799,402.38	40.33466988	-104.42950383
70 Ranch 10-16-1L LP 4 - plan hits target center - Point	0.00	0.37	6,310.00	-742.08	329.29	14,648,405.51	1,799,740.04	40.33271255	-104.42830871
70 Ranch 10-16-1L BHL - plan hits target center - Point	0.00	0.37	6,310.00	-10,386.40	400.80	14,638,761.87	1,799,873.71	40.30622968	-104.42805260

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	KOP Begin 10°/100' build
2,050.56	2,050.50	-1.15	1.91	Begin 5.06° tangent
5,779.45	5,764.87	-170.04	283.85	Begin 10°/100' build/turn
6,653.16	6,310.00	-742.08	329.29	LP Begin 90° lateral
16,297.75	6,310.00	-10,386.40	400.80	PBHL/TD 16297.75 MD/6310.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 03-T04N-R63W			
Site Position:		Northing:	14,650,244.32 usft	Latitude:	40.33774036
From:	Map	Easting:	1,800,940.24 usft	Longitude:	-104.42395937
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	70 Ranch 10-16-1L, Surf loc: 260 FSL 1211 FWL Section 03-T04N-R63W					
Well Position	+N/-S	0.00 ft	Northing:	14,649,145.45 usft	Latitude:	40.33475026
	+E/-W	0.00 ft	Easting:	1,799,405.98 usft	Longitude:	-104.42949024
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,596.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.30000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	177.79

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,297.75 plan1 (Original Hole)		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,050.56	5.06	120.92	2,050.50	-1.15	1.91	10.00	10.00	0.00	120.92	
5,779.45	5.06	120.92	5,764.87	-170.04	283.85	0.00	0.00	0.00	0.00	
6,653.16	90.00	179.58	6,310.00	-742.08	329.29	10.00	9.72	6.71	58.75	70 Ranch 10-16-1L LI
16,297.75	90.00	179.58	6,310.00	-10,386.40	400.80	0.00	0.00	0.00	0.00	70 Ranch 10-16-1L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
100.00	0.00	0.00	100.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
200.00	0.00	0.00	200.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
300.00	0.00	0.00	300.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
400.00	0.00	0.00	400.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
500.00	0.00	0.00	500.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
600.00	0.00	0.00	600.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
700.00	0.00	0.00	700.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
800.00	0.00	0.00	800.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
900.00	0.00	0.00	900.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,649,145.45	1,799,405.98	40.33475026	-104.42949024
KOP Begin 10°/100' build									
2,050.56	5.06	120.92	2,050.50	-1.15	1.91	14,649,144.31	1,799,407.90	40.33474712	-104.42948337
Begin 5.06° tangent									
2,100.00	5.06	120.92	2,099.74	-3.39	5.65	14,649,142.10	1,799,411.65	40.33474097	-104.42946996
2,200.00	5.06	120.92	2,199.35	-7.91	13.21	14,649,137.62	1,799,419.24	40.33472853	-104.42944283
2,300.00	5.06	120.92	2,298.96	-12.44	20.77	14,649,133.14	1,799,426.83	40.33471609	-104.42941570
2,400.00	5.06	120.92	2,398.57	-16.97	28.33	14,649,128.66	1,799,434.42	40.33470366	-104.42938857
2,500.00	5.06	120.92	2,498.19	-21.50	35.89	14,649,124.18	1,799,442.01	40.33469122	-104.42936144
2,600.00	5.06	120.92	2,597.80	-26.03	43.46	14,649,119.70	1,799,449.60	40.33467878	-104.42933431
2,700.00	5.06	120.92	2,697.41	-30.56	51.02	14,649,115.22	1,799,457.19	40.33466634	-104.42930718
2,800.00	5.06	120.92	2,797.02	-35.09	58.58	14,649,110.73	1,799,464.78	40.33465391	-104.42928005
2,900.00	5.06	120.92	2,896.63	-39.62	66.14	14,649,106.25	1,799,472.37	40.33464147	-104.42925292
3,000.00	5.06	120.92	2,996.24	-44.15	73.70	14,649,101.77	1,799,479.96	40.33462903	-104.42922579
3,100.00	5.06	120.92	3,095.85	-48.68	81.26	14,649,097.29	1,799,487.55	40.33461659	-104.42919866
3,200.00	5.06	120.92	3,195.46	-53.21	88.82	14,649,092.81	1,799,495.14	40.33460416	-104.42917153
3,300.00	5.06	120.92	3,295.07	-57.74	96.38	14,649,088.33	1,799,502.73	40.33459172	-104.42914440
3,400.00	5.06	120.92	3,394.68	-62.27	103.94	14,649,083.85	1,799,510.32	40.33457928	-104.42911727
3,500.00	5.06	120.92	3,494.29	-66.80	111.50	14,649,079.37	1,799,517.91	40.33456684	-104.42909014
3,600.00	5.06	120.92	3,593.90	-71.33	119.06	14,649,074.89	1,799,525.50	40.33455441	-104.42906301
3,700.00	5.06	120.92	3,693.52	-75.86	126.62	14,649,070.41	1,799,533.09	40.33454197	-104.42903587
3,800.00	5.06	120.92	3,793.13	-80.38	134.19	14,649,065.93	1,799,540.68	40.33452953	-104.42900874
3,900.00	5.06	120.92	3,892.74	-84.91	141.75	14,649,061.45	1,799,548.27	40.33451709	-104.42898161
4,000.00	5.06	120.92	3,992.35	-89.44	149.31	14,649,056.97	1,799,555.86	40.33450465	-104.42895448
4,100.00	5.06	120.92	4,091.96	-93.97	156.87	14,649,052.49	1,799,563.45	40.33449222	-104.42892735
4,200.00	5.06	120.92	4,191.57	-98.50	164.43	14,649,048.01	1,799,571.04	40.33447978	-104.42890022
4,300.00	5.06	120.92	4,291.18	-103.03	171.99	14,649,043.53	1,799,578.63	40.33446734	-104.42887309
4,400.00	5.06	120.92	4,390.79	-107.56	179.55	14,649,039.05	1,799,586.22	40.33445490	-104.42884596
4,500.00	5.06	120.92	4,490.40	-112.09	187.11	14,649,034.57	1,799,593.81	40.33444247	-104.42881883
4,600.00	5.06	120.92	4,590.01	-116.62	194.67	14,649,030.08	1,799,601.40	40.33443003	-104.42879170
4,700.00	5.06	120.92	4,689.62	-121.15	202.23	14,649,025.60	1,799,608.99	40.33441759	-104.42876457
4,800.00	5.06	120.92	4,789.23	-125.68	209.79	14,649,021.12	1,799,616.58	40.33440515	-104.42873744
4,900.00	5.06	120.92	4,888.85	-130.21	217.36	14,649,016.64	1,799,624.17	40.33439272	-104.42871031
5,000.00	5.06	120.92	4,988.46	-134.74	224.92	14,649,012.16	1,799,631.76	40.33438028	-104.42868318

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	5.06	120.92	5,088.07	-139.27	232.48	14,649,007.68	1,799,639.35	40.33436784	-104.42865605
5,200.00	5.06	120.92	5,187.68	-143.80	240.04	14,649,003.20	1,799,646.94	40.33435540	-104.42862892
5,300.00	5.06	120.92	5,287.29	-148.33	247.60	14,648,998.72	1,799,654.53	40.33434296	-104.42860179
5,400.00	5.06	120.92	5,386.90	-152.86	255.16	14,648,994.24	1,799,662.12	40.33433053	-104.42857466
5,500.00	5.06	120.92	5,486.51	-157.38	262.72	14,648,989.76	1,799,669.71	40.33431809	-104.42854753
5,600.00	5.06	120.92	5,586.12	-161.91	270.28	14,648,985.28	1,799,677.30	40.33430565	-104.42852040
5,700.00	5.06	120.92	5,685.73	-166.44	277.84	14,648,980.80	1,799,684.89	40.33429321	-104.42849327
5,779.45	5.06	120.92	5,764.87	-170.04	283.85	14,648,977.24	1,799,690.92	40.33428333	-104.42847172
Begin 10°/100' build/turn									
5,800.00	6.37	136.97	5,785.32	-171.34	285.40	14,648,975.95	1,799,692.48	40.33427977	-104.42846614
5,900.00	15.29	163.53	5,883.49	-188.08	292.95	14,648,959.25	1,799,700.13	40.33423379	-104.42843907
6,000.00	25.04	170.26	5,977.26	-221.67	300.28	14,648,925.72	1,799,707.68	40.33414156	-104.42841276
6,100.00	34.92	173.36	6,063.78	-271.08	307.19	14,648,876.35	1,799,714.91	40.33400589	-104.42838798
6,200.00	44.85	175.22	6,140.42	-334.81	313.45	14,648,812.67	1,799,721.58	40.33383089	-104.42836551
6,300.00	54.80	176.52	6,204.86	-410.92	318.88	14,648,736.59	1,799,727.51	40.33362189	-104.42834602
6,400.00	64.76	177.53	6,255.13	-497.11	323.32	14,648,650.44	1,799,732.50	40.33338523	-104.42833010
6,500.00	74.73	178.39	6,289.71	-590.74	326.63	14,648,556.82	1,799,736.41	40.33312810	-104.42831823
6,600.00	84.70	179.17	6,307.54	-688.99	328.71	14,648,458.59	1,799,739.12	40.33285832	-104.42831079
6,653.16	90.00	179.58	6,310.00	-742.08	329.29	14,648,405.51	1,799,740.04	40.33271255	-104.42830871
LP Begin 90° lateral									
6,700.00	90.00	179.58	6,310.00	-788.91	329.63	14,648,358.68	1,799,740.69	40.33258395	-104.42830747
6,800.00	90.00	179.58	6,310.00	-888.91	330.37	14,648,258.69	1,799,742.08	40.33230936	-104.42830481
6,900.00	90.00	179.58	6,310.00	-988.90	331.12	14,648,158.70	1,799,743.46	40.33203478	-104.42830216
7,000.00	90.00	179.58	6,310.00	-1,088.90	331.86	14,648,058.71	1,799,744.85	40.33176019	-104.42829950
7,100.00	90.00	179.58	6,310.00	-1,188.90	332.60	14,647,958.72	1,799,746.23	40.33148560	-104.42829684
7,200.00	90.00	179.58	6,310.00	-1,288.90	333.34	14,647,858.73	1,799,747.62	40.33121101	-104.42829419
7,300.00	90.00	179.58	6,310.00	-1,388.89	334.08	14,647,758.74	1,799,749.01	40.33093643	-104.42829153
7,400.00	90.00	179.58	6,310.00	-1,488.89	334.82	14,647,658.75	1,799,750.39	40.33066184	-104.42828888
7,500.00	90.00	179.58	6,310.00	-1,588.89	335.56	14,647,558.76	1,799,751.78	40.33038725	-104.42828622
7,600.00	90.00	179.58	6,310.00	-1,688.89	336.31	14,647,458.77	1,799,753.16	40.33011266	-104.42828357
7,700.00	90.00	179.58	6,310.00	-1,788.88	337.05	14,647,358.78	1,799,754.55	40.32983807	-104.42828091
7,800.00	90.00	179.58	6,310.00	-1,888.88	337.79	14,647,258.79	1,799,755.94	40.32956349	-104.42827825
7,900.00	90.00	179.58	6,310.00	-1,988.88	338.53	14,647,158.80	1,799,757.32	40.32928890	-104.42827560
8,000.00	90.00	179.58	6,310.00	-2,088.87	339.27	14,647,058.81	1,799,758.71	40.32901431	-104.42827294
8,100.00	90.00	179.58	6,310.00	-2,188.87	340.01	14,646,958.82	1,799,760.09	40.32873972	-104.42827029
8,200.00	90.00	179.58	6,310.00	-2,288.87	340.75	14,646,858.83	1,799,761.48	40.32846514	-104.42826763
8,300.00	90.00	179.58	6,310.00	-2,388.87	341.50	14,646,758.84	1,799,762.87	40.32819055	-104.42826497
8,400.00	90.00	179.58	6,310.00	-2,488.86	342.24	14,646,658.85	1,799,764.25	40.32791596	-104.42826232
8,500.00	90.00	179.58	6,310.00	-2,588.86	342.98	14,646,558.86	1,799,765.64	40.32764137	-104.42825966
8,600.00	90.00	179.58	6,310.00	-2,688.86	343.72	14,646,458.87	1,799,767.02	40.32736679	-104.42825701
8,700.00	90.00	179.58	6,310.00	-2,788.86	344.46	14,646,358.88	1,799,768.41	40.32709220	-104.42825435
8,800.00	90.00	179.58	6,310.00	-2,888.85	345.20	14,646,258.89	1,799,769.79	40.32681761	-104.42825170
8,900.00	90.00	179.58	6,310.00	-2,988.85	345.94	14,646,158.90	1,799,771.18	40.32654302	-104.42824904
9,000.00	90.00	179.58	6,310.00	-3,088.85	346.69	14,646,058.91	1,799,772.57	40.32626843	-104.42824638
9,100.00	90.00	179.58	6,310.00	-3,188.84	347.43	14,645,958.91	1,799,773.95	40.32599385	-104.42824373
9,200.00	90.00	179.58	6,310.00	-3,288.84	348.17	14,645,858.92	1,799,775.34	40.32571926	-104.42824107
9,300.00	90.00	179.58	6,310.00	-3,388.84	348.91	14,645,758.93	1,799,776.72	40.32544467	-104.42823842
9,400.00	90.00	179.58	6,310.00	-3,488.84	349.65	14,645,658.94	1,799,778.11	40.32517008	-104.42823576
9,500.00	90.00	179.58	6,310.00	-3,588.83	350.39	14,645,558.95	1,799,779.50	40.32489550	-104.42823311
9,600.00	90.00	179.58	6,310.00	-3,688.83	351.13	14,645,458.96	1,799,780.88	40.32462091	-104.42823045
9,700.00	90.00	179.58	6,310.00	-3,788.83	351.88	14,645,358.97	1,799,782.27	40.32434632	-104.42822779
9,800.00	90.00	179.58	6,310.00	-3,888.83	352.62	14,645,258.98	1,799,783.65	40.32407173	-104.42822514
9,900.00	90.00	179.58	6,310.00	-3,988.82	353.36	14,645,158.99	1,799,785.04	40.32379714	-104.42822248
10,000.00	90.00	179.58	6,310.00	-4,088.82	354.10	14,645,059.00	1,799,786.43	40.32352256	-104.42821983

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.00	90.00	179.58	6,310.00	-4,188.82	354.84	14,644,959.01	1,799,787.81	40.32324797	-104.42821717
10,200.00	90.00	179.58	6,310.00	-4,288.81	355.58	14,644,859.02	1,799,789.20	40.32297338	-104.42821452
10,300.00	90.00	179.58	6,310.00	-4,388.81	356.32	14,644,759.03	1,799,790.58	40.32269879	-104.42821186
10,400.00	90.00	179.58	6,310.00	-4,488.81	357.07	14,644,659.04	1,799,791.97	40.32242420	-104.42820921
10,500.00	90.00	179.58	6,310.00	-4,588.81	357.81	14,644,559.05	1,799,793.36	40.32214962	-104.42820655
10,600.00	90.00	179.58	6,310.00	-4,688.80	358.55	14,644,459.06	1,799,794.74	40.32187503	-104.42820389
10,700.00	90.00	179.58	6,310.00	-4,788.80	359.29	14,644,359.07	1,799,796.13	40.32160044	-104.42820124
10,800.00	90.00	179.58	6,310.00	-4,888.80	360.03	14,644,259.08	1,799,797.51	40.32132585	-104.42819858
10,900.00	90.00	179.58	6,310.00	-4,988.80	360.77	14,644,159.09	1,799,798.90	40.32105126	-104.42819593
11,000.00	90.00	179.58	6,310.00	-5,088.79	361.52	14,644,059.10	1,799,800.29	40.32077668	-104.42819327
11,100.00	90.00	179.58	6,310.00	-5,188.79	362.26	14,643,959.11	1,799,801.67	40.32050209	-104.42819062
11,200.00	90.00	179.58	6,310.00	-5,288.79	363.00	14,643,859.12	1,799,803.06	40.32022750	-104.42818796
11,300.00	90.00	179.58	6,310.00	-5,388.78	363.74	14,643,759.13	1,799,804.44	40.31995291	-104.42818531
11,400.00	90.00	179.58	6,310.00	-5,488.78	364.48	14,643,659.14	1,799,805.83	40.31967832	-104.42818265
11,500.00	90.00	179.58	6,310.00	-5,588.78	365.22	14,643,559.15	1,799,807.22	40.31940374	-104.42817999
11,600.00	90.00	179.58	6,310.00	-5,688.78	365.96	14,643,459.16	1,799,808.60	40.31912915	-104.42817734
11,700.00	90.00	179.58	6,310.00	-5,788.77	366.71	14,643,359.17	1,799,809.99	40.31885456	-104.42817468
11,800.00	90.00	179.58	6,310.00	-5,888.77	367.45	14,643,259.18	1,799,811.37	40.31857997	-104.42817203
11,900.00	90.00	179.58	6,310.00	-5,988.77	368.19	14,643,159.19	1,799,812.76	40.31830538	-104.42816937
12,000.00	90.00	179.58	6,310.00	-6,088.76	368.93	14,643,059.20	1,799,814.15	40.31803080	-104.42816672
12,100.00	90.00	179.58	6,310.00	-6,188.76	369.67	14,642,959.21	1,799,815.53	40.31775621	-104.42816406
12,200.00	90.00	179.58	6,310.00	-6,288.76	370.41	14,642,859.22	1,799,816.92	40.31748162	-104.42816141
12,300.00	90.00	179.58	6,310.00	-6,388.76	371.15	14,642,759.23	1,799,818.30	40.31720703	-104.42815875
12,400.00	90.00	179.58	6,310.00	-6,488.75	371.90	14,642,659.24	1,799,819.69	40.31693244	-104.42815610
12,500.00	90.00	179.58	6,310.00	-6,588.75	372.64	14,642,559.25	1,799,821.08	40.31665785	-104.42815344
12,600.00	90.00	179.58	6,310.00	-6,688.75	373.38	14,642,459.26	1,799,822.46	40.31638327	-104.42815078
12,700.00	90.00	179.58	6,310.00	-6,788.75	374.12	14,642,359.27	1,799,823.85	40.31610868	-104.42814813
12,800.00	90.00	179.58	6,310.00	-6,888.74	374.86	14,642,259.28	1,799,825.23	40.31583409	-104.42814547
12,900.00	90.00	179.58	6,310.00	-6,988.74	375.60	14,642,159.29	1,799,826.62	40.31555950	-104.42814282
13,000.00	90.00	179.58	6,310.00	-7,088.74	376.34	14,642,059.30	1,799,828.01	40.31528491	-104.42814016
13,100.00	90.00	179.58	6,310.00	-7,188.73	377.09	14,641,959.31	1,799,829.39	40.31501033	-104.42813751
13,200.00	90.00	179.58	6,310.00	-7,288.73	377.83	14,641,859.32	1,799,830.78	40.31473574	-104.42813485
13,300.00	90.00	179.58	6,310.00	-7,388.73	378.57	14,641,759.33	1,799,832.16	40.31446115	-104.42813220
13,400.00	90.00	179.58	6,310.00	-7,488.73	379.31	14,641,659.34	1,799,833.55	40.31418656	-104.42812954
13,500.00	90.00	179.58	6,310.00	-7,588.72	380.05	14,641,559.35	1,799,834.93	40.31391197	-104.42812689
13,600.00	90.00	179.58	6,310.00	-7,688.72	380.79	14,641,459.36	1,799,836.32	40.31363738	-104.42812423
13,700.00	90.00	179.58	6,310.00	-7,788.72	381.53	14,641,359.37	1,799,837.71	40.31336280	-104.42812158
13,800.00	90.00	179.58	6,310.00	-7,888.72	382.28	14,641,259.38	1,799,839.09	40.31308821	-104.42811892
13,900.00	90.00	179.58	6,310.00	-7,988.71	383.02	14,641,159.39	1,799,840.48	40.31281363	-104.42811626
14,000.00	90.00	179.58	6,310.00	-8,088.71	383.76	14,641,059.40	1,799,841.86	40.31253904	-104.42811361
14,100.00	90.00	179.58	6,310.00	-8,188.71	384.50	14,640,959.40	1,799,843.25	40.31226445	-104.42811095
14,200.00	90.00	179.58	6,310.00	-8,288.70	385.24	14,640,859.41	1,799,844.64	40.31198986	-104.42810830
14,300.00	90.00	179.58	6,310.00	-8,388.70	385.98	14,640,759.42	1,799,846.02	40.31171527	-104.42810564
14,400.00	90.00	179.58	6,310.00	-8,488.70	386.72	14,640,659.43	1,799,847.41	40.31144069	-104.42810299
14,500.00	90.00	179.58	6,310.00	-8,588.70	387.47	14,640,559.44	1,799,848.79	40.31116610	-104.42810033
14,600.00	90.00	179.58	6,310.00	-8,688.69	388.21	14,640,459.45	1,799,850.18	40.31089151	-104.42809768
14,700.00	90.00	179.58	6,310.00	-8,788.69	388.95	14,640,359.46	1,799,851.57	40.31061692	-104.42809502
14,800.00	90.00	179.58	6,310.00	-8,888.69	389.69	14,640,259.47	1,799,852.95	40.31034233	-104.42809237
14,900.00	90.00	179.58	6,310.00	-8,988.69	390.43	14,640,159.48	1,799,854.34	40.31006774	-104.42808971
15,000.00	90.00	179.58	6,310.00	-9,088.68	391.17	14,640,059.49	1,799,855.72	40.30979316	-104.42808706
15,100.00	90.00	179.58	6,310.00	-9,188.68	391.91	14,639,959.50	1,799,857.11	40.30951857	-104.42808440
15,200.00	90.00	179.58	6,310.00	-9,288.68	392.66	14,639,859.51	1,799,858.50	40.30924398	-104.42808175
15,300.00	90.00	179.58	6,310.00	-9,388.67	393.40	14,639,759.52	1,799,859.88	40.30896939	-104.42807909
15,400.00	90.00	179.58	6,310.00	-9,488.67	394.14	14,639,659.53	1,799,861.27	40.30869480	-104.42807644
15,500.00	90.00	179.58	6,310.00	-9,588.67	394.88	14,639,559.54	1,799,862.65	40.30842021	-104.42807378

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-16-1L
Company:	Confluence Resources	TVD Reference:	RKB=4596+24 @ 4620.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4596+24 @ 4620.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-16-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	90.00	179.58	6,310.00	-9,688.67	395.62	14,639,459.55	1,799,864.04	40.30814562	-104.42807113
15,700.00	90.00	179.58	6,310.00	-9,788.66	396.36	14,639,359.56	1,799,865.43	40.30787103	-104.42806847
15,800.00	90.00	179.58	6,310.00	-9,888.66	397.11	14,639,259.57	1,799,866.81	40.30759645	-104.42806582
15,900.00	90.00	179.58	6,310.00	-9,988.66	397.85	14,639,159.58	1,799,868.20	40.30732186	-104.42806316
16,000.00	90.00	179.58	6,310.00	-10,088.65	398.59	14,639,059.59	1,799,869.58	40.30704727	-104.42806051
16,100.00	90.00	179.58	6,310.00	-10,188.65	399.33	14,638,959.60	1,799,870.97	40.30677268	-104.42805785
16,200.00	90.00	179.58	6,310.00	-10,288.65	400.07	14,638,859.61	1,799,872.36	40.30649809	-104.42805520
16,297.75	90.00	179.58	6,310.00	-10,386.40	400.80	14,638,761.87	1,799,873.71	40.30622968	-104.42805260
PBHL/TD 16297.75 MD/6310.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
70 Ranch 10-16-1L SL 2	0.00	0.37	24.00	-29.27	-3.79	14,649,116.15	1,799,402.38	40.33466988	-104.42950383
- hit/miss target									
- plan misses target center by 29.52ft at 24.00ft MD (24.00 TVD, 0.00 N, 0.00 E)									
- Point									
70 Ranch 10-16-1L LP 4	0.00	0.37	6,310.00	-742.08	329.29	14,648,405.51	1,799,740.04	40.33271255	-104.42830871
- plan hits target center									
- Point									
70 Ranch 10-16-1L BHL	0.00	0.37	6,310.00	-10,386.40	400.80	14,638,761.87	1,799,873.71	40.30622968	-104.42805260
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	KOP Begin 10°/100' build
2,050.56	2,050.50	-1.15	1.91	Begin 5.06° tangent
5,779.45	5,764.87	-170.04	283.85	Begin 10°/100' build/turn
6,653.16	6,310.00	-742.08	329.29	LP Begin 90° lateral
16,297.75	6,310.00	-10,386.40	400.80	PBHL/TD 16297.75 MD/6310.00 TVD