

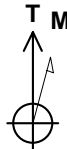
Weld County, Colorado
Section 03-T04N-R63W
70 Ranch 10-12-3L
plan1

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
70 Ranch 10-12-3L SL 260 FSL 1338 FWL	24.00	-29.27	-3.7914649123.97	1799529.65	40.33468910	-104.42904697	
70 Ranch 10-12-3L BHL 470 FSL 2423 FWL	6449.00	-10376.02	1141.3014638784.85	1800741.46	40.30627735	-104.42493973	
70 Ranch 10-12-3L LP 470 FNL 2412 FWL	6449.00	-702.01	1058.8214648458.10	1800596.58	40.33284174	-104.42523416	

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	2136.17	13.62	98.11	2134.89	-2.27	15.94	10.00	4.10	Begin 13.62° tangent
4	6022.76	13.62	98.11	5912.23	-131.43	921.83	0.00	236.84	Begin 10°/100' build/turn
5	6901.72	90.00	179.14	6449.00	-702.01	1058.82	10.00	819.42	LP Begin 90° lateral
6	16569.58	90.00	179.14	6449.00	-10368.78	1203.61	0.00	10438.41	PBHL/TD 16569.58 MD/6449.00 TVD



Azimuths to True North
Magnetic North: 8.10°

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

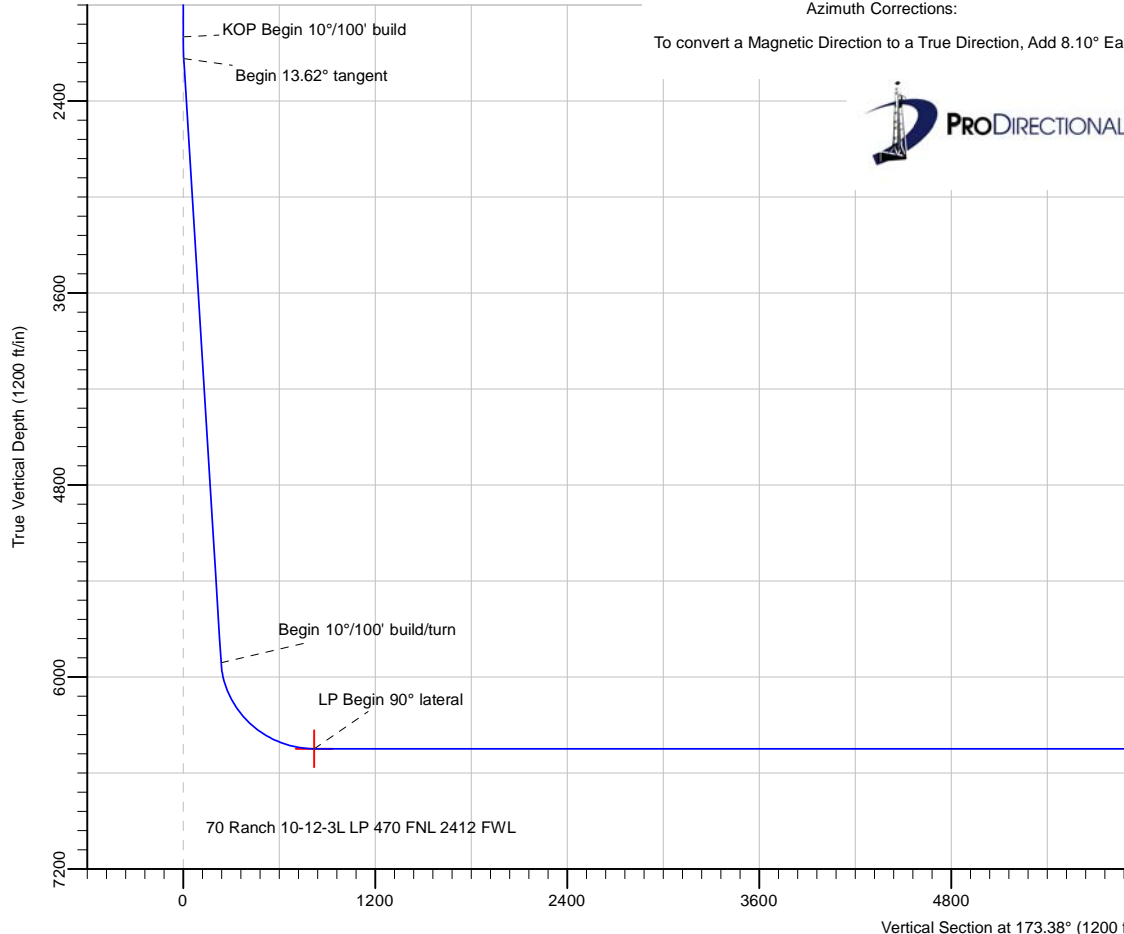
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0.00

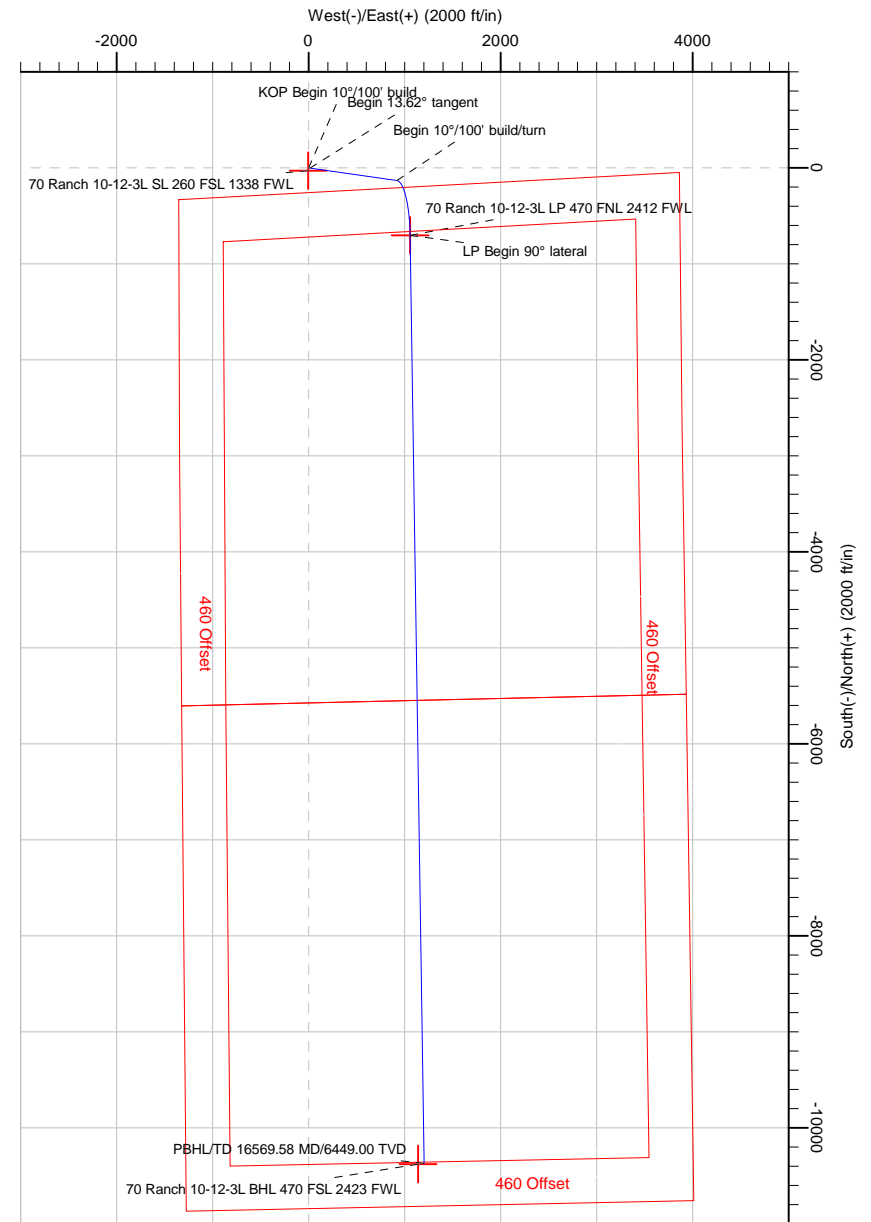
70 Ranch 10-12-3L			
Surf loc: 260 FSL 1338 FWL Section 03-T04N-R63W			
NAD83 Colorado - HARN			
Universal Transverse Mercator (US Survey Feet)			
Zone 13N (108 W to 102 W)			
RKB=4599+24 @ 4623.00ft			
Northing	Easting	Latitude	Longitude
14649153.27	1799533.25	40.33476949	-104.42903338

Azimuth Corrections:

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



Date: 1:49, 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 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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 10-12-3L, Surf loc: 260 FSL 1338 FWL Section 03-T04N-R63W					
Well Position	+N/-S	-1,081.87 ft	Northing:	14,649,153.27 usft	Latitude:	40.33476948
	+E/-W	-1,414.06 ft	Easting:	1,799,533.25 usft	Longitude:	-104.42903339
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,599.00 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	173.38

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,569.58	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	
2,136.17	13.62	98.11	2,134.89	-2.27	15.94	10.00	10.00	0.00	98.11	
6,022.76	13.62	98.11	5,912.23	-131.43	921.83	0.00	0.00	0.00	0.00	
6,901.72	90.00	179.14	6,449.00	-702.01	1,058.82	10.00	8.69	9.22	81.28	70 Ranch 10-12-3L LI
16,569.58	90.00	179.14	6,449.00	-10,368.78	1,203.61	0.00	0.00	0.00	0.00	70 Ranch 10-12-3L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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									
2,100.00	10.00	98.11	2,099.49	-1.23	8.62	2.21	10.00	10.00	0.00
2,136.17	13.62	98.11	2,134.89	-2.27	15.94	4.10	10.00	10.00	0.00
Begin 13.62° tangent									
2,200.00	13.62	98.11	2,196.93	-4.39	30.82	7.92	0.00	0.00	0.00
2,300.00	13.62	98.11	2,294.12	-7.72	54.13	13.91	0.00	0.00	0.00
2,400.00	13.62	98.11	2,391.31	-11.04	77.44	19.90	0.00	0.00	0.00
2,500.00	13.62	98.11	2,488.49	-14.36	100.74	25.88	0.00	0.00	0.00
2,600.00	13.62	98.11	2,585.68	-17.69	124.05	31.87	0.00	0.00	0.00
2,700.00	13.62	98.11	2,682.87	-21.01	147.36	37.86	0.00	0.00	0.00
2,800.00	13.62	98.11	2,780.06	-24.33	170.67	43.85	0.00	0.00	0.00
2,900.00	13.62	98.11	2,877.25	-27.66	193.98	49.84	0.00	0.00	0.00
3,000.00	13.62	98.11	2,974.44	-30.98	217.28	55.83	0.00	0.00	0.00
3,100.00	13.62	98.11	3,071.63	-34.30	240.59	61.81	0.00	0.00	0.00
3,200.00	13.62	98.11	3,168.82	-37.63	263.90	67.80	0.00	0.00	0.00
3,300.00	13.62	98.11	3,266.01	-40.95	287.21	73.79	0.00	0.00	0.00
3,400.00	13.62	98.11	3,363.20	-44.27	310.52	79.78	0.00	0.00	0.00
3,500.00	13.62	98.11	3,460.38	-47.59	333.82	85.77	0.00	0.00	0.00
3,600.00	13.62	98.11	3,557.57	-50.92	357.13	91.76	0.00	0.00	0.00
3,700.00	13.62	98.11	3,654.76	-54.24	380.44	97.74	0.00	0.00	0.00
3,800.00	13.62	98.11	3,751.95	-57.56	403.75	103.73	0.00	0.00	0.00
3,900.00	13.62	98.11	3,849.14	-60.89	427.06	109.72	0.00	0.00	0.00
4,000.00	13.62	98.11	3,946.33	-64.21	450.36	115.71	0.00	0.00	0.00
4,100.00	13.62	98.11	4,043.52	-67.53	473.67	121.70	0.00	0.00	0.00
4,200.00	13.62	98.11	4,140.71	-70.86	496.98	127.69	0.00	0.00	0.00
4,300.00	13.62	98.11	4,237.90	-74.18	520.29	133.68	0.00	0.00	0.00
4,400.00	13.62	98.11	4,335.09	-77.50	543.59	139.66	0.00	0.00	0.00
4,500.00	13.62	98.11	4,432.27	-80.83	566.90	145.65	0.00	0.00	0.00
4,600.00	13.62	98.11	4,529.46	-84.15	590.21	151.64	0.00	0.00	0.00
4,700.00	13.62	98.11	4,626.65	-87.47	613.52	157.63	0.00	0.00	0.00
4,800.00	13.62	98.11	4,723.84	-90.80	636.83	163.62	0.00	0.00	0.00
4,900.00	13.62	98.11	4,821.03	-94.12	660.13	169.61	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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	13.62	98.11	4,918.22	-97.44	683.44	175.59	0.00	0.00	0.00
5,100.00	13.62	98.11	5,015.41	-100.76	706.75	181.58	0.00	0.00	0.00
5,200.00	13.62	98.11	5,112.60	-104.09	730.06	187.57	0.00	0.00	0.00
5,300.00	13.62	98.11	5,209.79	-107.41	753.37	193.56	0.00	0.00	0.00
5,400.00	13.62	98.11	5,306.98	-110.73	776.67	199.55	0.00	0.00	0.00
5,500.00	13.62	98.11	5,404.16	-114.06	799.98	205.54	0.00	0.00	0.00
5,600.00	13.62	98.11	5,501.35	-117.38	823.29	211.52	0.00	0.00	0.00
5,700.00	13.62	98.11	5,598.54	-120.70	846.60	217.51	0.00	0.00	0.00
5,800.00	13.62	98.11	5,695.73	-124.03	869.90	223.50	0.00	0.00	0.00
5,900.00	13.62	98.11	5,792.92	-127.35	893.21	229.49	0.00	0.00	0.00
6,000.00	13.62	98.11	5,890.11	-130.67	916.52	235.48	0.00	0.00	0.00
6,022.76	13.62	98.11	5,912.23	-131.43	921.83	236.84	0.00	0.00	0.00
Begin 10°/100' build/turn									
6,100.00	16.61	125.81	5,986.89	-139.18	939.81	246.62	10.00	3.87	35.85
6,200.00	23.81	146.30	6,080.78	-164.40	962.66	274.30	10.00	7.20	20.50
6,300.00	32.47	157.05	6,168.94	-206.02	984.37	318.14	10.00	8.66	10.75
6,400.00	41.68	163.55	6,248.67	-262.76	1,004.30	376.81	10.00	9.21	6.50
6,500.00	51.14	168.03	6,317.56	-332.92	1,021.84	448.52	10.00	9.46	4.48
6,600.00	60.74	171.44	6,373.51	-414.35	1,036.45	531.09	10.00	9.59	3.41
6,700.00	70.40	174.26	6,414.82	-504.58	1,047.69	622.01	10.00	9.67	2.82
6,800.00	80.11	176.75	6,440.24	-600.87	1,055.21	718.53	10.00	9.71	2.50
6,900.00	89.83	179.10	6,449.00	-700.29	1,058.80	817.70	10.00	9.72	2.35
6,901.72	90.00	179.14	6,449.00	-702.01	1,058.82	819.42	10.00	9.73	2.33
LP Begin 90° lateral									
7,000.00	90.00	179.14	6,449.00	-800.28	1,060.30	917.20	0.00	0.00	0.00
7,100.00	90.00	179.14	6,449.00	-900.27	1,061.79	1,016.69	0.00	0.00	0.00
7,200.00	90.00	179.14	6,449.00	-1,000.26	1,063.29	1,116.19	0.00	0.00	0.00
7,300.00	90.00	179.14	6,449.00	-1,100.25	1,064.79	1,215.68	0.00	0.00	0.00
7,400.00	90.00	179.14	6,449.00	-1,200.24	1,066.29	1,315.18	0.00	0.00	0.00
7,500.00	90.00	179.14	6,449.00	-1,300.23	1,067.78	1,414.67	0.00	0.00	0.00
7,600.00	90.00	179.14	6,449.00	-1,400.21	1,069.28	1,514.17	0.00	0.00	0.00
7,700.00	90.00	179.14	6,449.00	-1,500.20	1,070.78	1,613.66	0.00	0.00	0.00
7,800.00	90.00	179.14	6,449.00	-1,600.19	1,072.28	1,713.15	0.00	0.00	0.00
7,900.00	90.00	179.14	6,449.00	-1,700.18	1,073.77	1,812.65	0.00	0.00	0.00
8,000.00	90.00	179.14	6,449.00	-1,800.17	1,075.27	1,912.14	0.00	0.00	0.00
8,100.00	90.00	179.14	6,449.00	-1,900.16	1,076.77	2,011.64	0.00	0.00	0.00
8,200.00	90.00	179.14	6,449.00	-2,000.15	1,078.27	2,111.13	0.00	0.00	0.00
8,300.00	90.00	179.14	6,449.00	-2,100.14	1,079.76	2,210.63	0.00	0.00	0.00
8,400.00	90.00	179.14	6,449.00	-2,200.12	1,081.26	2,310.12	0.00	0.00	0.00
8,500.00	90.00	179.14	6,449.00	-2,300.11	1,082.76	2,409.62	0.00	0.00	0.00
8,600.00	90.00	179.14	6,449.00	-2,400.10	1,084.26	2,509.11	0.00	0.00	0.00
8,700.00	90.00	179.14	6,449.00	-2,500.09	1,085.76	2,608.61	0.00	0.00	0.00
8,800.00	90.00	179.14	6,449.00	-2,600.08	1,087.25	2,708.10	0.00	0.00	0.00
8,900.00	90.00	179.14	6,449.00	-2,700.07	1,088.75	2,807.60	0.00	0.00	0.00
9,000.00	90.00	179.14	6,449.00	-2,800.06	1,090.25	2,907.09	0.00	0.00	0.00
9,100.00	90.00	179.14	6,449.00	-2,900.05	1,091.75	3,006.58	0.00	0.00	0.00
9,200.00	90.00	179.14	6,449.00	-3,000.03	1,093.24	3,106.08	0.00	0.00	0.00
9,300.00	90.00	179.14	6,449.00	-3,100.02	1,094.74	3,205.57	0.00	0.00	0.00
9,400.00	90.00	179.14	6,449.00	-3,200.01	1,096.24	3,305.07	0.00	0.00	0.00
9,500.00	90.00	179.14	6,449.00	-3,300.00	1,097.74	3,404.56	0.00	0.00	0.00
9,600.00	90.00	179.14	6,449.00	-3,399.99	1,099.23	3,504.06	0.00	0.00	0.00
9,700.00	90.00	179.14	6,449.00	-3,499.98	1,100.73	3,603.55	0.00	0.00	0.00
9,800.00	90.00	179.14	6,449.00	-3,599.97	1,102.23	3,703.05	0.00	0.00	0.00
9,900.00	90.00	179.14	6,449.00	-3,699.96	1,103.73	3,802.54	0.00	0.00	0.00

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Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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	179.14	6,449.00	-3,799.94	1,105.22	3,902.04	0.00	0.00	0.00	
10,100.00	90.00	179.14	6,449.00	-3,899.93	1,106.72	4,001.53	0.00	0.00	0.00	
10,200.00	90.00	179.14	6,449.00	-3,999.92	1,108.22	4,101.02	0.00	0.00	0.00	
10,300.00	90.00	179.14	6,449.00	-4,099.91	1,109.72	4,200.52	0.00	0.00	0.00	
10,400.00	90.00	179.14	6,449.00	-4,199.90	1,111.21	4,300.01	0.00	0.00	0.00	
10,500.00	90.00	179.14	6,449.00	-4,299.89	1,112.71	4,399.51	0.00	0.00	0.00	
10,600.00	90.00	179.14	6,449.00	-4,399.88	1,114.21	4,499.00	0.00	0.00	0.00	
10,700.00	90.00	179.14	6,449.00	-4,499.87	1,115.71	4,598.50	0.00	0.00	0.00	
10,800.00	90.00	179.14	6,449.00	-4,599.86	1,117.20	4,697.99	0.00	0.00	0.00	
10,900.00	90.00	179.14	6,449.00	-4,699.84	1,118.70	4,797.49	0.00	0.00	0.00	
11,000.00	90.00	179.14	6,449.00	-4,799.83	1,120.20	4,896.98	0.00	0.00	0.00	
11,100.00	90.00	179.14	6,449.00	-4,899.82	1,121.70	4,996.48	0.00	0.00	0.00	
11,200.00	90.00	179.14	6,449.00	-4,999.81	1,123.19	5,095.97	0.00	0.00	0.00	
11,300.00	90.00	179.14	6,449.00	-5,099.80	1,124.69	5,195.47	0.00	0.00	0.00	
11,400.00	90.00	179.14	6,449.00	-5,199.79	1,126.19	5,294.96	0.00	0.00	0.00	
11,500.00	90.00	179.14	6,449.00	-5,299.78	1,127.69	5,394.45	0.00	0.00	0.00	
11,600.00	90.00	179.14	6,449.00	-5,399.77	1,129.18	5,493.95	0.00	0.00	0.00	
11,700.00	90.00	179.14	6,449.00	-5,499.75	1,130.68	5,593.44	0.00	0.00	0.00	
11,800.00	90.00	179.14	6,449.00	-5,599.74	1,132.18	5,692.94	0.00	0.00	0.00	
11,900.00	90.00	179.14	6,449.00	-5,699.73	1,133.68	5,792.43	0.00	0.00	0.00	
12,000.00	90.00	179.14	6,449.00	-5,799.72	1,135.17	5,891.93	0.00	0.00	0.00	
12,100.00	90.00	179.14	6,449.00	-5,899.71	1,136.67	5,991.42	0.00	0.00	0.00	
12,200.00	90.00	179.14	6,449.00	-5,999.70	1,138.17	6,090.92	0.00	0.00	0.00	
12,300.00	90.00	179.14	6,449.00	-6,099.69	1,139.67	6,190.41	0.00	0.00	0.00	
12,400.00	90.00	179.14	6,449.00	-6,199.68	1,141.17	6,289.91	0.00	0.00	0.00	
12,500.00	90.00	179.14	6,449.00	-6,299.66	1,142.66	6,389.40	0.00	0.00	0.00	
12,600.00	90.00	179.14	6,449.00	-6,399.65	1,144.16	6,488.89	0.00	0.00	0.00	
12,700.00	90.00	179.14	6,449.00	-6,499.64	1,145.66	6,588.39	0.00	0.00	0.00	
12,800.00	90.00	179.14	6,449.00	-6,599.63	1,147.16	6,687.88	0.00	0.00	0.00	
12,900.00	90.00	179.14	6,449.00	-6,699.62	1,148.65	6,787.38	0.00	0.00	0.00	
13,000.00	90.00	179.14	6,449.00	-6,799.61	1,150.15	6,886.87	0.00	0.00	0.00	
13,100.00	90.00	179.14	6,449.00	-6,899.60	1,151.65	6,986.37	0.00	0.00	0.00	
13,200.00	90.00	179.14	6,449.00	-6,999.59	1,153.15	7,085.86	0.00	0.00	0.00	
13,300.00	90.00	179.14	6,449.00	-7,099.57	1,154.64	7,185.36	0.00	0.00	0.00	
13,400.00	90.00	179.14	6,449.00	-7,199.56	1,156.14	7,284.85	0.00	0.00	0.00	
13,500.00	90.00	179.14	6,449.00	-7,299.55	1,157.64	7,384.35	0.00	0.00	0.00	
13,600.00	90.00	179.14	6,449.00	-7,399.54	1,159.14	7,483.84	0.00	0.00	0.00	
13,700.00	90.00	179.14	6,449.00	-7,499.53	1,160.63	7,583.34	0.00	0.00	0.00	
13,800.00	90.00	179.14	6,449.00	-7,599.52	1,162.13	7,682.83	0.00	0.00	0.00	
13,900.00	90.00	179.14	6,449.00	-7,699.51	1,163.63	7,782.32	0.00	0.00	0.00	
14,000.00	90.00	179.14	6,449.00	-7,799.50	1,165.13	7,881.82	0.00	0.00	0.00	
14,100.00	90.00	179.14	6,449.00	-7,899.49	1,166.62	7,981.31	0.00	0.00	0.00	
14,200.00	90.00	179.14	6,449.00	-7,999.47	1,168.12	8,080.81	0.00	0.00	0.00	
14,300.00	90.00	179.14	6,449.00	-8,099.46	1,169.62	8,180.30	0.00	0.00	0.00	
14,400.00	90.00	179.14	6,449.00	-8,199.45	1,171.12	8,279.80	0.00	0.00	0.00	
14,500.00	90.00	179.14	6,449.00	-8,299.44	1,172.61	8,379.29	0.00	0.00	0.00	
14,600.00	90.00	179.14	6,449.00	-8,399.43	1,174.11	8,478.79	0.00	0.00	0.00	
14,700.00	90.00	179.14	6,449.00	-8,499.42	1,175.61	8,578.28	0.00	0.00	0.00	
14,800.00	90.00	179.14	6,449.00	-8,599.41	1,177.11	8,677.78	0.00	0.00	0.00	
14,900.00	90.00	179.14	6,449.00	-8,699.40	1,178.60	8,777.27	0.00	0.00	0.00	
15,000.00	90.00	179.14	6,449.00	-8,799.38	1,180.10	8,876.76	0.00	0.00	0.00	
15,100.00	90.00	179.14	6,449.00	-8,899.37	1,181.60	8,976.26	0.00	0.00	0.00	
15,200.00	90.00	179.14	6,449.00	-8,999.36	1,183.10	9,075.75	0.00	0.00	0.00	
15,300.00	90.00	179.14	6,449.00	-9,099.35	1,184.59	9,175.25	0.00	0.00	0.00	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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	179.14	6,449.00	-9,199.34	1,186.09	9,274.74	0.00	0.00	0.00	
15,500.00	90.00	179.14	6,449.00	-9,299.33	1,187.59	9,374.24	0.00	0.00	0.00	
15,600.00	90.00	179.14	6,449.00	-9,399.32	1,189.09	9,473.73	0.00	0.00	0.00	
15,700.00	90.00	179.14	6,449.00	-9,499.31	1,190.58	9,573.23	0.00	0.00	0.00	
15,800.00	90.00	179.14	6,449.00	-9,599.29	1,192.08	9,672.72	0.00	0.00	0.00	
15,900.00	90.00	179.14	6,449.00	-9,699.28	1,193.58	9,772.22	0.00	0.00	0.00	
16,000.00	90.00	179.14	6,449.00	-9,799.27	1,195.08	9,871.71	0.00	0.00	0.00	
16,100.00	90.00	179.14	6,449.00	-9,899.26	1,196.58	9,971.21	0.00	0.00	0.00	
16,200.00	90.00	179.14	6,449.00	-9,999.25	1,198.07	10,070.70	0.00	0.00	0.00	
16,300.00	90.00	179.14	6,449.00	-10,099.24	1,199.57	10,170.19	0.00	0.00	0.00	
16,400.00	90.00	179.14	6,449.00	-10,199.23	1,201.07	10,269.69	0.00	0.00	0.00	
16,500.00	90.00	179.14	6,449.00	-10,299.22	1,202.57	10,369.18	0.00	0.00	0.00	
16,569.58	90.00	179.14	6,449.00	-10,368.78	1,203.61	10,438.41	0.00	0.00	0.00	
PBHL/TD 16569.58 MD/6449.00 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 10-12-3L SL 2	0.00	0.37	24.00	-29.27	-3.79	14,649,123.97	1,799,529.65	40.33468910		-104.42904698
- hit/miss target										
- Shape										
- plan misses target center by 29.52ft at 24.00ft MD (24.00 TVD, 0.00 N, 0.00 E)										
- Point										
70 Ranch 10-12-3L LP 4	0.00	0.37	6,449.00	-702.01	1,058.82	14,648,458.10	1,800,596.58	40.33284173		-104.42523416
- plan hits target center										
- Point										
70 Ranch 10-12-3L BHL	0.00	0.37	6,449.00	-10,376.02	1,141.30	14,638,784.85	1,800,741.46	40.30627735		-104.42493974
- plan misses target center by 62.72ft at 16569.58ft MD (6449.00 TVD, -10368.78 N, 1203.61 E)										
- 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	
2,136.17	2,134.89	-2.27	15.94	Begin 13.62° tangent	
6,022.76	5,912.23	-131.43	921.83	Begin 10°/100' build/turn	
6,901.72	6,449.00	-702.01	1,058.82	LP Begin 90° lateral	
16,569.58	6,449.00	-10,368.78	1,203.61	PBHL/TD 16569.58 MD/6449.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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 10-12-3L, Surf loc: 260 FSL 1338 FWL Section 03-T04N-R63W					
Well Position	+N/-S	0.00 ft	Northing:	14,649,153.27 usft	Latitude:	40.33476948
	+E/-W	0.00 ft	Easting:	1,799,533.25 usft	Longitude:	-104.42903339
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,599.00 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	173.38

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,569.58 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	
2,136.17	13.62	98.11	2,134.89	-2.27	15.94	10.00	10.00	0.00	98.11	
6,022.76	13.62	98.11	5,912.23	-131.43	921.83	0.00	0.00	0.00	0.00	
6,901.72	90.00	179.14	6,449.00	-702.01	1,058.82	10.00	8.69	9.22	81.28	70 Ranch 10-12-3L LI
16,569.58	90.00	179.14	6,449.00	-10,368.78	1,203.61	0.00	0.00	0.00	0.00	70 Ranch 10-12-3L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
100.00	0.00	0.00	100.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
200.00	0.00	0.00	200.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
300.00	0.00	0.00	300.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
400.00	0.00	0.00	400.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
500.00	0.00	0.00	500.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
600.00	0.00	0.00	600.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
700.00	0.00	0.00	700.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
800.00	0.00	0.00	800.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
900.00	0.00	0.00	900.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,649,153.27	1,799,533.25	40.33476948	-104.42903339
KOP Begin 10°/100' build									
2,100.00	10.00	98.11	2,099.49	-1.23	8.62	14,649,152.09	1,799,541.88	40.33476611	-104.42900247
2,136.17	13.62	98.11	2,134.89	-2.27	15.94	14,649,151.10	1,799,549.21	40.33476324	-104.42897617
Begin 13.62° tangent									
2,200.00	13.62	98.11	2,196.93	-4.39	30.82	14,649,149.07	1,799,564.10	40.33475742	-104.42892279
2,300.00	13.62	98.11	2,294.12	-7.72	54.13	14,649,145.90	1,799,587.43	40.33474829	-104.42883916
2,400.00	13.62	98.11	2,391.31	-11.04	77.44	14,649,142.73	1,799,610.76	40.33473917	-104.42875552
2,500.00	13.62	98.11	2,488.49	-14.36	100.74	14,649,139.55	1,799,634.09	40.33473004	-104.42867189
2,600.00	13.62	98.11	2,585.68	-17.69	124.05	14,649,136.38	1,799,657.41	40.33472092	-104.42858825
2,700.00	13.62	98.11	2,682.87	-21.01	147.36	14,649,133.21	1,799,680.74	40.33471179	-104.42850462
2,800.00	13.62	98.11	2,780.06	-24.33	170.67	14,649,130.04	1,799,704.07	40.33470266	-104.42842098
2,900.00	13.62	98.11	2,877.25	-27.66	193.98	14,649,126.86	1,799,727.40	40.33469354	-104.42833735
3,000.00	13.62	98.11	2,974.44	-30.98	217.28	14,649,123.69	1,799,750.73	40.33468441	-104.42825372
3,100.00	13.62	98.11	3,071.63	-34.30	240.59	14,649,120.52	1,799,774.06	40.33467529	-104.42817008
3,200.00	13.62	98.11	3,168.82	-37.63	263.90	14,649,117.35	1,799,797.39	40.33466616	-104.42808645
3,300.00	13.62	98.11	3,266.01	-40.95	287.21	14,649,114.17	1,799,820.72	40.33465704	-104.42800281
3,400.00	13.62	98.11	3,363.20	-44.27	310.52	14,649,111.00	1,799,844.04	40.33464791	-104.42791918
3,500.00	13.62	98.11	3,460.38	-47.59	333.82	14,649,107.83	1,799,867.37	40.33463878	-104.42783555
3,600.00	13.62	98.11	3,557.57	-50.92	357.13	14,649,104.65	1,799,890.70	40.33462966	-104.42775191
3,700.00	13.62	98.11	3,654.76	-54.24	380.44	14,649,101.48	1,799,914.03	40.33462053	-104.42766828
3,800.00	13.62	98.11	3,751.95	-57.56	403.75	14,649,098.31	1,799,937.36	40.33461141	-104.42758464
3,900.00	13.62	98.11	3,849.14	-60.89	427.06	14,649,095.14	1,799,960.69	40.33460228	-104.42750101
4,000.00	13.62	98.11	3,946.33	-64.21	450.36	14,649,091.96	1,799,984.02	40.33459315	-104.42741737
4,100.00	13.62	98.11	4,043.52	-67.53	473.67	14,649,088.79	1,800,007.35	40.33458403	-104.42733374
4,200.00	13.62	98.11	4,140.71	-70.86	496.98	14,649,085.62	1,800,030.67	40.33457490	-104.42725011
4,300.00	13.62	98.11	4,237.90	-74.18	520.29	14,649,082.45	1,800,054.00	40.33456577	-104.42716647
4,400.00	13.62	98.11	4,335.09	-77.50	543.59	14,649,079.27	1,800,077.33	40.33455665	-104.42708284
4,500.00	13.62	98.11	4,432.27	-80.83	566.90	14,649,076.10	1,800,100.66	40.33454752	-104.42699920
4,600.00	13.62	98.11	4,529.46	-84.15	590.21	14,649,072.93	1,800,123.99	40.33453840	-104.42691557
4,700.00	13.62	98.11	4,626.65	-87.47	613.52	14,649,069.75	1,800,147.32	40.33452927	-104.42683194
4,800.00	13.62	98.11	4,723.84	-90.80	636.83	14,649,066.58	1,800,170.65	40.33452014	-104.42674830
4,900.00	13.62	98.11	4,821.03	-94.12	660.13	14,649,063.41	1,800,193.98	40.33451102	-104.42666467
5,000.00	13.62	98.11	4,918.22	-97.44	683.44	14,649,060.24	1,800,217.30	40.33450189	-104.42658103

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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	13.62	98.11	5,015.41	-100.76	706.75	14,649,057.06	1,800,240.63	40.33449276	-104.42649740
5,200.00	13.62	98.11	5,112.60	-104.09	730.06	14,649,053.89	1,800,263.96	40.33448363	-104.42641377
5,300.00	13.62	98.11	5,209.79	-107.41	753.37	14,649,050.72	1,800,287.29	40.33447451	-104.42633013
5,400.00	13.62	98.11	5,306.98	-110.73	776.67	14,649,047.55	1,800,310.62	40.33446538	-104.42624650
5,500.00	13.62	98.11	5,404.16	-114.06	799.98	14,649,044.37	1,800,333.95	40.33445625	-104.42616287
5,600.00	13.62	98.11	5,501.35	-117.38	823.29	14,649,041.20	1,800,357.28	40.33444713	-104.42607923
5,700.00	13.62	98.11	5,598.54	-120.70	846.60	14,649,038.03	1,800,380.61	40.33443800	-104.42599560
5,800.00	13.62	98.11	5,695.73	-124.03	869.90	14,649,034.85	1,800,403.94	40.33442887	-104.42591196
5,900.00	13.62	98.11	5,792.92	-127.35	893.21	14,649,031.68	1,800,427.26	40.33441974	-104.42582833
6,000.00	13.62	98.11	5,890.11	-130.67	916.52	14,649,028.51	1,800,450.59	40.33441062	-104.42574470
6,022.76	13.62	98.11	5,912.23	-131.43	921.83	14,649,027.79	1,800,455.90	40.33440854	-104.42572566
Begin 10°/100' build/turn									
6,100.00	16.61	125.81	5,986.89	-139.18	939.81	14,649,020.15	1,800,473.93	40.33438725	-104.42566114
6,200.00	23.81	146.30	6,080.78	-164.40	962.66	14,648,995.08	1,800,496.94	40.33431799	-104.42557916
6,300.00	32.47	157.05	6,168.94	-206.02	984.37	14,648,953.60	1,800,518.93	40.33420372	-104.42550123
6,400.00	41.68	163.55	6,248.67	-262.76	1,004.30	14,648,896.99	1,800,539.23	40.33404789	-104.42542973
6,500.00	51.14	168.03	6,317.56	-332.92	1,021.84	14,648,826.95	1,800,557.22	40.33385525	-104.42536681
6,600.00	60.74	171.44	6,373.51	-414.35	1,036.45	14,648,745.61	1,800,572.35	40.33363165	-104.42531440
6,700.00	70.40	174.26	6,414.82	-504.58	1,047.69	14,648,655.46	1,800,584.17	40.33338388	-104.42527409
6,800.00	80.11	176.75	6,440.24	-600.87	1,055.21	14,648,559.22	1,800,592.32	40.33311947	-104.42524710
6,900.00	89.83	179.10	6,449.00	-700.29	1,058.80	14,648,459.82	1,800,596.54	40.33284646	-104.42523426
6,901.72	90.00	179.14	6,449.00	-702.01	1,058.82	14,648,458.10	1,800,596.58	40.33284173	-104.42523416
LP Begin 90° lateral									
7,000.00	90.00	179.14	6,449.00	-800.28	1,060.30	14,648,359.84	1,800,598.68	40.33257189	-104.42522890
7,100.00	90.00	179.14	6,449.00	-900.27	1,061.79	14,648,259.87	1,800,600.83	40.33229733	-104.42522354
7,200.00	90.00	179.14	6,449.00	-1,000.26	1,063.29	14,648,159.89	1,800,602.97	40.33202276	-104.42521818
7,300.00	90.00	179.14	6,449.00	-1,100.25	1,064.79	14,648,059.91	1,800,605.11	40.33174820	-104.42521282
7,400.00	90.00	179.14	6,449.00	-1,200.24	1,066.29	14,647,959.94	1,800,607.25	40.33147363	-104.42520746
7,500.00	90.00	179.14	6,449.00	-1,300.23	1,067.78	14,647,859.96	1,800,609.40	40.33119907	-104.42520211
7,600.00	90.00	179.14	6,449.00	-1,400.21	1,069.28	14,647,759.98	1,800,611.54	40.33092451	-104.42519675
7,700.00	90.00	179.14	6,449.00	-1,500.20	1,070.78	14,647,660.01	1,800,613.68	40.33064994	-104.42519139
7,800.00	90.00	179.14	6,449.00	-1,600.19	1,072.28	14,647,560.03	1,800,615.82	40.33037538	-104.42518603
7,900.00	90.00	179.14	6,449.00	-1,700.18	1,073.77	14,647,460.05	1,800,617.97	40.33010081	-104.42518067
8,000.00	90.00	179.14	6,449.00	-1,800.17	1,075.27	14,647,360.08	1,800,620.11	40.32982625	-104.42517532
8,100.00	90.00	179.14	6,449.00	-1,900.16	1,076.77	14,647,260.10	1,800,622.25	40.32955168	-104.42516996
8,200.00	90.00	179.14	6,449.00	-2,000.15	1,078.27	14,647,160.12	1,800,624.39	40.32927712	-104.42516460
8,300.00	90.00	179.14	6,449.00	-2,100.14	1,079.76	14,647,060.14	1,800,626.54	40.32900255	-104.42515924
8,400.00	90.00	179.14	6,449.00	-2,200.12	1,081.26	14,646,960.17	1,800,628.68	40.32872799	-104.42515388
8,500.00	90.00	179.14	6,449.00	-2,300.11	1,082.76	14,646,860.19	1,800,630.82	40.32845343	-104.42514853
8,600.00	90.00	179.14	6,449.00	-2,400.10	1,084.26	14,646,760.21	1,800,632.96	40.32817886	-104.42514317
8,700.00	90.00	179.14	6,449.00	-2,500.09	1,085.76	14,646,660.24	1,800,635.11	40.32790430	-104.42513781
8,800.00	90.00	179.14	6,449.00	-2,600.08	1,087.25	14,646,560.26	1,800,637.25	40.32762973	-104.42513245
8,900.00	90.00	179.14	6,449.00	-2,700.07	1,088.75	14,646,460.28	1,800,639.39	40.32735517	-104.42512710
9,000.00	90.00	179.14	6,449.00	-2,800.06	1,090.25	14,646,360.31	1,800,641.53	40.32708060	-104.42512174
9,100.00	90.00	179.14	6,449.00	-2,900.05	1,091.75	14,646,260.33	1,800,643.68	40.32680604	-104.42511638
9,200.00	90.00	179.14	6,449.00	-3,000.03	1,093.24	14,646,160.35	1,800,645.82	40.32653147	-104.42511102
9,300.00	90.00	179.14	6,449.00	-3,100.02	1,094.74	14,646,060.38	1,800,647.96	40.32625691	-104.42510566
9,400.00	90.00	179.14	6,449.00	-3,200.01	1,096.24	14,645,960.40	1,800,650.10	40.32598234	-104.42510031
9,500.00	90.00	179.14	6,449.00	-3,300.00	1,097.74	14,645,860.42	1,800,652.25	40.32570778	-104.42509495
9,600.00	90.00	179.14	6,449.00	-3,399.99	1,099.23	14,645,760.45	1,800,654.39	40.32543322	-104.42508959
9,700.00	90.00	179.14	6,449.00	-3,499.98	1,100.73	14,645,660.47	1,800,656.53	40.32515865	-104.42508423
9,800.00	90.00	179.14	6,449.00	-3,599.97	1,102.23	14,645,560.49	1,800,658.67	40.32488409	-104.42507888
9,900.00	90.00	179.14	6,449.00	-3,699.96	1,103.73	14,645,460.52	1,800,660.82	40.32460952	-104.42507352
10,000.00	90.00	179.14	6,449.00	-3,799.94	1,105.22	14,645,360.54	1,800,662.96	40.32433496	-104.42506816

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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	179.14	6,449.00	-3,899.93	1,106.72	14,645,260.56	1,800,665.10	40.32406039	-104.42506280
10,200.00	90.00	179.14	6,449.00	-3,999.92	1,108.22	14,645,160.58	1,800,667.24	40.32378583	-104.42505745
10,300.00	90.00	179.14	6,449.00	-4,099.91	1,109.72	14,645,060.61	1,800,669.39	40.32351126	-104.42505209
10,400.00	90.00	179.14	6,449.00	-4,199.90	1,111.21	14,644,960.63	1,800,671.53	40.32323670	-104.42504673
10,500.00	90.00	179.14	6,449.00	-4,299.89	1,112.71	14,644,860.65	1,800,673.67	40.32296213	-104.42504138
10,600.00	90.00	179.14	6,449.00	-4,399.88	1,114.21	14,644,760.68	1,800,675.82	40.32268757	-104.42503602
10,700.00	90.00	179.14	6,449.00	-4,499.87	1,115.71	14,644,660.70	1,800,677.96	40.32241300	-104.42503066
10,800.00	90.00	179.14	6,449.00	-4,599.86	1,117.20	14,644,560.72	1,800,680.10	40.32213844	-104.42502530
10,900.00	90.00	179.14	6,449.00	-4,699.84	1,118.70	14,644,460.75	1,800,682.24	40.32186387	-104.42501995
11,000.00	90.00	179.14	6,449.00	-4,799.83	1,120.20	14,644,360.77	1,800,684.39	40.32158931	-104.42501459
11,100.00	90.00	179.14	6,449.00	-4,899.82	1,121.70	14,644,260.79	1,800,686.53	40.32131474	-104.42500923
11,200.00	90.00	179.14	6,449.00	-4,999.81	1,123.19	14,644,160.82	1,800,688.67	40.32104018	-104.42500388
11,300.00	90.00	179.14	6,449.00	-5,099.80	1,124.69	14,644,060.84	1,800,690.81	40.32076561	-104.42499852
11,400.00	90.00	179.14	6,449.00	-5,199.79	1,126.19	14,643,960.86	1,800,692.96	40.32049105	-104.42499316
11,500.00	90.00	179.14	6,449.00	-5,299.78	1,127.69	14,643,860.89	1,800,695.10	40.32021648	-104.42498780
11,600.00	90.00	179.14	6,449.00	-5,399.77	1,129.18	14,643,760.91	1,800,697.24	40.31994192	-104.42498245
11,700.00	90.00	179.14	6,449.00	-5,499.75	1,130.68	14,643,660.93	1,800,699.38	40.31966736	-104.42497709
11,800.00	90.00	179.14	6,449.00	-5,599.74	1,132.18	14,643,560.96	1,800,701.53	40.31939279	-104.42497173
11,900.00	90.00	179.14	6,449.00	-5,699.73	1,133.68	14,643,460.98	1,800,703.67	40.31911823	-104.42496638
12,000.00	90.00	179.14	6,449.00	-5,799.72	1,135.17	14,643,361.00	1,800,705.81	40.31884366	-104.42496102
12,100.00	90.00	179.14	6,449.00	-5,899.71	1,136.67	14,643,261.02	1,800,707.95	40.31856910	-104.42495566
12,200.00	90.00	179.14	6,449.00	-5,999.70	1,138.17	14,643,161.05	1,800,710.10	40.31829453	-104.42495031
12,300.00	90.00	179.14	6,449.00	-6,099.69	1,139.67	14,643,061.07	1,800,712.24	40.31801997	-104.42494495
12,400.00	90.00	179.14	6,449.00	-6,199.68	1,141.17	14,642,961.09	1,800,714.38	40.31774540	-104.42493959
12,500.00	90.00	179.14	6,449.00	-6,299.66	1,142.66	14,642,861.12	1,800,716.52	40.31747084	-104.42493424
12,600.00	90.00	179.14	6,449.00	-6,399.65	1,144.16	14,642,761.14	1,800,718.67	40.31719627	-104.42492888
12,700.00	90.00	179.14	6,449.00	-6,499.64	1,145.66	14,642,661.16	1,800,720.81	40.31692171	-104.42492352
12,800.00	90.00	179.14	6,449.00	-6,599.63	1,147.16	14,642,561.19	1,800,722.95	40.31664714	-104.42491817
12,900.00	90.00	179.14	6,449.00	-6,699.62	1,148.65	14,642,461.21	1,800,725.09	40.31637258	-104.42491281
13,000.00	90.00	179.14	6,449.00	-6,799.61	1,150.15	14,642,361.23	1,800,727.24	40.31609801	-104.42490745
13,100.00	90.00	179.14	6,449.00	-6,899.60	1,151.65	14,642,261.26	1,800,729.38	40.31582345	-104.42490210
13,200.00	90.00	179.14	6,449.00	-6,999.59	1,153.15	14,642,161.28	1,800,731.52	40.31554888	-104.42489674
13,300.00	90.00	179.14	6,449.00	-7,099.57	1,154.64	14,642,061.30	1,800,733.66	40.31527431	-104.42489138
13,400.00	90.00	179.14	6,449.00	-7,199.56	1,156.14	14,641,961.33	1,800,735.81	40.31499975	-104.42488603
13,500.00	90.00	179.14	6,449.00	-7,299.55	1,157.64	14,641,861.35	1,800,737.95	40.31472518	-104.42488067
13,600.00	90.00	179.14	6,449.00	-7,399.54	1,159.14	14,641,761.37	1,800,740.09	40.31445062	-104.42487532
13,700.00	90.00	179.14	6,449.00	-7,499.53	1,160.63	14,641,661.40	1,800,742.23	40.31417605	-104.42486996
13,800.00	90.00	179.14	6,449.00	-7,599.52	1,162.13	14,641,561.42	1,800,744.38	40.31390149	-104.42486460
13,900.00	90.00	179.14	6,449.00	-7,699.51	1,163.63	14,641,461.44	1,800,746.52	40.31362692	-104.42485925
14,000.00	90.00	179.14	6,449.00	-7,799.50	1,165.13	14,641,361.46	1,800,748.66	40.31335236	-104.42485389
14,100.00	90.00	179.14	6,449.00	-7,899.49	1,166.62	14,641,261.49	1,800,750.80	40.31307779	-104.42484853
14,200.00	90.00	179.14	6,449.00	-7,999.47	1,168.12	14,641,161.51	1,800,752.95	40.31280324	-104.42484318
14,300.00	90.00	179.14	6,449.00	-8,099.46	1,169.62	14,641,061.53	1,800,755.09	40.31252867	-104.42483782
14,400.00	90.00	179.14	6,449.00	-8,199.45	1,171.12	14,640,961.56	1,800,757.23	40.31225411	-104.42483247
14,500.00	90.00	179.14	6,449.00	-8,299.44	1,172.61	14,640,861.58	1,800,759.37	40.31197954	-104.42482711
14,600.00	90.00	179.14	6,449.00	-8,399.43	1,174.11	14,640,761.60	1,800,761.52	40.31170498	-104.42482175
14,700.00	90.00	179.14	6,449.00	-8,499.42	1,175.61	14,640,661.63	1,800,763.66	40.31143041	-104.42481640
14,800.00	90.00	179.14	6,449.00	-8,599.41	1,177.11	14,640,561.65	1,800,765.80	40.31115585	-104.42481104
14,900.00	90.00	179.14	6,449.00	-8,699.40	1,178.60	14,640,461.67	1,800,767.94	40.31088128	-104.42480569
15,000.00	90.00	179.14	6,449.00	-8,799.38	1,180.10	14,640,361.70	1,800,770.09	40.31060672	-104.42480033
15,100.00	90.00	179.14	6,449.00	-8,899.37	1,181.60	14,640,261.72	1,800,772.23	40.31033215	-104.42479497
15,200.00	90.00	179.14	6,449.00	-8,999.36	1,183.10	14,640,161.74	1,800,774.37	40.31005759	-104.42478962
15,300.00	90.00	179.14	6,449.00	-9,099.35	1,184.59	14,640,061.77	1,800,776.51	40.30978302	-104.42478426
15,400.00	90.00	179.14	6,449.00	-9,199.34	1,186.09	14,639,961.79	1,800,778.66	40.30950845	-104.42477891
15,500.00	90.00	179.14	6,449.00	-9,299.33	1,187.59	14,639,861.81	1,800,780.80	40.30923389	-104.42477355

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-12-3L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-12-3L	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	179.14	6,449.00	-9,399.32	1,189.09	14,639,761.84	1,800,782.94	40.30895932	-104.42476820
15,700.00	90.00	179.14	6,449.00	-9,499.31	1,190.58	14,639,661.86	1,800,785.08	40.30868476	-104.42476284
15,800.00	90.00	179.14	6,449.00	-9,599.29	1,192.08	14,639,561.88	1,800,787.23	40.30841019	-104.42475748
15,900.00	90.00	179.14	6,449.00	-9,699.28	1,193.58	14,639,461.90	1,800,789.37	40.30813563	-104.42475213
16,000.00	90.00	179.14	6,449.00	-9,799.27	1,195.08	14,639,361.93	1,800,791.51	40.30786106	-104.42474677
16,100.00	90.00	179.14	6,449.00	-9,899.26	1,196.58	14,639,261.95	1,800,793.65	40.30758650	-104.42474142
16,200.00	90.00	179.14	6,449.00	-9,999.25	1,198.07	14,639,161.97	1,800,795.80	40.30731193	-104.42473606
16,300.00	90.00	179.14	6,449.00	-10,099.24	1,199.57	14,639,062.00	1,800,797.94	40.30703737	-104.42473071
16,400.00	90.00	179.14	6,449.00	-10,199.23	1,201.07	14,638,962.02	1,800,800.08	40.30676280	-104.42472535
16,500.00	90.00	179.14	6,449.00	-10,299.22	1,202.57	14,638,862.04	1,800,802.22	40.30648823	-104.42472000
16,569.58	90.00	179.14	6,449.00	-10,368.78	1,203.61	14,638,792.48	1,800,803.71	40.30629720	-104.42471627
PBHL/TD 16569.58 MD/6449.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
70 Ranch 10-12-3L SL 2	0.00	0.37	24.00	-29.27	-3.79	14,649,123.97	1,799,529.65	40.33468910	-104.42904698
- plan misses target center by 29.52ft at 24.00ft MD (24.00 TVD, 0.00 N, 0.00 E)									
- Point									
70 Ranch 10-12-3L LP 4	0.00	0.37	6,449.00	-702.01	1,058.82	14,648,458.10	1,800,596.58	40.33284173	-104.42523416
- plan hits target center									
- Point									
70 Ranch 10-12-3L BHL	0.00	0.37	6,449.00	-10,376.02	1,141.30	14,638,784.85	1,800,741.46	40.30627735	-104.42493974
- plan misses target center by 62.72ft at 16569.58ft MD (6449.00 TVD, -10368.78 N, 1203.61 E)									
- 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
2,136.17	2,134.89	-2.27	15.94	Begin 13.62° tangent
6,022.76	5,912.23	-131.43	921.83	Begin 10°/100' build/turn
6,901.72	6,449.00	-702.01	1,058.82	LP Begin 90° lateral
16,569.58	6,449.00	-10,368.78	1,203.61	PBHL/TD 16569.58 MD/6449.00 TVD