



Weld County, Colorado
Section 33-T01N-R65W
Desha 4-07-1L
plan1

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	5377.20	37.72	126.02	5350.54	-70.43	96.85	10.00	80.83	Begin 37.72° tangent
4	7245.23	37.72	126.02	6828.16	-742.59	1021.16	0.00	852.32	Begin 10°/100' build/turn
5	7937.03	90.25	180.12	7139.00	-1279.87	1215.86	10.00	1408.03	LP Begin 90.25° lateral section
6	17273.38	90.25	180.12	7099.00	-10616.11	1196.89	0.00	10683.37	PBHL/TD 17273.38 MD/7099.00 TVD

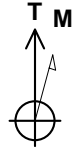
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL Desha 4-07-1L 470 FSL 1660 FWL	7099.00	-10616.11	1196.8914517290.00	1732158.35	39.97360380	-104.67253711	
LP Desha 4-07-1L 470 FNL 1660 FWL	7139.00	-1279.87	1215.8614526626.23	1732143.46	39.99924269	-104.67246784	

Desha 4-07-1L
Surf loc: 810 FSL 450 FWL Section 33-T01N-R65W

NAD83 Colorado - HARN
Universal Transverse Mercator (US Survey Feet)
Zone 13N (108 W to 102 W)
RKB=5078+25 @ 5103.00ft

Northing	Easting	Latitude	Longitude
14527901.68	1730922.97	40.00275750	-104.67680931

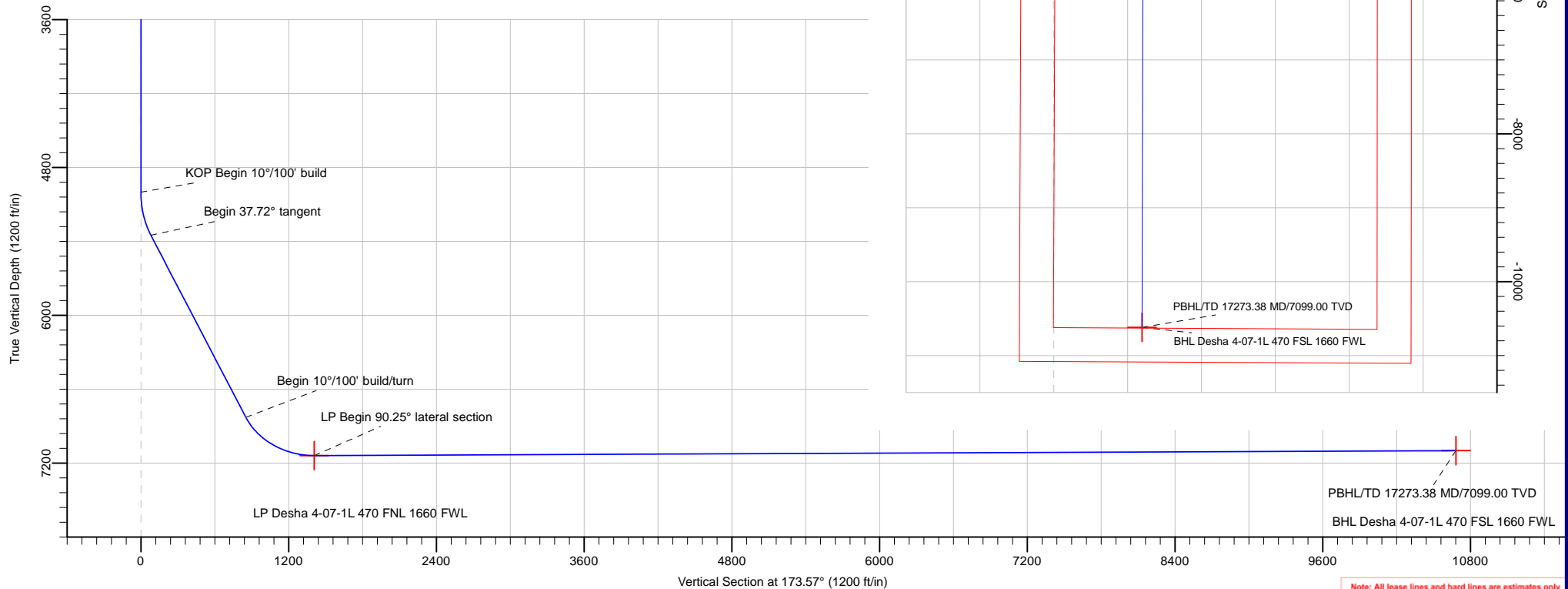


Azimuth Corrections:

To convert a Magnetic Direction to a True Direction, Add 8.28° East

Azimuths to True North
Magnetic North: 8.28°

Magnetic Field
Strength: 52146.2snT
Dip Angle: 66.45°
Date: 5/29/2017
Model: HDGM



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 Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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 33-T01N-R65W			
Site Position:		Northing:	14,527,751.12 usft	Latitude:	40.00234552
From:	Map	Easting:	1,730,774.27 usft	Longitude:	-104.67734224
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	Desha 4-07-1L, Surf loc: 810 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	150.02 ft	Northing:	14,527,901.68 usft	Latitude:	40.00275750
	+E/-W	149.24 ft	Easting:	1,730,922.97 usft	Longitude:	-104.67680930
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,078.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/29/2017	8.28	66.45	52,146.20000000

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	173.57

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,273.38	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	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,377.20	37.72	126.02	5,350.54	-70.43	96.85	10.00	10.00	0.00	126.02	
7,245.23	37.72	126.02	6,828.16	-742.59	1,021.16	0.00	0.00	0.00	0.00	
7,937.03	90.25	180.12	7,139.00	-1,279.87	1,215.86	10.00	7.59	7.82	60.06	LP Desha 4-07-1L 471
17,273.38	90.25	180.12	7,099.00	-10,616.11	1,196.89	0.00	0.00	0.00	0.00	BHL Desha 4-07-1L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 10°/100' build									
5,100.00	10.00	126.02	5,099.49	-5.12	7.04	5.88	10.00	10.00	0.00
5,200.00	20.00	126.02	5,195.96	-20.32	27.95	23.33	10.00	10.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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)
5,300.00	30.00	126.02	5,286.48	-45.15	62.08	51.82	10.00	10.00	0.00
5,377.20	37.72	126.02	5,350.54	-70.43	96.85	80.83	10.00	10.00	0.00
Begin 37.72° tangent									
5,400.00	37.72	126.02	5,368.57	-78.63	108.12	90.25	0.00	0.00	0.00
5,500.00	37.72	126.02	5,447.67	-114.61	157.61	131.55	0.00	0.00	0.00
5,600.00	37.72	126.02	5,526.77	-150.59	207.09	172.85	0.00	0.00	0.00
5,700.00	37.72	126.02	5,605.87	-186.58	256.57	214.15	0.00	0.00	0.00
5,800.00	37.72	126.02	5,684.97	-222.56	306.05	255.45	0.00	0.00	0.00
5,900.00	37.72	126.02	5,764.08	-258.54	355.53	296.75	0.00	0.00	0.00
6,000.00	37.72	126.02	5,843.18	-294.52	405.01	338.05	0.00	0.00	0.00
6,100.00	37.72	126.02	5,922.28	-330.51	454.49	379.35	0.00	0.00	0.00
6,200.00	37.72	126.02	6,001.38	-366.49	503.97	420.64	0.00	0.00	0.00
6,300.00	37.72	126.02	6,080.48	-402.47	553.45	461.94	0.00	0.00	0.00
6,400.00	37.72	126.02	6,159.58	-438.46	602.93	503.24	0.00	0.00	0.00
6,500.00	37.72	126.02	6,238.68	-474.44	652.41	544.54	0.00	0.00	0.00
6,600.00	37.72	126.02	6,317.78	-510.42	701.89	585.84	0.00	0.00	0.00
6,700.00	37.72	126.02	6,396.88	-546.40	751.37	627.14	0.00	0.00	0.00
6,800.00	37.72	126.02	6,475.98	-582.39	800.86	668.44	0.00	0.00	0.00
6,900.00	37.72	126.02	6,555.08	-618.37	850.34	709.74	0.00	0.00	0.00
7,000.00	37.72	126.02	6,634.18	-654.35	899.82	751.04	0.00	0.00	0.00
7,100.00	37.72	126.02	6,713.28	-690.33	949.30	792.34	0.00	0.00	0.00
7,200.00	37.72	126.02	6,792.38	-726.32	998.78	833.64	0.00	0.00	0.00
7,245.23	37.72	126.02	6,828.16	-742.59	1,021.16	852.32	0.00	0.00	0.00
Begin 10°/100' build/turn									
7,300.00	40.69	133.31	6,870.62	-764.71	1,047.72	877.28	10.00	5.42	13.31
7,400.00	47.09	144.43	6,942.76	-816.99	1,092.86	934.29	10.00	6.40	11.12
7,500.00	54.36	153.33	7,006.09	-883.26	1,132.50	1,004.58	10.00	7.27	8.90
7,600.00	62.17	160.69	7,058.71	-961.49	1,165.45	1,086.01	10.00	7.81	7.36
7,700.00	70.31	167.03	7,099.01	-1,049.32	1,190.70	1,176.11	10.00	8.14	6.35
7,800.00	78.66	172.76	7,125.75	-1,144.07	1,207.49	1,272.14	10.00	8.35	5.72
7,900.00	87.11	178.15	7,138.14	-1,242.86	1,215.30	1,371.19	10.00	8.45	5.39
7,937.03	90.25	180.12	7,139.00	-1,279.87	1,215.86	1,408.03	10.00	8.48	5.31
LP Begin 90.25° lateral section									
8,000.00	90.25	180.12	7,138.73	-1,342.84	1,215.73	1,470.59	0.00	0.00	0.00
8,100.00	90.25	180.12	7,138.30	-1,442.84	1,215.53	1,569.93	0.00	0.00	0.00
8,200.00	90.25	180.12	7,137.87	-1,542.84	1,215.33	1,669.28	0.00	0.00	0.00
8,300.00	90.25	180.12	7,137.45	-1,642.84	1,215.12	1,768.63	0.00	0.00	0.00
8,400.00	90.25	180.12	7,137.02	-1,742.83	1,214.92	1,867.97	0.00	0.00	0.00
8,500.00	90.25	180.12	7,136.59	-1,842.83	1,214.72	1,967.32	0.00	0.00	0.00
8,600.00	90.25	180.12	7,136.16	-1,942.83	1,214.51	2,066.67	0.00	0.00	0.00
8,700.00	90.25	180.12	7,135.73	-2,042.83	1,214.31	2,166.01	0.00	0.00	0.00
8,800.00	90.25	180.12	7,135.30	-2,142.83	1,214.11	2,265.36	0.00	0.00	0.00
8,900.00	90.25	180.12	7,134.87	-2,242.83	1,213.90	2,364.71	0.00	0.00	0.00
9,000.00	90.25	180.12	7,134.45	-2,342.83	1,213.70	2,464.05	0.00	0.00	0.00
9,100.00	90.25	180.12	7,134.02	-2,442.83	1,213.50	2,563.40	0.00	0.00	0.00
9,200.00	90.25	180.12	7,133.59	-2,542.83	1,213.29	2,662.75	0.00	0.00	0.00
9,300.00	90.25	180.12	7,133.16	-2,642.82	1,213.09	2,762.09	0.00	0.00	0.00
9,400.00	90.25	180.12	7,132.73	-2,742.82	1,212.89	2,861.44	0.00	0.00	0.00
9,500.00	90.25	180.12	7,132.30	-2,842.82	1,212.68	2,960.79	0.00	0.00	0.00
9,600.00	90.25	180.12	7,131.88	-2,942.82	1,212.48	3,060.13	0.00	0.00	0.00
9,700.00	90.25	180.12	7,131.45	-3,042.82	1,212.28	3,159.48	0.00	0.00	0.00
9,800.00	90.25	180.12	7,131.02	-3,142.82	1,212.07	3,258.83	0.00	0.00	0.00
9,900.00	90.25	180.12	7,130.59	-3,242.82	1,211.87	3,358.17	0.00	0.00	0.00

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Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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	90.25	180.12	7,130.16	-3,342.82	1,211.67	3,457.52	0.00	0.00	0.00
10,100.00	90.25	180.12	7,129.73	-3,442.82	1,211.47	3,556.87	0.00	0.00	0.00
10,200.00	90.25	180.12	7,129.30	-3,542.81	1,211.26	3,656.21	0.00	0.00	0.00
10,300.00	90.25	180.12	7,128.88	-3,642.81	1,211.06	3,755.56	0.00	0.00	0.00
10,400.00	90.25	180.12	7,128.45	-3,742.81	1,210.86	3,854.91	0.00	0.00	0.00
10,500.00	90.25	180.12	7,128.02	-3,842.81	1,210.65	3,954.25	0.00	0.00	0.00
10,600.00	90.25	180.12	7,127.59	-3,942.81	1,210.45	4,053.60	0.00	0.00	0.00
10,700.00	90.25	180.12	7,127.16	-4,042.81	1,210.25	4,152.95	0.00	0.00	0.00
10,800.00	90.25	180.12	7,126.73	-4,142.81	1,210.04	4,252.29	0.00	0.00	0.00
10,900.00	90.25	180.12	7,126.31	-4,242.81	1,209.84	4,351.64	0.00	0.00	0.00
11,000.00	90.25	180.12	7,125.88	-4,342.81	1,209.64	4,450.99	0.00	0.00	0.00
11,100.00	90.25	180.12	7,125.45	-4,442.80	1,209.43	4,550.33	0.00	0.00	0.00
11,200.00	90.25	180.12	7,125.02	-4,542.80	1,209.23	4,649.68	0.00	0.00	0.00
11,300.00	90.25	180.12	7,124.59	-4,642.80	1,209.03	4,749.02	0.00	0.00	0.00
11,400.00	90.25	180.12	7,124.16	-4,742.80	1,208.82	4,848.37	0.00	0.00	0.00
11,500.00	90.25	180.12	7,123.74	-4,842.80	1,208.62	4,947.72	0.00	0.00	0.00
11,600.00	90.25	180.12	7,123.31	-4,942.80	1,208.42	5,047.06	0.00	0.00	0.00
11,700.00	90.25	180.12	7,122.88	-5,042.80	1,208.22	5,146.41	0.00	0.00	0.00
11,800.00	90.25	180.12	7,122.45	-5,142.80	1,208.01	5,245.76	0.00	0.00	0.00
11,900.00	90.25	180.12	7,122.02	-5,242.80	1,207.81	5,345.10	0.00	0.00	0.00
12,000.00	90.25	180.12	7,121.59	-5,342.79	1,207.61	5,444.45	0.00	0.00	0.00
12,100.00	90.25	180.12	7,121.16	-5,442.79	1,207.40	5,543.80	0.00	0.00	0.00
12,200.00	90.25	180.12	7,120.74	-5,542.79	1,207.20	5,643.14	0.00	0.00	0.00
12,300.00	90.25	180.12	7,120.31	-5,642.79	1,207.00	5,742.49	0.00	0.00	0.00
12,400.00	90.25	180.12	7,119.88	-5,742.79	1,206.79	5,841.84	0.00	0.00	0.00
12,500.00	90.25	180.12	7,119.45	-5,842.79	1,206.59	5,941.18	0.00	0.00	0.00
12,600.00	90.25	180.12	7,119.02	-5,942.79	1,206.39	6,040.53	0.00	0.00	0.00
12,700.00	90.25	180.12	7,118.59	-6,042.79	1,206.18	6,139.88	0.00	0.00	0.00
12,800.00	90.25	180.12	7,118.17	-6,142.79	1,205.98	6,239.22	0.00	0.00	0.00
12,900.00	90.25	180.12	7,117.74	-6,242.78	1,205.78	6,338.57	0.00	0.00	0.00
13,000.00	90.25	180.12	7,117.31	-6,342.78	1,205.57	6,437.92	0.00	0.00	0.00
13,100.00	90.25	180.12	7,116.88	-6,442.78	1,205.37	6,537.26	0.00	0.00	0.00
13,200.00	90.25	180.12	7,116.45	-6,542.78	1,205.17	6,636.61	0.00	0.00	0.00
13,300.00	90.25	180.12	7,116.02	-6,642.78	1,204.97	6,735.96	0.00	0.00	0.00
13,400.00	90.25	180.12	7,115.59	-6,742.78	1,204.76	6,835.30	0.00	0.00	0.00
13,500.00	90.25	180.12	7,115.17	-6,842.78	1,204.56	6,934.65	0.00	0.00	0.00
13,600.00	90.25	180.12	7,114.74	-6,942.78	1,204.36	7,034.00	0.00	0.00	0.00
13,700.00	90.25	180.12	7,114.31	-7,042.78	1,204.15	7,133.34	0.00	0.00	0.00
13,800.00	90.25	180.12	7,113.88	-7,142.77	1,203.95	7,232.69	0.00	0.00	0.00
13,900.00	90.25	180.12	7,113.45	-7,242.77	1,203.75	7,332.04	0.00	0.00	0.00
14,000.00	90.25	180.12	7,113.02	-7,342.77	1,203.54	7,431.38	0.00	0.00	0.00
14,100.00	90.25	180.12	7,112.60	-7,442.77	1,203.34	7,530.73	0.00	0.00	0.00
14,200.00	90.25	180.12	7,112.17	-7,542.77	1,203.14	7,630.08	0.00	0.00	0.00
14,300.00	90.25	180.12	7,111.74	-7,642.77	1,202.93	7,729.42	0.00	0.00	0.00
14,400.00	90.25	180.12	7,111.31	-7,742.77	1,202.73	7,828.77	0.00	0.00	0.00
14,500.00	90.25	180.12	7,110.88	-7,842.77	1,202.53	7,928.12	0.00	0.00	0.00
14,600.00	90.25	180.12	7,110.45	-7,942.77	1,202.32	8,027.46	0.00	0.00	0.00
14,700.00	90.25	180.12	7,110.03	-8,042.76	1,202.12	8,126.81	0.00	0.00	0.00
14,800.00	90.25	180.12	7,109.60	-8,142.76	1,201.92	8,226.15	0.00	0.00	0.00
14,900.00	90.25	180.12	7,109.17	-8,242.76	1,201.72	8,325.50	0.00	0.00	0.00
15,000.00	90.25	180.12	7,108.74	-8,342.76	1,201.51	8,424.85	0.00	0.00	0.00
15,100.00	90.25	180.12	7,108.31	-8,442.76	1,201.31	8,524.19	0.00	0.00	0.00
15,200.00	90.25	180.12	7,107.88	-8,542.76	1,201.11	8,623.54	0.00	0.00	0.00
15,300.00	90.25	180.12	7,107.45	-8,642.76	1,200.90	8,722.89	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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	90.25	180.12	7,107.03	-8,742.76	1,200.70	8,822.23	0.00	0.00	0.00	
15,500.00	90.25	180.12	7,106.60	-8,842.76	1,200.50	8,921.58	0.00	0.00	0.00	
15,600.00	90.25	180.12	7,106.17	-8,942.75	1,200.29	9,020.93	0.00	0.00	0.00	
15,700.00	90.25	180.12	7,105.74	-9,042.75	1,200.09	9,120.27	0.00	0.00	0.00	
15,800.00	90.25	180.12	7,105.31	-9,142.75	1,199.89	9,219.62	0.00	0.00	0.00	
15,900.00	90.25	180.12	7,104.88	-9,242.75	1,199.68	9,318.97	0.00	0.00	0.00	
16,000.00	90.25	180.12	7,104.46	-9,342.75	1,199.48	9,418.31	0.00	0.00	0.00	
16,100.00	90.25	180.12	7,104.03	-9,442.75	1,199.28	9,517.66	0.00	0.00	0.00	
16,200.00	90.25	180.12	7,103.60	-9,542.75	1,199.07	9,617.01	0.00	0.00	0.00	
16,300.00	90.25	180.12	7,103.17	-9,642.75	1,198.87	9,716.35	0.00	0.00	0.00	
16,400.00	90.25	180.12	7,102.74	-9,742.75	1,198.67	9,815.70	0.00	0.00	0.00	
16,500.00	90.25	180.12	7,102.31	-9,842.74	1,198.46	9,915.05	0.00	0.00	0.00	
16,600.00	90.25	180.12	7,101.89	-9,942.74	1,198.26	10,014.39	0.00	0.00	0.00	
16,700.00	90.25	180.12	7,101.46	-10,042.74	1,198.06	10,113.74	0.00	0.00	0.00	
16,800.00	90.25	180.12	7,101.03	-10,142.74	1,197.86	10,213.09	0.00	0.00	0.00	
16,900.00	90.25	180.12	7,100.60	-10,242.74	1,197.65	10,312.43	0.00	0.00	0.00	
17,000.00	90.25	180.12	7,100.17	-10,342.74	1,197.45	10,411.78	0.00	0.00	0.00	
17,100.00	90.25	180.12	7,099.74	-10,442.74	1,197.25	10,511.13	0.00	0.00	0.00	
17,200.00	90.25	180.12	7,099.31	-10,542.74	1,197.04	10,610.47	0.00	0.00	0.00	
17,273.38	90.25	180.12	7,099.00	-10,616.11	1,196.89	10,683.37	0.00	0.00	0.00	
PBHL/TD 17273.38 MD/7099.00 TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
BHL Desha 4-07-1L 470 - hit/miss target - Shape - Point	0.00	0.00	7,099.00	-10,616.11	1,196.89	14,517,290.00	1,732,158.35	39.97360381	-104.67253710	
LP Desha 4-07-1L 470 F - plan hits target center - Point	0.00	0.00	7,139.00	-1,279.87	1,215.86	14,526,626.23	1,732,143.46	39.99924269	-104.67246783	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build	
5,377.20	5,350.54	-70.43	96.85	Begin 37.72° tangent	
7,245.23	6,828.16	-742.59	1,021.16	Begin 10°/100' build/turn	
7,937.03	7,139.00	-1,279.87	1,215.86	LP Begin 90.25° lateral section	
17,273.38	7,099.00	-10,616.11	1,196.89	PBHL/TD 17273.38 MD/7099.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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 33-T01N-R65W			
Site Position:		Northing:	14,527,751.12 usft	Latitude:	40.00234552
From:	Map	Easting:	1,730,774.27 usft	Longitude:	-104.67734224
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	Desha 4-07-1L, Surf loc: 810 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,901.68 usft	Latitude:	40.00275750
	+E/-W	0.00 ft	Easting:	1,730,922.97 usft	Longitude:	-104.67680930
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,078.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/29/2017	8.28	66.45	52,146.20000000

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	173.57

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,273.38 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	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,377.20	37.72	126.02	5,350.54	-70.43	96.85	10.00	10.00	0.00	126.02	
7,245.23	37.72	126.02	6,828.16	-742.59	1,021.16	0.00	0.00	0.00	0.00	
7,937.03	90.25	180.12	7,139.00	-1,279.87	1,215.86	10.00	7.59	7.82	60.06	LP Desha 4-07-1L 471
17,273.38	90.25	180.12	7,099.00	-10,616.11	1,196.89	0.00	0.00	0.00	0.00	BHL Desha 4-07-1L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
100.00	0.00	0.00	100.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
200.00	0.00	0.00	200.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
300.00	0.00	0.00	300.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
400.00	0.00	0.00	400.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
500.00	0.00	0.00	500.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
600.00	0.00	0.00	600.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
700.00	0.00	0.00	700.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
800.00	0.00	0.00	800.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
900.00	0.00	0.00	900.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,901.68	1,730,922.97	40.00275750	-104.67680930
KOP Begin 10°/100' build									
5,100.00	10.00	126.02	5,099.49	-5.12	7.04	14,527,896.59	1,730,930.03	40.00274344	-104.67678416
5,200.00	20.00	126.02	5,195.96	-20.32	27.95	14,527,881.46	1,730,950.99	40.00270169	-104.67670951

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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
5,300.00	30.00	126.02	5,286.48	-45.15	62.08	14,527,856.76	1,730,985.21	40.00263352	-104.67658762
5,377.20	37.72	126.02	5,350.54	-70.43	96.85	14,527,831.61	1,731,020.07	40.00256410	-104.67646348
Begin 37.72° tangent									
5,400.00	37.72	126.02	5,368.57	-78.63	108.12	14,527,823.45	1,731,031.38	40.00254157	-104.67642320
5,500.00	37.72	126.02	5,447.67	-114.61	157.61	14,527,787.65	1,731,080.99	40.00244276	-104.67624651
5,600.00	37.72	126.02	5,526.77	-150.59	207.09	14,527,751.84	1,731,130.60	40.00234394	-104.67606983
5,700.00	37.72	126.02	5,605.87	-186.58	256.57	14,527,716.04	1,731,180.21	40.00224513	-104.67589314
5,800.00	37.72	126.02	5,684.97	-222.56	306.05	14,527,680.24	1,731,229.82	40.00214631	-104.67571645
5,900.00	37.72	126.02	5,764.08	-258.54	355.53	14,527,644.43	1,731,279.43	40.00204749	-104.67553976
6,000.00	37.72	126.02	5,843.18	-294.52	405.01	14,527,608.63	1,731,329.04	40.00194868	-104.67536308
6,100.00	37.72	126.02	5,922.28	-330.51	454.49	14,527,572.83	1,731,378.65	40.00184986	-104.67518639
6,200.00	37.72	126.02	6,001.38	-366.49	503.97	14,527,537.03	1,731,428.26	40.00175104	-104.67500971
6,300.00	37.72	126.02	6,080.48	-402.47	553.45	14,527,501.22	1,731,477.88	40.00165223	-104.67483302
6,400.00	37.72	126.02	6,159.58	-438.46	602.93	14,527,465.42	1,731,527.49	40.00155341	-104.67465634
6,500.00	37.72	126.02	6,238.68	-474.44	652.41	14,527,429.62	1,731,577.10	40.00145459	-104.67447966
6,600.00	37.72	126.02	6,317.78	-510.42	701.89	14,527,393.81	1,731,626.71	40.00135577	-104.67430297
6,700.00	37.72	126.02	6,396.88	-546.40	751.37	14,527,358.01	1,731,676.32	40.00125696	-104.67412629
6,800.00	37.72	126.02	6,475.98	-582.39	800.86	14,527,322.21	1,731,725.93	40.00115814	-104.67394961
6,900.00	37.72	126.02	6,555.08	-618.37	850.34	14,527,286.40	1,731,775.54	40.00105932	-104.67377293
7,000.00	37.72	126.02	6,634.18	-654.35	899.82	14,527,250.60	1,731,825.15	40.00096050	-104.67359625
7,100.00	37.72	126.02	6,713.28	-690.33	949.30	14,527,214.80	1,731,874.76	40.00086168	-104.67341956
7,200.00	37.72	126.02	6,792.38	-726.32	998.78	14,527,179.00	1,731,924.37	40.00076286	-104.67324288
7,245.23	37.72	126.02	6,828.16	-742.59	1,021.16	14,527,162.80	1,731,946.81	40.00071817	-104.67316298
Begin 10°/100' build/turn									
7,300.00	40.69	133.31	6,870.62	-764.71	1,047.72	14,527,140.78	1,731,973.45	40.00065742	-104.67306813
7,400.00	47.09	144.43	6,942.76	-816.99	1,092.86	14,527,088.66	1,732,018.78	40.00051384	-104.67290696
7,500.00	54.36	153.33	7,006.09	-883.26	1,132.50	14,527,022.54	1,732,058.67	40.00033186	-104.67276541
7,600.00	62.17	160.69	7,058.71	-961.49	1,165.45	14,526,944.43	1,732,091.90	40.00011701	-104.67264777
7,700.00	70.31	167.03	7,099.01	-1,049.32	1,190.70	14,526,856.69	1,732,117.47	39.99987582	-104.67255762
7,800.00	78.66	172.76	7,125.75	-1,144.07	1,207.49	14,526,762.01	1,732,134.60	39.99961563	-104.67249770
7,900.00	87.11	178.15	7,138.14	-1,242.86	1,215.30	14,526,663.24	1,732,142.77	39.99934432	-104.67246982
7,937.03	90.25	180.12	7,139.00	-1,279.87	1,215.86	14,526,626.23	1,732,143.46	39.99924269	-104.67246783
LP Begin 90.25° lateral section									
8,000.00	90.25	180.12	7,138.73	-1,342.84	1,215.73	14,526,563.27	1,732,143.56	39.99906977	-104.67246830
8,100.00	90.25	180.12	7,138.30	-1,442.84	1,215.53	14,526,463.27	1,732,143.72	39.99879515	-104.67246904
8,200.00	90.25	180.12	7,137.87	-1,542.84	1,215.33	14,526,363.27	1,732,143.88	39.99852054	-104.67246979
8,300.00	90.25	180.12	7,137.45	-1,642.84	1,215.12	14,526,263.27	1,732,144.04	39.99824593	-104.67247053
8,400.00	90.25	180.12	7,137.02	-1,742.83	1,214.92	14,526,163.27	1,732,144.20	39.99797131	-104.67247127
8,500.00	90.25	180.12	7,136.59	-1,842.83	1,214.72	14,526,063.27	1,732,144.36	39.99769670	-104.67247201
8,600.00	90.25	180.12	7,136.16	-1,942.83	1,214.51	14,525,963.27	1,732,144.52	39.99742209	-104.67247276
8,700.00	90.25	180.12	7,135.73	-2,042.83	1,214.31	14,525,863.27	1,732,144.68	39.99714747	-104.67247350
8,800.00	90.25	180.12	7,135.30	-2,142.83	1,214.11	14,525,763.28	1,732,144.84	39.99687286	-104.67247424
8,900.00	90.25	180.12	7,134.87	-2,242.83	1,213.90	14,525,663.28	1,732,144.99	39.99659825	-104.67247498
9,000.00	90.25	180.12	7,134.45	-2,342.83	1,213.70	14,525,563.28	1,732,145.15	39.99632363	-104.67247573
9,100.00	90.25	180.12	7,134.02	-2,442.83	1,213.50	14,525,463.28	1,732,145.31	39.99604902	-104.67247647
9,200.00	90.25	180.12	7,133.59	-2,542.83	1,213.29	14,525,363.28	1,732,145.47	39.99577441	-104.67247721
9,300.00	90.25	180.12	7,133.16	-2,642.82	1,213.09	14,525,263.28	1,732,145.63	39.99549979	-104.67247795
9,400.00	90.25	180.12	7,132.73	-2,742.82	1,212.89	14,525,163.28	1,732,145.79	39.99522518	-104.67247870
9,500.00	90.25	180.12	7,132.30	-2,842.82	1,212.68	14,525,063.28	1,732,145.95	39.99495057	-104.67247944
9,600.00	90.25	180.12	7,131.88	-2,942.82	1,212.48	14,524,963.29	1,732,146.11	39.99467595	-104.67248018
9,700.00	90.25	180.12	7,131.45	-3,042.82	1,212.28	14,524,863.29	1,732,146.27	39.99440134	-104.67248092
9,800.00	90.25	180.12	7,131.02	-3,142.82	1,212.07	14,524,763.29	1,732,146.43	39.99412673	-104.67248167
9,900.00	90.25	180.12	7,130.59	-3,242.82	1,211.87	14,524,663.29	1,732,146.59	39.99385211	-104.67248241
10,000.00	90.25	180.12	7,130.16	-3,342.82	1,211.67	14,524,563.29	1,732,146.75	39.99357750	-104.67248315

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	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	90.25	180.12	7,129.73	-3,442.82	1,211.47	14,524,463.29	1,732,146.91	39.99330289	-104.67248389
10,200.00	90.25	180.12	7,129.30	-3,542.81	1,211.26	14,524,363.29	1,732,147.07	39.99302827	-104.67248463
10,300.00	90.25	180.12	7,128.88	-3,642.81	1,211.06	14,524,263.29	1,732,147.23	39.99275366	-104.67248538
10,400.00	90.25	180.12	7,128.45	-3,742.81	1,210.86	14,524,163.30	1,732,147.39	39.99247905	-104.67248612
10,500.00	90.25	180.12	7,128.02	-3,842.81	1,210.65	14,524,063.30	1,732,147.55	39.99220443	-104.67248686
10,600.00	90.25	180.12	7,127.59	-3,942.81	1,210.45	14,523,963.30	1,732,147.71	39.99192982	-104.67248760
10,700.00	90.25	180.12	7,127.16	-4,042.81	1,210.25	14,523,863.30	1,732,147.87	39.99165521	-104.67248835
10,800.00	90.25	180.12	7,126.73	-4,142.81	1,210.04	14,523,763.30	1,732,148.02	39.99138059	-104.67248909
10,900.00	90.25	180.12	7,126.31	-4,242.81	1,209.84	14,523,663.30	1,732,148.18	39.99110598	-104.67248983
11,000.00	90.25	180.12	7,125.88	-4,342.81	1,209.64	14,523,563.30	1,732,148.34	39.99083137	-104.67249057
11,100.00	90.25	180.12	7,125.45	-4,442.80	1,209.43	14,523,463.30	1,732,148.50	39.99055675	-104.67249131
11,200.00	90.25	180.12	7,125.02	-4,542.80	1,209.23	14,523,363.31	1,732,148.66	39.99028214	-104.67249206
11,300.00	90.25	180.12	7,124.59	-4,642.80	1,209.03	14,523,263.31	1,732,148.82	39.99000753	-104.67249280
11,400.00	90.25	180.12	7,124.16	-4,742.80	1,208.82	14,523,163.31	1,732,148.98	39.98973291	-104.67249354
11,500.00	90.25	180.12	7,123.74	-4,842.80	1,208.62	14,523,063.31	1,732,149.14	39.98945830	-104.67249428
11,600.00	90.25	180.12	7,123.31	-4,942.80	1,208.42	14,522,963.31	1,732,149.30	39.98918369	-104.67249502
11,700.00	90.25	180.12	7,122.88	-5,042.80	1,208.22	14,522,863.31	1,732,149.46	39.98890907	-104.67249577
11,800.00	90.25	180.12	7,122.45	-5,142.80	1,208.01	14,522,763.31	1,732,149.62	39.98863446	-104.67249651
11,900.00	90.25	180.12	7,122.02	-5,242.80	1,207.81	14,522,663.31	1,732,149.78	39.98835985	-104.67249725
12,000.00	90.25	180.12	7,121.59	-5,342.79	1,207.61	14,522,563.32	1,732,149.94	39.98808523	-104.67249799
12,100.00	90.25	180.12	7,121.16	-5,442.79	1,207.40	14,522,463.32	1,732,150.10	39.98781062	-104.67249874
12,200.00	90.25	180.12	7,120.74	-5,542.79	1,207.20	14,522,363.32	1,732,150.26	39.98753600	-104.67249948
12,300.00	90.25	180.12	7,120.31	-5,642.79	1,207.00	14,522,263.32	1,732,150.42	39.98726139	-104.67250022
12,400.00	90.25	180.12	7,119.88	-5,742.79	1,206.79	14,522,163.32	1,732,150.58	39.98698678	-104.67250096
12,500.00	90.25	180.12	7,119.45	-5,842.79	1,206.59	14,522,063.32	1,732,150.74	39.98671216	-104.67250170
12,600.00	90.25	180.12	7,119.02	-5,942.79	1,206.39	14,521,963.32	1,732,150.90	39.98643755	-104.67250244
12,700.00	90.25	180.12	7,118.59	-6,042.79	1,206.18	14,521,863.32	1,732,151.05	39.98616294	-104.67250319
12,800.00	90.25	180.12	7,118.17	-6,142.79	1,205.98	14,521,763.32	1,732,151.21	39.98588832	-104.67250393
12,900.00	90.25	180.12	7,117.74	-6,242.78	1,205.78	14,521,663.33	1,732,151.37	39.98561371	-104.67250467
13,000.00	90.25	180.12	7,117.31	-6,342.78	1,205.57	14,521,563.33	1,732,151.53	39.98533910	-104.67250541
13,100.00	90.25	180.12	7,116.88	-6,442.78	1,205.37	14,521,463.33	1,732,151.69	39.98506448	-104.67250615
13,200.00	90.25	180.12	7,116.45	-6,542.78	1,205.17	14,521,363.33	1,732,151.85	39.98478987	-104.67250690
13,300.00	90.25	180.12	7,116.02	-6,642.78	1,204.97	14,521,263.33	1,732,152.01	39.98451525	-104.67250764
13,400.00	90.25	180.12	7,115.59	-6,742.78	1,204.76	14,521,163.33	1,732,152.17	39.98424064	-104.67250838
13,500.00	90.25	180.12	7,115.17	-6,842.78	1,204.56	14,521,063.33	1,732,152.33	39.98396603	-104.67250912
13,600.00	90.25	180.12	7,114.74	-6,942.78	1,204.36	14,520,963.33	1,732,152.49	39.98369141	-104.67250986
13,700.00	90.25	180.12	7,114.31	-7,042.78	1,204.15	14,520,863.34	1,732,152.65	39.98341680	-104.67251061
13,800.00	90.25	180.12	7,113.88	-7,142.77	1,203.95	14,520,763.34	1,732,152.81	39.98314218	-104.67251135
13,900.00	90.25	180.12	7,113.45	-7,242.77	1,203.75	14,520,663.34	1,732,152.97	39.98286757	-104.67251209
14,000.00	90.25	180.12	7,113.02	-7,342.77	1,203.54	14,520,563.34	1,732,153.13	39.98259296	-104.67251283
14,100.00	90.25	180.12	7,112.60	-7,442.77	1,203.34	14,520,463.34	1,732,153.29	39.98231834	-104.67251357
14,200.00	90.25	180.12	7,112.17	-7,542.77	1,203.14	14,520,363.34	1,732,153.45	39.98204373	-104.67251431
14,300.00	90.25	180.12	7,111.74	-7,642.77	1,202.93	14,520,263.34	1,732,153.61	39.98176912	-104.67251506
14,400.00	90.25	180.12	7,111.31	-7,742.77	1,202.73	14,520,163.34	1,732,153.77	39.98149450	-104.67251580
14,500.00	90.25	180.12	7,110.88	-7,842.77	1,202.53	14,520,063.35	1,732,153.93	39.98121989	-104.67251654
14,600.00	90.25	180.12	7,110.45	-7,942.77	1,202.32	14,519,963.35	1,732,154.09	39.98094527	-104.67251728
14,700.00	90.25	180.12	7,110.03	-8,042.76	1,202.12	14,519,863.35	1,732,154.24	39.98067066	-104.67251802
14,800.00	90.25	180.12	7,109.60	-8,142.76	1,201.92	14,519,763.35	1,732,154.40	39.98039605	-104.67251876
14,900.00	90.25	180.12	7,109.17	-8,242.76	1,201.72	14,519,663.35	1,732,154.56	39.98012143	-104.67251951
15,000.00	90.25	180.12	7,108.74	-8,342.76	1,201.51	14,519,563.35	1,732,154.72	39.97984682	-104.67252025
15,100.00	90.25	180.12	7,108.31	-8,442.76	1,201.31	14,519,463.35	1,732,154.88	39.97957220	-104.67252099
15,200.00	90.25	180.12	7,107.88	-8,542.76	1,201.11	14,519,363.35	1,732,155.04	39.97929759	-104.67252173
15,300.00	90.25	180.12	7,107.45	-8,642.76	1,200.90	14,519,263.36	1,732,155.20	39.97902298	-104.67252247
15,400.00	90.25	180.12	7,107.03	-8,742.76	1,200.70	14,519,163.36	1,732,155.36	39.97874836	-104.67252321
15,500.00	90.25	180.12	7,106.60	-8,842.76	1,200.50	14,519,063.36	1,732,155.52	39.97847375	-104.67252396

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-07-1L
Company:	Confluence Resources	TVD Reference:	RKB=5078+25 @ 5103.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5078+25 @ 5103.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-07-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey										
Measured			Vertical			Map	Map			
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)			
15,600.00	90.25	180.12	7,106.17	-8,942.75	1,200.29	14,518,963.36	1,732,155.68	39.97819913	-104.67252470	
15,700.00	90.25	180.12	7,105.74	-9,042.75	1,200.09	14,518,863.36	1,732,155.84	39.97792452	-104.67252544	
15,800.00	90.25	180.12	7,105.31	-9,142.75	1,199.89	14,518,763.36	1,732,156.00	39.97764991	-104.67252618	
15,900.00	90.25	180.12	7,104.88	-9,242.75	1,199.68	14,518,663.36	1,732,156.16	39.97737529	-104.67252692	
16,000.00	90.25	180.12	7,104.46	-9,342.75	1,199.48	14,518,563.36	1,732,156.32	39.97710068	-104.67252766	
16,100.00	90.25	180.12	7,104.03	-9,442.75	1,199.28	14,518,463.37	1,732,156.48	39.97682606	-104.67252840	
16,200.00	90.25	180.12	7,103.60	-9,542.75	1,199.07	14,518,363.37	1,732,156.64	39.97655145	-104.67252915	
16,300.00	90.25	180.12	7,103.17	-9,642.75	1,198.87	14,518,263.37	1,732,156.80	39.97627683	-104.67252989	
16,400.00	90.25	180.12	7,102.74	-9,742.75	1,198.67	14,518,163.37	1,732,156.96	39.97600222	-104.67253063	
16,500.00	90.25	180.12	7,102.31	-9,842.74	1,198.46	14,518,063.37	1,732,157.12	39.97572761	-104.67253137	
16,600.00	90.25	180.12	7,101.89	-9,942.74	1,198.26	14,517,963.37	1,732,157.27	39.97545299	-104.67253211	
16,700.00	90.25	180.12	7,101.46	-10,042.74	1,198.06	14,517,863.37	1,732,157.43	39.97517838	-104.67253285	
16,800.00	90.25	180.12	7,101.03	-10,142.74	1,197.86	14,517,763.37	1,732,157.59	39.97490376	-104.67253359	
16,900.00	90.25	180.12	7,100.60	-10,242.74	1,197.65	14,517,663.38	1,732,157.75	39.97462915	-104.67253434	
17,000.00	90.25	180.12	7,100.17	-10,342.74	1,197.45	14,517,563.38	1,732,157.91	39.97435454	-104.67253508	
17,100.00	90.25	180.12	7,099.74	-10,442.74	1,197.25	14,517,463.38	1,732,158.07	39.97407992	-104.67253582	
17,200.00	90.25	180.12	7,099.31	-10,542.74	1,197.04	14,517,363.38	1,732,158.23	39.97380531	-104.67253656	
17,273.38	90.25	180.12	7,099.00	-10,616.11	1,196.89	14,517,290.00	1,732,158.35	39.97360381	-104.67253710	
PBHL/TD 17273.38 MD/7099.00 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										
BHL Desha 4-07-1L 470	0.00	0.00	7,099.00	-10,616.11	1,196.89	14,517,290.00	1,732,158.35	39.97360381	-104.67253710	
- plan hits target center										
- Point										
LP Desha 4-07-1L 470 F	0.00	0.00	7,139.00	-1,279.87	1,215.86	14,526,626.23	1,732,143.46	39.99924269	-104.67246783	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build	
5,377.20	5,350.54	-70.43	96.85	Begin 37.72° tangent	
7,245.23	6,828.16	-742.59	1,021.16	Begin 10°/100' build/turn	
7,937.03	7,139.00	-1,279.87	1,215.86	LP Begin 90.25° lateral section	
17,273.38	7,099.00	-10,616.11	1,196.89	PBHL/TD 17273.38 MD/7099.00 TVD	