

**Weld County, Colorado
Section 34-T01N-R65W
Desha 4-2-4L
plan1**

Section Details

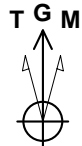
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	5346.25	34.62	246.63	5325.55	-40.25	-93.15	10.00	52.74	Begin 34.62° tangent
4	7563.84	34.62	246.63	7150.39	-540.00	-1249.84	0.00	707.67	Begin 10°/100' build/turn
5	8333.82	89.93	179.84	7526.00	-1098.44	-1486.29	10.00	1293.45	LP Begin 89.93° lateral section
6	17693.14	89.93	179.84	7538.00	-10457.71	-1460.42	0.00	10559.19	PBHL/TD 17693.14 MD/7538.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP Desha 4-2-4L 470 FNL 610 FEL	7526.00	-1098.44	-1486.2914526641.56	1735164.53	39.99925380	-104.66168036	
BHL Desha 4-2-4L 470 FSL 610 FEL	7538.00	-10457.71	-1460.4214517282.31	1735190.40	39.97355161	-104.66171478	

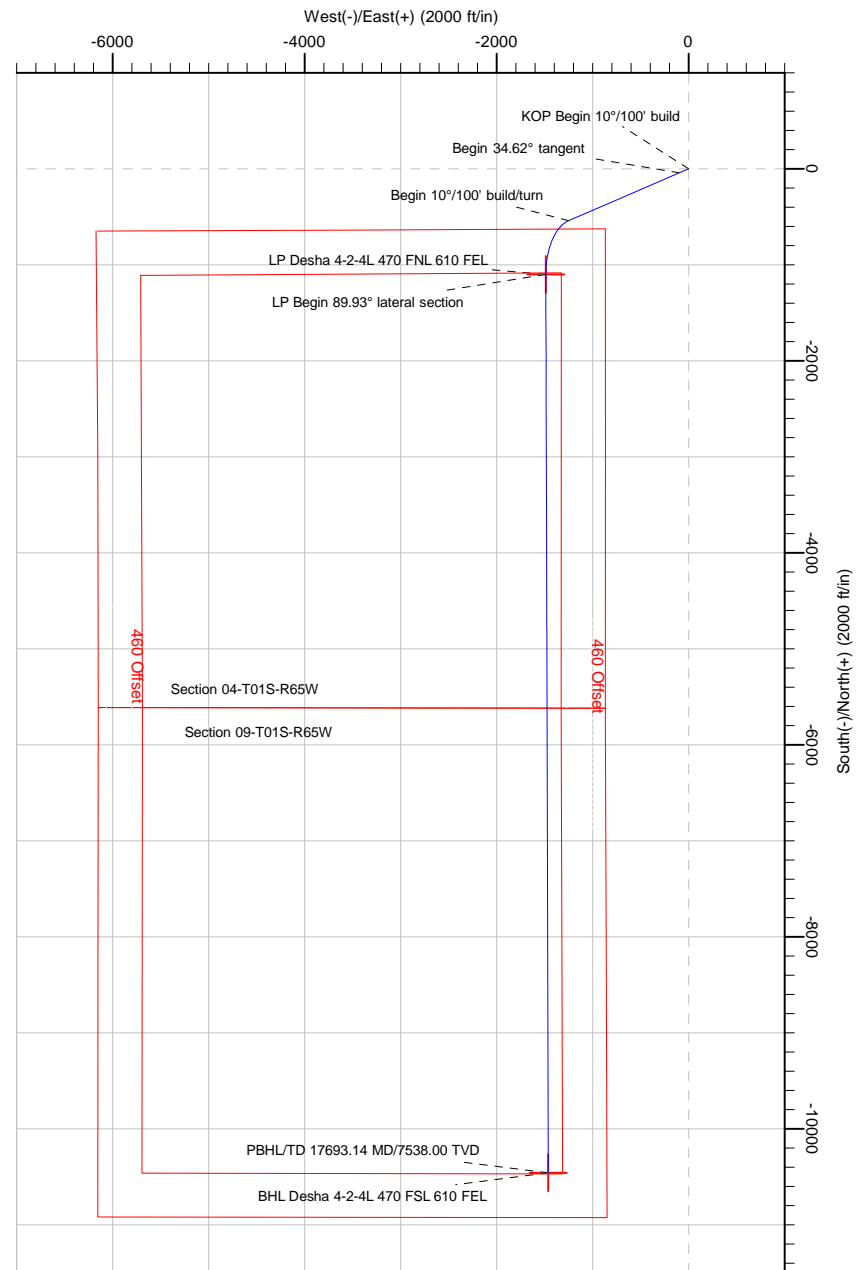
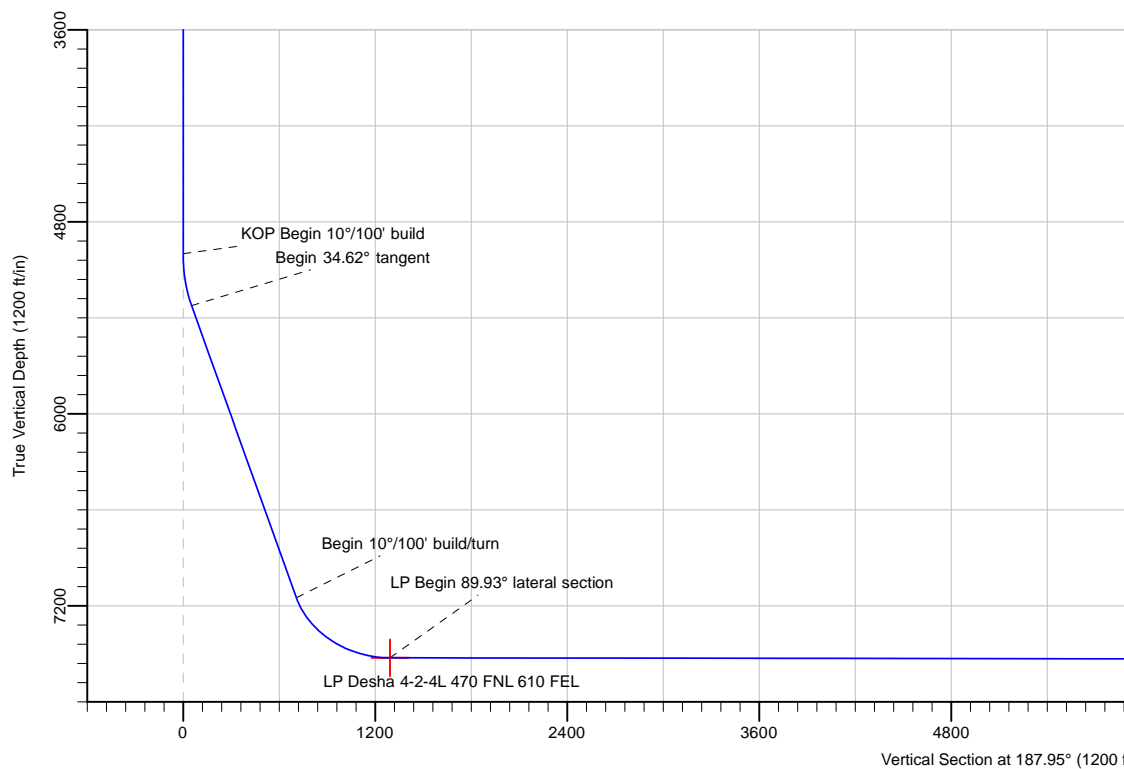
Desha 4-2-4L			
Surf loc: 620 FSL 918 FWL Sec34-T01N-R65W			
NAD83 Colorado - HARN			
Universal Transverse Mercator (US Survey Feet)			
Zone 13N (108 W to 102 W)			
RKB-5140+25 @ 5165.00ft			
Northing	Easting	Latitude	Longitude
14527740.00	1736650.82	40.00225466	-104.65635818

Azimuth Corrections:
To convert a Magnetic Direction to a True Direction, Add 8.27° East



Azimuths to Grid North
True North: -0.22°
Magnetic North: 8.05°

Magnetic Field
Strength: 52109.7snT
Dip Angle: 66.45°
Date: 8/29/2017
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 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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 34-T01N-R65W			
Site Position:		Northing:	14,527,892.80 usft	Latitude:	40.00267560
From:	Map	Easting:	1,736,525.30 usft	Longitude:	-104.65680429
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well	Desha 4-2-4L, Surf loc: 620 FSL 918 FWL Sec34-T01N-R65W					
Well Position	+N/-S	-152.80 ft	Northing:	14,527,740.00 usft	Latitude:	40.00225466
	+E/-W	125.52 ft	Easting:	1,736,650.82 usft	Longitude:	-104.65635818
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,140.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/29/2017	8.27	66.45	52,109.70000000

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	187.95

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,693.14	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	
5,346.25	34.62	246.63	5,325.55	-40.25	-93.15	10.00	10.00	0.00	246.63	
7,563.84	34.62	246.63	7,150.39	-540.00	-1,249.84	0.00	0.00	0.00	0.00	
8,333.82	89.93	179.84	7,526.00	-1,098.44	-1,486.29	10.00	7.18	-8.67	-70.61	LP Desha 4-2-4L 470
17,693.14	89.93	179.84	7,538.00	-10,457.71	-1,460.42	0.00	0.00	0.00	0.00	BHL Desha 4-2-4L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	246.63	5,099.49	-3.45	-7.99	4.52	10.00	10.00	0.00
5,200.00	20.00	246.63	5,195.96	-13.70	-31.72	17.96	10.00	10.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	246.63	5,286.48	-30.45	-70.47	39.90	10.00	10.00	0.00
5,346.25	34.62	246.63	5,325.55	-40.25	-93.15	52.74	10.00	10.00	0.00
Begin 34.62° tangent									
5,400.00	34.62	246.63	5,369.79	-52.36	-121.19	68.62	0.00	0.00	0.00
5,500.00	34.62	246.63	5,452.08	-74.90	-173.35	98.15	0.00	0.00	0.00
5,600.00	34.62	246.63	5,534.37	-97.43	-225.51	127.69	0.00	0.00	0.00
5,700.00	34.62	246.63	5,616.65	-119.97	-277.67	157.22	0.00	0.00	0.00
5,800.00	34.62	246.63	5,698.94	-142.50	-329.83	186.75	0.00	0.00	0.00
5,900.00	34.62	246.63	5,781.23	-165.04	-381.99	216.29	0.00	0.00	0.00
6,000.00	34.62	246.63	5,863.52	-187.58	-434.15	245.82	0.00	0.00	0.00
6,100.00	34.62	246.63	5,945.81	-210.11	-486.31	275.35	0.00	0.00	0.00
6,200.00	34.62	246.63	6,028.10	-232.65	-538.47	304.89	0.00	0.00	0.00
6,300.00	34.62	246.63	6,110.39	-255.18	-590.63	334.42	0.00	0.00	0.00
6,400.00	34.62	246.63	6,192.68	-277.72	-642.79	363.95	0.00	0.00	0.00
6,500.00	34.62	246.63	6,274.97	-300.25	-694.95	393.49	0.00	0.00	0.00
6,600.00	34.62	246.63	6,357.26	-322.79	-747.11	423.02	0.00	0.00	0.00
6,700.00	34.62	246.63	6,439.55	-345.33	-799.27	452.55	0.00	0.00	0.00
6,800.00	34.62	246.63	6,521.84	-367.86	-851.43	482.09	0.00	0.00	0.00
6,900.00	34.62	246.63	6,604.12	-390.40	-903.59	511.62	0.00	0.00	0.00
7,000.00	34.62	246.63	6,686.41	-412.93	-955.74	541.15	0.00	0.00	0.00
7,100.00	34.62	246.63	6,768.70	-435.47	-1,007.90	570.68	0.00	0.00	0.00
7,200.00	34.62	246.63	6,850.99	-458.00	-1,060.06	600.22	0.00	0.00	0.00
7,300.00	34.62	246.63	6,933.28	-480.54	-1,112.22	629.75	0.00	0.00	0.00
7,400.00	34.62	246.63	7,015.57	-503.08	-1,164.38	659.28	0.00	0.00	0.00
7,500.00	34.62	246.63	7,097.86	-525.61	-1,216.54	688.82	0.00	0.00	0.00
7,563.84	34.62	246.63	7,150.39	-540.00	-1,249.84	707.67	0.00	0.00	0.00
Begin 10°/100' build/turn									
7,600.00	35.97	240.82	7,179.91	-549.25	-1,268.55	719.43	10.00	3.71	-16.08
7,700.00	40.94	226.83	7,258.35	-586.08	-1,318.21	762.77	10.00	4.98	-13.99
7,800.00	47.28	215.68	7,330.22	-638.48	-1,363.65	820.94	10.00	6.34	-11.15
7,900.00	54.49	206.73	7,393.34	-704.84	-1,403.48	892.18	10.00	7.21	-8.95
8,000.00	62.25	199.31	7,445.79	-783.15	-1,436.50	974.30	10.00	7.76	-7.42
8,100.00	70.35	192.89	7,485.98	-871.04	-1,461.70	1,064.83	10.00	8.10	-6.41
8,200.00	78.66	187.11	7,512.70	-965.83	-1,478.32	1,161.01	10.00	8.31	-5.78
8,300.00	87.07	181.66	7,525.11	-1,064.64	-1,485.85	1,259.91	10.00	8.41	-5.45
8,333.82	89.93	179.84	7,526.00	-1,098.44	-1,486.29	1,293.45	10.00	8.44	-5.36
LP Begin 89.93° lateral section									
8,400.00	89.93	179.84	7,526.09	-1,164.62	-1,486.11	1,358.97	0.00	0.00	0.00
8,500.00	89.93	179.84	7,526.21	-1,264.62	-1,485.83	1,457.97	0.00	0.00	0.00
8,600.00	89.93	179.84	7,526.34	-1,364.62	-1,485.56	1,556.97	0.00	0.00	0.00
8,700.00	89.93	179.84	7,526.47	-1,464.62	-1,485.28	1,655.97	0.00	0.00	0.00
8,800.00	89.93	179.84	7,526.60	-1,564.62	-1,485.00	1,754.97	0.00	0.00	0.00
8,900.00	89.93	179.84	7,526.73	-1,664.62	-1,484.73	1,853.97	0.00	0.00	0.00
9,000.00	89.93	179.84	7,526.85	-1,764.62	-1,484.45	1,952.97	0.00	0.00	0.00
9,100.00	89.93	179.84	7,526.98	-1,864.61	-1,484.18	2,051.97	0.00	0.00	0.00
9,200.00	89.93	179.84	7,527.11	-1,964.61	-1,483.90	2,150.97	0.00	0.00	0.00
9,300.00	89.93	179.84	7,527.24	-2,064.61	-1,483.62	2,249.97	0.00	0.00	0.00
9,400.00	89.93	179.84	7,527.37	-2,164.61	-1,483.35	2,348.97	0.00	0.00	0.00
9,500.00	89.93	179.84	7,527.50	-2,264.61	-1,483.07	2,447.97	0.00	0.00	0.00
9,600.00	89.93	179.84	7,527.62	-2,364.61	-1,482.79	2,546.97	0.00	0.00	0.00
9,700.00	89.93	179.84	7,527.75	-2,464.61	-1,482.52	2,645.97	0.00	0.00	0.00
9,800.00	89.93	179.84	7,527.88	-2,564.61	-1,482.24	2,744.97	0.00	0.00	0.00
9,900.00	89.93	179.84	7,528.01	-2,664.61	-1,481.96	2,843.97	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	89.93	179.84	7,528.14	-2,764.61	-1,481.69	2,942.97	0.00	0.00	0.00
10,100.00	89.93	179.84	7,528.26	-2,864.61	-1,481.41	3,041.97	0.00	0.00	0.00
10,200.00	89.93	179.84	7,528.39	-2,964.61	-1,481.13	3,140.97	0.00	0.00	0.00
10,300.00	89.93	179.84	7,528.52	-3,064.61	-1,480.86	3,239.97	0.00	0.00	0.00
10,400.00	89.93	179.84	7,528.65	-3,164.61	-1,480.58	3,338.97	0.00	0.00	0.00
10,500.00	89.93	179.84	7,528.78	-3,264.61	-1,480.31	3,437.97	0.00	0.00	0.00
10,600.00	89.93	179.84	7,528.91	-3,364.61	-1,480.03	3,536.97	0.00	0.00	0.00
10,700.00	89.93	179.84	7,529.03	-3,464.61	-1,479.75	3,635.97	0.00	0.00	0.00
10,800.00	89.93	179.84	7,529.16	-3,564.61	-1,479.48	3,734.97	0.00	0.00	0.00
10,900.00	89.93	179.84	7,529.29	-3,664.61	-1,479.20	3,833.97	0.00	0.00	0.00
11,000.00	89.93	179.84	7,529.42	-3,764.61	-1,478.92	3,932.97	0.00	0.00	0.00
11,100.00	89.93	179.84	7,529.55	-3,864.61	-1,478.65	4,031.97	0.00	0.00	0.00
11,200.00	89.93	179.84	7,529.68	-3,964.60	-1,478.37	4,130.97	0.00	0.00	0.00
11,300.00	89.93	179.84	7,529.80	-4,064.60	-1,478.09	4,229.97	0.00	0.00	0.00
11,400.00	89.93	179.84	7,529.93	-4,164.60	-1,477.82	4,328.97	0.00	0.00	0.00
11,500.00	89.93	179.84	7,530.06	-4,264.60	-1,477.54	4,427.97	0.00	0.00	0.00
11,600.00	89.93	179.84	7,530.19	-4,364.60	-1,477.26	4,526.97	0.00	0.00	0.00
11,700.00	89.93	179.84	7,530.32	-4,464.60	-1,476.99	4,625.97	0.00	0.00	0.00
11,800.00	89.93	179.84	7,530.44	-4,564.60	-1,476.71	4,724.97	0.00	0.00	0.00
11,900.00	89.93	179.84	7,530.57	-4,664.60	-1,476.44	4,823.97	0.00	0.00	0.00
12,000.00	89.93	179.84	7,530.70	-4,764.60	-1,476.16	4,922.97	0.00	0.00	0.00
12,100.00	89.93	179.84	7,530.83	-4,864.60	-1,475.88	5,021.98	0.00	0.00	0.00
12,200.00	89.93	179.84	7,530.96	-4,964.60	-1,475.61	5,120.98	0.00	0.00	0.00
12,300.00	89.93	179.84	7,531.09	-5,064.60	-1,475.33	5,219.98	0.00	0.00	0.00
12,400.00	89.93	179.84	7,531.21	-5,164.60	-1,475.05	5,318.98	0.00	0.00	0.00
12,500.00	89.93	179.84	7,531.34	-5,264.60	-1,474.78	5,417.98	0.00	0.00	0.00
12,600.00	89.93	179.84	7,531.47	-5,364.60	-1,474.50	5,516.98	0.00	0.00	0.00
12,700.00	89.93	179.84	7,531.60	-5,464.60	-1,474.22	5,615.98	0.00	0.00	0.00
12,800.00	89.93	179.84	7,531.73	-5,564.60	-1,473.95	5,714.98	0.00	0.00	0.00
12,900.00	89.93	179.84	7,531.85	-5,664.60	-1,473.67	5,813.98	0.00	0.00	0.00
13,000.00	89.93	179.84	7,531.98	-5,764.60	-1,473.40	5,912.98	0.00	0.00	0.00
13,100.00	89.93	179.84	7,532.11	-5,864.60	-1,473.12	6,011.98	0.00	0.00	0.00
13,200.00	89.93	179.84	7,532.24	-5,964.60	-1,472.84	6,110.98	0.00	0.00	0.00
13,300.00	89.93	179.84	7,532.37	-6,064.60	-1,472.57	6,209.98	0.00	0.00	0.00
13,400.00	89.93	179.84	7,532.50	-6,164.59	-1,472.29	6,308.98	0.00	0.00	0.00
13,500.00	89.93	179.84	7,532.62	-6,264.59	-1,472.01	6,407.98	0.00	0.00	0.00
13,600.00	89.93	179.84	7,532.75	-6,364.59	-1,471.74	6,506.98	0.00	0.00	0.00
13,700.00	89.93	179.84	7,532.88	-6,464.59	-1,471.46	6,605.98	0.00	0.00	0.00
13,800.00	89.93	179.84	7,533.01	-6,564.59	-1,471.18	6,704.98	0.00	0.00	0.00
13,900.00	89.93	179.84	7,533.14	-6,664.59	-1,470.91	6,803.98	0.00	0.00	0.00
14,000.00	89.93	179.84	7,533.27	-6,764.59	-1,470.63	6,902.98	0.00	0.00	0.00
14,100.00	89.93	179.84	7,533.39	-6,864.59	-1,470.35	7,001.98	0.00	0.00	0.00
14,200.00	89.93	179.84	7,533.52	-6,964.59	-1,470.08	7,100.98	0.00	0.00	0.00
14,300.00	89.93	179.84	7,533.65	-7,064.59	-1,469.80	7,199.98	0.00	0.00	0.00
14,400.00	89.93	179.84	7,533.78	-7,164.59	-1,469.53	7,298.98	0.00	0.00	0.00
14,500.00	89.93	179.84	7,533.91	-7,264.59	-1,469.25	7,397.98	0.00	0.00	0.00
14,600.00	89.93	179.84	7,534.03	-7,364.59	-1,468.97	7,496.98	0.00	0.00	0.00
14,700.00	89.93	179.84	7,534.16	-7,464.59	-1,468.70	7,595.98	0.00	0.00	0.00
14,800.00	89.93	179.84	7,534.29	-7,564.59	-1,468.42	7,694.98	0.00	0.00	0.00
14,900.00	89.93	179.84	7,534.42	-7,664.59	-1,468.14	7,793.98	0.00	0.00	0.00
15,000.00	89.93	179.84	7,534.55	-7,764.59	-1,467.87	7,892.98	0.00	0.00	0.00
15,100.00	89.93	179.84	7,534.68	-7,864.59	-1,467.59	7,991.98	0.00	0.00	0.00
15,200.00	89.93	179.84	7,534.80	-7,964.59	-1,467.31	8,090.98	0.00	0.00	0.00
15,300.00	89.93	179.84	7,534.93	-8,064.59	-1,467.04	8,189.98	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	89.93	179.84	7,535.06	-8,164.59	-1,466.76	8,288.98	0.00	0.00	0.00
15,500.00	89.93	179.84	7,535.19	-8,264.59	-1,466.48	8,387.98	0.00	0.00	0.00
15,600.00	89.93	179.84	7,535.32	-8,364.58	-1,466.21	8,486.98	0.00	0.00	0.00
15,700.00	89.93	179.84	7,535.44	-8,464.58	-1,465.93	8,585.98	0.00	0.00	0.00
15,800.00	89.93	179.84	7,535.57	-8,564.58	-1,465.66	8,684.98	0.00	0.00	0.00
15,900.00	89.93	179.84	7,535.70	-8,664.58	-1,465.38	8,783.98	0.00	0.00	0.00
16,000.00	89.93	179.84	7,535.83	-8,764.58	-1,465.10	8,882.98	0.00	0.00	0.00
16,100.00	89.93	179.84	7,535.96	-8,864.58	-1,464.83	8,981.98	0.00	0.00	0.00
16,200.00	89.93	179.84	7,536.09	-8,964.58	-1,464.55	9,080.98	0.00	0.00	0.00
16,300.00	89.93	179.84	7,536.21	-9,064.58	-1,464.27	9,179.98	0.00	0.00	0.00
16,400.00	89.93	179.84	7,536.34	-9,164.58	-1,464.00	9,278.99	0.00	0.00	0.00
16,500.00	89.93	179.84	7,536.47	-9,264.58	-1,463.72	9,377.99	0.00	0.00	0.00
16,600.00	89.93	179.84	7,536.60	-9,364.58	-1,463.44	9,476.99	0.00	0.00	0.00
16,700.00	89.93	179.84	7,536.73	-9,464.58	-1,463.17	9,575.99	0.00	0.00	0.00
16,800.00	89.93	179.84	7,536.86	-9,564.58	-1,462.89	9,674.99	0.00	0.00	0.00
16,900.00	89.93	179.84	7,536.98	-9,664.58	-1,462.62	9,773.99	0.00	0.00	0.00
17,000.00	89.93	179.84	7,537.11	-9,764.58	-1,462.34	9,872.99	0.00	0.00	0.00
17,100.00	89.93	179.84	7,537.24	-9,864.58	-1,462.06	9,971.99	0.00	0.00	0.00
17,200.00	89.93	179.84	7,537.37	-9,964.58	-1,461.79	10,070.99	0.00	0.00	0.00
17,300.00	89.93	179.84	7,537.50	-10,064.58	-1,461.51	10,169.99	0.00	0.00	0.00
17,400.00	89.93	179.84	7,537.62	-10,164.58	-1,461.23	10,268.99	0.00	0.00	0.00
17,500.00	89.93	179.84	7,537.75	-10,264.58	-1,460.96	10,367.99	0.00	0.00	0.00
17,600.00	89.93	179.84	7,537.88	-10,364.58	-1,460.68	10,466.99	0.00	0.00	0.00
17,693.14	89.93	179.84	7,538.00	-10,457.71	-1,460.42	10,559.19	0.00	0.00	0.00
PBHL/TD 17693.14 MD/7538.00 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
LP Desha 4-2-4L 470 FM - plan hits target center - Point	0.00	0.00	7,526.00	-1,098.44	-1,486.29	14,526,641.56	1,735,164.53	39.99925380	-104.66168036
BHL Desha 4-2-4L 470 F - plan hits target center - Point	0.00	0.00	7,538.00	-10,457.71	-1,460.42	14,517,282.31	1,735,190.40	39.97355161	-104.66171478

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	
5,346.25	5,325.55	-40.25	-93.15	Begin 34.62° tangent	
7,563.84	7,150.39	-540.00	-1,249.84	Begin 10°/100' build/turn	
8,333.82	7,526.00	-1,098.44	-1,486.29	LP Begin 89.93° lateral section	
17,693.14	7,538.00	-10,457.71	-1,460.42	PBHL/TD 17693.14 MD/7538.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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 34-T01N-R65W			
Site Position:		Northing:	14,527,892.80 usft	Latitude:	40.00267560
From:	Map	Easting:	1,736,525.30 usft	Longitude:	-104.65680429
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well	Desha 4-2-4L, Surf loc: 620 FSL 918 FWL Sec34-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,740.00 usft	Latitude:	40.00225466
	+E/-W	0.00 ft	Easting:	1,736,650.82 usft	Longitude:	-104.65635818
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,140.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/29/2017	8.27	66.45	52,109.70000000

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	187.95

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,693.14 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	
5,346.25	34.62	246.63	5,325.55	-40.25	-93.15	10.00	10.00	0.00	246.63	
7,563.84	34.62	246.63	7,150.39	-540.00	-1,249.84	0.00	0.00	0.00	0.00	
8,333.82	89.93	179.84	7,526.00	-1,098.44	-1,486.29	10.00	7.18	-8.67	-70.61	LP Desha 4-2-4L 470
17,693.14	89.93	179.84	7,538.00	-10,457.71	-1,460.42	0.00	0.00	0.00	0.00	BHL Desha 4-2-4L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
100.00	0.00	0.00	100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
200.00	0.00	0.00	200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
300.00	0.00	0.00	300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
400.00	0.00	0.00	400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
500.00	0.00	0.00	500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
600.00	0.00	0.00	600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
700.00	0.00	0.00	700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
800.00	0.00	0.00	800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
900.00	0.00	0.00	900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
KOP Begin 10°/100' build									
5,100.00	10.00	246.63	5,099.49	-3.45	-7.99	14,527,736.55	1,736,642.83	40.00224527	-104.65638676
5,200.00	20.00	246.63	5,195.96	-13.70	-31.72	14,527,726.30	1,736,619.10	40.00221736	-104.65647163

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	246.63	5,286.48	-30.45	-70.47	14,527,709.56	1,736,580.35	40.00217180	-104.65661022
5,346.25	34.62	246.63	5,325.55	-40.25	-93.15	14,527,699.76	1,736,557.67	40.00214512	-104.65669136
Begin 34.62° tangent									
5,400.00	34.62	246.63	5,369.79	-52.36	-121.19	14,527,687.64	1,736,529.63	40.00211215	-104.65679165
5,500.00	34.62	246.63	5,452.08	-74.90	-173.35	14,527,665.11	1,736,477.47	40.00205082	-104.65697821
5,600.00	34.62	246.63	5,534.37	-97.43	-225.51	14,527,642.57	1,736,425.31	40.00198948	-104.65716477
5,700.00	34.62	246.63	5,616.65	-119.97	-277.67	14,527,620.04	1,736,373.15	40.00192815	-104.65735133
5,800.00	34.62	246.63	5,698.94	-142.50	-329.83	14,527,597.50	1,736,320.99	40.00186681	-104.65753789
5,900.00	34.62	246.63	5,781.23	-165.04	-381.99	14,527,574.97	1,736,268.83	40.00180548	-104.65772445
6,000.00	34.62	246.63	5,863.52	-187.58	-434.15	14,527,552.43	1,736,216.67	40.00174414	-104.65791101
6,100.00	34.62	246.63	5,945.81	-210.11	-486.31	14,527,529.89	1,736,164.51	40.00168280	-104.65809757
6,200.00	34.62	246.63	6,028.10	-232.65	-538.47	14,527,507.36	1,736,112.35	40.00162147	-104.65828413
6,300.00	34.62	246.63	6,110.39	-255.18	-590.63	14,527,484.82	1,736,060.19	40.00156013	-104.65847069
6,400.00	34.62	246.63	6,192.68	-277.72	-642.79	14,527,462.29	1,736,008.03	40.00149879	-104.65865725
6,500.00	34.62	246.63	6,274.97	-300.25	-694.95	14,527,439.75	1,735,955.87	40.00143745	-104.65884381
6,600.00	34.62	246.63	6,357.26	-322.79	-747.11	14,527,417.22	1,735,903.71	40.00137612	-104.65903037
6,700.00	34.62	246.63	6,439.55	-345.33	-799.27	14,527,394.68	1,735,851.55	40.00131478	-104.65921693
6,800.00	34.62	246.63	6,521.84	-367.86	-851.43	14,527,372.14	1,735,799.40	40.00125344	-104.65940349
6,900.00	34.62	246.63	6,604.12	-390.40	-903.59	14,527,349.61	1,735,747.24	40.00119210	-104.65959004
7,000.00	34.62	246.63	6,686.41	-412.93	-955.74	14,527,327.07	1,735,695.08	40.00113076	-104.65977660
7,100.00	34.62	246.63	6,768.70	-435.47	-1,007.90	14,527,304.54	1,735,642.92	40.00106942	-104.65996316
7,200.00	34.62	246.63	6,850.99	-458.00	-1,060.06	14,527,282.00	1,735,590.76	40.00100808	-104.66014972
7,300.00	34.62	246.63	6,933.28	-480.54	-1,112.22	14,527,259.47	1,735,538.60	40.00094674	-104.66033627
7,400.00	34.62	246.63	7,015.57	-503.08	-1,164.38	14,527,236.93	1,735,486.44	40.00088540	-104.66052283
7,500.00	34.62	246.63	7,097.86	-525.61	-1,216.54	14,527,214.39	1,735,434.28	40.00082406	-104.66070938
7,563.84	34.62	246.63	7,150.39	-540.00	-1,249.84	14,527,200.01	1,735,400.98	40.00078490	-104.66082847
Begin 10°/100' build/turn									
7,600.00	35.97	240.82	7,179.91	-549.25	-1,268.55	14,527,190.75	1,735,382.27	40.00075968	-104.66089541
7,700.00	40.94	226.83	7,258.35	-586.08	-1,318.21	14,527,153.92	1,735,332.61	40.00065905	-104.66107323
7,800.00	47.28	215.68	7,330.22	-638.48	-1,363.65	14,527,101.53	1,735,287.17	40.00051565	-104.66123619
7,900.00	54.49	206.73	7,393.34	-704.84	-1,403.48	14,527,035.17	1,735,247.34	40.00033383	-104.66137933
8,000.00	62.25	199.31	7,445.79	-783.15	-1,436.50	14,526,956.86	1,735,214.32	40.00011912	-104.66149829
8,100.00	70.35	192.89	7,485.98	-871.04	-1,461.70	14,526,868.97	1,735,189.12	39.99987803	-104.66158947
8,200.00	78.66	187.11	7,512.70	-965.83	-1,478.32	14,526,774.18	1,735,172.50	39.99961790	-104.66165010
8,300.00	87.07	181.66	7,525.11	-1,064.64	-1,485.85	14,526,675.37	1,735,164.97	39.99934663	-104.66167832
8,333.82	89.93	179.84	7,526.00	-1,098.44	-1,486.29	14,526,641.56	1,735,164.53	39.99925380	-104.66168036
LP Begin 89.93° lateral section									
8,400.00	89.93	179.84	7,526.09	-1,164.62	-1,486.11	14,526,575.39	1,735,164.71	39.99907207	-104.66168060
8,500.00	89.93	179.84	7,526.21	-1,264.62	-1,485.83	14,526,475.39	1,735,164.99	39.99879746	-104.66168097
8,600.00	89.93	179.84	7,526.34	-1,364.62	-1,485.56	14,526,375.39	1,735,165.26	39.99852284	-104.66168134
8,700.00	89.93	179.84	7,526.47	-1,464.62	-1,485.28	14,526,275.39	1,735,165.54	39.99824822	-104.66168171
8,800.00	89.93	179.84	7,526.60	-1,564.62	-1,485.00	14,526,175.39	1,735,165.82	39.99797361	-104.66168207
8,900.00	89.93	179.84	7,526.73	-1,664.62	-1,484.73	14,526,075.39	1,735,166.09	39.99769899	-104.66168244
9,000.00	89.93	179.84	7,526.85	-1,764.62	-1,484.45	14,525,975.39	1,735,166.37	39.99742438	-104.66168281
9,100.00	89.93	179.84	7,526.98	-1,864.61	-1,484.18	14,525,875.39	1,735,166.65	39.99714976	-104.66168318
9,200.00	89.93	179.84	7,527.11	-1,964.61	-1,483.90	14,525,775.39	1,735,166.92	39.99687515	-104.66168355
9,300.00	89.93	179.84	7,527.24	-2,064.61	-1,483.62	14,525,675.40	1,735,167.20	39.99660053	-104.66168392
9,400.00	89.93	179.84	7,527.37	-2,164.61	-1,483.35	14,525,575.40	1,735,167.48	39.99632591	-104.66168428
9,500.00	89.93	179.84	7,527.50	-2,264.61	-1,483.07	14,525,475.40	1,735,167.75	39.99605130	-104.66168465
9,600.00	89.93	179.84	7,527.62	-2,364.61	-1,482.79	14,525,375.40	1,735,168.03	39.99577668	-104.66168502
9,700.00	89.93	179.84	7,527.75	-2,464.61	-1,482.52	14,525,275.40	1,735,168.31	39.99550207	-104.66168539
9,800.00	89.93	179.84	7,527.88	-2,564.61	-1,482.24	14,525,175.40	1,735,168.58	39.99522745	-104.66168576
9,900.00	89.93	179.84	7,528.01	-2,664.61	-1,481.96	14,525,075.40	1,735,168.86	39.99495284	-104.66168612
10,000.00	89.93	179.84	7,528.14	-2,764.61	-1,481.69	14,524,975.40	1,735,169.13	39.99467822	-104.66168649

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	89.93	179.84	7,528.26	-2,864.61	-1,481.41	14,524,875.40	1,735,169.41	39.99440360	-104.66168686	
10,200.00	89.93	179.84	7,528.39	-2,964.61	-1,481.13	14,524,775.40	1,735,169.69	39.99412899	-104.66168723	
10,300.00	89.93	179.84	7,528.52	-3,064.61	-1,480.86	14,524,675.40	1,735,169.96	39.99385437	-104.66168760	
10,400.00	89.93	179.84	7,528.65	-3,164.61	-1,480.58	14,524,575.40	1,735,170.24	39.99357976	-104.66168796	
10,500.00	89.93	179.84	7,528.78	-3,264.61	-1,480.31	14,524,475.40	1,735,170.52	39.99330514	-104.66168833	
10,600.00	89.93	179.84	7,528.91	-3,364.61	-1,480.03	14,524,375.40	1,735,170.79	39.99303052	-104.66168870	
10,700.00	89.93	179.84	7,529.03	-3,464.61	-1,479.75	14,524,275.40	1,735,171.07	39.99275591	-104.66168907	
10,800.00	89.93	179.84	7,529.16	-3,564.61	-1,479.48	14,524,175.41	1,735,171.35	39.99248129	-104.66168944	
10,900.00	89.93	179.84	7,529.29	-3,664.61	-1,479.20	14,524,075.41	1,735,171.62	39.99220668	-104.66168980	
11,000.00	89.93	179.84	7,529.42	-3,764.61	-1,478.92	14,523,975.41	1,735,171.90	39.99193206	-104.66169017	
11,100.00	89.93	179.84	7,529.55	-3,864.61	-1,478.65	14,523,875.41	1,735,172.17	39.99165744	-104.66169054	
11,200.00	89.93	179.84	7,529.68	-3,964.60	-1,478.37	14,523,775.41	1,735,172.45	39.99138283	-104.66169091	
11,300.00	89.93	179.84	7,529.80	-4,064.60	-1,478.09	14,523,675.41	1,735,172.73	39.99110821	-104.66169128	
11,400.00	89.93	179.84	7,529.93	-4,164.60	-1,477.82	14,523,575.41	1,735,173.00	39.99083360	-104.66169164	
11,500.00	89.93	179.84	7,530.06	-4,264.60	-1,477.54	14,523,475.41	1,735,173.28	39.99055898	-104.66169201	
11,600.00	89.93	179.84	7,530.19	-4,364.60	-1,477.26	14,523,375.41	1,735,173.56	39.99028436	-104.66169238	
11,700.00	89.93	179.84	7,530.32	-4,464.60	-1,476.99	14,523,275.41	1,735,173.83	39.99000975	-104.66169275	
11,800.00	89.93	179.84	7,530.44	-4,564.60	-1,476.71	14,523,175.41	1,735,174.11	39.98973513	-104.66169312	
11,900.00	89.93	179.84	7,530.57	-4,664.60	-1,476.44	14,523,075.41	1,735,174.39	39.98946052	-104.66169348	
12,000.00	89.93	179.84	7,530.70	-4,764.60	-1,476.16	14,522,975.41	1,735,174.66	39.98918590	-104.66169385	
12,100.00	89.93	179.84	7,530.83	-4,864.60	-1,475.88	14,522,875.41	1,735,174.94	39.98891128	-104.66169422	
12,200.00	89.93	179.84	7,530.96	-4,964.60	-1,475.61	14,522,775.41	1,735,175.22	39.98863667	-104.66169459	
12,300.00	89.93	179.84	7,531.09	-5,064.60	-1,475.33	14,522,675.41	1,735,175.49	39.98836205	-104.66169496	
12,400.00	89.93	179.84	7,531.21	-5,164.60	-1,475.05	14,522,575.42	1,735,175.77	39.98808744	-104.66169532	
12,500.00	89.93	179.84	7,531.34	-5,264.60	-1,474.78	14,522,475.42	1,735,176.04	39.98781282	-104.66169569	
12,600.00	89.93	179.84	7,531.47	-5,364.60	-1,474.50	14,522,375.42	1,735,176.32	39.98753820	-104.66169606	
12,700.00	89.93	179.84	7,531.60	-5,464.60	-1,474.22	14,522,275.42	1,735,176.60	39.98726359	-104.66169643	
12,800.00	89.93	179.84	7,531.73	-5,564.60	-1,473.95	14,522,175.42	1,735,176.87	39.98698897	-104.66169679	
12,900.00	89.93	179.84	7,531.85	-5,664.60	-1,473.67	14,522,075.42	1,735,177.15	39.98671435	-104.66169716	
13,000.00	89.93	179.84	7,531.98	-5,764.60	-1,473.40	14,521,975.42	1,735,177.43	39.98643974	-104.66169753	
13,100.00	89.93	179.84	7,532.11	-5,864.60	-1,473.12	14,521,875.42	1,735,177.70	39.98616512	-104.66169790	
13,200.00	89.93	179.84	7,532.24	-5,964.60	-1,472.84	14,521,775.42	1,735,177.98	39.98589051	-104.66169827	
13,300.00	89.93	179.84	7,532.37	-6,064.60	-1,472.57	14,521,675.42	1,735,178.26	39.98561589	-104.66169863	
13,400.00	89.93	179.84	7,532.50	-6,164.59	-1,472.29	14,521,575.42	1,735,178.53	39.98534127	-104.66169900	
13,500.00	89.93	179.84	7,532.62	-6,264.59	-1,472.01	14,521,475.42	1,735,178.81	39.98506666	-104.66169937	
13,600.00	89.93	179.84	7,532.75	-6,364.59	-1,471.74	14,521,375.42	1,735,179.08	39.98479204	-104.66169974	
13,700.00	89.93	179.84	7,532.88	-6,464.59	-1,471.46	14,521,275.42	1,735,179.36	39.98451742	-104.66170010	
13,800.00	89.93	179.84	7,533.01	-6,564.59	-1,471.18	14,521,175.42	1,735,179.64	39.98424281	-104.66170047	
13,900.00	89.93	179.84	7,533.14	-6,664.59	-1,470.91	14,521,075.43	1,735,179.91	39.98396819	-104.66170084	
14,000.00	89.93	179.84	7,533.27	-6,764.59	-1,470.63	14,520,975.43	1,735,180.19	39.98369358	-104.66170121	
14,100.00	89.93	179.84	7,533.39	-6,864.59	-1,470.35	14,520,875.43	1,735,180.47	39.98341896	-104.66170158	
14,200.00	89.93	179.84	7,533.52	-6,964.59	-1,470.08	14,520,775.43	1,735,180.74	39.98314434	-104.66170194	
14,300.00	89.93	179.84	7,533.65	-7,064.59	-1,469.80	14,520,675.43	1,735,181.02	39.98286973	-104.66170231	
14,400.00	89.93	179.84	7,533.78	-7,164.59	-1,469.53	14,520,575.43	1,735,181.30	39.98259511	-104.66170268	
14,500.00	89.93	179.84	7,533.91	-7,264.59	-1,469.25	14,520,475.43	1,735,181.57	39.98232049	-104.66170305	
14,600.00	89.93	179.84	7,534.03	-7,364.59	-1,468.97	14,520,375.43	1,735,181.85	39.98204588	-104.66170341	
14,700.00	89.93	179.84	7,534.16	-7,464.59	-1,468.70	14,520,275.43	1,735,182.13	39.98177126	-104.66170378	
14,800.00	89.93	179.84	7,534.29	-7,564.59	-1,468.42	14,520,175.43	1,735,182.40	39.98149664	-104.66170415	
14,900.00	89.93	179.84	7,534.42	-7,664.59	-1,468.14	14,520,075.43	1,735,182.68	39.98122203	-104.66170452	
15,000.00	89.93	179.84	7,534.55	-7,764.59	-1,467.87	14,519,975.43	1,735,182.95	39.98094741	-104.66170488	
15,100.00	89.93	179.84	7,534.68	-7,864.59	-1,467.59	14,519,875.43	1,735,183.23	39.98067279	-104.66170525	
15,200.00	89.93	179.84	7,534.80	-7,964.59	-1,467.31	14,519,775.43	1,735,183.51	39.98039818	-104.66170562	
15,300.00	89.93	179.84	7,534.93	-8,064.59	-1,467.04	14,519,675.43	1,735,183.78	39.98012356	-104.66170599	
15,400.00	89.93	179.84	7,535.06	-8,164.59	-1,466.76	14,519,575.44	1,735,184.06	39.97984894	-104.66170635	
15,500.00	89.93	179.84	7,535.19	-8,264.59	-1,466.48	14,519,475.44	1,735,184.34	39.97957433	-104.66170672	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-2-4L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-2-4L	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	89.93	179.84	7,535.32	-8,364.58	-1,466.21	14,519,375.44	1,735,184.61	39.97929971	-104.66170709
15,700.00	89.93	179.84	7,535.44	-8,464.58	-1,465.93	14,519,275.44	1,735,184.89	39.97902509	-104.66170746
15,800.00	89.93	179.84	7,535.57	-8,564.58	-1,465.66	14,519,175.44	1,735,185.17	39.97875048	-104.66170782
15,900.00	89.93	179.84	7,535.70	-8,664.58	-1,465.38	14,519,075.44	1,735,185.44	39.97847586	-104.66170819
16,000.00	89.93	179.84	7,535.83	-8,764.58	-1,465.10	14,518,975.44	1,735,185.72	39.97820124	-104.66170856
16,100.00	89.93	179.84	7,535.96	-8,864.58	-1,464.83	14,518,875.44	1,735,186.00	39.97792663	-104.66170893
16,200.00	89.93	179.84	7,536.09	-8,964.58	-1,464.55	14,518,775.44	1,735,186.27	39.97765201	-104.66170929
16,300.00	89.93	179.84	7,536.21	-9,064.58	-1,464.27	14,518,675.44	1,735,186.55	39.97737739	-104.66170966
16,400.00	89.93	179.84	7,536.34	-9,164.58	-1,464.00	14,518,575.44	1,735,186.82	39.97710278	-104.66171003
16,500.00	89.93	179.84	7,536.47	-9,264.58	-1,463.72	14,518,475.44	1,735,187.10	39.97682816	-104.66171040
16,600.00	89.93	179.84	7,536.60	-9,364.58	-1,463.44	14,518,375.44	1,735,187.38	39.97655354	-104.66171076
16,700.00	89.93	179.84	7,536.73	-9,464.58	-1,463.17	14,518,275.44	1,735,187.65	39.97627893	-104.66171113
16,800.00	89.93	179.84	7,536.86	-9,564.58	-1,462.89	14,518,175.44	1,735,187.93	39.97600431	-104.66171150
16,900.00	89.93	179.84	7,536.98	-9,664.58	-1,462.62	14,518,075.45	1,735,188.21	39.97572969	-104.66171187
17,000.00	89.93	179.84	7,537.11	-9,764.58	-1,462.34	14,517,975.45	1,735,188.48	39.97545508	-104.66171223
17,100.00	89.93	179.84	7,537.24	-9,864.58	-1,462.06	14,517,875.45	1,735,188.76	39.97518046	-104.66171260
17,200.00	89.93	179.84	7,537.37	-9,964.58	-1,461.79	14,517,775.45	1,735,189.04	39.97490584	-104.66171297
17,300.00	89.93	179.84	7,537.50	-10,064.58	-1,461.51	14,517,675.45	1,735,189.31	39.97463123	-104.66171334
17,400.00	89.93	179.84	7,537.62	-10,164.58	-1,461.23	14,517,575.45	1,735,189.59	39.97435661	-104.66171370
17,500.00	89.93	179.84	7,537.75	-10,264.58	-1,460.96	14,517,475.45	1,735,189.86	39.97408199	-104.66171407
17,600.00	89.93	179.84	7,537.88	-10,364.58	-1,460.68	14,517,375.45	1,735,190.14	39.97380738	-104.66171444
17,693.14	89.93	179.84	7,538.00	-10,457.71	-1,460.42	14,517,282.31	1,735,190.40	39.97355161	-104.66171478
PBHL/TD 17693.14 MD/7538.00 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									
LP Desha 4-2-4L 470 F	0.00	0.00	7,526.00	-1,098.44	-1,486.29	14,526,641.56	1,735,164.53	39.99925380	-104.66168036
- plan hits target center									
- Point									
BHL Desha 4-2-4L 470 F	0.00	0.00	7,538.00	-10,457.71	-1,460.42	14,517,282.31	1,735,190.40	39.97355161	-104.66171478
- 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	
5,346.25	5,325.55	-40.25	-93.15	Begin 34.62° tangent	
7,563.84	7,150.39	-540.00	-1,249.84	Begin 10°/100' build/turn	
8,333.82	7,526.00	-1,098.44	-1,486.29	LP Begin 89.93° lateral section	
17,693.14	7,538.00	-10,457.71	-1,460.42	PBHL/TD 17693.14 MD/7538.00 TVD	