

**Weld County, Colorado
Section 34-T01N-R65W
Desha 4-3-3L
plan1**

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	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	5487.15	48.71	255.04	5430.54	-50.31	-188.31	10.00	90.31	Begin 48.71° tangent
4	8010.34	48.71	255.04	7095.36	-539.68	-2020.08	0.00	968.81	Begin 10°/100' build/turn
5	8798.26	89.86	179.91	7407.00	-1101.51	-2360.92	10.00	1591.63	LP Begin 89.86° lateral section
6	18151.07	89.86	179.91	7430.00	-10454.28	-2345.44	0.00	10714.15	PBHL/TD 18151.07 MD/7430.00 TVD

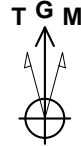
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP Desha 4-3-3L 470 FNL1520 FEL	7407.00	-1101.51	-2360.92	14526638.49	1734264.90	39.99925470	-104.66489269
BHL Desha 4-3-3L 470 FSL1520 FEL	7430.00	-10454.28	-2345.44	14517285.74	1734280.38	39.97357046	-104.66496291

Desha 4-3-3L			
Surf loc: 620 FSL 868 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	1736625.82	40.00225492	-104.65644745

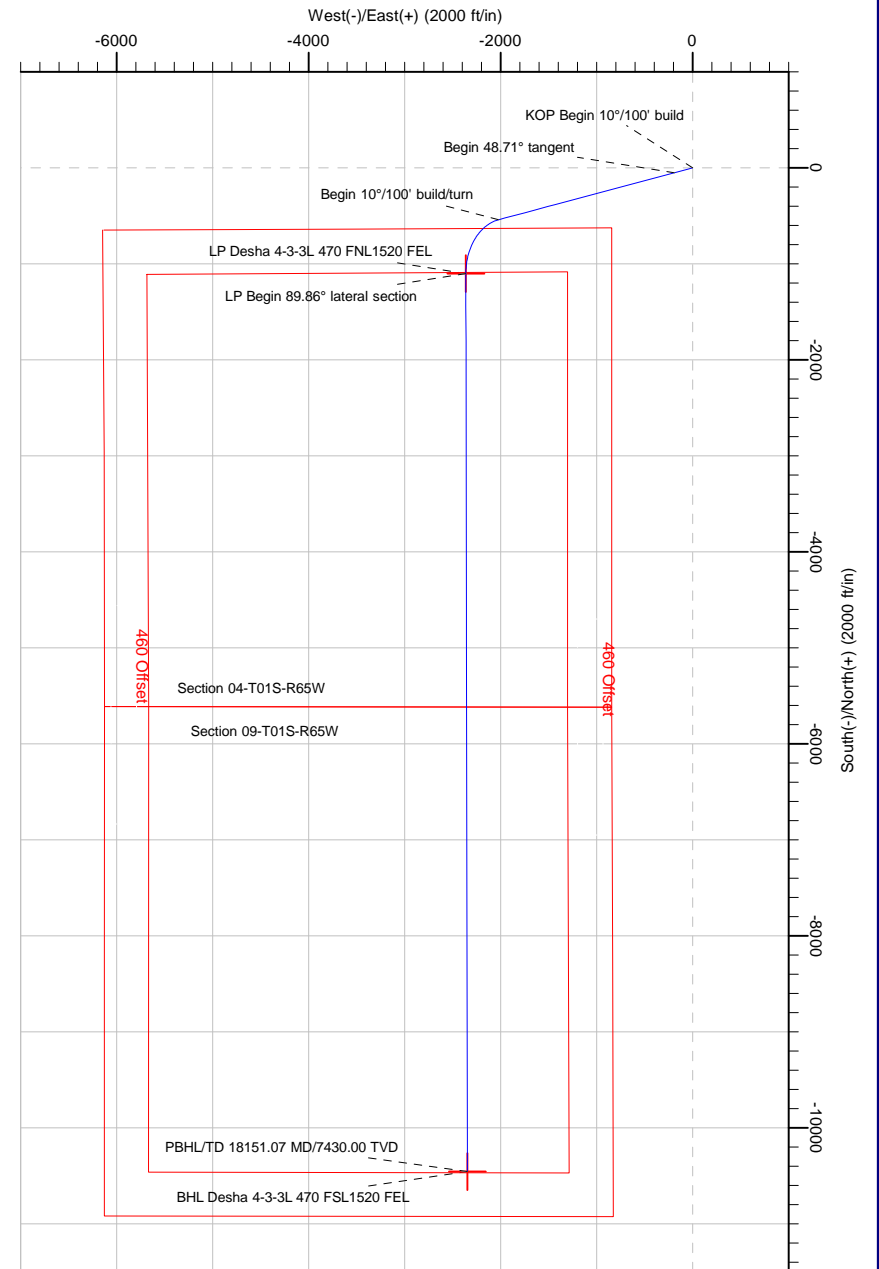
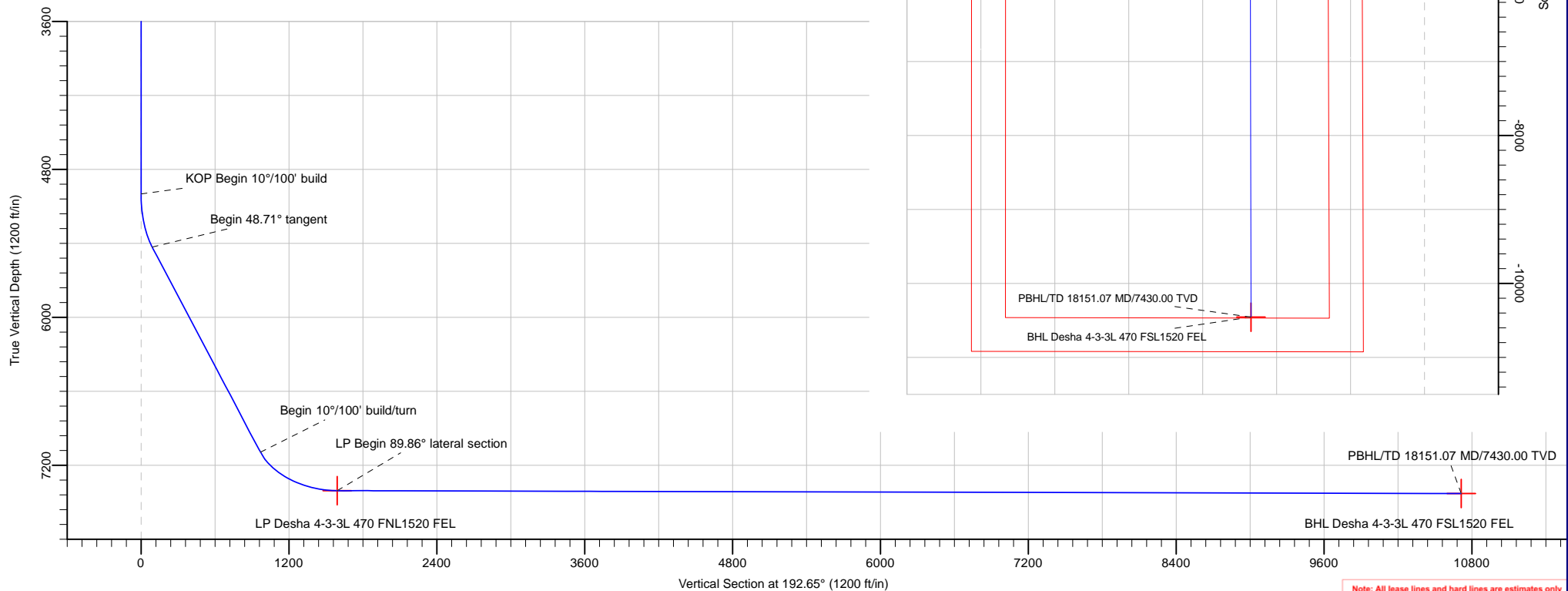
Azimuth Corrections:

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 4-3-3L
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 4-3-3L	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 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 4-3-3L, Surf loc: 620 FSL 868 FWL Sec34-T01N-R65W					
Well Position	+N/-S	-152.80 ft	Northing:	14,527,740.00 usft	Latitude:	40.00225493
	+E/-W	100.52 ft	Easting:	1,736,625.82 usft	Longitude:	-104.65644745
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	192.65

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,151.07	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	
5,487.15	48.71	255.04	5,430.54	-50.31	-188.31	10.00	10.00	0.00	255.04	
8,010.34	48.71	255.04	7,095.36	-539.68	-2,020.08	0.00	0.00	0.00	0.00	
8,798.26	89.86	179.91	7,407.00	-1,101.51	-2,360.92	10.00	5.22	-9.54	-80.17	LP Desha 4-3-3L 470
18,151.07	89.86	179.91	7,430.00	-10,454.28	-2,345.44	0.00	0.00	0.00	0.00	BHL Desha 4-3-3L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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
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	255.04	5,099.49	-2.25	-8.41	4.03	10.00	10.00	0.00
5,200.00	20.00	255.04	5,195.96	-8.92	-33.38	16.01	10.00	10.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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)
5,300.00	30.00	255.04	5,286.48	-19.81	-74.16	35.57	10.00	10.00	0.00
5,400.00	40.00	255.04	5,368.29	-34.60	-129.50	62.11	10.00	10.00	0.00
5,487.15	48.71	255.04	5,430.54	-50.31	-188.31	90.31	10.00	10.00	0.00
Begin 48.71° tangent									
5,500.00	48.71	255.04	5,439.02	-52.80	-197.64	94.79	0.00	0.00	0.00
5,600.00	48.71	255.04	5,505.00	-72.20	-270.24	129.60	0.00	0.00	0.00
5,700.00	48.71	255.04	5,570.98	-91.59	-342.84	164.42	0.00	0.00	0.00
5,800.00	48.71	255.04	5,636.96	-110.99	-415.43	199.24	0.00	0.00	0.00
5,900.00	48.71	255.04	5,702.94	-130.38	-488.03	234.05	0.00	0.00	0.00
6,000.00	48.71	255.04	5,768.92	-149.78	-560.63	268.87	0.00	0.00	0.00
6,100.00	48.71	255.04	5,834.90	-169.17	-633.23	303.69	0.00	0.00	0.00
6,200.00	48.71	255.04	5,900.88	-188.57	-705.82	338.51	0.00	0.00	0.00
6,300.00	48.71	255.04	5,966.87	-207.96	-778.42	373.32	0.00	0.00	0.00
6,400.00	48.71	255.04	6,032.85	-227.36	-851.02	408.14	0.00	0.00	0.00
6,500.00	48.71	255.04	6,098.83	-246.75	-923.62	442.96	0.00	0.00	0.00
6,600.00	48.71	255.04	6,164.81	-266.15	-996.21	477.77	0.00	0.00	0.00
6,700.00	48.71	255.04	6,230.79	-285.54	-1,068.81	512.59	0.00	0.00	0.00
6,800.00	48.71	255.04	6,296.77	-304.94	-1,141.41	547.41	0.00	0.00	0.00
6,900.00	48.71	255.04	6,362.75	-324.33	-1,214.01	582.22	0.00	0.00	0.00
7,000.00	48.71	255.04	6,428.73	-343.73	-1,286.60	617.04	0.00	0.00	0.00
7,100.00	48.71	255.04	6,494.71	-363.12	-1,359.20	651.86	0.00	0.00	0.00
7,200.00	48.71	255.04	6,560.69	-382.52	-1,431.80	686.67	0.00	0.00	0.00
7,300.00	48.71	255.04	6,626.67	-401.91	-1,504.40	721.49	0.00	0.00	0.00
7,400.00	48.71	255.04	6,692.65	-421.31	-1,576.99	756.31	0.00	0.00	0.00
7,500.00	48.71	255.04	6,758.63	-440.70	-1,649.59	791.13	0.00	0.00	0.00
7,600.00	48.71	255.04	6,824.61	-460.10	-1,722.19	825.94	0.00	0.00	0.00
7,700.00	48.71	255.04	6,890.60	-479.49	-1,794.79	860.76	0.00	0.00	0.00
7,800.00	48.71	255.04	6,956.58	-498.89	-1,867.38	895.58	0.00	0.00	0.00
7,900.00	48.71	255.04	7,022.56	-518.28	-1,939.98	930.39	0.00	0.00	0.00
8,000.00	48.71	255.04	7,088.54	-537.68	-2,012.58	965.21	0.00	0.00	0.00
8,010.34	48.71	255.04	7,095.36	-539.68	-2,020.08	968.81	0.00	0.00	0.00
Begin 10°/100' build/turn									
8,100.00	50.82	243.62	7,153.38	-563.87	-2,083.89	1,006.38	10.00	2.35	-12.74
8,200.00	54.39	231.84	7,214.24	-606.31	-2,150.74	1,062.43	10.00	3.57	-11.77
8,300.00	58.99	221.21	7,269.25	-663.81	-2,211.09	1,131.74	10.00	4.60	-10.63
8,400.00	64.38	211.63	7,316.75	-734.61	-2,263.11	1,212.21	10.00	5.39	-9.58
8,500.00	70.34	202.93	7,355.29	-816.57	-2,305.20	1,301.40	10.00	5.96	-8.71
8,600.00	76.69	194.86	7,383.70	-907.20	-2,336.10	1,396.59	10.00	6.35	-8.07
8,700.00	83.27	187.21	7,401.11	-1,003.74	-2,354.86	1,494.90	10.00	6.59	-7.65
8,798.26	89.86	179.91	7,407.00	-1,101.51	-2,360.92	1,591.63	10.00	6.70	-7.44
LP Begin 89.86° lateral section									
8,800.00	89.86	179.91	7,407.00	-1,103.25	-2,360.92	1,593.32	0.00	0.00	0.00
8,900.00	89.86	179.91	7,407.25	-1,203.25	-2,360.76	1,690.86	0.00	0.00	0.00
9,000.00	89.86	179.91	7,407.50	-1,303.25	-2,360.59	1,788.40	0.00	0.00	0.00
9,100.00	89.86	179.91	7,407.74	-1,403.25	-2,360.43	1,885.94	0.00	0.00	0.00
9,200.00	89.86	179.91	7,407.99	-1,503.25	-2,360.26	1,983.47	0.00	0.00	0.00
9,300.00	89.86	179.91	7,408.23	-1,603.25	-2,360.09	2,081.01	0.00	0.00	0.00
9,400.00	89.86	179.91	7,408.48	-1,703.25	-2,359.93	2,178.55	0.00	0.00	0.00
9,500.00	89.86	179.91	7,408.73	-1,803.25	-2,359.76	2,276.09	0.00	0.00	0.00
9,600.00	89.86	179.91	7,408.97	-1,903.25	-2,359.60	2,373.63	0.00	0.00	0.00
9,700.00	89.86	179.91	7,409.22	-2,003.25	-2,359.43	2,471.16	0.00	0.00	0.00
9,800.00	89.86	179.91	7,409.46	-2,103.25	-2,359.27	2,568.70	0.00	0.00	0.00
9,900.00	89.86	179.91	7,409.71	-2,203.25	-2,359.10	2,666.24	0.00	0.00	0.00

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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 4-3-3L	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	89.86	179.91	7,409.96	-2,303.25	-2,358.94	2,763.78	0.00	0.00	0.00
10,100.00	89.86	179.91	7,410.20	-2,403.24	-2,358.77	2,861.31	0.00	0.00	0.00
10,200.00	89.86	179.91	7,410.45	-2,503.24	-2,358.60	2,958.85	0.00	0.00	0.00
10,300.00	89.86	179.91	7,410.69	-2,603.24	-2,358.44	3,056.39	0.00	0.00	0.00
10,400.00	89.86	179.91	7,410.94	-2,703.24	-2,358.27	3,153.93	0.00	0.00	0.00
10,500.00	89.86	179.91	7,411.19	-2,803.24	-2,358.11	3,251.47	0.00	0.00	0.00
10,600.00	89.86	179.91	7,411.43	-2,903.24	-2,357.94	3,349.00	0.00	0.00	0.00
10,700.00	89.86	179.91	7,411.68	-3,003.24	-2,357.78	3,446.54	0.00	0.00	0.00
10,800.00	89.86	179.91	7,411.92	-3,103.24	-2,357.61	3,544.08	0.00	0.00	0.00
10,900.00	89.86	179.91	7,412.17	-3,203.24	-2,357.45	3,641.62	0.00	0.00	0.00
11,000.00	89.86	179.91	7,412.41	-3,303.24	-2,357.28	3,739.15	0.00	0.00	0.00
11,100.00	89.86	179.91	7,412.66	-3,403.24	-2,357.12	3,836.69	0.00	0.00	0.00
11,200.00	89.86	179.91	7,412.91	-3,503.24	-2,356.95	3,934.23	0.00	0.00	0.00
11,300.00	89.86	179.91	7,413.15	-3,603.24	-2,356.78	4,031.77	0.00	0.00	0.00
11,400.00	89.86	179.91	7,413.40	-3,703.24	-2,356.62	4,129.31	0.00	0.00	0.00
11,500.00	89.86	179.91	7,413.64	-3,803.24	-2,356.45	4,226.84	0.00	0.00	0.00
11,600.00	89.86	179.91	7,413.89	-3,903.24	-2,356.29	4,324.38	0.00	0.00	0.00
11,700.00	89.86	179.91	7,414.14	-4,003.24	-2,356.12	4,421.92	0.00	0.00	0.00
11,800.00	89.86	179.91	7,414.38	-4,103.24	-2,355.96	4,519.46	0.00	0.00	0.00
11,900.00	89.86	179.91	7,414.63	-4,203.24	-2,355.79	4,617.00	0.00	0.00	0.00
12,000.00	89.86	179.91	7,414.87	-4,303.24	-2,355.63	4,714.53	0.00	0.00	0.00
12,100.00	89.86	179.91	7,415.12	-4,403.24	-2,355.46	4,812.07	0.00	0.00	0.00
12,200.00	89.86	179.91	7,415.37	-4,503.24	-2,355.29	4,909.61	0.00	0.00	0.00
12,300.00	89.86	179.91	7,415.61	-4,603.24	-2,355.13	5,007.15	0.00	0.00	0.00
12,400.00	89.86	179.91	7,415.86	-4,703.23	-2,354.96	5,104.68	0.00	0.00	0.00
12,500.00	89.86	179.91	7,416.10	-4,803.23	-2,354.80	5,202.22	0.00	0.00	0.00
12,600.00	89.86	179.91	7,416.35	-4,903.23	-2,354.63	5,299.76	0.00	0.00	0.00
12,700.00	89.86	179.91	7,416.60	-5,003.23	-2,354.47	5,397.30	0.00	0.00	0.00
12,800.00	89.86	179.91	7,416.84	-5,103.23	-2,354.30	5,494.84	0.00	0.00	0.00
12,900.00	89.86	179.91	7,417.09	-5,203.23	-2,354.14	5,592.37	0.00	0.00	0.00
13,000.00	89.86	179.91	7,417.33	-5,303.23	-2,353.97	5,689.91	0.00	0.00	0.00
13,100.00	89.86	179.91	7,417.58	-5,403.23	-2,353.80	5,787.45	0.00	0.00	0.00
13,200.00	89.86	179.91	7,417.82	-5,503.23	-2,353.64	5,884.99	0.00	0.00	0.00
13,300.00	89.86	179.91	7,418.07	-5,603.23	-2,353.47	5,982.52	0.00	0.00	0.00
13,400.00	89.86	179.91	7,418.32	-5,703.23	-2,353.31	6,080.06	0.00	0.00	0.00
13,500.00	89.86	179.91	7,418.56	-5,803.23	-2,353.14	6,177.60	0.00	0.00	0.00
13,600.00	89.86	179.91	7,418.81	-5,903.23	-2,352.98	6,275.14	0.00	0.00	0.00
13,700.00	89.86	179.91	7,419.05	-6,003.23	-2,352.81	6,372.68	0.00	0.00	0.00
13,800.00	89.86	179.91	7,419.30	-6,103.23	-2,352.65	6,470.21	0.00	0.00	0.00
13,900.00	89.86	179.91	7,419.55	-6,203.23	-2,352.48	6,567.75	0.00	0.00	0.00
14,000.00	89.86	179.91	7,419.79	-6,303.23	-2,352.32	6,665.29	0.00	0.00	0.00
14,100.00	89.86	179.91	7,420.04	-6,403.23	-2,352.15	6,762.83	0.00	0.00	0.00
14,200.00	89.86	179.91	7,420.28	-6,503.23	-2,351.98	6,860.37	0.00	0.00	0.00
14,300.00	89.86	179.91	7,420.53	-6,603.23	-2,351.82	6,957.90	0.00	0.00	0.00
14,400.00	89.86	179.91	7,420.78	-6,703.23	-2,351.65	7,055.44	0.00	0.00	0.00
14,500.00	89.86	179.91	7,421.02	-6,803.23	-2,351.49	7,152.98	0.00	0.00	0.00
14,600.00	89.86	179.91	7,421.27	-6,903.23	-2,351.32	7,250.52	0.00	0.00	0.00
14,700.00	89.86	179.91	7,421.51	-7,003.22	-2,351.16	7,348.05	0.00	0.00	0.00
14,800.00	89.86	179.91	7,421.76	-7,103.22	-2,350.99	7,445.59	0.00	0.00	0.00
14,900.00	89.86	179.91	7,422.01	-7,203.22	-2,350.83	7,543.13	0.00	0.00	0.00
15,000.00	89.86	179.91	7,422.25	-7,303.22	-2,350.66	7,640.67	0.00	0.00	0.00
15,100.00	89.86	179.91	7,422.50	-7,403.22	-2,350.49	7,738.21	0.00	0.00	0.00
15,200.00	89.86	179.91	7,422.74	-7,503.22	-2,350.33	7,835.74	0.00	0.00	0.00
15,300.00	89.86	179.91	7,422.99	-7,603.22	-2,350.16	7,933.28	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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	89.86	179.91	7,423.23	-7,703.22	-2,350.00	8,030.82	0.00	0.00	0.00
15,500.00	89.86	179.91	7,423.48	-7,803.22	-2,349.83	8,128.36	0.00	0.00	0.00
15,600.00	89.86	179.91	7,423.73	-7,903.22	-2,349.67	8,225.89	0.00	0.00	0.00
15,700.00	89.86	179.91	7,423.97	-8,003.22	-2,349.50	8,323.43	0.00	0.00	0.00
15,800.00	89.86	179.91	7,424.22	-8,103.22	-2,349.34	8,420.97	0.00	0.00	0.00
15,900.00	89.86	179.91	7,424.46	-8,203.22	-2,349.17	8,518.51	0.00	0.00	0.00
16,000.00	89.86	179.91	7,424.71	-8,303.22	-2,349.01	8,616.05	0.00	0.00	0.00
16,100.00	89.86	179.91	7,424.96	-8,403.22	-2,348.84	8,713.58	0.00	0.00	0.00
16,200.00	89.86	179.91	7,425.20	-8,503.22	-2,348.67	8,811.12	0.00	0.00	0.00
16,300.00	89.86	179.91	7,425.45	-8,603.22	-2,348.51	8,908.66	0.00	0.00	0.00
16,400.00	89.86	179.91	7,425.69	-8,703.22	-2,348.34	9,006.20	0.00	0.00	0.00
16,500.00	89.86	179.91	7,425.94	-8,803.22	-2,348.18	9,103.74	0.00	0.00	0.00
16,600.00	89.86	179.91	7,426.19	-8,903.22	-2,348.01	9,201.27	0.00	0.00	0.00
16,700.00	89.86	179.91	7,426.43	-9,003.22	-2,347.85	9,298.81	0.00	0.00	0.00
16,800.00	89.86	179.91	7,426.68	-9,103.22	-2,347.68	9,396.35	0.00	0.00	0.00
16,900.00	89.86	179.91	7,426.92	-9,203.22	-2,347.52	9,493.89	0.00	0.00	0.00
17,000.00	89.86	179.91	7,427.17	-9,303.21	-2,347.35	9,591.42	0.00	0.00	0.00
17,100.00	89.86	179.91	7,427.42	-9,403.21	-2,347.18	9,688.96	0.00	0.00	0.00
17,200.00	89.86	179.91	7,427.66	-9,503.21	-2,347.02	9,786.50	0.00	0.00	0.00
17,300.00	89.86	179.91	7,427.91	-9,603.21	-2,346.85	9,884.04	0.00	0.00	0.00
17,400.00	89.86	179.91	7,428.15	-9,703.21	-2,346.69	9,981.58	0.00	0.00	0.00
17,500.00	89.86	179.91	7,428.40	-9,803.21	-2,346.52	10,079.11	0.00	0.00	0.00
17,600.00	89.86	179.91	7,428.64	-9,903.21	-2,346.36	10,176.65	0.00	0.00	0.00
17,700.00	89.86	179.91	7,428.89	-10,003.21	-2,346.19	10,274.19	0.00	0.00	0.00
17,800.00	89.86	179.91	7,429.14	-10,103.21	-2,346.03	10,371.73	0.00	0.00	0.00
17,900.00	89.86	179.91	7,429.38	-10,203.21	-2,345.86	10,469.26	0.00	0.00	0.00
18,000.00	89.86	179.91	7,429.63	-10,303.21	-2,345.69	10,566.80	0.00	0.00	0.00
18,100.00	89.86	179.91	7,429.87	-10,403.21	-2,345.53	10,664.34	0.00	0.00	0.00
18,151.07	89.86	179.91	7,430.00	-10,454.28	-2,345.44	10,714.15	0.00	0.00	0.00
PBHL/TD 18151.07 MD/7430.00 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 4-3-3L 470 F - plan hits target center - Point	0.00	0.00	7,407.00	-1,101.51	-2,360.92	14,526,638.49	1,734,264.90	39.99925470	-104.66489269
BHL Desha 4-3-3L 470 F - plan hits target center - Point	0.00	0.00	7,430.00	-10,454.28	-2,345.44	14,517,285.74	1,734,280.38	39.97357046	-104.66496290

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build	
5,487.15	5,430.54	-50.31	-188.31	Begin 48.71° tangent	
8,010.34	7,095.36	-539.68	-2,020.08	Begin 10°/100' build/turn	
8,798.26	7,407.00	-1,101.51	-2,360.92	LP Begin 89.86° lateral section	
18,151.07	7,430.00	-10,454.28	-2,345.44	PBHL/TD 18151.07 MD/7430.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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 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 4-3-3L, Surf loc: 620 FSL 868 FWL Sec34-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,740.00 usft	Latitude:	40.00225493
	+E/-W	0.00 ft	Easting:	1,736,625.82 usft	Longitude:	-104.65644745
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	192.65

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,151.07 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	
5,487.15	48.71	255.04	5,430.54	-50.31	-188.31	10.00	10.00	0.00	255.04	
8,010.34	48.71	255.04	7,095.36	-539.68	-2,020.08	0.00	0.00	0.00	0.00	
8,798.26	89.86	179.91	7,407.00	-1,101.51	-2,360.92	10.00	5.22	-9.54	-80.17	LP Desha 4-3-3L 470
18,151.07	89.86	179.91	7,430.00	-10,454.28	-2,345.44	0.00	0.00	0.00	0.00	BHL Desha 4-3-3L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
100.00	0.00	0.00	100.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
200.00	0.00	0.00	200.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
300.00	0.00	0.00	300.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
400.00	0.00	0.00	400.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
500.00	0.00	0.00	500.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
600.00	0.00	0.00	600.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
700.00	0.00	0.00	700.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
800.00	0.00	0.00	800.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
900.00	0.00	0.00	900.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,740.00	1,736,625.82	40.00225493	-104.65644745
KOP Begin 10°/100' build									
5,100.00	10.00	255.04	5,099.49	-2.25	-8.41	14,527,737.76	1,736,617.41	40.00224885	-104.65647751
5,200.00	20.00	255.04	5,195.96	-8.92	-33.38	14,527,731.09	1,736,592.44	40.00223079	-104.65656677

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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)		
5,300.00	30.00	255.04	5,286.48	-19.81	-74.16	14,527,720.19	1,736,551.66	40.00220130	-104.65671253
5,400.00	40.00	255.04	5,368.29	-34.60	-129.50	14,527,705.41	1,736,496.31	40.00216129	-104.65691036
5,487.15	48.71	255.04	5,430.54	-50.31	-188.31	14,527,689.70	1,736,437.51	40.00211876	-104.65712057
Begin 48.71° tangent									
5,500.00	48.71	255.04	5,439.02	-52.80	-197.64	14,527,687.20	1,736,428.18	40.00211202	-104.65715392
5,600.00	48.71	255.04	5,505.00	-72.20	-270.24	14,527,667.81	1,736,355.58	40.00205952	-104.65741341
5,700.00	48.71	255.04	5,570.98	-91.59	-342.84	14,527,648.41	1,736,282.98	40.00200703	-104.65767291
5,800.00	48.71	255.04	5,636.96	-110.99	-415.43	14,527,629.02	1,736,210.39	40.00195453	-104.65793241
5,900.00	48.71	255.04	5,702.94	-130.38	-488.03	14,527,609.62	1,736,137.79	40.00190203	-104.65819191
6,000.00	48.71	255.04	5,768.92	-149.78	-560.63	14,527,590.23	1,736,065.19	40.00184954	-104.65845140
6,100.00	48.71	255.04	5,834.90	-169.17	-633.23	14,527,570.83	1,735,992.59	40.00179704	-104.65871090
6,200.00	48.71	255.04	5,900.88	-188.57	-705.82	14,527,551.44	1,735,920.00	40.00174454	-104.65897040
6,300.00	48.71	255.04	5,966.87	-207.96	-778.42	14,527,532.04	1,735,847.40	40.00169204	-104.65922989
6,400.00	48.71	255.04	6,032.85	-227.36	-851.02	14,527,512.65	1,735,774.80	40.00163954	-104.65948939
6,500.00	48.71	255.04	6,098.83	-246.75	-923.62	14,527,493.25	1,735,702.20	40.00158704	-104.65974888
6,600.00	48.71	255.04	6,164.81	-266.15	-996.21	14,527,473.86	1,735,629.61	40.00153454	-104.66000838
6,700.00	48.71	255.04	6,230.79	-285.54	-1,068.81	14,527,454.46	1,735,557.01	40.00148204	-104.66026787
6,800.00	48.71	255.04	6,296.77	-304.94	-1,141.41	14,527,435.07	1,735,484.41	40.00142954	-104.66052736
6,900.00	48.71	255.04	6,362.75	-324.33	-1,214.01	14,527,415.67	1,735,411.82	40.00137704	-104.66078686
7,000.00	48.71	255.04	6,428.73	-343.73	-1,286.60	14,527,396.28	1,735,339.22	40.00132453	-104.66104635
7,100.00	48.71	255.04	6,494.71	-363.12	-1,359.20	14,527,376.88	1,735,266.62	40.00127203	-104.66130584
7,200.00	48.71	255.04	6,560.69	-382.52	-1,431.80	14,527,357.49	1,735,194.02	40.00121953	-104.66156533
7,300.00	48.71	255.04	6,626.67	-401.91	-1,504.40	14,527,338.09	1,735,121.43	40.00116702	-104.66182483
7,400.00	48.71	255.04	6,692.65	-421.31	-1,576.99	14,527,318.70	1,735,048.83	40.00111452	-104.66208432
7,500.00	48.71	255.04	6,758.63	-440.70	-1,649.59	14,527,299.30	1,734,976.23	40.00106201	-104.66234381
7,600.00	48.71	255.04	6,824.61	-460.10	-1,722.19	14,527,279.91	1,734,903.63	40.00100951	-104.66260330
7,700.00	48.71	255.04	6,890.60	-479.49	-1,794.79	14,527,260.51	1,734,831.04	40.00095700	-104.66286279
7,800.00	48.71	255.04	6,956.58	-498.89	-1,867.38	14,527,241.12	1,734,758.44	40.00090449	-104.66312228
7,900.00	48.71	255.04	7,022.56	-518.28	-1,939.98	14,527,221.72	1,734,685.84	40.00085198	-104.66338177
8,000.00	48.71	255.04	7,088.54	-537.68	-2,012.58	14,527,202.33	1,734,613.25	40.00079947	-104.66364126
8,010.34	48.71	255.04	7,095.36	-539.68	-2,020.08	14,527,200.32	1,734,605.74	40.00079404	-104.66366809
Begin 10°/100' build/turn									
8,100.00	50.82	243.62	7,153.38	-563.87	-2,083.89	14,527,176.14	1,734,541.93	40.00072829	-104.66389625
8,200.00	54.39	231.84	7,214.24	-606.31	-2,150.74	14,527,133.69	1,734,475.08	40.00061242	-104.66413554
8,300.00	58.99	221.21	7,269.25	-663.81	-2,211.09	14,527,076.20	1,734,414.73	40.00045515	-104.66435181
8,400.00	64.38	211.63	7,316.75	-734.61	-2,263.11	14,527,005.39	1,734,362.72	40.00026125	-104.66453848
8,500.00	70.34	202.93	7,355.29	-816.57	-2,305.20	14,526,923.43	1,734,320.62	40.00003661	-104.66468990
8,600.00	76.69	194.86	7,383.70	-907.20	-2,336.10	14,526,832.81	1,734,289.72	39.99978806	-104.66480144
8,700.00	83.27	187.21	7,401.11	-1,003.74	-2,354.86	14,526,736.27	1,734,270.96	39.99952315	-104.66486973
8,798.26	89.86	179.91	7,407.00	-1,101.51	-2,360.92	14,526,638.49	1,734,264.90	39.99925470	-104.66489269
LP Begin 89.86° lateral section									
8,800.00	89.86	179.91	7,407.00	-1,103.25	-2,360.92	14,526,636.76	1,734,264.90	39.99924993	-104.66489270
8,900.00	89.86	179.91	7,407.25	-1,203.25	-2,360.76	14,526,536.76	1,734,265.07	39.99897531	-104.66489345
9,000.00	89.86	179.91	7,407.50	-1,303.25	-2,360.59	14,526,436.76	1,734,265.23	39.99870070	-104.66489420
9,100.00	89.86	179.91	7,407.74	-1,403.25	-2,360.43	14,526,336.76	1,734,265.40	39.99842609	-104.66489496
9,200.00	89.86	179.91	7,407.99	-1,503.25	-2,360.26	14,526,236.76	1,734,265.56	39.99815147	-104.66489571
9,300.00	89.86	179.91	7,408.23	-1,603.25	-2,360.09	14,526,136.76	1,734,265.73	39.99787686	-104.66489646
9,400.00	89.86	179.91	7,408.48	-1,703.25	-2,359.93	14,526,036.76	1,734,265.89	39.99760224	-104.66489721
9,500.00	89.86	179.91	7,408.73	-1,803.25	-2,359.76	14,525,936.76	1,734,266.06	39.99732763	-104.66489796
9,600.00	89.86	179.91	7,408.97	-1,903.25	-2,359.60	14,525,836.76	1,734,266.23	39.99705301	-104.66489871
9,700.00	89.86	179.91	7,409.22	-2,003.25	-2,359.43	14,525,736.76	1,734,266.39	39.99677840	-104.66489946
9,800.00	89.86	179.91	7,409.46	-2,103.25	-2,359.27	14,525,636.76	1,734,266.56	39.99650378	-104.66490021
9,900.00	89.86	179.91	7,409.71	-2,203.25	-2,359.10	14,525,536.76	1,734,266.72	39.99622917	-104.66490097
10,000.00	89.86	179.91	7,409.96	-2,303.25	-2,358.94	14,525,436.76	1,734,266.89	39.99595455	-104.66490172

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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	89.86	179.91	7,410.20	-2,403.24	-2,358.77	14,525,336.76	1,734,267.05	39.99567994	-104.66490247	
10,200.00	89.86	179.91	7,410.45	-2,503.24	-2,358.60	14,525,236.77	1,734,267.22	39.99540532	-104.66490322	
10,300.00	89.86	179.91	7,410.69	-2,603.24	-2,358.44	14,525,136.77	1,734,267.38	39.99513071	-104.66490397	
10,400.00	89.86	179.91	7,410.94	-2,703.24	-2,358.27	14,525,036.77	1,734,267.55	39.99485609	-104.66490472	
10,500.00	89.86	179.91	7,411.19	-2,803.24	-2,358.11	14,524,936.77	1,734,267.72	39.99458148	-104.66490547	
10,600.00	89.86	179.91	7,411.43	-2,903.24	-2,357.94	14,524,836.77	1,734,267.88	39.99430686	-104.66490622	
10,700.00	89.86	179.91	7,411.68	-3,003.24	-2,357.78	14,524,736.77	1,734,268.05	39.99403225	-104.66490698	
10,800.00	89.86	179.91	7,411.92	-3,103.24	-2,357.61	14,524,636.77	1,734,268.21	39.99375763	-104.66490773	
10,900.00	89.86	179.91	7,412.17	-3,203.24	-2,357.45	14,524,536.77	1,734,268.38	39.99348302	-104.66490848	
11,000.00	89.86	179.91	7,412.41	-3,303.24	-2,357.28	14,524,436.77	1,734,268.54	39.99320840	-104.66490923	
11,100.00	89.86	179.91	7,412.66	-3,403.24	-2,357.12	14,524,336.77	1,734,268.71	39.99293379	-104.66490998	
11,200.00	89.86	179.91	7,412.91	-3,503.24	-2,356.95	14,524,236.77	1,734,268.87	39.99265917	-104.66491073	
11,300.00	89.86	179.91	7,413.15	-3,603.24	-2,356.78	14,524,136.77	1,734,269.04	39.99238456	-104.66491148	
11,400.00	89.86	179.91	7,413.40	-3,703.24	-2,356.62	14,524,036.77	1,734,269.20	39.99210994	-104.66491223	
11,500.00	89.86	179.91	7,413.64	-3,803.24	-2,356.45	14,523,936.77	1,734,269.37	39.99183533	-104.66491298	
11,600.00	89.86	179.91	7,413.89	-3,903.24	-2,356.29	14,523,836.77	1,734,269.54	39.99156071	-104.66491373	
11,700.00	89.86	179.91	7,414.14	-4,003.24	-2,356.12	14,523,736.77	1,734,269.70	39.99128610	-104.66491449	
11,800.00	89.86	179.91	7,414.38	-4,103.24	-2,355.96	14,523,636.78	1,734,269.87	39.99101148	-104.66491524	
11,900.00	89.86	179.91	7,414.63	-4,203.24	-2,355.79	14,523,536.78	1,734,270.03	39.99073687	-104.66491599	
12,000.00	89.86	179.91	7,414.87	-4,303.24	-2,355.63	14,523,436.78	1,734,270.20	39.99046225	-104.66491674	
12,100.00	89.86	179.91	7,415.12	-4,403.24	-2,355.46	14,523,336.78	1,734,270.36	39.99018764	-104.66491749	
12,200.00	89.86	179.91	7,415.37	-4,503.24	-2,355.29	14,523,236.78	1,734,270.53	39.98991302	-104.66491824	
12,300.00	89.86	179.91	7,415.61	-4,603.24	-2,355.13	14,523,136.78	1,734,270.69	39.98963841	-104.66491899	
12,400.00	89.86	179.91	7,415.86	-4,703.23	-2,354.96	14,523,036.78	1,734,270.86	39.98936379	-104.66491974	
12,500.00	89.86	179.91	7,416.10	-4,803.23	-2,354.80	14,522,936.78	1,734,271.03	39.98908918	-104.66492049	
12,600.00	89.86	179.91	7,416.35	-4,903.23	-2,354.63	14,522,836.78	1,734,271.19	39.98881456	-104.66492124	
12,700.00	89.86	179.91	7,416.60	-5,003.23	-2,354.47	14,522,736.78	1,734,271.36	39.98853995	-104.66492200	
12,800.00	89.86	179.91	7,416.84	-5,103.23	-2,354.30	14,522,636.78	1,734,271.52	39.98826533	-104.66492275	
12,900.00	89.86	179.91	7,417.09	-5,203.23	-2,354.14	14,522,536.78	1,734,271.69	39.98799072	-104.66492350	
13,000.00	89.86	179.91	7,417.33	-5,303.23	-2,353.97	14,522,436.78	1,734,271.85	39.98771610	-104.66492425	
13,100.00	89.86	179.91	7,417.58	-5,403.23	-2,353.80	14,522,336.78	1,734,272.02	39.98744149	-104.66492500	
13,200.00	89.86	179.91	7,417.82	-5,503.23	-2,353.64	14,522,236.78	1,734,272.18	39.98716687	-104.66492575	
13,300.00	89.86	179.91	7,418.07	-5,603.23	-2,353.47	14,522,136.78	1,734,272.35	39.98689226	-104.66492650	
13,400.00	89.86	179.91	7,418.32	-5,703.23	-2,353.31	14,522,036.79	1,734,272.52	39.98661764	-104.66492725	
13,500.00	89.86	179.91	7,418.56	-5,803.23	-2,353.14	14,521,936.79	1,734,272.68	39.98634303	-104.66492800	
13,600.00	89.86	179.91	7,418.81	-5,903.23	-2,352.98	14,521,836.79	1,734,272.85	39.98606841	-104.66492875	
13,700.00	89.86	179.91	7,419.05	-6,003.23	-2,352.81	14,521,736.79	1,734,273.01	39.98579380	-104.66492950	
13,800.00	89.86	179.91	7,419.30	-6,103.23	-2,352.65	14,521,636.79	1,734,273.18	39.98551918	-104.66493025	
13,900.00	89.86	179.91	7,419.55	-6,203.23	-2,352.48	14,521,536.79	1,734,273.34	39.98524457	-104.66493100	
14,000.00	89.86	179.91	7,419.79	-6,303.23	-2,352.32	14,521,436.79	1,734,273.51	39.98496995	-104.66493176	
14,100.00	89.86	179.91	7,420.04	-6,403.23	-2,352.15	14,521,336.79	1,734,273.67	39.98469534	-104.66493251	
14,200.00	89.86	179.91	7,420.28	-6,503.23	-2,351.98	14,521,236.79	1,734,273.84	39.98442072	-104.66493326	
14,300.00	89.86	179.91	7,420.53	-6,603.23	-2,351.82	14,521,136.79	1,734,274.00	39.98414610	-104.66493401	
14,400.00	89.86	179.91	7,420.78	-6,703.23	-2,351.65	14,521,036.79	1,734,274.17	39.98387149	-104.66493476	
14,500.00	89.86	179.91	7,421.02	-6,803.23	-2,351.49	14,520,936.79	1,734,274.34	39.98359687	-104.66493551	
14,600.00	89.86	179.91	7,421.27	-6,903.23	-2,351.32	14,520,836.79	1,734,274.50	39.98332226	-104.66493626	
14,700.00	89.86	179.91	7,421.51	-7,003.22	-2,351.16	14,520,736.79	1,734,274.67	39.98304764	-104.66493701	
14,800.00	89.86	179.91	7,421.76	-7,103.22	-2,350.99	14,520,636.79	1,734,274.83	39.98277303	-104.66493776	
14,900.00	89.86	179.91	7,422.01	-7,203.22	-2,350.83	14,520,536.80	1,734,275.00	39.98249841	-104.66493851	
15,000.00	89.86	179.91	7,422.25	-7,303.22	-2,350.66	14,520,436.80	1,734,275.16	39.98222380	-104.66493926	
15,100.00	89.86	179.91	7,422.50	-7,403.22	-2,350.49	14,520,336.80	1,734,275.33	39.98194918	-104.66494001	
15,200.00	89.86	179.91	7,422.74	-7,503.22	-2,350.33	14,520,236.80	1,734,275.49	39.98167457	-104.66494076	
15,300.00	89.86	179.91	7,422.99	-7,603.22	-2,350.16	14,520,136.80	1,734,275.66	39.98139995	-104.66494151	
15,400.00	89.86	179.91	7,423.23	-7,703.22	-2,350.00	14,520,036.80	1,734,275.83	39.98112534	-104.66494226	
15,500.00	89.86	179.91	7,423.48	-7,803.22	-2,349.83	14,519,936.80	1,734,275.99	39.98085072	-104.66494301	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-3L
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 4-3-3L	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	89.86	179.91	7,423.73	-7,903.22	-2,349.67	14,519,836.80	1,734,276.16	39.98057610	-104.66494376
15,700.00	89.86	179.91	7,423.97	-8,003.22	-2,349.50	14,519,736.80	1,734,276.32	39.98030149	-104.66494451
15,800.00	89.86	179.91	7,424.22	-8,103.22	-2,349.34	14,519,636.80	1,734,276.49	39.98002687	-104.66494527
15,900.00	89.86	179.91	7,424.46	-8,203.22	-2,349.17	14,519,536.80	1,734,276.65	39.97975226	-104.66494602
16,000.00	89.86	179.91	7,424.71	-8,303.22	-2,349.01	14,519,436.80	1,734,276.82	39.97947764	-104.66494677
16,100.00	89.86	179.91	7,424.96	-8,403.22	-2,348.84	14,519,336.80	1,734,276.98	39.97920303	-104.66494752
16,200.00	89.86	179.91	7,425.20	-8,503.22	-2,348.67	14,519,236.80	1,734,277.15	39.97892841	-104.66494827
16,300.00	89.86	179.91	7,425.45	-8,603.22	-2,348.51	14,519,136.80	1,734,277.32	39.97865380	-104.66494902
16,400.00	89.86	179.91	7,425.69	-8,703.22	-2,348.34	14,519,036.80	1,734,277.48	39.97837918	-104.66494977
16,500.00	89.86	179.91	7,425.94	-8,803.22	-2,348.18	14,518,936.81	1,734,277.65	39.97810456	-104.66495052
16,600.00	89.86	179.91	7,426.19	-8,903.22	-2,348.01	14,518,836.81	1,734,277.81	39.97782995	-104.66495127
16,700.00	89.86	179.91	7,426.43	-9,003.22	-2,347.85	14,518,736.81	1,734,277.98	39.97755533	-104.66495202
16,800.00	89.86	179.91	7,426.68	-9,103.22	-2,347.68	14,518,636.81	1,734,278.14	39.97728072	-104.66495277
16,900.00	89.86	179.91	7,426.92	-9,203.22	-2,347.52	14,518,536.81	1,734,278.31	39.97700610	-104.66495352
17,000.00	89.86	179.91	7,427.17	-9,303.21	-2,347.35	14,518,436.81	1,734,278.47	39.97673149	-104.66495427
17,100.00	89.86	179.91	7,427.42	-9,403.21	-2,347.18	14,518,336.81	1,734,278.64	39.97645687	-104.66495502
17,200.00	89.86	179.91	7,427.66	-9,503.21	-2,347.02	14,518,236.81	1,734,278.80	39.97618225	-104.66495577
17,300.00	89.86	179.91	7,427.91	-9,603.21	-2,346.85	14,518,136.81	1,734,278.97	39.97590764	-104.66495652
17,400.00	89.86	179.91	7,428.15	-9,703.21	-2,346.69	14,518,036.81	1,734,279.14	39.97563302	-104.66495727
17,500.00	89.86	179.91	7,428.40	-9,803.21	-2,346.52	14,517,936.81	1,734,279.30	39.97535841	-104.66495802
17,600.00	89.86	179.91	7,428.64	-9,903.21	-2,346.36	14,517,836.81	1,734,279.47	39.97508379	-104.66495877
17,700.00	89.86	179.91	7,428.89	-10,003.21	-2,346.19	14,517,736.81	1,734,279.63	39.97480918	-104.66495952
17,800.00	89.86	179.91	7,429.14	-10,103.21	-2,346.03	14,517,636.81	1,734,279.80	39.97453456	-104.66496027
17,900.00	89.86	179.91	7,429.38	-10,203.21	-2,345.86	14,517,536.81	1,734,279.96	39.97425994	-104.66496102
18,000.00	89.86	179.91	7,429.63	-10,303.21	-2,345.69	14,517,436.81	1,734,280.13	39.97398533	-104.66496177
18,100.00	89.86	179.91	7,429.87	-10,403.21	-2,345.53	14,517,336.82	1,734,280.29	39.97371071	-104.66496252
18,151.07	89.86	179.91	7,430.00	-10,454.28	-2,345.44	14,517,285.74	1,734,280.38	39.97357046	-104.66496290
PBHL/TD 18151.07 MD/7430.00 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 4-3-3L 470 F	0.00	0.00	7,407.00	-1,101.51	-2,360.92	14,526,638.49	1,734,264.90	39.99925470	-104.66489269
- plan hits target center									
- Point									
BHL Desha 4-3-3L 470 F	0.00	0.00	7,430.00	-10,454.28	-2,345.44	14,517,285.74	1,734,280.38	39.97357046	-104.66496290
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build
5,487.15	5,430.54	-50.31	-188.31	Begin 48.71° tangent
8,010.34	7,095.36	-539.68	-2,020.08	Begin 10°/100' build/turn
8,798.26	7,407.00	-1,101.51	-2,360.92	LP Begin 89.86° lateral section
18,151.07	7,430.00	-10,454.28	-2,345.44	PBHL/TD 18151.07 MD/7430.00 TVD