

Weld County, Colorado
Section 33-T01N-R65W
Desha 4-10-2L
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	5180.95	18.09	177.12	5177.96	-28.30	1.42	10.00	28.30	Begin 18.09° tangent
4	6974.51	18.09	177.12	6882.81	-584.66	29.44	0.00	584.70	Begin 10°/100' build/turn
5	7694.49	90.07	180.12	7278.00	-1130.05	35.09	10.00	1130.10	LP Begin 90.07° lateral section
6	17026.30	90.07	180.12	7267.00	-10461.83	16.14	0.00	10461.84	PBHL/TD 17026.30 MD/7267.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL Desha 4-10-2L 470 FSL 480 FWL	7267.00	-10461.83	16.1414517290.00	1730978.35	39.97361562	-104.67674894	
LP Desha 4-10-2L 470 FNL 480 FWL	7278.00	-1130.05	35.0914526621.77	1730963.46	39.99924227	-104.67668130	

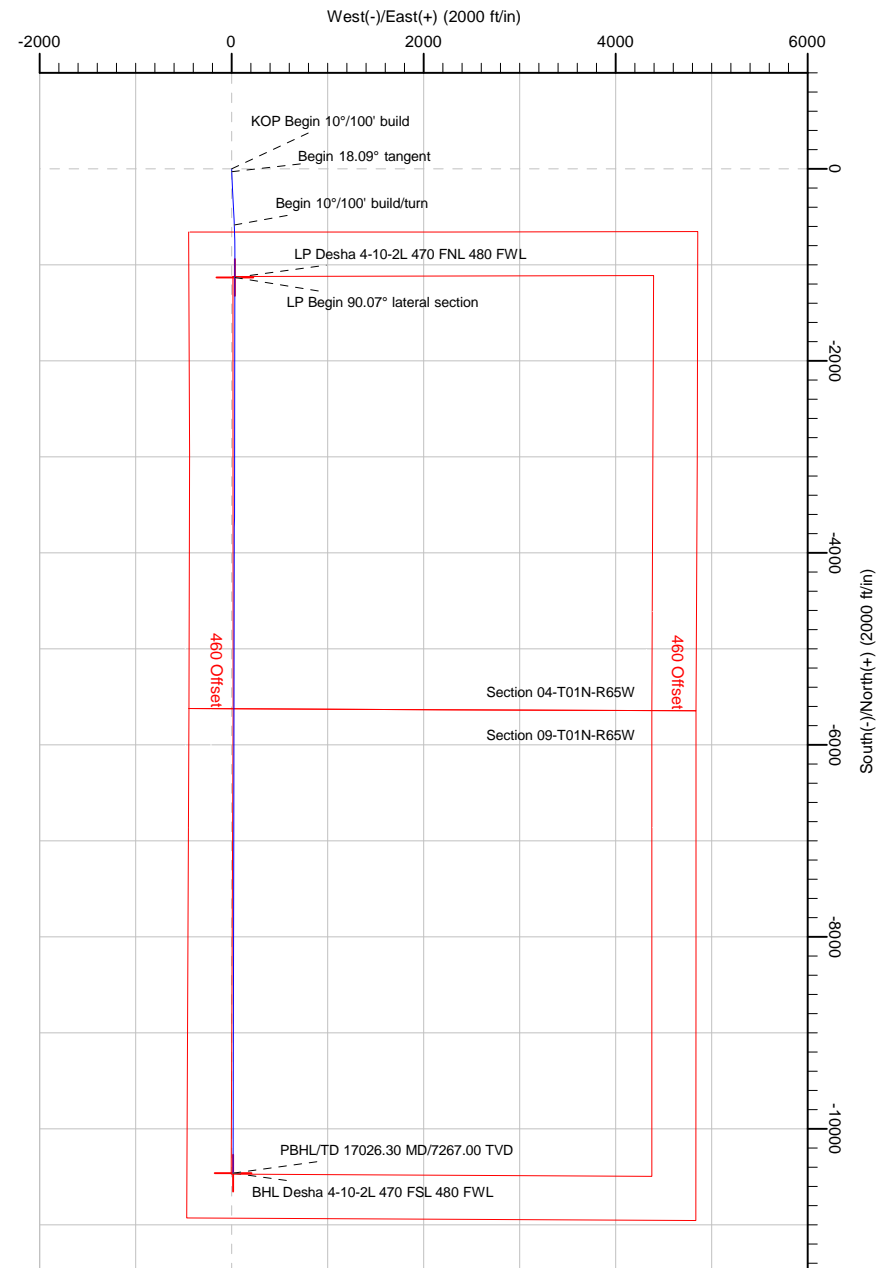
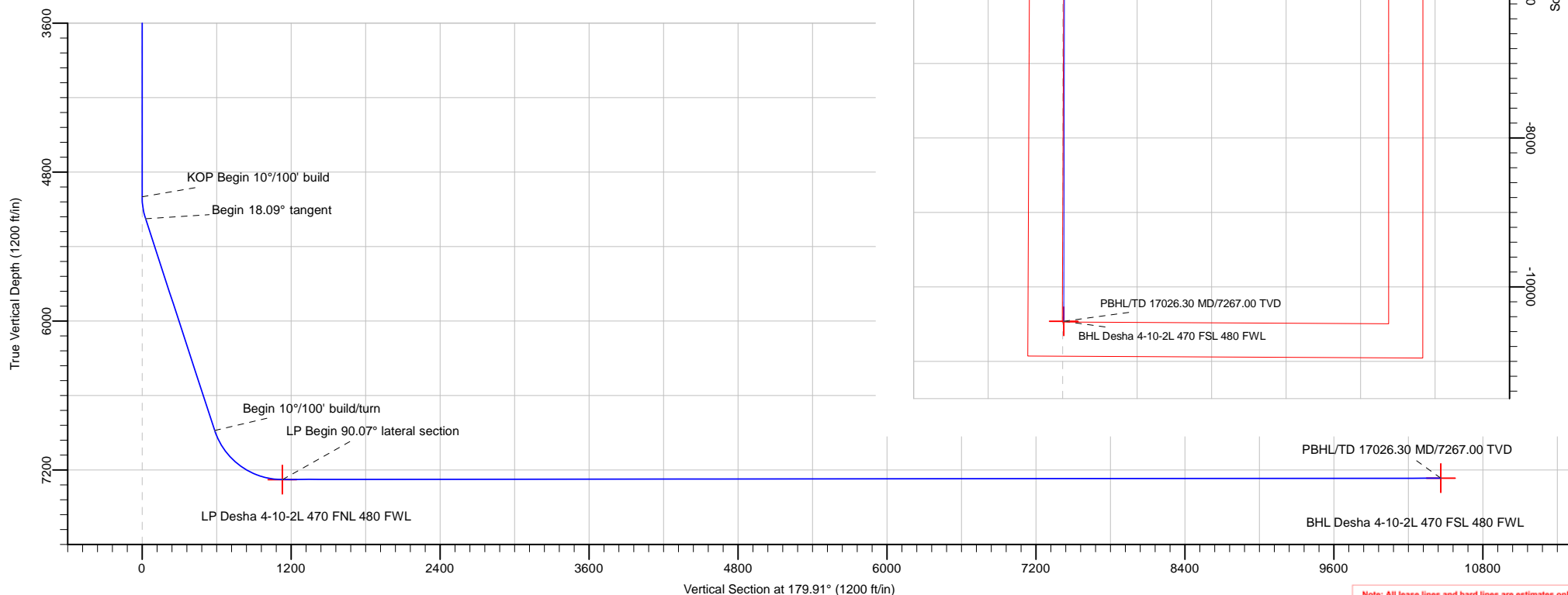
Desha 4-10-2L			
Surf loc: 660 FSL 450 FWL Section 33-T01N-R65W			
NAD83 Colorado - HARN			
Universal Transverse Mercator (US Survey Feet)			
Zone 13N (108 W to 102 W)			
RKB=5075+25 @ 5100.00ft			
Northing	Easting	Latitude	Longitude
14527751.68	1730924.27	40.00234556	-104.67680661

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: 52144.8snT
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 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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 4-10-2L, Surf loc: 660 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	0.02 ft	Northing:	14,527,751.68 usft	Latitude:	40.00234556
	+E/-W	150.00 ft	Easting:	1,730,924.27 usft	Longitude:	-104.67680660
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,075.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/29/2017	8.28	66.45	52,144.80000000

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	179.91

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,026.30	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	
5,180.95	18.09	177.12	5,177.96	-28.30	1.42	10.00	10.00	0.00	177.12	
6,974.51	18.09	177.12	6,882.81	-584.66	29.44	0.00	0.00	0.00	0.00	
7,694.49	90.07	180.12	7,278.00	-1,130.05	35.09	10.00	10.00	0.42	3.15	LP Desha 4-10-2L 471
17,026.30	90.07	180.12	7,267.00	-10,461.83	16.14	0.00	0.00	0.00	0.00	BHL Desha 4-10-2L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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	177.12	5,099.49	-8.69	0.44	8.69	10.00	10.00	0.00
5,180.95	18.09	177.12	5,177.96	-28.30	1.42	28.30	10.00	10.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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)
Begin 18.09° tangent									
5,200.00	18.09	177.12	5,196.06	-34.21	1.72	34.21	0.00	0.00	0.00
5,300.00	18.09	177.12	5,291.12	-65.23	3.28	65.24	0.00	0.00	0.00
5,400.00	18.09	177.12	5,386.17	-96.25	4.85	96.26	0.00	0.00	0.00
5,500.00	18.09	177.12	5,481.23	-127.27	6.41	127.28	0.00	0.00	0.00
5,600.00	18.09	177.12	5,576.28	-158.29	7.97	158.30	0.00	0.00	0.00
5,700.00	18.09	177.12	5,671.34	-189.31	9.53	189.32	0.00	0.00	0.00
5,800.00	18.09	177.12	5,766.39	-220.33	11.09	220.35	0.00	0.00	0.00
5,900.00	18.09	177.12	5,861.45	-251.35	12.65	251.37	0.00	0.00	0.00
6,000.00	18.09	177.12	5,956.50	-282.37	14.22	282.39	0.00	0.00	0.00
6,100.00	18.09	177.12	6,051.55	-313.39	15.78	313.41	0.00	0.00	0.00
6,200.00	18.09	177.12	6,146.61	-344.41	17.34	344.43	0.00	0.00	0.00
6,300.00	18.09	177.12	6,241.66	-375.43	18.90	375.46	0.00	0.00	0.00
6,400.00	18.09	177.12	6,336.72	-406.45	20.46	406.48	0.00	0.00	0.00
6,500.00	18.09	177.12	6,431.77	-437.47	22.03	437.50	0.00	0.00	0.00
6,600.00	18.09	177.12	6,526.83	-468.49	23.59	468.52	0.00	0.00	0.00
6,700.00	18.09	177.12	6,621.88	-499.51	25.15	499.54	0.00	0.00	0.00
6,800.00	18.09	177.12	6,716.94	-530.53	26.71	530.57	0.00	0.00	0.00
6,900.00	18.09	177.12	6,811.99	-561.55	28.27	561.59	0.00	0.00	0.00
6,974.51	18.09	177.12	6,882.81	-584.66	29.44	584.70	0.00	0.00	0.00
Begin 10°/100' build/turn									
7,000.00	20.64	177.52	6,906.86	-593.10	29.83	593.15	10.00	9.99	1.56
7,100.00	30.63	178.46	6,996.90	-636.29	31.28	636.34	10.00	9.99	0.95
7,200.00	40.63	178.97	7,078.08	-694.46	32.55	694.50	10.00	10.00	0.51
7,300.00	50.63	179.31	7,147.92	-765.84	33.60	765.89	10.00	10.00	0.34
7,400.00	60.62	179.56	7,204.31	-848.26	34.40	848.32	10.00	10.00	0.25
7,500.00	70.62	179.77	7,245.54	-939.23	34.92	939.28	10.00	10.00	0.21
7,600.00	80.62	179.95	7,270.34	-1,035.97	35.15	1,036.03	10.00	10.00	0.18
7,694.49	90.07	180.12	7,278.00	-1,130.05	35.09	1,130.10	10.00	10.00	0.17
LP Begin 90.07° lateral section									
7,700.00	90.07	180.12	7,277.99	-1,135.56	35.08	1,135.61	0.00	0.00	0.00
7,800.00	90.07	180.12	7,277.88	-1,235.56	34.88	1,235.61	0.00	0.00	0.00
7,900.00	90.07	180.12	7,277.76	-1,335.56	34.68	1,335.61	0.00	0.00	0.00
8,000.00	90.07	180.12	7,277.64	-1,435.56	34.47	1,435.61	0.00	0.00	0.00
8,100.00	90.07	180.12	7,277.52	-1,535.55	34.27	1,535.61	0.00	0.00	0.00
8,200.00	90.07	180.12	7,277.40	-1,635.55	34.07	1,635.61	0.00	0.00	0.00
8,300.00	90.07	180.12	7,277.29	-1,735.55	33.86	1,735.60	0.00	0.00	0.00
8,400.00	90.07	180.12	7,277.17	-1,835.55	33.66	1,835.60	0.00	0.00	0.00
8,500.00	90.07	180.12	7,277.05	-1,935.55	33.46	1,935.60	0.00	0.00	0.00
8,600.00	90.07	180.12	7,276.93	-2,035.55	33.25	2,035.60	0.00	0.00	0.00
8,700.00	90.07	180.12	7,276.81	-2,135.55	33.05	2,135.60	0.00	0.00	0.00
8,800.00	90.07	180.12	7,276.70	-2,235.55	32.85	2,235.60	0.00	0.00	0.00
8,900.00	90.07	180.12	7,276.58	-2,335.55	32.64	2,335.60	0.00	0.00	0.00
9,000.00	90.07	180.12	7,276.46	-2,435.55	32.44	2,435.60	0.00	0.00	0.00
9,100.00	90.07	180.12	7,276.34	-2,535.55	32.24	2,535.60	0.00	0.00	0.00
9,200.00	90.07	180.12	7,276.23	-2,635.55	32.04	2,635.60	0.00	0.00	0.00
9,300.00	90.07	180.12	7,276.11	-2,735.55	31.83	2,735.60	0.00	0.00	0.00
9,400.00	90.07	180.12	7,275.99	-2,835.55	31.63	2,835.60	0.00	0.00	0.00
9,500.00	90.07	180.12	7,275.87	-2,935.55	31.43	2,935.60	0.00	0.00	0.00
9,600.00	90.07	180.12	7,275.75	-3,035.55	31.22	3,035.60	0.00	0.00	0.00
9,700.00	90.07	180.12	7,275.64	-3,135.55	31.02	3,135.59	0.00	0.00	0.00
9,800.00	90.07	180.12	7,275.52	-3,235.55	30.82	3,235.59	0.00	0.00	0.00
9,900.00	90.07	180.12	7,275.40	-3,335.55	30.61	3,335.59	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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	90.07	180.12	7,275.28	-3,435.55	30.41	3,435.59	0.00	0.00	0.00	
10,100.00	90.07	180.12	7,275.16	-3,535.55	30.21	3,535.59	0.00	0.00	0.00	
10,200.00	90.07	180.12	7,275.05	-3,635.55	30.00	3,635.59	0.00	0.00	0.00	
10,300.00	90.07	180.12	7,274.93	-3,735.55	29.80	3,735.59	0.00	0.00	0.00	
10,400.00	90.07	180.12	7,274.81	-3,835.55	29.60	3,835.59	0.00	0.00	0.00	
10,500.00	90.07	180.12	7,274.69	-3,935.55	29.40	3,935.59	0.00	0.00	0.00	
10,600.00	90.07	180.12	7,274.58	-4,035.55	29.19	4,035.59	0.00	0.00	0.00	
10,700.00	90.07	180.12	7,274.46	-4,135.55	28.99	4,135.59	0.00	0.00	0.00	
10,800.00	90.07	180.12	7,274.34	-4,235.55	28.79	4,235.59	0.00	0.00	0.00	
10,900.00	90.07	180.12	7,274.22	-4,335.55	28.58	4,335.59	0.00	0.00	0.00	
11,000.00	90.07	180.12	7,274.10	-4,435.55	28.38	4,435.59	0.00	0.00	0.00	
11,100.00	90.07	180.12	7,273.99	-4,535.55	28.18	4,535.58	0.00	0.00	0.00	
11,200.00	90.07	180.12	7,273.87	-4,635.55	27.97	4,635.58	0.00	0.00	0.00	
11,300.00	90.07	180.12	7,273.75	-4,735.55	27.77	4,735.58	0.00	0.00	0.00	
11,400.00	90.07	180.12	7,273.63	-4,835.55	27.57	4,835.58	0.00	0.00	0.00	
11,500.00	90.07	180.12	7,273.51	-4,935.55	27.36	4,935.58	0.00	0.00	0.00	
11,600.00	90.07	180.12	7,273.40	-5,035.55	27.16	5,035.58	0.00	0.00	0.00	
11,700.00	90.07	180.12	7,273.28	-5,135.55	26.96	5,135.58	0.00	0.00	0.00	
11,800.00	90.07	180.12	7,273.16	-5,235.54	26.76	5,235.58	0.00	0.00	0.00	
11,900.00	90.07	180.12	7,273.04	-5,335.54	26.55	5,335.58	0.00	0.00	0.00	
12,000.00	90.07	180.12	7,272.92	-5,435.54	26.35	5,435.58	0.00	0.00	0.00	
12,100.00	90.07	180.12	7,272.81	-5,535.54	26.15	5,535.58	0.00	0.00	0.00	
12,200.00	90.07	180.12	7,272.69	-5,635.54	25.94	5,635.58	0.00	0.00	0.00	
12,300.00	90.07	180.12	7,272.57	-5,735.54	25.74	5,735.58	0.00	0.00	0.00	
12,400.00	90.07	180.12	7,272.45	-5,835.54	25.54	5,835.58	0.00	0.00	0.00	
12,500.00	90.07	180.12	7,272.34	-5,935.54	25.33	5,935.57	0.00	0.00	0.00	
12,600.00	90.07	180.12	7,272.22	-6,035.54	25.13	6,035.57	0.00	0.00	0.00	
12,700.00	90.07	180.12	7,272.10	-6,135.54	24.93	6,135.57	0.00	0.00	0.00	
12,800.00	90.07	180.12	7,271.98	-6,235.54	24.73	6,235.57	0.00	0.00	0.00	
12,900.00	90.07	180.12	7,271.86	-6,335.54	24.52	6,335.57	0.00	0.00	0.00	
13,000.00	90.07	180.12	7,271.75	-6,435.54	24.32	6,435.57	0.00	0.00	0.00	
13,100.00	90.07	180.12	7,271.63	-6,535.54	24.12	6,535.57	0.00	0.00	0.00	
13,200.00	90.07	180.12	7,271.51	-6,635.54	23.91	6,635.57	0.00	0.00	0.00	
13,300.00	90.07	180.12	7,271.39	-6,735.54	23.71	6,735.57	0.00	0.00	0.00	
13,400.00	90.07	180.12	7,271.27	-6,835.54	23.51	6,835.57	0.00	0.00	0.00	
13,500.00	90.07	180.12	7,271.16	-6,935.54	23.30	6,935.57	0.00	0.00	0.00	
13,600.00	90.07	180.12	7,271.04	-7,035.54	23.10	7,035.57	0.00	0.00	0.00	
13,700.00	90.07	180.12	7,270.92	-7,135.54	22.90	7,135.57	0.00	0.00	0.00	
13,800.00	90.07	180.12	7,270.80	-7,235.54	22.69	7,235.57	0.00	0.00	0.00	
13,900.00	90.07	180.12	7,270.69	-7,335.54	22.49	7,335.57	0.00	0.00	0.00	
14,000.00	90.07	180.12	7,270.57	-7,435.54	22.29	7,435.56	0.00	0.00	0.00	
14,100.00	90.07	180.12	7,270.45	-7,535.54	22.09	7,535.56	0.00	0.00	0.00	
14,200.00	90.07	180.12	7,270.33	-7,635.54	21.88	7,635.56	0.00	0.00	0.00	
14,300.00	90.07	180.12	7,270.21	-7,735.54	21.68	7,735.56	0.00	0.00	0.00	
14,400.00	90.07	180.12	7,270.10	-7,835.54	21.48	7,835.56	0.00	0.00	0.00	
14,500.00	90.07	180.12	7,269.98	-7,935.54	21.27	7,935.56	0.00	0.00	0.00	
14,600.00	90.07	180.12	7,269.86	-8,035.54	21.07	8,035.56	0.00	0.00	0.00	
14,700.00	90.07	180.12	7,269.74	-8,135.54	20.87	8,135.56	0.00	0.00	0.00	
14,800.00	90.07	180.12	7,269.62	-8,235.54	20.66	8,235.56	0.00	0.00	0.00	
14,900.00	90.07	180.12	7,269.51	-8,335.54	20.46	8,335.56	0.00	0.00	0.00	
15,000.00	90.07	180.12	7,269.39	-8,435.54	20.26	8,435.56	0.00	0.00	0.00	
15,100.00	90.07	180.12	7,269.27	-8,535.54	20.05	8,535.56	0.00	0.00	0.00	
15,200.00	90.07	180.12	7,269.15	-8,635.54	19.85	8,635.56	0.00	0.00	0.00	
15,300.00	90.07	180.12	7,269.04	-8,735.54	19.65	8,735.56	0.00	0.00	0.00	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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	90.07	180.12	7,268.92	-8,835.54	19.45	8,835.55	0.00	0.00	0.00
15,500.00	90.07	180.12	7,268.80	-8,935.53	19.24	8,935.55	0.00	0.00	0.00
15,600.00	90.07	180.12	7,268.68	-9,035.53	19.04	9,035.55	0.00	0.00	0.00
15,700.00	90.07	180.12	7,268.56	-9,135.53	18.84	9,135.55	0.00	0.00	0.00
15,800.00	90.07	180.12	7,268.45	-9,235.53	18.63	9,235.55	0.00	0.00	0.00
15,900.00	90.07	180.12	7,268.33	-9,335.53	18.43	9,335.55	0.00	0.00	0.00
16,000.00	90.07	180.12	7,268.21	-9,435.53	18.23	9,435.55	0.00	0.00	0.00
16,100.00	90.07	180.12	7,268.09	-9,535.53	18.02	9,535.55	0.00	0.00	0.00
16,200.00	90.07	180.12	7,267.97	-9,635.53	17.82	9,635.55	0.00	0.00	0.00
16,300.00	90.07	180.12	7,267.86	-9,735.53	17.62	9,735.55	0.00	0.00	0.00
16,400.00	90.07	180.12	7,267.74	-9,835.53	17.41	9,835.55	0.00	0.00	0.00
16,500.00	90.07	180.12	7,267.62	-9,935.53	17.21	9,935.55	0.00	0.00	0.00
16,600.00	90.07	180.12	7,267.50	-10,035.53	17.01	10,035.55	0.00	0.00	0.00
16,700.00	90.07	180.12	7,267.38	-10,135.53	16.81	10,135.55	0.00	0.00	0.00
16,800.00	90.07	180.12	7,267.27	-10,235.53	16.60	10,235.54	0.00	0.00	0.00
16,900.00	90.07	180.12	7,267.15	-10,335.53	16.40	10,335.54	0.00	0.00	0.00
17,000.00	90.07	180.12	7,267.03	-10,435.53	16.20	10,435.54	0.00	0.00	0.00
17,026.30	90.07	180.12	7,267.00	-10,461.83	16.14	10,461.84	0.00	0.00	0.00
PBHL/TD 17026.30 MD/7267.00 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 4-10-2L 470	0.00	0.00	7,267.00	-10,461.83	16.14	14,517,290.00	1,730,978.35	39.97361563	-104.67674893
- plan hits target center									
- Point									
LP Desha 4-10-2L 470 F	0.00	0.00	7,278.00	-1,130.05	35.09	14,526,621.77	1,730,963.46	39.99924227	-104.67668130
- 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
5,180.95	5,177.96	-28.30	1.42	Begin 18.09° tangent
6,974.51	6,882.81	-584.66	29.44	Begin 10°/100' build/turn
7,694.49	7,278.00	-1,130.05	35.09	LP Begin 90.07° lateral section
17,026.30	7,267.00	-10,461.83	16.14	PBHL/TD 17026.30 MD/7267.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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 4-10-2L, Surf loc: 660 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,751.68 usft	Latitude:	40.00234556
	+E/-W	0.00 ft	Easting:	1,730,924.27 usft	Longitude:	-104.67680660
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,075.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/29/2017	8.28	66.45	52,144.80000000

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	179.91

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,026.30 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	
5,180.95	18.09	177.12	5,177.96	-28.30	1.42	10.00	10.00	0.00	177.12	
6,974.51	18.09	177.12	6,882.81	-584.66	29.44	0.00	0.00	0.00	0.00	
7,694.49	90.07	180.12	7,278.00	-1,130.05	35.09	10.00	10.00	0.42	3.15	LP Desha 4-10-2L 471
17,026.30	90.07	180.12	7,267.00	-10,461.83	16.14	0.00	0.00	0.00	0.00	BHL Desha 4-10-2L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
100.00	0.00	0.00	100.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
200.00	0.00	0.00	200.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
300.00	0.00	0.00	300.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
400.00	0.00	0.00	400.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
500.00	0.00	0.00	500.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
600.00	0.00	0.00	600.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
700.00	0.00	0.00	700.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
800.00	0.00	0.00	800.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
900.00	0.00	0.00	900.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,751.68	1,730,924.27	40.00234556	-104.67680660
KOP Begin 10°/100' build									
5,100.00	10.00	177.12	5,099.49	-8.69	0.44	14,527,742.99	1,730,924.74	40.00232169	-104.67680504

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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
5,180.95	18.09	177.12	5,177.96	-28.30	1.42	14,527,723.39	1,730,925.80	40.00226785	-104.67680151
Begin 18.09° tangent									
5,200.00	18.09	177.12	5,196.06	-34.21	1.72	14,527,717.48	1,730,926.12	40.00225162	-104.67680045
5,300.00	18.09	177.12	5,291.12	-65.23	3.28	14,527,686.47	1,730,927.79	40.00216643	-104.67679488
5,400.00	18.09	177.12	5,386.17	-96.25	4.85	14,527,655.45	1,730,929.46	40.00208125	-104.67678930
5,500.00	18.09	177.12	5,481.23	-127.27	6.41	14,527,624.44	1,730,931.14	40.00199606	-104.67678372
5,600.00	18.09	177.12	5,576.28	-158.29	7.97	14,527,593.43	1,730,932.81	40.00191088	-104.67677814
5,700.00	18.09	177.12	5,671.34	-189.31	9.53	14,527,562.41	1,730,934.49	40.00182569	-104.67677257
5,800.00	18.09	177.12	5,766.39	-220.33	11.09	14,527,531.40	1,730,936.16	40.00174051	-104.67676699
5,900.00	18.09	177.12	5,861.45	-251.35	12.65	14,527,500.38	1,730,937.84	40.00165532	-104.67676141
6,000.00	18.09	177.12	5,956.50	-282.37	14.22	14,527,469.37	1,730,939.51	40.00157014	-104.67675584
6,100.00	18.09	177.12	6,051.55	-313.39	15.78	14,527,438.36	1,730,941.18	40.00148495	-104.67675026
6,200.00	18.09	177.12	6,146.61	-344.41	17.34	14,527,407.34	1,730,942.86	40.00139976	-104.67674468
6,300.00	18.09	177.12	6,241.66	-375.43	18.90	14,527,376.33	1,730,944.53	40.00131458	-104.67673911
6,400.00	18.09	177.12	6,336.72	-406.45	20.46	14,527,345.32	1,730,946.21	40.00122939	-104.67673353
6,500.00	18.09	177.12	6,431.77	-437.47	22.03	14,527,314.30	1,730,947.88	40.00114421	-104.67672795
6,600.00	18.09	177.12	6,526.83	-468.49	23.59	14,527,283.29	1,730,949.55	40.00105902	-104.67672238
6,700.00	18.09	177.12	6,621.88	-499.51	25.15	14,527,252.27	1,730,951.23	40.00097384	-104.67671680
6,800.00	18.09	177.12	6,716.94	-530.53	26.71	14,527,221.26	1,730,952.90	40.00088865	-104.67671122
6,900.00	18.09	177.12	6,811.99	-561.55	28.27	14,527,190.25	1,730,954.58	40.00080347	-104.67670565
6,974.51	18.09	177.12	6,882.81	-584.66	29.44	14,527,167.14	1,730,955.83	40.00074000	-104.67670149
Begin 10°/100' build/turn									
7,000.00	20.64	177.52	6,906.86	-593.10	29.83	14,527,158.70	1,730,956.25	40.00071681	-104.67670008
7,100.00	30.63	178.46	6,996.90	-636.29	31.28	14,527,115.52	1,730,957.86	40.00059821	-104.67669490
7,200.00	40.63	178.97	7,078.08	-694.46	32.55	14,527,057.35	1,730,959.34	40.00043848	-104.67669037
7,300.00	50.63	179.31	7,147.92	-765.84	33.60	14,526,985.98	1,730,960.65	40.00024245	-104.67668662
7,400.00	60.62	179.56	7,204.31	-848.26	34.40	14,526,903.55	1,730,961.74	40.00001610	-104.67668377
7,500.00	70.62	179.77	7,245.54	-939.23	34.92	14,526,812.59	1,730,962.60	39.99976629	-104.67668191
7,600.00	80.62	179.95	7,270.34	-1,035.97	35.15	14,526,715.85	1,730,963.18	39.99950061	-104.67668109
7,694.49	90.07	180.12	7,278.00	-1,130.05	35.09	14,526,621.77	1,730,963.46	39.99924227	-104.67668130
LP Begin 90.07° lateral section									
7,700.00	90.07	180.12	7,277.99	-1,135.56	35.08	14,526,616.27	1,730,963.47	39.99922714	-104.67668134
7,800.00	90.07	180.12	7,277.88	-1,235.56	34.88	14,526,516.27	1,730,963.63	39.99895253	-104.67668206
7,900.00	90.07	180.12	7,277.76	-1,335.56	34.68	14,526,416.27	1,730,963.79	39.99867791	-104.67668279
8,000.00	90.07	180.12	7,277.64	-1,435.56	34.47	14,526,316.27	1,730,963.95	39.99840330	-104.67668351
8,100.00	90.07	180.12	7,277.52	-1,535.55	34.27	14,526,216.27	1,730,964.11	39.99812868	-104.67668424
8,200.00	90.07	180.12	7,277.40	-1,635.55	34.07	14,526,116.27	1,730,964.27	39.99785407	-104.67668496
8,300.00	90.07	180.12	7,277.29	-1,735.55	33.86	14,526,016.27	1,730,964.42	39.99757945	-104.67668569
8,400.00	90.07	180.12	7,277.17	-1,835.55	33.66	14,525,916.27	1,730,964.58	39.99730483	-104.67668641
8,500.00	90.07	180.12	7,277.05	-1,935.55	33.46	14,525,816.27	1,730,964.74	39.99703022	-104.67668714
8,600.00	90.07	180.12	7,276.93	-2,035.55	33.25	14,525,716.27	1,730,964.90	39.99675560	-104.67668786
8,700.00	90.07	180.12	7,276.81	-2,135.55	33.05	14,525,616.27	1,730,965.06	39.99648099	-104.67668859
8,800.00	90.07	180.12	7,276.70	-2,235.55	32.85	14,525,516.27	1,730,965.22	39.99620637	-104.67668932
8,900.00	90.07	180.12	7,276.58	-2,335.55	32.64	14,525,416.27	1,730,965.38	39.99593176	-104.67669004
9,000.00	90.07	180.12	7,276.46	-2,435.55	32.44	14,525,316.27	1,730,965.54	39.99565714	-104.67669077
9,100.00	90.07	180.12	7,276.34	-2,535.55	32.24	14,525,216.27	1,730,965.70	39.99538253	-104.67669149
9,200.00	90.07	180.12	7,276.23	-2,635.55	32.04	14,525,116.27	1,730,965.86	39.99510791	-104.67669222
9,300.00	90.07	180.12	7,276.11	-2,735.55	31.83	14,525,016.27	1,730,966.02	39.99483329	-104.67669294
9,400.00	90.07	180.12	7,275.99	-2,835.55	31.63	14,524,916.27	1,730,966.18	39.99455868	-104.67669367
9,500.00	90.07	180.12	7,275.87	-2,935.55	31.43	14,524,816.27	1,730,966.34	39.99428406	-104.67669439
9,600.00	90.07	180.12	7,275.75	-3,035.55	31.22	14,524,716.27	1,730,966.50	39.99400945	-104.67669512
9,700.00	90.07	180.12	7,275.64	-3,135.55	31.02	14,524,616.27	1,730,966.66	39.99373483	-104.67669584
9,800.00	90.07	180.12	7,275.52	-3,235.55	30.82	14,524,516.27	1,730,966.82	39.99346021	-104.67669657
9,900.00	90.07	180.12	7,275.40	-3,335.55	30.61	14,524,416.27	1,730,966.98	39.99318560	-104.67669729

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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
10,000.00	90.07	180.12	7,275.28	-3,435.55	30.41	14,524,316.27	1,730,967.14	39.99291098	-104.67669802
10,100.00	90.07	180.12	7,275.16	-3,535.55	30.21	14,524,216.28	1,730,967.30	39.99263637	-104.67669874
10,200.00	90.07	180.12	7,275.05	-3,635.55	30.00	14,524,116.28	1,730,967.46	39.99236175	-104.67669947
10,300.00	90.07	180.12	7,274.93	-3,735.55	29.80	14,524,016.28	1,730,967.62	39.99208714	-104.67670019
10,400.00	90.07	180.12	7,274.81	-3,835.55	29.60	14,523,916.28	1,730,967.78	39.99181252	-104.67670092
10,500.00	90.07	180.12	7,274.69	-3,935.55	29.40	14,523,816.28	1,730,967.94	39.99153790	-104.67670164
10,600.00	90.07	180.12	7,274.58	-4,035.55	29.19	14,523,716.28	1,730,968.09	39.99126329	-104.67670237
10,700.00	90.07	180.12	7,274.46	-4,135.55	28.99	14,523,616.28	1,730,968.25	39.99098867	-104.67670309
10,800.00	90.07	180.12	7,274.34	-4,235.55	28.79	14,523,516.28	1,730,968.41	39.99071406	-104.67670382
10,900.00	90.07	180.12	7,274.22	-4,335.55	28.58	14,523,416.28	1,730,968.57	39.99043944	-104.67670454
11,000.00	90.07	180.12	7,274.10	-4,435.55	28.38	14,523,316.28	1,730,968.73	39.99016482	-104.67670527
11,100.00	90.07	180.12	7,273.99	-4,535.55	28.18	14,523,216.28	1,730,968.89	39.98989021	-104.67670599
11,200.00	90.07	180.12	7,273.87	-4,635.55	27.97	14,523,116.28	1,730,969.05	39.98961559	-104.67670672
11,300.00	90.07	180.12	7,273.75	-4,735.55	27.77	14,523,016.28	1,730,969.21	39.98934098	-104.67670744
11,400.00	90.07	180.12	7,273.63	-4,835.55	27.57	14,522,916.28	1,730,969.37	39.98906636	-104.67670817
11,500.00	90.07	180.12	7,273.51	-4,935.55	27.36	14,522,816.28	1,730,969.53	39.98879174	-104.67670889
11,600.00	90.07	180.12	7,273.40	-5,035.55	27.16	14,522,716.28	1,730,969.69	39.98851713	-104.67670962
11,700.00	90.07	180.12	7,273.28	-5,135.55	26.96	14,522,616.28	1,730,969.85	39.98824251	-104.67671034
11,800.00	90.07	180.12	7,273.16	-5,235.54	26.76	14,522,516.28	1,730,970.01	39.98796790	-104.67671107
11,900.00	90.07	180.12	7,273.04	-5,335.54	26.55	14,522,416.28	1,730,970.17	39.98769328	-104.67671179
12,000.00	90.07	180.12	7,272.92	-5,435.54	26.35	14,522,316.28	1,730,970.33	39.98741866	-104.67671252
12,100.00	90.07	180.12	7,272.81	-5,535.54	26.15	14,522,216.28	1,730,970.49	39.98714405	-104.67671324
12,200.00	90.07	180.12	7,272.69	-5,635.54	25.94	14,522,116.28	1,730,970.65	39.98686943	-104.67671397
12,300.00	90.07	180.12	7,272.57	-5,735.54	25.74	14,522,016.28	1,730,970.81	39.98659482	-104.67671469
12,400.00	90.07	180.12	7,272.45	-5,835.54	25.54	14,521,916.28	1,730,970.97	39.98632020	-104.67671542
12,500.00	90.07	180.12	7,272.34	-5,935.54	25.33	14,521,816.28	1,730,971.13	39.98604558	-104.67671614
12,600.00	90.07	180.12	7,272.22	-6,035.54	25.13	14,521,716.28	1,730,971.29	39.98577097	-104.67671687
12,700.00	90.07	180.12	7,272.10	-6,135.54	24.93	14,521,616.29	1,730,971.45	39.98549635	-104.67671759
12,800.00	90.07	180.12	7,271.98	-6,235.54	24.73	14,521,516.29	1,730,971.61	39.98522174	-104.67671832
12,900.00	90.07	180.12	7,271.86	-6,335.54	24.52	14,521,416.29	1,730,971.76	39.98494712	-104.67671904
13,000.00	90.07	180.12	7,271.75	-6,435.54	24.32	14,521,316.29	1,730,971.92	39.98467250	-104.67671977
13,100.00	90.07	180.12	7,271.63	-6,535.54	24.12	14,521,216.29	1,730,972.08	39.98439789	-104.67672049
13,200.00	90.07	180.12	7,271.51	-6,635.54	23.91	14,521,116.29	1,730,972.24	39.98412327	-104.67672121
13,300.00	90.07	180.12	7,271.39	-6,735.54	23.71	14,521,016.29	1,730,972.40	39.98384865	-104.67672194
13,400.00	90.07	180.12	7,271.27	-6,835.54	23.51	14,520,916.29	1,730,972.56	39.98357404	-104.67672266
13,500.00	90.07	180.12	7,271.16	-6,935.54	23.30	14,520,816.29	1,730,972.72	39.98329942	-104.67672339
13,600.00	90.07	180.12	7,271.04	-7,035.54	23.10	14,520,716.29	1,730,972.88	39.98302481	-104.67672411
13,700.00	90.07	180.12	7,270.92	-7,135.54	22.90	14,520,616.29	1,730,973.04	39.98275019	-104.67672484
13,800.00	90.07	180.12	7,270.80	-7,235.54	22.69	14,520,516.29	1,730,973.20	39.98247557	-104.67672556
13,900.00	90.07	180.12	7,270.69	-7,335.54	22.49	14,520,416.29	1,730,973.36	39.98220096	-104.67672629
14,000.00	90.07	180.12	7,270.57	-7,435.54	22.29	14,520,316.29	1,730,973.52	39.98192634	-104.67672701
14,100.00	90.07	180.12	7,270.45	-7,535.54	22.09	14,520,216.29	1,730,973.68	39.98165172	-104.67672774
14,200.00	90.07	180.12	7,270.33	-7,635.54	21.88	14,520,116.29	1,730,973.84	39.98137711	-104.67672846
14,300.00	90.07	180.12	7,270.21	-7,735.54	21.68	14,520,016.29	1,730,974.00	39.98110249	-104.67672919
14,400.00	90.07	180.12	7,270.10	-7,835.54	21.48	14,519,916.29	1,730,974.16	39.98082788	-104.67672991
14,500.00	90.07	180.12	7,269.98	-7,935.54	21.27	14,519,816.29	1,730,974.32	39.98055326	-104.67673063
14,600.00	90.07	180.12	7,269.86	-8,035.54	21.07	14,519,716.29	1,730,974.48	39.98027864	-104.67673136
14,700.00	90.07	180.12	7,269.74	-8,135.54	20.87	14,519,616.29	1,730,974.64	39.98000403	-104.67673208
14,800.00	90.07	180.12	7,269.62	-8,235.54	20.66	14,519,516.29	1,730,974.80	39.97972941	-104.67673281
14,900.00	90.07	180.12	7,269.51	-8,335.54	20.46	14,519,416.29	1,730,974.96	39.97945479	-104.67673353
15,000.00	90.07	180.12	7,269.39	-8,435.54	20.26	14,519,316.29	1,730,975.12	39.97918018	-104.67673426
15,100.00	90.07	180.12	7,269.27	-8,535.54	20.05	14,519,216.29	1,730,975.28	39.97890556	-104.67673498
15,200.00	90.07	180.12	7,269.15	-8,635.54	19.85	14,519,116.30	1,730,975.43	39.97863094	-104.67673571
15,300.00	90.07	180.12	7,269.04	-8,735.54	19.65	14,519,016.30	1,730,975.59	39.97835633	-104.67673643
15,400.00	90.07	180.12	7,268.92	-8,835.54	19.45	14,518,916.30	1,730,975.75	39.97808171	-104.67673715

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5075+25 @ 5100.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5075+25 @ 5100.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-10-2L	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
15,500.00	90.07	180.12	7,268.80	-8,935.53	19.24	14,518,816.30	1,730,975.91	39.97780709	-104.67673788
15,600.00	90.07	180.12	7,268.68	-9,035.53	19.04	14,518,716.30	1,730,976.07	39.97753248	-104.67673860
15,700.00	90.07	180.12	7,268.56	-9,135.53	18.84	14,518,616.30	1,730,976.23	39.97725786	-104.67673933
15,800.00	90.07	180.12	7,268.45	-9,235.53	18.63	14,518,516.30	1,730,976.39	39.97698325	-104.67674005
15,900.00	90.07	180.12	7,268.33	-9,335.53	18.43	14,518,416.30	1,730,976.55	39.97670863	-104.67674078
16,000.00	90.07	180.12	7,268.21	-9,435.53	18.23	14,518,316.30	1,730,976.71	39.97643401	-104.67674150
16,100.00	90.07	180.12	7,268.09	-9,535.53	18.02	14,518,216.30	1,730,976.87	39.97615940	-104.67674222
16,200.00	90.07	180.12	7,267.97	-9,635.53	17.82	14,518,116.30	1,730,977.03	39.97588478	-104.67674295
16,300.00	90.07	180.12	7,267.86	-9,735.53	17.62	14,518,016.30	1,730,977.19	39.97561016	-104.67674367
16,400.00	90.07	180.12	7,267.74	-9,835.53	17.41	14,517,916.30	1,730,977.35	39.97533555	-104.67674440
16,500.00	90.07	180.12	7,267.62	-9,935.53	17.21	14,517,816.30	1,730,977.51	39.97506093	-104.67674512
16,600.00	90.07	180.12	7,267.50	-10,035.53	17.01	14,517,716.30	1,730,977.67	39.97478631	-104.67674585
16,700.00	90.07	180.12	7,267.38	-10,135.53	16.81	14,517,616.30	1,730,977.83	39.97451170	-104.67674657
16,800.00	90.07	180.12	7,267.27	-10,235.53	16.60	14,517,516.30	1,730,977.99	39.97423708	-104.67674729
16,900.00	90.07	180.12	7,267.15	-10,335.53	16.40	14,517,416.30	1,730,978.15	39.97396246	-104.67674802
17,000.00	90.07	180.12	7,267.03	-10,435.53	16.20	14,517,316.30	1,730,978.31	39.97368785	-104.67674874
17,026.30	90.07	180.12	7,267.00	-10,461.83	16.14	14,517,290.00	1,730,978.35	39.97361563	-104.67674893
PBHL/TD 17026.30 MD/7267.00 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 4-10-2L 470	0.00	0.00	7,267.00	-10,461.83	16.14	14,517,290.00	1,730,978.35	39.97361563	-104.67674893
- plan hits target center									
- Point									
LP Desha 4-10-2L 470 F	0.00	0.00	7,278.00	-1,130.05	35.09	14,526,621.77	1,730,963.46	39.99924227	-104.67668130
- 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	
5,180.95	5,177.96	-28.30	1.42	Begin 18.09° tangent	
6,974.51	6,882.81	-584.66	29.44	Begin 10°/100' build/turn	
7,694.49	7,278.00	-1,130.05	35.09	LP Begin 90.07° lateral section	
17,026.30	7,267.00	-10,461.83	16.14	PBHL/TD 17026.30 MD/7267.00 TVD	