

Weld County, Colorado
Section 31-T01N-R65W
Walla 5-10-2L
plan1

Walla 5-10-2L			
Surf Loc: 861 FSL 680 FWL Sec31-T01N-R65W			
NAD83 Colorado - HARN			
Universal Transverse Mercator (US Survey Feet)			
Zone 13N (108 W to 102 W)			
RKB=5039+27 @ 5066.00ft			
Northing	Easting	Latitude	Longitude
14527928.38	1724505.97	40.00289245	-104.69972327

Azimuth Corrections:

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

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	5362.29	36.23	127.48	5338.63	-67.41	87.90	10.00	76.68	Begin 36.23° tangent
4	7373.56	36.23	127.48	6961.04	-790.78	1031.15	0.00	899.51	Begin 10°/100' build/turn
5	8063.93	89.99	180.25	7279.00	-1326.56	1214.21	10.00	1452.18	LP Begin 89.99° lateral section
6	17329.47	89.99	180.25	7281.00	-10592.01	1173.33	0.00	10656.80	PBHL/TD 17329.47 MD/7281.00 TVD

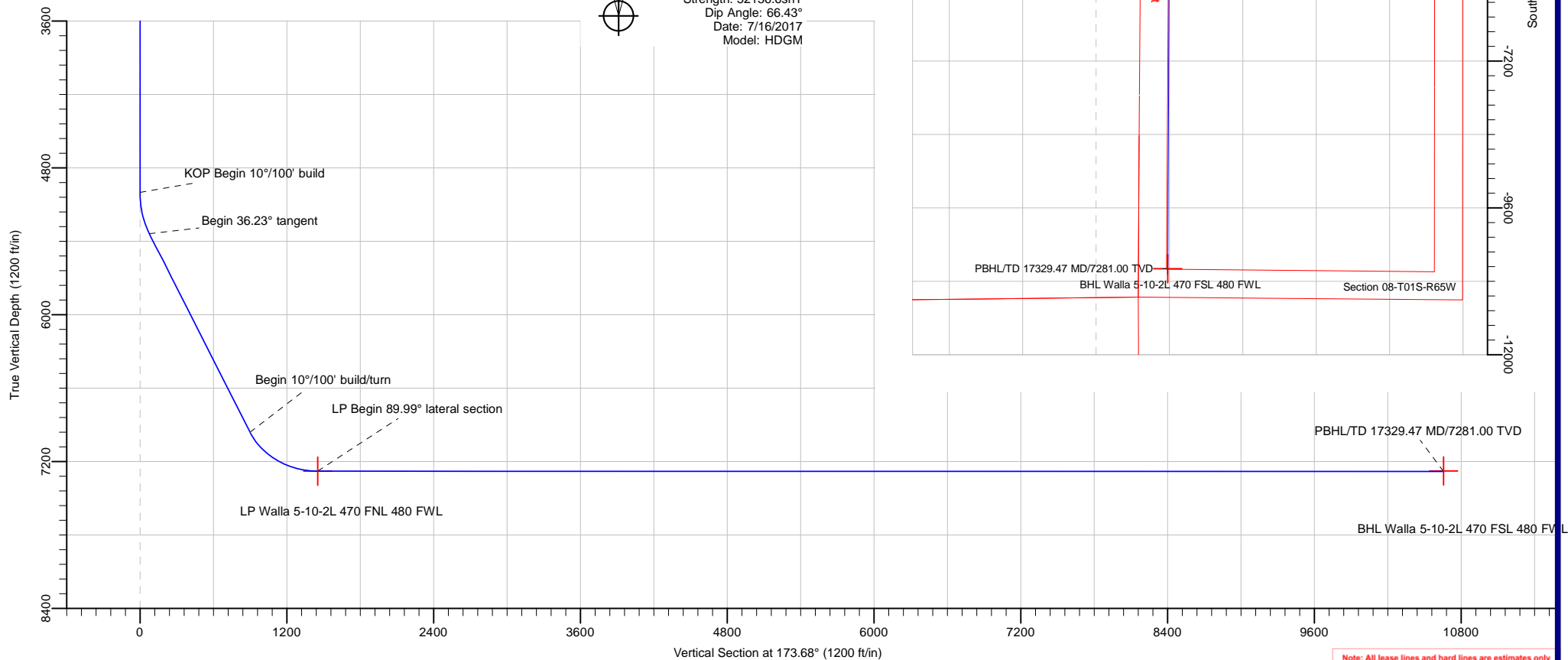
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL Walla 5-10-2L 470 FSL 480 FWL	7277.00	-10592.01	1173.3314517336.39	1725679.30	39.97379422	-104.69566255	
LP Walla 5-10-2L 470 FNL 480 FWL	7279.00	-1326.56	1214.2114526601.82	1725720.18	39.99923820	-104.69540366	



Azimuths to Grid North
True North: -0.19°
Magnetic North: 8.07°

Magnetic Field
Strength: 52136.6snT
Dip Angle: 66.43°
Date: 7/16/2017
Model: HDGM



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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 31-T01N-R65W			
Site Position:		Northing:	14,527,926.57 usft	Latitude:	40.00289000
From:	Lat/Long	Easting:	1,724,232.45 usft	Longitude:	-104.70070000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.19 °

Well	Walla 5-10-2L, Surf Loc: 861 FSL 680 FWL Sec31-T01N-R65W					
Well Position	+N/-S	1.81 ft	Northing:	14,527,928.38 usft	Latitude:	40.00289245
	+E/-W	273.52 ft	Easting:	1,724,505.97 usft	Longitude:	-104.69972326
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,039.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/16/2017	8.27	66.43	52,136.60000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	173.68

Plan Survey Tool Program	Date	7/16/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,329.47	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	
5,362.29	36.23	127.48	5,338.63	-67.41	87.90	10.00	10.00	0.00	127.48	
7,373.56	36.23	127.48	6,961.04	-790.78	1,031.15	0.00	0.00	0.00	0.00	
8,063.93	89.99	180.25	7,279.00	-1,326.56	1,214.21	10.00	7.79	7.64	58.50	LP Walla 5-10-2L 470
17,329.47	89.99	180.25	7,281.00	-10,592.01	1,173.33	0.00	0.00	0.00	0.00	BHL Walla 5-10-2L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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	127.48	5,099.49	-5.30	6.91	6.03	10.00	10.00	0.00
5,200.00	20.00	127.48	5,195.96	-21.03	27.42	23.92	10.00	10.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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)
5,300.00	30.00	127.48	5,286.48	-46.71	60.91	53.14	10.00	10.00	0.00
5,362.29	36.23	127.48	5,338.63	-67.41	87.90	76.68	10.00	10.00	0.00
Begin 36.23° tangent									
5,400.00	36.23	127.48	5,369.05	-80.97	105.59	92.11	0.00	0.00	0.00
5,500.00	36.23	127.48	5,449.71	-116.94	152.48	133.02	0.00	0.00	0.00
5,600.00	36.23	127.48	5,530.38	-152.91	199.38	173.93	0.00	0.00	0.00
5,700.00	36.23	127.48	5,611.04	-188.87	246.28	214.84	0.00	0.00	0.00
5,800.00	36.23	127.48	5,691.71	-224.84	293.18	255.75	0.00	0.00	0.00
5,900.00	36.23	127.48	5,772.38	-260.80	340.08	296.66	0.00	0.00	0.00
6,000.00	36.23	127.48	5,853.04	-296.77	386.97	337.57	0.00	0.00	0.00
6,100.00	36.23	127.48	5,933.71	-332.74	433.87	378.48	0.00	0.00	0.00
6,200.00	36.23	127.48	6,014.38	-368.70	480.77	419.39	0.00	0.00	0.00
6,300.00	36.23	127.48	6,095.04	-404.67	527.67	460.30	0.00	0.00	0.00
6,400.00	36.23	127.48	6,175.71	-440.63	574.57	501.21	0.00	0.00	0.00
6,500.00	36.23	127.48	6,256.37	-476.60	621.46	542.13	0.00	0.00	0.00
6,600.00	36.23	127.48	6,337.04	-512.56	668.36	583.04	0.00	0.00	0.00
6,700.00	36.23	127.48	6,417.71	-548.53	715.26	623.95	0.00	0.00	0.00
6,800.00	36.23	127.48	6,498.37	-584.50	762.16	664.86	0.00	0.00	0.00
6,900.00	36.23	127.48	6,579.04	-620.46	809.06	705.77	0.00	0.00	0.00
7,000.00	36.23	127.48	6,659.71	-656.43	855.95	746.68	0.00	0.00	0.00
7,100.00	36.23	127.48	6,740.37	-692.39	902.85	787.59	0.00	0.00	0.00
7,200.00	36.23	127.48	6,821.04	-728.36	949.75	828.50	0.00	0.00	0.00
7,300.00	36.23	127.48	6,901.70	-764.33	996.65	869.41	0.00	0.00	0.00
7,373.56	36.23	127.48	6,961.04	-790.78	1,031.15	899.51	0.00	0.00	0.00
Begin 10°/100' build/turn									
7,400.00	37.67	131.17	6,982.17	-800.86	1,043.43	910.87	10.00	5.45	13.96
7,500.00	43.99	143.07	7,057.92	-848.85	1,087.40	963.42	10.00	6.32	11.90
7,600.00	51.27	152.37	7,125.35	-911.33	1,126.45	1,029.81	10.00	7.29	9.29
7,700.00	59.16	159.87	7,182.40	-986.39	1,159.40	1,108.04	10.00	7.88	7.51
7,800.00	67.41	166.21	7,227.36	-1,071.75	1,185.24	1,195.73	10.00	8.25	6.34
7,900.00	75.88	171.82	7,258.85	-1,164.81	1,203.19	1,290.20	10.00	8.47	5.61
8,000.00	84.47	177.02	7,275.91	-1,262.75	1,212.70	1,388.60	10.00	8.59	5.20
8,063.93	89.99	180.25	7,279.00	-1,326.56	1,214.21	1,452.18	10.00	8.63	5.05
LP Begin 89.99° lateral section									
8,100.00	89.99	180.25	7,279.01	-1,362.63	1,214.05	1,488.01	0.00	0.00	0.00
8,200.00	89.99	180.25	7,279.03	-1,462.63	1,213.61	1,587.36	0.00	0.00	0.00
8,300.00	89.99	180.25	7,279.05	-1,562.63	1,213.17	1,686.70	0.00	0.00	0.00
8,400.00	89.99	180.25	7,279.07	-1,662.62	1,212.73	1,786.04	0.00	0.00	0.00
8,500.00	89.99	180.25	7,279.09	-1,762.62	1,212.29	1,885.38	0.00	0.00	0.00
8,600.00	89.99	180.25	7,279.12	-1,862.62	1,211.85	1,984.73	0.00	0.00	0.00
8,700.00	89.99	180.25	7,279.14	-1,962.62	1,211.41	2,084.07	0.00	0.00	0.00
8,800.00	89.99	180.25	7,279.16	-2,062.62	1,210.96	2,183.41	0.00	0.00	0.00
8,900.00	89.99	180.25	7,279.18	-2,162.62	1,210.52	2,282.75	0.00	0.00	0.00
9,000.00	89.99	180.25	7,279.20	-2,262.62	1,210.08	2,382.10	0.00	0.00	0.00
9,100.00	89.99	180.25	7,279.22	-2,362.62	1,209.64	2,481.44	0.00	0.00	0.00
9,200.00	89.99	180.25	7,279.25	-2,462.62	1,209.20	2,580.78	0.00	0.00	0.00
9,300.00	89.99	180.25	7,279.27	-2,562.62	1,208.76	2,680.12	0.00	0.00	0.00
9,400.00	89.99	180.25	7,279.29	-2,662.62	1,208.32	2,779.47	0.00	0.00	0.00
9,500.00	89.99	180.25	7,279.31	-2,762.61	1,207.88	2,878.81	0.00	0.00	0.00
9,600.00	89.99	180.25	7,279.33	-2,862.61	1,207.44	2,978.15	0.00	0.00	0.00
9,700.00	89.99	180.25	7,279.35	-2,962.61	1,206.99	3,077.49	0.00	0.00	0.00
9,800.00	89.99	180.25	7,279.37	-3,062.61	1,206.55	3,176.84	0.00	0.00	0.00
9,900.00	89.99	180.25	7,279.40	-3,162.61	1,206.11	3,276.18	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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	89.99	180.25	7,279.42	-3,262.61	1,205.67	3,375.52	0.00	0.00	0.00
10,100.00	89.99	180.25	7,279.44	-3,362.61	1,205.23	3,474.86	0.00	0.00	0.00
10,200.00	89.99	180.25	7,279.46	-3,462.61	1,204.79	3,574.21	0.00	0.00	0.00
10,300.00	89.99	180.25	7,279.48	-3,562.61	1,204.35	3,673.55	0.00	0.00	0.00
10,400.00	89.99	180.25	7,279.50	-3,662.61	1,203.91	3,772.89	0.00	0.00	0.00
10,500.00	89.99	180.25	7,279.53	-3,762.60	1,203.46	3,872.23	0.00	0.00	0.00
10,600.00	89.99	180.25	7,279.55	-3,862.60	1,203.02	3,971.58	0.00	0.00	0.00
10,700.00	89.99	180.25	7,279.57	-3,962.60	1,202.58	4,070.92	0.00	0.00	0.00
10,800.00	89.99	180.25	7,279.59	-4,062.60	1,202.14	4,170.26	0.00	0.00	0.00
10,900.00	89.99	180.25	7,279.61	-4,162.60	1,201.70	4,269.60	0.00	0.00	0.00
11,000.00	89.99	180.25	7,279.63	-4,262.60	1,201.26	4,368.95	0.00	0.00	0.00
11,100.00	89.99	180.25	7,279.66	-4,362.60	1,200.82	4,468.29	0.00	0.00	0.00
11,200.00	89.99	180.25	7,279.68	-4,462.60	1,200.38	4,567.63	0.00	0.00	0.00
11,300.00	89.99	180.25	7,279.70	-4,562.60	1,199.93	4,666.97	0.00	0.00	0.00
11,400.00	89.99	180.25	7,279.72	-4,662.60	1,199.49	4,766.31	0.00	0.00	0.00
11,500.00	89.99	180.25	7,279.74	-4,762.59	1,199.05	4,865.66	0.00	0.00	0.00
11,600.00	89.99	180.25	7,279.76	-4,862.59	1,198.61	4,965.00	0.00	0.00	0.00
11,700.00	89.99	180.25	7,279.79	-4,962.59	1,198.17	5,064.34	0.00	0.00	0.00
11,800.00	89.99	180.25	7,279.81	-5,062.59	1,197.73	5,163.68	0.00	0.00	0.00
11,900.00	89.99	180.25	7,279.83	-5,162.59	1,197.29	5,263.03	0.00	0.00	0.00
12,000.00	89.99	180.25	7,279.85	-5,262.59	1,196.85	5,362.37	0.00	0.00	0.00
12,100.00	89.99	180.25	7,279.87	-5,362.59	1,196.41	5,461.71	0.00	0.00	0.00
12,200.00	89.99	180.25	7,279.89	-5,462.59	1,195.96	5,561.05	0.00	0.00	0.00
12,300.00	89.99	180.25	7,279.91	-5,562.59	1,195.52	5,660.40	0.00	0.00	0.00
12,400.00	89.99	180.25	7,279.94	-5,662.59	1,195.08	5,759.74	0.00	0.00	0.00
12,500.00	89.99	180.25	7,279.96	-5,762.59	1,194.64	5,859.08	0.00	0.00	0.00
12,600.00	89.99	180.25	7,279.98	-5,862.58	1,194.20	5,958.42	0.00	0.00	0.00
12,700.00	89.99	180.25	7,280.00	-5,962.58	1,193.76	6,057.77	0.00	0.00	0.00
12,800.00	89.99	180.25	7,280.02	-6,062.58	1,193.32	6,157.11	0.00	0.00	0.00
12,900.00	89.99	180.25	7,280.04	-6,162.58	1,192.88	6,256.45	0.00	0.00	0.00
13,000.00	89.99	180.25	7,280.07	-6,262.58	1,192.43	6,355.79	0.00	0.00	0.00
13,100.00	89.99	180.25	7,280.09	-6,362.58	1,191.99	6,455.14	0.00	0.00	0.00
13,200.00	89.99	180.25	7,280.11	-6,462.58	1,191.55	6,554.48	0.00	0.00	0.00
13,300.00	89.99	180.25	7,280.13	-6,562.58	1,191.11	6,653.82	0.00	0.00	0.00
13,400.00	89.99	180.25	7,280.15	-6,662.58	1,190.67	6,753.16	0.00	0.00	0.00
13,500.00	89.99	180.25	7,280.17	-6,762.58	1,190.23	6,852.51	0.00	0.00	0.00
13,600.00	89.99	180.25	7,280.20	-6,862.57	1,189.79	6,951.85	0.00	0.00	0.00
13,700.00	89.99	180.25	7,280.22	-6,962.57	1,189.35	7,051.19	0.00	0.00	0.00
13,800.00	89.99	180.25	7,280.24	-7,062.57	1,188.90	7,150.53	0.00	0.00	0.00
13,900.00	89.99	180.25	7,280.26	-7,162.57	1,188.46	7,249.88	0.00	0.00	0.00
14,000.00	89.99	180.25	7,280.28	-7,262.57	1,188.02	7,349.22	0.00	0.00	0.00
14,100.00	89.99	180.25	7,280.30	-7,362.57	1,187.58	7,448.56	0.00	0.00	0.00
14,200.00	89.99	180.25	7,280.32	-7,462.57	1,187.14	7,547.90	0.00	0.00	0.00
14,300.00	89.99	180.25	7,280.35	-7,562.57	1,186.70	7,647.25	0.00	0.00	0.00
14,400.00	89.99	180.25	7,280.37	-7,662.57	1,186.26	7,746.59	0.00	0.00	0.00
14,500.00	89.99	180.25	7,280.39	-7,762.57	1,185.82	7,845.93	0.00	0.00	0.00
14,600.00	89.99	180.25	7,280.41	-7,862.56	1,185.37	7,945.27	0.00	0.00	0.00
14,700.00	89.99	180.25	7,280.43	-7,962.56	1,184.93	8,044.62	0.00	0.00	0.00
14,800.00	89.99	180.25	7,280.45	-8,062.56	1,184.49	8,143.96	0.00	0.00	0.00
14,900.00	89.99	180.25	7,280.48	-8,162.56	1,184.05	8,243.30	0.00	0.00	0.00
15,000.00	89.99	180.25	7,280.50	-8,262.56	1,183.61	8,342.64	0.00	0.00	0.00
15,100.00	89.99	180.25	7,280.52	-8,362.56	1,183.17	8,441.99	0.00	0.00	0.00
15,200.00	89.99	180.25	7,280.54	-8,462.56	1,182.73	8,541.33	0.00	0.00	0.00
15,300.00	89.99	180.25	7,280.56	-8,562.56	1,182.29	8,640.67	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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	89.99	180.25	7,280.58	-8,662.56	1,181.85	8,740.01	0.00	0.00	0.00
15,500.00	89.99	180.25	7,280.61	-8,762.56	1,181.40	8,839.36	0.00	0.00	0.00
15,600.00	89.99	180.25	7,280.63	-8,862.55	1,180.96	8,938.70	0.00	0.00	0.00
15,700.00	89.99	180.25	7,280.65	-8,962.55	1,180.52	9,038.04	0.00	0.00	0.00
15,800.00	89.99	180.25	7,280.67	-9,062.55	1,180.08	9,137.38	0.00	0.00	0.00
15,900.00	89.99	180.25	7,280.69	-9,162.55	1,179.64	9,236.73	0.00	0.00	0.00
16,000.00	89.99	180.25	7,280.71	-9,262.55	1,179.20	9,336.07	0.00	0.00	0.00
16,100.00	89.99	180.25	7,280.73	-9,362.55	1,178.76	9,435.41	0.00	0.00	0.00
16,200.00	89.99	180.25	7,280.76	-9,462.55	1,178.32	9,534.75	0.00	0.00	0.00
16,300.00	89.99	180.25	7,280.78	-9,562.55	1,177.87	9,634.10	0.00	0.00	0.00
16,400.00	89.99	180.25	7,280.80	-9,662.55	1,177.43	9,733.44	0.00	0.00	0.00
16,500.00	89.99	180.25	7,280.82	-9,762.55	1,176.99	9,832.78	0.00	0.00	0.00
16,600.00	89.99	180.25	7,280.84	-9,862.55	1,176.55	9,932.12	0.00	0.00	0.00
16,700.00	89.99	180.25	7,280.86	-9,962.54	1,176.11	10,031.47	0.00	0.00	0.00
16,800.00	89.99	180.25	7,280.89	-10,062.54	1,175.67	10,130.81	0.00	0.00	0.00
16,900.00	89.99	180.25	7,280.91	-10,162.54	1,175.23	10,230.15	0.00	0.00	0.00
17,000.00	89.99	180.25	7,280.93	-10,262.54	1,174.79	10,329.49	0.00	0.00	0.00
17,100.00	89.99	180.25	7,280.95	-10,362.54	1,174.34	10,428.84	0.00	0.00	0.00
17,200.00	89.99	180.25	7,280.97	-10,462.54	1,173.90	10,528.18	0.00	0.00	0.00
17,300.00	89.99	180.25	7,280.99	-10,562.54	1,173.46	10,627.52	0.00	0.00	0.00
17,329.47	89.99	180.25	7,281.00	-10,592.01	1,173.33	10,656.80	0.00	0.00	0.00
PBHL/TD 17329.47 MD/7281.00 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 Walla 5-10-2L 470 I	0.00	0.00	7,277.00	-10,592.01	1,173.33	14,517,336.39	1,725,679.30	39.97379422	-104.69566255
- plan misses target center by 4.00ft at 17329.47ft MD (7281.00 TVD, -10592.01 N, 1173.33 E)									
- Point									
LP Walla 5-10-2L 470 Ft	0.00	0.00	7,279.00	-1,326.56	1,214.21	14,526,601.82	1,725,720.18	39.99923820	-104.69540365
- 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
5,362.29	5,338.63	-67.41	87.90	Begin 36.23° tangent
7,373.56	6,961.04	-790.78	1,031.15	Begin 10°/100' build/turn
8,063.93	7,279.00	-1,326.56	1,214.21	LP Begin 89.99° lateral section
17,329.47	7,281.00	-10,592.01	1,173.33	PBHL/TD 17329.47 MD/7281.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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 31-T01N-R65W			
Site Position:		Northing:	14,527,926.57 usft	Latitude:	40.00289000
From:	Lat/Long	Easting:	1,724,232.45 usft	Longitude:	-104.70070000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.19 °

Well	Walla 5-10-2L, Surf Loc: 861 FSL 680 FWL Sec31-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,928.38 usft	Latitude:	40.00289245
	+E/-W	0.00 ft	Easting:	1,724,505.97 usft	Longitude:	-104.69972326
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,039.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/16/2017	8.27	66.43	52,136.60000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	173.68

Plan Survey Tool Program	Date	7/16/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,329.47 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	
5,362.29	36.23	127.48	5,338.63	-67.41	87.90	10.00	10.00	0.00	127.48	
7,373.56	36.23	127.48	6,961.04	-790.78	1,031.15	0.00	0.00	0.00	0.00	
8,063.93	89.99	180.25	7,279.00	-1,326.56	1,214.21	10.00	7.79	7.64	58.50	LP Walla 5-10-2L 470
17,329.47	89.99	180.25	7,281.00	-10,592.01	1,173.33	0.00	0.00	0.00	0.00	BHL Walla 5-10-2L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
100.00	0.00	0.00	100.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
200.00	0.00	0.00	200.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
300.00	0.00	0.00	300.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
400.00	0.00	0.00	400.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
500.00	0.00	0.00	500.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
600.00	0.00	0.00	600.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
700.00	0.00	0.00	700.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
800.00	0.00	0.00	800.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
900.00	0.00	0.00	900.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,928.38	1,724,505.97	40.00289245	-104.69972326
KOP Begin 10°/100' build									
5,100.00	10.00	127.48	5,099.49	-5.30	6.91	14,527,923.09	1,724,512.88	40.00287784	-104.69969866
5,200.00	20.00	127.48	5,195.96	-21.03	27.42	14,527,907.36	1,724,533.39	40.00283446	-104.69962561

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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
5,300.00	30.00	127.48	5,286.48	-46.71	60.91	14,527,881.67	1,724,566.88	40.00276361	-104.69950632
5,362.29	36.23	127.48	5,338.63	-67.41	87.90	14,527,860.97	1,724,593.87	40.00270652	-104.69941019
Begin 36.23° tangent									
5,400.00	36.23	127.48	5,369.05	-80.97	105.59	14,527,847.41	1,724,611.56	40.00266911	-104.69934720
5,500.00	36.23	127.48	5,449.71	-116.94	152.48	14,527,811.44	1,724,658.45	40.00256991	-104.69918017
5,600.00	36.23	127.48	5,530.38	-152.91	199.38	14,527,775.48	1,724,705.35	40.00247071	-104.69901313
5,700.00	36.23	127.48	5,611.04	-188.87	246.28	14,527,739.51	1,724,752.25	40.00237150	-104.69884610
5,800.00	36.23	127.48	5,691.71	-224.84	293.18	14,527,703.55	1,724,799.15	40.00227230	-104.69867907
5,900.00	36.23	127.48	5,772.38	-260.80	340.08	14,527,667.58	1,724,846.04	40.00217310	-104.69851204
6,000.00	36.23	127.48	5,853.04	-296.77	386.97	14,527,631.62	1,724,892.94	40.00207389	-104.69834501
6,100.00	36.23	127.48	5,933.71	-332.74	433.87	14,527,595.65	1,724,939.84	40.00197469	-104.69817798
6,200.00	36.23	127.48	6,014.38	-368.70	480.77	14,527,559.68	1,724,986.74	40.00187549	-104.69801095
6,300.00	36.23	127.48	6,095.04	-404.67	527.67	14,527,523.72	1,725,033.64	40.00177628	-104.69784392
6,400.00	36.23	127.48	6,175.71	-440.63	574.57	14,527,487.75	1,725,080.53	40.00167708	-104.69767690
6,500.00	36.23	127.48	6,256.37	-476.60	621.46	14,527,451.79	1,725,127.43	40.00157787	-104.69750987
6,600.00	36.23	127.48	6,337.04	-512.56	668.36	14,527,415.82	1,725,174.33	40.00147867	-104.69734284
6,700.00	36.23	127.48	6,417.71	-548.53	715.26	14,527,379.86	1,725,221.23	40.00137946	-104.69717581
6,800.00	36.23	127.48	6,498.37	-584.50	762.16	14,527,343.89	1,725,268.12	40.00128026	-104.69700879
6,900.00	36.23	127.48	6,579.04	-620.46	809.06	14,527,307.92	1,725,315.02	40.00118105	-104.69684176
7,000.00	36.23	127.48	6,659.71	-656.43	855.95	14,527,271.96	1,725,361.92	40.00108185	-104.69667474
7,100.00	36.23	127.48	6,740.37	-692.39	902.85	14,527,235.99	1,725,408.82	40.00098264	-104.69650771
7,200.00	36.23	127.48	6,821.04	-728.36	949.75	14,527,200.03	1,725,455.72	40.00088343	-104.69634069
7,300.00	36.23	127.48	6,901.70	-764.33	996.65	14,527,164.06	1,725,502.61	40.00078423	-104.69617366
7,373.56	36.23	127.48	6,961.04	-790.78	1,031.15	14,527,137.60	1,725,537.11	40.00071125	-104.69605080
Begin 10°/100' build/turn									
7,400.00	37.67	131.17	6,982.17	-800.86	1,043.43	14,527,127.53	1,725,549.39	40.00068347	-104.69600707
7,500.00	43.99	143.07	7,057.92	-848.85	1,087.40	14,527,079.53	1,725,593.37	40.00055125	-104.69585063
7,600.00	51.27	152.37	7,125.35	-911.33	1,126.45	14,527,017.06	1,725,632.42	40.00037932	-104.69571195
7,700.00	59.16	159.87	7,182.40	-986.39	1,159.40	14,526,942.00	1,725,665.37	40.00017289	-104.69559522
7,800.00	67.41	166.21	7,227.36	-1,071.75	1,185.24	14,526,856.64	1,725,691.21	39.99993824	-104.69550399
7,900.00	75.88	171.82	7,258.85	-1,164.81	1,203.19	14,526,763.58	1,725,709.15	39.99968250	-104.69544104
8,000.00	84.47	177.02	7,275.91	-1,262.75	1,212.70	14,526,665.63	1,725,718.66	39.99941344	-104.69540828
8,063.93	89.99	180.25	7,279.00	-1,326.56	1,214.21	14,526,601.83	1,725,720.18	39.99923821	-104.69540365
LP Begin 89.99° lateral section									
8,100.00	89.99	180.25	7,279.01	-1,362.63	1,214.05	14,526,565.76	1,725,720.02	39.99913916	-104.69540466
8,200.00	89.99	180.25	7,279.03	-1,462.63	1,213.61	14,526,465.76	1,725,719.58	39.99886456	-104.69540746
8,300.00	89.99	180.25	7,279.05	-1,562.63	1,213.17	14,526,365.76	1,725,719.14	39.99858995	-104.69541025
8,400.00	89.99	180.25	7,279.07	-1,662.62	1,212.73	14,526,265.76	1,725,718.70	39.99831534	-104.69541305
8,500.00	89.99	180.25	7,279.09	-1,762.62	1,212.29	14,526,165.76	1,725,718.25	39.99804073	-104.69541584
8,600.00	89.99	180.25	7,279.12	-1,862.62	1,211.85	14,526,065.77	1,725,717.81	39.99776612	-104.69541864
8,700.00	89.99	180.25	7,279.14	-1,962.62	1,211.41	14,525,965.77	1,725,717.37	39.99749151	-104.69542143
8,800.00	89.99	180.25	7,279.16	-2,062.62	1,210.96	14,525,865.77	1,725,716.93	39.99721691	-104.69542423
8,900.00	89.99	180.25	7,279.18	-2,162.62	1,210.52	14,525,765.77	1,725,716.49	39.99694230	-104.69542702
9,000.00	89.99	180.25	7,279.20	-2,262.62	1,210.08	14,525,665.77	1,725,716.05	39.99666769	-104.69542982
9,100.00	89.99	180.25	7,279.22	-2,362.62	1,209.64	14,525,565.77	1,725,715.61	39.99639308	-104.69543261
9,200.00	89.99	180.25	7,279.25	-2,462.62	1,209.20	14,525,465.77	1,725,715.17	39.99611847	-104.69543541
9,300.00	89.99	180.25	7,279.27	-2,562.62	1,208.76	14,525,365.77	1,725,714.72	39.99584386	-104.69543820
9,400.00	89.99	180.25	7,279.29	-2,662.62	1,208.32	14,525,265.77	1,725,714.28	39.99556926	-104.69544100
9,500.00	89.99	180.25	7,279.31	-2,762.61	1,207.88	14,525,165.78	1,725,713.84	39.99529465	-104.69544379
9,600.00	89.99	180.25	7,279.33	-2,862.61	1,207.44	14,525,065.78	1,725,713.40	39.99502004	-104.69544659
9,700.00	89.99	180.25	7,279.35	-2,962.61	1,206.99	14,524,965.78	1,725,712.96	39.99474543	-104.69544939
9,800.00	89.99	180.25	7,279.37	-3,062.61	1,206.55	14,524,865.78	1,725,712.52	39.99447082	-104.69545218
9,900.00	89.99	180.25	7,279.40	-3,162.61	1,206.11	14,524,765.78	1,725,712.08	39.99419621	-104.69545498
10,000.00	89.99	180.25	7,279.42	-3,262.61	1,205.67	14,524,665.78	1,725,711.64	39.99392161	-104.69545777

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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
10,100.00	89.99	180.25	7,279.44	-3,362.61	1,205.23	14,524,565.78	1,725,711.20	39.99364700	-104.69546057
10,200.00	89.99	180.25	7,279.46	-3,462.61	1,204.79	14,524,465.78	1,725,710.75	39.99337239	-104.69546336
10,300.00	89.99	180.25	7,279.48	-3,562.61	1,204.35	14,524,365.79	1,725,710.31	39.99309778	-104.69546616
10,400.00	89.99	180.25	7,279.50	-3,662.61	1,203.91	14,524,265.79	1,725,709.87	39.99282317	-104.69546895
10,500.00	89.99	180.25	7,279.53	-3,762.60	1,203.46	14,524,165.79	1,725,709.43	39.99254856	-104.69547174
10,600.00	89.99	180.25	7,279.55	-3,862.60	1,203.02	14,524,065.79	1,725,708.99	39.99227396	-104.69547454
10,700.00	89.99	180.25	7,279.57	-3,962.60	1,202.58	14,523,965.79	1,725,708.55	39.99199935	-104.69547733
10,800.00	89.99	180.25	7,279.59	-4,062.60	1,202.14	14,523,865.79	1,725,708.11	39.99172474	-104.69548013
10,900.00	89.99	180.25	7,279.61	-4,162.60	1,201.70	14,523,765.79	1,725,707.67	39.99145013	-104.69548292
11,000.00	89.99	180.25	7,279.63	-4,262.60	1,201.26	14,523,665.79	1,725,707.22	39.99117552	-104.69548572
11,100.00	89.99	180.25	7,279.66	-4,362.60	1,200.82	14,523,565.79	1,725,706.78	39.99090091	-104.69548851
11,200.00	89.99	180.25	7,279.68	-4,462.60	1,200.38	14,523,465.80	1,725,706.34	39.99062630	-104.69549131
11,300.00	89.99	180.25	7,279.70	-4,562.60	1,199.93	14,523,365.80	1,725,705.90	39.99035170	-104.69549410
11,400.00	89.99	180.25	7,279.72	-4,662.60	1,199.49	14,523,265.80	1,725,705.46	39.99007709	-104.69549690
11,500.00	89.99	180.25	7,279.74	-4,762.59	1,199.05	14,523,165.80	1,725,705.02	39.98980248	-104.69549969
11,600.00	89.99	180.25	7,279.76	-4,862.59	1,198.61	14,523,065.80	1,725,704.58	39.98952787	-104.69550249
11,700.00	89.99	180.25	7,279.79	-4,962.59	1,198.17	14,522,965.80	1,725,704.14	39.98925326	-104.69550528
11,800.00	89.99	180.25	7,279.81	-5,062.59	1,197.73	14,522,865.80	1,725,703.69	39.98897865	-104.69550808
11,900.00	89.99	180.25	7,279.83	-5,162.59	1,197.29	14,522,765.80	1,725,703.25	39.98870404	-104.69551087
12,000.00	89.99	180.25	7,279.85	-5,262.59	1,196.85	14,522,665.81	1,725,702.81	39.98842944	-104.69551366
12,100.00	89.99	180.25	7,279.87	-5,362.59	1,196.41	14,522,565.81	1,725,702.37	39.98815483	-104.69551646
12,200.00	89.99	180.25	7,279.89	-5,462.59	1,195.96	14,522,465.81	1,725,701.93	39.98788022	-104.69551925
12,300.00	89.99	180.25	7,279.91	-5,562.59	1,195.52	14,522,365.81	1,725,701.49	39.98760561	-104.69552205
12,400.00	89.99	180.25	7,279.94	-5,662.59	1,195.08	14,522,265.81	1,725,701.05	39.98733100	-104.69552484
12,500.00	89.99	180.25	7,279.96	-5,762.59	1,194.64	14,522,165.81	1,725,700.61	39.98705639	-104.69552764
12,600.00	89.99	180.25	7,279.98	-5,862.58	1,194.20	14,522,065.81	1,725,700.17	39.98678178	-104.69553043
12,700.00	89.99	180.25	7,280.00	-5,962.58	1,193.76	14,521,965.81	1,725,699.72	39.98650718	-104.69553322
12,800.00	89.99	180.25	7,280.02	-6,062.58	1,193.32	14,521,865.81	1,725,699.28	39.98623257	-104.69553602
12,900.00	89.99	180.25	7,280.04	-6,162.58	1,192.88	14,521,765.82	1,725,698.84	39.98595796	-104.69553881
13,000.00	89.99	180.25	7,280.07	-6,262.58	1,192.43	14,521,665.82	1,725,698.40	39.98568335	-104.69554161
13,100.00	89.99	180.25	7,280.09	-6,362.58	1,191.99	14,521,565.82	1,725,697.96	39.98540874	-104.69554440
13,200.00	89.99	180.25	7,280.11	-6,462.58	1,191.55	14,521,465.82	1,725,697.52	39.98513413	-104.69554719
13,300.00	89.99	180.25	7,280.13	-6,562.58	1,191.11	14,521,365.82	1,725,697.08	39.98485952	-104.69554999
13,400.00	89.99	180.25	7,280.15	-6,662.58	1,190.67	14,521,265.82	1,725,696.64	39.98458491	-104.69555278
13,500.00	89.99	180.25	7,280.17	-6,762.58	1,190.23	14,521,165.82	1,725,696.19	39.98431031	-104.69555558
13,600.00	89.99	180.25	7,280.20	-6,862.57	1,189.79	14,521,065.82	1,725,695.75	39.98403570	-104.69555837
13,700.00	89.99	180.25	7,280.22	-6,962.57	1,189.35	14,520,965.83	1,725,695.31	39.98376109	-104.69556116
13,800.00	89.99	180.25	7,280.24	-7,062.57	1,188.90	14,520,865.83	1,725,694.87	39.98348648	-104.69556396
13,900.00	89.99	180.25	7,280.26	-7,162.57	1,188.46	14,520,765.83	1,725,694.43	39.98321187	-104.69556675
14,000.00	89.99	180.25	7,280.28	-7,262.57	1,188.02	14,520,665.83	1,725,693.99	39.98293726	-104.69556955
14,100.00	89.99	180.25	7,280.30	-7,362.57	1,187.58	14,520,565.83	1,725,693.55	39.98266265	-104.69557234
14,200.00	89.99	180.25	7,280.32	-7,462.57	1,187.14	14,520,465.83	1,725,693.11	39.98238804	-104.69557513
14,300.00	89.99	180.25	7,280.35	-7,562.57	1,186.70	14,520,365.83	1,725,692.66	39.98211343	-104.69557793
14,400.00	89.99	180.25	7,280.37	-7,662.57	1,186.26	14,520,265.83	1,725,692.22	39.98183883	-104.69558072
14,500.00	89.99	180.25	7,280.39	-7,762.57	1,185.82	14,520,165.83	1,725,691.78	39.98156422	-104.69558351
14,600.00	89.99	180.25	7,280.41	-7,862.56	1,185.37	14,520,065.84	1,725,691.34	39.98128961	-104.69558631
14,700.00	89.99	180.25	7,280.43	-7,962.56	1,184.93	14,519,965.84	1,725,690.90	39.98101500	-104.69558910
14,800.00	89.99	180.25	7,280.45	-8,062.56	1,184.49	14,519,865.84	1,725,690.46	39.98074039	-104.69559190
14,900.00	89.99	180.25	7,280.48	-8,162.56	1,184.05	14,519,765.84	1,725,690.02	39.98046578	-104.69559469
15,000.00	89.99	180.25	7,280.50	-8,262.56	1,183.61	14,519,665.84	1,725,689.58	39.98019117	-104.69559748
15,100.00	89.99	180.25	7,280.52	-8,362.56	1,183.17	14,519,565.84	1,725,689.14	39.97991656	-104.69560028
15,200.00	89.99	180.25	7,280.54	-8,462.56	1,182.73	14,519,465.84	1,725,688.69	39.97964195	-104.69560307
15,300.00	89.99	180.25	7,280.56	-8,562.56	1,182.29	14,519,365.84	1,725,688.25	39.97936734	-104.69560586
15,400.00	89.99	180.25	7,280.58	-8,662.56	1,181.85	14,519,265.85	1,725,687.81	39.97909273	-104.69560866
15,500.00	89.99	180.25	7,280.61	-8,762.56	1,181.40	14,519,165.85	1,725,687.37	39.97881813	-104.69561145

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Walla 5-10-2L
Company:	Confluence Resources	TVD Reference:	RKB=5039+27 @ 5066.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5039+27 @ 5066.00ft
Site:	Section 31-T01N-R65W	North Reference:	Grid
Well:	Walla 5-10-2L	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
15,600.00	89.99	180.25	7,280.63	-8,862.55	1,180.96	14,519,065.85	1,725,686.93	39.97854352	-104.69561424
15,700.00	89.99	180.25	7,280.65	-8,962.55	1,180.52	14,518,965.85	1,725,686.49	39.97826891	-104.69561704
15,800.00	89.99	180.25	7,280.67	-9,062.55	1,180.08	14,518,865.85	1,725,686.05	39.97799430	-104.69561983
15,900.00	89.99	180.25	7,280.69	-9,162.55	1,179.64	14,518,765.85	1,725,685.61	39.97771969	-104.69562262
16,000.00	89.99	180.25	7,280.71	-9,262.55	1,179.20	14,518,665.85	1,725,685.16	39.97744508	-104.69562542
16,100.00	89.99	180.25	7,280.73	-9,362.55	1,178.76	14,518,565.85	1,725,684.72	39.97717047	-104.69562821
16,200.00	89.99	180.25	7,280.76	-9,462.55	1,178.32	14,518,465.85	1,725,684.28	39.97689586	-104.69563100
16,300.00	89.99	180.25	7,280.78	-9,562.55	1,177.87	14,518,365.86	1,725,683.84	39.97662125	-104.69563380
16,400.00	89.99	180.25	7,280.80	-9,662.55	1,177.43	14,518,265.86	1,725,683.40	39.97634664	-104.69563659
16,500.00	89.99	180.25	7,280.82	-9,762.55	1,176.99	14,518,165.86	1,725,682.96	39.97607203	-104.69563938
16,600.00	89.99	180.25	7,280.84	-9,862.55	1,176.55	14,518,065.86	1,725,682.52	39.97579742	-104.69564218
16,700.00	89.99	180.25	7,280.86	-9,962.54	1,176.11	14,517,965.86	1,725,682.08	39.97552282	-104.69564497
16,800.00	89.99	180.25	7,280.89	-10,062.54	1,175.67	14,517,865.86	1,725,681.63	39.97524821	-104.69564776
16,900.00	89.99	180.25	7,280.91	-10,162.54	1,175.23	14,517,765.86	1,725,681.19	39.97497360	-104.69565055
17,000.00	89.99	180.25	7,280.93	-10,262.54	1,174.79	14,517,665.86	1,725,680.75	39.97469899	-104.69565335
17,100.00	89.99	180.25	7,280.95	-10,362.54	1,174.34	14,517,565.87	1,725,680.31	39.97442438	-104.69565614
17,200.00	89.99	180.25	7,280.97	-10,462.54	1,173.90	14,517,465.87	1,725,679.87	39.97414977	-104.69565893
17,300.00	89.99	180.25	7,280.99	-10,562.54	1,173.46	14,517,365.87	1,725,679.43	39.97387516	-104.69566173
17,329.47	89.99	180.25	7,281.00	-10,592.01	1,173.33	14,517,336.40	1,725,679.30	39.97379423	-104.69566255
PBHL/TD 17329.47 MD/7281.00 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 Walla 5-10-2L 470 I	0.00	0.00	7,277.00	-10,592.01	1,173.33	14,517,336.39	1,725,679.30	39.97379422	-104.69566255
- plan misses target center by 4.00ft at 17329.47ft MD (7281.00 TVD, -10592.01 N, 1173.33 E)									
- Point									
LP Walla 5-10-2L 470 F†	0.00	0.00	7,279.00	-1,326.56	1,214.21	14,526,601.82	1,725,720.18	39.99923820	-104.69540365
- 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
5,362.29	5,338.63	-67.41	87.90	Begin 36.23° tangent
7,373.56	6,961.04	-790.78	1,031.15	Begin 10°/100' build/turn
8,063.93	7,279.00	-1,326.56	1,214.21	LP Begin 89.99° lateral section
17,329.47	7,281.00	-10,592.01	1,173.33	PBHL/TD 17329.47 MD/7281.00 TVD