



Well: Salt Ranch Fee 201-1830H
Site: Section 18-T11N-R64W
Project: Weld County, Colorado
Design: plan1

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Salt Ranch Fee 201-1830H LP 300 FNL 350 FEL	7975.10	-606.63	620.25	1576707.93	3253757.01	40.91282599	-104.58191600
Salt Ranch Fee 201-1830H PBHL 300 FSL 350 FEL	7983.10	-10583.66	776.73	1566733.07	3254016.52	40.88544299	-104.58135100

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	3364.28	7.29	93.75	3363.30	-1.51	23.08	2.00	93.75	3.20	
4	7446.51	7.29	93.75	7412.57	-35.35	539.66	0.00	0.00	74.76	Begin 10°/100' build/turn
5	8340.17	89.95	179.10	7975.10	-606.63	620.25	10.00	85.40	650.40	Begin 89.95° lateral
6	18318.42	89.95	179.10	7983.10	-10583.66	776.73	0.00	0.00	10612.12	

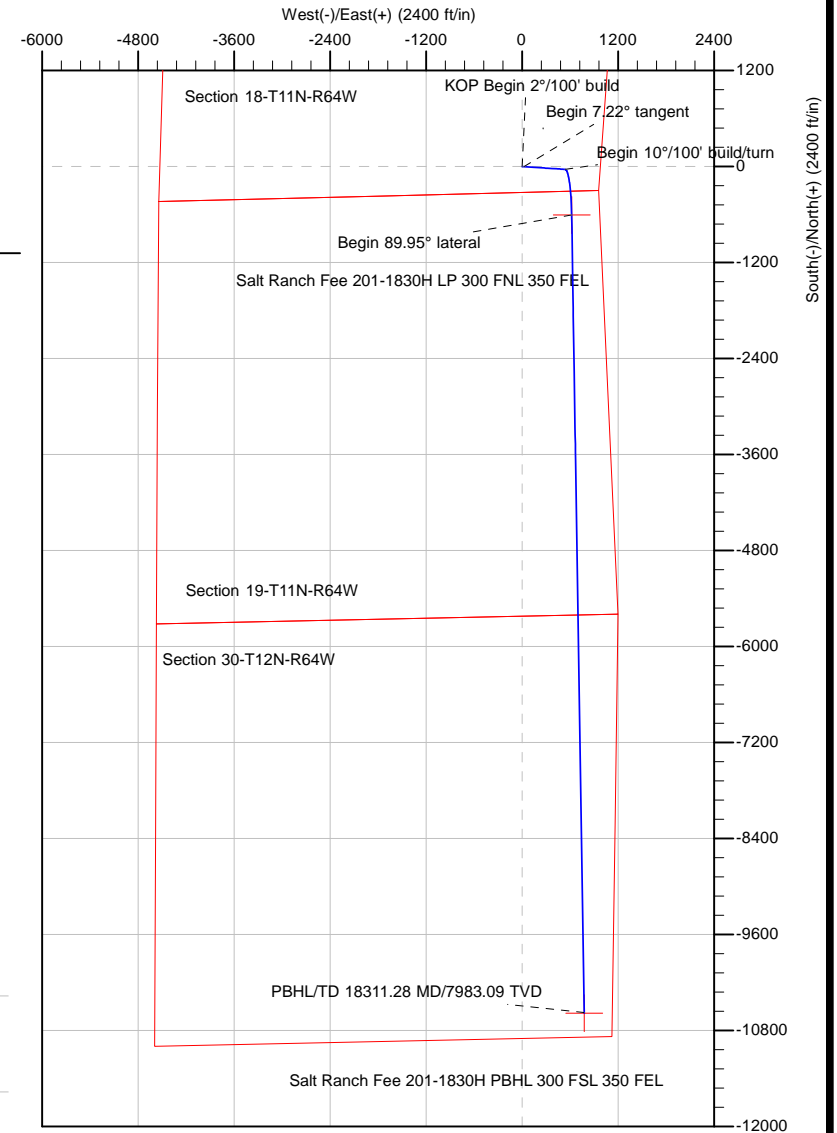
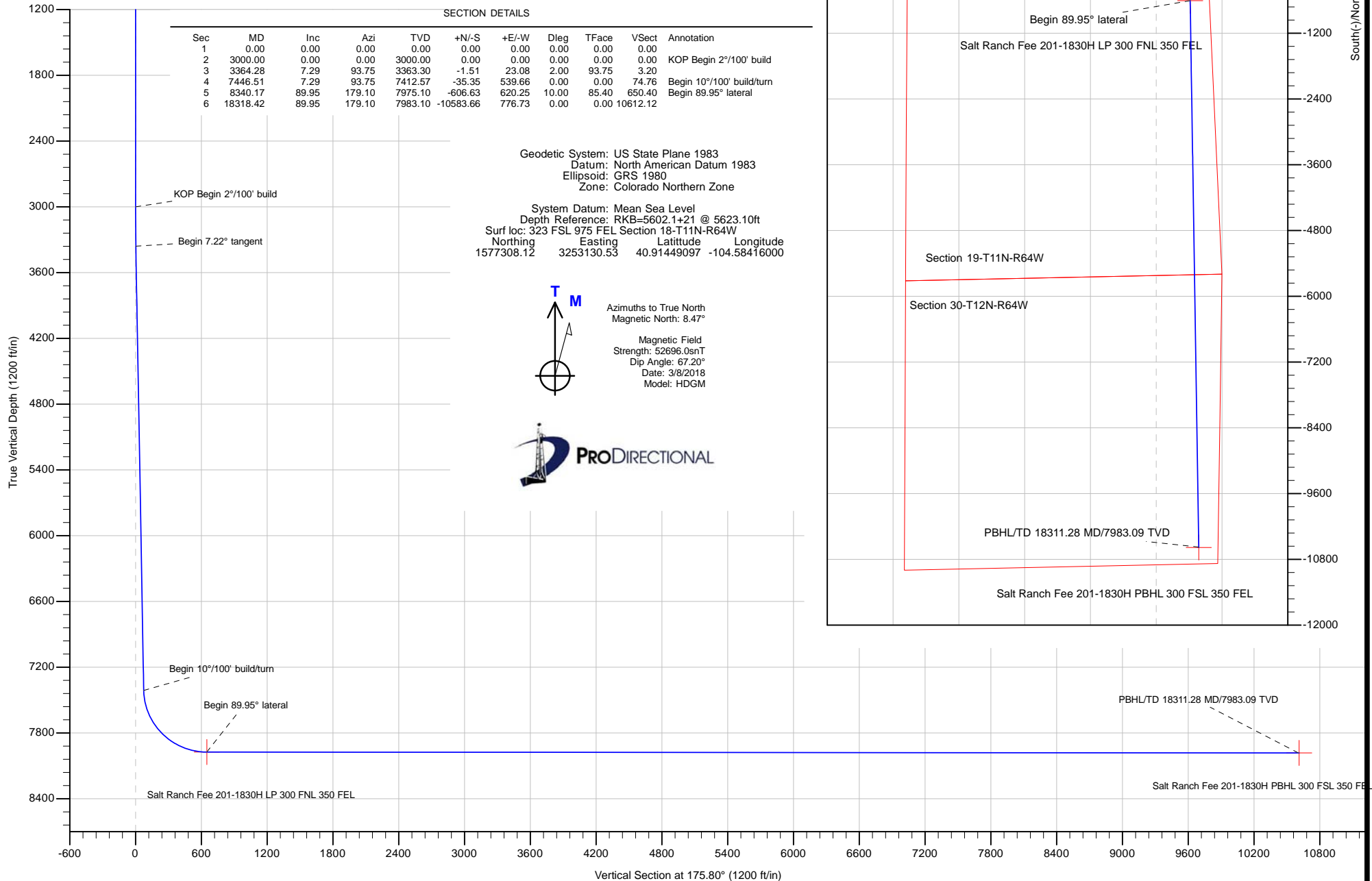
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level
Depth Reference: RKB=5602.1+21 @ 5623.10ft
Surf loc: 323 FSL 975 FEL Section 18-T11N-R64W
Northing Easting Latitude Longitude
1577308.12 3253130.53 40.91449097 -104.58416000



Azimuths to True North
Magnetic North: 8.47°

Magnetic Field
Strength: 52696.0nT
Dip Angle: 67.20°
Date: 3/8/2018
Model: HDGM



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Section 18-T11N-R64W			
Site Position:		Northing:	1,579,480.31 usft	Latitude:	40.92050067
From:	Map	Easting:	3,251,422.80 usft	Longitude:	-104.59025758
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59 °

Well	Salt Ranch Fee 201-1830H, Surf loc: 323 FSL 975 FEL Section 18-T11N-R64W					
Well Position	+N/-S	-2,189.60 ft	Northing:	1,577,308.11 usft	Latitude:	40.91449097
	+E/-W	1,685.35 ft	Easting:	3,253,130.53 usft	Longitude:	-104.58416000
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,602.10 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/8/2018	8.47	67.20	52,696.00000000

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	175.80

Plan Survey Tool Program	Date	3/9/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,318.42 plan1 (Original Hole)	MWD	
			OWSG MWD - Standard	

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	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,364.28	7.29	93.75	3,363.30	-1.51	23.08	2.00	2.00	0.00	93.75	
7,446.51	7.29	93.75	7,412.57	-35.35	539.66	0.00	0.00	0.00	0.00	
8,340.17	89.95	179.10	7,975.10	-606.63	620.25	10.00	9.25	9.55	85.40	Salt Ranch Fee 201-1
18,318.42	89.95	179.10	7,983.10	-10,583.66	776.73	0.00	0.00	0.00	0.00	Salt Ranch Fee 201-1

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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
2,500.01	0.00	0.00	2,500.01	0.00	0.00	0.00	0.00	0.00	0.00
2,600.01	0.00	0.00	2,600.01	0.00	0.00	0.00	0.00	0.00	0.00
2,700.01	0.00	0.00	2,700.01	0.00	0.00	0.00	0.00	0.00	0.00
2,800.01	0.00	0.00	2,800.01	0.00	0.00	0.00	0.00	0.00	0.00
2,900.01	0.00	0.00	2,900.01	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
KOP Begin 2°/100' build									
3,000.01	0.00	93.75	3,000.01	0.00	0.00	0.00	0.00	0.00	0.00
3,100.01	2.00	93.75	3,099.99	-0.11	1.74	0.24	2.00	2.00	0.00
3,200.01	4.00	93.75	3,199.84	-0.46	6.96	0.96	2.00	2.00	0.00
3,300.01	6.00	93.75	3,299.46	-1.03	15.66	2.17	2.00	2.00	0.00
3,360.76	7.22	93.75	3,359.81	-1.48	22.64	3.14	2.00	2.00	0.00
Begin 7.22° tangent									
3,364.28	7.29	93.75	3,363.30	-1.51	23.08	3.20	2.00	2.00	0.00
3,400.01	7.29	93.75	3,398.74	-1.81	27.60	3.82	0.00	0.00	0.00
3,500.01	7.29	93.75	3,497.93	-2.64	40.26	5.58	0.00	0.00	0.00
3,600.01	7.29	93.75	3,597.12	-3.47	52.91	7.33	0.00	0.00	0.00
3,700.01	7.29	93.75	3,696.32	-4.30	65.56	9.08	0.00	0.00	0.00
3,800.01	7.29	93.75	3,795.51	-5.12	78.22	10.84	0.00	0.00	0.00
3,900.01	7.29	93.75	3,894.70	-5.95	90.87	12.59	0.00	0.00	0.00
4,000.01	7.29	93.75	3,993.89	-6.78	103.53	14.34	0.00	0.00	0.00
4,100.01	7.29	93.75	4,093.09	-7.61	116.18	16.09	0.00	0.00	0.00
4,200.01	7.29	93.75	4,192.28	-8.44	128.84	17.85	0.00	0.00	0.00
4,300.01	7.29	93.75	4,291.47	-9.27	141.49	19.60	0.00	0.00	0.00
4,400.01	7.29	93.75	4,390.67	-10.10	154.14	21.35	0.00	0.00	0.00
4,500.01	7.29	93.75	4,489.86	-10.93	166.80	23.11	0.00	0.00	0.00
4,600.01	7.29	93.75	4,589.05	-11.76	179.45	24.86	0.00	0.00	0.00
4,700.01	7.29	93.75	4,688.24	-12.59	192.11	26.61	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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)
4,800.01	7.29	93.75	4,787.44	-13.41	204.76	28.37	0.00	0.00	0.00
4,900.01	7.29	93.75	4,886.63	-14.24	217.42	30.12	0.00	0.00	0.00
5,000.01	7.29	93.75	4,985.82	-15.07	230.07	31.87	0.00	0.00	0.00
5,100.01	7.29	93.75	5,085.02	-15.90	242.72	33.62	0.00	0.00	0.00
5,200.01	7.29	93.75	5,184.21	-16.73	255.38	35.38	0.00	0.00	0.00
5,300.01	7.29	93.75	5,283.40	-17.56	268.03	37.13	0.00	0.00	0.00
5,400.01	7.29	93.75	5,382.59	-18.39	280.69	38.88	0.00	0.00	0.00
5,500.01	7.29	93.75	5,481.79	-19.22	293.34	40.64	0.00	0.00	0.00
5,600.01	7.29	93.75	5,580.98	-20.05	306.00	42.39	0.00	0.00	0.00
5,700.01	7.29	93.75	5,680.17	-20.88	318.65	44.14	0.00	0.00	0.00
5,800.01	7.29	93.75	5,779.37	-21.70	331.31	45.90	0.00	0.00	0.00
5,900.01	7.29	93.75	5,878.56	-22.53	343.96	47.65	0.00	0.00	0.00
6,000.01	7.29	93.75	5,977.75	-23.36	356.61	49.40	0.00	0.00	0.00
6,100.01	7.29	93.75	6,076.94	-24.19	369.27	51.15	0.00	0.00	0.00
6,200.01	7.29	93.75	6,176.14	-25.02	381.92	52.91	0.00	0.00	0.00
6,300.01	7.29	93.75	6,275.33	-25.85	394.58	54.66	0.00	0.00	0.00
6,400.01	7.29	93.75	6,374.52	-26.68	407.23	56.41	0.00	0.00	0.00
6,500.01	7.29	93.75	6,473.72	-27.51	419.89	58.17	0.00	0.00	0.00
6,600.01	7.29	93.75	6,572.91	-28.34	432.54	59.92	0.00	0.00	0.00
6,700.01	7.29	93.75	6,672.10	-29.17	445.19	61.67	0.00	0.00	0.00
6,800.01	7.29	93.75	6,771.29	-29.99	457.85	63.43	0.00	0.00	0.00
6,900.01	7.29	93.75	6,870.49	-30.82	470.50	65.18	0.00	0.00	0.00
7,000.01	7.29	93.75	6,969.68	-31.65	483.16	66.93	0.00	0.00	0.00
7,100.01	7.29	93.75	7,068.87	-32.48	495.81	68.68	0.00	0.00	0.00
7,200.01	7.29	93.75	7,168.07	-33.31	508.47	70.44	0.00	0.00	0.00
7,300.01	7.29	93.75	7,267.26	-34.14	521.12	72.19	0.00	0.00	0.00
7,400.01	7.29	93.75	7,366.45	-34.97	533.77	73.94	0.00	0.00	0.00
7,446.51	7.29	93.75	7,412.57	-35.35	539.66	74.76	0.00	0.00	0.00
7,446.62	7.29	93.75	7,412.68	-35.36	539.67	74.76	0.00	0.00	0.00
Begin 10°/100' build/turn									
7,500.02	9.37	128.55	7,465.54	-38.29	546.45	78.19	10.02	3.90	65.17
7,600.02	17.47	155.23	7,562.81	-57.05	559.14	97.82	10.00	8.10	26.68
7,700.02	26.87	164.54	7,655.34	-92.55	571.49	134.13	10.00	9.39	9.31
7,800.02	36.57	169.22	7,740.32	-143.72	583.12	186.02	10.00	9.70	4.68
7,900.02	46.38	172.13	7,815.16	-209.01	593.67	251.90	10.00	9.81	2.92
8,000.02	56.25	174.22	7,877.59	-286.43	602.83	329.78	10.00	9.87	2.09
8,100.02	66.14	175.88	7,925.71	-373.62	610.33	417.29	10.00	9.89	1.65
8,200.02	76.05	177.29	7,958.07	-467.94	615.92	511.77	10.00	9.91	1.42
8,300.02	85.97	178.59	7,973.67	-566.52	619.44	610.34	10.00	9.92	1.30
8,339.43	89.88	179.09	7,975.10	-605.90	620.24	649.67	10.00	9.92	1.27
Begin 89.95° lateral									
8,340.17	89.95	179.10	7,975.10	-606.63	620.25	650.40	10.00	9.92	1.26
8,400.02	89.95	179.10	7,975.15	-666.48	621.19	710.15	0.00	0.00	0.00
8,500.02	89.95	179.10	7,975.23	-766.46	622.76	809.99	0.00	0.00	0.00
8,600.02	89.95	179.10	7,975.31	-866.45	624.33	909.82	0.00	0.00	0.00
8,700.02	89.95	179.10	7,975.39	-966.44	625.89	1,009.66	0.00	0.00	0.00
8,800.02	89.95	179.10	7,975.47	-1,066.43	627.46	1,109.49	0.00	0.00	0.00
8,900.02	89.95	179.10	7,975.55	-1,166.41	629.03	1,209.33	0.00	0.00	0.00
9,000.02	89.95	179.10	7,975.63	-1,266.40	630.60	1,309.16	0.00	0.00	0.00
9,100.02	89.95	179.10	7,975.71	-1,366.39	632.17	1,409.00	0.00	0.00	0.00
9,200.02	89.95	179.10	7,975.79	-1,466.38	633.74	1,508.83	0.00	0.00	0.00
9,300.02	89.95	179.10	7,975.87	-1,566.37	635.30	1,608.66	0.00	0.00	0.00
9,400.02	89.95	179.10	7,975.95	-1,666.35	636.87	1,708.50	0.00	0.00	0.00
9,500.02	89.95	179.10	7,976.03	-1,766.34	638.44	1,808.33	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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)
9,600.02	89.95	179.10	7,976.11	-1,866.33	640.01	1,908.17	0.00	0.00	0.00
9,700.02	89.95	179.10	7,976.19	-1,966.32	641.58	2,008.00	0.00	0.00	0.00
9,800.02	89.95	179.10	7,976.27	-2,066.31	643.14	2,107.84	0.00	0.00	0.00
9,900.02	89.95	179.10	7,976.35	-2,166.29	644.71	2,207.67	0.00	0.00	0.00
10,000.02	89.95	179.10	7,976.43	-2,266.28	646.28	2,307.51	0.00	0.00	0.00
10,100.02	89.95	179.10	7,976.51	-2,366.27	647.85	2,407.34	0.00	0.00	0.00
10,200.02	89.95	179.10	7,976.59	-2,466.26	649.42	2,507.17	0.00	0.00	0.00
10,300.02	89.95	179.10	7,976.67	-2,566.24	650.99	2,607.01	0.00	0.00	0.00
10,400.02	89.95	179.10	7,976.75	-2,666.23	652.55	2,706.84	0.00	0.00	0.00
10,500.02	89.95	179.10	7,976.83	-2,766.22	654.12	2,806.68	0.00	0.00	0.00
10,600.02	89.95	179.10	7,976.91	-2,866.21	655.69	2,906.51	0.00	0.00	0.00
10,700.02	89.95	179.10	7,976.99	-2,966.20	657.26	3,006.35	0.00	0.00	0.00
10,800.02	89.95	179.10	7,977.07	-3,066.18	658.83	3,106.18	0.00	0.00	0.00
10,900.02	89.95	179.10	7,977.15	-3,166.17	660.40	3,206.02	0.00	0.00	0.00
11,000.02	89.95	179.10	7,977.23	-3,266.16	661.96	3,305.85	0.00	0.00	0.00
11,100.02	89.95	179.10	7,977.31	-3,366.15	663.53	3,405.68	0.00	0.00	0.00
11,200.02	89.95	179.10	7,977.39	-3,466.14	665.10	3,505.52	0.00	0.00	0.00
11,300.02	89.95	179.10	7,977.47	-3,566.12	666.67	3,605.35	0.00	0.00	0.00
11,400.02	89.95	179.10	7,977.55	-3,666.11	668.24	3,705.19	0.00	0.00	0.00
11,500.02	89.95	179.10	7,977.63	-3,766.10	669.81	3,805.02	0.00	0.00	0.00
11,600.02	89.95	179.10	7,977.71	-3,866.09	671.37	3,904.86	0.00	0.00	0.00
11,700.02	89.95	179.10	7,977.79	-3,966.07	672.94	4,004.69	0.00	0.00	0.00
11,800.02	89.95	179.10	7,977.87	-4,066.06	674.51	4,104.53	0.00	0.00	0.00
11,900.02	89.95	179.10	7,977.95	-4,166.05	676.08	4,204.36	0.00	0.00	0.00
12,000.02	89.95	179.10	7,978.03	-4,266.04	677.65	4,304.20	0.00	0.00	0.00
12,100.02	89.95	179.10	7,978.11	-4,366.03	679.21	4,404.03	0.00	0.00	0.00
12,200.02	89.95	179.10	7,978.19	-4,466.01	680.78	4,503.86	0.00	0.00	0.00
12,300.02	89.95	179.10	7,978.27	-4,566.00	682.35	4,603.70	0.00	0.00	0.00
12,400.03	89.95	179.10	7,978.36	-4,665.99	683.92	4,703.53	0.00	0.00	0.00
12,500.03	89.95	179.10	7,978.44	-4,765.98	685.49	4,803.37	0.00	0.00	0.00
12,600.03	89.95	179.10	7,978.52	-4,865.97	687.06	4,903.20	0.00	0.00	0.00
12,700.03	89.95	179.10	7,978.60	-4,965.95	688.62	5,003.04	0.00	0.00	0.00
12,800.03	89.95	179.10	7,978.68	-5,065.94	690.19	5,102.87	0.00	0.00	0.00
12,900.03	89.95	179.10	7,978.76	-5,165.93	691.76	5,202.71	0.00	0.00	0.00
13,000.03	89.95	179.10	7,978.84	-5,265.92	693.33	5,302.54	0.00	0.00	0.00
13,100.03	89.95	179.10	7,978.92	-5,365.91	694.90	5,402.37	0.00	0.00	0.00
13,200.03	89.95	179.10	7,979.00	-5,465.89	696.47	5,502.21	0.00	0.00	0.00
13,300.03	89.95	179.10	7,979.08	-5,565.88	698.03	5,602.04	0.00	0.00	0.00
13,400.03	89.95	179.10	7,979.16	-5,665.87	699.60	5,701.88	0.00	0.00	0.00
13,500.03	89.95	179.10	7,979.24	-5,765.86	701.17	5,801.71	0.00	0.00	0.00
13,600.03	89.95	179.10	7,979.32	-5,865.84	702.74	5,901.55	0.00	0.00	0.00
13,700.03	89.95	179.10	7,979.40	-5,965.83	704.31	6,001.38	0.00	0.00	0.00
13,800.03	89.95	179.10	7,979.48	-6,065.82	705.87	6,101.22	0.00	0.00	0.00
13,900.03	89.95	179.10	7,979.56	-6,165.81	707.44	6,201.05	0.00	0.00	0.00
14,000.03	89.95	179.10	7,979.64	-6,265.80	709.01	6,300.88	0.00	0.00	0.00
14,100.03	89.95	179.10	7,979.72	-6,365.78	710.58	6,400.72	0.00	0.00	0.00
14,200.03	89.95	179.10	7,979.80	-6,465.77	712.15	6,500.55	0.00	0.00	0.00
14,300.03	89.95	179.10	7,979.88	-6,565.76	713.72	6,600.39	0.00	0.00	0.00
14,400.03	89.95	179.10	7,979.96	-6,665.75	715.28	6,700.22	0.00	0.00	0.00
14,500.03	89.95	179.10	7,980.04	-6,765.74	716.85	6,800.06	0.00	0.00	0.00
14,600.03	89.95	179.10	7,980.12	-6,865.72	718.42	6,899.89	0.00	0.00	0.00
14,700.03	89.95	179.10	7,980.20	-6,965.71	719.99	6,999.73	0.00	0.00	0.00
14,800.03	89.95	179.10	7,980.28	-7,065.70	721.56	7,099.56	0.00	0.00	0.00
14,900.03	89.95	179.10	7,980.36	-7,165.69	723.13	7,199.39	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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)
15,000.03	89.95	179.10	7,980.44	-7,265.67	724.69	7,299.23	0.00	0.00	0.00
15,100.03	89.95	179.10	7,980.52	-7,365.66	726.26	7,399.06	0.00	0.00	0.00
15,200.03	89.95	179.10	7,980.60	-7,465.65	727.83	7,498.90	0.00	0.00	0.00
15,300.03	89.95	179.10	7,980.68	-7,565.64	729.40	7,598.73	0.00	0.00	0.00
15,400.03	89.95	179.10	7,980.76	-7,665.63	730.97	7,698.57	0.00	0.00	0.00
15,500.03	89.95	179.10	7,980.84	-7,765.61	732.54	7,798.40	0.00	0.00	0.00
15,600.03	89.95	179.10	7,980.92	-7,865.60	734.10	7,898.24	0.00	0.00	0.00
15,700.03	89.95	179.10	7,981.00	-7,965.59	735.67	7,998.07	0.00	0.00	0.00
15,800.03	89.95	179.10	7,981.08	-8,065.58	737.24	8,097.90	0.00	0.00	0.00
15,900.03	89.95	179.10	7,981.16	-8,165.57	738.81	8,197.74	0.00	0.00	0.00
16,000.03	89.95	179.10	7,981.24	-8,265.55	740.38	8,297.57	0.00	0.00	0.00
16,100.03	89.95	179.10	7,981.32	-8,365.54	741.94	8,397.41	0.00	0.00	0.00
16,200.03	89.95	179.10	7,981.40	-8,465.53	743.51	8,497.24	0.00	0.00	0.00
16,300.03	89.95	179.10	7,981.48	-8,565.52	745.08	8,597.08	0.00	0.00	0.00
16,400.03	89.95	179.10	7,981.56	-8,665.50	746.65	8,696.91	0.00	0.00	0.00
16,500.03	89.95	179.10	7,981.64	-8,765.49	748.22	8,796.75	0.00	0.00	0.00
16,600.03	89.95	179.10	7,981.72	-8,865.48	749.79	8,896.58	0.00	0.00	0.00
16,700.03	89.95	179.10	7,981.80	-8,965.47	751.35	8,996.42	0.00	0.00	0.00
16,800.03	89.95	179.10	7,981.88	-9,065.46	752.92	9,096.25	0.00	0.00	0.00
16,900.03	89.95	179.10	7,981.96	-9,165.44	754.49	9,196.08	0.00	0.00	0.00
17,000.03	89.95	179.10	7,982.04	-9,265.43	756.06	9,295.92	0.00	0.00	0.00
17,100.03	89.95	179.10	7,982.12	-9,365.42	757.63	9,395.75	0.00	0.00	0.00
17,200.03	89.95	179.10	7,982.20	-9,465.41	759.20	9,495.59	0.00	0.00	0.00
17,300.03	89.95	179.10	7,982.28	-9,565.40	760.76	9,595.42	0.00	0.00	0.00
17,400.04	89.95	179.10	7,982.36	-9,665.38	762.33	9,695.26	0.00	0.00	0.00
17,500.04	89.95	179.10	7,982.44	-9,765.37	763.90	9,795.09	0.00	0.00	0.00
17,600.04	89.95	179.10	7,982.52	-9,865.36	765.47	9,894.93	0.00	0.00	0.00
17,700.04	89.95	179.10	7,982.60	-9,965.35	767.04	9,994.76	0.00	0.00	0.00
17,800.04	89.95	179.10	7,982.68	-10,065.34	768.61	10,094.59	0.00	0.00	0.00
17,900.04	89.95	179.10	7,982.76	-10,165.32	770.17	10,194.43	0.00	0.00	0.00
18,000.04	89.95	179.10	7,982.84	-10,265.31	771.74	10,294.26	0.00	0.00	0.00
18,100.04	89.95	179.10	7,982.93	-10,365.30	773.31	10,394.10	0.00	0.00	0.00
18,200.04	89.95	179.10	7,983.01	-10,465.29	774.88	10,493.93	0.00	0.00	0.00
18,300.04	89.95	179.10	7,983.09	-10,565.27	776.45	10,593.77	0.00	0.00	0.00
18,311.28	89.95	179.10	7,983.09	-10,576.52	776.62	10,604.99	0.00	0.00	0.00
PBHL/TD 18311.28 MD/7983.09 TVD									
18,318.42	89.95	179.10	7,983.10	-10,583.66	776.73	10,612.12	0.00	0.00	0.00

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									
Salt Ranch Fee 201-183	0.00	0.59	7,975.10	-606.63	620.25	1,576,707.92	3,253,757.01	40.91282599	-104.58191600
- plan hits target center									
- Point									
Salt Ranch Fee 201-183	0.00	0.59	7,983.10	-10,583.66	776.73	1,566,733.06	3,254,016.53	40.88544299	-104.58135100
- plan hits target center									
- Point									

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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)	
3,000.00	3,000.00	0.00	0.00	KOP Begin 2°/100' build
3,360.76	3,359.81	-1.53	22.63	Begin 7.22° tangent
7,446.62	7,413.31	-36.20	534.63	Begin 10°/100' build/turn
8,339.43	7,975.10	-606.63	620.25	Begin 89.95° lateral
18,311.28	7,983.10	-10,575.10	879.60	PBHL/TD 18311.28 MD/7983.09 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Section 18-T11N-R64W			
Site Position:		Northing:	1,579,480.31 usft	Latitude:	40.92050067
From:	Map	Easting:	3,251,422.80 usft	Longitude:	-104.59025758
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59 °

Well	Salt Ranch Fee 201-1830H, Surf loc: 323 FSL 975 FEL Section 18-T11N-R64W					
Well Position	+N/-S	0.00 ft	Northing:	1,577,308.11 usft	Latitude:	40.91449097
	+E/-W	0.00 ft	Easting:	3,253,130.53 usft	Longitude:	-104.58416000
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,602.10 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/8/2018	8.47	67.20	52,696.00000000

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	175.80

Plan Survey Tool Program	Date	3/9/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,318.42 plan1 (Original Hole)	MWD	
			OWSG MWD - Standard	

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	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,364.28	7.29	93.75	3,363.30	-1.51	23.08	2.00	2.00	0.00	93.75	
7,446.51	7.29	93.75	7,412.57	-35.35	539.66	0.00	0.00	0.00	0.00	
8,340.17	89.95	179.10	7,975.10	-606.63	620.25	10.00	9.25	9.55	85.40	Salt Ranch Fee 201-1
18,318.42	89.95	179.10	7,983.10	-10,583.66	776.73	0.00	0.00	0.00	0.00	Salt Ranch Fee 201-1

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
100.00	0.00	0.00	100.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
200.00	0.00	0.00	200.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
300.00	0.00	0.00	300.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
400.00	0.00	0.00	400.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
500.00	0.00	0.00	500.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
600.00	0.00	0.00	600.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
700.00	0.00	0.00	700.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
800.00	0.00	0.00	800.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
900.00	0.00	0.00	900.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,000.00	0.00	0.00	1,000.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,100.00	0.00	0.00	1,100.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,200.00	0.00	0.00	1,200.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,300.00	0.00	0.00	1,300.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,400.00	0.00	0.00	1,400.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,500.00	0.00	0.00	1,500.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,700.00	0.00	0.00	1,700.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,800.00	0.00	0.00	1,800.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
1,900.00	0.00	0.00	1,900.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,000.00	0.00	0.00	2,000.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,100.00	0.00	0.00	2,100.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,200.00	0.00	0.00	2,200.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,300.00	0.00	0.00	2,300.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,400.00	0.00	0.00	2,400.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,500.01	0.00	0.00	2,500.01	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,600.01	0.00	0.00	2,600.01	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,700.01	0.00	0.00	2,700.01	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,800.01	0.00	0.00	2,800.01	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
2,900.01	0.00	0.00	2,900.01	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
3,000.00	0.00	0.00	3,000.00	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
KOP Begin 2°/100' build									
3,000.01	0.00	93.75	3,000.01	0.00	0.00	1,577,308.11	3,253,130.53	40.91449097	-104.58416000
3,100.01	2.00	93.75	3,099.99	-0.11	1.74	1,577,308.02	3,253,132.27	40.91449065	-104.58415369
3,200.01	4.00	93.75	3,199.84	-0.46	6.96	1,577,307.73	3,253,137.50	40.91448971	-104.58413480
3,300.01	6.00	93.75	3,299.46	-1.03	15.66	1,577,307.25	3,253,146.20	40.91448815	-104.58410334
3,360.76	7.22	93.75	3,359.81	-1.48	22.64	1,577,306.87	3,253,153.18	40.91448690	-104.58407810
Begin 7.22° tangent									
3,364.28	7.29	93.75	3,363.30	-1.51	23.08	1,577,306.84	3,253,153.62	40.91448682	-104.58407649
3,400.01	7.29	93.75	3,398.74	-1.81	27.60	1,577,306.59	3,253,158.15	40.91448600	-104.58406014
3,500.01	7.29	93.75	3,497.93	-2.64	40.26	1,577,305.89	3,253,170.81	40.91448373	-104.58401435
3,600.01	7.29	93.75	3,597.12	-3.47	52.91	1,577,305.19	3,253,183.47	40.91448145	-104.58396857
3,700.01	7.29	93.75	3,696.32	-4.30	65.56	1,577,304.50	3,253,196.13	40.91447918	-104.58392279
3,800.01	7.29	93.75	3,795.51	-5.12	78.22	1,577,303.80	3,253,208.80	40.91447690	-104.58387700
3,900.01	7.29	93.75	3,894.70	-5.95	90.87	1,577,303.10	3,253,221.46	40.91447463	-104.58383122
4,000.01	7.29	93.75	3,993.89	-6.78	103.53	1,577,302.40	3,253,234.12	40.91447235	-104.58378544
4,100.01	7.29	93.75	4,093.09	-7.61	116.18	1,577,301.70	3,253,246.78	40.91447008	-104.58373965
4,200.01	7.29	93.75	4,192.28	-8.44	128.84	1,577,301.01	3,253,259.44	40.91446780	-104.58369387
4,300.01	7.29	93.75	4,291.47	-9.27	141.49	1,577,300.31	3,253,272.11	40.91446552	-104.58364809
4,400.01	7.29	93.75	4,390.67	-10.10	154.14	1,577,299.61	3,253,284.77	40.91446325	-104.58360230
4,500.01	7.29	93.75	4,489.86	-10.93	166.80	1,577,298.91	3,253,297.43	40.91446097	-104.58355652
4,600.01	7.29	93.75	4,589.05	-11.76	179.45	1,577,298.21	3,253,310.09	40.91445870	-104.58351074
4,700.01	7.29	93.75	4,688.24	-12.59	192.11	1,577,297.51	3,253,322.75	40.91445642	-104.58346495
4,800.01	7.29	93.75	4,787.44	-13.41	204.76	1,577,296.82	3,253,335.42	40.91445415	-104.58341917

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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
4,900.01	7.29	93.75	4,886.63	-14.24	217.42	1,577,296.12	3,253,348.08	40.91445187	-104.58337339
5,000.01	7.29	93.75	4,985.82	-15.07	230.07	1,577,295.42	3,253,360.74	40.91444960	-104.58332761
5,100.01	7.29	93.75	5,085.02	-15.90	242.72	1,577,294.72	3,253,373.40	40.91444732	-104.58328182
5,200.01	7.29	93.75	5,184.21	-16.73	255.38	1,577,294.02	3,253,386.07	40.91444504	-104.58323604
5,300.01	7.29	93.75	5,283.40	-17.56	268.03	1,577,293.32	3,253,398.73	40.91444277	-104.58319026
5,400.01	7.29	93.75	5,382.59	-18.39	280.69	1,577,292.63	3,253,411.39	40.91444049	-104.58314447
5,500.01	7.29	93.75	5,481.79	-19.22	293.34	1,577,291.93	3,253,424.05	40.91443822	-104.58309869
5,600.01	7.29	93.75	5,580.98	-20.05	306.00	1,577,291.23	3,253,436.71	40.91443594	-104.58305291
5,700.01	7.29	93.75	5,680.17	-20.88	318.65	1,577,290.53	3,253,449.38	40.91443367	-104.58300712
5,800.01	7.29	93.75	5,779.37	-21.70	331.31	1,577,289.83	3,253,462.04	40.91443139	-104.58296134
5,900.01	7.29	93.75	5,878.56	-22.53	343.96	1,577,289.13	3,253,474.70	40.91442911	-104.58291556
6,000.01	7.29	93.75	5,977.75	-23.36	356.61	1,577,288.44	3,253,487.36	40.91442684	-104.58286977
6,100.01	7.29	93.75	6,076.94	-24.19	369.27	1,577,287.74	3,253,500.03	40.91442456	-104.58282399
6,200.01	7.29	93.75	6,176.14	-25.02	381.92	1,577,287.04	3,253,512.69	40.91442229	-104.58277821
6,300.01	7.29	93.75	6,275.33	-25.85	394.58	1,577,286.34	3,253,525.35	40.91442001	-104.58273242
6,400.01	7.29	93.75	6,374.52	-26.68	407.23	1,577,285.64	3,253,538.01	40.91441774	-104.58268664
6,500.01	7.29	93.75	6,473.72	-27.51	419.89	1,577,284.94	3,253,550.67	40.91441546	-104.58264086
6,600.01	7.29	93.75	6,572.91	-28.34	432.54	1,577,284.25	3,253,563.34	40.91441318	-104.58259508
6,700.01	7.29	93.75	6,672.10	-29.17	445.19	1,577,283.55	3,253,576.00	40.91441091	-104.58254929
6,800.01	7.29	93.75	6,771.29	-29.99	457.85	1,577,282.85	3,253,588.66	40.91440863	-104.58250351
6,900.01	7.29	93.75	6,870.49	-30.82	470.50	1,577,282.15	3,253,601.32	40.91440636	-104.58245773
7,000.01	7.29	93.75	6,969.68	-31.65	483.16	1,577,281.45	3,253,613.99	40.91440408	-104.58241194
7,100.01	7.29	93.75	7,068.87	-32.48	495.81	1,577,280.76	3,253,626.65	40.91440180	-104.58236616
7,200.01	7.29	93.75	7,168.07	-33.31	508.47	1,577,280.06	3,253,639.31	40.91439953	-104.58232038
7,300.01	7.29	93.75	7,267.26	-34.14	521.12	1,577,279.36	3,253,651.97	40.91439725	-104.58227459
7,400.01	7.29	93.75	7,366.45	-34.97	533.77	1,577,278.66	3,253,664.63	40.91439498	-104.58222881
7,446.51	7.29	93.75	7,412.57	-35.35	539.66	1,577,278.34	3,253,670.52	40.91439392	-104.58220752
7,446.62	7.29	93.75	7,412.68	-35.36	539.67	1,577,278.33	3,253,670.54	40.91439391	-104.58220748
Begin 10°/100' build/turn									
7,500.02	9.37	128.55	7,465.54	-38.29	546.45	1,577,275.47	3,253,677.35	40.91438585	-104.58218293
7,600.02	17.47	155.23	7,562.81	-57.05	559.14	1,577,256.84	3,253,690.23	40.91433437	-104.58213703
7,700.02	26.87	164.54	7,655.34	-92.55	571.49	1,577,221.47	3,253,702.94	40.91423693	-104.58209237
7,800.02	36.57	169.22	7,740.32	-143.72	583.12	1,577,170.42	3,253,715.10	40.91409648	-104.58205030
7,900.02	46.38	172.13	7,815.16	-209.01	593.67	1,577,105.25	3,253,726.33	40.91391730	-104.58201212
8,000.02	56.25	174.22	7,877.59	-286.43	602.83	1,577,027.93	3,253,736.29	40.91370483	-104.58197898
8,100.02	66.14	175.88	7,925.71	-373.62	610.33	1,576,940.82	3,253,744.68	40.91346552	-104.58195188
8,200.02	76.05	177.29	7,958.07	-467.94	615.92	1,576,846.56	3,253,751.25	40.91320664	-104.58193165
8,300.02	85.97	178.59	7,973.67	-566.52	619.44	1,576,748.02	3,253,755.79	40.91293607	-104.58191891
8,339.43	89.88	179.09	7,975.10	-605.90	620.24	1,576,708.66	3,253,756.99	40.91282801	-104.58191604
Begin 89.95° lateral									
8,340.17	89.95	179.10	7,975.10	-606.63	620.25	1,576,707.92	3,253,757.01	40.91282599	-104.58191600
8,400.02	89.95	179.10	7,975.15	-666.48	621.19	1,576,648.09	3,253,758.57	40.91266174	-104.58191261
8,500.02	89.95	179.10	7,975.23	-766.46	622.76	1,576,548.13	3,253,761.17	40.91238732	-104.58190694
8,600.02	89.95	179.10	7,975.31	-866.45	624.33	1,576,448.16	3,253,763.77	40.91211289	-104.58190128
8,700.02	89.95	179.10	7,975.39	-966.44	625.89	1,576,348.19	3,253,766.37	40.91183847	-104.58189561
8,800.02	89.95	179.10	7,975.47	-1,066.43	627.46	1,576,248.23	3,253,768.97	40.91156404	-104.58188995
8,900.02	89.95	179.10	7,975.55	-1,166.41	629.03	1,576,148.26	3,253,771.57	40.91128961	-104.58188428
9,000.02	89.95	179.10	7,975.63	-1,266.40	630.60	1,576,048.29	3,253,774.17	40.91101519	-104.58187862
9,100.02	89.95	179.10	7,975.71	-1,366.39	632.17	1,575,948.33	3,253,776.77	40.91074076	-104.58187295
9,200.02	89.95	179.10	7,975.79	-1,466.38	633.74	1,575,848.36	3,253,779.37	40.91046634	-104.58186729
9,300.02	89.95	179.10	7,975.87	-1,566.37	635.30	1,575,748.40	3,253,781.97	40.91019191	-104.58186163
9,400.02	89.95	179.10	7,975.95	-1,666.35	636.87	1,575,648.43	3,253,784.57	40.90991748	-104.58185596
9,500.02	89.95	179.10	7,976.03	-1,766.34	638.44	1,575,548.46	3,253,787.18	40.90964306	-104.58185030
9,600.02	89.95	179.10	7,976.11	-1,866.33	640.01	1,575,448.50	3,253,789.78	40.90936863	-104.58184463

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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
9,700.02	89.95	179.10	7,976.19	-1,966.32	641.58	1,575,348.53	3,253,792.38	40.90909421	-104.58183897
9,800.02	89.95	179.10	7,976.27	-2,066.31	643.14	1,575,248.57	3,253,794.98	40.90881978	-104.58183331
9,900.02	89.95	179.10	7,976.35	-2,166.29	644.71	1,575,148.60	3,253,797.58	40.90854535	-104.58182764
10,000.02	89.95	179.10	7,976.43	-2,266.28	646.28	1,575,048.63	3,253,800.18	40.90827093	-104.58182198
10,100.02	89.95	179.10	7,976.51	-2,366.27	647.85	1,574,948.67	3,253,802.78	40.90799650	-104.58181631
10,200.02	89.95	179.10	7,976.59	-2,466.26	649.42	1,574,848.70	3,253,805.38	40.90772207	-104.58181065
10,300.02	89.95	179.10	7,976.67	-2,566.24	650.99	1,574,748.74	3,253,807.98	40.90744765	-104.58180499
10,400.02	89.95	179.10	7,976.75	-2,666.23	652.55	1,574,648.77	3,253,810.58	40.90717322	-104.58179932
10,500.02	89.95	179.10	7,976.83	-2,766.22	654.12	1,574,548.80	3,253,813.18	40.90689880	-104.58179366
10,600.02	89.95	179.10	7,976.91	-2,866.21	655.69	1,574,448.84	3,253,815.78	40.90662437	-104.58178800
10,700.02	89.95	179.10	7,976.99	-2,966.20	657.26	1,574,348.87	3,253,818.39	40.90634994	-104.58178233
10,800.02	89.95	179.10	7,977.07	-3,066.18	658.83	1,574,248.90	3,253,820.99	40.90607552	-104.58177667
10,900.02	89.95	179.10	7,977.15	-3,166.17	660.40	1,574,148.94	3,253,823.59	40.90580109	-104.58177100
11,000.02	89.95	179.10	7,977.23	-3,266.16	661.96	1,574,048.97	3,253,826.19	40.90552666	-104.58176534
11,100.02	89.95	179.10	7,977.31	-3,366.15	663.53	1,573,949.01	3,253,828.79	40.90525224	-104.58175968
11,200.02	89.95	179.10	7,977.39	-3,466.14	665.10	1,573,849.04	3,253,831.39	40.90497781	-104.58175401
11,300.02	89.95	179.10	7,977.47	-3,566.12	666.67	1,573,749.07	3,253,833.99	40.90470338	-104.58174835
11,400.02	89.95	179.10	7,977.55	-3,666.11	668.24	1,573,649.11	3,253,836.59	40.90442896	-104.58174269
11,500.02	89.95	179.10	7,977.63	-3,766.10	669.81	1,573,549.14	3,253,839.19	40.90415453	-104.58173702
11,600.02	89.95	179.10	7,977.71	-3,866.09	671.37	1,573,449.18	3,253,841.79	40.90388010	-104.58173136
11,700.02	89.95	179.10	7,977.79	-3,966.07	672.94	1,573,349.21	3,253,844.39	40.90360568	-104.58172570
11,800.02	89.95	179.10	7,977.87	-4,066.06	674.51	1,573,249.24	3,253,846.99	40.90333125	-104.58172004
11,900.02	89.95	179.10	7,977.95	-4,166.05	676.08	1,573,149.28	3,253,849.60	40.90305682	-104.58171437
12,000.02	89.95	179.10	7,978.03	-4,266.04	677.65	1,573,049.31	3,253,852.20	40.90278240	-104.58170871
12,100.02	89.95	179.10	7,978.11	-4,366.03	679.21	1,572,949.34	3,253,854.80	40.90250797	-104.58170305
12,200.02	89.95	179.10	7,978.19	-4,466.01	680.78	1,572,849.38	3,253,857.40	40.90223354	-104.58169738
12,300.02	89.95	179.10	7,978.27	-4,566.00	682.35	1,572,749.41	3,253,860.00	40.90195912	-104.58169172
12,400.03	89.95	179.10	7,978.36	-4,665.99	683.92	1,572,649.45	3,253,862.60	40.90168469	-104.58168606
12,500.03	89.95	179.10	7,978.44	-4,765.98	685.49	1,572,549.48	3,253,865.20	40.90141026	-104.58168040
12,600.03	89.95	179.10	7,978.52	-4,865.97	687.06	1,572,449.51	3,253,867.80	40.90113583	-104.58167473
12,700.03	89.95	179.10	7,978.60	-4,965.95	688.62	1,572,349.55	3,253,870.40	40.90086141	-104.58166907
12,800.03	89.95	179.10	7,978.68	-5,065.94	690.19	1,572,249.58	3,253,873.00	40.90058698	-104.58166341
12,900.03	89.95	179.10	7,978.76	-5,165.93	691.76	1,572,149.62	3,253,875.60	40.90031255	-104.58165775
13,000.03	89.95	179.10	7,978.84	-5,265.92	693.33	1,572,049.65	3,253,878.20	40.90003813	-104.58165208
13,100.03	89.95	179.10	7,978.92	-5,365.91	694.90	1,571,949.68	3,253,880.81	40.89976370	-104.58164642
13,200.03	89.95	179.10	7,979.00	-5,465.89	696.47	1,571,849.72	3,253,883.41	40.89948927	-104.58164076
13,300.03	89.95	179.10	7,979.08	-5,565.88	698.03	1,571,749.75	3,253,886.01	40.89921484	-104.58163510
13,400.03	89.95	179.10	7,979.16	-5,665.87	699.60	1,571,649.78	3,253,888.61	40.89894042	-104.58162943
13,500.03	89.95	179.10	7,979.24	-5,765.86	701.17	1,571,549.82	3,253,891.21	40.89866599	-104.58162377
13,600.03	89.95	179.10	7,979.32	-5,865.84	702.74	1,571,449.85	3,253,893.81	40.89839156	-104.58161811
13,700.03	89.95	179.10	7,979.40	-5,965.83	704.31	1,571,349.89	3,253,896.41	40.89811714	-104.58161245
13,800.03	89.95	179.10	7,979.48	-6,065.82	705.87	1,571,249.92	3,253,899.01	40.89784271	-104.58160678
13,900.03	89.95	179.10	7,979.56	-6,165.81	707.44	1,571,149.95	3,253,901.61	40.89756828	-104.58160112
14,000.03	89.95	179.10	7,979.64	-6,265.80	709.01	1,571,049.99	3,253,904.21	40.89729385	-104.58159546
14,100.03	89.95	179.10	7,979.72	-6,365.78	710.58	1,570,950.02	3,253,906.81	40.89701943	-104.58158980
14,200.03	89.95	179.10	7,979.80	-6,465.77	712.15	1,570,850.06	3,253,909.41	40.89674500	-104.58158414
14,300.03	89.95	179.10	7,979.88	-6,565.76	713.72	1,570,750.09	3,253,912.02	40.89647057	-104.58157847
14,400.03	89.95	179.10	7,979.96	-6,665.75	715.28	1,570,650.12	3,253,914.62	40.89619614	-104.58157281
14,500.03	89.95	179.10	7,980.04	-6,765.74	716.85	1,570,550.16	3,253,917.22	40.89592172	-104.58156715
14,600.03	89.95	179.10	7,980.12	-6,865.72	718.42	1,570,450.19	3,253,919.82	40.89564729	-104.58156149
14,700.03	89.95	179.10	7,980.20	-6,965.71	719.99	1,570,350.22	3,253,922.42	40.89537286	-104.58155583
14,800.03	89.95	179.10	7,980.28	-7,065.70	721.56	1,570,250.26	3,253,925.02	40.89509843	-104.58155017
14,900.03	89.95	179.10	7,980.36	-7,165.69	723.13	1,570,150.29	3,253,927.62	40.89482401	-104.58154450
15,000.03	89.95	179.10	7,980.44	-7,265.67	724.69	1,570,050.33	3,253,930.22	40.89454958	-104.58153884
15,100.03	89.95	179.10	7,980.52	-7,365.66	726.26	1,569,950.36	3,253,932.82	40.89427515	-104.58153318

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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
15,200.03	89.95	179.10	7,980.60	-7,465.65	727.83	1,569,850.39	3,253,935.42	40.89400072	-104.58152752
15,300.03	89.95	179.10	7,980.68	-7,565.64	729.40	1,569,750.43	3,253,938.02	40.89372629	-104.58152186
15,400.03	89.95	179.10	7,980.76	-7,665.63	730.97	1,569,650.46	3,253,940.62	40.89345187	-104.58151620
15,500.03	89.95	179.10	7,980.84	-7,765.61	732.54	1,569,550.50	3,253,943.23	40.89317744	-104.58151054
15,600.03	89.95	179.10	7,980.92	-7,865.60	734.10	1,569,450.53	3,253,945.83	40.89290301	-104.58150487
15,700.03	89.95	179.10	7,981.00	-7,965.59	735.67	1,569,350.56	3,253,948.43	40.89262858	-104.58149921
15,800.03	89.95	179.10	7,981.08	-8,065.58	737.24	1,569,250.60	3,253,951.03	40.89235416	-104.58149355
15,900.03	89.95	179.10	7,981.16	-8,165.57	738.81	1,569,150.63	3,253,953.63	40.89207973	-104.58148789
16,000.03	89.95	179.10	7,981.24	-8,265.55	740.38	1,569,050.66	3,253,956.23	40.89180530	-104.58148223
16,100.03	89.95	179.10	7,981.32	-8,365.54	741.94	1,568,950.70	3,253,958.83	40.89153087	-104.58147657
16,200.03	89.95	179.10	7,981.40	-8,465.53	743.51	1,568,850.73	3,253,961.43	40.89125644	-104.58147091
16,300.03	89.95	179.10	7,981.48	-8,565.52	745.08	1,568,750.77	3,253,964.03	40.89098202	-104.58146525
16,400.03	89.95	179.10	7,981.56	-8,665.50	746.65	1,568,650.80	3,253,966.63	40.89070759	-104.58145959
16,500.03	89.95	179.10	7,981.64	-8,765.49	748.22	1,568,550.83	3,253,969.23	40.89043316	-104.58145392
16,600.03	89.95	179.10	7,981.72	-8,865.48	749.79	1,568,450.87	3,253,971.83	40.89015873	-104.58144826
16,700.03	89.95	179.10	7,981.80	-8,965.47	751.35	1,568,350.90	3,253,974.44	40.88988430	-104.58144260
16,800.03	89.95	179.10	7,981.88	-9,065.46	752.92	1,568,250.94	3,253,977.04	40.88960987	-104.58143694
16,900.03	89.95	179.10	7,981.96	-9,165.44	754.49	1,568,150.97	3,253,979.64	40.88933545	-104.58143128
17,000.03	89.95	179.10	7,982.04	-9,265.43	756.06	1,568,051.00	3,253,982.24	40.88906102	-104.58142562
17,100.03	89.95	179.10	7,982.12	-9,365.42	757.63	1,567,951.04	3,253,984.84	40.88878659	-104.58141996
17,200.03	89.95	179.10	7,982.20	-9,465.41	759.20	1,567,851.07	3,253,987.44	40.88851216	-104.58141430
17,300.03	89.95	179.10	7,982.28	-9,565.40	760.76	1,567,751.11	3,253,990.04	40.88823773	-104.58140864
17,400.04	89.95	179.10	7,982.36	-9,665.38	762.33	1,567,651.14	3,253,992.64	40.88796330	-104.58140298
17,500.04	89.95	179.10	7,982.44	-9,765.37	763.90	1,567,551.17	3,253,995.24	40.88768888	-104.58139732
17,600.04	89.95	179.10	7,982.52	-9,865.36	765.47	1,567,451.21	3,253,997.84	40.88741445	-104.58139166
17,700.04	89.95	179.10	7,982.60	-9,965.35	767.04	1,567,351.24	3,254,000.44	40.88714002	-104.58138600
17,800.04	89.95	179.10	7,982.68	-10,065.34	768.61	1,567,251.27	3,254,003.04	40.88686559	-104.58138034
17,900.04	89.95	179.10	7,982.76	-10,165.32	770.17	1,567,151.31	3,254,005.65	40.88659116	-104.58137468
18,000.04	89.95	179.10	7,982.84	-10,265.31	771.74	1,567,051.34	3,254,008.25	40.88631673	-104.58136902
18,100.04	89.95	179.10	7,982.93	-10,365.30	773.31	1,566,951.38	3,254,010.85	40.88604231	-104.58136336
18,200.04	89.95	179.10	7,983.01	-10,465.29	774.88	1,566,851.41	3,254,013.45	40.88576788	-104.58135770
18,300.04	89.95	179.10	7,983.09	-10,565.27	776.45	1,566,751.44	3,254,016.05	40.88549345	-104.58135204
18,311.28	89.95	179.10	7,983.09	-10,576.52	776.62	1,566,740.21	3,254,016.34	40.88546260	-104.58135140
PBHL/TD 18311.28 MD/7983.09 TVD									
18,318.42	89.95	179.10	7,983.10	-10,583.66	776.73	1,566,733.06	3,254,016.53	40.88544299	-104.58135100

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									
Salt Ranch Fee 201-183	0.00	0.59	7,975.10	-606.63	620.25	1,576,707.92	3,253,757.01	40.91282599	-104.58191600
- plan hits target center									
- Point									
Salt Ranch Fee 201-183	0.00	0.59	7,983.10	-10,583.66	776.73	1,566,733.06	3,254,016.53	40.88544299	-104.58135100
- plan hits target center									
- Point									

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Salt Ranch Fee 201-1830H
Company:	Clear Creek Resources Partners	TVD Reference:	RKB=5602.1+21 @ 5623.10ft
Project:	Weld County, Colorado	MD Reference:	RKB=5602.1+21 @ 5623.10ft
Site:	Section 18-T11N-R64W	North Reference:	True
Well:	Salt Ranch Fee 201-1830H	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)	
3,000.00	3,000.00	0.00	0.00	KOP Begin 2°/100' build
3,360.76	3,359.81	-1.53	22.63	Begin 7.22° tangent
7,446.62	7,413.31	-36.20	534.63	Begin 10°/100' build/turn
8,339.43	7,975.10	-606.63	620.25	Begin 89.95° lateral
18,311.28	7,983.10	-10,575.10	879.60	PBHL/TD 18311.28 MD/7983.09 TVD