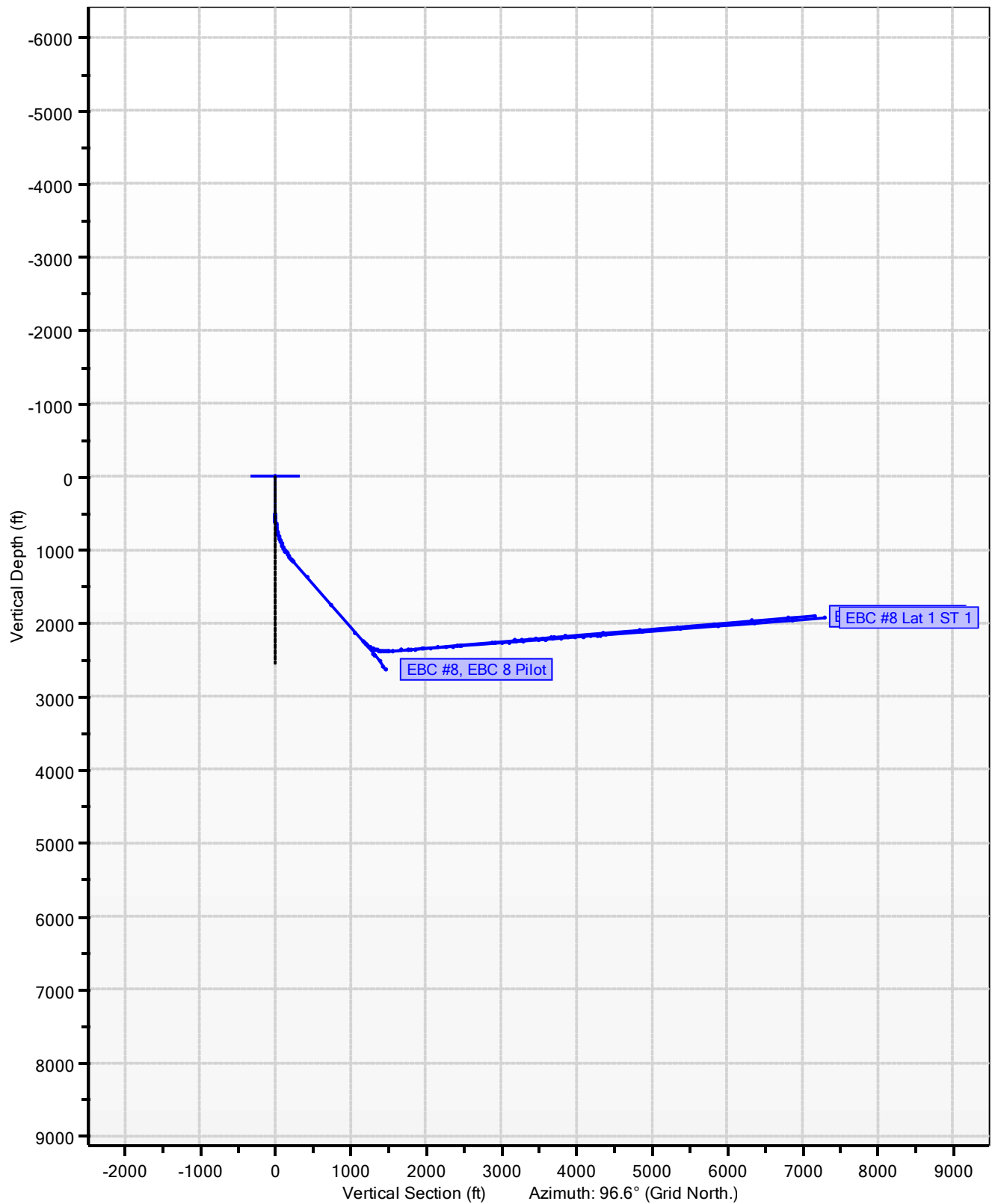


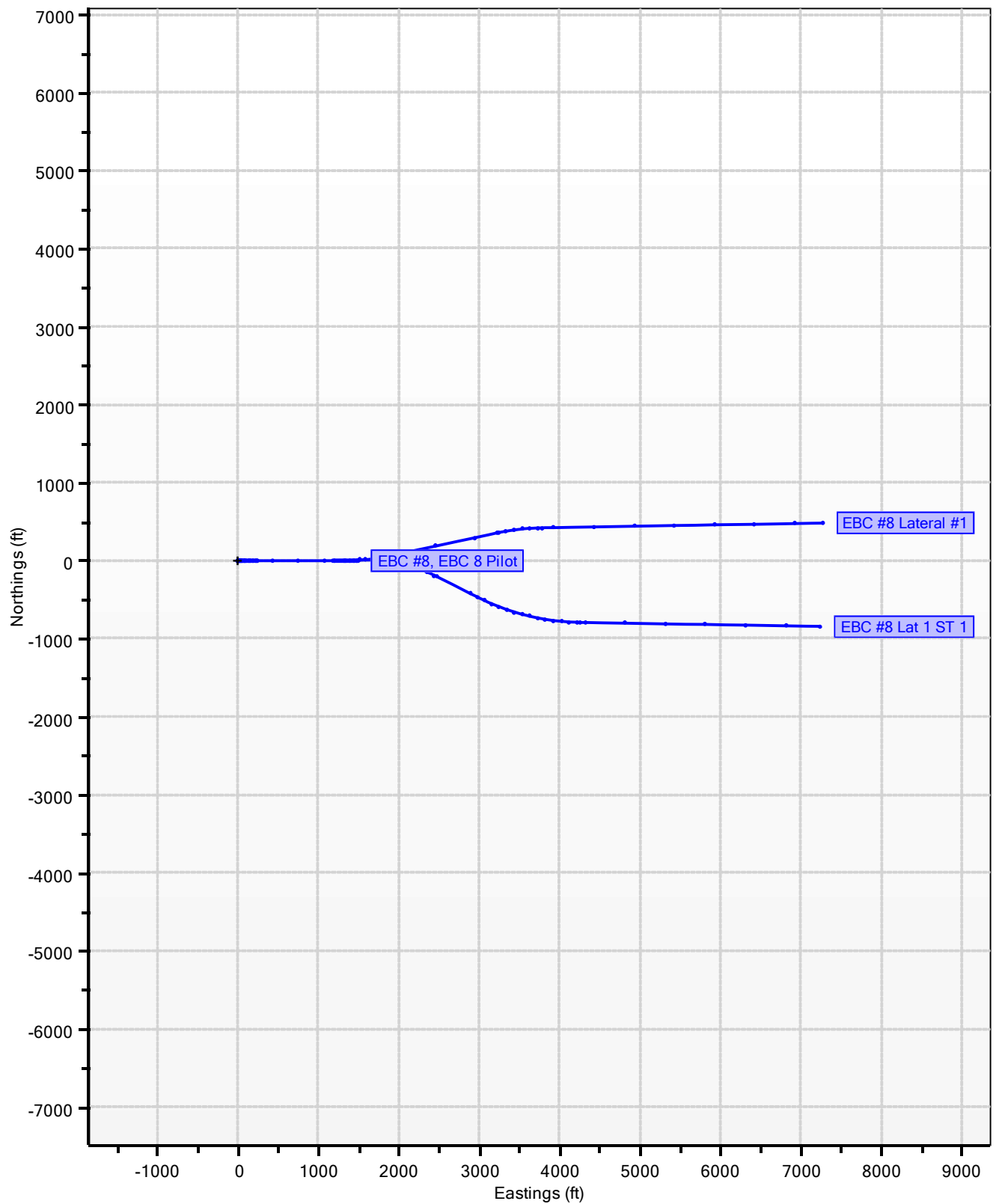
**East Bull Creek Well  
EBC Pad 4  
EBC #8  
EBC 8 Pilot**

## **Catamount Energy Partners Proposal Report**

EBC Pad 4, EBC #8



EBC Pad 4, EBC #8



# Catamount Energy Partners

## Proposal Report



<b>Database:</b>	San Juan Basin	<b>Local Coordinate Reference:</b>	EBC #8
<b>Company:</b>		<b>TVD Reference:</b>	EBC #8
<b>Project:</b>	East Bull Creek Well	<b>MD Reference:</b>	EBC #8
<b>Site:</b>	EBC Pad 4	<b>North reference:</b>	Grid North
<b>Well:</b>	EBC #8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>			
<b>Proposal:</b>	EBC 8 Pilot		

<b>Project</b>	East Bull Creek Well		
<b>Map System:</b>	HPGN Colorado State Planes	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	High Precision GPS Network (aka HARN, NAD83/9)		
<b>Map Zone:</b>	Southern Zone		

<b>Site</b>	EBC Pad 4		
<b>Site Position:</b>		<b>Northing:</b>	0
<b>From:</b>	Map	<b>Easting:</b>	0
<b>Position Uncertainty:</b>	0ft	<b>Slot Radius:</b>	0in
		<b>Latitude:</b>	33.48902771° N
		<b>Longitude:</b>	115.33027986° W
		<b>Grid Convergence:</b>	-6.0°

<b>Well</b>	EBC #8		
<b>Well Position:</b>	<b>+N/-S</b>	1184864ft	<b>Northing:</b>
	<b>+E/-W</b>	2448254ft	<b>Easting:</b>
<b>Position Uncertainty:</b>		1ft	<b>Wellhead Elevation:</b>
			6750ft
			<b>Latitude:</b>
			37.15900751° N
			<b>Longitude:</b>
			107.39338332° W
			<b>Ground Level:</b>
			6734ft

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	2/9/2018	0.0	0.0	0.0

<b>Proposal</b>	EBC 8 Pilot		
<b>Audit Notes:</b>			
<b>Version:</b>		<b>Phase:</b>	<b>Tie On Depth:</b>
			0ft

Vertical Section:	Depth from TVD (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0	0	0	90.0

Survey Program		3/26/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0	3145	EBC 8 Pilot	MWD	MWD	

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	0.0	0.0	0	0	0					
500	0.0	0.0	500	0	0	0.0	0.0	0.0	0.0	
1228	40.7	90.0	1168	0	248	5.6	5.6	0.0	90.0	
2872	40.7	90.0	2415	0	1320	0.0	0.0	0.0	0.0	EBC #8 Pilot Top Coal
3145	27.7	90.0	2640	0	1473	4.8	-4.8	0.0	180.0	EBC 8 Lat 1 ST 1 BHL

Planned Survey											
Measured Depth (ft)	Incl. (°)	Az. (°)	Vertical Depth (ft)	Sub Sea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Closure Distance (ft)	Closure Azimuth (°)	Dogleg Rate (°/100ft)	Comments/ Formations
0	0.0	0.0	0	-6750	0	0	0	0	0.0	0.0	MWD
16	0.0	0.0	16	-6734	0	0	0	0	0.0	0.0	Animas
100	0.0	0.0	100	-6650	0	0	0	0	0.0	0.0	
200	0.0	0.0	200	-6550	0	0	0	0	0.0	0.0	
300	0.0	0.0	300	-6450	0	0	0	0	0.0	0.0	

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<b>Site:</b>	EBC Pad 4	<b>North reference:</b>	Grid North
<b>Well:</b>	EBC #8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>			
<b>Proposal:</b>	EBC 8 Pilot		

Planned Survey											
Measured Depth (ft)	Incl. (°)	Az. (°)	Vertical Depth (ft)	Sub Sea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Closure Distance (ft)	Closure Azimuth (°)	Dogleg Rate (°/100ft)	Comments/ Formations
400	0.0	0.0	400	-6350	0	0	0	0	0.0	0.0	
500	0.0	0.0	500	-6250	0	0	0	0	0.0	0.0	
510	0.6	90.0	510	-6240	0	0	0	0	90.0	5.6	
540	2.2	90.0	540	-6210	0	1	1	1	90.0	5.6	
570	3.9	90.0	570	-6180	0	2	2	2	90.0	5.6	
600	5.6	90.0	600	-6150	0	5	5	5	90.0	5.6	
630	7.3	90.0	630	-6120	0	8	8	8	90.0	5.6	
660	8.9	90.0	659	-6091	0	12	12	12	90.0	5.6	
690	10.6	90.0	689	-6061	0	18	18	18	90.0	5.6	
720	12.3	90.0	718	-6032	0	24	24	24	90.0	5.6	
750	14.0	90.0	748	-6002	0	30	30	30	90.0	5.6	
780	15.7	90.0	777	-5973	0	38	38	38	90.0	5.6	
810	17.3	90.0	805	-5945	0	47	47	47	90.0	5.6	
840	19.0	90.0	834	-5916	0	56	56	56	90.0	5.6	
870	20.7	90.0	862	-5888	0	66	66	66	90.0	5.6	
900	22.4	90.0	890	-5860	0	77	77	77	90.0	5.6	
930	24.0	90.0	917	-5833	0	89	89	89	90.0	5.6	
960	25.7	90.0	945	-5805	0	102	102	102	90.0	5.6	
990	27.4	90.0	972	-5778	0	115	115	115	90.0	5.6	
1020	29.1	90.0	998	-5752	0	129	129	129	90.0	5.6	
1050	30.8	90.0	1024	-5726	0	144	144	144	90.0	5.6	
1080	32.4	90.0	1050	-5700	0	160	160	160	90.0	5.6	
1110	34.1	90.0	1075	-5675	0	176	176	176	90.0	5.6	
1140	35.8	90.0	1099	-5651	0	193	193	193	90.0	5.6	
1170	37.5	90.0	1123	-5627	0	211	211	211	90.0	5.6	
1200	39.1	90.0	1147	-5603	0	230	230	230	90.0	5.6	
1228	40.7	90.0	1168	-5582	0	248	248	248	90.0	5.6	
1300	40.7	90.0	1223	-5527	0	295	295	295	90.0	0.0	
1400	40.7	90.0	1299	-5451	0	360	360	360	90.0	0.0	
1500	40.7	90.0	1375	-5375	0	425	425	425	90.0	0.0	
1600	40.7	90.0	1450	-5300	0	490	490	490	90.0	0.0	
1700	40.7	90.0	1526	-5224	0	556	556	556	90.0	0.0	
1800	40.7	90.0	1602	-5148	0	621	621	621	90.0	0.0	
1900	40.7	90.0	1678	-5072	0	686	686	686	90.0	0.0	
2000	40.7	90.0	1754	-4996	0	751	751	751	90.0	0.0	
2015	40.7	90.0	1765	-4985	0	761	761	761	90.0	0.0	Kirtland
2100	40.7	90.0	1829	-4921	0	816	816	816	90.0	0.0	
2135	40.7	90.0	1856	-4894	0	839	839	839	90.0	0.0	Farmington SS
2200	40.7	90.0	1905	-4845	0	882	882	882	90.0	0.0	
2300	40.7	90.0	1981	-4769	0	947	947	947	90.0	0.0	
2400	40.7	90.0	2057	-4693	0	1012	1012	1012	90.0	0.0	
2500	40.7	90.0	2133	-4617	0	1077	1077	1077	90.0	0.0	
2507	40.7	90.0	2138	-4612	0	1082	1082	1082	90.0	0.0	Lower Kirtland
2600	40.7	90.0	2209	-4541	0	1142	1142	1142	90.0	0.0	
2700	40.7	90.0	2284	-4466	0	1208	1208	1208	90.0	0.0	
2800	40.7	90.0	2360	-4390	0	1273	1273	1273	90.0	0.0	
2872	40.7	90.0	2415	-4335	0	1320	1320	1320	90.0	0.0	Fruitland Coal EBC #8 Pilot Top Coal
2880	40.3	90.0	2421	-4329	0	1325	1325	1325	90.0	4.8	
2910	38.9	90.0	2444	-4306	0	1344	1344	1344	90.0	4.8	
2940	37.5	90.0	2468	-4282	0	1363	1363	1363	90.0	4.8	

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<b>Well:</b>	EBC #8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>			
<b>Proposal:</b>	EBC 8 Pilot		

Planned Survey											
Measured Depth (ft)	Incl. (°)	Az. (°)	Vertical Depth (ft)	Sub Sea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Closure Distance (ft)	Closure Azimuth (°)	Dogleg Rate (°/100ft)	Comments/ Formations
2970	36.0	90.0	2492	-4258	0	1381	1381	1381	90.0	4.8	Pictured Cliffs
2979	35.6	90.0	2499	-4251	0	1386	1386	1386	90.0	4.8	
3000	34.6	90.0	2516	-4234	0	1398	1398	1398	90.0	4.8	
3030	33.2	90.0	2541	-4209	0	1415	1415	1415	90.0	4.8	
3060	31.8	90.0	2566	-4184	0	1431	1431	1431	90.0	4.8	
3090	30.3	90.0	2592	-4158	0	1446	1446	1446	90.0	4.8	EBC 8 Lat 1 BHL EBC 8 Lat 1 ST 1 BHL
3120	28.9	90.0	2618	-4132	0	1461	1461	1461	90.0	4.8	
3145	27.7	90.0	2640	-4110	0	1473	1473	1473	90.0	4.8	

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
EBC #8 Pilot Top Coal			2415	0	1320	+1184864	+2449574	37.15908090° N	107.38885482° W	
- hit/miss target										
- Shape										
- Point										
EBC 8 Lat 1 BHL			1900	481	7269	+1185345	+2455523	37.16073022° N	107.36847858° W	
- proposal misses the target center by 5863ft at 3145ft MD (2640TVD, 0, +1473)										
- Point										
EBC 8 Lat 1 ST 1 BHL			1929	-844	7242	+1184020	+2455496	37.15709050° N	107.36848027° W	
- proposal misses the target center by 5874ft at 3145ft MD (2640TVD, 0, +1473)										
- Point										

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Subsea Depth (ft)	Name	Dip Angle (°)	Dip Direction (°)
16	16	-6734	Animas	0.0	0.0
2015	1765	-4985	Kirtland	0.0	0.0
2135	1856	-4894	Farmington SS	0.0	0.0
2507	2138	-4612	Lower Kirtland	0.0	0.0
2872	2415	-4335	Fruitland Coal	0.0	0.0
2979	2499	-4251	Pictured Cliffs	0.0	0.0

Checked By:	Approved By:	Date:
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