

Catamount Energy Partners

Standard Planning Report

IGS 144

Sec 20 T33N R8W

La Plata County CO

June 30,2017



Catamount Energy Partners

DIRECTIONAL DRILLING PLAN

Well: IGS 144
 STR: Sec 20 T33N R8W
 Location (Ft.): 1191FNL, 1015FEL
 Field: Ignacio Blanco Field
 Co, State: La Plata County, Colorado

SECTION DETAILS

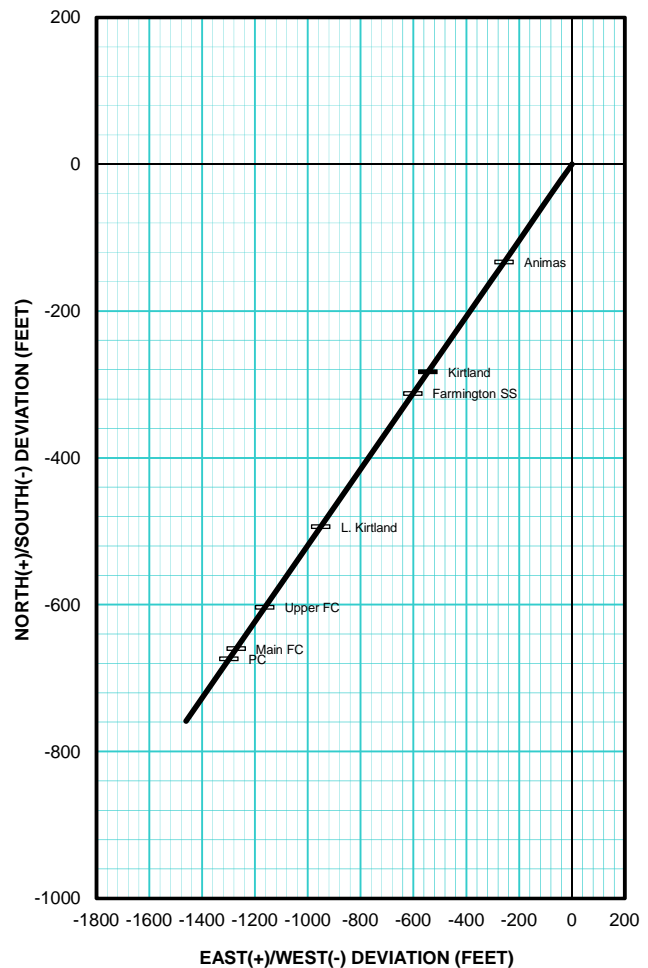
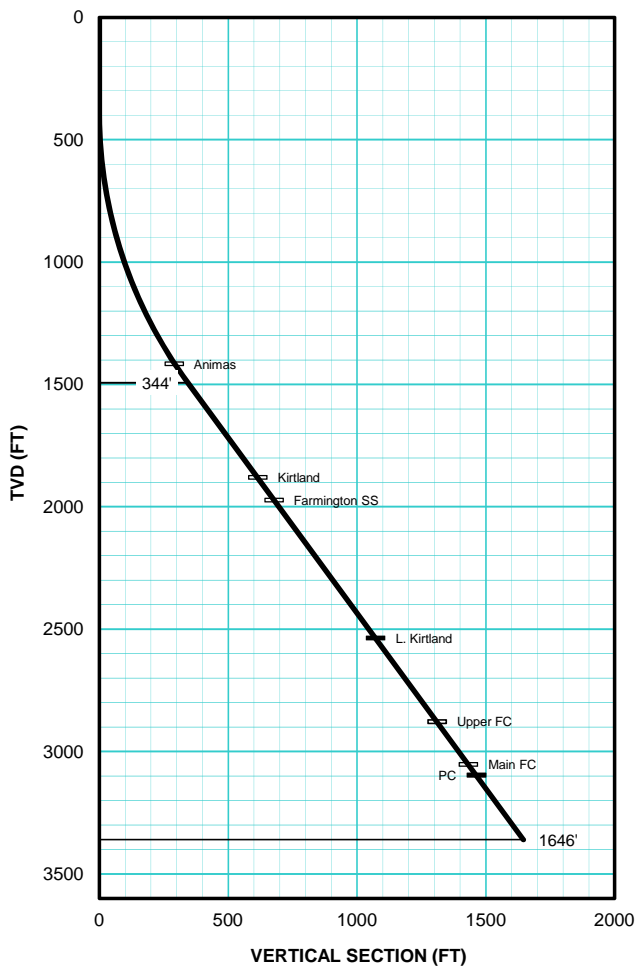
Section	MD	Incl	Azi	TVD	+N/-S	+E/-W	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00
3	1563.36	34.90	242.56	1492.74	-158.27	-304.86	343.50
4	3840.11	34.90	242.56	3360.00	-758.50	-1461.00	1646.16 PBHL

ESTIMATED FORMATION TOP DETAILS

Formation	TVD Path	MD Path	+N/-S	+E/-W
Animas	1416.00	1469.79	-133.61	-257.35
Kirtland Shale	1881.00	2036.77	-283.08	-545.26
Farmington Sandstone	1973.00	2148.94	-312.65	-602.22
Lower Kirtland Shale	2537.00	2836.63	-493.95	-951.43
Upper Fruitland Coal	2879.00	3253.63	-603.88	-1163.18
Main Fruitland Coal	3054.00	3467.00	-660.14	-1271.54
Pictured Cliffs	3213.00	3660.87	-711.25	-1369.98

GL: 6752'

KB: 6764'



IGS 144, Plan 1

Operator Catamount Energy Partners	Units feet, °/100ft	14:43 Friday, June 30, 2017 Page 1 of 3
Field Ignacio Blanco	County La Plata	Vertical Section Azimuth 0
Well Name IGS 144	State CO	Survey Calculation Method Minimum Curvature
Plan 1	Country	Database Access

Location	Map Zone UTM	Lat Long Ref NAD83
Site	Surface X	Surface Long 37.09345
Slot Name	Surface Y	Surface Lat -107.73532
Well Number	Surface Z	Global Z Ref Mean Sea Level
Project	Ground Level 6752	Local North Ref Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
*** RKB (at MD = 0.00)										
0.00	0.00	0.0	0.00	0.00	0.00		0.00	0.00	0.00	
50.00	0.00	0.0	50.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.0	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.0	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.0	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.0	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
350.00	0.00	0.0	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
*** KOP (at MD = 400.00)										
400.00	0.00	0.0	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
450.00	1.50	242.6	449.99	-0.30	-0.58	3.00	-0.30	0.00	0.00	
500.00	3.00	242.6	499.95	-1.21	-2.32	3.00	-1.21	0.00	0.00	
550.00	4.50	242.6	549.85	-2.71	-5.23	3.00	-2.71	0.00	0.00	
600.00	6.00	242.6	599.63	-4.82	-9.29	3.00	-4.82	0.00	0.00	
650.00	7.50	242.6	649.29	-7.53	-14.50	3.00	-7.53	0.00	0.00	
700.00	9.00	242.6	698.77	-10.83	-20.87	3.00	-10.83	0.00	0.00	
750.00	10.50	242.6	748.04	-14.74	-28.38	3.00	-14.74	0.00	0.00	
800.00	12.00	242.6	797.08	-19.23	-37.04	3.00	-19.23	0.00	0.00	
850.00	13.50	242.6	845.85	-24.31	-46.83	3.00	-24.31	0.00	0.00	
900.00	15.00	242.6	894.31	-29.99	-57.76	3.00	-29.99	0.00	0.00	
950.00	16.50	242.6	942.43	-36.24	-69.80	3.00	-36.24	0.00	0.00	
1000.00	18.00	242.6	990.18	-43.07	-82.96	3.00	-43.07	0.00	0.00	
1050.00	19.50	242.6	1037.52	-50.48	-97.22	3.00	-50.48	0.00	0.00	
1100.00	21.00	242.6	1084.43	-58.45	-112.58	3.00	-58.45	0.00	0.00	
1150.00	22.50	242.6	1130.87	-66.99	-129.03	3.00	-66.99	0.00	0.00	
1200.00	24.00	242.6	1176.81	-76.08	-146.54	3.00	-76.08	0.00	0.00	
1250.00	25.50	242.6	1222.22	-85.73	-165.12	3.00	-85.73	0.00	0.00	
1300.00	27.00	242.6	1267.06	-95.91	-184.75	3.00	-95.91	0.00	0.00	
1350.00	28.50	242.6	1311.31	-106.64	-205.41	3.00	-106.64	0.00	0.00	
1400.00	30.00	242.6	1354.93	-117.90	-227.09	3.00	-117.90	0.00	0.00	
1450.00	31.50	242.6	1397.90	-129.68	-249.78	3.00	-129.68	0.00	0.00	
1500.00	33.00	242.6	1440.18	-141.97	-273.46	3.00	-141.97	0.00	0.00	
1550.00	34.50	242.6	1481.76	-154.77	-298.11	3.00	-154.77	0.00	0.00	
1563.36	34.90	242.6	1492.74	-158.27	-304.86	3.00	-158.27	0.00	0.00	
1600.00	34.90	242.6	1522.79	-167.93	-323.47	0.00	-167.93	0.00	0.00	
1650.00	34.90	242.6	1563.80	-181.12	-348.86	0.00	-181.12	0.00	0.00	
1700.00	34.90	242.6	1604.80	-194.30	-374.25	0.00	-194.30	0.00	0.00	

IGS 144, Plan 1

Operator Catamount Energy Partners	Units feet, °/100ft	14:43 Friday, June 30, 2017 Page 2 of 3
Field Ignacio Blanco	County La Plata	Vertical Section Azimuth 0
Well Name IGS 144	State CO	Survey Calculation Method Minimum Curvature
Plan 1	Country	Database Access

Location	Map Zone UTM	Lat Long Ref NAD83
Site	Surface X	Surface Long 37.09345
Slot Name	Surface Y	Surface Lat -107.73532
Well Number	Surface Z	Global Z Ref Mean Sea Level
Project	Ground Level 6752	Local North Ref Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
1750.00	34.90	242.6	1645.81	-207.48	-399.64	0.00	-207.48	0.00	0.00	
1800.00	34.90	242.6	1686.82	-220.66	-425.03	0.00	-220.66	0.00	0.00	
1850.00	34.90	242.6	1727.83	-233.84	-450.42	0.00	-233.84	0.00	0.00	
1900.00	34.90	242.6	1768.83	-247.02	-475.81	0.00	-247.02	0.00	0.00	
1950.00	34.90	242.6	1809.84	-260.21	-501.20	0.00	-260.21	0.00	0.00	
2000.00	34.90	242.6	1850.85	-273.39	-526.59	0.00	-273.39	0.00	0.00	
2050.00	34.90	242.6	1891.85	-286.57	-551.98	0.00	-286.57	0.00	0.00	
2100.00	34.90	242.6	1932.86	-299.75	-577.37	0.00	-299.75	0.00	0.00	
2150.00	34.90	242.6	1973.87	-312.93	-602.76	0.00	-312.93	0.00	0.00	
2200.00	34.90	242.6	2014.88	-326.11	-628.15	0.00	-326.11	0.00	0.00	
2250.00	34.90	242.6	2055.88	-339.30	-653.54	0.00	-339.30	0.00	0.00	
2300.00	34.90	242.6	2096.89	-352.48	-678.93	0.00	-352.48	0.00	0.00	
2350.00	34.90	242.6	2137.90	-365.66	-704.32	0.00	-365.66	0.00	0.00	
2400.00	34.90	242.6	2178.90	-378.84	-729.71	0.00	-378.84	0.00	0.00	
2450.00	34.90	242.6	2219.91	-392.02	-755.10	0.00	-392.02	0.00	0.00	
2500.00	34.90	242.6	2260.92	-405.20	-780.49	0.00	-405.20	0.00	0.00	
2550.00	34.90	242.6	2301.93	-418.39	-805.88	0.00	-418.39	0.00	0.00	
2600.00	34.90	242.6	2342.93	-431.57	-831.27	0.00	-431.57	0.00	0.00	
2650.00	34.90	242.6	2383.94	-444.75	-856.66	0.00	-444.75	0.00	0.00	
2700.00	34.90	242.6	2424.95	-457.93	-882.05	0.00	-457.93	0.00	0.00	
2750.00	34.90	242.6	2465.95	-471.11	-907.44	0.00	-471.11	0.00	0.00	
2800.00	34.90	242.6	2506.96	-484.29	-932.83	0.00	-484.29	0.00	0.00	
2850.00	34.90	242.6	2547.97	-497.47	-958.22	0.00	-497.47	0.00	0.00	
2900.00	34.90	242.6	2588.98	-510.66	-983.61	0.00	-510.66	0.00	0.00	
2950.00	34.90	242.6	2629.98	-523.84	-1009.00	0.00	-523.84	0.00	0.00	
3000.00	34.90	242.6	2670.99	-537.02	-1034.39	0.00	-537.02	0.00	0.00	
3050.00	34.90	242.6	2712.00	-550.20	-1059.78	0.00	-550.20	0.00	0.00	
3100.00	34.90	242.6	2753.01	-563.38	-1085.17	0.00	-563.38	0.00	0.00	
3150.00	34.90	242.6	2794.01	-576.56	-1110.56	0.00	-576.56	0.00	0.00	
3200.00	34.90	242.6	2835.02	-589.75	-1135.95	0.00	-589.75	0.00	0.00	
3250.00	34.90	242.6	2876.03	-602.93	-1161.34	0.00	-602.93	0.00	0.00	
3300.00	34.90	242.6	2917.03	-616.11	-1186.73	0.00	-616.11	0.00	0.00	
3350.00	34.90	242.6	2958.04	-629.29	-1212.12	0.00	-629.29	0.00	0.00	
3400.00	34.90	242.6	2999.05	-642.47	-1237.51	0.00	-642.47	0.00	0.00	
3450.00	34.90	242.6	3040.06	-655.65	-1262.90	0.00	-655.65	0.00	0.00	
3500.00	34.90	242.6	3081.06	-668.84	-1288.29	0.00	-668.84	0.00	0.00	
3550.00	34.90	242.6	3122.07	-682.02	-1313.68	0.00	-682.02	0.00	0.00	

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Location		Map Zone	UTM	Lat Long Ref	NAD83
Site		Surface X		Surface Long	37.09345
Slot Name		Surface Y		Surface Lat	-107.73532
Well Number		Surface Z		Global Z Ref	Mean Sea Level
Project		Ground Level	6752	Local North Ref	Grid
	UWI				
	API				
	MD/TVD Ref	KB			

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
3600.00	34.90	242.6	3163.08	-695.20	-1339.07	0.00	-695.20	0.00	0.00	
3650.00	34.90	242.6	3204.08	-708.38	-1364.46	0.00	-708.38	0.00	0.00	
3700.00	34.90	242.6	3245.09	-721.56	-1389.85	0.00	-721.56	0.00	0.00	
3750.00	34.90	242.6	3286.10	-734.74	-1415.24	0.00	-734.74	0.00	0.00	
3800.00	34.90	242.6	3327.11	-747.93	-1440.63	0.00	-747.93	0.00	0.00	
3840.11	34.90	242.6	3360.00	-758.50	-1461.00	0.00	-758.50	0.00	0.00	