

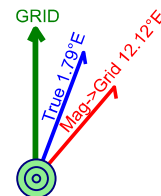


Job Number: 12xxx
Company: Black Hills Plateau Productin Co.
Lease/Well: Homer Deep Unit 9-11CH
Location: Garfield County, CO
Rig Name:
State/Country: CCO/ Garfield
Country: USA
API Number:

Elevation (To MSL): 5521.00 ft
RKB: 0.00 ft
Projection System: US State Plane 1927 (Exact solution)
Projection Group: Colorado Central 502
Projection Datum: CLARKE 1866
Magnetic Declination: 10.34
Grid Convergence: -1.78988 W
Date: Tuesday, August 21, 2012

Calculated by HawkEye Software
 Minimum Curvature Method
 Vertical Section Plane 141.86°

Northing (US ft): 575921.25 **Easting (US ft):** 1197655.63
Latitude: 39°22'48.9845" N **Longitude:** -108°20'20.0155" W
Well Location: 292.34 FNL, 416.80 FWL, Section 9, T8S, R98W, Meridian 06, Garfield County, CO
Direction Reference: Grid North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS %/100Ft
Surface									
0.00	0.00	0.00	0.00	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
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.04	0.00
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.03	0.00
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.02	0.00
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.01	0.00
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.01	0.00
3500.00	0.00	0.00	3500.00	0.00	0.01	0.00	0.01	0.01	0.00
4000.00	0.00	0.00	4000.00	0.00	0.01	-0.01	0.01	0.01	0.00
4500.00	0.00	0.00	4500.00	0.00	0.01	-0.01	0.01	0.01	0.00
 casing 9 5/8"									
4750.00	0.00	0.00	4750.00	0.00	0.01	-0.01	0.01	0.01	0.00
5000.00	0.00	0.00	5000.00	0.00	0.01	-0.01	0.01	0.01	0.00
5500.00	0.00	0.00	5500.00	0.00	0.01	-0.01	0.01	0.01	0.00
6000.00	0.00	0.00	6000.00	0.00	0.01	-0.01	0.01	0.01	0.00
KOP-Begin Build @ 8.00%/ 100 Ft									
6080.00	0.00	0.00	6080.00	0.00	0.01	-0.01	0.01	0.01	0.00
6110.00	2.40	90.00	6109.99	0.63	0.01	0.38	0.63	89.07	8.00
6140.00	4.80	90.00	6139.93	2.51	0.01	1.54	2.51	89.77	8.00
6170.00	7.20	90.00	6169.76	5.65	0.01	3.48	5.65	89.90	8.00
6200.00	9.60	90.00	6199.44	10.03	0.01	6.19	10.03	89.94	8.00
6230.00	12.00	90.00	6228.91	15.65	0.01	9.66	15.65	89.96	8.00
6260.00	14.40	90.00	6258.11	22.50	0.01	13.89	22.50	89.97	8.00
6290.00	16.80	90.00	6287.00	30.57	0.01	18.87	30.57	89.98	8.00
6320.00	19.20	90.00	6315.53	39.84	0.01	24.59	39.84	89.98	8.00
6350.00	21.60	90.00	6343.65	50.29	0.01	31.05	50.29	89.99	8.00
6380.00	24.00	90.00	6371.30	61.92	0.01	38.23	61.92	89.99	8.00
6410.00	26.40	90.00	6398.45	74.69	0.01	46.12	74.69	89.99	8.00
6440.00	28.80	90.00	6425.03	88.59	0.01	54.70	88.59	89.99	8.00
6470.00	31.20	90.00	6451.01	103.59	0.01	63.97	103.59	89.99	8.00
6500.00	33.60	90.00	6476.34	119.66	0.01	73.89	119.66	89.99	8.00
6530.00	36.00	90.00	6500.97	136.78	0.01	84.47	136.78	90.00	8.00
6560.00	38.40	90.00	6524.86	154.92	0.01	95.67	154.92	90.00	8.00
6590.00	40.80	90.00	6547.98	174.04	0.01	107.48	174.04	90.00	8.00
6620.00	43.20	90.00	6570.27	194.11	0.01	119.87	194.11	90.00	8.00
6650.00	45.60	90.00	6591.70	215.10	0.01	132.83	215.10	90.00	8.00
6680.00	48.00	90.00	6612.24	236.97	0.01	146.34	236.97	90.00	8.00
6710.00	50.40	90.00	6631.84	259.68	0.01	160.36	259.68	90.00	8.00
6740.00	52.80	90.00	6650.47	283.19	0.01	174.88	283.19	90.00	8.00
6770.00	55.20	90.00	6668.10	307.45	0.01	189.87	307.45	90.00	8.00
6800.00	57.60	90.00	6684.71	332.44	0.01	205.30	332.44	90.00	8.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS %/100Ft
Begin Hold @ 60.00°/90.00° Azm									
6830.00	60.00	90.00	6700.24	358.10	0.01	221.15	358.10	90.00	8.00
7330.00	60.00	90.00	6950.24	791.11	0.01	488.57	791.11	90.00	0.00
Build and Turn @ 8.00°/100 Ft									
7422.50	60.00	90.00	6996.49	871.22	0.01	538.04	871.22	90.00	0.00
7452.50	60.80	92.60	7011.31	897.29	-0.58	554.61	897.29	90.04	8.00
7482.50	61.66	95.16	7025.76	923.53	-2.37	572.22	923.53	90.15	8.00
7512.50	62.55	97.68	7039.79	949.87	-5.33	590.82	949.89	90.32	8.00
7542.50	63.50	100.15	7053.40	976.28	-9.48	610.39	976.33	90.56	8.00
7572.50	64.48	102.59	7066.56	1002.71	-14.80	630.90	1002.82	90.85	8.00
7602.50	65.51	104.98	7079.24	1029.11	-21.28	652.30	1029.33	91.18	8.00
7632.50	66.57	107.34	7091.42	1055.44	-28.91	674.56	1055.84	91.57	8.00
7662.50	67.67	109.66	7103.09	1081.65	-37.68	697.64	1082.30	92.00	8.00
7692.50	68.80	111.94	7114.21	1107.69	-47.57	721.51	1108.71	92.46	8.00
7722.50	69.96	114.18	7124.78	1133.52	-58.57	746.11	1135.04	92.96	8.00
7752.50	71.15	116.39	7134.77	1159.10	-70.65	771.41	1161.25	93.49	8.00
7782.50	72.36	118.57	7144.16	1184.37	-83.80	797.36	1187.33	94.05	8.00
7812.50	73.60	120.72	7152.94	1209.30	-97.99	823.92	1213.26	94.63	8.00
7842.50	74.86	122.85	7161.10	1233.84	-113.20	851.03	1239.02	95.24	8.00
7872.50	76.14	124.94	7168.61	1257.94	-129.40	878.66	1264.58	95.87	8.00
7902.50	77.43	127.02	7175.47	1281.57	-146.55	906.75	1289.93	96.52	8.00
7932.50	78.74	129.07	7181.66	1304.69	-164.65	935.25	1315.03	97.19	8.00
7962.50	80.07	131.11	7187.18	1327.24	-183.64	964.12	1339.89	97.88	8.00
7992.50	81.41	133.13	7192.01	1349.20	-203.49	993.30	1364.46	98.58	8.00
8022.50	82.76	135.13	7196.14	1370.53	-224.18	1022.74	1388.74	99.29	8.00
8052.50	84.11	137.12	7199.57	1391.18	-245.66	1052.39	1412.71	100.01	8.00
8082.50	85.48	139.11	7202.29	1411.13	-267.91	1082.20	1436.33	100.75	8.00
8112.50	86.85	141.08	7204.30	1430.33	-290.87	1112.12	1459.60	101.49	8.00
8142.50	88.22	143.05	7205.59	1448.75	-314.51	1142.09	1482.50	102.25	8.00
8172.50	89.60	145.02	7206.16	1466.36	-338.78	1172.06	1504.99	103.01	8.00
8202.50	90.97	146.99	7206.01	1483.14	-363.65	1201.98	1527.07	103.78	8.00
Casing 7"									
8202.60	90.98	146.99	7206.01	1483.19	-363.73	1202.08	1527.14	103.78	8.00
Target - Hold @ 90.98°, 147.0° Azm									
8202.70	90.98	147.00	7206.01	1483.24	-363.81	1202.17	1527.21	103.78	7.99
8232.70	90.98	147.00	7205.50	1499.58	-388.97	1232.05	1549.21	104.54	0.00
8732.70	90.98	147.00	7196.94	1771.86	-808.24	1729.96	1947.50	114.52	0.00
9232.70	90.98	147.00	7188.39	2044.15	-1227.51	2227.88	2384.39	120.98	0.00
9732.70	90.98	147.00	7179.83	2316.43	-1646.78	2725.80	2842.14	125.41	0.00
10232.70	90.98	147.00	7171.28	2588.71	-2066.06	3223.71	3312.10	128.59	0.00
10732.70	90.98	147.00	7162.73	2861.00	-2485.33	3721.63	3789.74	130.98	0.00
11232.70	90.98	147.00	7154.17	3133.28	-2904.60	4219.55	4272.49	132.83	0.00
11732.70	90.98	147.00	7145.62	3405.57	-3323.87	4717.46	4758.78	134.30	0.00
12232.70	90.98	147.00	7137.06	3677.85	-3743.14	5215.38	5247.64	135.50	0.00
12732.70	90.98	147.00	7128.51	3950.13	-4162.41	5713.30	5738.40	136.50	0.00
13232.70	90.98	147.00	7119.95	4222.42	-4581.68	6211.21	6230.62	137.34	0.00
13732.70	90.98	147.00	7111.40	4494.70	-5000.96	6709.13	6723.98	138.05	0.00
14232.70	90.98	147.00	7102.84	4766.98	-5420.23	7207.05	7218.24	138.67	0.00
14732.70	90.98	147.00	7094.29	5039.27	-5839.50	7704.97	7713.23	139.21	0.00
15232.70	90.98	147.00	7085.74	5311.55	-6258.77	8202.88	8208.82	139.68	0.00
15732.70	90.98	147.00	7077.18	5583.83	-6678.04	8700.80	8704.91	140.10	0.00
16232.70	90.98	147.00	7068.63	5856.12	-7097.31	9198.72	9201.41	140.47	0.00
16732.70	90.98	147.00	7060.07	6128.40	-7516.58	9696.63	9698.26	140.81	0.00
17232.70	90.98	147.00	7051.52	6400.68	-7935.86	10194.55	10195.42	141.11	0.00
17732.70	90.98	147.00	7042.96	6672.97	-8355.13	10692.47	10692.83	141.39	0.00
18232.70	90.98	147.00	7034.41	6945.25	-8774.40	11190.38	11190.47	141.64	0.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS °/100Ft	
Proposed End of Lateral										
18723.94	90.98	147.00	7026.00	7212.77	-9186.33	11679.58	11679.58	141.86	0.00	
TARGET DATA										
Name		Shape	Easting (Ft)	Northing (Ft)	Subsea TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Diameter (Ft)
9-11CH BHL		CYLINDER	1204868.40	566734.92	1505.00	-9186.33	7212.77	100.00	200.00	100.00
9-11CH Landing		CYLINDER	1199314.56	575087.09	1685.00	-834.16	1658.93	100.00	200.00	100.00
CASING DATA										
Size (in)		Weight (Lbs/Ft)	ID (in)	OD (in)		Top MD (Ft)		Set MD (Ft)		
9 5/8		40.00	8.84	10.63		4750.00		4780.00		
7		23.00	6.37	7.66		8202.60		8202.60		