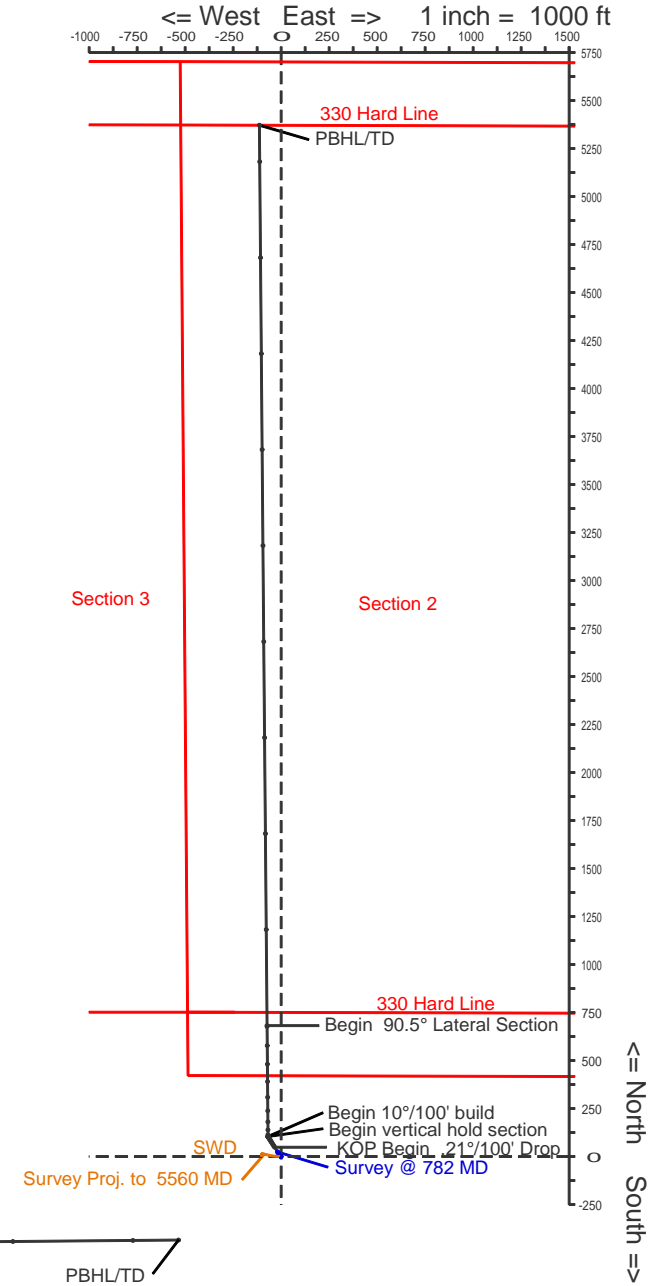
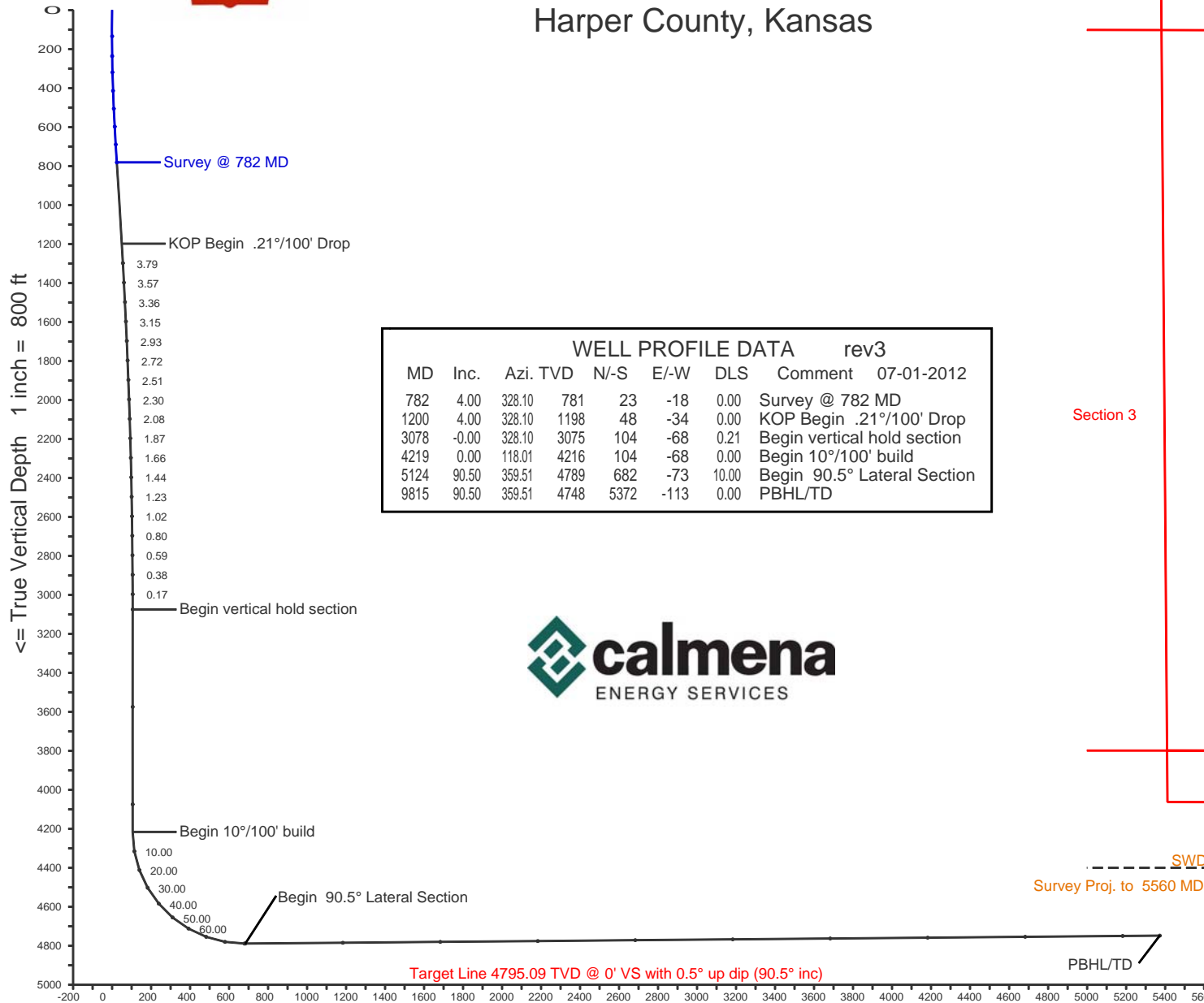




Shell Exploration and Production Company

Chain Land 3509 #11-1H

Harper County, Kansas



Vertical Section on 358.8 deg azimuth with reference 0.00 N, 0.00 E

Calmena Energy Services

Company: Shell Exploration and Production Company
 Well: Chain Land 3509 #11-1H
 Location: Harper County, Kansas

Date: 1-Jul-2012
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MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 358.8° Az (feet)	Grid Y	Grid X	Comments
Surface Location								128870.07	2066637.65	
782.00	4.00	328.10	781.12	23.43	-18.24	0.00	23.80	128893.50	2066619.41	Survey @ 782 MD
1200.00	4.00	328.10	1198.11	48.18	-33.65	0.00	48.88	128918.25	2066604.00	KOP Begin .21°/100' Drop
1300.00	3.79	328.10	1297.88	53.95	-37.23	0.21	54.71	128924.02	2066600.42	
1400.00	3.57	328.10	1397.67	59.40	-40.63	0.21	60.23	128929.47	2066597.02	
1500.00	3.36	328.10	1497.49	64.53	-43.82	0.21	65.43	128934.60	2066593.83	
1600.00	3.15	328.10	1597.32	69.35	-46.82	0.21	70.32	128939.42	2066590.83	
1700.00	2.93	328.10	1697.18	73.86	-49.63	0.21	74.88	128943.93	2066588.02	
1800.00	2.72	328.10	1797.06	78.04	-52.23	0.21	79.12	128948.11	2066585.42	
1900.00	2.51	328.10	1896.96	81.92	-54.64	0.21	83.05	128951.99	2066583.01	
2000.00	2.30	328.10	1996.87	85.48	-56.86	0.21	86.65	128955.55	2066580.79	
2100.00	2.08	328.10	2096.80	88.72	-58.88	0.21	89.93	128958.79	2066578.77	
2200.00	1.87	328.10	2196.74	91.65	-60.70	0.21	92.90	128961.72	2066576.95	
2300.00	1.66	328.10	2296.69	94.26	-62.33	0.21	95.55	128964.33	2066575.32	
2400.00	1.44	328.10	2396.65	96.56	-63.76	0.21	97.87	128966.63	2066573.89	
2500.00	1.23	328.10	2496.63	98.54	-64.99	0.21	99.88	128968.61	2066572.66	
2600.00	1.02	328.10	2596.61	100.21	-66.03	0.21	101.57	128970.28	2066571.62	
2700.00	0.80	328.10	2696.59	101.56	-66.87	0.21	102.93	128971.63	2066570.78	
2800.00	0.59	328.10	2796.59	102.59	-67.51	0.21	103.98	128972.66	2066570.14	
2900.00	0.38	328.10	2896.58	103.31	-67.96	0.21	104.71	128973.38	2066569.69	
3000.00	0.17	328.10	2996.58	103.71	-68.21	0.21	105.12	128973.78	2066569.44	
3077.93	0.00	328.10	3074.51	103.81	-68.27	0.21	105.22	128973.88	2066569.38	Begin vertical hold section
3577.93	0.00	328.10	3574.51	103.81	-68.27	0.00	105.22	128973.88	2066569.38	
4077.93	0.00	328.10	4074.51	103.81	-68.27	0.00	105.22	128973.88	2066569.38	
4219.42	0.00	118.01	4216.00	103.81	-68.27	0.00	105.22	128973.88	2066569.38	Begin 10°/100' build
4319.42	10.00	359.51	4315.49	112.51	-68.35	10.00	113.92	128982.58	2066569.30	
4419.42	20.00	359.51	4411.96	138.36	-68.56	10.00	139.77	129008.43	2066569.09	
4519.42	30.00	359.51	4502.48	180.57	-68.92	10.00	181.97	129050.64	2066568.73	
4619.42	40.00	359.51	4584.29	237.85	-69.41	10.00	239.25	129107.92	2066568.24	
4719.42	50.00	359.51	4654.91	308.47	-70.01	10.00	309.87	129178.54	2066567.64	
4819.42	60.00	359.51	4712.20	390.28	-70.70	10.00	391.67	129260.35	2066566.95	

Calmena Energy Services

Company: Shell Exploration and Production Company
 Well: Chain Land 3509 #11-1H
 Location: Harper County, Kansas

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NAD27 Ks South gr elev=1242 RKB=1269.5

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD RKB (feet)	N/-S (feet)	E/-W (feet)	DLS (deg/100')	VS @ 358.8° Az (feet)	Grid Y	Grid X	Comments
4919.42	70.00	359.51	4754.41	480.79	-71.47	10.00	482.18	129350.86	2066566.18	
5019.42	80.00	359.51	4780.25	577.26	-72.29	10.00	578.65	129447.33	2066565.36	
5119.42	90.00	359.51	4788.96	676.75	-73.13	10.00	678.13	129546.82	2066564.52	
5124.40	90.50	359.51	4788.94	681.72	-73.18	10.00	683.11	129551.79	2066564.47	Begin 90.5° Lateral Section
5624.40	90.50	359.51	4784.59	1181.69	-77.42	0.00	1183.05	130051.76	2066560.23	
6124.40	90.50	359.51	4780.25	1681.65	-81.66	0.00	1682.99	130551.72	2066555.99	
6624.40	90.50	359.51	4775.91	2181.61	-85.90	0.00	2182.93	131051.68	2066551.75	
7124.40	90.50	359.51	4771.57	2681.58	-90.14	0.00	2682.88	131551.65	2066547.51	
7624.40	90.50	359.51	4767.22	3181.54	-94.39	0.00	3182.82	132051.61	2066543.26	
8124.40	90.50	359.51	4762.88	3681.50	-98.63	0.00	3682.76	132551.57	2066539.02	
8624.40	90.50	359.51	4758.54	4181.47	-102.87	0.00	4182.70	133051.54	2066534.78	
9124.40	90.50	359.51	4754.20	4681.43	-107.11	0.00	4682.65	133551.50	2066530.54	
9624.40	90.50	359.51	4749.85	5181.39	-111.36	0.00	5182.59	134051.46	2066526.29	
9814.62	90.50	359.51	4748.20	5371.60	-112.97	0.00	5372.79	134241.67	2066524.68	PBHL/TD