



Job Number: 125469  
 Company: Anadarko  
 Lease/Well: Saddleback 6-26X  
 Location: Saddleback  
 Rig Name: Xtreme 11  
 RKB: 5031  
 G.L. or M.S.L.: GL

State/Country: CO/USA  
 Declination: 8.77  
 Grid: True  
 File name: C:\WINSERVE\125469.SVY  
 Date/Time: 03-Aug-12 / 08:45  
 Curve Name: Saddleback 6-29X

### Cathedral Energy Services

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 120.40  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
Tie-in for sidetrack									
3876.00	10.90	140.40	3815.40	-423.20	460.80	611.60	625.65	132.56	.00
4013.00	10.20	102.10	3950.25	-435.74	480.94	635.32	648.98	132.18	5.05
4104.00	10.20	93.50	4039.81	-437.92	496.86	650.15	662.30	131.39	1.67
4194.00	11.10	100.30	4128.26	-439.96	513.34	665.40	676.08	130.60	1.72
4285.00	12.30	98.30	4217.37	-442.92	531.55	682.60	691.90	129.80	1.39
4376.00	11.00	99.80	4306.50	-445.80	549.70	699.71	707.75	129.04	1.47
4467.00	10.70	102.30	4395.87	-449.08	566.51	715.87	722.91	128.40	.61
4557.00	10.60	95.50	4484.32	-451.65	582.91	731.32	737.41	127.77	1.40
4648.00	10.80	98.00	4573.74	-453.64	599.69	746.79	751.94	127.11	.56
4739.00	10.50	109.20	4663.18	-457.55	615.96	762.81	767.31	126.61	2.29
4830.00	12.80	107.80	4752.30	-463.36	633.39	780.79	784.79	126.19	2.55
4920.00	12.80	104.10	4840.07	-468.84	652.56	800.09	803.52	125.70	.91
5011.00	12.50	97.40	4928.86	-472.56	672.10	818.83	821.60	125.11	1.64
5102.00	11.60	95.40	5017.86	-474.69	690.97	836.18	838.32	124.49	1.09
5193.00	10.50	95.00	5107.17	-476.27	708.34	851.97	853.57	123.92	1.21
5283.00	9.30	93.10	5195.83	-477.38	723.77	865.84	867.03	123.41	1.38
5374.00	9.30	94.20	5285.63	-478.32	738.45	878.97	879.83	122.93	.20
5465.00	8.80	104.50	5375.51	-480.60	752.52	892.26	892.90	122.56	1.86
5556.00	10.30	102.80	5465.24	-484.15	767.20	906.71	907.19	122.25	1.68
5646.00	11.50	99.70	5553.62	-487.44	783.89	922.77	923.08	121.87	1.48
5737.00	9.30	98.20	5643.12	-490.02	800.11	938.07	938.24	121.48	2.44
5828.00	8.90	89.40	5732.98	-490.99	814.43	950.91	950.98	121.08	1.59
5919.00	9.40	90.20	5822.82	-490.94	828.90	963.37	963.38	120.64	.57

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
6009.00	10.20	98.20	5911.51	-492.11	844.13	977.10	977.10	120.24	1.75
6100.00	8.70	94.20	6001.27	-493.76	858.97	990.74	990.78	119.89	1.80
6191.00	7.00	90.00	6091.42	-494.26	871.38	1001.70	1001.80	119.56	1.97
6282.00	5.60	87.10	6181.86	-494.04	881.36	1010.19	1010.39	119.27	1.58
6372.00	3.20	127.20	6271.61	-495.34	887.75	1016.36	1016.59	119.16	4.18
6463.00	2.40	116.80	6362.50	-497.73	891.48	1020.78	1021.01	119.18	1.04
6554.00	1.90	112.50	6453.44	-499.17	894.57	1024.18	1024.41	119.16	.58
6645.00	1.50	103.70	6544.40	-500.03	897.12	1026.81	1027.06	119.13	.52
6735.00	1.50	95.60	6634.37	-500.42	899.44	1029.01	1029.28	119.09	.24
6826.00	1.20	79.90	6725.34	-500.37	901.56	1030.81	1031.11	119.03	.52
6917.00	.80	84.10	6816.33	-500.14	903.13	1032.05	1032.37	118.98	.45
7008.00	.60	79.80	6907.32	-499.99	904.23	1032.92	1033.26	118.94	.23
7098.00	.50	73.10	6997.32	-499.79	905.07	1033.55	1033.90	118.91	.13
7189.00	.60	203.80	7088.32	-500.11	905.26	1033.87	1034.22	118.92	1.10
7280.00	.30	124.40	7179.31	-500.68	905.26	1034.17	1034.50	118.95	.68
7370.00	.70	85.60	7269.31	-500.77	906.01	1034.85	1035.19	118.93	.56
7461.00	.40	210.00	7360.31	-501.01	906.40	1035.31	1035.65	118.93	1.08
7552.00	1.60	189.50	7451.29	-502.53	906.03	1035.77	1036.07	119.02	1.36
7642.00	.90	170.30	7541.27	-504.47	905.95	1036.67	1036.93	119.11	.90
7733.00	3.40	108.60	7632.21	-506.04	908.62	1039.77	1040.03	119.11	3.38
7824.00	2.30	96.80	7723.09	-507.11	913.00	1044.09	1044.38	119.05	1.36
7869.00	1.70	88.80	7768.07	-507.20	914.56	1045.48	1045.79	119.01	1.47
7915.00	1.80	97.20	7814.04	-507.28	915.96	1046.73	1047.05	118.98	.60
7960.00	1.50	107.40	7859.03	-507.55	917.22	1047.95	1048.28	118.96	.93
8005.00	1.50	116.70	7904.01	-507.99	918.31	1049.11	1049.45	118.95	.54
8051.00	.90	107.70	7950.00	-508.37	919.19	1050.07	1050.40	118.95	1.36
8096.00	.90	103.20	7994.99	-508.56	919.87	1050.75	1051.09	118.94	.16
8141.00	1.10	115.70	8039.99	-508.82	920.61	1051.52	1051.86	118.93	.66
8187.00	1.20	101.10	8085.98	-509.11	921.48	1052.41	1052.76	118.92	.67
8239.00	1.30	98.90	8137.97	-509.30	922.59	1053.47	1053.83	118.90	.21

**Projection to Bit**

8297.00	1.50	95.60	8195.95	-509.48	924.00	1054.78	1055.15	118.87	.37
---------	------	-------	---------	---------	--------	---------	---------	--------	-----