

# **EXTRACTION OIL & GAS**

**WELD COUNTY, COLORADO (NAD 83)**

**SW SE SEC 36 T6N R66W 6th P.M.**

**CS-BITTERSWEET 3-1-13**

**ORIGINAL WELLBORE**

**02 November, 2015**

**Plan: PROPOSAL #2**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SW SE SEC 36 T6N R66W 6th P.M.  
Well: CS-BITTERSWEET 3-1-13  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS

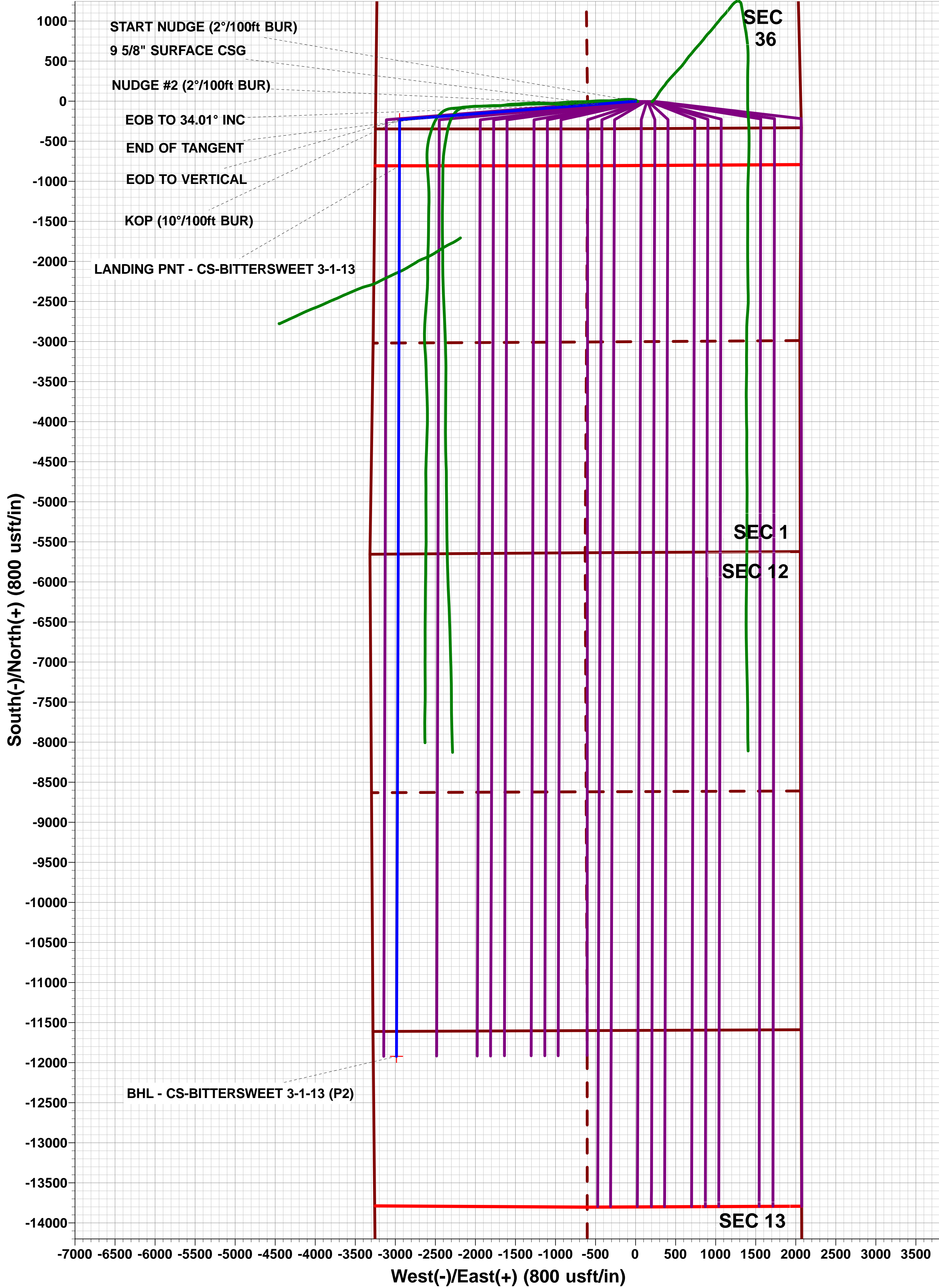
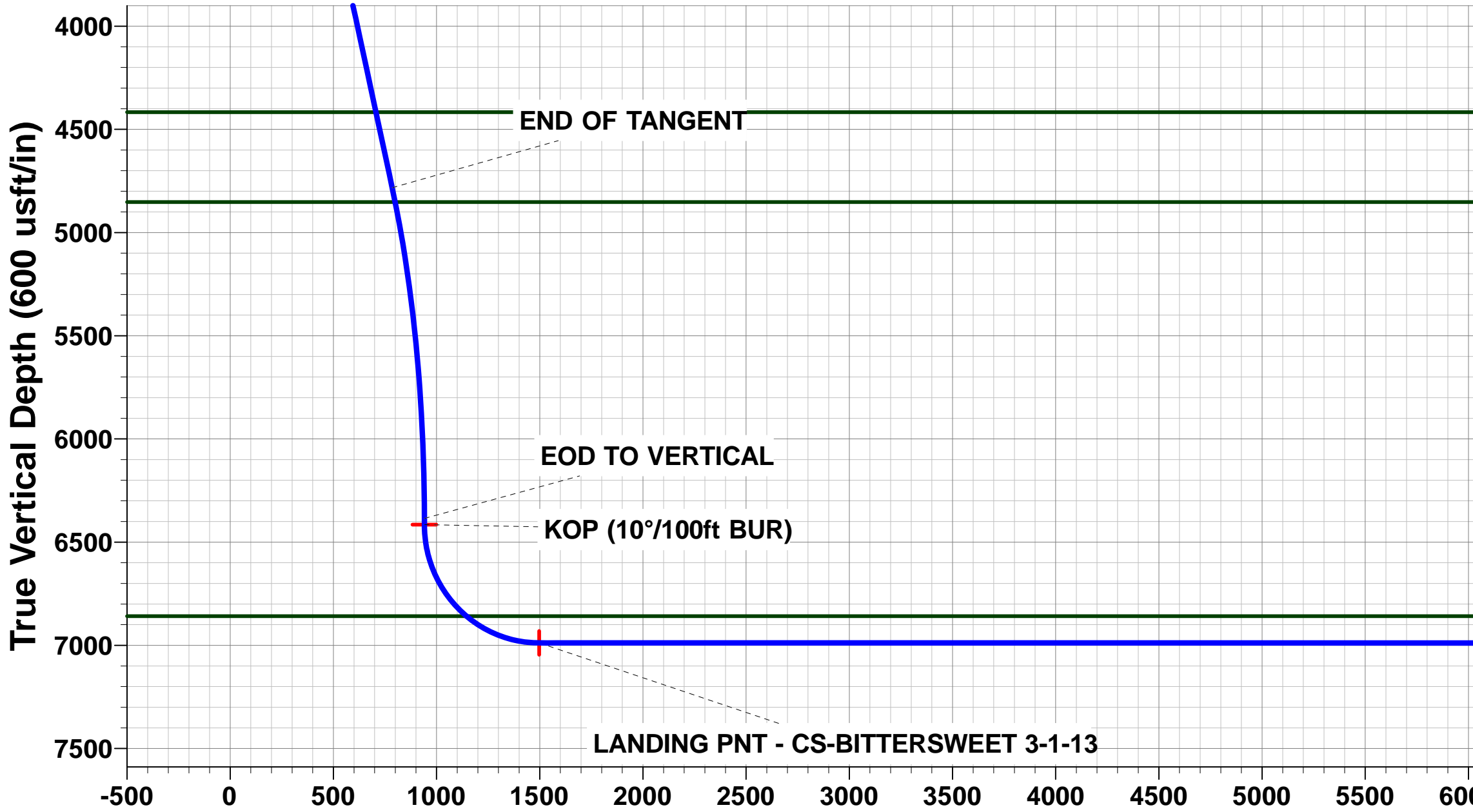
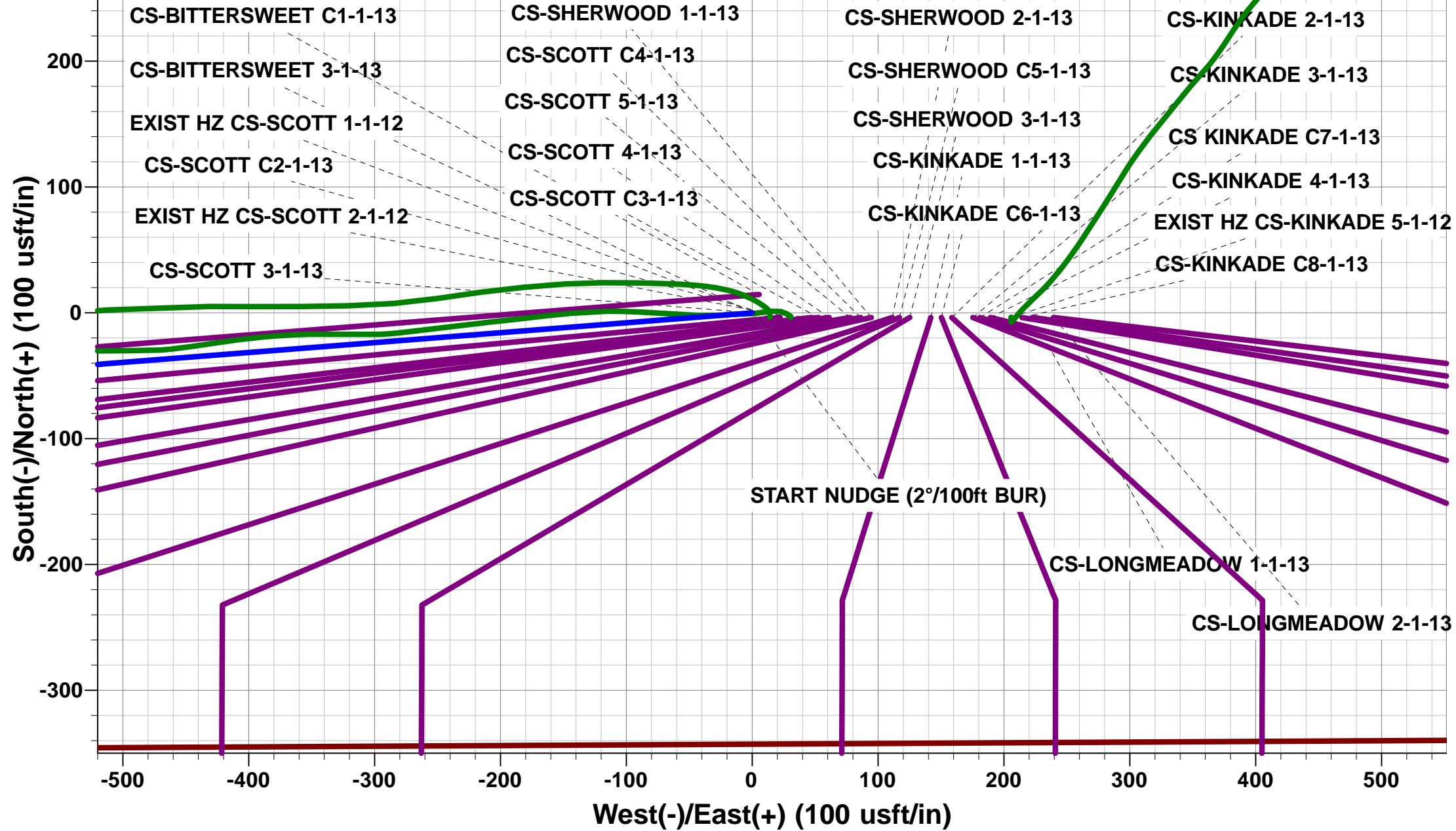
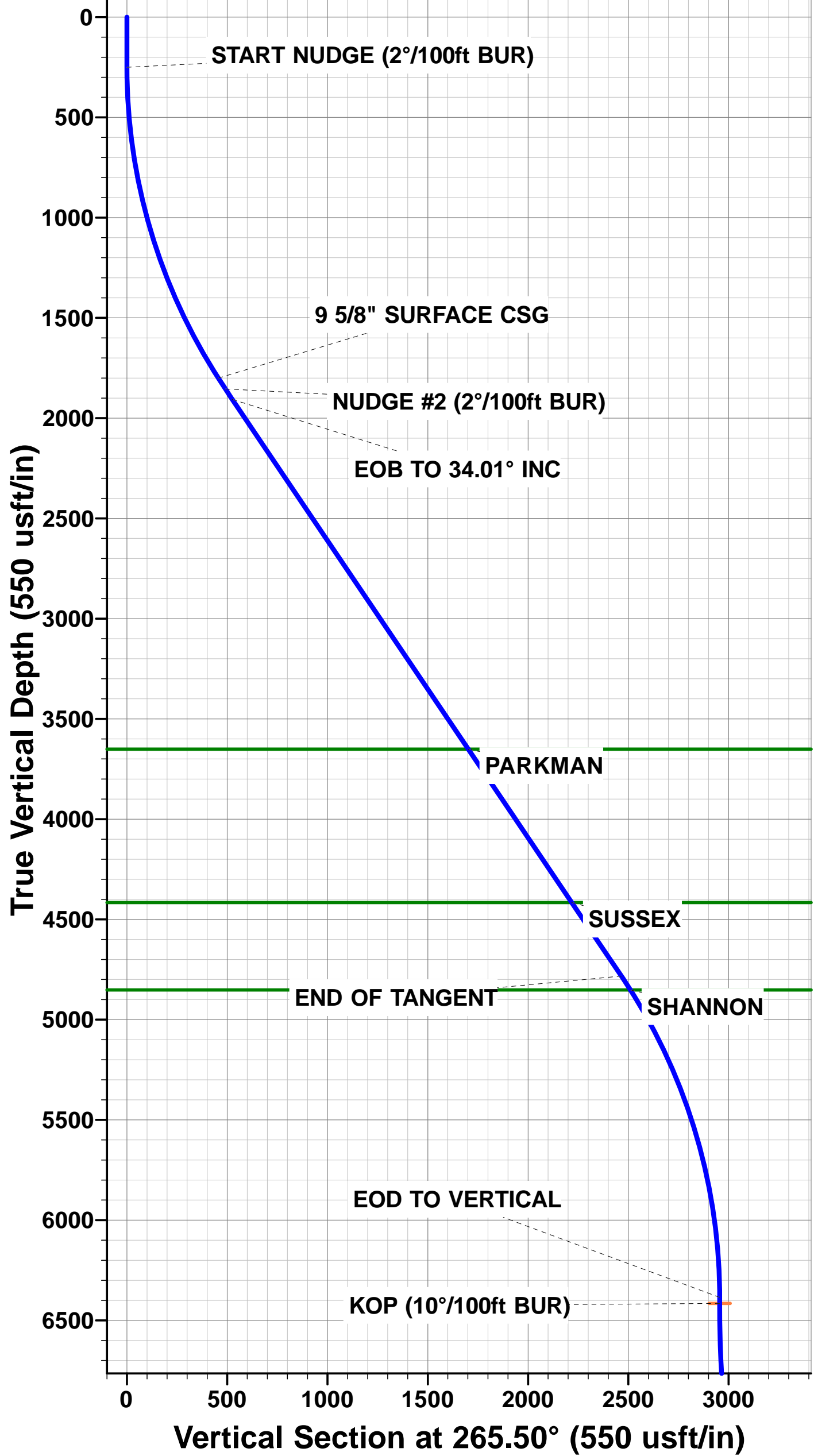
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
250.0	250.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1800.0	1887.8	32.76	265.50	-35.7	-454.1	145.0	455.5	9 5/8" SURFACE CSG
1854.7	1952.8	32.76	265.50	-38.5	-489.2	156.2	490.7	NUDGE #2 (2°/100ft BUR)
1907.0	2015.4	34.01	265.50	-41.2	-523.6	167.2	525.2	EOB TO 34.01° INC
4782.6	5484.4	34.01	265.50	-193.5	-2457.8	784.8	2465.4	END OF TANGENT
6384.9	7184.8	0.00	0.00	-231.9	-2946.3	940.8	2955.4	EOD TO VERTICAL
6414.9	7214.8	0.00	0.00	-231.9	-2946.3	940.8	2955.4	KOP (10°/100ft BUR)
6988.0	8115.0	90.00	180.17	-804.9	-2948.0	1497.1	3528.5	LANDING PNT - CS-BITTERSWEET 3-1-13
6988.0	19230.2	90.00	180.22	-11920.1	-2985.5	12288.3	14643.7	BHL - CS-BITTERSWEET 3-1-13 (P2)

PROPOSED LOCAL COORDINATES:

SHL: 341ft FSL & 2063ft FEL Sec 36  
LANDING PNT: 460ft FNL & 303ft FWL Sec 1  
BHL: 310ft FNL & 288ft FWL Sec 13

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CS-BITTERSWEET 3-1-13	6414.9	-231.9	-2946.3	40.437743	-104.733864
BHL - CS-BITTERSWEET 3-1-13 (P2)	6988.0	-11920.1	-2985.5	40.405660	-104.734000
LANDING PNT - CS-BITTERSWEET 3-1-13	6988.0	-804.9	-2948.0	40.436170	-104.733870



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET 3-1-13
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Site:</b>	SW SE SEC 36 T6N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CS-BITTERSWEET 3-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	SW SE SEC 36 T6N R66W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,403,485.52 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,216,213.28 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.438370
		<b>Longitude:</b>	-104.723230
		<b>Grid Convergence:</b>	0.50 °

<b>Well</b>	CS-BITTERSWEET 3-1-13		
<b>Well Position</b>	<b>+N/-S</b>	3.6 usft	<b>Northing:</b>
	<b>+E/-W</b>	-13.9 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	23/06/2015	8.40	66.94	52,644

<b>Design</b>	PROPOSAL #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	6,988.0	0.0	0.0	194.06

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,681.0	0.0	0.0	0.00	0.00	0.00	0.00	
250.0	0.00	0.00	250.0	-4,431.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,887.8	32.76	265.50	1,800.0	-2,881.0	-35.7	-454.1	2.00	2.00	0.00	265.50	
1,952.8	32.76	265.50	1,854.7	-2,826.3	-38.5	-489.2	0.00	0.00	0.00	0.00	
2,015.4	34.01	265.50	1,907.0	-2,774.0	-41.2	-523.6	2.00	2.00	0.00	0.00	
5,484.4	34.01	265.50	4,782.6	101.6	-193.5	-2,457.8	0.00	0.00	0.00	0.00	
7,184.8	0.00	0.00	6,384.9	1,703.9	-231.9	-2,946.3	2.00	-2.00	0.00	180.00	
7,214.8	0.00	0.00	6,414.9	1,733.9	-231.9	-2,946.3	0.00	0.00	0.00	0.00	KOP - CS-BITTERSWEET
8,115.0	90.00	180.17	6,988.0	2,307.0	-804.9	-2,948.0	10.00	10.00	-19.98	180.17	LANDING PNT - CS-BITTERSWEET
19,230.2	90.00	180.22	6,988.0	2,307.0	-11,920.1	-2,985.5	0.00	0.00	0.00	79.92	BHL - CS-BITTERSWEET

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET 3-1-13
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Site:</b>	SW SE SEC 36 T6N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CS-BITTERSWEET 3-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	4,681.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,581.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,481.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
<b>250.0</b>	<b>0.00</b>	<b>0.00</b>	<b>250.0</b>	<b>4,431.00</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
300.0	1.00	265.50	300.0	4,381.00	0.0	-0.4	0.1	2.00	2.00	0.00
400.0	3.00	265.50	399.9	4,281.07	-0.3	-3.9	1.2	2.00	2.00	0.00
500.0	5.00	265.50	499.7	4,181.32	-0.9	-10.9	3.5	2.00	2.00	0.00
600.0	7.00	265.50	599.1	4,081.87	-1.7	-21.3	6.8	2.00	2.00	0.00
700.0	9.00	265.50	698.2	3,982.85	-2.8	-35.2	11.2	2.00	2.00	0.00
800.0	11.00	265.50	796.6	3,884.37	-4.1	-52.5	16.8	2.00	2.00	0.00
900.0	13.00	265.50	894.4	3,786.56	-5.8	-73.2	23.4	2.00	2.00	0.00
1,000.0	15.00	265.50	991.5	3,689.54	-7.7	-97.3	31.1	2.00	2.00	0.00
1,100.0	17.00	265.50	1,087.6	3,593.42	-9.8	-124.8	39.8	2.00	2.00	0.00
1,200.0	19.00	265.50	1,182.7	3,498.32	-12.2	-155.6	49.7	2.00	2.00	0.00
1,300.0	21.00	265.50	1,276.6	3,404.35	-14.9	-189.7	60.6	2.00	2.00	0.00
1,400.0	23.00	265.50	1,369.4	3,311.64	-17.9	-227.0	72.5	2.00	2.00	0.00
1,500.0	25.00	265.50	1,460.7	3,220.29	-21.1	-267.6	85.4	2.00	2.00	0.00
1,600.0	27.00	265.50	1,550.6	3,130.41	-24.5	-311.3	99.4	2.00	2.00	0.00
1,700.0	29.00	265.50	1,638.9	3,042.12	-28.2	-358.1	114.3	2.00	2.00	0.00
1,800.0	31.00	265.50	1,725.5	2,955.52	-32.1	-407.9	130.2	2.00	2.00	0.00
<b>9 5/8" SURFACE CSG</b>										
<b>1,887.8</b>	<b>32.76</b>	<b>265.50</b>	<b>1,800.0</b>	<b>2,881.00</b>	<b>-35.7</b>	<b>-454.1</b>	<b>145.0</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>
1,900.0	32.76	265.50	1,810.3	2,870.71	-36.3	-460.7	147.1	0.00	0.00	0.00
<b>NUDGE #2 (2°/100ft BUR)</b>										
<b>1,952.8</b>	<b>32.76</b>	<b>265.50</b>	<b>1,854.7</b>	<b>2,826.34</b>	<b>-38.5</b>	<b>-489.2</b>	<b>156.2</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
2,000.0	33.70	265.50	1,894.2	2,786.82	-40.5	-515.0	164.4	2.00	2.00	0.00
<b>EOB TO 34.01° INC</b>										
<b>2,015.4</b>	<b>34.01</b>	<b>265.50</b>	<b>1,907.0</b>	<b>2,774.02</b>	<b>-41.2</b>	<b>-523.6</b>	<b>167.2</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>
2,100.0	34.01	265.50	1,977.1	2,703.90	-44.9	-570.7	182.2	0.00	0.00	0.00
2,200.0	34.01	265.50	2,060.0	2,621.01	-49.3	-626.5	200.0	0.00	0.00	0.00
2,300.0	34.01	265.50	2,142.9	2,538.11	-53.7	-682.2	217.8	0.00	0.00	0.00
2,400.0	34.01	265.50	2,225.8	2,455.22	-58.1	-738.0	235.6	0.00	0.00	0.00
2,500.0	34.01	265.50	2,308.7	2,372.32	-62.5	-793.8	253.4	0.00	0.00	0.00
2,600.0	34.01	265.50	2,391.6	2,289.43	-66.9	-849.5	271.3	0.00	0.00	0.00
2,700.0	34.01	265.50	2,474.5	2,206.53	-71.3	-905.3	289.1	0.00	0.00	0.00
2,800.0	34.01	265.50	2,557.4	2,123.64	-75.6	-961.0	306.9	0.00	0.00	0.00
2,900.0	34.01	265.50	2,640.3	2,040.74	-80.0	-1,016.8	324.7	0.00	0.00	0.00
3,000.0	34.01	265.50	2,723.2	1,957.84	-84.4	-1,072.5	342.5	0.00	0.00	0.00
3,100.0	34.01	265.50	2,806.1	1,874.95	-88.8	-1,128.3	360.3	0.00	0.00	0.00
3,200.0	34.01	265.50	2,888.9	1,792.05	-93.2	-1,184.1	378.1	0.00	0.00	0.00
3,300.0	34.01	265.50	2,971.8	1,709.16	-97.6	-1,239.8	395.9	0.00	0.00	0.00
3,400.0	34.01	265.50	3,054.7	1,626.26	-102.0	-1,295.6	413.7	0.00	0.00	0.00
3,500.0	34.01	265.50	3,137.6	1,543.37	-106.4	-1,351.3	431.5	0.00	0.00	0.00
3,600.0	34.01	265.50	3,220.5	1,460.47	-110.7	-1,407.1	449.3	0.00	0.00	0.00
3,700.0	34.01	265.50	3,303.4	1,377.58	-115.1	-1,462.9	467.1	0.00	0.00	0.00
3,800.0	34.01	265.50	3,386.3	1,294.68	-119.5	-1,518.6	484.9	0.00	0.00	0.00
3,900.0	34.01	265.50	3,469.2	1,211.79	-123.9	-1,574.4	502.7	0.00	0.00	0.00
4,000.0	34.01	265.50	3,552.1	1,128.89	-128.3	-1,630.1	520.5	0.00	0.00	0.00
4,100.0	34.01	265.50	3,635.0	1,045.99	-132.7	-1,685.9	538.3	0.00	0.00	0.00
<b>PARKMAN</b>										
<b>4,119.3</b>	<b>34.01</b>	<b>265.50</b>	<b>3,651.0</b>	<b>1,030.00</b>	<b>-133.5</b>	<b>-1,696.7</b>	<b>541.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,200.0	34.01	265.50	3,717.9	963.10	-137.1	-1,741.7	556.1	0.00	0.00	0.00
4,300.0	34.01	265.50	3,800.8	880.20	-141.5	-1,797.4	573.9	0.00	0.00	0.00



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET 3-1-13
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<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Site:</b>	SW SE SEC 36 T6N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CS-BITTERSWEET 3-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.0	34.01	265.50	3,883.7	797.31	-145.9	-1,853.2	591.7	0.00	0.00	0.00
4,500.0	34.01	265.50	3,966.6	714.41	-150.2	-1,908.9	609.5	0.00	0.00	0.00
4,600.0	34.01	265.50	4,049.5	631.52	-154.6	-1,964.7	627.3	0.00	0.00	0.00
4,700.0	34.01	265.50	4,132.4	548.62	-159.0	-2,020.5	645.1	0.00	0.00	0.00
4,800.0	34.01	265.50	4,215.3	465.73	-163.4	-2,076.2	662.9	0.00	0.00	0.00
4,900.0	34.01	265.50	4,298.2	382.83	-167.8	-2,132.0	680.7	0.00	0.00	0.00
5,000.0	34.01	265.50	4,381.1	299.93	-172.2	-2,187.7	698.6	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>5,042.1</b>	<b>34.01</b>	<b>265.50</b>	<b>4,416.0</b>	<b>265.00</b>	<b>-174.0</b>	<b>-2,211.2</b>	<b>706.1</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,100.0	34.01	265.50	4,464.0	217.04	-176.6	-2,243.5	716.4	0.00	0.00	0.00
5,200.0	34.01	265.50	4,546.9	134.14	-181.0	-2,299.2	734.2	0.00	0.00	0.00
5,300.0	34.01	265.50	4,629.8	51.25	-185.4	-2,355.0	752.0	0.00	0.00	0.00
5,400.0	34.01	265.50	4,712.6	-31.65	-189.7	-2,410.8	769.8	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,484.4</b>	<b>34.01</b>	<b>265.50</b>	<b>4,782.6</b>	<b>-101.58</b>	<b>-193.5</b>	<b>-2,457.8</b>	<b>784.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,500.0	33.70	265.50	4,795.6	-114.57	-194.1	-2,466.5	787.6	2.00	-2.00	0.00
<b>SHANNON</b>										
<b>5,567.3</b>	<b>32.35</b>	<b>265.50</b>	<b>4,852.0</b>	<b>-171.00</b>	<b>-197.0</b>	<b>-2,503.1</b>	<b>799.2</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,600.0	31.70	265.50	4,879.7	-198.72	-198.4	-2,520.3	804.8	2.00	-2.00	0.00
5,700.0	29.70	265.50	4,965.7	-284.70	-202.4	-2,571.2	821.0	2.00	-2.00	0.00
5,800.0	27.70	265.50	5,053.4	-372.42	-206.1	-2,619.1	836.3	2.00	-2.00	0.00
5,900.0	25.70	265.50	5,142.8	-461.75	-209.7	-2,663.9	850.6	2.00	-2.00	0.00
6,000.0	23.70	265.50	5,233.6	-552.60	-212.9	-2,705.5	863.9	2.00	-2.00	0.00
6,100.0	21.70	265.50	5,325.9	-644.85	-216.0	-2,744.0	876.2	2.00	-2.00	0.00
6,200.0	19.70	265.50	5,419.4	-738.40	-218.7	-2,779.2	887.4	2.00	-2.00	0.00
6,300.0	17.70	265.50	5,514.1	-833.12	-221.3	-2,811.2	897.6	2.00	-2.00	0.00
6,400.0	15.70	265.50	5,609.9	-928.89	-223.5	-2,839.8	906.8	2.00	-2.00	0.00
6,500.0	13.70	265.50	5,706.6	-1,025.62	-225.5	-2,865.1	914.8	2.00	-2.00	0.00
6,600.0	11.70	265.50	5,804.2	-1,123.17	-227.2	-2,887.0	921.8	2.00	-2.00	0.00
6,700.0	9.70	265.50	5,902.4	-1,221.43	-228.7	-2,905.5	927.7	2.00	-2.00	0.00
6,800.0	7.70	265.50	6,001.3	-1,320.27	-229.9	-2,920.6	932.6	2.00	-2.00	0.00
6,900.0	5.70	265.50	6,100.6	-1,419.58	-230.8	-2,932.2	936.3	2.00	-2.00	0.00
7,000.0	3.70	265.50	6,200.2	-1,519.24	-231.4	-2,940.4	938.9	2.00	-2.00	0.00
7,100.0	1.70	265.50	6,300.1	-1,619.13	-231.8	-2,945.0	940.4	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>7,184.8</b>	<b>0.00</b>	<b>0.00</b>	<b>6,384.9</b>	<b>-1,703.90</b>	<b>-231.9</b>	<b>-2,946.3</b>	<b>940.8</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
7,200.0	0.00	0.00	6,400.1	-1,719.12	-231.9	-2,946.3	940.8	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>7,214.8</b>	<b>0.00</b>	<b>0.00</b>	<b>6,414.9</b>	<b>-1,733.90</b>	<b>-231.9</b>	<b>-2,946.3</b>	<b>940.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
7,300.0	8.52	180.17	6,499.8	-1,818.80	-238.2	-2,946.3	946.9	10.00	10.00	0.00
7,400.0	18.52	180.17	6,596.9	-1,915.91	-261.6	-2,946.4	969.6	10.00	10.00	0.00
7,500.0	28.51	180.17	6,688.5	-2,007.49	-301.4	-2,946.5	1,008.3	10.00	10.00	0.00
7,600.0	38.51	180.17	6,771.8	-2,090.76	-356.6	-2,946.7	1,061.8	10.00	10.00	0.00
7,700.0	48.51	180.17	6,844.2	-2,163.19	-425.3	-2,946.9	1,128.5	10.00	10.00	0.00
<b>NIOBRARA</b>										
<b>7,721.3</b>	<b>50.64</b>	<b>180.17</b>	<b>6,858.0</b>	<b>-2,177.00</b>	<b>-441.5</b>	<b>-2,946.9</b>	<b>1,144.3</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,800.0	58.51	180.17	6,903.6	-2,222.58	-505.6	-2,947.1	1,206.5	10.00	10.00	0.00
7,900.0	68.50	180.17	6,948.1	-2,267.14	-595.0	-2,947.4	1,293.2	10.00	10.00	0.00
8,000.0	78.50	180.17	6,976.5	-2,295.50	-690.8	-2,947.6	1,386.2	10.00	10.00	0.00
8,100.0	88.50	180.17	6,987.8	-2,306.80	-790.0	-2,947.9	1,482.5	10.00	10.00	0.00
<b>LANDING PNT - CS-BITTERSWEET 3-1-13</b>										
<b>8,115.0</b>	<b>90.00</b>	<b>180.17</b>	<b>6,988.0</b>	<b>-2,307.00</b>	<b>-804.9</b>	<b>-2,948.0</b>	<b>1,497.1</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
8,200.0	90.00	180.17	6,988.0	-2,307.01	-890.0	-2,948.2	1,579.6	0.00	0.00	0.00

## Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET 3-1-13
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Site:</b>	SW SE SEC 36 T6N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CS-BITTERSWEET 3-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.0	90.00	180.17	6,988.0	-2,307.02	-990.0	-2,948.5	1,676.7	0.00	0.00	0.00
8,400.0	90.00	180.17	6,988.0	-2,307.02	-1,090.0	-2,948.8	1,773.8	0.00	0.00	0.00
8,500.0	90.00	180.17	6,988.0	-2,307.03	-1,190.0	-2,949.1	1,870.8	0.00	0.00	0.00
8,600.0	90.00	180.17	6,988.0	-2,307.04	-1,290.0	-2,949.4	1,967.9	0.00	0.00	0.00
8,700.0	90.00	180.17	6,988.0	-2,307.05	-1,390.0	-2,949.7	2,065.0	0.00	0.00	0.00
8,800.0	90.00	180.17	6,988.1	-2,307.05	-1,490.0	-2,950.0	2,162.1	0.00	0.00	0.00
8,900.0	90.00	180.17	6,988.1	-2,307.06	-1,590.0	-2,950.3	2,259.1	0.00	0.00	0.00
9,000.0	90.00	180.17	6,988.1	-2,307.07	-1,690.0	-2,950.6	2,356.2	0.00	0.00	0.00
9,100.0	90.00	180.17	6,988.1	-2,307.08	-1,790.0	-2,950.9	2,453.3	0.00	0.00	0.00
9,200.0	90.00	180.17	6,988.1	-2,307.08	-1,890.0	-2,951.2	2,550.4	0.00	0.00	0.00
9,300.0	90.00	180.17	6,988.1	-2,307.09	-1,990.0	-2,951.5	2,647.4	0.00	0.00	0.00
9,400.0	90.00	180.17	6,988.1	-2,307.10	-2,090.0	-2,951.8	2,744.5	0.00	0.00	0.00
9,500.0	90.00	180.17	6,988.1	-2,307.10	-2,190.0	-2,952.1	2,841.6	0.00	0.00	0.00
9,600.0	90.00	180.17	6,988.1	-2,307.11	-2,290.0	-2,952.4	2,938.7	0.00	0.00	0.00
9,700.0	90.00	180.17	6,988.1	-2,307.11	-2,390.0	-2,952.7	3,035.7	0.00	0.00	0.00
9,800.0	90.00	180.17	6,988.1	-2,307.12	-2,490.0	-2,953.0	3,132.8	0.00	0.00	0.00
9,900.0	90.00	180.17	6,988.1	-2,307.13	-2,590.0	-2,953.3	3,229.9	0.00	0.00	0.00
10,000.0	90.00	180.18	6,988.1	-2,307.13	-2,690.0	-2,953.6	3,327.0	0.00	0.00	0.00
10,100.0	90.00	180.18	6,988.1	-2,307.14	-2,790.0	-2,953.9	3,424.0	0.00	0.00	0.00
10,200.0	90.00	180.18	6,988.1	-2,307.14	-2,890.0	-2,954.2	3,521.1	0.00	0.00	0.00
10,300.0	90.00	180.18	6,988.1	-2,307.15	-2,990.0	-2,954.5	3,618.2	0.00	0.00	0.00
10,400.0	90.00	180.18	6,988.2	-2,307.15	-3,090.0	-2,954.8	3,715.3	0.00	0.00	0.00
10,500.0	90.00	180.18	6,988.2	-2,307.16	-3,190.0	-2,955.1	3,812.4	0.00	0.00	0.00
10,600.0	90.00	180.18	6,988.2	-2,307.16	-3,290.0	-2,955.4	3,909.4	0.00	0.00	0.00
10,700.0	90.00	180.18	6,988.2	-2,307.17	-3,390.0	-2,955.7	4,006.5	0.00	0.00	0.00
10,800.0	90.00	180.18	6,988.2	-2,307.17	-3,490.0	-2,956.1	4,103.6	0.00	0.00	0.00
10,900.0	90.00	180.18	6,988.2	-2,307.18	-3,590.0	-2,956.4	4,200.7	0.00	0.00	0.00
11,000.0	90.00	180.18	6,988.2	-2,307.18	-3,690.0	-2,956.7	4,297.8	0.00	0.00	0.00
11,100.0	90.00	180.18	6,988.2	-2,307.18	-3,790.0	-2,957.0	4,394.8	0.00	0.00	0.00
11,200.0	90.00	180.18	6,988.2	-2,307.19	-3,890.0	-2,957.3	4,491.9	0.00	0.00	0.00
11,300.0	90.00	180.18	6,988.2	-2,307.19	-3,990.0	-2,957.6	4,589.0	0.00	0.00	0.00
11,400.0	90.00	180.18	6,988.2	-2,307.20	-4,090.0	-2,958.0	4,686.1	0.00	0.00	0.00
11,500.0	90.00	180.18	6,988.2	-2,307.20	-4,190.0	-2,958.3	4,783.2	0.00	0.00	0.00
11,600.0	90.00	180.18	6,988.2	-2,307.20	-4,290.0	-2,958.6	4,880.2	0.00	0.00	0.00
11,700.0	90.00	180.18	6,988.2	-2,307.21	-4,390.0	-2,958.9	4,977.3	0.00	0.00	0.00
11,800.0	90.00	180.18	6,988.2	-2,307.21	-4,490.0	-2,959.2	5,074.4	0.00	0.00	0.00
11,900.0	90.00	180.18	6,988.2	-2,307.21	-4,590.0	-2,959.6	5,171.5	0.00	0.00	0.00
12,000.0	90.00	180.19	6,988.2	-2,307.21	-4,690.0	-2,959.9	5,268.6	0.00	0.00	0.00
12,100.0	90.00	180.19	6,988.2	-2,307.22	-4,790.0	-2,960.2	5,365.6	0.00	0.00	0.00
12,200.0	90.00	180.19	6,988.2	-2,307.22	-4,890.0	-2,960.5	5,462.7	0.00	0.00	0.00
12,300.0	90.00	180.19	6,988.2	-2,307.22	-4,990.0	-2,960.9	5,559.8	0.00	0.00	0.00
12,400.0	90.00	180.19	6,988.2	-2,307.22	-5,090.0	-2,961.2	5,656.9	0.00	0.00	0.00
12,500.0	90.00	180.19	6,988.2	-2,307.22	-5,190.0	-2,961.5	5,754.0	0.00	0.00	0.00
12,600.0	90.00	180.19	6,988.2	-2,307.23	-5,290.0	-2,961.8	5,851.1	0.00	0.00	0.00
12,700.0	90.00	180.19	6,988.2	-2,307.23	-5,390.0	-2,962.2	5,948.1	0.00	0.00	0.00
12,800.0	90.00	180.19	6,988.2	-2,307.23	-5,490.0	-2,962.5	6,045.2	0.00	0.00	0.00
12,900.0	90.00	180.19	6,988.2	-2,307.23	-5,590.0	-2,962.8	6,142.3	0.00	0.00	0.00
13,000.0	90.00	180.19	6,988.2	-2,307.23	-5,690.0	-2,963.2	6,239.4	0.00	0.00	0.00
13,100.0	90.00	180.19	6,988.2	-2,307.23	-5,790.0	-2,963.5	6,336.5	0.00	0.00	0.00
13,200.0	90.00	180.19	6,988.2	-2,307.23	-5,890.0	-2,963.8	6,433.6	0.00	0.00	0.00
13,300.0	90.00	180.19	6,988.2	-2,307.23	-5,990.0	-2,964.2	6,530.6	0.00	0.00	0.00
13,400.0	90.00	180.19	6,988.2	-2,307.23	-6,090.0	-2,964.5	6,627.7	0.00	0.00	0.00
13,500.0	90.00	180.19	6,988.2	-2,307.23	-6,190.0	-2,964.8	6,724.8	0.00	0.00	0.00
13,600.0	90.00	180.19	6,988.2	-2,307.23	-6,290.0	-2,965.2	6,821.9	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET 3-1-13
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Site:</b>	SW SE SEC 36 T6N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CS-BITTERSWEET 3-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,700.0	90.00	180.19	6,988.2	-2,307.24	-6,390.0	-2,965.5	6,919.0	0.00	0.00	0.00
13,800.0	90.00	180.19	6,988.2	-2,307.23	-6,490.0	-2,965.8	7,016.1	0.00	0.00	0.00
13,900.0	90.00	180.19	6,988.2	-2,307.23	-6,590.0	-2,966.2	7,113.2	0.00	0.00	0.00
14,000.0	90.00	180.20	6,988.2	-2,307.23	-6,690.0	-2,966.5	7,210.2	0.00	0.00	0.00
14,100.0	90.00	180.20	6,988.2	-2,307.23	-6,790.0	-2,966.9	7,307.3	0.00	0.00	0.00
14,200.0	90.00	180.20	6,988.2	-2,307.23	-6,890.0	-2,967.2	7,404.4	0.00	0.00	0.00
14,300.0	90.00	180.20	6,988.2	-2,307.23	-6,990.0	-2,967.5	7,501.5	0.00	0.00	0.00
14,400.0	90.00	180.20	6,988.2	-2,307.23	-7,090.0	-2,967.9	7,598.6	0.00	0.00	0.00
14,500.0	90.00	180.20	6,988.2	-2,307.23	-7,190.0	-2,968.2	7,695.7	0.00	0.00	0.00
14,600.0	90.00	180.20	6,988.2	-2,307.23	-7,290.0	-2,968.6	7,792.8	0.00	0.00	0.00
14,700.0	90.00	180.20	6,988.2	-2,307.23	-7,390.0	-2,968.9	7,889.8	0.00	0.00	0.00
14,800.0	90.00	180.20	6,988.2	-2,307.23	-7,490.0	-2,969.3	7,986.9	0.00	0.00	0.00
14,900.0	90.00	180.20	6,988.2	-2,307.22	-7,590.0	-2,969.6	8,084.0	0.00	0.00	0.00
15,000.0	90.00	180.20	6,988.2	-2,307.22	-7,690.0	-2,970.0	8,181.1	0.00	0.00	0.00
15,100.0	90.00	180.20	6,988.2	-2,307.22	-7,790.0	-2,970.3	8,278.2	0.00	0.00	0.00
15,200.0	90.00	180.20	6,988.2	-2,307.22	-7,890.0	-2,970.7	8,375.3	0.00	0.00	0.00
15,300.0	90.00	180.20	6,988.2	-2,307.21	-7,990.0	-2,971.0	8,472.4	0.00	0.00	0.00
15,400.0	90.00	180.20	6,988.2	-2,307.21	-8,090.0	-2,971.4	8,569.5	0.00	0.00	0.00
15,500.0	90.00	180.20	6,988.2	-2,307.21	-8,190.0	-2,971.7	8,666.6	0.00	0.00	0.00
15,600.0	90.00	180.20	6,988.2	-2,307.21	-8,290.0	-2,972.1	8,763.6	0.00	0.00	0.00
15,700.0	90.00	180.20	6,988.2	-2,307.20	-8,390.0	-2,972.4	8,860.7	0.00	0.00	0.00
15,800.0	90.00	180.20	6,988.2	-2,307.20	-8,489.9	-2,972.8	8,957.8	0.00	0.00	0.00
15,900.0	90.00	180.20	6,988.2	-2,307.20	-8,589.9	-2,973.1	9,054.9	0.00	0.00	0.00
16,000.0	90.00	180.20	6,988.2	-2,307.19	-8,689.9	-2,973.5	9,152.0	0.00	0.00	0.00
16,100.0	90.00	180.21	6,988.2	-2,307.19	-8,789.9	-2,973.9	9,249.1	0.00	0.00	0.00
16,200.0	90.00	180.21	6,988.2	-2,307.19	-8,889.9	-2,974.2	9,346.2	0.00	0.00	0.00
16,300.0	90.00	180.21	6,988.2	-2,307.18	-8,989.9	-2,974.6	9,443.3	0.00	0.00	0.00
16,400.0	90.00	180.21	6,988.2	-2,307.18	-9,089.9	-2,974.9	9,540.4	0.00	0.00	0.00
16,500.0	90.00	180.21	6,988.2	-2,307.17	-9,189.9	-2,975.3	9,637.5	0.00	0.00	0.00
16,600.0	90.00	180.21	6,988.2	-2,307.17	-9,289.9	-2,975.7	9,734.5	0.00	0.00	0.00
16,700.0	90.00	180.21	6,988.2	-2,307.17	-9,389.9	-2,976.0	9,831.6	0.00	0.00	0.00
16,800.0	90.00	180.21	6,988.2	-2,307.16	-9,489.9	-2,976.4	9,928.7	0.00	0.00	0.00
16,900.0	90.00	180.21	6,988.2	-2,307.16	-9,589.9	-2,976.8	10,025.8	0.00	0.00	0.00
17,000.0	90.00	180.21	6,988.2	-2,307.15	-9,689.9	-2,977.1	10,122.9	0.00	0.00	0.00
17,100.0	90.00	180.21	6,988.1	-2,307.15	-9,789.9	-2,977.5	10,220.0	0.00	0.00	0.00
17,200.0	90.00	180.21	6,988.1	-2,307.14	-9,889.9	-2,977.9	10,317.1	0.00	0.00	0.00
17,300.0	90.00	180.21	6,988.1	-2,307.13	-9,989.9	-2,978.2	10,414.2	0.00	0.00	0.00
17,400.0	90.00	180.21	6,988.1	-2,307.13	-10,089.9	-2,978.6	10,511.3	0.00	0.00	0.00
17,500.0	90.00	180.21	6,988.1	-2,307.12	-10,189.9	-2,979.0	10,608.4	0.00	0.00	0.00
17,600.0	90.00	180.21	6,988.1	-2,307.12	-10,289.9	-2,979.3	10,705.5	0.00	0.00	0.00
17,700.0	90.00	180.21	6,988.1	-2,307.11	-10,389.9	-2,979.7	10,802.6	0.00	0.00	0.00
17,800.0	90.00	180.21	6,988.1	-2,307.11	-10,489.9	-2,980.1	10,899.7	0.00	0.00	0.00
17,900.0	90.00	180.21	6,988.1	-2,307.10	-10,589.9	-2,980.4	10,996.7	0.00	0.00	0.00
18,000.0	90.00	180.21	6,988.1	-2,307.09	-10,689.9	-2,980.8	11,093.8	0.00	0.00	0.00
18,100.0	90.00	180.22	6,988.1	-2,307.09	-10,789.9	-2,981.2	11,190.9	0.00	0.00	0.00
18,200.0	90.00	180.22	6,988.1	-2,307.08	-10,889.9	-2,981.6	11,288.0	0.00	0.00	0.00
18,300.0	90.00	180.22	6,988.1	-2,307.07	-10,989.9	-2,981.9	11,385.1	0.00	0.00	0.00
18,400.0	90.00	180.22	6,988.1	-2,307.06	-11,089.9	-2,982.3	11,482.2	0.00	0.00	0.00
18,500.0	90.00	180.22	6,988.1	-2,307.06	-11,189.9	-2,982.7	11,579.3	0.00	0.00	0.00
18,600.0	90.00	180.22	6,988.1	-2,307.05	-11,289.9	-2,983.1	11,676.4	0.00	0.00	0.00
18,700.0	90.00	180.22	6,988.0	-2,307.04	-11,389.9	-2,983.5	11,773.5	0.00	0.00	0.00
18,800.0	90.00	180.22	6,988.0	-2,307.03	-11,489.9	-2,983.8	11,870.6	0.00	0.00	0.00
18,900.0	90.00	180.22	6,988.0	-2,307.03	-11,589.9	-2,984.2	11,967.7	0.00	0.00	0.00
19,000.0	90.00	180.22	6,988.0	-2,307.02	-11,689.9	-2,984.6	12,064.8	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET 3-1-13
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4681.0usft (Original Well Elev)
<b>Site:</b>	SW SE SEC 36 T6N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CS-BITTERSWEET 3-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,100.0	90.00	180.22	6,988.0	-2,307.01	-11,789.9	-2,985.0	12,161.9	0.00	0.00	0.00
19,200.0	90.00	180.22	6,988.0	-2,307.00	-11,889.9	-2,985.4	12,259.0	0.00	0.00	0.00
<b>BHL - CS-BITTERSWEET 3-1-13 (P2)</b>										
<b>19,230.2</b>	<b>90.00</b>	<b>180.22</b>	<b>6,988.0</b>	<b>-2,307.00</b>	<b>-11,920.1</b>	<b>-2,985.5</b>	<b>12,288.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,119.3	3,651.0	PARKMAN				
5,042.1	4,416.0	SUSSEX				
5,567.3	4,852.0	SHANNON				
7,721.3	6,858.0	NIOBRARA				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.0	250.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,887.8	1,800.0	-35.7	-454.1	9 5/8" SURFACE CSG
1,952.8	1,854.7	-38.5	-489.2	NUDGE #2 (2°/100ft BUR)
2,015.4	1,907.0	-41.2	-523.6	EOB TO 34.01° INC
5,484.4	4,782.6	-193.5	-2,457.8	END OF TANGENT
7,184.8	6,384.9	-231.9	-2,946.3	EOD TO VERTICAL
7,214.8	6,414.9	-231.9	-2,946.3	KOP (10°/100ft BUR)
8,115.0	6,988.0	-804.9	-2,948.0	LANDING PNT - CS-BITTERSWEET 3-1-13
19,230.2	6,988.0	-11,920.1	-2,985.5	BHL - CS-BITTERSWEET 3-1-13 (P2)