

# **EXTRACTION OIL & GAS**

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

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

**CS-BITTERSWEET C1-1-13**

**ORIGINAL WELLBORE**

**29 November, 2016**

**Plan: PROPOSAL #3**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SW SE SEC 36 T6N R66W 6th P.M.  
Well: CS-BITTERSWEET C1-1-13  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #3

ANNOTATIONS

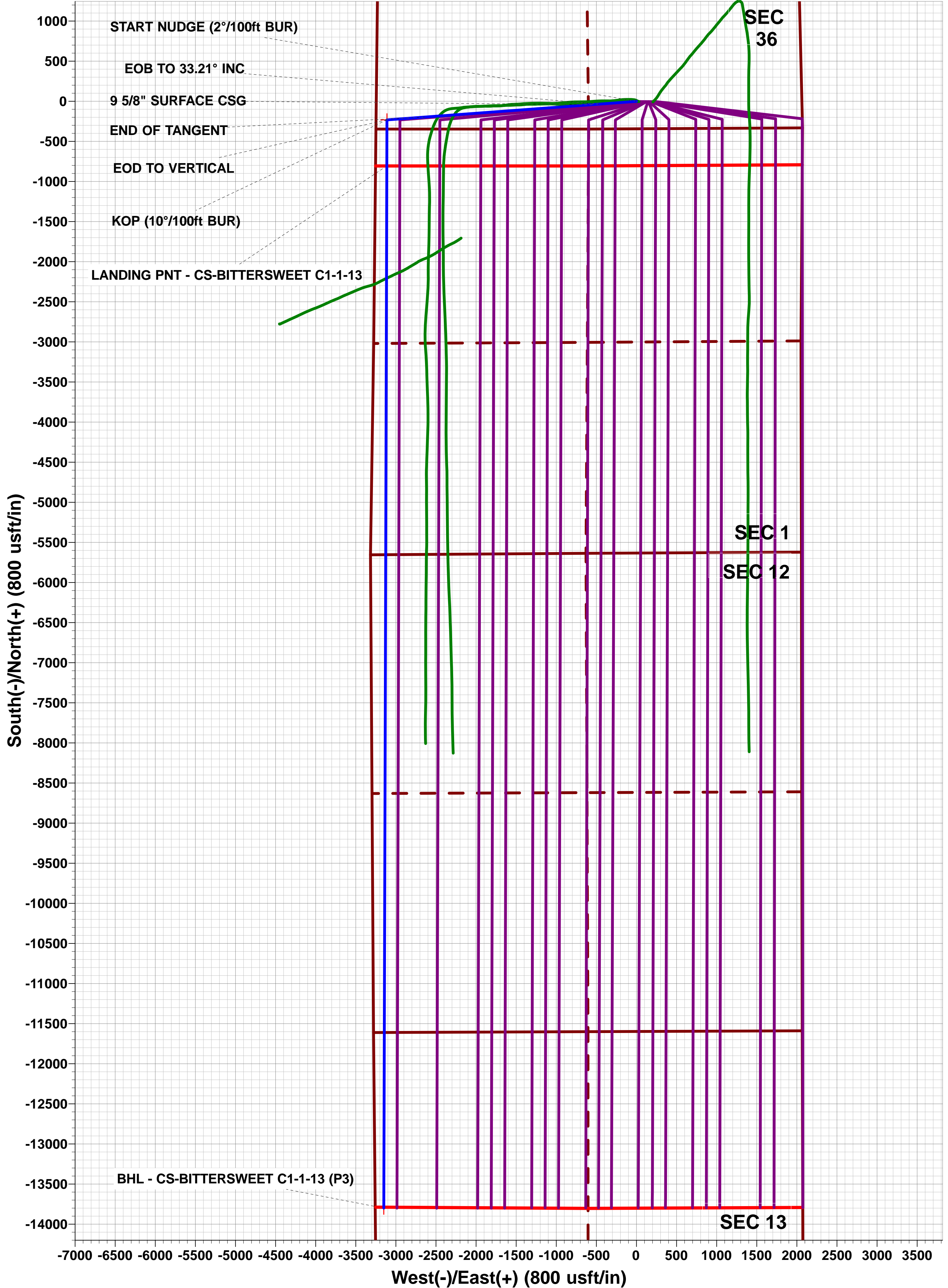
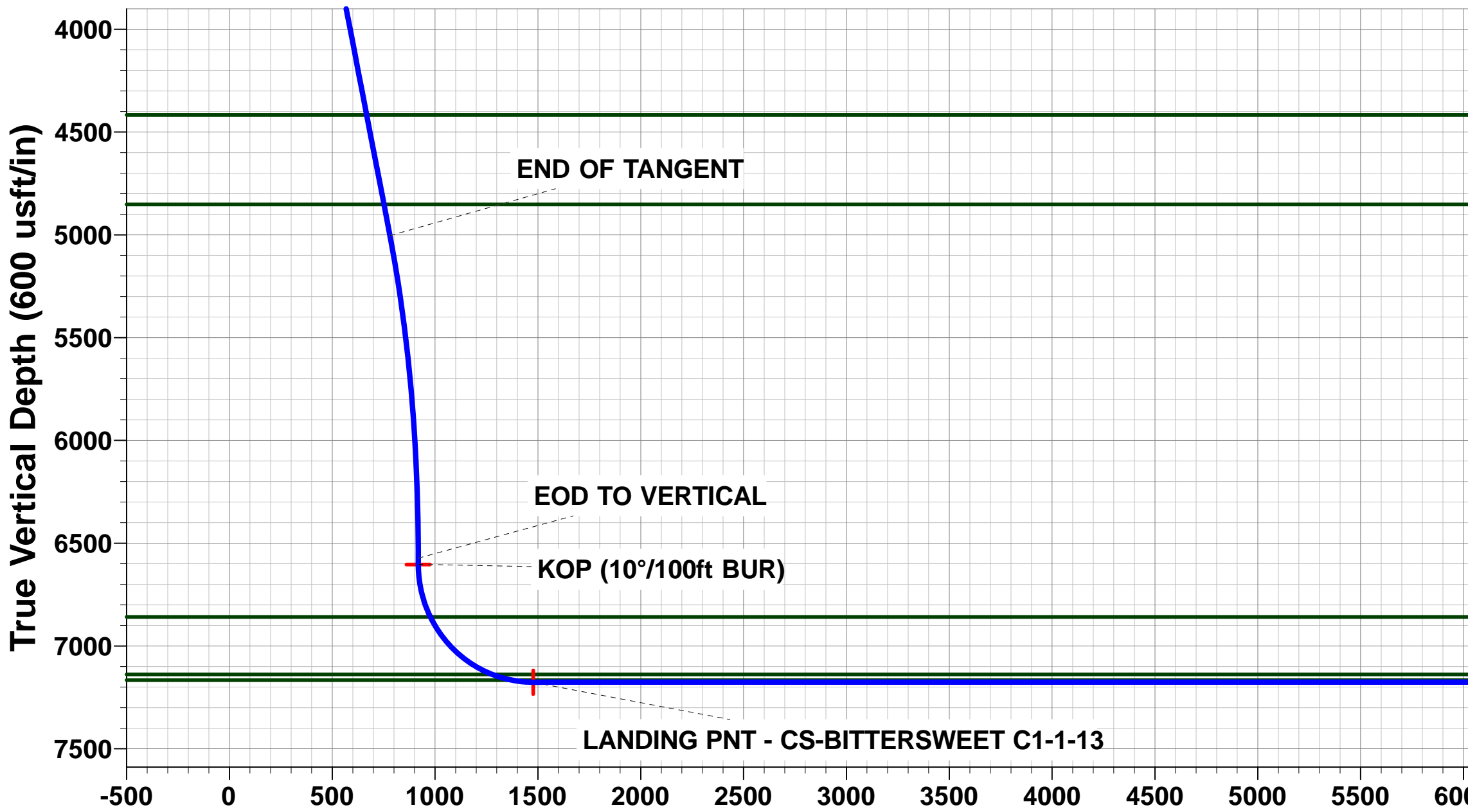
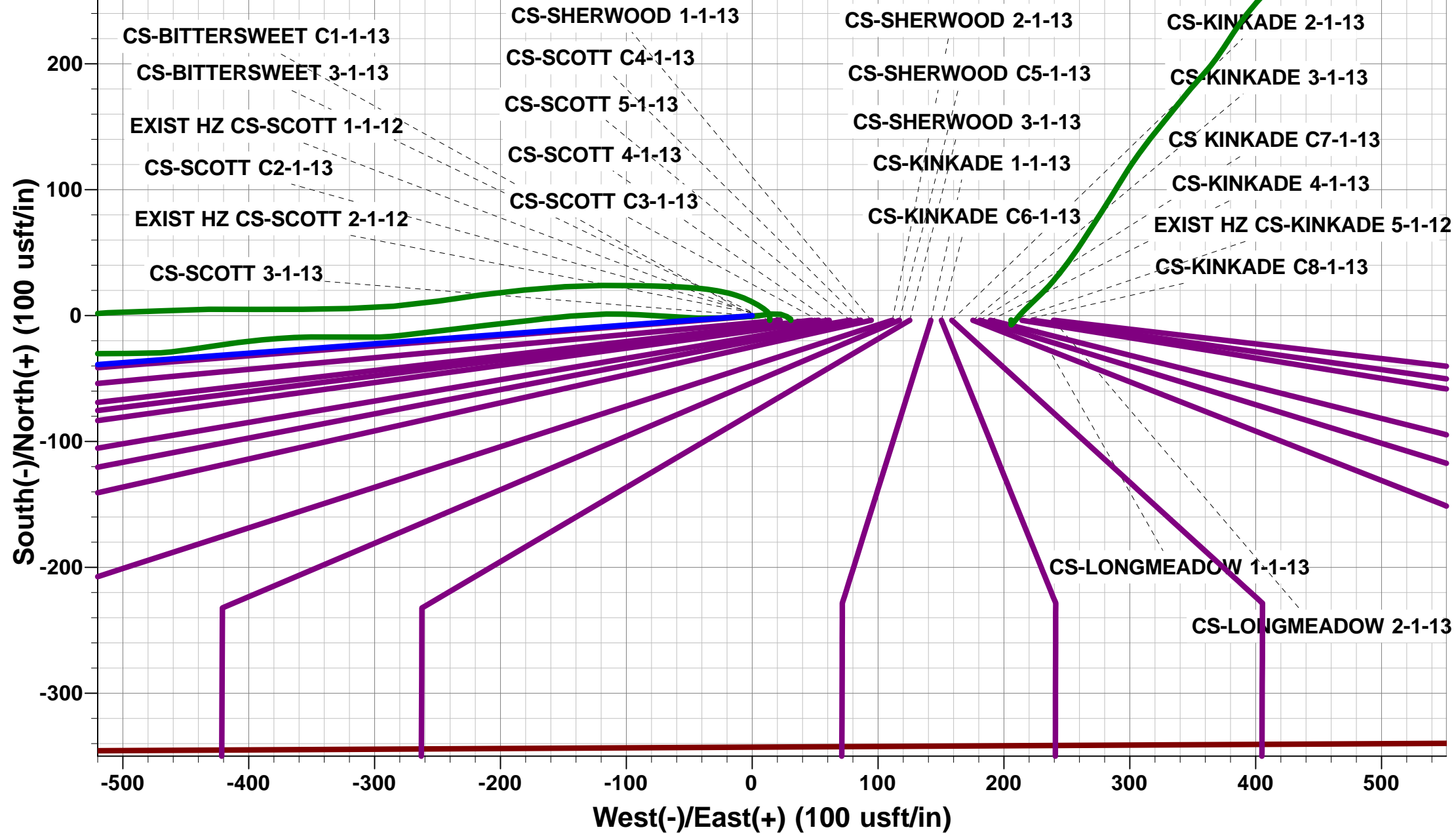
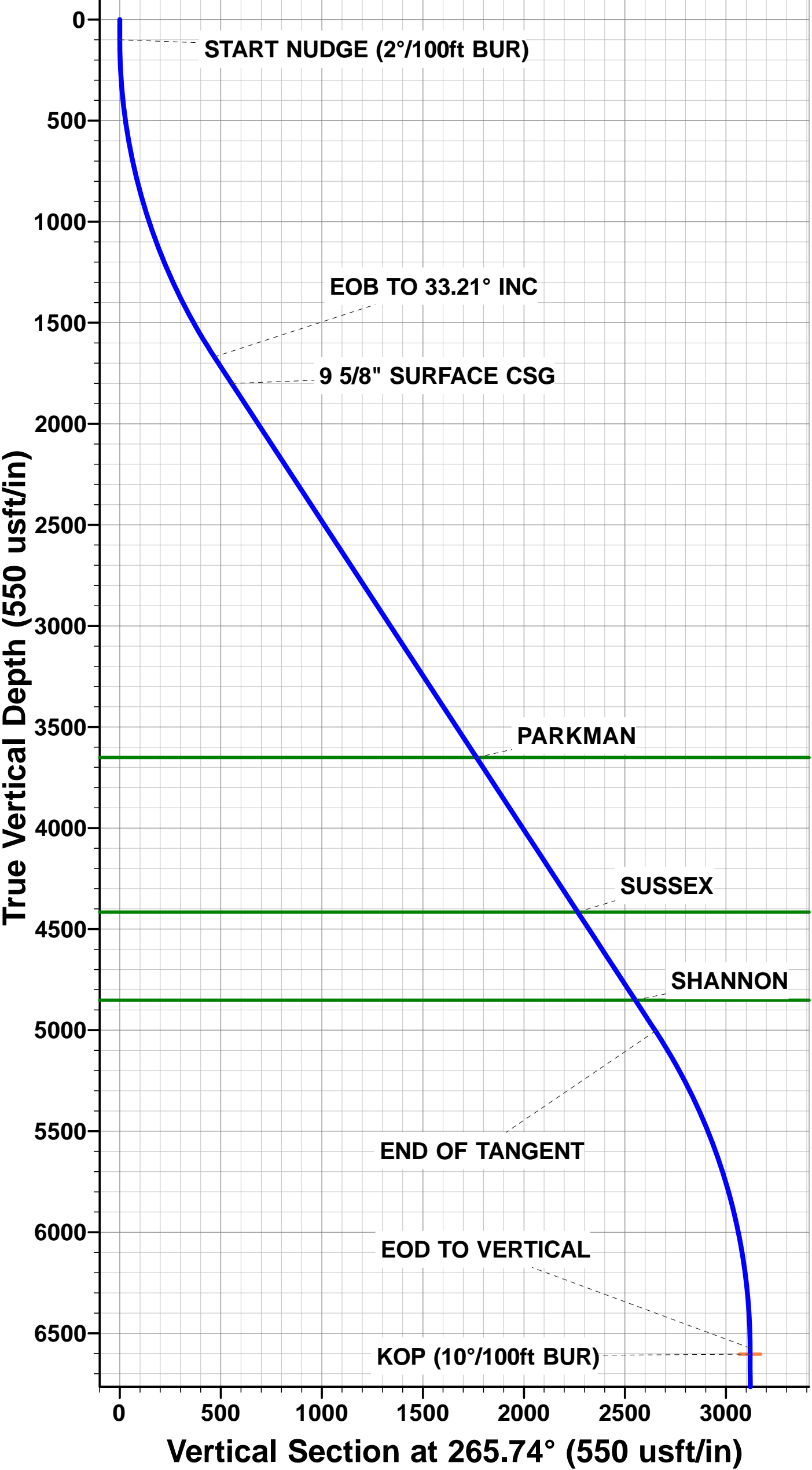
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
100.0	100.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1669.2	1760.6	33.21	265.74	-34.8	-466.7	137.8	468.0	EOB TO 33.21° INC
1800.0	1917.0	33.21	265.74	-41.2	-552.1	163.0	553.6	9 5/8" SURFACE CSG
5003.8	5746.4	33.21	265.74	-197.1	-2643.9	780.6	2651.2	END OF TANGENT
6573.0	7407.0	0.00	265.74	-231.9	-3110.5	918.3	3119.2	EOD TO VERTICAL
6603.0	7437.0	0.00	0.00	-231.9	-3110.5	918.3	3119.2	KOP (10°/100ft BUR)
7176.0	8337.1	90.00	180.17	-804.9	-3112.2	1477.4	3692.2	LANDING PNT - CS-BITTERSWEET C1-1-13
7175.9	21332.1	90.00	180.17	-13799.9	-3150.1	14154.9	16687.2	BHL - CS-BITTERSWEET C1-1-13 (P3)

PROPOSED LOCAL COORDINATES:

SHL: 341ft FSL & 2063ft FEL Sec 36  
LANDING PNT: 460ft FNL & 140ft FWL Sec 1  
BHL: 2191ft FNL & 108ft FWL Sec 13

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CS-BITTERSWEET C1-1-13	6603.0	-231.9	-3110.5	40.437743	-104.734454
BHL - CS-BITTERSWEET C1-1-13 (P3)	7176.0	-13799.9	-3150.0	40.400500	-104.734590
LANDING PNT - CS-BITTERSWEET C1-1-13	7176.0	-804.9	-3112.2	40.436170	-104.734460



Vertical Section at 192.86° (600 usft/in)

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET C1-1-13
<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 C1-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #3		

<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 C1-1-13		
<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 #3			
<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>
	7,176.0	0.0	0.0	192.86

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	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	
100.0	0.00	0.00	100.0	-4,581.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,760.6	33.21	265.74	1,669.2	-3,011.8	-34.8	-466.7	2.00	2.00	0.00	265.74	
5,746.4	33.21	265.74	5,003.8	322.8	-197.1	-2,643.8	0.00	0.00	0.00	0.00	
7,407.0	0.00	0.00	6,573.0	1,892.0	-231.9	-3,110.5	2.00	-2.00	0.00	180.00	
7,437.0	0.00	0.00	6,603.0	1,922.0	-231.9	-3,110.5	0.00	0.00	0.00	0.00	KOP - CS-BITTERSWEET
8,337.1	90.00	180.17	7,176.0	2,495.0	-804.9	-3,112.2	10.00	10.00	-19.98	180.17	LANDING PNT - CS-BITTERSWEET
21,332.1	90.00	180.17	7,176.0	2,495.0	-13,799.9	-3,150.0	0.00	0.00	0.00	0.00	BHL - CS-BITTERSWEET

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET C1-1-13
<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 C1-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #3		

## 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
<b>START NUDGE (2°/100ft BUR)</b>										
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	2.00	265.74	200.0	4,481.02	-0.1	-1.7	0.5	2.00	2.00	0.00
300.0	4.00	265.74	299.8	4,381.16	-0.5	-7.0	2.1	2.00	2.00	0.00
400.0	6.00	265.74	399.5	4,281.55	-1.2	-15.7	4.6	2.00	2.00	0.00
500.0	8.00	265.74	498.7	4,182.30	-2.1	-27.8	8.2	2.00	2.00	0.00
600.0	10.00	265.74	597.5	4,083.53	-3.2	-43.4	12.8	2.00	2.00	0.00
700.0	12.00	265.74	695.6	3,985.38	-4.7	-62.4	18.4	2.00	2.00	0.00
800.0	14.00	265.74	793.1	3,887.94	-6.3	-84.9	25.1	2.00	2.00	0.00
900.0	16.00	265.74	889.6	3,791.36	-8.3	-110.7	32.7	2.00	2.00	0.00
1,000.0	18.00	265.74	985.3	3,695.73	-10.4	-139.8	41.3	2.00	2.00	0.00
1,100.0	20.00	265.74	1,079.8	3,601.18	-12.8	-172.3	50.9	2.00	2.00	0.00
1,200.0	22.00	265.74	1,173.2	3,507.83	-15.5	-208.0	61.4	2.00	2.00	0.00
1,300.0	24.00	265.74	1,265.2	3,415.79	-18.4	-247.0	72.9	2.00	2.00	0.00
1,400.0	26.00	265.74	1,355.8	3,325.16	-21.6	-289.1	85.4	2.00	2.00	0.00
1,500.0	28.00	265.74	1,444.9	3,236.06	-24.9	-334.4	98.7	2.00	2.00	0.00
1,600.0	30.00	265.74	1,532.4	3,148.61	-28.5	-382.7	113.0	2.00	2.00	0.00
1,700.0	32.00	265.74	1,618.1	3,062.89	-32.4	-434.1	128.2	2.00	2.00	0.00
<b>EOB TO 33.21° INC</b>										
1,760.6	33.21	265.74	1,669.2	3,011.84	-34.8	-466.7	137.8	2.00	2.00	0.00
1,800.0	33.21	265.74	1,702.1	2,978.88	-36.4	-488.2	144.1	0.00	0.00	0.00
1,900.0	33.21	265.74	1,785.8	2,895.22	-40.5	-542.8	160.3	0.00	0.00	0.00
<b>9 5/8" SURFACE CSG</b>										
1,917.0	33.21	265.74	1,800.0	2,881.00	-41.2	-552.1	163.0	0.00	0.00	0.00
2,000.0	33.21	265.74	1,869.4	2,811.55	-44.5	-597.4	176.4	0.00	0.00	0.00
2,100.0	33.21	265.74	1,953.1	2,727.89	-48.6	-652.1	192.5	0.00	0.00	0.00
2,200.0	33.21	265.74	2,036.8	2,644.23	-52.7	-706.7	208.6	0.00	0.00	0.00
2,300.0	33.21	265.74	2,120.4	2,560.56	-56.8	-761.3	224.8	0.00	0.00	0.00
2,400.0	33.21	265.74	2,204.1	2,476.90	-60.8	-815.9	240.9	0.00	0.00	0.00
2,500.0	33.21	265.74	2,287.8	2,393.23	-64.9	-870.6	257.0	0.00	0.00	0.00
2,600.0	33.21	265.74	2,371.4	2,309.57	-69.0	-925.2	273.1	0.00	0.00	0.00
2,700.0	33.21	265.74	2,455.1	2,225.90	-73.1	-979.8	289.3	0.00	0.00	0.00
2,800.0	33.21	265.74	2,538.8	2,142.24	-77.1	-1,034.4	305.4	0.00	0.00	0.00
2,900.0	33.21	265.74	2,622.4	2,058.58	-81.2	-1,089.1	321.5	0.00	0.00	0.00
3,000.0	33.21	265.74	2,706.1	1,974.91	-85.3	-1,143.7	337.7	0.00	0.00	0.00
3,100.0	33.21	265.74	2,789.8	1,891.25	-89.3	-1,198.3	353.8	0.00	0.00	0.00
3,200.0	33.21	265.74	2,873.4	1,807.58	-93.4	-1,252.9	369.9	0.00	0.00	0.00
3,300.0	33.21	265.74	2,957.1	1,723.92	-97.5	-1,307.5	386.0	0.00	0.00	0.00
3,400.0	33.21	265.74	3,040.7	1,640.26	-101.6	-1,362.2	402.2	0.00	0.00	0.00
3,500.0	33.21	265.74	3,124.4	1,556.59	-105.6	-1,416.8	418.3	0.00	0.00	0.00
3,600.0	33.21	265.74	3,208.1	1,472.93	-109.7	-1,471.4	434.4	0.00	0.00	0.00
3,700.0	33.21	265.74	3,291.7	1,389.26	-113.8	-1,526.0	450.5	0.00	0.00	0.00
3,800.0	33.21	265.74	3,375.4	1,305.60	-117.9	-1,580.7	466.7	0.00	0.00	0.00
3,900.0	33.21	265.74	3,459.1	1,221.94	-121.9	-1,635.3	482.8	0.00	0.00	0.00
4,000.0	33.21	265.74	3,542.7	1,138.27	-126.0	-1,689.9	498.9	0.00	0.00	0.00
4,100.0	33.21	265.74	3,626.4	1,054.61	-130.1	-1,744.5	515.0	0.00	0.00	0.00
<b>PARKMAN</b>										
4,129.4	33.21	265.74	3,651.0	1,030.00	-131.3	-1,760.6	519.8	0.00	0.00	0.00
4,200.0	33.21	265.74	3,710.1	970.94	-134.1	-1,799.2	531.2	0.00	0.00	0.00
4,300.0	33.21	265.74	3,793.7	887.28	-138.2	-1,853.8	547.3	0.00	0.00	0.00
4,400.0	33.21	265.74	3,877.4	803.62	-142.3	-1,908.4	563.4	0.00	0.00	0.00
4,500.0	33.21	265.74	3,961.0	719.95	-146.4	-1,963.0	579.6	0.00	0.00	0.00
4,600.0	33.21	265.74	4,044.7	636.29	-150.4	-2,017.7	595.7	0.00	0.00	0.00



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET C1-1-13
<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 C1-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #3		

## 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)
4,700.0	33.21	265.74	4,128.4	552.62	-154.5	-2,072.3	611.8	0.00	0.00	0.00
4,800.0	33.21	265.74	4,212.0	468.96	-158.6	-2,126.9	627.9	0.00	0.00	0.00
4,900.0	33.21	265.74	4,295.7	385.30	-162.7	-2,181.5	644.1	0.00	0.00	0.00
5,000.0	33.21	265.74	4,379.4	301.63	-166.7	-2,236.1	660.2	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>5,043.8</b>	<b>33.21</b>	<b>265.74</b>	<b>4,416.0</b>	<b>265.00</b>	<b>-168.5</b>	<b>-2,260.1</b>	<b>667.2</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,100.0	33.21	265.74	4,463.0	217.97	-170.8	-2,290.8	676.3	0.00	0.00	0.00
5,200.0	33.21	265.74	4,546.7	134.30	-174.9	-2,345.4	692.4	0.00	0.00	0.00
5,300.0	33.21	265.74	4,630.4	50.64	-179.0	-2,400.0	708.6	0.00	0.00	0.00
5,400.0	33.21	265.74	4,714.0	-33.02	-183.0	-2,454.6	724.7	0.00	0.00	0.00
5,500.0	33.21	265.74	4,797.7	-116.69	-187.1	-2,509.3	740.8	0.00	0.00	0.00
<b>SHANNON</b>										
<b>5,564.9</b>	<b>33.21</b>	<b>265.74</b>	<b>4,852.0</b>	<b>-171.00</b>	<b>-189.7</b>	<b>-2,544.7</b>	<b>751.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,600.0	33.21	265.74	4,881.4	-200.35	-191.2	-2,563.9	756.9	0.00	0.00	0.00
5,700.0	33.21	265.74	4,965.0	-284.02	-195.2	-2,618.5	773.1	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,746.4</b>	<b>33.21</b>	<b>265.74</b>	<b>5,003.8</b>	<b>-322.84</b>	<b>-197.1</b>	<b>-2,643.9</b>	<b>780.6</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,800.0	32.14	265.74	5,049.0	-367.95	-199.3	-2,672.7	789.1	2.00	-2.00	0.00
5,900.0	30.14	265.74	5,134.5	-453.54	-203.1	-2,724.3	804.3	2.00	-2.00	0.00
6,000.0	28.14	265.74	5,221.9	-540.88	-206.7	-2,772.8	818.6	2.00	-2.00	0.00
6,100.0	26.14	265.74	5,310.9	-629.86	-210.1	-2,818.3	832.1	2.00	-2.00	0.00
6,200.0	24.14	265.74	5,401.4	-720.38	-213.3	-2,860.7	844.6	2.00	-2.00	0.00
6,300.0	22.14	265.74	5,493.3	-812.33	-216.2	-2,899.9	856.1	2.00	-2.00	0.00
6,400.0	20.14	265.74	5,586.6	-905.60	-218.9	-2,935.8	866.8	2.00	-2.00	0.00
6,500.0	18.14	265.74	5,681.1	-1,000.07	-221.3	-2,968.5	876.4	2.00	-2.00	0.00
6,600.0	16.14	265.74	5,776.6	-1,095.62	-223.5	-2,997.9	885.1	2.00	-2.00	0.00
6,700.0	14.14	265.74	5,873.1	-1,192.14	-225.5	-3,024.0	892.8	2.00	-2.00	0.00
6,800.0	12.14	265.74	5,970.5	-1,289.52	-227.2	-3,046.6	899.5	2.00	-2.00	0.00
6,900.0	10.14	265.74	6,068.6	-1,387.63	-228.6	-3,065.9	905.2	2.00	-2.00	0.00
7,000.0	8.14	265.74	6,167.4	-1,486.36	-229.8	-3,081.7	909.8	2.00	-2.00	0.00
7,100.0	6.14	265.74	6,266.6	-1,585.58	-230.7	-3,094.1	913.5	2.00	-2.00	0.00
7,200.0	4.14	265.74	6,366.2	-1,685.17	-231.4	-3,103.1	916.1	2.00	-2.00	0.00
7,300.0	2.14	265.74	6,466.0	-1,785.01	-231.8	-3,108.5	917.7	2.00	-2.00	0.00
7,400.0	0.14	265.74	6,566.0	-1,884.99	-231.9	-3,110.5	918.3	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>7,407.0</b>	<b>0.00</b>	<b>265.74</b>	<b>6,573.0</b>	<b>-1,891.99</b>	<b>-231.9</b>	<b>-3,110.5</b>	<b>918.3</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
<b>KOP (10°/100ft BUR)</b>										
<b>7,437.0</b>	<b>0.00</b>	<b>0.00</b>	<b>6,603.0</b>	<b>-1,921.99</b>	<b>-231.9</b>	<b>-3,110.5</b>	<b>918.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
7,500.0	6.30	180.17	6,665.9	-1,984.86	-235.4	-3,110.5	921.7	10.00	10.00	0.00
7,600.0	16.30	180.17	6,763.8	-2,082.80	-255.0	-3,110.6	940.8	10.00	10.00	0.00
7,700.0	26.30	180.17	6,856.9	-2,175.85	-291.2	-3,110.7	976.2	10.00	10.00	0.00
<b>NIOBRARA</b>										
<b>7,701.3</b>	<b>26.43</b>	<b>180.17</b>	<b>6,858.0</b>	<b>-2,177.00</b>	<b>-291.8</b>	<b>-3,110.7</b>	<b>976.7</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,800.0	36.30	180.17	6,942.2	-2,261.19	-343.1	-3,110.9	1,026.8	10.00	10.00	0.00
7,900.0	46.30	180.17	7,017.2	-2,336.23	-409.0	-3,111.0	1,091.1	10.00	10.00	0.00
8,000.0	56.29	180.17	7,079.7	-2,398.68	-487.0	-3,111.3	1,167.1	10.00	10.00	0.00
8,100.0	66.29	180.17	7,127.7	-2,446.65	-574.6	-3,111.5	1,252.6	10.00	10.00	0.00
<b>FORT HAYS</b>										
<b>8,127.2</b>	<b>69.02</b>	<b>180.17</b>	<b>7,138.0</b>	<b>-2,457.00</b>	<b>-599.7</b>	<b>-3,111.6</b>	<b>1,277.2</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
8,200.0	76.29	180.17	7,159.7	-2,478.68	-669.2	-3,111.8	1,344.9	10.00	10.00	0.00
<b>CODELL</b>										
<b>8,229.9</b>	<b>79.28</b>	<b>180.17</b>	<b>7,166.0</b>	<b>-2,485.00</b>	<b>-698.3</b>	<b>-3,111.9</b>	<b>1,373.4</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
8,300.0	86.29	180.17	7,174.8	-2,493.80	-767.9	-3,112.1	1,441.2	10.00	10.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET C1-1-13
<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 C1-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #3		

## 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)
<b>LANDING PNT - CS-BITTERSWEET C1-1-13</b>										
8,337.1	90.00	180.17	7,176.0	-2,495.00	-804.9	-3,112.2	1,477.4	9.99	9.99	0.00
8,400.0	90.00	180.17	7,176.0	-2,495.00	-867.8	-3,112.4	1,538.7	0.00	0.00	0.00
8,500.0	90.00	180.17	7,176.0	-2,495.00	-967.8	-3,112.7	1,636.3	0.00	0.00	0.00
8,600.0	90.00	180.17	7,176.0	-2,495.00	-1,067.8	-3,113.0	1,733.8	0.00	0.00	0.00
8,700.0	90.00	180.17	7,176.0	-2,495.00	-1,167.8	-3,113.3	1,831.4	0.00	0.00	0.00
8,800.0	90.00	180.17	7,176.0	-2,495.00	-1,267.8	-3,113.6	1,928.9	0.00	0.00	0.00
8,900.0	90.00	180.17	7,176.0	-2,495.00	-1,367.8	-3,113.8	2,026.5	0.00	0.00	0.00
9,000.0	90.00	180.17	7,176.0	-2,495.00	-1,467.8	-3,114.1	2,124.1	0.00	0.00	0.00
9,100.0	90.00	180.17	7,176.0	-2,495.00	-1,567.8	-3,114.4	2,221.6	0.00	0.00	0.00
9,200.0	90.00	180.17	7,176.0	-2,495.00	-1,667.8	-3,114.7	2,319.2	0.00	0.00	0.00
9,300.0	90.00	180.17	7,176.0	-2,494.99	-1,767.8	-3,115.0	2,416.7	0.00	0.00	0.00
9,400.0	90.00	180.17	7,176.0	-2,494.99	-1,867.8	-3,115.3	2,514.3	0.00	0.00	0.00
9,500.0	90.00	180.17	7,176.0	-2,494.99	-1,967.8	-3,115.6	2,611.8	0.00	0.00	0.00
9,600.0	90.00	180.17	7,176.0	-2,494.99	-2,067.8	-3,115.9	2,709.4	0.00	0.00	0.00
9,700.0	90.00	180.17	7,176.0	-2,494.99	-2,167.8	-3,116.2	2,807.0	0.00	0.00	0.00
9,800.0	90.00	180.17	7,176.0	-2,494.99	-2,267.8	-3,116.5	2,904.5	0.00	0.00	0.00
9,900.0	90.00	180.17	7,176.0	-2,494.99	-2,367.8	-3,116.8	3,002.1	0.00	0.00	0.00
10,000.0	90.00	180.17	7,176.0	-2,494.99	-2,467.8	-3,117.0	3,099.6	0.00	0.00	0.00
10,100.0	90.00	180.17	7,176.0	-2,494.99	-2,567.8	-3,117.3	3,197.2	0.00	0.00	0.00
10,200.0	90.00	180.17	7,176.0	-2,494.99	-2,667.8	-3,117.6	3,294.7	0.00	0.00	0.00
10,300.0	90.00	180.17	7,176.0	-2,494.99	-2,767.8	-3,117.9	3,392.3	0.00	0.00	0.00
10,400.0	90.00	180.17	7,176.0	-2,494.99	-2,867.8	-3,118.2	3,489.9	0.00	0.00	0.00
10,500.0	90.00	180.17	7,176.0	-2,494.99	-2,967.8	-3,118.5	3,587.4	0.00	0.00	0.00
10,600.0	90.00	180.17	7,176.0	-2,494.99	-3,067.8	-3,118.8	3,685.0	0.00	0.00	0.00
10,700.0	90.00	180.17	7,176.0	-2,494.99	-3,167.8	-3,119.1	3,782.5	0.00	0.00	0.00
10,800.0	90.00	180.17	7,176.0	-2,494.99	-3,267.8	-3,119.4	3,880.1	0.00	0.00	0.00
10,900.0	90.00	180.17	7,176.0	-2,494.99	-3,367.8	-3,119.7	3,977.6	0.00	0.00	0.00
11,000.0	90.00	180.17	7,176.0	-2,494.98	-3,467.8	-3,120.0	4,075.2	0.00	0.00	0.00
11,100.0	90.00	180.17	7,176.0	-2,494.98	-3,567.8	-3,120.3	4,172.8	0.00	0.00	0.00
11,200.0	90.00	180.17	7,176.0	-2,494.98	-3,667.8	-3,120.5	4,270.3	0.00	0.00	0.00
11,300.0	90.00	180.17	7,176.0	-2,494.98	-3,767.8	-3,120.8	4,367.9	0.00	0.00	0.00
11,400.0	90.00	180.17	7,176.0	-2,494.98	-3,867.8	-3,121.1	4,465.4	0.00	0.00	0.00
11,500.0	90.00	180.17	7,176.0	-2,494.98	-3,967.8	-3,121.4	4,563.0	0.00	0.00	0.00
11,600.0	90.00	180.17	7,176.0	-2,494.98	-4,067.8	-3,121.7	4,660.5	0.00	0.00	0.00
11,700.0	90.00	180.17	7,176.0	-2,494.98	-4,167.8	-3,122.0	4,758.1	0.00	0.00	0.00
11,800.0	90.00	180.17	7,176.0	-2,494.98	-4,267.8	-3,122.3	4,855.6	0.00	0.00	0.00
11,900.0	90.00	180.17	7,176.0	-2,494.98	-4,367.8	-3,122.6	4,953.2	0.00	0.00	0.00
12,000.0	90.00	180.17	7,176.0	-2,494.98	-4,467.8	-3,122.9	5,050.8	0.00	0.00	0.00
12,100.0	90.00	180.17	7,176.0	-2,494.98	-4,567.8	-3,123.2	5,148.3	0.00	0.00	0.00
12,200.0	90.00	180.17	7,176.0	-2,494.98	-4,667.8	-3,123.5	5,245.9	0.00	0.00	0.00
12,300.0	90.00	180.17	7,176.0	-2,494.98	-4,767.8	-3,123.7	5,343.4	0.00	0.00	0.00
12,400.0	90.00	180.17	7,176.0	-2,494.98	-4,867.8	-3,124.0	5,441.0	0.00	0.00	0.00
12,500.0	90.00	180.17	7,176.0	-2,494.98	-4,967.8	-3,124.3	5,538.5	0.00	0.00	0.00
12,600.0	90.00	180.17	7,176.0	-2,494.98	-5,067.8	-3,124.6	5,636.1	0.00	0.00	0.00
12,700.0	90.00	180.17	7,176.0	-2,494.98	-5,167.8	-3,124.9	5,733.7	0.00	0.00	0.00
12,800.0	90.00	180.17	7,176.0	-2,494.97	-5,267.8	-3,125.2	5,831.2	0.00	0.00	0.00
12,900.0	90.00	180.17	7,176.0	-2,494.97	-5,367.8	-3,125.5	5,928.8	0.00	0.00	0.00
13,000.0	90.00	180.17	7,176.0	-2,494.97	-5,467.8	-3,125.8	6,026.3	0.00	0.00	0.00
13,100.0	90.00	180.17	7,176.0	-2,494.97	-5,567.8	-3,126.1	6,123.9	0.00	0.00	0.00
13,200.0	90.00	180.17	7,176.0	-2,494.97	-5,667.8	-3,126.4	6,221.4	0.00	0.00	0.00
13,300.0	90.00	180.17	7,176.0	-2,494.97	-5,767.8	-3,126.7	6,319.0	0.00	0.00	0.00
13,400.0	90.00	180.17	7,176.0	-2,494.97	-5,867.8	-3,127.0	6,416.6	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 C1-1-13
<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 C1-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #3		

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)
13,500.0	90.00	180.17	7,176.0	-2,494.97	-5,967.8	-3,127.2	6,514.1	0.00	0.00	0.00
13,600.0	90.00	180.17	7,176.0	-2,494.97	-6,067.8	-3,127.5	6,611.7	0.00	0.00	0.00
13,700.0	90.00	180.17	7,176.0	-2,494.97	-6,167.8	-3,127.8	6,709.2	0.00	0.00	0.00
13,800.0	90.00	180.17	7,176.0	-2,494.97	-6,267.8	-3,128.1	6,806.8	0.00	0.00	0.00
13,900.0	90.00	180.17	7,176.0	-2,494.97	-6,367.8	-3,128.4	6,904.3	0.00	0.00	0.00
14,000.0	90.00	180.17	7,176.0	-2,494.97	-6,467.8	-3,128.7	7,001.9	0.00	0.00	0.00
14,100.0	90.00	180.17	7,176.0	-2,494.97	-6,567.8	-3,129.0	7,099.5	0.00	0.00	0.00
14,200.0	90.00	180.17	7,176.0	-2,494.97	-6,667.8	-3,129.3	7,197.0	0.00	0.00	0.00
14,300.0	90.00	180.17	7,176.0	-2,494.97	-6,767.8	-3,129.6	7,294.6	0.00	0.00	0.00
14,400.0	90.00	180.17	7,176.0	-2,494.97	-6,867.8	-3,129.9	7,392.1	0.00	0.00	0.00
14,500.0	90.00	180.17	7,176.0	-2,494.97	-6,967.8	-3,130.2	7,489.7	0.00	0.00	0.00
14,600.0	90.00	180.17	7,176.0	-2,494.96	-7,067.8	-3,130.4	7,587.2	0.00	0.00	0.00
14,700.0	90.00	180.17	7,176.0	-2,494.96	-7,167.8	-3,130.7	7,684.8	0.00	0.00	0.00
14,800.0	90.00	180.17	7,176.0	-2,494.96	-7,267.8	-3,131.0	7,782.4	0.00	0.00	0.00
14,900.0	90.00	180.17	7,176.0	-2,494.96	-7,367.8	-3,131.3	7,879.9	0.00	0.00	0.00
15,000.0	90.00	180.17	7,176.0	-2,494.96	-7,467.8	-3,131.6	7,977.5	0.00	0.00	0.00
15,100.0	90.00	180.17	7,176.0	-2,494.96	-7,567.8	-3,131.9	8,075.0	0.00	0.00	0.00
15,200.0	90.00	180.17	7,176.0	-2,494.96	-7,667.8	-3,132.2	8,172.6	0.00	0.00	0.00
15,300.0	90.00	180.17	7,176.0	-2,494.96	-7,767.8	-3,132.5	8,270.1	0.00	0.00	0.00
15,400.0	90.00	180.17	7,176.0	-2,494.96	-7,867.8	-3,132.8	8,367.7	0.00	0.00	0.00
15,500.0	90.00	180.17	7,176.0	-2,494.96	-7,967.8	-3,133.1	8,465.2	0.00	0.00	0.00
15,600.0	90.00	180.17	7,176.0	-2,494.96	-8,067.8	-3,133.4	8,562.8	0.00	0.00	0.00
15,700.0	90.00	180.17	7,176.0	-2,494.96	-8,167.8	-3,133.7	8,660.4	0.00	0.00	0.00
15,800.0	90.00	180.17	7,176.0	-2,494.96	-8,267.8	-3,133.9	8,757.9	0.00	0.00	0.00
15,900.0	90.00	180.17	7,176.0	-2,494.96	-8,367.8	-3,134.2	8,855.5	0.00	0.00	0.00
16,000.0	90.00	180.17	7,176.0	-2,494.96	-8,467.8	-3,134.5	8,953.0	0.00	0.00	0.00
16,100.0	90.00	180.17	7,176.0	-2,494.96	-8,567.8	-3,134.8	9,050.6	0.00	0.00	0.00
16,200.0	90.00	180.17	7,176.0	-2,494.96	-8,667.8	-3,135.1	9,148.1	0.00	0.00	0.00
16,300.0	90.00	180.17	7,176.0	-2,494.95	-8,767.8	-3,135.4	9,245.7	0.00	0.00	0.00
16,400.0	90.00	180.17	7,176.0	-2,494.95	-8,867.8	-3,135.7	9,343.3	0.00	0.00	0.00
16,500.0	90.00	180.17	7,176.0	-2,494.95	-8,967.8	-3,136.0	9,440.8	0.00	0.00	0.00
16,600.0	90.00	180.17	7,176.0	-2,494.95	-9,067.8	-3,136.3	9,538.4	0.00	0.00	0.00
16,700.0	90.00	180.17	7,176.0	-2,494.95	-9,167.8	-3,136.6	9,635.9	0.00	0.00	0.00
16,800.0	90.00	180.17	7,176.0	-2,494.95	-9,267.8	-3,136.9	9,733.5	0.00	0.00	0.00
16,900.0	90.00	180.17	7,176.0	-2,494.95	-9,367.8	-3,137.2	9,831.0	0.00	0.00	0.00
17,000.0	90.00	180.17	7,176.0	-2,494.95	-9,467.8	-3,137.4	9,928.6	0.00	0.00	0.00
17,100.0	90.00	180.17	7,176.0	-2,494.95	-9,567.8	-3,137.7	10,026.2	0.00	0.00	0.00
17,200.0	90.00	180.17	7,175.9	-2,494.95	-9,667.8	-3,138.0	10,123.7	0.00	0.00	0.00
17,300.0	90.00	180.17	7,175.9	-2,494.95	-9,767.8	-3,138.3	10,221.3	0.00	0.00	0.00
17,400.0	90.00	180.17	7,175.9	-2,494.95	-9,867.8	-3,138.6	10,318.8	0.00	0.00	0.00
17,500.0	90.00	180.17	7,175.9	-2,494.95	-9,967.8	-3,138.9	10,416.4	0.00	0.00	0.00
17,600.0	90.00	180.17	7,175.9	-2,494.95	-10,067.8	-3,139.2	10,513.9	0.00	0.00	0.00
17,700.0	90.00	180.17	7,175.9	-2,494.95	-10,167.8	-3,139.5	10,611.5	0.00	0.00	0.00
17,800.0	90.00	180.17	7,175.9	-2,494.95	-10,267.8	-3,139.8	10,709.1	0.00	0.00	0.00
17,900.0	90.00	180.17	7,175.9	-2,494.95	-10,367.8	-3,140.1	10,806.6	0.00	0.00	0.00
18,000.0	90.00	180.17	7,175.9	-2,494.95	-10,467.8	-3,140.4	10,904.2	0.00	0.00	0.00
18,100.0	90.00	180.17	7,175.9	-2,494.94	-10,567.8	-3,140.6	11,001.7	0.00	0.00	0.00
18,200.0	90.00	180.17	7,175.9	-2,494.94	-10,667.8	-3,140.9	11,099.3	0.00	0.00	0.00
18,300.0	90.00	180.17	7,175.9	-2,494.94	-10,767.8	-3,141.2	11,196.8	0.00	0.00	0.00
18,400.0	90.00	180.17	7,175.9	-2,494.94	-10,867.8	-3,141.5	11,294.4	0.00	0.00	0.00
18,500.0	90.00	180.17	7,175.9	-2,494.94	-10,967.8	-3,141.8	11,392.0	0.00	0.00	0.00
18,600.0	90.00	180.17	7,175.9	-2,494.94	-11,067.8	-3,142.1	11,489.5	0.00	0.00	0.00
18,700.0	90.00	180.17	7,175.9	-2,494.94	-11,167.8	-3,142.4	11,587.1	0.00	0.00	0.00
18,800.0	90.00	180.17	7,175.9	-2,494.94	-11,267.8	-3,142.7	11,684.6	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 C1-1-13
<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 C1-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #3		

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)
18,900.0	90.00	180.17	7,175.9	-2,494.94	-11,367.8	-3,143.0	11,782.2	0.00	0.00	0.00
19,000.0	90.00	180.17	7,175.9	-2,494.94	-11,467.8	-3,143.3	11,879.7	0.00	0.00	0.00
19,100.0	90.00	180.17	7,175.9	-2,494.94	-11,567.8	-3,143.6	11,977.3	0.00	0.00	0.00
19,200.0	90.00	180.17	7,175.9	-2,494.94	-11,667.8	-3,143.9	12,074.8	0.00	0.00	0.00
19,300.0	90.00	180.17	7,175.9	-2,494.94	-11,767.8	-3,144.1	12,172.4	0.00	0.00	0.00
19,400.0	90.00	180.17	7,175.9	-2,494.94	-11,867.8	-3,144.4	12,270.0	0.00	0.00	0.00
19,500.0	90.00	180.17	7,175.9	-2,494.94	-11,967.8	-3,144.7	12,367.5	0.00	0.00	0.00
19,600.0	90.00	180.17	7,175.9	-2,494.94	-12,067.8	-3,145.0	12,465.1	0.00	0.00	0.00
19,700.0	90.00	180.17	7,175.9	-2,494.94	-12,167.8	-3,145.3	12,562.6	0.00	0.00	0.00
19,800.0	90.00	180.17	7,175.9	-2,494.94	-12,267.8	-3,145.6	12,660.2	0.00	0.00	0.00
19,900.0	90.00	180.17	7,175.9	-2,494.93	-12,367.8	-3,145.9	12,757.7	0.00	0.00	0.00
20,000.0	90.00	180.17	7,175.9	-2,494.93	-12,467.8	-3,146.2	12,855.3	0.00	0.00	0.00
20,100.0	90.00	180.17	7,175.9	-2,494.93	-12,567.8	-3,146.5	12,952.9	0.00	0.00	0.00
20,200.0	90.00	180.17	7,175.9	-2,494.93	-12,667.8	-3,146.8	13,050.4	0.00	0.00	0.00
20,300.0	90.00	180.17	7,175.9	-2,494.93	-12,767.8	-3,147.1	13,148.0	0.00	0.00	0.00
20,400.0	90.00	180.17	7,175.9	-2,494.93	-12,867.8	-3,147.3	13,245.5	0.00	0.00	0.00
20,500.0	90.00	180.17	7,175.9	-2,494.93	-12,967.8	-3,147.6	13,343.1	0.00	0.00	0.00
20,600.0	90.00	180.17	7,175.9	-2,494.93	-13,067.8	-3,147.9	13,440.6	0.00	0.00	0.00
20,700.0	90.00	180.17	7,175.9	-2,494.93	-13,167.8	-3,148.2	13,538.2	0.00	0.00	0.00
20,800.0	90.00	180.17	7,175.9	-2,494.93	-13,267.8	-3,148.5	13,635.8	0.00	0.00	0.00
20,900.0	90.00	180.17	7,175.9	-2,494.93	-13,367.8	-3,148.8	13,733.3	0.00	0.00	0.00
21,000.0	90.00	180.17	7,175.9	-2,494.93	-13,467.8	-3,149.1	13,830.9	0.00	0.00	0.00
21,100.0	90.00	180.17	7,175.9	-2,494.93	-13,567.8	-3,149.4	13,928.4	0.00	0.00	0.00
21,200.0	90.00	180.17	7,175.9	-2,494.93	-13,667.8	-3,149.7	14,026.0	0.00	0.00	0.00
21,300.0	90.00	180.17	7,175.9	-2,494.93	-13,767.8	-3,150.0	14,123.5	0.00	0.00	0.00
<b>BHL - CS-BITTERSWEET C1-1-13 (P3)</b>										
<b>21,332.1</b>	<b>90.00</b>	<b>180.17</b>	<b>7,175.9</b>	<b>-2,494.93</b>	<b>-13,799.9</b>	<b>-3,150.1</b>	<b>14,154.9</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,129.4	3,651.0	PARKMAN				
5,043.8	4,416.0	SUSSEX				
5,564.9	4,852.0	SHANNON				
7,701.3	6,858.0	NIOBRARA				
8,127.2	7,138.0	FORT HAYS				
8,229.9	7,166.0	CODELL				



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CS-BITTERSWEET C1-1-13
<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 C1-1-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #3		

## Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.0	100.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,760.6	1,669.2	-34.8	-466.7	EOB TO 33.21° INC
1,917.0	1,800.0	-41.2	-552.1	9 5/8" SURFACE CSG
5,746.4	5,003.8	-197.1	-2,643.9	END OF TANGENT
7,407.0	6,573.0	-231.9	-3,110.5	EOD TO VERTICAL
7,437.0	6,603.0	-231.9	-3,110.5	KOP (10°/100ft BUR)
8,337.1	7,176.0	-804.9	-3,112.2	LANDING PNT - CS-BITTERSWEET C1-1-13
21,332.1	7,175.9	-13,799.9	-3,150.1	BHL - CS-BITTERSWEET C1-1-13 (P3)