

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

CS-BITTERSWEET C1-1-13

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 C1-1-13
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS

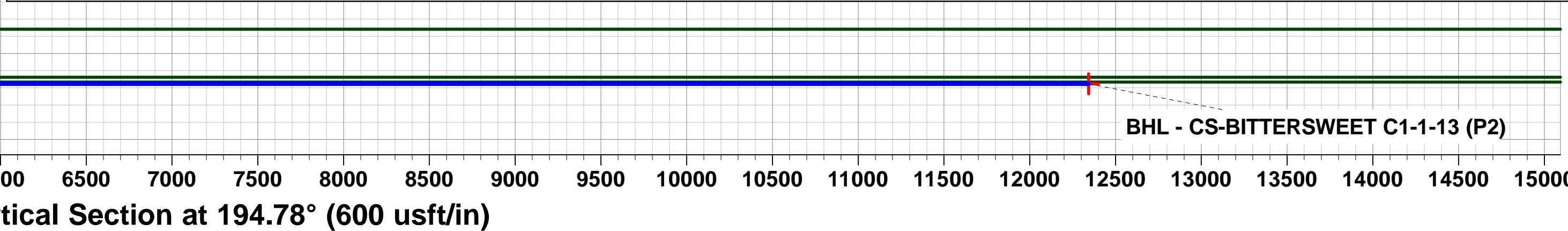
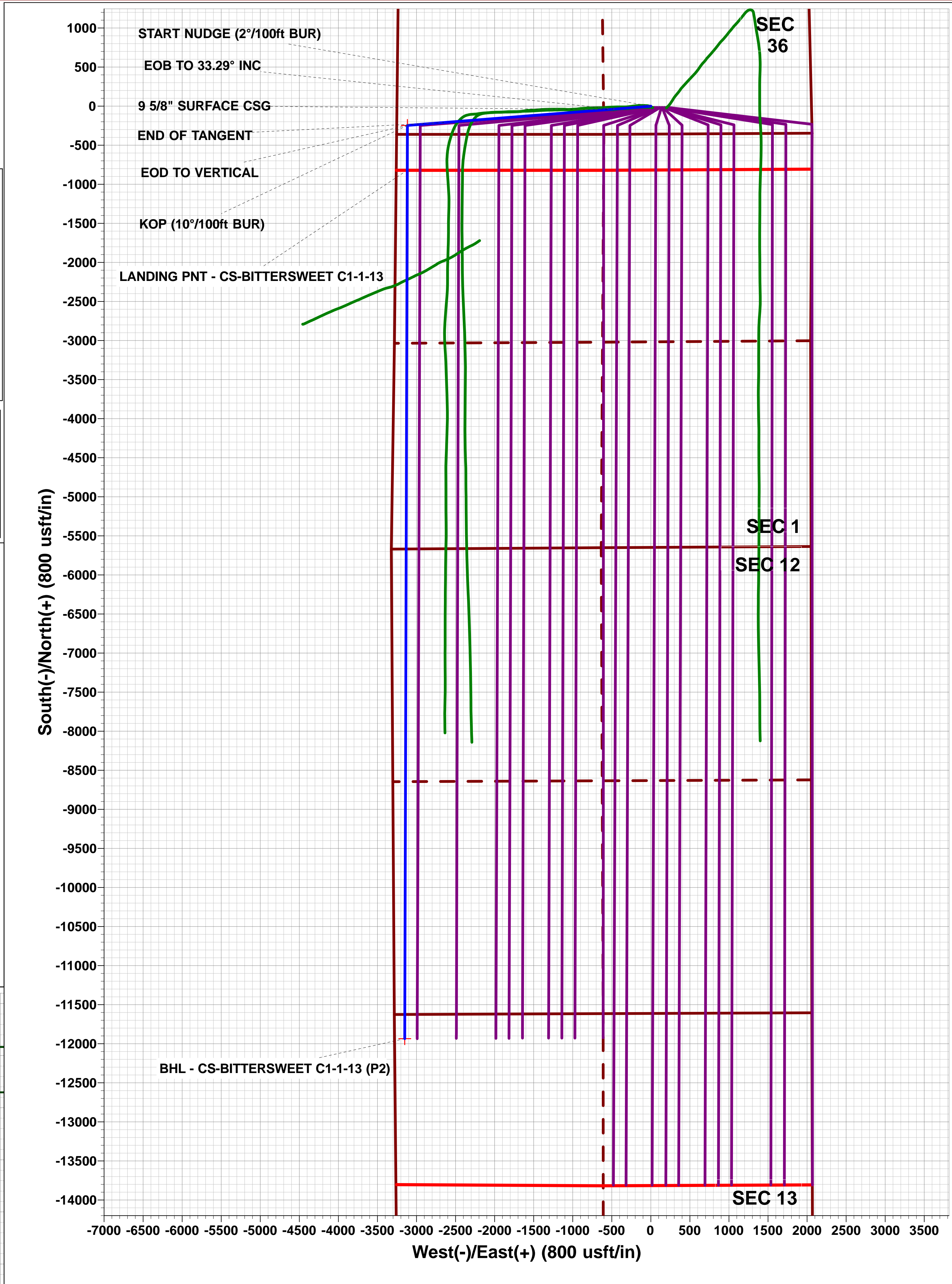
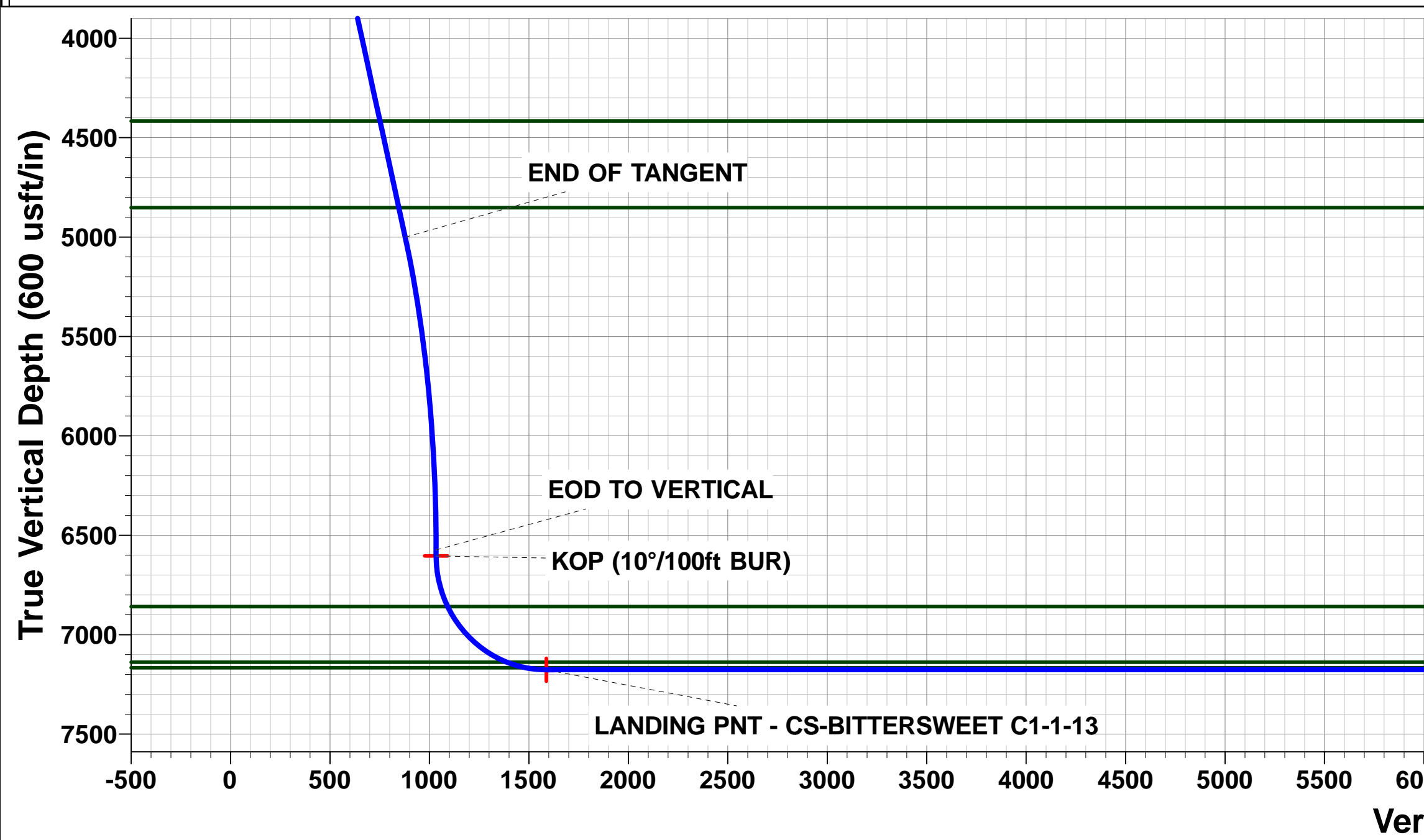
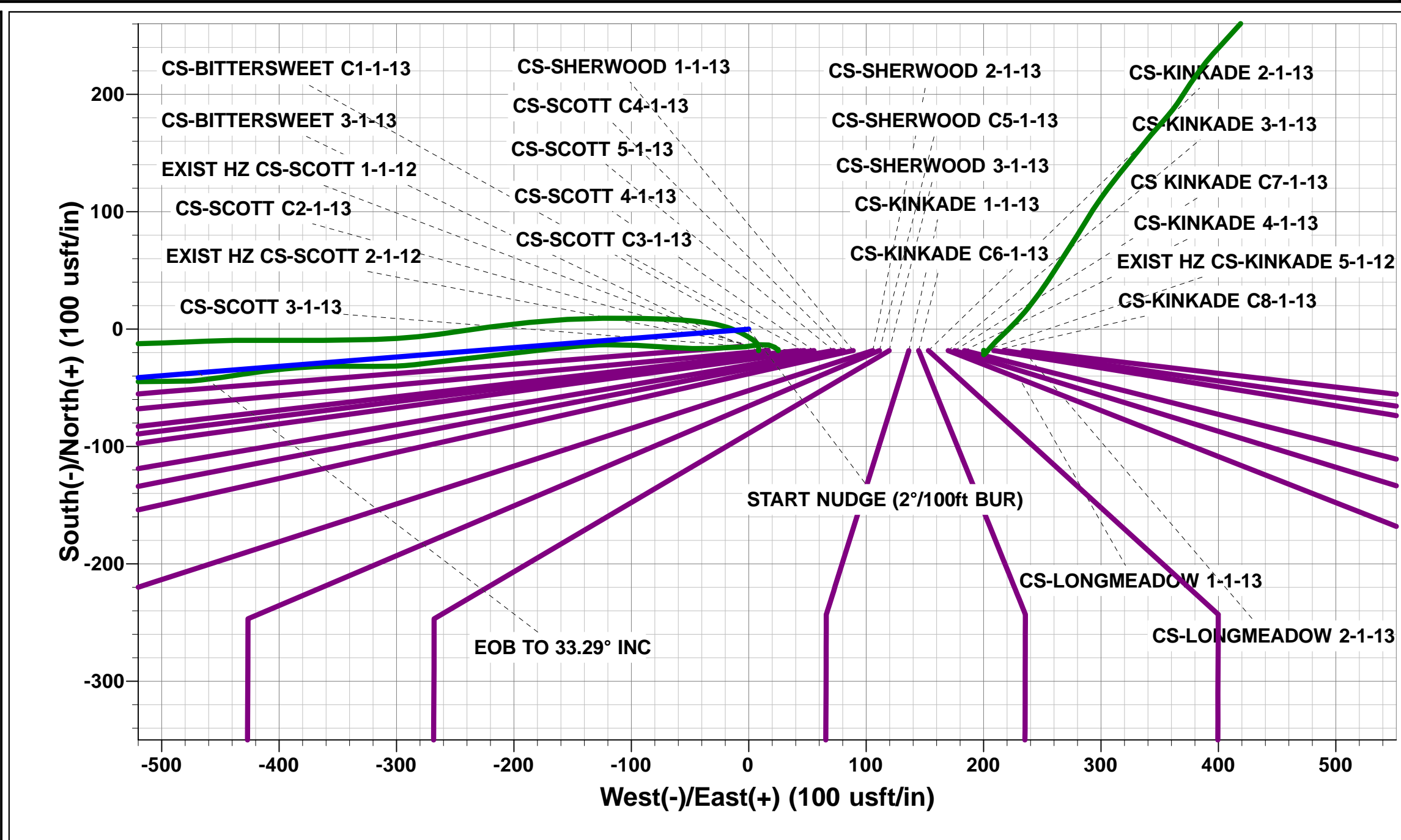
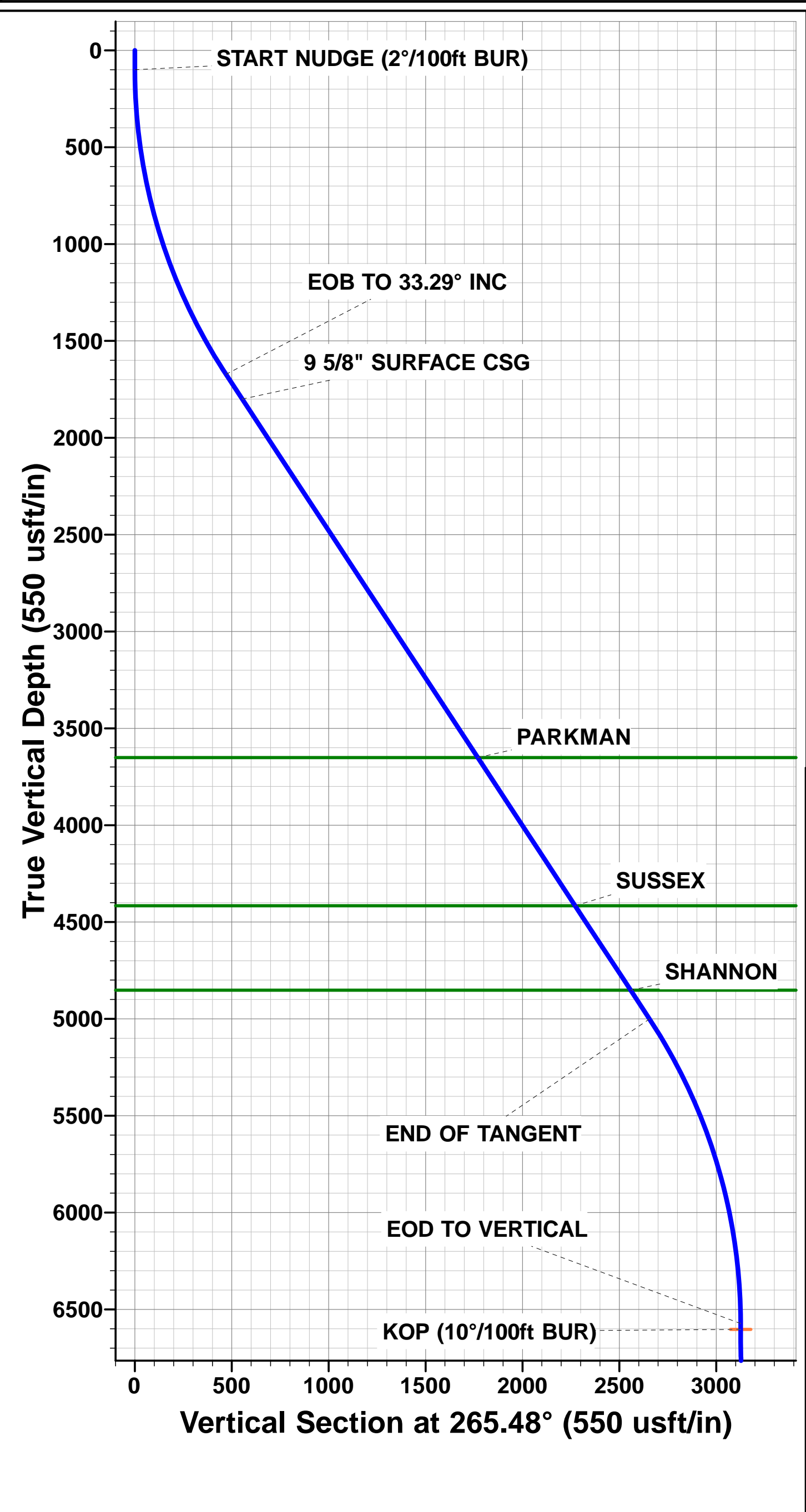
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
100.0	100.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1672.5	1764.7	33.29	265.48	-37.1	-468.7	155.5	470.2	EOB TO 33.29° INC
1800.0	1917.1	33.29	265.48	-43.7	-552.2	183.1	553.9	9 5/8" SURFACE CSG
5000.5	5746.0	33.29	265.48	-209.4	-2647.4	878.1	2655.6	END OF TANGENT
6573.0	7410.7	0.00	0.00	-246.5	-3116.1	1033.5	3125.8	EOD TO VERTICAL
6603.0	7440.7	0.00	0.00	-246.5	-3116.1	1033.5	3125.8	KOP (10°/100ft BUR)
7176.0	8340.7	90.00	180.17	-819.5	-3117.8	1588.0	3698.8	LANDING PNT - CS-BITTERSWEET C1-1-13
7176.0	19455.9	90.00	180.16	-11934.6	-3149.8	12343.3	14814.0	BHL - CS-BITTERSWEET C1-1-13 (P2)

PROPOSED LOCAL COORDINATES:

SHL: 357ft FSL & 2056ft FEL Sec 36
LANDING PNT: 460ft FNL & 140ft FWL Sec 1
BHL: 310ft FNL & 129ft FWL Sec 13

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CS-BITTERSWEET C1-1-13	6603.0	-246.5	-3116.1	40.437743	-104.734454
BHL - CS-BITTERSWEET C1-1-13 (P2)	7176.0	-11934.7	-3149.8	40.405660	-104.734570
LANDING PNT - CS-BITTERSWEET C1-1-13	7176.0	-819.5	-3117.8	40.436170	-104.734460



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CS-BITTERSWEET C1-1-13
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	North Reference:	True
Well:	CS-BITTERSWEET C1-1-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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

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

Well	CS-BITTERSWEET C1-1-13		
Well Position	+N-S	18.2 usft	Northing:
	+E-W	-8.4 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

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

Design	PROPOSAL #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	7,176.0	0.0	0.0	194.78

Plan Sections											
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	
100.0	0.00	0.00	100.0	-4,581.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,764.7	33.29	265.48	1,672.5	-3,008.5	-37.1	-468.7	2.00	2.00	0.00	265.48	
5,746.0	33.29	265.48	5,000.5	319.5	-209.4	-2,647.4	0.00	0.00	0.00	0.00	
7,410.7	0.00	0.00	6,573.0	1,892.0	-246.5	-3,116.1	2.00	-2.00	0.00	180.00	
7,440.7	0.00	0.00	6,603.0	1,922.0	-246.5	-3,116.1	0.00	0.00	0.00	0.00	KOP - CS-BITTERSWEET
8,340.7	90.00	180.17	7,176.0	2,495.0	-819.5	-3,117.8	10.00	10.00	-19.98	180.17	LANDING PNT - CS-BITTERSWEET
19,455.9	90.00	180.16	7,176.0	2,495.0	-11,934.7	-3,149.8	0.00	0.00	0.00	-100.24	BHL - CS-BITTERSWEET

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CS-BITTERSWEET C1-1-13
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	North Reference:	True
Well:	CS-BITTERSWEET C1-1-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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
START NUDGE (2°/100ft BUR)										
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	265.48	200.0	4,481.02	-0.1	-1.7	0.6	2.00	2.00	0.00
300.0	4.00	265.48	299.8	4,381.16	-0.6	-7.0	2.3	2.00	2.00	0.00
400.0	6.00	265.48	399.5	4,281.55	-1.2	-15.6	5.2	2.00	2.00	0.00
500.0	8.00	265.48	498.7	4,182.30	-2.2	-27.8	9.2	2.00	2.00	0.00
600.0	10.00	265.48	597.5	4,083.53	-3.4	-43.4	14.4	2.00	2.00	0.00
700.0	12.00	265.48	695.6	3,985.38	-4.9	-62.4	20.7	2.00	2.00	0.00
800.0	14.00	265.48	793.1	3,887.94	-6.7	-84.8	28.1	2.00	2.00	0.00
900.0	16.00	265.48	889.6	3,791.36	-8.8	-110.6	36.7	2.00	2.00	0.00
1,000.0	18.00	265.48	985.3	3,695.73	-11.1	-139.8	46.4	2.00	2.00	0.00
1,100.0	20.00	265.48	1,079.8	3,601.18	-13.6	-172.2	57.1	2.00	2.00	0.00
1,200.0	22.00	265.48	1,173.2	3,507.83	-16.5	-208.0	69.0	2.00	2.00	0.00
1,300.0	24.00	265.48	1,265.2	3,415.79	-19.5	-246.9	81.9	2.00	2.00	0.00
1,400.0	26.00	265.48	1,355.8	3,325.16	-22.9	-289.0	95.9	2.00	2.00	0.00
1,500.0	28.00	265.48	1,444.9	3,236.06	-26.4	-334.3	110.9	2.00	2.00	0.00
1,600.0	30.00	265.48	1,532.4	3,148.61	-30.3	-382.6	126.9	2.00	2.00	0.00
1,700.0	32.00	265.48	1,618.1	3,062.89	-34.3	-434.0	143.9	2.00	2.00	0.00
EOB TO 33.29° INC										
1,764.7	33.29	265.48	1,672.5	3,008.45	-37.1	-468.7	155.5	2.00	2.00	0.00
1,800.0	33.29	265.48	1,702.1	2,978.91	-38.6	-488.1	161.9	0.00	0.00	0.00
1,900.0	33.29	265.48	1,785.7	2,895.32	-42.9	-542.8	180.0	0.00	0.00	0.00
9 5/8" SURFACE CSG										
1,917.1	33.29	265.48	1,800.0	2,881.00	-43.7	-552.2	183.1	0.00	0.00	0.00
2,000.0	33.29	265.48	1,869.3	2,811.74	-47.3	-597.5	198.2	0.00	0.00	0.00
2,100.0	33.29	265.48	1,952.9	2,728.15	-51.6	-652.2	216.3	0.00	0.00	0.00
2,200.0	33.29	265.48	2,036.4	2,644.56	-55.9	-707.0	234.5	0.00	0.00	0.00
2,300.0	33.29	265.48	2,120.0	2,560.97	-60.3	-761.7	252.6	0.00	0.00	0.00
2,400.0	33.29	265.48	2,203.6	2,477.39	-64.6	-816.4	270.8	0.00	0.00	0.00
2,500.0	33.29	265.48	2,287.2	2,393.80	-68.9	-871.1	288.9	0.00	0.00	0.00
2,600.0	33.29	265.48	2,370.8	2,310.21	-73.2	-925.8	307.1	0.00	0.00	0.00
2,700.0	33.29	265.48	2,454.4	2,226.62	-77.6	-980.6	325.2	0.00	0.00	0.00
2,800.0	33.29	265.48	2,538.0	2,143.04	-81.9	-1,035.3	343.4	0.00	0.00	0.00
2,900.0	33.29	265.48	2,621.6	2,059.45	-86.2	-1,090.0	361.5	0.00	0.00	0.00
3,000.0	33.29	265.48	2,705.1	1,975.86	-90.6	-1,144.7	379.7	0.00	0.00	0.00
3,100.0	33.29	265.48	2,788.7	1,892.28	-94.9	-1,199.4	397.8	0.00	0.00	0.00
3,200.0	33.29	265.48	2,872.3	1,808.69	-99.2	-1,254.2	416.0	0.00	0.00	0.00
3,300.0	33.29	265.48	2,955.9	1,725.10	-103.5	-1,308.9	434.1	0.00	0.00	0.00
3,400.0	33.29	265.48	3,039.5	1,641.51	-107.9	-1,363.6	452.3	0.00	0.00	0.00
3,500.0	33.29	265.48	3,123.1	1,557.93	-112.2	-1,418.3	470.4	0.00	0.00	0.00
3,600.0	33.29	265.48	3,206.7	1,474.34	-116.5	-1,473.0	488.6	0.00	0.00	0.00
3,700.0	33.29	265.48	3,290.2	1,390.75	-120.9	-1,527.8	506.7	0.00	0.00	0.00
3,800.0	33.29	265.48	3,373.8	1,307.16	-125.2	-1,582.5	524.9	0.00	0.00	0.00
3,900.0	33.29	265.48	3,457.4	1,223.58	-129.5	-1,637.2	543.0	0.00	0.00	0.00
4,000.0	33.29	265.48	3,541.0	1,139.99	-133.8	-1,691.9	561.2	0.00	0.00	0.00
4,100.0	33.29	265.48	3,624.6	1,056.40	-138.2	-1,746.7	579.3	0.00	0.00	0.00
PARKMAN										
4,131.6	33.29	265.48	3,651.0	1,030.00	-139.5	-1,763.9	585.0	0.00	0.00	0.00
4,200.0	33.29	265.48	3,708.2	972.82	-142.5	-1,801.4	597.5	0.00	0.00	0.00
4,300.0	33.29	265.48	3,791.8	889.23	-146.8	-1,856.1	615.6	0.00	0.00	0.00
4,400.0	33.29	265.48	3,875.4	805.64	-151.2	-1,910.8	633.8	0.00	0.00	0.00
4,500.0	33.29	265.48	3,958.9	722.05	-155.5	-1,965.5	651.9	0.00	0.00	0.00
4,600.0	33.29	265.48	4,042.5	638.47	-159.8	-2,020.3	670.1	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CS-BITTERSWEET C1-1-13
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	North Reference:	True
Well:	CS-BITTERSWEET C1-1-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
4,700.0	33.29	265.48	4,126.1	554.88	-164.1	-2,075.0	688.2	0.00	0.00	0.00
4,800.0	33.29	265.48	4,209.7	471.29	-168.5	-2,129.7	706.4	0.00	0.00	0.00
4,900.0	33.29	265.48	4,293.3	387.70	-172.8	-2,184.4	724.5	0.00	0.00	0.00
5,000.0	33.29	265.48	4,376.9	304.12	-177.1	-2,239.1	742.7	0.00	0.00	0.00
SUSSEX										
5,046.8	33.29	265.48	4,416.0	265.00	-179.2	-2,264.8	751.2	0.00	0.00	0.00
5,100.0	33.29	265.48	4,460.5	220.53	-181.5	-2,293.9	760.8	0.00	0.00	0.00
5,200.0	33.29	265.48	4,544.1	136.94	-185.8	-2,348.6	779.0	0.00	0.00	0.00
5,300.0	33.29	265.48	4,627.6	53.36	-190.1	-2,403.3	797.1	0.00	0.00	0.00
5,400.0	33.29	265.48	4,711.2	-30.23	-194.4	-2,458.0	815.3	0.00	0.00	0.00
5,500.0	33.29	265.48	4,794.8	-113.82	-198.8	-2,512.8	833.4	0.00	0.00	0.00
SHANNON										
5,568.4	33.29	265.48	4,852.0	-171.00	-201.7	-2,550.2	845.8	0.00	0.00	0.00
5,600.0	33.29	265.48	4,878.4	-197.41	-203.1	-2,567.5	851.6	0.00	0.00	0.00
5,700.0	33.29	265.48	4,962.0	-280.99	-207.4	-2,622.2	869.7	0.00	0.00	0.00
END OF TANGENT										
5,746.0	33.29	265.48	5,000.5	-319.45	-209.4	-2,647.4	878.1	0.00	0.00	0.00
5,800.0	32.21	265.48	5,045.9	-364.86	-211.7	-2,676.5	887.7	2.00	-2.00	0.00
5,900.0	30.21	265.48	5,131.4	-450.38	-215.8	-2,728.2	904.8	2.00	-2.00	0.00
6,000.0	28.21	265.48	5,218.7	-537.65	-219.7	-2,776.8	921.0	2.00	-2.00	0.00
6,100.0	26.21	265.48	5,307.6	-626.58	-223.3	-2,822.4	936.1	2.00	-2.00	0.00
6,200.0	24.21	265.48	5,398.0	-717.05	-226.6	-2,864.9	950.2	2.00	-2.00	0.00
6,300.0	22.21	265.48	5,489.9	-808.95	-229.7	-2,904.1	963.2	2.00	-2.00	0.00
6,400.0	20.21	265.48	5,583.2	-902.17	-232.6	-2,940.2	975.2	2.00	-2.00	0.00
6,500.0	18.21	265.48	5,677.6	-996.59	-235.2	-2,973.0	986.1	2.00	-2.00	0.00
6,600.0	16.21	265.48	5,773.1	-1,092.11	-237.5	-3,002.5	995.8	2.00	-2.00	0.00
6,700.0	14.21	265.48	5,869.6	-1,188.60	-239.6	-3,028.7	1,004.5	2.00	-2.00	0.00
6,800.0	12.21	265.48	5,966.9	-1,285.95	-241.4	-3,051.5	1,012.1	2.00	-2.00	0.00
6,900.0	10.21	265.48	6,065.0	-1,384.03	-242.9	-3,070.8	1,018.5	2.00	-2.00	0.00
7,000.0	8.21	265.48	6,163.7	-1,482.74	-244.2	-3,086.8	1,023.8	2.00	-2.00	0.00
7,100.0	6.21	265.48	6,262.9	-1,581.94	-245.2	-3,099.3	1,028.0	2.00	-2.00	0.00
7,200.0	4.21	265.48	6,362.5	-1,681.52	-245.9	-3,108.4	1,031.0	2.00	-2.00	0.00
7,300.0	2.21	265.48	6,462.4	-1,781.36	-246.3	-3,114.0	1,032.8	2.00	-2.00	0.00
7,400.0	0.21	265.48	6,562.3	-1,881.33	-246.5	-3,116.1	1,033.5	2.00	-2.00	0.00
EOD TO VERTICAL										
7,410.7	0.00	0.00	6,573.0	-1,892.00	-246.5	-3,116.1	1,033.5	2.00	-2.00	0.00
KOP (10°/100ft BUR)										
7,440.7	0.00	0.00	6,603.0	-1,922.00	-246.5	-3,116.1	1,033.5	0.00	0.00	0.00
7,500.0	5.93	180.17	6,662.2	-1,981.23	-249.6	-3,116.1	1,036.5	10.00	10.00	0.00
7,600.0	15.93	180.17	6,760.3	-2,079.29	-268.5	-3,116.2	1,054.8	10.00	10.00	0.00
7,700.0	25.93	180.17	6,853.6	-2,172.57	-304.2	-3,116.3	1,089.3	10.00	10.00	0.00
NIORARA										
7,704.9	26.43	180.17	6,858.0	-2,177.00	-306.4	-3,116.3	1,091.4	10.00	10.00	0.00
7,800.0	35.93	180.17	6,939.2	-2,258.24	-355.5	-3,116.4	1,139.0	10.00	10.00	0.00
7,900.0	45.93	180.17	7,014.7	-2,333.69	-421.0	-3,116.6	1,202.3	10.00	10.00	0.00
8,000.0	55.93	180.17	7,077.6	-2,396.64	-498.5	-3,116.8	1,277.4	10.00	10.00	0.00
8,100.0	65.93	180.17	7,126.2	-2,445.17	-585.8	-3,117.1	1,361.8	10.00	10.00	0.00
FORT HAYS										
8,130.9	69.02	180.17	7,138.0	-2,457.00	-614.3	-3,117.2	1,389.4	10.00	10.00	0.00
8,200.0	75.93	180.17	7,158.8	-2,477.80	-680.2	-3,117.4	1,453.2	10.00	10.00	0.00
CODELL										
8,233.5	79.28	180.17	7,166.0	-2,485.00	-712.9	-3,117.5	1,484.8	10.00	10.00	0.00
8,300.0	85.93	180.17	7,174.6	-2,493.55	-778.8	-3,117.7	1,548.6	10.00	10.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CS-BITTERSWEET C1-1-13
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	North Reference:	True
Well:	CS-BITTERSWEET C1-1-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
LANDING PNT - CS-BITTERSWEET C1-1-13										
8,340.7	90.00	180.17	7,176.0	-2,495.00	-819.5	-3,117.8	1,588.0	10.00	10.00	0.00
8,400.0	90.00	180.17	7,176.0	-2,495.00	-878.8	-3,117.9	1,645.3	0.00	0.00	0.00
8,500.0	90.00	180.17	7,176.0	-2,495.00	-978.8	-3,118.2	1,742.1	0.00	0.00	0.00
8,600.0	90.00	180.17	7,176.0	-2,495.00	-1,078.8	-3,118.5	1,838.8	0.00	0.00	0.00
8,700.0	90.00	180.17	7,176.0	-2,495.00	-1,178.8	-3,118.8	1,935.6	0.00	0.00	0.00
8,800.0	90.00	180.17	7,176.0	-2,495.00	-1,278.8	-3,119.1	2,032.4	0.00	0.00	0.00
8,900.0	90.00	180.17	7,176.0	-2,495.00	-1,378.8	-3,119.4	2,129.1	0.00	0.00	0.00
9,000.0	90.00	180.17	7,176.0	-2,495.00	-1,478.8	-3,119.7	2,225.9	0.00	0.00	0.00
9,100.0	90.00	180.17	7,176.0	-2,495.00	-1,578.8	-3,120.0	2,322.7	0.00	0.00	0.00
9,200.0	90.00	180.17	7,176.0	-2,495.00	-1,678.8	-3,120.3	2,419.4	0.00	0.00	0.00
9,300.0	90.00	180.17	7,176.0	-2,495.00	-1,778.8	-3,120.6	2,516.2	0.00	0.00	0.00
9,400.0	90.00	180.17	7,176.0	-2,494.99	-1,878.8	-3,120.9	2,612.9	0.00	0.00	0.00
9,500.0	90.00	180.17	7,176.0	-2,494.99	-1,978.8	-3,121.1	2,709.7	0.00	0.00	0.00
9,600.0	90.00	180.17	7,176.0	-2,494.99	-2,078.8	-3,121.4	2,806.5	0.00	0.00	0.00
9,700.0	90.00	180.17	7,176.0	-2,494.99	-2,178.8	-3,121.7	2,903.2	0.00	0.00	0.00
9,800.0	90.00	180.17	7,176.0	-2,494.99	-2,278.8	-3,122.0	3,000.0	0.00	0.00	0.00
9,900.0	90.00	180.17	7,176.0	-2,494.99	-2,378.8	-3,122.3	3,096.8	0.00	0.00	0.00
10,000.0	90.00	180.17	7,176.0	-2,494.99	-2,478.8	-3,122.6	3,193.5	0.00	0.00	0.00
10,100.0	90.00	180.17	7,176.0	-2,494.99	-2,578.8	-3,122.9	3,290.3	0.00	0.00	0.00
10,200.0	90.00	180.17	7,176.0	-2,494.99	-2,678.8	-3,123.2	3,387.1	0.00	0.00	0.00
10,300.0	90.00	180.17	7,176.0	-2,494.99	-2,778.8	-3,123.5	3,483.8	0.00	0.00	0.00
10,400.0	90.00	180.17	7,176.0	-2,494.99	-2,878.8	-3,123.8	3,580.6	0.00	0.00	0.00
10,500.0	90.00	180.17	7,176.0	-2,494.99	-2,978.8	-3,124.0	3,677.3	0.00	0.00	0.00
10,600.0	90.00	180.17	7,176.0	-2,494.99	-3,078.8	-3,124.3	3,774.1	0.00	0.00	0.00
10,700.0	90.00	180.17	7,176.0	-2,494.99	-3,178.8	-3,124.6	3,870.9	0.00	0.00	0.00
10,800.0	90.00	180.17	7,176.0	-2,494.99	-3,278.8	-3,124.9	3,967.6	0.00	0.00	0.00
10,900.0	90.00	180.17	7,176.0	-2,494.99	-3,378.8	-3,125.2	4,064.4	0.00	0.00	0.00
11,000.0	90.00	180.17	7,176.0	-2,494.99	-3,478.8	-3,125.5	4,161.2	0.00	0.00	0.00
11,100.0	90.00	180.17	7,176.0	-2,494.99	-3,578.8	-3,125.8	4,257.9	0.00	0.00	0.00
11,200.0	90.00	180.17	7,176.0	-2,494.99	-3,678.8	-3,126.1	4,354.7	0.00	0.00	0.00
11,300.0	90.00	180.17	7,176.0	-2,494.99	-3,778.8	-3,126.4	4,451.4	0.00	0.00	0.00
11,400.0	90.00	180.17	7,176.0	-2,494.99	-3,878.8	-3,126.7	4,548.2	0.00	0.00	0.00
11,500.0	90.00	180.17	7,176.0	-2,494.99	-3,978.8	-3,126.9	4,645.0	0.00	0.00	0.00
11,600.0	90.00	180.17	7,176.0	-2,494.99	-4,078.8	-3,127.2	4,741.7	0.00	0.00	0.00
11,700.0	90.00	180.17	7,176.0	-2,494.99	-4,178.8	-3,127.5	4,838.5	0.00	0.00	0.00
11,800.0	90.00	180.17	7,176.0	-2,494.99	-4,278.8	-3,127.8	4,935.3	0.00	0.00	0.00
11,900.0	90.00	180.17	7,176.0	-2,494.99	-4,378.7	-3,128.1	5,032.0	0.00	0.00	0.00
12,000.0	90.00	180.17	7,176.0	-2,494.99	-4,478.7	-3,128.4	5,128.8	0.00	0.00	0.00
12,100.0	90.00	180.17	7,176.0	-2,494.99	-4,578.7	-3,128.7	5,225.5	0.00	0.00	0.00
12,200.0	90.00	180.17	7,176.0	-2,494.99	-4,678.7	-3,129.0	5,322.3	0.00	0.00	0.00
12,300.0	90.00	180.17	7,176.0	-2,494.99	-4,778.7	-3,129.3	5,419.1	0.00	0.00	0.00
12,400.0	90.00	180.17	7,176.0	-2,494.99	-4,878.7	-3,129.6	5,515.8	0.00	0.00	0.00
12,500.0	90.00	180.17	7,176.0	-2,494.99	-4,978.7	-3,129.8	5,612.6	0.00	0.00	0.00
12,600.0	90.00	180.17	7,176.0	-2,494.99	-5,078.7	-3,130.1	5,709.4	0.00	0.00	0.00
12,700.0	90.00	180.17	7,176.0	-2,494.99	-5,178.7	-3,130.4	5,806.1	0.00	0.00	0.00
12,800.0	90.00	180.17	7,176.0	-2,494.98	-5,278.7	-3,130.7	5,902.9	0.00	0.00	0.00
12,900.0	90.00	180.17	7,176.0	-2,494.98	-5,378.7	-3,131.0	5,999.6	0.00	0.00	0.00
13,000.0	90.00	180.17	7,176.0	-2,494.98	-5,478.7	-3,131.3	6,096.4	0.00	0.00	0.00
13,100.0	90.00	180.17	7,176.0	-2,494.98	-5,578.7	-3,131.6	6,193.2	0.00	0.00	0.00
13,200.0	90.00	180.17	7,176.0	-2,494.98	-5,678.7	-3,131.9	6,289.9	0.00	0.00	0.00
13,300.0	90.00	180.17	7,176.0	-2,494.98	-5,778.7	-3,132.2	6,386.7	0.00	0.00	0.00
13,400.0	90.00	180.17	7,176.0	-2,494.98	-5,878.7	-3,132.4	6,483.5	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CS-BITTERSWEET C1-1-13
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	North Reference:	True
Well:	CS-BITTERSWEET C1-1-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
13,500.0	90.00	180.17	7,176.0	-2,494.98	-5,978.7	-3,132.7	6,580.2	0.00	0.00	0.00
13,600.0	90.00	180.17	7,176.0	-2,494.98	-6,078.7	-3,133.0	6,677.0	0.00	0.00	0.00
13,700.0	90.00	180.17	7,176.0	-2,494.98	-6,178.7	-3,133.3	6,773.7	0.00	0.00	0.00
13,800.0	90.00	180.17	7,176.0	-2,494.98	-6,278.7	-3,133.6	6,870.5	0.00	0.00	0.00
13,900.0	90.00	180.17	7,176.0	-2,494.98	-6,378.7	-3,133.9	6,967.3	0.00	0.00	0.00
14,000.0	90.00	180.17	7,176.0	-2,494.98	-6,478.7	-3,134.2	7,064.0	0.00	0.00	0.00
14,100.0	90.00	180.17	7,176.0	-2,494.98	-6,578.7	-3,134.5	7,160.8	0.00	0.00	0.00
14,200.0	90.00	180.17	7,176.0	-2,494.98	-6,678.7	-3,134.7	7,257.6	0.00	0.00	0.00
14,300.0	90.00	180.17	7,176.0	-2,494.98	-6,778.7	-3,135.0	7,354.3	0.00	0.00	0.00
14,400.0	90.00	180.16	7,176.0	-2,494.98	-6,878.7	-3,135.3	7,451.1	0.00	0.00	0.00
14,500.0	90.00	180.16	7,176.0	-2,494.98	-6,978.7	-3,135.6	7,547.8	0.00	0.00	0.00
14,600.0	90.00	180.16	7,176.0	-2,494.98	-7,078.7	-3,135.9	7,644.6	0.00	0.00	0.00
14,700.0	90.00	180.16	7,176.0	-2,494.98	-7,178.7	-3,136.2	7,741.4	0.00	0.00	0.00
14,800.0	90.00	180.16	7,176.0	-2,494.98	-7,278.7	-3,136.5	7,838.1	0.00	0.00	0.00
14,900.0	90.00	180.16	7,176.0	-2,494.98	-7,378.7	-3,136.8	7,934.9	0.00	0.00	0.00
15,000.0	90.00	180.16	7,176.0	-2,494.98	-7,478.7	-3,137.0	8,031.7	0.00	0.00	0.00
15,100.0	90.00	180.16	7,176.0	-2,494.99	-7,578.7	-3,137.3	8,128.4	0.00	0.00	0.00
15,200.0	90.00	180.16	7,176.0	-2,494.99	-7,678.7	-3,137.6	8,225.2	0.00	0.00	0.00
15,300.0	90.00	180.16	7,176.0	-2,494.99	-7,778.7	-3,137.9	8,321.9	0.00	0.00	0.00
15,400.0	90.00	180.16	7,176.0	-2,494.99	-7,878.7	-3,138.2	8,418.7	0.00	0.00	0.00
15,500.0	90.00	180.16	7,176.0	-2,494.99	-7,978.7	-3,138.5	8,515.5	0.00	0.00	0.00
15,600.0	90.00	180.16	7,176.0	-2,494.99	-8,078.7	-3,138.8	8,612.2	0.00	0.00	0.00
15,700.0	90.00	180.16	7,176.0	-2,494.99	-8,178.7	-3,139.1	8,709.0	0.00	0.00	0.00
15,800.0	90.00	180.16	7,176.0	-2,494.99	-8,278.7	-3,139.3	8,805.8	0.00	0.00	0.00
15,900.0	90.00	180.16	7,176.0	-2,494.99	-8,378.7	-3,139.6	8,902.5	0.00	0.00	0.00
16,000.0	90.00	180.16	7,176.0	-2,494.99	-8,478.7	-3,139.9	8,999.3	0.00	0.00	0.00
16,100.0	90.00	180.16	7,176.0	-2,494.99	-8,578.7	-3,140.2	9,096.0	0.00	0.00	0.00
16,200.0	90.00	180.16	7,176.0	-2,494.99	-8,678.7	-3,140.5	9,192.8	0.00	0.00	0.00
16,300.0	90.00	180.16	7,176.0	-2,494.99	-8,778.7	-3,140.8	9,289.6	0.00	0.00	0.00
16,400.0	90.00	180.16	7,176.0	-2,494.99	-8,878.7	-3,141.1	9,386.3	0.00	0.00	0.00
16,500.0	90.00	180.16	7,176.0	-2,494.99	-8,978.7	-3,141.4	9,483.1	0.00	0.00	0.00
16,600.0	90.00	180.16	7,176.0	-2,494.99	-9,078.7	-3,141.6	9,579.9	0.00	0.00	0.00
16,700.0	90.00	180.16	7,176.0	-2,494.99	-9,178.7	-3,141.9	9,676.6	0.00	0.00	0.00
16,800.0	90.00	180.16	7,176.0	-2,494.99	-9,278.7	-3,142.2	9,773.4	0.00	0.00	0.00
16,900.0	90.00	180.16	7,176.0	-2,494.99	-9,378.7	-3,142.5	9,870.1	0.00	0.00	0.00
17,000.0	90.00	180.16	7,176.0	-2,494.99	-9,478.7	-3,142.8	9,966.9	0.00	0.00	0.00
17,100.0	90.00	180.16	7,176.0	-2,494.99	-9,578.7	-3,143.1	10,063.7	0.00	0.00	0.00
17,200.0	90.00	180.16	7,176.0	-2,494.99	-9,678.7	-3,143.4	10,160.4	0.00	0.00	0.00
17,300.0	90.00	180.16	7,176.0	-2,494.99	-9,778.7	-3,143.6	10,257.2	0.00	0.00	0.00
17,400.0	90.00	180.16	7,176.0	-2,494.99	-9,878.7	-3,143.9	10,353.9	0.00	0.00	0.00
17,500.0	90.00	180.16	7,176.0	-2,494.99	-9,978.7	-3,144.2	10,450.7	0.00	0.00	0.00
17,600.0	90.00	180.16	7,176.0	-2,494.99	-10,078.7	-3,144.5	10,547.5	0.00	0.00	0.00
17,700.0	90.00	180.16	7,176.0	-2,494.99	-10,178.7	-3,144.8	10,644.2	0.00	0.00	0.00
17,800.0	90.00	180.16	7,176.0	-2,494.99	-10,278.7	-3,145.1	10,741.0	0.00	0.00	0.00
17,900.0	90.00	180.16	7,176.0	-2,494.99	-10,378.7	-3,145.4	10,837.8	0.00	0.00	0.00
18,000.0	90.00	180.16	7,176.0	-2,494.99	-10,478.7	-3,145.7	10,934.5	0.00	0.00	0.00
18,100.0	90.00	180.16	7,176.0	-2,494.99	-10,578.7	-3,145.9	11,031.3	0.00	0.00	0.00
18,200.0	90.00	180.16	7,176.0	-2,494.99	-10,678.7	-3,146.2	11,128.0	0.00	0.00	0.00
18,300.0	90.00	180.16	7,176.0	-2,494.99	-10,778.7	-3,146.5	11,224.8	0.00	0.00	0.00
18,400.0	90.00	180.16	7,176.0	-2,494.99	-10,878.7	-3,146.8	11,321.6	0.00	0.00	0.00
18,500.0	90.00	180.16	7,176.0	-2,495.00	-10,978.7	-3,147.1	11,418.3	0.00	0.00	0.00
18,600.0	90.00	180.16	7,176.0	-2,495.00	-11,078.7	-3,147.4	11,515.1	0.00	0.00	0.00
18,700.0	90.00	180.16	7,176.0	-2,495.00	-11,178.7	-3,147.7	11,611.9	0.00	0.00	0.00
18,800.0	90.00	180.16	7,176.0	-2,495.00	-11,278.7	-3,147.9	11,708.6	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CS-BITTERSWEET C1-1-13
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4681.0usft (Original Well Elev)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	North Reference:	True
Well:	CS-BITTERSWEET C1-1-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
18,900.0	90.00	180.16	7,176.0	-2,495.00	-11,378.7	-3,148.2	11,805.4	0.00	0.00	0.00
19,000.0	90.00	180.16	7,176.0	-2,495.00	-11,478.7	-3,148.5	11,902.1	0.00	0.00	0.00
19,100.0	90.00	180.16	7,176.0	-2,495.00	-11,578.7	-3,148.8	11,998.9	0.00	0.00	0.00
19,200.0	90.00	180.16	7,176.0	-2,495.00	-11,678.7	-3,149.1	12,095.7	0.00	0.00	0.00
19,300.0	90.00	180.16	7,176.0	-2,495.00	-11,778.7	-3,149.4	12,192.4	0.00	0.00	0.00
19,400.0	90.00	180.16	7,176.0	-2,495.00	-11,878.7	-3,149.6	12,289.2	0.00	0.00	0.00
BHL - CS-BITTERSWEET C1-1-13 (P2)										
19,455.9	90.00	180.16	7,176.0	-2,495.00	-11,934.6	-3,149.8	12,343.3	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,131.6	3,651.0	PARKMAN			
5,046.8	4,416.0	SUSSEX			
5,568.4	4,852.0	SHANNON			
7,704.9	6,858.0	NIOBRARA			
8,130.9	7,138.0	FORT HAYS			
8,233.5	7,166.0	CODELL			

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)
1,764.7	1,672.5	-37.1	-468.7	EOB TO 33.29° INC
1,917.1	1,800.0	-43.7	-552.2	9 5/8" SURFACE CSG
5,746.0	5,000.5	-209.4	-2,647.4	END OF TANGENT
7,410.7	6,573.0	-246.5	-3,116.1	EOD TO VERTICAL
7,440.7	6,603.0	-246.5	-3,116.1	KOP (10°/100ft BUR)
8,340.7	7,176.0	-819.5	-3,117.8	LANDING PNT - CS-BITTERSWEET C1-1-13
19,455.9	7,176.0	-11,934.6	-3,149.8	BHL - CS-BITTERSWEET C1-1-13 (P2)