



# ENCANA OIL & GAS (USA) INC

Location: COLORADO Slot: Slot #07 Federal 20-11BB (PN20) 1047FSL & 2151FWL  
Field: GARFIELD COUNTY (NEW) Well: Federal 20-11BB  
Facility: SEC.20-T7S-R95W Wellbore: Federal 20-11BB PWB

Plot reference wellpath is Federal 20-11BB PWB Rev A-0		Grid System: NAD83 / Lambert Colorado State Planes, Central Zone (502), US feet	
True vertical depths are referenced to Rig on Slot #07 Federal 20-11BB (PN20) 1047FSL & 2151FWL (RT)		North Reference: True north	
Measured depths are referenced to Rig on Slot #07 Federal 20-11BB (PN20) 1047FSL & 2151FWL (RT)		Scale: True distance	
Rig on Slot #07 Federal 20-11BB (PN20) 1047FSL & 2151FWL (RT) to Mean Sea Level: 5795 feet		Depths are in feet	
Mean Sea Level to Mud line (Facility: SEC.20-T7S-R95W): 0 feet		Created by: thomsuz on 9/16/2009	
Coordinates are in feet referenced to Slot			

## Location Information

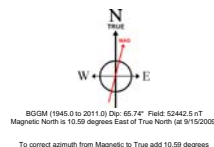
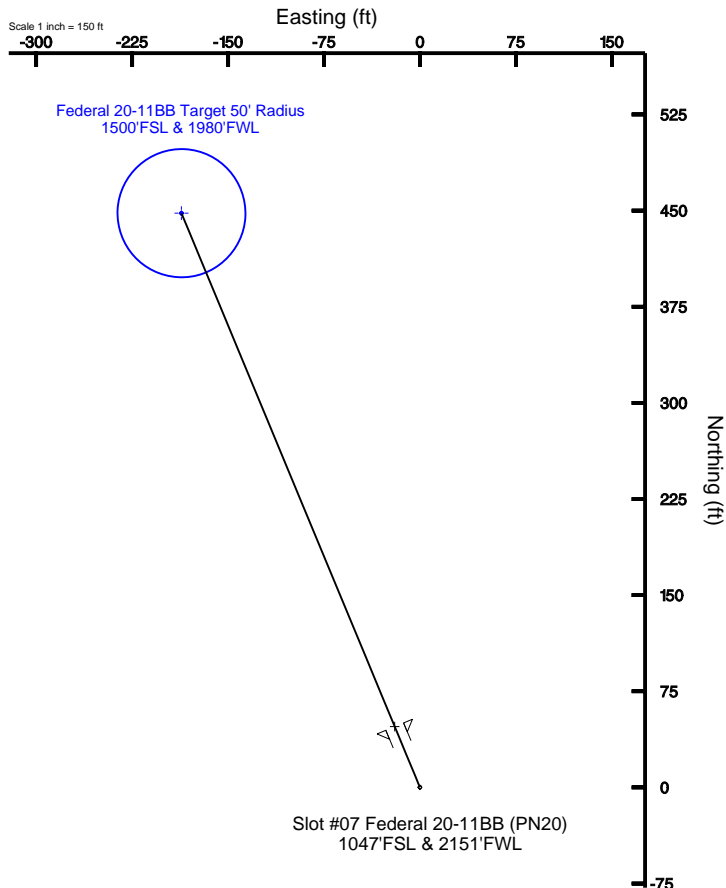
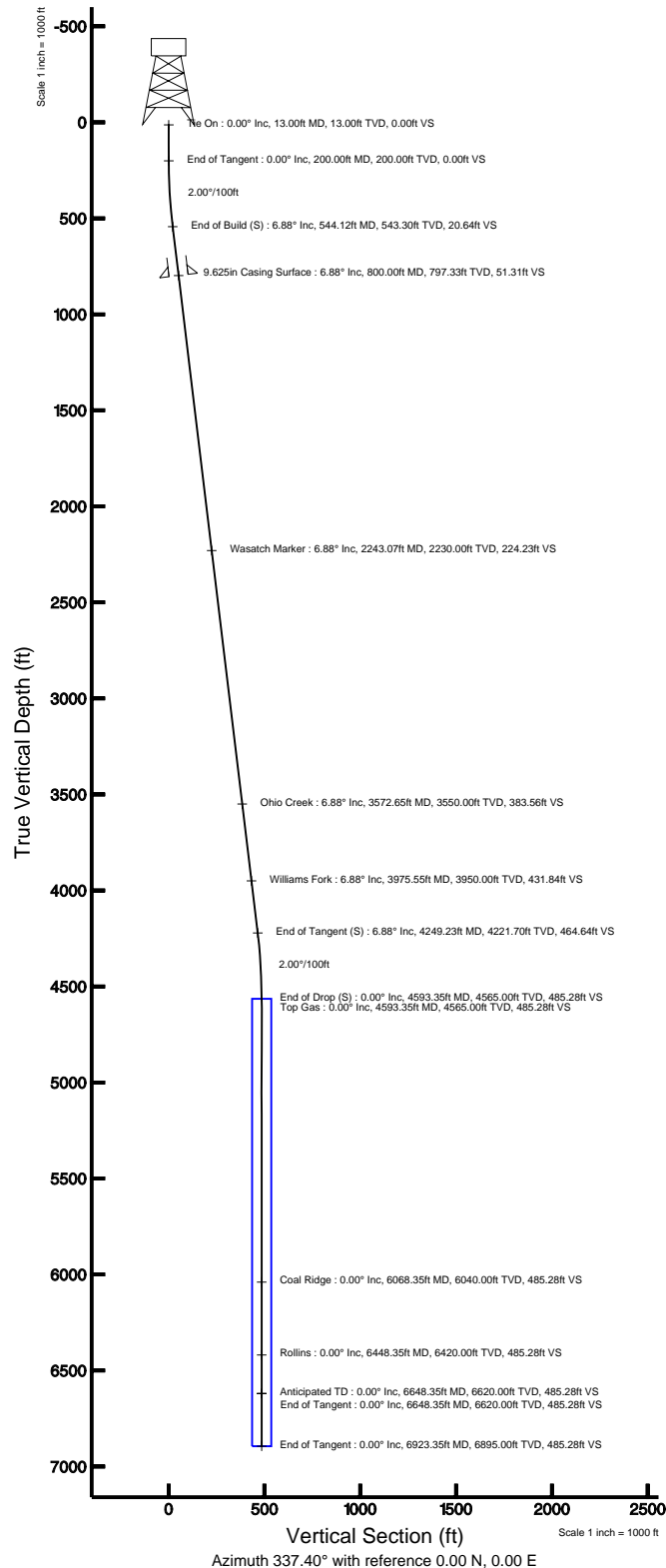
Facility Name				Grid East (USF)	Grid North (USF)	Latitude	Longitude
SEC.20-T7S-R95W				2287520.922	1587271.857	39°25'07.212"N	108°01'20.208"W
Slot	Local N (ft)	Local E (ft)		Grid East (USF)	Grid North (USF)	Latitude	Longitude
Slot #07 Federal 20-11BB (PN20) 1047FSL & 2151FWL	-36.43	-33.90		2287486.023	1587236.389	39°25'06.852"N	108°01'20.640"W
Rig on Slot #07 Federal 20-11BB (PN20) 1047FSL & 2151FWL (RT) to Mud line (Facility: SEC.20-T7S-R95W)							5795ft
Mean Sea Level to Mud line (Facility: SEC.20-T7S-R95W)							0ft
Rig on Slot #07 Federal 20-11BB (PN20) 1047FSL & 2151FWL (RT) to Mean Sea Level							5795ft

## Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (USF)	Grid North (USF)	Latitude	Longitude
Federal 20-11BB Target 50' Radius 1500'FSL & 1980'FWL	4593.35	4565.00	448.03	-186.46	2287312.08	1587688.40	39°25'11.280"N	108°01'23.016"W

## Well Profile Data

Design Comment	MD (ft)	Inc (")	Az (")	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	13.00	0.000	337.404	13.00	0.00	0.00	0.00	0.00
End of Tangent	200.00	0.000	337.404	200.00	0.00	0.00	0.00	0.00
End of Build (S)	544.12	6.882	337.404	543.30	19.06	-7.93	2.00	20.64
End of Tangent (S)	4249.23	6.882	337.404	4221.70	428.97	-178.53	0.00	464.64
End of Drop (S)	4593.35	0.000	337.404	4565.00	448.03	-186.46	2.00	485.28
End of Tangent	6648.35	0.000	337.404	6620.00	448.03	-186.46	0.00	485.28
End of Tangent	6923.35	0.000	337.404	6895.00	448.03	-186.46	0.00	485.28





# Planned Wellpath Report

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ENCANA OIL & GAS (USA) INC	Slot	Slot #07 Federal 20-11BB (PN20) 1047'FSL & 2151'FWL
Area	COLORADO	Well	Federal 20-11BB
Field	GARFIELD COUNTY (NEW)	Wellbore	Federal 20-11BB PWB
Facility	SEC.20-T7S-R95W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado State Planes, Central Zone (502), US feet	Software System	WellArchitect® 2.0
North Reference	True	User	Thomsuzc
Scale	0.999951	Report Generated	9/16/2009 at 1:14:18 PM
Convergence at slot	1.59° West	Database/Source file	Denver/Federal_20-11BB_PWB.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	-36.43	-33.90	2287486.02	1587236.39	39°25'06.852"N	108°01'20.640"W
Facility Reference Pt			2287520.92	1587271.86	39°25'07.212"N	108°01'20.208"W
Field Reference Pt			3000000.01	4560984.48	47°34'21.070"N	105°30'00.000"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Rig on Slot #07 Federal 20-11BB (PN20) 1047'FSL & 2151'FWL (RT) to Facility Vertical Datum	5795.00ft
Horizontal Reference Pt	Slot	Rig on Slot #07 Federal 20-11BB (PN20) 1047'FSL & 2151'FWL (RT) to Mean Sea Level	5795.00ft
Vertical Reference Pt	Rig on Slot #07 Federal 20-11BB (PN20) 1047'FSL & 2151'FWL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on Slot #07 Federal 20-11BB (PN20) 1047'FSL & 2151'FWL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	337.40°



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Area	COLORADO	Well	Federal 20-11BB
Field	GARFIELD COUNTY (NEW)	Wellbore	Federal 20-11BB PWB
Facility	SEC.20-T7S-R95W		

## WELLPATH DATA (77 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]
0.00†	0.000	337.404	0.00	0.00	0.00	0.00	0.00
13.00	0.000	337.404	13.00	0.00	0.00	0.00	0.00
113.00†	0.000	337.404	113.00	0.00	0.00	0.00	0.00
200.00	0.000	337.404	200.00	0.00	0.00	0.00	0.00
213.00†	0.260	337.404	213.00	0.03	0.03	-0.01	2.00
313.00†	2.260	337.404	312.97	2.23	2.06	-0.86	2.00
413.00†	4.260	337.404	412.80	7.91	7.31	-3.04	2.00
513.00†	6.260	337.404	512.38	17.08	15.77	-6.56	2.00
544.12	6.882	337.404	543.30	20.64	19.06	-7.93	2.00
613.00†	6.882	337.404	611.68	28.90	26.68	-11.10	0.00
713.00†	6.882	337.404	710.96	40.88	37.74	-15.71	0.00
813.00†	6.882	337.404	810.24	52.86	48.81	-20.31	0.00
913.00†	6.882	337.404	909.51	64.85	59.87	-24.92	0.00
1013.00†	6.882	337.404	1008.79	76.83	70.93	-29.52	0.00
1113.00†	6.882	337.404	1108.07	88.81	82.00	-34.13	0.00
1213.00†	6.882	337.404	1207.35	100.80	93.06	-38.73	0.00
1313.00†	6.882	337.404	1306.63	112.78	104.12	-43.33	0.00
1413.00†	6.882	337.404	1405.91	124.76	115.19	-47.94	0.00
1513.00†	6.882	337.404	1505.19	136.75	126.25	-52.54	0.00
1613.00†	6.882	337.404	1604.47	148.73	137.31	-57.15	0.00
1713.00†	6.882	337.404	1703.75	160.71	148.38	-61.75	0.00
1813.00†	6.882	337.404	1803.03	172.70	159.44	-66.36	0.00
1913.00†	6.882	337.404	1902.31	184.68	170.50	-70.96	0.00
2013.00†	6.882	337.404	2001.59	196.66	181.57	-75.57	0.00
2113.00†	6.882	337.404	2100.87	208.65	192.63	-80.17	0.00
2213.00†	6.882	337.404	2200.15	220.63	203.69	-84.77	0.00
2313.00†	6.882	337.404	2299.43	232.61	214.76	-89.38	0.00
2413.00†	6.882	337.404	2398.71	244.60	225.82	-93.98	0.00
2513.00†	6.882	337.404	2497.99	256.58	236.88	-98.59	0.00
2613.00†	6.882	337.404	2597.26	268.56	247.95	-103.19	0.00
2713.00†	6.882	337.404	2696.54	280.55	259.01	-107.80	0.00
2813.00†	6.882	337.404	2795.82	292.53	270.07	-112.40	0.00
2913.00†	6.882	337.404	2895.10	304.51	281.14	-117.01	0.00
3013.00†	6.882	337.404	2994.38	316.50	292.20	-121.61	0.00
3113.00†	6.882	337.404	3093.66	328.48	303.26	-126.21	0.00
3213.00†	6.882	337.404	3192.94	340.46	314.33	-130.82	0.00
3313.00†	6.882	337.404	3292.22	352.45	325.39	-135.42	0.00
3413.00†	6.882	337.404	3391.50	364.43	336.45	-140.03	0.00
3513.00†	6.882	337.404	3490.78	376.41	347.52	-144.63	0.00
3613.00†	6.882	337.404	3590.06	388.40	358.58	-149.24	0.00
3713.00†	6.882	337.404	3689.34	400.38	369.64	-153.84	0.00
3813.00†	6.882	337.404	3788.62	412.36	380.71	-158.45	0.00
3913.00†	6.882	337.404	3887.90	424.35	391.77	-163.05	0.00
4013.00†	6.882	337.404	3987.18	436.33	402.83	-167.65	0.00
4113.00†	6.882	337.404	4086.46	448.31	413.90	-172.26	0.00



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## REFERENCE WELLPATH IDENTIFICATION

Operator	ENCANA OIL & GAS (USA) INC	Slot	Slot #07 Federal 20-11BB (PN20) 1047'FSL & 2151'FWL
Area	COLORADO	Well	Federal 20-11BB
Field	GARFIELD COUNTY (NEW)	Wellbore	Federal 20-11BB PWB
Facility	SEC.20-T7S-R95W		

## WELLPATH DATA (77 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]
4213.00†	6.882	337.404	4185.74	460.30	424.96	-176.86	0.00
4249.23	6.882	337.404	4221.70	464.64	428.97	-178.53	0.00
4313.00†	5.607	337.404	4285.09	471.57	435.37	-181.20	2.00
4413.00†	3.607	337.404	4384.77	479.61	442.79	-184.28	2.00
4513.00†	1.607	337.404	4484.66	484.15	446.99	-186.03	2.00
4593.35	0.000	337.404	4565.00 <sup>1</sup>	485.28	448.03	-186.46	2.00
4613.00†	0.000	337.404	4584.65	485.28	448.03	-186.46	0.00
4713.00†	0.000	337.404	4684.65	485.28	448.03	-186.46	0.00
4813.00†	0.000	337.404	4784.65	485.28	448.03	-186.46	0.00
4913.00†	0.000	337.404	4884.65	485.28	448.03	-186.46	0.00
5013.00†	0.000	337.404	4984.65	485.28	448.03	-186.46	0.00
5113.00†	0.000	337.404	5084.65	485.28	448.03	-186.46	0.00
5213.00†	0.000	337.404	5184.65	485.28	448.03	-186.46	0.00
5313.00†	0.000	337.404	5284.65	485.28	448.03	-186.46	0.00
5413.00†	0.000	337.404	5384.65	485.28	448.03	-186.46	0.00
5513.00†	0.000	337.404	5484.65	485.28	448.03	-186.46	0.00
5613.00†	0.000	337.404	5584.65	485.28	448.03	-186.46	0.00
5713.00†	0.000	337.404	5684.65	485.28	448.03	-186.46	0.00
5813.00†	0.000	337.404	5784.65	485.28	448.03	-186.46	0.00
5913.00†	0.000	337.404	5884.65	485.28	448.03	-186.46	0.00
6013.00†	0.000	337.404	5984.65	485.28	448.03	-186.46	0.00
6113.00†	0.000	337.404	6084.65	485.28	448.03	-186.46	0.00
6213.00†	0.000	337.404	6184.65	485.28	448.03	-186.46	0.00
6313.00†	0.000	337.404	6284.65	485.28	448.03	-186.46	0.00
6413.00†	0.000	337.404	6384.65	485.28	448.03	-186.46	0.00
6513.00†	0.000	337.404	6484.65	485.28	448.03	-186.46	0.00
6613.00†	0.000	337.404	6584.65	485.28	448.03	-186.46	0.00
6648.35	0.000	337.404	6620.00	485.28	448.03	-186.46	0.00
6713.00†	0.000	337.404	6684.65	485.28	448.03	-186.46	0.00
6813.00†	0.000	337.404	6784.65	485.28	448.03	-186.46	0.00
6913.00†	0.000	337.404	6884.65	485.28	448.03	-186.46	0.00
6923.35	0.000	337.404	6895.00	485.28	448.03	-186.46	0.00

## HOLE & CASING SECTIONS Ref Wellbore: Federal 20-11BB PWB Ref Wellpath: Federal 20-11BB PWP Rev-A.0

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
12.25in Open Hole	13.00	800.00	787.00	13.00	797.33	0.00	0.00	47.37	-19.71
9.625in Casing Surface	13.00	800.00	787.00	13.00	797.33	0.00	0.00	47.37	-19.71



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REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	Federal 20-11BB
Field	GARFIELD COUNTY (NEW)	Wellbore	Federal 20-11BB PWB
Facility	SEC.20-T7S-R95W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) Federal 20-11BB Target 50' Radius 1500'FSL & 1980'FWL	4593.35	4565.00	448.03	-186.46	2287312.08	1587689.40	39°25'11.280"N	108°01'23.016"W	circle

SURVEY PROGRAM Ref Wellbore: Federal 20-11BB PWB Ref Wellpath: Federal 20-11BB PWP Rev-A.0				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
13.00	6923.35	MTC (Collar, post-2000) (Standard)		Federal 20-11BB PWB



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Area	COLORADO	Well	Federal 20-11BB
Field	GARFIELD COUNTY (NEW)	Wellbore	Federal 20-11BB PWB
Facility	SEC.20-T7S-R95W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
2243.07	6.882	337.404	2230.00	Wasatch Marker
3572.65	6.882	337.404	3550.00	Ohio Creek
3975.55	6.882	337.404	3950.00	Williams Fork
4593.35	0.000	337.404	4565.00	Top Gas
6068.35	0.000	337.404	6040.00	Coal Ridge
6448.35	0.000	337.404	6420.00	Rollins
6648.35	0.000	337.404	6620.00	Anticipated TD