



ANADARKO PETROLEUM CORP.

ANADARKO COLORADO NORTHERN ZONE NAD 83

WELD_SWEETGRASS 14-14

Sweetgrass 23-14

Sweetgrass 23-14

Plan: Sweetgrass 23-14 (wp02)

Standard Planning Report

04 November, 2010





Project: ANADARKO COLORADO NORTHERN ZONE NAD 83
 Site: WELD_SWEETGRASS 14-14
 Well: Sweetgrass 23-14
 Wellbore: Sweetgrass 23-14
 Section:
 SHL:
 Design: Sweetgrass 23-14 (wp02)
 Latitude: 40° 2' 59.489 N
 Longitude: 104° 58' 38.363 W
 GL: 5104.0
 KB: WELL @ 5104.0ft (Original Well Elev)



Weatherford®



Azimuths to True North
 Magnetic North: 9.01°

Magnetic Field
 Strength: 52979.1snT
 Dip Angle: 66.77°
 Date: 9/28/2010
 Model: BGGM2010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3944.0	4125.2	PK
4763.0	5025.9	SX
7469.0	7866.3	NIO
7849.0	8246.3	CD
7925.0	8322.3	GH
8293.0	8690.3	J

CASING DETAILS

TVD	MD	Name	Size
1160.0	1160.0	9 5/8"	9-5/8

SECTION DETAILS

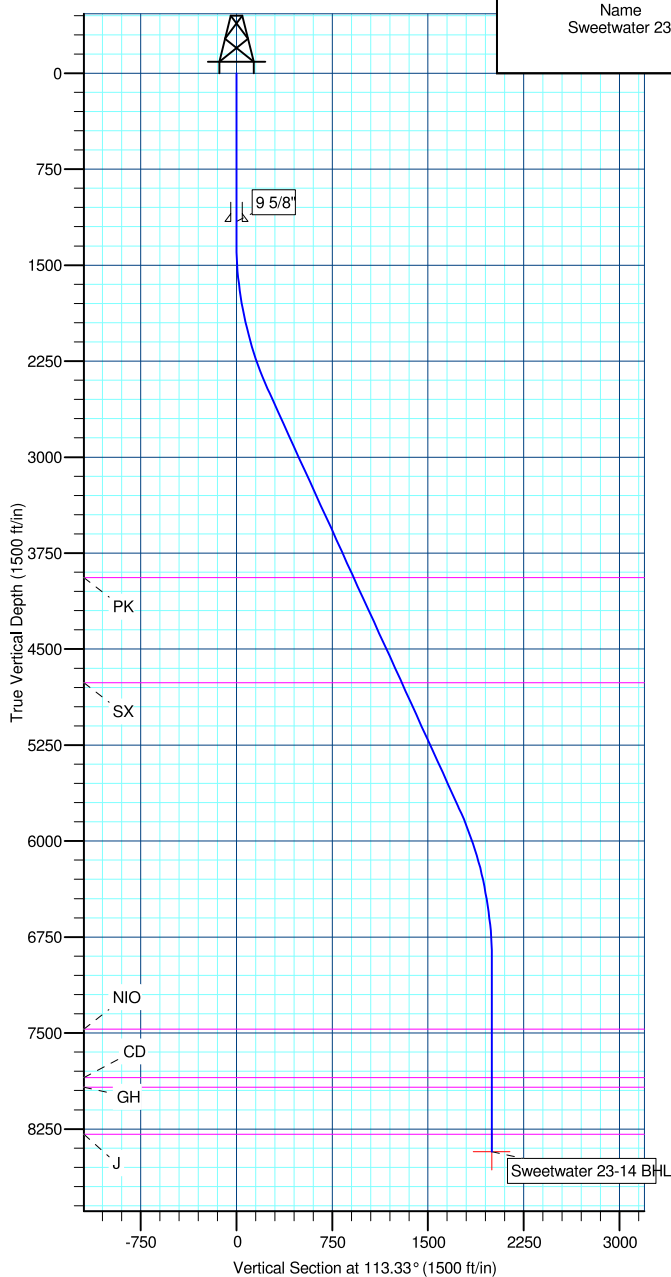
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.0	0.00	0.00	0.0	0.0	50.1	0.00	0.00	0.0	
1310.0	0.00	0.00	1310.0	0.0	50.1	0.00	0.00	0.0	
2539.5	24.59	113.33	2502.1	-102.9	288.7	2.00	113.33	259.8	
6095.8	24.59	113.33	5735.9	-689.0	1647.5	0.00	0.00	1739.7	
7325.3	0.00	0.00	6928.0	-791.9	1886.1	2.00	180.00	1999.5	
8825.3	0.00	0.00	8428.0	-791.9	1886.1	0.00	0.00	1999.5	

WELL DETAILS: Sweetgrass 23-14

+N/-S	+E/-W	Northing	Easting	Ground Level:	5104.0	Latitude	Longitude	Slot
0.0	50.1	1261440.07	3146321.94	40° 2' 59.489 N	104° 58' 38.363 W			

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Sweetwater 23-14 BHL	8428.0	-791.9	1886.1	1260659.05	3148162.54	40° 2' 51.662 N	104° 58' 14.754 W	Point



Plan: Sweetgrass 23-14 (wp02) (Sweetgrass 23-14/Sweetgrass 23-14)

Created By: Jason Daguitera Date: 18:07, November 04 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site WELD_SWEETGRASS 14-14
Company:	ANADARKO PETROLEUM CORP.	TVD Reference:	WELL @ 5104.0ft (Original Well Elev)
Project:	ANADARKO COLORADO NORTHERN ZONE NAD 83	MD Reference:	WELL @ 5104.0ft (Original Well Elev)
Site:	WELD_SWEETGRASS 14-14	North Reference:	True
Well:	Sweetgrass 23-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sweetgrass 23-14		
Design:	Sweetgrass 23-14 (wp02)		

Project	ANADARKO COLORADO NORTHERN ZONE NAD 83, ROCKIES, ROCKIES		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						WELD_SWEETGRASS 14-14											
Site Position:			Northing:			1,261,439.81ft			Latitude:			40° 2' 59.489 N					
From:			Lat/Long			Easting:			3,146,271.81ft			Longitude:			104° 58' 39.007 W		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.34 °		

Well	Sweetgrass 23-14					
Well Position	+N/-S	0.0 ft	Northing:	1,261,440.07 ft	Latitude:	40° 2' 59.489 N
	+E/-W	50.1ft	Easting:	3,146,321.94 ft	Longitude:	104° 58' 38.363 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,104.0ft

Wellbore	Sweetgrass 23-14				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2010	9/28/2010	9.01	66.77	52,979

Design	Sweetgrass 23-14 (wp02)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	-15.0	0.0	50.1	113.33

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	50.1	0.00	0.00	0.00	0.00	
1,310.0	0.00	0.00	1,310.0	0.0	50.1	0.00	0.00	0.00	0.00	
2,539.5	24.59	113.33	2,502.1	-102.9	288.7	2.00	2.00	0.00	113.33	
6,095.8	24.59	113.33	5,735.9	-689.0	1,647.5	0.00	0.00	0.00	0.00	
7,325.3	0.00	0.00	6,928.0	-791.9	1,886.1	2.00	-2.00	0.00	180.00	
8,825.3	0.00	0.00	8,428.0	-791.9	1,886.1	0.00	0.00	0.00	0.00	Sweetwater 23-14 E

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Project:	ANADARKO COLORADO NORTHERN ZONE NAD 83	MD Reference:	WELL @ 5104.0ft (Original Well Elev)
Site:	WELD_SWEETGRASS 14-14	North Reference:	True
Well:	Sweetgrass 23-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sweetgrass 23-14		
Design:	Sweetgrass 23-14 (wp02)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	50.1	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	50.1	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	50.1	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	50.1	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	50.1	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	50.1	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	50.1	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	50.1	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	50.1	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	50.1	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	50.1	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	50.1	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	50.1	0.0	0.00	0.00	0.00
9 5/8"									
1,200.0	0.00	0.00	1,200.0	0.0	50.1	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	50.1	0.0	0.00	0.00	0.00
1,310.0	0.00	0.00	1,310.0	0.0	50.1	0.0	0.00	0.00	0.00
1,400.0	1.80	113.33	1,400.0	-0.6	51.4	1.4	2.00	2.00	0.00
1,500.0	3.80	113.33	1,499.9	-2.5	55.9	6.3	2.00	2.00	0.00
1,600.0	5.80	113.33	1,599.5	-5.8	63.6	14.7	2.00	2.00	0.00
1,700.0	7.80	113.33	1,698.8	-10.5	74.5	26.5	2.00	2.00	0.00
1,800.0	9.80	113.33	1,797.6	-16.6	88.5	41.8	2.00	2.00	0.00
1,900.0	11.80	113.33	1,895.8	-24.0	105.7	60.5	2.00	2.00	0.00
2,000.0	13.80	113.33	1,993.3	-32.8	126.1	82.7	2.00	2.00	0.00
2,100.0	15.80	113.33	2,090.0	-42.9	149.5	108.2	2.00	2.00	0.00
2,200.0	17.80	113.33	2,185.8	-54.3	176.1	137.1	2.00	2.00	0.00
2,300.0	19.80	113.33	2,280.4	-67.1	205.6	169.4	2.00	2.00	0.00
2,400.0	21.80	113.33	2,373.9	-81.2	238.3	204.9	2.00	2.00	0.00
2,500.0	23.80	113.33	2,466.1	-96.5	273.8	243.6	2.00	2.00	0.00
2,539.5	24.59	113.33	2,502.1	-102.9	288.7	259.8	2.00	2.00	0.00
2,600.0	24.59	113.33	2,557.1	-112.9	311.8	285.0	0.00	0.00	0.00
2,700.0	24.59	113.33	2,648.0	-129.4	350.0	326.6	0.00	0.00	0.00
2,800.0	24.59	113.33	2,739.0	-145.9	388.2	368.2	0.00	0.00	0.00
2,900.0	24.59	113.33	2,829.9	-162.3	426.4	409.8	0.00	0.00	0.00
3,000.0	24.59	113.33	2,920.8	-178.8	464.7	451.4	0.00	0.00	0.00
3,100.0	24.59	113.33	3,011.8	-195.3	502.9	493.0	0.00	0.00	0.00
3,200.0	24.59	113.33	3,102.7	-211.8	541.1	534.7	0.00	0.00	0.00
3,300.0	24.59	113.33	3,193.6	-228.3	579.3	576.3	0.00	0.00	0.00
3,400.0	24.59	113.33	3,284.6	-244.7	617.5	617.9	0.00	0.00	0.00
3,500.0	24.59	113.33	3,375.5	-261.2	655.7	659.5	0.00	0.00	0.00
3,600.0	24.59	113.33	3,466.4	-277.7	693.9	701.1	0.00	0.00	0.00
3,700.0	24.59	113.33	3,557.4	-294.2	732.1	742.7	0.00	0.00	0.00
3,800.0	24.59	113.33	3,648.3	-310.7	770.3	784.3	0.00	0.00	0.00
3,900.0	24.59	113.33	3,739.2	-327.1	808.5	825.9	0.00	0.00	0.00
4,000.0	24.59	113.33	3,830.2	-343.6	846.7	867.5	0.00	0.00	0.00
4,100.0	24.59	113.33	3,921.1	-360.1	885.0	909.2	0.00	0.00	0.00
4,125.2	24.59	113.33	3,944.0	-364.2	894.6	919.6	0.00	0.00	0.00
PK									
4,200.0	24.59	113.33	4,012.0	-376.6	923.2	950.8	0.00	0.00	0.00
4,300.0	24.59	113.33	4,102.9	-393.0	961.4	992.4	0.00	0.00	0.00
4,400.0	24.59	113.33	4,193.9	-409.5	999.6	1,034.0	0.00	0.00	0.00
4,500.0	24.59	113.33	4,284.8	-426.0	1,037.8	1,075.6	0.00	0.00	0.00
4,600.0	24.59	113.33	4,375.7	-442.5	1,076.0	1,117.2	0.00	0.00	0.00

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Site:	WELD_SWEETGRASS 14-14	North Reference:	True
Well:	Sweetgrass 23-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sweetgrass 23-14		
Design:	Sweetgrass 23-14 (wp02)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	24.59	113.33	4,466.7	-459.0	1,114.2	1,158.8	0.00	0.00	0.00
4,800.0	24.59	113.33	4,557.6	-475.4	1,152.4	1,200.4	0.00	0.00	0.00
4,900.0	24.59	113.33	4,648.5	-491.9	1,190.6	1,242.0	0.00	0.00	0.00
5,000.0	24.59	113.33	4,739.5	-508.4	1,228.8	1,283.7	0.00	0.00	0.00
5,025.9	24.59	113.33	4,763.0	-512.7	1,238.7	1,294.4	0.00	0.00	0.00
SX									
5,100.0	24.59	113.33	4,830.4	-524.9	1,267.0	1,325.3	0.00	0.00	0.00
5,200.0	24.59	113.33	4,921.3	-541.4	1,305.3	1,366.9	0.00	0.00	0.00
5,300.0	24.59	113.33	5,012.3	-557.8	1,343.5	1,408.5	0.00	0.00	0.00
5,400.0	24.59	113.33	5,103.2	-574.3	1,381.7	1,450.1	0.00	0.00	0.00
5,500.0	24.59	113.33	5,194.1	-590.8	1,419.9	1,491.7	0.00	0.00	0.00
5,600.0	24.59	113.33	5,285.1	-607.3	1,458.1	1,533.3	0.00	0.00	0.00
5,700.0	24.59	113.33	5,376.0	-623.8	1,496.3	1,574.9	0.00	0.00	0.00
5,800.0	24.59	113.33	5,466.9	-640.2	1,534.5	1,616.6	0.00	0.00	0.00
5,900.0	24.59	113.33	5,557.8	-656.7	1,572.7	1,658.2	0.00	0.00	0.00
6,000.0	24.59	113.33	5,648.8	-673.2	1,610.9	1,699.8	0.00	0.00	0.00
6,095.8	24.59	113.33	5,735.9	-689.0	1,647.5	1,739.7	0.00	0.00	0.00
6,100.0	24.51	113.33	5,739.7	-689.7	1,649.1	1,741.4	2.00	-2.00	0.00
6,200.0	22.51	113.33	5,831.4	-705.5	1,685.8	1,781.3	2.00	-2.00	0.00
6,300.0	20.51	113.33	5,924.4	-720.0	1,719.4	1,817.9	2.00	-2.00	0.00
6,400.0	18.51	113.33	6,018.7	-733.2	1,750.1	1,851.3	2.00	-2.00	0.00
6,500.0	16.51	113.33	6,114.1	-745.1	1,777.7	1,881.4	2.00	-2.00	0.00
6,600.0	14.51	113.33	6,210.4	-755.7	1,802.2	1,908.1	2.00	-2.00	0.00
6,700.0	12.51	113.33	6,307.6	-765.0	1,823.7	1,931.5	2.00	-2.00	0.00
6,800.0	10.51	113.33	6,405.6	-772.9	1,842.0	1,951.4	2.00	-2.00	0.00
6,900.0	8.51	113.33	6,504.3	-779.4	1,857.2	1,967.9	2.00	-2.00	0.00
7,000.0	6.51	113.33	6,603.4	-784.6	1,869.2	1,981.0	2.00	-2.00	0.00
7,100.0	4.51	113.33	6,702.9	-788.4	1,878.0	1,990.6	2.00	-2.00	0.00
7,200.0	2.51	113.33	6,802.7	-790.8	1,883.6	1,996.7	2.00	-2.00	0.00
7,300.0	0.51	113.33	6,902.7	-791.8	1,886.0	1,999.3	2.00	-2.00	0.00
7,325.3	0.00	0.00	6,928.0	-791.9	1,886.1	1,999.5	2.00	-2.00	0.00
7,400.0	0.00	0.00	7,002.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
7,500.0	0.00	0.00	7,102.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
7,600.0	0.00	0.00	7,202.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
7,700.0	0.00	0.00	7,302.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
7,800.0	0.00	0.00	7,402.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
7,866.3	0.00	0.00	7,469.0	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
NIO									
7,900.0	0.00	0.00	7,502.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,000.0	0.00	0.00	7,602.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,100.0	0.00	0.00	7,702.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,200.0	0.00	0.00	7,802.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,246.3	0.00	0.00	7,849.0	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
CD									
8,300.0	0.00	0.00	7,902.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,322.3	0.00	0.00	7,925.0	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
GH									
8,400.0	0.00	0.00	8,002.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,500.0	0.00	0.00	8,102.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,600.0	0.00	0.00	8,202.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,690.3	0.00	0.00	8,293.0	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
J									
8,700.0	0.00	0.00	8,302.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00

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Well:	Sweetgrass 23-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sweetgrass 23-14		
Design:	Sweetgrass 23-14 (wp02)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,800.0	0.00	0.00	8,402.7	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
8,825.3	0.00	0.00	8,428.0	-791.9	1,886.1	1,999.5	0.00	0.00	0.00
Sweetwater 23-14 BHL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,160.0	1,160.0	9 5/8"	9-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,690.3	8,293.0	J		0.00	
4,125.2	3,944.0	PK		0.00	
8,322.3	7,925.0	GH		0.00	
5,025.9	4,763.0	SX		0.00	
7,866.3	7,469.0	NIO		0.00	
8,246.3	7,849.0	CD		0.00	