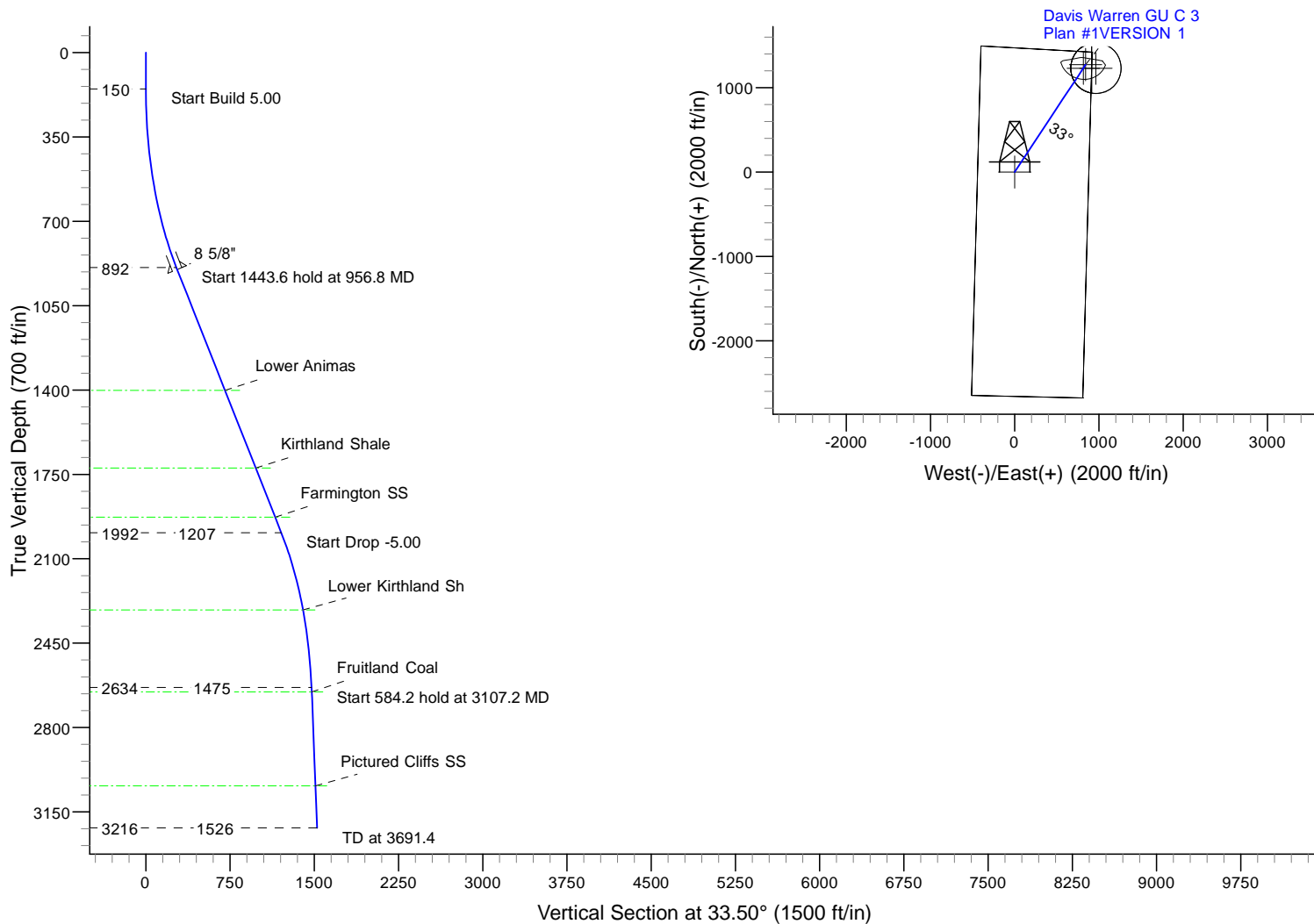


Project: Western - San Juan North (NAD 83)  
 Site: SEC 13 -T33N-R09W  
 Well: Davis Warren GU C 3  
 Wellbore: Wellbore #1  
 Design: Plan #1VERSION 1



SECTION DETAILS											FORMATION TOP DETAILS		
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target	TVDPath	MDPath	Formation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	FC DAVIS C3 DRILLING BHL DAVIS C3	1401.0	1624.9	Lower Animas
2	150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.0		1723.0	2047.4	Kirthland Shale
3	956.8	40.34	33.50	891.8	227.2	150.4	5.00	33.50	272.5		1927.0	2315.0	Farmington SS
4	2400.4	40.34	33.50	1992.1	1006.5	666.1	0.00	0.00	1207.0		2312.0	2775.2	Lower Kirthland Sh
5	3107.2	5.00	33.50	2634.0	1230.1	814.1	5.00	180.00	1475.1		2652.0	3125.3	Fruitland Coal
6	3691.4	5.00	33.50	3216.0	1272.6	842.2	0.00	0.00	1526.0		3042.0	3516.8	Pictured Cliffs SS

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
Drilling window davis c3	0.0	0.0	0.0	1167891.00	2334313.03	37° 6' 19.476 N	107° 46' 58.152 W	Polygon	
FC DAVIS C3 DRILLING	2634.0	1230.1	814.1	1169121.12	2335127.15	37° 6' 31.831 N	107° 46' 48.476 W	Circle (Radius: 300.0)	
FC DAVIS C3 subsurface	2634.0	1230.1	964.1	1169121.11	2335277.15	37° 6' 31.867 N	107° 46' 46.625 W	Circle (Radius: 300.0)	
BHL DAVIS C3	3216.0	1272.6	842.2	1169163.62	2335155.25	37° 6' 32.258 N	107° 46' 48.142 W	Point	



	PROJECT DETAILS	WELL SURFACE DETAILS	PLAN APPROVAL: 13:29, December 06 2011
	Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Colorado Southern Zone System Datum: Mean Sea Level	Ground Level: 6694.8 Ref. Sec.: Slot - (0.0N, 0.0E) North: 1167890.99 East: 2334313.03 Lat: 37° 6' 19.476 N Long: 107° 46' 58.152 W	Created By: Lucas Munisteri Checked: Lucas Munisteri Reviewed: Kelli Fereday Approved: _____

# **North America - Onshore US - BP**

**Western - San Juan North (NAD 83)**

**SEC 13 -T33N-R09W**

**Davis Warren GU C 3**

**Wellbore #1**

**Plan: Plan #1VERSION 1**

## **Standard Planning Report**

**06 December, 2011**

**bp**  
Planning Report

<b>Database:</b>	EDM .16 Hou Prod - WH21P	<b>Local Co-ordinate Reference:</b>	Well Davis Warren GU C 3
<b>Company:</b>	North America - Onshore US - BP	<b>TVD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Project:</b>	Western - San Juan North (NAD 83)	<b>MD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Site:</b>	SEC 13 -T33N-R09W	<b>North Reference:</b>	Grid
<b>Well:</b>	Davis Warren GU C 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1VERSION 1		

<b>Project</b>	Western - San Juan North (NAD 83), LAPLATA COUNTY COLORADO, USA		
<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 Southern Zone		Using geodetic scale factor

Site		SEC 13 -T33N-R09W			
Site Position:		Northing:	1,167,891.00ft	Latitude:	37° 6' 19.476 N
From:	Lat/Long	Easting:	2,334,313.03ft	Longitude:	107° 46' 58.152 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.40 °

Well	Davis Warren GU C 3					
Well Position	+N-S	0.0 ft	Northing:	1,167,890.99 ft	Latitude:	37° 6' 19.476 N
	+E-W	0.0 ft	Easting:	2,334,313.03 ft	Longitude:	107° 46' 58.152 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	6,694.8 ft	Ground Level:	6,694.8 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2011	7/25/2011	9.94	63.78	50,906

<b>Design</b>	Plan #1VERSION 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	33.50

<b>Plan Sections</b>										
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	0.0	0.00	0.00	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.00	
956.8	40.34	33.50	891.8	227.2	150.4	5.00	5.00	0.00	33.50	
2,400.4	40.34	33.50	1,992.1	1,006.5	666.1	0.00	0.00	0.00	0.00	
3,107.2	5.00	33.50	2,634.0	1,230.1	814.1	5.00	-5.00	0.00	180.00	FC DAVIS C3 DRIL
3,691.4	5.00	33.50	3,216.0	1,272.6	842.2	0.00	0.00	0.00	0.00	BHL DAVIS C3

**bp**  
Planning Report

<b>Database:</b>	EDM .16 Hou Prod - WH21P	<b>Local Co-ordinate Reference:</b>	Well Davis Warren GU C 3
<b>Company:</b>	North America - Onshore US - BP	<b>TVD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Project:</b>	Western - San Juan North (NAD 83)	<b>MD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Site:</b>	SEC 13 -T33N-R09W	<b>North Reference:</b>	Grid
<b>Well:</b>	Davis Warren GU C 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1VERSION 1		

**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	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	2.50	33.50	200.0	0.9	0.6	1.1	5.00	5.00	0.00
300.0	7.50	33.50	299.6	8.2	5.4	9.8	5.00	5.00	0.00
400.0	12.50	33.50	398.0	22.7	15.0	27.2	5.00	5.00	0.00
500.0	17.50	33.50	494.6	44.2	29.3	53.0	5.00	5.00	0.00
600.0	22.50	33.50	588.5	72.7	48.1	87.2	5.00	5.00	0.00
700.0	27.50	33.50	679.1	108.0	71.5	129.5	5.00	5.00	0.00
800.0	32.50	33.50	765.7	149.7	99.0	179.5	5.00	5.00	0.00
900.0	37.50	33.50	847.6	197.5	130.7	236.8	5.00	5.00	0.00
956.8	40.34	33.50	891.8	227.2	150.4	272.5	5.00	5.00	0.00
967.6	40.34	33.50	900.0	233.0	154.2	279.5	0.00	0.00	0.00
<b>8 5/8"</b>									
1,000.0	40.34	33.50	924.7	250.5	165.8	300.4	0.00	0.00	0.00
1,100.0	40.34	33.50	1,000.9	304.5	201.5	365.2	0.00	0.00	0.00
1,200.0	40.34	33.50	1,077.1	358.5	237.3	429.9	0.00	0.00	0.00
1,300.0	40.34	33.50	1,153.4	412.5	273.0	494.6	0.00	0.00	0.00
1,400.0	40.34	33.50	1,229.6	466.5	308.7	559.4	0.00	0.00	0.00
1,500.0	40.34	33.50	1,305.8	520.5	344.4	624.1	0.00	0.00	0.00
1,600.0	40.34	33.50	1,382.0	574.4	380.2	688.8	0.00	0.00	0.00
1,624.9	40.34	33.50	1,401.0	587.9	389.1	705.0	0.00	0.00	0.00
<b>Lower Animas</b>									
1,700.0	40.34	33.50	1,458.2	628.4	415.9	753.6	0.00	0.00	0.00
1,800.0	40.34	33.50	1,534.5	682.4	451.6	818.3	0.00	0.00	0.00
1,900.0	40.34	33.50	1,610.7	736.4	487.4	883.0	0.00	0.00	0.00
2,000.0	40.34	33.50	1,686.9	790.4	523.1	947.8	0.00	0.00	0.00
2,047.4	40.34	33.50	1,723.0	815.9	540.0	978.4	0.00	0.00	0.00
<b>Kirthland Shale</b>									
2,100.0	40.34	33.50	1,763.1	844.3	558.8	1,012.5	0.00	0.00	0.00
2,200.0	40.34	33.50	1,839.3	898.3	594.5	1,077.2	0.00	0.00	0.00
2,300.0	40.34	33.50	1,915.6	952.3	630.3	1,142.0	0.00	0.00	0.00
2,315.0	40.34	33.50	1,927.0	960.4	635.6	1,151.7	0.00	0.00	0.00
<b>Farmington SS</b>									
2,400.0	40.34	33.50	1,991.8	1,006.3	666.0	1,206.7	0.00	0.00	0.00
2,400.4	40.34	33.50	1,992.1	1,006.5	666.1	1,207.0	0.00	0.00	0.00
2,500.0	35.36	33.50	2,070.7	1,057.5	699.8	1,268.1	5.00	-5.00	0.00
2,600.0	30.36	33.50	2,154.7	1,102.7	729.8	1,322.3	5.00	-5.00	0.00
2,700.0	25.36	33.50	2,243.1	1,141.6	755.6	1,369.0	5.00	-5.00	0.00
2,775.2	21.60	33.50	2,312.0	1,166.6	772.1	1,399.0	5.00	-5.00	0.00
<b>Lower Kirthland Sh</b>									
2,800.0	20.36	33.50	2,335.2	1,174.0	777.0	1,407.9	5.00	-5.00	0.00
2,900.0	15.36	33.50	2,430.3	1,199.6	793.9	1,438.5	5.00	-5.00	0.00
3,000.0	10.36	33.50	2,527.8	1,218.2	806.2	1,460.8	5.00	-5.00	0.00
3,100.0	5.36	33.50	2,626.8	1,229.6	813.7	1,474.4	5.00	-5.00	0.00
3,107.2	5.00	33.50	2,634.0	1,230.1	814.1	1,475.1	5.00	-5.00	0.00
<b>FC DAVIS C3 DRILLING</b>									
3,125.3	5.00	33.50	2,652.0	1,231.4	815.0	1,476.7	0.00	0.00	0.00
<b>Fruitland Coal</b>									
3,200.0	5.00	33.50	2,726.4	1,236.8	818.6	1,483.2	0.00	0.00	0.00
3,300.0	5.00	33.50	2,826.1	1,244.1	823.4	1,491.9	0.00	0.00	0.00
3,400.0	5.00	33.50	2,925.7	1,251.4	828.2	1,500.6	0.00	0.00	0.00
3,500.0	5.00	33.50	3,025.3	1,258.6	833.0	1,509.3	0.00	0.00	0.00

**bp**  
Planning Report

<b>Database:</b>	EDM .16 Hou Prod - WH21P	<b>Local Co-ordinate Reference:</b>	Well Davis Warren GU C 3
<b>Company:</b>	North America - Onshore US - BP	<b>TVD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Project:</b>	Western - San Juan North (NAD 83)	<b>MD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Site:</b>	SEC 13 -T33N-R09W	<b>North Reference:</b>	Grid
<b>Well:</b>	Davis Warren GU C 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1VERSION 1		

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)
3,516.8	5.00	33.50	3,042.0	1,259.9	833.8	1,510.8	0.00	0.00	0.00
<b>Pictured Cliffs SS</b>									
3,600.0	5.00	33.50	3,124.9	1,265.9	837.8	1,518.0	0.00	0.00	0.00
3,691.4	5.00	33.50	3,216.0	1,272.6	842.2	1,526.0	0.00	0.00	0.00
<b>BHL DAVIS C3</b>									

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
BHL DAVIS C3	- plan hits target center	0.00	360.00	3,216.0	1,272.6	842.2	1,169,163.62	2,335,155.25	37° 6' 32.258 N 107° 46' 48.142 W
	- Point								
Drilling window davis	- plan hits target center	0.00	360.00	0.0	0.0	0.0	1,167,891.00	2,334,313.03	37° 6' 19.476 N 107° 46' 58.152 W
	- Polygon								
	Point 1			0.0	1,493.6	-399.8	1,169,384.64	2,333,913.22	
	Point 2			0.0	1,420.7	918.8	1,169,311.74	2,335,231.85	
	Point 3			0.0	-2,679.5	808.4	1,165,211.44	2,335,121.45	
	Point 4			0.0	-2,648.4	-511.2	1,165,242.54	2,333,801.82	
FC DAVIS C3 subsurf	- plan misses target center by 149.8ft at 3114.4ft MD (2641.2 TVD, 1230.6 N, 814.4 E)	0.00	0.00	2,634.0	1,230.1	964.1	1,169,121.11	2,335,277.15	37° 6' 31.867 N 107° 46' 46.625 W
	- Circle (radius 300.0)								
FC DAVIS C3 DRILLII	- plan hits target center	0.00	360.00	2,634.0	1,230.1	814.1	1,169,121.12	2,335,127.15	37° 6' 31.831 N 107° 46' 48.476 W
	- Circle (radius 300.0)								

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
967.6	900.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,624.9	1,401.0	Lower Animas		0.00	359.95	
2,047.4	1,723.0	Kirthland Shale		0.00	359.95	
2,315.0	1,927.0	Farmington SS		0.00	359.95	
2,775.2	2,312.0	Lower Kirthland Sh		0.00	359.95	
3,125.3	2,652.0	Fruitland Coal		0.00	359.95	
3,516.8	3,042.0	Pictured Cliffs SS		0.00	359.95	

**bp**  
Planning Report

<b>Database:</b>	EDM .16 Hou Prod - WH21P	<b>Local Co-ordinate Reference:</b>	Well Davis Warren GU C 3
<b>Company:</b>	North America - Onshore US - BP	<b>TVD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Project:</b>	Western - San Juan North (NAD 83)	<b>MD Reference:</b>	WELL @ 6710.8ft (Original Well Elev)
<b>Site:</b>	SEC 13 -T33N-R09W	<b>North Reference:</b>	Grid
<b>Well:</b>	Davis Warren GU C 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1VERSION 1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.0	150.0	0.0	0.0	Start Build 5.00
967.6	900.0	233.1	154.3	Start 80.0 hold at 967.6 MD
1,047.6	961.0	276.3	182.8	Start DLS 5.00 TFO 180.00
1,133.6	1,026.5	322.7	213.5	Start 1296.9 hold at 1133.6 MD
2,430.5	2,015.3	1,022.5	676.7	Start DLS 5.00 TFO -180.00
3,062.2	2,589.2	1,226.1	811.4	Start 391.5 hold at 3062.2 MD
3,453.6	2,979.1	1,255.3	830.8	Start 175.7 hold at 3453.6 MD
3,629.3	3,154.1	1,268.0	839.2	TD at 3629.3