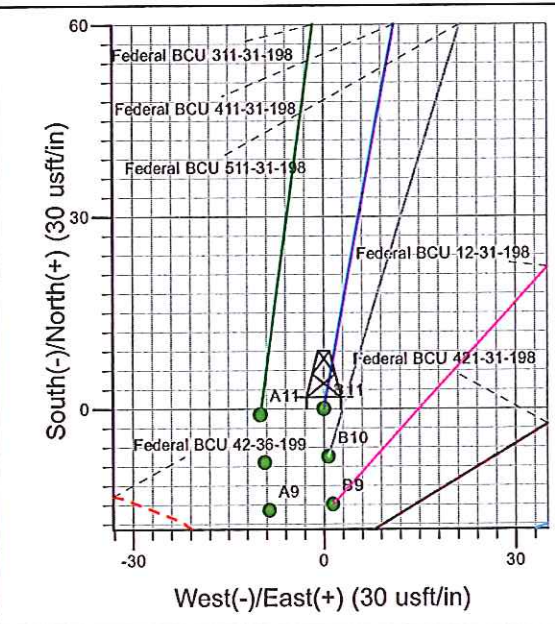
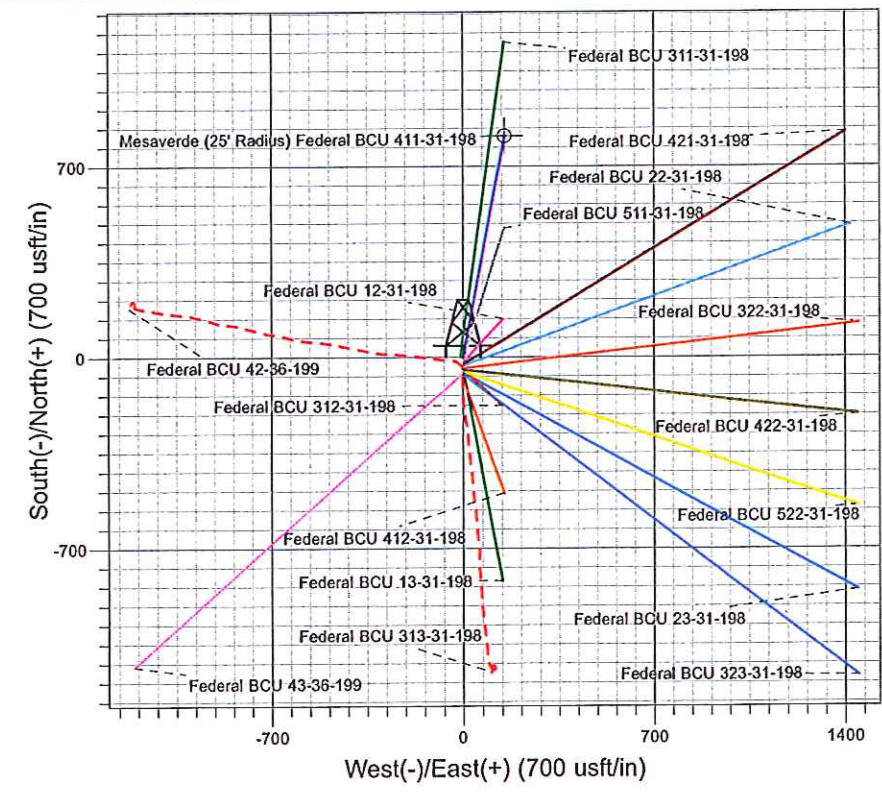
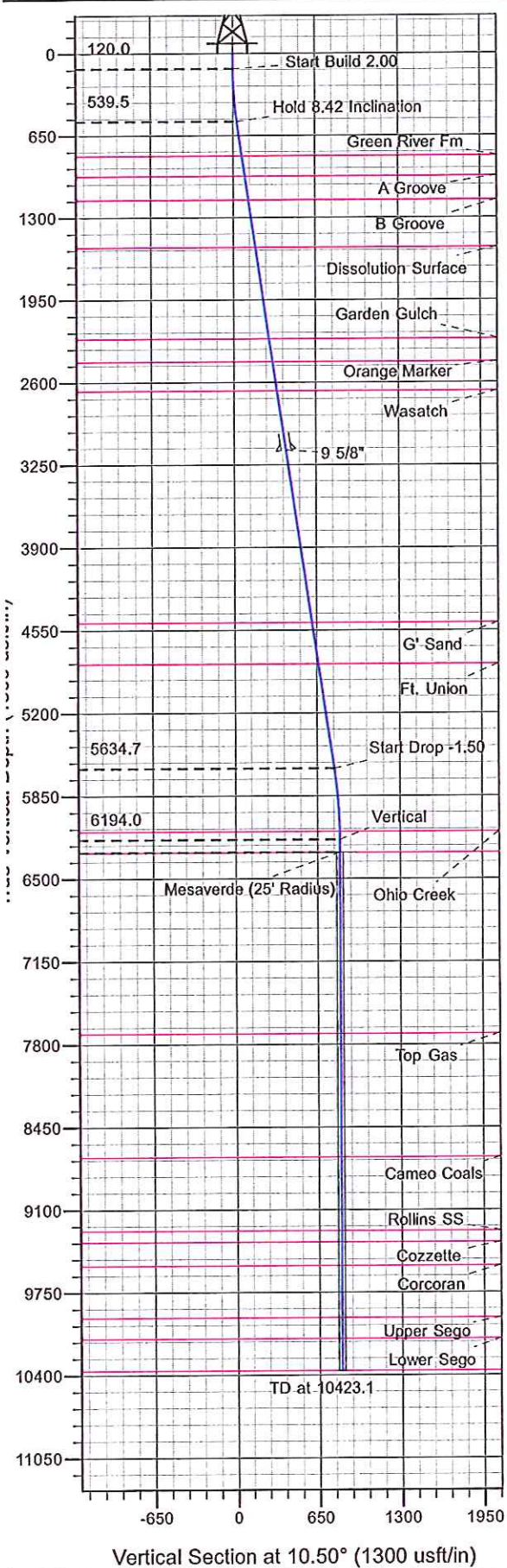




Surface Location: BCU 12-31-198 Pad
 North American Datum 1983, US State Plane 1983, Colorado Central Zone
 Ground Elevation: 6843.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1807846.50 2176133.55 40° 0' 53.038 N 108° 26' 29.863 W B11
 KELLY BUSHING @ 6864.0usft



Project: BC 31-01N-098W
 Site: BCU 12-31-198 Pad
 Well: Federal BCU 411-31-198
 Plan #2 05Jan12 kjs

T Azimuths to True North
M Magnetic North: 10.68°
 Magnetic Field
 Strength: 52564.5snT
 Dip Angle: 66.11°
 Date: 10/14/2010
 Model: IGRF2005-10

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	V Sect	Departure	Annotation
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.0	Start Build 2.00
541.0	8.42	10.50	539.5	30.4	5.6	30.9	30.9	Hold 8.42 Inclination
5691.7	8.42	10.50	5634.7	772.0	143.0	785.1	785.1	Start Drop -1.50
6253.1	0.00	0.00	6194.0	812.4	150.5	826.3	826.3	Vertical
6353.1	0.00	0.00	6294.0	812.4	150.5	826.3	826.3	Mesaverde
10423.1	0.00	0.00	10364.0	812.4	150.5	826.3	826.3	TD at 10423.1



PICEANCE HL NAD 83

BC 31-01N-098W

BCU 12-31-198 Pad

Federal BCU 411-31-198 - Slot B11

Wellbore #1

Plan: Plan #2 05Jan12 kjs

Standard Planning Report - Geographic

25 January, 2012



Williams
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well Federal BCU 411-31-198 - Slot B11
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6864.0usft
Project:	BC 31-01N-098W	MD Reference:	KELLY BUSHING @ 6864.0usft
Site:	BCU 12-31-198 Pad	North Reference:	True
Well:	Federal BCU 411-31-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 05Jan12 kjs		

Project	BC 31-01N-098W, Rio Blanco County, CO, BC 31-01S-098W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site	BCU 12-31-198 Pad				
Site Position:		Northing:	1,807,786.60 usft	Latitude:	40° 0' 52.447 N
From:	Map	Easting:	2,176,137.10 usft	Longitude:	108° 26' 29.793 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.855 °

Well	Federal BCU 411-31-198 - Slot B11					
Well Position	+N/-S	0.0 usft	Northing:	1,807,846.50 usft	Latitude:	40° 0' 53.038 N
	+E/-W	0.0 usft	Easting:	2,176,133.55 usft	Longitude:	108° 26' 29.863 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,843.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	10/14/2010	10.682	66.111	52,564

Design	Plan #2 05Jan12 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	10.50

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (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	0.0	0.0	0.00	0.00	0.00	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
541.0	8.42	10.50	539.5	30.4	5.6	2.00	2.00	0.00	10.496	
5,691.7	8.42	10.50	5,634.7	772.0	143.0	0.00	0.00	0.00	0.000	
6,253.1	0.00	0.00	6,194.0	812.4	150.5	1.50	-1.50	0.00	180.000	
6,353.1	0.00	0.00	6,294.0	812.4	150.5	0.00	0.00	0.00	0.000	Mesaverde (25' Radiu
10,423.1	0.00	0.00	10,364.0	812.4	150.5	0.00	0.00	0.00	0.000	



Williams
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well Federal BCU 411-31-198 - Slot B11
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6864.0usft
Project:	BC 31-01N-098W	MD Reference:	KELLY BUSHING @ 6864.0usft
Site:	BCU 12-31-198 Pad	North Reference:	True
Well:	Federal BCU 411-31-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 05Jan12 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,807,846.50	2,176,133.55	40° 0' 53.038 N	108° 26' 29.863 W
120.0	0.00	0.00	120.0	0.0	0.0	1,807,846.50	2,176,133.55	40° 0' 53.038 N	108° 26' 29.863 W
Start Build 2.00									
541.0	8.42	10.50	539.5	30.4	5.6	1,807,876.67	2,176,140.15	40° 0' 53.338 N	108° 26' 29.791 W
Hold 8.42 Inclination									
813.5	8.42	10.50	809.0	69.6	12.9	1,807,915.64	2,176,148.69	40° 0' 53.725 N	108° 26' 29.698 W
Green River Fm									
975.2	8.42	10.50	969.0	92.9	17.2	1,807,938.78	2,176,153.75	40° 0' 53.955 N	108° 26' 29.642 W
A Groove									
1,167.3	8.42	10.50	1,159.0	120.5	22.3	1,807,966.25	2,176,159.77	40° 0' 54.229 N	108° 26' 29.576 W
B Groove									
1,546.4	8.42	10.50	1,534.0	175.1	32.4	1,808,020.48	2,176,171.64	40° 0' 54.768 N	108° 26' 29.447 W
Dissolution Surface									
2,274.2	8.42	10.50	2,254.0	279.9	51.9	1,808,124.60	2,176,194.44	40° 0' 55.804 N	108° 26' 29.197 W
Garden Gulch									
2,456.2	8.42	10.50	2,434.0	306.1	56.7	1,808,150.63	2,176,200.14	40° 0' 56.063 N	108° 26' 29.135 W
Orange Marker									
2,688.7	8.42	10.50	2,664.0	339.6	62.9	1,808,183.89	2,176,207.43	40° 0' 56.393 N	108° 26' 29.055 W
Wasatch									
3,164.0	8.42	10.50	3,134.2	408.0	75.6	1,808,251.89	2,176,222.31	40° 0' 57.070 N	108° 26' 28.892 W
9 5/8"									
4,533.5	8.42	10.50	4,489.0	605.2	112.1	1,808,447.80	2,176,265.21	40° 0' 59.018 N	108° 26' 28.422 W
G' Sand									
4,862.1	8.42	10.50	4,814.0	652.5	120.9	1,808,494.80	2,176,275.50	40° 0' 59.486 N	108° 26' 28.310 W
Ft. Union									
5,691.7	8.42	10.50	5,634.7	772.0	143.0	1,808,613.48	2,176,301.49	40° 1' 0.666 N	108° 26' 28.025 W
Start Drop -1.50									
6,188.0	0.98	10.50	6,129.0	811.9	150.4	1,808,653.16	2,176,310.18	40° 1' 1.061 N	108° 26' 27.930 W
Ohio Creek									
6,253.1	0.00	0.00	6,194.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Vertical									
6,353.1	0.00	0.00	6,294.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Mesaverde - Mesaverde - Mesaverde (25' Radius) Federal BCU 411-31-198									
7,773.1	0.00	0.00	7,714.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Top Gas									
8,743.1	0.00	0.00	8,684.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Cameo Coals									
9,323.1	0.00	0.00	9,264.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Rollins SS									
9,413.1	0.00	0.00	9,354.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Cozzette									
9,598.1	0.00	0.00	9,539.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Corcoran									
10,008.1	0.00	0.00	9,949.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Upper Seggo									
10,173.1	0.00	0.00	10,114.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
Lower Seggo									
10,423.1	0.00	0.00	10,364.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W
TD at 10423.1 - TD									



Williams
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well Federal BCU 411-31-198 - Slot B11
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6864.0usft
Project:	BC 31-01N-098W	MD Reference:	KELLY BUSHING @ 6864.0usft
Site:	BCU 12-31-198 Pad	North Reference:	True
Well:	Federal BCU 411-31-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 05Jan12 kjs		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Mesaverde (25' Radius) - plan hits target center - Circle (radius 25.0)	0.00	358.14	6,294.0	812.4	150.5	1,808,653.70	2,176,310.30	40° 1' 1.066 N	108° 26' 27.929 W

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(usft)	(usft)		(in)	(in)
3,164.0	3,134.2	9 5/8"	9.625	12.250

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
813.5	809.0	Green River Fm				
975.2	969.0	A Groove				
1,167.3	1,159.0	B Groove				
1,546.4	1,534.0	Dissolution Surface				
2,274.2	2,254.0	Garden Gulch				
2,456.2	2,434.0	Orange Marker				
2,688.7	2,664.0	Wasatch				
4,533.5	4,489.0	G' Sand				
4,862.1	4,814.0	Ft. Union				
6,188.0	6,129.0	Ohio Creek				
6,353.1	6,294.0	Mesaverde				
7,773.1	7,714.0	Top Gas				
8,743.1	8,684.0	Cameo Coals				
9,323.1	9,264.0	Rollins SS				
9,413.1	9,354.0	Cozzette				
9,598.1	9,539.0	Corcoran				
10,008.1	9,949.0	Upper Segó				
10,173.1	10,114.0	Lower Segó				
10,423.1	10,364.0	TD		0.000		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
120.0	120.0	0.0	0.0	Start Build 2.00	
541.0	539.5	30.4	5.6	Hold 8.42 Inclination	
5,691.7	5,634.7	772.0	143.0	Start Drop -1.50	
6,253.1	6,194.0	812.4	150.5	Vertical	
6,353.1	6,294.0	812.4	150.5	Mesaverde	
10,423.1	10,364.0	812.4	150.5	TD at 10423.1	