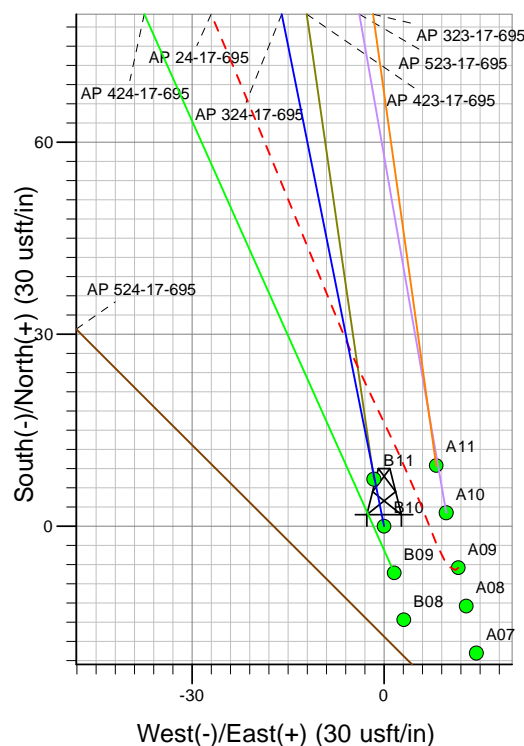
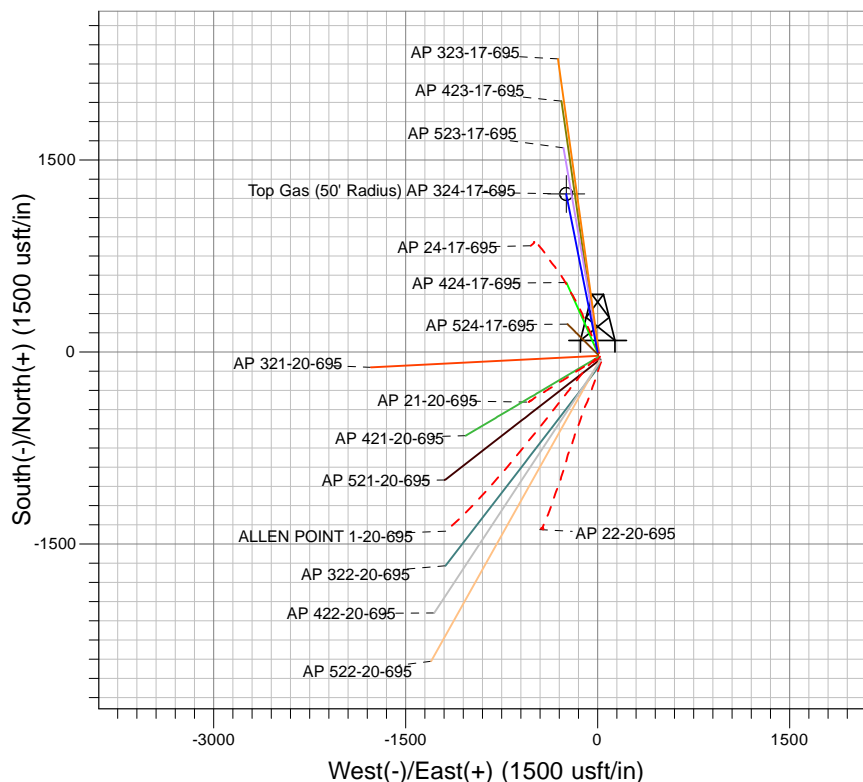
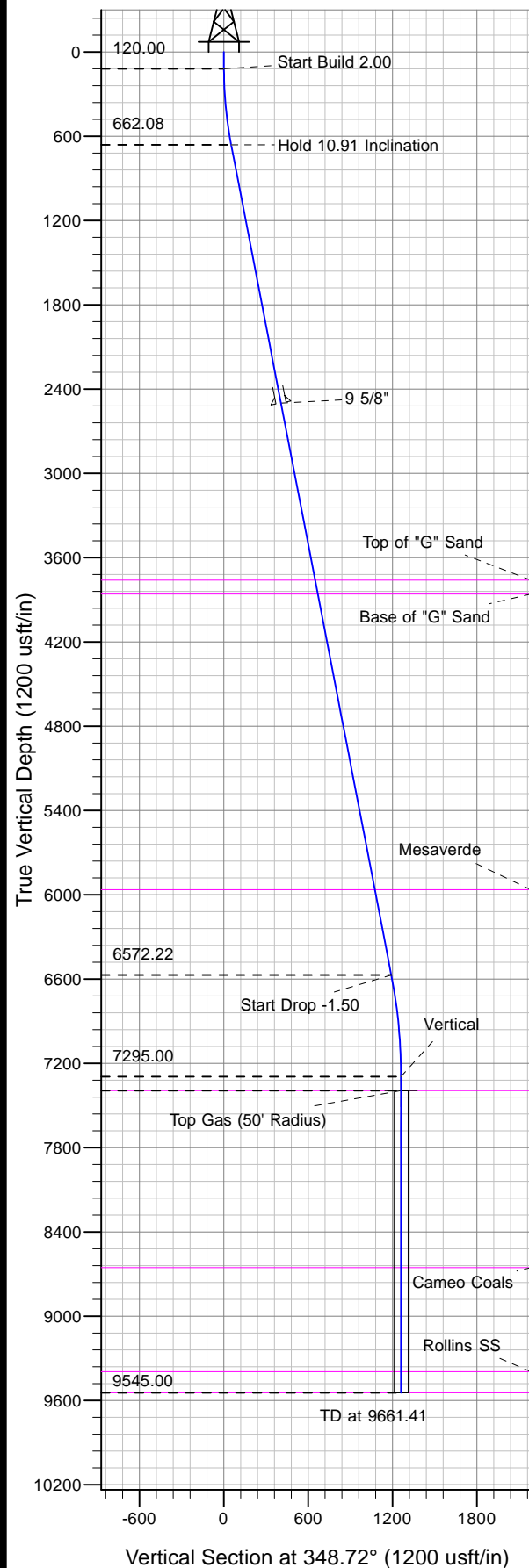




Well Name: AP 324-17-695
Surface Location: AP 21-20-695 Pad
North American Datum 1983 , US State Plane 1983, Colorado Central Zone
Ground Elevation: 6909.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1623294.00	2288325.37	39.51759	-108.02297	B10

KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)



Project: AP 20-06S-095W
Site: AP 21-20-695 Pad
Well: AP 324-17-695
Plan 2 29Aug13 kjs

Azimuths to True North
Magnetic North: 10.46°

Magnetic Field
Strength: 52373.1snT
Dip Angle: 65.79°
Date: 7/16/2010
Model: IGRF2005-10

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
120.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
662.08	665.37	10.91	348.72	50.76	-10.12	51.75	51.75	Hold 10.91 Inclination
6572.22	6684.25	10.91	348.72	1167.67	-232.87	1190.66	1190.66	Start Drop -1.50
7295.00	7411.41	0.00	0.00	1235.34	-246.37	1259.67	1259.67	Vertical
7395.00	7511.41	0.00	0.00	1235.34	-246.37	1259.67	1259.67	Top Gas
9545.00	9661.41	0.00	0.00	1235.34	-246.37	1259.67	1259.67	TD at 9661.41



PICEANCE VLY NAD 83

AP 20-06S-095W

AP 21-20-695 Pad

AP 324-17-695 - Slot B10

Wellbore #1

Plan: Plan 2 29Aug13 kjs

Standard Planning Report - Geographic

12 November, 2013



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well AP 324-17-695 - Slot B10
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Project:	AP 20-06S-095W	MD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Site:	AP 21-20-695 Pad	North Reference:	True
Well:	AP 324-17-695	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2 29Aug13 kjs		

Project	AP 20-06S-095W, Garfield County, CO, 20-06S-095W		
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	AP 21-20-695 Pad			
Site Position:		Northing:	1,623,258.80 usft	Latitude: 39.51750
From: Map		Easting:	2,288,342.20 usft	Longitude: -108.02291
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.591 °

Well	AP 324-17-695 - Slot B10			
Well Position	+N/-S	0.00 usft	Northing:	1,623,294.00 usft
	+E/-W	0.00 usft	Easting:	2,288,325.37 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	
			Ground Level:	6,909.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	7/16/2010	10.461	65.788	52,373

Design	Plan 2 29Aug13 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	348.72

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.000	
665.37	10.91	348.72	662.08	50.76	-10.12	2.00	2.00	0.00	348.721	
6,684.25	10.91	348.72	6,572.22	1,167.67	-232.87	0.00	0.00	0.00	0.000	
7,411.41	0.00	0.00	7,295.00	1,235.34	-246.37	1.50	-1.50	0.00	180.000	
7,511.41	0.00	0.00	7,395.00	1,235.34	-246.37	0.00	0.00	0.00	0.000	Top Gas (50' Radius)
9,661.41	0.00	0.00	9,545.00	1,235.34	-246.37	0.00	0.00	0.00	0.000	

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well AP 324-17-695 - Slot B10
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Project:	AP 20-06S-095W	MD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Site:	AP 21-20-695 Pad	North Reference:	True
Well:	AP 324-17-695	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2 29Aug13 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
0.00	0.00	0.00	0.00	0.00	0.00	1,623,294.00	2,288,325.37	39.51759	-108.02298
120.00	0.00	0.00	120.00	0.00	0.00	1,623,294.00	2,288,325.37	39.51759	-108.02298
Start Build 2.00									
500.00	7.60	348.72	498.89	24.68	-4.92	1,623,318.80	2,288,321.14	39.51766	-108.02299
665.37	10.91	348.72	662.08	50.76	-10.12	1,623,345.01	2,288,316.66	39.51773	-108.02301
Hold 10.91 Inclination									
1,000.00	10.91	348.72	990.67	112.85	-22.51	1,623,407.43	2,288,306.01	39.51790	-108.02306
1,500.00	10.91	348.72	1,481.63	205.64	-41.01	1,623,500.68	2,288,290.09	39.51816	-108.02312
2,000.00	10.91	348.72	1,972.60	298.42	-59.51	1,623,593.94	2,288,274.17	39.51841	-108.02319
2,500.00	10.91	348.72	2,463.57	391.20	-78.02	1,623,687.20	2,288,258.25	39.51867	-108.02325
2,537.10	10.91	348.72	2,500.00	398.09	-79.39	1,623,694.12	2,288,257.07	39.51868	-108.02326
9 5/8"									
3,000.00	10.91	348.72	2,954.53	483.99	-96.52	1,623,780.46	2,288,242.33	39.51892	-108.02332
3,500.00	10.91	348.72	3,445.50	576.77	-115.03	1,623,873.72	2,288,226.41	39.51918	-108.02338
3,820.28	10.91	348.72	3,760.00	636.21	-126.88	1,623,933.46	2,288,216.21	39.51934	-108.02343
Top of "G" Sand									
3,922.12	10.91	348.72	3,860.00	655.11	-130.65	1,623,952.45	2,288,212.97	39.51939	-108.02344
Base of "G" Sand									
4,000.00	10.91	348.72	3,936.47	669.56	-133.53	1,623,966.98	2,288,210.49	39.51943	-108.02345
4,500.00	10.91	348.72	4,427.44	762.34	-152.04	1,624,060.24	2,288,194.57	39.51968	-108.02352
5,000.00	10.91	348.72	4,918.40	855.13	-170.54	1,624,153.50	2,288,178.65	39.51994	-108.02358
5,500.00	10.91	348.72	5,409.37	947.91	-189.04	1,624,246.76	2,288,162.73	39.52019	-108.02365
6,000.00	10.91	348.72	5,900.34	1,040.70	-207.55	1,624,340.01	2,288,146.81	39.52045	-108.02371
6,065.85	10.91	348.72	5,965.00	1,052.92	-209.99	1,624,352.30	2,288,144.71	39.52048	-108.02372
Mesaverde									
6,500.00	10.91	348.72	6,391.30	1,133.48	-226.05	1,624,433.27	2,288,130.89	39.52070	-108.02378
6,684.25	10.91	348.72	6,572.22	1,167.67	-232.87	1,624,467.64	2,288,125.02	39.52080	-108.02380
Start Drop -1.50									
7,000.00	6.17	348.72	6,884.39	1,213.64	-242.04	1,624,513.84	2,288,117.13	39.52092	-108.02383
7,411.41	0.00	0.00	7,295.00	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
Vertical									
7,500.00	0.00	0.00	7,383.59	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
7,511.41	0.00	0.00	7,395.00	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
Top Gas - Approx. Top Gas									
8,000.00	0.00	0.00	7,883.59	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
8,500.00	0.00	0.00	8,383.59	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
8,771.41	0.00	0.00	8,655.00	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
Cameo Coals									
9,000.00	0.00	0.00	8,883.59	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
9,500.00	0.00	0.00	9,383.59	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
9,511.41	0.00	0.00	9,395.00	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
Rollins SS									
9,661.41	0.00	0.00	9,545.00	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385
TD at 9661.41 - TD									



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well AP 324-17-695 - Slot B10
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Project:	AP 20-06S-095W	MD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Site:	AP 21-20-695 Pad	North Reference:	True
Well:	AP 324-17-695	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 2 29Aug13 kjs		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (50' Radius) AF - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,395.00	1,235.34	-246.37	1,624,535.66	2,288,113.41	39.52098	-108.02385

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,537.10	2,500.00	9 5/8"	9.625	12.250	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,820.28	3,760.00	Top of "G" Sand				
3,922.12	3,860.00	Base of "G" Sand				
6,065.85	5,965.00	Mesaverde				
7,511.41	7,395.00	Approx. Top Gas				
8,771.41	8,655.00	Cameo Coals				
9,511.41	9,395.00	Rollins SS				
9,661.41	9,545.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 2.00	
665.37	662.08	50.76	-10.12	Hold 10.91 Inclination	
6,684.25	6,572.22	1,167.67	-232.87	Start Drop -1.50	
7,411.41	7,295.00	1,235.34	-246.37	Vertical	
7,511.41	7,395.00	1,235.34	-246.37	Top Gas	
9,661.41	9,545.00	1,235.34	-246.37	TD at 9661.41	