



+N/-S  
0.00

+E/-W  
0.00

Northing  
1597400.72

Well Name: GM 544-12  
Surface Location: GM 24-12 Pad

North American Datum 1983 , US State Plane 1983 , Colorado Central Zone

Ground Elevation: 5141.00

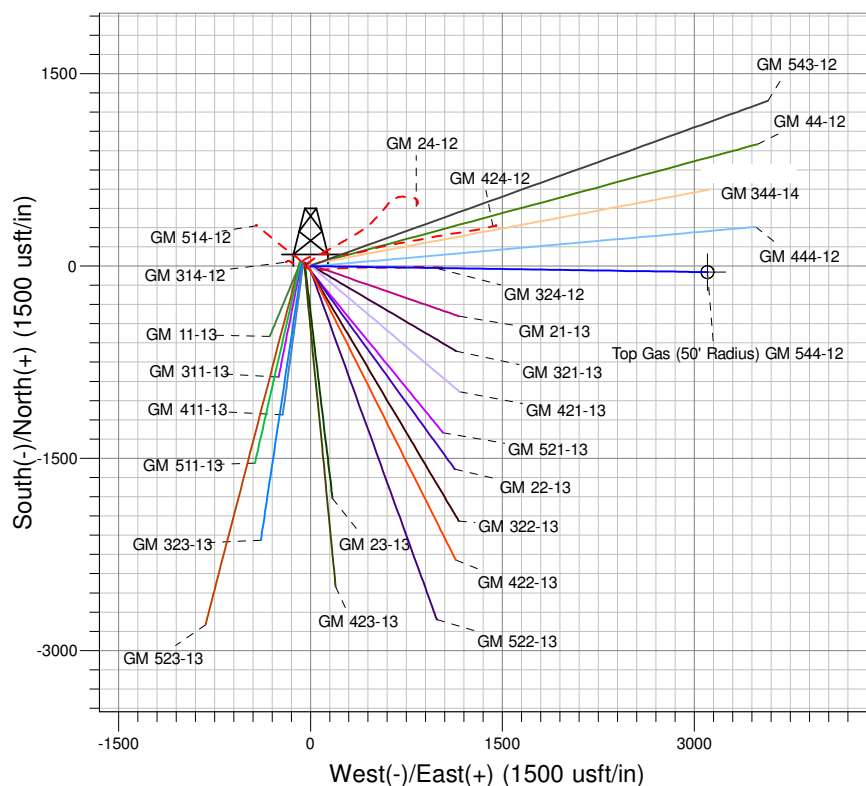
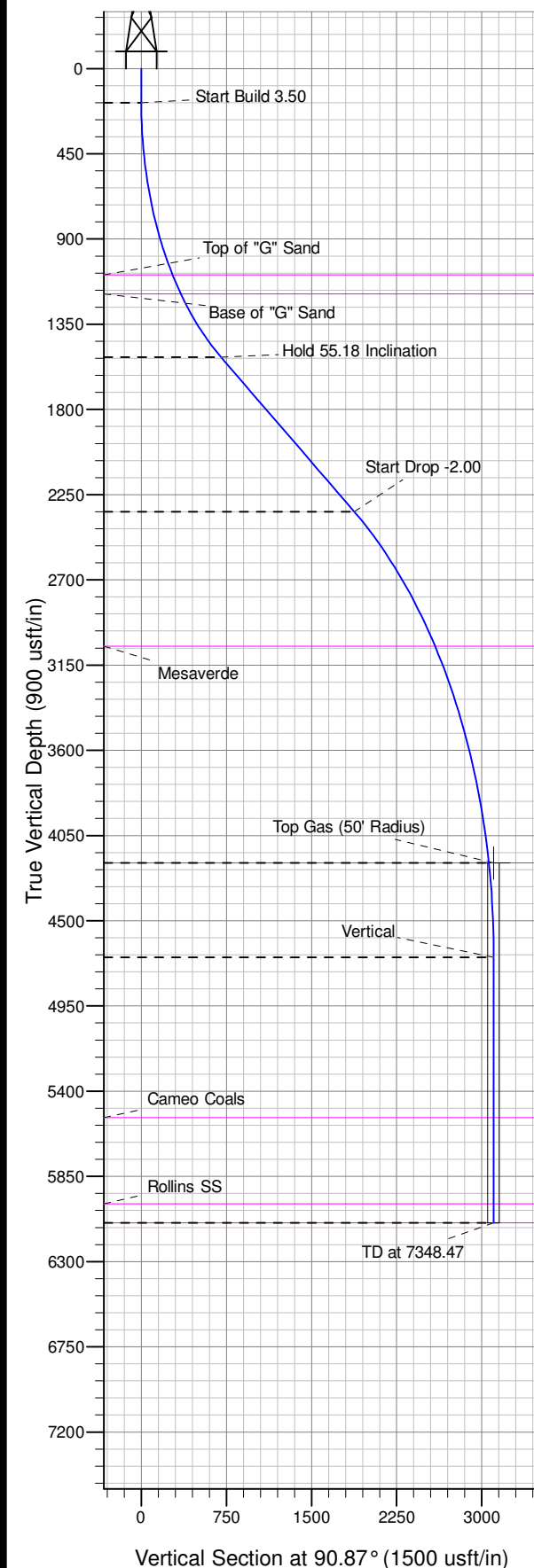
Easting  
2275897.22

Latitude  
39.44557

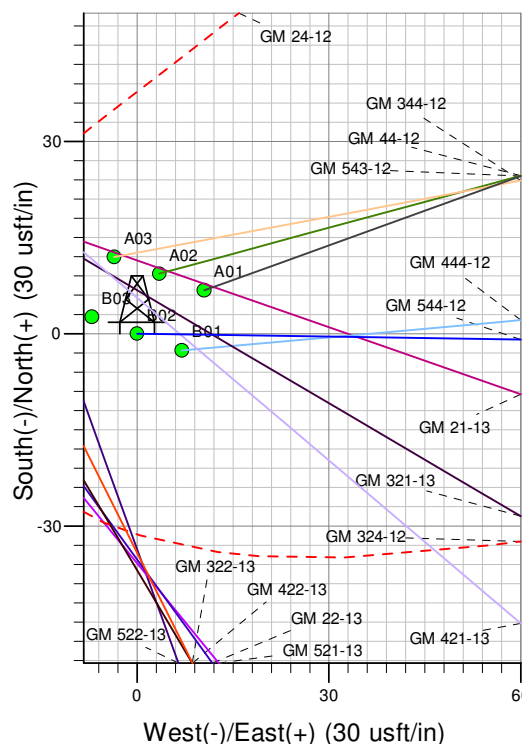
Longitude  
-108.06442

Slot  
B02

KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)



Project: GV 12-07S-096W  
Site: GM 24-12 Pad  
Well: GM 544-12  
Design #1 03Mar14 kjs



↑ M  
Azimuths to True North  
Magnetic North: 10.03°  
Magnetic Field  
Strength: 51946.6nT  
Dip Angle: 65.61°  
Date: 3/3/2014  
Model: IGRF2010

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
180.00	180.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.50
1523.94	1756.62	55.18	90.87	-10.69	702.24	702.32	702.32	Hold 55.18 Inclination
2340.57	3186.85	55.18	90.87	-28.55	1876.28	1876.49	1876.49	Start Drop -2.00
4195.00	5445.94	10.00	90.87	-46.59	3061.69	3062.04	3062.04	Top Gas
4692.47	5945.94	0.00	0.00	-47.25	3105.20	3105.56	3105.56	Vertical
6095.00	7348.47	0.00	0.00	-47.25	3105.20	3105.56	3105.56	TD at 7348.47

# **PICEANCE VLY NAD 83**

**GV 12-07S-096W**

**GM 24-12 Pad**

**GM 544-12 - Slot B02**

**Wellbore #1**

**Plan: Design #1 03Mar14 kjs**

## **Standard Planning Report - Geographic**

**11 March, 2014**

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 544-12 - Slot B02
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Project:</b>	GV 12-07S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Site:</b>	GM 24-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 544-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 03Mar14 kjs		

<b>Project</b>	GV 12-07S-096W, Garfield County CO, GV 12-07W-096W		
<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 Central Zone		Using geodetic scale factor

<b>Site</b>	GM 24-12 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,597,443.66 usft	<b>Latitude:</b> 39.44569
<b>From:</b> Map		<b>Easting:</b>	2,275,817.52 usft	<b>Longitude:</b> -108.06471
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.618 °

<b>Well</b>	GM 544-12 - Slot B02			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,597,400.71 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,275,897.23 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	5,141.00 usft

<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>
	IGRF2010	3/3/2014	10.028	65.611	51,947

<b>Design</b>	Design #1 03Mar14 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	90.87

<b>Plan Sections</b>										
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	
180.00	0.00	0.00	180.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,756.62	55.18	90.87	1,523.94	-10.69	702.24	3.50	3.50	0.00	90.872	
3,186.85	55.18	90.87	2,340.57	-28.55	1,876.28	0.00	0.00	0.00	0.000	
5,445.94	10.00	90.87	4,195.00	-46.59	3,061.69	2.00	-2.00	0.00	180.000	Top Gas (50' Radius)
5,945.94	0.00	0.00	4,692.47	-47.25	3,105.20	2.00	-2.00	-18.17	180.000	
7,348.47	0.00	0.00	6,095.00	-47.25	3,105.20	0.00	0.00	0.00	0.000	

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 544-12 - Slot B02
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Project:</b>	GV 12-07S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Site:</b>	GM 24-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 544-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 03Mar14 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	1,597,400.71	2,275,897.23	39.44558	-108.06442	
100.00	0.00	0.00	100.00	0.00	0.00	1,597,400.71	2,275,897.23	39.44558	-108.06442	
180.00	0.00	0.00	180.00	0.00	0.00	1,597,400.71	2,275,897.23	39.44558	-108.06442	
Start Build 3.50										
200.00	0.70	90.87	200.00	0.00	0.12	1,597,400.71	2,275,897.35	39.44558	-108.06442	
300.00	4.20	90.87	299.89	-0.07	4.40	1,597,400.52	2,275,901.62	39.44558	-108.06441	
400.00	7.70	90.87	399.34	-0.22	14.76	1,597,400.07	2,275,911.97	39.44557	-108.06437	
500.00	11.20	90.87	497.97	-0.47	31.17	1,597,399.36	2,275,928.37	39.44557	-108.06431	
600.00	14.70	90.87	595.41	-0.82	53.58	1,597,398.39	2,275,950.76	39.44557	-108.06423	
700.00	18.20	90.87	691.30	-1.25	81.89	1,597,397.16	2,275,979.04	39.44557	-108.06413	
800.00	21.70	90.87	785.28	-1.77	116.00	1,597,395.68	2,276,013.12	39.44557	-108.06401	
900.00	25.20	90.87	877.01	-2.37	155.78	1,597,393.95	2,276,052.87	39.44557	-108.06387	
1,000.00	28.70	90.87	966.14	-3.06	201.09	1,597,391.98	2,276,098.14	39.44557	-108.06371	
1,100.00	32.20	90.87	1,052.33	-3.83	251.76	1,597,389.78	2,276,148.76	39.44556	-108.06353	
1,144.91	33.77	90.87	1,090.00	-4.20	276.20	1,597,388.72	2,276,173.19	39.44556	-108.06344	
Top of "G" Sand										
1,200.00	35.70	90.87	1,135.27	-4.68	307.59	1,597,387.36	2,276,204.54	39.44556	-108.06333	
1,268.44	38.10	90.87	1,190.00	-5.31	348.67	1,597,385.57	2,276,245.59	39.44556	-108.06319	
Base of "G" Sand										
1,300.00	39.20	90.87	1,214.65	-5.61	368.38	1,597,384.71	2,276,265.28	39.44556	-108.06312	
1,400.00	42.70	90.87	1,290.16	-6.60	433.90	1,597,381.87	2,276,330.75	39.44556	-108.06289	
1,500.00	46.20	90.87	1,361.54	-7.67	503.91	1,597,378.83	2,276,400.70	39.44555	-108.06264	
1,600.00	49.70	90.87	1,428.51	-8.80	578.15	1,597,375.60	2,276,474.87	39.44555	-108.06238	
1,700.00	53.20	90.87	1,490.82	-9.99	656.33	1,597,372.21	2,276,552.98	39.44555	-108.06210	
1,756.62	55.18	90.87	1,523.94	-10.69	702.24	1,597,370.21	2,276,598.86	39.44555	-108.06194	
Hold 55.18 Inclination										
1,800.00	55.18	90.87	1,548.71	-11.23	737.85	1,597,368.67	2,276,634.43	39.44554	-108.06181	
1,857.00	55.18	90.87	1,581.26	-11.94	784.64	1,597,366.63	2,276,681.18	39.44554	-108.06164	
9 5/8"										
1,900.00	55.18	90.87	1,605.81	-12.48	819.94	1,597,365.10	2,276,716.45	39.44554	-108.06152	
2,000.00	55.18	90.87	1,662.90	-13.73	902.02	1,597,361.54	2,276,798.46	39.44554	-108.06123	
2,100.00	55.18	90.87	1,720.00	-14.98	984.11	1,597,357.97	2,276,880.48	39.44553	-108.06094	
2,200.00	55.18	90.87	1,777.10	-16.22	1,066.20	1,597,354.41	2,276,962.49	39.44553	-108.06065	
2,300.00	55.18	90.87	1,834.20	-17.47	1,148.29	1,597,350.84	2,277,044.51	39.44553	-108.06036	
2,400.00	55.18	90.87	1,891.29	-18.72	1,230.37	1,597,347.27	2,277,126.52	39.44552	-108.06007	
2,500.00	55.18	90.87	1,948.39	-19.97	1,312.46	1,597,343.71	2,277,208.54	39.44552	-108.05978	
2,600.00	55.18	90.87	2,005.49	-21.22	1,394.55	1,597,340.14	2,277,290.56	39.44552	-108.05948	
2,700.00	55.18	90.87	2,062.59	-22.47	1,476.64	1,597,336.58	2,277,372.57	39.44551	-108.05919	
2,800.00	55.18	90.87	2,119.68	-23.72	1,558.72	1,597,333.01	2,277,454.59	39.44551	-108.05890	
2,900.00	55.18	90.87	2,176.78	-24.97	1,640.81	1,597,329.45	2,277,536.60	39.44551	-108.05861	
3,000.00	55.18	90.87	2,233.88	-26.22	1,722.90	1,597,325.88	2,277,618.62	39.44550	-108.05832	
3,100.00	55.18	90.87	2,290.98	-27.47	1,804.99	1,597,322.32	2,277,700.63	39.44550	-108.05803	
3,186.85	55.18	90.87	2,340.57	-28.55	1,876.28	1,597,319.22	2,277,771.86	39.44550	-108.05778	
Start Drop -2.00										
3,200.00	54.92	90.87	2,348.10	-28.72	1,887.06	1,597,318.75	2,277,782.63	39.44550	-108.05774	
3,300.00	52.92	90.87	2,406.99	-29.95	1,967.86	1,597,315.24	2,277,863.37	39.44549	-108.05745	
3,400.00	50.92	90.87	2,468.66	-31.14	2,046.56	1,597,311.82	2,277,942.00	39.44549	-108.05718	
3,500.00	48.92	90.87	2,533.05	-32.31	2,123.06	1,597,308.50	2,278,018.43	39.44549	-108.05691	
3,600.00	46.92	90.87	2,600.06	-33.44	2,197.27	1,597,305.28	2,278,092.57	39.44548	-108.05664	
3,700.00	44.92	90.87	2,669.63	-34.53	2,269.09	1,597,302.16	2,278,164.33	39.44548	-108.05639	
3,800.00	42.92	90.87	2,741.66	-35.59	2,338.44	1,597,299.15	2,278,233.63	39.44548	-108.05614	
3,900.00	40.92	90.87	2,816.06	-36.60	2,405.24	1,597,296.25	2,278,300.36	39.44547	-108.05591	

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 544-12 - Slot B02
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Project:</b>	GV 12-07S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Site:</b>	GM 24-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 544-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 03Mar14 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
4,000.00	38.92	90.87	2,892.75	-37.58	2,469.40	1,597,293.46	2,278,364.47	39.44547	-108.05568
4,100.00	36.92	90.87	2,971.64	-38.51	2,530.84	1,597,290.79	2,278,425.86	39.44547	-108.05546
4,196.81	34.98	90.87	3,050.00	-39.38	2,587.67	1,597,288.32	2,278,482.63	39.44547	-108.05526
<b>Mesaverde</b>									
4,200.00	34.92	90.87	3,052.62	-39.41	2,589.50	1,597,288.24	2,278,484.46	39.44547	-108.05525
4,300.00	32.92	90.87	3,135.60	-40.25	2,645.29	1,597,285.82	2,278,540.20	39.44546	-108.05506
4,400.00	30.92	90.87	3,220.47	-41.06	2,698.15	1,597,283.52	2,278,593.02	39.44546	-108.05487
4,500.00	28.92	90.87	3,307.14	-41.82	2,748.02	1,597,281.36	2,278,642.85	39.44546	-108.05469
4,600.00	26.92	90.87	3,395.50	-42.53	2,794.84	1,597,279.32	2,278,689.62	39.44546	-108.05453
4,700.00	24.92	90.87	3,485.43	-43.20	2,838.54	1,597,277.43	2,278,733.28	39.44546	-108.05437
4,800.00	22.92	90.87	3,576.84	-43.81	2,879.08	1,597,275.67	2,278,773.79	39.44545	-108.05423
4,900.00	20.92	90.87	3,669.61	-44.38	2,916.40	1,597,274.04	2,278,811.08	39.44545	-108.05410
5,000.00	18.92	90.87	3,763.62	-44.90	2,950.46	1,597,272.56	2,278,845.11	39.44545	-108.05398
5,100.00	16.92	90.87	3,858.77	-45.37	2,981.22	1,597,271.23	2,278,875.85	39.44545	-108.05387
5,200.00	14.92	90.87	3,954.93	-45.78	3,008.65	1,597,270.04	2,278,903.24	39.44545	-108.05377
5,300.00	12.92	90.87	4,051.98	-46.15	3,032.70	1,597,268.99	2,278,927.27	39.44545	-108.05368
5,400.00	10.92	90.87	4,149.82	-46.46	3,053.35	1,597,268.10	2,278,947.90	39.44545	-108.05361
5,445.94	10.00	90.87	4,195.00	-46.59	3,061.69	1,597,267.73	2,278,956.24	39.44545	-108.05358
<b>Top Gas - Approx. Top Gas</b>									
5,500.00	8.92	90.87	4,248.32	-46.73	3,070.57	1,597,267.35	2,278,965.11	39.44545	-108.05355
5,600.00	6.92	90.87	4,347.37	-46.94	3,084.34	1,597,266.75	2,278,978.87	39.44545	-108.05350
5,700.00	4.92	90.87	4,446.83	-47.09	3,094.65	1,597,266.30	2,278,989.18	39.44545	-108.05346
5,800.00	2.92	90.87	4,546.59	-47.20	3,101.49	1,597,266.01	2,278,996.00	39.44545	-108.05344
5,900.00	0.92	90.87	4,646.53	-47.25	3,104.84	1,597,265.86	2,278,999.35	39.44545	-108.05343
5,945.94	0.00	0.00	4,692.47	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
<b>Vertical</b>									
6,000.00	0.00	0.00	4,746.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,100.00	0.00	0.00	4,846.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,200.00	0.00	0.00	4,946.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,300.00	0.00	0.00	5,046.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,400.00	0.00	0.00	5,146.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,500.00	0.00	0.00	5,246.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,600.00	0.00	0.00	5,346.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,700.00	0.00	0.00	5,446.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,793.47	0.00	0.00	5,540.00	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
<b>Cameo Coals</b>									
6,800.00	0.00	0.00	5,546.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
6,900.00	0.00	0.00	5,646.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
7,000.00	0.00	0.00	5,746.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
7,100.00	0.00	0.00	5,846.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
7,200.00	0.00	0.00	5,946.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
7,248.47	0.00	0.00	5,995.00	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
<b>Rollins SS</b>									
7,300.00	0.00	0.00	6,046.53	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
7,348.47	0.00	0.00	6,095.00	-47.25	3,105.20	1,597,265.84	2,278,999.72	39.44545	-108.05343
<b>TD at 7348.47</b>									

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 544-12 - Slot B02
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Project:</b>	GV 12-07S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5165.00usft (H&P 318 (24' RKB) kjs)
<b>Site:</b>	GM 24-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 544-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 03Mar14 kjs		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Top Gas (50' Radius) GM	0.00	0.00	4,195.00	-47.27	3,102.39	1,597,265.91	2,278,996.90	39.44545	-108.05344
- plan misses target center by 40.10usft at 5452.63usft MD (4201.59 TVD, -46.61 N, 3062.84 E)									
- Circle (radius 50.00)									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(usft)	(usft)	Name		(in)	(in)
1,857.00	1,581.26	9 5/8"		9.625	12.250

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,144.91	1,090.00	Top of "G" Sand				
1,268.44	1,190.00	Base of "G" Sand				
4,196.81	3,050.00	Mesaverde				
5,445.94	4,195.00	Approx. Top Gas				
6,793.47	5,540.00	Cameo Coals				
7,248.47	5,995.00	Rollins SS				
7,348.47	6,095.00	TD				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
180.00	180.00	0.00	0.00	Start Build 3.50	
1,756.62	1,523.94	-10.69	702.24	Hold 55.18 Inclination	
3,186.85	2,340.57	-28.55	1,876.28	Start Drop -2.00	
5,445.94	4,195.00	-46.59	3,061.69	Top Gas	
5,945.94	4,692.47	-47.25	3,105.20	Vertical	
7,348.47	6,095.00	-47.25	3,105.20	TD at 7348.47	