

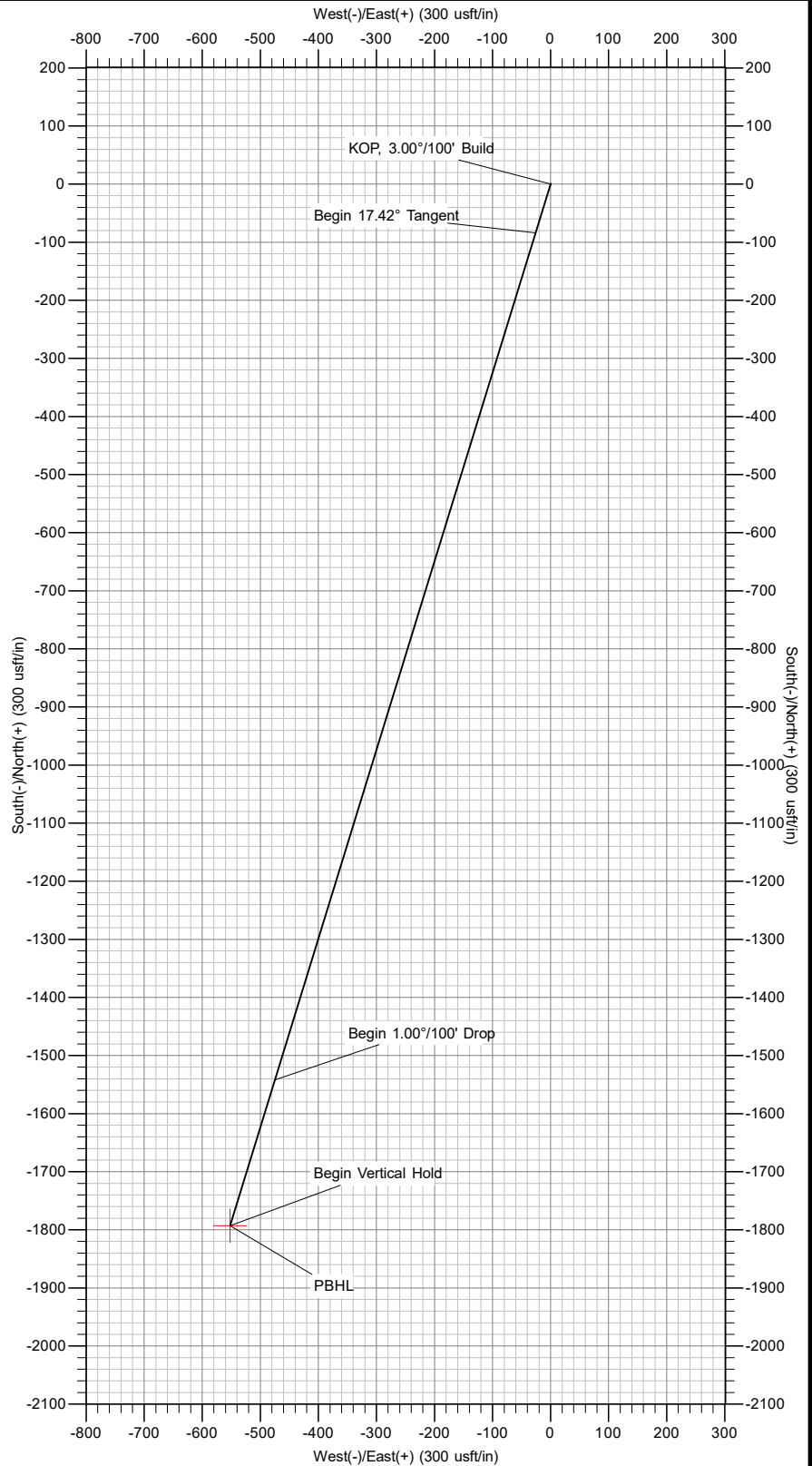
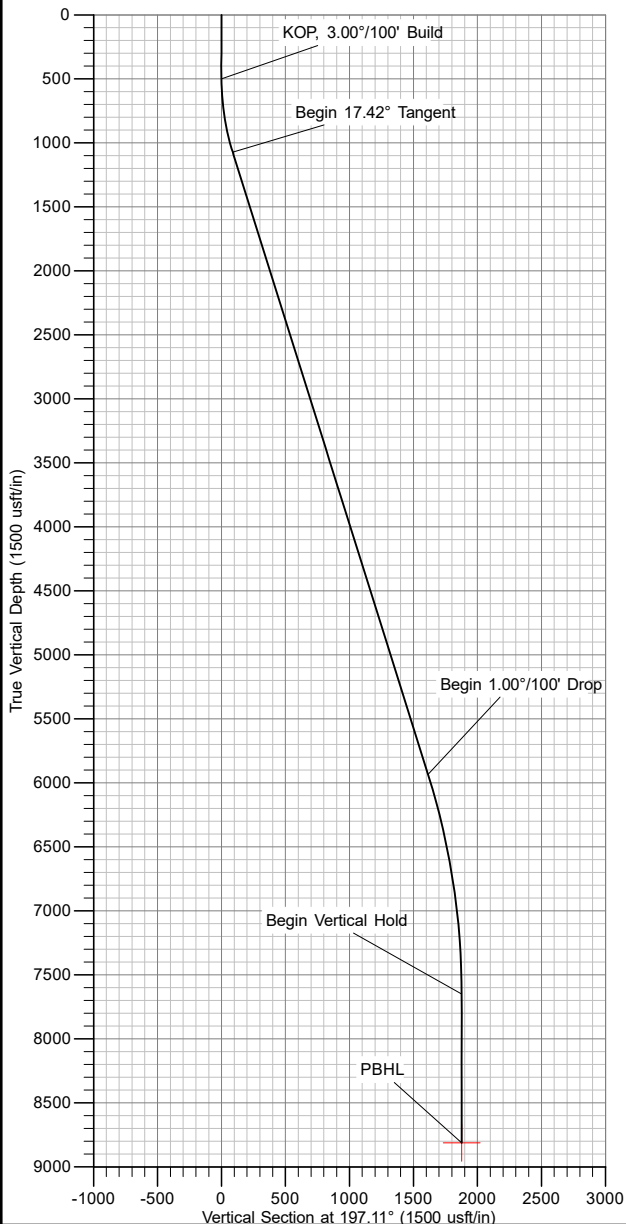
Azimuths to True North
 Magnetic North: 9.80°
 Magnetic Field
 Strength: 50574.4snT
 Dip Angle: 64.04°
 Date: 7/1/2016
 Model: BGGM2017

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	KOP, 3.00°/100' Build
1080.79	17.42	197.11	1071.88	-83.75	-25.79	87.63	87.63	Begin 17.42° Tangent
6175.89	17.42	197.11	5933.20	-1541.84	-474.76	1613.28	1613.28	Begin 1.00°/100' Drop
7918.25	0.00	0.00	7648.83	-1793.09	-552.13	1876.17	1876.17	Begin Vertical Hold
9080.62	0.00	0.00	8811.20	-1793.09	-552.13	1876.17	1876.17	PBHL

US State Plane 1983
 Colorado Southern Zone

Created By: KAW
 Date: 14:37, June 27 2017
 Plan: Design #6





Kinder Morgan

Dolores County, Colorado (NAD 83)

Doe Canyon

#29

Wellbore #1

Plan: Design #6

Standard Planning Report

27 June, 2017

Database:	EDM 5000.14 Conroe Server	Local Co-ordinate Reference:	Well #29
Company:	Kinder Morgan	TVD Reference:	Well @ 7201.20usft (Aztec 1000)
Project:	Dolores County, Colorado (NAD 83)	MD Reference:	Well @ 7201.20usft (Aztec 1000)
Site:	Doe Canyon	North Reference:	True
Well:	#29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

Project	Dolores County, Colorado (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Well	#29					
Well Position	+N/-S	1,616,596.76 usft	Northing:	1,410,400.08 usft	Latitude:	37° 44' 47.868 N
	+E/-W	1,877,821.07 usft	Easting:	2,037,245.37 usft	Longitude:	108° 49' 49.656 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,175.70 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	7/1/2016	9.80	64.04	50,574

Design	Design #6			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	197.11

Plan Survey Tool Program	Date 6/27/2017			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	9,080.05	Design #6 (Wellbore #1)	MWD
				OWSG MWD - Standard

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	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,080.79	17.42	197.11	1,071.88	-83.75	-25.79	3.00	3.00	0.00	197.11	
6,175.89	17.42	197.11	5,933.20	-1,541.84	-474.76	0.00	0.00	0.00	0.00	
7,918.25	0.00	0.00	7,648.83	-1,793.09	-552.13	1.00	-1.00	0.00	180.00	
9,080.62	0.00	0.00	8,811.20	-1,793.09	-552.13	0.00	0.00	0.00	0.00	PBHL v6 - Doe Can

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Site:	Doe Canyon	North Reference:	True
Well:	#29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 3.00°/100' Build									
600.00	3.00	197.11	599.95	-2.50	-0.77	2.62	3.00	3.00	0.00
700.00	6.00	197.11	699.63	-10.00	-3.08	10.46	3.00	3.00	0.00
800.00	9.00	197.11	798.77	-22.47	-6.92	23.51	3.00	3.00	0.00
900.00	12.00	197.11	897.08	-39.89	-12.28	41.74	3.00	3.00	0.00
1,000.00	15.00	197.11	994.31	-62.20	-19.15	65.08	3.00	3.00	0.00
1,080.79	17.42	197.11	1,071.88	-83.75	-25.79	87.63	3.00	3.00	0.00
Begin 17.42° Tangent									
1,100.00	17.42	197.11	1,090.21	-89.25	-27.48	93.38	0.00	0.00	0.00
1,200.00	17.42	197.11	1,185.62	-117.87	-36.29	123.33	0.00	0.00	0.00
1,300.00	17.42	197.11	1,281.03	-146.48	-45.10	153.27	0.00	0.00	0.00
1,400.00	17.42	197.11	1,376.44	-175.10	-53.92	183.21	0.00	0.00	0.00
1,500.00	17.42	197.11	1,471.86	-203.72	-62.73	213.16	0.00	0.00	0.00
1,600.00	17.42	197.11	1,567.27	-232.34	-71.54	243.10	0.00	0.00	0.00
1,700.00	17.42	197.11	1,662.68	-260.95	-80.35	273.04	0.00	0.00	0.00
1,800.00	17.42	197.11	1,758.09	-289.57	-89.16	302.99	0.00	0.00	0.00
1,900.00	17.42	197.11	1,853.50	-318.19	-97.98	332.93	0.00	0.00	0.00
2,000.00	17.42	197.11	1,948.91	-346.80	-106.79	362.87	0.00	0.00	0.00
2,100.00	17.42	197.11	2,044.33	-375.42	-115.60	392.82	0.00	0.00	0.00
2,200.00	17.42	197.11	2,139.74	-404.04	-124.41	422.76	0.00	0.00	0.00
2,300.00	17.42	197.11	2,235.15	-432.66	-133.22	452.70	0.00	0.00	0.00
2,400.00	17.42	197.11	2,330.56	-461.27	-142.04	482.65	0.00	0.00	0.00
2,500.00	17.42	197.11	2,425.97	-489.89	-150.85	512.59	0.00	0.00	0.00
2,600.00	17.42	197.11	2,521.38	-518.51	-159.66	542.53	0.00	0.00	0.00
2,700.00	17.42	197.11	2,616.80	-547.13	-168.47	572.48	0.00	0.00	0.00
2,800.00	17.42	197.11	2,712.21	-575.74	-177.28	602.42	0.00	0.00	0.00
2,900.00	17.42	197.11	2,807.62	-604.36	-186.10	632.36	0.00	0.00	0.00
3,000.00	17.42	197.11	2,903.03	-632.98	-194.91	662.31	0.00	0.00	0.00
3,100.00	17.42	197.11	2,998.44	-661.60	-203.72	692.25	0.00	0.00	0.00
3,200.00	17.42	197.11	3,093.85	-690.21	-212.53	722.19	0.00	0.00	0.00
3,300.00	17.42	197.11	3,189.27	-718.83	-221.34	752.14	0.00	0.00	0.00
3,400.00	17.42	197.11	3,284.68	-747.45	-230.15	782.08	0.00	0.00	0.00
3,500.00	17.42	197.11	3,380.09	-776.07	-238.97	812.02	0.00	0.00	0.00
3,600.00	17.42	197.11	3,475.50	-804.68	-247.78	841.97	0.00	0.00	0.00
3,700.00	17.42	197.11	3,570.91	-833.30	-256.59	871.91	0.00	0.00	0.00
3,800.00	17.42	197.11	3,666.32	-861.92	-265.40	901.85	0.00	0.00	0.00
3,900.00	17.42	197.11	3,761.74	-890.54	-274.21	931.80	0.00	0.00	0.00
4,000.00	17.42	197.11	3,857.15	-919.15	-283.03	961.74	0.00	0.00	0.00
4,100.00	17.42	197.11	3,952.56	-947.77	-291.84	991.69	0.00	0.00	0.00
4,200.00	17.42	197.11	4,047.97	-976.39	-300.65	1,021.63	0.00	0.00	0.00
4,300.00	17.42	197.11	4,143.38	-1,005.01	-309.46	1,051.57	0.00	0.00	0.00
4,400.00	17.42	197.11	4,238.79	-1,033.62	-318.27	1,081.52	0.00	0.00	0.00
4,500.00	17.42	197.11	4,334.21	-1,062.24	-327.09	1,111.46	0.00	0.00	0.00
4,600.00	17.42	197.11	4,429.62	-1,090.86	-335.90	1,141.40	0.00	0.00	0.00
4,700.00	17.42	197.11	4,525.03	-1,119.48	-344.71	1,171.35	0.00	0.00	0.00
4,800.00	17.42	197.11	4,620.44	-1,148.09	-353.52	1,201.29	0.00	0.00	0.00
4,900.00	17.42	197.11	4,715.85	-1,176.71	-362.33	1,231.23	0.00	0.00	0.00
5,000.00	17.42	197.11	4,811.26	-1,205.33	-371.14	1,261.18	0.00	0.00	0.00

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Site:	Doe Canyon	North Reference:	True
Well:	#29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.00	17.42	197.11	4,906.68	-1,233.95	-379.96	1,291.12	0.00	0.00	0.00
5,200.00	17.42	197.11	5,002.09	-1,262.56	-388.77	1,321.06	0.00	0.00	0.00
5,300.00	17.42	197.11	5,097.50	-1,291.18	-397.58	1,351.01	0.00	0.00	0.00
5,400.00	17.42	197.11	5,192.91	-1,319.80	-406.39	1,380.95	0.00	0.00	0.00
5,500.00	17.42	197.11	5,288.32	-1,348.42	-415.20	1,410.89	0.00	0.00	0.00
5,600.00	17.42	197.11	5,383.73	-1,377.03	-424.02	1,440.84	0.00	0.00	0.00
5,700.00	17.42	197.11	5,479.15	-1,405.65	-432.83	1,470.78	0.00	0.00	0.00
5,800.00	17.42	197.11	5,574.56	-1,434.27	-441.64	1,500.72	0.00	0.00	0.00
5,900.00	17.42	197.11	5,669.97	-1,462.88	-450.45	1,530.67	0.00	0.00	0.00
6,000.00	17.42	197.11	5,765.38	-1,491.50	-459.26	1,560.61	0.00	0.00	0.00
6,100.00	17.42	197.11	5,860.79	-1,520.12	-468.08	1,590.55	0.00	0.00	0.00
6,175.89	17.42	197.11	5,933.20	-1,541.84	-474.76	1,613.28	0.00	0.00	0.00
Begin 1.00°/100' Drop									
6,200.00	17.18	197.11	5,956.22	-1,548.69	-476.87	1,620.45	1.00	-1.00	0.00
6,300.00	16.18	197.11	6,052.01	-1,576.13	-485.32	1,649.15	1.00	-1.00	0.00
6,400.00	15.18	197.11	6,148.29	-1,601.96	-493.28	1,676.18	1.00	-1.00	0.00
6,500.00	14.18	197.11	6,245.02	-1,626.18	-500.73	1,701.53	1.00	-1.00	0.00
6,600.00	13.18	197.11	6,342.18	-1,648.79	-507.70	1,725.18	1.00	-1.00	0.00
6,700.00	12.18	197.11	6,439.74	-1,669.77	-514.16	1,747.14	1.00	-1.00	0.00
6,800.00	11.18	197.11	6,537.67	-1,689.12	-520.12	1,767.39	1.00	-1.00	0.00
6,900.00	10.18	197.11	6,635.93	-1,706.84	-525.57	1,785.92	1.00	-1.00	0.00
7,000.00	9.18	197.11	6,734.51	-1,722.91	-530.52	1,802.74	1.00	-1.00	0.00
7,100.00	8.18	197.11	6,833.36	-1,737.34	-534.96	1,817.84	1.00	-1.00	0.00
7,200.00	7.18	197.11	6,932.46	-1,750.12	-538.90	1,831.21	1.00	-1.00	0.00
7,300.00	6.18	197.11	7,031.78	-1,761.24	-542.32	1,842.84	1.00	-1.00	0.00
7,400.00	5.18	197.11	7,131.29	-1,770.70	-545.23	1,852.74	1.00	-1.00	0.00
7,500.00	4.18	197.11	7,230.95	-1,778.50	-547.64	1,860.91	1.00	-1.00	0.00
7,600.00	3.18	197.11	7,330.74	-1,784.64	-549.53	1,867.33	1.00	-1.00	0.00
7,700.00	2.18	197.11	7,430.63	-1,789.11	-550.90	1,872.01	1.00	-1.00	0.00
7,800.00	1.18	197.11	7,530.59	-1,791.92	-551.77	1,874.95	1.00	-1.00	0.00
7,900.00	0.18	197.11	7,630.58	-1,793.06	-552.12	1,876.14	1.00	-1.00	0.00
7,918.25	0.00	0.00	7,648.83	-1,793.09	-552.13	1,876.17	1.00	-1.00	892.56
Begin Vertical Hold									
8,000.00	0.00	0.00	7,730.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,100.00	0.00	0.00	7,830.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,200.00	0.00	0.00	7,930.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,300.00	0.00	0.00	8,030.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,400.00	0.00	0.00	8,130.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,500.00	0.00	0.00	8,230.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,600.00	0.00	0.00	8,330.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,700.00	0.00	0.00	8,430.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,800.00	0.00	0.00	8,530.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
8,900.00	0.00	0.00	8,630.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
9,000.00	0.00	0.00	8,730.58	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
9,080.62	0.00	0.00	8,811.20	-1,793.09	-552.13	1,876.17	0.00	0.00	0.00
PBHL									

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Site:	Doe Canyon	North Reference:	True
Well:	#29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL v6 - Doe Canyc	0.00	0.00	8,811.20	-1,793.09	-552.13	1,408,627.81	2,036,629.67	37° 44' 30.140 N	108° 49' 56.530 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	KOP, 3.00°/100' Build
1,080.79	1,071.88	-83.75	-25.79	Begin 17.42° Tangent
6,175.89	5,933.20	-1,541.84	-474.76	Begin 1.00°/100' Drop
7,918.25	7,648.83	-1,793.09	-552.13	Begin Vertical Hold
9,080.62	8,811.20	-1,793.09	-552.13	PBHL