

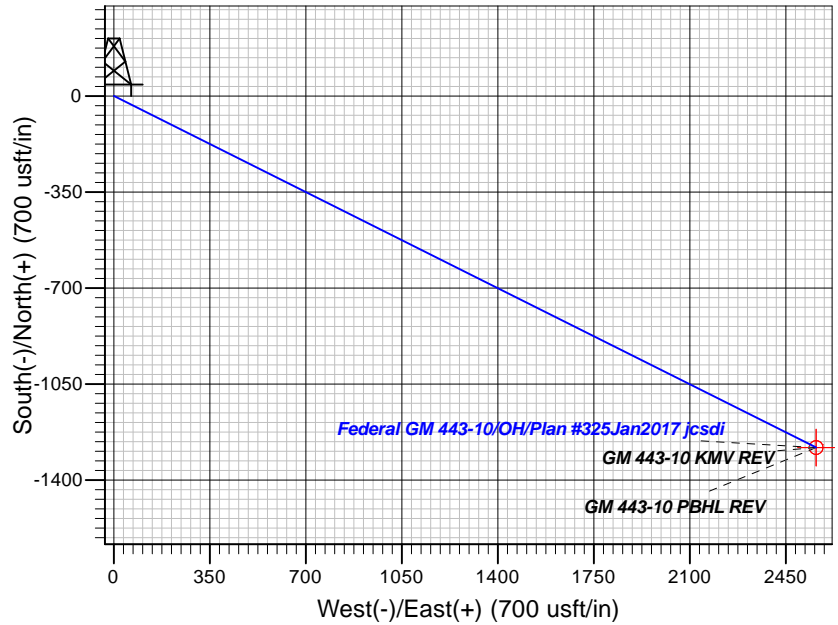
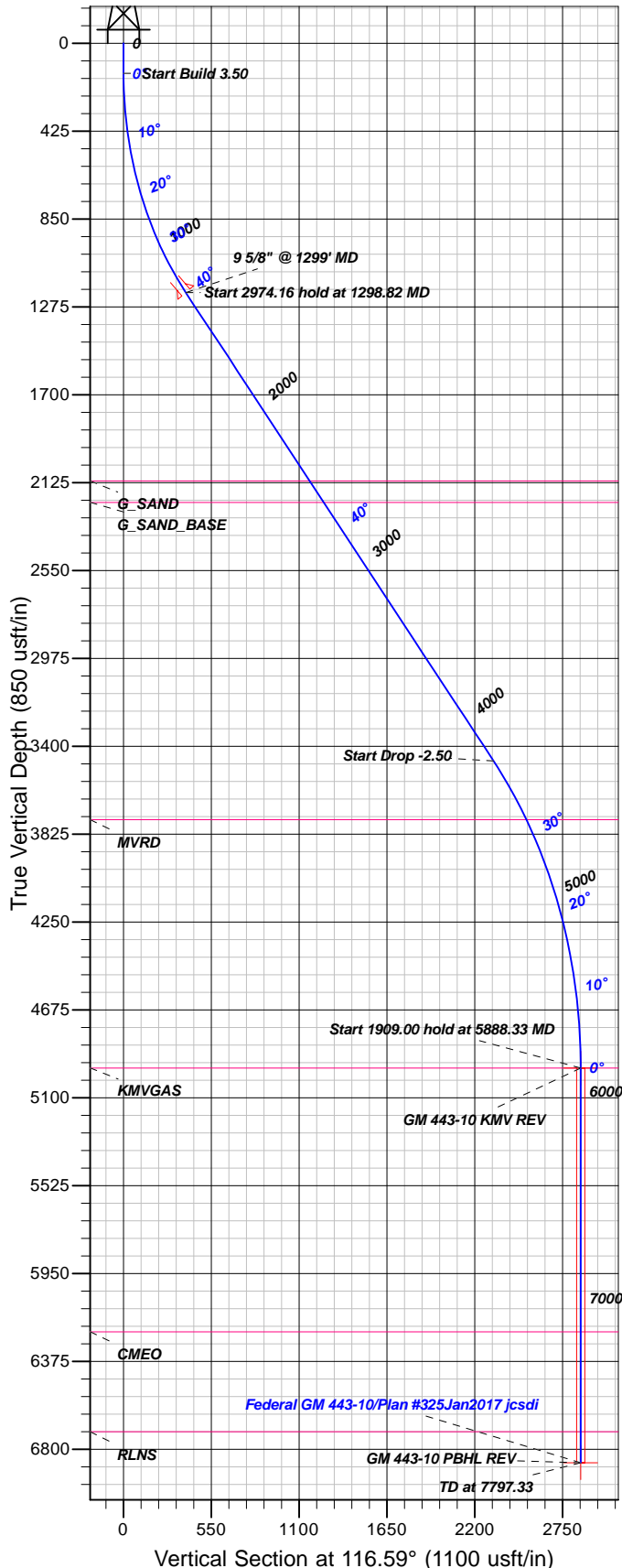
Well Details: Federal GM 443-10

GL 6148' & RKB 24' @ 6172.00usft (H&P 318)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600354.00	2266910.20	39.4529786	-108.0965291	A13

T M Azimuths to True North
Magnetic North: 9.71°

Magnetic Field
Strength: 51587.4snT
Dip Angle: 65.58°
Date: 9/13/2016
Model: BGGM2016



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
2116.00	2493.97	G_SAND
2221.00	2631.81	G_SAND_BASE
3755.00	4624.20	MVRD
4956.00	5888.33	KMGAS
6232.00	7164.33	CMEO
6715.00	7647.33	RLNS

Plan: Plan #325Jan2017 jcsdi

12:22, January 26 2017
Created By: Janie Collins

PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone

System Datum: Mean Sea Level

CASING DETAILS

TVD	MD	Name	Size
1206.24	1299.62	9 5/8" @ 1299' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	
3	1298.82	40.38	116.59	1205.63	-174.60	348.81	3.50	116.59	390.07	
4	4272.98	40.38	116.59	3471.11	-1037.16	2071.95	0.00	0.00	2317.04	
5	5888.33	0.00	0.00	4956.00	-1281.60	2560.28	2.50	180.00	2863.13	GM 443-10 KMV REV
6	7797.33	0.00	0.00	6865.00	-1281.60	2560.28	0.00	0.00	2863.13	GM 443-10 PBHL REV

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 443-10 KMV REV 4956.00	-1281.60	2560.28	1598999.76	2269432.80	39.4494597	-108.0874626	Circle (Radius: 25.00)	
- plan hits target center								
GM 443-10 PBHL REV 6865.00	-1281.60	2560.28	1598999.76	2269432.80	39.4494597	-108.0874626	Point	
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 443-10 - Slot A13

OH

Plan: Plan #325Jan2017 jcsdi

Standard Planning Report

26 January, 2017



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 443-10 - Slot A13
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 443-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #325Jan2017 jcsdi		

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	MV 5-10 Pad			
Site Position:		Northing:	1,600,344.70 usft	Latitude: 39.4529509
From: Map		Easting:	2,266,881.70 usft	Longitude: -108.0966291
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.64 °

Well	Federal GM 443-10 - Slot A13			
Well Position	+N/-S	10.11 usft	Northing:	1,600,354.00 usft
	+E/-W	28.22 usft	Easting:	2,266,910.20 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,148.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	9/13/2016	9.72	65.58	51,587

Design	Plan #325Jan2017 jcsdi			
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	116.59

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	
145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,298.82	40.38	116.59	1,205.63	-174.60	348.81	3.50	3.50	0.00	116.59	
4,272.98	40.38	116.59	3,471.11	-1,037.16	2,071.95	0.00	0.00	0.00	0.00	
5,888.33	0.00	0.00	4,956.00	-1,281.60	2,560.28	2.50	-2.50	0.00	180.00	GM 443-10 KMV REV
7,797.33	0.00	0.00	6,865.00	-1,281.60	2,560.28	0.00	0.00	0.00	0.00	GM 443-10 PBHL RE'

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 443-10 - Slot A13
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 443-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #325Jan2017 jcsdi		

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	
145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.92	116.59	199.99	-0.41	0.83	0.92	3.50	3.50	0.00	
300.00	5.42	116.59	299.77	-3.28	6.56	7.33	3.50	3.50	0.00	
400.00	8.92	116.59	398.97	-8.87	17.72	19.82	3.50	3.50	0.00	
500.00	12.42	116.59	497.22	-17.16	34.29	38.34	3.50	3.50	0.00	
600.00	15.92	116.59	594.16	-28.12	56.18	62.83	3.50	3.50	0.00	
700.00	19.42	116.59	689.43	-41.71	83.33	93.18	3.50	3.50	0.00	
800.00	22.92	116.59	782.66	-57.88	115.62	129.30	3.50	3.50	0.00	
900.00	26.42	116.59	873.52	-76.56	152.95	171.04	3.50	3.50	0.00	
1,000.00	29.92	116.59	961.65	-97.69	195.16	218.25	3.50	3.50	0.00	
1,100.00	33.42	116.59	1,046.74	-121.19	242.11	270.75	3.50	3.50	0.00	
1,200.00	36.92	116.59	1,128.47	-146.98	293.62	328.35	3.50	3.50	0.00	
1,298.82	40.38	116.59	1,205.63	-174.60	348.81	390.07	3.50	3.50	0.00	
1,299.62	40.38	116.59	1,206.24	-174.83	349.27	390.58	0.00	0.00	0.00	
9 5/8" @ 1299' MD										
1,300.00	40.38	116.59	1,206.53	-174.94	349.49	390.83	0.00	0.00	0.00	
1,400.00	40.38	116.59	1,282.70	-203.95	407.42	455.62	0.00	0.00	0.00	
1,500.00	40.38	116.59	1,358.87	-232.95	465.36	520.41	0.00	0.00	0.00	
1,600.00	40.38	116.59	1,435.04	-261.95	523.30	585.20	0.00	0.00	0.00	
1,700.00	40.38	116.59	1,511.22	-290.95	581.24	649.99	0.00	0.00	0.00	
1,800.00	40.38	116.59	1,587.39	-319.95	639.17	714.78	0.00	0.00	0.00	
1,900.00	40.38	116.59	1,663.56	-348.95	697.11	779.57	0.00	0.00	0.00	
2,000.00	40.38	116.59	1,739.73	-377.95	755.05	844.36	0.00	0.00	0.00	
2,100.00	40.38	116.59	1,815.90	-406.96	812.98	909.15	0.00	0.00	0.00	
2,200.00	40.38	116.59	1,892.08	-435.96	870.92	973.94	0.00	0.00	0.00	
2,300.00	40.38	116.59	1,968.25	-464.96	928.86	1,038.73	0.00	0.00	0.00	
2,400.00	40.38	116.59	2,044.42	-493.96	986.79	1,103.52	0.00	0.00	0.00	
2,493.97	40.38	116.59	2,116.00	-521.21	1,041.24	1,164.41	0.00	0.00	0.00	
G_SAND										
2,500.00	40.38	116.59	2,120.59	-522.96	1,044.73	1,168.31	0.00	0.00	0.00	
2,599.99	40.38	116.59	2,196.76	-551.96	1,102.67	1,233.10	0.00	0.00	0.00	
2,631.81	40.38	116.59	2,221.00	-561.19	1,121.10	1,253.72	0.00	0.00	0.00	
G_SAND_BASE										
2,699.99	40.38	116.59	2,272.94	-580.97	1,160.60	1,297.89	0.00	0.00	0.00	
2,799.99	40.38	116.59	2,349.11	-609.97	1,218.54	1,362.68	0.00	0.00	0.00	
2,899.99	40.38	116.59	2,425.28	-638.97	1,276.48	1,427.47	0.00	0.00	0.00	
2,999.99	40.38	116.59	2,501.45	-667.97	1,334.42	1,492.26	0.00	0.00	0.00	
3,099.99	40.38	116.59	2,577.63	-696.97	1,392.35	1,557.05	0.00	0.00	0.00	
3,199.99	40.38	116.59	2,653.80	-725.97	1,450.29	1,621.84	0.00	0.00	0.00	
3,299.99	40.38	116.59	2,729.97	-754.98	1,508.23	1,686.63	0.00	0.00	0.00	
3,399.99	40.38	116.59	2,806.14	-783.98	1,566.16	1,751.42	0.00	0.00	0.00	
3,499.99	40.38	116.59	2,882.31	-812.98	1,624.10	1,816.22	0.00	0.00	0.00	
3,599.99	40.38	116.59	2,958.49	-841.98	1,682.04	1,881.01	0.00	0.00	0.00	
3,699.99	40.38	116.59	3,034.66	-870.98	1,739.97	1,945.80	0.00	0.00	0.00	
3,799.99	40.38	116.59	3,110.83	-899.98	1,797.91	2,010.59	0.00	0.00	0.00	
3,899.99	40.38	116.59	3,187.00	-928.99	1,855.85	2,075.38	0.00	0.00	0.00	
3,999.99	40.38	116.59	3,263.17	-957.99	1,913.79	2,140.17	0.00	0.00	0.00	
4,099.99	40.38	116.59	3,339.35	-986.99	1,971.72	2,204.96	0.00	0.00	0.00	
4,199.99	40.38	116.59	3,415.52	-1,015.99	2,029.66	2,269.75	0.00	0.00	0.00	
4,272.98	40.38	116.59	3,471.11	-1,037.16	2,071.95	2,317.04	0.00	0.00	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 443-10 - Slot A13
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 443-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #325Jan2017 jcsdi		

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)
4,299.99	39.71	116.59	3,491.79	-1,044.94	2,087.49	2,334.42	2.50	-2.50	0.00
4,399.99	37.21	116.59	3,570.09	-1,072.77	2,143.10	2,396.61	2.50	-2.50	0.00
4,499.99	34.71	116.59	3,651.03	-1,099.06	2,195.60	2,455.32	2.50	-2.50	0.00
4,599.99	32.21	116.59	3,734.45	-1,123.73	2,244.90	2,510.45	2.50	-2.50	0.00
4,624.20	31.60	116.59	3,755.00	-1,129.46	2,256.34	2,523.24	2.50	-2.50	0.00
MVRD									
4,699.99	29.71	116.59	3,820.20	-1,146.76	2,290.90	2,561.89	2.50	-2.50	0.00
4,799.99	27.21	116.59	3,908.11	-1,168.09	2,333.51	2,609.54	2.50	-2.50	0.00
4,899.99	24.71	116.59	3,998.01	-1,187.68	2,372.64	2,653.30	2.50	-2.50	0.00
4,999.99	22.21	116.59	4,089.74	-1,205.50	2,408.24	2,693.11	2.50	-2.50	0.00
5,099.99	19.71	116.59	4,183.11	-1,221.51	2,440.22	2,728.88	2.50	-2.50	0.00
5,199.99	17.21	116.59	4,277.96	-1,235.68	2,468.53	2,760.53	2.50	-2.50	0.00
5,299.99	14.71	116.59	4,374.10	-1,247.98	2,493.12	2,788.03	2.50	-2.50	0.00
5,399.99	12.21	116.59	4,471.35	-1,258.40	2,513.93	2,811.30	2.50	-2.50	0.00
5,499.99	9.71	116.59	4,569.52	-1,266.91	2,530.92	2,830.31	2.50	-2.50	0.00
5,599.99	7.21	116.59	4,668.42	-1,273.49	2,544.08	2,845.02	2.50	-2.50	0.00
5,699.99	4.71	116.59	4,767.87	-1,278.14	2,553.36	2,855.40	2.50	-2.50	0.00
5,799.99	2.21	116.59	4,867.68	-1,280.84	2,558.75	2,861.43	2.50	-2.50	0.00
5,886.08	0.06	116.59	4,953.75	-1,281.60	2,560.27	2,863.13	2.50	-2.50	0.00
GM 443-10 KMV									
5,888.33	0.00	0.00	4,956.00	-1,281.60	2,560.28	2,863.13	2.50	-2.50	0.00
KMVGAS - GM 443-10 KMV REV									
5,899.99	0.00	0.00	4,967.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
5,999.99	0.00	0.00	5,067.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,099.99	0.00	0.00	5,167.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,199.99	0.00	0.00	5,267.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,299.99	0.00	0.00	5,367.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,399.99	0.00	0.00	5,467.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,499.99	0.00	0.00	5,567.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,599.99	0.00	0.00	5,667.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,699.99	0.00	0.00	5,767.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,799.99	0.00	0.00	5,867.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,899.99	0.00	0.00	5,967.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
6,999.99	0.00	0.00	6,067.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,099.99	0.00	0.00	6,167.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,164.33	0.00	0.00	6,232.00	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
CME0									
7,199.99	0.00	0.00	6,267.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,299.99	0.00	0.00	6,367.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,399.99	0.00	0.00	6,467.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,499.99	0.00	0.00	6,567.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,599.98	0.00	0.00	6,667.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,647.33	0.00	0.00	6,715.00	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
RLNS									
7,699.98	0.00	0.00	6,767.66	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
7,797.33	0.00	0.00	6,865.00	-1,281.60	2,560.28	2,863.13	0.00	0.00	0.00
GM 443-10 PBHL - GM 443-10 PBHL REV									

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Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 443-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #325Jan2017 jcsdi		

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
GM 443-10 KMV REV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,956.00	-1,281.60	2,560.28	1,598,999.75	2,269,432.80	39.4494597	-108.0874626
GM 443-10 PBHL REV - plan hits target center - Point	0.00	0.00	6,865.00	-1,281.60	2,560.28	1,598,999.75	2,269,432.80	39.4494597	-108.0874626

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,299.62	1,206.24	9 5/8" @ 1299' MD	9.62	9.62	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,493.97	2,116.00	G_SAND		0.00	0.00	
2,631.81	2,221.00	G_SAND_BASE		0.00	0.00	
4,624.20	3,755.00	MVRD		0.00	0.00	
5,888.33	4,956.00	KMVGAS		0.00	0.00	
7,164.33	6,232.00	CME0		0.00	0.00	
7,647.33	6,715.00	RLNS		0.00	0.00	