

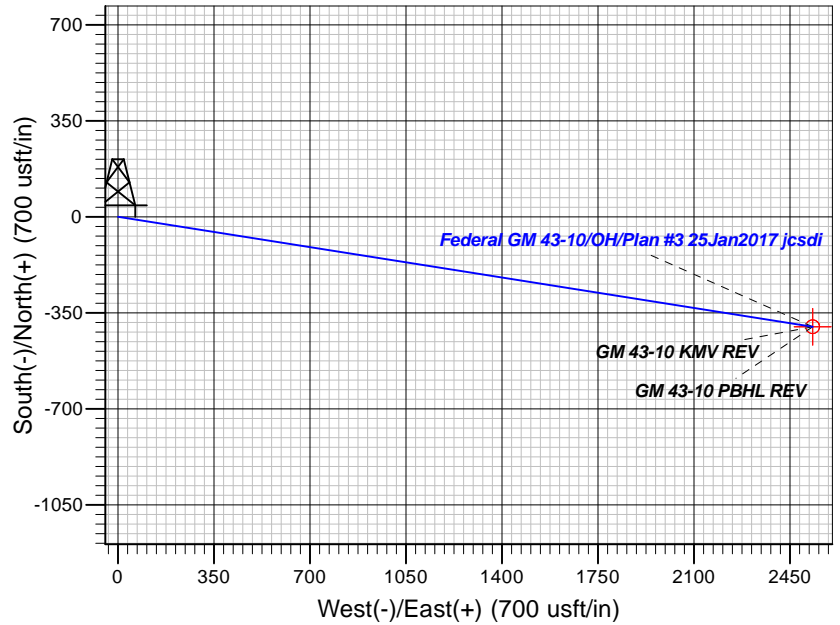
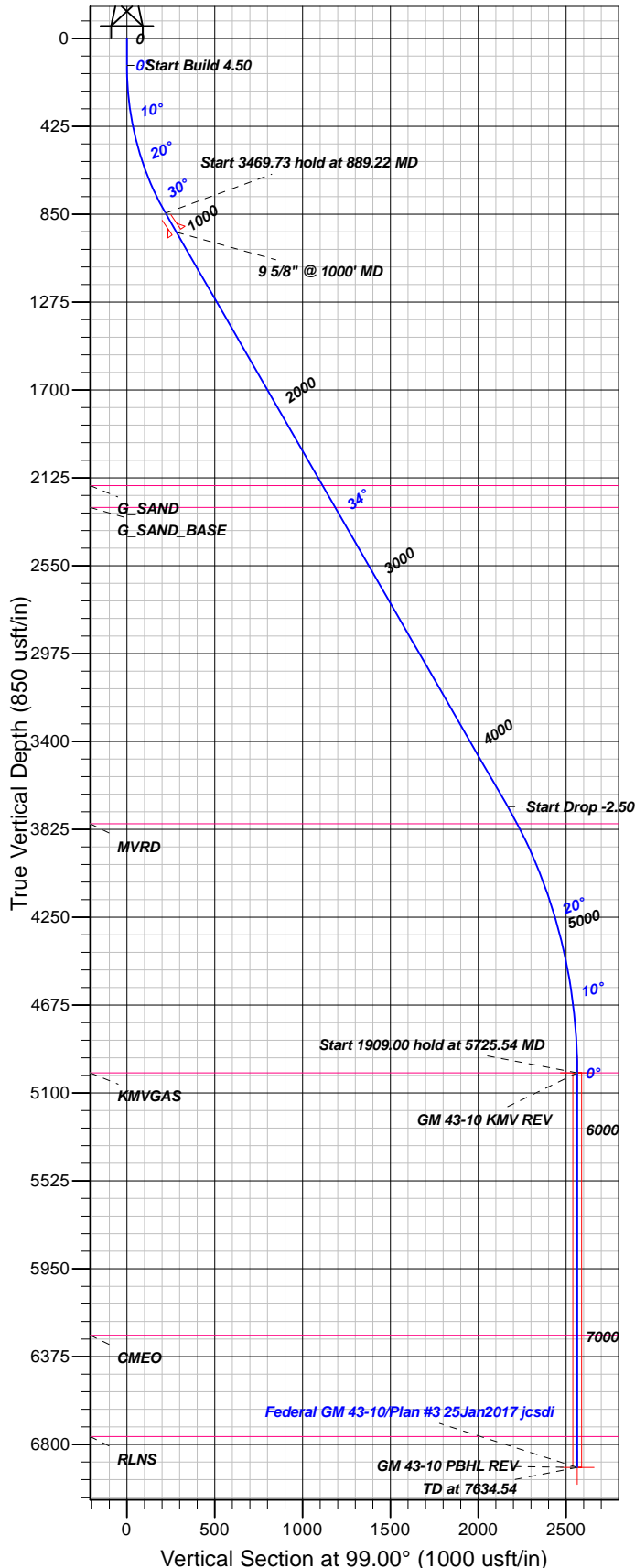
Well Details: Federal GM 43-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600361.00	2266931.60	39.4529995	-108.0964541	A16

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
2163.00	2482.09	G_SAND
2268.00	2608.99	G_SAND_BASE
3798.00	4456.71	MVRD
5003.00	5725.54	KMVGAS
6272.00	6994.54	CMEQ
6762.00	7484.54	RLNS

Plan: Plan #3 25Jan2017 jcsdi

18:19, 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
936.68	1000.00	9 5/8" @ 1000' 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	130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	
3	889.22	34.16	99.00	845.02	-34.36	217.03	4.50	99.00	219.73	
4	4358.95	34.16	99.00	3715.96	-339.07	2141.57	0.00	0.002168.25		
5	5725.54	0.00	0.00	5003.00	-400.92	2532.22	2.50	180.002563.76		GM 43-10 KMV REV
6	7634.54	0.00	0.00	6912.00	-400.92	2532.22	0.00	0.002563.76		GM 43-10 PBHL REV

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 43-10 KMV REV	5003.00	-400.92	2532.22	1599887.88	2269451.33	39.4518985	-108.0874866	Circle (Radius: 25.00)
- plan hits target center								
GM 43-10 PBHL REV	6912.00	-400.92	2532.22	1599887.88	2269451.33	39.4518985	-108.0874866	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 43-10 - Slot A16

OH

Plan: Plan #3 25Jan2017 jcsdi

Standard Planning Report

26 January, 2017



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 43-10 - Slot A16
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 43-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 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 43-10 - Slot A16			
Well Position	+N/-S	17.72 usft	Northing:	1,600,361.00 usft
	+E/-W	49.41 usft	Easting:	2,266,931.60 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 #3 25Jan2017 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	99.00

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	
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00	
889.22	34.16	99.00	845.02	-34.36	217.03	4.50	4.50	0.00	99.00	
4,358.95	34.16	99.00	3,715.96	-339.07	2,141.57	0.00	0.00	0.00	0.00	
5,725.54	0.00	0.00	5,003.00	-400.92	2,532.22	2.50	-2.50	0.00	180.00	GM 43-10 KMV REV
7,634.54	0.00	0.00	6,912.00	-400.92	2,532.22	0.00	0.00	0.00	0.00	GM 43-10 PBHL REV

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 43-10 - Slot A16
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 43-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 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
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	3.15	99.00	199.96	-0.30	1.90	1.92	4.50	4.50	0.00
300.00	7.65	99.00	299.49	-1.77	11.19	11.33	4.50	4.50	0.00
400.00	12.15	99.00	397.98	-4.46	28.17	28.52	4.50	4.50	0.00
500.00	16.65	99.00	494.81	-8.35	52.73	53.38	4.50	4.50	0.00
600.00	21.15	99.00	589.40	-13.41	84.71	85.77	4.50	4.50	0.00
700.00	25.65	99.00	681.15	-19.62	123.93	125.47	4.50	4.50	0.00
800.00	30.15	99.00	769.50	-26.94	170.13	172.25	4.50	4.50	0.00
889.22	34.16	99.00	845.02	-34.36	217.03	219.73	4.50	4.50	0.00
900.00	34.16	99.00	853.94	-35.31	223.00	225.78	0.00	0.00	0.00
1,000.00	34.16	99.00	936.68	-44.09	278.47	281.94	0.00	0.00	0.00
9 5/8" @ 1000' MD									
1,100.00	34.16	99.00	1,019.42	-52.87	333.94	338.10	0.00	0.00	0.00
1,200.00	34.16	99.00	1,102.17	-61.65	389.40	394.25	0.00	0.00	0.00
1,300.00	34.16	99.00	1,184.91	-70.43	444.87	450.41	0.00	0.00	0.00
1,400.00	34.16	99.00	1,267.65	-79.22	500.34	506.57	0.00	0.00	0.00
1,500.00	34.16	99.00	1,350.39	-88.00	555.80	562.73	0.00	0.00	0.00
1,600.00	34.16	99.00	1,433.14	-96.78	611.27	618.88	0.00	0.00	0.00
1,700.00	34.16	99.00	1,515.88	-105.56	666.74	675.04	0.00	0.00	0.00
1,800.00	34.16	99.00	1,598.62	-114.34	722.20	731.20	0.00	0.00	0.00
1,900.00	34.16	99.00	1,681.36	-123.13	777.67	787.36	0.00	0.00	0.00
2,000.00	34.16	99.00	1,764.11	-131.91	833.14	843.51	0.00	0.00	0.00
2,100.00	34.16	99.00	1,846.85	-140.69	888.60	899.67	0.00	0.00	0.00
2,200.00	34.16	99.00	1,929.59	-149.47	944.07	955.83	0.00	0.00	0.00
2,300.00	34.16	99.00	2,012.33	-158.25	999.54	1,011.99	0.00	0.00	0.00
2,400.00	34.16	99.00	2,095.07	-167.03	1,055.00	1,068.14	0.00	0.00	0.00
2,482.09	34.16	99.00	2,163.00	-174.24	1,100.54	1,114.25	0.00	0.00	0.00
G_SAND									
2,500.00	34.16	99.00	2,177.82	-175.82	1,110.47	1,124.30	0.00	0.00	0.00
2,599.99	34.16	99.00	2,260.56	-184.60	1,165.94	1,180.46	0.00	0.00	0.00
2,608.99	34.16	99.00	2,268.00	-185.39	1,170.92	1,185.51	0.00	0.00	0.00
G_SAND_BASE									
2,699.99	34.16	99.00	2,343.30	-193.38	1,221.40	1,236.62	0.00	0.00	0.00
2,799.99	34.16	99.00	2,426.04	-202.16	1,276.87	1,292.77	0.00	0.00	0.00
2,899.99	34.16	99.00	2,508.79	-210.94	1,332.34	1,348.93	0.00	0.00	0.00
2,999.99	34.16	99.00	2,591.53	-219.73	1,387.80	1,405.09	0.00	0.00	0.00
3,099.99	34.16	99.00	2,674.27	-228.51	1,443.27	1,461.25	0.00	0.00	0.00
3,199.99	34.16	99.00	2,757.01	-237.29	1,498.74	1,517.40	0.00	0.00	0.00
3,299.99	34.16	99.00	2,839.76	-246.07	1,554.20	1,573.56	0.00	0.00	0.00
3,399.99	34.16	99.00	2,922.50	-254.85	1,609.67	1,629.72	0.00	0.00	0.00
3,499.99	34.16	99.00	3,005.24	-263.63	1,665.14	1,685.88	0.00	0.00	0.00
3,599.99	34.16	99.00	3,087.98	-272.42	1,720.60	1,742.03	0.00	0.00	0.00
3,699.99	34.16	99.00	3,170.73	-281.20	1,776.07	1,798.19	0.00	0.00	0.00
3,799.99	34.16	99.00	3,253.47	-289.98	1,831.54	1,854.35	0.00	0.00	0.00
3,899.99	34.16	99.00	3,336.21	-298.76	1,887.00	1,910.51	0.00	0.00	0.00
3,999.99	34.16	99.00	3,418.95	-307.54	1,942.47	1,966.66	0.00	0.00	0.00
4,099.99	34.16	99.00	3,501.69	-316.33	1,997.94	2,022.82	0.00	0.00	0.00
4,199.99	34.16	99.00	3,584.44	-325.11	2,053.40	2,078.98	0.00	0.00	0.00
4,299.99	34.16	99.00	3,667.18	-333.89	2,108.87	2,135.14	0.00	0.00	0.00
4,358.95	34.16	99.00	3,715.96	-339.07	2,141.57	2,168.25	0.00	0.00	0.00
4,399.99	33.14	99.00	3,750.13	-342.62	2,164.03	2,190.99	2.50	-2.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 43-10 - Slot A16
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 43-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 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)	
4,456.71	31.72	99.00	3,798.00	-347.38	2,194.08	2,221.41	2.50	-2.50	0.00	
MVRD										
4,499.99	30.64	99.00	3,835.03	-350.88	2,216.21	2,243.81	2.50	-2.50	0.00	
4,599.99	28.14	99.00	3,922.15	-358.56	2,264.67	2,292.88	2.50	-2.50	0.00	
4,699.99	25.64	99.00	4,011.33	-365.63	2,309.34	2,338.10	2.50	-2.50	0.00	
4,799.99	23.14	99.00	4,102.40	-372.09	2,350.12	2,379.39	2.50	-2.50	0.00	
4,899.99	20.64	99.00	4,195.18	-377.92	2,386.94	2,416.67	2.50	-2.50	0.00	
4,999.99	18.14	99.00	4,289.51	-383.11	2,419.73	2,449.87	2.50	-2.50	0.00	
5,099.99	15.64	99.00	4,385.18	-387.65	2,448.42	2,478.92	2.50	-2.50	0.00	
5,199.99	13.14	99.00	4,482.04	-391.53	2,472.96	2,503.76	2.50	-2.50	0.00	
5,299.99	10.64	99.00	4,579.89	-394.76	2,493.31	2,524.36	2.50	-2.50	0.00	
5,399.99	8.14	99.00	4,678.54	-397.31	2,509.42	2,540.68	2.50	-2.50	0.00	
5,499.99	5.64	99.00	4,777.81	-399.18	2,521.26	2,552.67	2.50	-2.50	0.00	
5,599.99	3.14	99.00	4,877.51	-400.38	2,528.82	2,560.32	2.50	-2.50	0.00	
5,699.99	0.64	99.00	4,977.45	-400.89	2,532.08	2,563.62	2.50	-2.50	0.00	
5,725.16	0.01	99.00	5,002.62	-400.92	2,532.22	2,563.76	2.50	-2.50	0.00	
GM 43-10 KMV										
5,725.54	0.00	0.00	5,003.00	-400.92	2,532.22	2,563.76	2.50	-2.50	0.00	
KMVGAS - GM 43-10 KMV REV										
5,799.99	0.00	0.00	5,077.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
5,899.99	0.00	0.00	5,177.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
5,999.99	0.00	0.00	5,277.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,099.99	0.00	0.00	5,377.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,199.99	0.00	0.00	5,477.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,299.99	0.00	0.00	5,577.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,399.99	0.00	0.00	5,677.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,499.99	0.00	0.00	5,777.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,599.99	0.00	0.00	5,877.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,699.99	0.00	0.00	5,977.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,799.99	0.00	0.00	6,077.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,899.99	0.00	0.00	6,177.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
6,994.54	0.00	0.00	6,272.00	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
CME0										
6,999.99	0.00	0.00	6,277.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
7,099.99	0.00	0.00	6,377.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
7,199.99	0.00	0.00	6,477.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
7,299.99	0.00	0.00	6,577.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
7,399.99	0.00	0.00	6,677.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
7,484.54	0.00	0.00	6,762.00	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
RLNS										
7,499.99	0.00	0.00	6,777.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
7,599.98	0.00	0.00	6,877.44	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
7,634.54	0.00	0.00	6,912.00	-400.92	2,532.22	2,563.76	0.00	0.00	0.00	
GM 43-10 PBHL REV - GM 43-10 PBHL										

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 43-10 - Slot A16
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 43-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 25Jan2017 jcsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 43-10 KMV REV	0.00	0.00	5,003.00	-400.92	2,532.22	1,599,887.88	2,269,451.33	39.4518985	-108.0874866
- hit/miss target									
- Shape									
- Circle (radius 25.00)									
GM 43-10 PBHL REV	0.00	0.00	6,912.00	-400.92	2,532.22	1,599,887.88	2,269,451.33	39.4518985	-108.0874866
- plan hits target center									
- Circle (radius 25.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	936.68	9 5/8" @ 1000' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,482.09	4,560.20	G_SAND		0.00	0.00
2,608.99	4,665.20	G_SAND_BASE		0.00	0.00
4,456.71	6,195.20	MVRD		0.00	0.00
5,725.54	7,400.20	KMVGAS		0.00	0.00
6,994.54	8,669.20	CME0		0.00	0.00
7,484.54	9,159.20	RLNS		0.00	0.00