

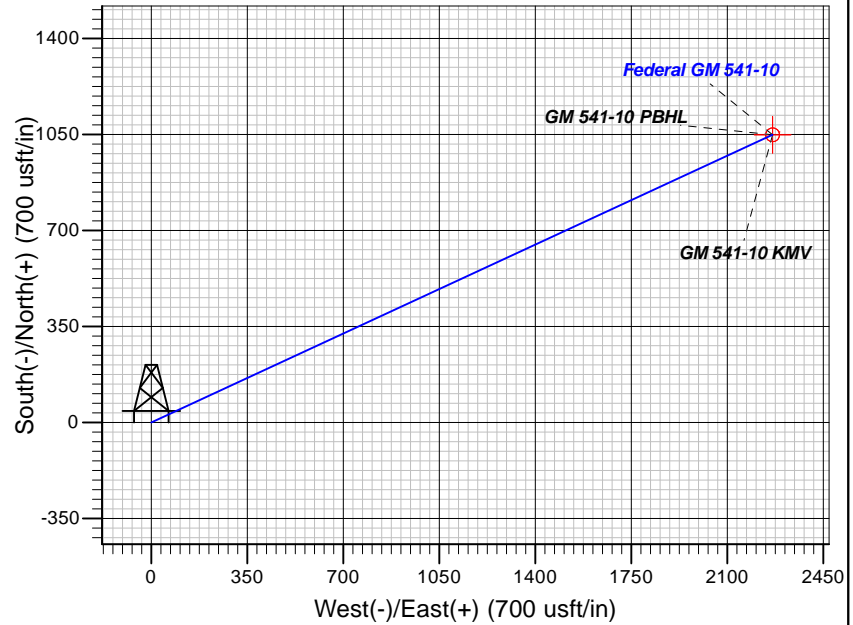
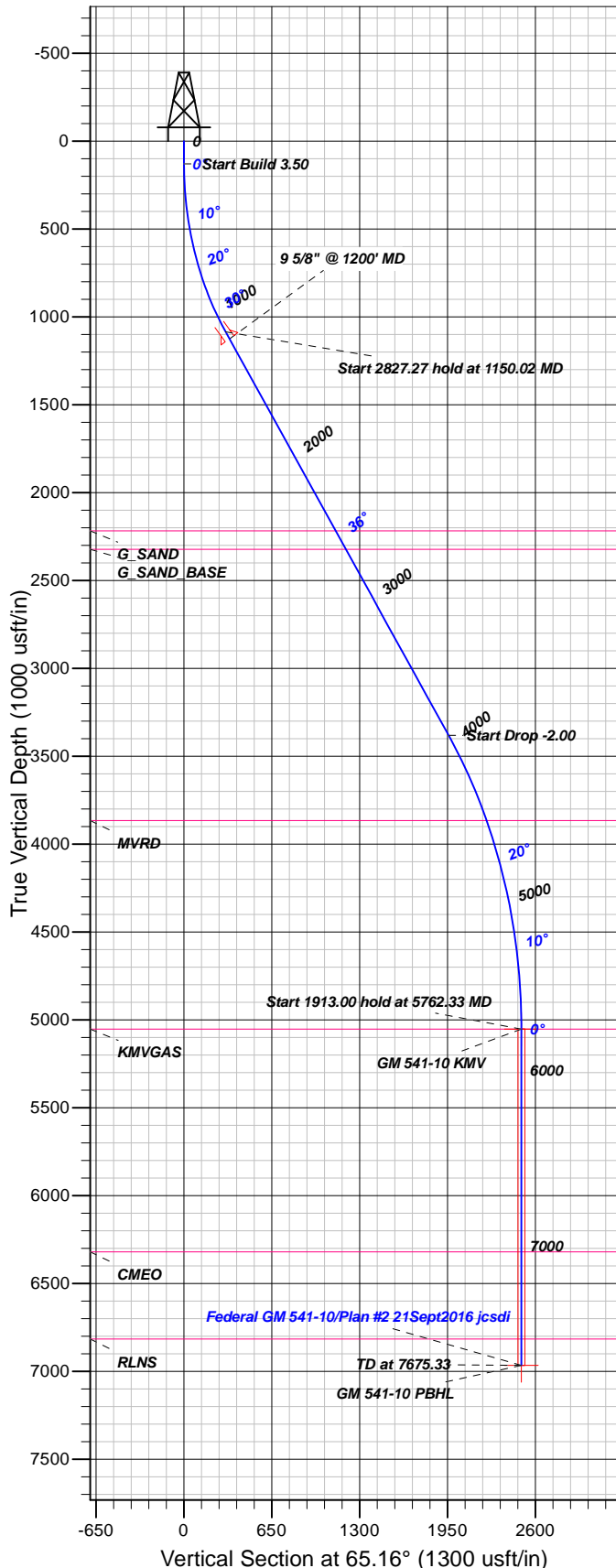
Well Details: Federal GM 541-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600372.80	2266935.60	39.4530322	-108.0964411	B17

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

TVDPath	MDPath	Formation
2218.00	2544.86	G_SAND
2323.00	2674.16	G_SAND_BASE
3866.00	4538.44	MVRD
5053.00	5762.33	KMGAS
6320.00	7029.33	CMEQ
6816.00	7525.33	RLNS

Plan: Plan #2 21Sept2016 jcsdi

17:13, September 22 2016
 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
1125.89	1200.02	9 5/8" @ 1200' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	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	1150.02	35.70	65.16	1085.29	129.23	279.18	3.50	65.16	307.64	
4	3977.29	35.70	65.16	3381.25	822.30	1776.41	0.00	0.00	1957.50	
5	5762.33	0.00	0.00	5053.00	1048.45	2264.96	2.00	180.00	2495.86	GM 541-10 KMG
6	7675.33	0.00	0.00	6966.00	1048.45	2264.96	0.00	0.00	2495.86	GM 541-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 541-10 KMG	5053.00	1048.45	2264.96	1601356.10	2269229.60	39.4559105	-108.0884196	Circle (Radius: 25.00)
- plan hits target center								
GM 541-10 PBHL	6966.00	1048.45	2264.96	1601356.10	2269229.60	39.4559105	-108.0884196	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 541-10 - Slot B17

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 541-10 - Slot B17
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 541-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 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 541-10 - Slot B17			
Well Position	+N/-S	29.63 usft	Northing:	1,600,372.80 usft
	+E/-W	53.07 usft	Easting:	2,266,935.60 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 #2 21Sept2016 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	65.16

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	
1,150.02	35.70	65.16	1,085.29	129.23	279.18	3.50	3.50	0.00	65.16	
3,977.29	35.70	65.16	3,381.25	822.30	1,776.41	0.00	0.00	0.00	0.00	
5,762.33	0.00	0.00	5,053.00	1,048.45	2,264.96	2.00	-2.00	0.00	180.00	GM 541-10 KMW
7,675.33	0.00	0.00	6,966.00	1,048.45	2,264.96	0.00	0.00	0.00	0.00	GM 541-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 541-10 - Slot B17
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 541-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 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	2.45	65.16	199.98	0.63	1.36	1.50	3.50	3.50	0.00
300.00	5.95	65.16	299.69	3.70	8.00	8.82	3.50	3.50	0.00
400.00	9.45	65.16	398.78	9.33	20.16	22.22	3.50	3.50	0.00
500.00	12.95	65.16	496.86	17.49	37.78	41.64	3.50	3.50	0.00
600.00	16.45	65.16	593.57	28.15	60.81	67.01	3.50	3.50	0.00
700.00	19.95	65.16	688.55	41.27	89.15	98.24	3.50	3.50	0.00
800.00	23.45	65.16	781.45	56.80	122.70	135.21	3.50	3.50	0.00
900.00	26.95	65.16	871.92	74.68	161.33	177.78	3.50	3.50	0.00
1,000.00	30.45	65.16	959.62	94.85	204.90	225.79	3.50	3.50	0.00
1,100.00	33.95	65.16	1,044.23	117.23	253.25	279.07	3.50	3.50	0.00
1,150.02	35.70	65.16	1,085.29	129.23	279.18	307.64	3.50	3.50	0.00
1,200.00	35.70	65.16	1,125.87	141.48	305.64	336.80	0.00	0.00	0.00
1,200.02	35.70	65.16	1,125.89	141.49	305.65	336.81	0.00	0.00	0.00
9 5/8" @ 1200' MD									
1,300.00	35.70	65.16	1,207.08	166.00	358.60	395.16	0.00	0.00	0.00
1,400.00	35.70	65.16	1,288.29	190.51	411.56	453.51	0.00	0.00	0.00
1,500.00	35.70	65.16	1,369.50	215.02	464.51	511.87	0.00	0.00	0.00
1,600.00	35.70	65.16	1,450.70	239.54	517.47	570.22	0.00	0.00	0.00
1,700.00	35.70	65.16	1,531.91	264.05	570.43	628.58	0.00	0.00	0.00
1,800.00	35.70	65.16	1,613.12	288.56	623.38	686.93	0.00	0.00	0.00
1,900.00	35.70	65.16	1,694.33	313.08	676.34	745.29	0.00	0.00	0.00
2,000.00	35.70	65.16	1,775.53	337.59	729.30	803.64	0.00	0.00	0.00
2,100.00	35.70	65.16	1,856.74	362.11	782.25	862.00	0.00	0.00	0.00
2,200.00	35.70	65.16	1,937.95	386.62	835.21	920.35	0.00	0.00	0.00
2,300.00	35.70	65.16	2,019.16	411.13	888.17	978.71	0.00	0.00	0.00
2,400.00	35.70	65.16	2,100.36	435.65	941.12	1,037.06	0.00	0.00	0.00
2,500.00	35.70	65.16	2,181.57	460.16	994.08	1,095.42	0.00	0.00	0.00
2,544.86	35.70	65.16	2,218.00	471.16	1,017.83	1,121.60	0.00	0.00	0.00
G_SAND									
2,600.00	35.70	65.16	2,262.78	484.67	1,047.04	1,153.77	0.00	0.00	0.00
2,674.16	35.70	65.16	2,323.00	502.85	1,086.31	1,197.05	0.00	0.00	0.00
G_SAND_BASE									
2,700.00	35.70	65.16	2,343.99	509.19	1,099.99	1,212.13	0.00	0.00	0.00
2,800.00	35.70	65.16	2,425.20	533.70	1,152.95	1,270.48	0.00	0.00	0.00
2,900.00	35.70	65.16	2,506.40	558.22	1,205.91	1,328.84	0.00	0.00	0.00
3,000.00	35.70	65.16	2,587.61	582.73	1,258.86	1,387.19	0.00	0.00	0.00
3,100.00	35.70	65.16	2,668.82	607.24	1,311.82	1,445.55	0.00	0.00	0.00
3,200.00	35.70	65.16	2,750.03	631.76	1,364.78	1,503.91	0.00	0.00	0.00
3,300.00	35.70	65.16	2,831.23	656.27	1,417.73	1,562.26	0.00	0.00	0.00
3,400.00	35.70	65.16	2,912.44	680.78	1,470.69	1,620.62	0.00	0.00	0.00
3,500.00	35.70	65.16	2,993.65	705.30	1,523.65	1,678.97	0.00	0.00	0.00
3,600.00	35.70	65.16	3,074.86	729.81	1,576.60	1,737.33	0.00	0.00	0.00
3,700.00	35.70	65.16	3,156.06	754.32	1,629.56	1,795.68	0.00	0.00	0.00
3,800.00	35.70	65.16	3,237.27	778.84	1,682.52	1,854.04	0.00	0.00	0.00
3,900.00	35.70	65.16	3,318.48	803.35	1,735.47	1,912.39	0.00	0.00	0.00
3,977.29	35.70	65.16	3,381.25	822.30	1,776.41	1,957.50	0.00	0.00	0.00
4,000.00	35.25	65.16	3,399.74	827.83	1,788.36	1,970.67	2.00	-2.00	0.00
4,100.00	33.25	65.16	3,482.40	851.47	1,839.43	2,026.95	2.00	-2.00	0.00
4,200.00	31.25	65.16	3,566.97	873.89	1,887.85	2,080.30	2.00	-2.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 541-10 - Slot B17
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 541-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 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)
4,300.00	29.25	65.16	3,653.35	895.05	1,933.56	2,130.67	2.00	-2.00	0.00
4,400.00	27.25	65.16	3,741.44	914.93	1,976.50	2,177.99	2.00	-2.00	0.00
4,500.00	25.25	65.16	3,831.12	933.50	2,016.63	2,222.22	2.00	-2.00	0.00
4,538.44	24.48	65.16	3,866.00	940.29	2,031.30	2,238.38	2.00	-2.00	0.00
MVRD									
4,600.00	23.25	65.16	3,922.30	950.75	2,053.90	2,263.28	2.00	-2.00	0.00
4,700.00	21.25	65.16	4,014.85	966.66	2,088.26	2,301.14	2.00	-2.00	0.00
4,800.00	19.25	65.16	4,108.66	981.19	2,119.66	2,335.74	2.00	-2.00	0.00
4,900.00	17.25	65.16	4,203.63	994.34	2,148.07	2,367.05	2.00	-2.00	0.00
5,000.00	15.25	65.16	4,299.63	1,006.10	2,173.46	2,395.03	2.00	-2.00	0.00
5,100.00	13.25	65.16	4,396.55	1,016.43	2,195.79	2,419.64	2.00	-2.00	0.00
5,200.00	11.25	65.16	4,494.27	1,025.34	2,215.04	2,440.85	2.00	-2.00	0.00
5,300.00	9.25	65.16	4,592.67	1,032.82	2,231.18	2,458.63	2.00	-2.00	0.00
5,400.00	7.25	65.16	4,691.63	1,038.84	2,244.20	2,472.98	2.00	-2.00	0.00
5,500.00	5.25	65.16	4,791.03	1,043.41	2,254.07	2,483.86	2.00	-2.00	0.00
5,600.00	3.25	65.16	4,890.76	1,046.52	2,260.79	2,491.26	2.00	-2.00	0.00
5,700.00	1.25	65.16	4,990.67	1,048.17	2,264.35	2,495.18	2.00	-2.00	0.00
5,762.33	0.00	0.00	5,053.00	1,048.45	2,264.96	2,495.86	2.00	-2.00	-104.54
KMVGAS - GM 541-10 KMV									
5,800.00	0.00	0.00	5,090.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
5,900.00	0.00	0.00	5,190.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,000.00	0.00	0.00	5,290.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,100.00	0.00	0.00	5,390.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,200.00	0.00	0.00	5,490.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,300.00	0.00	0.00	5,590.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,400.00	0.00	0.00	5,690.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,500.00	0.00	0.00	5,790.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,600.00	0.00	0.00	5,890.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,700.00	0.00	0.00	5,990.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,800.00	0.00	0.00	6,090.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
6,900.00	0.00	0.00	6,190.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,000.00	0.00	0.00	6,290.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,029.33	0.00	0.00	6,320.00	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
CME0									
7,100.00	0.00	0.00	6,390.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,200.00	0.00	0.00	6,490.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,300.00	0.00	0.00	6,590.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,400.00	0.00	0.00	6,690.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,500.00	0.00	0.00	6,790.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,525.33	0.00	0.00	6,816.00	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
RLNS									
7,600.00	0.00	0.00	6,890.67	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
7,675.33	0.00	0.00	6,966.00	1,048.45	2,264.96	2,495.86	0.00	0.00	0.00
GM 541-10 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 541-10 - Slot B17
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 541-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 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 541-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	5,053.00	1,048.45	2,264.96	1,601,356.10	2,269,229.60	39.4559105	-108.0884197
GM 541-10 PBHL - plan hits target center - Point	0.00	0.00	6,966.00	1,048.45	2,264.96	1,601,356.10	2,269,229.60	39.4559105	-108.0884197

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,200.02	1,125.89	9 5/8" @ 1200' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,544.86	2,218.00	G_SAND		0.00	0.00
2,674.16	2,323.00	G_SAND_BASE		0.00	0.00
4,538.44	3,866.00	MVRD		0.00	0.00
5,762.33	5,053.00	KMVGAS		0.00	0.00
7,029.33	6,320.00	CME0		0.00	0.00
7,525.33	6,816.00	RLNS		0.00	0.00