

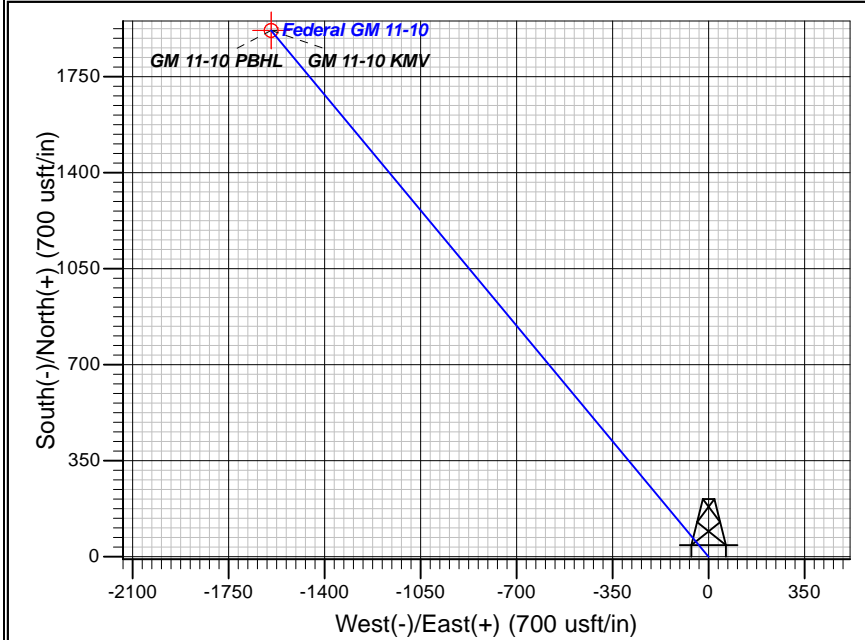
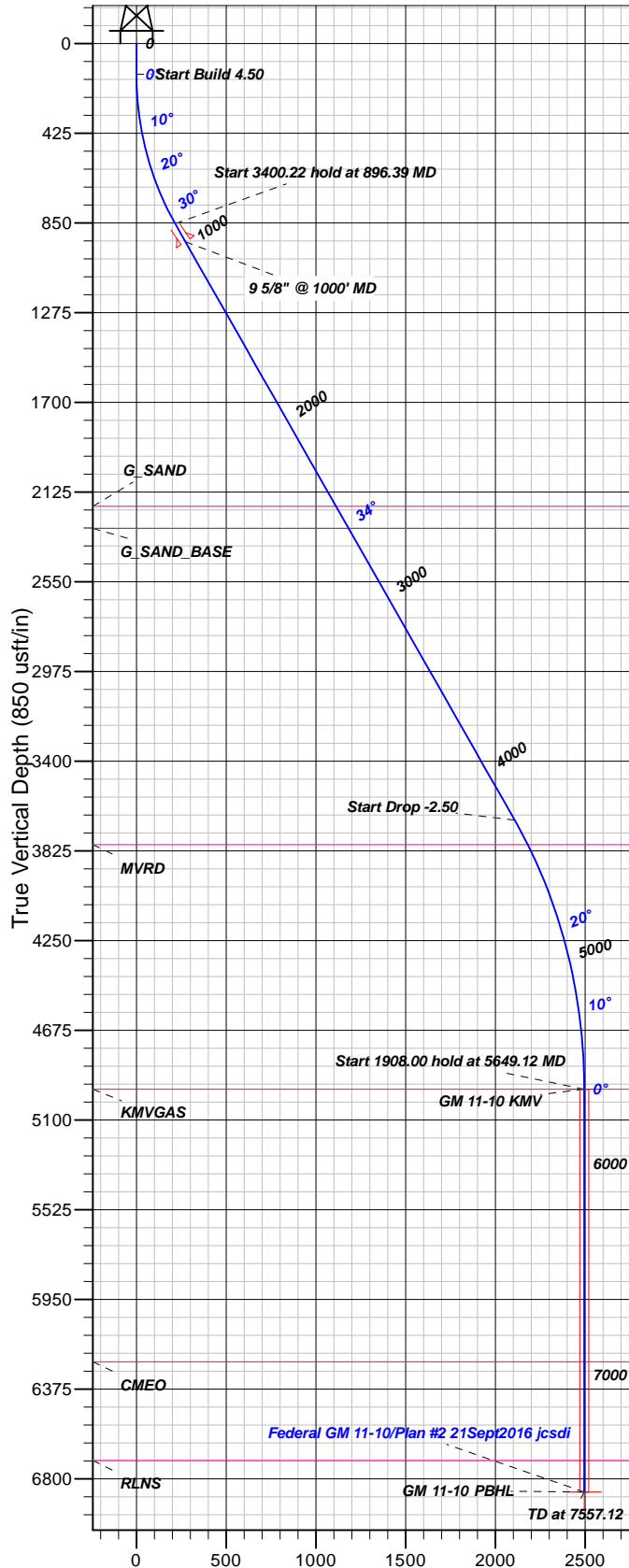
Well Details: Federal GM 11-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600356.50	2266885.70	39.4529836	-108.0966161	B10

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
2192.00	2507.33	G_SAND
2297.00	2633.71	G_SAND_BASE
3795.00	4433.98	MVRD
4954.00	5649.12	KMVGAS
6245.00	6940.12	CMEO
6712.00	7407.12	RLNS

Plan: Plan #2 21Sept2016 jcsdi

16:24, 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
939.61	1000.00	9 5/8" @ 1000' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	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	896.39	33.81	320.26	853.53	165.60	-137.67	4.50	320.26	215.35	
4	4296.61	33.81	320.26	3678.65	1620.62	-1347.28	0.00	0.00	0.00	GM 11-10 KMV
5	5649.12	0.00	0.00	4954.00	1918.70	-1595.09	2.50	180.00	2495.14	GM 11-10 PBHL
6	7557.12	0.00	0.00	6862.00	1918.70	-1595.09	0.00	0.00	2495.14	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 11-10 KMV	4954.00	1918.70	-1595.09	1602320.00	2265346.10	39.4582512	-108.1022654	Circle (Radius: 25.00)
- plan hits target center								
GM 11-10 PBHL	6862.00	1918.70	-1595.09	1602320.00	2265346.10	39.4582512	-108.1022654	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 11-10 - Slot B10

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 11-10 - Slot B10
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 11-10	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 11-10 - Slot B10					
Well Position	+N/-S	11.91 usft	Northing:	1,600,356.50 usft	Latitude:	39.4529836
	+E/-W	3.66 usft	Easting:	2,266,885.70 usft	Longitude:	-108.0966162
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	320.26

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	
896.39	33.81	320.26	853.53	165.60	-137.67	4.50	4.50	0.00	320.26	
4,296.61	33.81	320.26	3,678.65	1,620.62	-1,347.28	0.00	0.00	0.00	0.00	
5,649.12	0.00	0.00	4,954.00	1,918.70	-1,595.09	2.50	-2.50	0.00	180.00	GM 11-10 KMV
7,557.12	0.00	0.00	6,862.00	1,918.70	-1,595.09	0.00	0.00	0.00	0.00	GM 11-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 11-10 - Slot B10
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 11-10	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	
145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	2.48	320.26	199.98	0.91	-0.76	1.19	4.50	4.50	0.00	
300.00	6.98	320.26	299.62	7.25	-6.02	9.42	4.50	4.50	0.00	
400.00	11.48	320.26	398.30	19.57	-16.27	25.45	4.50	4.50	0.00	
500.00	15.98	320.26	495.42	37.81	-31.43	49.17	4.50	4.50	0.00	
600.00	20.48	320.26	590.38	61.85	-51.42	80.44	4.50	4.50	0.00	
700.00	24.98	320.26	682.59	91.55	-76.11	119.06	4.50	4.50	0.00	
800.00	29.48	320.26	771.49	126.72	-105.35	164.79	4.50	4.50	0.00	
896.39	33.81	320.26	853.53	165.60	-137.67	215.35	4.50	4.50	0.00	
900.00	33.81	320.26	856.53	167.15	-138.95	217.36	0.00	0.00	0.00	
1,000.00	33.81	320.26	939.61	209.94	-174.53	273.01	0.00	0.00	0.00	
9 5/8" @ 1000' MD										
1,100.00	33.81	320.26	1,022.70	252.73	-210.10	328.66	0.00	0.00	0.00	
1,200.00	33.81	320.26	1,105.79	295.52	-245.68	384.30	0.00	0.00	0.00	
1,300.00	33.81	320.26	1,188.87	338.31	-281.25	439.95	0.00	0.00	0.00	
1,400.00	33.81	320.26	1,271.96	381.10	-316.83	495.60	0.00	0.00	0.00	
1,500.00	33.81	320.26	1,355.05	423.90	-352.40	551.25	0.00	0.00	0.00	
1,600.00	33.81	320.26	1,438.13	466.69	-387.98	606.90	0.00	0.00	0.00	
1,700.00	33.81	320.26	1,521.22	509.48	-423.55	662.54	0.00	0.00	0.00	
1,800.00	33.81	320.26	1,604.31	552.27	-459.12	718.19	0.00	0.00	0.00	
1,900.00	33.81	320.26	1,687.39	595.06	-494.70	773.84	0.00	0.00	0.00	
2,000.00	33.81	320.26	1,770.48	637.86	-530.27	829.49	0.00	0.00	0.00	
2,100.00	33.81	320.26	1,853.56	680.65	-565.85	885.13	0.00	0.00	0.00	
2,200.00	33.81	320.26	1,936.65	723.44	-601.42	940.78	0.00	0.00	0.00	
2,300.00	33.81	320.26	2,019.74	766.23	-637.00	996.43	0.00	0.00	0.00	
2,400.00	33.81	320.26	2,102.82	809.02	-672.57	1,052.08	0.00	0.00	0.00	
2,500.00	33.81	320.26	2,185.91	851.81	-708.14	1,107.73	0.00	0.00	0.00	
2,507.33	33.81	320.26	2,192.00	854.95	-710.75	1,111.81	0.00	0.00	0.00	
G_SAND										
2,600.00	33.81	320.26	2,269.00	894.61	-743.72	1,163.37	0.00	0.00	0.00	
2,633.71	33.81	320.26	2,297.00	909.03	-755.71	1,182.13	0.00	0.00	0.00	
G_SAND_BASE										
2,700.00	33.81	320.26	2,352.08	937.40	-779.29	1,219.02	0.00	0.00	0.00	
2,800.00	33.81	320.26	2,435.17	980.19	-814.87	1,274.67	0.00	0.00	0.00	
2,900.00	33.81	320.26	2,518.25	1,022.98	-850.44	1,330.32	0.00	0.00	0.00	
3,000.00	33.81	320.26	2,601.34	1,065.77	-886.02	1,385.96	0.00	0.00	0.00	
3,100.00	33.81	320.26	2,684.43	1,108.56	-921.59	1,441.61	0.00	0.00	0.00	
3,200.00	33.81	320.26	2,767.51	1,151.36	-957.17	1,497.26	0.00	0.00	0.00	
3,300.00	33.81	320.26	2,850.60	1,194.15	-992.74	1,552.91	0.00	0.00	0.00	
3,400.00	33.81	320.26	2,933.69	1,236.94	-1,028.31	1,608.56	0.00	0.00	0.00	
3,500.00	33.81	320.26	3,016.77	1,279.73	-1,063.89	1,664.20	0.00	0.00	0.00	
3,600.00	33.81	320.26	3,099.86	1,322.52	-1,099.46	1,719.85	0.00	0.00	0.00	
3,700.00	33.81	320.26	3,182.94	1,365.32	-1,135.04	1,775.50	0.00	0.00	0.00	
3,800.00	33.81	320.26	3,266.03	1,408.11	-1,170.61	1,831.15	0.00	0.00	0.00	
3,900.00	33.81	320.26	3,349.12	1,450.90	-1,206.19	1,886.79	0.00	0.00	0.00	
4,000.00	33.81	320.26	3,432.20	1,493.69	-1,241.76	1,942.44	0.00	0.00	0.00	
4,100.00	33.81	320.26	3,515.29	1,536.48	-1,277.34	1,998.09	0.00	0.00	0.00	
4,200.00	33.81	320.26	3,598.38	1,579.27	-1,312.91	2,053.74	0.00	0.00	0.00	
4,296.61	33.81	320.26	3,678.65	1,620.62	-1,347.28	2,107.50	0.00	0.00	0.00	
4,300.00	33.73	320.26	3,681.46	1,622.06	-1,348.48	2,109.38	2.50	-2.50	0.00	

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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 11-10	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)
4,400.00	31.23	320.26	3,765.82	1,663.35	-1,382.81	2,163.08	2.50	-2.50	0.00
4,433.98	30.38	320.26	3,795.00	1,676.73	-1,393.93	2,180.48	2.50	-2.50	0.00
MVRD									
4,500.00	28.73	320.26	3,852.43	1,701.77	-1,414.75	2,213.04	2.50	-2.50	0.00
4,600.00	26.23	320.26	3,941.14	1,737.25	-1,444.24	2,259.18	2.50	-2.50	0.00
4,700.00	23.73	320.26	4,031.78	1,769.72	-1,471.23	2,301.40	2.50	-2.50	0.00
4,800.00	21.23	320.26	4,124.18	1,799.12	-1,495.67	2,339.63	2.50	-2.50	0.00
4,900.00	18.73	320.26	4,218.15	1,825.39	-1,517.51	2,373.79	2.50	-2.50	0.00
5,000.00	16.23	320.26	4,313.53	1,848.48	-1,536.71	2,403.82	2.50	-2.50	0.00
5,100.00	13.73	320.26	4,410.12	1,868.35	-1,553.23	2,429.67	2.50	-2.50	0.00
5,200.00	11.23	320.26	4,507.75	1,884.97	-1,567.04	2,451.27	2.50	-2.50	0.00
5,300.00	8.73	320.26	4,606.23	1,898.29	-1,578.12	2,468.60	2.50	-2.50	0.00
5,400.00	6.23	320.26	4,705.38	1,908.30	-1,586.44	2,481.61	2.50	-2.50	0.00
5,500.00	3.73	320.26	4,804.99	1,914.97	-1,591.99	2,490.29	2.50	-2.50	0.00
5,600.00	1.23	320.26	4,904.89	1,918.29	-1,594.75	2,494.61	2.50	-2.50	0.00
5,649.12	0.00	0.00	4,954.00	1,918.70	-1,595.09	2,495.14	2.50	-2.50	0.00
KMVGAS - GM 11-10 KMV									
5,700.00	0.00	0.00	5,004.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
5,800.00	0.00	0.00	5,104.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
5,900.00	0.00	0.00	5,204.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,000.00	0.00	0.00	5,304.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,100.00	0.00	0.00	5,404.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,200.00	0.00	0.00	5,504.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,300.00	0.00	0.00	5,604.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,400.00	0.00	0.00	5,704.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,500.00	0.00	0.00	5,804.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,600.00	0.00	0.00	5,904.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,700.00	0.00	0.00	6,004.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,800.00	0.00	0.00	6,104.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,900.00	0.00	0.00	6,204.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
6,940.12	0.00	0.00	6,245.00	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
CME0									
7,000.00	0.00	0.00	6,304.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
7,100.00	0.00	0.00	6,404.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
7,200.00	0.00	0.00	6,504.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
7,300.00	0.00	0.00	6,604.88	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
7,400.00	0.00	0.00	6,704.89	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
7,407.12	0.00	0.00	6,712.00	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
RLNS									
7,500.00	0.00	0.00	6,804.89	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
7,557.12	0.00	0.00	6,862.00	1,918.70	-1,595.09	2,495.14	0.00	0.00	0.00
GM 11-10 PBHL									

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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 11-10	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 11-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,954.00	1,918.70	-1,595.09	1,602,320.00	2,265,346.10	39.4582512	-108.1022654
GM 11-10 PBHL - plan hits target center - Point	0.00	0.00	6,862.00	1,918.70	-1,595.09	1,602,320.00	2,265,346.10	39.4582512	-108.1022654

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	939.61	9 5/8" @ 1000' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,507.33	-3,980.00	G_SAND		0.00	0.00
2,633.71	-3,875.00	G_SAND_BASE		0.00	0.00
4,433.98	-2,377.00	MVRD		0.00	0.00
5,649.12	-1,218.00	KMVGAS		0.00	0.00
6,940.12	73.00	CME0		0.00	0.00
7,407.12	540.00	RLNS		0.00	0.00