

Results of Directional Survey

API number:	30-025-39108		
OGRID:		Operator:	COG OPERATING LLC
		Property:	MC FEDERAL # 37

surface	ULSTR:	N	21	T 17S	R 32E
			870	FSL	1600
				FWL	

BH Loc	ULSTR:	N	21	T 17S	R 32E
			371	FSL	2270
				FWL	

Top Perf/OH	ULSTR:	N	21	T 17S	R 32E
			5560	435	FSL
				2188	FWL

Bot Perf/OH	ULSTR:	N	21	T 17S	R 32E
			6940	380	FSL
				2257	FWL

	MD	N/S	E/W	VD
	5546	-433.59	586.55	5462.65
TOP PERFS/OH	5560	-434.62	587.71	5476.56
	5639	-440.46	594.23	5555.08
	6851	-486.59	652.41	6764.67
BOT PERFS/OH	6940	-489.80	657.03	6853.49
	6945	-489.98	657.29	6858.48

NEXT TO LAST	7039	-493.51	662.02	6952.29
LAST READING	7148	-497.49	667.28	7061.09
TD	7197	-499.28	669.64	7110.00

Surface Location	870	FS	1600	FW
Projected BHL	371	FS	2270	FW
Location of				
Top Perfs/OH	435	FS	2188	FW
Bottom Perfs/OH	380	FS	2257	FW

SUMMARY of Subsurface Locations

Surface Location	N-21-17S-32E	870	FS	1600	FW	Vert. Depth
Top Perfs/OH	N-21-17S-32E	435	FS	2188	FW	5476.56
Bottom Perfs/OH	N-21-17S-32E	380	FS	2257	FW	6853.49
Projected TD	N-21-17S-32E	371	FS	2270	FW	7110.00