

Results of Directional Survey

API number:	30-025-40076		
OGRID:		Operator:	COG OPERATING LLC
		Property:	RANGER LAKE 1 STATE # 1H

surface	ULSTR:	H	01	T 13S	R 34E
				2015 FNL	430 FEL

BH Loc	ULSTR:	E	01	T 13S	R 34E
13654	MD	9210.9	TVD	2017 FNL	4933 FEL
<i>347 FWL</i>					

Top Perf/OH	ULSTR:	H	01	T 13S	R 34E
8321	MD	8320.2	TVD	2021 FNL	364 FEL

Bot Perf/OH	ULSTR:	F	01	T 13S	R 34E
12150	MD	9244.2	TVD	2084 FNL	3432 FEL

	MD	N/S	E/W	VD
	8600	-6.70	88.20	8598.3
TOP PERFS/OH	8321	-5.85	66.22	8320.15
	8633	-6.80	90.80	8631.20
	12067	-69.30	-2918.60	9246.40
BOT PERFS/OH	12150	-69.47	-3001.51	9244.15
	12163	-69.50	-3014.50	9243.80

NEXT TO LAST	13585	-5.90	-4434.20	9213.40
LAST READING	13654	-2.40	-4503.00	9210.90
TD	13654	-2.40	-4503.00	9210.90

Surface Location	2015	FN	430	FE
Projected BHL	2017	FN	4933	FE
Location of				
Top Perfs/OH	2021	FN	364	FE
Bottom Perfs/OH	2084	FN	3432	FE

SUMMARY of Subsurface Locations

Surface Location	H-01-13S-34E	2015	FN	430	FE	Vert. Depth
Top Perfs/OH	H-01-13S-34E	2021	FN	364	FE	8320.15
Bottom Perfs/OH	F-01-13S-34E	2084	FN	3432	FE	9244.15
Projected TD	E-01-13S-34E	2017	FN	4933	FE	9210.90

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