GEOLOGISTS REPORT

OPERATOR	MURFIN DRILLING CO., INC.
LOCATION	150' FNL 660' FEL
SEC. 13 TWP. 18 RGE. 30W	
COUNTY	LANE KANSAS
ELEVATION	KB 2837
API #	15-101-22000
COMMENCED	10-8-2008
COMPLETED	10-17-2008
CONTRACTOR	MURFIN DRILLING CO. INC. RIG 1
SURFACE CASING	8 5/8" @ 224' W/ 150 SXS
PRODUCTION CASING	4 1/2" @ 4700' W/ 175 SXS
MUD	MEDICAT CHEMICAL DISTRIBUTOR
MUD TYPE	FRESH WATER GEL CHEMICAL
DRILL STEM TESTS	0
DST'S TAKEN	0
DST'S RECOVERED	0
CORES	0
CORES RECOVERED	0
ELECTRICAL LOGS	NONE
ELEVATIONS	KB 2842 DF 2840 GL 2832
SAMPLES	10' FROM 3600' TO RTD
SAMPLE TYPE	WASHED & DRIED
SAMPLE QUALITY	GOOD
DEPTH	3600 3650 3700 3750 3800 3850 3900 3950 4000 4050 4100 4150 4200 4250 4300 4350 4400 4450 4500 4550 4600 4650 4700
DRILL TIME	5 MIN. PER 5 FT.
DRILL RATE	1 MIN. PER FT.
TOTAL GAS	0
TOTAL CHROMATOGRAPH	0
DRILL STEM TESTS	0
DST'S TAKEN	0
DST'S RECOVERED	0
CORES	0
CORES RECOVERED	0
ELECTRICAL LOGS	NONE
ELEVATIONS	KB 2842 DF 2840 GL 2832
SAMPLES	10' FROM 3600' TO RTD
SAMPLE TYPE	WASHED & DRIED
SAMPLE QUALITY	GOOD

REMARKS

API - 15-101-22000
Drilling Fluids - MORGAN MUD
Drill Stem Testing - TRILOBITE TESTERS
Drill Time - 5 MIN PER
Reserve Pit Chlorides - 6000 PPM

DRILL TIME (MIN/FT)	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	REMARKS
	3600		Shale gray tan red sandy silty	
			Limestone gray tan t cln fx oolitic	
			Shale gray grn sed	
			Limestone crm t cst sh chalky sl foss	
	3650		Shale tan gray red silty sandy sl pyrite	
			Limestone crm t cst fxln chalky p ch fr oolitic	TOPEKA LIME 3640 -808
	3700		Shale gray tnn silty	
			Limestone tan t crm cst fxln sl sh chalky	
			Shale gray, red silty	
			Limestone tan t crm bsa sast f cst foss pp fr	
	3750		Limestone tan t crm cst fxln chalky	
			Shale gray sl fx	
			Limestone crm t cst fxln chalky	
			Limestone white chalky soft	
	3800		Shale gray red red silty	
			Limestone tan t crm cst fxln dense	
			Shale gray red grn silty sandy	
			Limestone crm t cst fxln sl sh chalky	
	3850		Shale gray, sand tan grn silty sandy	
			Limestone tan t crm cst fxln dense	
			Shale black carb	
			Shale gray tnn red silty	
			Limestone crm t cst fxln chalky	
	3900		Shale gray tnn silty	HEEBNER SHALE 3899 -1057
			Limestone tan t crm bsa dense	
			Shale gray grn silty sandy	
			Limestone tan t crm bsa sast chalky off	
			No cast pp fx ch stain dry fracture	
	3950		Shale gray fx sl silty	
			Limestone crm t cst sh bsa sl chalky	LANSING LIME 3938 -1096
			chert white foss fossil	
			Limestone crm t cst sh bsa sl chalky	
			dense	
			Shale tan gray dk gray grn silty	
			Limestone crm t cst sh fxln dense	
	4000		Shale tan grn	
			Limestone crm t cst sh bsa dense	
			Shale tan gray silty	
			Limestone crm t cst sh bsa sl chalky	
			dense	
			Shale tan gray silty	
			Limestone crm t cst sh bsa dense	
	4050		Shale grn tnn gray silty	
			Limestone crm t cst sh bsa sl chalky	
			Shale gray tnn grn	
			Limestone gray tnn t cst sst sast sh fxln sh	
			chalky f pp sast pp fxln	
	4100		Limestone crm t cst sh bsa dense	
			Limestone crm gray t cst chalky dense sl	
			sh sl gray foss sast	
			Shale black carb	
			Shale grn tnn gray	
			Limestone gray tnn sst sast pp fxln	
	4150		Shale black gray carb	327 AT 4153 (CDP -1314)
			Shale gray grn sandy	4150 -1312 (CDP -1312)
			Limestone crm t cst sh bsa dense	4154 -1316 (CDP -1316)
			Limestone crm t cst sh bsa sl ch bsa sst	4157 -1319 (CDP -1319)
			fxln f cast fair pp	
	4200		Shale gray grn tnn sl gray sl silty	
			Limestone gray t cst sst sast f cst sst foss	
			pp (CDP) fracture sast dark sparr	
			Shale black carb	
			Shale tan gray	
			Limestone crm t cst sh bsa dense sl chert	
			gray foss fossil	
	4250		Limestone tnn t cst sst f cst f cst f cst sh	327 AT 4250 4210
			fxln pp sast f f f f f fxln pp sast	4250 -1410
			sugar sst (CDP) tnn sast dk brn sast pp	4253 -1413
			fxln	4254 -1414
			Limestone crm t cst chalky	4256 -1416
			Limestone crm ch bsa sst p f fx f fx f sst	4257 -1417
			crm (CDP) crm sst foss	4258 -1418
	4300		Shale tan gray grn fx	327 AT 4300 4259
			Limestone crm gray t cst chalky	4300 -1460
			Limestone gray t cst sh bsa dense	
			Limestone crm f fxln f cst f cst bsa sl sst	
			pp (CDP) moderate sast dark sparr	
	4350		Limestone crm gray t cst sl foss chalky	327 AT 4350 4310
			Shale black carb	4350 -1510
			Shale grn tnn foss fx	4353 -1513
			Limestone gray t cst sh bsa sast pp	4354 -1514
			(CDP) f f f sst sast fxln	4356 -1516
	4400		Shale gray grn tnn	327 AT 4356 4315
			Limestone tan t cst sh bsa sl gray sl sl sst	4356 -1516
			chalky p ch fxln pp sast dark sparr (CDP)	4357 -1517
			Shale black gr gray carb	4358 -1518
			Shale black carb	
			Shale gray grn tnn silty	
			Limestone gray t cst sh bsa sl chalky	
			p fxln sast pp (CDP) sast sparr	
	4450		Limestone tan t cst sh bsa sl chalky sl	
			foss sast pp (CDP) sast sparr	
			Shale black carb	
			Shale gray grn tnn silty	
			Limestone gray t cst chalky dense	
			Shale dark gray carb	
			Shale gray grn silty	
			Limestone gray tnn t cst sh bsa sast sg fx	
			sl sst (CDP) (CDP) sl sast sast dark	
	4500		Shale gry grn tnn sandy	
			Limestone tan t cst sh bsa sl chalky	
			Limestone crm t cst sh bsa sl chalky	
			Limestone crm t cst sh bsa sst chalky	
			Shale gray grn tnn fx silty	
	4550		Limestone tan t cst sh bsa sl chalky	
			Limestone crm t cst sh bsa sl chalky	
			Limestone crm t cst sh bsa sst chalky	
			Shale gray grn tnn fx silty	
	4600		Dolomite tan gray fx ch vsstast f cst sst	
			fx sl gy (CDP) f f fxln sast ch bsa sst	
			sst sparr	
			Shale gray red sandy	
			Limestone tan t cst sh bsa sl ch sst sast	
			pp	
			Limestone gray f fg ch sast mg & ch sst	
			sst (CDP)	
			Dolomite gray f ch sst bsa sast ch sst pp	
			fxln	
	4700			

				KCC 4690

Operator:	MURFIN DRILLING CO, INC.
Lease:	PINKOSKI UNIT #1-13
Location:	150' FNL 660' FEL SEC. 13 TWSP 18 RGE 30W
County:	LANE State: KANSAS