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JEEP TRAIL FEDERAL #1-32

QUINTANA PETROLEUM CORPORATION  
CN N/4 Sec 32, R11N, T90W  
MOFFAT COUNTY, COLORADO

1935

1935



TABLE OF CONTENTS

JEEP TRAIL FEDERAL #1-32  
CN N/4 Sec 32, R11N, T90W  
MOFFAT COUNTY, COLORADO

	PAGE
WELL DATA SUMMARY . . . . .	1
DAILY DRILLING SUMMARY . . . . .	2
FORMATION TOPS . . . . .	3
DEVIATION SURVEY . . . . .	4
BIT RECORD . . . . .	5
SHOW REPORT . . . . .	6
GEOLOGIC SUMMARY . . . . .	7
SAMPLE DESCRIPTIONS . . . . .	9



WELL DATA SUMMARY

WELL NAME: JEEP TRAIL FEDERAL #1-32  
OPERATOR: QUINTANA PETROLEUM  
LOCATION: CN N/4 Sec 32 R11N, T90W  
COUNTY: MOFFAT  
STATE: COLORADO  
AREA: JEEP TRAIL  
DRILLING CONTRACTOR: BRINKERHOFF RIG #2  
DRILLING ENGINEER: HENRY BALDES  
WELL SITE GEOLOGY: DOUG REDMOND  
ELEVATION: GL 6860'  
KB 6876'  
DEPTH LOGGED: 260' - 4350'  
DATE LOGGED: MAY 30, 1986 - June 3, 1986  
TOTAL DEPTH: 4350'  
HOLE SIZE: 7 7/8" to TD  
CASING PROGRAM: 8 5/8' to 266'  
MUDLOGGING COMPANY: TOOKE INTERNATIONAL  
MECHANICAL LOGS: WELEX  
WELL STATUS: PLUGGED AND ABANDONED

DAILY DRILLING SUMMARY

<u>DATE</u>	<u>DEPTH</u>	<u>PROGRESS</u>	<u>HOURS</u> <u>DRLG.</u>	<u>MUD</u> <u>WEIGHT</u>	<u>VISC.</u>	<u>W.L.</u>	<u>PH</u>	<u>ACTIVITY</u>
5/30/86	266'	0	0	WATER				RIGGING UP
5/31/86	1842'	1576'	15 1/4	10.0	44			DRILLING
6/01/86	3065'	1223'	16 3/4	9.0	31			TRIP FOR BIT
6/02/86	3956'	891'	13 1/4	9.3	35	12	10.5	DRILLING
6/03/86	4350'	394'	7					E-LOGGING



SAMPLE DESCRIPTIONS

260- 290	100%	Abundant LCM, Very poor sample, Abundant cement <u>Shale</u> - vari-colored, medium gray, soft
290- 350	100%	<u>Shale</u> - medium gray, red, yellow, vari-colored, siliceous, slightly bentonitic, silty, blocky, soft Trace Sandstone - loose quartz grains
350- 430	100%	<u>Shale</u> - yellow, medium gray, light gray, brown to lavender, siliceous, silty, very soft, blocky, decrease of red color Trace Sandstone - clear, loose quartz grains
430- 470	70%	<u>Sandstone</u> - clear, yellow, rose, fine to coarse grain, very slightly calcareous, siliceous, trace asphaltic staining or bitumin included with sandstone grains, pyritic, predominately unconsolidated, very friable, some dark green to black, silty, angular, clay filled, firm, NFSOC
	30%	<u>Shale</u> - as above Trace Chert - milky, gray Trace Glauconite
460- 490	80%	<u>Sandstone</u> - as above
	20%	<u>Shale</u> - as above
490- 550	100%	<u>Sandstone</u> - clear, white, light gray, fine to coarse grain, siliceous, some siliceous clay fill, predominately unconsolidated, angular, very friable, NFSOC Trace Shale, COAL - bituminous to sub-bituminous
550- 580	50%	<u>Sandstone</u> - as above, clear, white, clean, some light gray to green, silty and clay fill, salt and pepper, friable, tight, quartzose
	50%	<u>Shale</u> - medium gray, occasionally orangy, green, yellow, very silty and sandy in part, siliceous, soft, blocky
580- 640	100%	<u>Shale</u> - medium gray, light gray to green, red, yellow, vari-colored, silty and very finely sandy, siliceous, very soft, blocky and smooth Trace Sandstone
640- 670	90%	<u>Shale</u> - medium gray, yellow, light gray, smooth to slightly silty, very slightly calcareous, predominately siliceous, soft to firm
	10%	<u>Siltstone</u> - light gray, sandy, non-calcareous, salt and pepper appearance, firm Trace Coal
670- 700	70%	<u>Sandstone</u> - clear, white, very fine to fine grain, white clay fill, siliceous, some salt and pepper, very fine pyrite encrustments on grains, subrounded, frosted, predominately unconsolidated, friable, NFSOC
	30%	<u>Siltstone</u> - as above, graded to silty shale Trace Bitumin - coal

700- 730	80%	<u>Shale</u> - medium gray, yellow, red, silty, sandy, occasionally embedded with mica, siliceous, firm to soft
	20%	<u>Sandstone</u> - as above, some rose, yellow quartz grains
730- 760	60%	<u>Shale</u> - as above
	40%	<u>Sandstone</u> - clear, white, rose, fine grain, siliceous, angular, unconsolidated
760- 790	80%	<u>Shale</u> - medium gray, light gray, smooth to slightly silty, very silty, salt and pepper in part, soft to firm, occasionally waxy
	20%	<u>Sandstone</u> - as above, becoming fine grained, graded to siltstone, some loose quartz grains
790- 850	60%	<u>Siltstone</u> - light gray, siliceous, salt and pepper, soft
	40%	<u>Shale</u> - yellow, light gray, red, smooth, non-calcareous, soft
850- 880	60%	<u>Sandstone</u> - clear, white, yellow, rose, fine to coarse grain, some white siliceous clay cement, very poorly cemented, unconsolidated, angular to subangular, NFSOC
	30%	<u>Siltstone</u> - as above
	10%	<u>Shale</u> - as above
880- 910	80%	<u>Sandstone</u> - as above, glauconitic, abundant black bitumin fill around grains
	20%	<u>Siltstone</u> - as above
910- 940	70%	<u>Siltstone</u> - light gray, siliceous, salt and pepper, sandy, soft
	20%	<u>Shale</u> - light gray, yellow, red, siliceous, soft
	10%	<u>Sandstone</u> - as above
940-1000	70%	<u>Siltstone</u> - as above
	30%	<u>Shale</u> - as above
		Trace loose quartz grains
1000-1030	60%	<u>Siltstone</u> - as above
	40%	<u>Shale</u> - light gray, red, yellow, lavender, smooth, silty in part, occasional bitumin deposits along bedding planes, siliceous, soft
		Trace loose quartz grains
1030-1120	70%	<u>Shale</u> - as above
	30%	<u>Siltstone</u> - as above
1120-1150	70%	<u>Sandstone</u> - clear, white, rose, smoky, fine to coarse grain, white clay cement, siliceous, angular to subrounded, moderately sorted, unconsolidated, quartzose, NFSOC
	30%	<u>Shale</u> - as above
		Abundant pipe dope in sample
1150-1180	50%	<u>Sandstone</u> - as above, becoming very fine grain, silty, pyritic, unconsolidated, poorly cemented
	50%	<u>Shale</u> - light gray, yellow, orange to red, graded to siltstone in part, soft
1180-1210	90%	<u>Shale</u> - light gray to green, yellow, lavender, orange, red, silty, siliceous, waxy, soft
	10%	<u>Sandstone</u> - as above, loose quartz grains

1210-1240	70%	<u>Sandstone</u> - clear, white, rose, yellow, fine to coarse grained, siliceous, some white clay cement, occasional feldspar grain, angular to subrounded, poorly cemented, unconsolidated, moderately to well sorted, trace black asphaltic staining, NFOC
	30%	<u>Shale</u> - as above
1240-1300	100%	<u>Shale</u> - light gray, yellow, red, smooth to silty, occasionally slightly sandy, siliceous, occasionally very slightly calcareous, soft Trace Sandstone, Siltstone - light gray, salt and pepper
1300-1360	90%	<u>Shale</u> - as above
	10%	<u>Siltstone</u> - light gray, salt and pepper, siliceous, soft Trace Pyrite, loose quartz grains
1360-1390	80%	<u>Shale</u> - as above
	10%	<u>Siltstone</u> - as above
	10%	<u>Sandstone</u> - smoky, clear, white clay cement, siliceous, unconsolidated
1390-1420	90%	<u>Shale</u> - light to medium gray, medium gray, smooth to slightly silty, siliceous, waxy, soft, occasionally yellow, soft
	10%	<u>Siltstone</u> - light gray, salt and pepper, sandy, soft
1420-1480	80%	<u>Sandstone</u> - clear, white, smoky, lavender, very fine to coarse grained, white clay cement, moderate sorting, unconsolidated
	20%	<u>Shale</u> - as above Trace Coal - bitumin
1480-1510	90%	<u>Shale</u> - medium gray to green, brown, medium gray, smooth, slightly silty, non-calcareous, very soft
	10%	<u>Siltstone</u> - light to medium gray, very finely sandy, non-calcareous, soft Trace Sandstone
1510-1600	100%	<u>Shale</u> - medium gray, medium gray to green, occasionally light gray, smooth, non-calcareous, slightly fissile, soft, waxy Trace Pyrite, Siltstone
1600-1630	80%	<u>Shale</u> - light to medium gray, gray to green, smooth, non-calcareous, silty in part, waxy, soft
	20%	<u>Siltstone</u> - light gray, clastic to embedded with black organic fragments(bitumin)
1630-1780	70%	<u>Shale</u> - light to medium gray, non-calcareous, soft, slightly fissile
	30%	<u>Siltstone</u> - as above, occasionally slightly bentonitic Trace Sandstone - quartz grains, clear, angular, unconsolidated
1780-1810	80%	<u>Shale</u> - light to medium gray, some dark gray brown, smooth to silty, non-calcareous, siliceous, soft, blocky, slightly fissile in part
	20%	<u>Siltstone</u> - light gray, noncalcareous, very finely sandy, soft Trace Coal
1810-1840	90%	<u>Coal</u> - black, conchoidal fracture, pyritic, brittle
	10%	<u>Shale</u> - as above

1840-1870	50%	<u>Siltstone</u> - light to medium gray, non-calcareous, graded to very fine to fine grain sandstone, very tight, glauconitic, white clay cement, pyritic, soft
	40%	<u>Shale</u> - as above
	10%	<u>Coal</u> - as above
1870-1930		Abundant cavings
	90%	<u>Shale</u> - light gray, smooth, slightly silty, soft
	10%	<u>Siltstone</u> - as above
		Trace Pyrite
		Trace Sandstone - loose quartz grains
		Abundant cavings, Coal - vari-colored shades from up hole
1930-1960	50%	<u>Shale</u> - as above
	40%	<u>Sandstone</u> - white, clear, some salt and pepper, very fine grain, glauconitic, siliceous clay cement, angular, friable, very tight and clay filled, NFSOC
	10%	<u>Dolomite</u> - medium brown, cryptocrystalline, marly, firm to medium hard, dense
1960-2020	90%	<u>Shale</u> - medium gray, light gray, silty, non-calcareous, soft
	10%	<u>Sandstone</u> - as above
		Abundant cavings
2020-2050	100%	<u>Coal</u> - black, very finely pyritic
		Trace Shale
2050-2080		Very poor sample
	50%	<u>Coal</u> - as above
	50%	<u>Shale</u> - as above
2080-2110	80%	<u>Coal</u> - as above
	20%	<u>Shale</u> - as above
		Trace Sandstone - very fine grain, clear, occasional feldspars
2110-2140	60%	<u>Coal</u> - as above
	40%	<u>Shale</u> - as above
2140-2170	80%	<u>Sandstone</u> - clear, white, yellow, orange, very fine to medium grain, siliceous, white clay cement, very slightly arkosic, subangular to subrounded, moderate sorting, unconsolidated
	20%	<u>Shale</u> - as above
		Abundant Coal
2170-2200	50%	<u>Sandstone</u> - as above
	40%	<u>Shale</u> - light gray, white, smooth to silty, non-calcareous, blocky, soft
	10%	<u>Siltstone</u> - light gray, salt and pepper, non-calcareous, soft
2200-2230	90%	<u>Sandstone</u> - white, clear, smoky, yellow, fine to medium grain, white siliceous clay cement, subangular to subrounded, clean, moderately to well sorted, unconsolidated, NFSOC
	10%	<u>Shale</u> - as above
		Trace Coal
2230-2260	60%	<u>Sandstone</u> - as above
	40%	<u>Shale</u> - white, light gray, clay appearance, siliceous, soft to very soft



2260-2320	90%	<u>Sandstone</u> - white, clear, medium grain, siliceous, trace feldspars included, clear, well sorted, subangular to subrounded, unconsolidated, NFSOC
	10%	<u>Shale</u> - as above, some light gray, silty, soft
2320-2380	80%	<u>Sandstone</u> - as above
	20%	<u>Shale</u> - light to medium gray, slightly silty, siliceous, soft
2380-2410	70%	<u>Shale</u> - light to medium gray, smooth to silty, occasionally very thinly embedded with coal laminations, siliceous, soft, blocky
	30%	<u>Sandstone</u> - as above
2410-2440	100%	<u>Shale</u> - as above, some waxy, very soft Trace Sandstone - 5%, loose angular quartz grains Trace Coal throughout
2440-2500	100%	<u>Shale</u> - light gray, smooth, waxy, siliceous, soft Trace Coal - 5%, Sandstone grains
2500-2530	70%	<u>Sandstone</u> - clear, white, orange, smoky, very fine to medium grain, white clay siliceous cement, poorly cemented, subangular, unconsolidated, NFSOC
	30%	<u>Shale</u> - as above
2530-2560	60%	<u>Sandstone</u> - as above
	40%	<u>Shale</u> - as above light gray, non-calcareous, silty, soft
2560-2590	100%	Very poor sample <u>Shale</u> - light gray, white, smooth, waxy, non-calcareous, silty in part, blocky to fissile, soft Trace Sandstone
2590-2620	90%	<u>Shale</u> - as above
	10%	<u>Sandstone</u> - white, clear, smoky, white clay cement, subangular, unconsolidated
2620-2680	100%	<u>Shale</u> - light gray, white, medium gray, smooth to silty, occasionally thinly laminated with coal, fissile, soft Abundant cavings in samples
2680-2710	70%	<u>Shale</u> - as above
	30%	<u>Sandstone</u> - white, clear, fine to medium grain, white siliceous clay cement, poorly sorted, angular to subrounded, friable, tight Trace Glauconite, Pyrite
2710-2740	60%	<u>Shale</u> - as above
	40%	<u>Sandstone</u> - as above Trace Coal
2740-2800	100%	<u>Shale</u> - light gray, medium gray, smooth to slightly silty, thinly laminated with coal, waxy, fissile in part, soft Abundant cavings
2800-2860	100%	<u>Shale</u> - as above Trace Sandstone, Abundant cavings
2860-2920	90%	<u>Shale</u> - as above
	10%	<u>Sandstone</u> - white, light gray, very fine grain, silty, salt and pepper, white clay, micaceous, poorly sorted, subangular, friable, tight, graded to siltstone



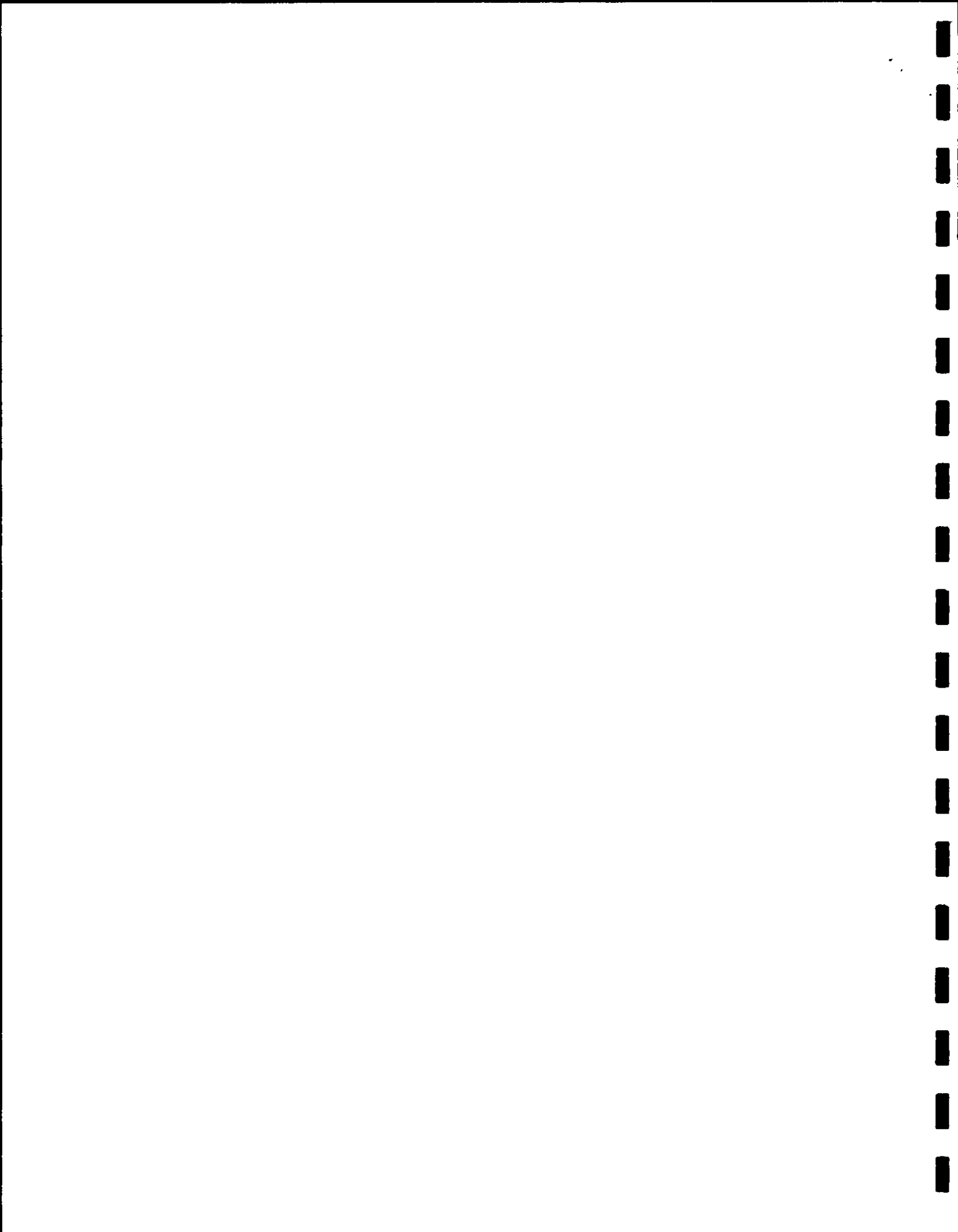
2920-2950	80%	<u>Shale</u> - as above
	20%	<u>Sandstone</u> - as above
2950-3100	100%	Very poor sample <u>Shale</u> - light gray, medium gray, dark gray, smooth, slightly calcareous in part, predominately non-calcareous, blocky, soft Trace Sandstone - 5%, pyritic Trace Coal throughout
3100-3130	90%	<u>Shale</u> - as above
	10%	<u>Sandstone</u> - white, light gray, white clay cement, siliceous, soft
3130-3190	100%	Very poor sample <u>Shale</u> - light to medium gray, dark gray, non-calcareous, silty in part, fissile, soft Trace Sandstone
3190-3250	90%	Very poor sample <u>Shale</u> - as above
	10%	<u>Sandstone</u> - white, light gray, fine to medium grain, white clay cement, friable, firm Trace Coal
3250-3400	100%	<u>Shale</u> - light gray, medium gray, slightly calcareous, non-calcareous, silty, soft, waxy, blocky Trace Coal, Sandstone
3400-3430	90%	Very poor sample <u>Shale</u> - light to medium gray, occasionally dark gray, silty in part, calcareous in part, soft to firm, brittle
	10%	<u>Sandstone</u> - white to light gray, very fine grain, silty, calcareous in part, salt and pepper, glauconitic, micaceous, angular, poorly sorted, friable, soft, tight
3430-3460	70%	<u>Shale</u> - light to medium gray, dark gray, thinly laminated with coals, soft, firm
	20%	<u>Sandstone</u> - as above, very fine grain, tight
	10%	<u>Coal</u>
3460-3490	80%	<u>Shale</u> - as above
	20%	<u>Sandstone</u> - as above
3490-3520	60%	<u>Shale</u> - as above
	30%	<u>Coal</u> - as above
	10%	<u>Sandstone</u> - as above
3520-3550	90%	Very poor sample <u>Shale</u> - light to medium gray, dark gray, slightly calcareous to non-calcareous, silty, firm to soft
	10%	<u>Sandstone</u> - white, light gray, very fine grain, salt and pepper, calcareous, white clay cement, poorly sorted, angular, friable, soft, tight
3550-3580	70%	Very poor sample <u>Shale</u> - light to medium gray, non-calcareous, soft
	30%	<u>Sandstone</u> - white, light gray, very fine to fine grain, calcareous, white clay cement, pyritic, micaceous, salt and pepper, angular, poorly sorted, friable, soft to firm, tight Trace Coal

3580-3670		Very poor sample throughout
	80%	<u>Shale</u> - as above
	20%	<u>Sandstone</u> - as above
		Trace Coal, Pyrite
3670-3700		Very Poor Sample, Abundant LCM
	90%	<u>Shale</u> - as above
	10%	<u>Sandstone</u> - as above
3700-3710		Very poor sample
	100%	<u>Shale</u> - light to medium gray, smooth, slightly silty, non-calcareous, soft
3710-3720		Very poor sample, Predominately LCM
	100%	<u>Shale</u> - as above
3720-3730		Samples slowly improving
	100%	<u>Shale</u> - light to medium gray, some dark gray to brown, smooth, calcareous, slightly silty, embedded with disseminated mica, soft waxy, blocky
3730-3780		100% <u>Shale</u> - as above, becoming medium to dark gray, smooth, calcareous, firm to soft
3780-3790		90% <u>Shale</u> - medium to dark gray brown, calcareous, silty, finely disseminated mica, soft
	10%	<u>Sandstone</u> - medium gray, very fine grain to silty, calcareous, soft, tight
3790-3800		60% <u>Shale</u> - as above
	40%	<u>Sandstone</u> - white, light brown, very fine to fine grain, calcareous, white clay cement, salt and pepper, angular to subrounded, moderately sorted, friable, soft to firm, tight, trace light brown stain, NFSOC, very little to no visible Ø
3800-3810		50% <u>Sandstone</u> - as above, some very silty, shaly, tight, black fragments embedded with sandstone grains, poorly sorted
	50%	<u>Shale</u> - as above
3810-3820		90% <u>Shale</u> - light to medium gray, calcareous, silty, soft
	10%	<u>Sandstone</u> - as above
3820-3830		60% <u>Sandstone</u> - brown, tan, white, very fine to medium grain, graded to siltstone, calcareous, brown and white clay included, subrounded, moderately to well sorted, very friable to unconsolidated, NFSOC
	40%	<u>Shale</u> - as above
3830-3840		50% <u>Sandstone</u> - as above, trace glauconitic, NFSOC
	50%	<u>Shale</u> - as above
3840-3860		80% <u>Shale</u> - as above
	20%	<u>Sandstone</u> - as above, graded to siltstone
3860-3870		60% <u>Shale</u> - medium to dark gray, dark gray brown, calcareous to slightly calcareous, silty, waxy, firm to soft
	30%	<u>Siltstone</u> - medium brown, graded to very fine sandstone, calcareous, unconsolidated to soft
	10%	<u>Sandstone</u> - as above



3870-3880	50%	<u>Shale</u> - as above
	50%	<u>Siltstone</u> - as above, graded to shale
	10%	<u>Sandstone</u> - white to brown, very fine to fine grain, silty, calcareous, salt and pepper in part, angular to subrounded, friable, tight, NFSOC
3880-3890	40%	<u>Shale</u> - as above
	30%	<u>Siltstone</u> - as above
	30%	<u>Sandstone</u> - as above, slight increase in grain size, micaceous, angular, tight
3890-3900	50%	<u>Sandstone</u> - white, clear, light gray, very fine to fine grain, calcareous, white clay cement, glauconitic, micaceous, salt and pepper in part, occasionally feldspar, angular to subangular, poor to moderate sorting, friable, tight, trace black staining, NFOC
	50%	<u>Shale</u> - as above
3900-3910	60%	<u>Sandstone</u> - white, light gray, tan, very fine grain, calcareous, white clay cement, glauconitic, salt and pepper, angular, moderately sorted, friable, tight, NFSOC
	40%	<u>Shale</u> - medium gray, silty, calcareous, fissile in part, soft to firm
3910-3920	80%	<u>Shale</u> - as above
	20%	<u>Sandstone</u> - as above
		Abundant LCM in sample
3920-3930	60%	<u>Shale</u> - as above
	30%	<u>Siltstone</u> - medium gray, calcareous, occasionally very finely sandy, soft
	10%	<u>Sandstone</u> - as above
3930-3940	40%	<u>Siltstone</u> - as above
	30%	<u>Shale</u> - as above
	30%	<u>Sandstone</u> - white, light gray, very fine grain, calcareous, salt and pepper, subangular, friable, firm, tight
3940-3950		Abundant LCM and cavings in samples
	60%	<u>Siltstone</u> - as above, some very finely sandy, soft to firm
	40%	<u>Shale</u> - as above
3950-3960	60%	<u>Siltstone</u> - as above
	20%	<u>Sandstone</u> - white, light gray, very fine grain, calcareous, salt and pepper, silty, white clay, firm, friable, tight, NFSOC
	20%	<u>Shale</u> - as above
3960-3970	80%	<u>Siltstone</u> - as above
	20%	<u>Sandstone</u> - as above, graded to siltstone
		Trace Shale - 5%
3970-4000	90%	<u>Siltstone</u> - as above
	10%	<u>Sandstone</u> - as above
4000-4020	80%	<u>Siltstone</u> - as above, graded to shale in part
	20%	<u>Sandstone</u> - white, light gray, very fine grain, calcareous, white clay cement, angular, firm, tight, NFSOC

4020-4030	60%	<u>Siltstone</u> - as above, medium gray, graded to shale
	40%	<u>Sandstone</u> - white, light gray, very fine to fine grain, calcareous, white clay cement, micaceous, glauconitic, subrounded, moderately sorted, firm, friable, tight, NFSOC
4030-4050	60%	<u>Siltstone</u> - as above
	30%	<u>Shale</u> - medium gray, smooth, calcareous, fissile, soft to firm
	10%	<u>Sandstone</u> - as above
4050-4070	70%	<u>Siltstone</u> - medium gray, calcareous, very finely sandy in part, firm, soft
	30%	<u>Sandstone</u> - white, very fine grain, calcareous, salt and pepper, subrounded, moderately sorted, firm, friable, tight, NFSOC
4070-4080	60%	<u>Siltstone</u> - as above
	40%	<u>Sandstone</u> - as above, graded to siltstone
4080-4110	100%	<u>Siltstone</u> - as above, graded to very fine sandstone in part, soft, some graded to shale
4110-4120	80%	<u>Siltstone</u> - as above
	20%	<u>Shale</u> - medium gray, smooth, calcareous, soft, blocky
4120-4130	70%	<u>Shale</u> - as above
	30%	<u>Siltstone</u> - as above
4130-4140	50%	<u>Sandstone</u> - white, light gray, very fine grain, fine grain, calcareous, white clay cement, salt and pepper in part, subangular to subrounded, well to moderately sorted, friable, firm, tight, NFSOC
	50%	<u>Shale</u> - as above, some graded to siltstone
4140-4150	90%	<u>Shale</u> - as above
	10%	<u>Sandstone</u> - as above
4150-4170	60%	<u>Shale</u> - as above
	40%	<u>Sandstone</u> - as above
4170-4190	50%	<u>Sandstone</u> - white, light gray, very fine to fine grain, calcareous, white clay cement, salt and pepper, subangular, moderately sorted, friable, firm, tight, NFSOC
	50%	<u>Shale</u> - as above
4190-4220	90%	<u>Shale</u> - medium gray, calcareous, firm, some white clay fragments present, some graded to siltstone
	10%	<u>Sandstone</u> - as above
4220-4250	100%	<u>Shale</u> - medium to dark gray, smooth, calcareous, silty in part, embedded with decimated mica, fissile, firm to soft
4250-4270	50%	<u>Sandstone</u> - white, clear, very fine to medium grain, calcareous, glauconitic, subangular to subrounded, moderately sorted, some unconsolidated, friable, firm, NFSOC
	50%	<u>Shale</u> - as above
4270-4290	80%	<u>Shale</u> - as above
	20%	<u>Sandstone</u> - as above, abundant loose quartz grains



4290-4350 100%

Shale - dark gray, medium gray, smooth, calcareous, slightly silty, fissile, firm, brittle in part  
Trace Sandstone, Siltstone