00237833

Summit Mountain
Geology, Inc.
Well Site Geology and Mud Logging
575 28½ Road #56, Grand Junction, Co. 81501
(303)245-5024

COMPANY ANADARKO PRODUCTION COMPANY

WELL NAME COTTON WOOD GULCH SMITH B-1

LOCATION NW SE SW SECTION 24-T8N-R91W MOFFAT COUNTY COLORADO

ZONE OF INTEREST NO. 1

INTERVAL: From 3028 To 3050

DRILL RATE: Abv 3 mins/2 ft Thur ½ min/2 ft Below 5 mins/2 ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C_1	C_2	C_3	C_4	C_5	OTHER
BEFORE	2 units						
DURING	70-200+ units						
AFTER	5 units						

TYPE GAS INCREASE: Gradual ___ Sharp X

GAS VARIATION WITHIN ZONE: STEADY X ERRATIC ___ INCREASING ___ DECREASING X

FLUORESCENCE: MINERAL ___ EVEN ___ SPOTTY X STREAMING ___ FLASHING ___ HALEO ___
NONE ___ CUT: NONE X SLOW ___
POOR X % in Total Sample 5% POOR ___ MOD ___
FAIR ___ % in Show Lithology ___ FAIR ___ FAST ___

STAIN: NONE X POOR ___ FAIR ___ GOOD ___ LIVE ___ DEAD ___ RESIDUE ___ EVEN ___

POROSITY: POOR X FAIR ___ GOOD ___ KIND COAL POSSIBLY INTERGRANULAR

LITHOLOGY: COAL BLK SHINNY HD BRIT

SS WH-S&P VFGR SBRD WSRTD PCMTD FRI

NOTIFIED: STEVE CALKINS @ 8:00 am HRS. DATE 12/3/80

REMARKS: GOOD MARKER ZONE FOR ANADARKO FIELD

TRACES OF GAS CUT MUD NOTED DURING GAS INCREASE

ZONE DESCRIBED BY: JOE RUNGE

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COMPANY ANADARKO PRODUCTION COMPANY

WELL NAME COTTONWOOD GULCH SMITH "B" 1

LOCATION NW SE SW SECTION 24-T8N-R91W MOFFAT COUNTY, COLORADO

ZONE OF INTEREST NO. 2

INTERVAL: From 3750 To 3764

DRILL RATE: Abv 3 min/ft Thur 1½ min/ft Below 7½ min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C_1	C_2	C_3	C_4	C_5	OTHER
BEFORE	3 units						
DURING	100 units						
AFTER	30 units						

TYPE GAS INCREASE: Gradual ___ Sharp X

GAS VARIATION WITHIN ZONE: STEADY X ERRATIC ___ INCREASING ___ DECREASING X

FLUORESCENCE: MINERAL ___ EVEN X SPOTTY ___ STREAMING X FLASHING ___ HALEO ___
NONE ___ CUT: NONE ___ SLOW X
POOR ___ % in Total Sample 75 % POOR X MOD ___
FAIR X % in Show Lithology 75 % FAIR ___ FAST ___

STAIN: NONE ___ POOR X FAIR ___ GOOD ___ LIVE ___ DEAD ___ RESIDUE X EVEN ___

POROSITY: POOR ___ FAIR ___ GOOD X KIND INTRAGRANULAR

LITHOLOGY: SS wh-s&p fgr sbrd wsrtd frm fri occ free mgr sbrd-sbang qtz grs in bottom of tray Trace of ltbrn oil staining Dull Yellow Fluo v slow streaming cut

NOTIFIED: STEVE CALKINS @ 5:00 am HRS. DATE 12/5/80

REMARKS: TOP SAND IN THE LOWER COTTONWOOD GULCH SANDSTONE POSSIBLE GOOD ZONE FOR DST

ZONE DESCRIBED BY: Joseph J. Ryan

ANADARKO PRODUCTION COMPANY
COTTONWOOD GULCH SMITH "B" 1
MOFFAT COUNTY, COLORADO

24-8N-91W

FORMATION TOPS

FORMATION	PROJECTED	DRILL TIME	"E"-LOG	DATUM
FT. UNION	1105	1100	1110	+5603
LANCE	2135	2130	2102	+4611
FOX HILLS	3065	3032	3036	+3611
LEWIS SHALE	3245	3240	3260	+3453
LEWIS SAND	3560	3690	3720	+2993
BASE LEWIS SAND	3785	3986	3990	+2723
TD	3850	4030	4027	+2683

TOPS COMPARED TO NEAREST OFFSETS

FORMATION	ANADARKO PROD. COTTONWOOD GULCH SMITH "B" 1 Sec 24-T8N-R91W	ANADARKO PROD. COTTONWOOD GULCH FED. A-No.-2 Sec. 25-T8N-R91W	ANADARKO PROD. COTTONWOOD GULCH FED. No. A-1 Sec. 25-T8N-R91W
FT. UNION	1110	1258	855
LANCE	2102	2203	2475
FOX HOLLS	3036	2883	2900
LEWIS SHALE	3260	3090	3265
LEWIS SAND	3720	3486	3528
BASE LEWIS SAND	3990	3780	3710
TD	4027	3850	3800

GEOLOGIC SUMMARY
&
ZONES OF INTEREST

Samples were examined from 520-4030. One foot drilling time plotted from 600-4030. The sample log is drafted on a 5" = 100' scale with lithology and all important well data.

Sample and Electric Log Tops are correlated with the Anadarko Production Company Cottonwood Gulch Fed. A-No-2 and Cottonwood Gulch Fed. No. A-1 wells, which are to the south and west of Cottonwood Gulch Smith "B" 1. Refer to the Comparative Formation Tops page for structural differences.

At the top of the Lewis Sand stone the Smith "B" 1 is 234' deaper than Fed. A-No.-2 and 192' deaper than Fed. No. A-1.

FT. UNION (1110-2102)

The Ft. Union in this area of the Sand Wash Basin is predominatly dark gray to black shales, with occasional silty and sandy stringers. Interbedded are thick beds of clear to milky very fine to medium grained sub round to sub angular poorly sorted sandstones. At the bottom of the formation these sandstone beds become 30 feet thick.

LANCE (2102-3030)

The Lance is very simular in lithology to the Ft. Union, except that it has a larger number of interbedded coal seams. Shales are predominatly dark gray to gray green, very micaceous slty and sandy and firm. Sandstones are white to salt and pepper, fine to medium grained, sub round and friable to hard and brittle.

Slight gas increases were noted thru out the Lance, but most were in coal stringers or beds.

FOX HILLS (3036-3260)

The Fox Hills in this area is recognizable by the large coal seam and gas increase that is associated along with it. The Fox Hills is predominatly interbedded sands and shales. Sands are clear to salt and pepper, very fine grained, sub round, well sorted, poorly cemented and friable.

A 200 plus unit gas increase was noted at 3036 to 3044 in a coal seam. Several smaller increases were noted below it, all being in smaller coal seams. The sands that are interbedded with the coal seams showed some dull yellow fluorecense but no cut. A small portion of gas cut mud was recovered at the shale shaker.

LEWIS SHALE (3260-3720)

Predominatly medium to light gray shales with green siltstone stringers and occasional sandstone beds.

The Smith "B" 1 showed a thickening of the Lewis Shale by 200 feet in comparison to the Fed. A-2. This is probably caused by a fault of an area of steaper dipping beds on the structure.

LEWIS SAND (3720-3990)

The Lewis Sand in this section seemed to be poorly developed all though a 100 unit gas increase was noted in the top sand (3730-40). This sand was white to salt and pepper, fine grained, well sorted, firm but friable. Upon occasion medium grained sub rounded free qtz grains were noted on the bottom of the sample tray. A Dull Yellow Fluorescence was noted in 75% of the sample with a light brown oil stain in 15% of the samples. A very slow streaming cut was noted in most of the samples. Porosity in the sand looked fairly good although some parts of the section were tite.

The Electric Loggs showed an average porosity of 12% and an average resistivity of 10 ohms.

A drill stem test was run over the first set of sands in the section (3730-3887). The initial open was 30 minutes. During this time a flow of 8 inches in the bucket was reached. The initial shutin was 60 minutes, with the bubbles depleating by the end the interval. The final open was 120 minutes with 2 inches in the bucket for 1½ hrs then pressures depleated. Finial shutin was 240 minutes, ½ inch in the bucket for 10 minutes then depleated. Tool was pulled with a recovery of 300 feet of drilling mud, with the top 25 feet being slightly gas cut. The sample chamber contained .12 cubic feet of gas and 2000 cc's of gas cut mud.

The bottom sand was encountered at 3930-90. The sand was very poorly developed. E-Logs showed 6 ohms of resistivity maximum and porosity of 12% maximum. No gas shows were noted in this zone.

Well was TD at 4027.

Thank you, once again for the opportunity of serving you. If I can be of any further assistance in interpetation or anything else, please feel free to call on me at any time.

JOSEPH J. RUNGE

WELL SUMMARY

OPERATOR:	ANADARKO PRODUCTION COMPANY
WELL NAME:	COTTONWOOD GULCH SMITH "B" 1
LOCATION:	NW SE SW SECTION 24-T8N-R91W 990' FWL 990' FSL
AREA:	COTTONWOOD GULCH NORTH OF CRAIG
COUNTY:	MOFFAT
STATE:	COLORADO
ELEVATION:	GL 6701' - KB 6713'
WELL SITE GEOLOGIST:	JOE RUNGE (SUMMIT MOUNTAIN GEOLOGY,INC.)
SPUD DATE:	11-26-80
COMPLETION DATE:	12-9-80
CONTRACTOR:	CRC COLORADO WELL SERVICE #66
TOOL PUSHER:	HARRY
DRILLING ENGINEER:	C. J. WOMACK
HOLE SIZE:	$12\frac{1}{4}$ to 518'; 7 7/8" to 4030
CASING SIZE:	8 5/8" to 518'; $4\frac{1}{2}$" to 4030
MUD COMPANY:	MAGCOBAR
DST COMPANY:	JOHNSTON TESTING COMPANY
ELECTRIC LOGGING CO.:	SCHLUMBERGER, VERNAL, UTAH & ROCK SPRINGS, WYO. ENGINEER, STEVE WHITE TOM PETERSON
TYPES OF LOGS RUN:	DIL-SFL-GR-CAL, CNL-FDC w/GR-CAL, SONIC w/GR-CAL
OBJECTIVE:	LEWIS SAND (UPPER & LOWER COTTONWOOD GULCH SANDS)
TOTAL DEPTH:	4030
STATUS:	SET PIPE THRU COTTONWOOD GULCH SANDS

ANADARKO PRODUCTION COMPANY
COTTONWOOD GULCH SMITH "B" 1
Sec 24, T8N, R91W

SAMPLE DESCRIPTION

520-50	SH	100%	ltgy v mic sdy frm
550-80	SS	100%	clr-ltgy m-c gr ang free qtz
580-610	SH	50%	lt-mgy mic sdy frm sl calc
	SS	50%	clr vf-mgr ang free qtz
610-40	SH	50%	a/a
	SS	50%	a/a
640-70	SH	50%	dkgy v mic occ sdy frm
	SS	50%	clr f-mgr ang sbang frm free qtz
670-700	SS	100%	clr-mlky m-cgr sbang-ang free
700-30	SS	100%	clr mgr sbang wsrtd free qtz
730-60	NS		
760-90	NS		
790-820	SH	100%	m-dkgy mic slty frm
820-50	SS	100%	clr-smky mgr sbang-ang uniform free
850-80	SH	50%	mgy mic slty frm
	SS	50%	clr-mlky occ amber sbang wsrtd free qtz
880-910	SH	100%	dkgy blk slty mic frm-sft sl calc
910-40	SH	70%	a/a
	SS	30%	pred amber mgr sbang wsrtd free
940-70	SH	100%	dkgy slty mic frm-sft sl calc
970-1000	SH	30%	dkgy mic frm
	SS	70%	clr-amber f-cgr sbang-ang psrtd free
1000-30	SH	100%	dkgy-blk mic v slty & sdy frm
1030-60	SH	100%	a/a
1060-1180	NS		
1180-1210	SH	90%	dkgy mic sdy frm
	SS	10%	clr-mlky mgr sbang free qtz
1210-40	SH	100%	m-dkgy v mic frm wxy ip
	SS	TR.	mlky mgr sbrd free
1240-70	SH	100%	m-dkgy mic bcm slty & sdy frm
	COAL	TR.	blk frm-hd brit
1270-1300	SH	90%	a/a
	COAL	10%	a/a
1300-90	NS		
1390-1420	SH	100%	dkgy blk mic carb frm
1420-50	SH	50%	dkgy-blk v carb strngrs occ mic frm
	SS	50%	gy-clr vf-mgr sbrd psrtd hd brit occ free
1450-80	SH	50%	gy-gygrn blk mic v carb ip frm
	SS	50%	ltgy-wh vf-mgr sbrd sbang psrtd frm brit
1480-1510	SH	100%	m-dkgy brn mic frm-hd brit
1510-40	SH	50%	m-dkgy v mic v slty frm
	SLTST	50%	lt-mgy sbrd-rd occ sdy frm
1540-70	COAL	100%	blk hd brit conch frac
1570-1600	SH	50%	lt-mgy lt-mbrn slty frm
	SS	50%	mgy mbrn mic sbrd frm
1600-30	COAL	100%	blk hd brit sdy conch frac
1630-60	SH	90%	m-dkgy mic carb incl frm
	COAL	10%	blk hd shly sdy frm
1660-90	SH	50%	dkgy mic v sdy frm
	SS	50%	clr wh ltgy vf-mgr sbrd v psrtd frm fri free
1690-1720	SH	100%	dkgy-blk mic carb frm
1720-50	SH	90%	dkgy blk mic carb incl frm wxy
	SLTST	10%	ltgy sbrd-sbang occ grdg to vfgr ss
1750-80	SS	100%	mlky-clr mgr sbang sbrd qtz free

1780-1810	SH	20%	dkgy v mic frm wxy
	SS	80%	clr-mlky m-cgr sbang free qtz
1810-40	SH	50%	a/a
	SS	50%	a/a
1840-70	SH	50%	mgy mic occ slty frm-sft
	SS	50%	clr-mlky m-cgr sbang sbrd free qtz
1870-1900	SH	30%	a/a
	SS	70%	a/a
1900-30	SH	20%	dkgy blk v mic frm
	SS	80%	clr-mlky m-cgr sbrd-sbang psrtd free qtz
1930-60	SH	50%	a/a
	SS	50%	clr-mlky vf-cgr sbrd sbang v psrtd free qtz
1960-90	SH	100%	dkgy dkbrn mic occ slty frm-hd brit
			TR DULL YEL GRN FLUO
1990-2020	SH	100%	m-dkgy ltbrn mic sdy occ grdg to sltst frm
2020-50	SH	90%	gy-brn mic slty frm brit
	SS	10%	clr f-mgr sbrd sbang psrtd frm fri
2050-80	SH	90%	brn-gy mic carb incl frm v slty
	SS	10%	brn-clr vf-cgr sbrd-sbang fri free
2080-2110	SS	100%	clr mgr sbrd-sbang free qtz
2110-40	SH	80%	m-dkgy mic slty frm
	SS	20%	s&p carb incl slty psrtd frm fri
2140-70	SH	90%	a/a
	SS	10%	clr mlky vf-fgr sbrd fri
2170-2200	SH	80%	dkgy carb incl occ mic sdy blky frm
	SS	20%	s&p ltgy vf-fgr sbrd slty strngrs psrtd fri
2200-30	SH	100%	dkgy dkbrn occ mic carb incl slty frm
2230-60	SH	90%	a/a
	SS	10%	s&p vf-mgr sbrd hd brit
226-90	SH	50%	dkgy-brngy mic slty carb strngrs pyric hd
	SS	50%	s&p vfgr sbrd slty occ free frm fri
2290-2320	SH	50%	dkgy mic v slty occ sdy carb ip frm
	SS	50%	s&p clr mgr sbrd wsrtd pcmtd fri free
2320-50	SH	100%	m-dkgy gygrn mic ip frm wxy
2350-80	SH	100%	m-dkgy brn occ mic & sdy frm
	SLTST	TR.	s&p sbrd frm fri ip
2380-2410	SH	90%	gy-blk v carb sdy slty frm
	SS	10%	s&p vf-fgr sbrd psrtd frm fri
2410-40	SH	100%	gy-brn occ dkgrn mic sdy ip carb incl frm
2440-70	SH	90%	gy-gygrn tan mic occ sdy v carb fis ip
	COAL	5%	blk cln occ v shly brit
	SS	5%	wh-ltgy vf-fgr sbrd psrtd frm fri
2470-2500	SH	90%	gy-ltbrn mic occ sdy frm wxy
	SS	10%	s&p vfgr sbrd occ v slty frm fri
2500-10	SH	100%	a/a
2510-20	SH	90%	gy-brn gygrn mic sdy frm
	SS	10%	clr-ltgygrn vf-mgr sbrd wsrtd frm fri
2520-30	SH	100%	m-dkgy gygrn tan mic & sdy frm-sft
2530-40	SH	100%	a/a
	SS	TR.	clr w/cly cmt fgr sbrd fri
2540-50	SH	100%	brn gy's mic occ carb incl sdy ip frm-sft
2550-60	SH	100%	pred dkgrn occ sdy frm wxy
2560-70	SH	90%	dkgy brn mic slty strngrs occ sdy frm
	SS	10%	clr smky sbrd psrtd hd brit TR. HVY MINERALS

2570-80	SH	90%	a/a
	SS	10%	a/a
2580-90	SH	100%	dkgy dkbrn dkgrn mic slty occ sdy occ v carb frm wxy
2590-2600	SH	100%	a/a
2600-10	SH	90%	a/a
	ANHY	10%	wh-ltgy pink hd brit porc
2610-20	SH	90%	dkgy brn grn mic slty frm
	SS	10%	clr-wh-s&p fgr sbrd anhydric hd brit
2620-30	SH	100%	dkgy gybrn slty frm wxy ip
	COAL	TR.	blk shly frm
2630-40	SH	100%	dkgy gybrn carb mic frm
2640-50	SH	100%	a/a
2650-60	SH	90%	a/a
	SS	10%	wh-s&p vfgr sbrd occ v mic occ grdg to sltst v psrtd fri
2660-70	SH	100%	dkgy grn frm wxy bentic
2670-80	SH	90%	pred mgy slty frm
	SS	10%	gy vfgr sbrd occ slty strngrs frm fri
2680-90	SH	90%	a/a bcm v carb
	SS	10%	a/a carb strngrs
2690-2700	SH	90%	gy-tan mic sdy slty frm-sft wxy
	COAL	10%	blk shinny hd brit conch frac
2700-10	SH	90%	gy-tan v mic fis ip frm brit
	COAL	10%	blk hd brit conch frac
2710-20	SH	90%	gy-tan mic incr carb strngrs frm
	COAL	10%	blk shly sdy ip brit
2720-30	SH	100%	gy-tan occ gygrn frm-sft
	SS	TR.	gy vfgr carb fri
2730-40	SH	100%	a/a v thinly bedded coal strngrs interbd
2740-50	SH	100%	gy-brn occ mic slty & sdy carb incl frm wxy
2750-60	NS		largely cavings
2760-70	SH	100%	lt-dkgy tan mic ip slty ip carb incl anhy strngrs
	ANHY	TR.	wh-gy frm-sft pwdry
	SS	TR.	clr-wh fgr sbrd fri
2770-80	SH	100%	mgy mbrn occ mic & slty frm
	SS	TR.	clr-wh vf-fgr sbrd fri occ free grs
2780-90	SH	100%	mgy brngy brn blk v carb strngrs ip frm
2790-2800	SH	100%	gy-tan occ mic & slty frm-sft
	SS	TR.	clr-wh vfgr sbrd wsrtd fri
2800-10	SH	100%	gy mic v slty carb strngrs sft
2810-20	SH	100%	a/a
2820-30	SH	90%	gy-tan v slty frm-sft
	SS	10%	ltgy tan vfgr sbrd v carb strngrs fri
2830-40	SH	100%	gy-dkgy mic slty occ carb incl frm
2840-50	SH	100%	a/a incr amts of blk coal
2850-60	COAL	100%	blk shinny sdy brit sft
2860-70	SH	70%	dkgy dktan mic slty frm
	SS	30%	wh-clr vfgr sbrd-rd wsrtd frm fri
2870-80	SH	80%	a/a
	SS	20%	a/a
2880-90	SLTST	50%	gy-crm mic carb frm
	SS	50%	wh-crm vfgr sbrd hd brit
2890-2900	SH	30%	dkbrn blk v carb sdy frm-hd
	SS	70%	wh-s&p vfgr sbrd wsrtd hd brit
2900-10	SS	100%	a/a

2910-20	SH	60%	dkgy mic sdy v carb strngrs frm
	COAL	40%	blk cln occ sdy hd brit conch frac splintry
2920-30	SH	80%	a/a
	SS	20%	clr fgr sbrd psrtd orng cht intrbd occ carb brit
2930-40	SH	50%	dkgy mic slty fis frm brit
	SS	50%	wh-clr vf-fgr sbang-sbrd frm
2940-50	SH	90%	a/a
	SS	10%	a/a
2950-60	SH	50%	dkgy blk v carb sdy ip frm
	SS	20%	wh vfgr sbrd carb frm fri
	COAL	30%	blk shly sdy frm
2960-70	SH	50%	mgy occ dkgy carb sdy frm-sft
	SS	50%	wh-ltgy vfgr sbrd wsrtd frm fri
2970-80	SH	50%	m-ltgy sdy ip fis ip frm-sft
	SS	50%	s&p ltgy vfgr sbrd wsrtd fri
2980-90	NS		
2990-3000	SH	60%	m-ltgy sdy fis ip sft-frm
	SS	40%	s&p ltgy vfgr sbrd wsrtd fri
3000-10	SH	10%	mgy mic sdy frm brit
	SS	90%	wh-ltgy vf-fgr sbrd wsrtd frm fri
3010-20	SS	100%	wh-clr occ s&p vfgr sbrd v wsrtd fri
3020-30	SH	20%	mgy mic v sdy occ carb frm wxy ip
	SS	80%	a/a
3030-40	NS		
3040-50	SS	50%	wh-ltgy fgr sbrd-rd wsrtd fri
	COAL	50%	blk shinny hd brit conch frac
			TR DULL YELLOW FLUO NO CUT
3050-60	SH	20%	lt-dkgy v carb mic sdy fis plty brit
	SS	60%	wh-s&p vfgr sbrd wsrtd pcmtd fri
	COAL	20%	blk shinny hd brit
3060-70	SH	60%	lt-mgy v mic sdy strngrs frm
	SS	40%	clr-wh fgr sbang hd brit
3070-80	SH	100%	blk-brn v mic carb strngrs occ sdy frm
3080-90	SH	50%	lt-dkgy brn mic carb strngrs occ sdy intrbd w anhy
	ANHY	50%	wh-ltgy banded hd porc
3090-3100	SH	80%	m-dkgy brn-blk v carb sdy mic frm
	COAL	20%	blk v shly lam frm
3100-10	NS		
3110-20	SS	100%	wh-clr fgr sbrd occ slts intrbd psrtd fri
3120-30	SS	100%	ltgy vf-fgr sbrd psrtd grdg back & forth fri
3130-40	SS	100%	lt-mgy vfgr sbrd grdg to sltst occ wsrtd fri
3140-50	SH	100%	m-dkgy v mic occ slty occ carb incl frm
3150-60	SH	100%	mgy occ mic slty & occ sdy carb incl frm
3160-70	SH	40%	mgy v slty & sdy occ carb incl frm
	SS	60%	ltgy-s&p vf-fgr sbrd psrtd fri occ brit
3170-80	NS		
3180-90	SH	70%	a/a
	SS	30%	a/a
3190-3200	SH	20%	blk brn mgy mic carb incl mfrm sft
	SS	80%	ltgy wh vf-fgr sbrd occ wsrtd frm fri
3200-10	SH	10%	dkgy slty frm
	SS	90%	s&p ltgy fgr sbrd intrbd w/coal strngrs fri
3210-20	SH	10%	a/a
	SS	80%	wh-ltgy vf-fgr sbrd wsrtd ip intrbd w/coal fri
	COAL	10%	blk slty lam frm

3220-30	SLTST	100%	mgy occ sdy sbrd carb incl mic ip frm
3230-40	SH	100%	pred mgy ltgy occ tan slty & sdy ip frm sl calc
3240-50	SH	90%	a/a
	COAL	10%	blk cln occ shly strngrs hd conch frac
3250-60	SH	100%	dkgy blk brn mic slty & sdy frm bentic ip
3260-70	SH	60%	a/a
	SS	40%	wh-s&p vfgr sbrd wsrtd frm fri calc
3270-80	SH	100%	dkgy brn tan slty & occ sdy carb incl frm calc
3280-90	SH	100%	a/a
3290-3300	SH	100%	pred mgy sdy wxy calc
3300-10	SH	100%	a/a
3310-20	SH	100%	m-dkgy sdy frm calc
3320-30	SH	100%	m-dkgy grn slty frm calc
3330-40	SH	90%	lt-mgy occ mic v slty strngrs occ carb incl frm
	SS	10%	wh-ltgy vfgr sbrd bcm slty frm fri calc
3340-50	SH	90%	a/a
	SS	10%	a/a
3350-60	SH	100%	m-dkgy occ trs of ltgy mic slty frm calc
	SS	TR.	clr-wh vfgr sbrd v frem tt calc
3360-70	SH	100%	mgy bcm sdy & slty carb frm-sft calc
	SS	TR.	gy vfgr sbrd slty psrtd fri calc
	COAL	TR.	blk-brn v shly & sdy frm-sft
3370-80	SH	100%	a/a
3380-90	NS		
3390-3400	SH	100%	ltgy mic slty frm-sft sl calc
3400-10	NS		
3410-20	SH	100%	ltgy mic bcm slty frm-sft sl calc
3420-30	NS		
3430-40	SH	100%	lt-mgy v mic slty strngrs occ sdy carb ip frm calc
3440-50	SH	100%	a/a
3450-60	SH	70%	dkgy ltgy mic sdy carb frm
	SS	30%	wh-ltgy occ dkgy vfgr sbrd hd tt
3460-70	SH	70%	a/a
	SS	30%	s&p ltgy vfgr sbrd v hd brit tt
3470-80	SH	40%	dkgy mic sdy carb frm anhy strngrs
	SS	60%	lt-mgy vfgr sbrd hd brit
3480-90	SH	50%	m-dkgy blk occ mic sdy ip frm
	SS	50%	wh-s&p vfgr sbrd hd-fri
	SLTST	TR.	grn sbrd
3490-3500	SH	50%	m-dkgy occ blk mic carb sdy strngrs frm
	SS	50%	wh-clr vf-fgr sbrd frm-fri cly cmt calc
	COAL	TR.	blk sft
3500-10	SH	40%	a/a
	SS	50%	a/a
	COAL	10%	blk shinny frm brit conch frac
3510-20	SH	60%	dkgy blk mic carb incl frm
	SS	40%	s&p wh vfgr sbrd grdg to sltst hd brit tt
3520-30	SH	50%	a/a anhy strngrs
	SS	50%	s&p fgr sbrd wsrtd pcmtd fri calc
			TR. VERY PALE ORNG FLUO NO CUT
3530-40	SH	100%	ltgy mic sdy frm sl calc
3540-50	SH	10%	a/a
	SS	90%	clr-gy fgr sbrd-rd wsrtd pcmtd v fri calc

3550-60	SH	80%	m-dkgy mic sdy ip carb incl frm calc
	SS	20%	s&p vf-fgr sbrd psrtd frm calc
3560-70	SH	60%	dkgy mic frm brit calc
	SS	40%	lt-mgy vfgr sbrd shly grdg to sltst mfrm fri
3570-80	SH	100%	mgy mic ip v slty frm calc
3580-90	SH	100%	a/a
3590-3600	SH	100%	a/a
3600-10	SH	90%	m-dkgy mic occ slty strngrs frm calc
	SLTST	10%	mgy ltgy sbrd occ sd grs intrbd frm calc
3610-20	SH	40%	a/a
	SLTST	60%	mgy sbrd occ grdg to ss frm calc
3620-30	SH	100%	lt-mgy mic slty frm calc
3630-40	SH	90%	a/a
	SS	10%	ltgy vfgr sbrd wsrtd hd brit calc
3640-50	SH	100%	dkgy mgy mic v slty frm pyric incl calc
3650-60	SH	100%	a/a
3660-70	SH	100%	mgy mic occ sdy frm calc
3670-80	SH	100%	mgy mic sdy strngrs frm calc
3680-90	SH	100%	a/a
3690-3700	SH	80%	mgy mic v sdy strngrs frm calc
	SS	20%	wh-gy vfgr sbrd slty sft
3700-10	SS	100%	wh-gy sbrd v drty v shly v hd tt
3710-20	SH	70%	gy-tan mic slty frm calc
	SS	30%	lt-mgy vfgr sbrd occ slt strngrs occ fgr intrbd
3720-30	SH	100%	m-dkgy brn mic ip slty ip carb ip frm
3730-40	SH	50%	m-dkgy occ mic slty anhy strngers v frm
	ANHY	50%	wh-ltgy banded frm-pwdry porc ip
3740-50	SS	100%	wh-s&p f-mgr sbrd psrtd v fri TR. DULL YELLOW FLUO NO CUT
3750-60	SS	100%	wh-s&p fgr sbrd wsrtd frm fri occ free mgr sbrd qtz grs ltbrn oil stning **75% ss DULL YELLOW FLUO w/SLOW PALE YELLOW STRMG CUT**
3760-70	SS	100%	a/a abt wh cly matrix
3770-80	SH	50%	dkgy mic frm
	SS	50%	s&p-wh fgr sbrd wsrtd frm fri DULL YELLOW FLUO NO CUT
3780-90	NS		
3790-3800	SS	100%	wh-ltgy vfgr sbrd v sft & fri w/wh cly matrix v calc lmy cmt TR. DULL YELLOW FLUO NO CUT
3800-10	SH	50%	dkgy mic occ slty frm
	SS	50%	s&p wh fgr sbrd wsrtd hd brit-sft & fri w/ wh cly matrix
3810-20	SH	100%	gy dkgy slty frm w/trs of ss
3820-30	SH	90%	a/a
	SS	10%	wh-s&p fgr sbrd occ sbang frm sl calc
3830-40	SH	100%	pred dkgy mic frm calc
3840-50	SH	100%	a/a
3850-60	SH	100%	dkgy blk frm slty ip calc
3860-70	SH	100%	dkgy mbrn frm sdy ip calc
3870-80	SH	100%	m-dkgy brn mic slty & sdy frm-hd bentic ip calc
3880-90	NS		largely cavings
3890-3900	SH	80%	dkgy brn v mic v sdy frm sl calc
	SS	20%	s&p gy fgr sbrd frm fri
3900-10	SH	100%	lt-dkgy mic slty & sdy strngrs frm-sft calc

3910-20	SH	100%	m-dkgy mic slty strngrs frm sl calc
	SS	TR.	mgy-s&p vfgr sbrd frm trs clr mgr sbrd free qtz
3920-30	SH	90%	a/a
	SS	10%	mgy vfgr sbrd v slty psrtd frm
3930-40	SH	80%	m-dkgy mic slty strngrs frm sl calc
	SS	20%	mgy s&p vfgr sbrd slty psrtd frm
3940-50	SH	80%	m-dkgy occ brn v mic frm-sft flakey
	SS	20%	s&p vfgr sbrd fri
3950-60	SH	100%	a/a
3960-70	SH	100%	pred dkgy mic slty stngrs frm fis
3970-80	SH	100%	a/a
3980-90	SH	50%	pred dkgy mic slty bcm v sdy frm fis
	SS	50%	s&p-wh vf-fgr sbrd v psrtd frm fri
3990-4000	SH	90%	dkgy mic occ sdy frm
	SS	10%	gy-s&p vfgr sbrd wsrtd frm brit pyric incl
4000-10	SH	100%	dkgy mic occ sdy frm-hd
4010-20	SH	100%	a/a
4020-30	SH	100%	dkgy mic occ sdy strngrs frm-hd brit

COTTONWOOD GULCH SMITH "B" 1
MOFFAT COUNTY, COLORADO

MUD RECORD

DATE	DEPTH	WEIGHT	MUD GRADIENT	FUNNEL VIS	PLASTIC VIS	YIELD POINT	GEL STRENGTH	PH	FILTRATE API	CAKE	ALKALINITY FILTRATE	CHLORIDE PPM	CALCIUM PPM	SAND % CONTENT	SOLIDS % CONTENT	OIL % CONTENT	WATER % CONTENT	% KCL
11/27	518	9.3	.484	41	10	12	.3/.5	10.0	24.8	1/32"	.4/1.3	800	20	¼	7.25		92.75	
11/28	518	8.3	.434	26				6.8			.0/.2	800	80				100	
11/29	1300	9.3	.483	34	6	16	.9/1.4	10.5		1/32"	.4/2.0	700	60	1	7.25		92.75	
11/30	1994	9.1	.473	31	5	2	1/8	10.0		1/32"	.05/.2	700	120	3/4	5.75		94.25	
12/1	2675	9.2		31	4	2	1/10	8.5		2/32"	.2/.5	700	120	½	6.50		93.50	
12/2	2900	9.1	.473	34	7	4	1/7	10.0	8.0	2/32"	.04/.07	500	60	½	5.75		94.25	
12/3	3350	9.1		39	13	6	2/9	10.0	7.8	2/32"	.2/.5	600	60	½	5.75		94.25	
12/4	3420	9.1	.473	37	12	7	1/8	10.0	8.2	2/32"	.3/.6	600	80	½	5.75		94.25	
12/5	3840	9.1	.473	40	14	9	2/12	10.0	7.6	2/32"	.2/.5	600	80	½	5.75		94.25	
12/6	3887	8.8	.457	30	6	2	1/6	10.0	8.4	1/32"	.5/.8	700	80	½	3.50		96.50	
12/7	3887	8.8	.457	38	9	5	1/8	10.0	8.8	1/32	.4/.8	700	80	½	3.50		96.50	
12/8	4002	8.8	.463	55	25	5	3/8	11.0	8.0	1/32	.9/1.4	700	80	½	3.50		96.50