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## MUDLOG MD

COMPANY	ExxonMobil Production
WELL	FRU 197-28A5
FIELD	PICEANCE CREEK
REGION	ROCKIES
COORDINATES	LAT: 39.9344449000 LON: 108.295900000
ELEVATION	GL = 6,082' KB = 6,109'
COUNTY, STATE	RIO BLANCO, CO
API INDEX	051031163300
SPUD DATE	08/05/2010
CONTRACTOR	HELMRICH AND PAYNE
CO. REP.	RICKY T. OWENS
RIG/TYPE	215 / FLEX 3
LOGGING UNIT	UNIT 051
GEOLOGISTS	GEORGE BAKER DEVIN CLAAR
ADD. PERSONS	BILL JOHANNING TRISH ORTIZ
CO. GEOLOGIST	MEL,ANIE BIGGS

### LOG INTERVAL

DEPTHS: 149' TO 12,529'  
DATES: 8/05/2010 TO 8/25/2010  
SCALE: 5" =100'

### CASING DATA

16" AT 120'  
10.75" AT 3,566'  
AT  
AT

### MUD TYPES

SPUD MUD TO 3,576'  
BARO-TROL PLUS TO 12,529'  
TO  
TO

### HOLE SIZE

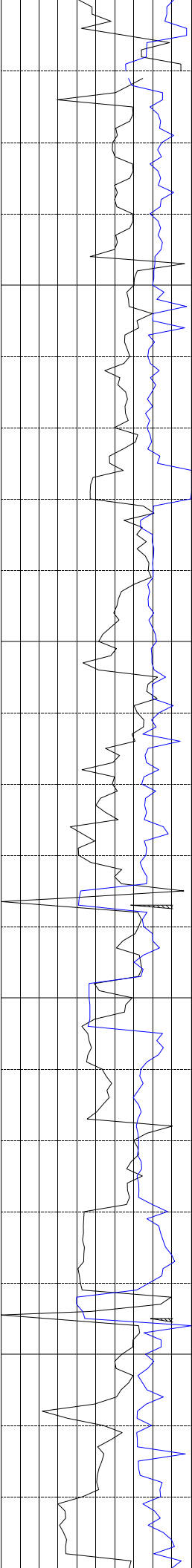
14.75" TO 3,576'  
8.75" TO 12,529'  
TO  
TO

### ABBREVIATIONS

NB	NEWBIT	PV	PLASTIC VISCOSITY	LC	LOST CIRCULATION
RRB	RERUN BIT	YP	YIELD POINT	CO	CIRCULATE OUT
CB	CORE BIT	FL	FLUID LOSS	NR	NO RETURNS
WOB	WEIGHT ON BIT	CL	PPM CLORIDE ION	TG	TRIP GAS
RPM	ROTARY REV/MIN	Rm	MUD RESISTIVITY	SG	SURVEY GAS
PP	PUMP PRESSURE	Rmf	FILTRATE RESISTIVITY	WG	WIPER GAS
SPM	STROKES/MIN	PR	POOR RETURNS	CG	CONNECTION GAS
MW	MUD WEIGHT	LAT	LOGGED AFTER TRIP		
VIS	FUNNEL VISCOSITY	LAS	LOGGED AFTER SURVEY		

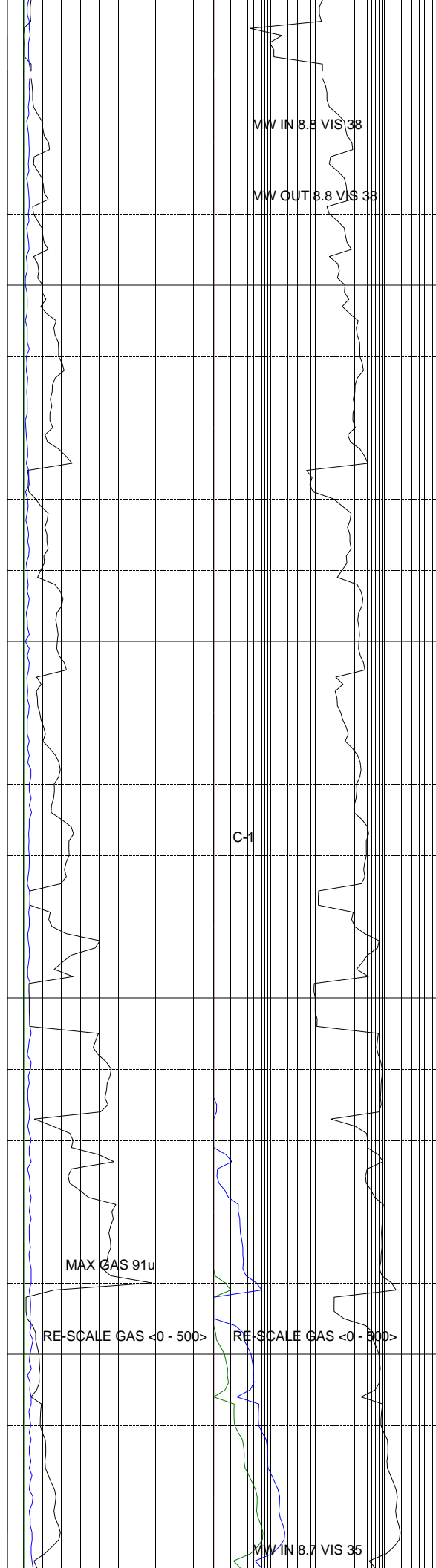
	ALTERED ZONE		CHERT - GLASSY		FELSIC SILIC DIKE		MARL - CALC		SANDSTONE
	ANDESITE		CHERT - PORCEL		FOSSIL		METAMORPHICS		SANDSTONE-TUFFACEOUS
	ANHYDRITE		CHERT - TIGER STRIPE		GABBRO		MUDSTONE		SERICITIZATION
	BASALT		CHERT - UNDIFF		GLASSY TUFF		OBSIDIAN		SERPENTINE
	BENTONITE		CLAY		GRANITE		PALEOSOL		SHALE
	BIOTITIZATION		CLAY-MUDSTONE		GRANITE WASH		PHOSPHATE		SHALE TUFFACEOUS
	BRECCIA		CLYST-TUFFACEOUS		GRANODIORITE		PORCELANITE		SHELL FRAGMENTS
	CALCARENITE		CHLORITIZATION		GYPSUM		PORCELANEOUS CLYST		SIDERITE
	CALCAREOUS TUFF		COAL		HALITE		PYRITE		SILICIFICATION
	CALCILUTITE		CONGLOMERATE		HORNBL-QTZ-DIO		PYROCLASTICS		SILTSTONE
	CARBONATES		CONGL. SAND		IGNEOUS (ACIDIC)		QUARTZ DIORITE		SILTST-TUFFACEOUS
	CARBONACEOUS MAT		CONGL. SANDSTONE		IGNEOUS (BASIC)		QUARTZ LATITE		TUFF
	CARBONACEOUS SH		COQUINA		INTRUSIVES		QUARTZ MONZONITE		VOLCANICLASTICS SEDS
	CEMENT CONTAM.		DACITE		KAOLINITIC		RECRYSTALLIZED CALCITE		VOLCANICS
	CHALK		DIATOMITE		LIMESTONE		RHYOLITE		
	CRYSTALLINE TUFF		DIORITE		LITHIC TUFF		SALT		
	CHERT - ARGILL		DOLOSTONE		MARL - DOLO		SAND		

ExxonMobil Production										FRU 197-28A5										8/30/2010																													
<div>&lt;300</div> <div>ROP</div> <div>0&gt;</div>					Depth					Lithology					MGS					<div>&lt;0</div> <div>Ttl Gas</div> <div>4K&gt;</div>					<div>&lt;10</div> <div>Meth C-1</div> <div>100K&gt;</div>					Interp. Lith					Remarks														
<div>ft/hr</div>																				<div>&lt;10</div> <div>Ethn C-2</div> <div>100K&gt;</div>										Survey Data, Mud Reports, Other Info.																			
<div>&lt;50</div> <div>Avg WOB</div> <div>0&gt;</div>																				<div>&lt;10</div> <div>CO2</div> <div>10K&gt;</div>					<div>&lt;10</div> <div>Prop C-3</div> <div>100K&gt;</div>																								
<div>klbs</div>																				<div>&lt;10</div> <div>Butn C-4</div> <div>100K&gt;</div>																													
																				<div>&lt;10</div> <div>Flare Ht.</div> <div>100&gt;</div>					<div>&lt;10</div> <div>Pent C-5</div> <div>100K&gt;</div>																								



300

400



MW IN 8.8 VIS 38

MW OUT 8.8 VIS 38

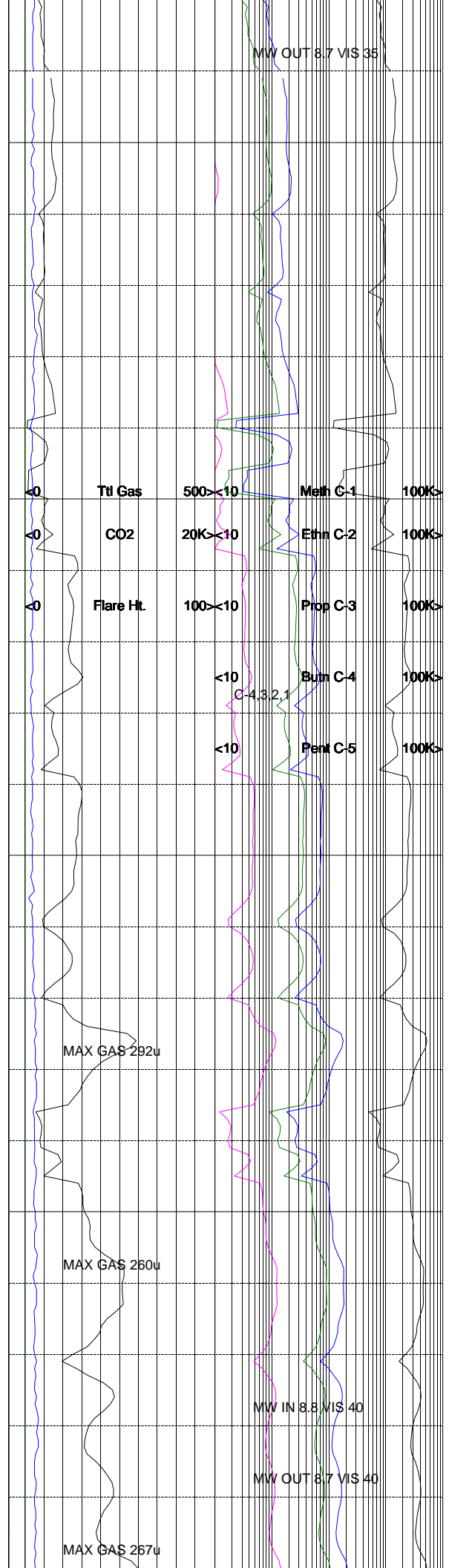
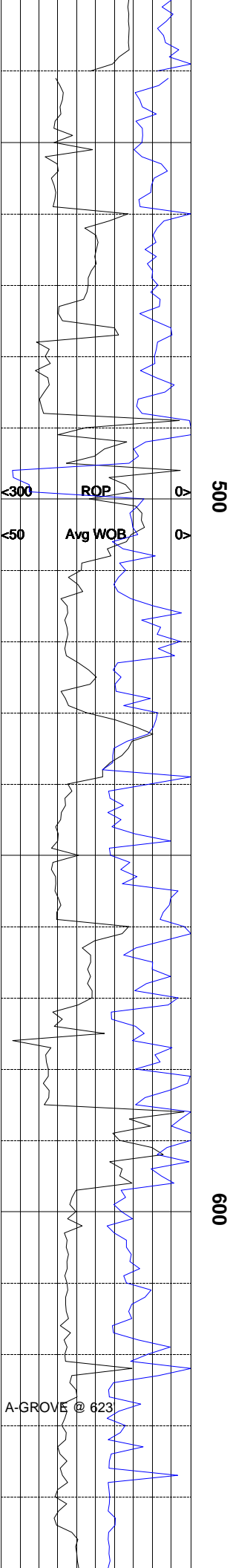
C-1

MAX GAS 91u

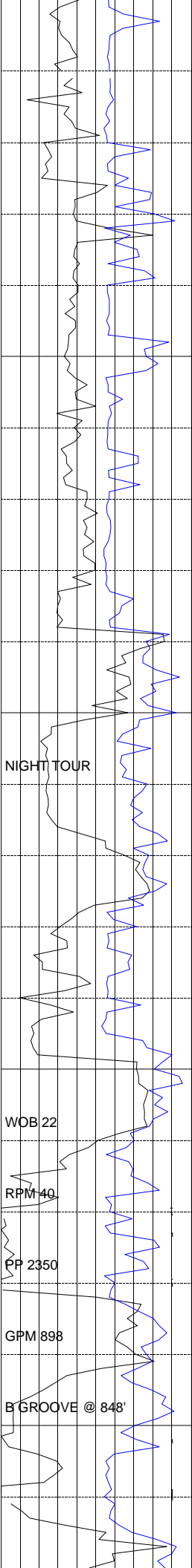
RE-SCALE GAS <0 - 500>

RE-SCALE GAS <0 - 500>

MW IN 8.7 VIS 35

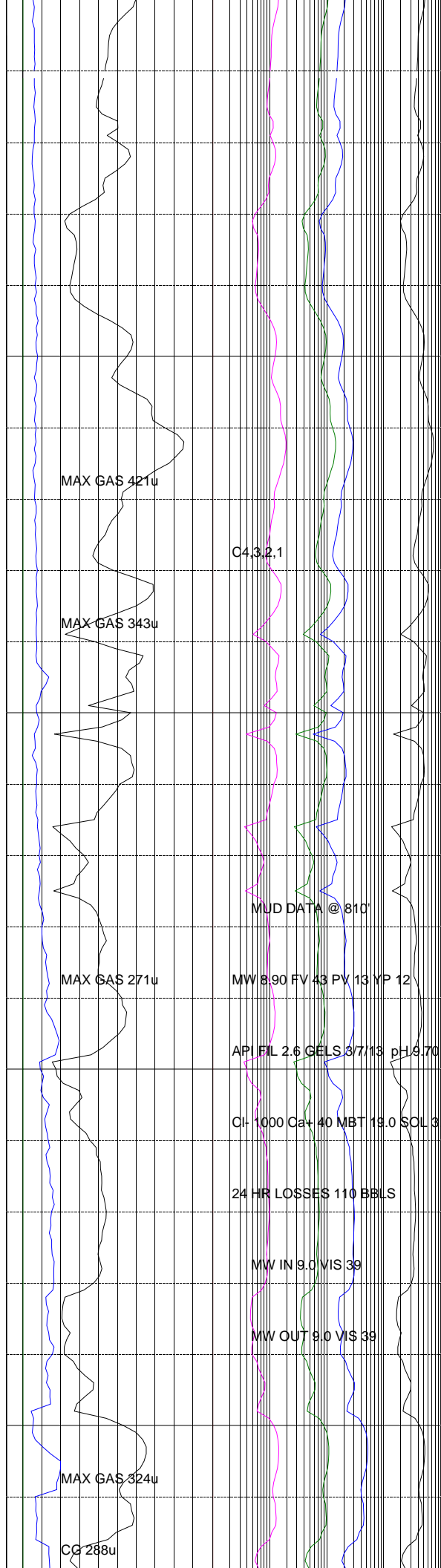


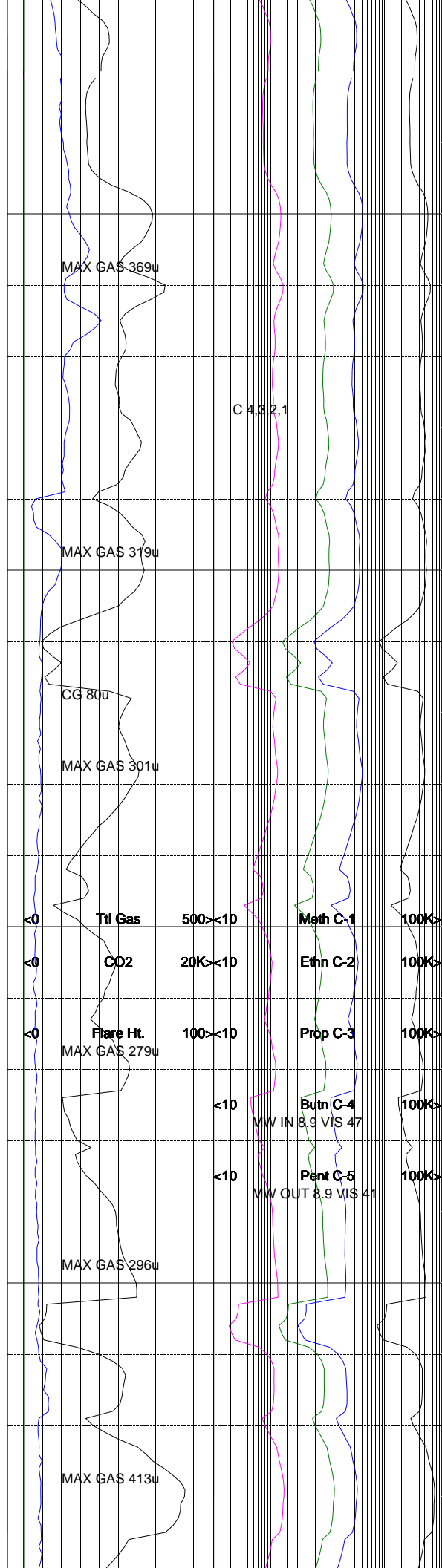
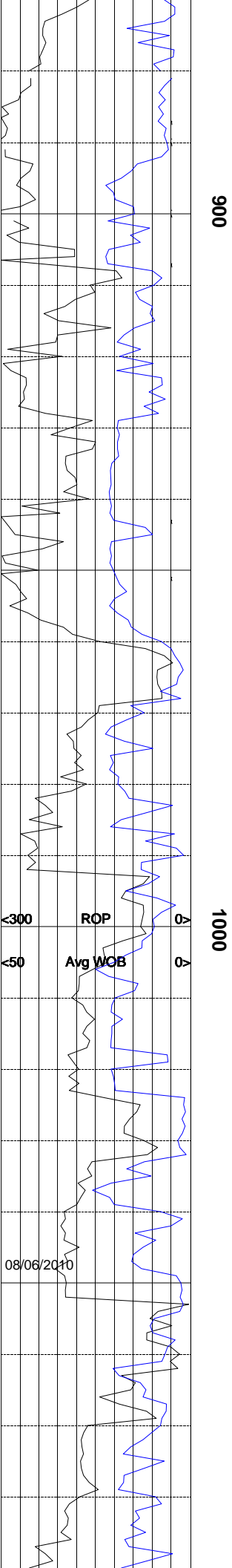




700

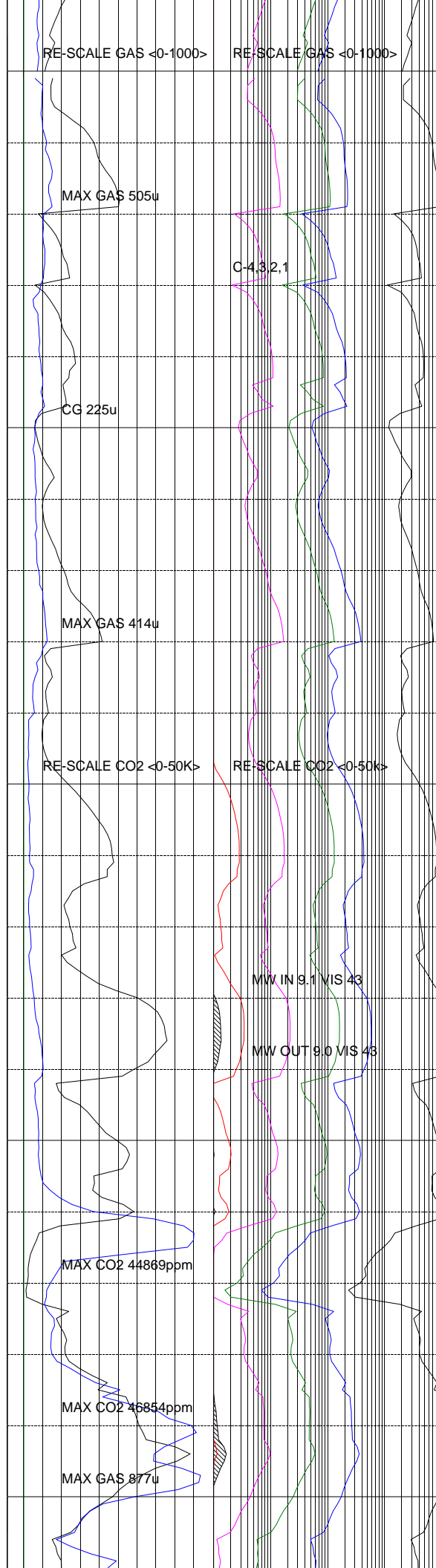
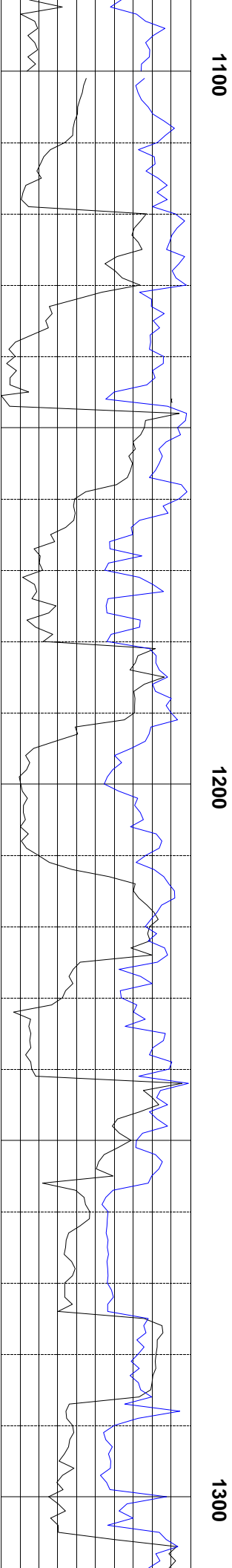
800

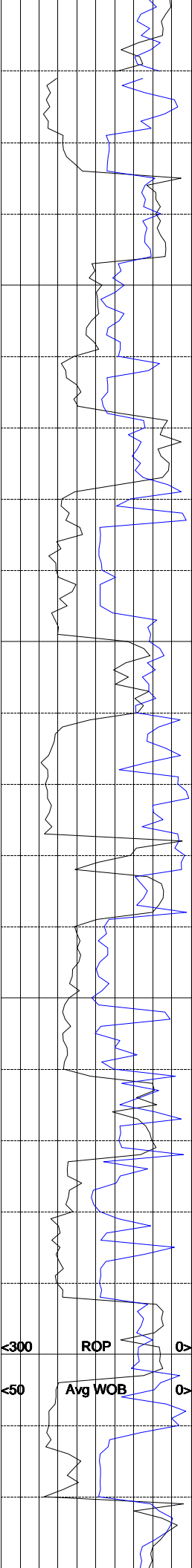




PUMPS DOWN @962' , 1 1/2 HOURS

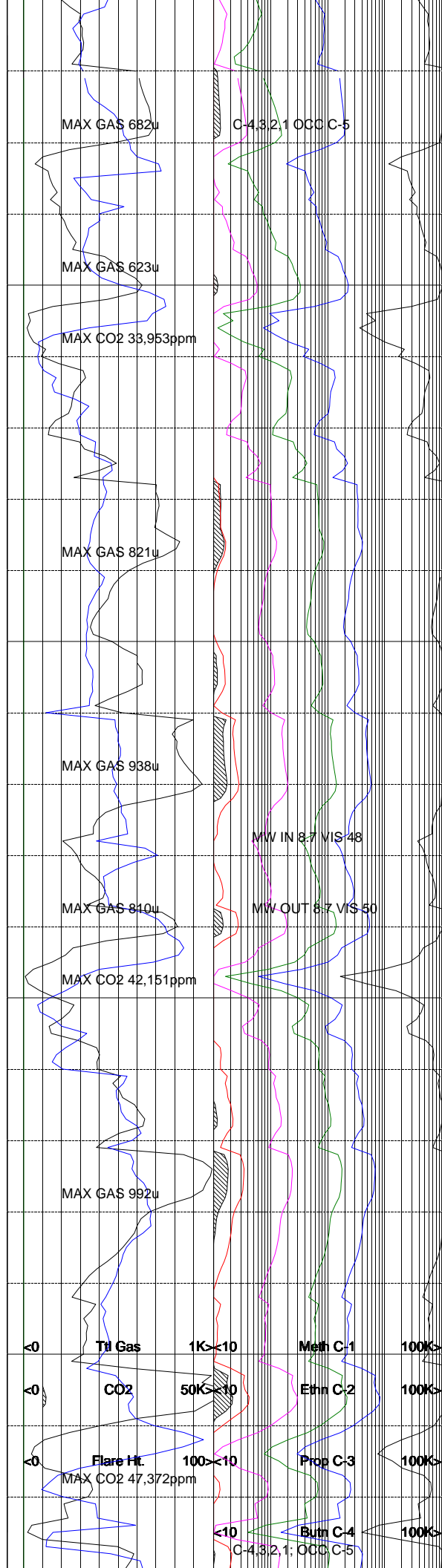
PUMP # 2 DOWN @1052' , ONE HOUR

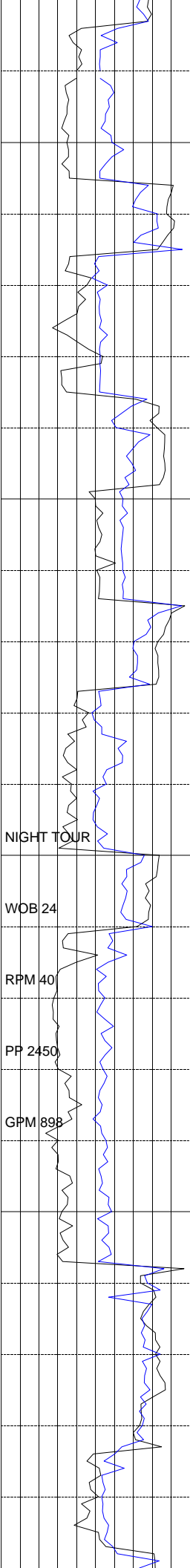




1400

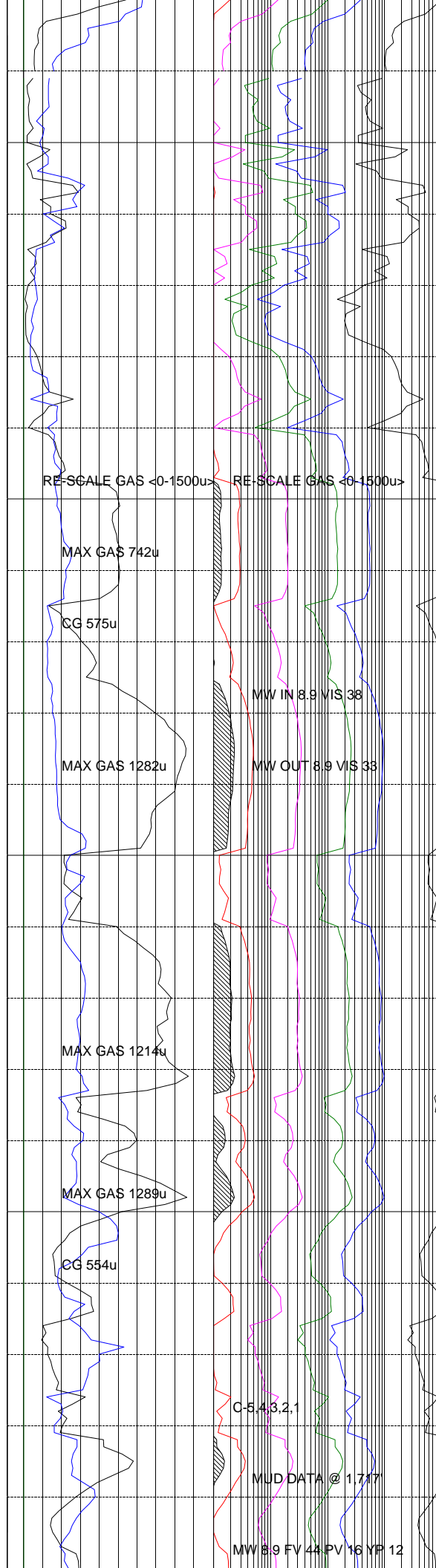
1500

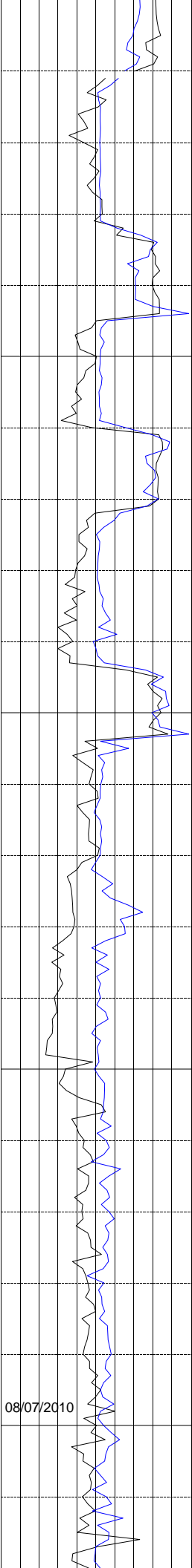




1600

1700

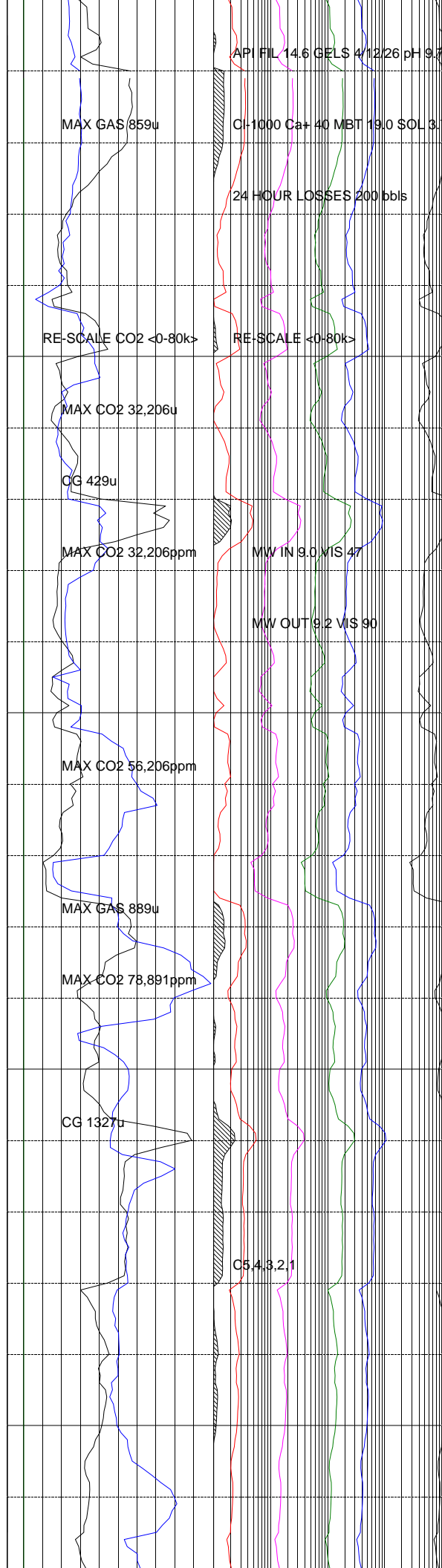


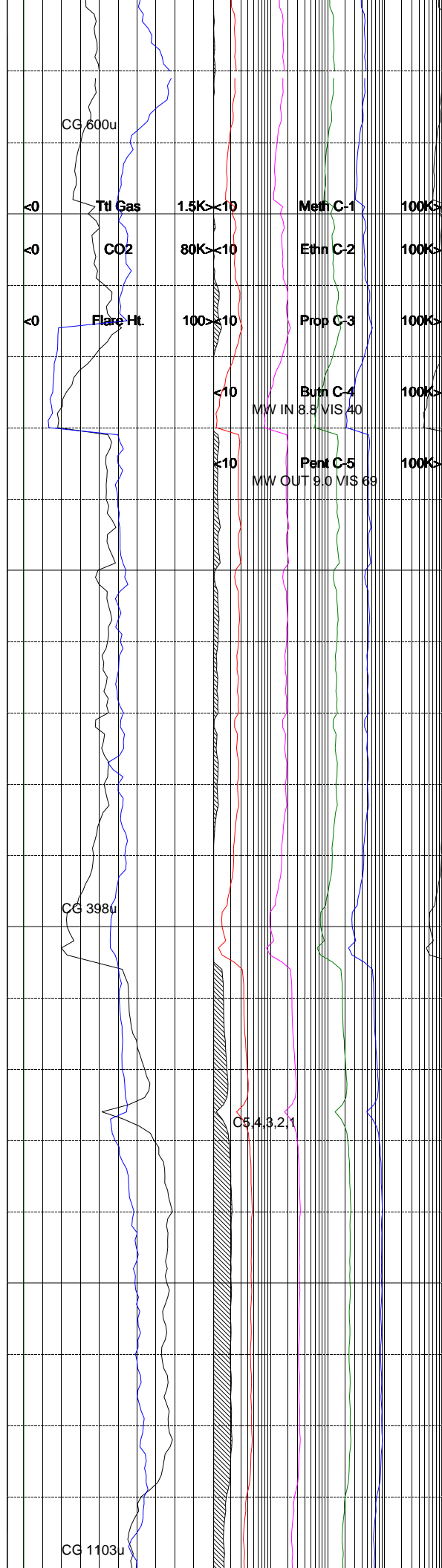
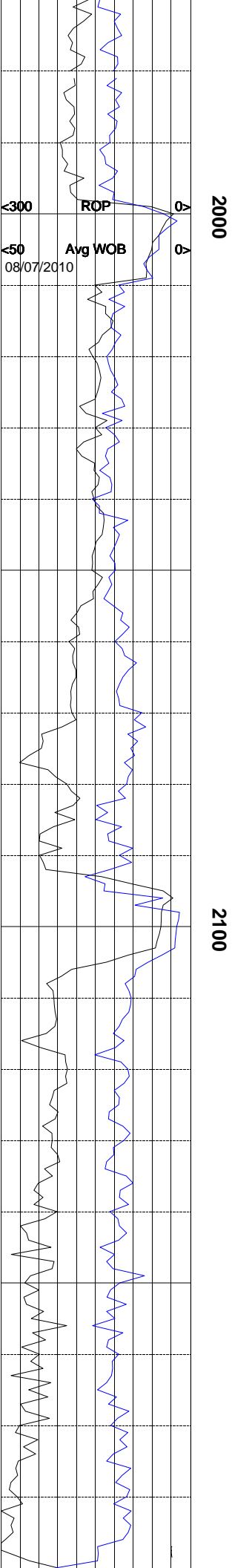


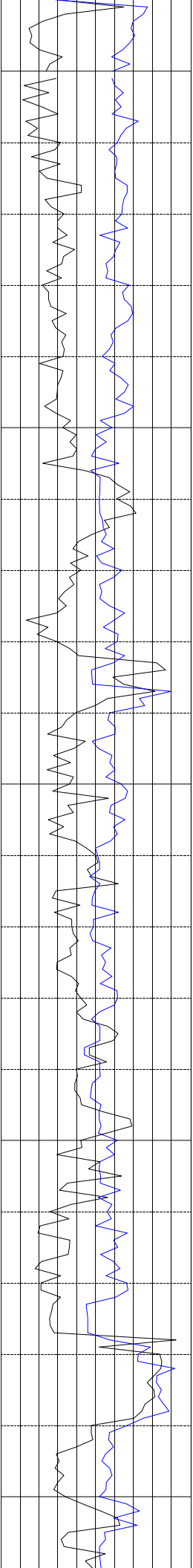
1800

1900

08/07/2010



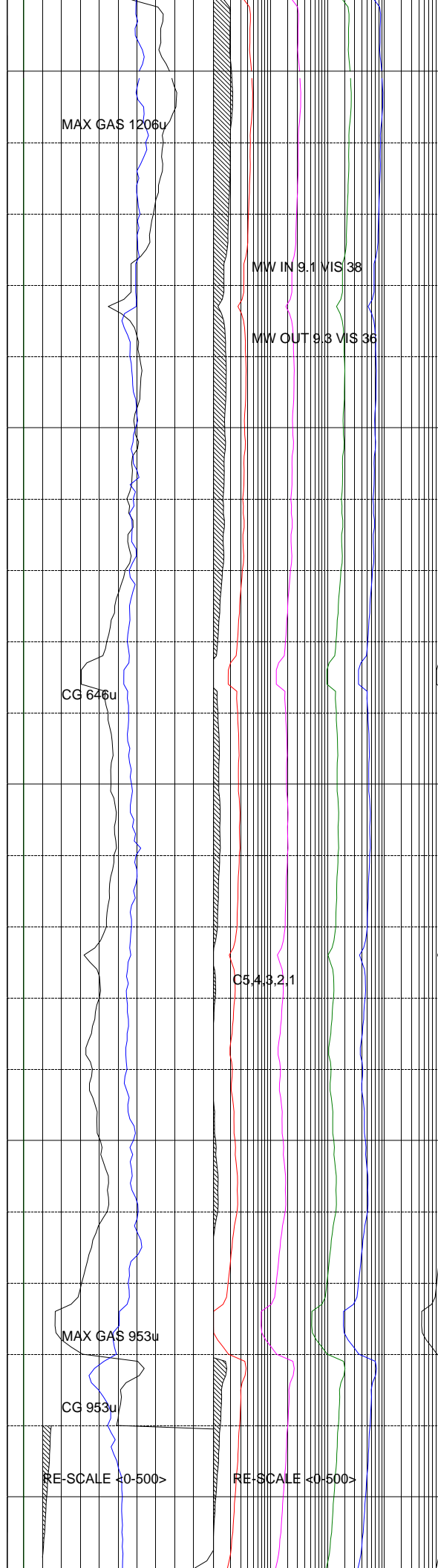




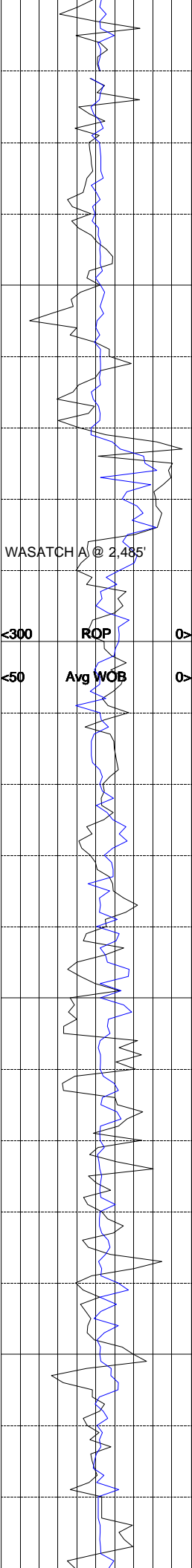
2200

2300

2400

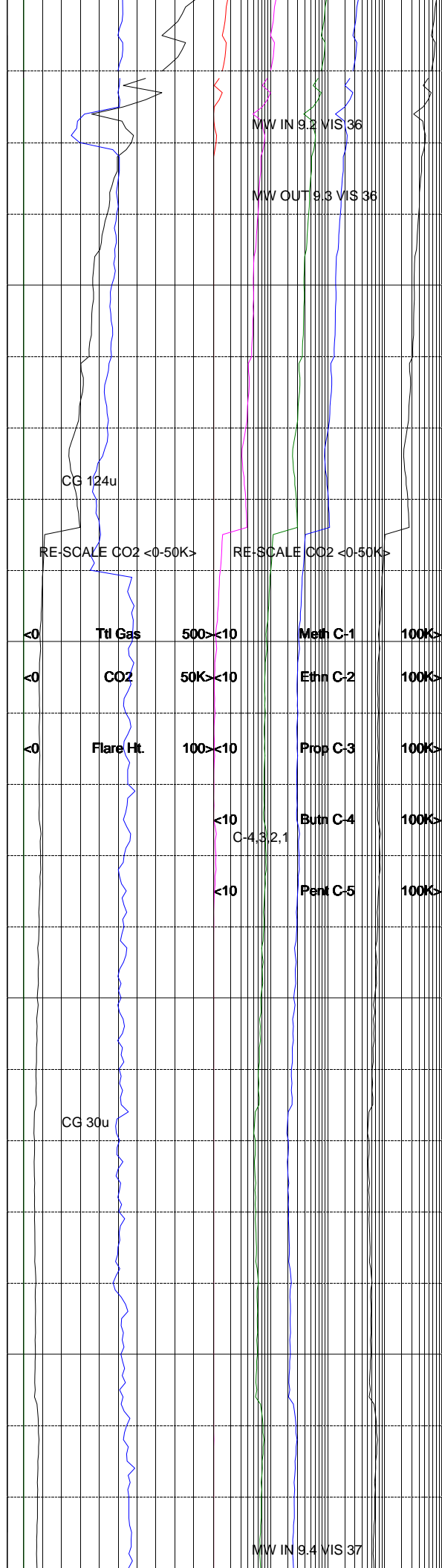


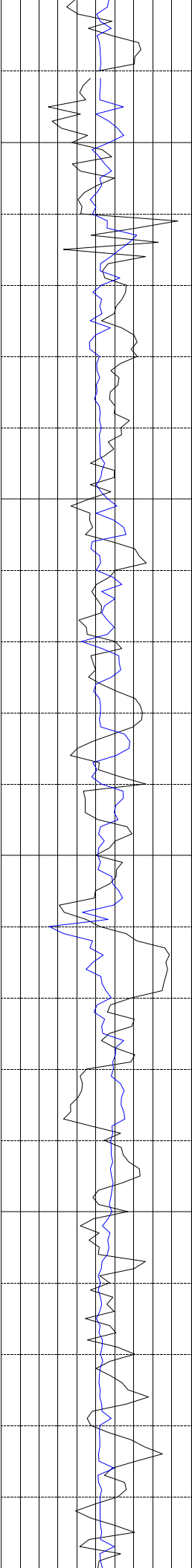




2500

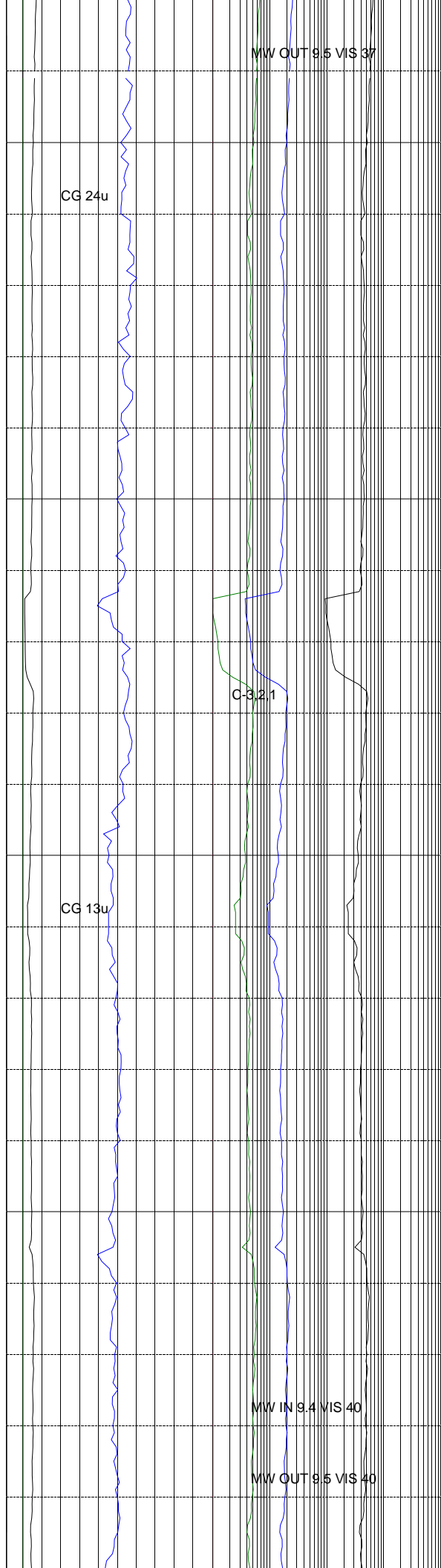
2600





2700

2800



MW OUT 9.5 VIS 37

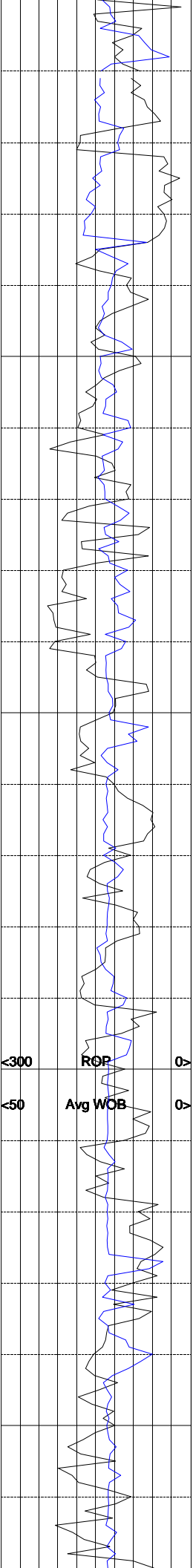
CG 24u

C-3,2,1

CG 13u

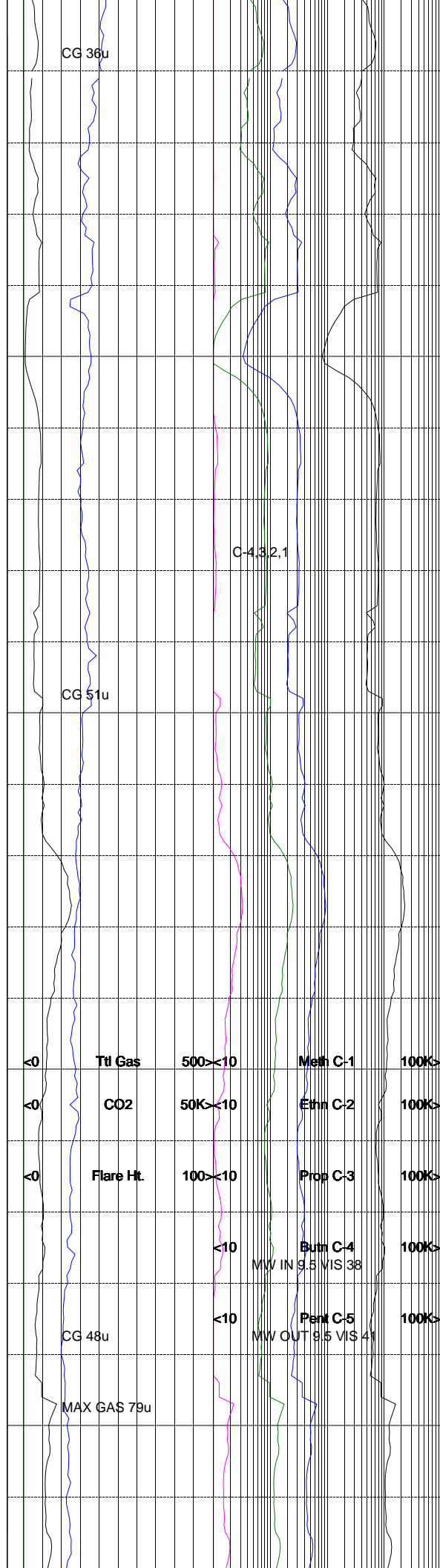
MW IN 9.4 VIS 40

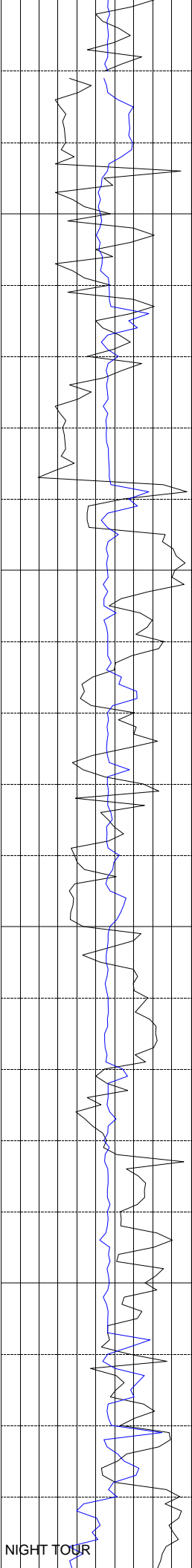
MW OUT 9.5 VIS 40



2900

3000

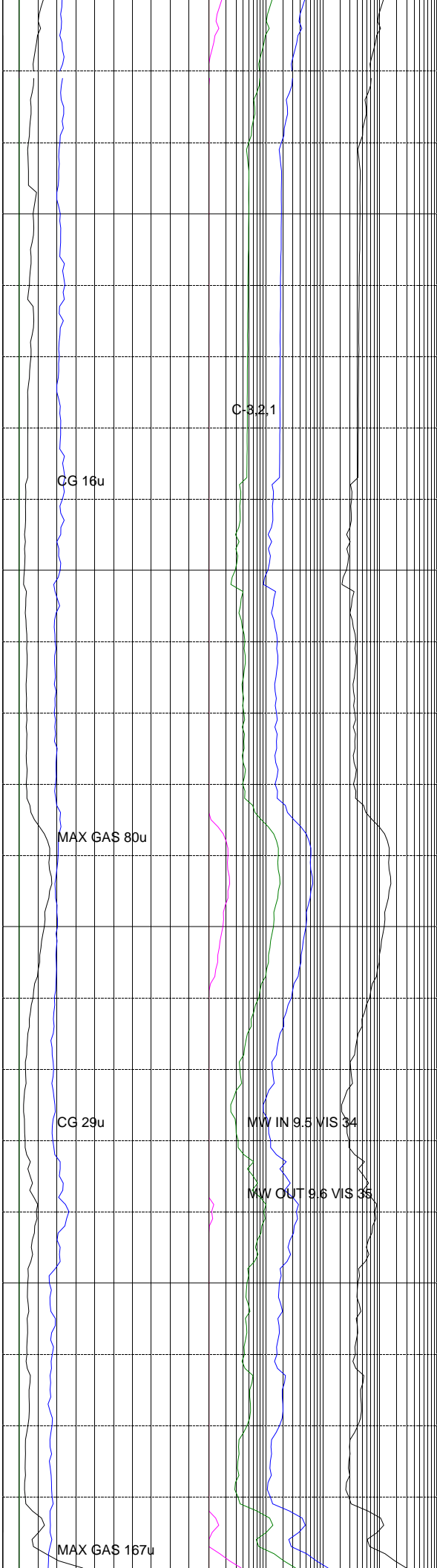




3100

3200

NIGHT TOUR



CG 16u

C-3.2.1

MAX GAS 80u

CG 29u

MW IN 8.5 VIS 34

MW OUT 9.6 VIS 35

MAX GAS 167u

GSA ROCK COLOR CHART, ROCK CONSTITUENTS

ARE DESCRIBED WET AND LISTED IN ORDER OF

MOST ABUNDANT TO LEAST ABUNDANT. ALL

SAMPLE DEPTHS ARE REFERENCED TO RKB.

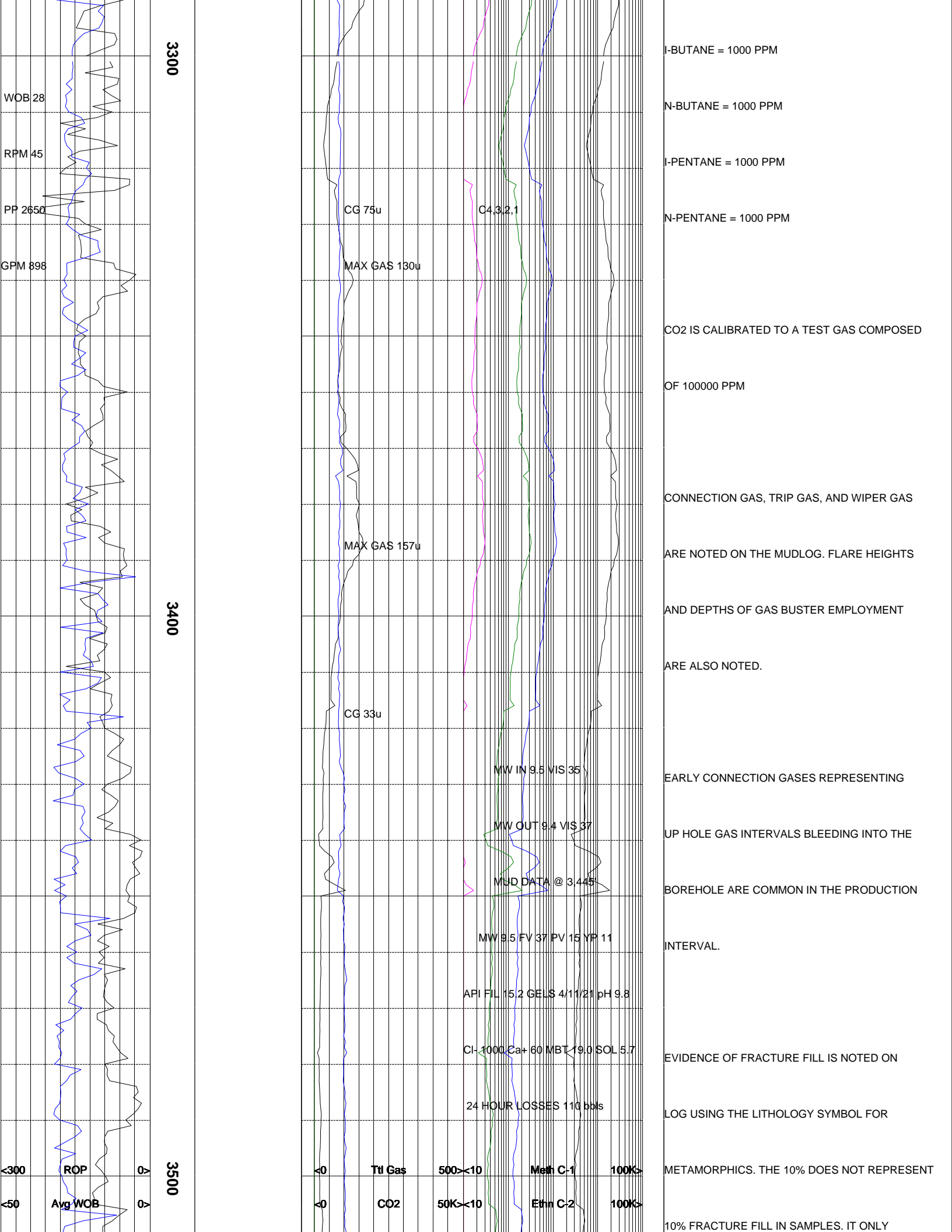
GAS CHROMATOGRAPHY EQUIPMENT IS

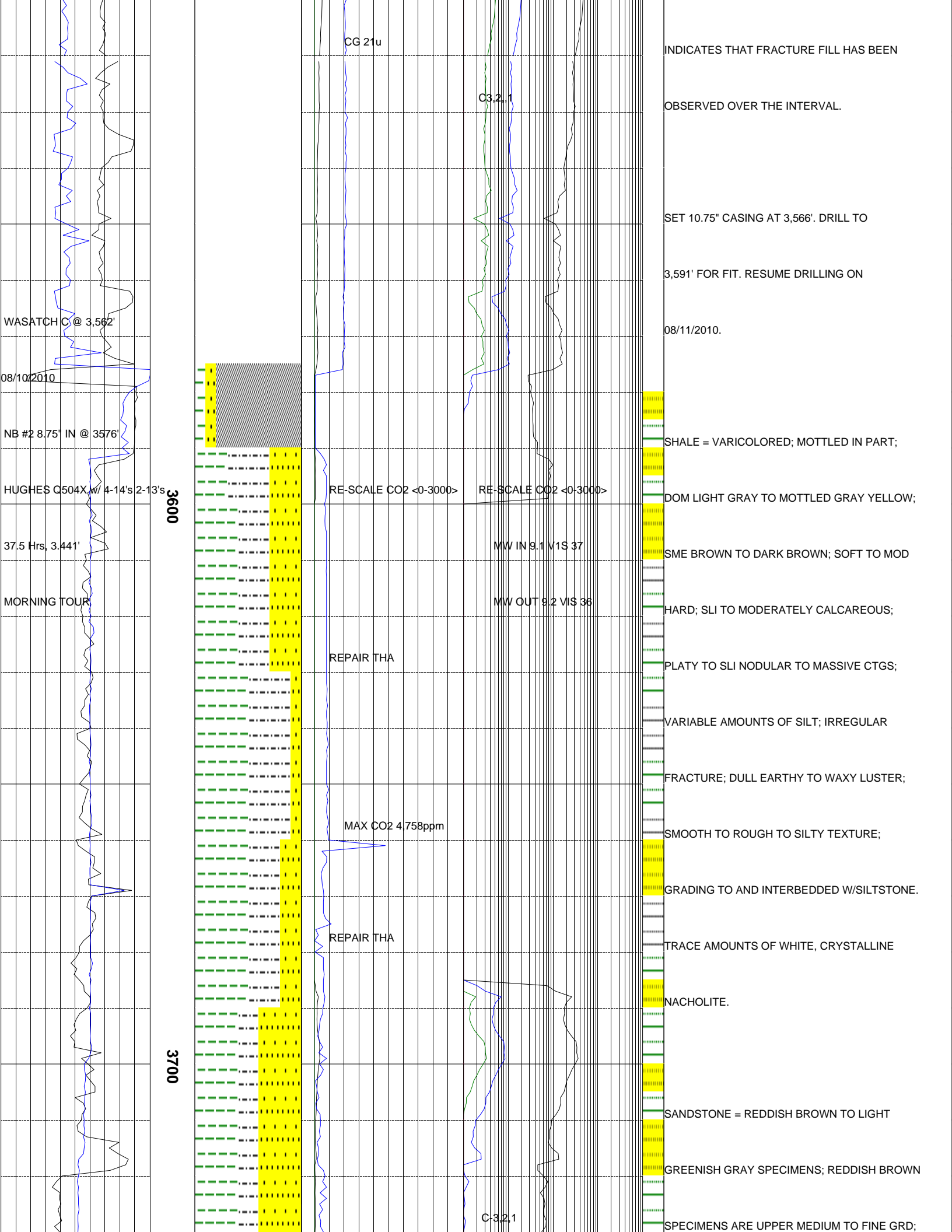
CALIBRATED TO A TEST GAS COMPOSED OF

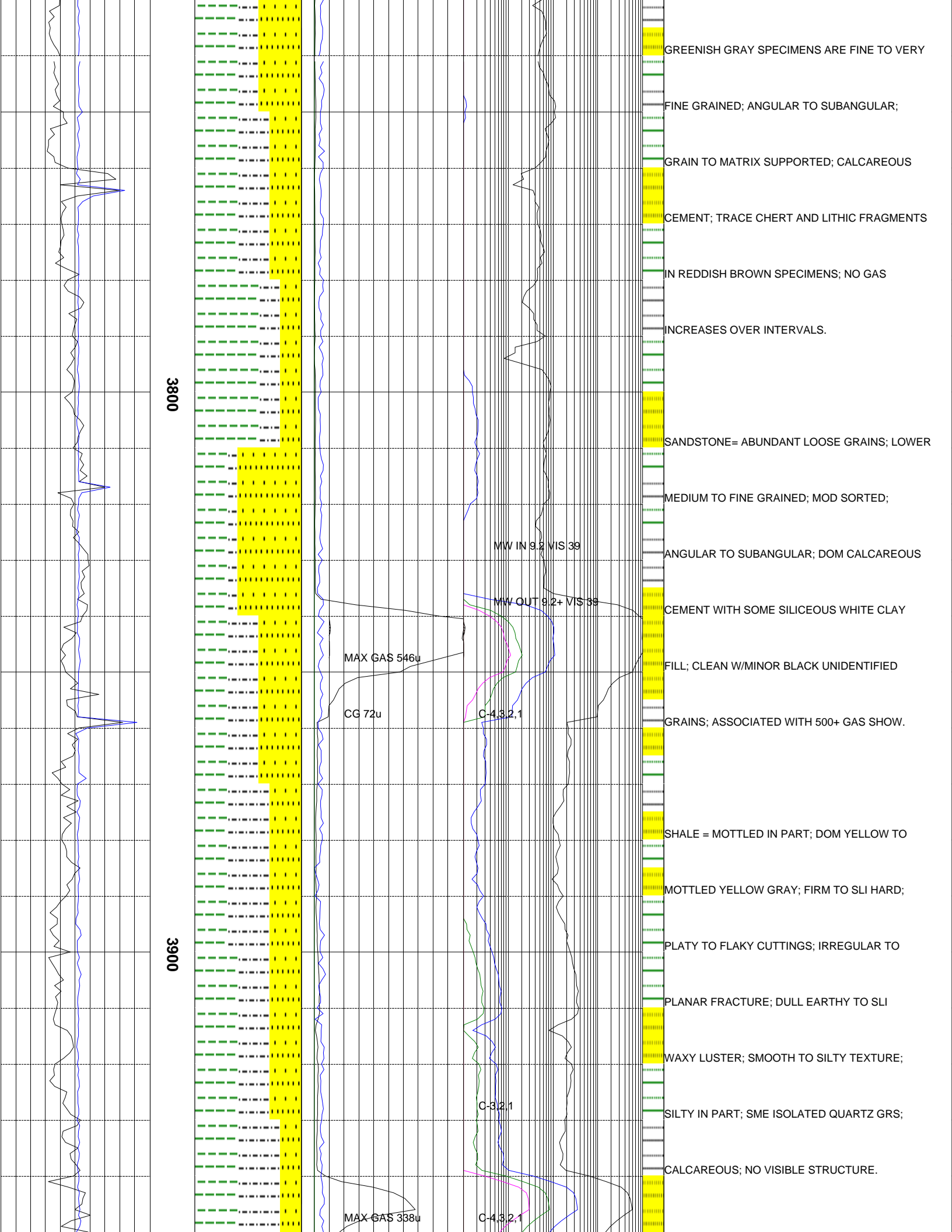
METHANE = 10000 PPM

ETHANE = 1000 PPM

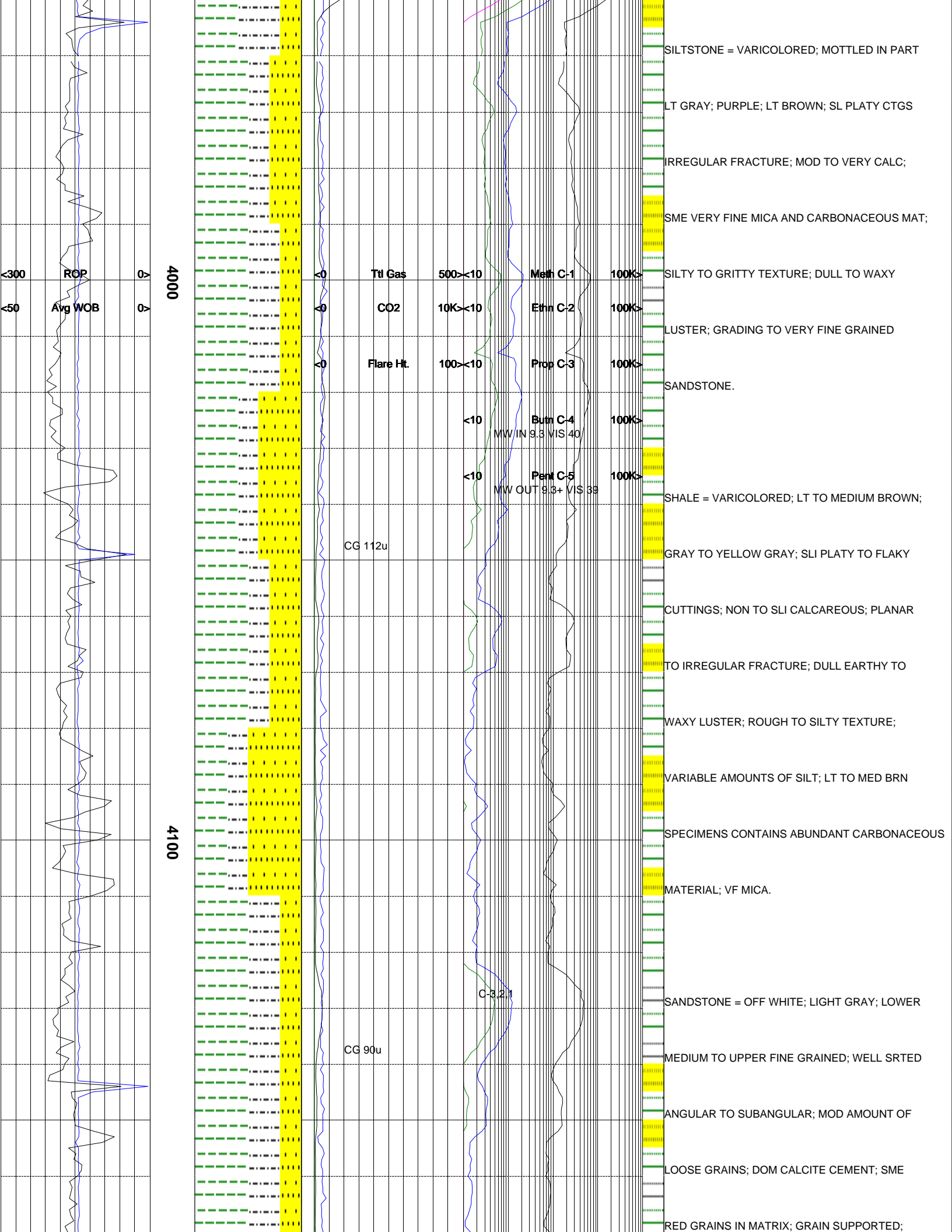
PROPANE = 1000 PPM



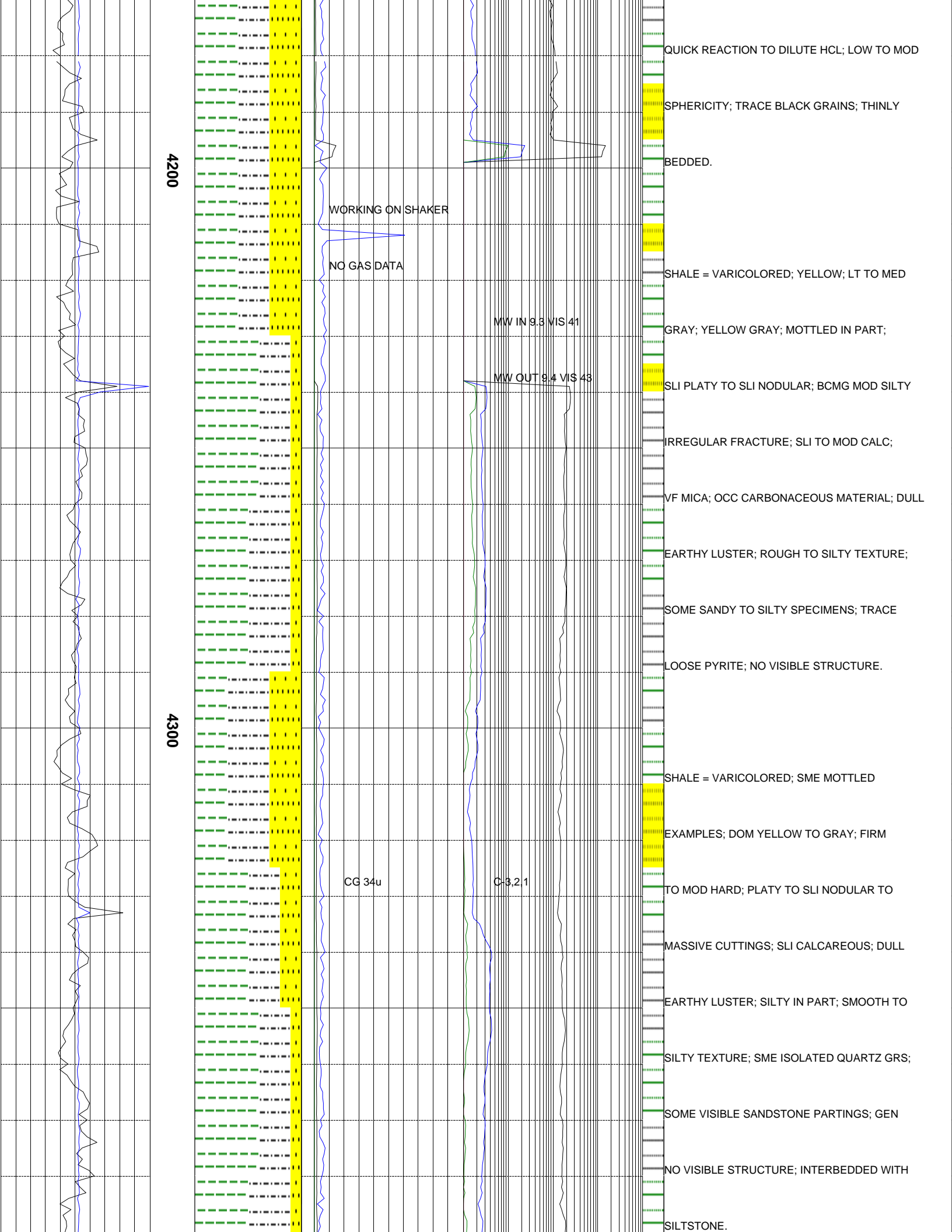




GREENISH GRAY SPECIMENS ARE FINE TO VERY  
FINE GRAINED; ANGULAR TO SUBANGULAR;  
GRAIN TO MATRIX SUPPORTED; CALCAREOUS  
CEMENT; TRACE CHERT AND LITHIC FRAGMENTS  
IN REDDISH BROWN SPECIMENS; NO GAS  
INCREASES OVER INTERVALS.  
SANDSTONE= ABUNDANT LOOSE GRAINS; LOWER  
MEDIUM TO FINE GRAINED; MOD SORTED;  
ANGULAR TO SUBANGULAR; DOM CALCAREOUS  
CEMENT WITH SOME SILICEOUS WHITE CLAY  
FILL; CLEAN W/MINOR BLACK UNIDENTIFIED  
GRAINS; ASSOCIATED WITH 500+ GAS SHOW.  
SHALE = MOTTLED IN PART; DOM YELLOW TO  
MOTTLED YELLOW GRAY; FIRM TO SLI HARD;  
PLATY TO FLAKY CUTTINGS; IRREGULAR TO  
PLANAR FRACTURE; DULL EARTHY TO SLI  
WAXY LUSTER; SMOOTH TO SILTY TEXTURE;  
SILTY IN PART; SME ISOLATED QUARTZ GRS;  
CALCAREOUS; NO VISIBLE STRUCTURE.







4200

4300

WORKING ON SHAKER

NO GAS DATA

MW IN 8.3 VIS 41

MW OUT 9.4 VIS 43

CG 34u

C-3.2.1

QUICK REACTION TO DILUTE HCL; LOW TO MOD

SPHERICITY; TRACE BLACK GRAINS; THINLY

BEDDED.

SHALE = VARICOLORED; YELLOW; LT TO MED

GRAY; YELLOW GRAY; MOTTLED IN PART;

SLI PLATY TO SLI NODULAR; BCMG MOD SILTY

IRREGULAR FRACTURE; SLI TO MOD CALC;

VF MICA; OCC CARBONACEOUS MATERIAL; DULL

EARTHY LUSTER; ROUGH TO SILTY TEXTURE;

SOME SANDY TO SILTY SPECIMENS; TRACE

LOOSE PYRITE; NO VISIBLE STRUCTURE.

SHALE = VARICOLORED; SME MOTTLED

EXAMPLES; DOM YELLOW TO GRAY; FIRM

TO MOD HARD; PLATY TO SLI NODULAR TO

MASSIVE CUTTINGS; SLI CALCAREOUS; DULL

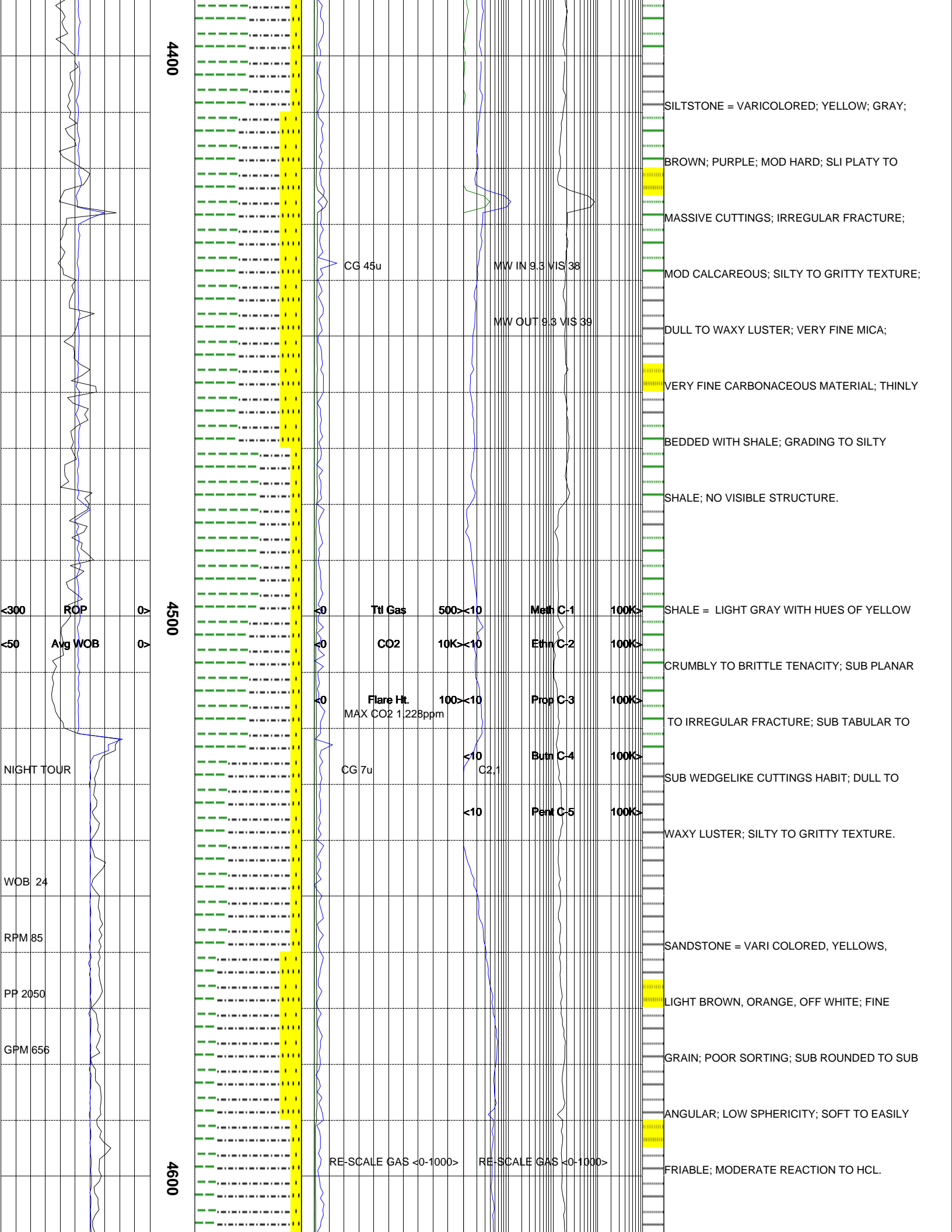
EARTHY LUSTER; SILTY IN PART; SMOOTH TO

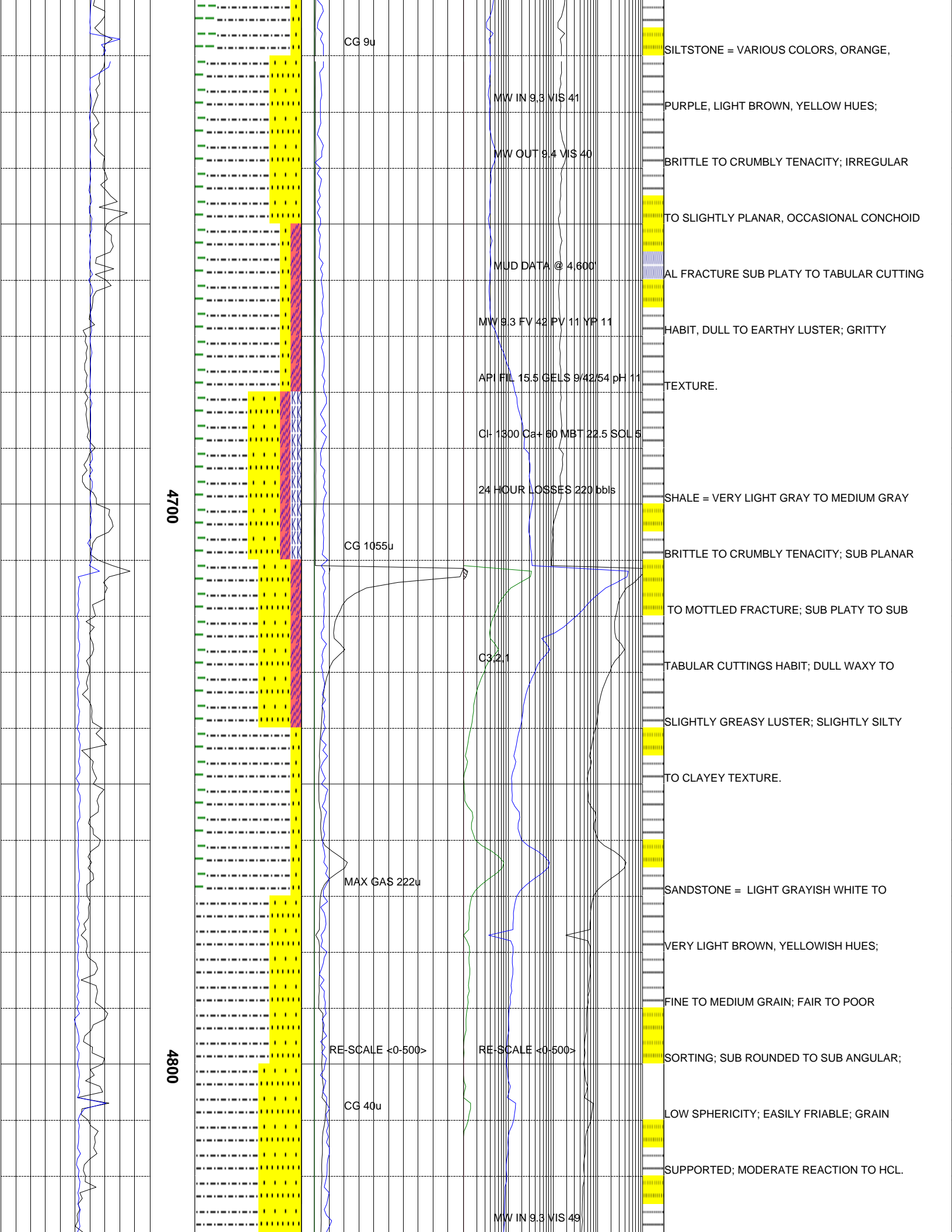
SILTY TEXTURE; SME ISOLATED QUARTZ GRS;

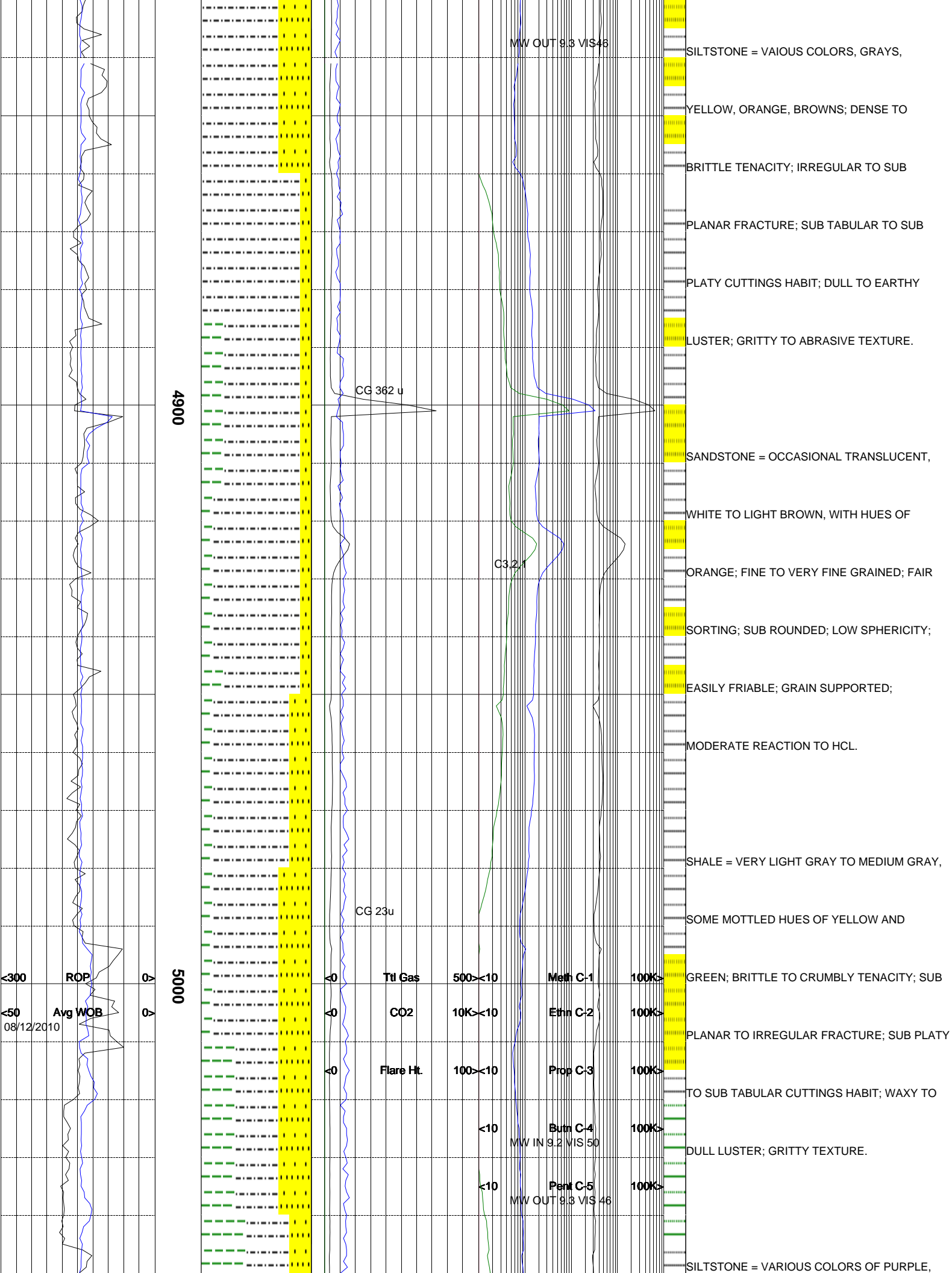
SOME VISIBLE SANDSTONE PARTINGS; GEN

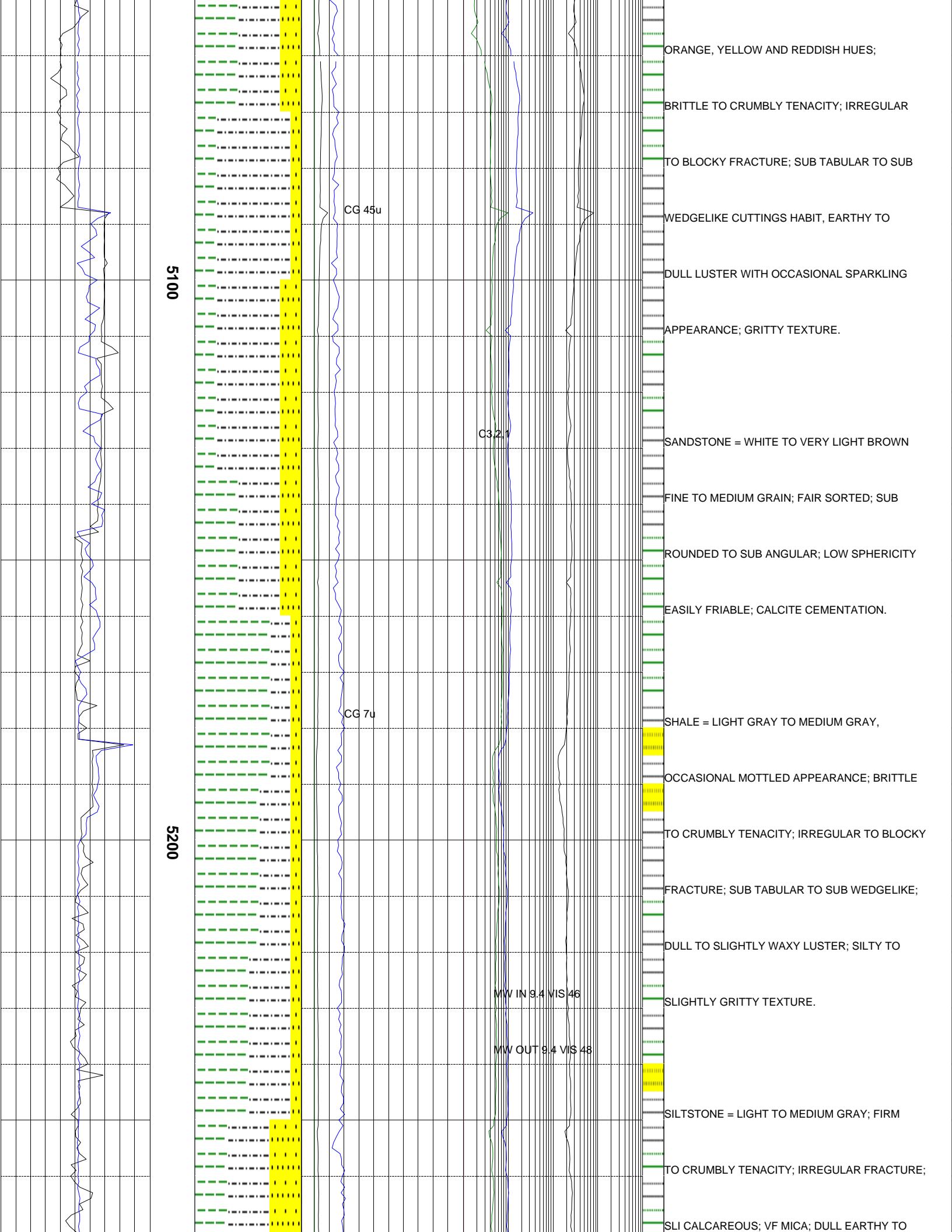
NO VISIBLE STRUCTURE; INTERBEDDED WITH

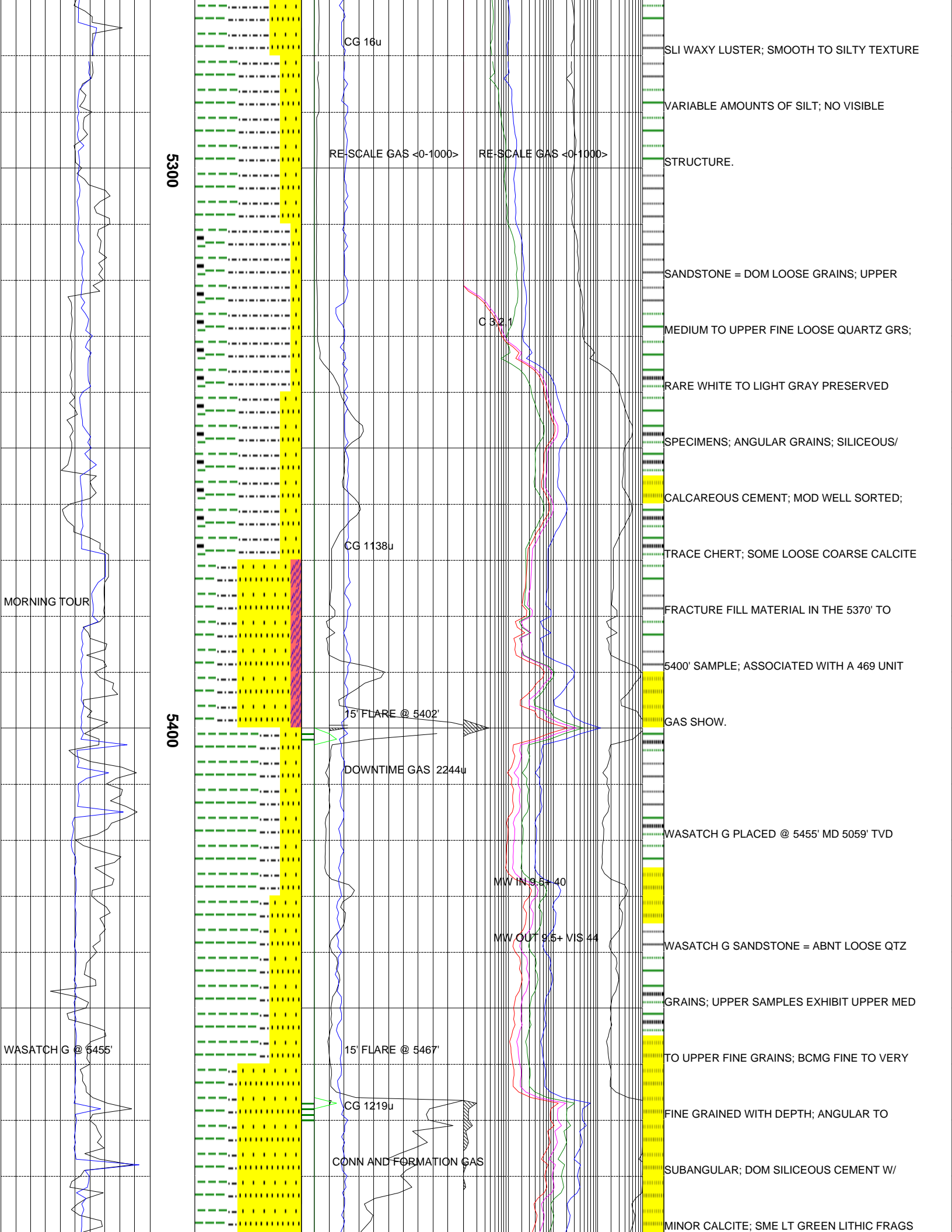
SILTSTONE.

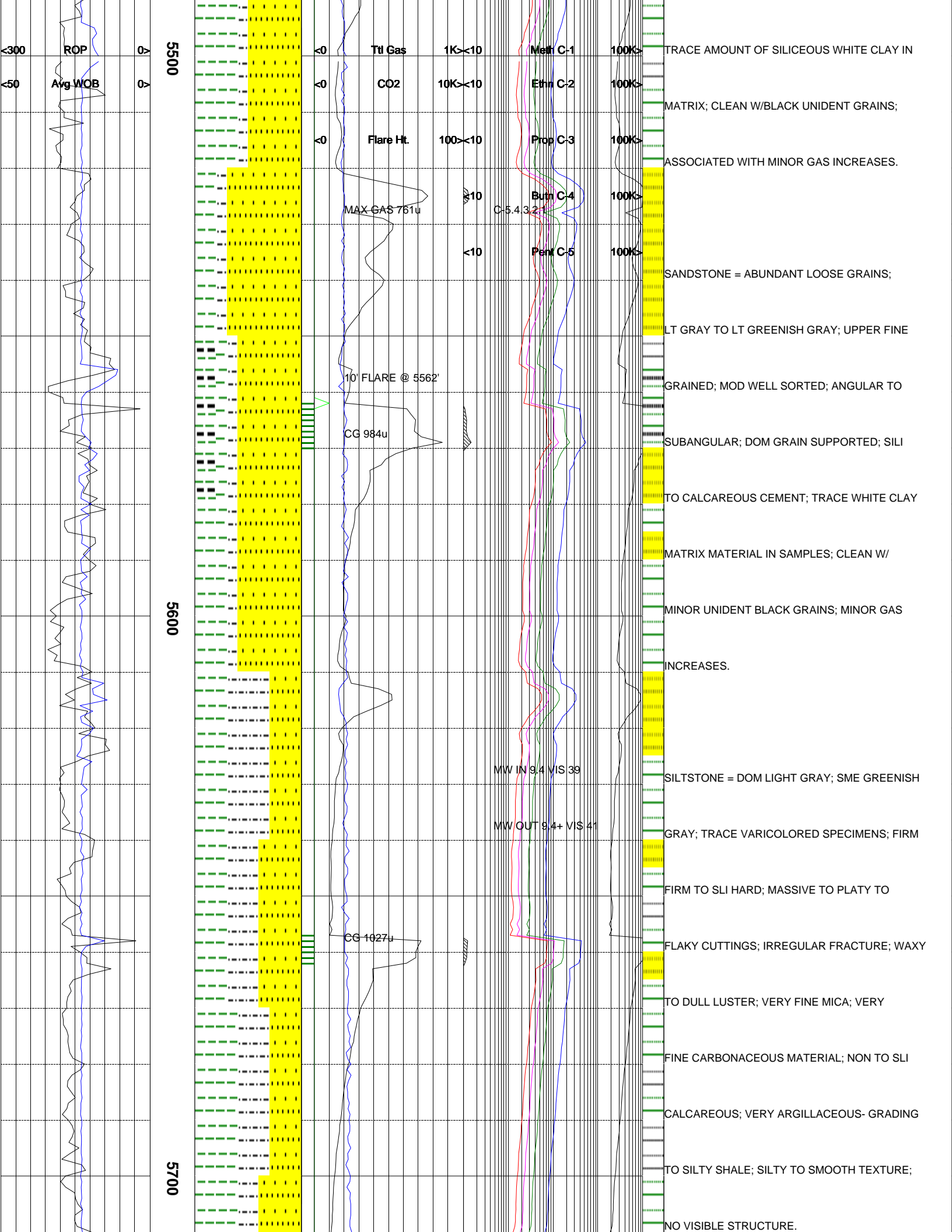


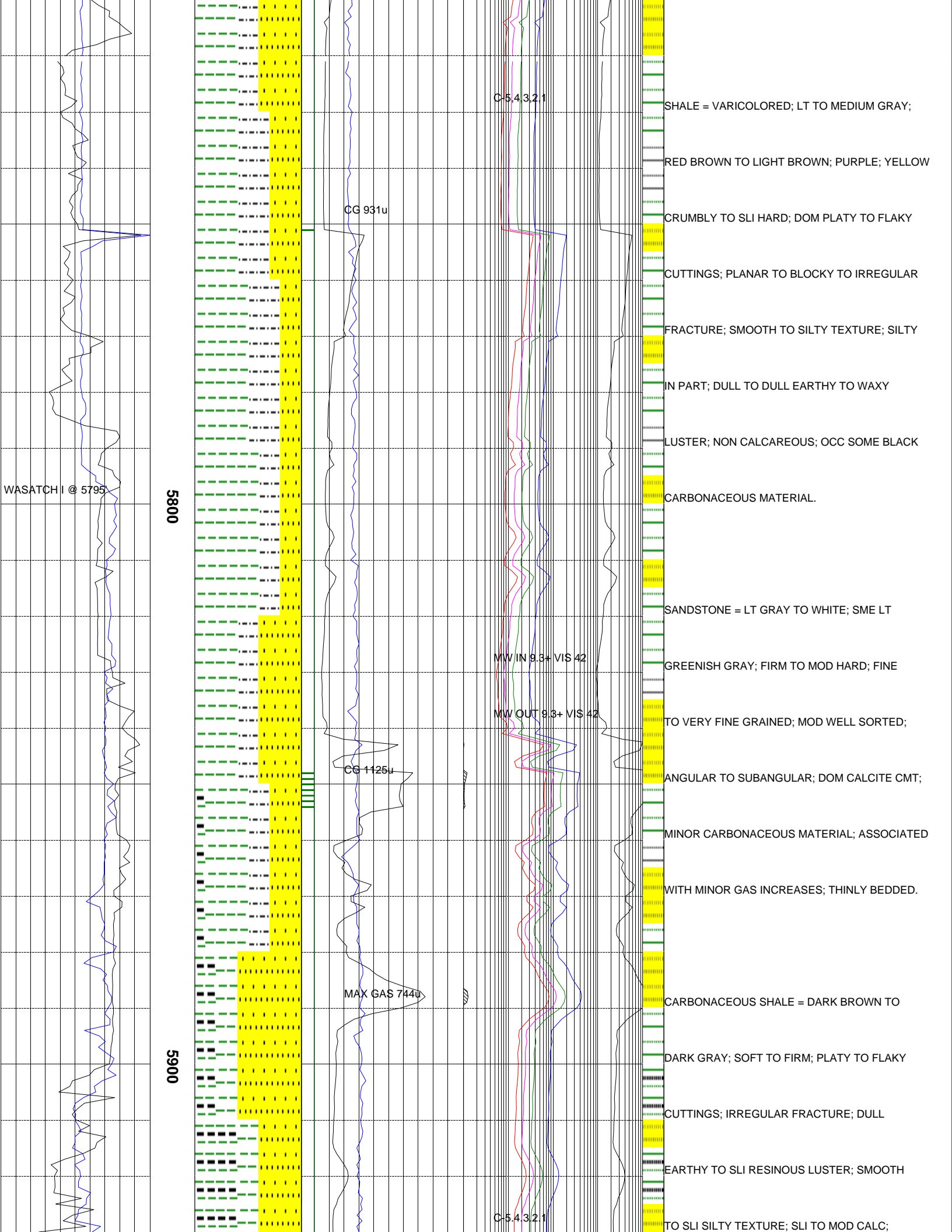




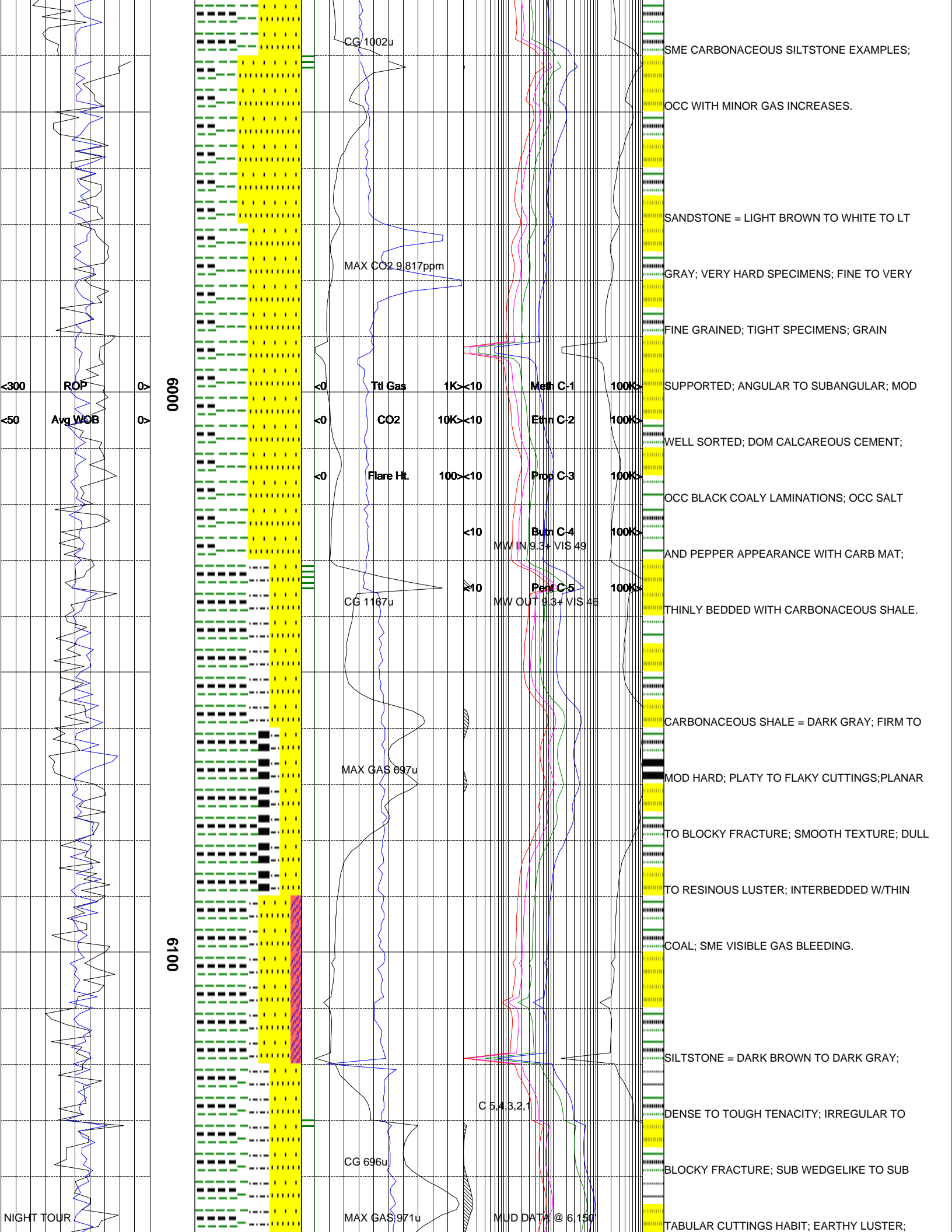


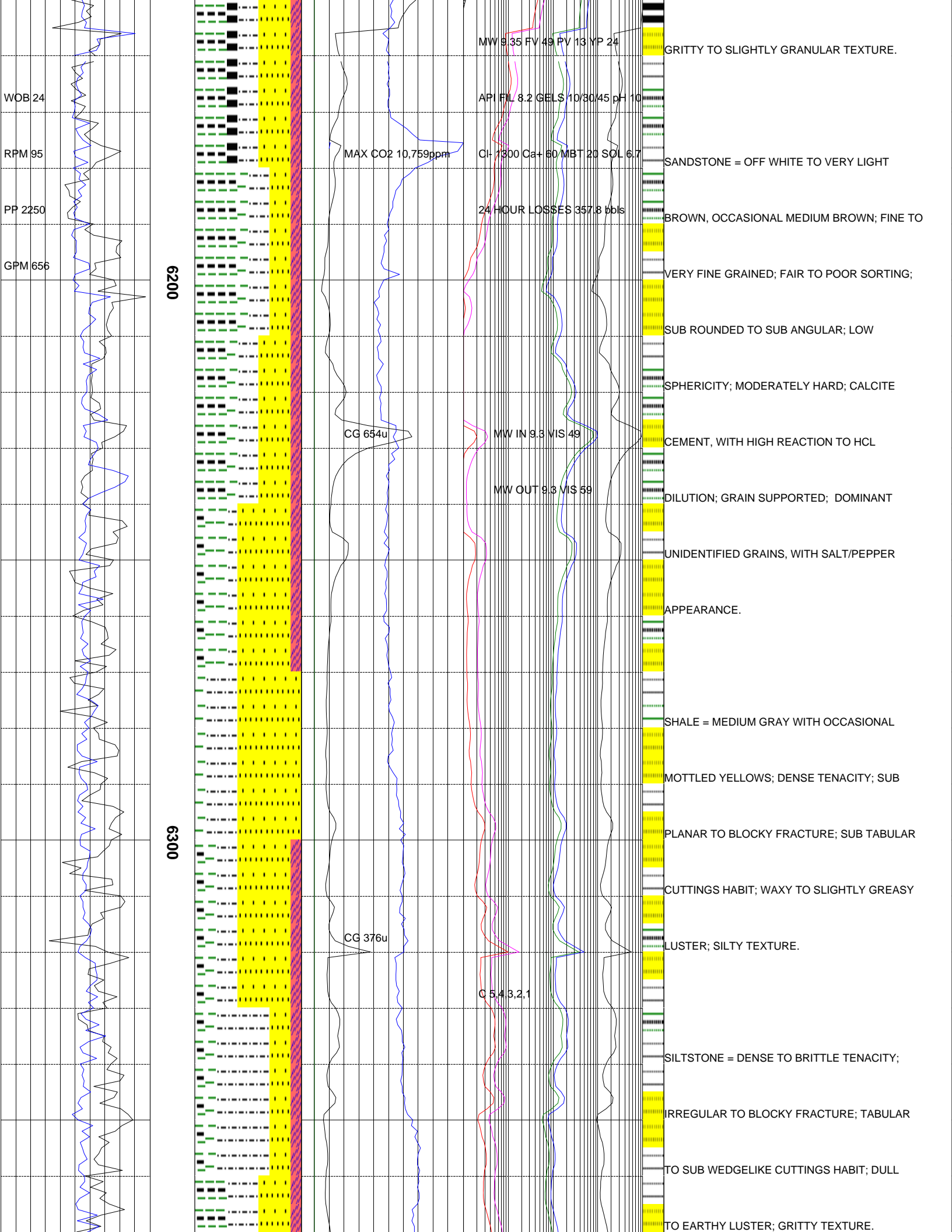


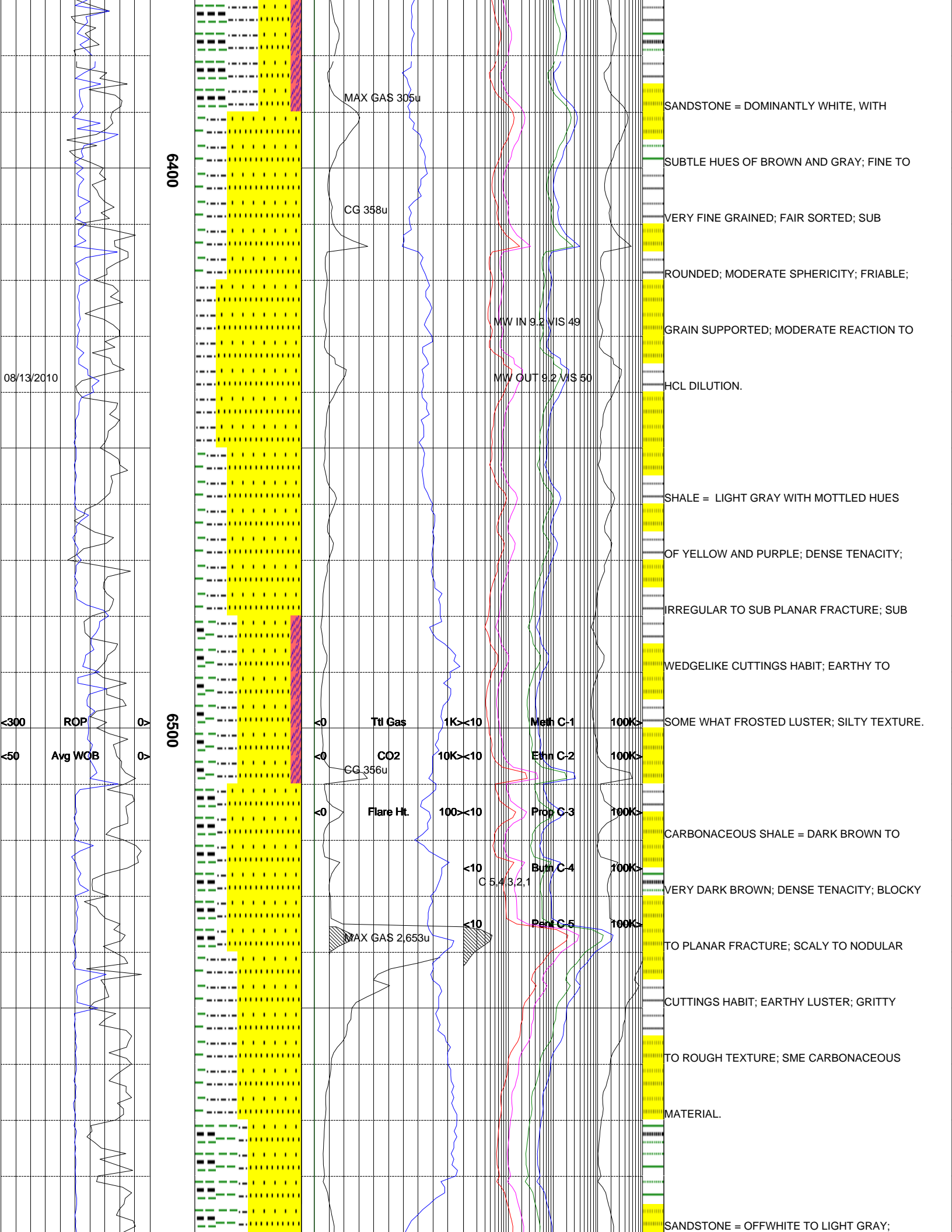


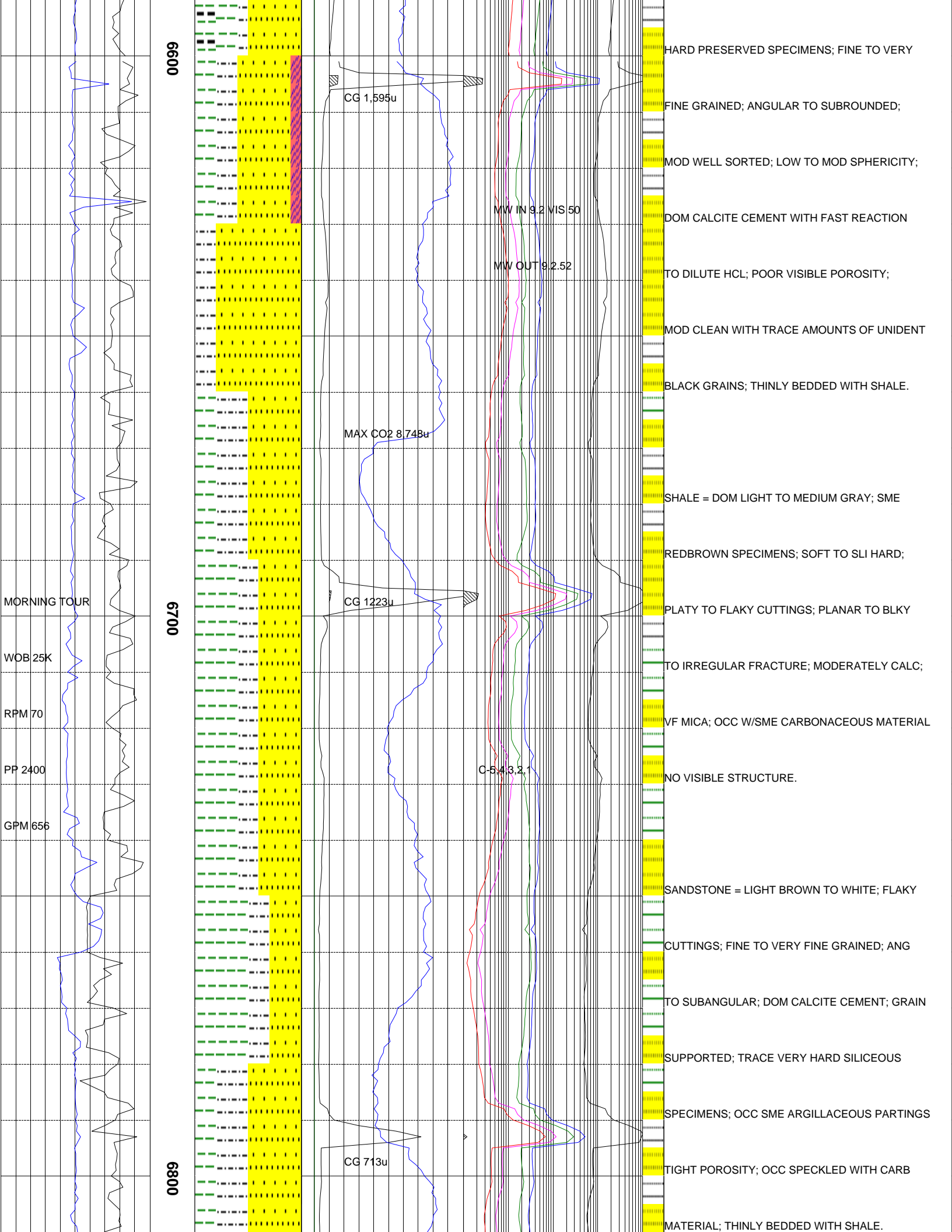


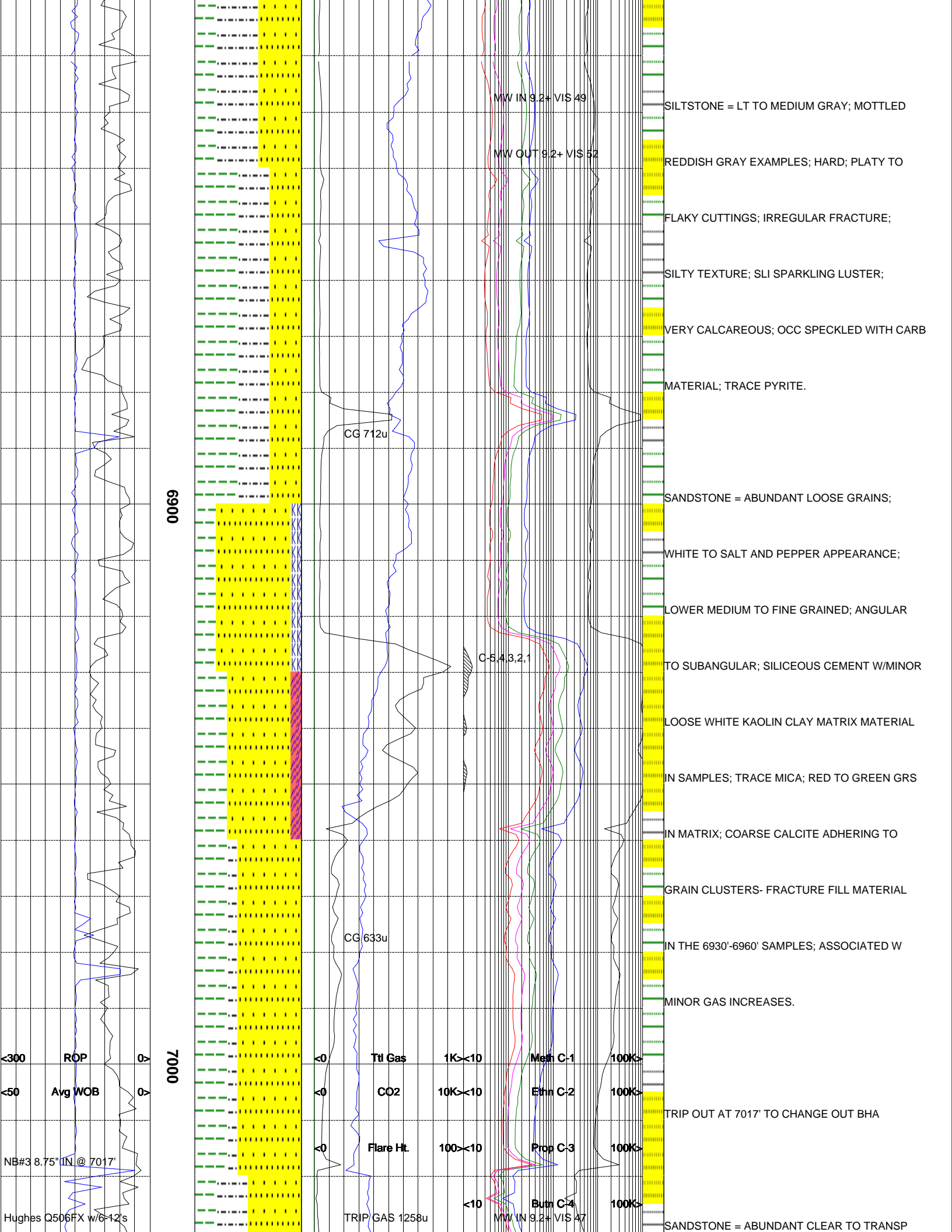


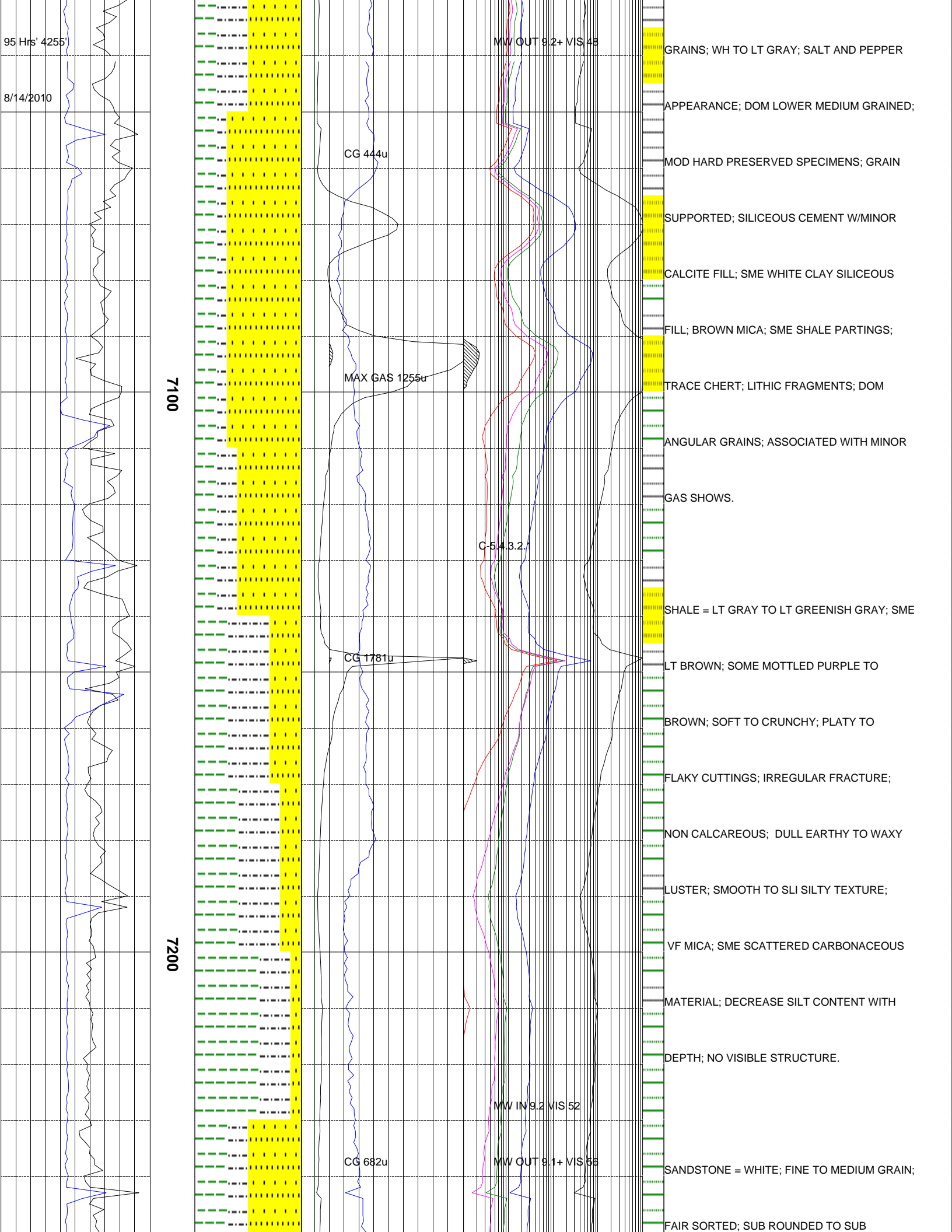












95 Hrs' 4255'

8/14/2010

MW OUT 9.2+ VIS 48

CG 444u

MAX GAS 1255u

C-5.4.3.2.1

CG 1781u

MW IN 9.2 VIS 52

CG 682u

MW OUT 9.1+ VIS 56

7100

7200

