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## MUDLOG MD

COMPANY	ExxonMobil Production
WELL	PCU 197-34B10
FIELD	PICEANCE CREEK
REGION	ROCKY MOUNTAIN
COORDINATES	39.91558 108.261224
ELEVATION	GL 6651.2' KB 6683.2'
COUNTY, STATE	RIO BLANCO, CO
API INDEX	05-103-11146-00
SPUD DATE	12/23/2008
CONTRACTOR	HE
CO. REP.	W.GARNER, S.GUYOTE
RIG/TYPE	# 320/FLEX 4S+
LOGGING UNIT	ML # 032
GEOLOGISTS	J.KEEVAN C.RECORD, C.PIERCE
ADD. PERSONS	M. PIPER, B. HICKS T. WALKER
CO. GEOLOGIST	CHRIS ALBA

### LOG INTERVAL

DEPTHS:	3,944'	TO	12,747'
DATES:	10/26/2009	TO	11/18/2009
SCALE:	5" = 100'		

### CASING DATA

16"	AT	130'
10.75"	AT	3,927'
7"	AT	9,005'

AT

### HOLE SIZE

14.75"	TO	3,943'
9.875"	TO	9,020'
6.125"	TO	12,747'
	TO	

### MUD TYPES

SPUD MUD	TO	3,943'
LSND	TO	12,747'
	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
	ANDESITE
	ANHYDRITE
	BASALT
	BENTONITE
	BIOTITIZATION
	BRECCIA
	CALCARENITE
	CALCAREOUS TUFF
	CALCILUTITE
	CARBONATES
	CARBONACEOUS MAT
	CARBONACEOUS SH
	CEMENT CONTAM.
	CHALK
	CRYSTALLINE TUFF
	CHERT - ARGILL

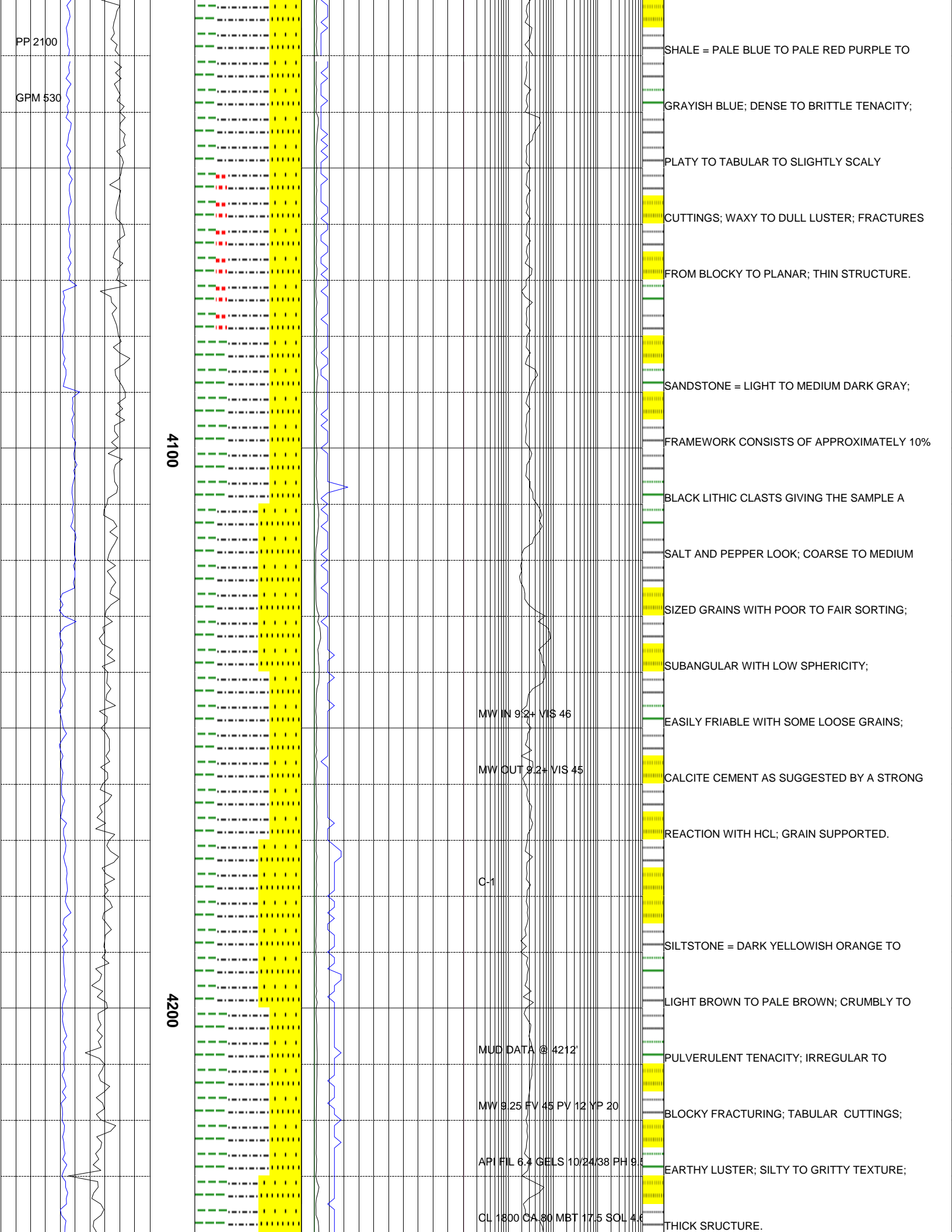
	CHERT - GLASSY
	CHERT - PORCEL
	CHERT - TIGER STRIPE
	CHERT - UNDIFF
	CLAY
	CLAY-MUDSTONE
	CLYST-TUFFACEOUS
	CHLORITIZATION
	COAL
	CONGLOMERATE
	CONGL. SAND
	CONGL. SANDSTONE
	COQUINA
	DACITE
	DIATOMITE
	DIORITE
	DOLOSTONE

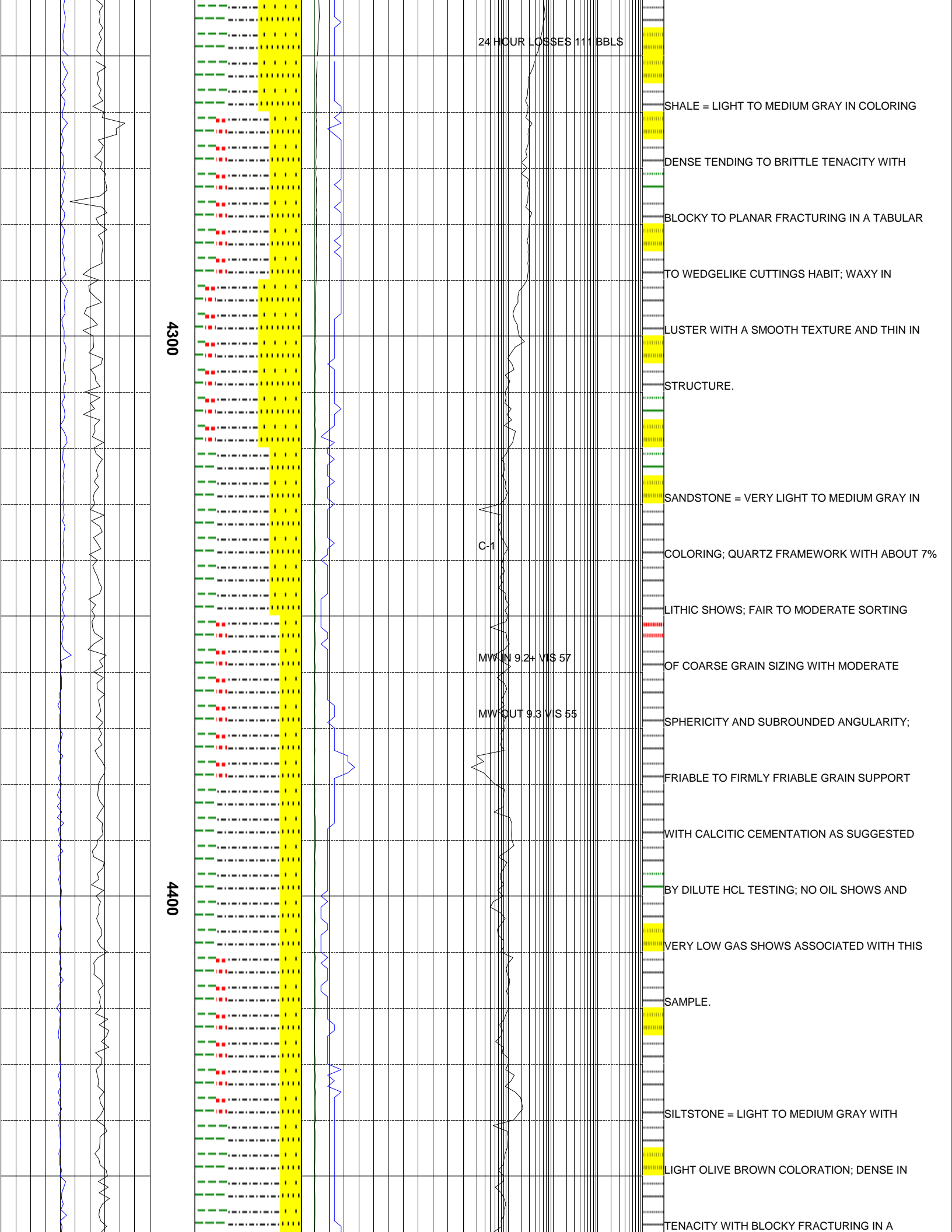
	FELSIC SILIC DIKE
	FOSSIL
	GABBRO
	GLASSY TUFF
	GRANITE
	GRANITE WASH
	GRANODIORITE
	GYPSUM
	HALITE
	HORNBL-QTZ-DIO
	IGNEOUS (ACIDIC)
	IGNEOUS (BASIC)
	INTRUSIVES
	KAOLINITIC
	LIMESTONE
	LITHIC TUFF
	MARL - DOLO

	MARL - CALC
	METAMORPHICS
	MUDSTONE
	OBSIDIAN
	PALEOSOL
	PHOSPHATE
	PORCELANITE
	PORCELANEOUS CLYST
	PYRITE
	PYROCLASTICS
	QUARTZ DIORITE
	QUARTZ LATITE
	QUARTZ MONZONITE
	RECRYSTALLIZED CALCITE
	RHYOLITE
	SALT
	SAND

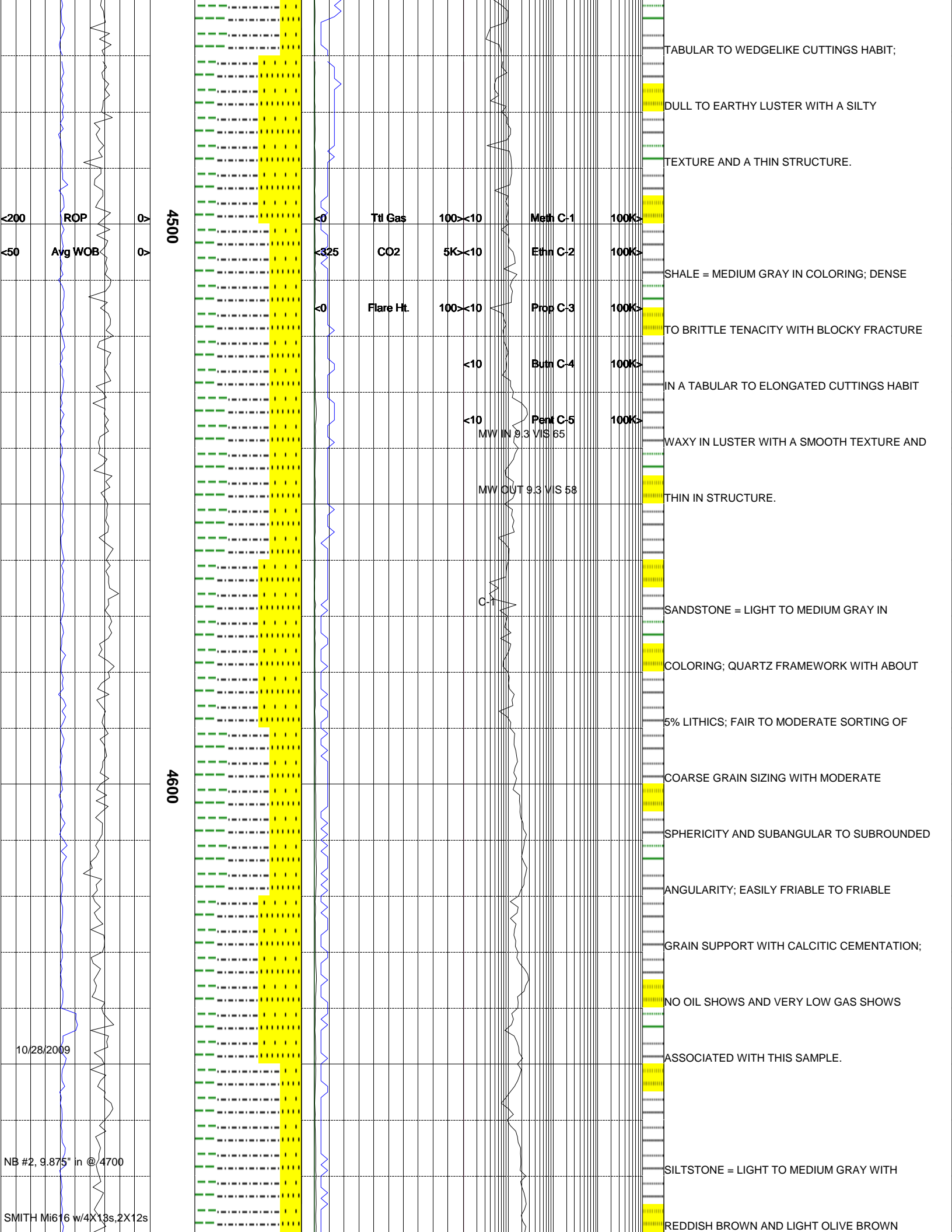
	SANDSTONE
	SANDSTONE-TUFFACEOUS
	SERICITIZATION
	SERPENTINE
	SHALE
	SHALE TUFFACEOUS
	SHELL FRAGMENTS
	SIDERITE
	SILICIFICATION
	SILTSTONE
	SILTST-TUFFACEOUS
	TUFF
	VOLCANICLASTICS SEDS
	VOLCANICS

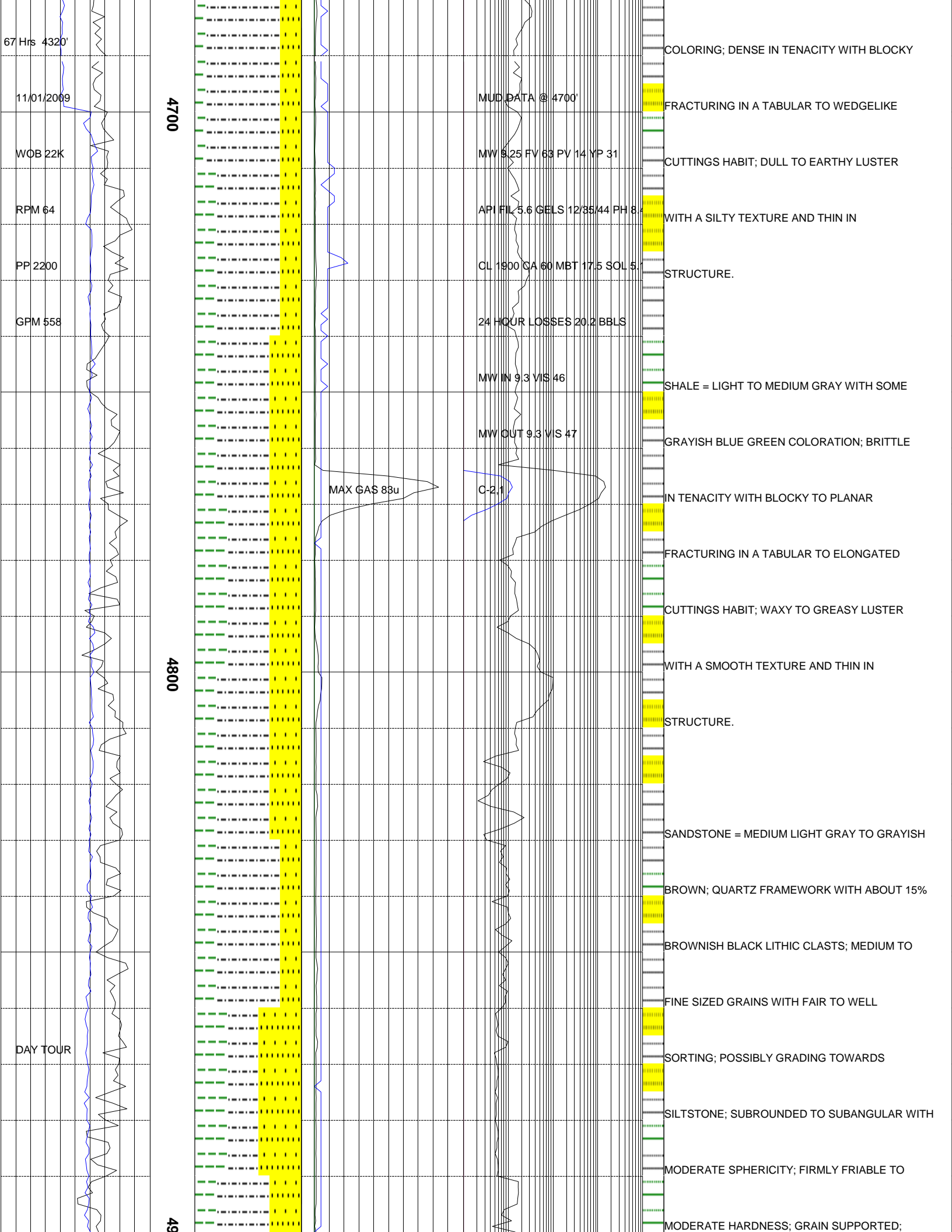
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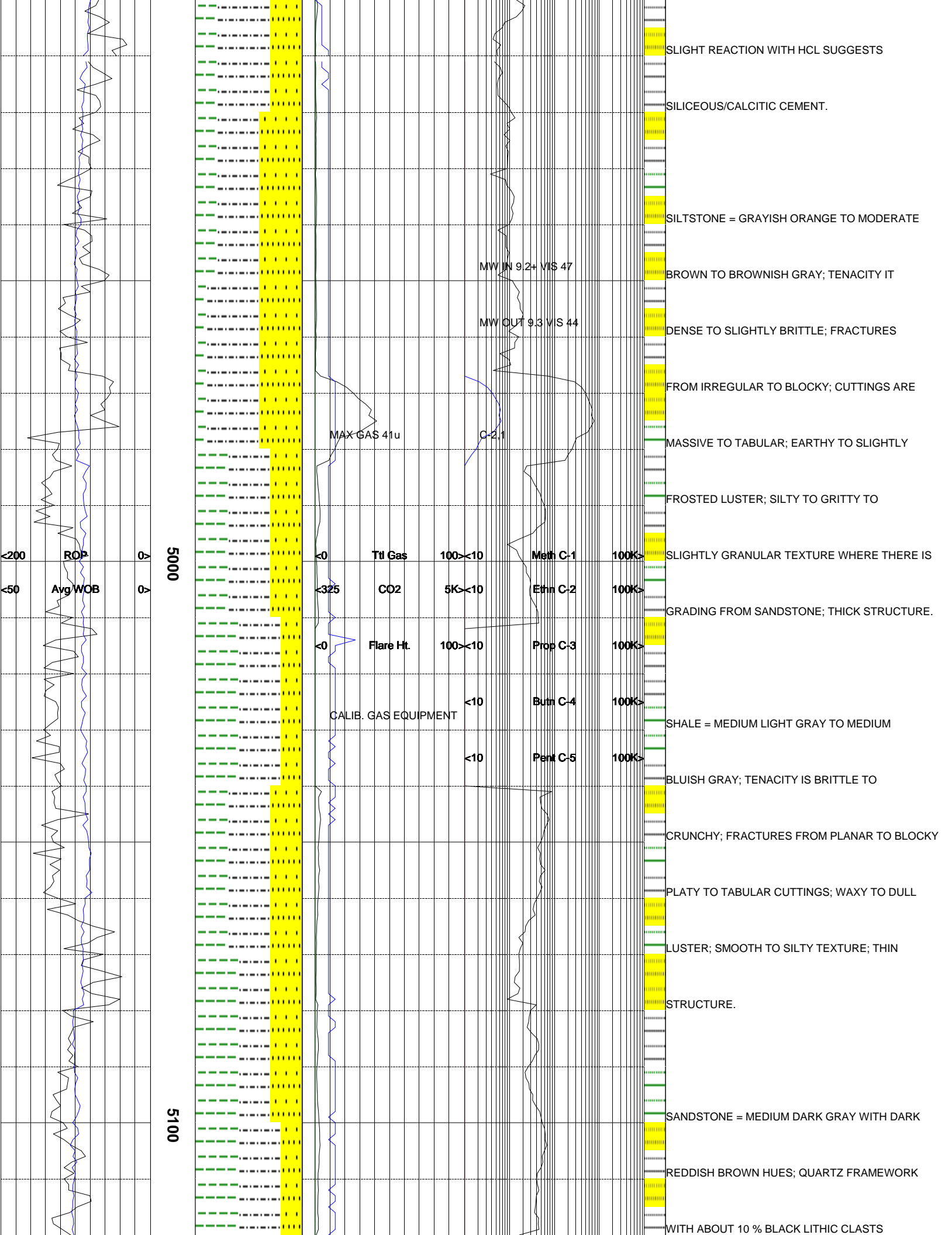


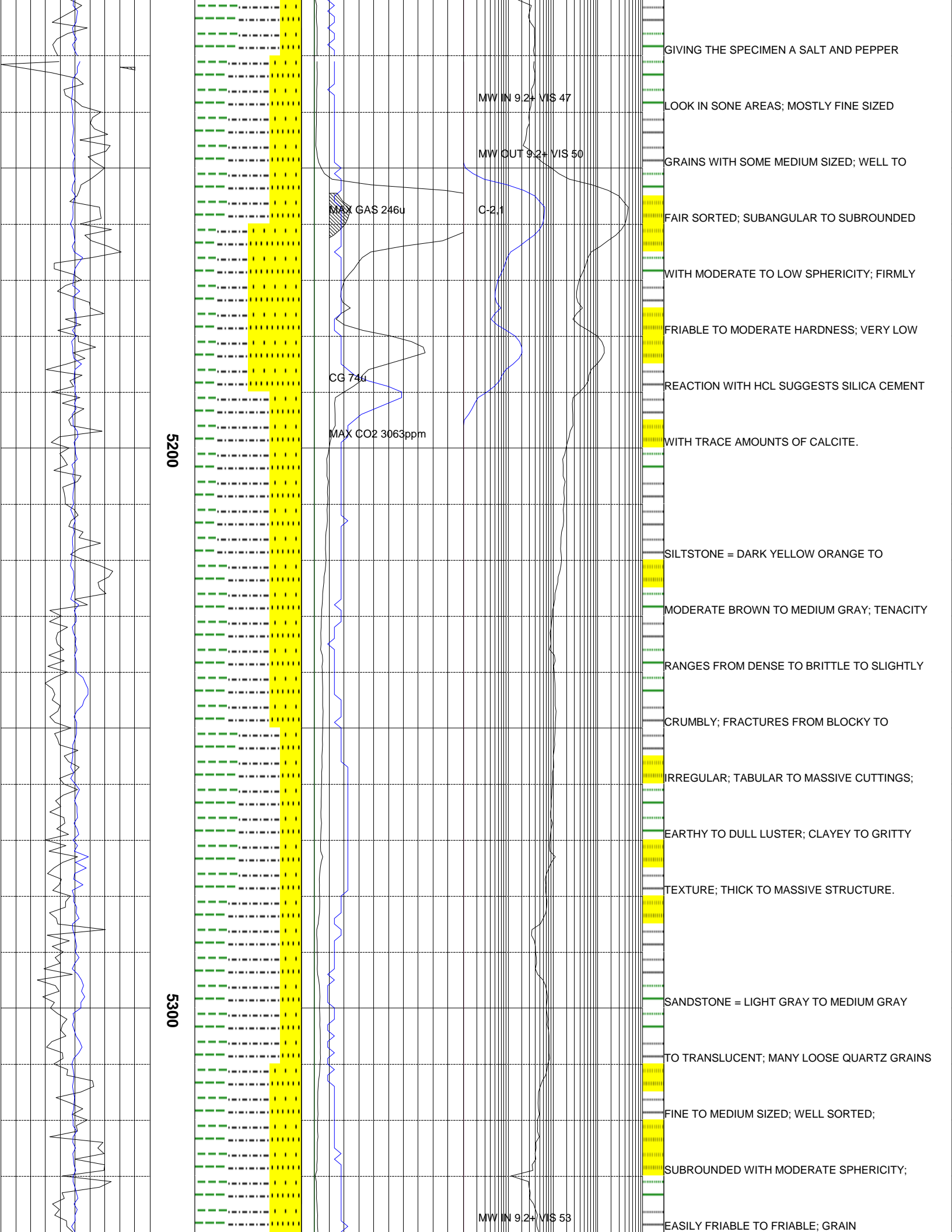


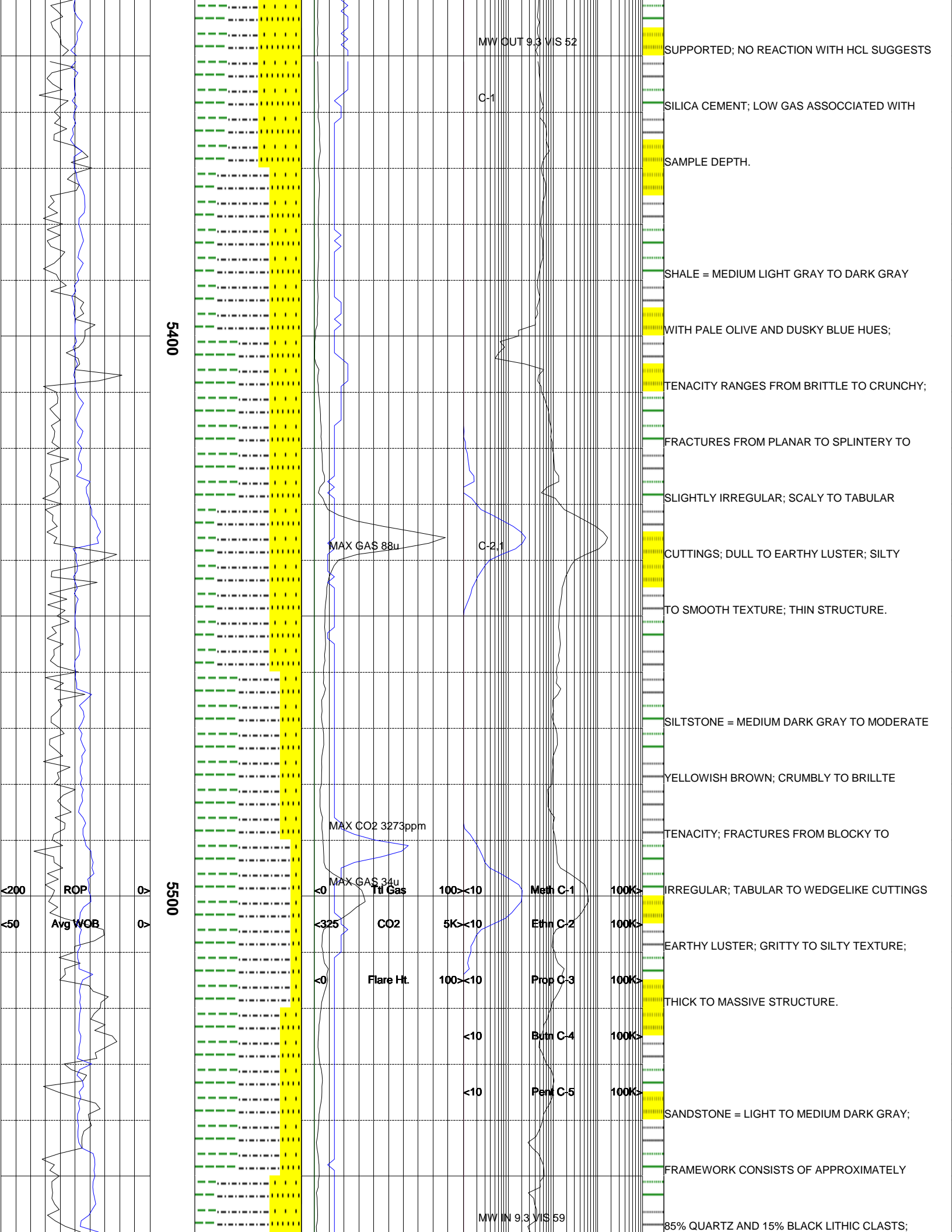


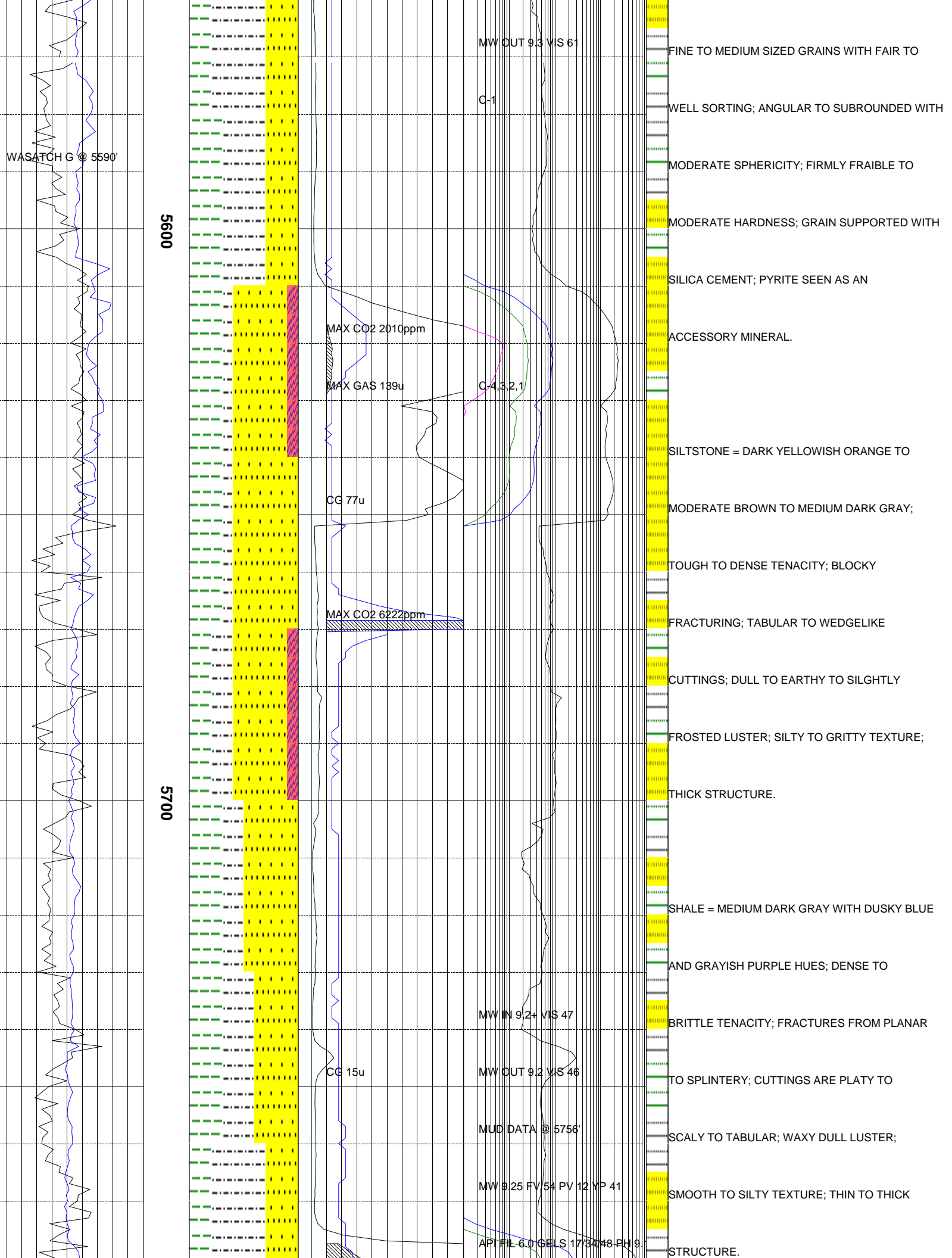


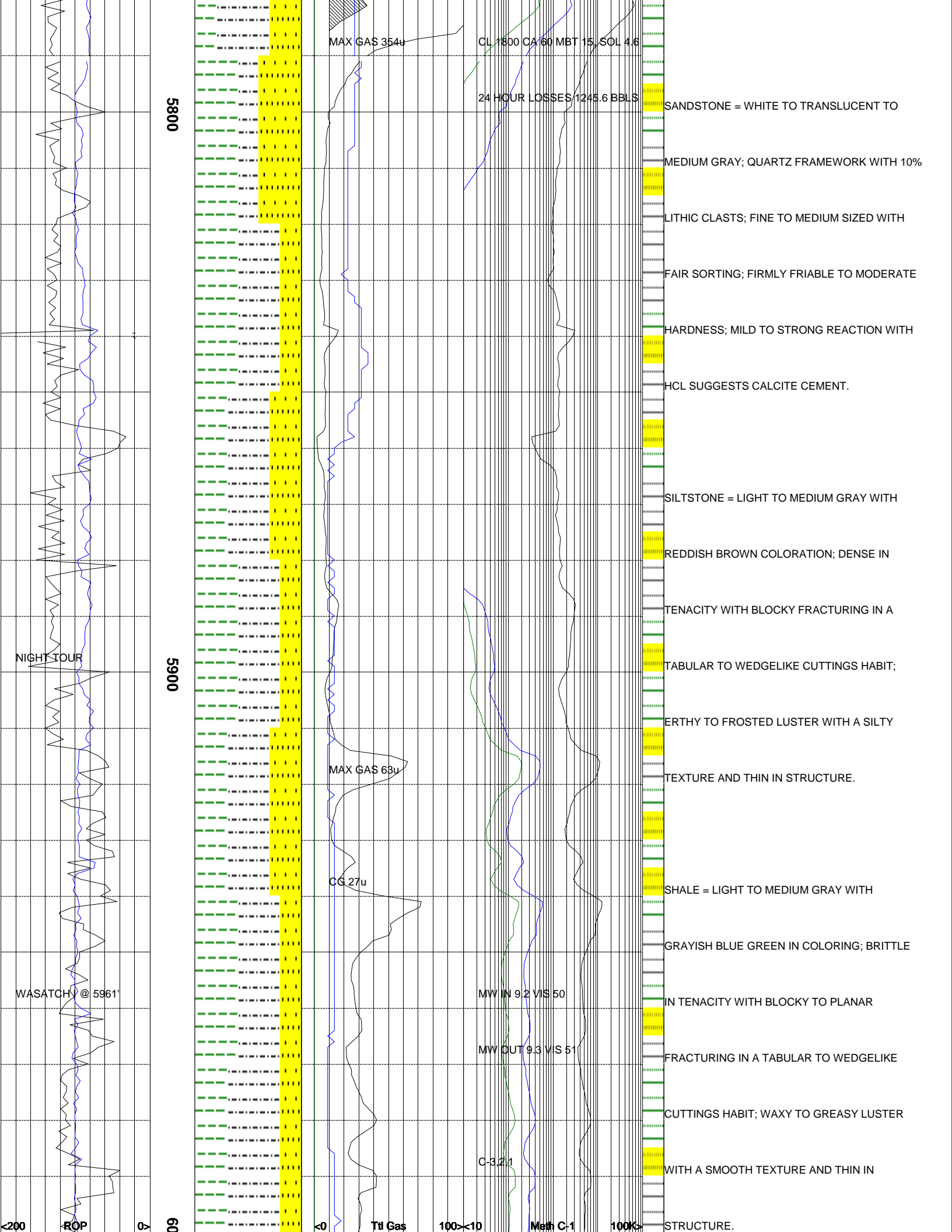


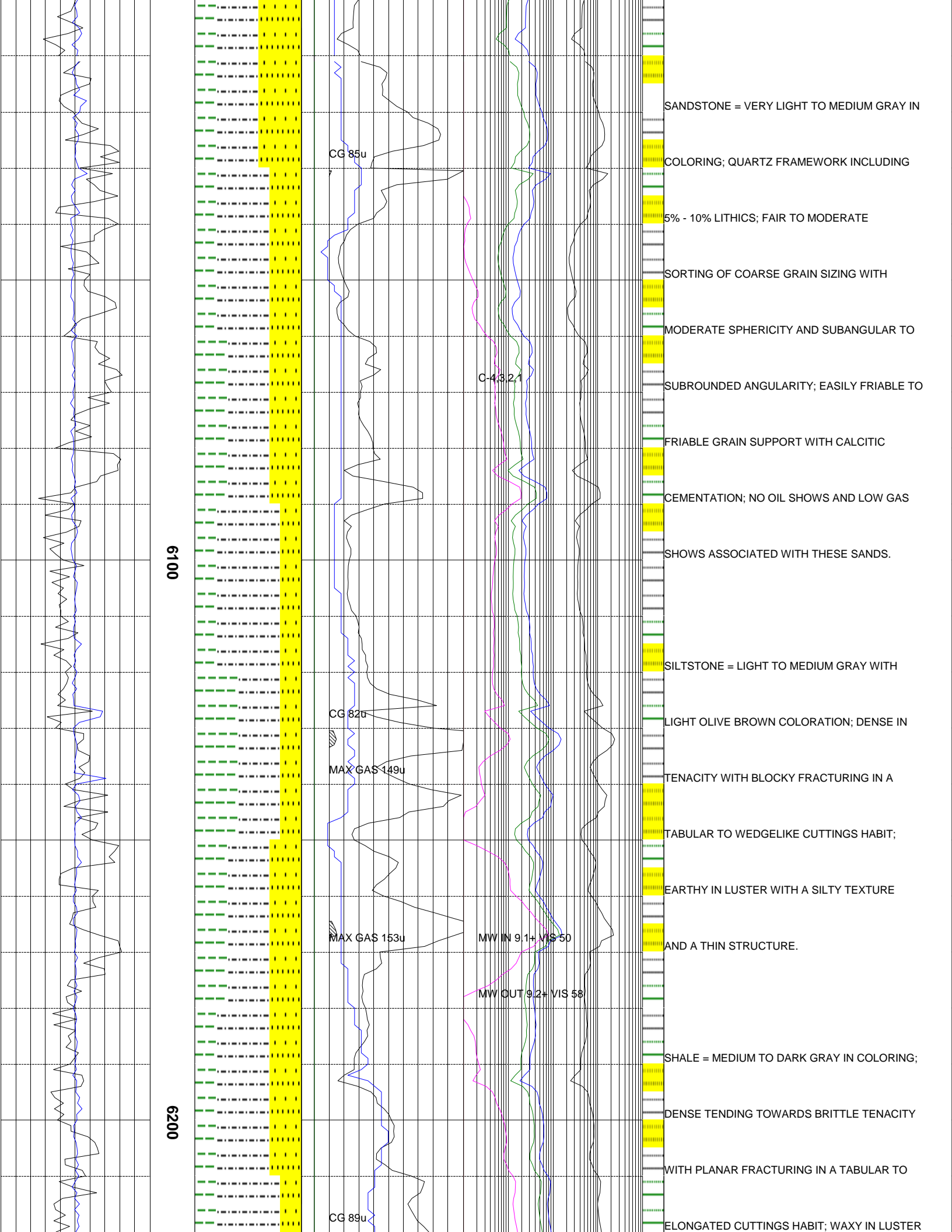




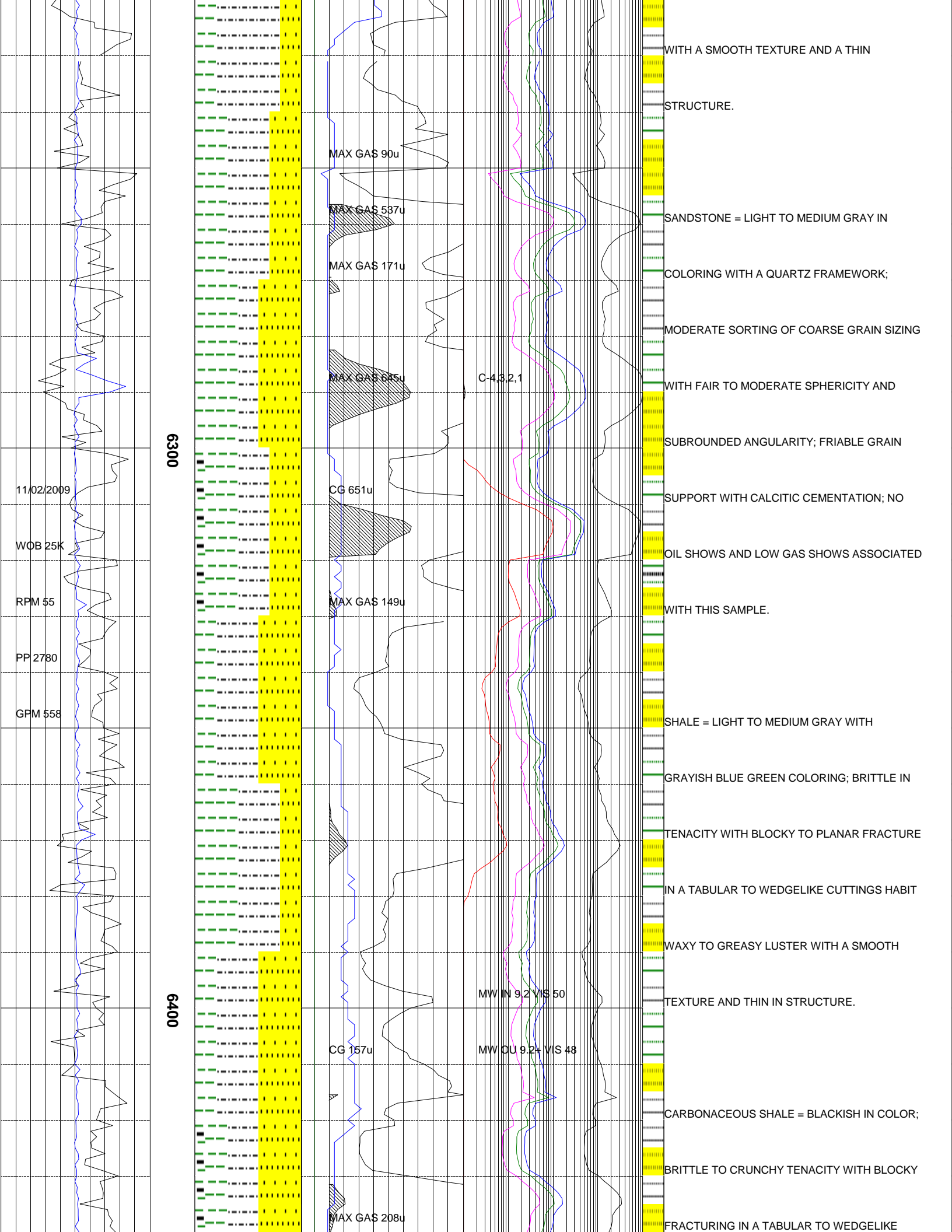


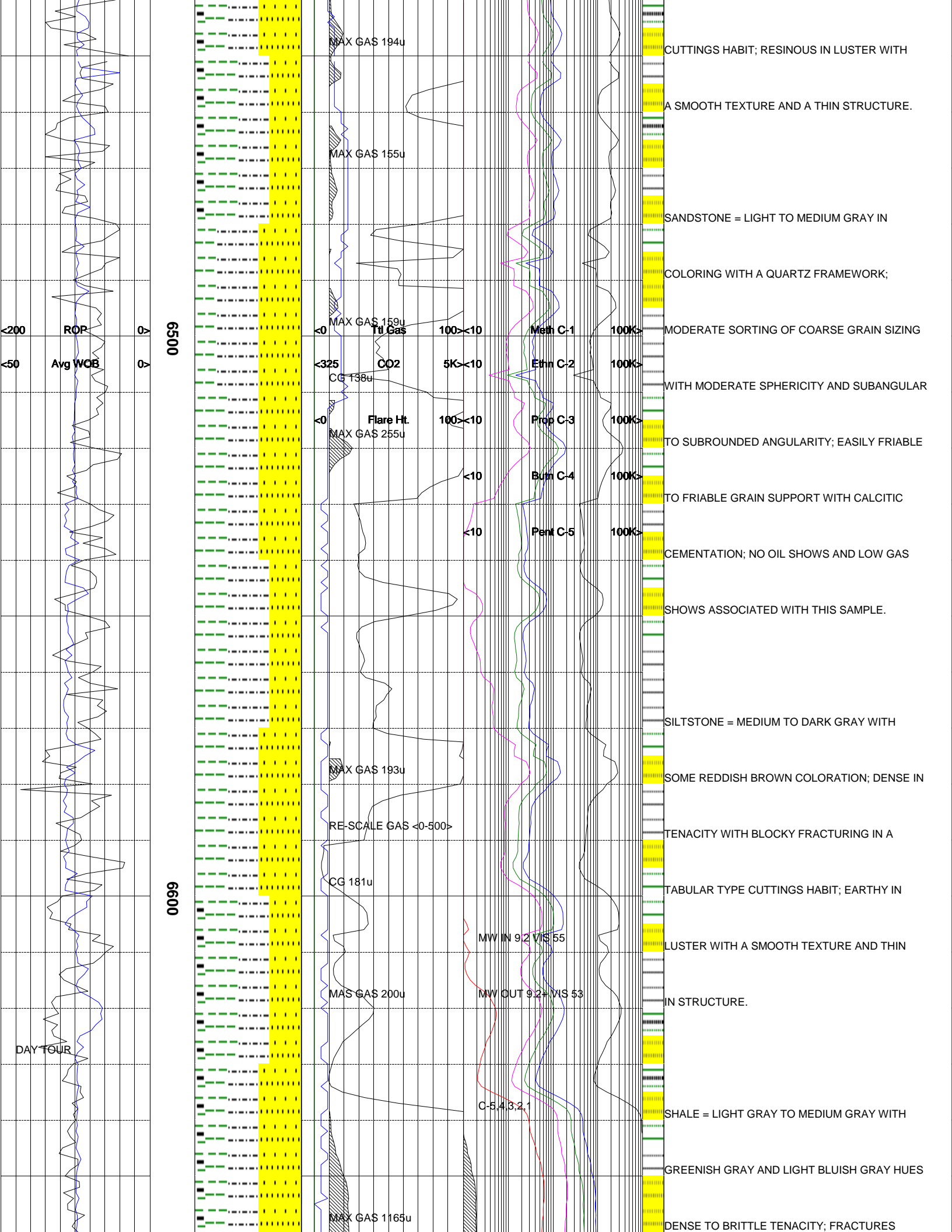


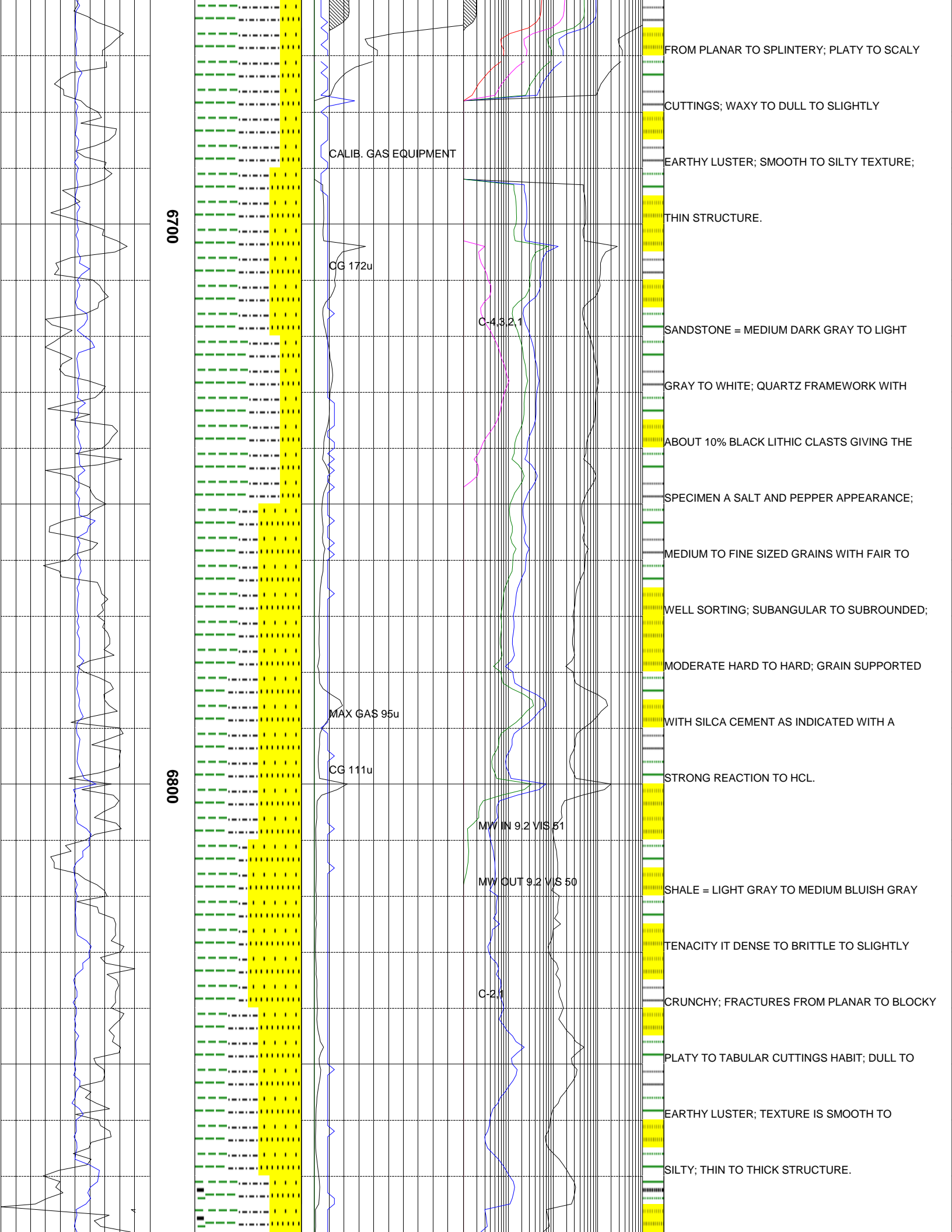


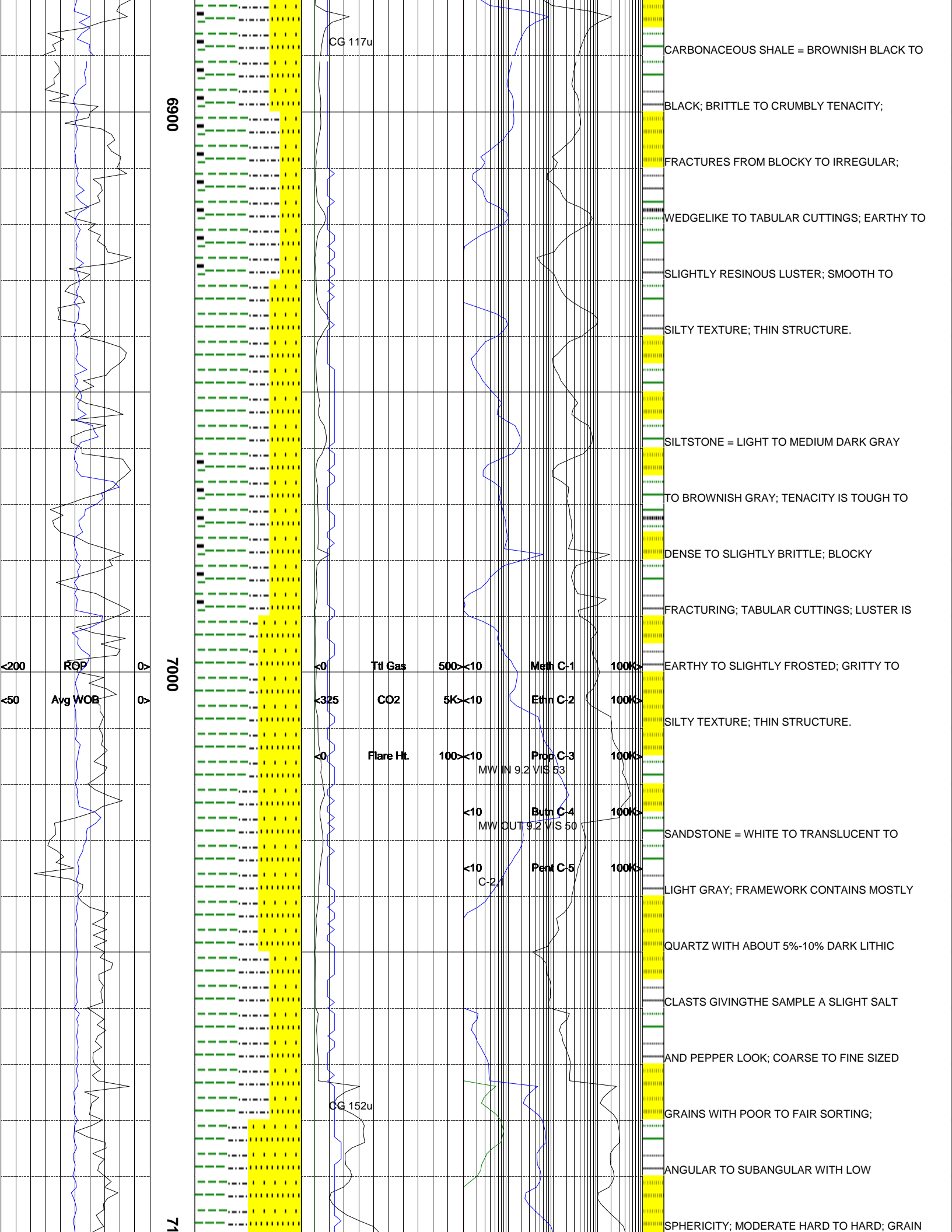


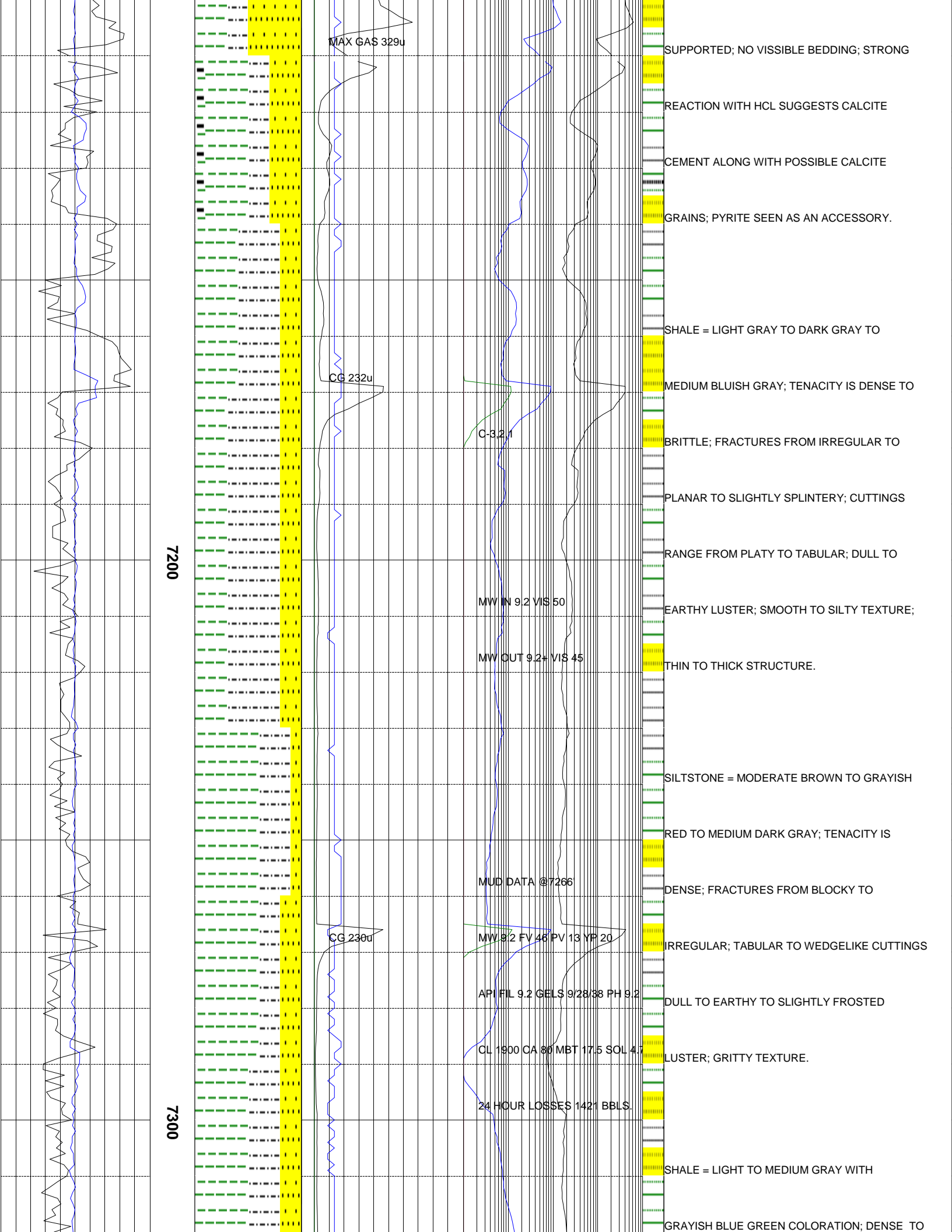


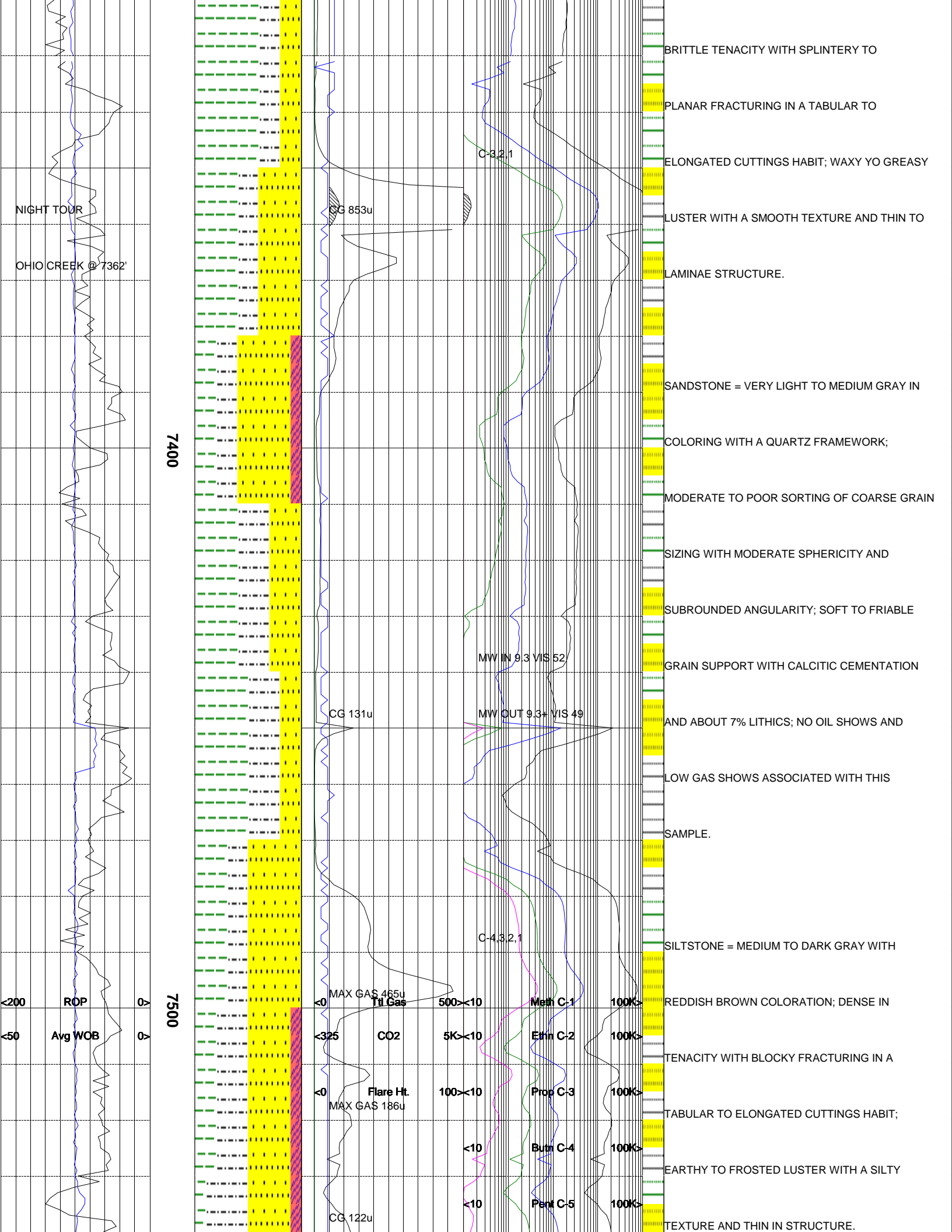












7400

7500

NIGHT TOUR

OHIO CREEK @ 7362'

CG 853u

C-3.2.1

MW IN 9.3 VIS 52

CG 131u

MW OUT 9.3+ VIS 49

C-4.3.2.1

MAX GAS 465u

CO<sub>2</sub>

Flare Ht. MAX GAS 186u

CG 122u

Meth C-1

Eth C-2

Prop C-3

But C-4

Pent C-5

BRITTLE TENACITY WITH SPLINTERY TO

PLANAR FRACTURING IN A TABULAR TO

ELONGATED CUTTINGS HABIT; WAXY YO GREASY

LUSTER WITH A SMOOTH TEXTURE AND THIN TO

LAMINAE STRUCTURE.

SANDSTONE = VERY LIGHT TO MEDIUM GRAY IN

COLORING WITH A QUARTZ FRAMEWORK;

MODERATE TO POOR SORTING OF COARSE GRAIN

SIZING WITH MODERATE SPHERICITY AND

SUBROUNDED ANGULARITY; SOFT TO FRIABLE

GRAIN SUPPORT WITH CALCITIC CEMENTATION

AND ABOUT 7% LITHICS; NO OIL SHOWS AND

LOW GAS SHOWS ASSOCIATED WITH THIS

SAMPLE.

SILTSTONE = MEDIUM TO DARK GRAY WITH

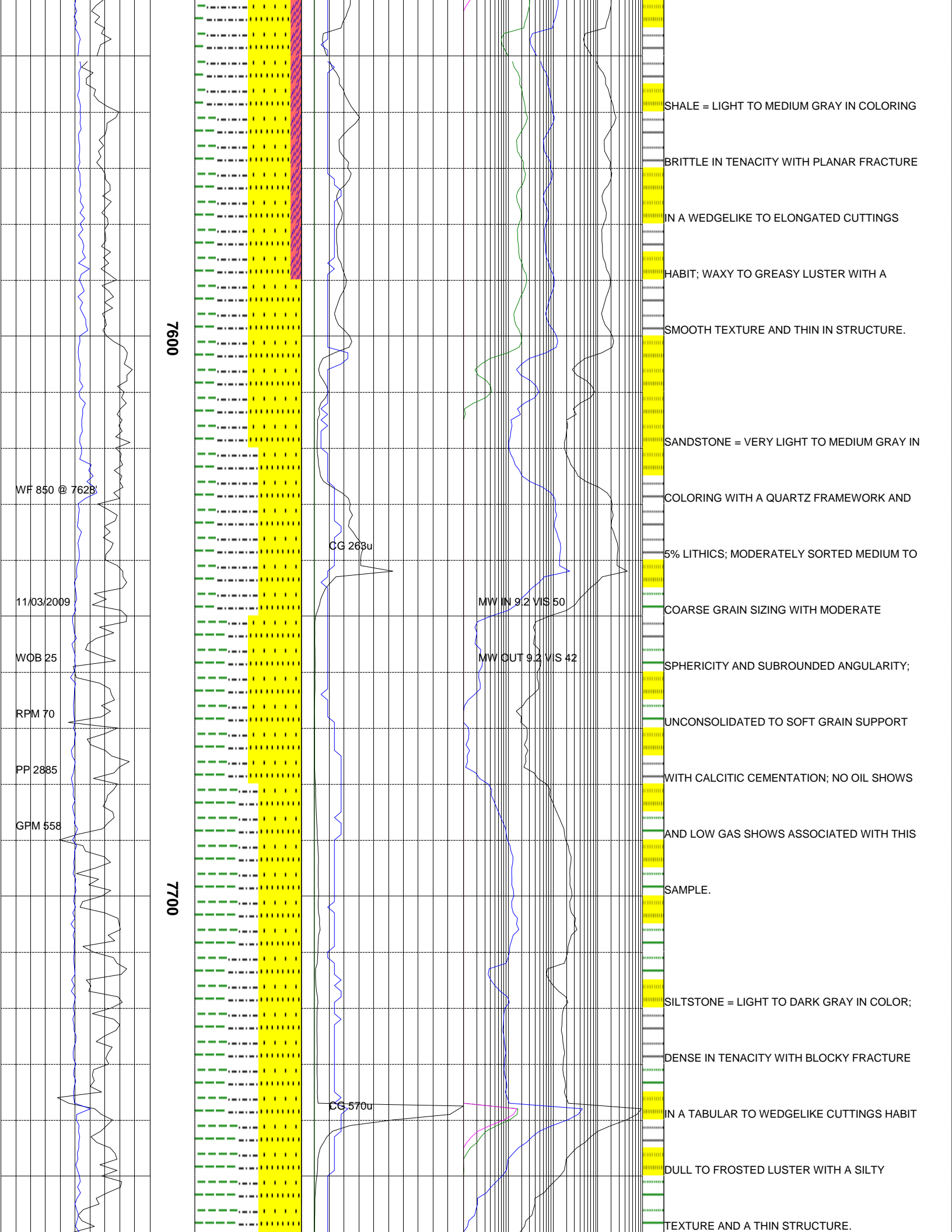
REDDISH BROWN COLORATION; DENSE IN

TENACITY WITH BLOCKY FRACTURING IN A

TABULAR TO ELONGATED CUTTINGS HABIT;

EARTHY TO FROSTED LUSTER WITH A SILTY

TEXTURE AND THIN IN STRUCTURE.



7600

7700

WF 850 @ 7628

11/03/2009

WOB 25

RPM 70

PP 2885

GPM 558

CG 263u

MW IN 9.2 V/S 50

MW OUT 9.2 V/S 42

CG 570u

SHALE = LIGHT TO MEDIUM GRAY IN COLORING

BRITTLE IN TENACITY WITH PLANAR FRACTURE

IN A WEDGELIKE TO ELONGATED CUTTINGS

HABIT; WAXY TO GREASY LUSTER WITH A

SMOOTH TEXTURE AND THIN IN STRUCTURE.

SANDSTONE = VERY LIGHT TO MEDIUM GRAY IN

COLORING WITH A QUARTZ FRAMEWORK AND

5% LITHICS; MODERATELY SORTED MEDIUM TO

COARSE GRAIN SIZING WITH MODERATE

SPHERICITY AND SUBROUNDED ANGULARITY;

UNCONSOLIDATED TO SOFT GRAIN SUPPORT

WITH CALCITIC CEMENTATION; NO OIL SHOWS

AND LOW GAS SHOWS ASSOCIATED WITH THIS

SAMPLE.

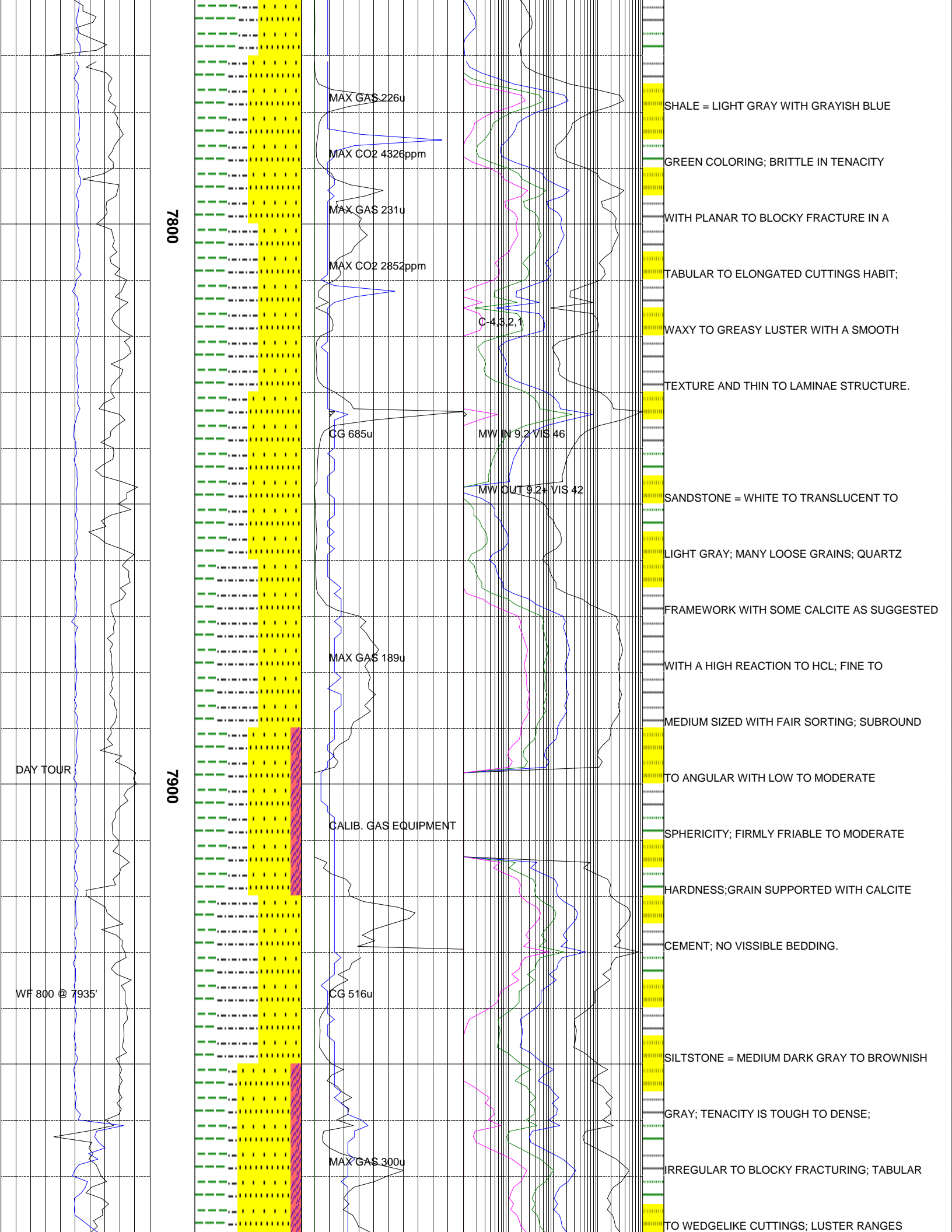
SILTSTONE = LIGHT TO DARK GRAY IN COLOR;

DENSE IN TENACITY WITH BLOCKY FRACTURE

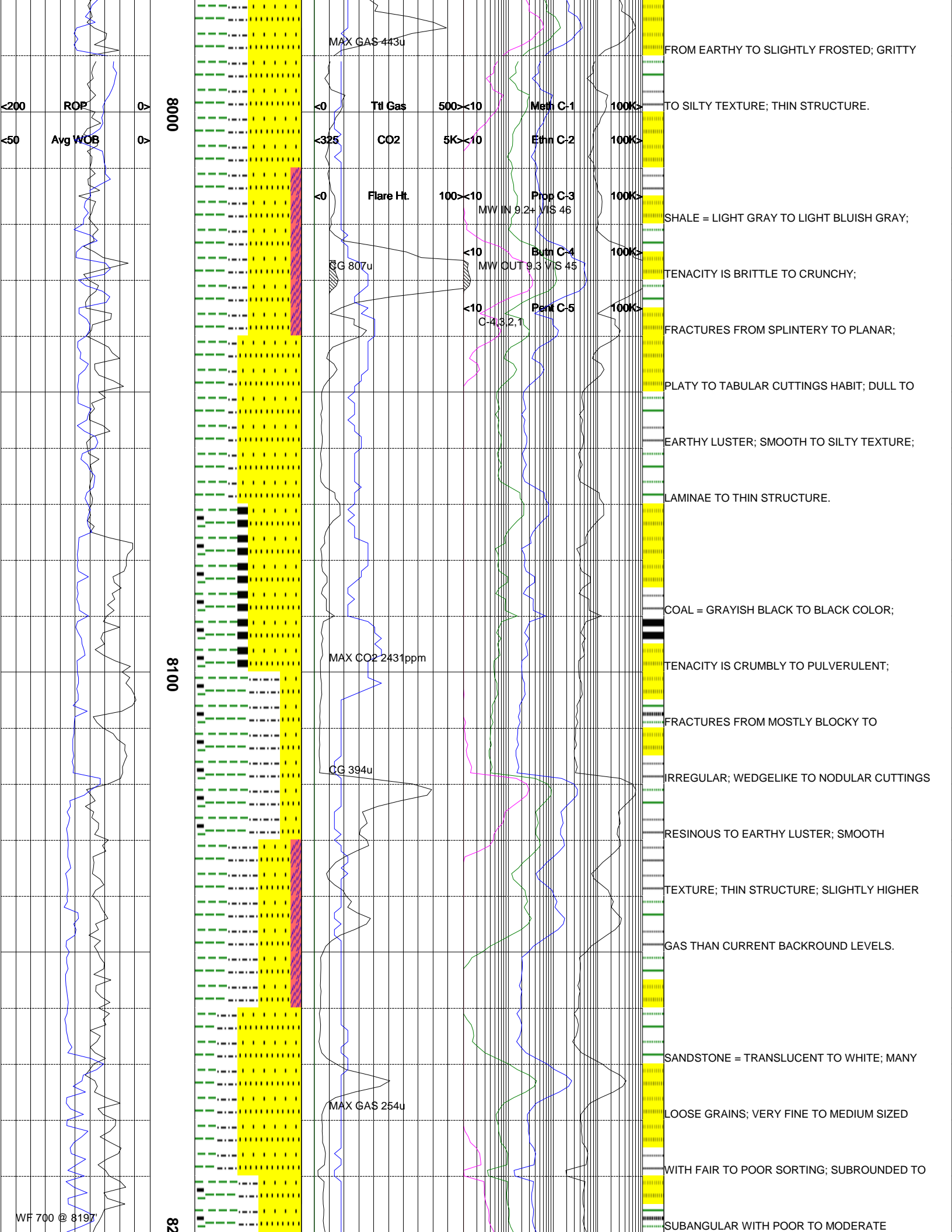
IN A TABULAR TO WEDGELIKE CUTTINGS HABIT

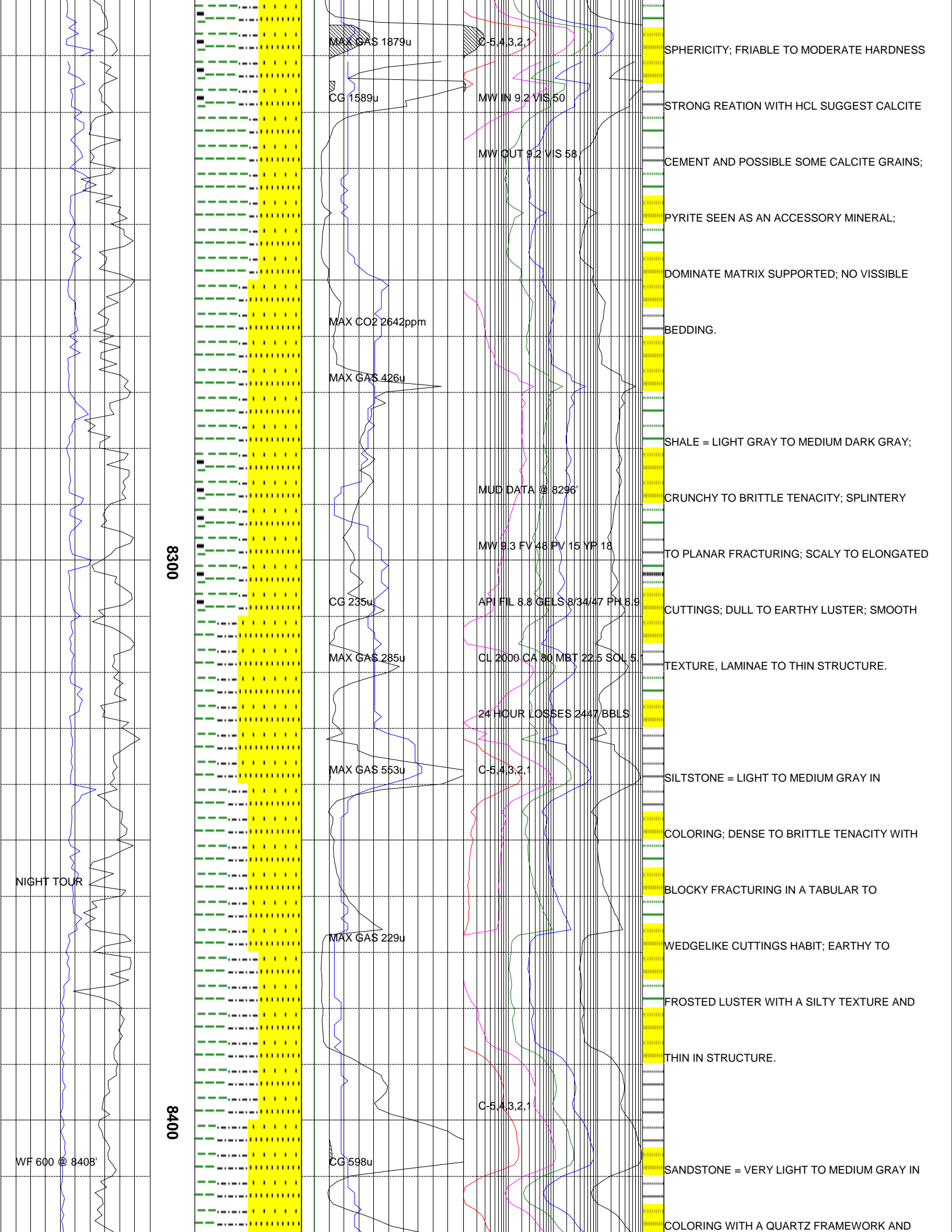
DULL TO FROSTED LUSTER WITH A SILTY

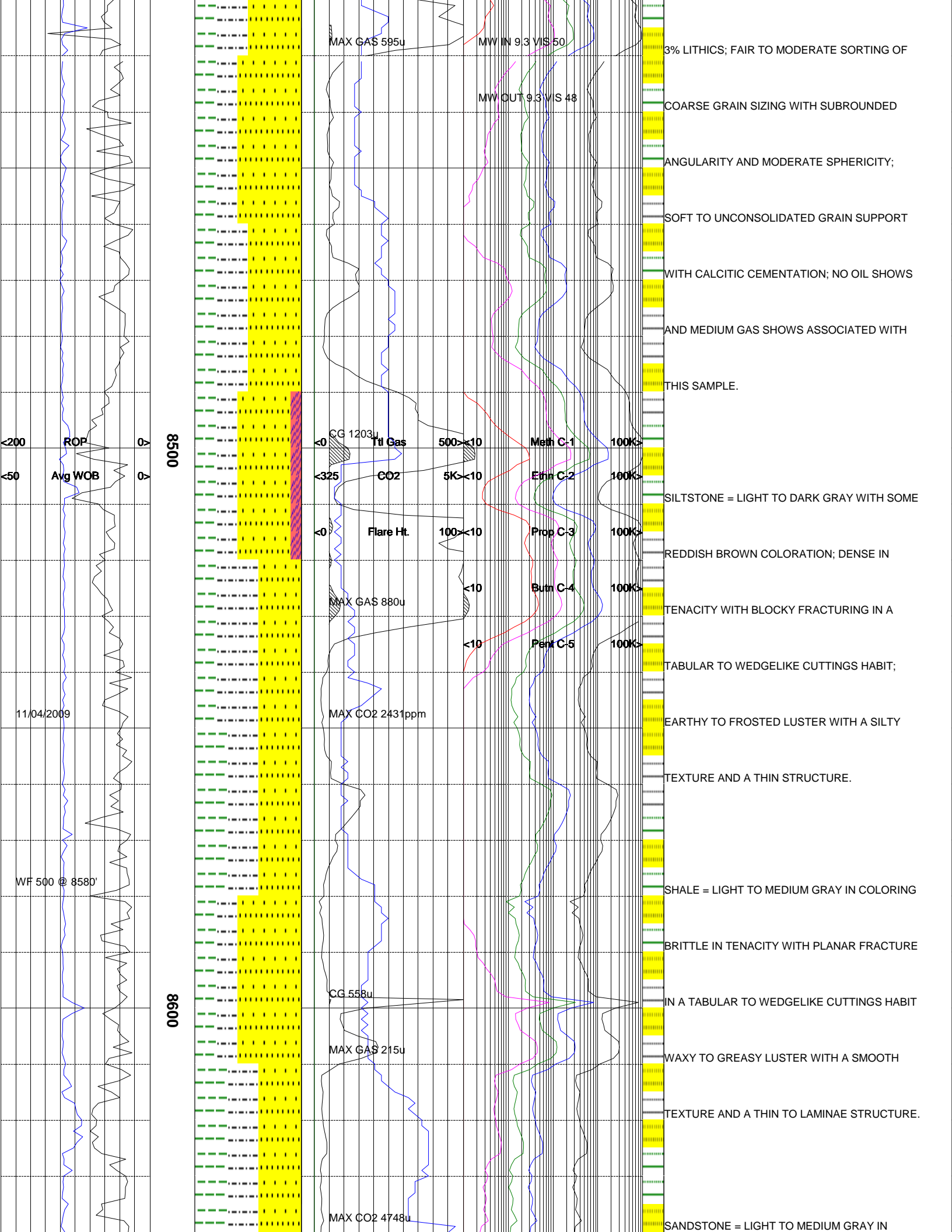
TEXTURE AND A THIN STRUCTURE.

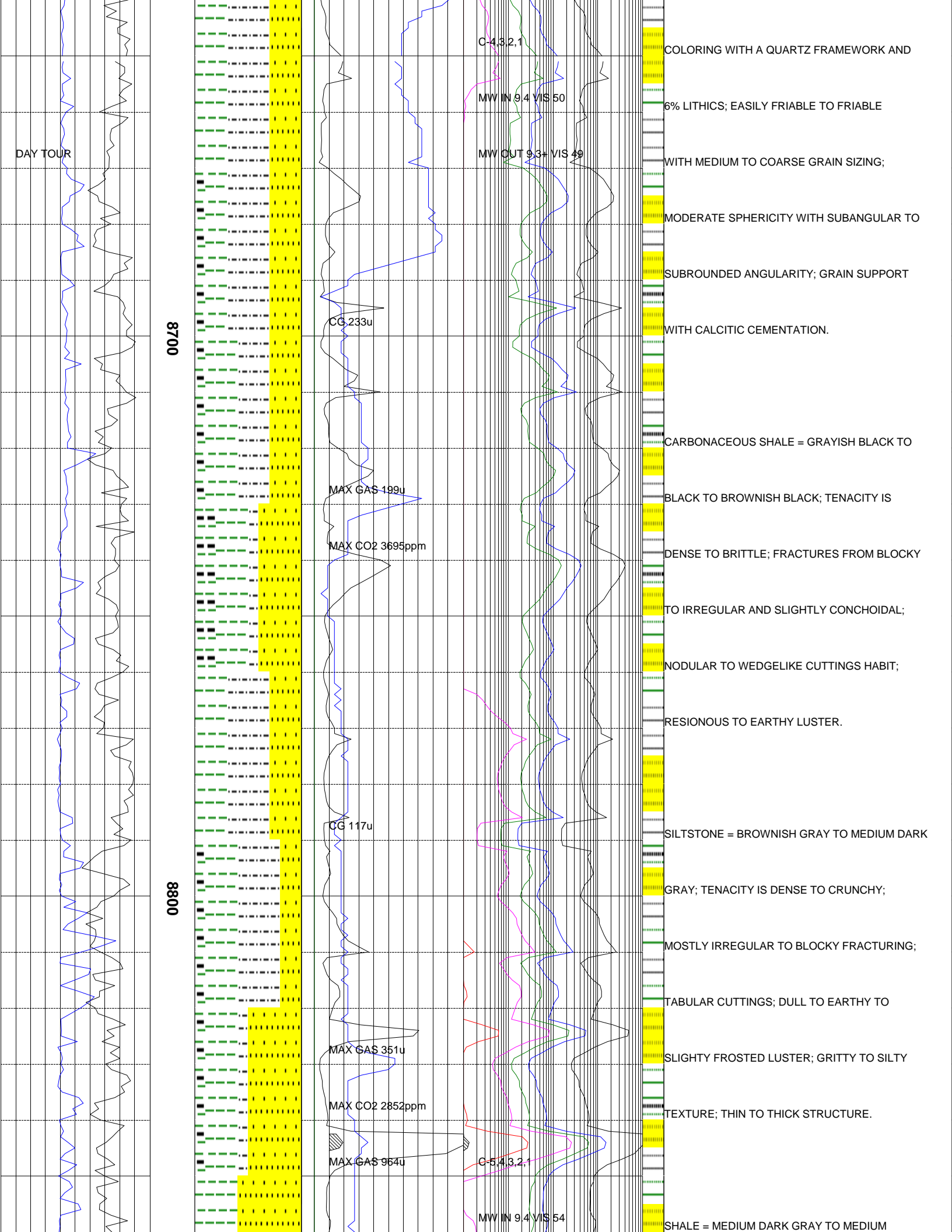


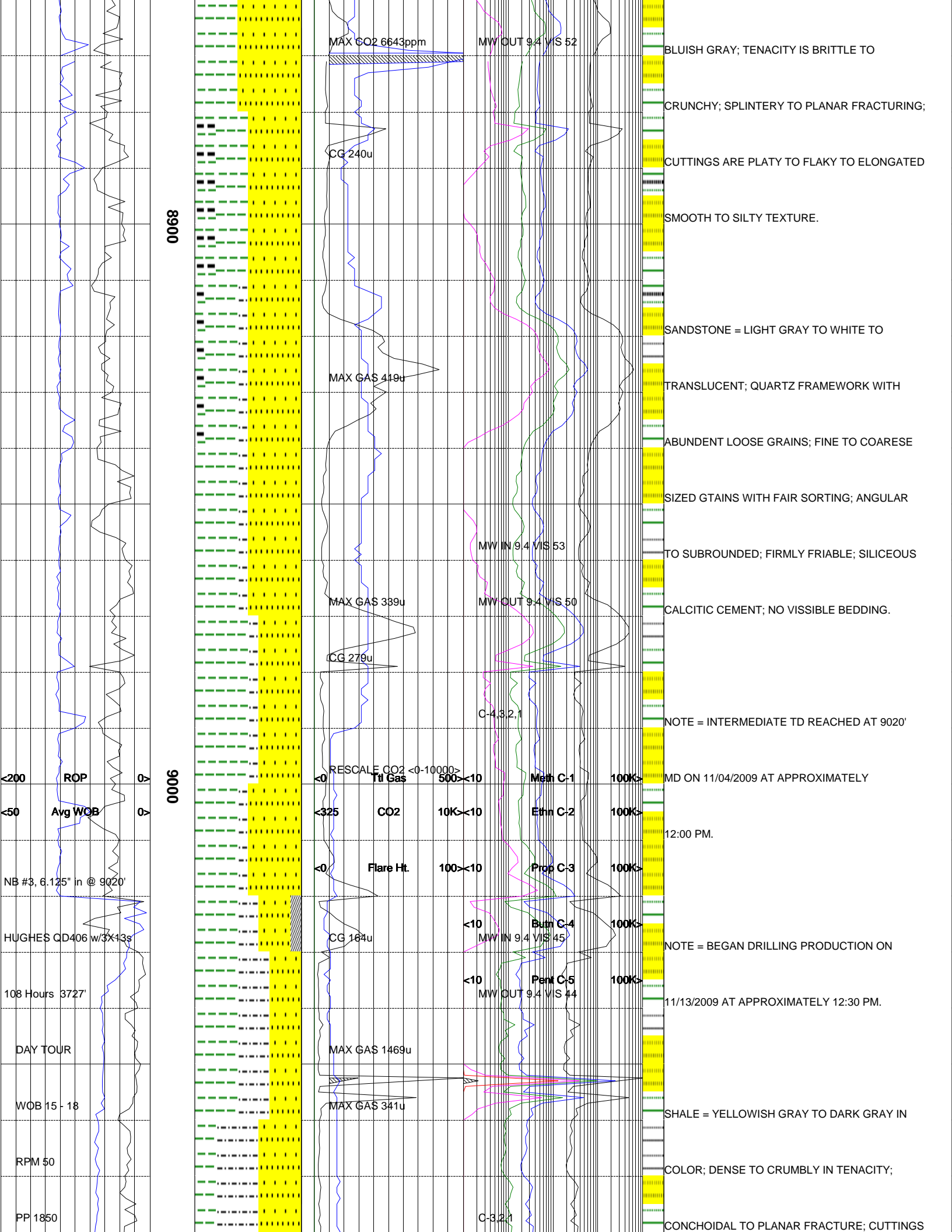


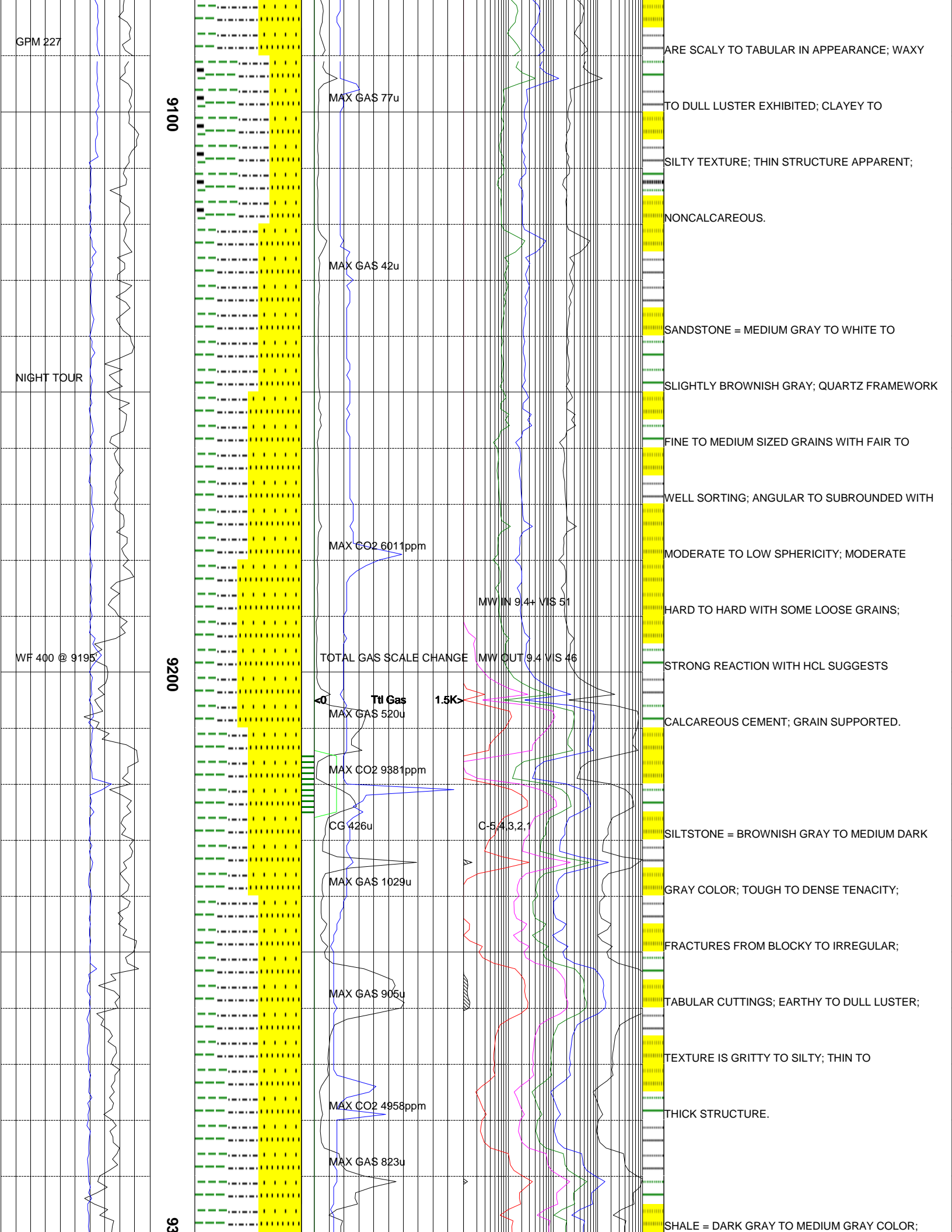


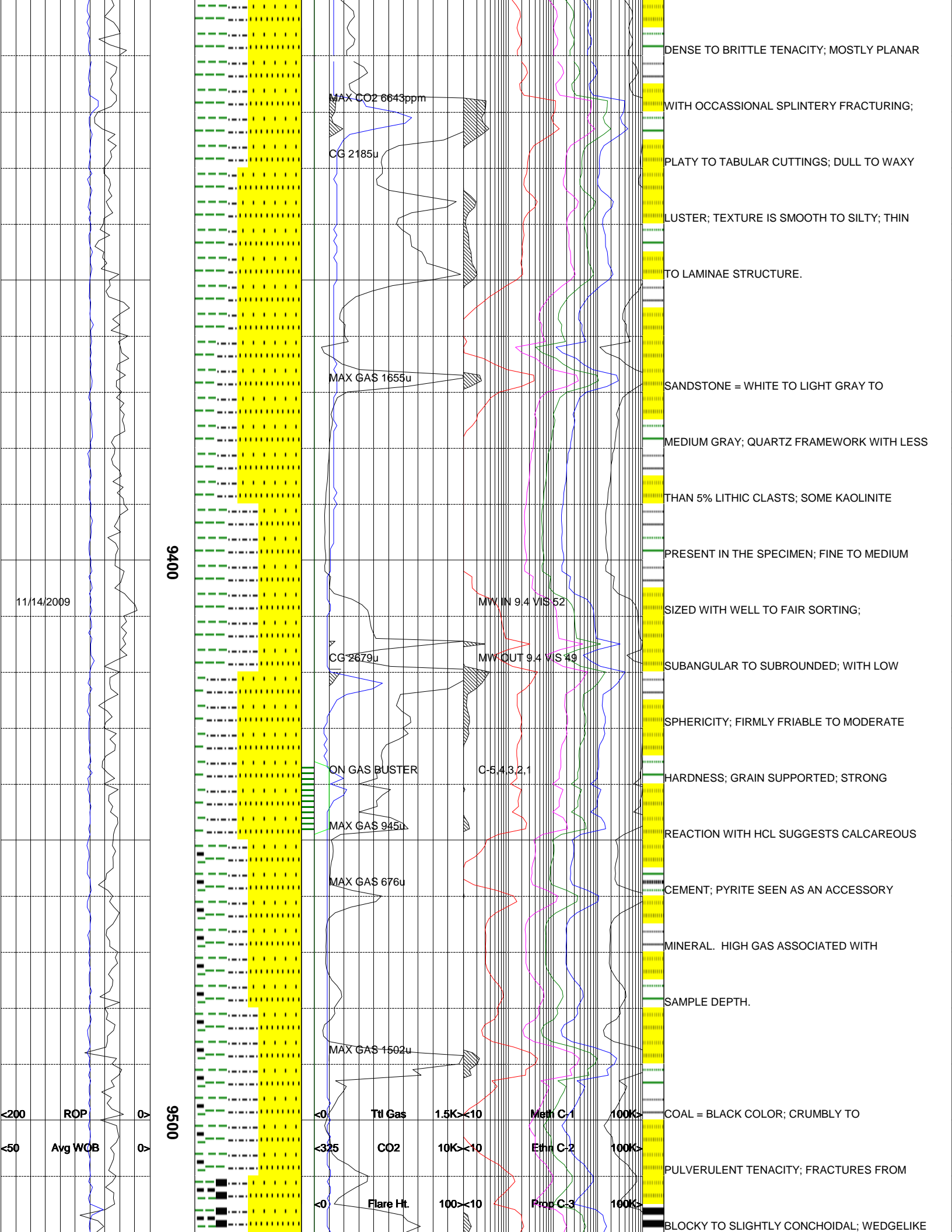




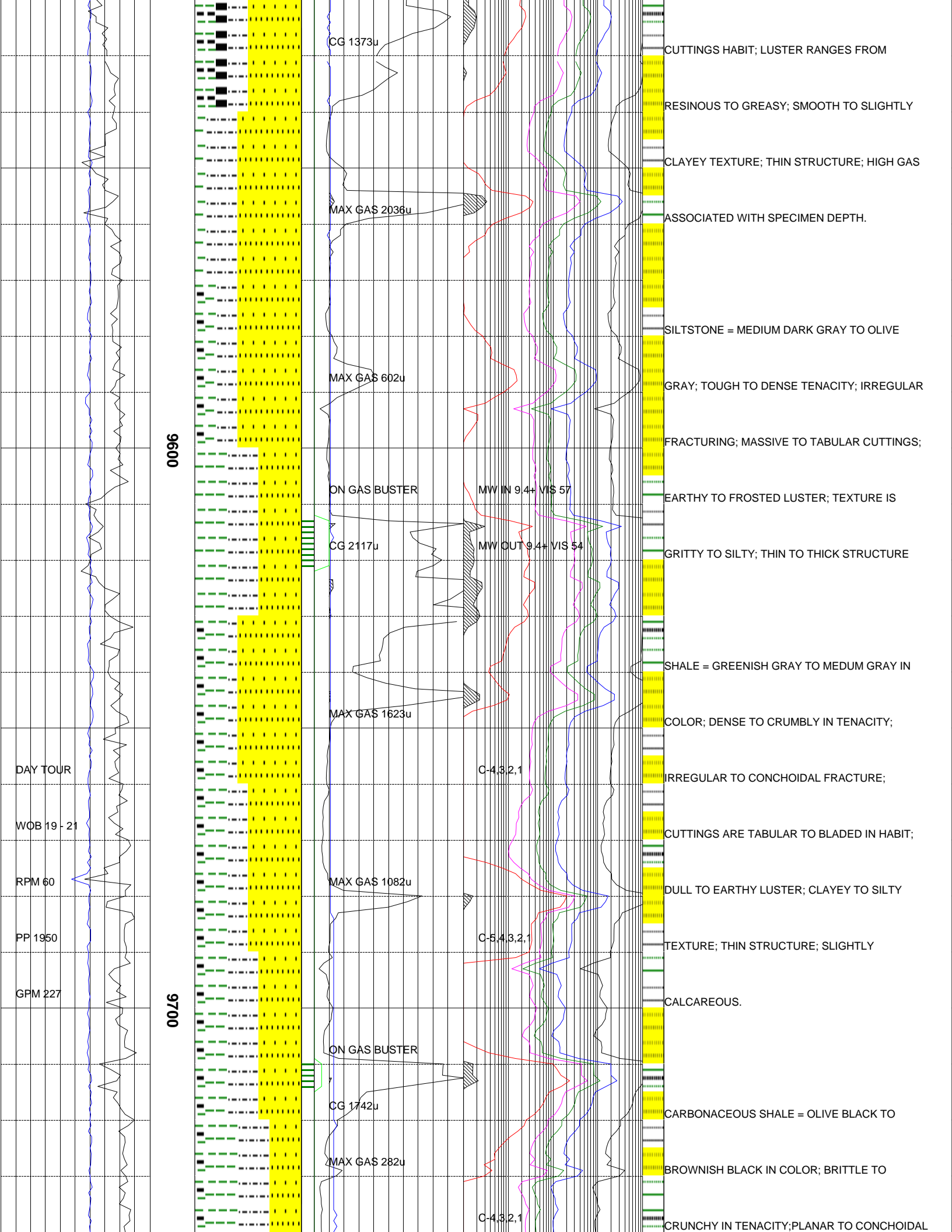




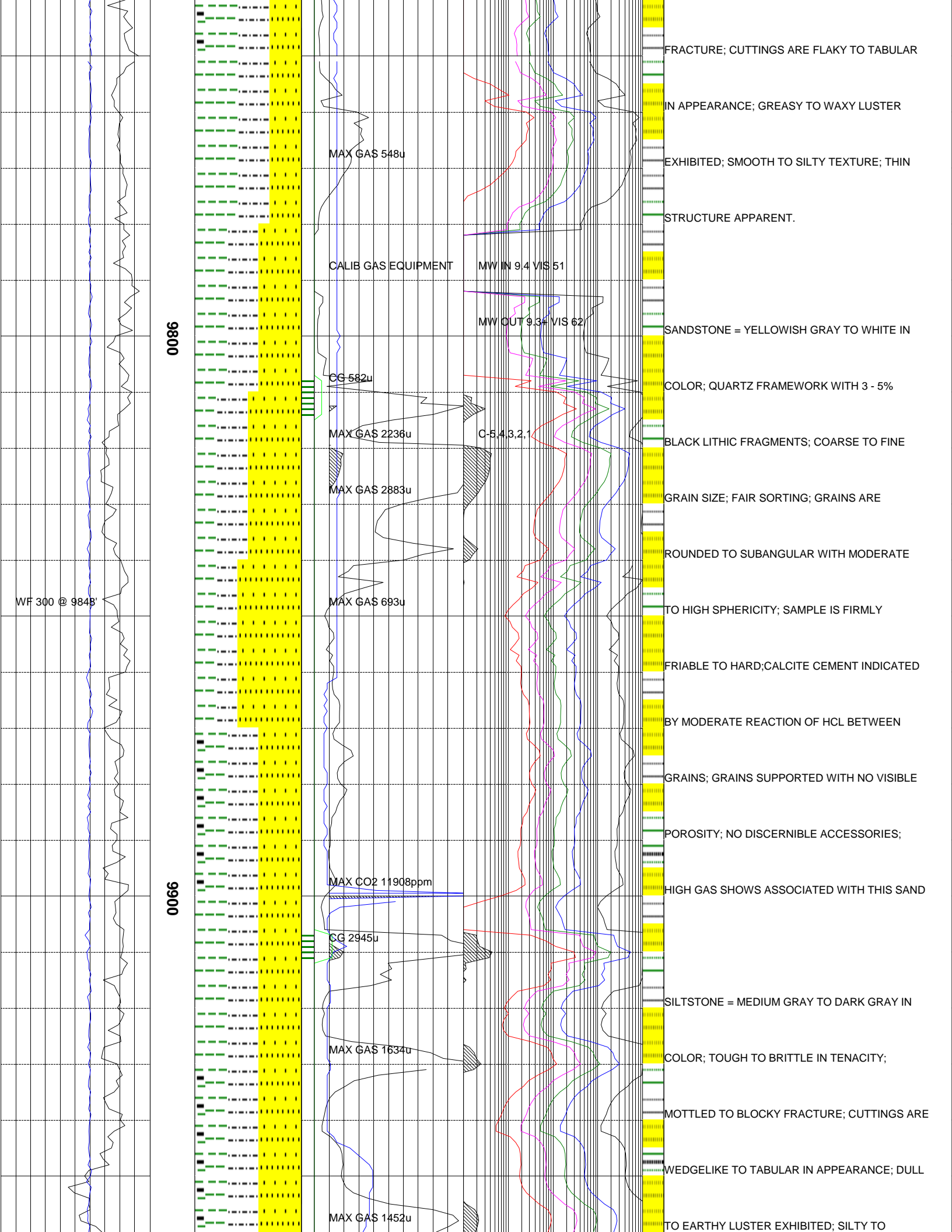


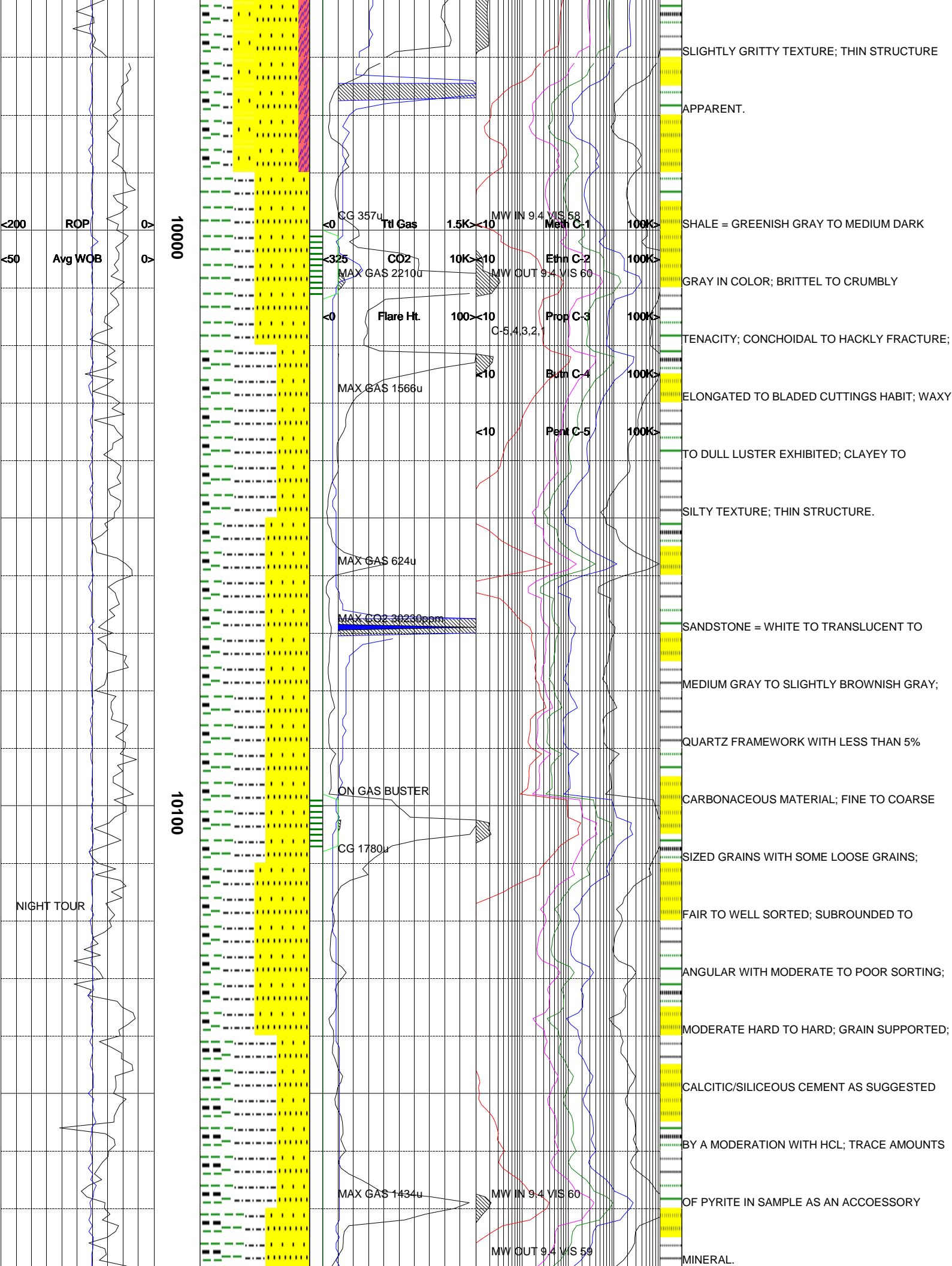


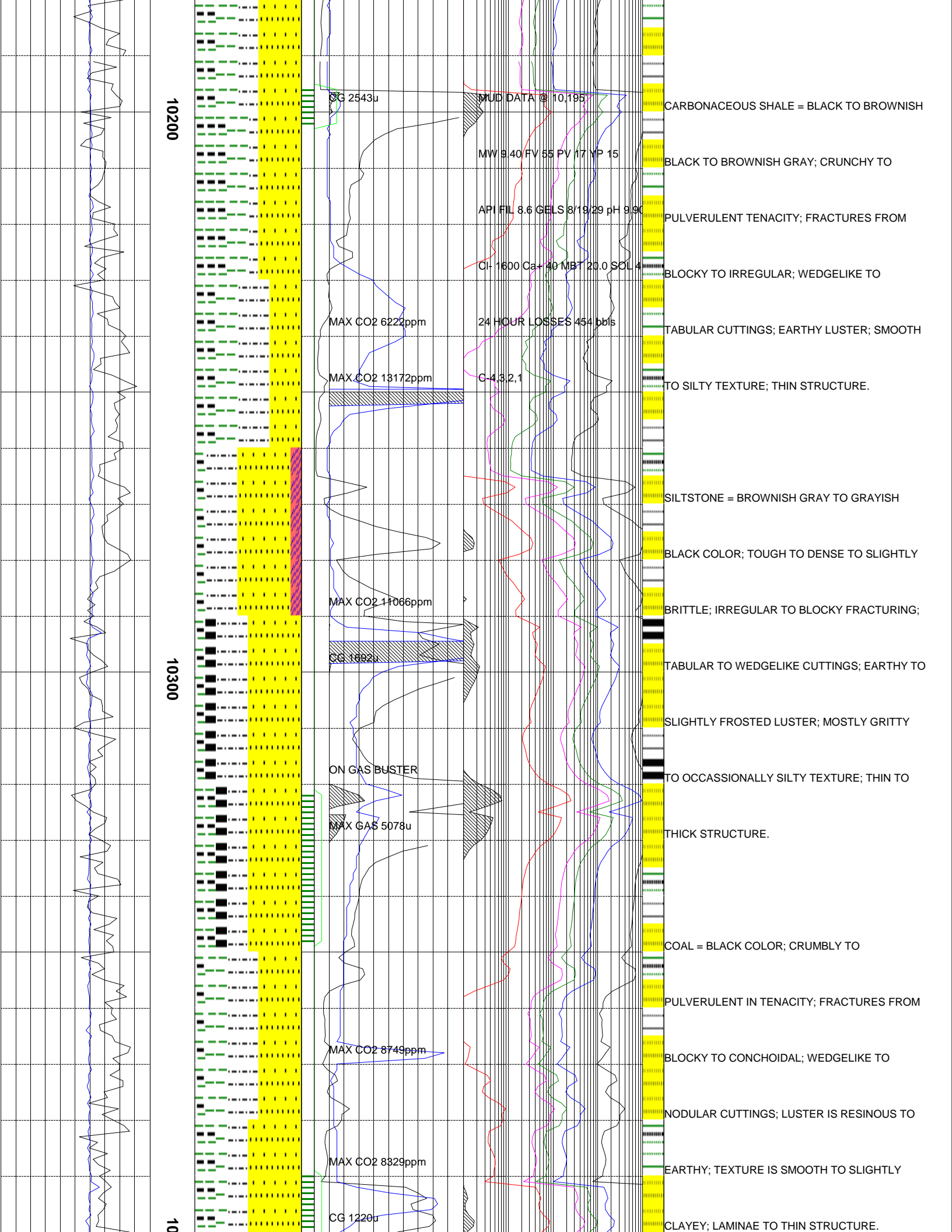


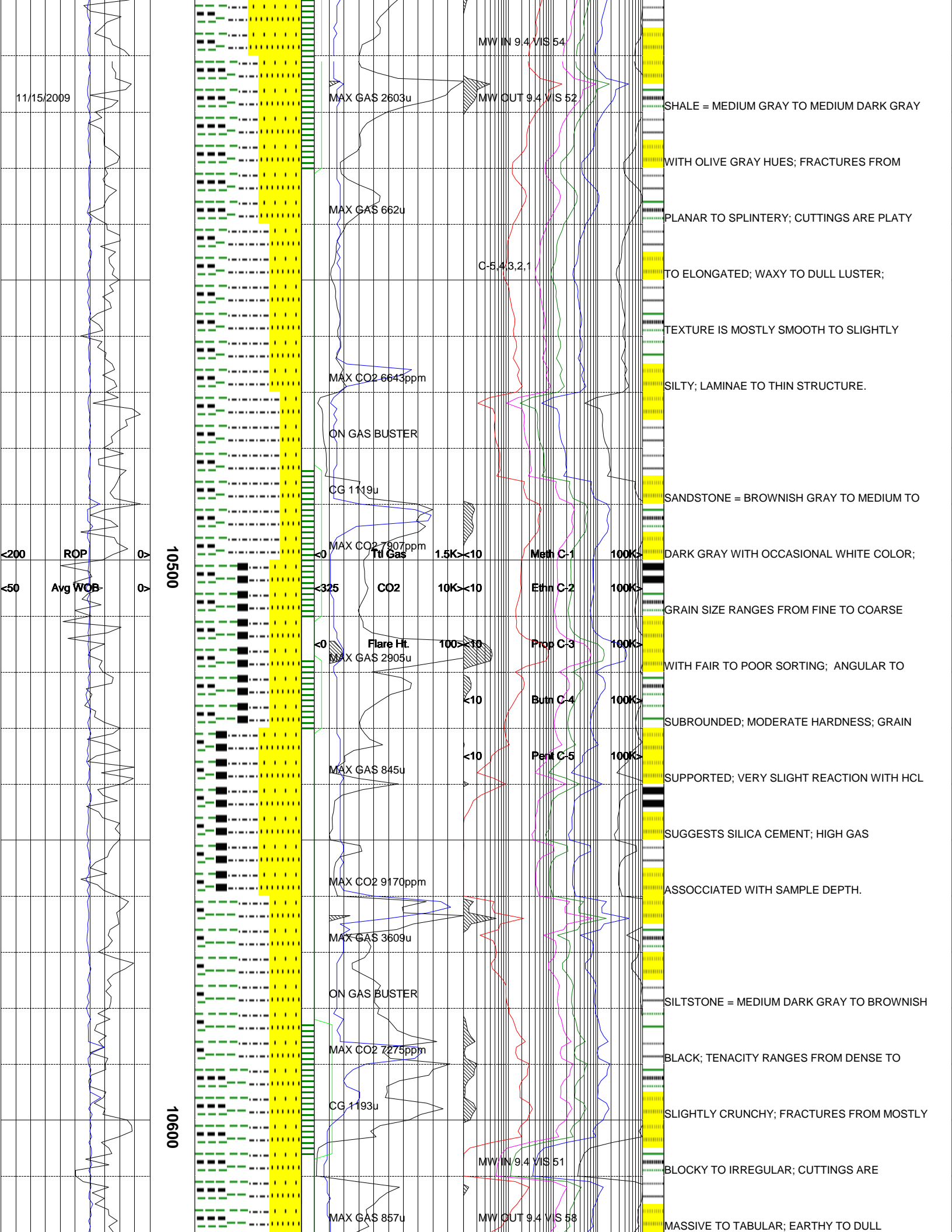


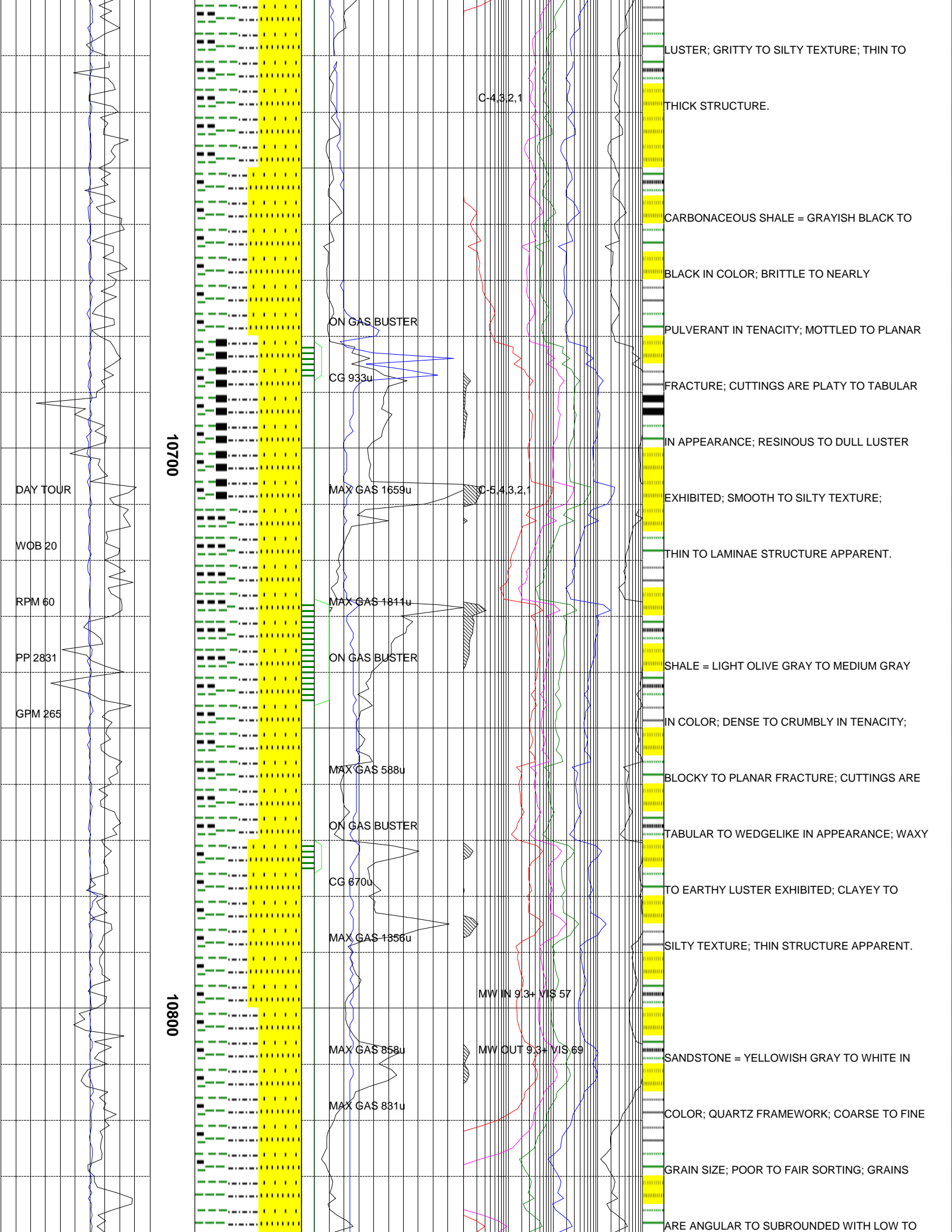












CLUSTER; GRITTY TO SILTY TEXTURE; THIN TO

THICK STRUCTURE.

CARBONACEOUS SHALE = GRAYISH BLACK TO

BLACK IN COLOR; BRITTLE TO NEARLY

PULVERANT IN TENACITY; MOTTLED TO PLANAR

FRACTURE; CUTTINGS ARE PLATY TO TABULAR

IN APPEARANCE; RESINOUS TO DULL LUSTER

EXHIBITED; SMOOTH TO SILTY TEXTURE;

THIN TO LAMINAE STRUCTURE APPARENT.

SHALE = LIGHT OLIVE GRAY TO MEDIUM GRAY

IN COLOR; DENSE TO CRUMBLY IN TENACITY;

BLOCKY TO PLANAR FRACTURE; CUTTINGS ARE

TABULAR TO WEDGELIKE IN APPEARANCE; WAXY

TO EARTHY LUSTER EXHIBITED; CLAYEY TO

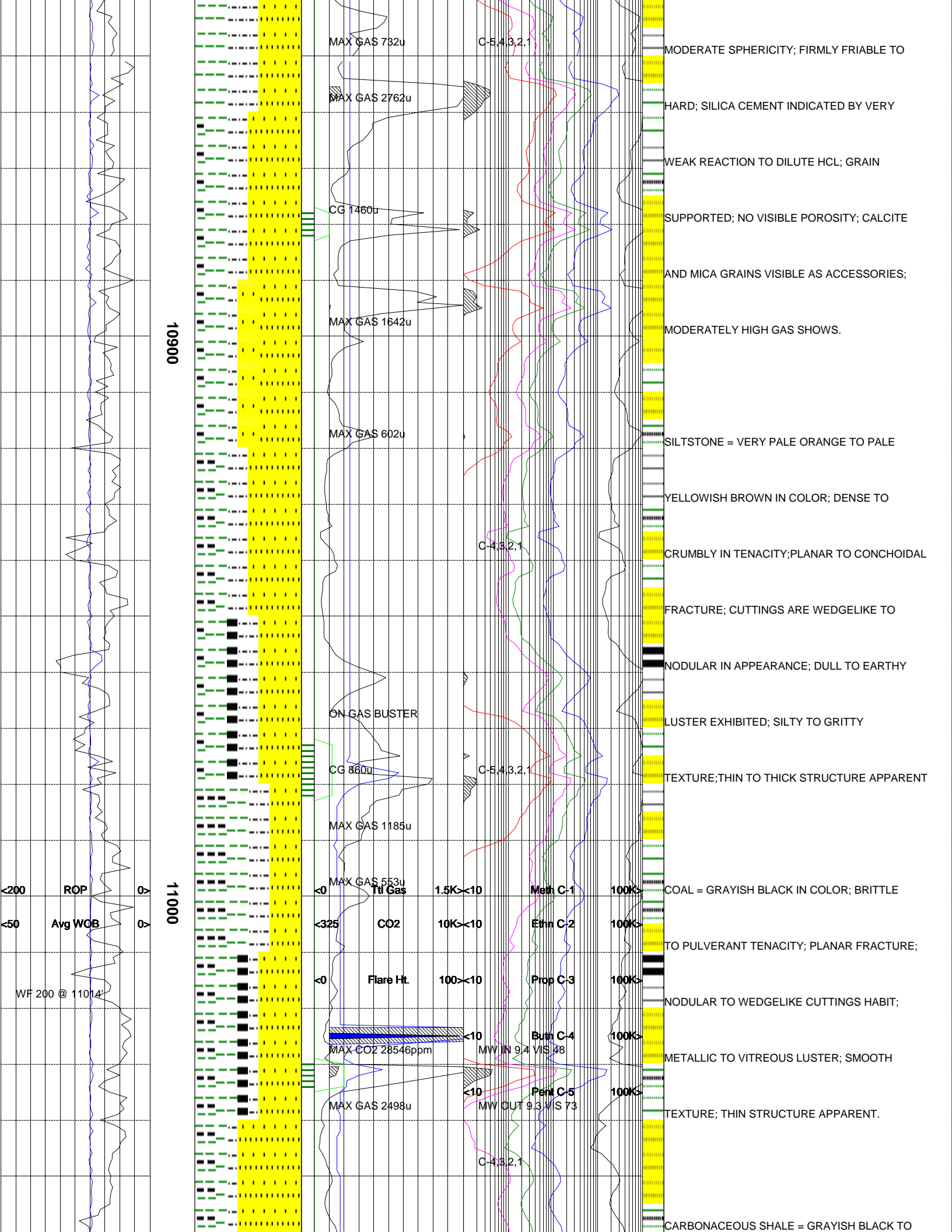
SILTY TEXTURE; THIN STRUCTURE APPARENT.

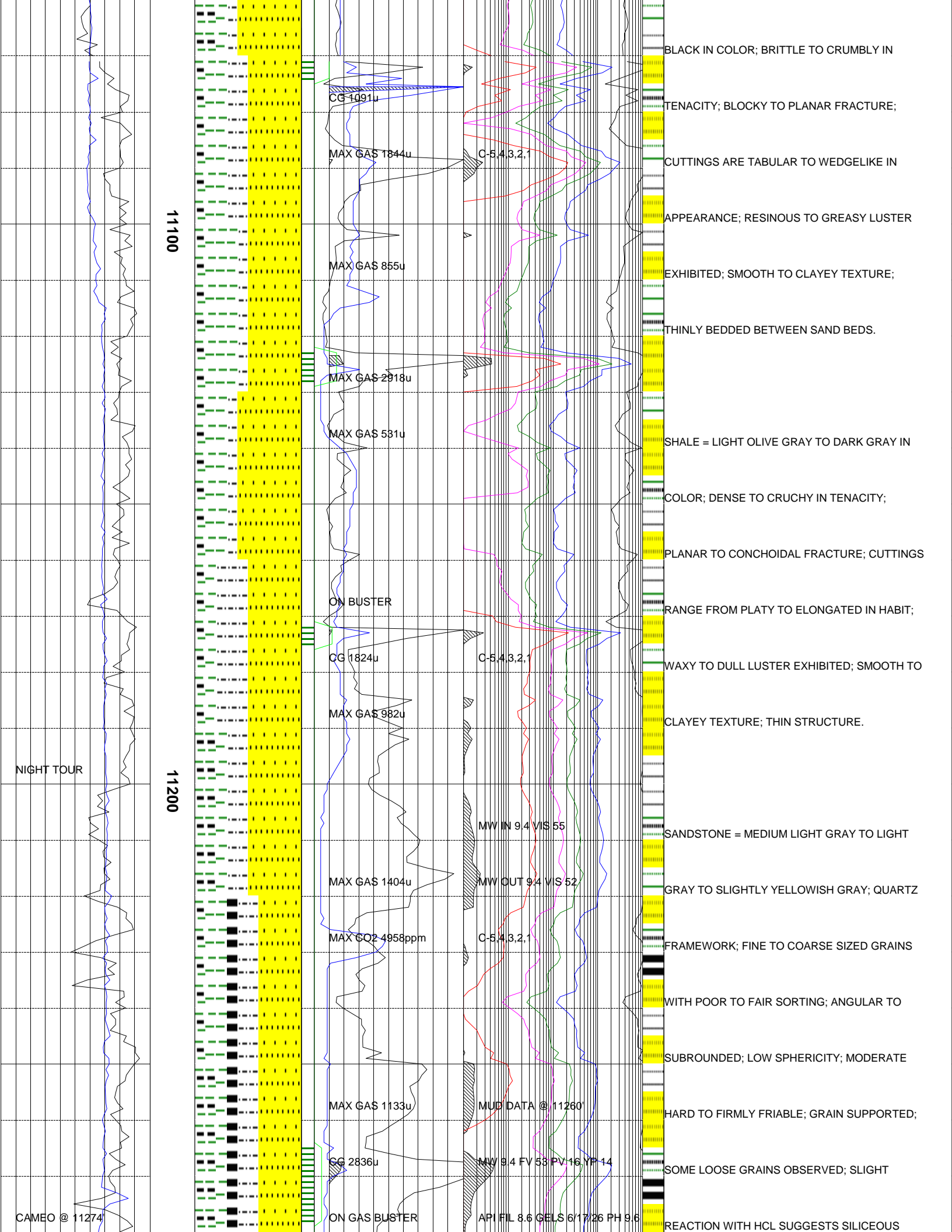
SANDSTONE = YELLOWISH GRAY TO WHITE IN

COLOR; QUARTZ FRAMEWORK; COARSE TO FINE

GRAIN SIZE; POOR TO FAIR SORTING; GRAINS

ARE ANGULAR TO SUBROUNDED WITH LOW TO





11100

11200

NIGHT TOUR

CAMEO @ 11274

CG 1091u

MAX GAS 1844u

MAX GAS 855u

MAX GAS 2918u

MAX GAS 531u

ON BUSTER

CG 1824u

MAX GAS 982u

MAX GAS 1404u

MAX CO2 4958ppm

MAX GAS 1133u

CG 2836u

ON GAS BUSTER

C-5.4.3.2.1

C-5.4.3.2.1

MW IN 9.4 VIS 55

MW OUT 9.4 VIS 52

C-5.4.3.2.1

MUD DATA @ 11260

MW 9.4 FV 53 PV 16 YF 14

API FIL 8.6 GELS 6/17/26 PH 9.6

BLACK IN COLOR; BRITTLE TO CRUMBLY IN

TENACITY; BLOCKY TO PLANAR FRACTURE;

CUTTINGS ARE TABULAR TO WEDGELIKE IN

APPEARANCE; RESINOUS TO GREASY LUSTER

EXHIBITED; SMOOTH TO CLAYEY TEXTURE;

THINLY BEDDED BETWEEN SAND BEDS.

SHALE = LIGHT OLIVE GRAY TO DARK GRAY IN

COLOR; DENSE TO CRUCHY IN TENACITY;

PLANAR TO CONCHOIDAL FRACTURE; CUTTINGS

RANGE FROM PLATY TO ELONGATED IN HABIT;

WAXY TO DULL LUSTER EXHIBITED; SMOOTH TO

CLAYEY TEXTURE; THIN STRUCTURE.

SANDSTONE = MEDIUM LIGHT GRAY TO LIGHT

GRAY TO SLIGHTLY YELLOWISH GRAY; QUARTZ

FRAMEWORK; FINE TO COARSE SIZED GRAINS

WITH POOR TO FAIR SORTING; ANGULAR TO

SUBROUNDED; LOW SPHERICITY; MODERATE

HARD TO FIRMLY FRIABLE; GRAIN SUPPORTED;

SOME LOOSE GRAINS OBSERVED; SLIGHT

REACTION WITH HCL SUGGESTS SILICEOUS



