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(281) 784-5500

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(337) 364-2322

Anchorage, AK
(907) 561-2465

MUDLOG MD

COMPANY	EXXONMOBIL
WELL	PCU 296-6B2 ST1
FIELD	PICEANCE CREEK UNIT
REGION	ROCKY MOUNTAIN
COORDINATES	LAT 39.905269000 LON 108.205030000
ELEVATION	GL = 7363.8' KB = 7390.8'
COUNTY, STATE	RIO BLANCO, CO
API INDEX	051031154501
SPUD DATE	04/25/2011
CONTRACTOR	HELMRICH AND PAYNE
CO. REP.	SCOTT ARENBURG
RIG/TYPE	215/FLEX 3
LOGGING UNIT	ML051
GEOLOGISTS	B.MARSH, B.JOHANNING G.BAKER, D.CLAAR
ADD. PERSONS	K.WALLANDER I. FAROOQUI
CO. GEOLOGIST	CHRIS ALBA, WILL HOFFMAN

LOG INTERVAL

DEPTHS: 4,622' **TO** 10,280'

DATES: 04/25/2011 **TO** 05/12/2011

SCALE: 5" = 100'

CASING DATA

16" **AT** 145'

10.75" **AT** 4,622'

7.00" **AT** 8,665'

AT

HOLE SIZE

20.0" **TO** 145'

14.75" **TO** 4,622'

9.875" **TO** 10,280'

TO

MUD TYPES

LSND **TO** 10,280'

TO

TO

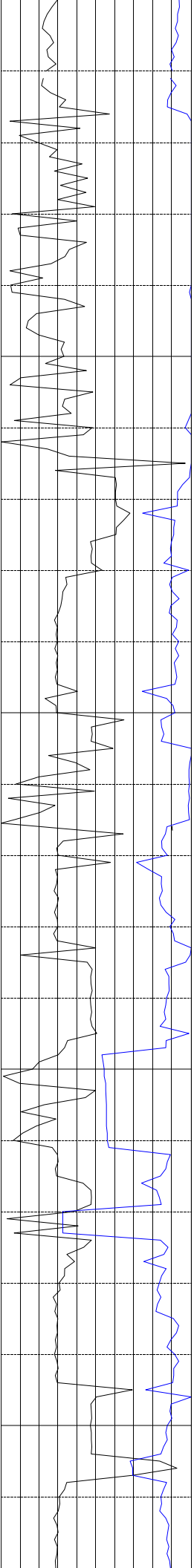
TO

ABBREVIATIONS

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

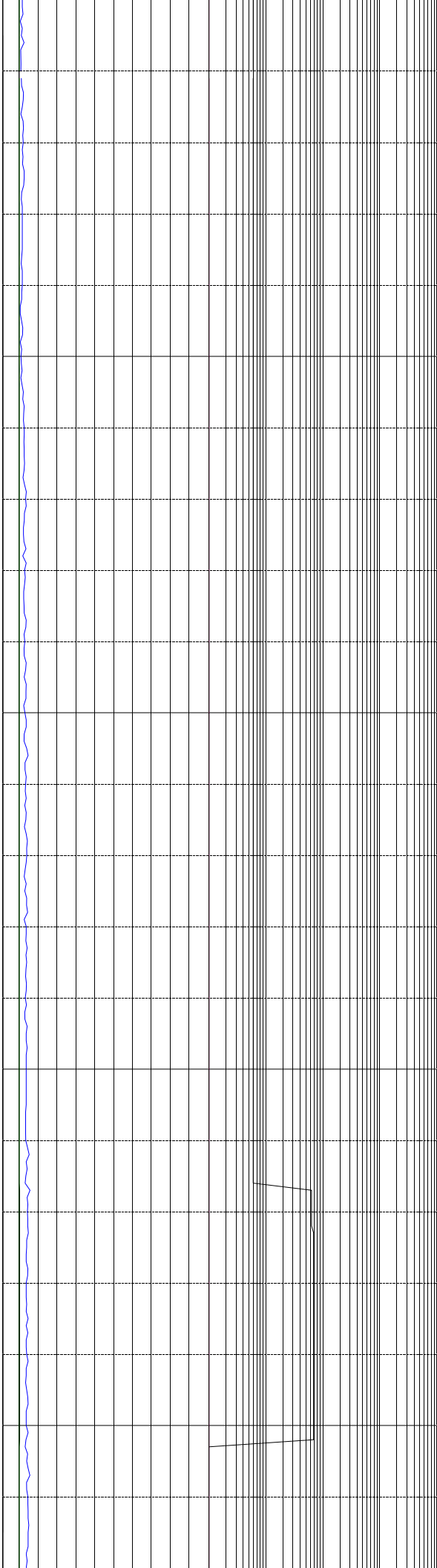
ALTERED ZONE	CHERT - GLASSY	FELSIC SILIC DIKE	MARL - CALC	SANDSTONE
ANDESITE	CHERT - PORCEL	FOSSIL	METAMORPHICS	SANDSTONE-TUFFACEOUS
ANHYDRITE	CHERT - TIGER STRIPE	GABBRO	MUDSTONE	SERICITIZATION
BASALT	CHERT - UNDIFF	GLASSY TUFF	OBSIDIAN	SERPENTINE
BENTONITE	CLAY	GRANITE	PALEOSOL	SHALE
BIOTITIZATION	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	

[illegible]



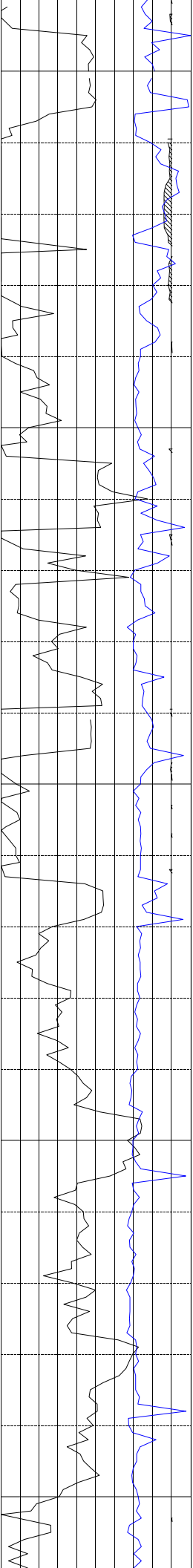
300

400



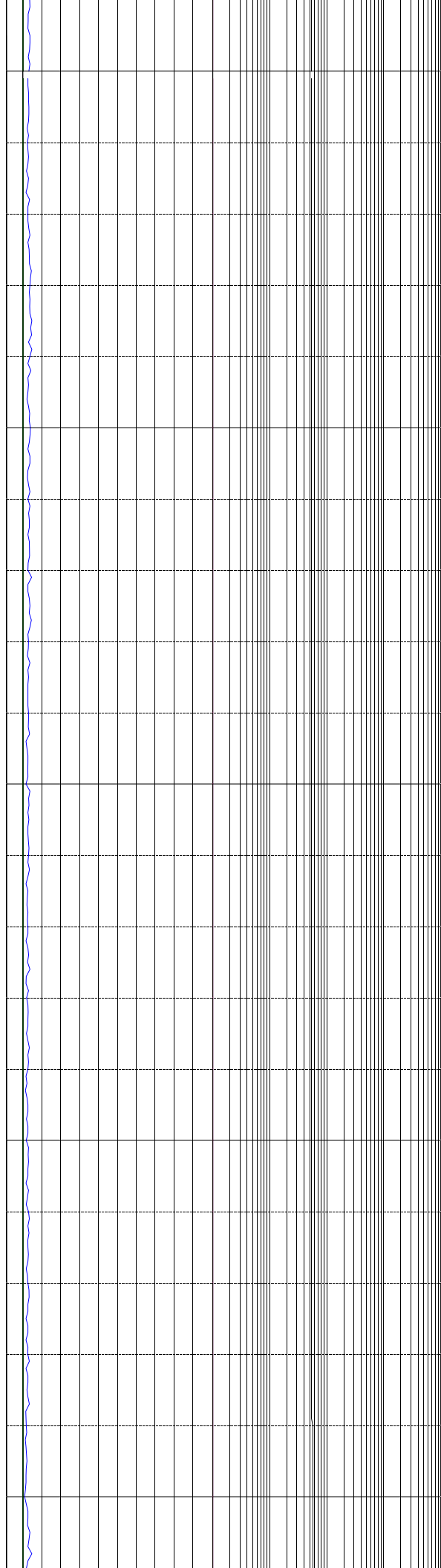
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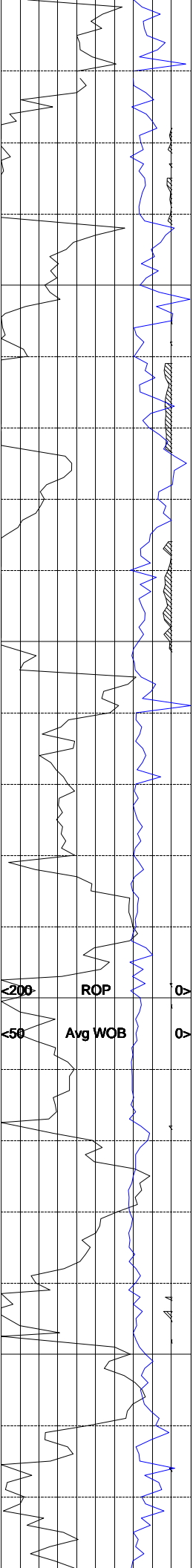
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700

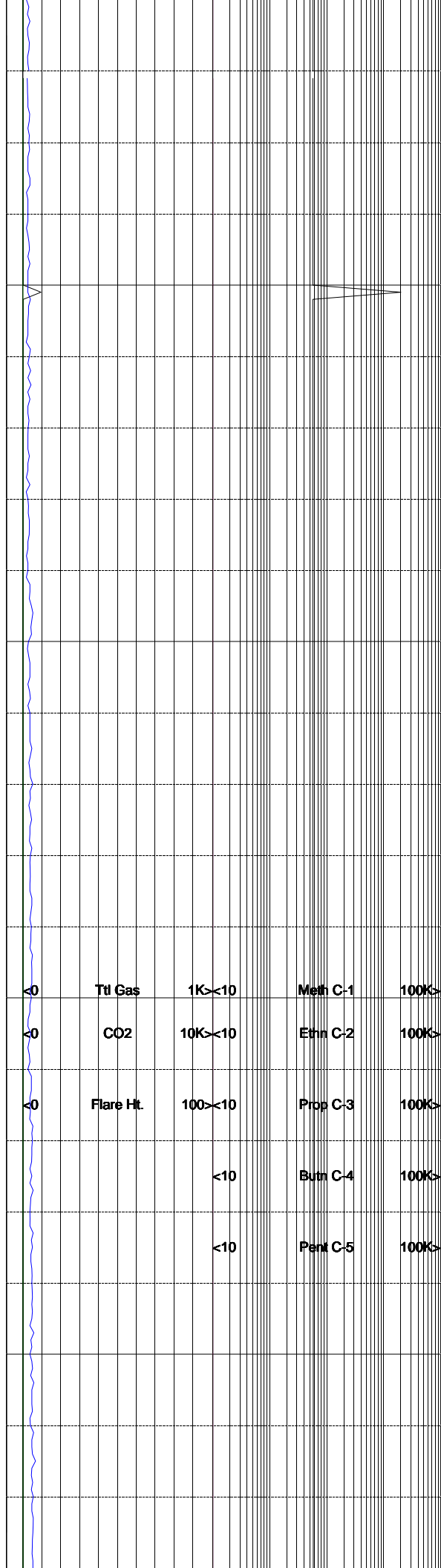
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900

1000



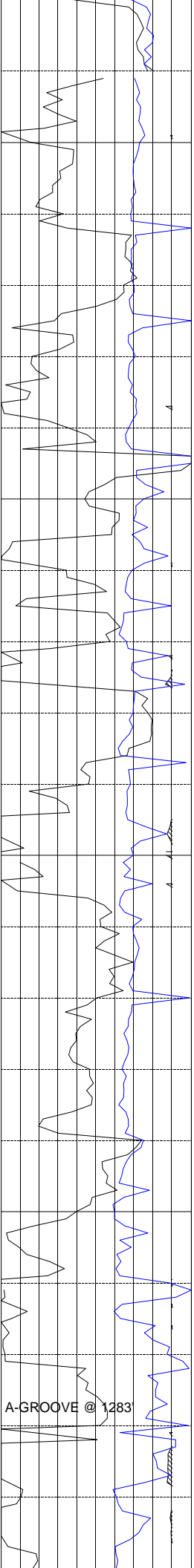
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<0 CO2 10K<10 Ethn C-2 100K>

<0 Flare Ht. 100><10 Prop C-3 100K>

<10 Butn C-4 100K>

<10 Pent C-5 100K>

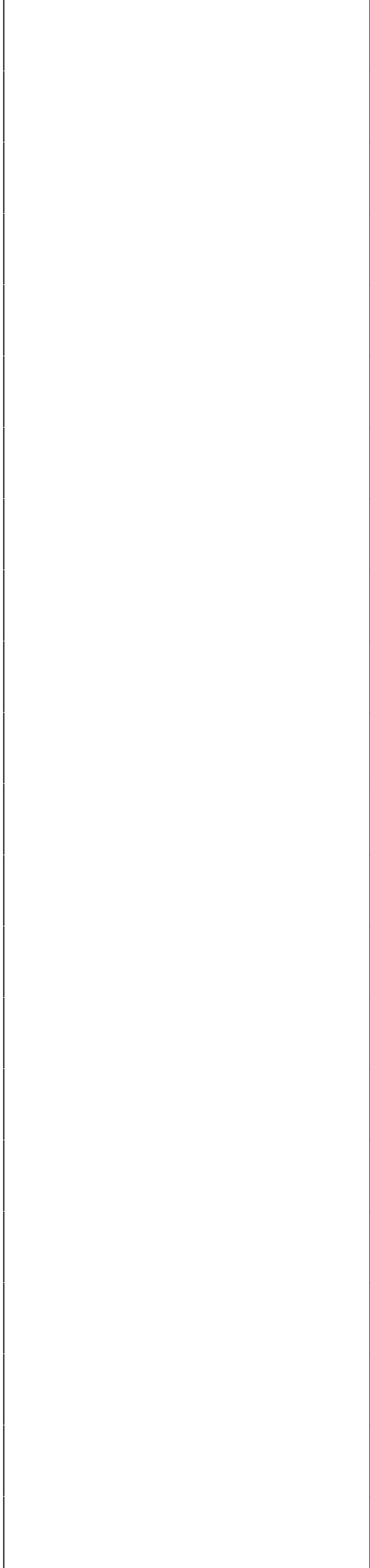
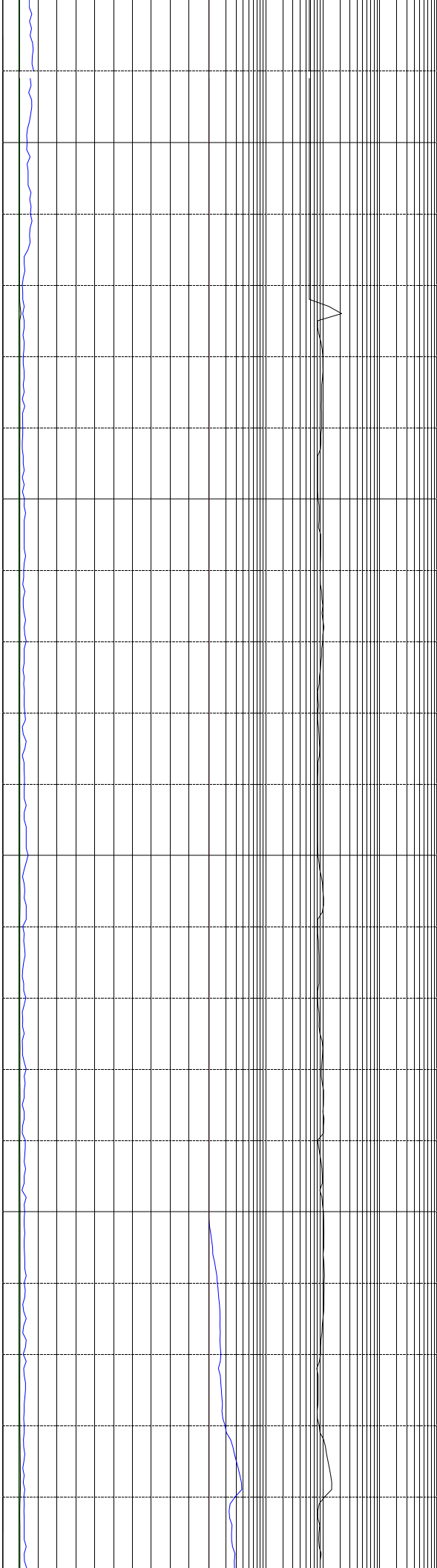


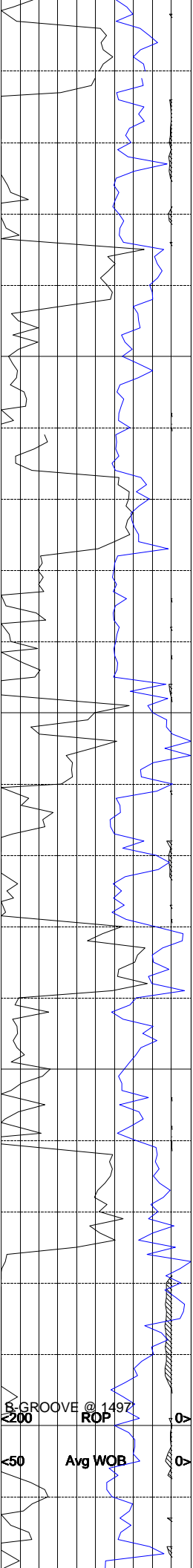
1100

1200

13

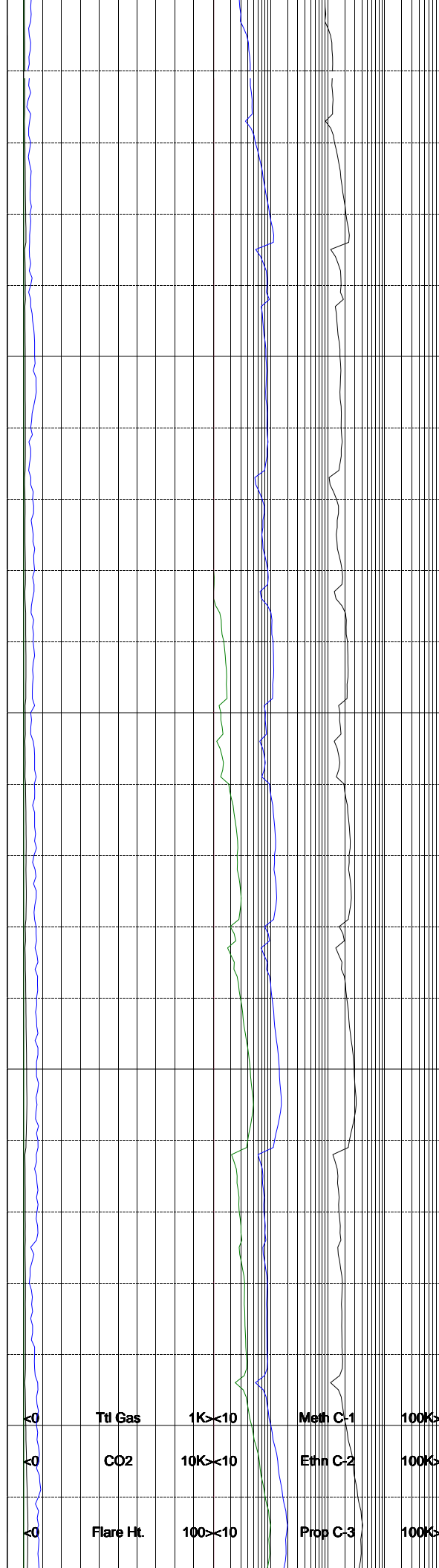
A-GROOVE @ 1283





1400

1500



Ttl Gas

1K<10

Meth C-1

100K>

CO2

10K<10

Ethn C-2

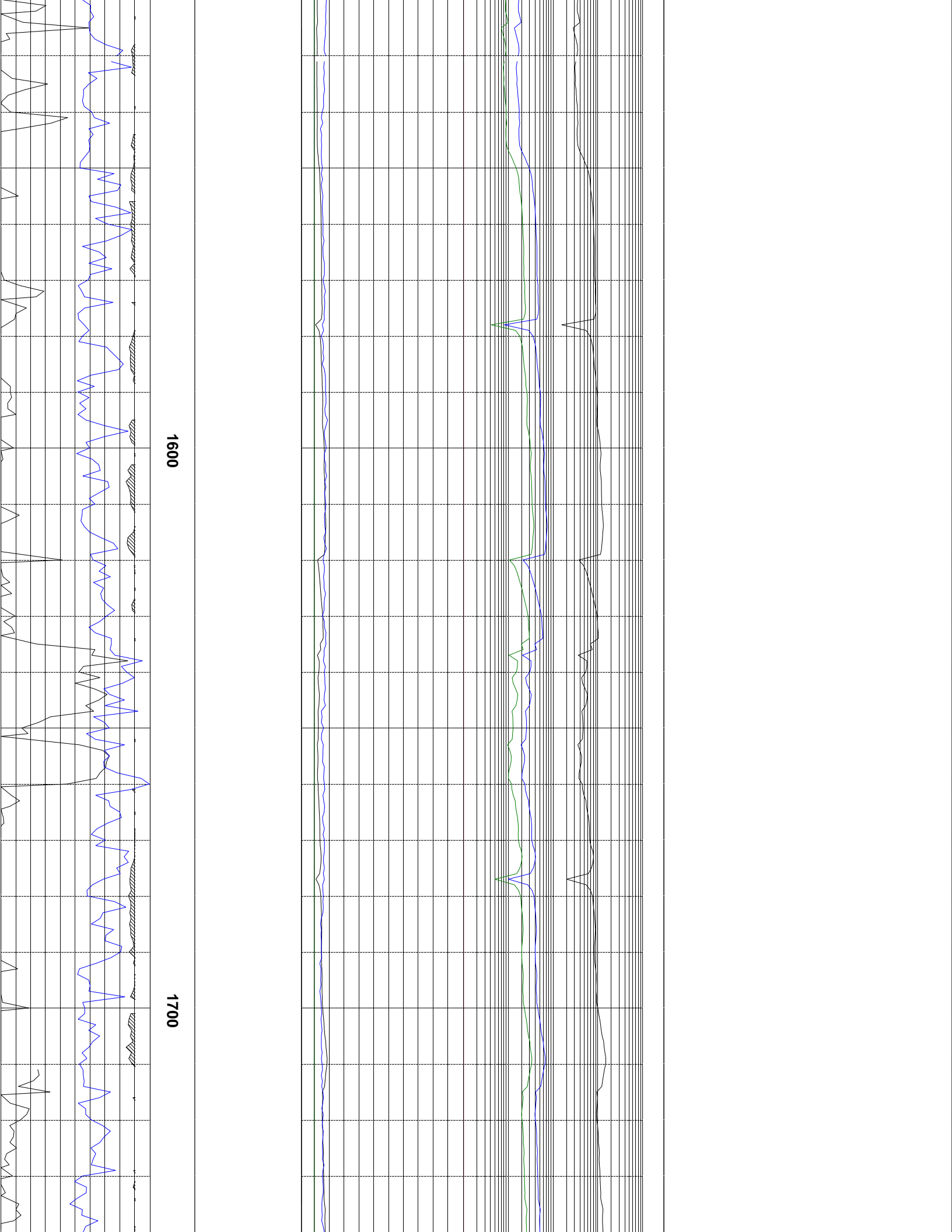
100K>

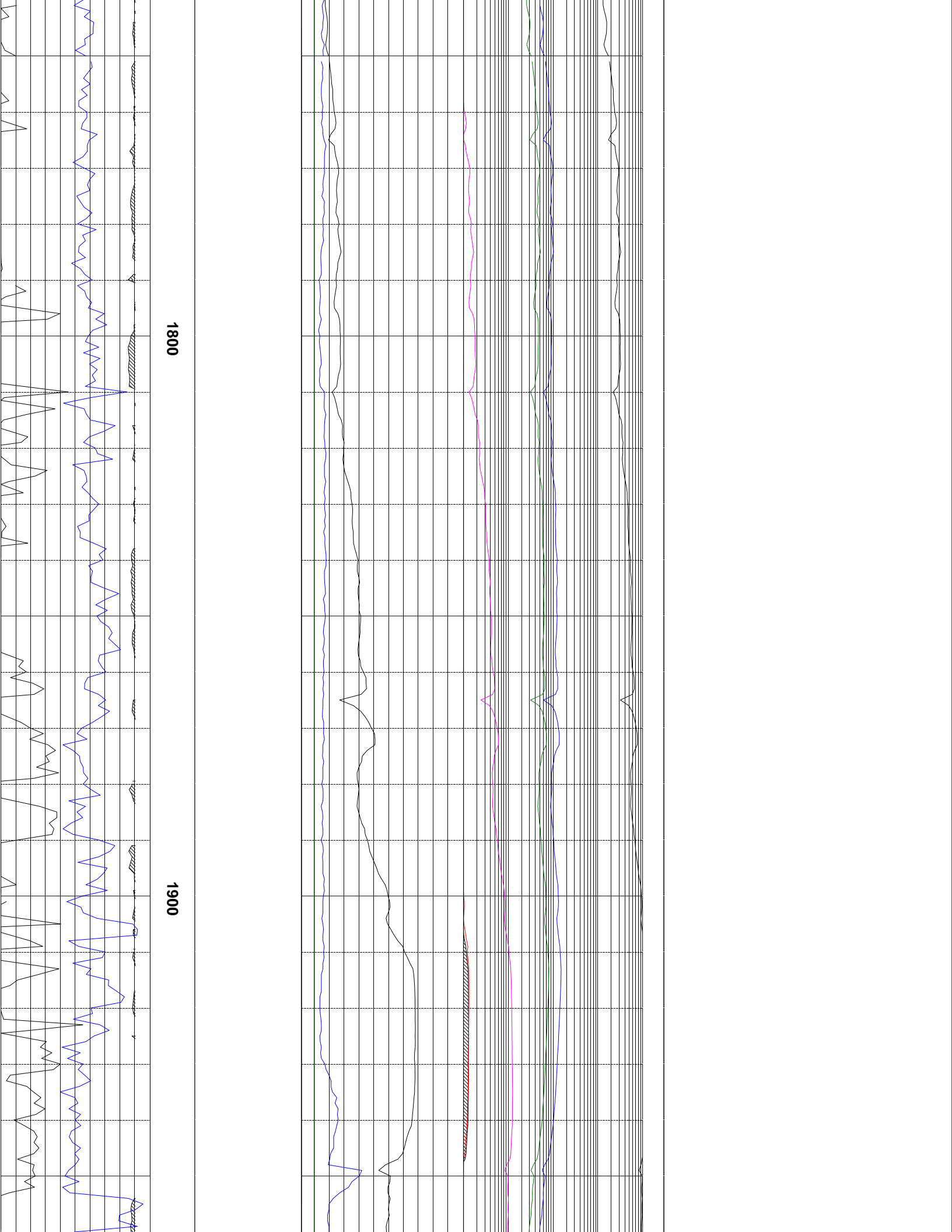
Flare Ht.

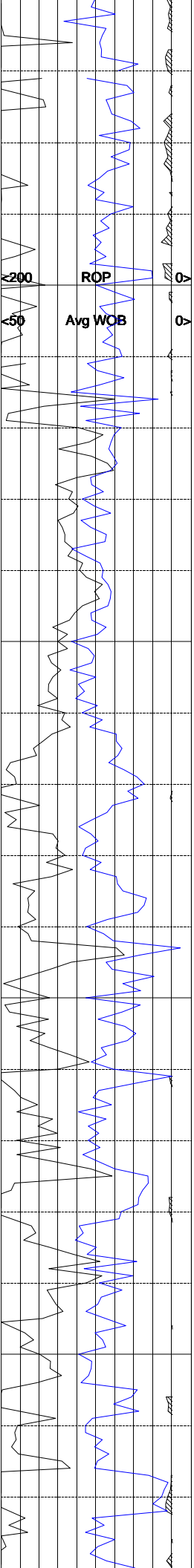
100<10

Prop C-3

100K>

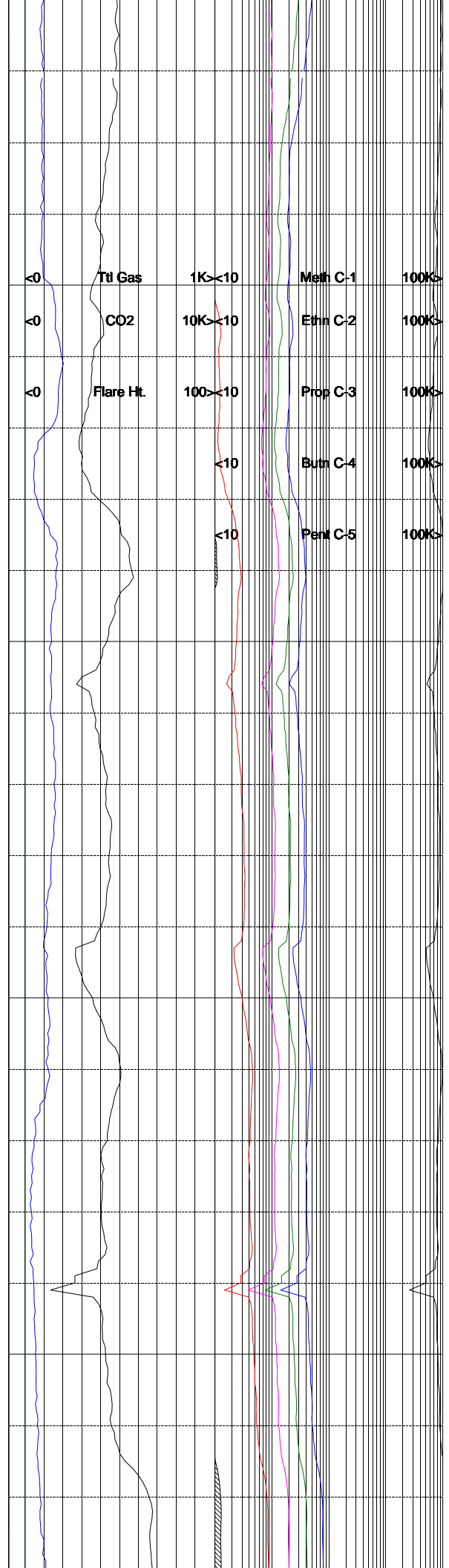


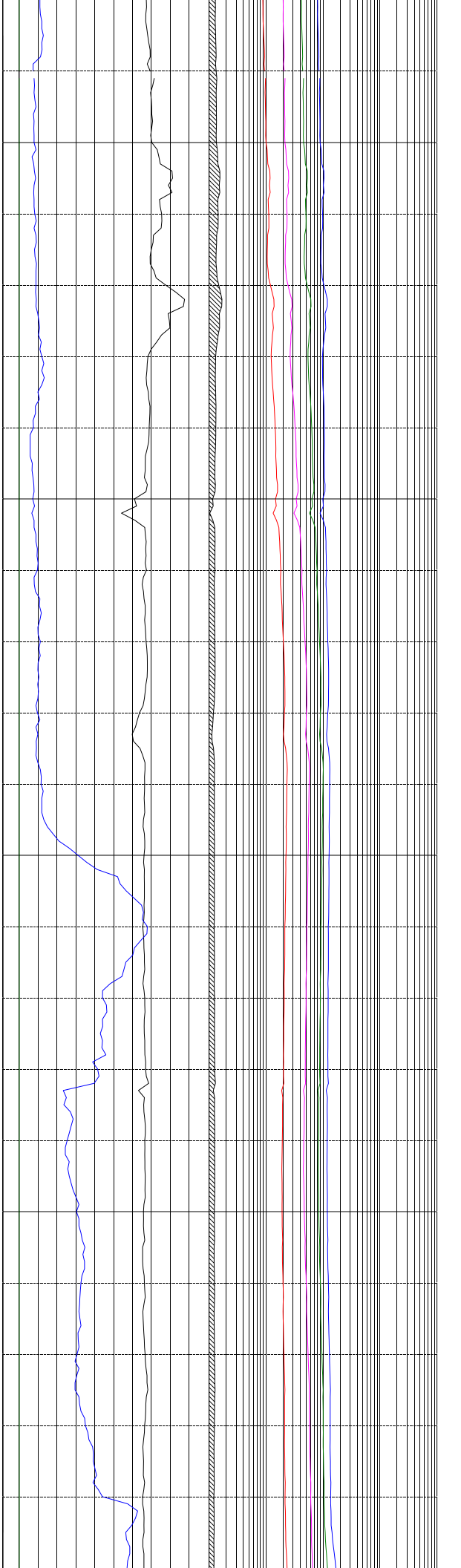




2000

2100

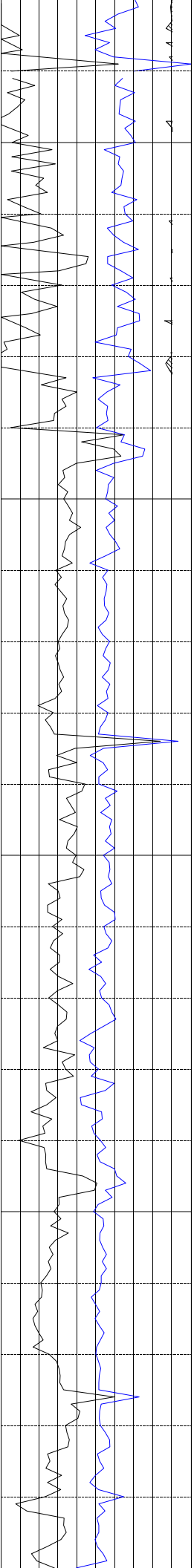


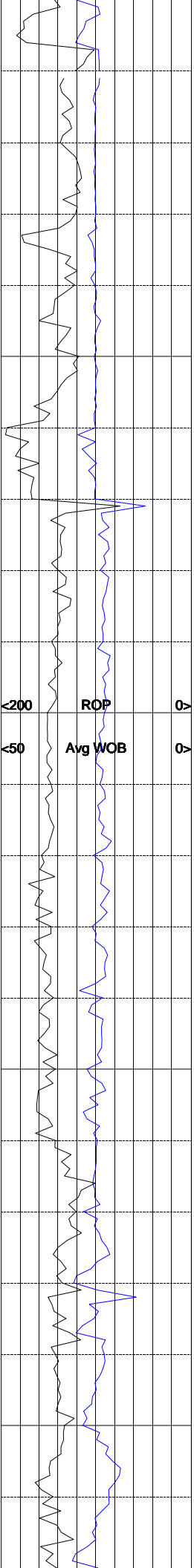


2200

2300

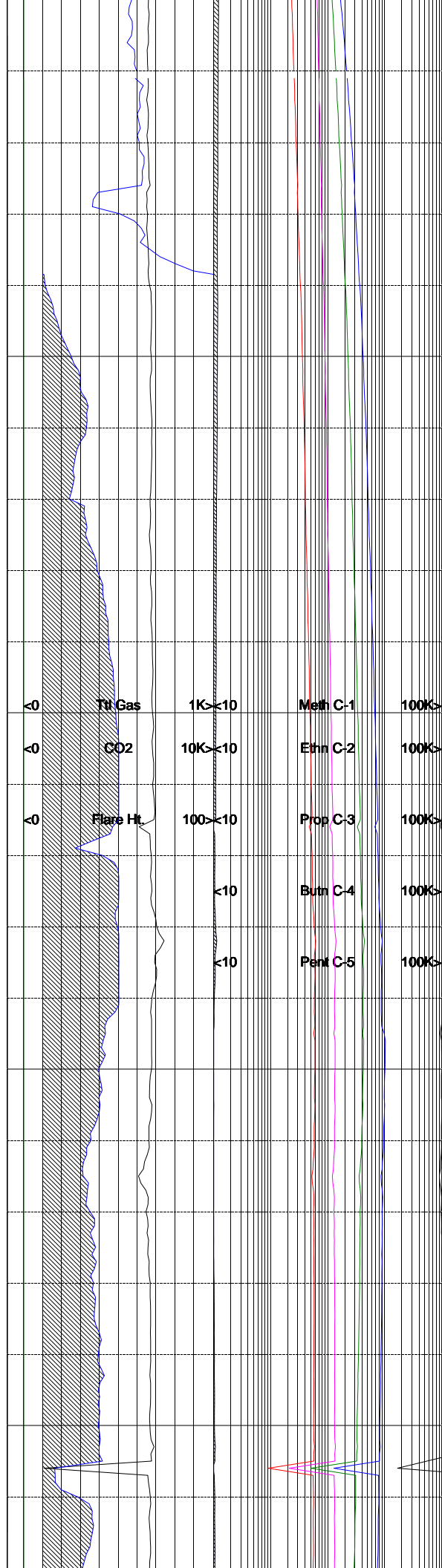
24





2500

2600



<0

Ttl Gas

1K<10

Meth C-1

100K>

<0

CO2

10K<10

Ethn C-2

100K>

<0

Flare Ht

100>10

Prop C-3

100K>

<10

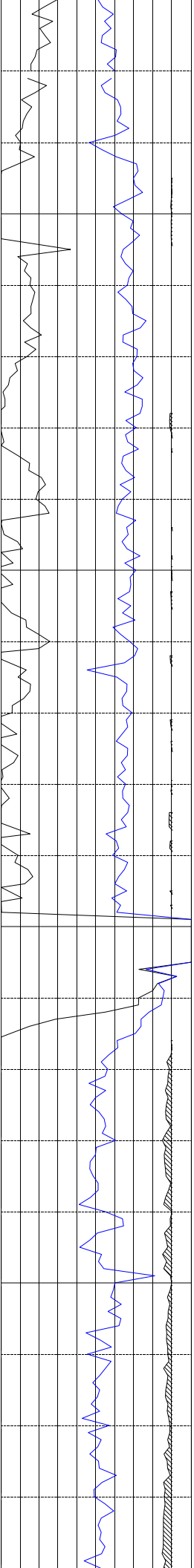
Butn C-4

100K>

<10

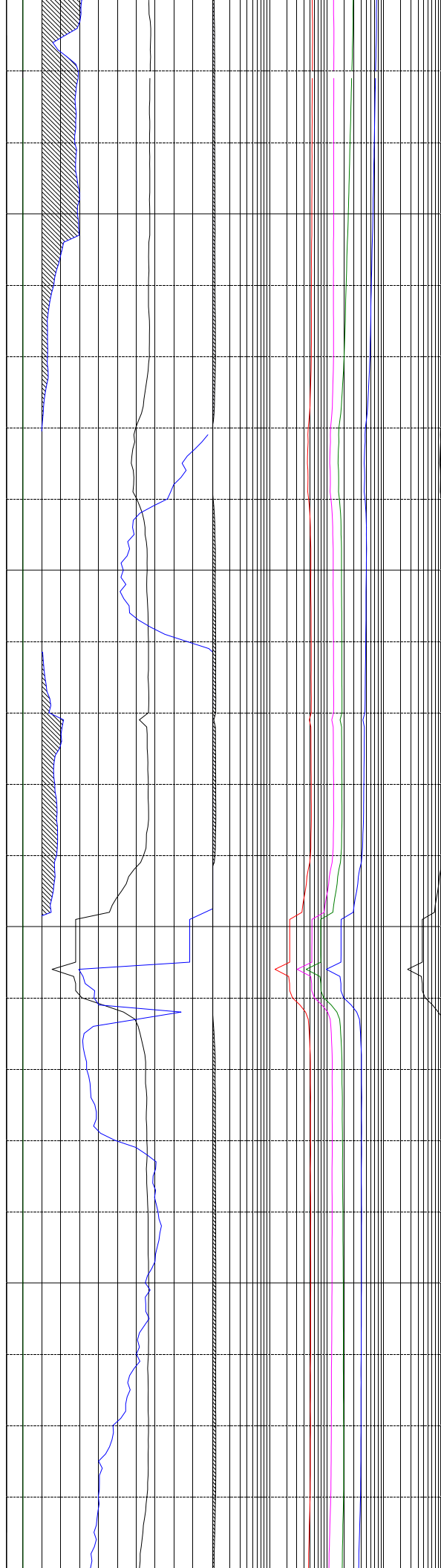
Pent C-5

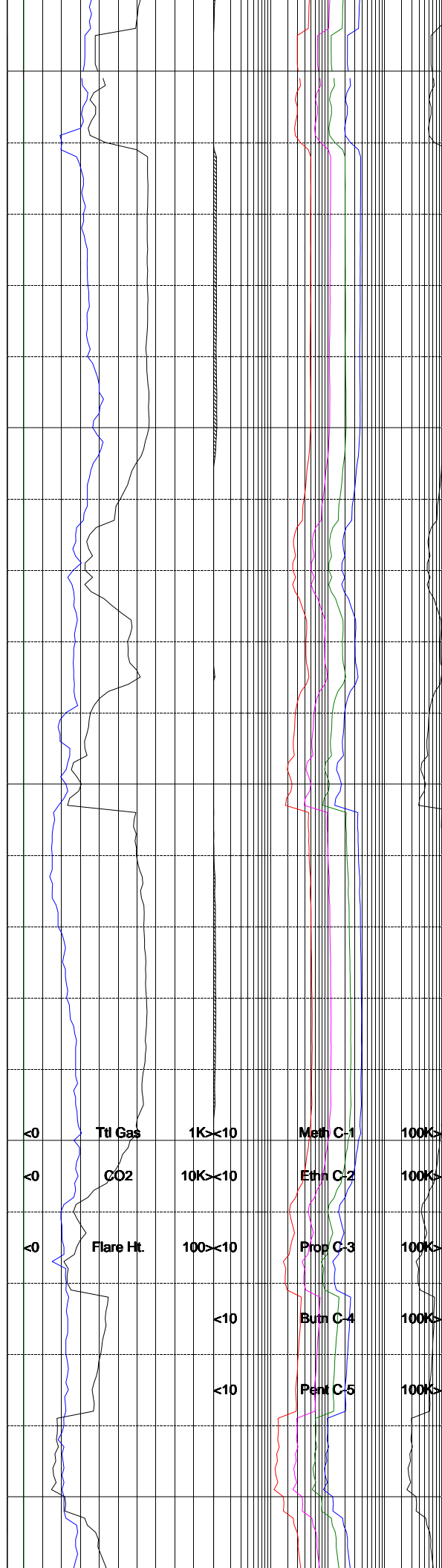
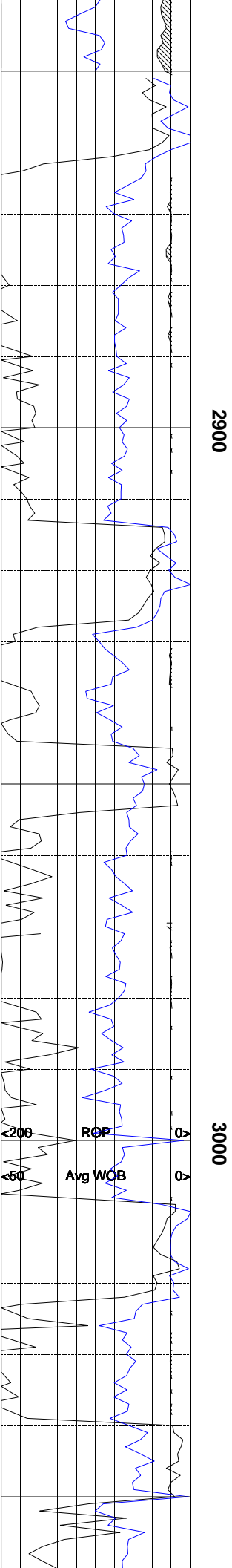
100K>

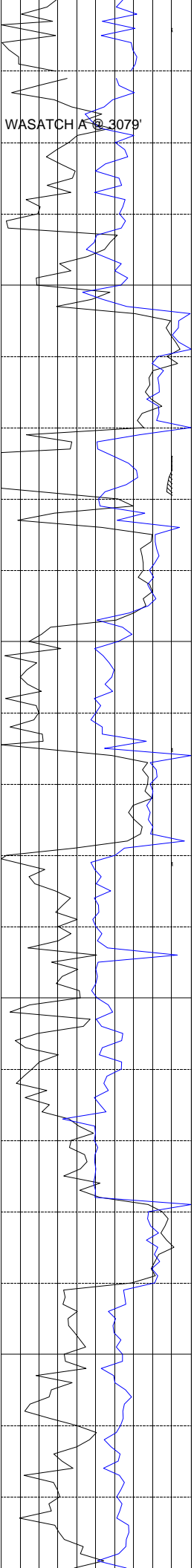


2700

2800



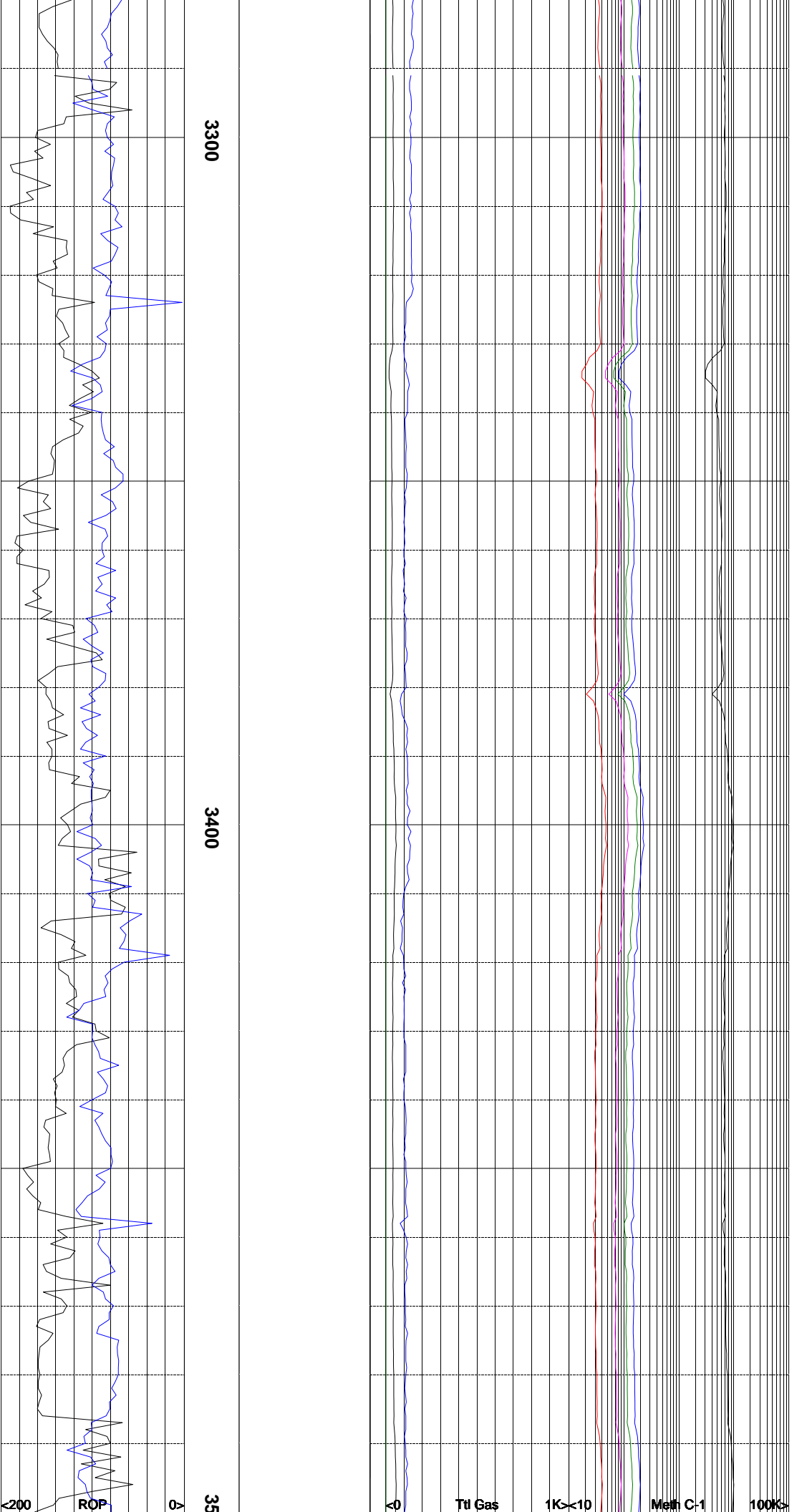


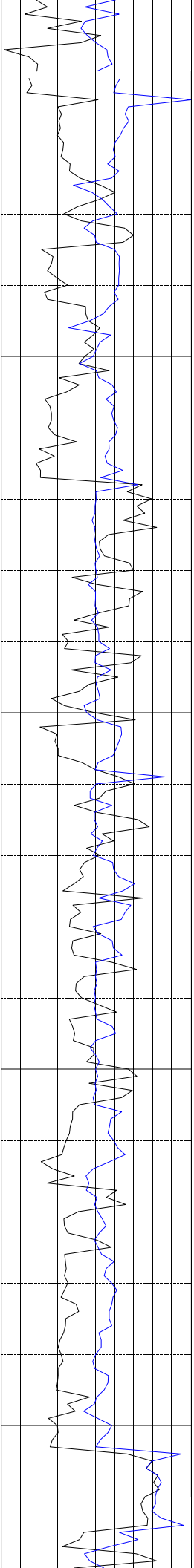


3100

3200

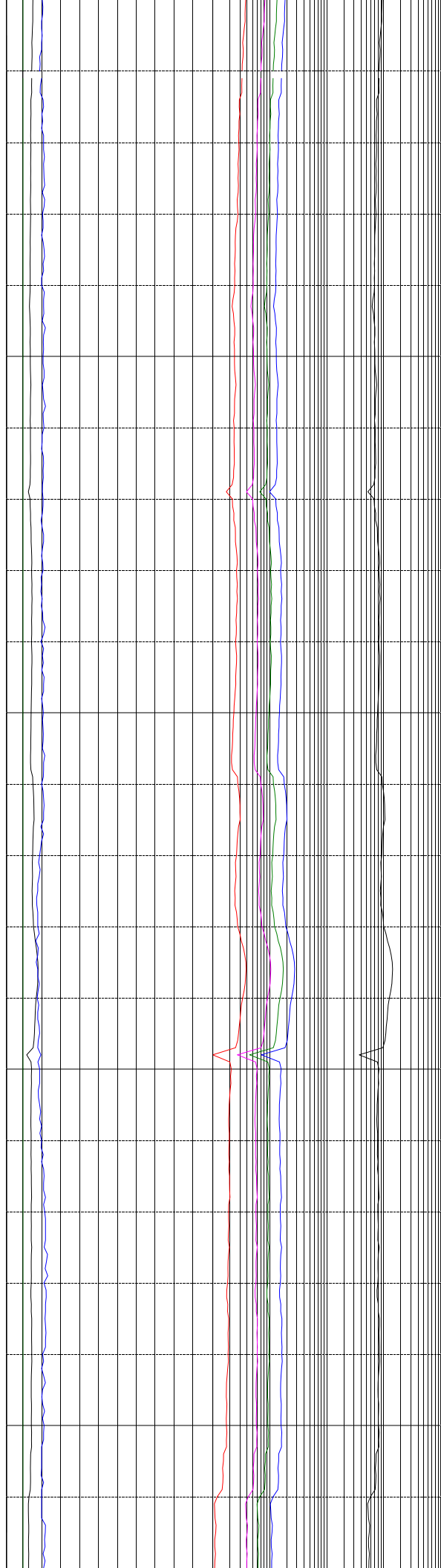


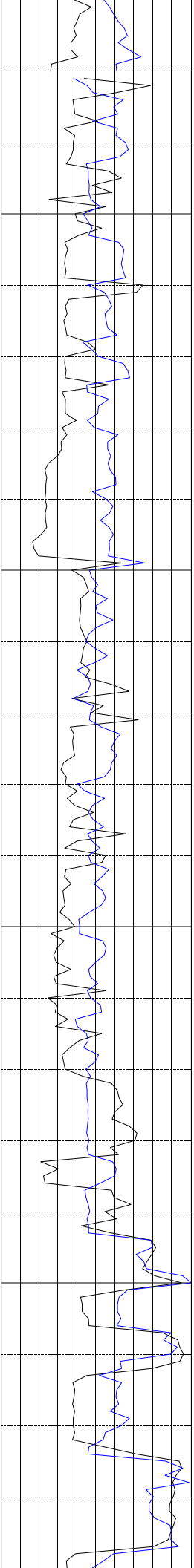




3600

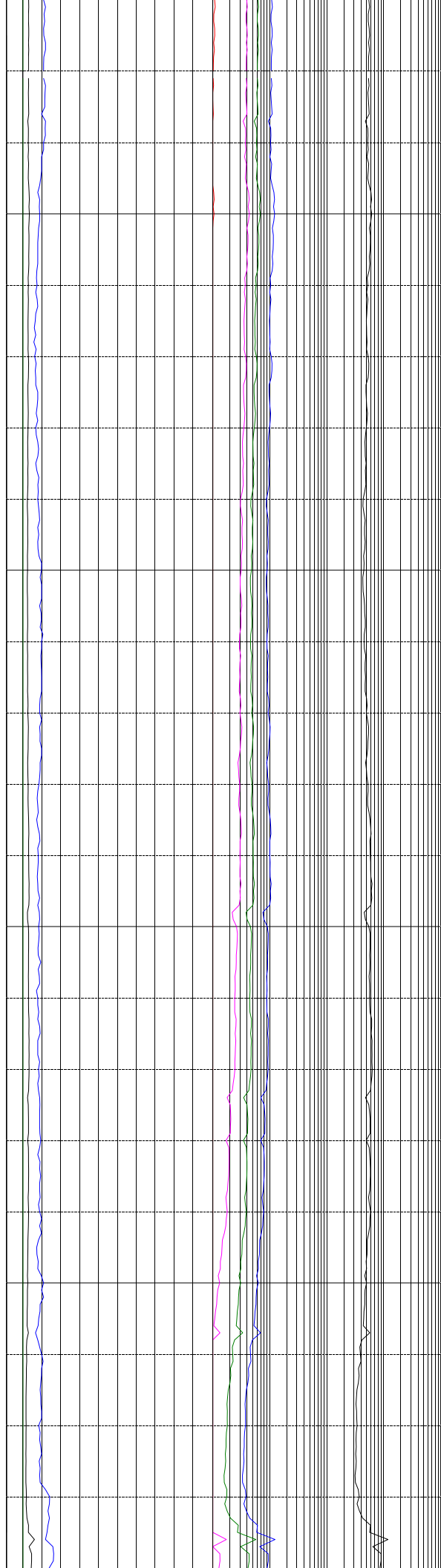
3700

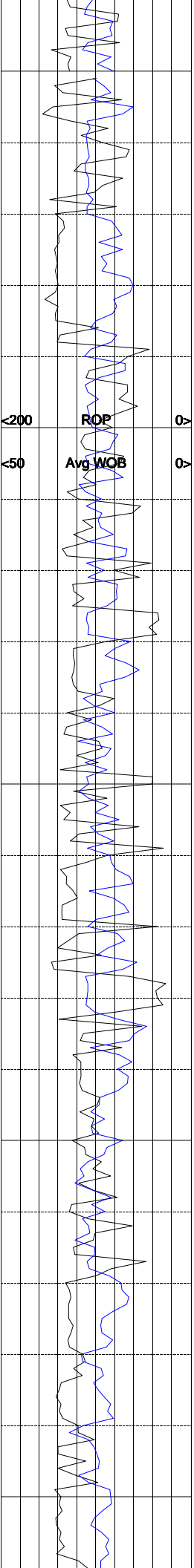




3800

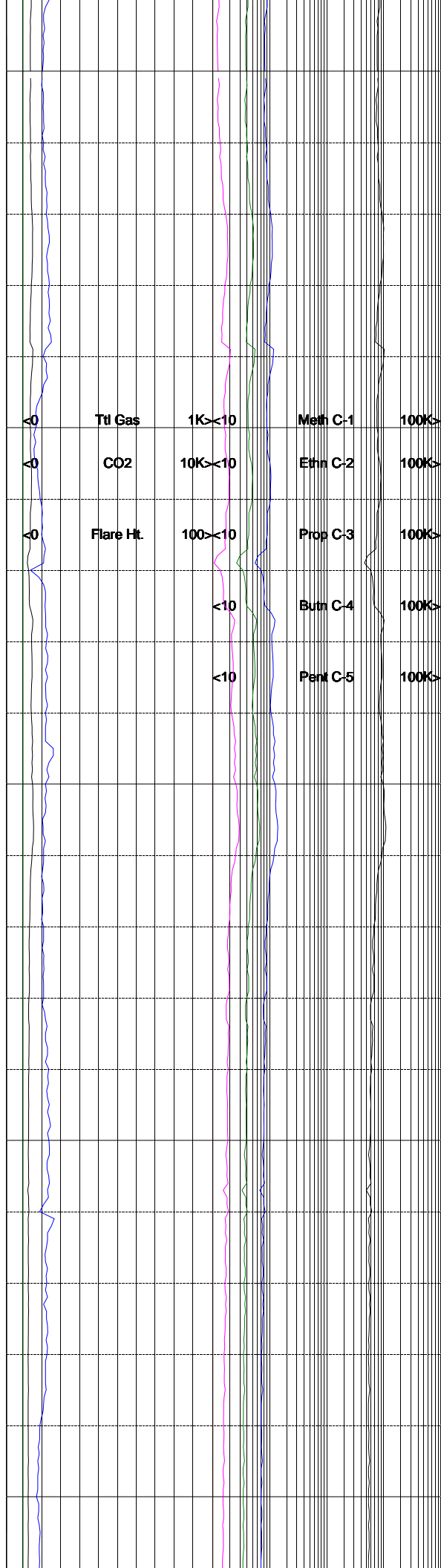
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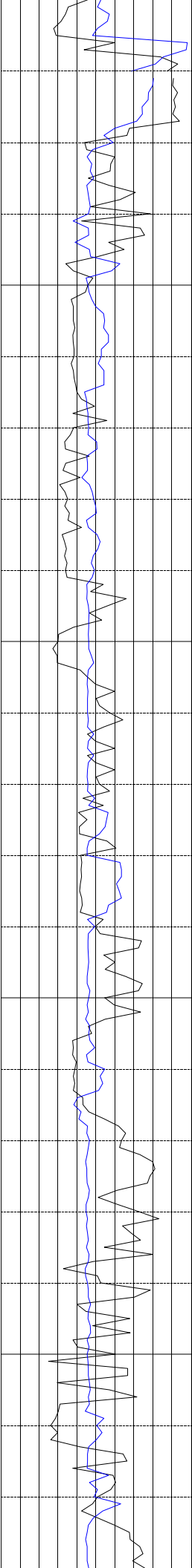




4000

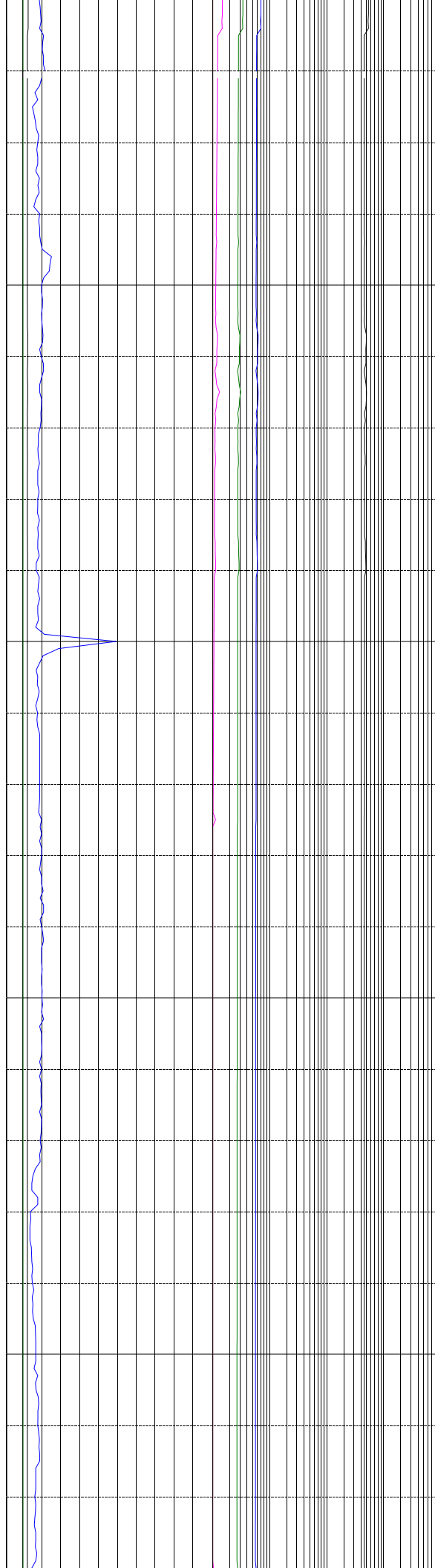
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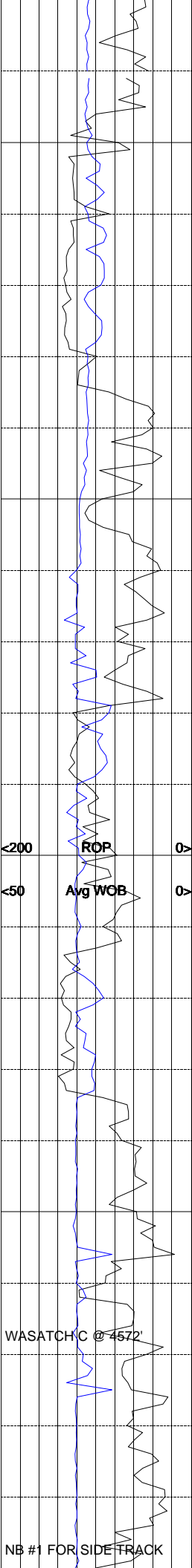


4200

4300



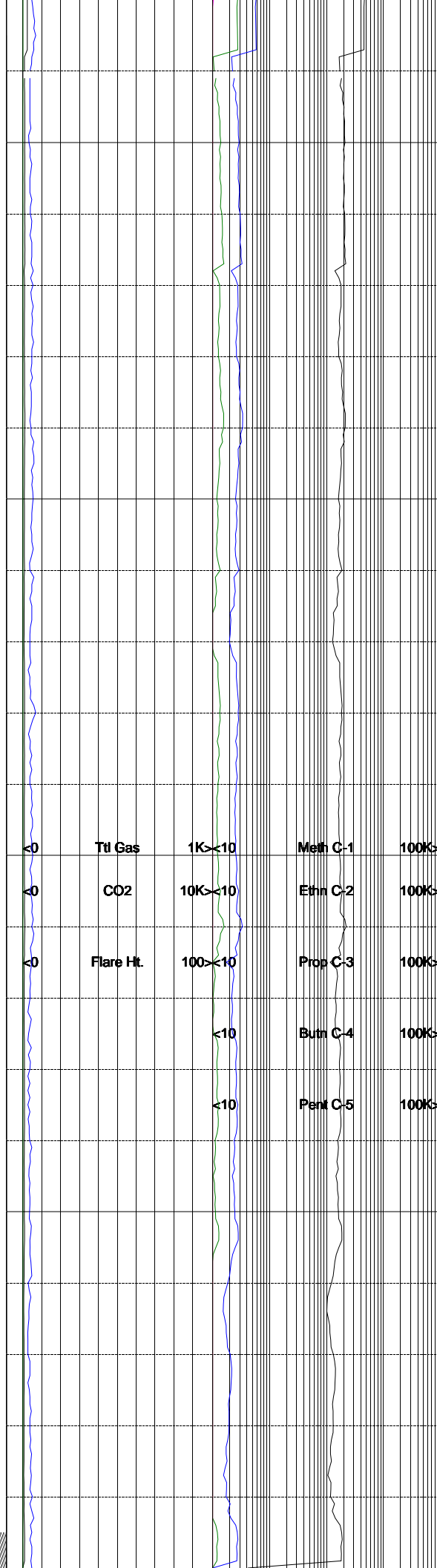
ALL ROCK COLORS ARE REFERENCED TO THE
GSA ROCK COLOR CHART, ROCK CONSTITUENTS
ARE DESCRIBED WET AND LISTED IN ORDER OF
MOST ABUNDANT TO LEAST ABUNDANT, ALL
SAMPLE DEPTHS ARE REFERENCED TO RKB.
GAS CHROMATOGRAPHY EQUIPMENT IS
CALIBRATED TO A TEST GAS COMPOSED OF
METHANE = 10000 PPM
ETHANE = 1000 PPM
PROPANE = 1000 PPM
I-BUTANE = 1000 PPM
N- BUTANE = 1000 PPM
I- PENTANE = 1000 PPM
N- PENTANE = 1000 PPM
CO2 IS CALIBRATED TO A TEST GAS COMPOSED
OF 100000 PPM
CONNECTION GAS, TRIP GAS, AND WIPER GAS
ARE NOTED ON THE MUDLOG, FLARE HEIGHTS



4400

4500

4600



AND DEPTHS OF GAS BUSTER USAGE ARE ALSO
NOTED.

EARLY CONNECTION GASES REPRESENTING
UP HOLE GAS INTERVALS BLEEDING INTO THE
BOREHOLE ARE COMMON IN THE PRODUCTION
INTERVAL.

EVIDENCE OF FRACTURE FILL IS NOTED ON
THE LOG USING THE LITHOLOGY SYMBOL FOR
METAMORPHICS. THE 10% DOES NOT REPRESENT
10% FRACTURE FILL IN SAMPLE. IT ONLY
INDICATES THAT FRACTURE FILL HAS BEEN
OBSERVED OVER THE INTERVAL.

SURVEY DATA AT 6323' MD

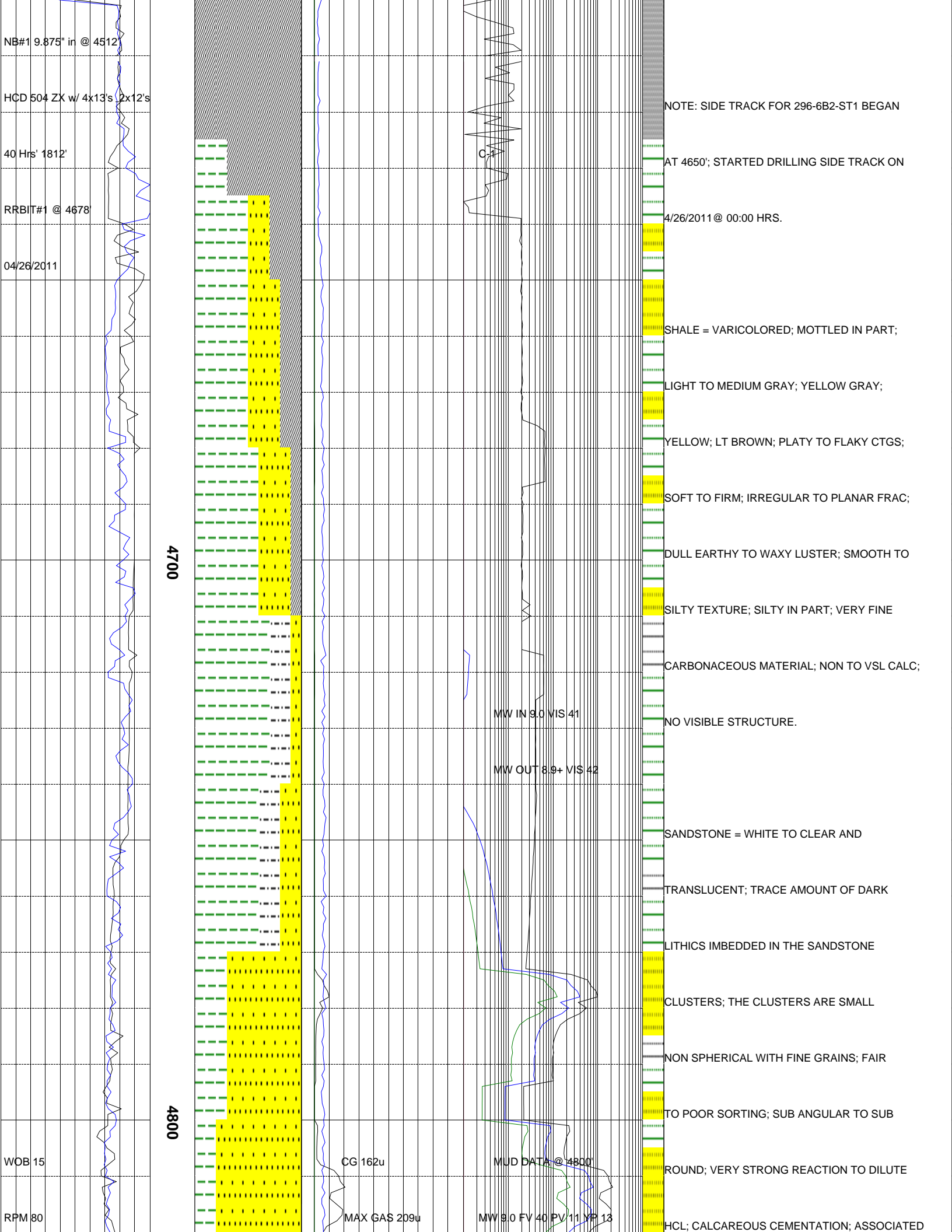
INCL: 0.04

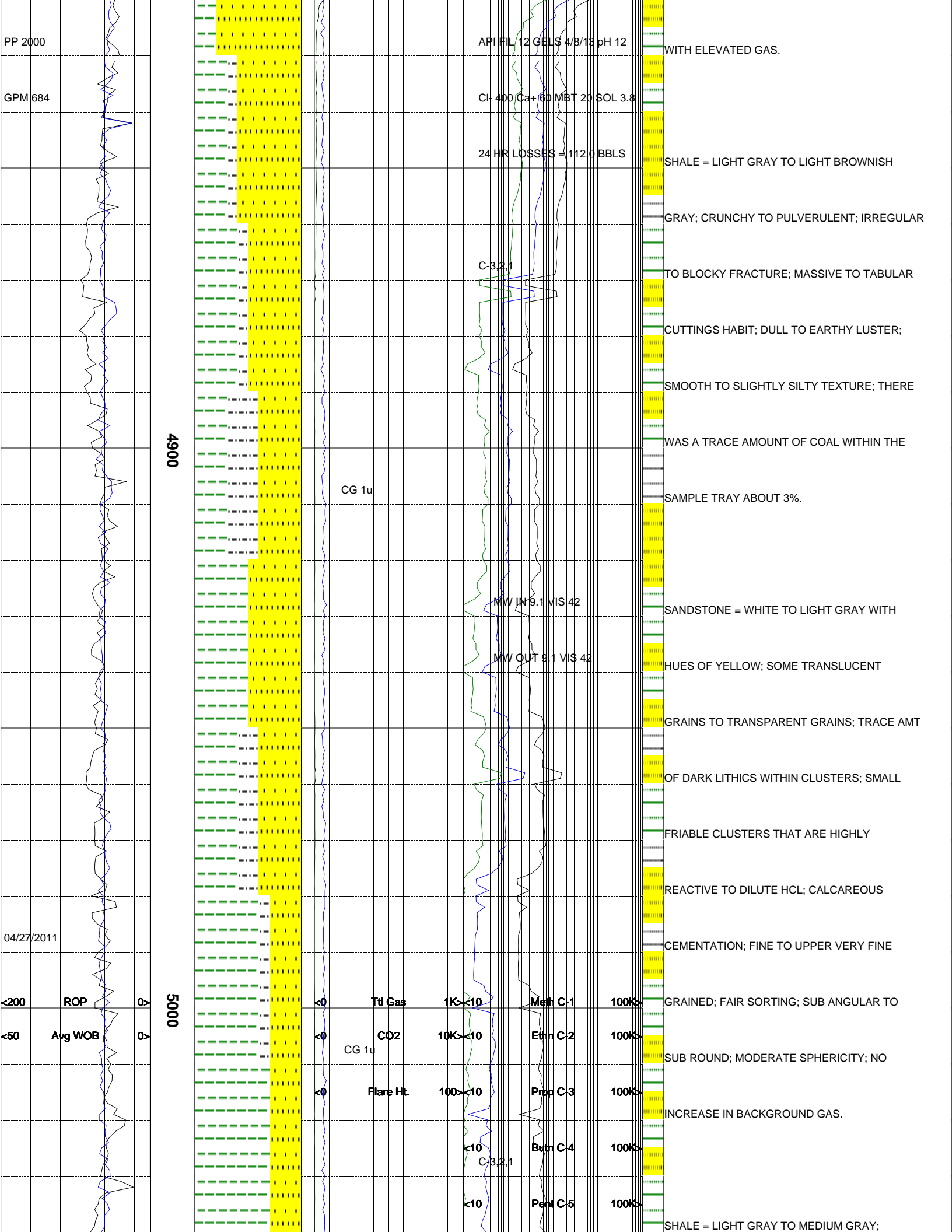
AZIM: 13.79

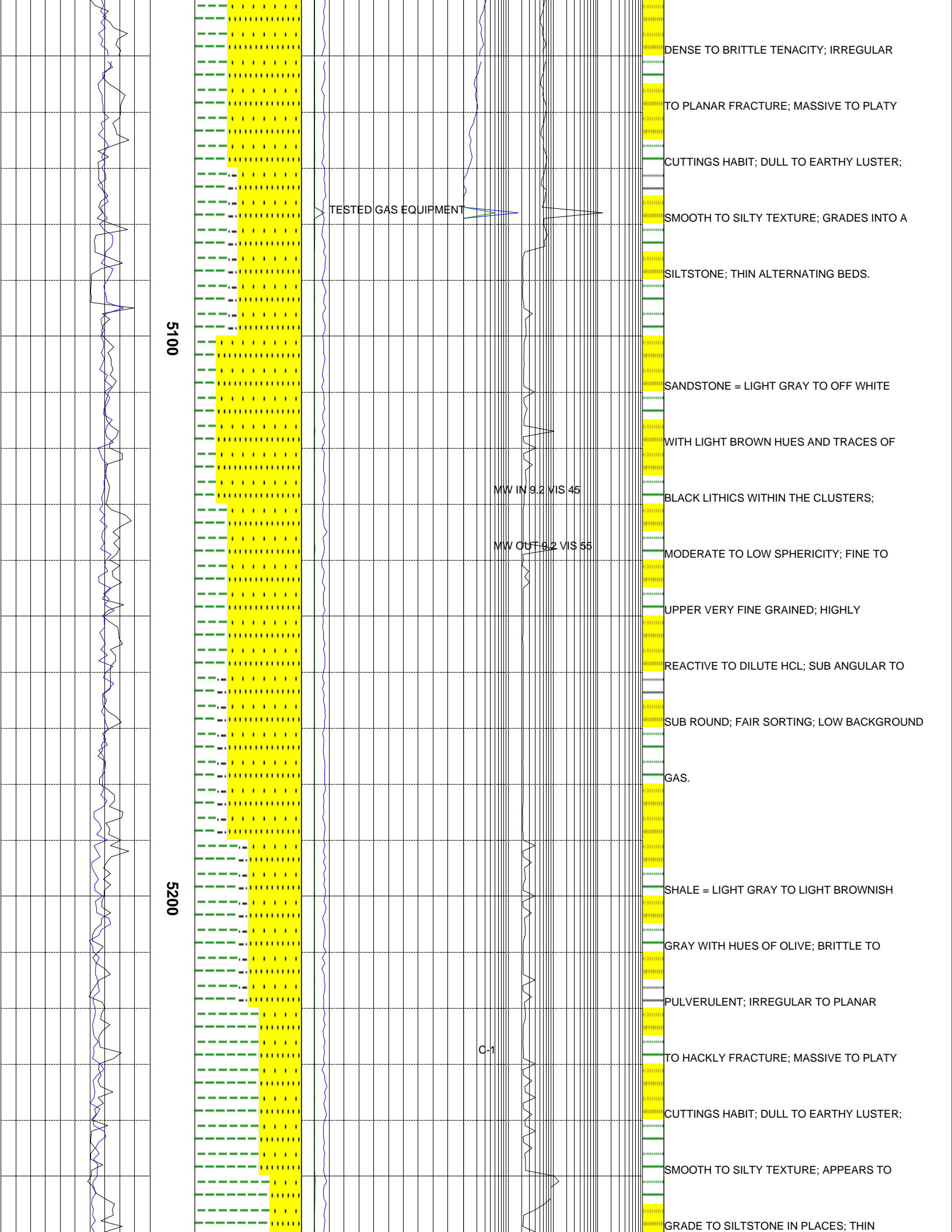
TVD: 6013.15

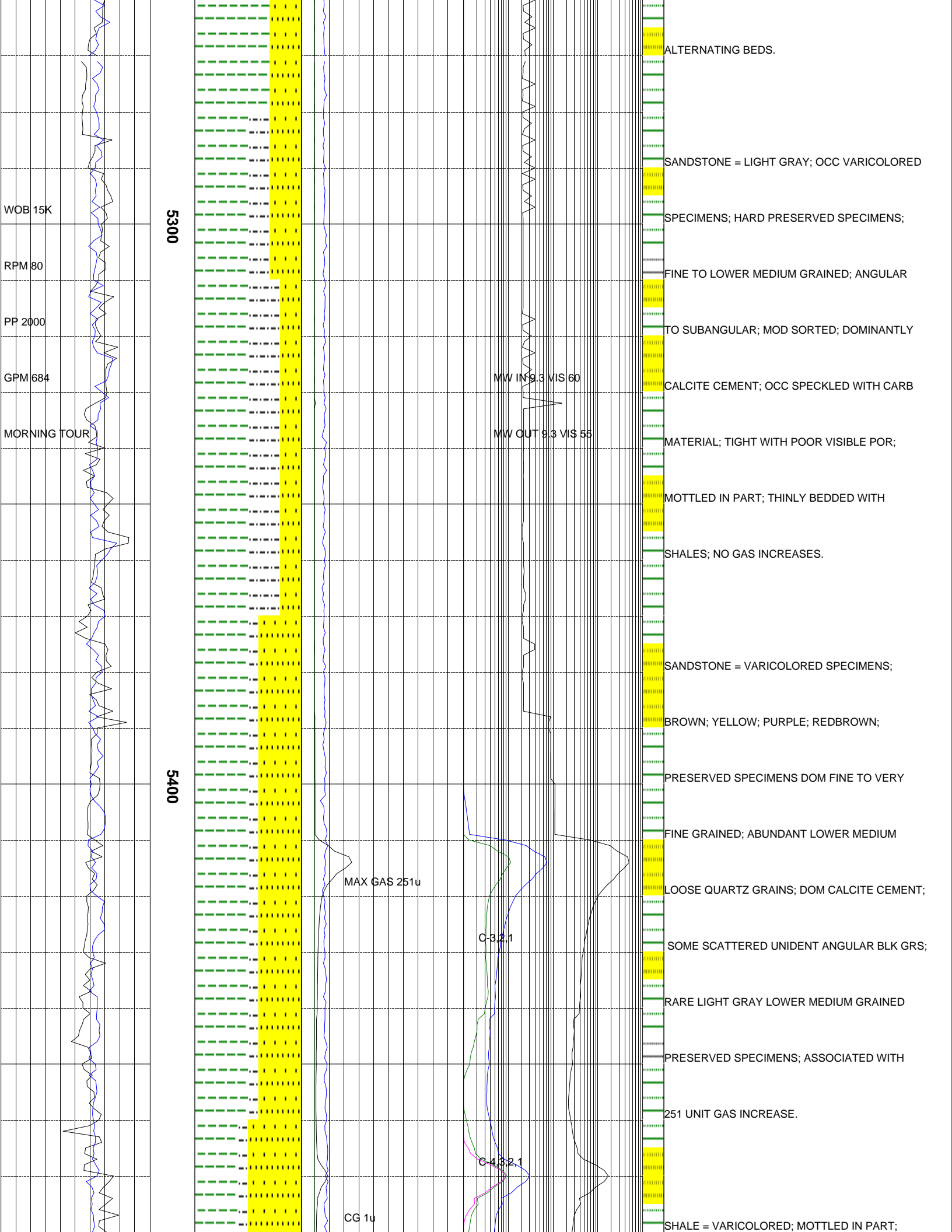
NOTE: TD SURFACE SECTION @ 4627'

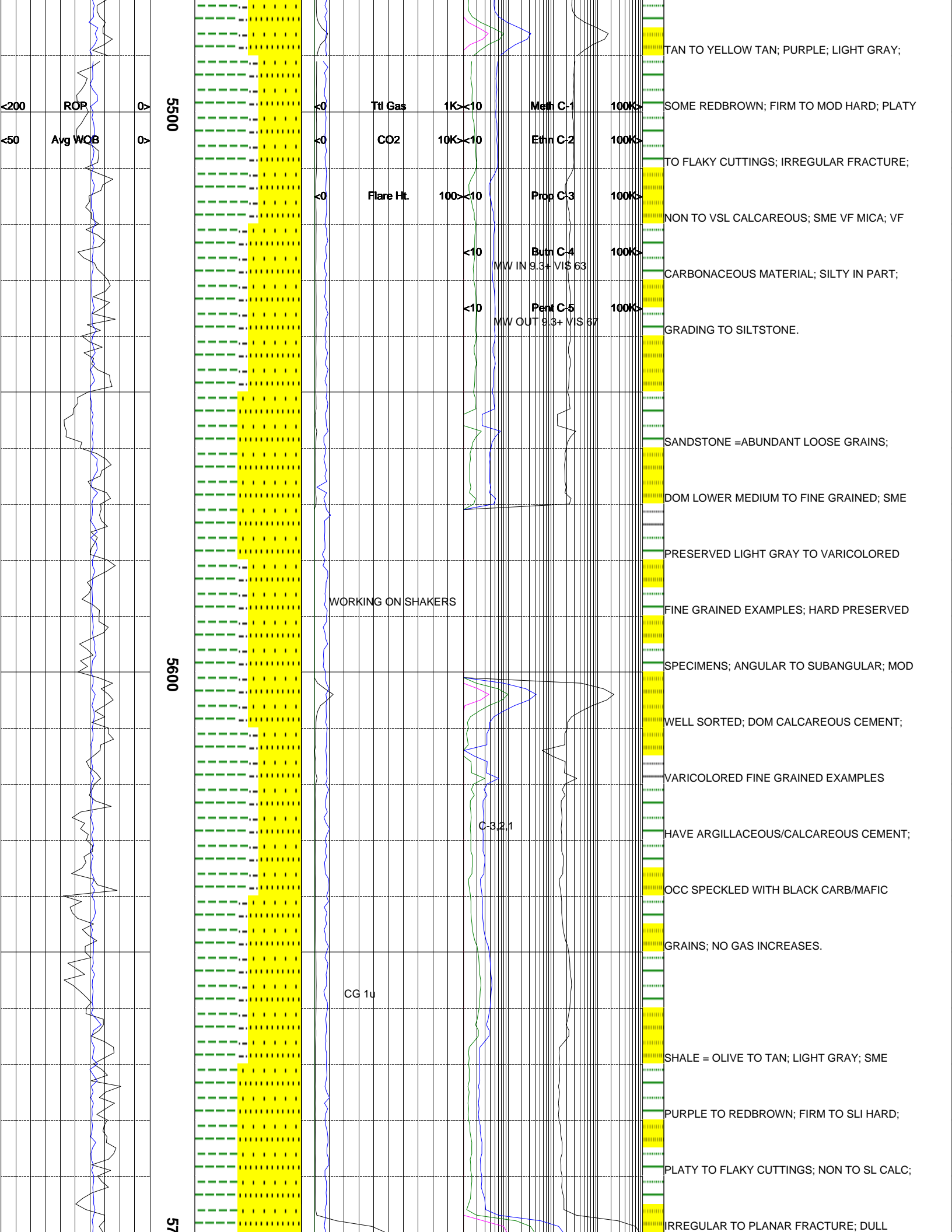
ON 1-29-2011 AT 03:10 AM

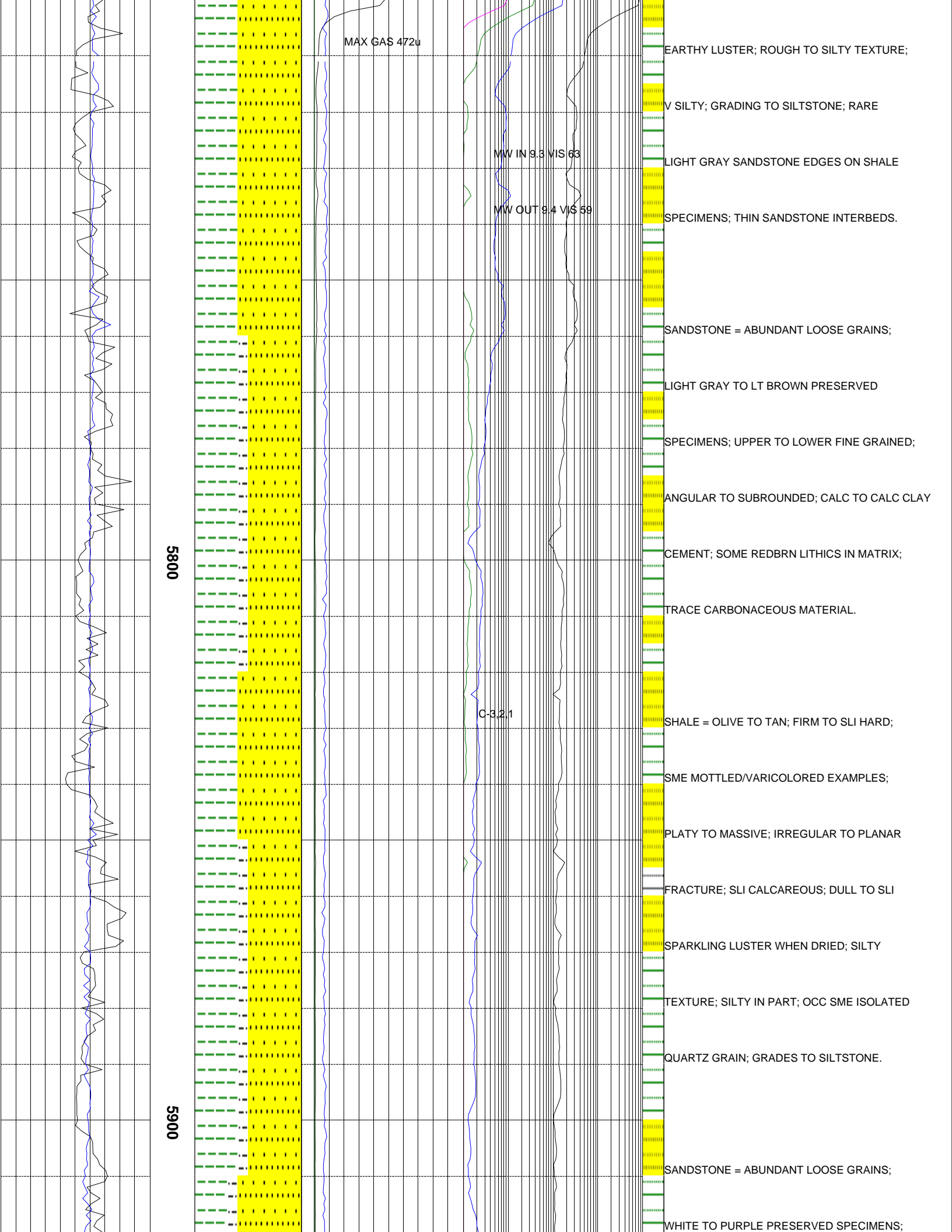


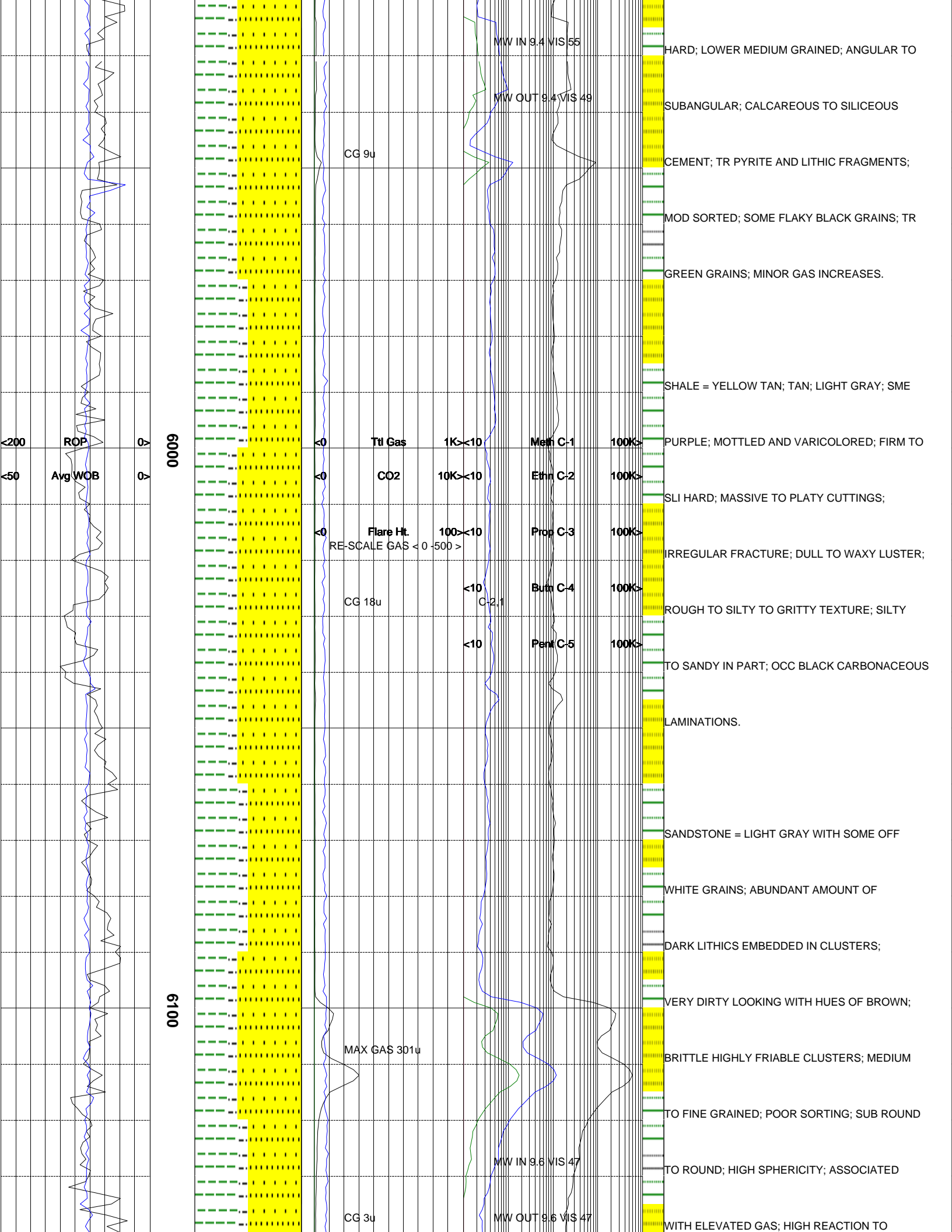


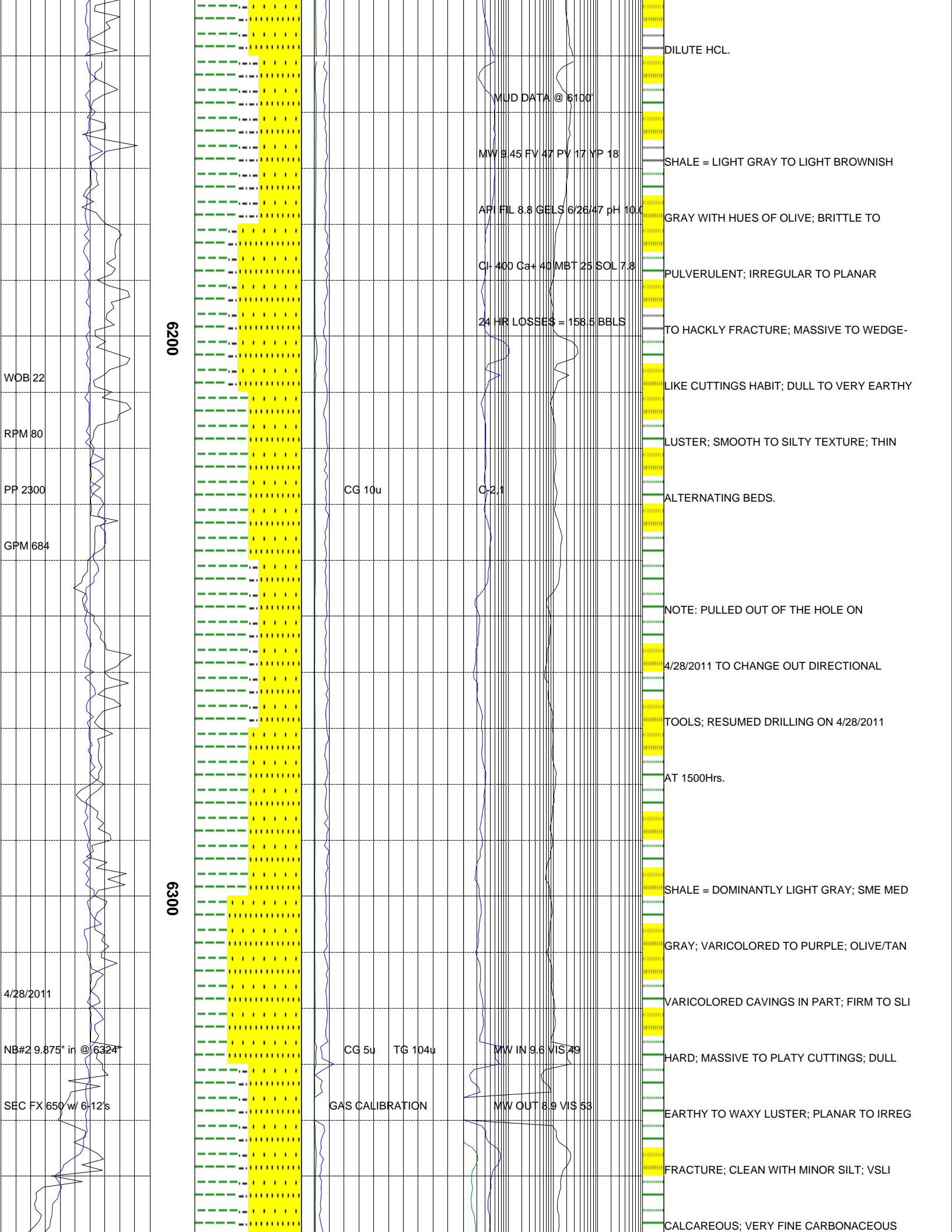


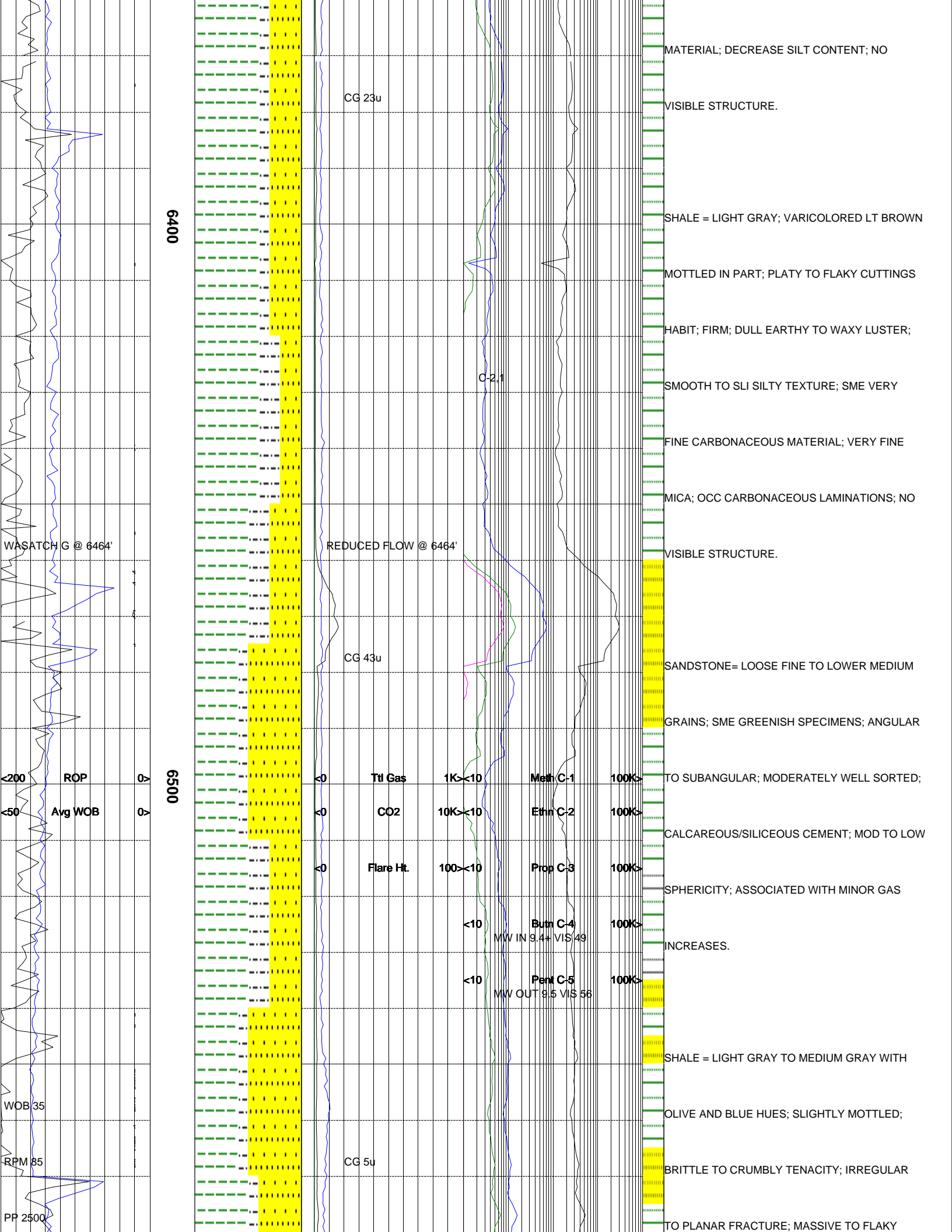


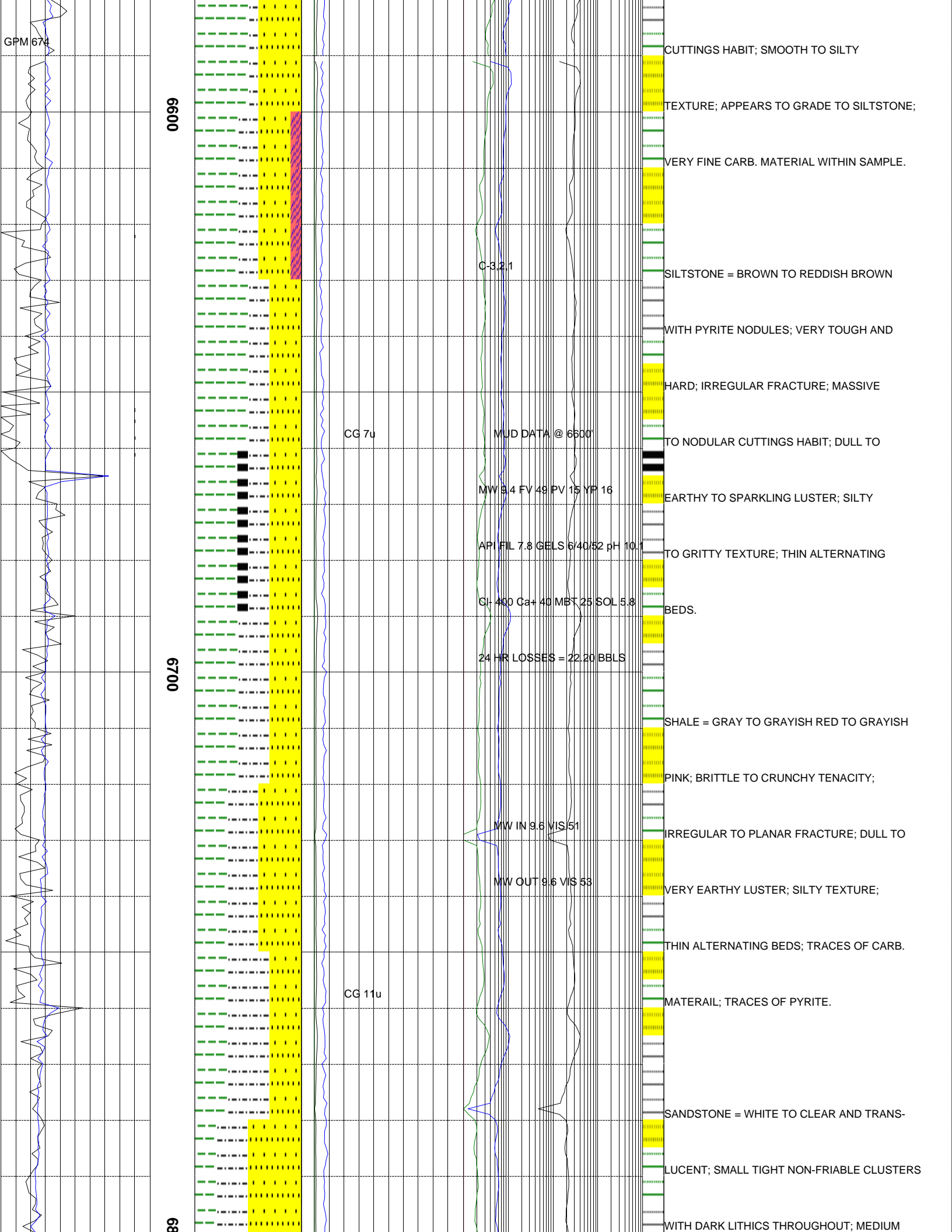


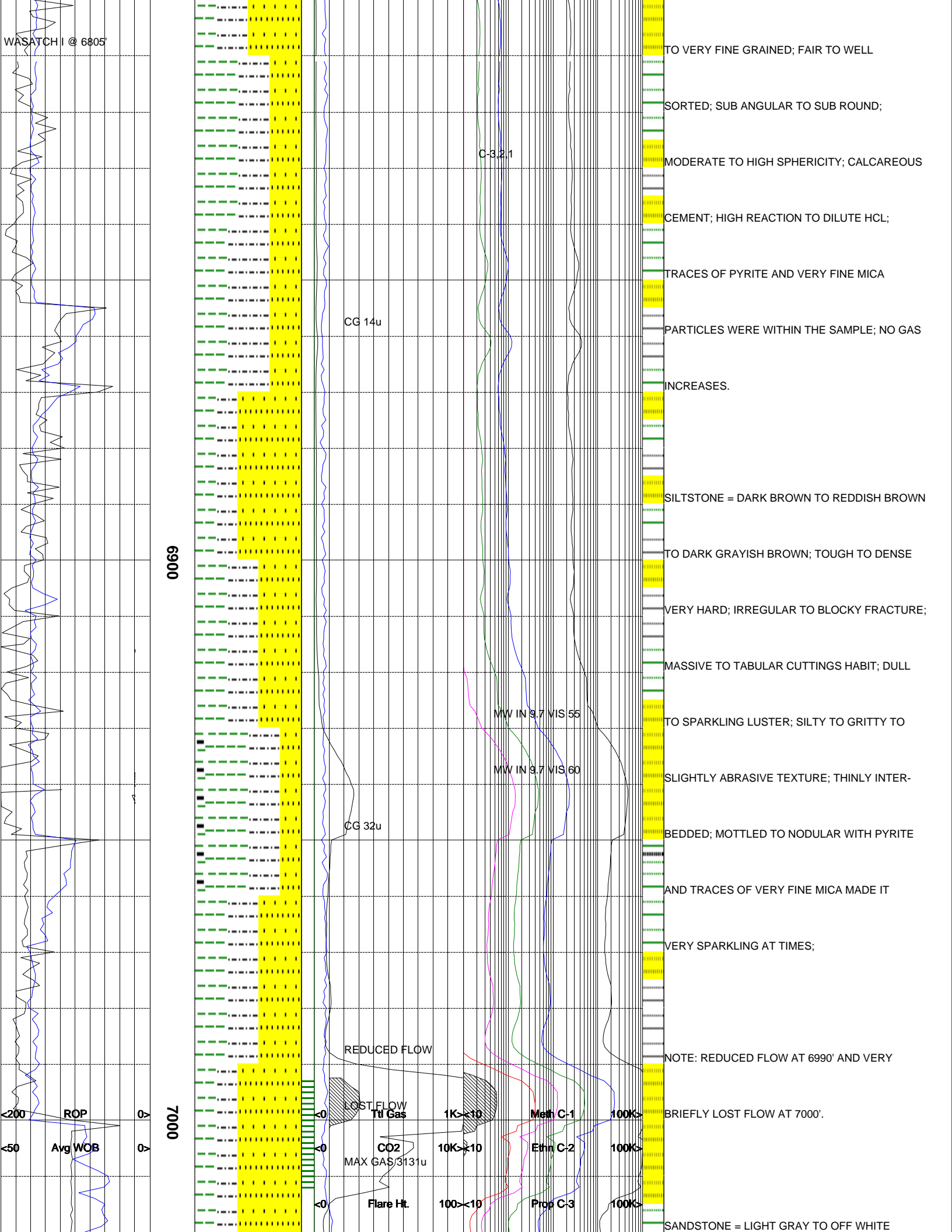


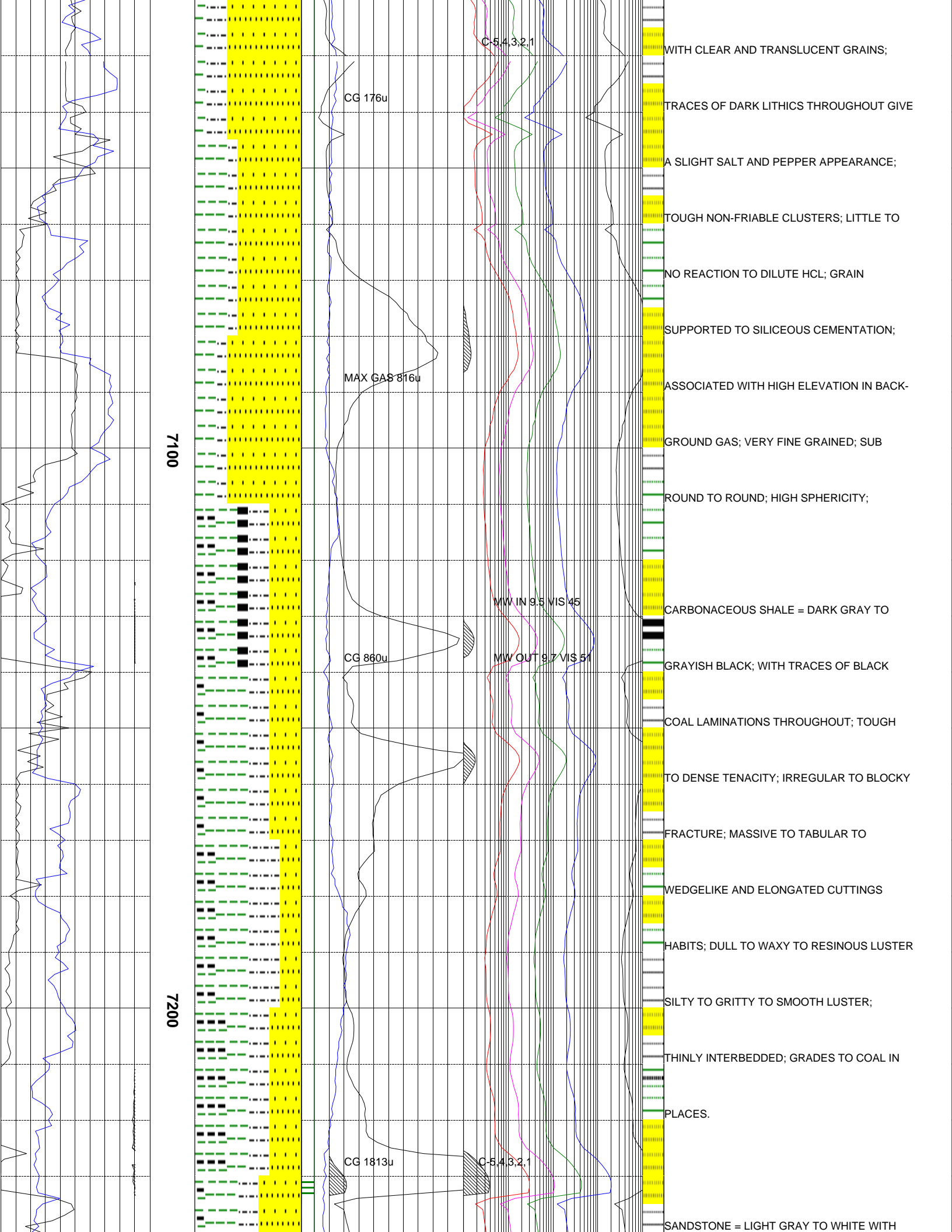


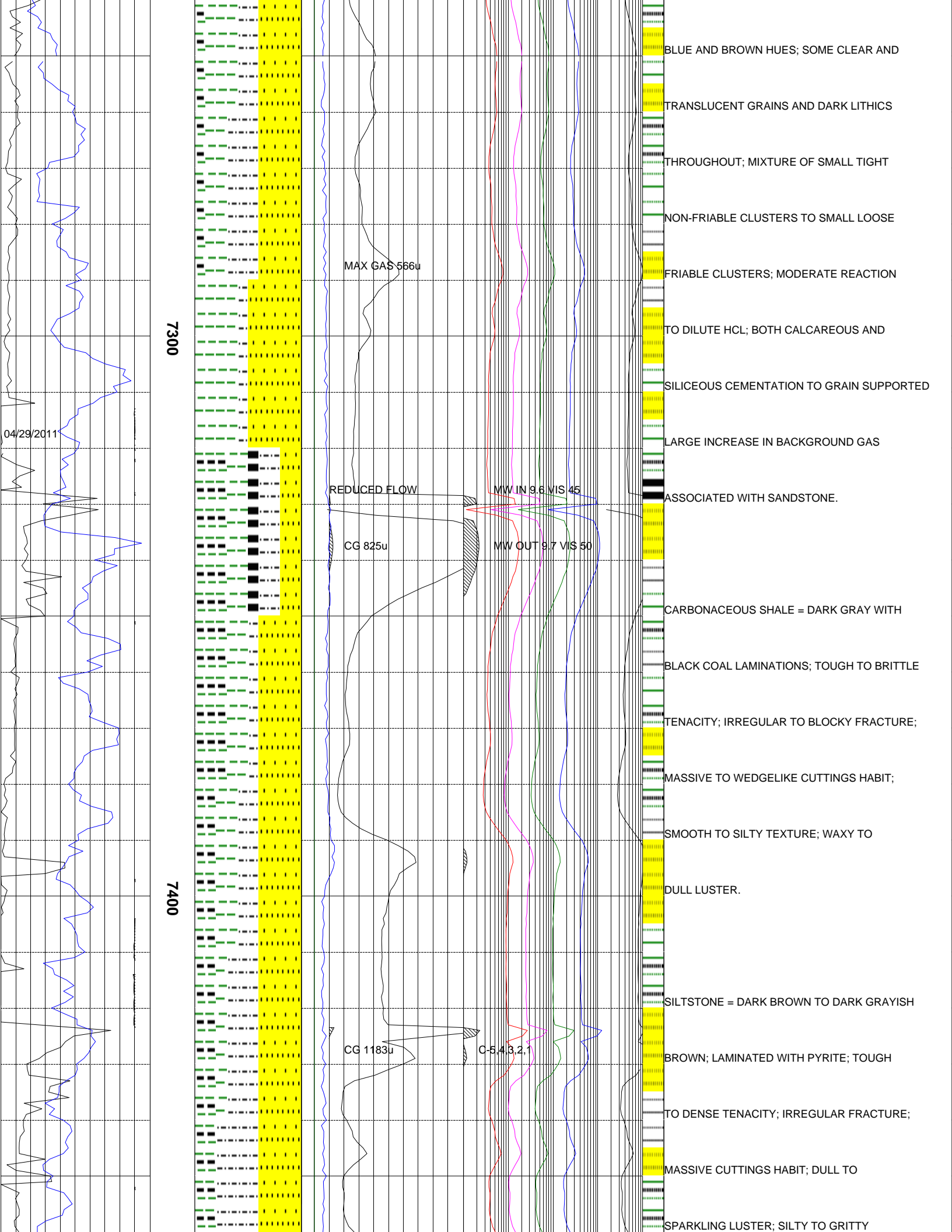


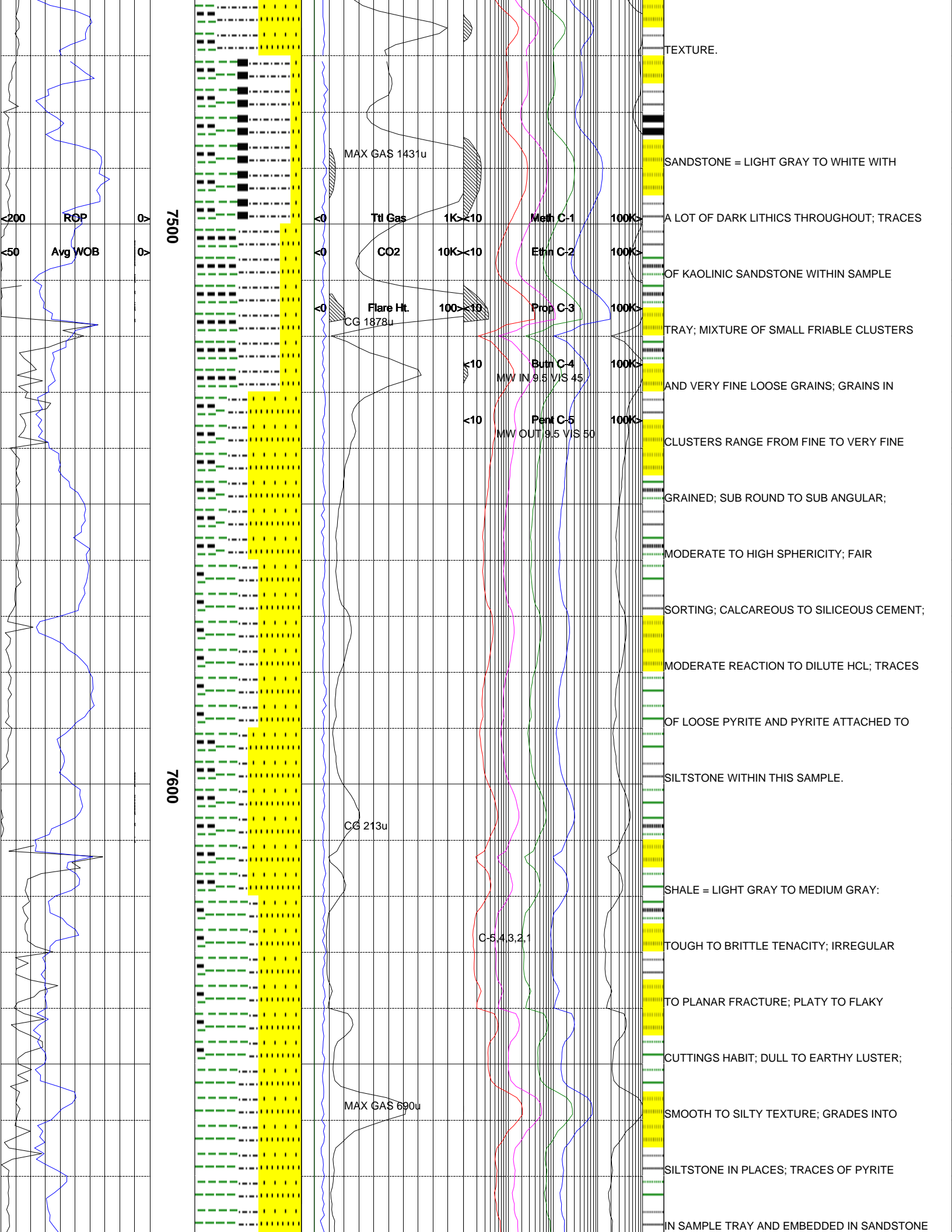


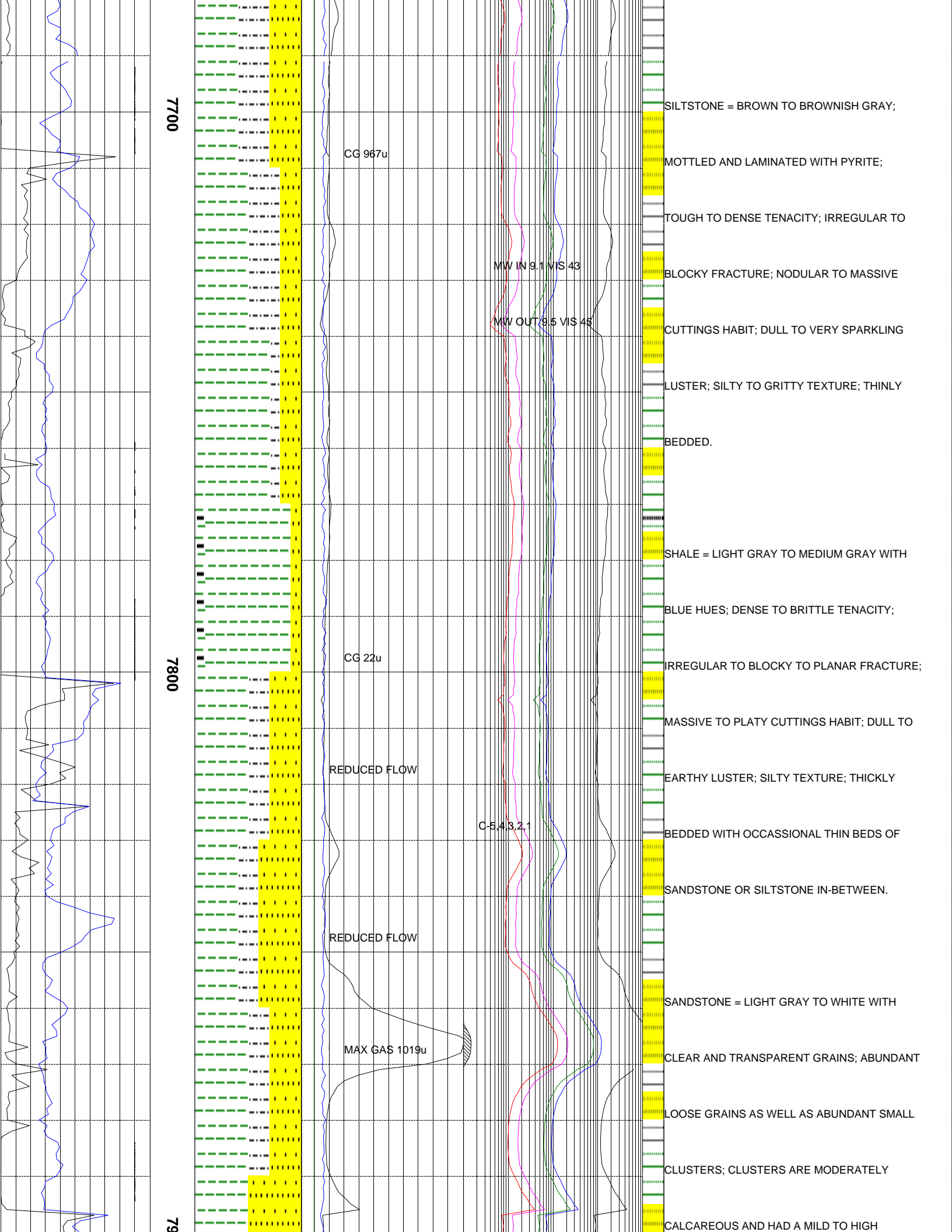


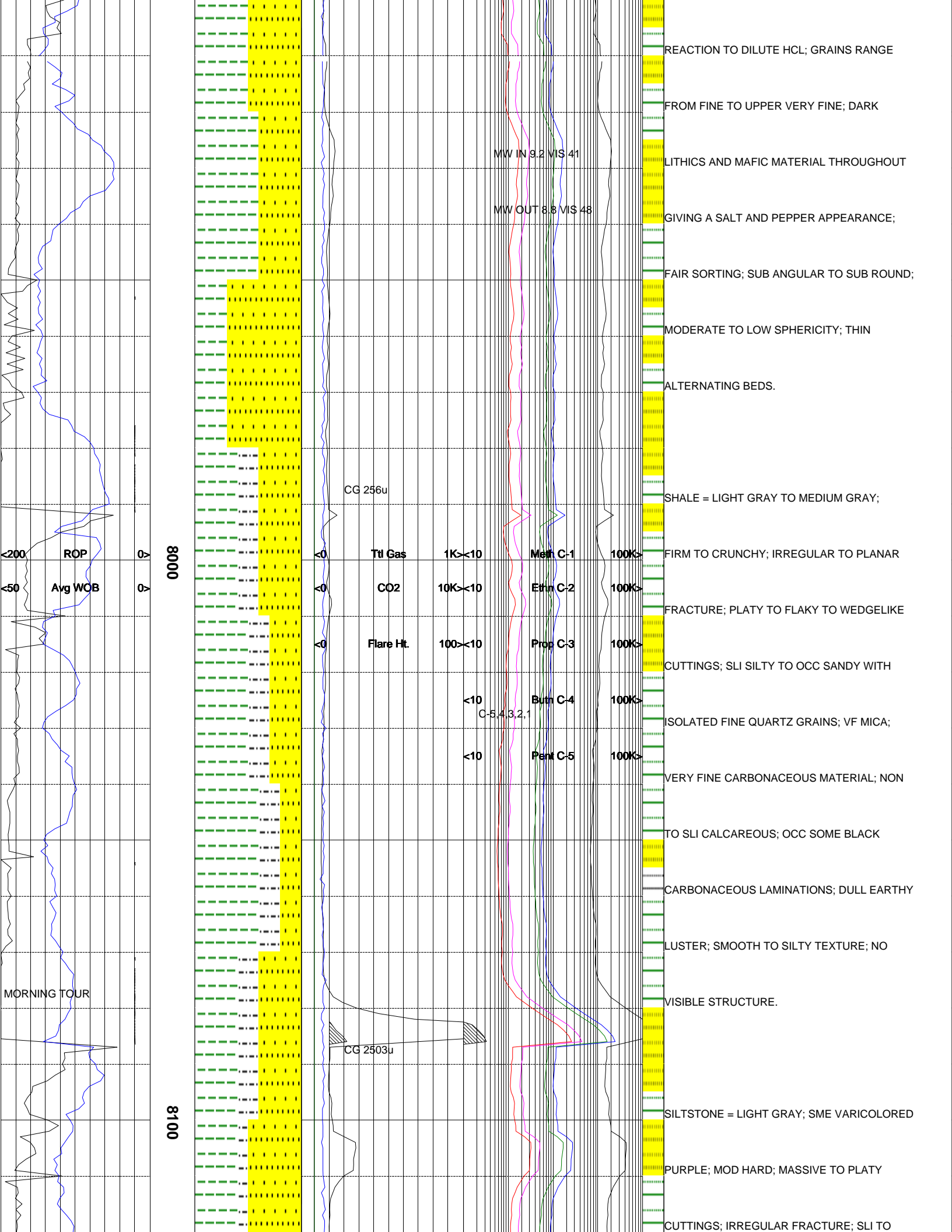


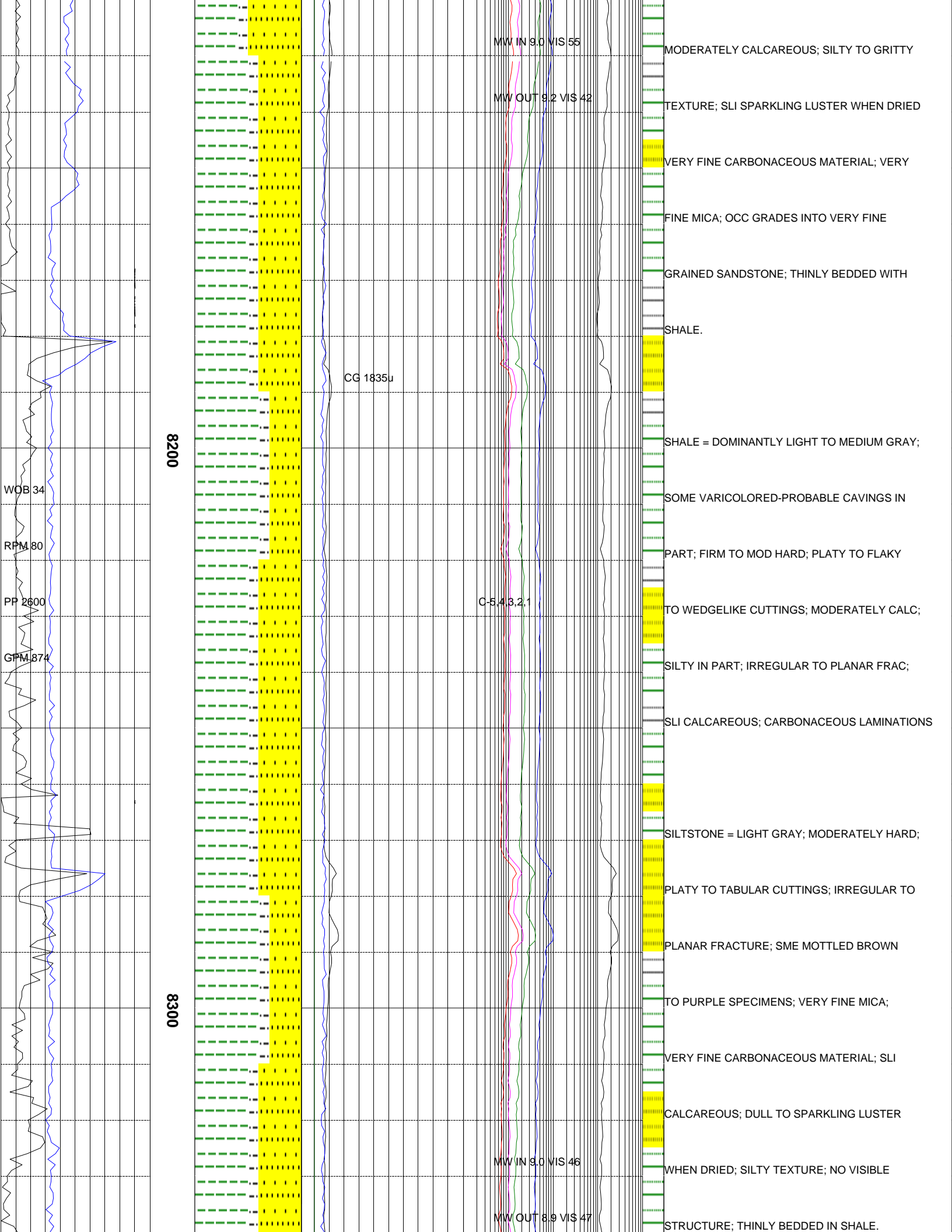


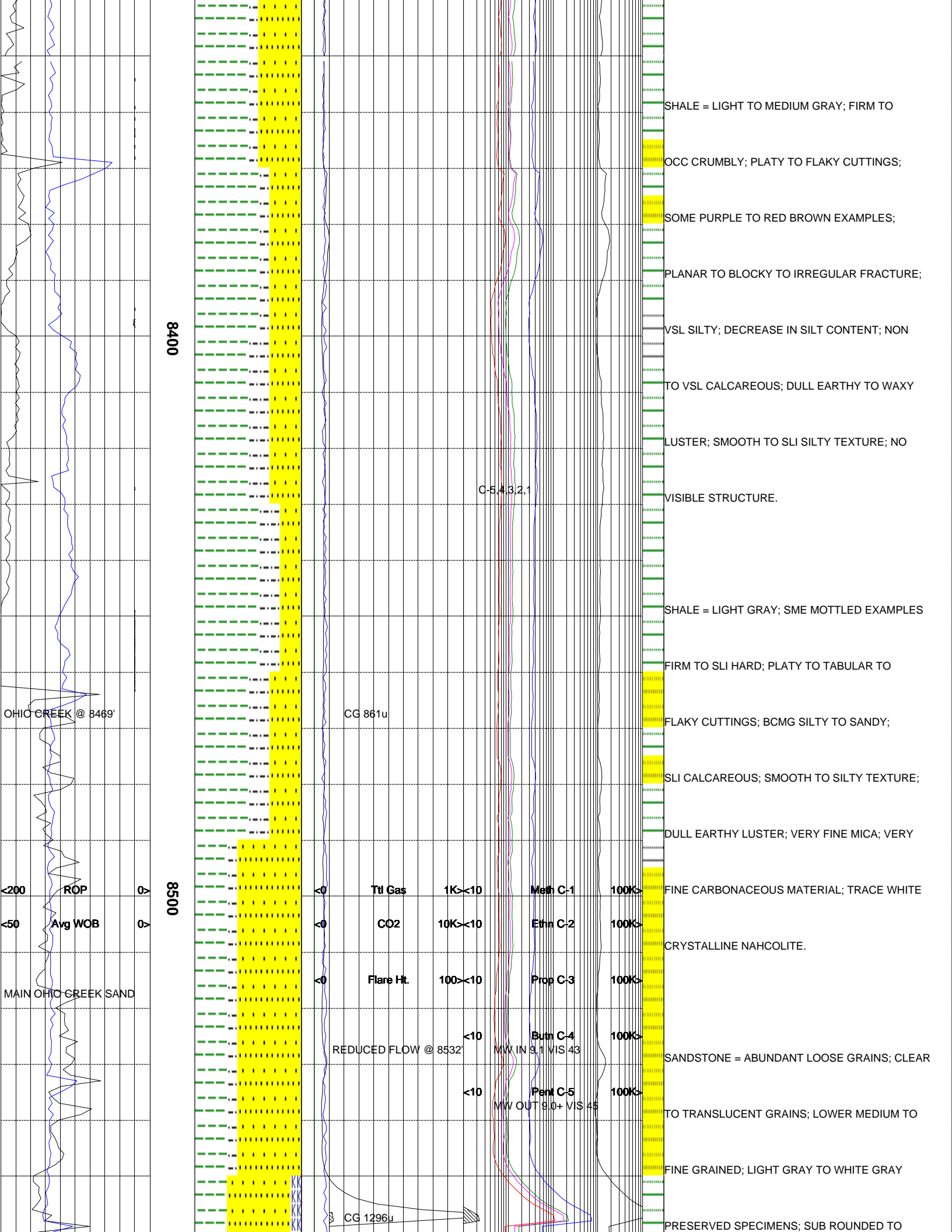


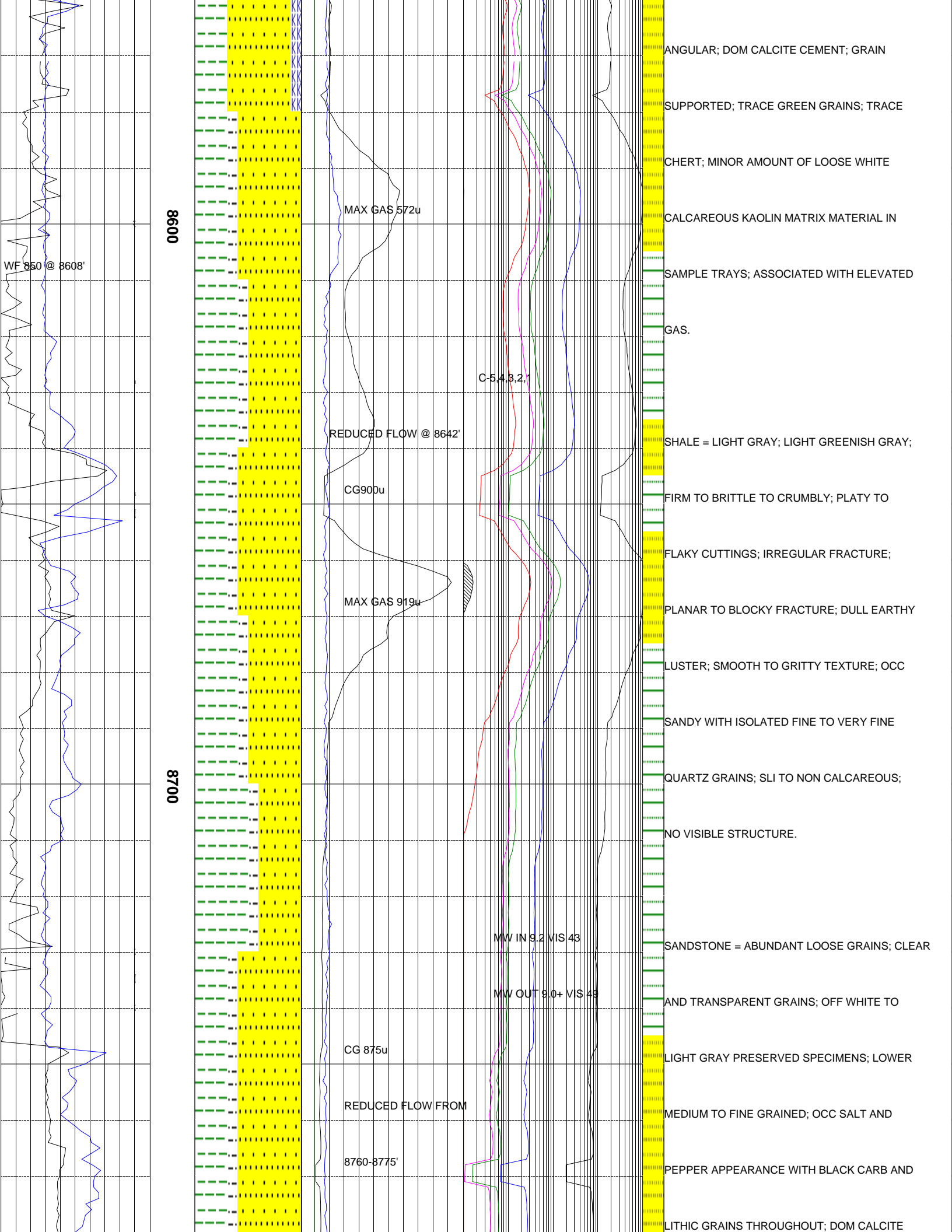












8600

8700

WF 850 @ 8608'

MAX GAS 572u

REDUCED FLOW @ 8642'

CG900u

MAX GAS 919u

C-5.43.2.1

MW IN 9.2 VIS 43

MW OUT 9.0+ VIS 49

CG 875u

REDUCED FLOW FROM

8760-8775'

ANGULAR; DOM CALCITE CEMENT; GRAIN

SUPPORTED; TRACE GREEN GRAINS; TRACE

CHERT; MINOR AMOUNT OF LOOSE WHITE

CALCAREOUS KAOLIN MATRIX MATERIAL IN

SAMPLE TRAYS; ASSOCIATED WITH ELEVATED

GAS.

SHALE = LIGHT GRAY; LIGHT GREENISH GRAY;

FIRM TO BRITTLE TO CRUMBLY; PLATY TO

FLAKY CUTTINGS; IRREGULAR FRACTURE;

PLANAR TO BLOCKY FRACTURE; DULL EARTHY

LUSTER; SMOOTH TO GRITTY TEXTURE; OCC

SANDY WITH ISOLATED FINE TO VERY FINE

QUARTZ GRAINS; SLI TO NON CALCAREOUS;

NO VISIBLE STRUCTURE.

SANDSTONE = ABUNDANT LOOSE GRAINS; CLEAR

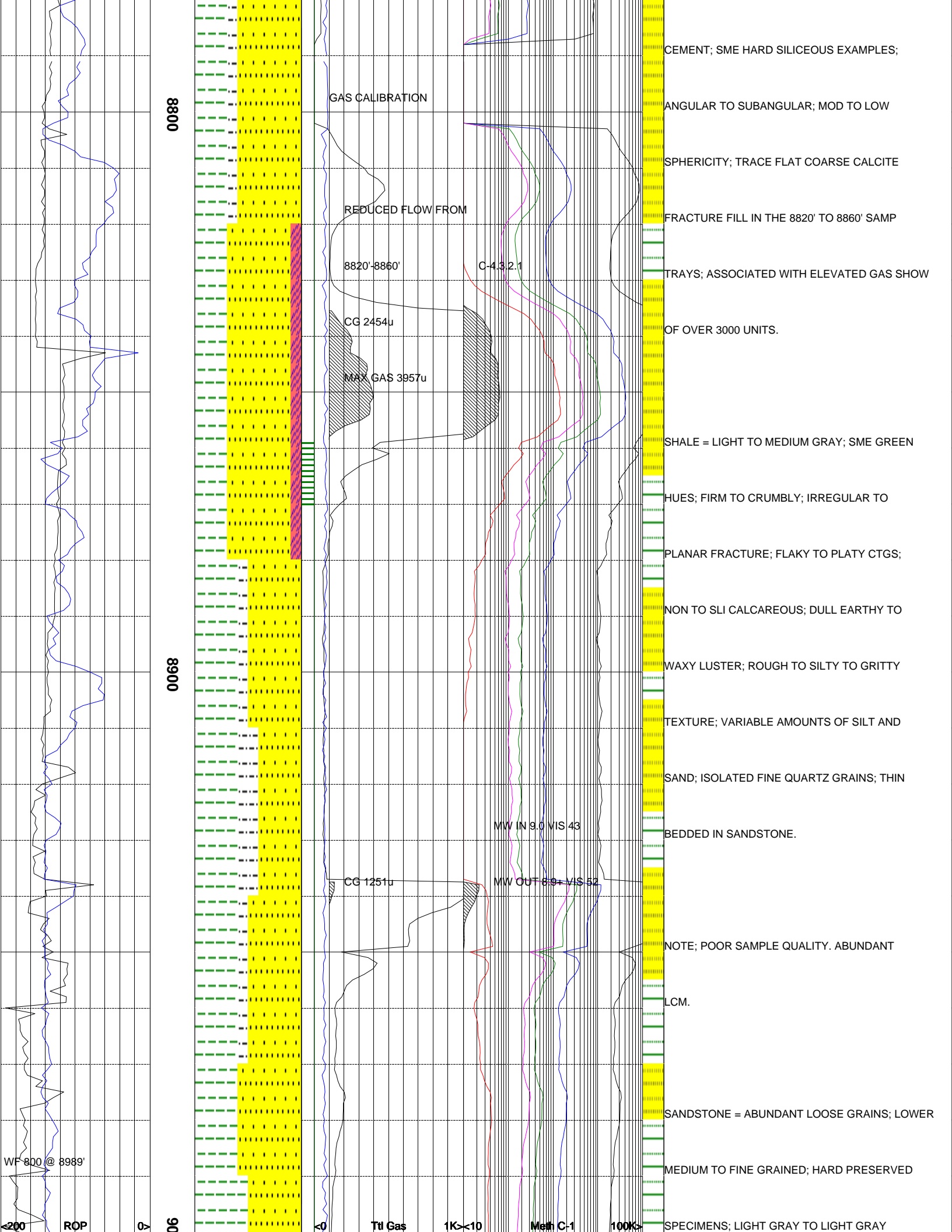
AND TRANSPARENT GRAINS; OFF WHITE TO

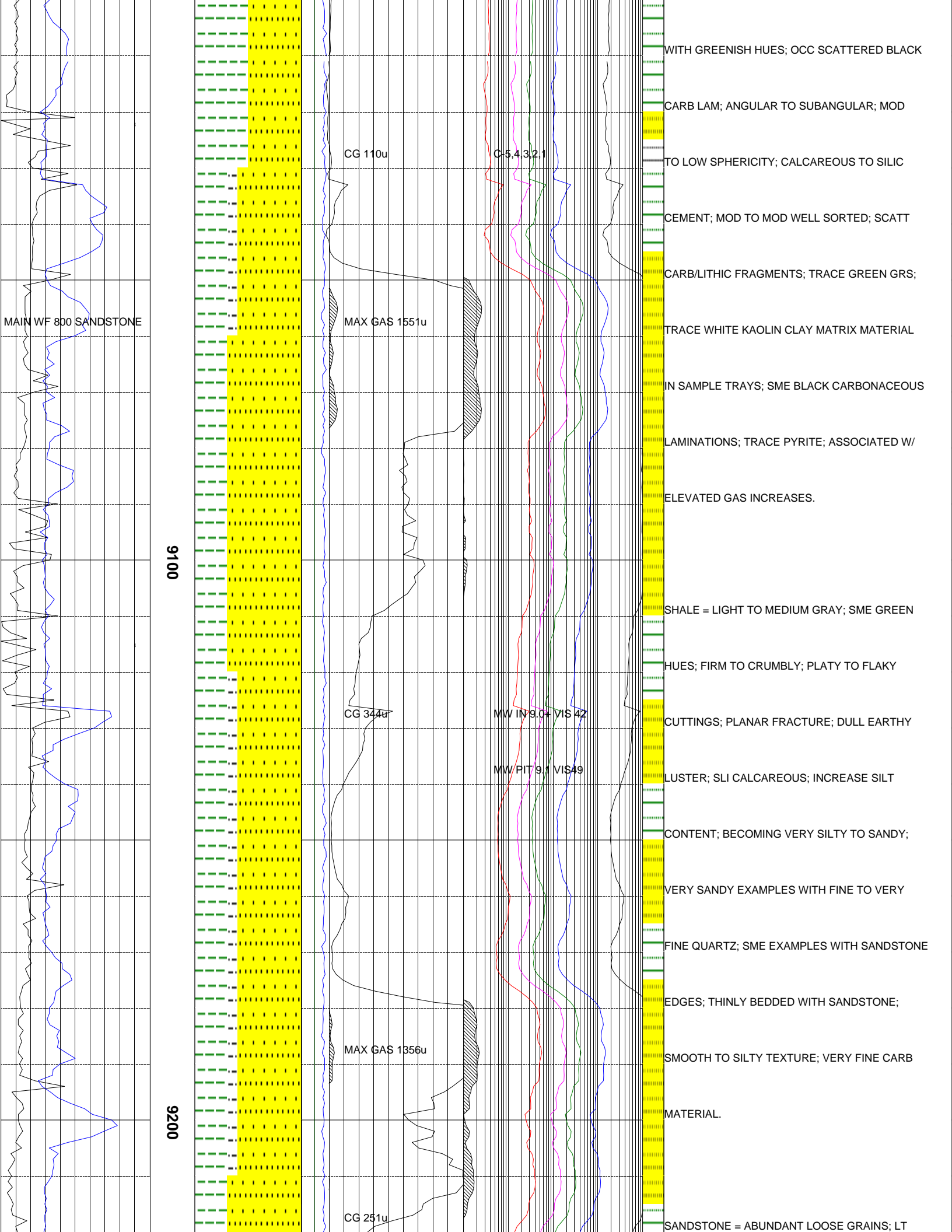
LIGHT GRAY PRESERVED SPECIMENS; LOWER

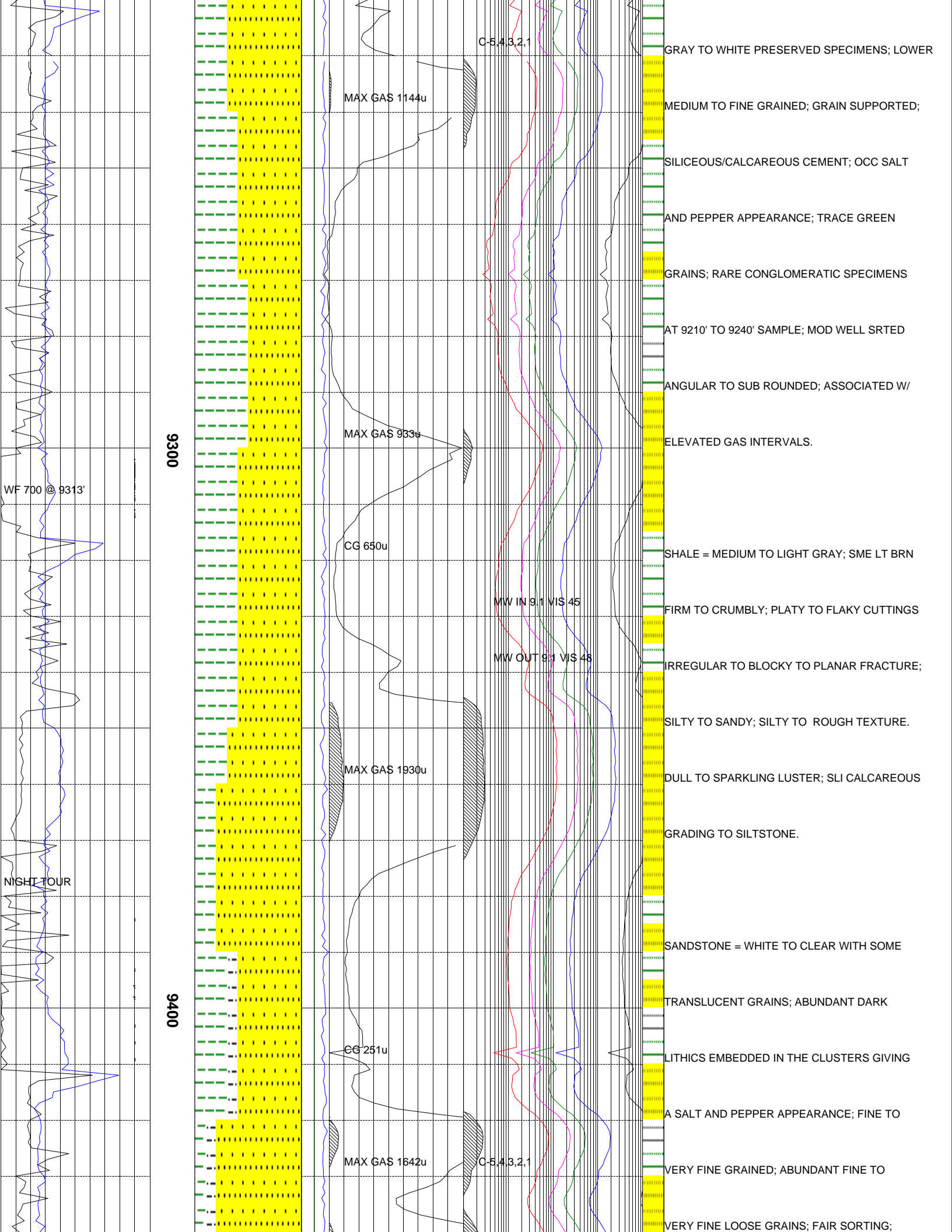
MEDIUM TO FINE GRAINED; OCC SALT AND

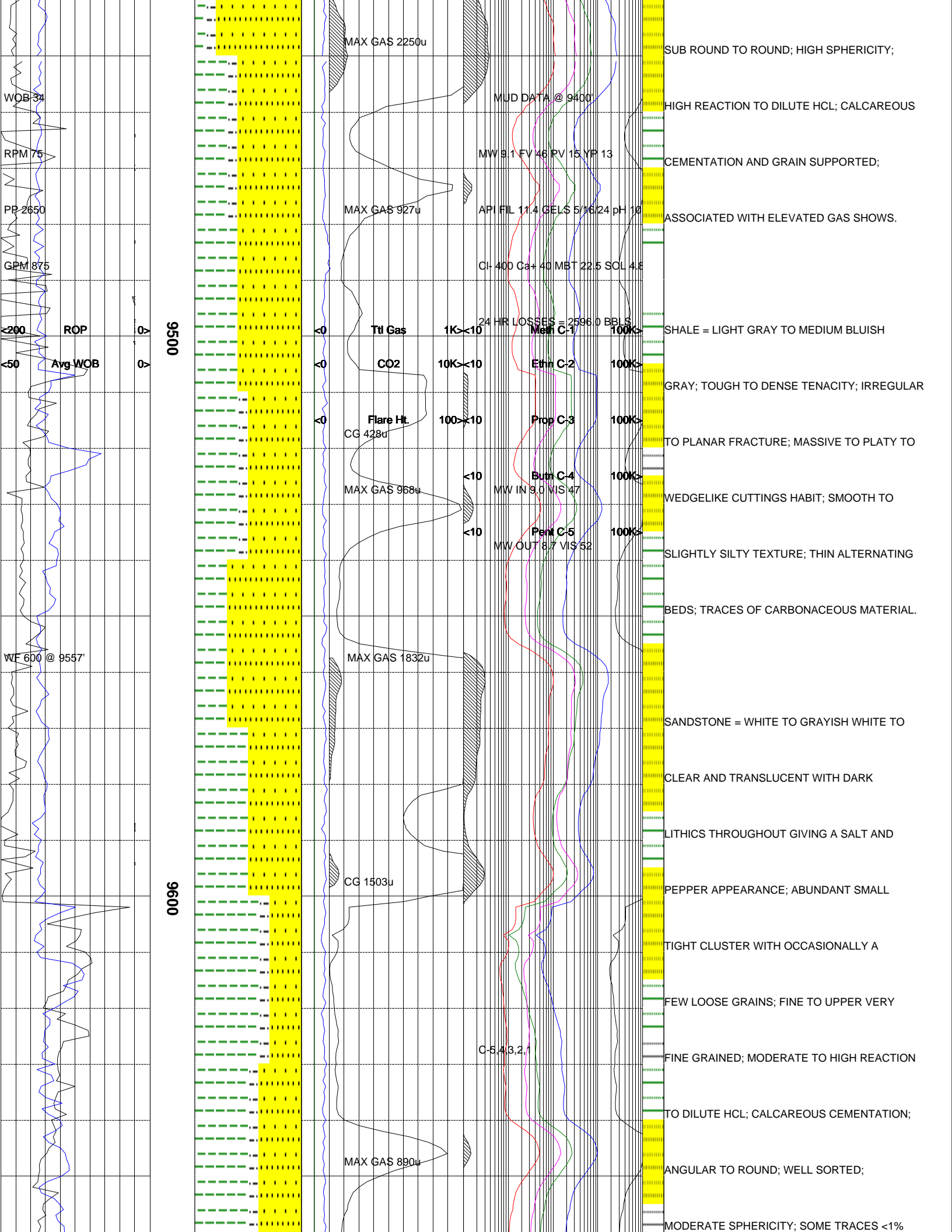
PEPPER APPEARANCE WITH BLACK CARB AND

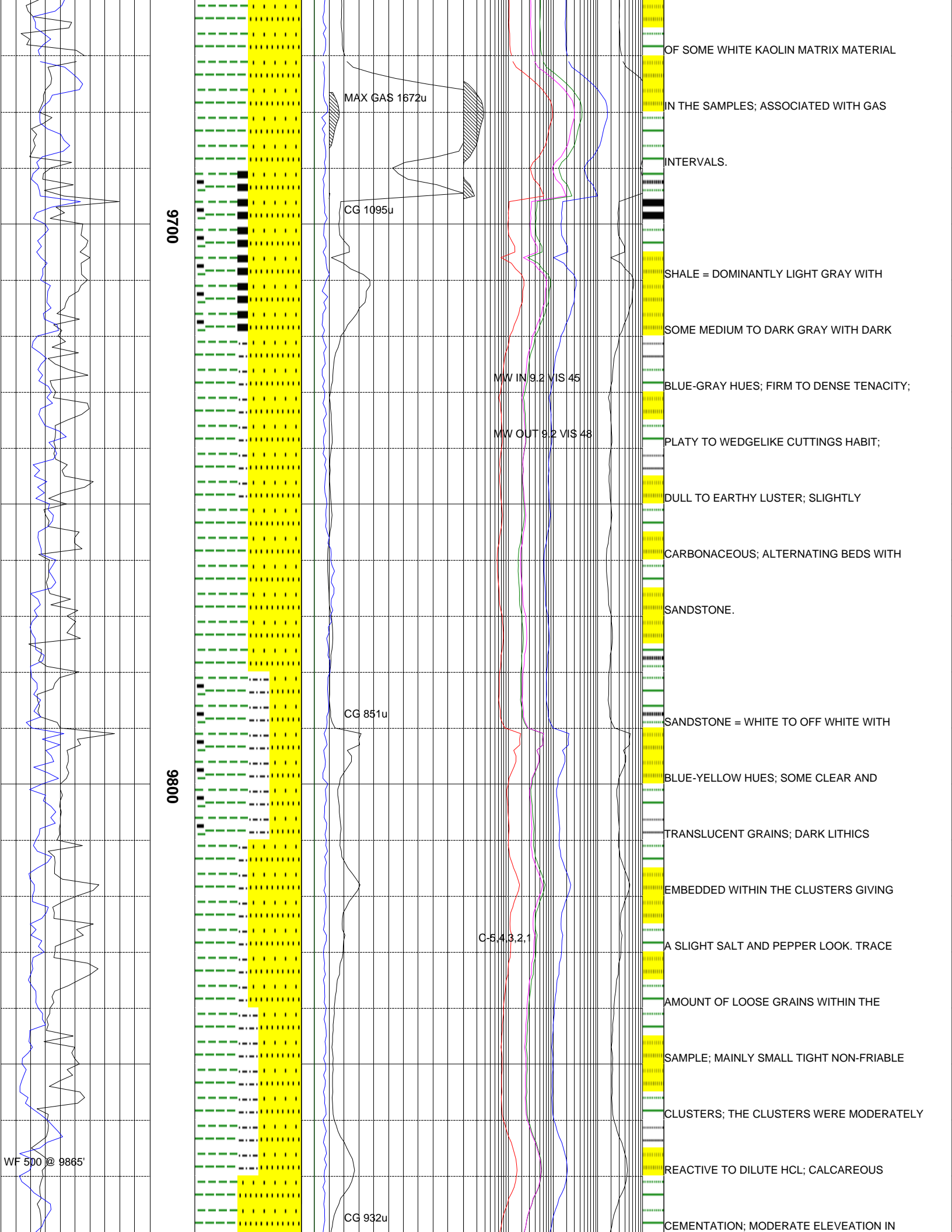
LITHIC GRAINS THROUGHOUT; DOM CALCITE











9700

9866

MAX GAS 1672u

CG 1095u

MW IN 9.2 VIS 45

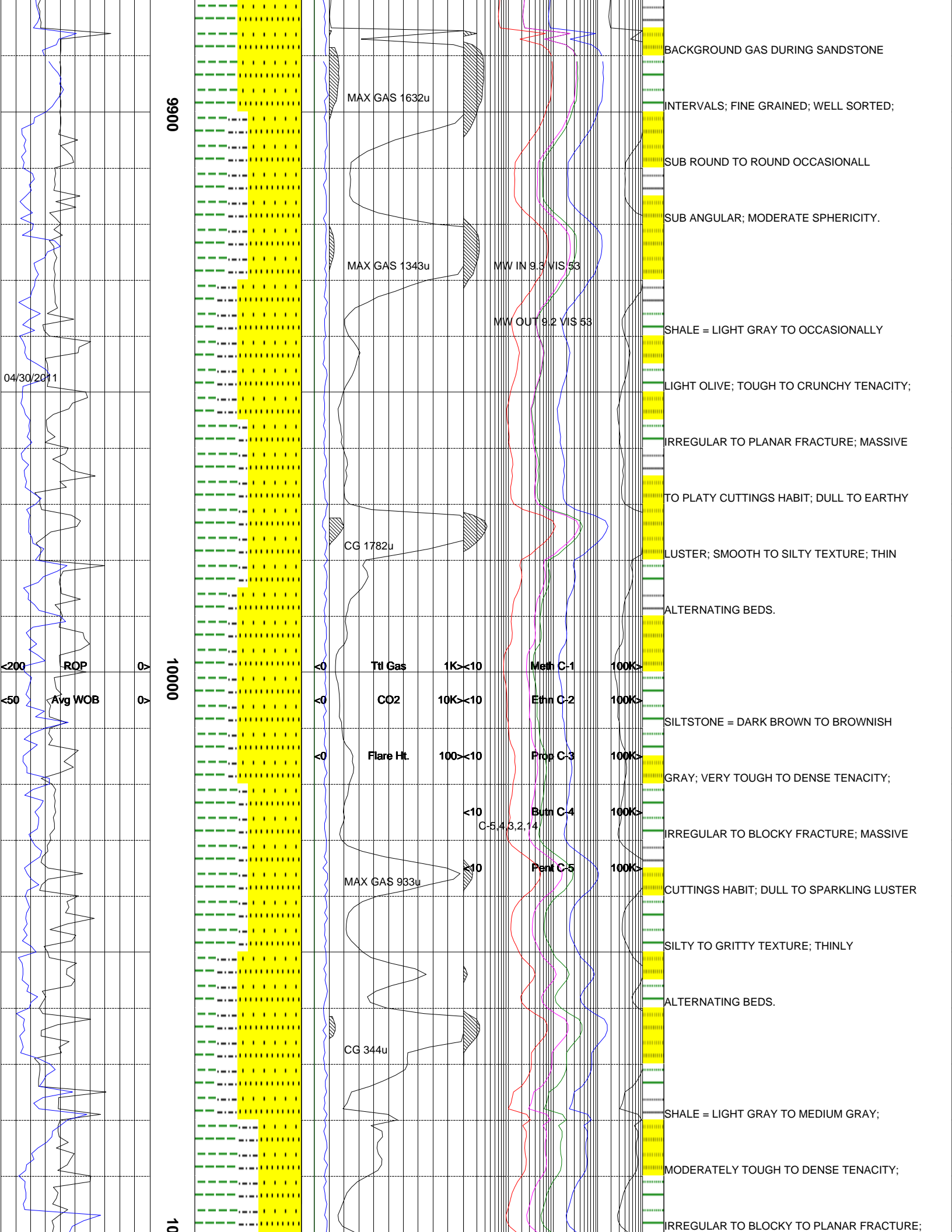
MW OUT 9.2 VIS 48

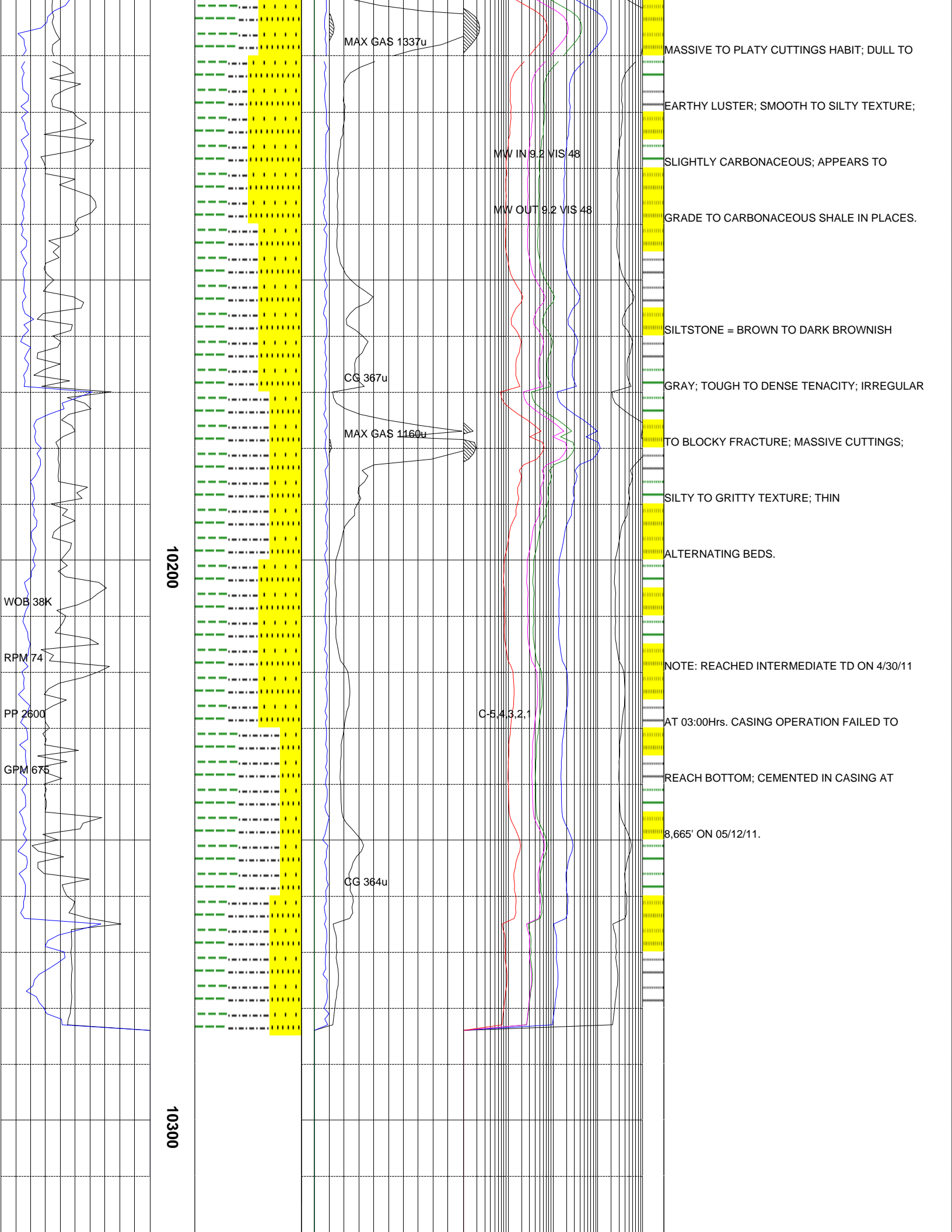
CG 851u

C-5.43.2.1

CG 932u

WF 500 @ 9865'





[illegible]A blank sheet of graph paper featuring a uniform grid of small squares. The grid consists of 20 columns and 15 rows of squares. A horizontal dashed line runs across the middle of the page, separating the top half from the bottom half. The lines are thin and black, and the background is white.

The log data, interpretations and recommendation provided by Canrig are inferences and assumptions based on measurements of drilling fluids. Such inferences and assumptions are not infallible and reasonable professionals may differ. Canrig does not represent or warrant the accuracy, correctness or completeness of any log data, interpretations, recommendations or information provided by Canrig, its officers, agents or employees. Canrig does not and cannot guarantee the accuracy of any such interpretation of the log data, interpretations or recommendations and Company is fully responsible for all decisions and actions it takes based on such log data, interpretations and recommendations.

