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## MUDLOG TVD

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

### LOG INTERVAL

### CASING DATA

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

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

**SCALE:** 5" = 100'

16" **AT** 145'

10.75" **AT** 4,622'

7.00" **AT** 8,665'

**AT**

### MUD TYPES

### HOLE SIZE

LSND **TO** 10,280'

**TO**

**TO**

**TO**

20.0" **TO** 145'

14.75" **TO** 4,622'

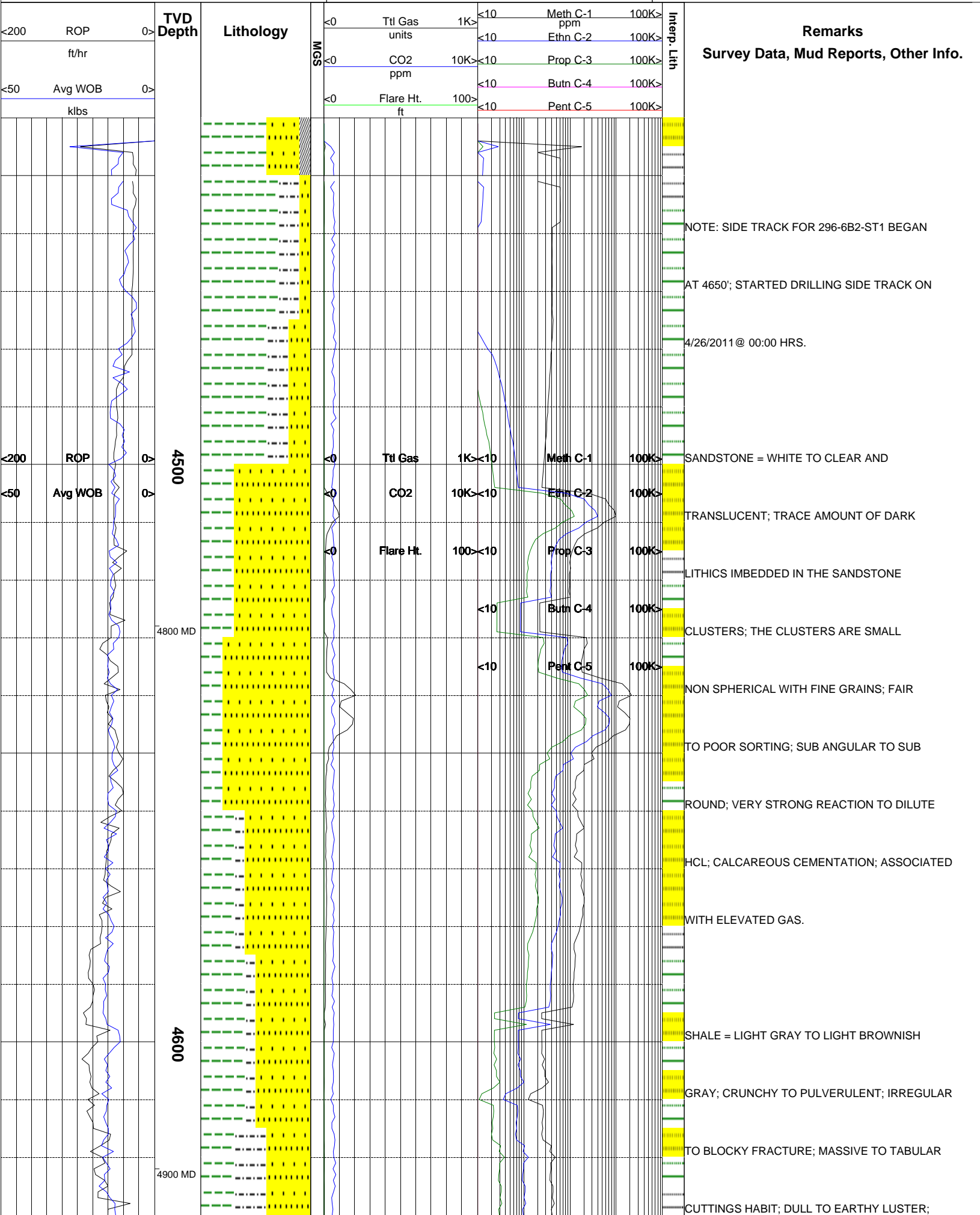
9.875" **TO** 10,280'

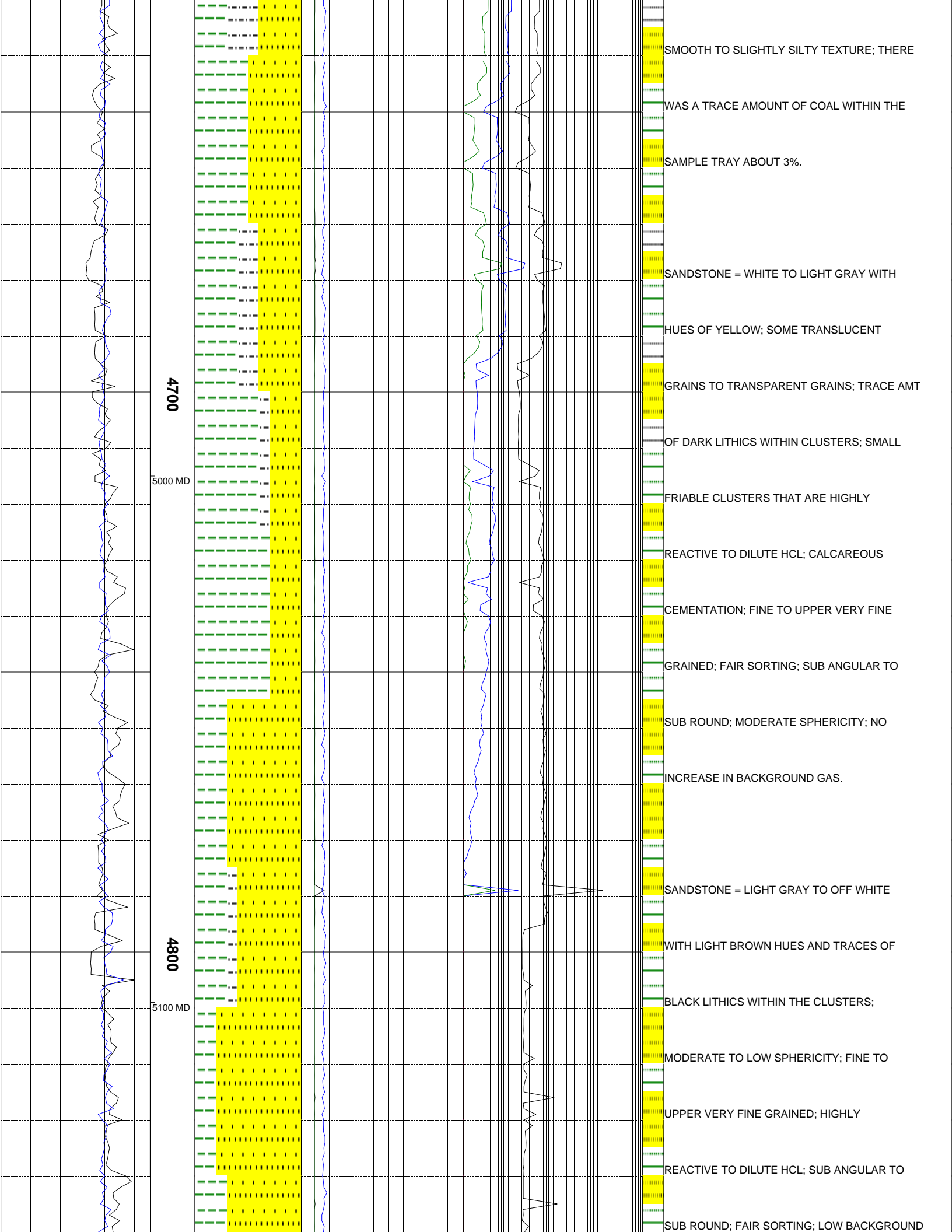
**TO**

### 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	





4700

5000 MD

4800

5100 MD

SMOOTH TO SLIGHTLY SILTY TEXTURE; THERE

WAS A TRACE AMOUNT OF COAL WITHIN THE

SAMPLE TRAY ABOUT 3%.

SANDSTONE = WHITE TO LIGHT GRAY WITH

HUES OF YELLOW; SOME TRANSLUCENT

GRAINS TO TRANSPARENT GRAINS; TRACE AMT

OF DARK LITHICS WITHIN CLUSTERS; SMALL

FRIABLE CLUSTERS THAT ARE HIGHLY

REACTIVE TO DILUTE HCL; CALCAREOUS

CEMENTATION; FINE TO UPPER VERY FINE

GRAINED; FAIR SORTING; SUB ANGULAR TO

SUB ROUND; MODERATE SPHERICITY; NO

INCREASE IN BACKGROUND GAS.

SANDSTONE = LIGHT GRAY TO OFF WHITE

WITH LIGHT BROWN HUES AND TRACES OF

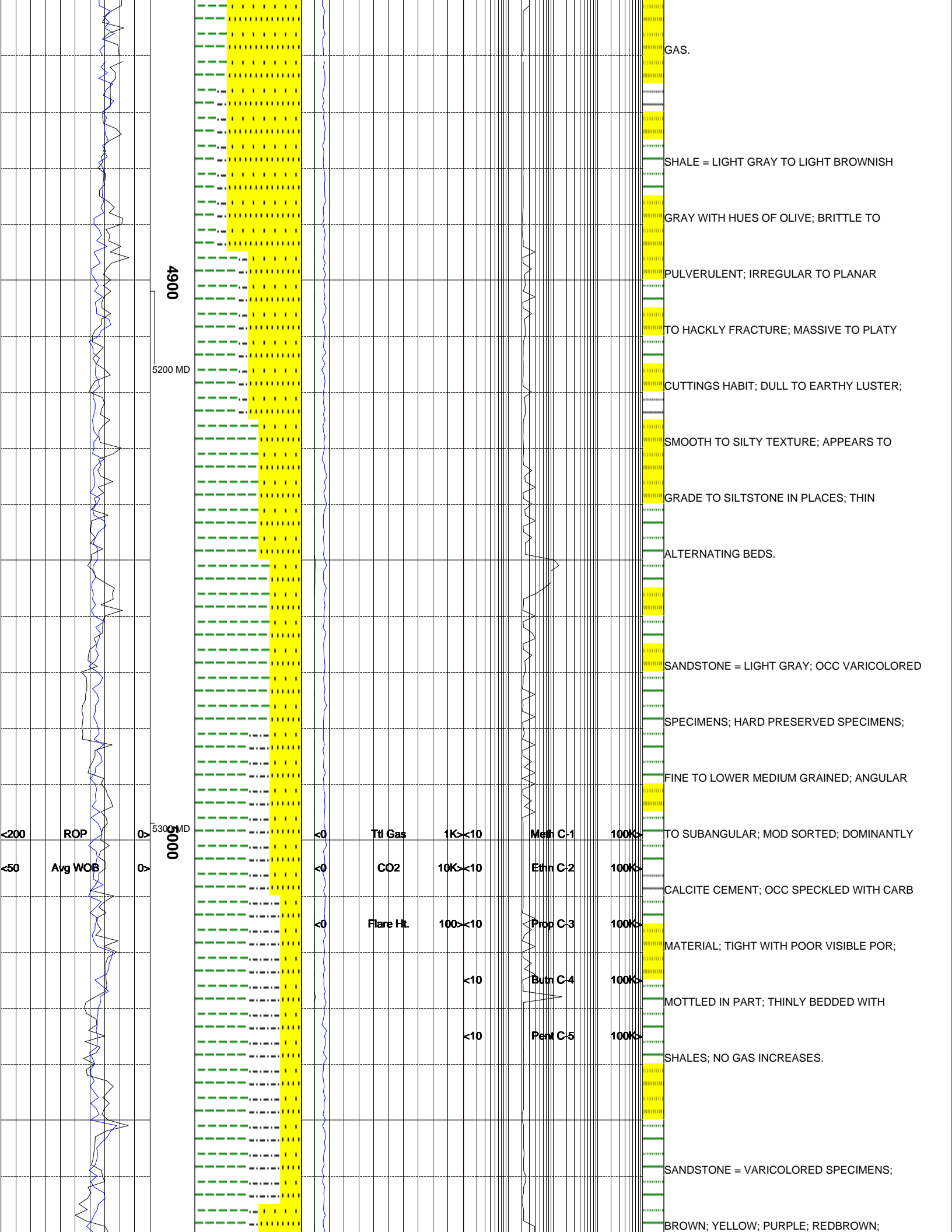
BLACK LITHICS WITHIN THE CLUSTERS;

MODERATE TO LOW SPHERICITY; FINE TO

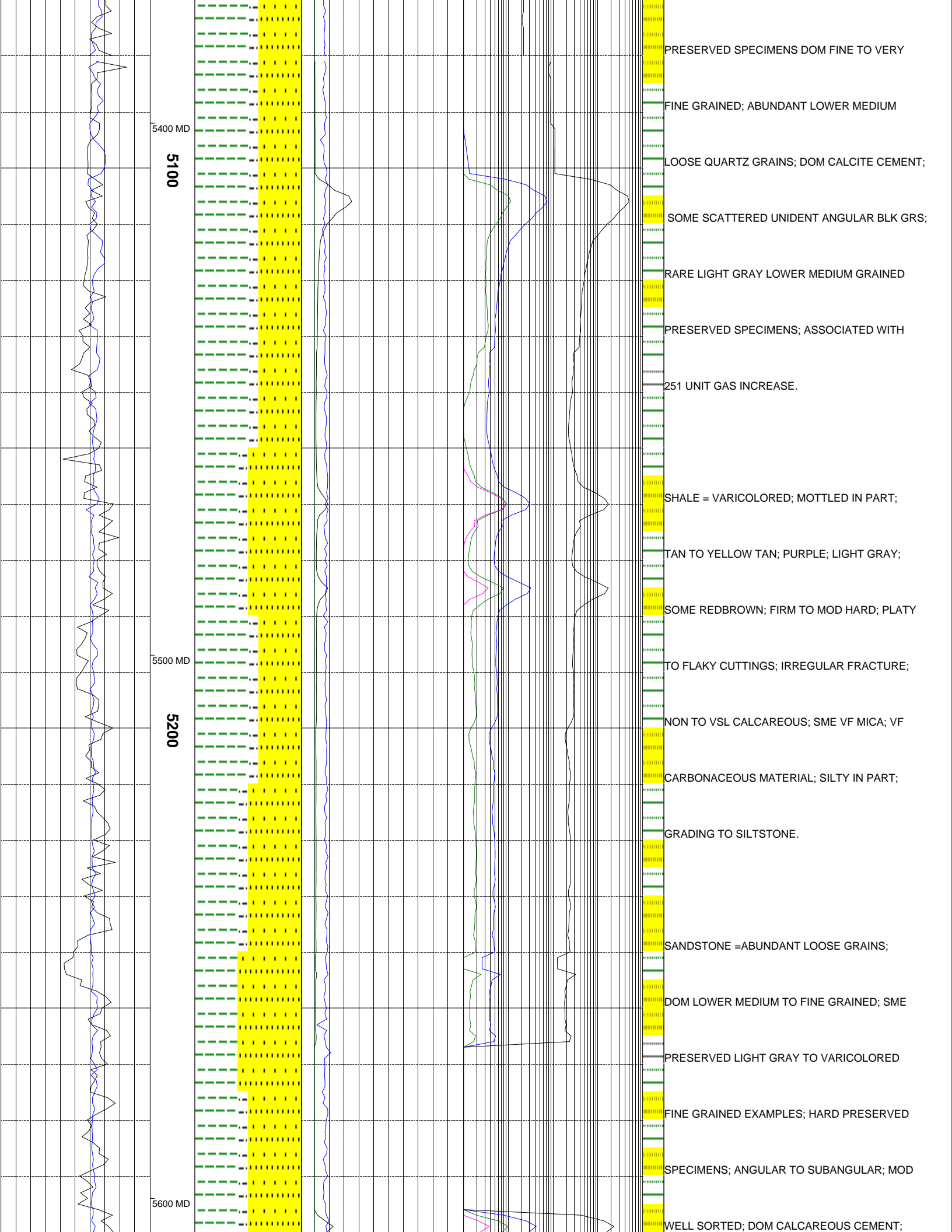
UPPER VERY FINE GRAINED; HIGHLY

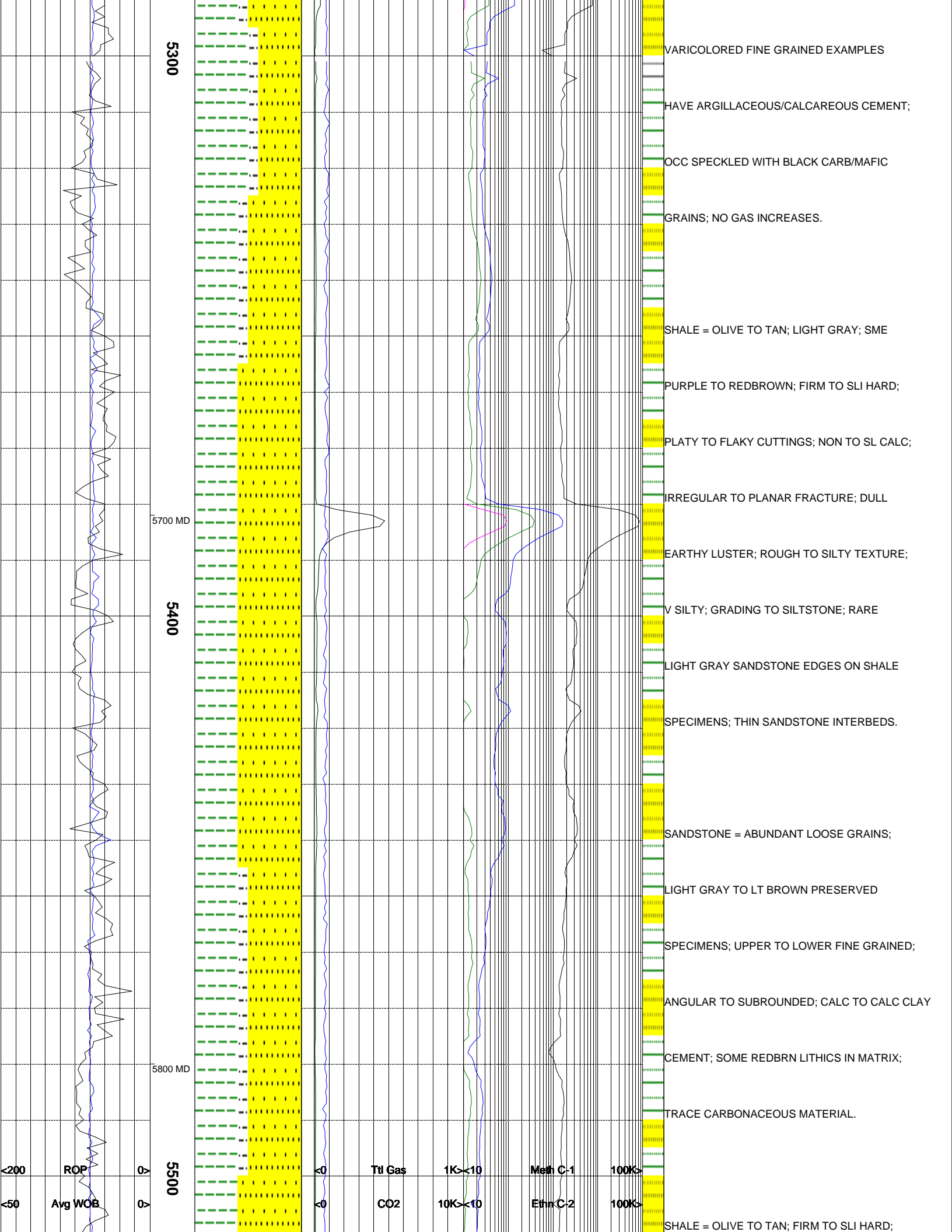
REACTIVE TO DILUTE HCL; SUB ANGULAR TO

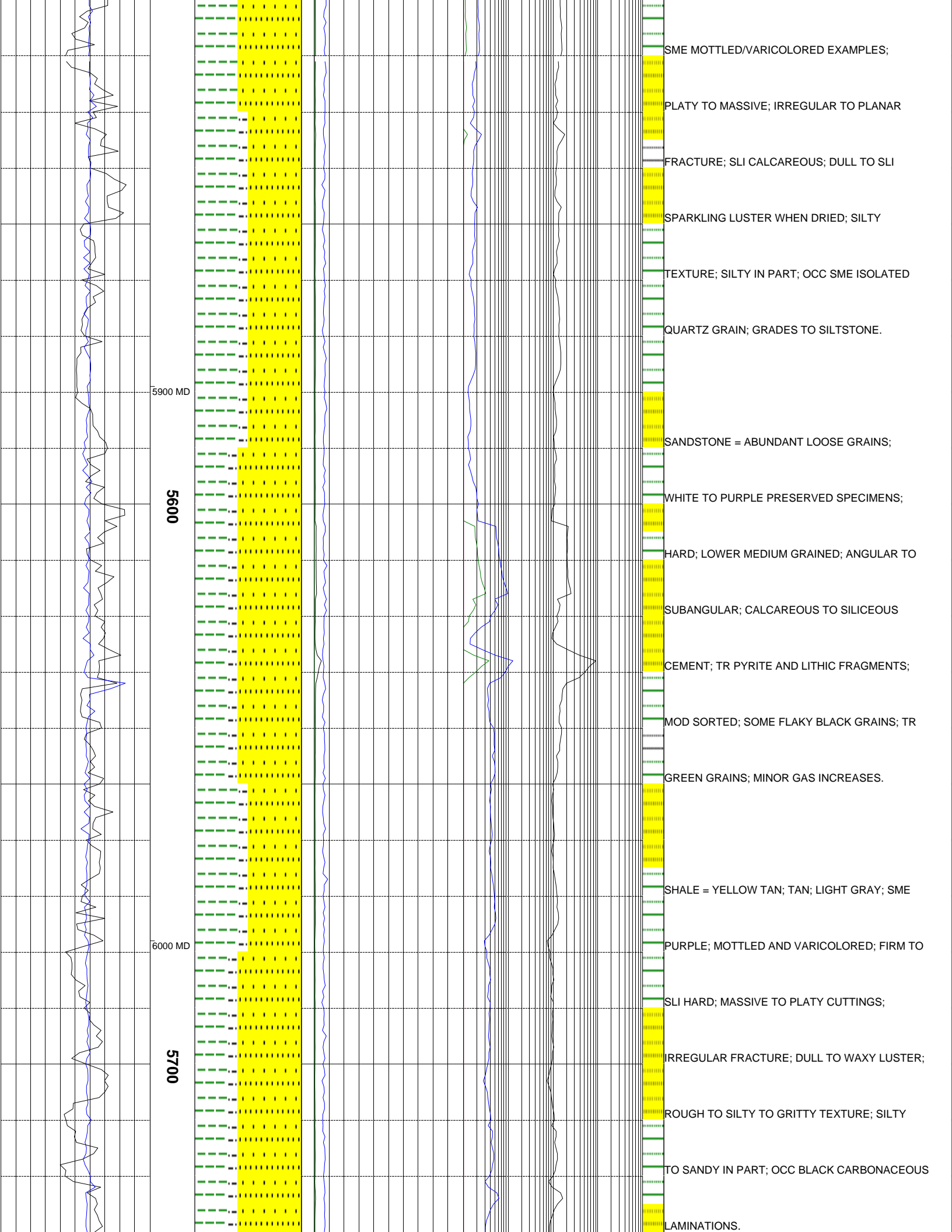
SUB ROUND; FAIR SORTING; LOW BACKGROUND

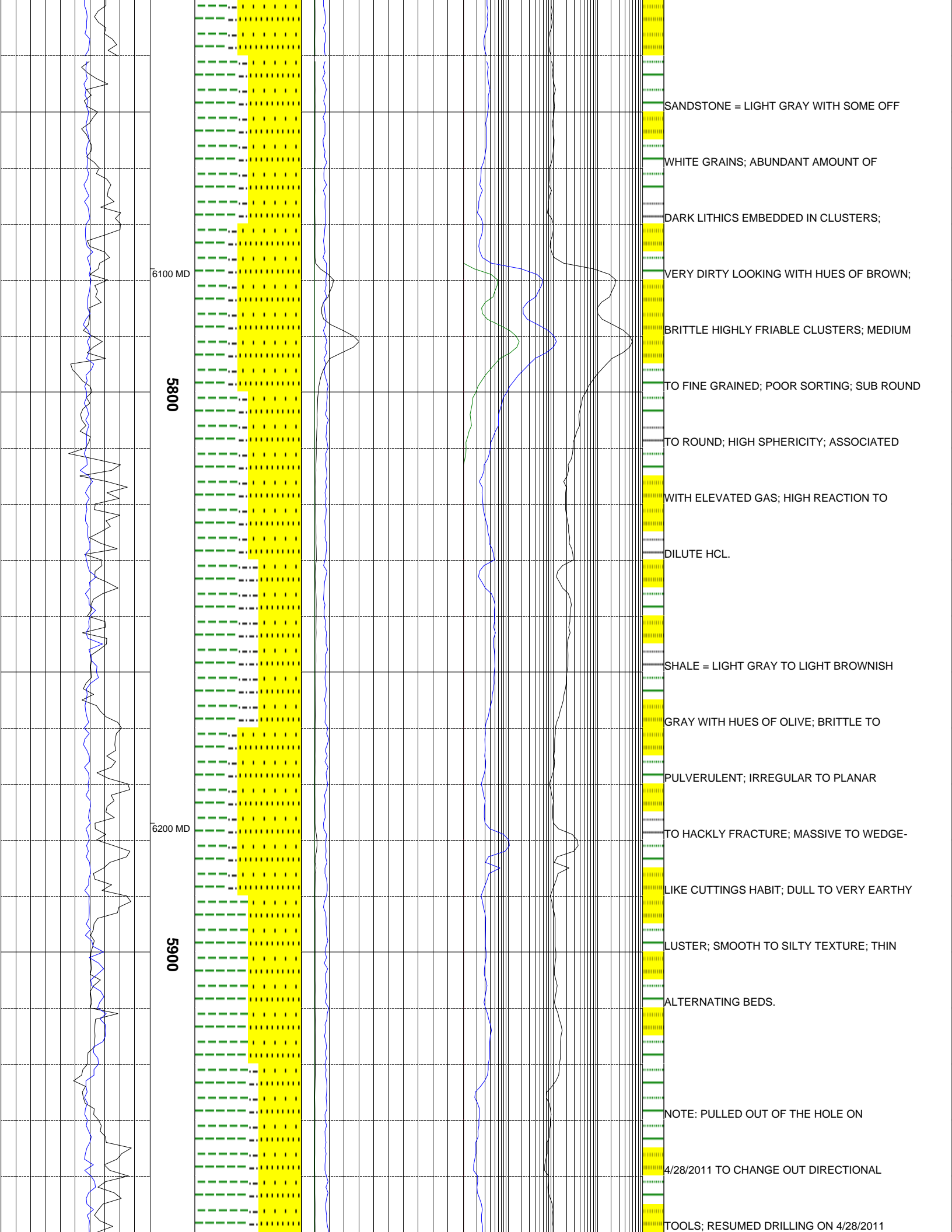












6100 MD

5800

6200 MD

5900

SANDSTONE = LIGHT GRAY WITH SOME OFF

WHITE GRAINS; ABUNDANT AMOUNT OF

DARK LITHICS EMBEDDED IN CLUSTERS;

VERY DIRTY LOOKING WITH HUES OF BROWN;

BRITTLE HIGHLY FRIABLE CLUSTERS; MEDIUM

TO FINE GRAINED; POOR SORTING; SUB ROUND

TO ROUND; HIGH SPHERICITY; ASSOCIATED

WITH ELEVATED GAS; HIGH REACTION TO

DILUTE HCL.

SHALE = LIGHT GRAY TO LIGHT BROWNISH

GRAY WITH HUES OF OLIVE; BRITTLE TO

PULVERULENT; IRREGULAR TO PLANAR

TO HACKLY FRACTURE; MASSIVE TO WEDGE-

LIKE CUTTINGS HABIT; DULL TO VERY EARTHY

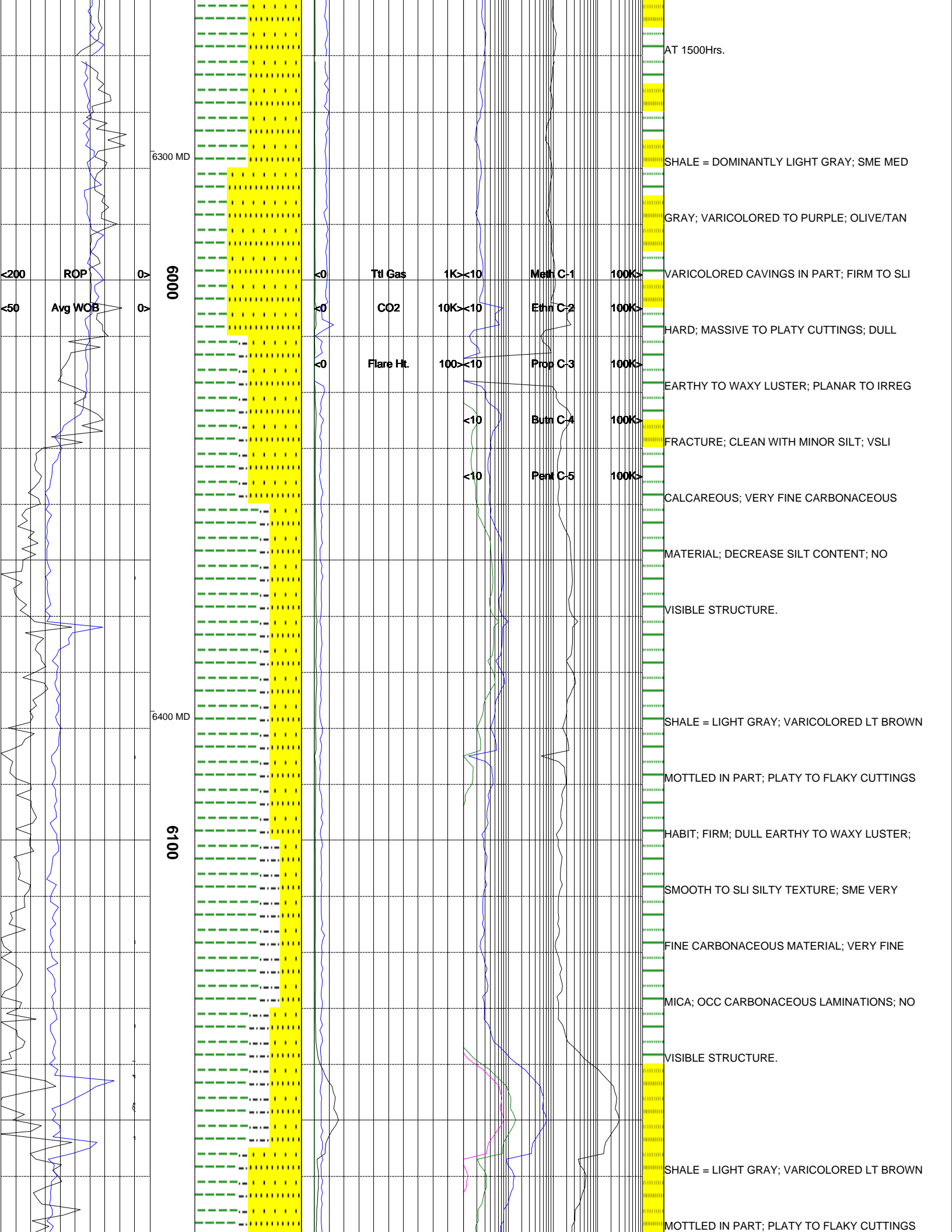
LUSTER; SMOOTH TO SILTY TEXTURE; THIN

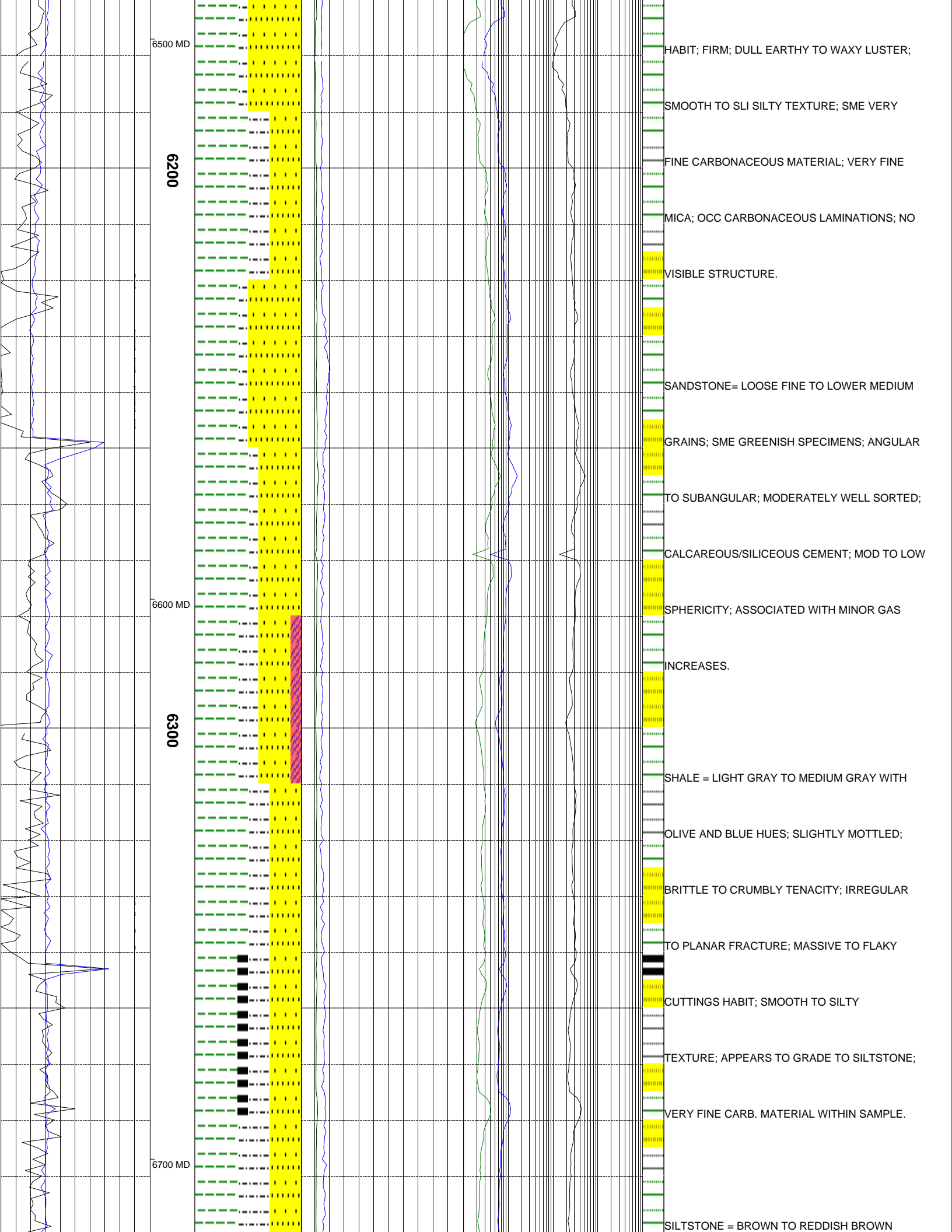
ALTERNATING BEDS.

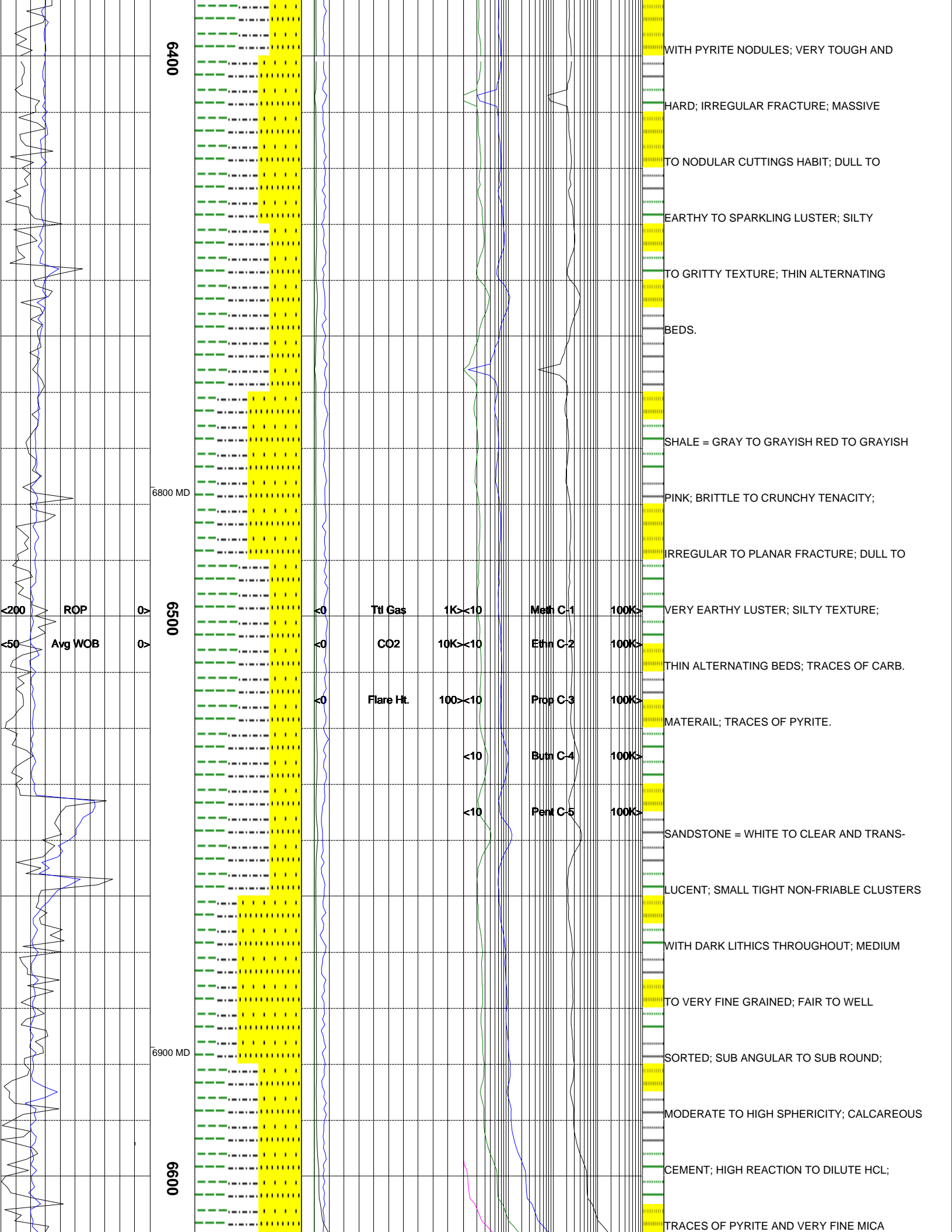
NOTE: PULLED OUT OF THE HOLE ON

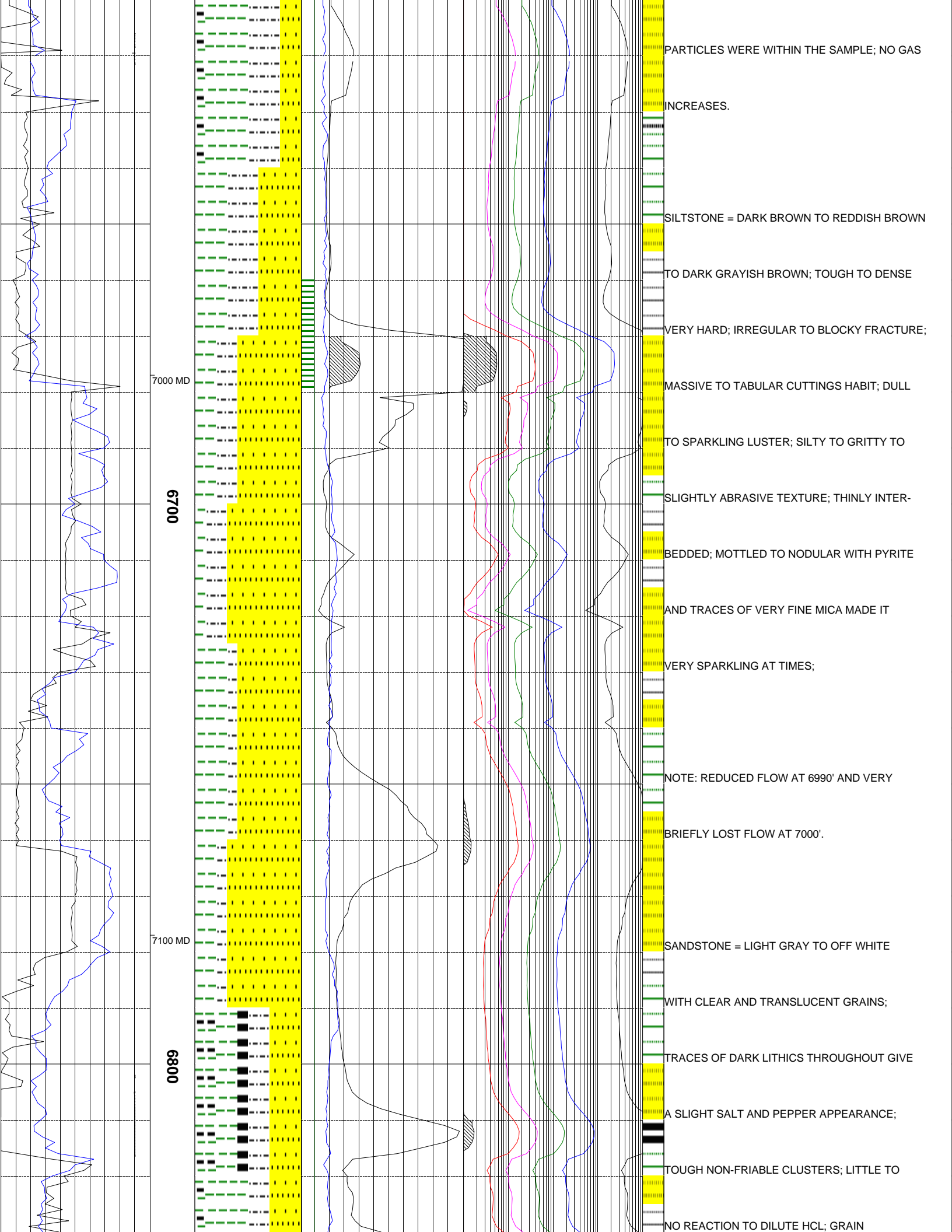
4/28/2011 TO CHANGE OUT DIRECTIONAL

TOOLS; RESUMED DRILLING ON 4/28/2011

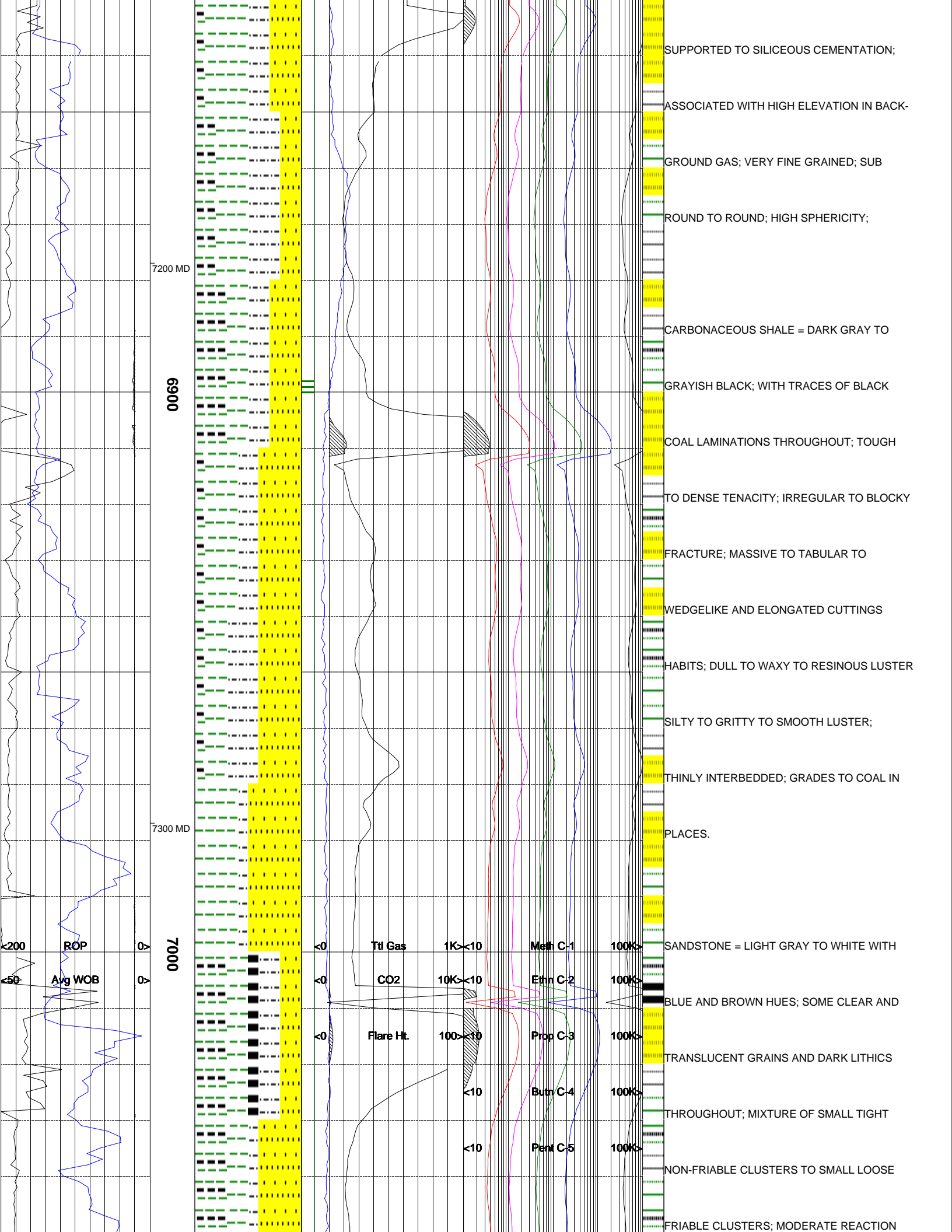


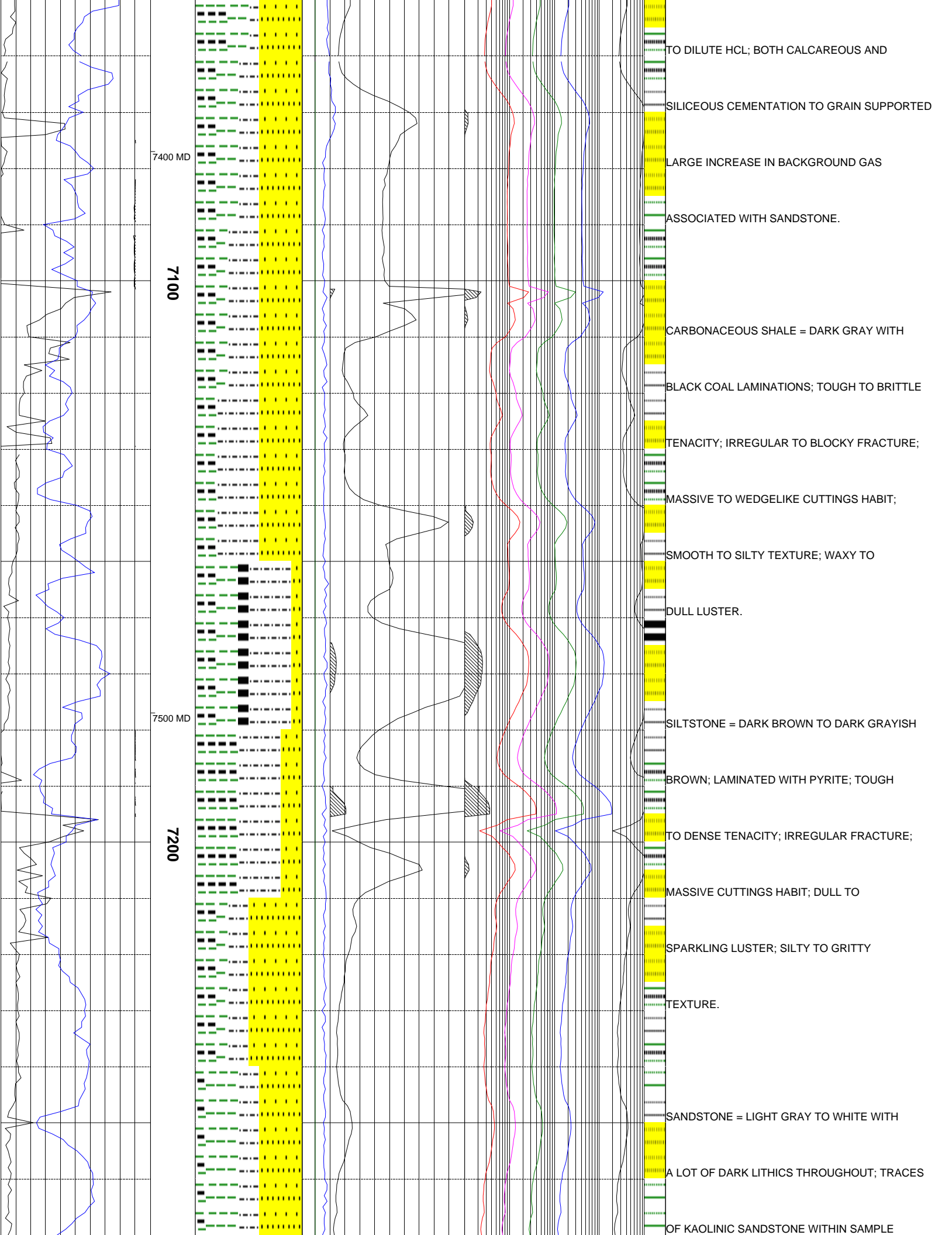


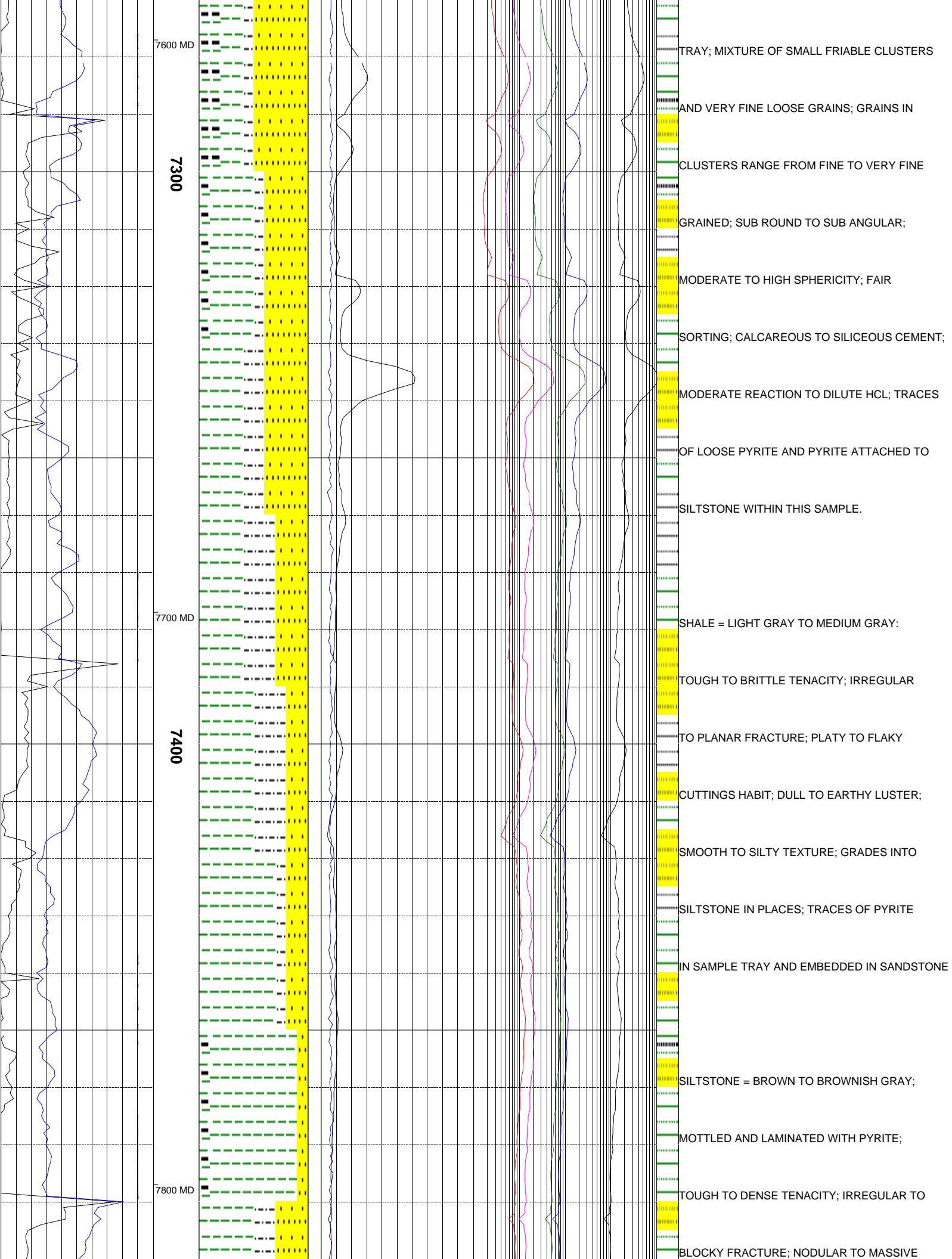


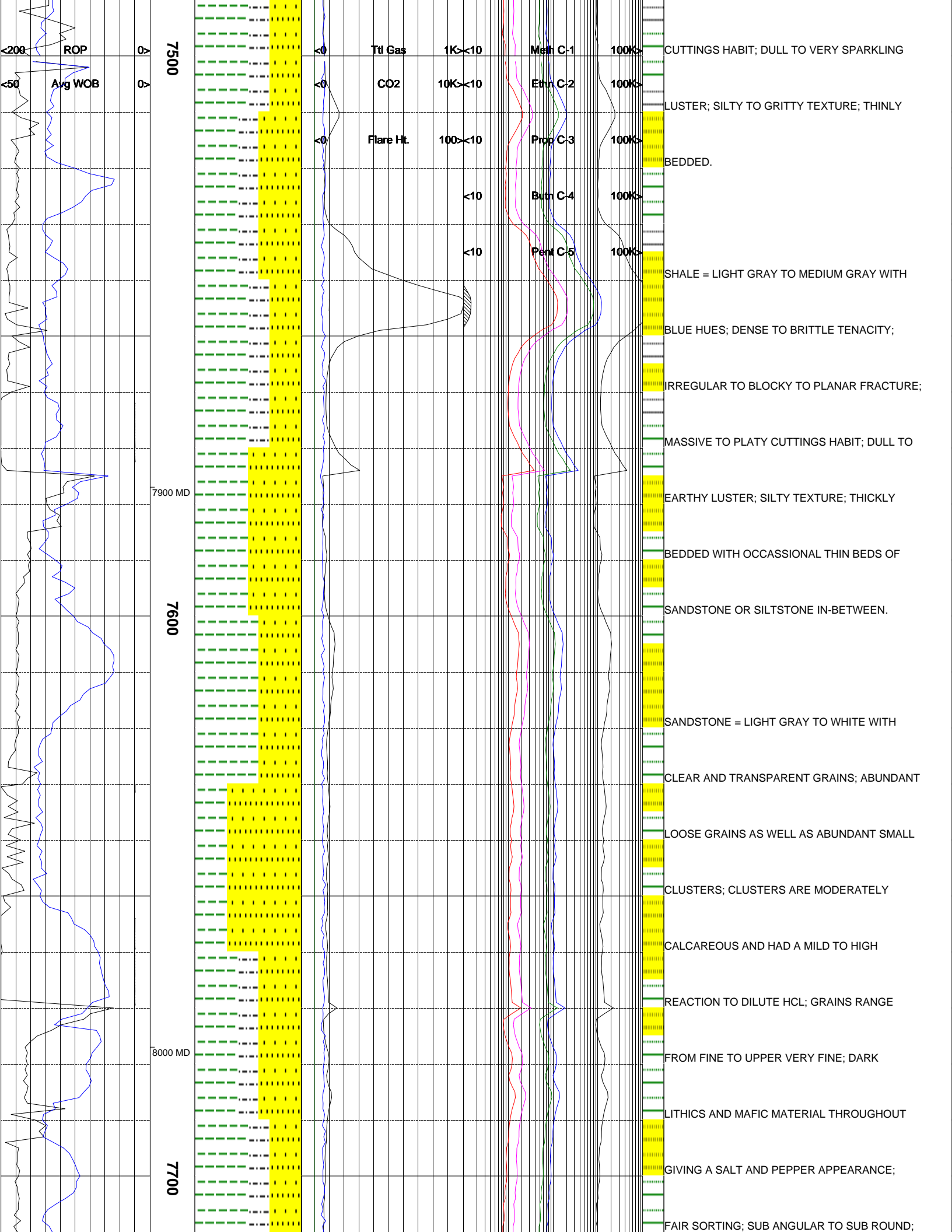












7500

7600

7700

7900 MD

8000 MD

Ttl Gas

1K<10

Meth C-1

100K<

CUTTINGS HABIT; DULL TO VERY SPARKLING

CO2

10K<10

Ethn C-2

100K<

LUSTER; SILTY TO GRITTY TEXTURE; THINLY

Flare Ht.

100<10

Prop C-3

100K<

BEDDED.

<10

Butn C-4

100K<

<10

Pent C-5

100K<

SHALE = LIGHT GRAY TO MEDIUM GRAY WITH

BLUE HUES; DENSE TO BRITTLE TENACITY;

IRREGULAR TO BLOCKY TO PLANAR FRACTURE;

MASSIVE TO PLATY CUTTINGS HABIT; DULL TO

EARTHY LUSTER; SILTY TEXTURE; THICKLY

BEDDED WITH OCCASSIONAL THIN BEDS OF

SANDSTONE OR SILTSTONE IN-BETWEEN.

SANDSTONE = LIGHT GRAY TO WHITE WITH

CLEAR AND TRANSPARENT GRAINS; ABUNDANT

LOOSE GRAINS AS WELL AS ABUNDANT SMALL

CLUSTERS; CLUSTERS ARE MODERATELY

CALCAREOUS AND HAD A MILD TO HIGH

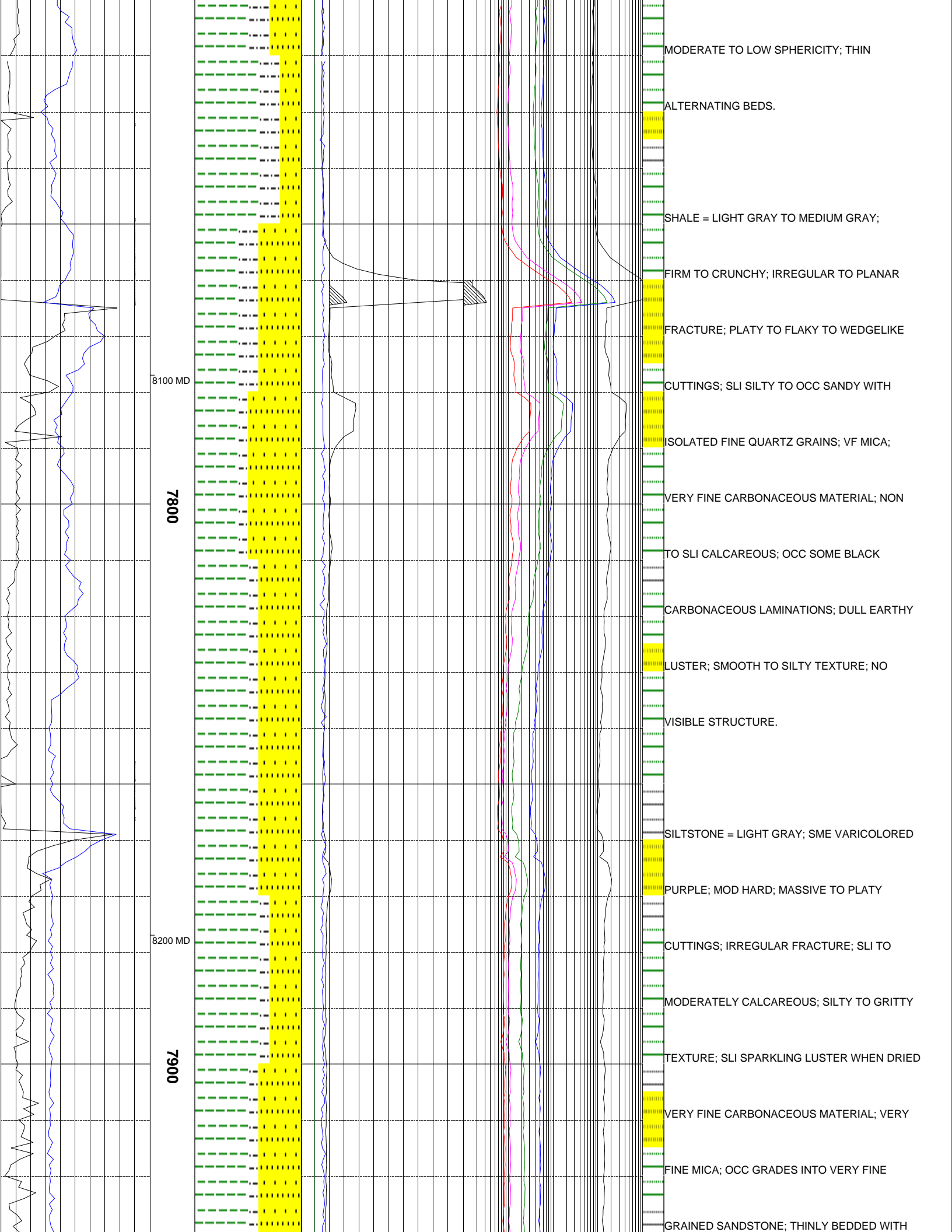
REACTION TO DILUTE HCL; GRAINS RANGE

FROM FINE TO UPPER VERY FINE; DARK

LITHICS AND MAFIC MATERIAL THROUGHOUT

GIVING A SALT AND PEPPER APPEARANCE;

FAIR SORTING; SUB ANGULAR TO SUB ROUND;



MODERATE TO LOW SPHERICITY; THIN

ALTERNATING BEDS.

SHALE = LIGHT GRAY TO MEDIUM GRAY;

FIRM TO CRUNCHY; IRREGULAR TO PLANAR

FRACTURE; PLATY TO FLAKY TO WEDGELIKE

CUTTINGS; SLI SILTY TO OCC SANDY WITH

ISOLATED FINE QUARTZ GRAINS; VF MICA;

VERY FINE CARBONACEOUS MATERIAL; NON

TO SLI CALCAREOUS; OCC SOME BLACK

CARBONACEOUS LAMINATIONS; DULL EARTHY

LUSTER; SMOOTH TO SILTY TEXTURE; NO

VISIBLE STRUCTURE.

SILTSTONE = LIGHT GRAY; SME VARICOLORED

PURPLE; MOD HARD; MASSIVE TO PLATY

CUTTINGS; IRREGULAR FRACTURE; SLI TO

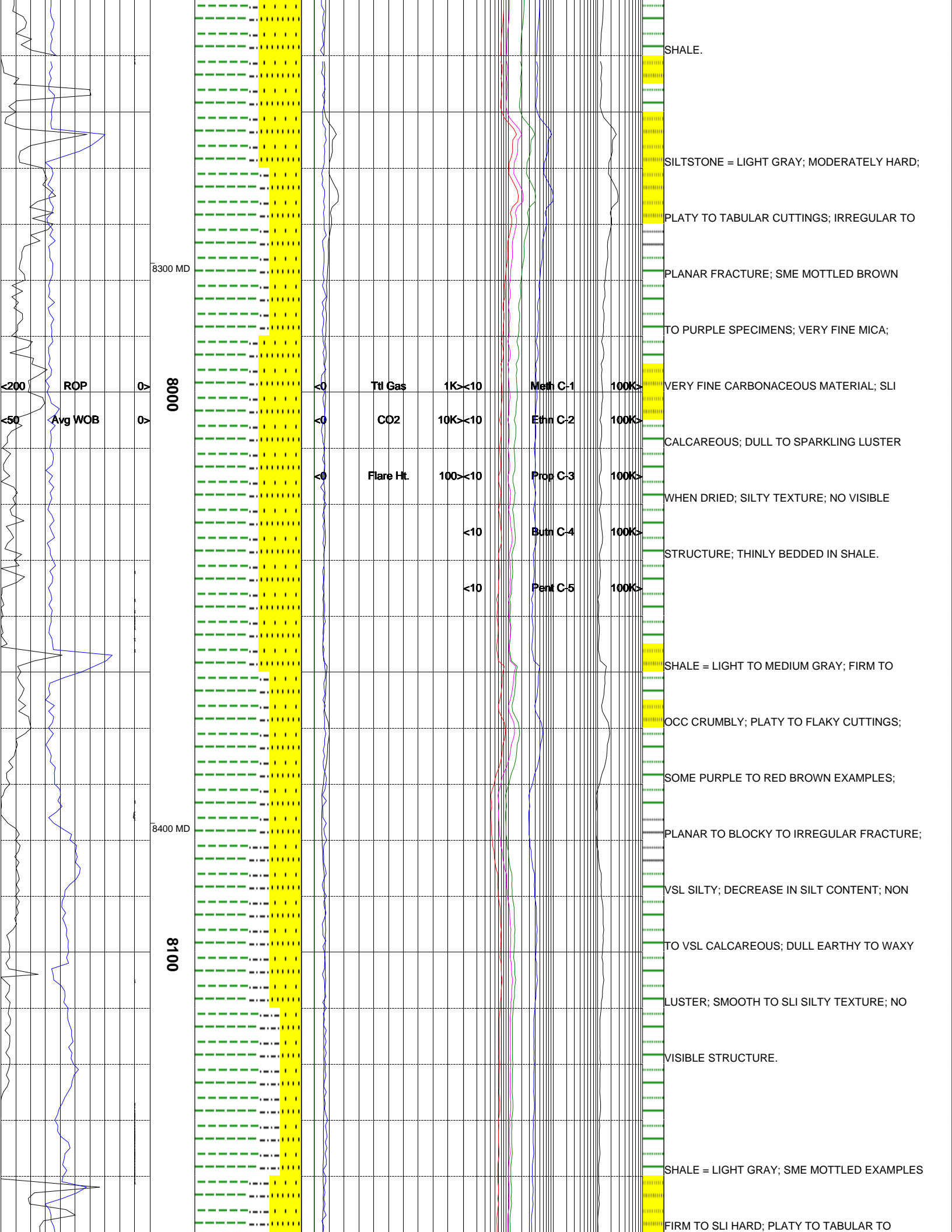
MODERATELY CALCAREOUS; SILTY TO GRITTY

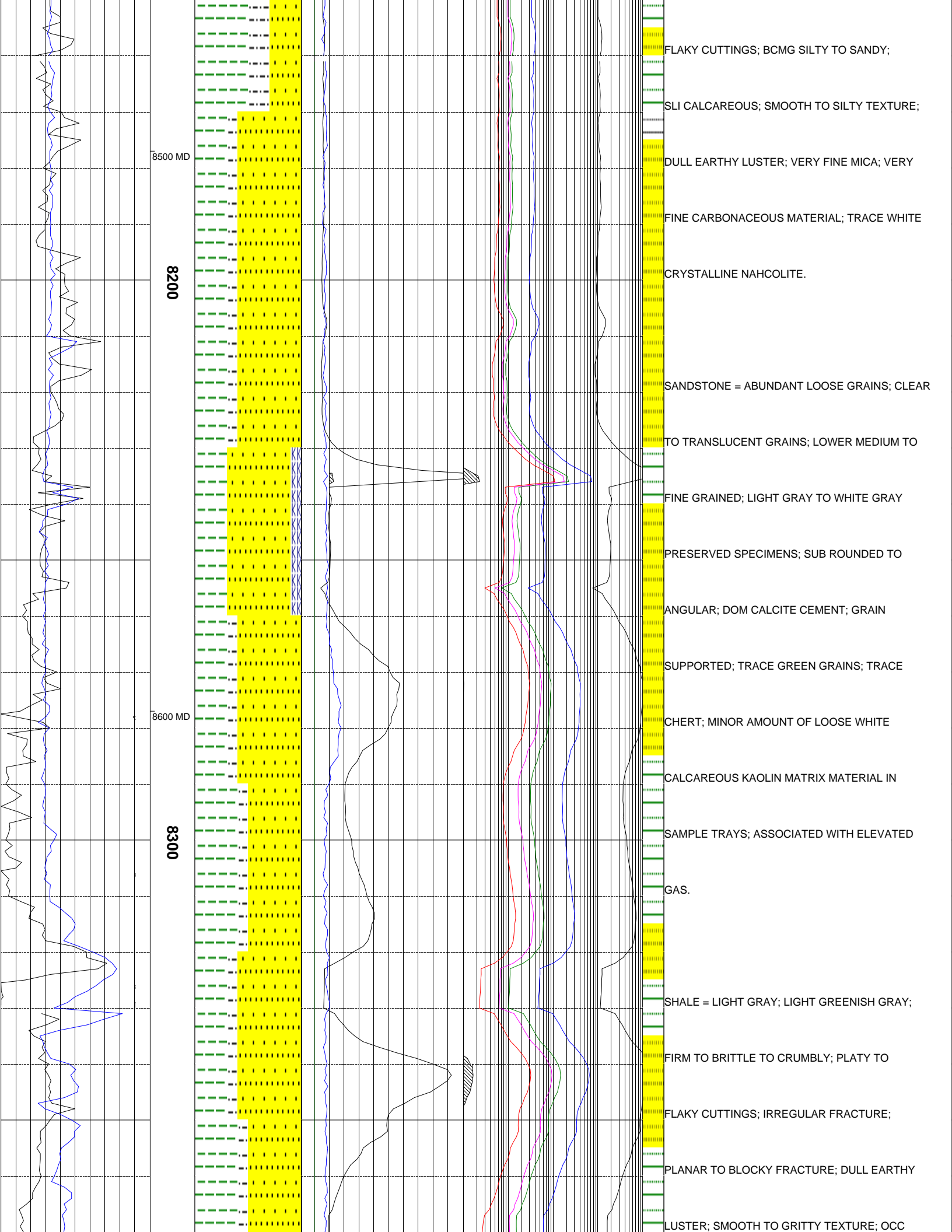
TEXTURE; SLI SPARKLING LUSTER WHEN DRIED

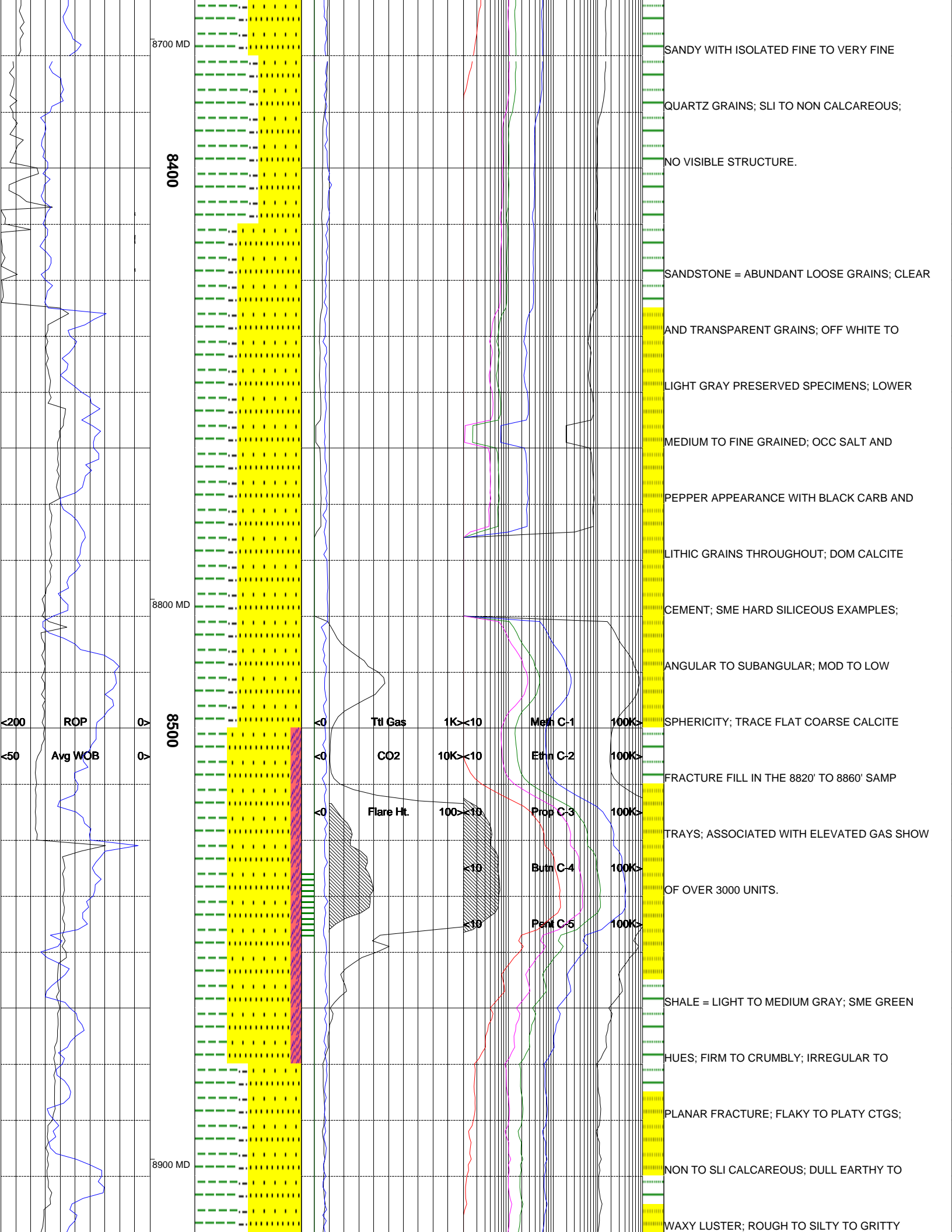
VERY FINE CARBONACEOUS MATERIAL; VERY

FINE MICA; OCC GRADES INTO VERY FINE

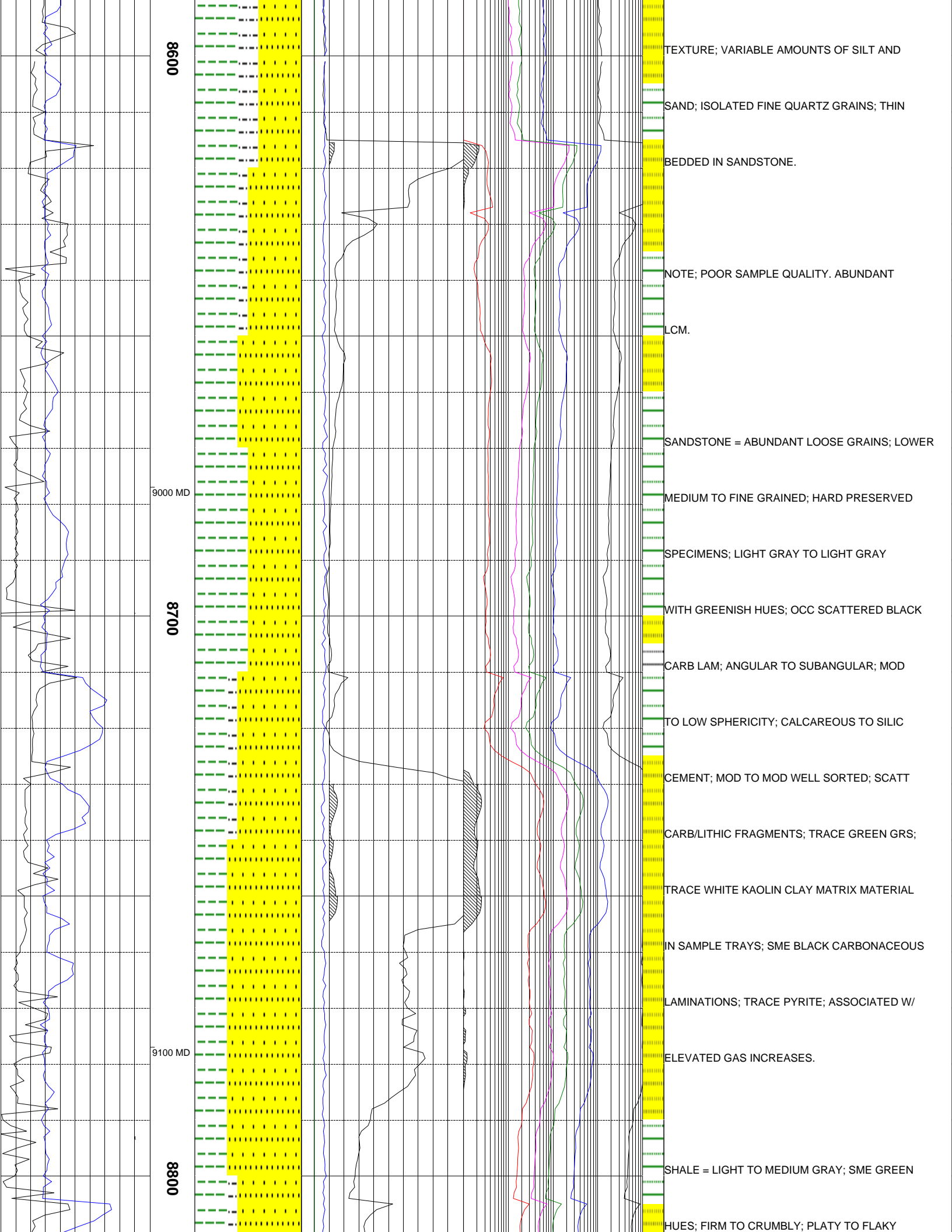
GRAINED SANDSTONE; THINLY BEDDED WITH

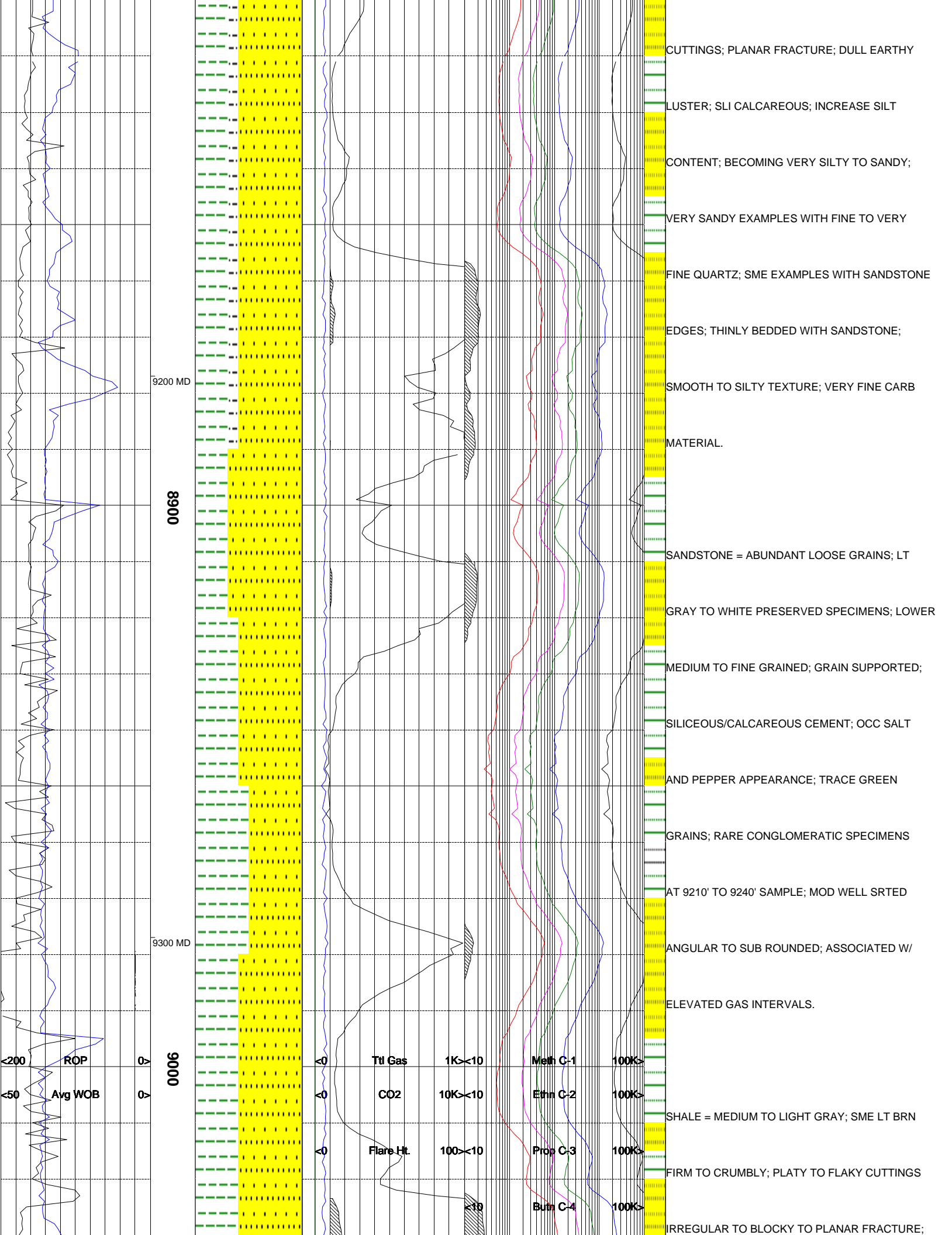


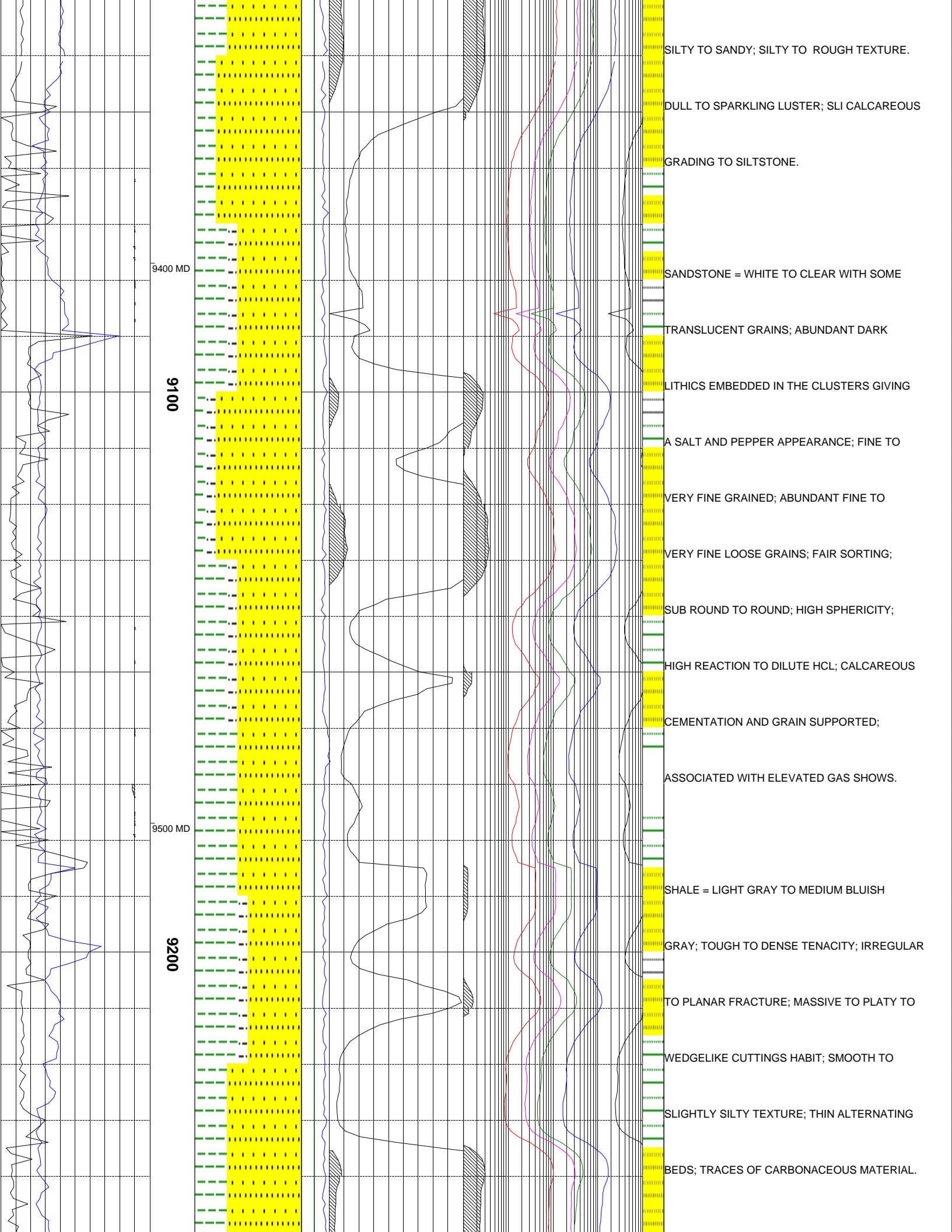


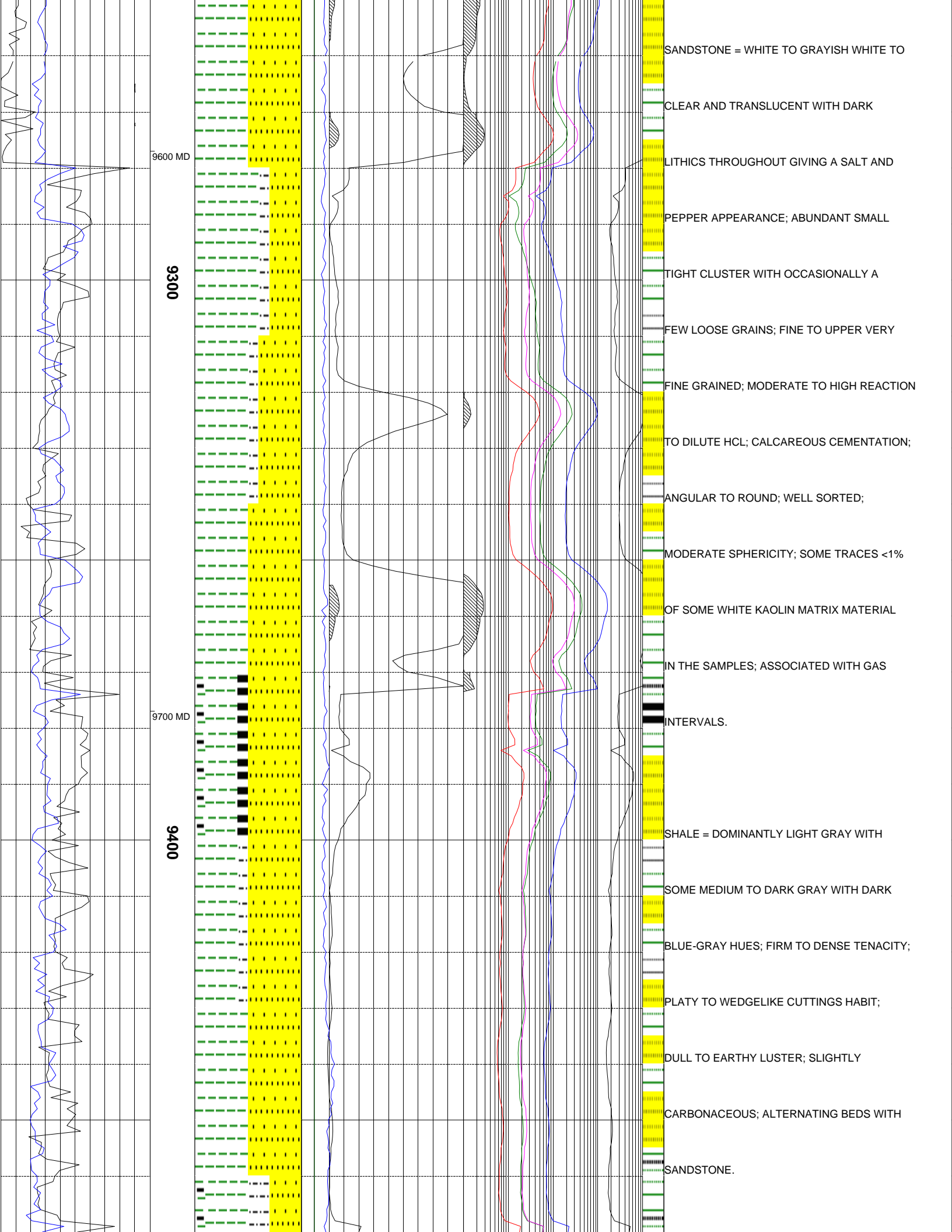


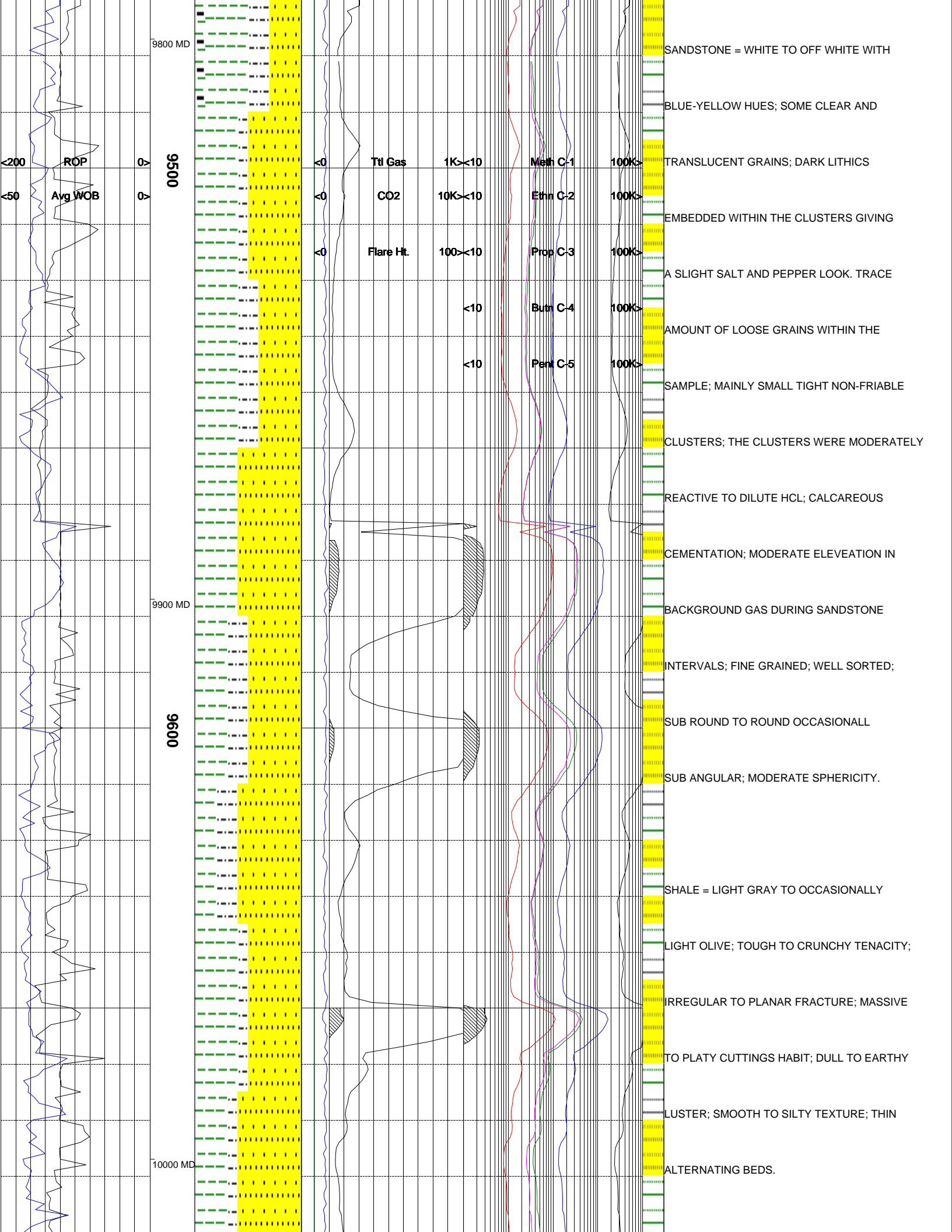


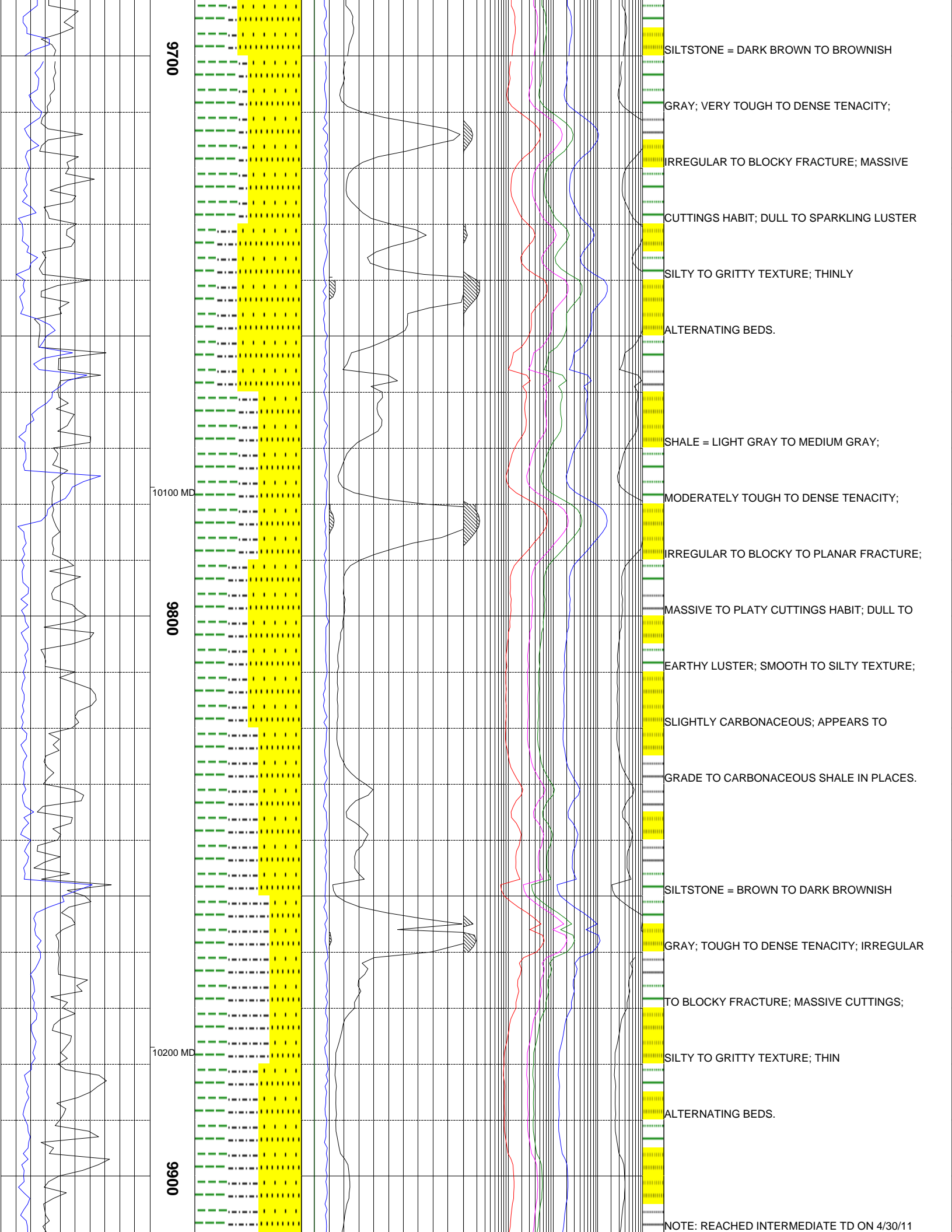


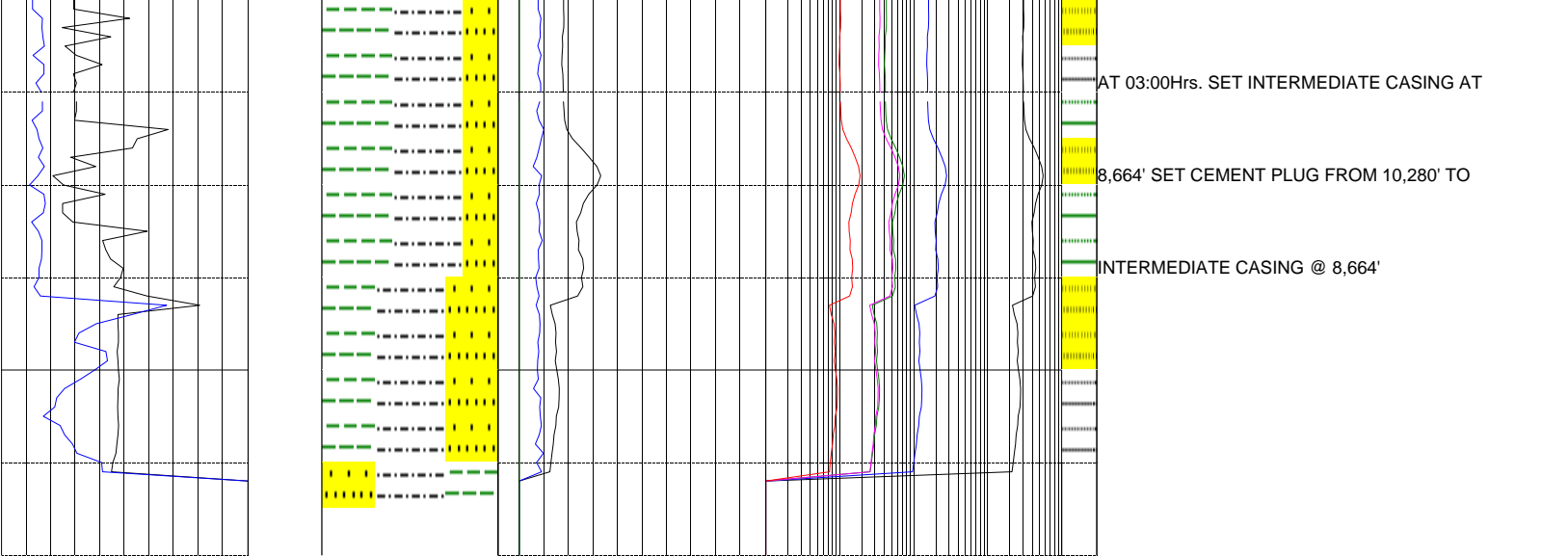












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