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## MUDLOG TVD

|                      |   |
|----------------------|---|
| <b>COMPANY</b>       | ExxonMobil Production                     |
| <b>WELL</b>          | PCU 197-34A4                              |
| <b>FIELD</b>         | PICEANCE CREEK UNIT                       |
| <b>REGION</b>        | ROCKY MOUNTAIN                            |
| <b>COORDINATES</b>   | LAT: 39.918076000<br>LONG: -108.276956000 |
| <b>ELEVATION</b>     | G.L.: 6492'<br>R.K.B.: 30.2'              |
| <b>COUNTY, STATE</b> | RIO BLANCO, CO                            |
| <b>API INDEX</b>     | 051031154100                              |
| <b>SPUD DATE</b>     | 03/04/2010                                |
| <b>CONTRACTOR</b>    | HELMERICH AND PAYNE                       |
| <b>CO. REP.</b>      | JOEY THOMAS                               |
| <b>RIG/TYPE</b>      | HP 325/FLEX 4S                            |
| <b>LOGGING UNIT</b>  | MLU 48                                    |
| <b>GEOLOGISTS</b>    | M. GROSS<br>J.SELL                        |
| <b>ADD. PERSONS</b>  | D. NEW                                    |
| <b>CO. GEOLOGIST</b> | MELISSA SAURBORN                          |

### LOG INTERVAL

**DEPTHS:** 3735' **TO** 12641'

**DATES:** 06/08/2010 **TO** 08/13/2010

**SCALE:** 1" = 100'

### CASING DATA

10.75" **AT** 3713'

7.00" **AT** 8560'

**AT**

**AT**

### MUD TYPES

SPUD MUD **TO** 3735'

LSND **TO** 12641'

**TO**

**TO**

### HOLE SIZE

14.75" **TO** 3735'

9.875" **TO** 8605'

**TO**

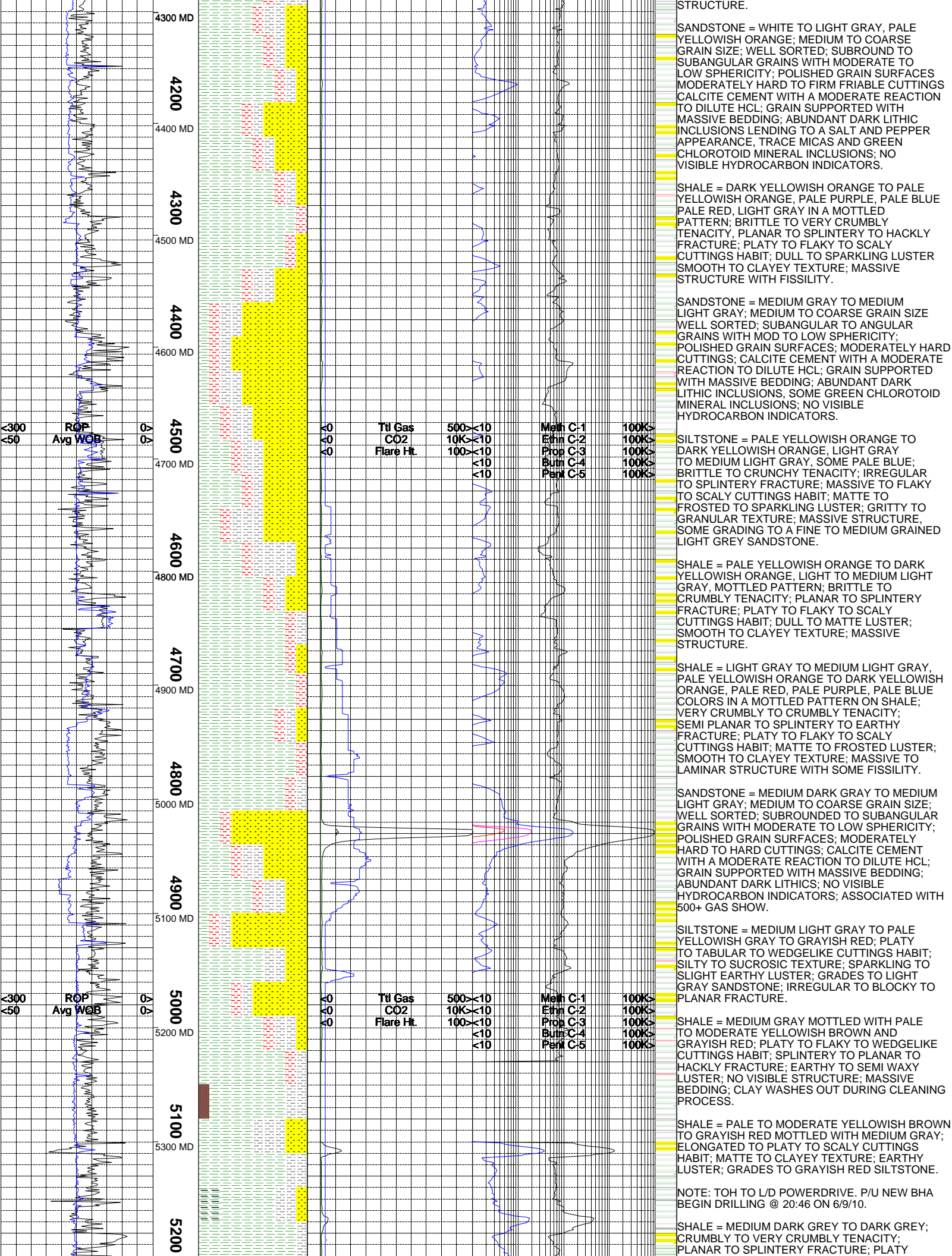
**TO**

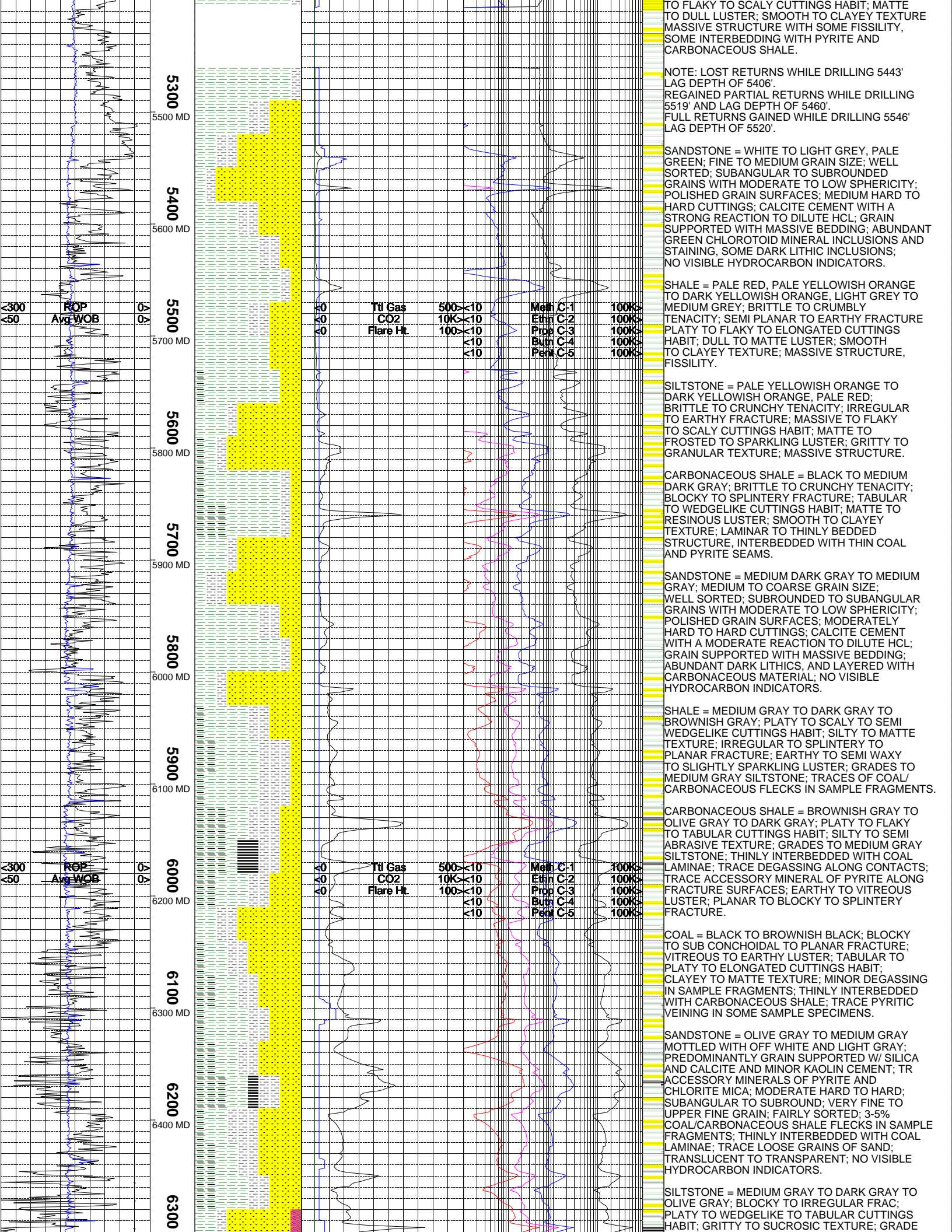
### ABBREVIATIONS

|                             |                                 |                            |
|-----------------------------|---------------------------------|----------------------------|
| <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  |                            |

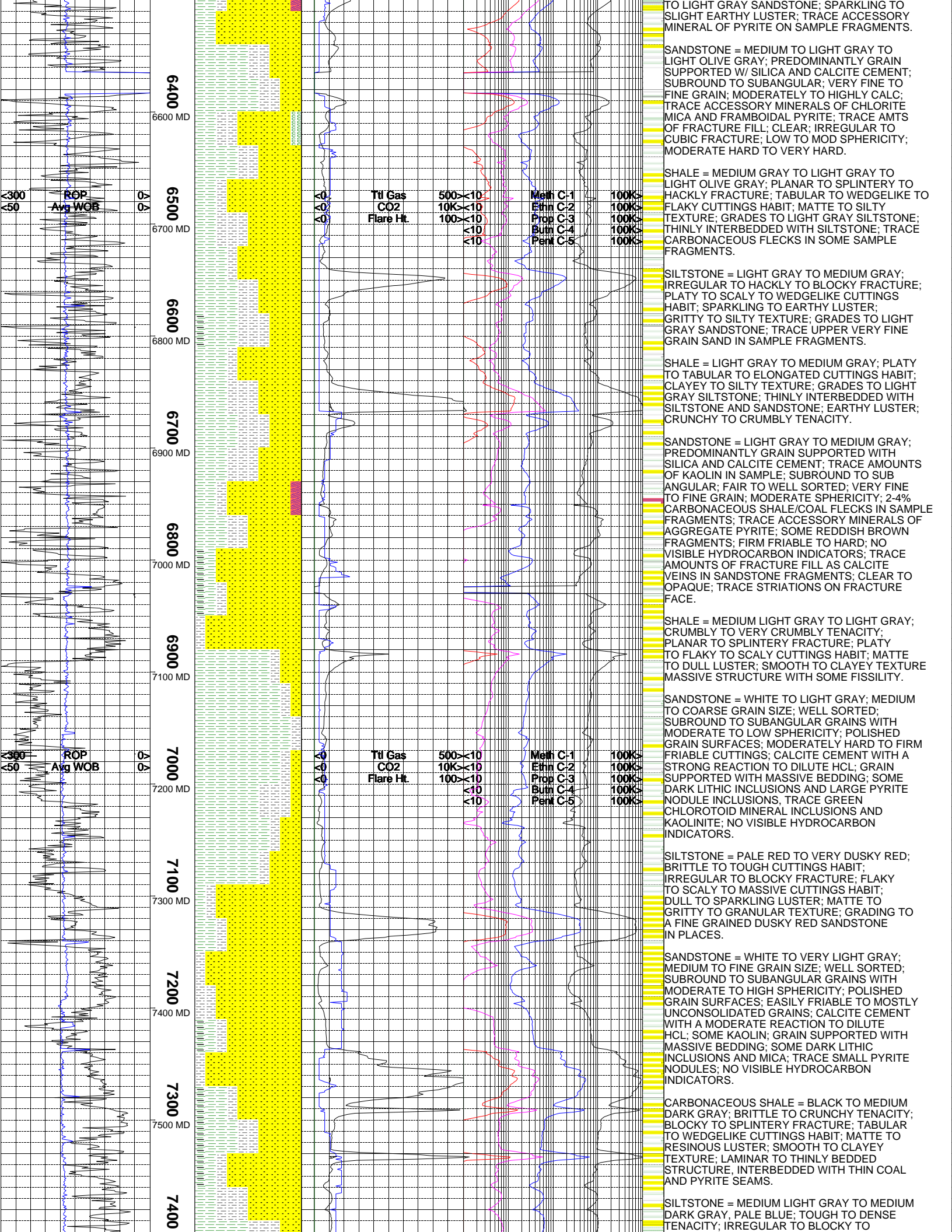
|                  |                      |                   |                        |                      |
|------------------|----------------------|-------------------|------------------------|----------------------|
| ALTERED ZONE     | CHERT - GLASSY       | FELSIC SILIC DIKE | MARL - CALC            | 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                   |                      |

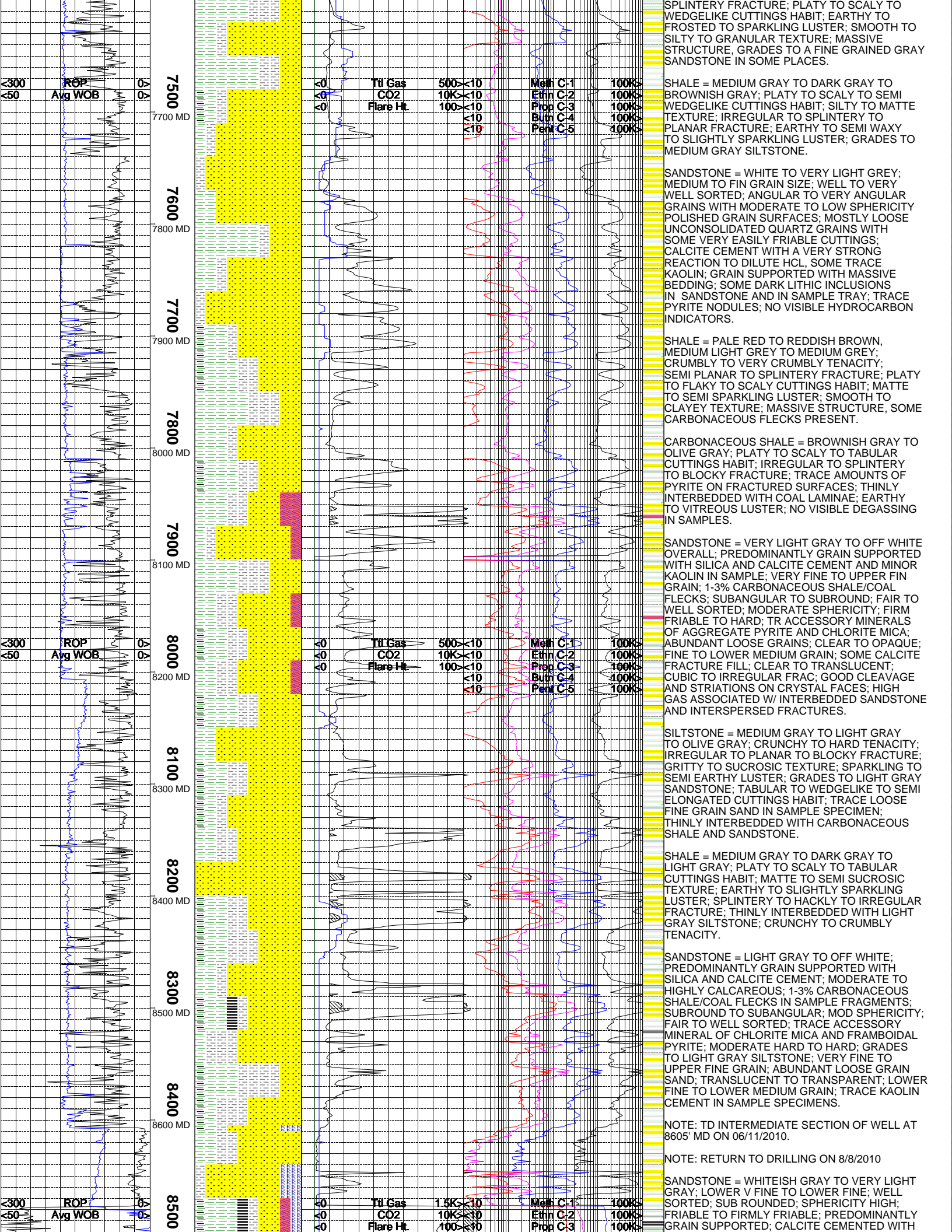
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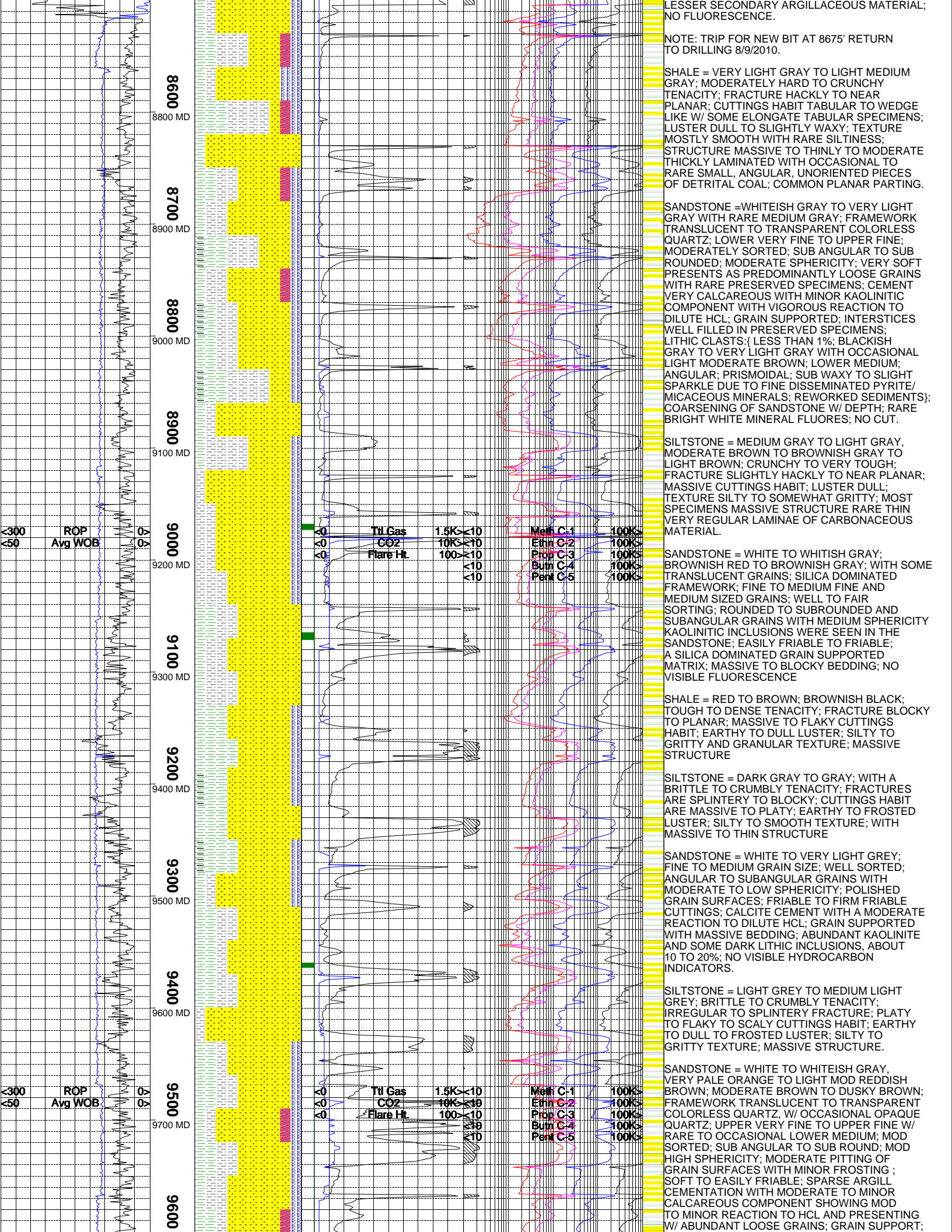




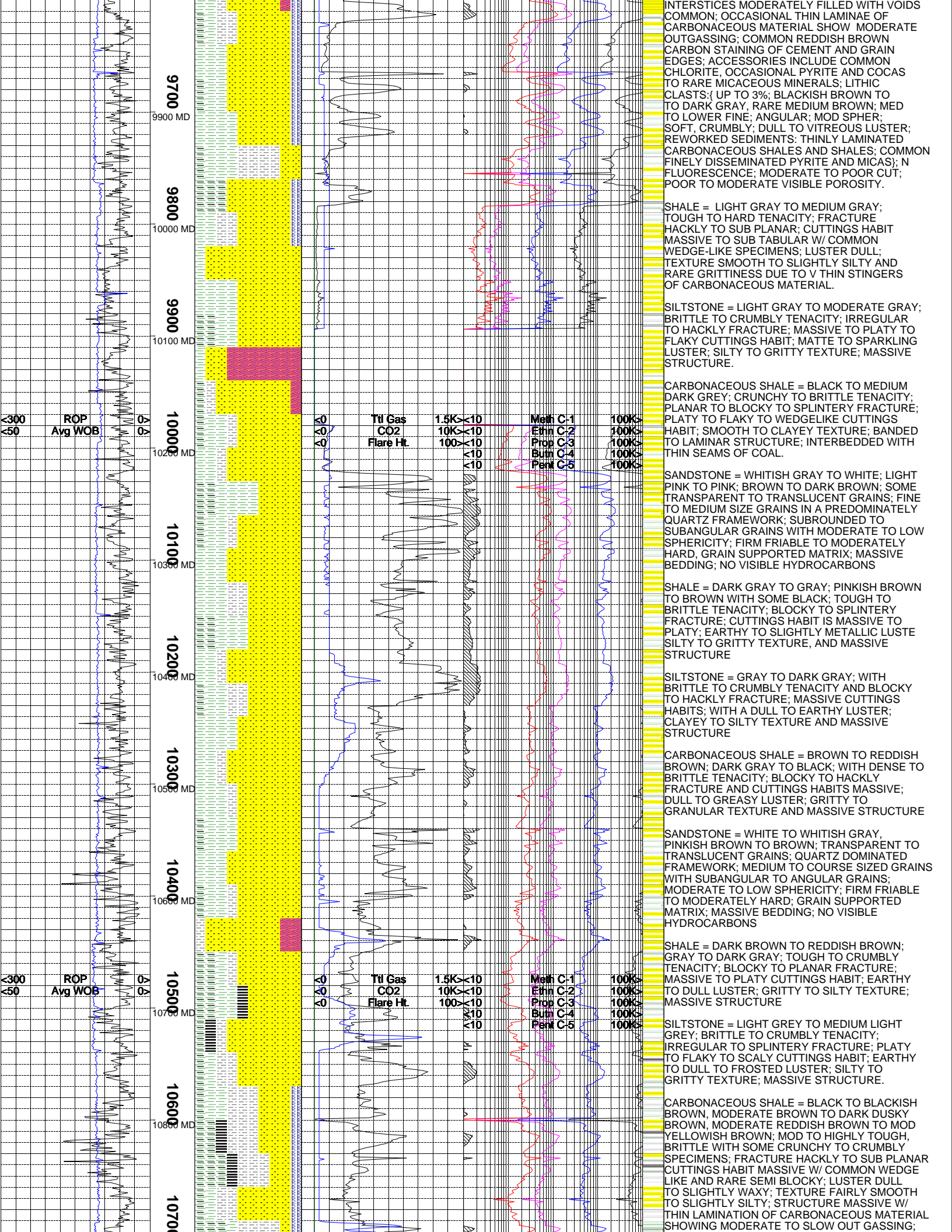




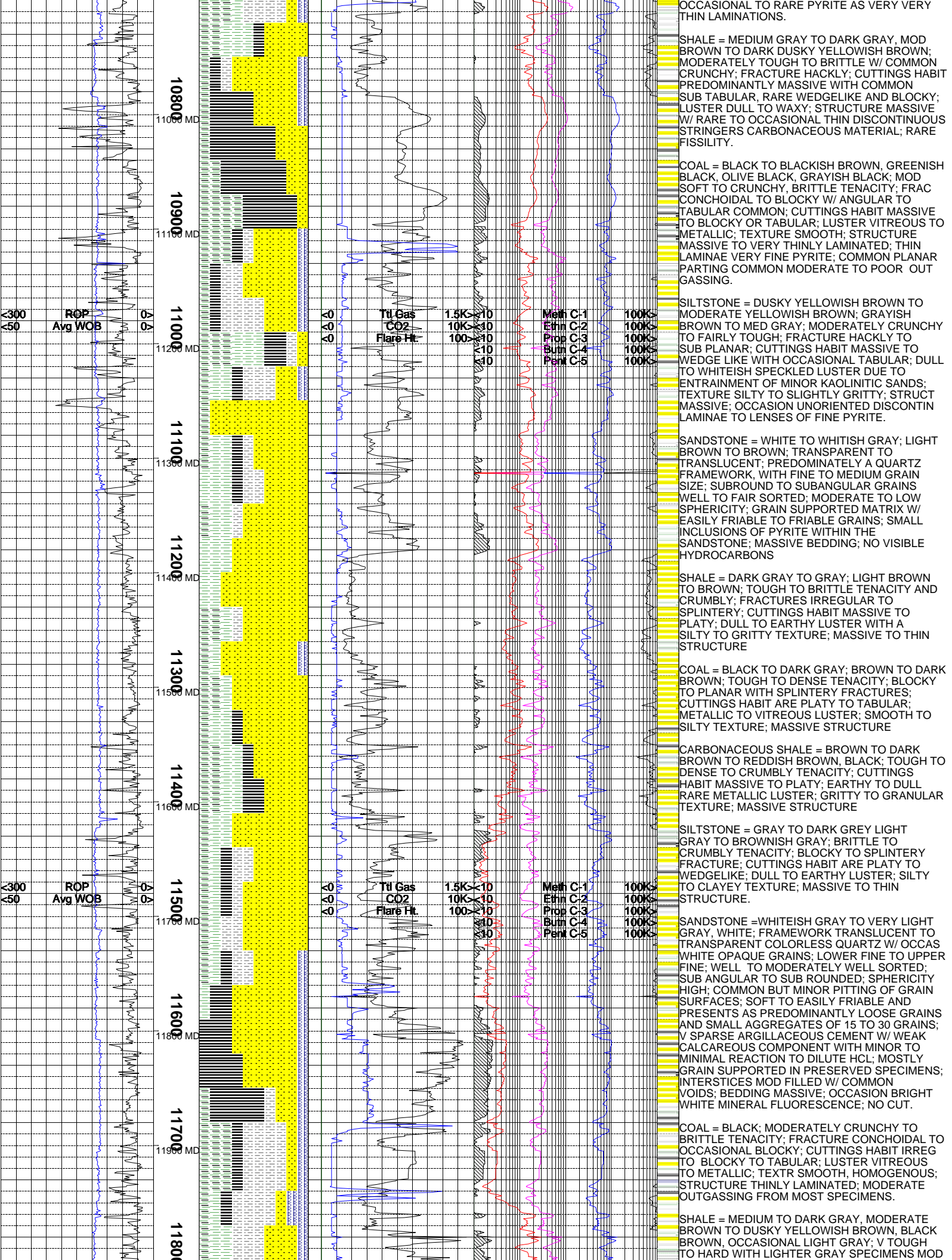


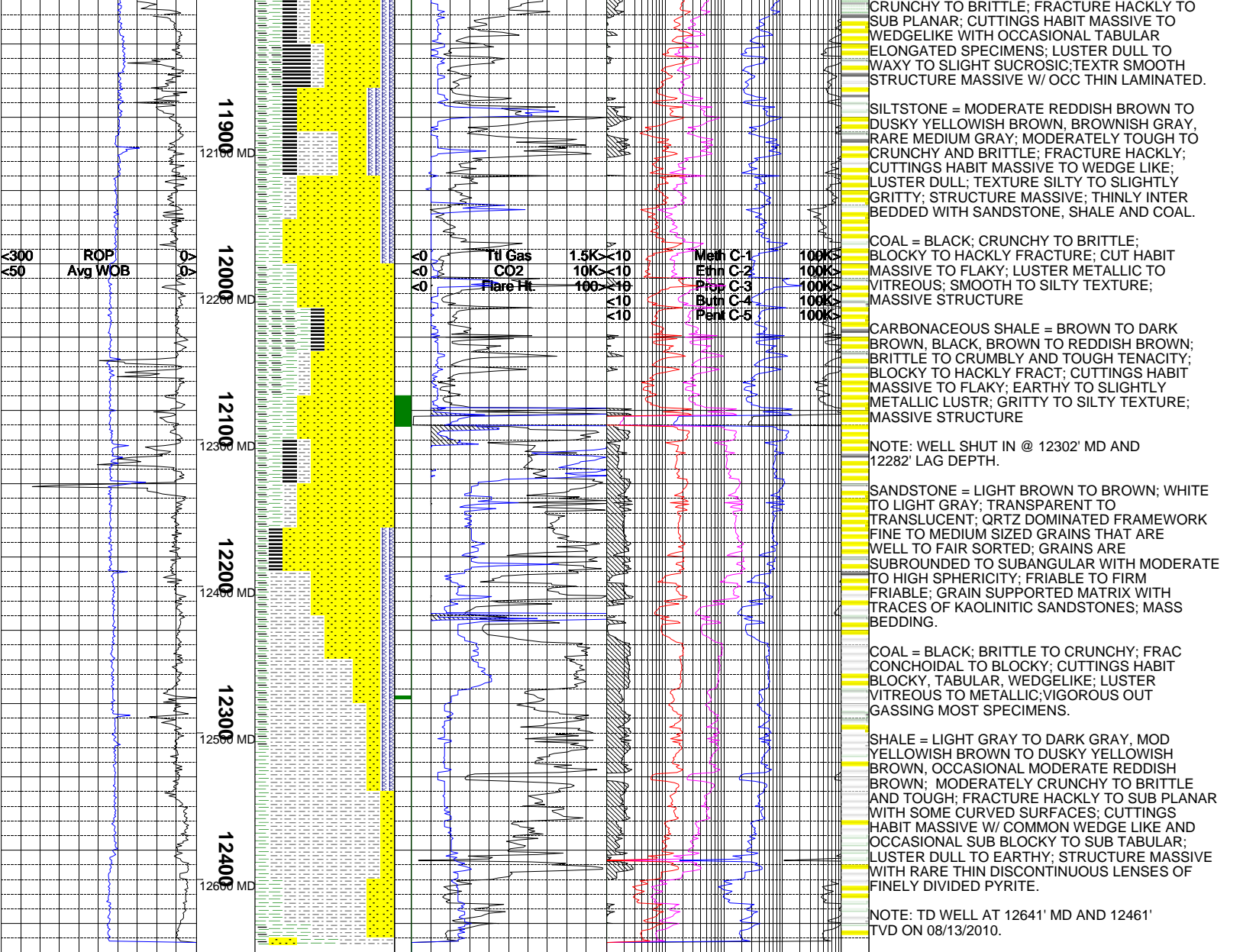












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