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MUDLOG TVD

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

CASING DATA

DEPTHS: 3,944' TO 12,747'

DATES: 10/26/2009 TO 11/18/2009

SCALE: 1" = 100'

16" AT 130'

10.75" AT 3,927'

7" AT 9,005'

AT

MUD TYPES

HOLE SIZE

SPUD MUD TO 3,943'

LSND TO 12,747'

TO

TO

14.75" TO 3,943'

9.875" TO 9,020'

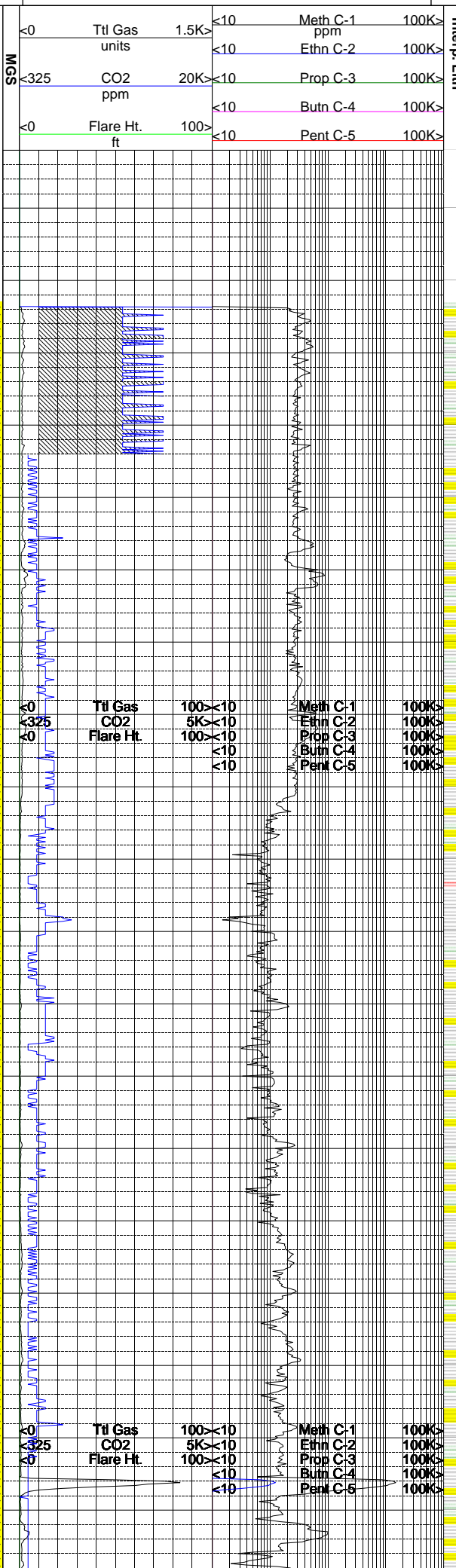
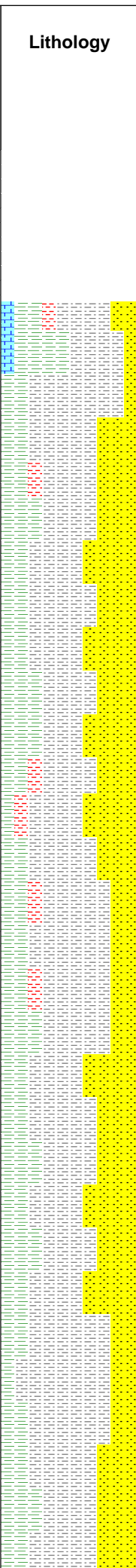
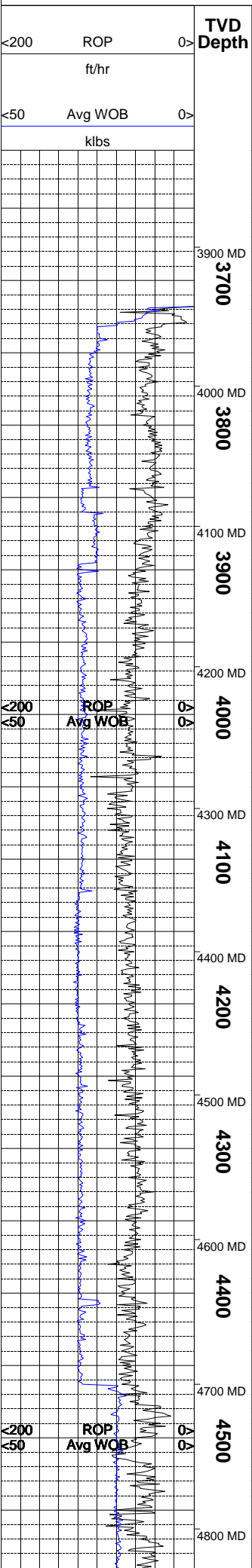
6.125" TO 12,747'

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 | KAOLINIC | RECRYSTALLIZED CALCITE | VOLCANICS |
| CHALK | DIATOMITE | LIMESTONE | RHYOLITE | |
| CRYSTALLINE TUFF | DIORITE | LITHIC TUFF | SALT | |
| CHERT - ARGILL | DOLOSTONE | MARL - DOLO | SAND | |



| Remarks | |
|---------------------------------------|---------------|
| Survey Data, Mud Reports, Other Info. | |
| <math>0 < 10</math> | Meth C-1 100K |
| <math>0 < 10</math> | Ethn C-2 100K |
| <math>0 < 10</math> | Prop C-3 100K |
| <math>0 < 10</math> | Butn C-4 100K |
| <math>0 < 10</math> | Pent C-5 100K |

<math>0 < 200</math> ROP
<math>0 < 50</math> Avg WOB

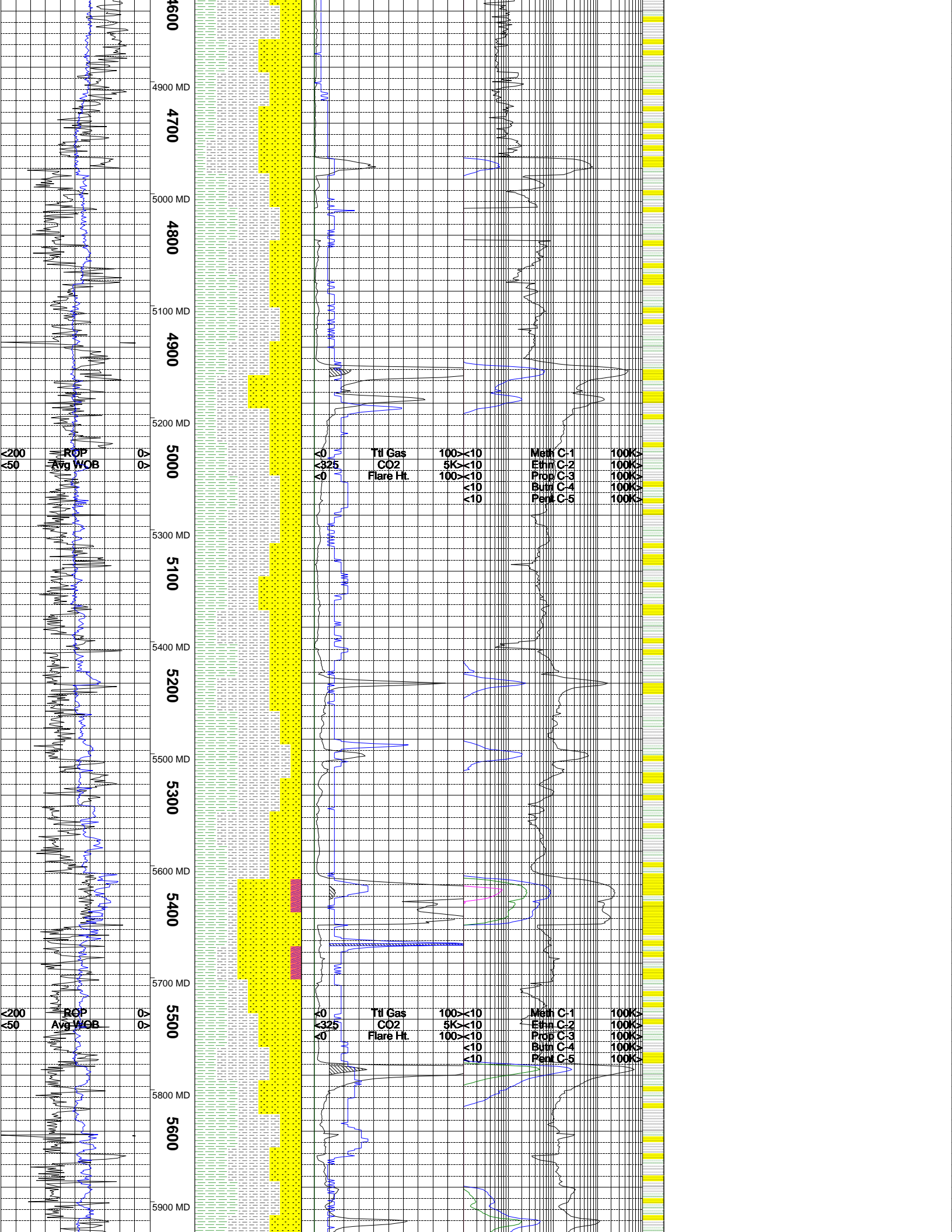
<math>0 < 1.5K</math> Ttl Gas
<math>0 < 325</math> CO2
<math>0 < 100</math> Flare Ht.

Meth C-1 100K
Ethn C-2 100K
Prop C-3 100K
Butn C-4 100K
Pent C-5 100K

<math>0 < 200</math> ROP
<math>0 < 50</math> Avg WOB

<math>0 < 1.5K</math> Ttl Gas
<math>0 < 325</math> CO2
<math>0 < 100</math> Flare Ht.

Meth C-1 100K
Ethn C-2 100K
Prop C-3 100K
Butn C-4 100K
Pent C-5 100K



4600
4700
4800
4900
5000
5100
5200
5300
5400
5500
5600
5700
5800
5900

ROP
Avg WOB

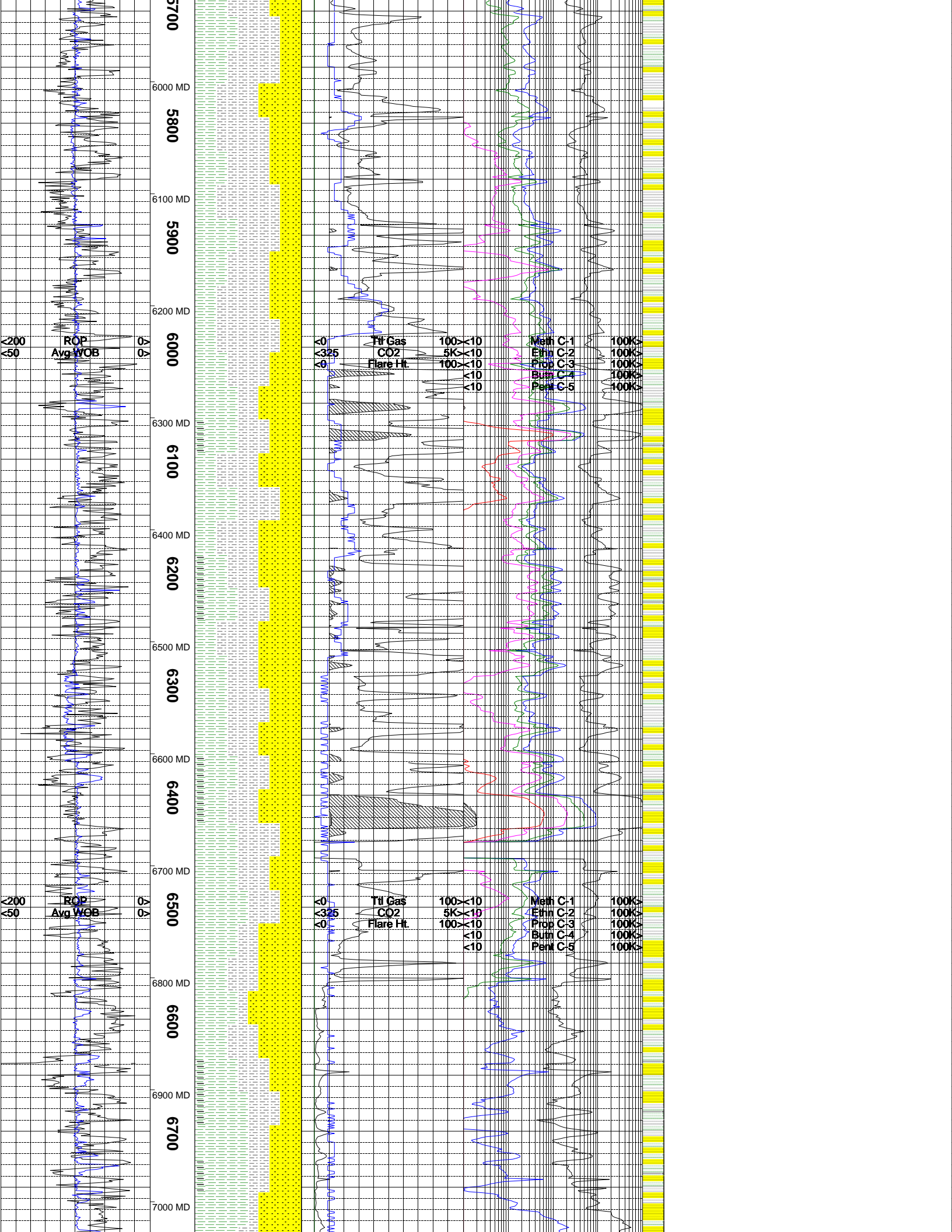
Ttl Gas 100x10
CO2 5Kx10
Flare Ht. 100x10

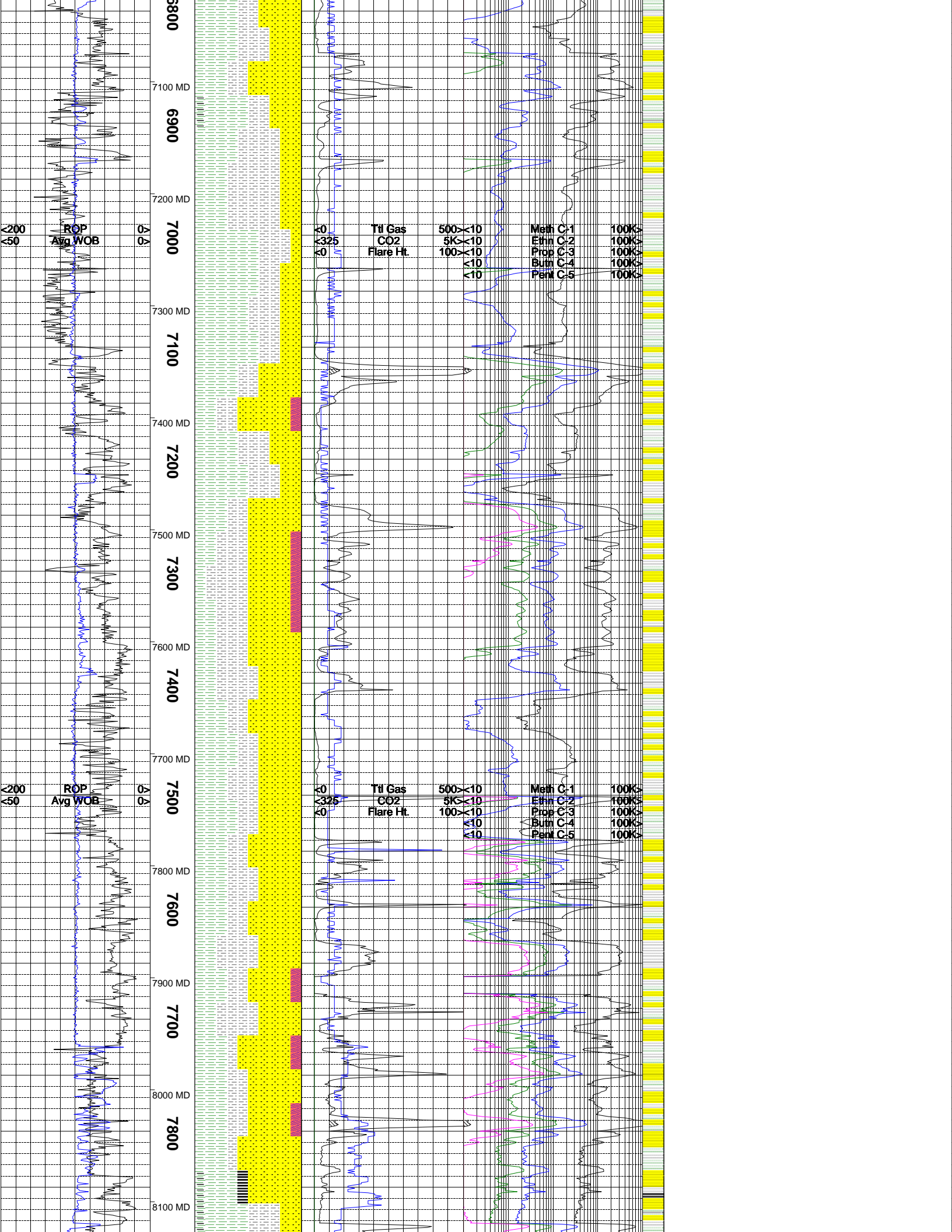
| | |
|----------|------|
| Meth C-1 | 100K |
| Ethn C-2 | 100K |
| Prop C-3 | 100K |
| Butn C-4 | 100K |
| Pent C-5 | 100K |

ROP
Avg WOB

Ttl Gas 100x10
CO2 5Kx10
Flare Ht. 100x10

| | |
|----------|------|
| Meth C-1 | 100K |
| Ethn C-2 | 100K |
| Prop C-3 | 100K |
| Butn C-4 | 100K |
| Pent C-5 | 100K |





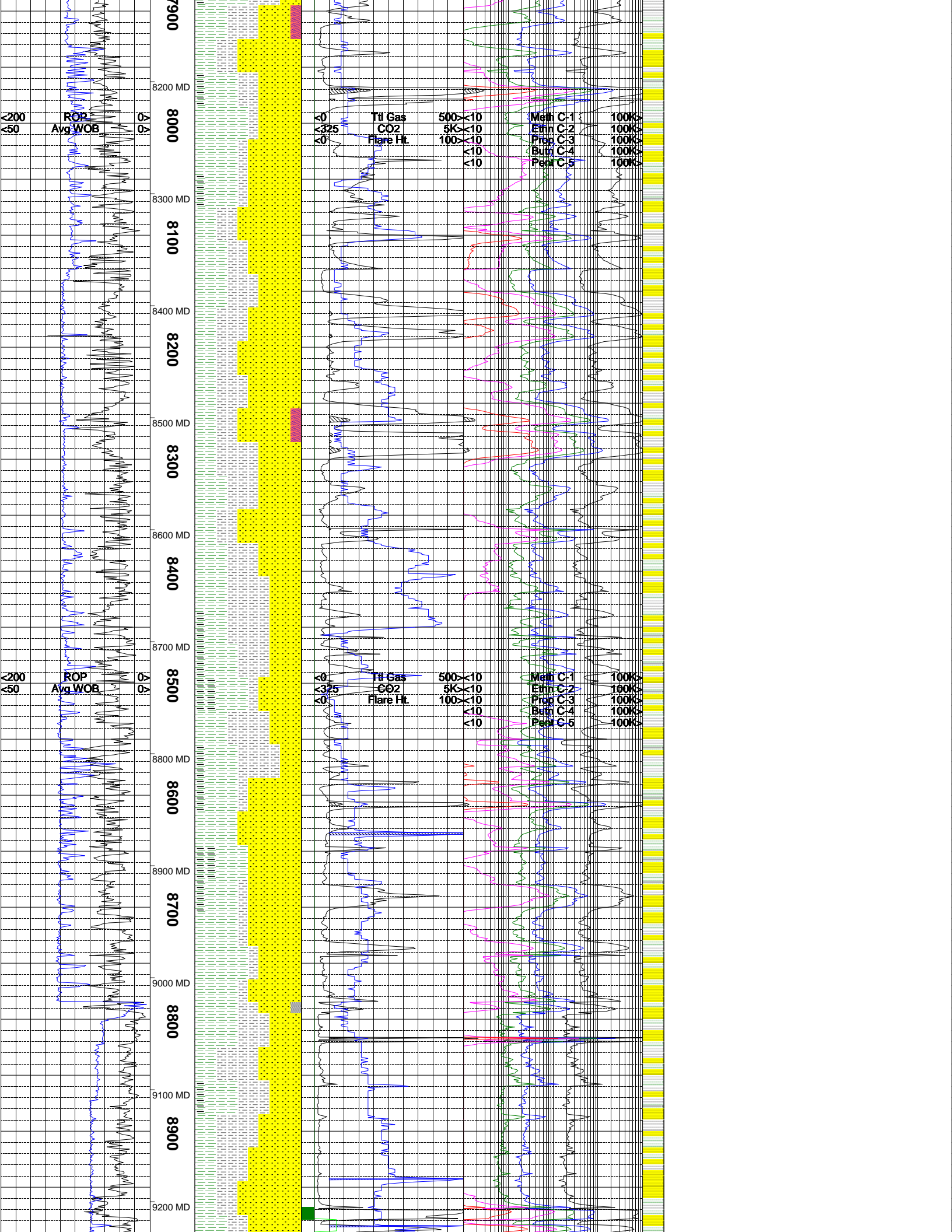
6800
7100 MD
6900
7200 MD
7000
7300 MD
7100
7400 MD
7200
7500 MD
7300
7600 MD
7400
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7500
7800 MD
7600
7900 MD
7700
8000 MD
7800
8100 MD

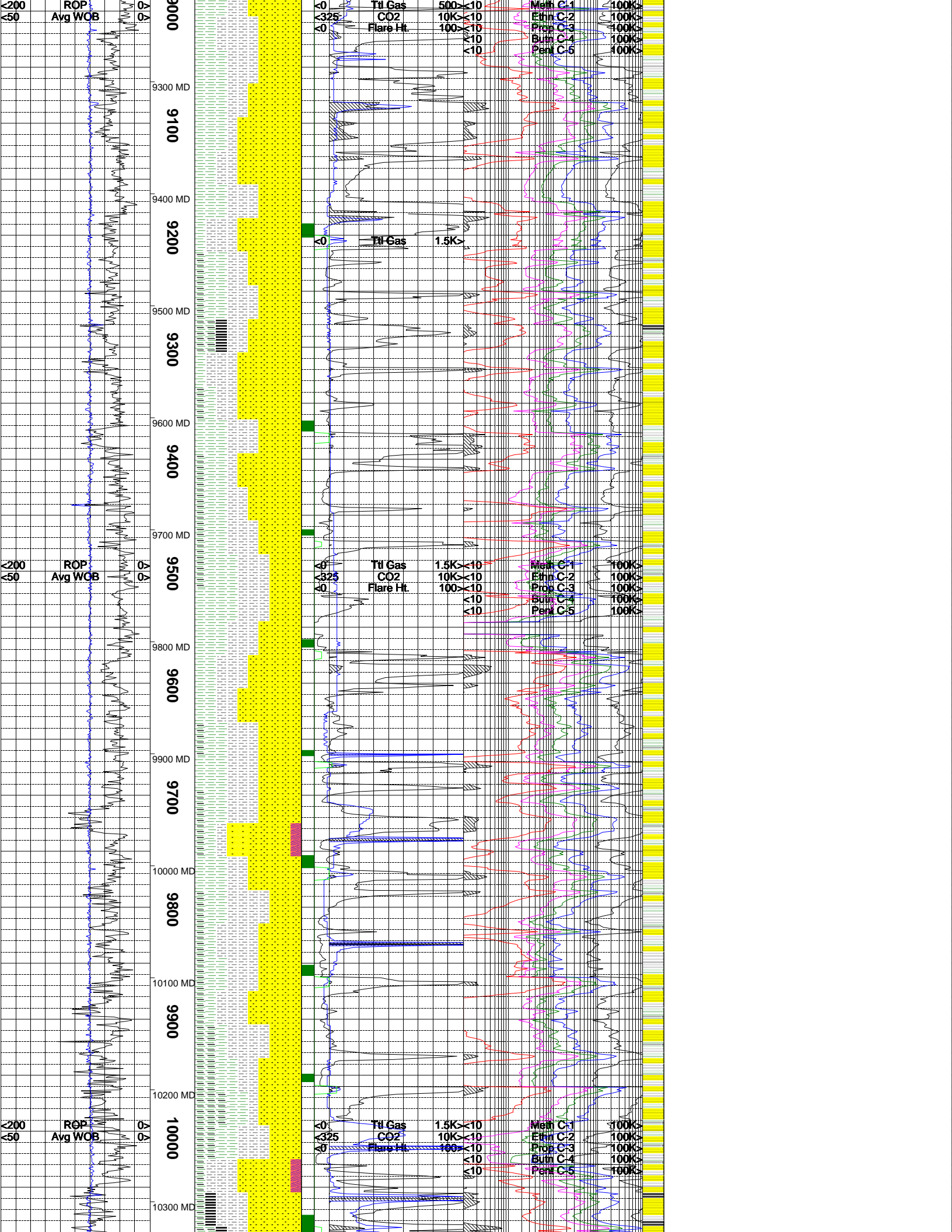
ROP
Avg WOB

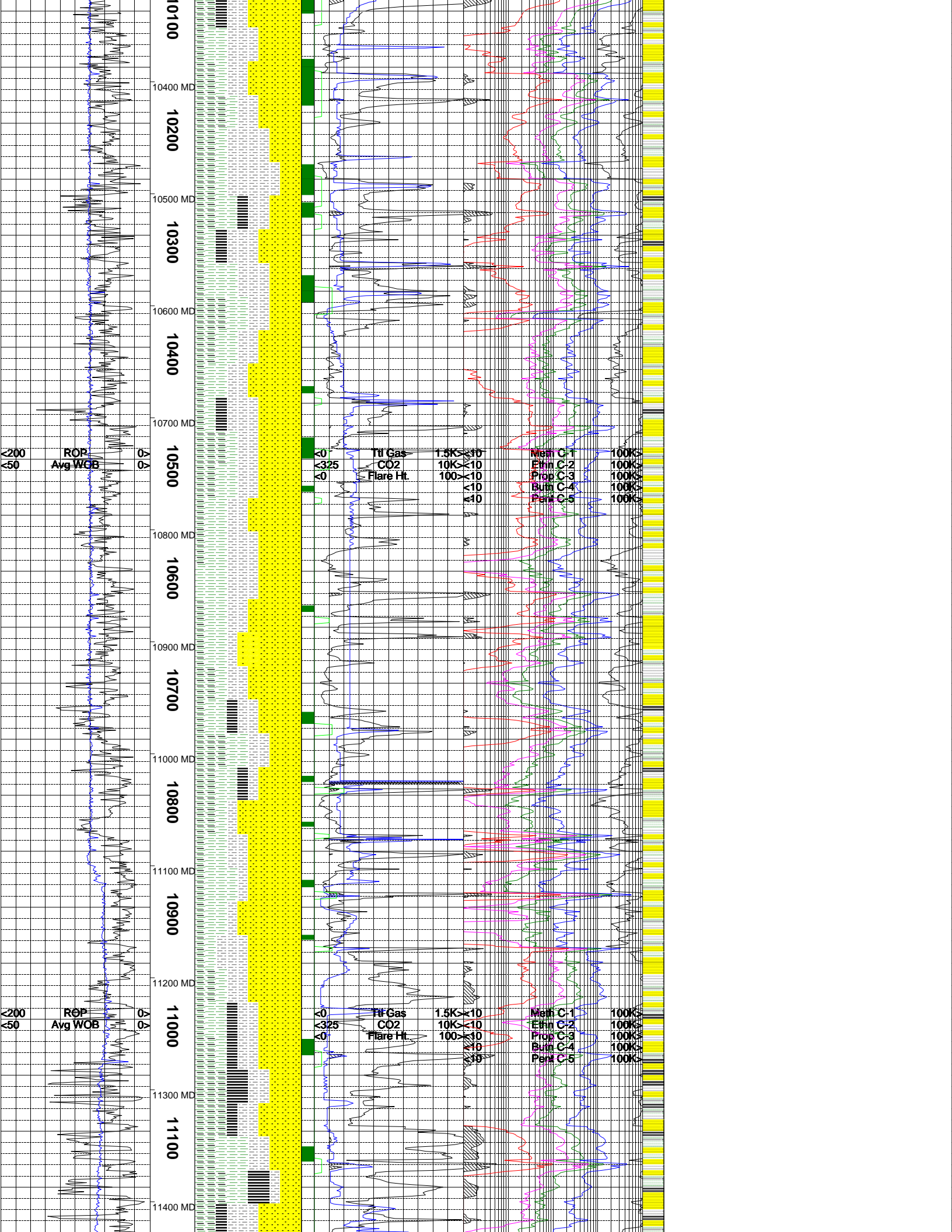
| | | | | |
|-----------|-----|-----|----------|------|
| Ttl Gas | 500 | >10 | Meth C:1 | 100K |
| CO2 | 5K | <10 | Ethn C:2 | 100K |
| Flare Ht. | 100 | >10 | Prop C:3 | 100K |
| | <10 | | Butn C:4 | 100K |
| | <10 | | Pent C:5 | 100K |

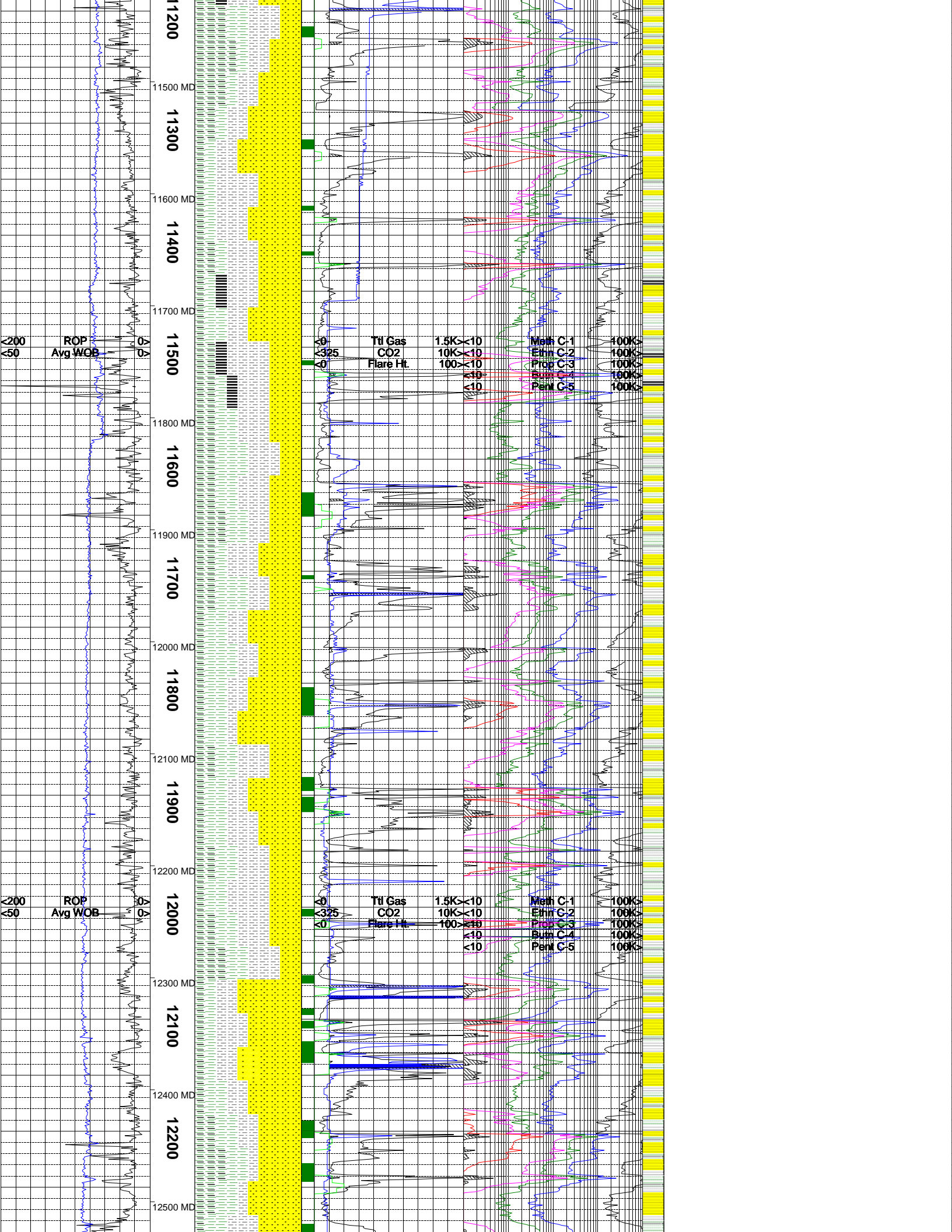
ROP
Avg WOB

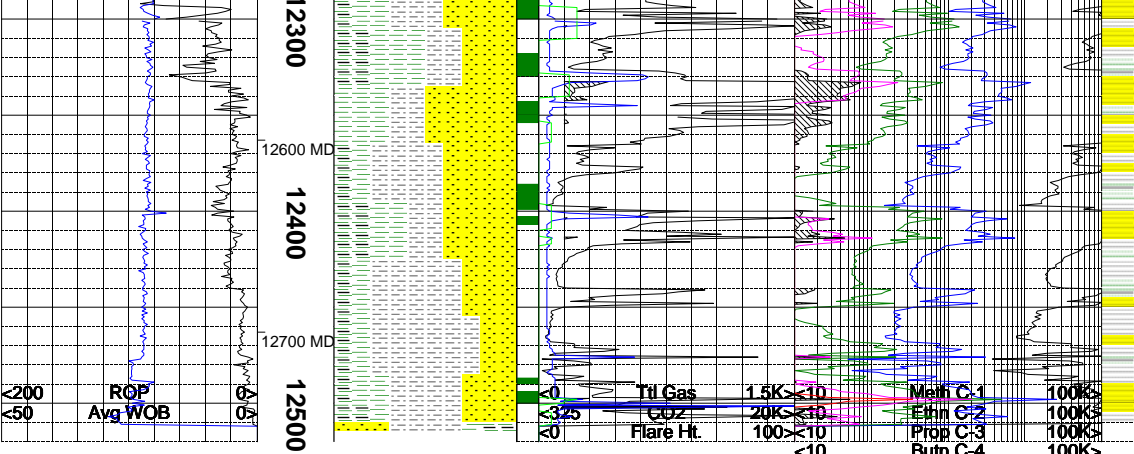
| | | | | |
|-----------|-----|-----|----------|------|
| Ttl Gas | 500 | >10 | Meth C:1 | 100K |
| CO2 | 5K | <10 | Ethn C:2 | 100K |
| Flare Ht. | 100 | >10 | Prop C:3 | 100K |
| | <10 | | Butn C:4 | 100K |
| | <10 | | Pent C:5 | 100K |











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