



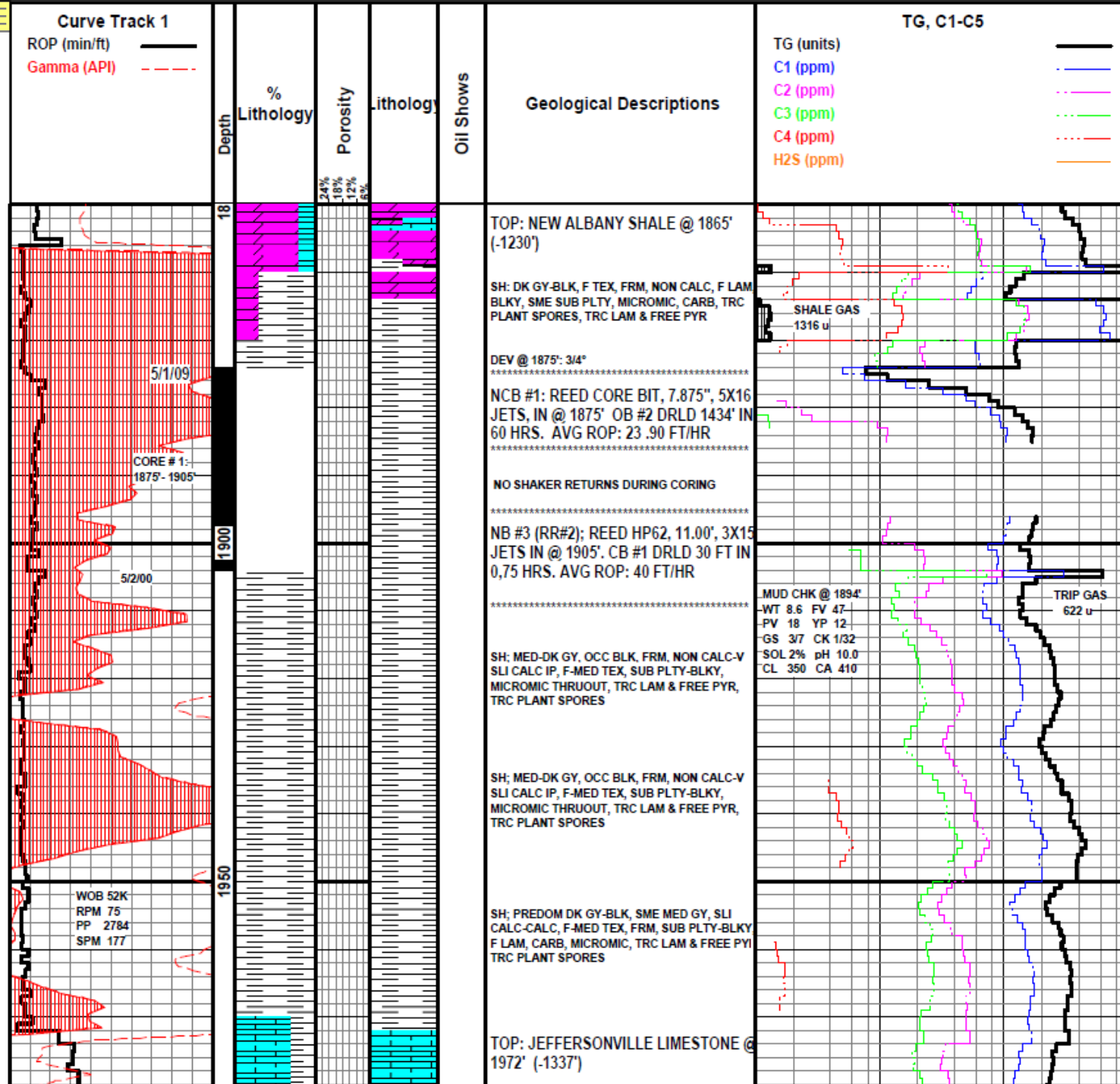
Preliminary Data Assessment of the New Albany Shale in the KGS #1 Blan Well, Hancock County

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Kentucky Geological Survey

23-Oct-2009





Gas Show on Mud Log

Grassy Creek

Density Caliper
Gamma Ray
DST Uphole Tension

1850

123°

1900

Deep Induction

Medium Induction

PE

Compensated Density

Base Density Porosity

Density Correction

Limestone Neutron Por.

Selmier

123°

Blocher

1950

1500

KGS

0 deg

90 deg

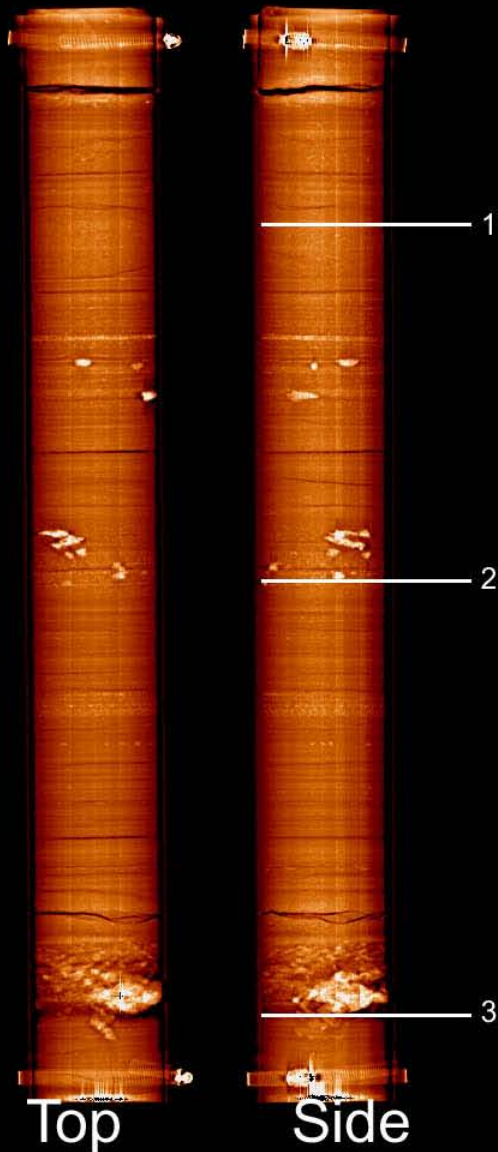
Company: Kentucky Geological Survey

Job: HH-43630

Well: KGS No. 1 Blan

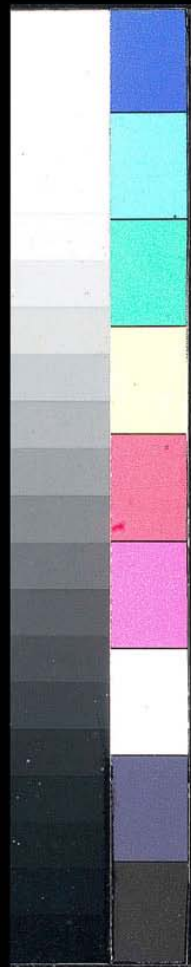
Field: Wildcat

Depth: 1884.00 - 1887.00 Feet



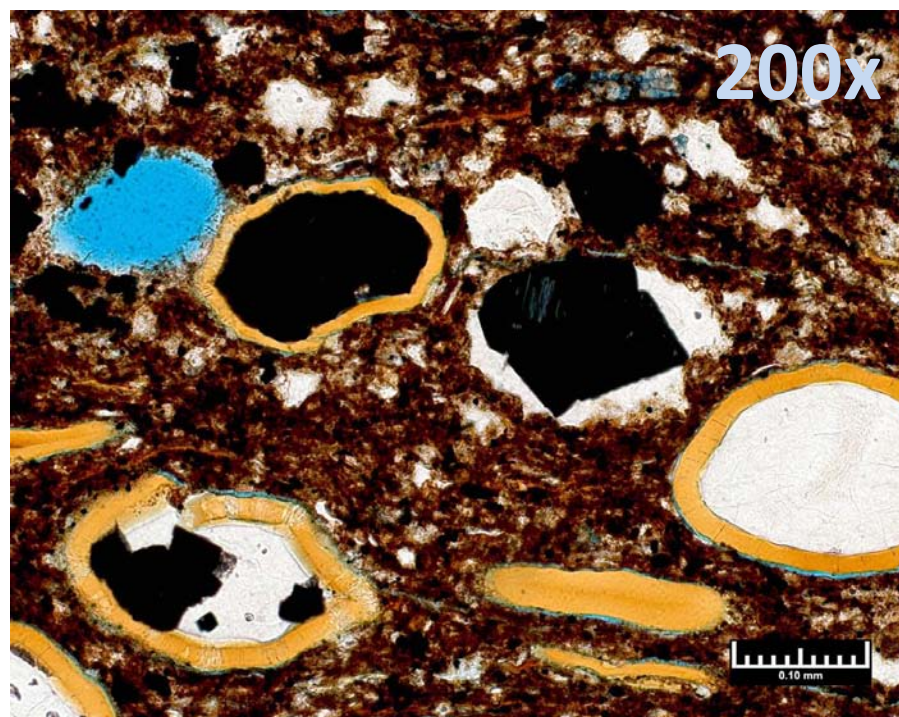
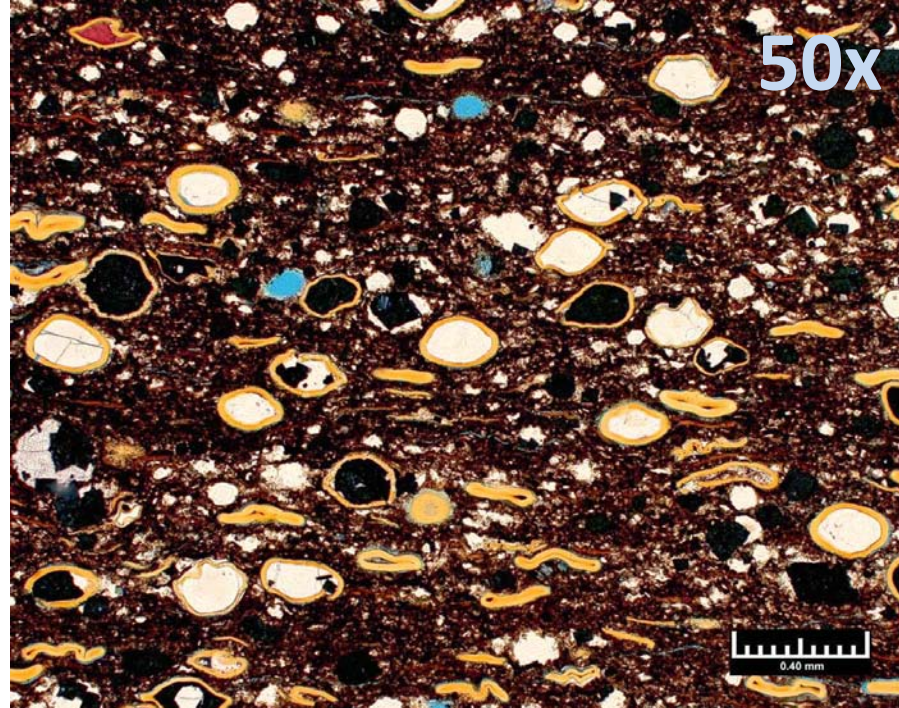
**Bioturbation
@ 1886.5**

1899

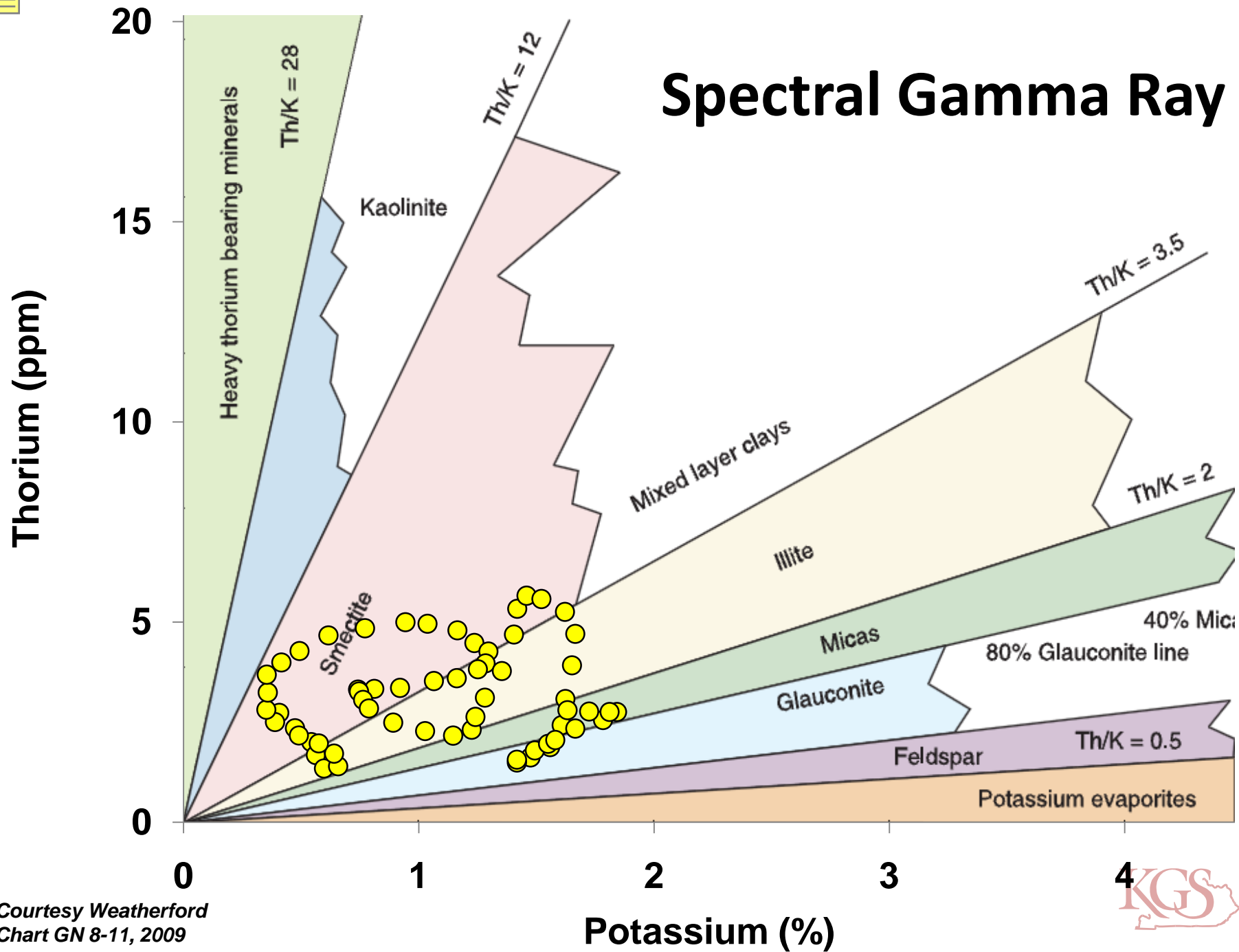


.5

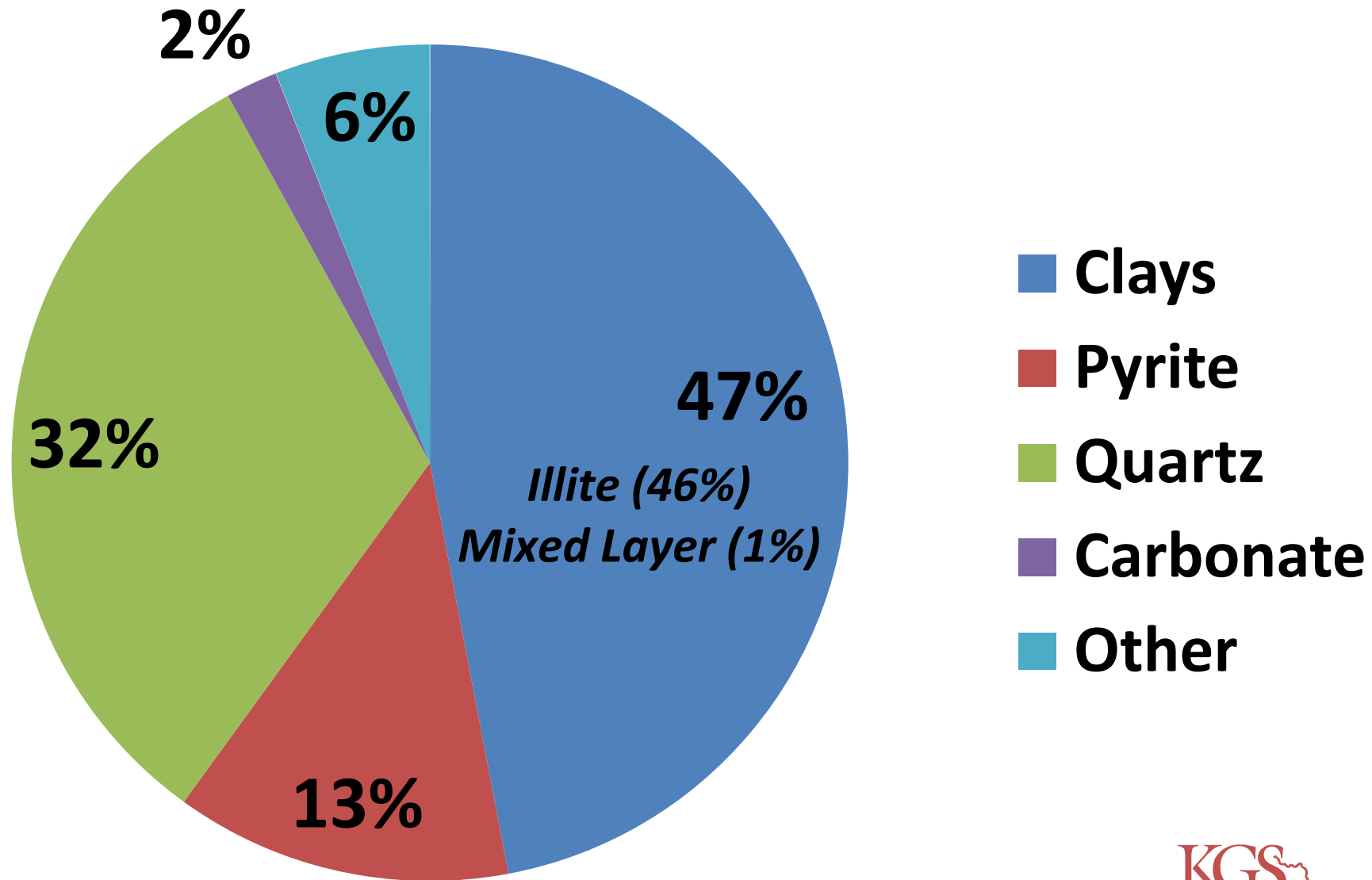
KGS



Spectral Gamma Ray



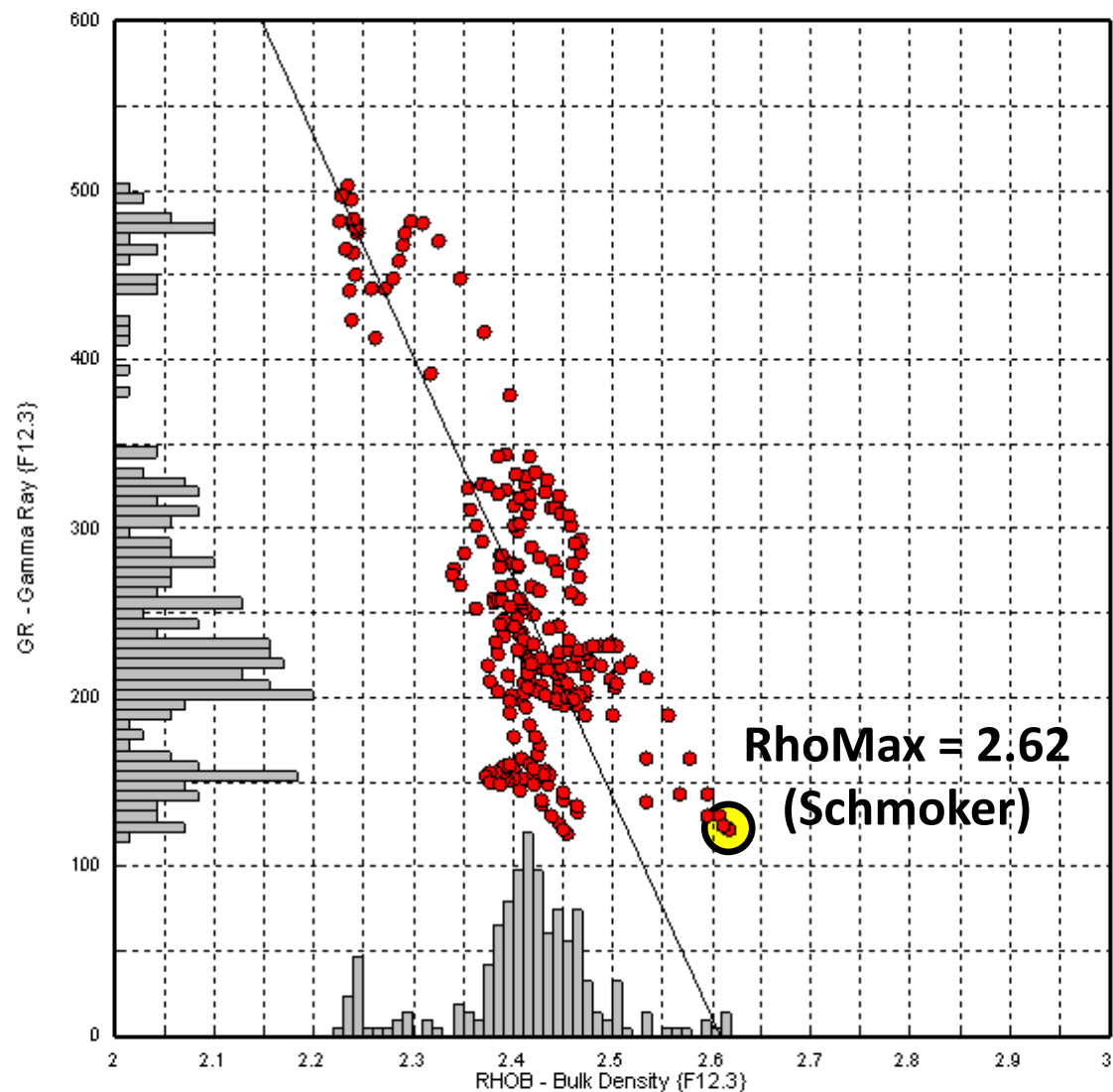
X-Ray Diffraction Mineralogy



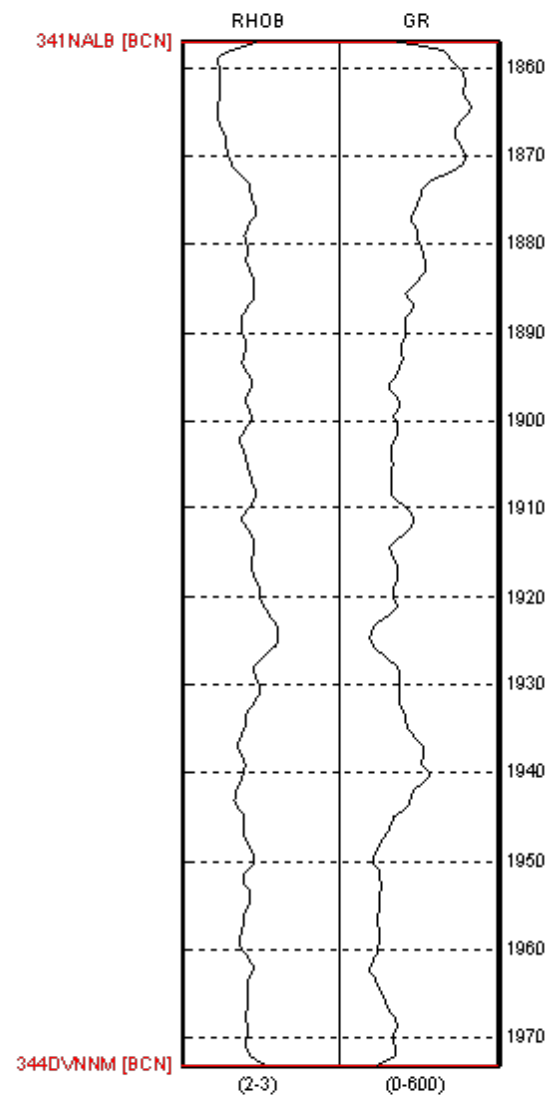
Devonian Shale of Kentucky (networked version)

Shale Identification

WELL: 16091013960000 (233 samples)

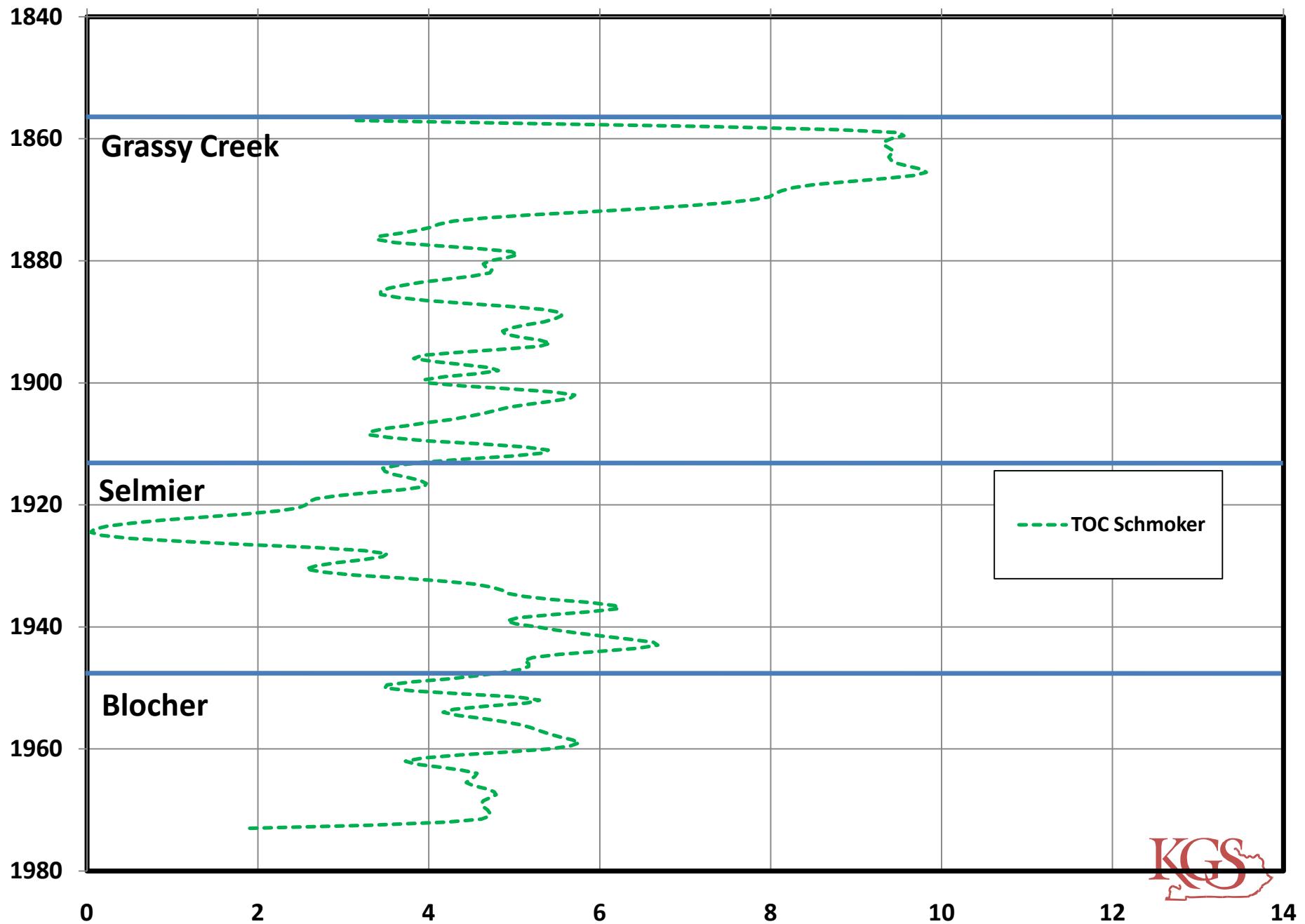


$$GR = (-1297.62713235) \cdot RHOB + 3386.124 \quad \text{Corr} = -0.750 \quad \text{StdErr} = 68.0513$$



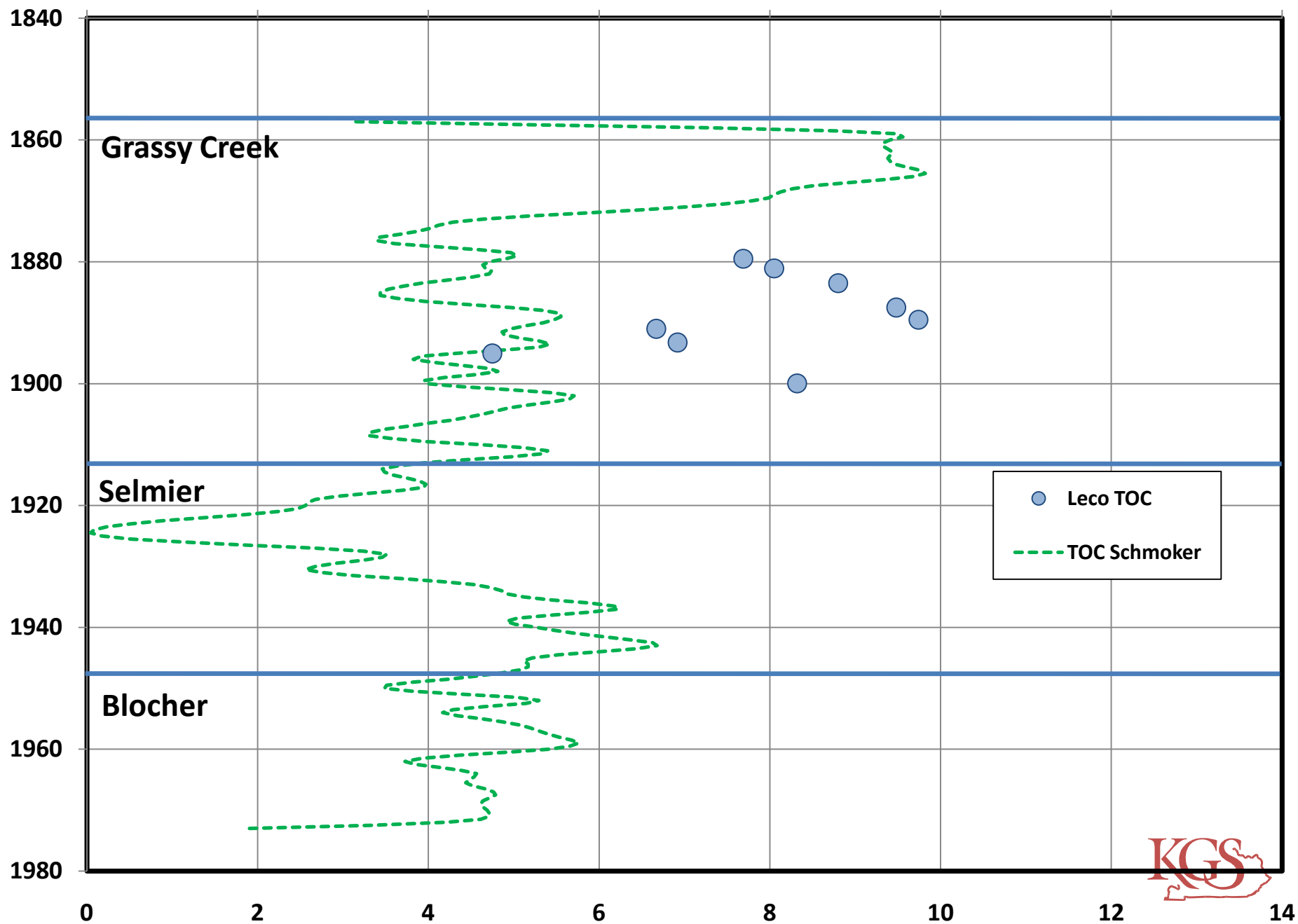


Total Organic Carbon (%)



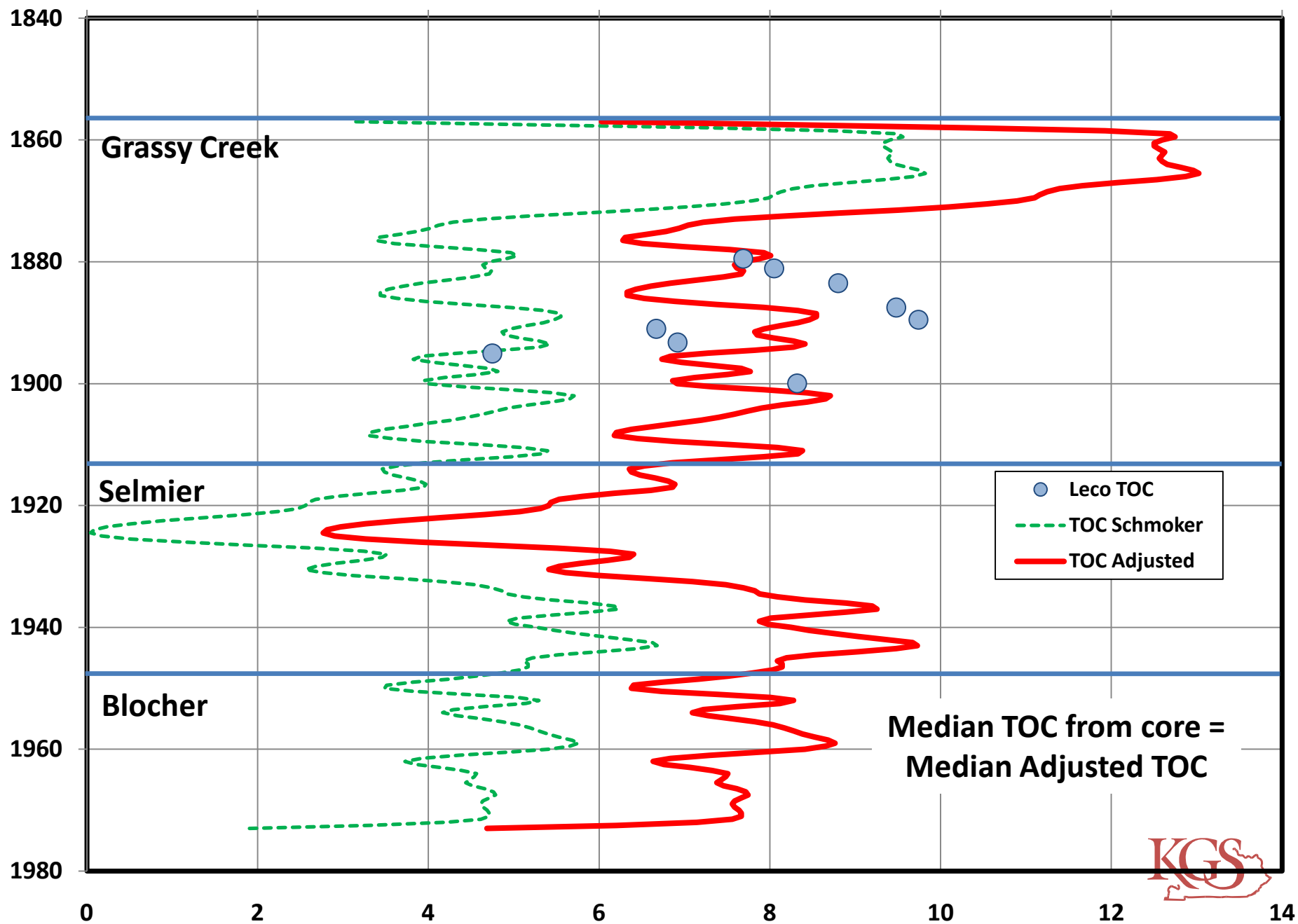


Total Organic Carbon (%)

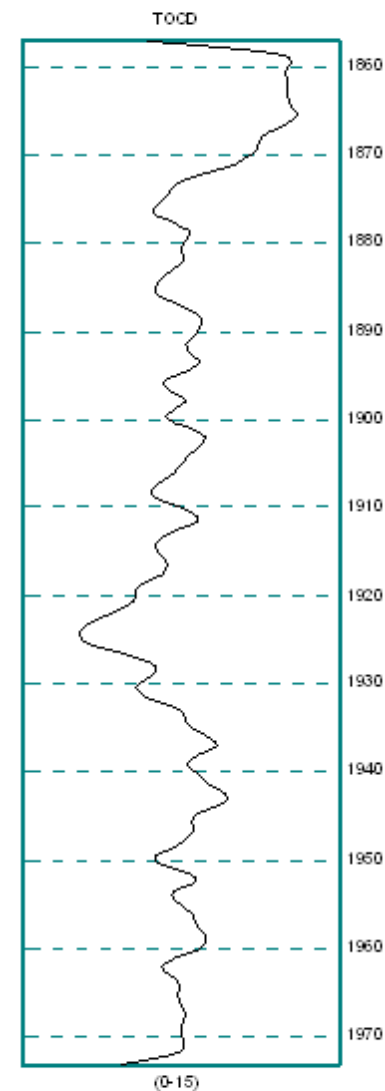
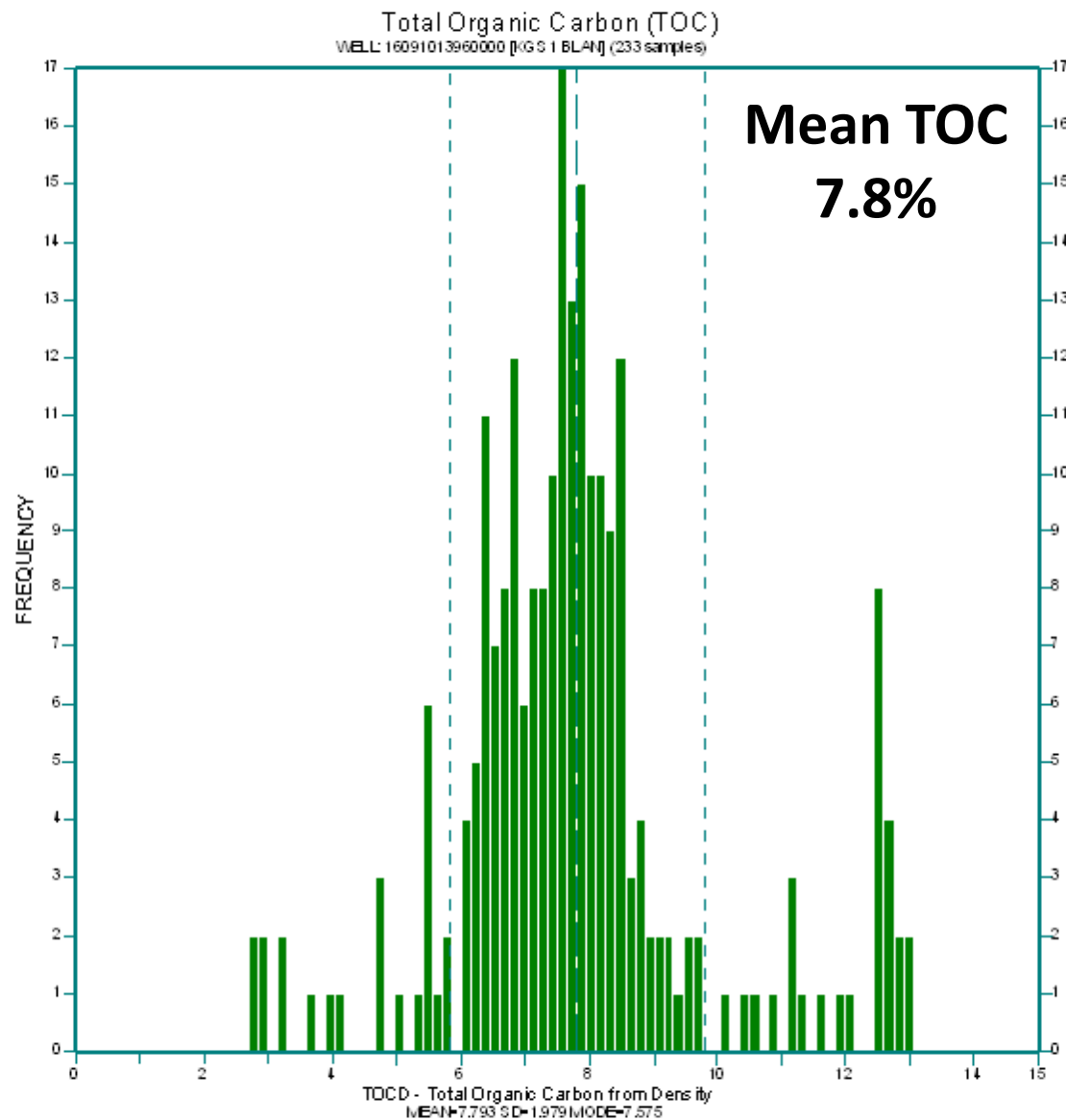




Total Organic Carbon (%)



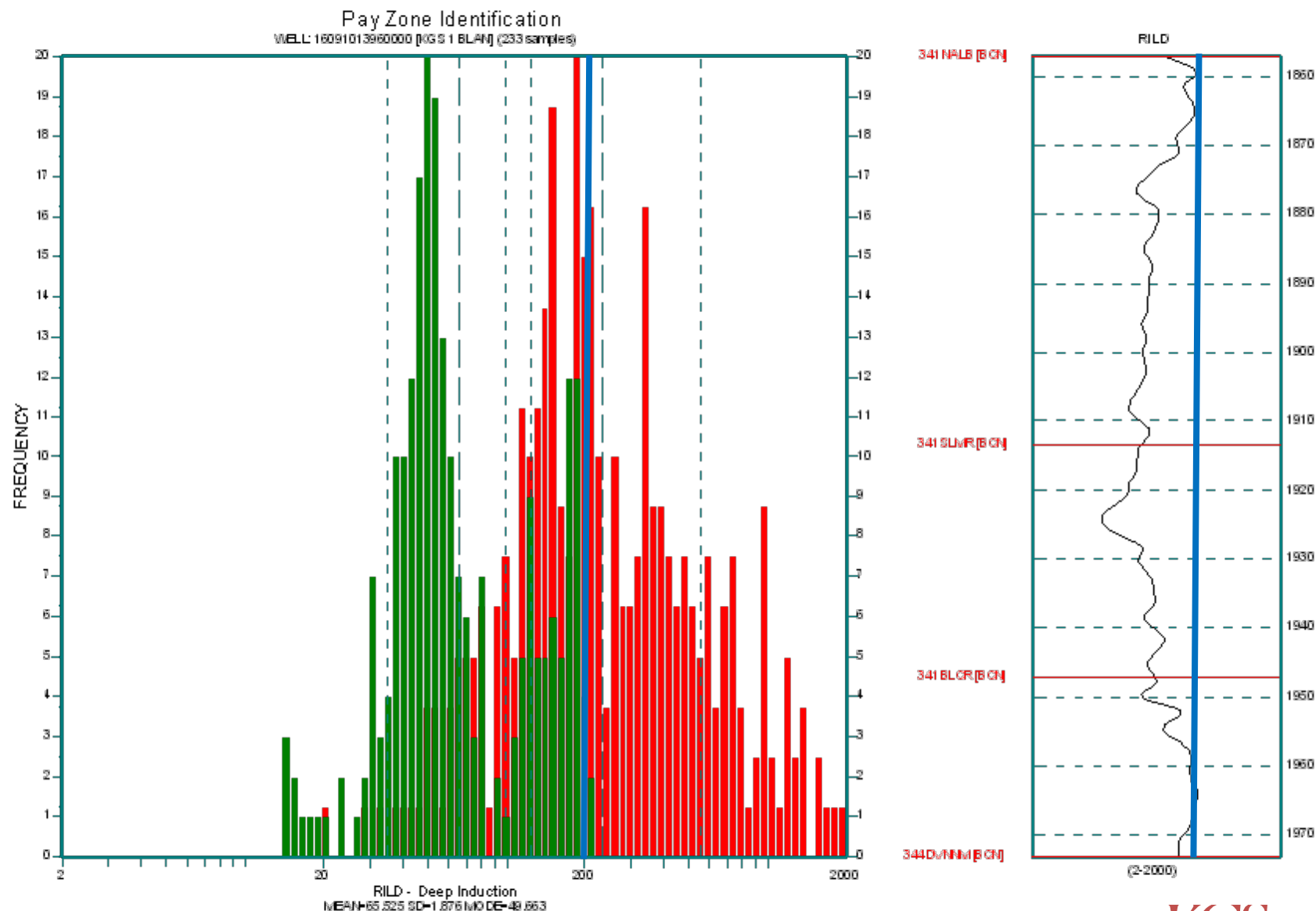
Devonian Shale of Kentucky (networked version)



$$\text{TOC} = 55.822 * ((2.748 / \text{RhoB}) - 1)$$

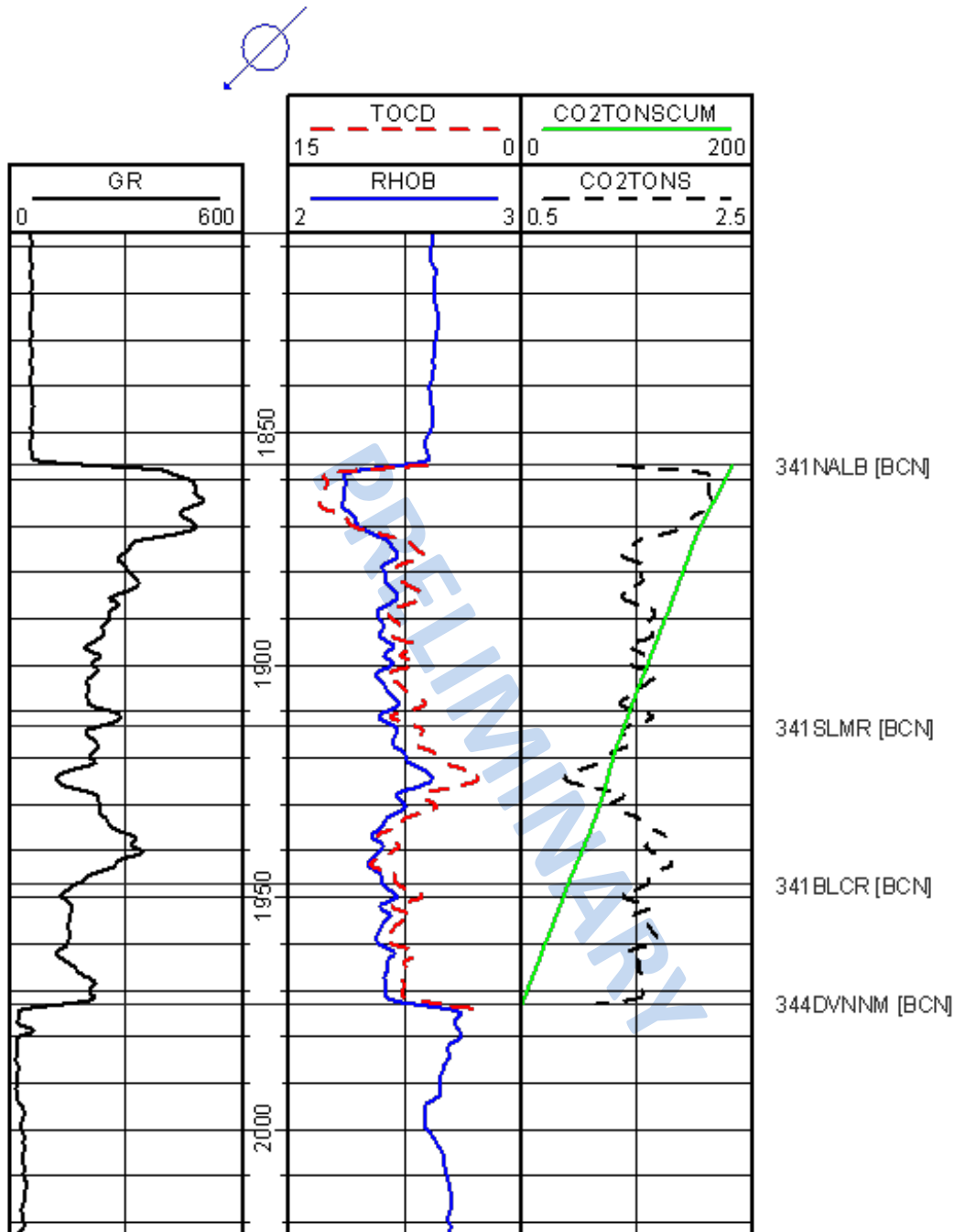


Devonian Shale of Kentucky (networked version)



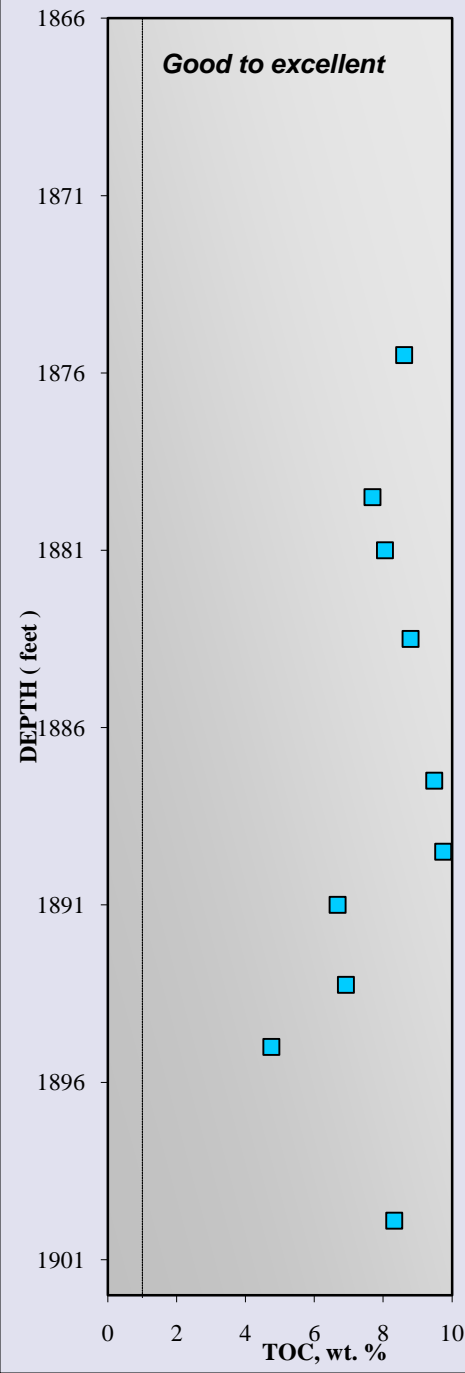
Storage Calculations

- Preliminary
 - 10% storage efficiency
 - 181 tons CO₂ per acre

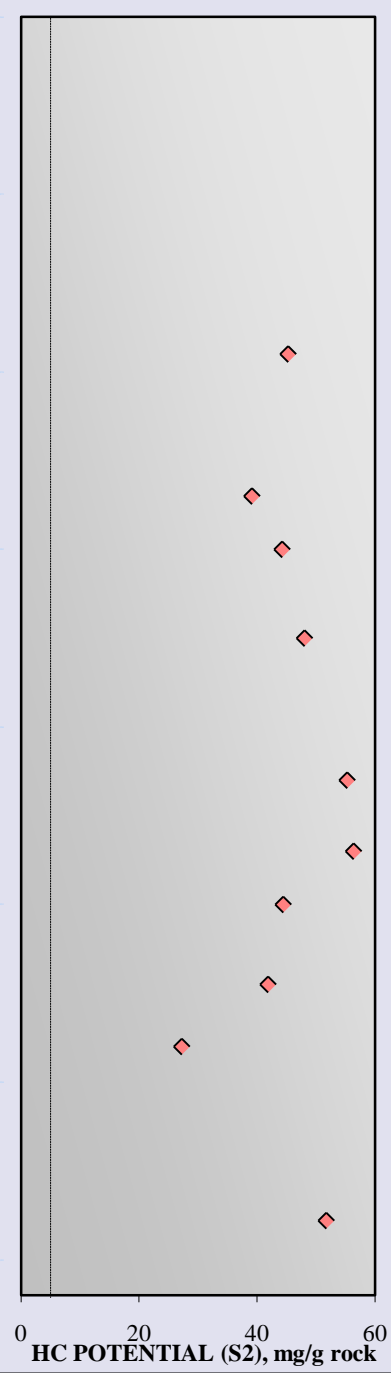




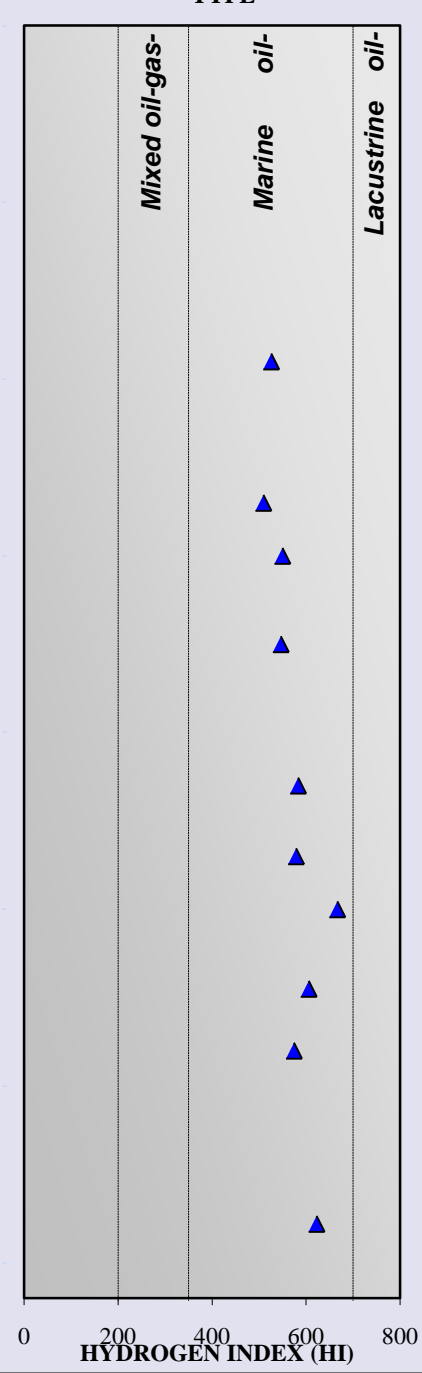
LOG 1: ORGANIC RICHNESS



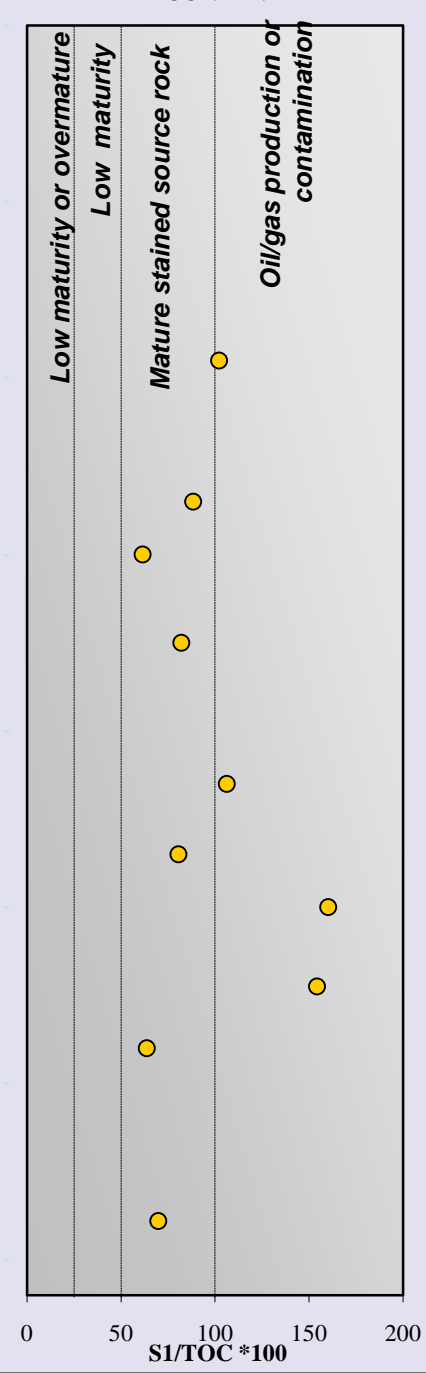
LOG 2: HYDROCARBON POTENTIAL



LOG 3: ORGANIC MATTER TYPE



LOG 4: NORMALIZED OIL CONTENT



Observations

- **CO₂ storage appears possible**
- **Major regional seal**
 - Low permeability (<μd)
 - Adsorb CO₂ migrating from lower storage zones
- **Shale gas possibility (+/-)**
 - Gas show on mud log
 - Good gas saturations, TOC, low maturity
 - Horizontal completions