



**Pc1 +(Al, Si, K, Ti), -(Ca)**
 **Pc2 +(Cr, Fe, Mo, S)**
 **Pc3 +(Mg, P)**
 **Spec. Gamma**
 **Drilling Targets**

Supplemental Figure 3. Principle Component Analysis for the Upton County Drill Core.

A statistical analysis that dimensionalizes data into the primary differentiating constituents. For example, instead of looking at all elements identified by the XRF, this analysis focuses only on the elements responsible for the greatest variance in the rocks. The Pc1 track (black) tracks terrestrial sediments versus calcareous biogenic sediment (48% variance). Pc2, tracks the oscillating redox conditions on the basin floor (17% variance). Pc3 tracks diagenetic mineralization such as phosphate deposition and glauconite mineralization (11% variance).