

SW Kiln Conference 2017 Portable X-ray Fluorescence Data Summary

NOTE: this method produces qualitative data only, especially given how we conducted the analysis. Relative comparisons between analyses can be made but should not be discussed in terms of numerical values. Statistical analyses cannot be conducted.

The numbers are the net counts, but are not parts per million or weight percent. The first sheet has the *Mudrock Major* spectral analysis that is better for lighter elements. The second sheet has the *Spectrum* spectral analysis that covers heavier elements. Any net counts below 100 are considered "LOD", i.e., below the Limit of Detection and are reported as zeros.

MATTS:

- Specular hematite paint: high in iron, but also has some silica, potassium, and calcium (these could be from the clay below). Notable copper, zinc, lead, and rubidium.

CHRISTINA:

- Purple slip, raw sample: high silica as it is clay, some titanium and iron. An interestingly high amount of zirconium likely related to the source rock.
- Pink slip, raw sample: similar to previous sample but with less iron, potassium and titanium, but more sulphur and calcium. Calcium could lighten the color.
- Flat top yellow slip, raw sample: common silica, iron, sulfur, and calcium. Sulfur and iron likely giving the yellow color.
- Flat top yellow slip, raw sample: in this spot there is more potassium and silica, but less sulfur and calcium.

ANDY:

- White Klondike slip: high silica and calcium suggesting a limestone source.
- Black yucca paint: low iron but high potassium; some amount of manganese and calcium likely from slip
- Brown Kuykendall clay body: silica, potassium, calcium, titanium, iron, and zirconium
- White Horseshoe slip: mostly calcium so likely from limestone
- White Salado slip: calcium and potassium, some iron, zinc, and strontium (Note: strontium and calcium are found together). Could be a calcareous shale clay.
- Brown Salado clay body: silica, potassium, calcium, titanium, iron, and strontium
- Brown Kuykendall clay body: unusually high aluminum, sulfur, iron, copper, and lead; low calcium

CIRRELDA:

- Kinney Brick Quarry yellow shale: high iron with some potassium and calcium
- Kinney Brick Quarry yellow mud: less iron, potassium, and calcium, but some nickel and titanium (wet sample)
- Kinney Brick Quarry yellow crumbs: less potassium and calcium, some titanium and iron

- Kinney Brick Quarry gray shale: some potassium and manganese, higher calcium and strontium with less iron

STEVE:

- La Madera US mine hill micaceous slip: high potassium and aluminum, low calcium, and some iron and zinc. Note: muscovite mica is high in potassium and aluminum

MARY:

- White Cannonball slip: high aluminum and silica, some sulfur, calcium, and nickel; high strontium and zirconium; low iron. Likely a shale clay.
- Rocky Mountain Purple Bee paint: some iron and manganese, high sulfur, and potassium, some calcium; some strontium and zirconium from slip below.

CHERYLENE:

- MAV paint, raw sample: high in iron and titanium
- White Cannonball slip: high aluminum and silica, some sulfur, potassium and calcium, some strontium and zirconium; low iron. Likely a shale clay.
- Black mineral paint (G Mix): influence from slip below, but more iron.
- White clay body (unknown): high aluminum and silica, some titanium, nickel, and zirconium; low iron, potassium and calcium. Likely a shale clay.
- G Mix mineral + RM Purple Bee: influence from clay below, but more iron, sulfur, calcium, and potassium
- mix of HBB and BEW blush clay (test tile): high aluminum and silica, some titanium, iron, and copper
- White Cannonball slip (test tile): similar to other analyses but less aluminum, silica, strontium and zirconium; low iron. Possibly influenced by test tile composition.
- BLKB+RBL slip clay (test tile): some manganese, vanadium, iron, and copper; low calcium but high potassium
- unreal red+RBL slip clay (test tile): high manganese, some iron, copper, and potassium, low calcium
- Manganese black paint, Mowry Mine (test tile): high manganese, lead, copper, and zinc; some iron, nickel, and potassium
- Malachite black paint (test tile): high copper, some iron, manganese, and zinc; high aluminum and silica, some calcium and potassium (malachite is a copper mineral)
- LVH brown clay slip (test tile): some calcium, potassium, iron, and sulfur
- MAR brown clay slip (test tile): moderate amounts of most major elements, notable iron
- FCN shiny mineral, raw sample: high iron, some vanadium, oddly high rubidium with oddly low copper (rubidium is found in pegmatites but these shouldn't have too much iron, weird!)
- TCN black mineral, raw sample: mostly manganese with vanadium and titanium
- Blanding North Hwy Cut black mineral, raw sample: some aluminum and silica with high titanium, zirconium, and nickel, some iron

- TCN turquoise, raw sample: high zinc, nickel, titanium, and copper, with oddly some calcium (probably a zinc/copper ore)
- BCG white clay slip (disk test tile): high calcium and sulfur, with some potassium, iron, and strontium. Likely a limestone source.
- RCG brown clay slip (disk test tile): high calcium and sulfur, with some potassium, nickel, and iron
- FTY clay (disk test tile): moderate amounts of most elements with some iron, potassium, and zinc
- Calico Gold raw clay: high iron with some manganese
- Calico Blush raw clay: some aluminum, titanium, iron, and zirconium
- BE Slate mineral raw sample: high iron, some silica
- DVB black mineral raw sample: high vanadium, rubidium and lead; low iron (could be a lead ore with vanadium, which is found in magnetite)
- BMP mineral raw sample: high iron
- BEW clay slip: high aluminum, some silica; moderate amounts of most elements