

From: [McAtee Nancy](#)
To: [Liedler Courtney](#)
Cc: [Budinski Michael](#)
Subject: CEN17LA009-Fuel debris examination
Date: Monday, August 5, 2019 2:23:11 PM

Courtney,

The filtered contents from four fuel samples from this accident were submitted to the Materials Laboratory for examination. The filtered contents were submitted on the filter paper used to remove the debris from the liquid fuel. The debris on each filter paper was examined using a hand-held x-ray fluorescence (XRF) alloy analyzer to determine which metallic/inorganic elements were present in the debris. The results of the analysis is below.

Sample name	Elements present
Jar #1	Silicon (Si), Chromium (Cr), Vanadium (V)
Jar #2 Filter 1	Silicon (Si)
Jar #2 Filter 2	Silicon (Si), Sulfur(S), Phosphorous (P)
Jar #3	Silicon (Si), Iron (Fe), Sulfur (S), Chromium (Cr)
Jar #4	Silicon (Si), Zinc (Zn), Iron (Fe), Chromium (Cr) Vanadium (V)

1. Elements commonly found in soils-silicon, sulfur, phosphorous and iron
2. Elements commonly found in aircraft systems/fuel-chromium, vanadium, iron, sulfur, and zinc

All of the elements found were consistent with those found in either soil or typical aircraft systems and/or fuel additives.

If you have any questions, please let me know.

Nancy B McAtee
Chemist
RE-30