



## Benefits of Vanta™ XRF Analyzers

Oil and gas assets such as production wells, tankers, and refineries can be hot and wet environments. The Olympus Vanta XRF analyzer is able to operate in harsh working environments. Features of the analyzer include:

### Application Notes

## PORTABLE XRF FOR ANALYSIS OF MERCURY-CONTAMINATED OIL AND GAS ASSETS

Mercury contamination of oil and gas assets is a common industry problem. Vanta™ portable X-ray fluorescence (pXRF) analyzers provide rapid quantitative near-surface analysis of mercury in materials such as carbon steel and stainless steel, as well as galvanized metals, coated and painted substrates, polymers, wood, fiberboard, and plastics. These data can be used to guide maintenance, decommissioning, and disposal activities.

### Impacts of Mercury Contamination of Oil and Gas Assets

Mercury is an extremely toxic element that occurs naturally in crude oil. Over time, the mercury in the oil can bind with the surfaces it contacts. Depending on the environmental conditions, mercury can bind to and contaminate assets in as little

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### Impacts of Mercury Contamination of Oil and Gas Assets

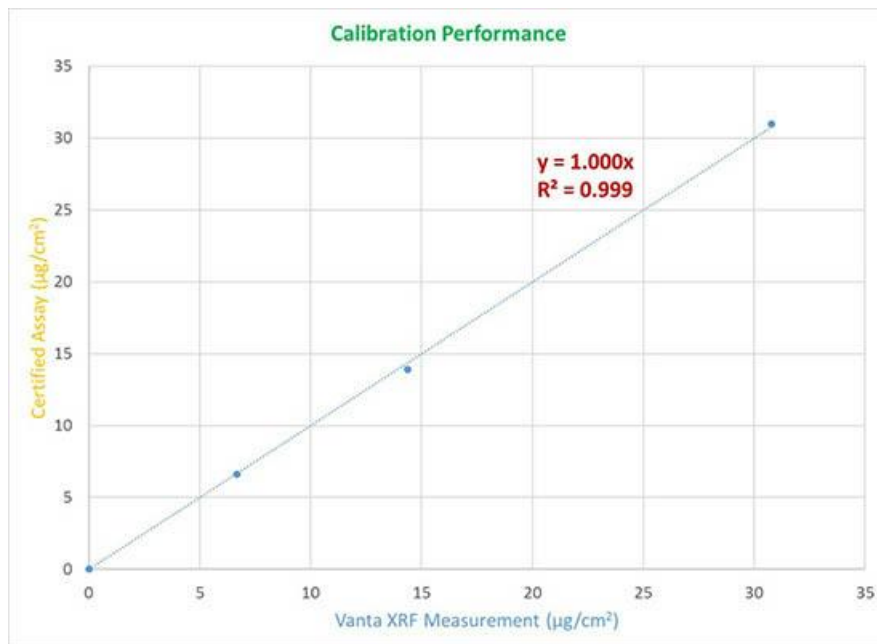
This contamination affects every stage of the supply chain:

- Upstream: exploration and production wells
- Midstream: transportation vessels (e.g. tankers and trucks) and pipelines
- Downstream: refineries

Surfaces contaminated with even trace amounts of mercury can pose an extreme risk to workers. At room temperatures, mercury can evaporate forming an invisible, odorless toxic vapor. Activities such as welding and steel cutting, or surface treatments such as blasting, can cause the mercury to vaporize at accelerated rates. For this reason, it is critical to be able to identify mercury-contaminated materials.

## Quantifying Mercury Contamination Using the Vanta pXRF Analyzer

Vanta pXRF analyzers provide fast, precise, nondestructive assessment of mercury contamination directly on oil and gas assets (Figure 1). A substrate-independent calibration enables the analysis without prior knowledge of the sample material. The results can help determine proper decommissioning and disposal or maintenance methods.



### Benefits of Vanta™ XRF Analyzers

Oil and gas assets such as production wells, tankers, and refineries can be hot and wet environments. The Olympus Vanta XRF analyzer is able to operate in harsh working environments. Features of the analyzer include:

- Continuous operation at high temperatures: up to 50 °C (122 °F)\*
- IP55/54 for dust and water resistance to withstand rain and dirt
- Rugged design that's built to pass a 4-foot (1.2 m) drop test (MIL-STD-810G) to help prevent breakages
- Cloud data storage and real-time remote data viewing using the Olympus Scientific Cloud™



\*With optional fan.

## Related Product



### Vanta Max and Core

The Vanta™ handheld XRF analyzer series provides rapid, accurate elemental analysis and alloy ID in two powerful models. The Vanta Max analyzer offers the series' highest analytical capabilities for robust applications, including mining exploration, mineral analysis, soil testing, and environmental analysis. The Vanta Core analyzer is the standard choice for fast alloy ID. Comfortable to hold, easy to use, and durable, the analyzers maximize efficiency in the field and lab.

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