# Method 13 - Gold

**Sample Weight: 15 g**

## Summary

Gold is determined in geological materials by lead fusion fire assay and ICP- OES/ICP-MS. The sample is mixed with fluxing agents to assist with melting, and to promote separation from waste (gangue) materials from the precious metals. After cooling, the gangue is separated and discarded as a glassy slag from the precious metal- containing lead button. This button is further heated on an absorbing magnesium oxide crucible to remove the lead and trace amounts of base metals, and a small silver prill is left containing the precious metals. The silver prill is digested in aqua regia, then analyzed by ICP-OES and ICP-MS. Lower concentrations of Gold are measured by ICP-MS. Higher concentrations are measured by ICP-OES.

## Method 13 Reporting Limits

The reporting limit range for Gold is 1 ppb to 10,000 ppb.

## Analytical Performance

Data will be deemed acceptable if recovery of Gold is ±20% at five times the LOD and the calculated percent RSD of duplicate samples is no greater than 20%.