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*Regarding Agnico Eagle Mines, Meliadine Project, carbonate analysis*

SGS Canada Lakefield performed carbonate (CO<sub>3</sub>) analysis on the tailings samples submitted by Agnico Eagle Mines, Meliadine Project. These samples were also analyzed by the SGS Canada Burnaby laboratory. It was observed that both sites demonstrated equivalent total carbon values, however the SGS Canada Burnaby laboratory reported carbonate values that were consistently higher than the carbonate values reported by the SGS Lakefield laboratory.

Two different approaches were used by the laboratories, SGS Burnaby used a coulometric titration (MEND-2009) whereas SGS Lakefield used a pyrolysis technique as referenced in ASTM E1915. To investigate the differences a set of tailings samples were retrieved and analyzed using the following methods at the SGS Lakefield laboratory; CO<sub>3</sub> by pyrolysis (ASTM E1915), CO<sub>3</sub> by hydrochloric acid leach (ASTM E1915, MEND 2009), and CO<sub>3</sub> by perchloric acid leach (modified coulometric technique).

Comparison of the analytical results demonstrated the perchloric acid leach and hydrochloric acid leach matched well. The results from the pyrolysis method were biased low when compared with the acid leachable values. This indicates a possible interference with the pyrolysis method, suggesting the unexpected loss or decomposition of a carbonate mineral at the temperature specified in the reference method, which would result in a low bias of carbonate values analyzed by the pyrolysis method.

All the tailings samples from 2020 were retrieved and re-analyzed, comparing the acid leach method values to the pyrolysis values and the same bias was apparent. The analytical data was then compared to the data generated by SGS Burnaby, on the same samples. The SGS Burnaby and SGS Lakefield acid leach data correlated well, while the pyrolysis values were low, suggesting that ASTM pyrolysis method is not ideal for the tailings samples and that the acid leach or coulometric technique is a more robust choice.

A handwritten signature in black ink, appearing to read 'Robert Irwin'.

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