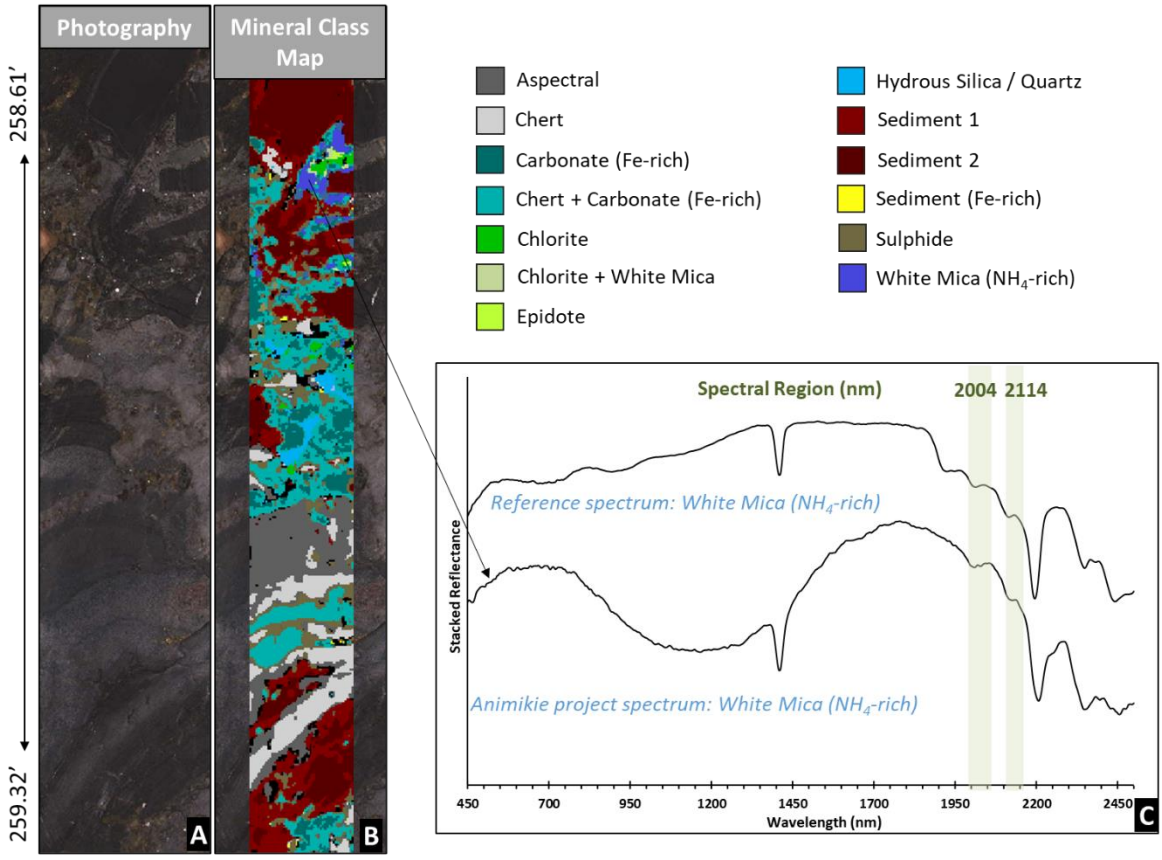
MnDNR Corescan Project
Animikie Core – Example Results



Photography (A) mineral class map (B) of DDH LM-13-01. Inset spectra (C) of NH_4-bearing white mica (intermixed with trace chlorite) displaying the ammoniated feature around 2004 and 2114 nm (Canet, 2015).

Hyperspectral-detected Mineralogy	The Animikie core included in this project consist predominantly of banded intervals of ferruginous and cherty sediments. Many minerals/mineral groups can be identified in the VIS-SWIR range, including phyllosilicates (micas, chlorites), ammoniated white mica, iron oxides, clays, carbonates and chert. See associated Mineral Key for full list of identified mineralogy with the Corescan HCI-3 system.
Results	Ammonium-bearing (NH_4-rich) white micas are recognized locally in the Animikie drill core, but are not a major component. Distribution is irregular, and occurrences are noted in quartz-breccia zones, metasedimentary units, as well as Fe-rich banded sediments. Additional sampling could help clarify the relationship to potential mineralization and/or lithological domains. White micas in general have a relatively narrow range of compositions (based on 2200nm wavelength positions) from Al-rich and Al-poor micas, but negligible Na- and/or Fe-components. Chlorite compositions on average (based on 2250nm wavelength positions) are close to Fe end-member values.

References:

***Canet C.**, Hernández-Cruz B., Jiménez-Franco A., Pi T., Peláez B., Villanueva-Estrada R.E., Alfonso P., González-Partida E., Salinas S.,2015. Combining ammonium mapping and short-wave infrared (SWIR) reflectance spectroscopy to constrain a model of hydrothermal alteration for the Acoculco geothermal zone, Eastern Mexico. Geothermics 53:154-65.*

1/127 Grandstand Road
Ascot, WA, 6104
Australia

T +61 8 9277 2355
ABN 65 139 606 867
corescan.com.au

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