Department of **Mines, Petroleum and Exploration**

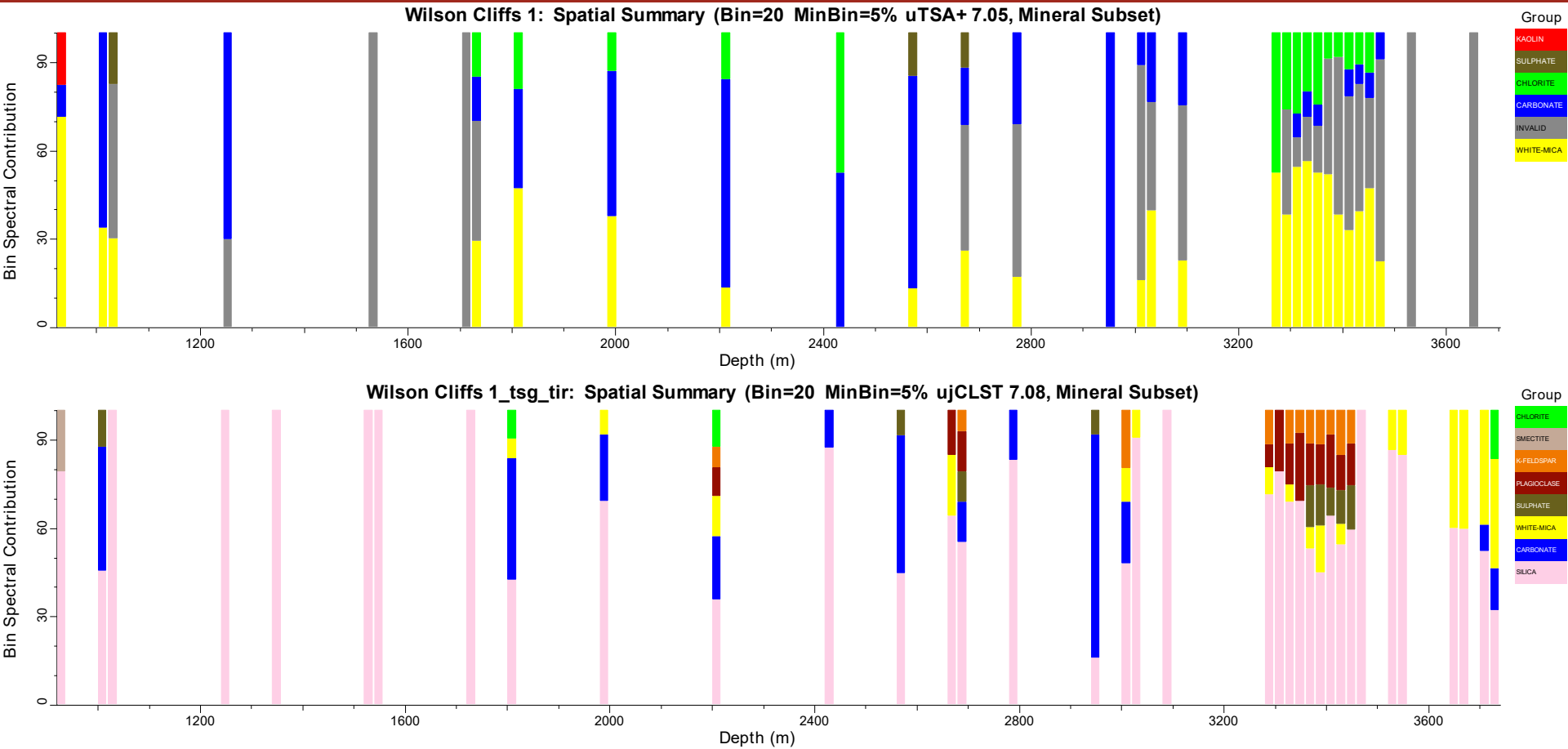
GOVERNMENT OF WESTERN AUSTRALIA

Mineralogy Summary

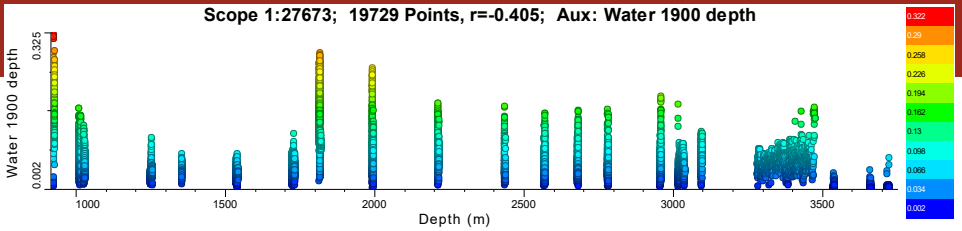
Drillhole: **Wilson Cliffs 1**

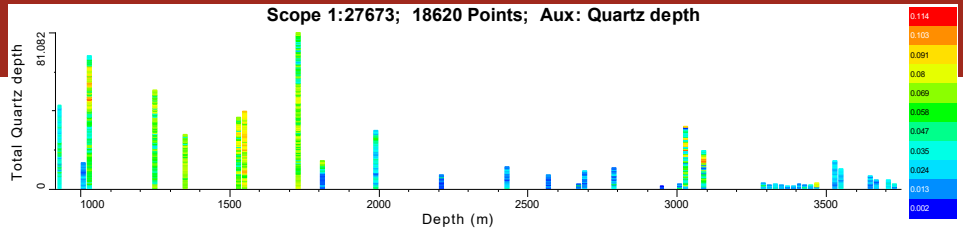
HyLogger-4 | Process Level 2

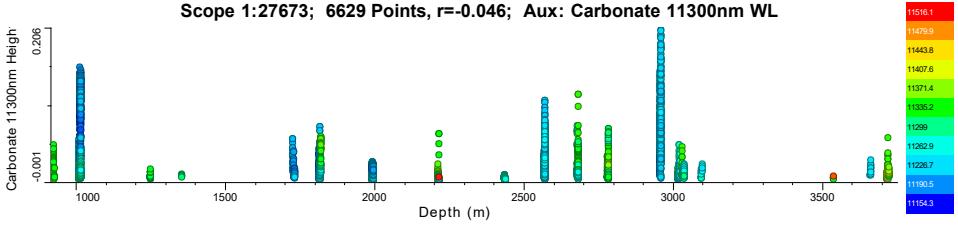
Top: SWIR summary | **Bottom:** TIR summary

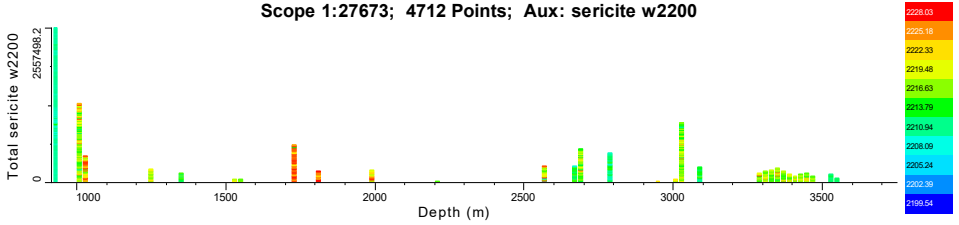


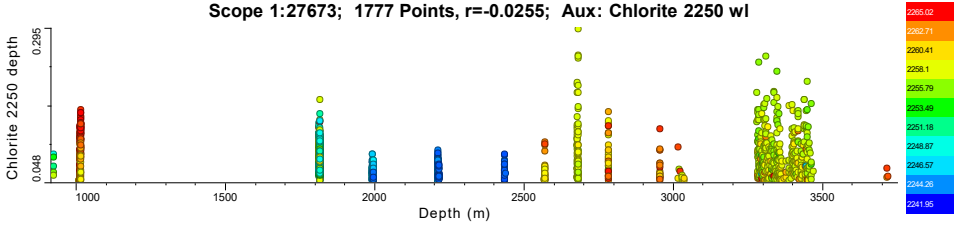
Mineral Groups

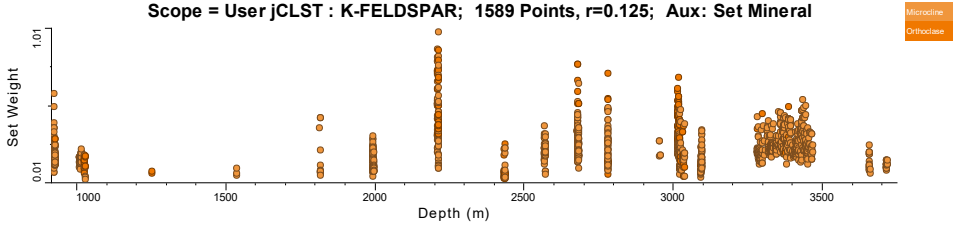


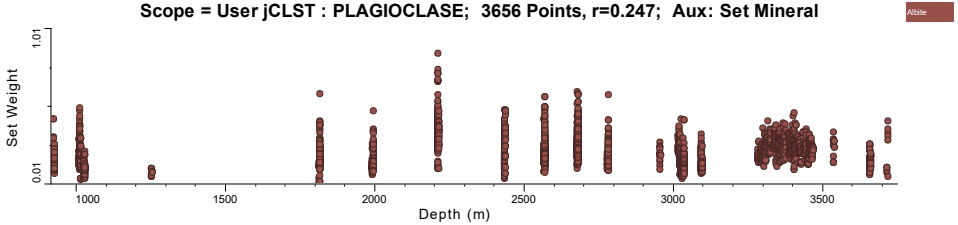


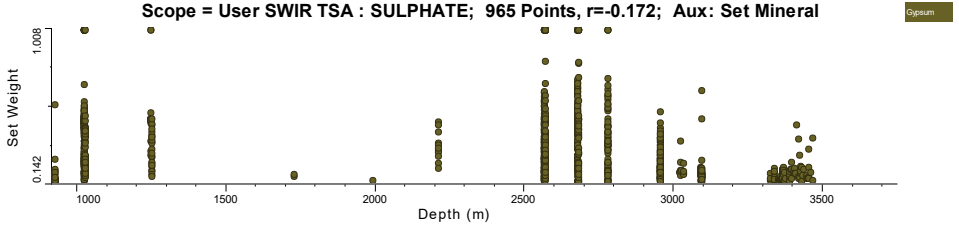












TERMINOLOGY	DESCRIPTION
TSG	The Spectral Geologist™ software package (and associated file format)
Process Level 1	Dataset processed with automated (System) mineral interpretations
Process Level 2	Dataset processed with geologist refined (User) mineral interpretations
VNIR	Visible-Near Infrared region (~380 to 1000 nm)
SWIR	Short-wave Infrared region (~1000 to 2500 nm)
MIR	Mid Infrared region (~2500 to 6000nm)
TIR	Thermal Infrared region (~6000 to 14500 nm)
Bin	Selected summary interval for plot (metres)
MinBin	Selected minimum spectral weight for plot (%)
Bin Spectral Contribution	Relative spectral weight % (normalized to 100 for minerals above minimum spectral weight)
sTSA+	System (process Level 1) TSA+ SWIR unmixing algorithm
uTSA+	User (process Level 2) TSA+ SWIR unmixing algorithm
sjCLST	System (process Level 1) jCLST TIR unmixing algorithm
ujCLST	User (process Level 2) jCLST TIR unmixing algorithm

TSA+ algorithm:
"The Spectral Assistant™ plus" - an improved TSA unmixing routine utilised in TSG. Identifies and estimates abundances of minerals from VNIR or SWIR spectra using linear modelling of in-built reference library mineral spectra. Default results are best-fit 1 to 3 mineral spectral models (Schodlok et al., 2016).

jCLST algorithm:
"Justified Constrained Least Squares" - an improved CLS unmixing routine utilised in TSG. Identifies and estimates abundances of minerals from TIR spectra using quadratic modelling of restricted sets of in-built reference library mineral spectra, guided by TSA results. Default results are best-fit 1 to 3 mineral spectral models (Schodlok et al., 2016).

Schodlok, MC, Whitbourn, L, Huntington, J, Mason, P, Green, A, Berman, M, Coward, D, Connor, P, Wright, W, Jolivet, M and Martinez, R 2016, HyLogger-3, a visible to shortwave and thermal infrared reflectance spectrometer system for drill core logging: functional description: Australian Journal of Earth Sciences, v. 63, no. 8, p. 929-940, doi:10.1080/08120099.2016.1231133