HUNTINGTON HYPERSPECTRAL

HyLogged mineralogy of three drillholes from the Coupon Prospect EL 43/2004, Western Tasmania

Prepared for Shree Minerals Ltd November 2012

Coupon drill holes LYN003, LYN004, LYN007

Contact

M +61 (0)408 221 934

34 Craiglands Avenue
Gordon NSW 2072
Australia

Final Draft for Review

Overall Summary

- Relative to the Sulphide Creek holes alteration in the Lynchford holes appears overall less intense and also more disparately located, occurring not only in sediments but also carbonate units.
- Structurally influenced zones of intense goethite & dickite development are still present and relate spatially to narrow higher Au & As grades. Their location seems less predictable as dickite zones occur even with the carbonate units (e.g. LYN004).
- Overall dickite is less well developed in the Lynchford holes.
- In the Sulphide Creek holes there appeared to be a local association with hematite. This is hardly seen in the Lynchford holes.
- There appear to be variations in mica composition controlled by both lithology and alteration. There is a tendency for some higher Au & As grades to be more associated with shorter wavelength mica (higher Al micas). All occur in narrow zones and seem to reflect strong local structural control versus a large scale pervasive alteration event.
- Higher grade Au & As zones are often associated with locally increased quartz development (e.g. LYN007), though this is not always the case (e.g. in LYN004, where base metal grades are associated with quartz zones).
- Past studies have made little reference to clay mineralogy. The HyLogging data offers fresh insight that should be valuable in re-thinking mineralised alteration signatures in the region.
- The newly-defined dickite +/- iron oxide zones at Sulphide Creek and Lynchford are interpreted to be structurally controlled fluid pathways and important vectors to future mineralisation search, though, as observed by others, they may merely reflect hydrothermal leakage zones from deeper seated activity/targets.
- White mica (sericite) is considered a regional or distal effect, whereas dickite plus goethite is considered a proximal vector, especially where they appear most intensely developed in pervasive structures. Sharp boundaries in white mica chemistry suggest a lithological rather than alteration control.
- No believable evidence of alunite, pyrophyllite or topaz, also found in the high sulphidation parts of the Mt Lyell and Henty mineral systems, has so far been located.
- Descriptions of individual drill holes follow.

Background

- This report describes three of six diamond drillholes scanned by Mineral Resources Tasmania (MRT) using the CSIRO-developed and AuScope-funded HyLogger-3 hyperspectral core logging technology. The aim was to characterise the iron oxide, hydrous (clay) and anhydrous silicate mineralogy of these drill cores. Initial pre-processing and depth reconciliation was carried out by MRT staff.

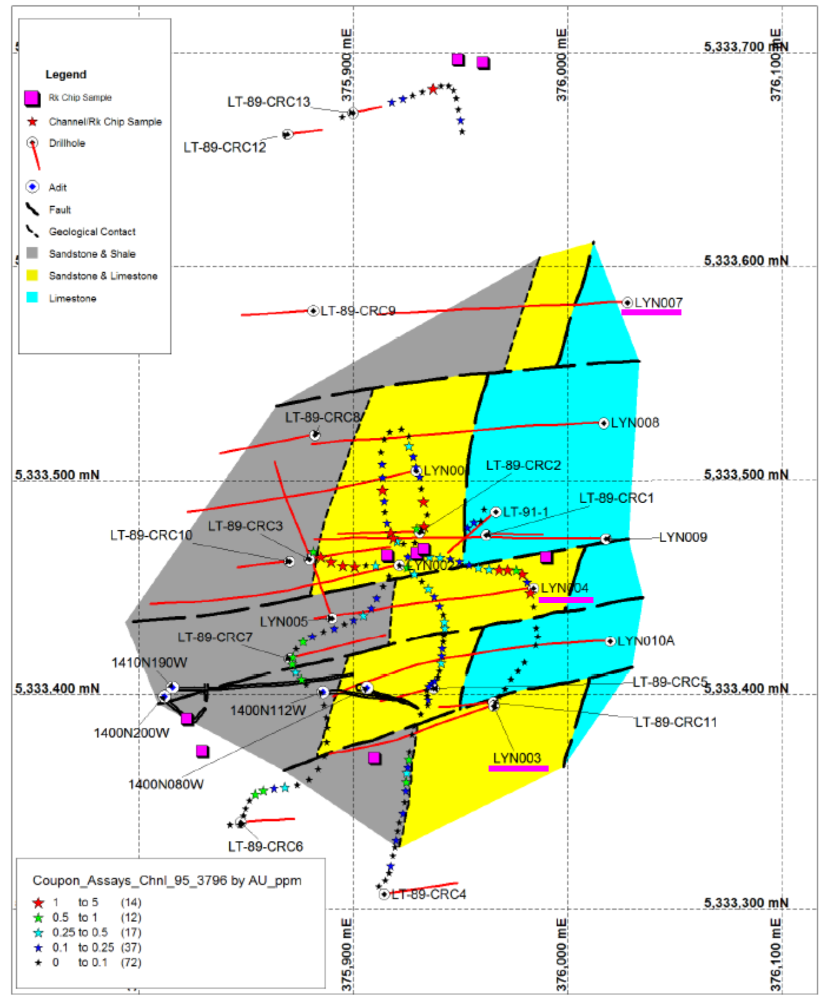
- Spectroscopic sample resolution was ~8*18 mm sampled every 8 mm along the core. The HyLogging system collects 125 samples per metre of core (before masking). Digital imagery with a resolution of ~0.2 mm was acquired simultaneously with the mineral spectroscopy.

- Data analysis was carried out by the author using “The Spectral Geologist” (TSG-HotCore) software package.

- To minimise initial bias a first pass interpretation of the spectroscopic data was undertaken “blind” without reference to previous work. Relatively little background data for the three Coupon holes was available other than the Hellman & Schofield Pty Ltd report by S. Tear (2011).

- The map at right shows the collar locations of the three holes studied. It should be noted that the maps shows the collars <u>starting</u> in the limestone unit, however the HyLogging data and the supplied logs show the holes <u>ending</u> in the limestone. There may thus be an error in the map as to the collars of the holes.

Figure 11 Coupon Prospect Drilling Summary



Coupon Prospect plan view showing grid and drill hole locations from S Tear (2011). The three holes covered in this report are underlined in pink.

Cautionary Note

- The Lynchford drill holes were drilled in the period 1993-95. The core age and thus quality, combined with poor recoveries and core loss resulting from many structural dislocations and poor ground appears to have impacted accurate depth logging.
- This, combined with relatively sparse historical geological logs, makes uncertain the exact reconciliation of the HyLogging results with imported lithological and assay logs. Correlations may be locally several metres out, and in the case of LYN003 possible up to 5 metres out in the centre of the hole. This study has used all data “as provided” by the client without any significant re-location.
- User’s of these interpretations must bear this in mind when drawing their own conclusions.

Drill hole 18188-LYN003

18188-LYN003

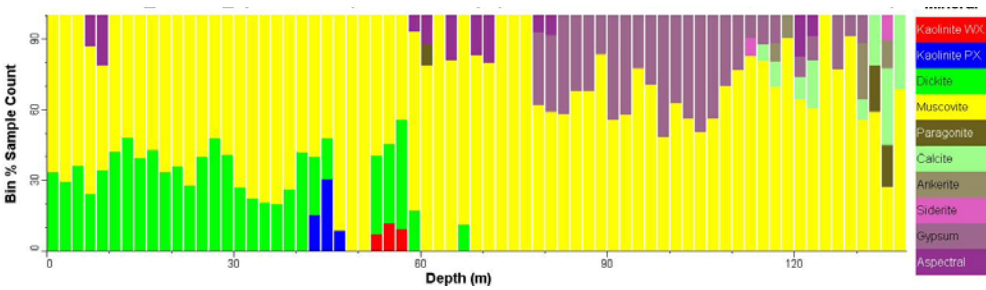
A. Dominant mineralogy per 2 m interval
B. Kaolinite crystallinity per sample.
C. Kaolinite crystallinity per sample coloured by kaolin group weights.

Background mineralogy is dominated by white mica (yellow) with sub-domains defined by variable kaolin/dickite, carbonate and gypsum mineralogy (plot A).

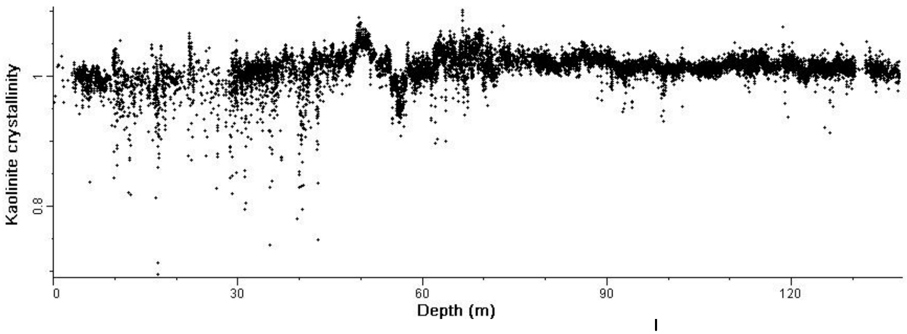
Compared to the Sulphide Creek holes dickite development (green in A) is much less intense and spatially spotty.

In plots B and C the kaolinite crystallinity index (KI) plot for all samples (kaolin or mica bearing) shows only relatively minor variation. In C colouring is by kaolin group weights (red=highest relative proportions of kaolin minerals, dark blue = lowest relative proportions). Index values below 0.98 show dickite characteristics but most of the kaolin development is weak and results from mixing between samples with low KI values and white mica (darker blue in plot C). Grey uncoloured samples in plot C are white mica only.

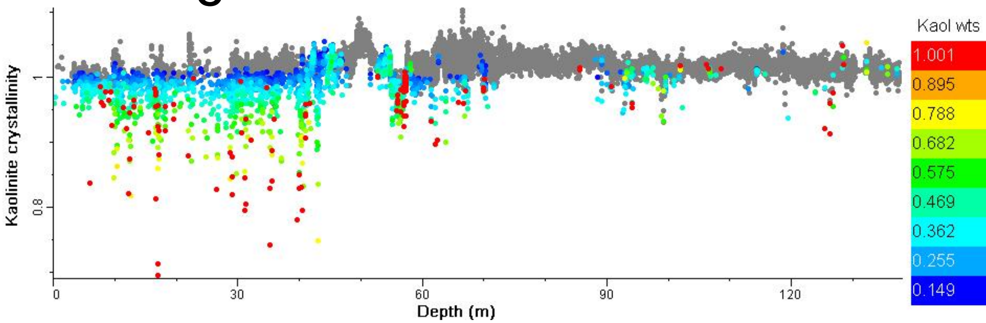
A



B



C



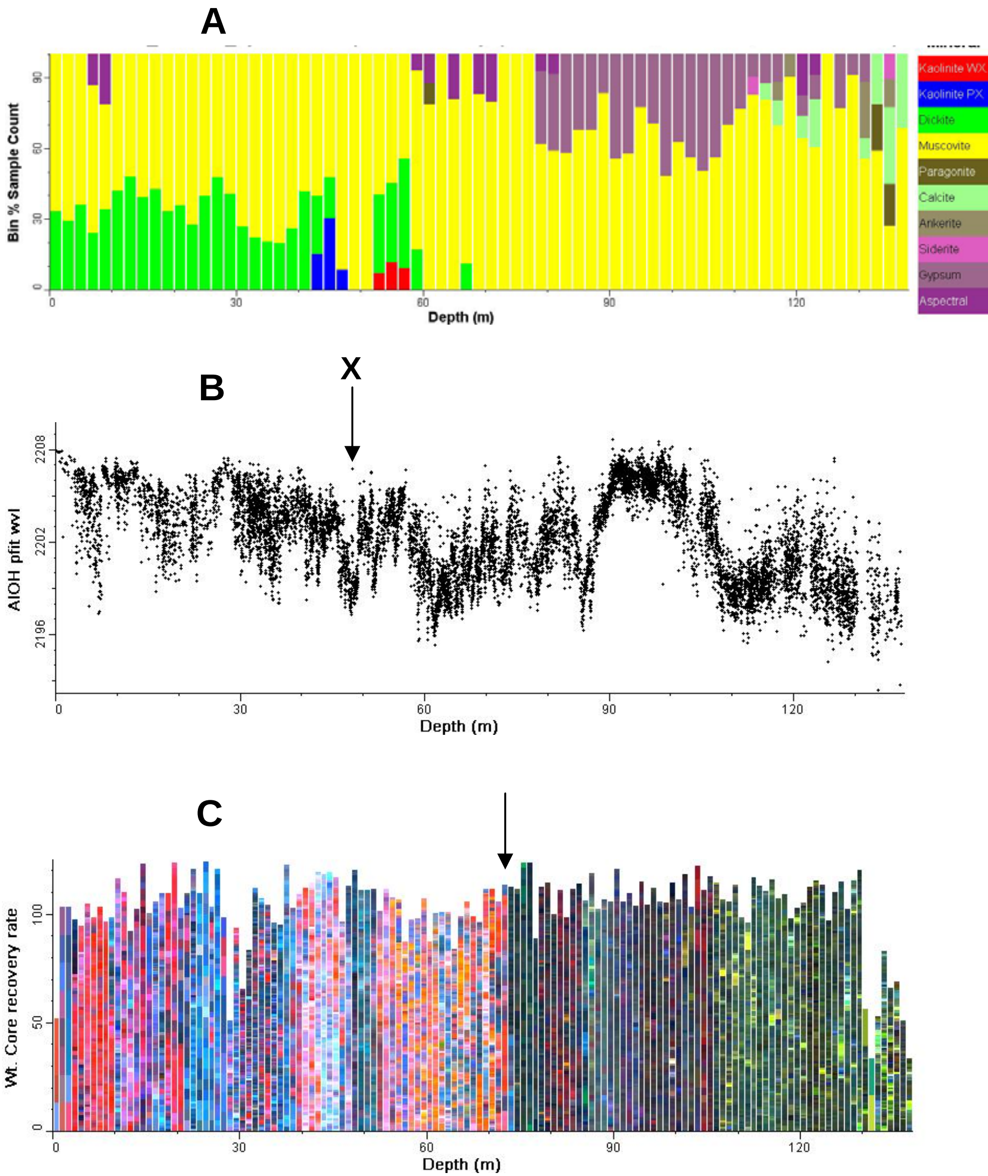
18188-LYN003

A. Dominant mineralogy per 2 m interval
B. White mica chemistry scalar
C. False colour composite using 920, 1413, 2178 nm bands in RGB (see Appendix).

The wavelength of the AlOH band near 2200 nm (B) is influence by both mica chemistry, and kaolin group mineralogies. Plot B shows only samples classified as containing mica as the dominant phase, even though the kaolin may have some influence.

The highest Au assays (see page 8) are in the zone “X” comprising some of the lowest mica wavelengths (highest Al content).

In the colour composite (C) major goethitic iron-oxide zones appear red and define a major domain boundary near 73 m and narrower oxide-rich zones above that point. Below 73 m the rocks are mainly grey iron-poor rocks. The same boundary corresponds with the appearance of abundant gypsum (mauve in plot A).

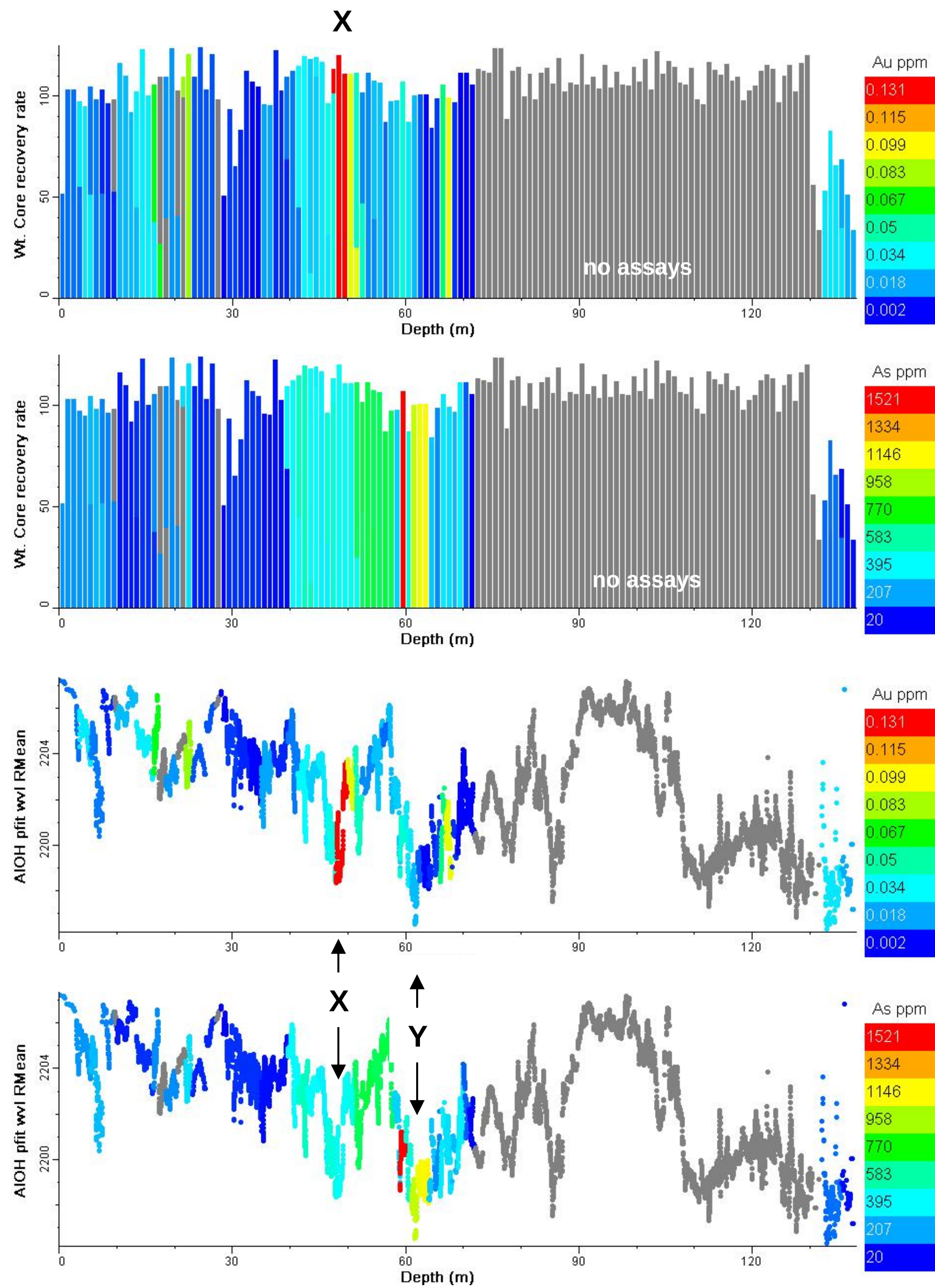


18188-LYN003

A. Au assays (ppm) per 1 m interval
B. As assays (ppm) per 1 m interval
C. White mica wavelength (chemistry) coloured by Au assays.
D. White mica wavelength (chemistry) coloured by As assays.

The higher Au and As values appear, broadly, to occupy intervals where the (smoothed) mica wavelengths have the shortest wavelengths (X and Y) , i.e. maybe chemically different from other micas.

Unlike the Sulphide Creek drill holes this hole does not show an obvious association between assays and dickite.



18188-LYN003

A. Hematite / goethite wavelength index
B. Goethite intensity index coloured by false colour composite using 920, 1413, 2178 nm bands in RGB.
C. False colour composite using 920, 1413, 2178 nm bands in RGB showing the location of iron oxides in red.

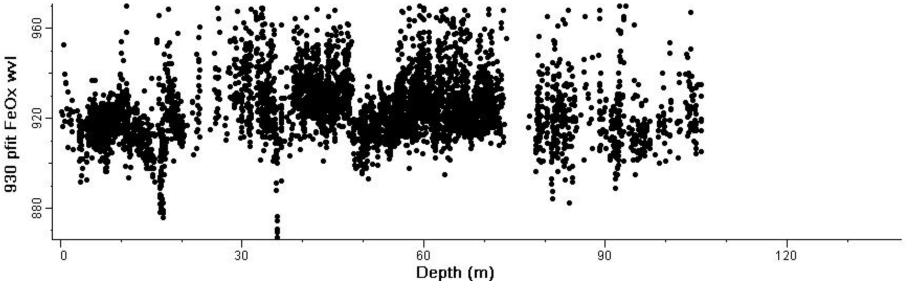
The wavelength of the 930 nm band (A) is indicative of a change from hematite (shorter wavelengths) to goethite (longer wavelengths).

In contrast to the Sulphide Creek holes virtually all iron oxides are goethitic with virtually none of the fault controlled and mineralised hematitic zones seen there. Only two locations show minor hematitic signatures at 16.9 and 35.8 m.

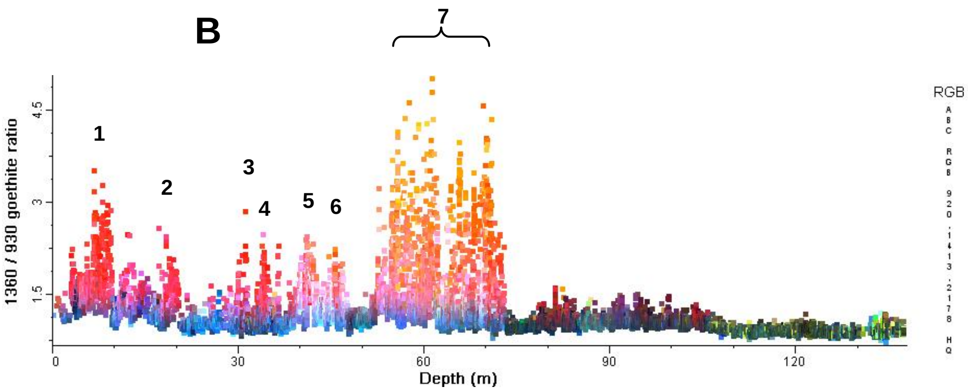
The majority of the goethite altered rocks occur above 73 metres in 7 zones (B). The most intense of these forming a characteristic domain (#7) from 52-73 m.

A

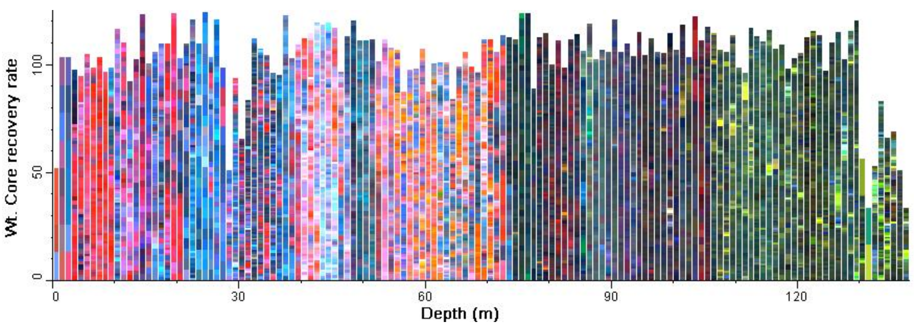
A1



B



C



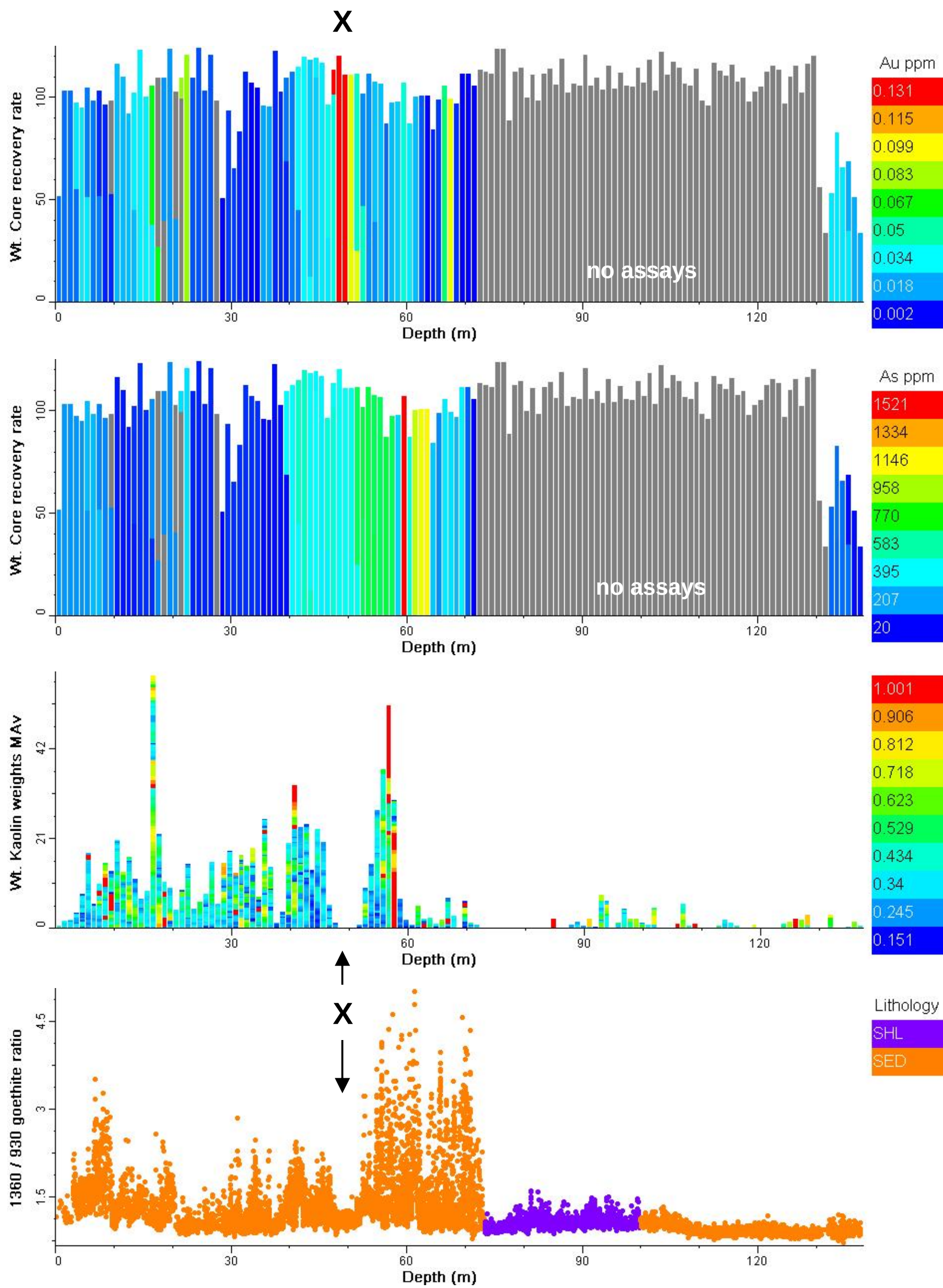
18188-LYN003

A. Au assays (ppm) per 1 m interval
B. As assays (ppm) per 1 m interval
C. Kaolinite group proportions per 1 m coloured by same.
D. Goethite intensity index coloured by supplied lithology log (SED-sediment, SHL-shale). It appears that the upper sediment might be subdivided on the basis of the available evidence.

A simple high assay vs mineralogy correlation as seen before is not immediately obvious.

The higher Au and As values coincide with the upper part of the major central goethite-rich zone (D) and the boundary between that zone and, in the case of Au, a hanging wall zone devoid of goethite and kaolinite that is comprised only of white mica (arrowed at X).

This high Au interval corresponds to a visibly different looking core with only mica present but kaolinite (not dickite) on either side (page 6, plot A).



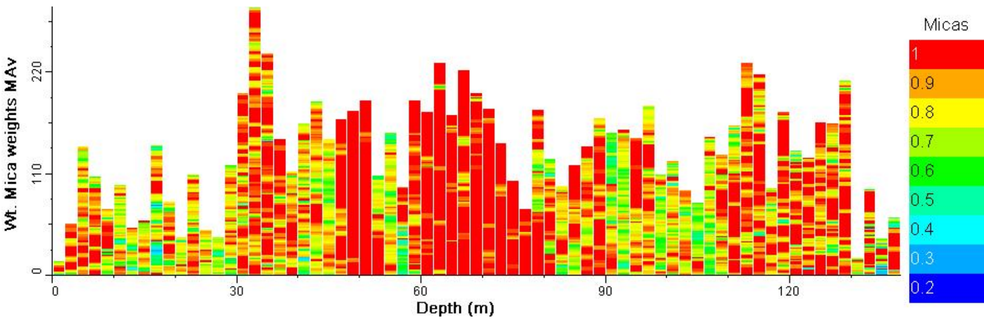
18188-LYN003

A. Proportion of all white mica bearing samples.
B. Proportion of all kaolinite group samples on the same scale as the micas.
C. False colour composite using 920, 1413, 2178 nm bands in RGB.

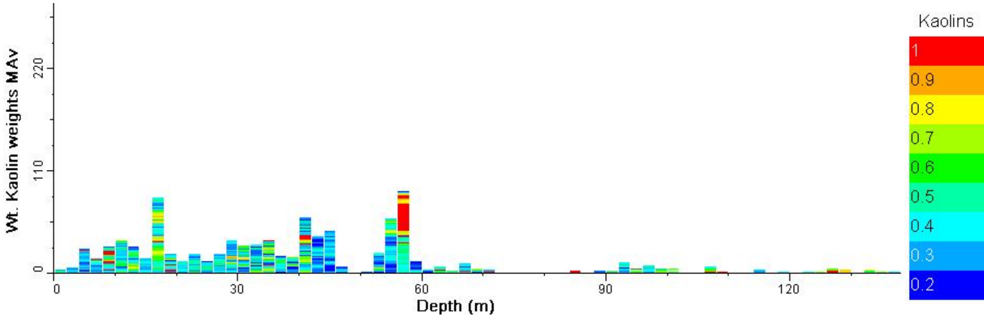
As seen on page 6 and separated out here, white mica (sericite) is common in this hole (A), whereas, relative to Sulphide Creek, kaolin group minerals (plot B) are much less well developed.

As page six indicated the majority of the kaolin group is represented by dickite, which might suggest a more hydrothermal source than a weathering effect, which might be one's first interpretation when combined with the iron oxide distribution.

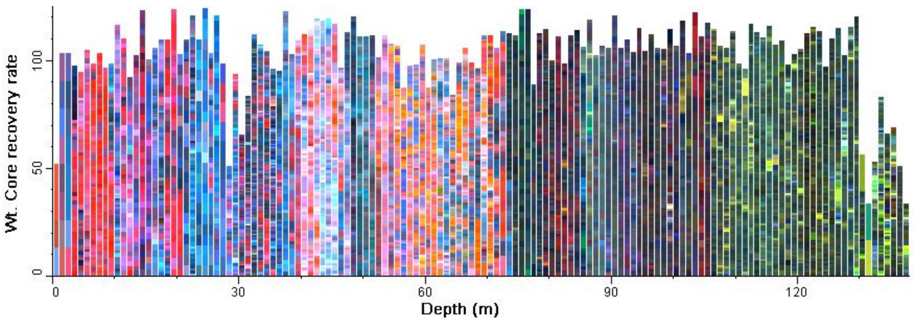
A



B



C



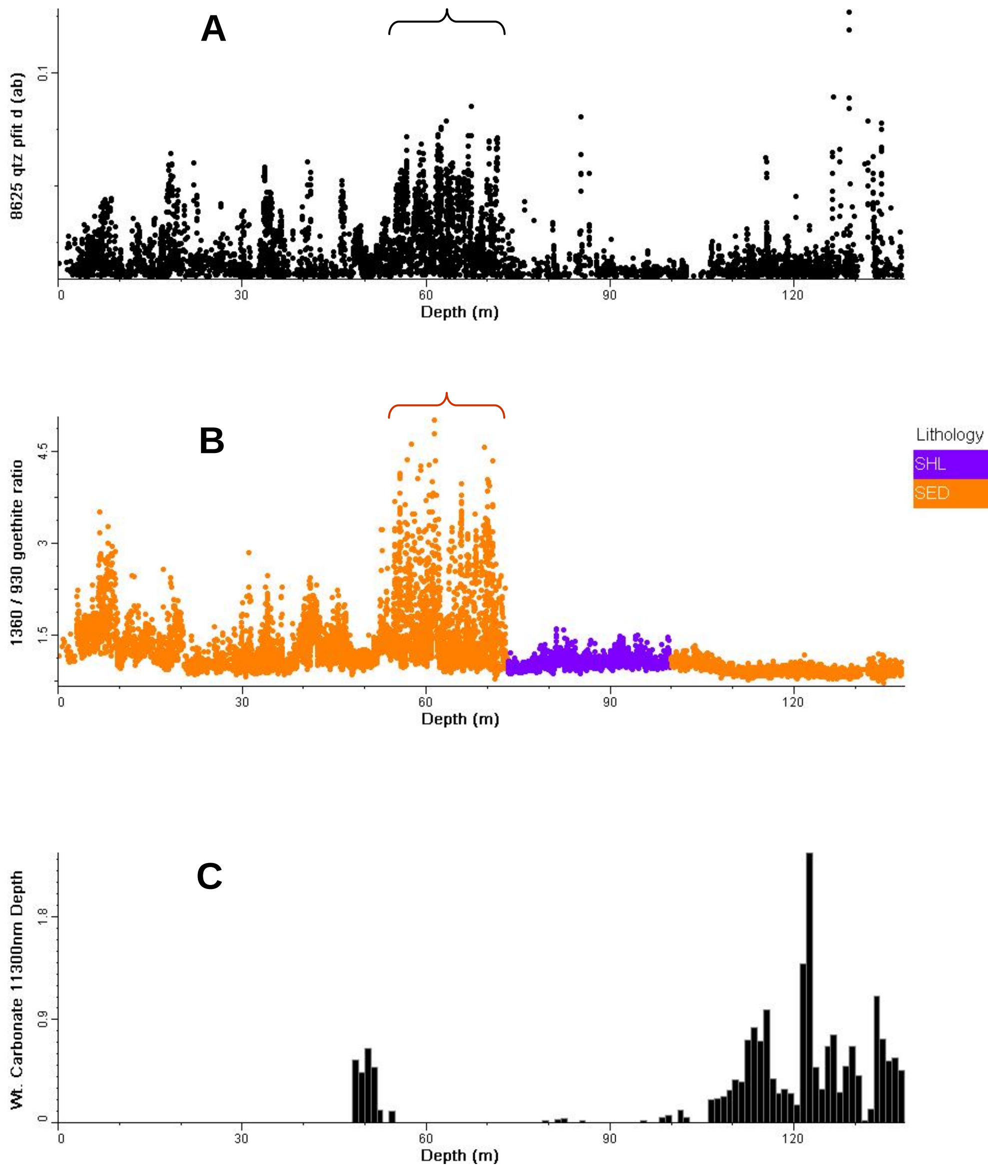
18188-LYN003

A. Quartz intensity per 1 metre
B. Goethite intensity index coloured by supplied lithology log (SED-sediment, SHL-shale).
C. Carbonate distribution per 1 metre

Plot A shows a low level quartz presence throughout the entire hole, however, with relatively more dense domains, plus intense narrow zones. The most obvious domain coincides with the increased goethite domain from 55-73 metres (bracketed).

Comparing plots A & B shows the association between the quartz intensity (A) and goethite (B) and previously logged lithologies (B colour). Even above 55 metres rises in quartz correlate with rises in goethite intensity. The shale (purple) has the lowest quartz intensity.

Plot C shows a domain of mica+quartz+ carbonate (matrix & veins). The concentration around 50 m is not carbonate but caused by an unusual spectral interval shown on the next page.



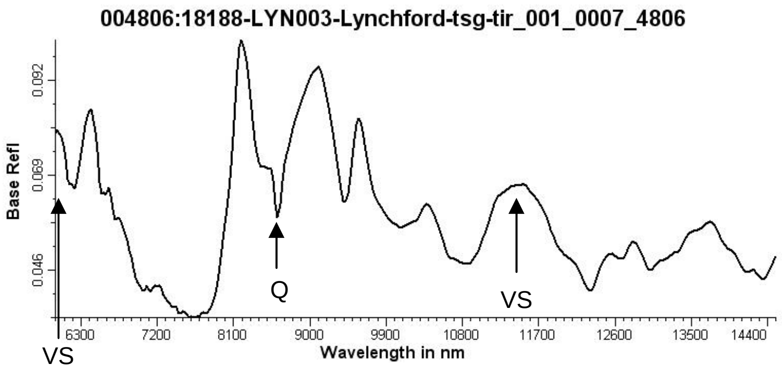
18188-LYN003

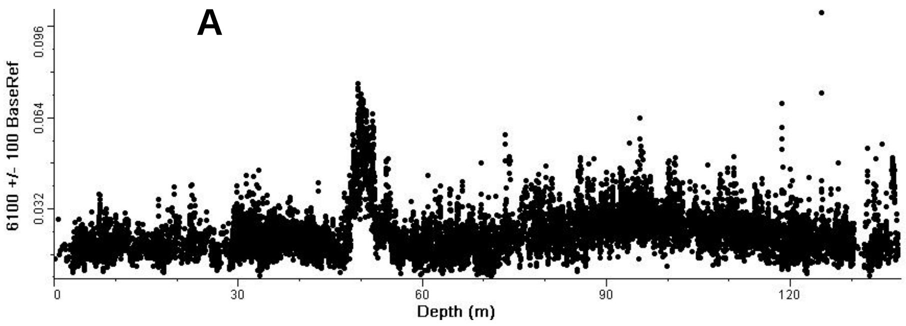
A. 6100 nm reflectance (arrowed below left) that maps an unusual spectrum coincident with the highest Au grades.

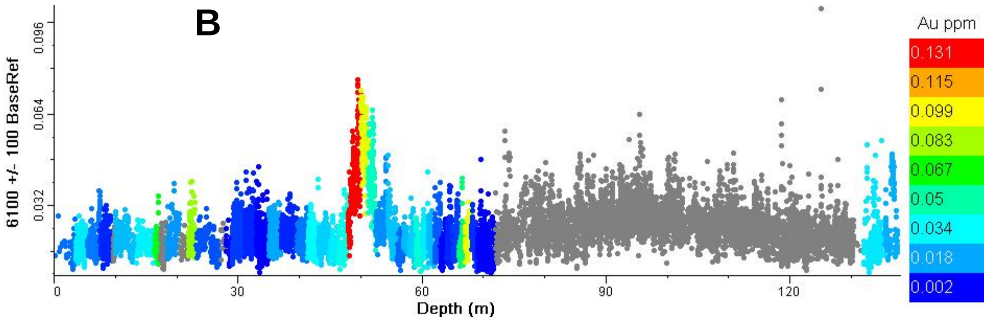
B. 6100 reflectance nm coloured by Au.

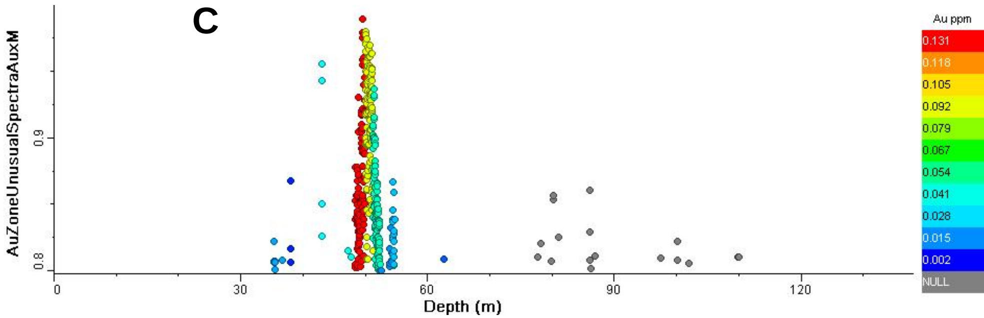
C. Correlation of the strongest plot B spectra to <u>all other</u> spectra illustrating its uniqueness.

D. Spectrum typical of the high Au grade interval from 48 to 53 metres. Unusual VS features are thought to be due to, as yet, poorly understood volume scattering effects.





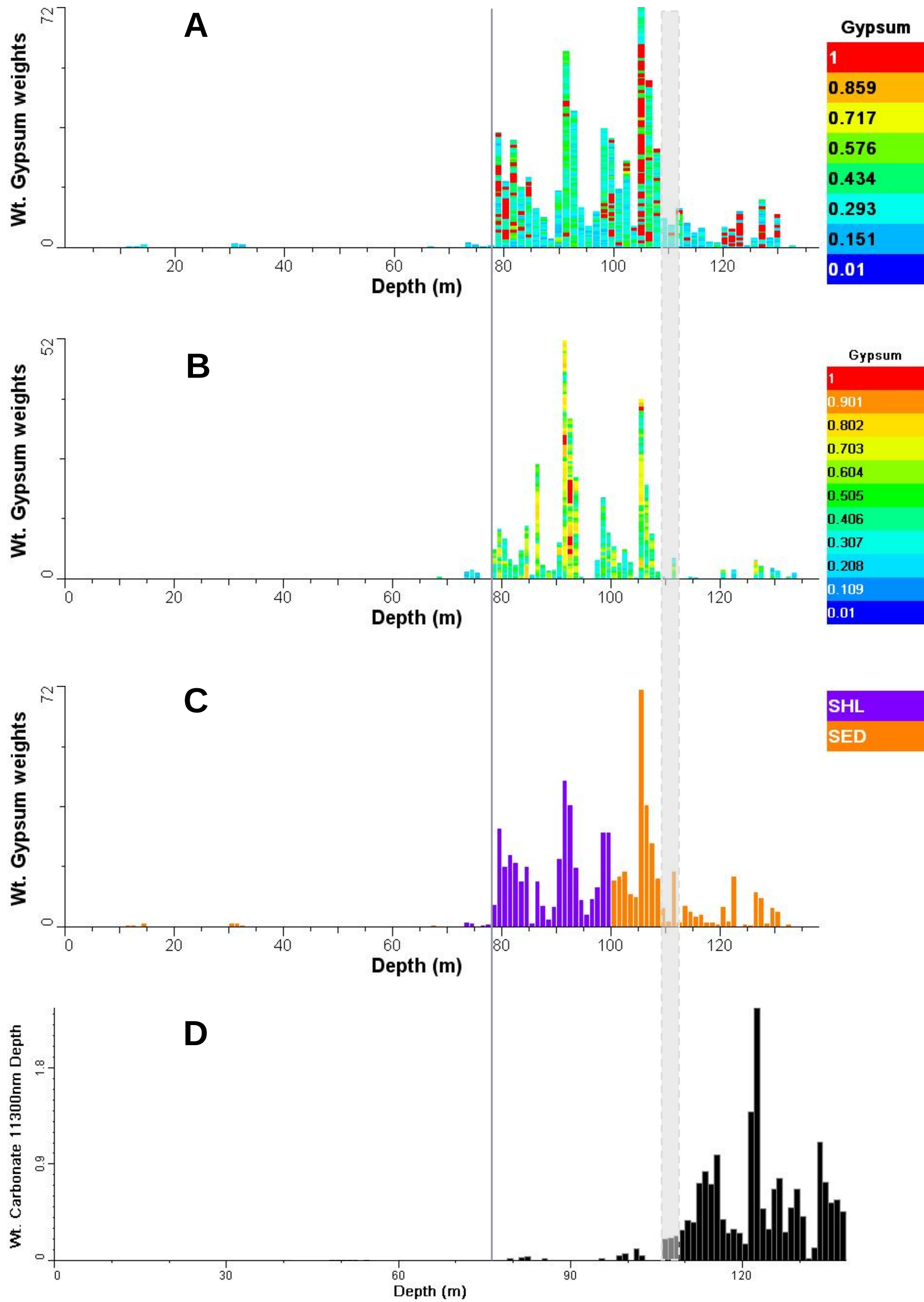




18188-LYN003

A. Gypsum distribution from the SWIR per 1 m interval
B. Gypsum distribution from the TIR
C. SWIR defined gypsum coloured by the logged lithologies
D. Carbonate distribution from the TIR

The lower part of the hole from ~73-108 m contains appreciable gypsum identified in the SWIR and TIR. This spans the logged shale/ sediment contact and suggests an alternative lithological subdivision, with an alternative, possibly transitional boundary into the mica + carbonate+quartz sediment defined lowest unit below 108 m.



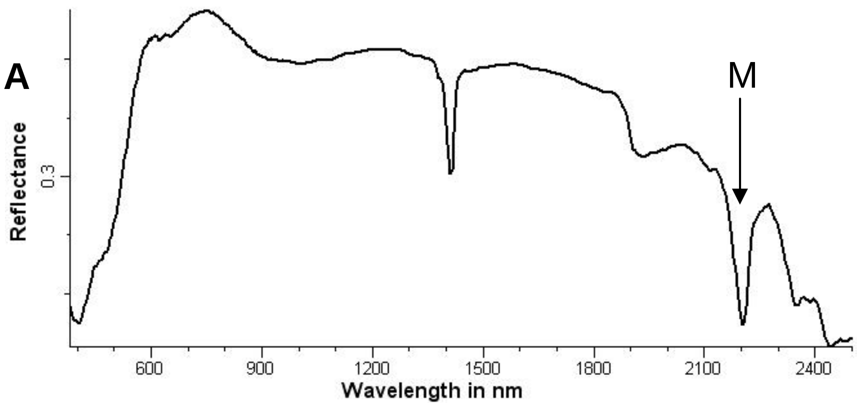
The source of the gypsum may be pyrite in the sediments suggested by the spotted texture illustrated opposite.

LYN003 & SCDDH004 Example mineral spectra

A. Typical muscovite (M) spectrum
B. Goethite + kaolinite (K) (from LYN003)
C. LYN003 extreme goethite (G) from 55-73 m
D. Typical goethite (G) + dickite (D) spectrum
E. Typical goethite + very strong dickite (D)

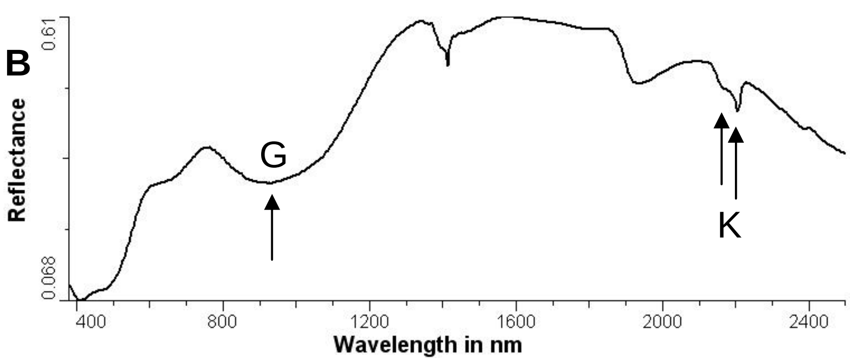
014274:29032_SCDDH4_SulphideCk_0027_442 T=27 L=4 P=43 D=103.755313 X=340.472046 H=29032_SCDDH4_SulphideCk

A



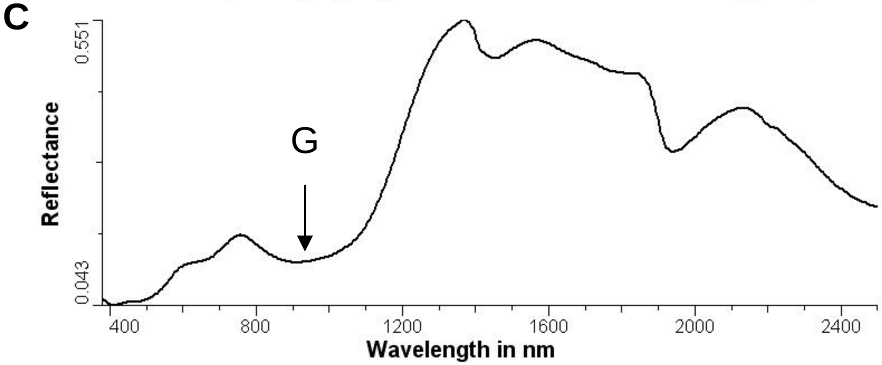
005730:18188-LYN003-Lynchford_001_0009_5730 T=10 L=1 P=60 D=57.135 X=477.53 H=18188_lyn003_lynchford

B



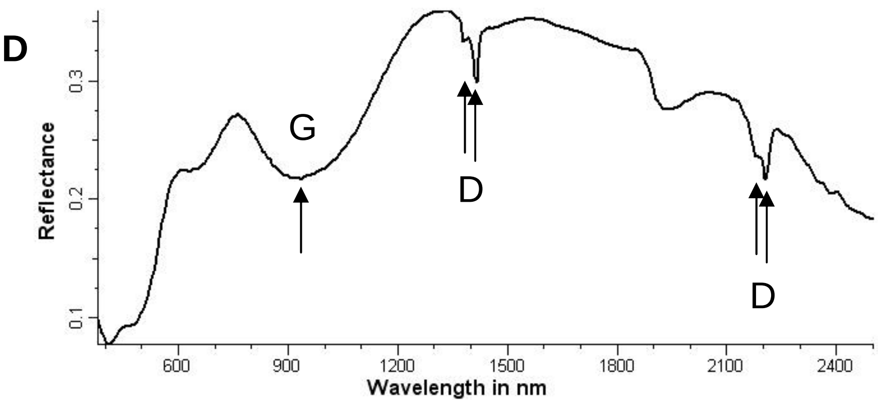
007715:18188-LYN003-Lynchford_001_0012_7715 T=13 L=2 P=29 D=69.59 X=228 H=18188_lyn003_lynchford

C



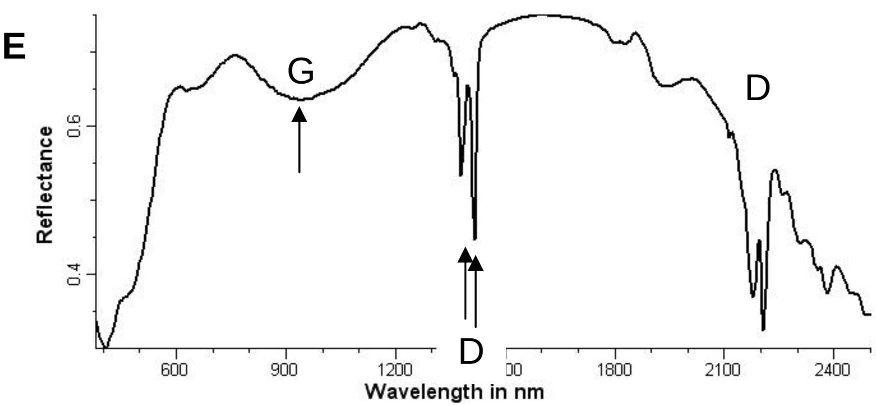
010530:29032_SCDDH4_SulphideCk_0020_422 T=20 L=4 P=23 D=78.386845 X=180.472046 H=29032_SCDDH4_SulphideCk

D



005162:29032_SCDDH4_SulphideCk_0010_374 T=10 L=3 P=108 D=38.019135 X=859.999939 H=29032_SCDDH4_SulphideCk

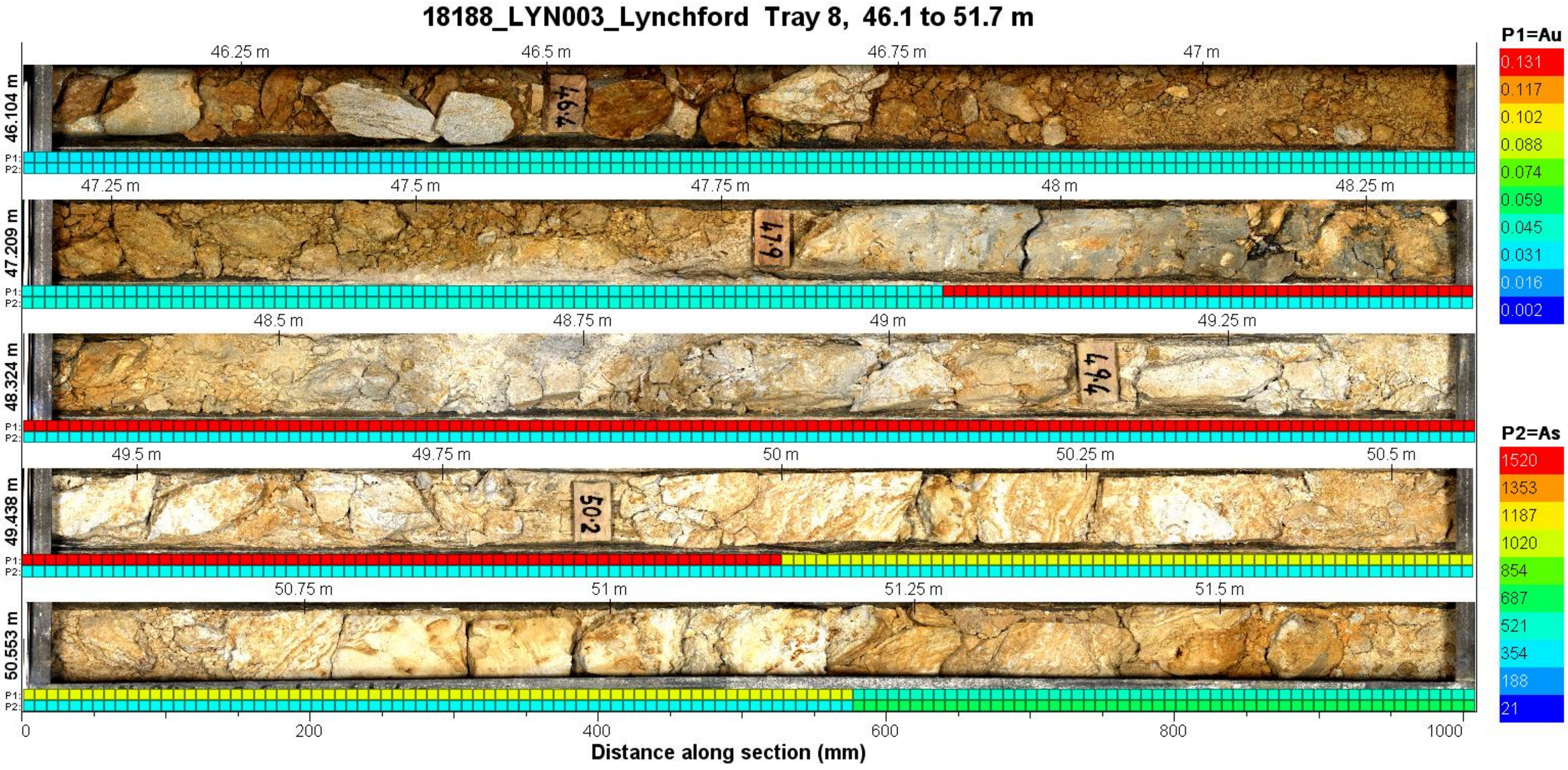
E



18188 LYN003 Summary

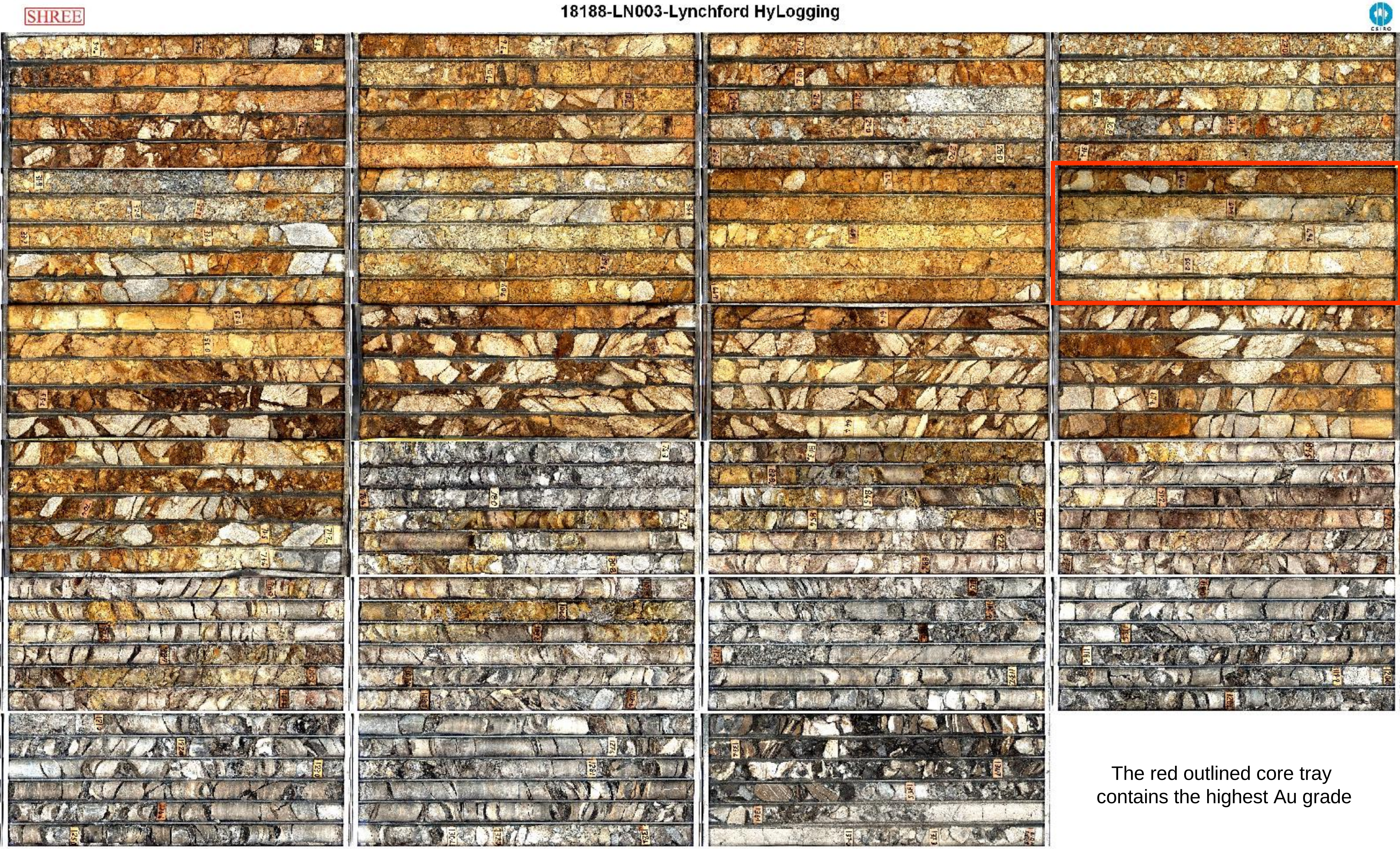
- The bulk mineral assemblage is much the same as at Sulphide Creek though here carbonate units giving rise to abundant carbonate as primary rock types and as common (sometimes ferroan) carbonate veins.
- Minerals encountered include, kaolin, dickite, muscovite, gypsum calcite, siderite/ankerite, goethite, quartz, and chlorite.
- The HyLogging data appears to do a better job at defining lithological units, characterising the primary lithologies, and their facies changes, than recorded in the available conventional logs.
- Dickite + intense goethite zones are present as before, though the higher gold assays do not appear to be concentrated in dickite-bearing intervals as in Sulphide Creek or other Coupon holes.
- Dickite and kaolin is less well developed than in the Sulphide Creek holes.
- There are variations in the composition of white micas, and a weak suggestion that some higher Au & As assays may correlate with intervals of shorter than average (higher Al) mica absorptions.
- High Au grades occur in a HyLogger mapped interval thought to be due to a specific thermal infrared grain size effect in quartz+mica-bearing rocks.

18188-LYN003 – Core Tray 8 with Au Assays



This image shows the association of the highest Au grades (and lesser As) in this hole with an intensely bleached, mica-rich interval, that is also less goethite-rich

18188-LYN003 Lynchford - Drill hole mosaic



The red outlined core tray contains the highest Au grade

Drill hole 18011-LYN004

18011-LYN004

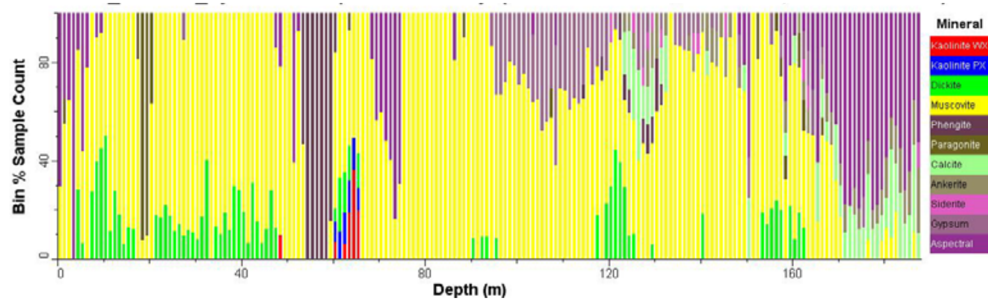
A. Dominant mineralogy per 1 m interval
B. Kaolinite crystallinity per sample for all samples.
C. Kaolinite crystallinity per sample coloured by kaolin group weights.

Background mineralogy is dominated by white mica (yellow) with sub-domains defined by variable kaolin/dickite, carbonate and gypsum mineralogy and aspectral material (plot A).

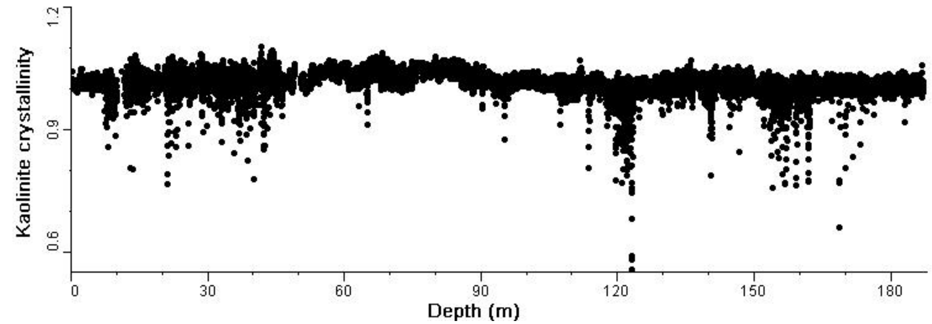
Compared to the Sulphide Creek holes dickite development (green in A) is less intense.

In plot C four main zones of kaolin group development are apparent with most being low level occurrences of dickite (A-D and green in plot A).

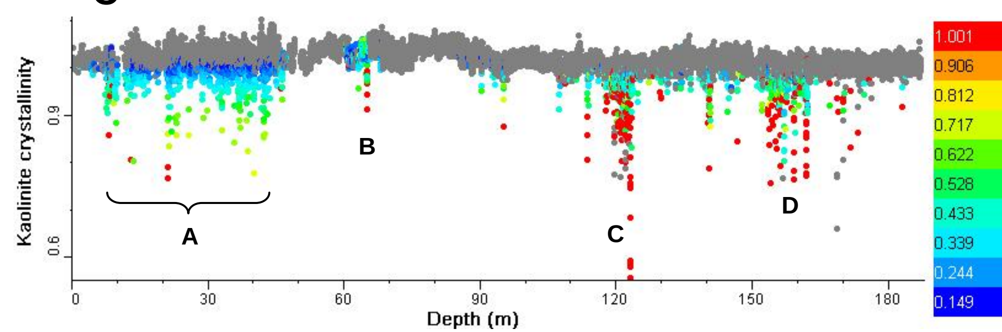
A



B



C



18011-LYN004

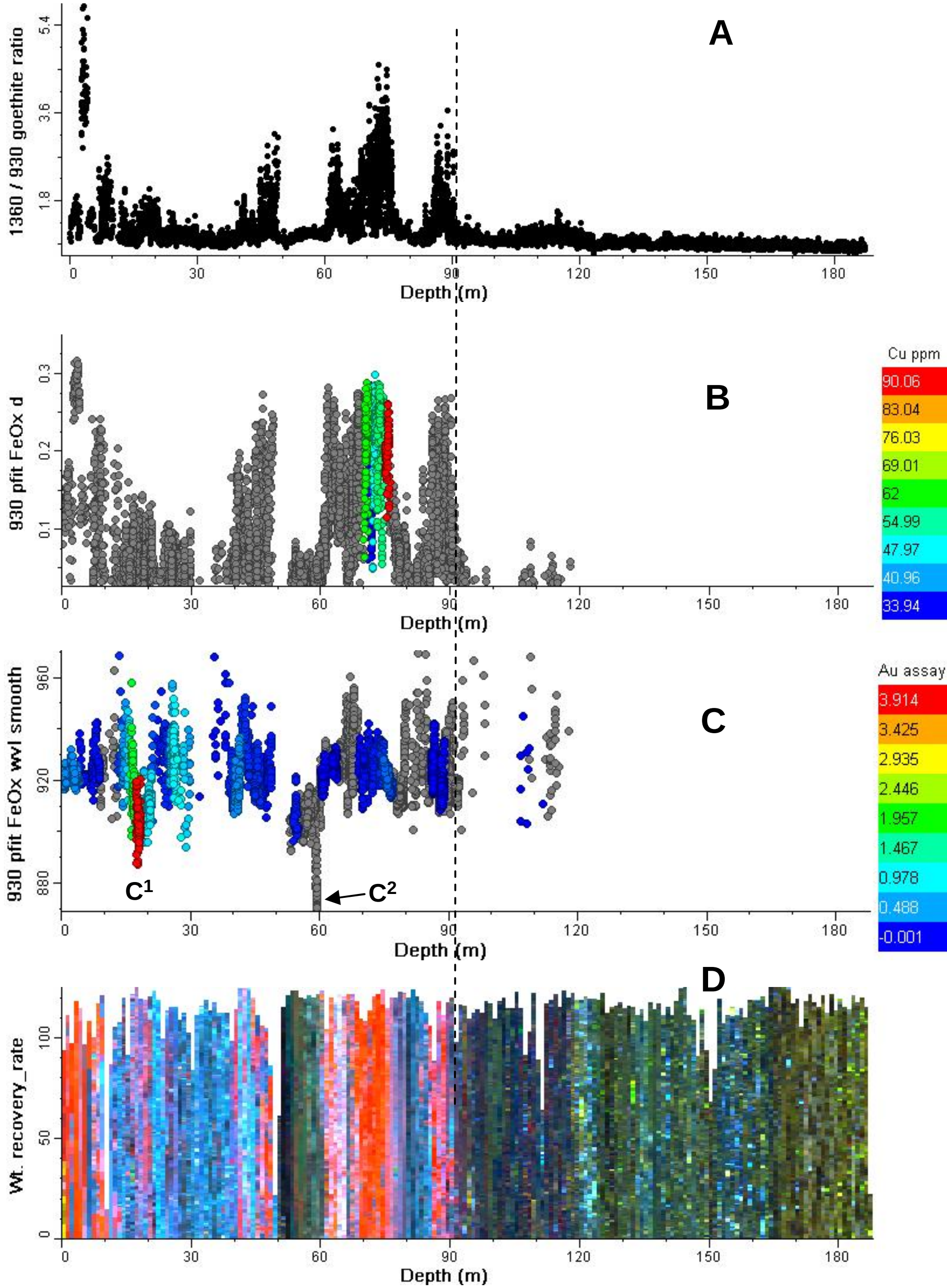
A. Goethite intensity ratio
B. Hematite/goethite relative abundance coloured by Cu assays
C. Hematite/goethite wavelength (composition) plot.
D. False colour composite using 920, 1413, 2178 nm bands in RGB.

Plots A and B show two versions of the iron oxide (goethite) distribution that forms in a number of discrete zones.

Cu, Pb and Zn correlate with one of these iron oxide concentrations near 70-75 m. Au and As are more associated with less pronounced iron oxide concentrations near 16-18 metres.

Plot C illustrates two zones (C^1 & C^2) that have appreciably shorter iron oxide absorption wavelengths indicative of more hematitic composition. One of these is associated with elevated Au, the other was not sampled.

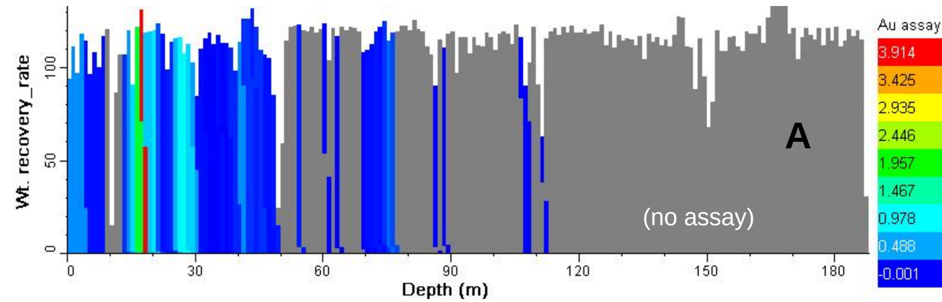
Plot D illustrates iron oxides zones in red, the dickite-bearing intervals in light blue and carbonates units in dark green and dark blue.

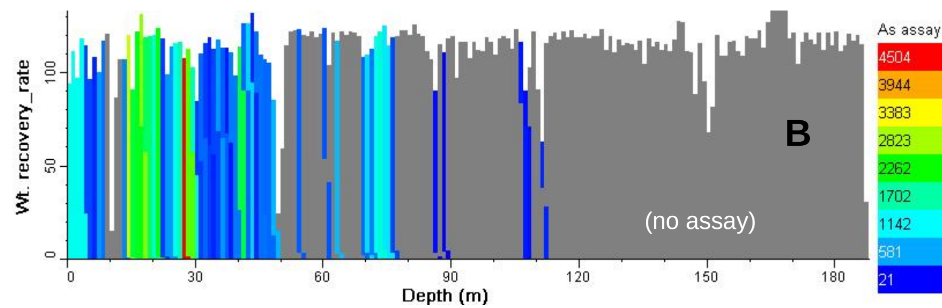


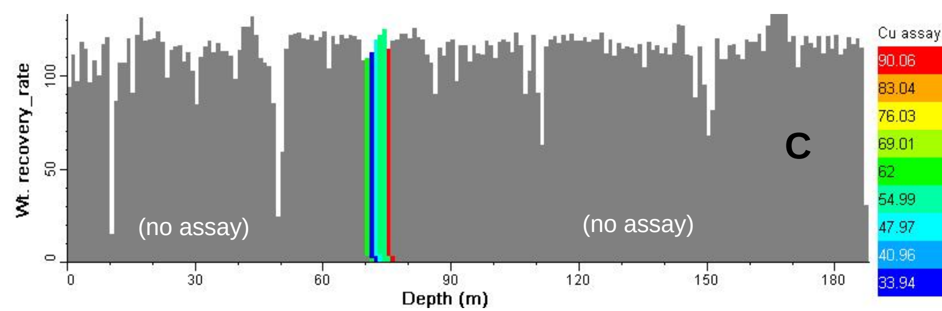
18011-LYN004

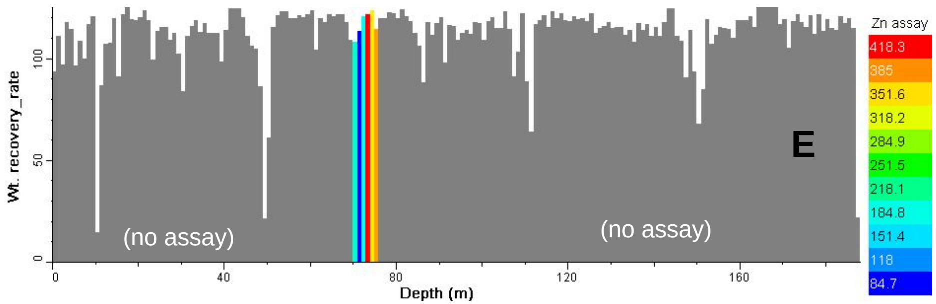
Plots A – E show the two groups of assays per 1 m interval:

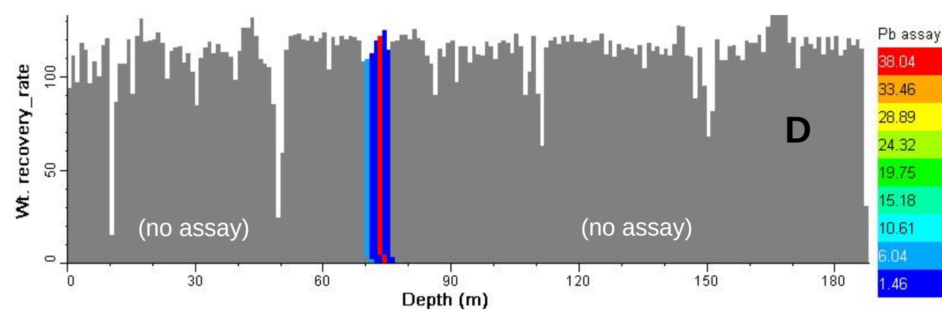
1. Au and As in the upper portion of the hole concentrate in intervals characterised by the presence of dickite, medium levels of iron oxides and highly broken core (structural association?)
2. Cu, Pb and Zn near 70-75 m are associated with very strong goethitic signatures and no dickite.
3. As best as can be determined this 70-75 m interval matches a logged fault zone, though the imagery suggests there may be a +/- 5 m core loss and mis-registration in this vicinity.











18011-LYN004

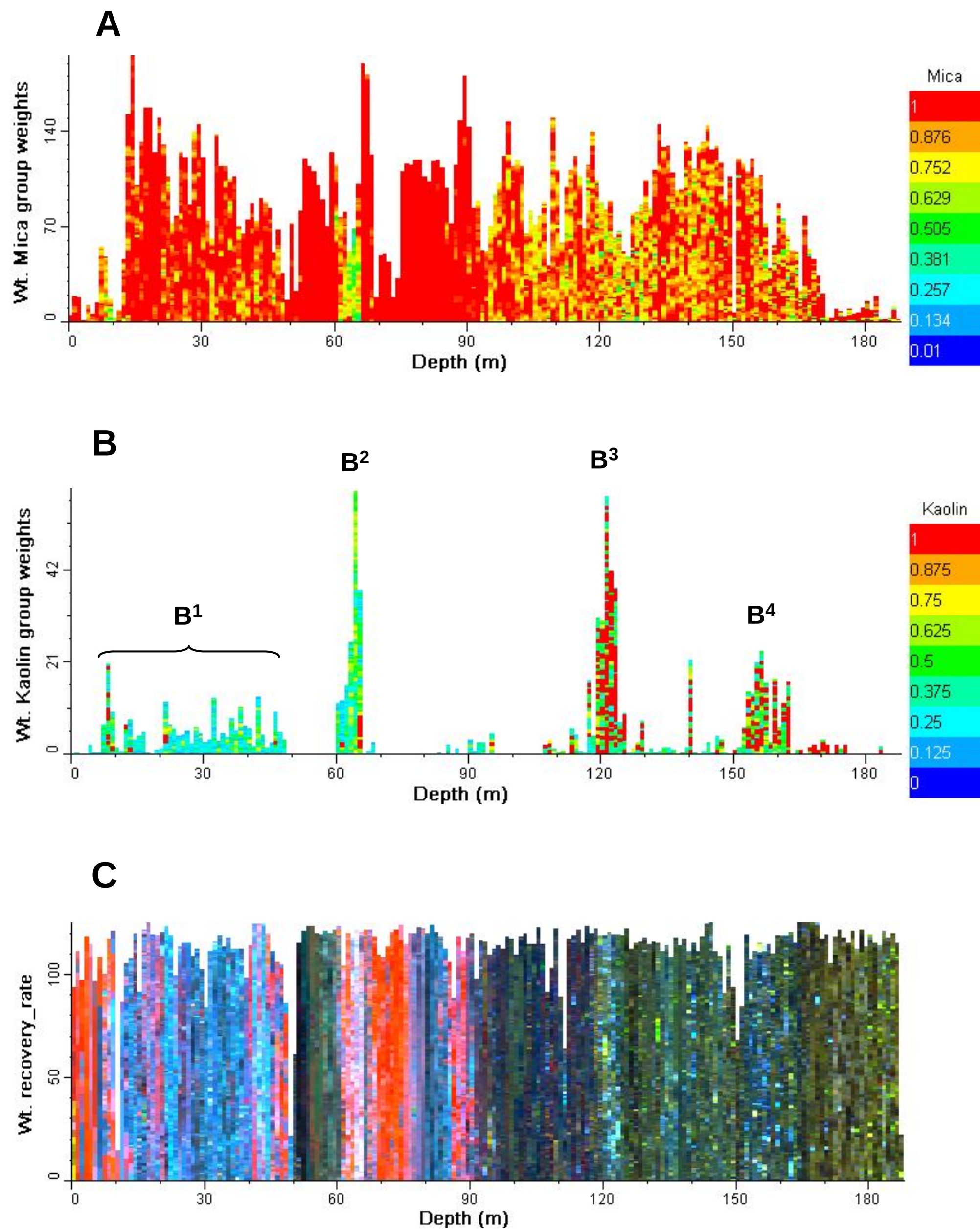
A. Proportion (weights) of all white mica bearing samples.
B. Proportion (weights) of all kaolinite group samples.
C. False colour composite using 920, 1413, 2178 nm bands in RGB.

Except for intervals of "aspectral" material at the top and bottom, plus carbonates at the bottom of the hole, white mica is very common (A).

Kaolin group minerals occupy four zones (B^1, B^2, B^3 & B^4). Only B^2 is dominantly kaolin while the others are dickite, even those occurring in micaceous intervals within the mapped limestone unit.

Notwithstanding that nearly all the core in this drill hole is badly broken these largely tightly constrained kaolin group intervals are thought likely to be structural dislocations, shears or faults.

In plot C dickite-bearing intervals are in light blue.



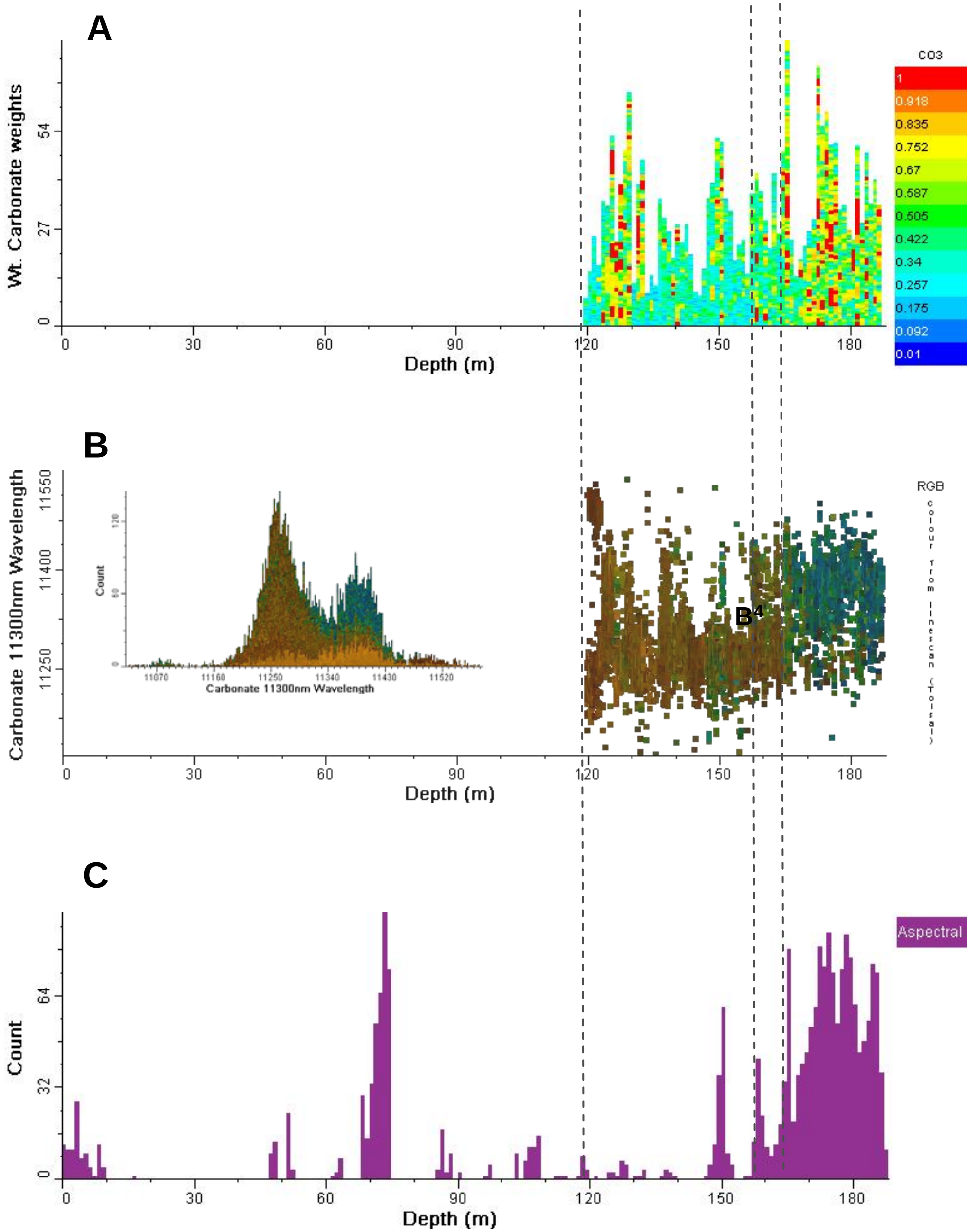
18011-LYN004

A. Proportion (weights) of all TIR carbonates
B. Wavelength (composition) of carbonates coloured by a natural coloured composite using 650, 550, 450 nm bands in RGB.
C. Distribution of SWIR "aspectral" samples.

Carbonate-bearing rocks occupy a domain from 119 m downwards (plot A), that was not previously differentiated from upper units.

These can be subdivided (plot B) on the basis of the wavelength of the 11300 nm reflectance peak. Wavelengths can be impacted by grain size, but overall an upper carbonate sub-unit from 119-157 m is typically stained reddish-brown with many iron-stained carbonate veins. Below 157 metres the carbonates transition to longer wavelengths (of different composition) are unstained, dark grey in colour, and have white quartz/carbonate veins. The twin carbonate populations are evident in the inset wavelength plot (plot B).

The lower-most sub-unit equates to the SWIR aspectral zone (C) reflecting the core's darker colour, weaker SWIR absorptions and possibly higher organic content. The 70-75 m aspectral zone is a qtz + goethite zone.



18011-LYN004

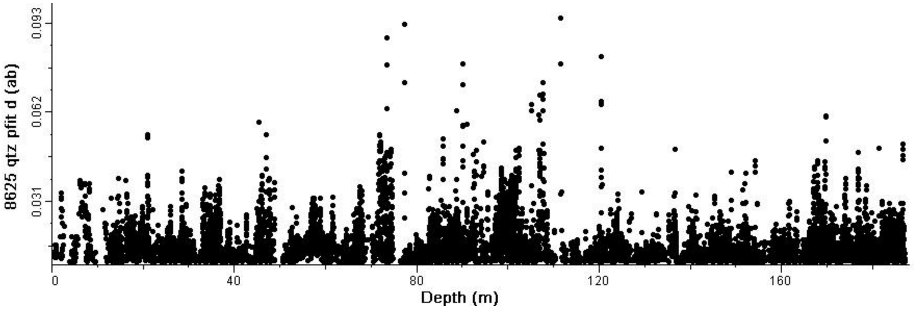
A. Intensity of quartz development
B. Intensity of quartz development coloured by Au assay
C. Intensity of quartz development coloured by Cu assay.

Quartz is relatively ubiquitous throughout the drill hole peaking in narrow zones and veins (A).

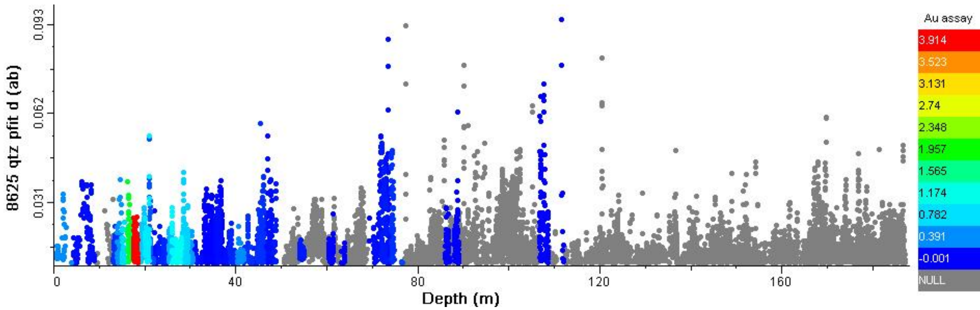
In plot B no clear relationship with Au assay is evident and maybe more influenced by where assays were collected than anything else.

The limited Cu assay C does correlate with a zone of increased quartz development, which also aligns with the increased dense goethite development shown earlier.

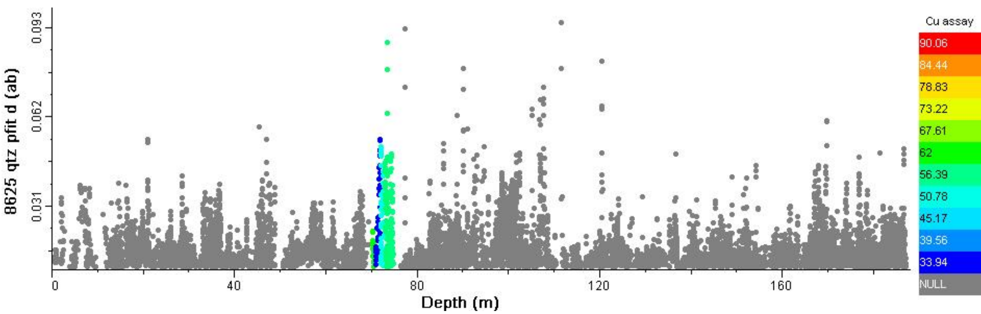
A



B



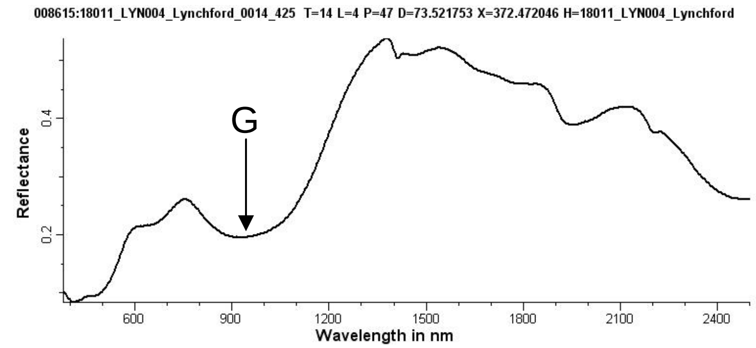
C

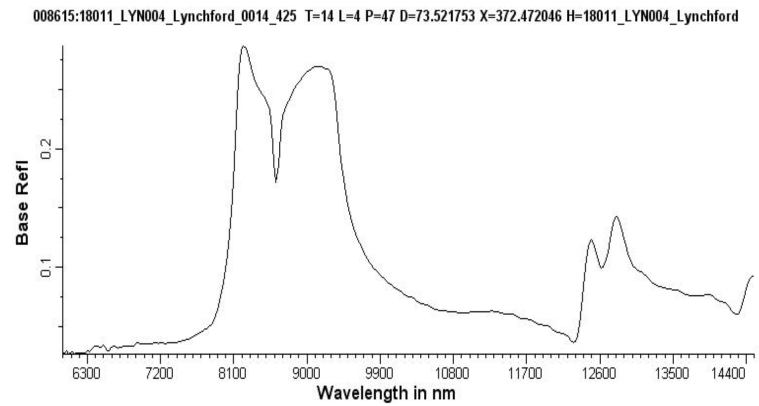


18011-LYN004
Example mineral spectra

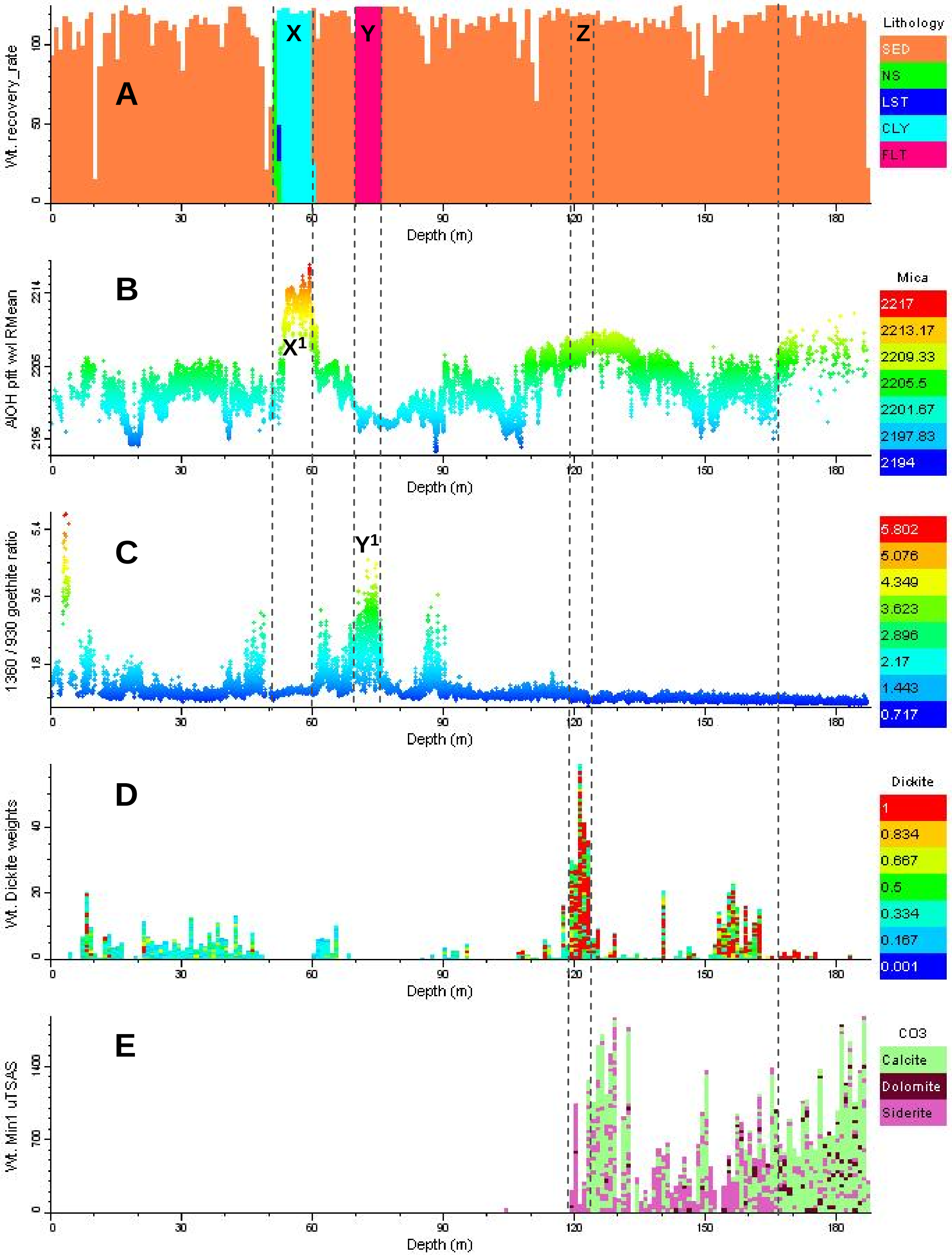
A. Extreme goethite spectrum from 73.5 m
B. Quartz spectrum from 73.5 m
C. Image of sample of A and B

The interval containing this sample returned high values of Cu, Pb and Zn.





18011-LYN004 Summary



The HyLogged mineralogy offers an objective and fresh view of the mineralogy of this old hole not well represented by the originally-logged lithologies.

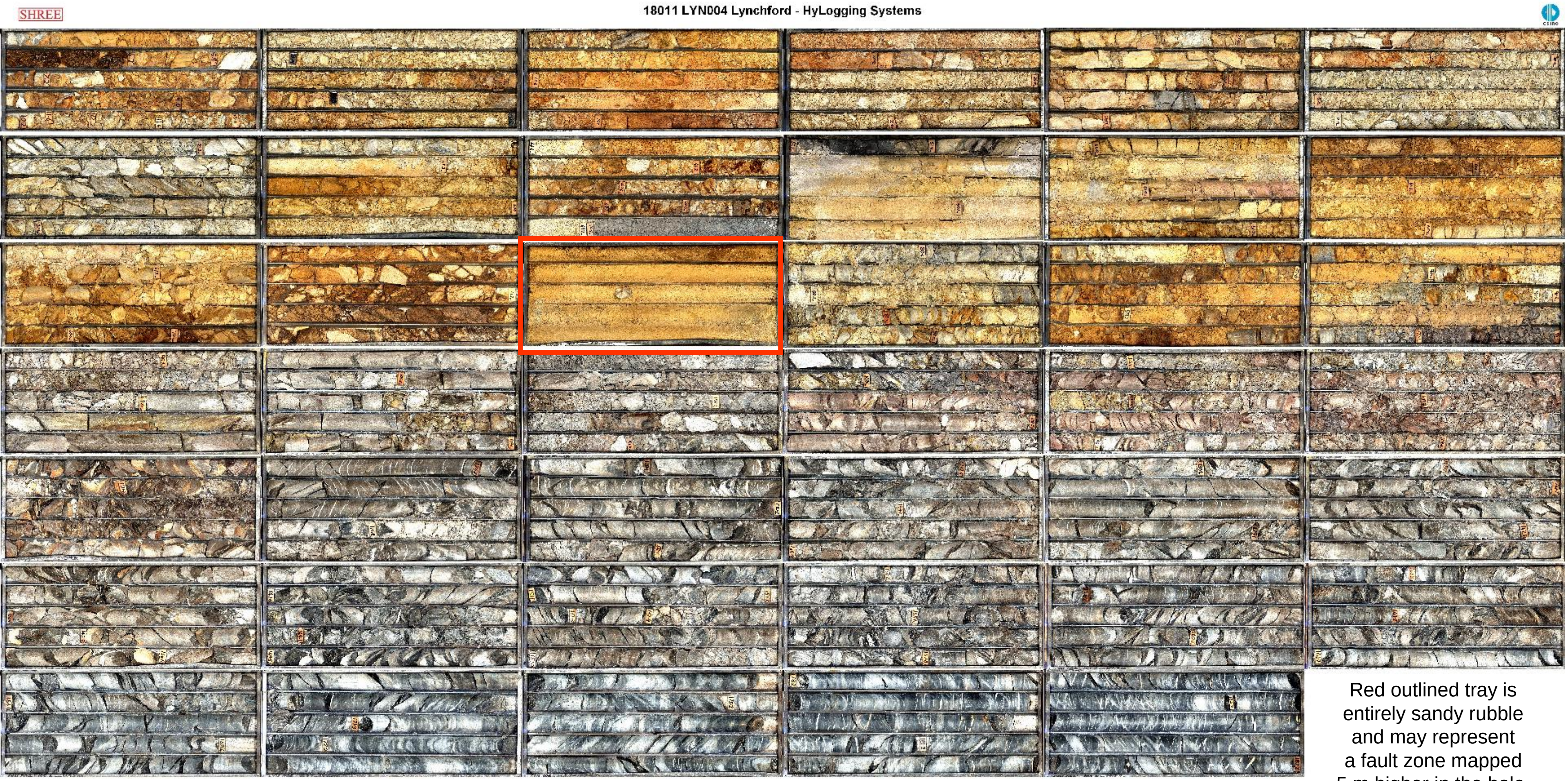
Significant variations in mica chemistry correlate with a probable structurally-controlled and logged "clay" zone (X-X[1] in B).

Significantly increased goethitic iron oxide development, and in some cases quartz, correlate with base metal assays and possibly a logged fault zone at Y-Y[1].

Au and As assays correlate more with occurrences of dickite (D).

The lower carbonate unit (E) (not originally logged) has been subdivided into two sub-units on the basis of chemistry. It contains mica + dickite (D) zones within it which may represent further structures focussing hydrothermal fluids.

18011 LYN004 - Drill hole mosaic



Red outlined tray is entirely sandy rubble and may represent a fault zone mapped 5 m higher in the hole.

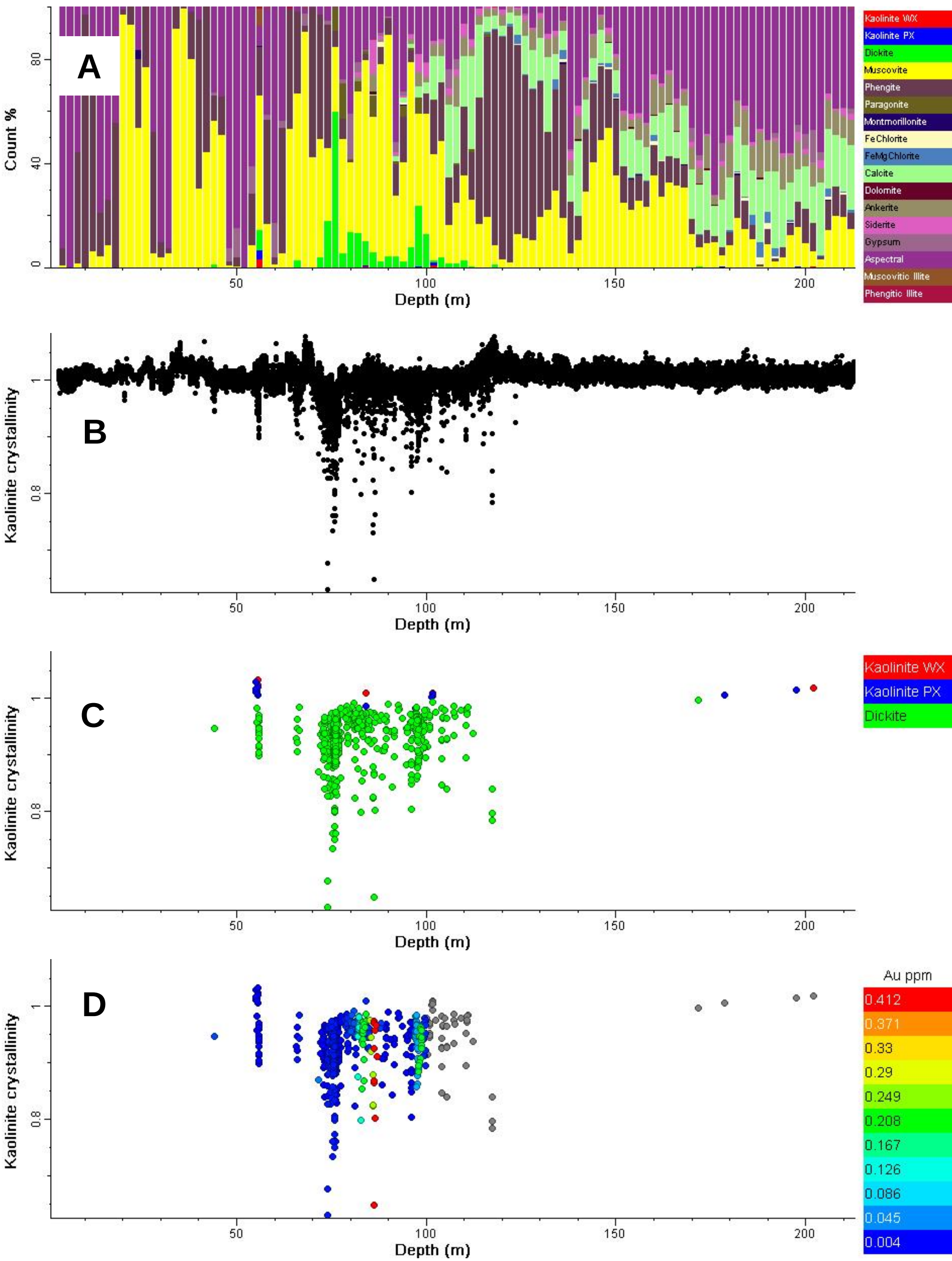
Drill hole 18189-LYN007

18189-LYN007

A. Dominant mineralogy per 2 m interval
B. Kaolinite crystallinity per sample.
C. Kaolinite crystallinity coloured by kaolin species
D. Kaolinite crystallinity coloured by Au assays.

Background mineralogy is dominated by white mica (yellow & brown in plot A) and carbonate (below 100 metres), with a sub-domain from 55-100 m of dickite, plus many intervals of “aspectral” “rotten” pyritic material and fine grey sediments.

The highest Au (plot D) and As grades are coincident with the presence of dickite (+ white mica).



18189-LYN007

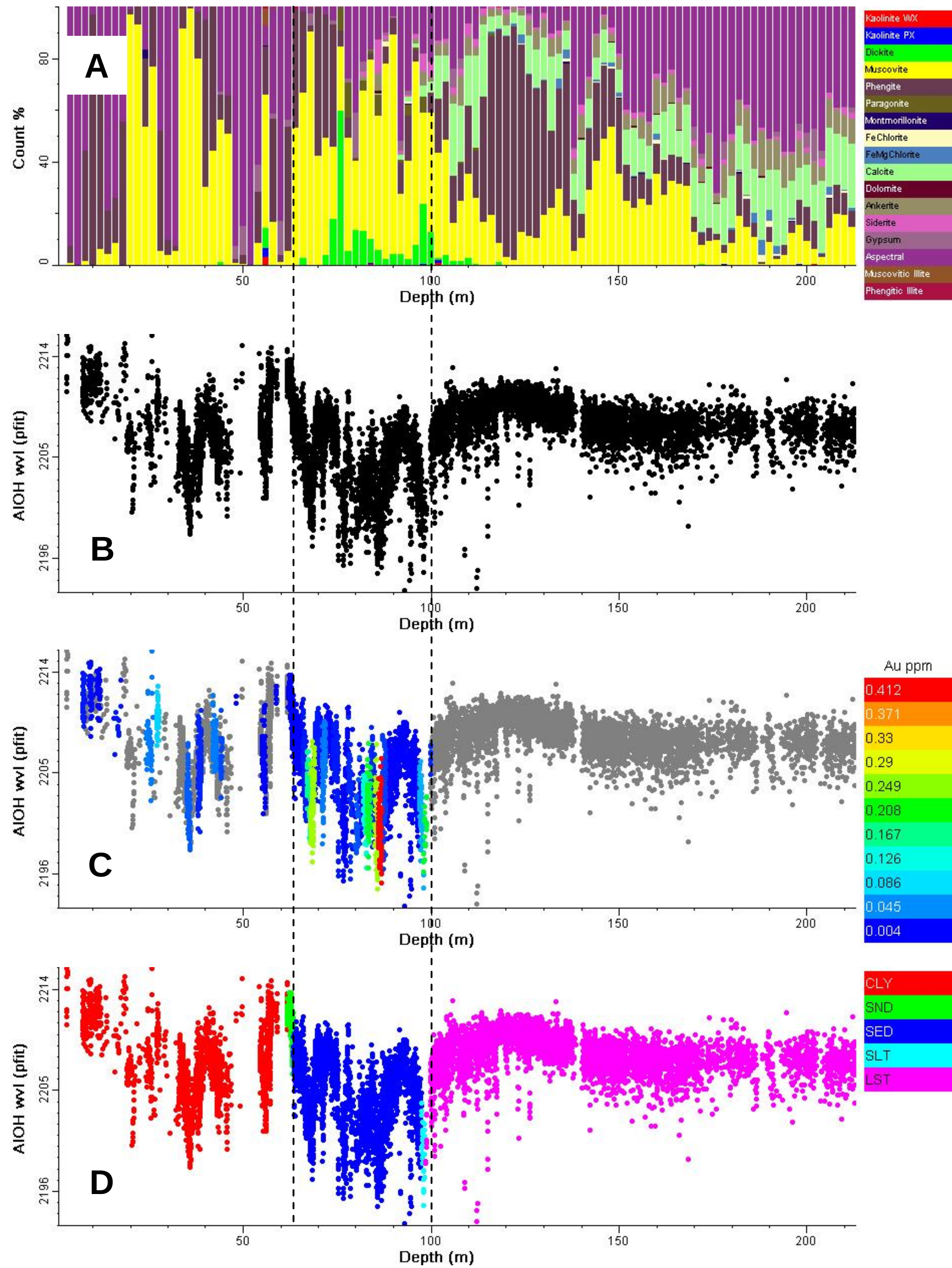
A. Dominant mineralogy per 2 m interval
B. White mica chemistry scalar.
C. White mica chemistry coloured by Au assays
D. White mica chemistry coloured by previously logged lithologies.

White mica forms in three domains:

(i) 0-53 metres where it is interleaved with black and rotten pyritic “aspectral” zones and has variable wavelengths,

(ii) from 53-100 m where it is dominantly of a shorter wavelength, occurs with dickite and hosts the Au and As assays and occupies the logged sediment unit. Within this unit the Au zones are associated with the generally shortest wavelengths micas, though not vice versa.

(iii) in the limestone unit when it grades from the short to long (slightly phengitic) wavelengths from 100-110 m and is interleaved with carbonate beds and veins.



18189-LYN007

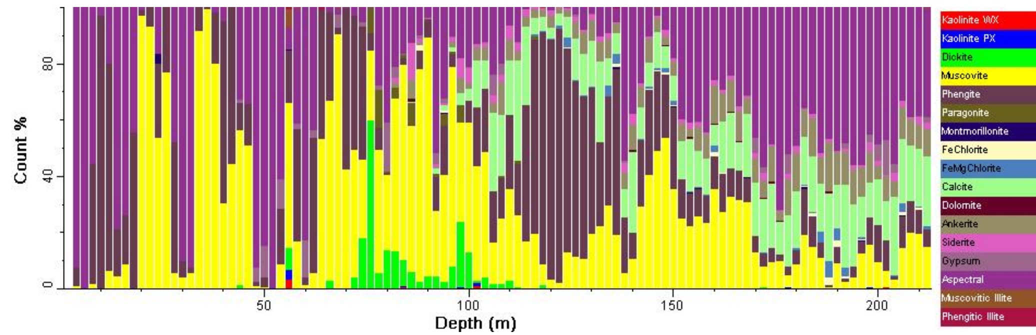
A. Dominant mineralogy per 2 m interval
B. White mica chemistry scalar
C. False colour composite using 920, 1413, 2178 nm bands in RGB (see Appendix).

The wavelength of the AlOH band near 2200 nm (plot B) is influenced by both mica chemistry, and kaolin group mineralogies.

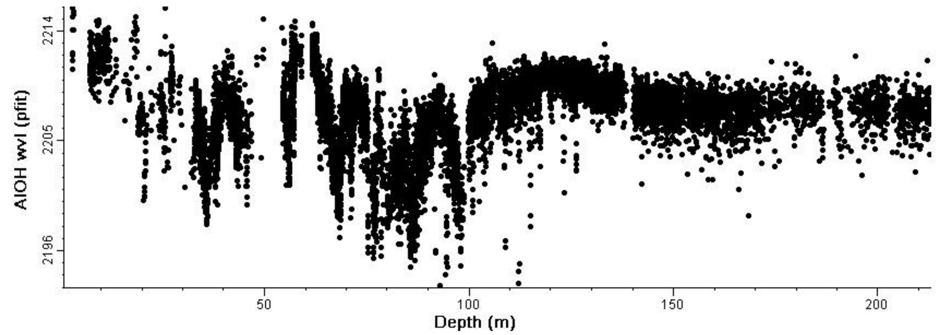
Plot B shows only those samples classified as <u>dominantly</u> white mica-bearing defining a clear-cut domain from ~48-105 metres (arrowed) where only dickite occurs.

In plot C carbonate rocks account for the green colours in the lower half of the hole. Bright green samples are carbonate veins. Light blue samples are dickite and muscovite bearing. Very dark samples at the top of the hole represent the bright weathered clays. Red samples are goethitic.

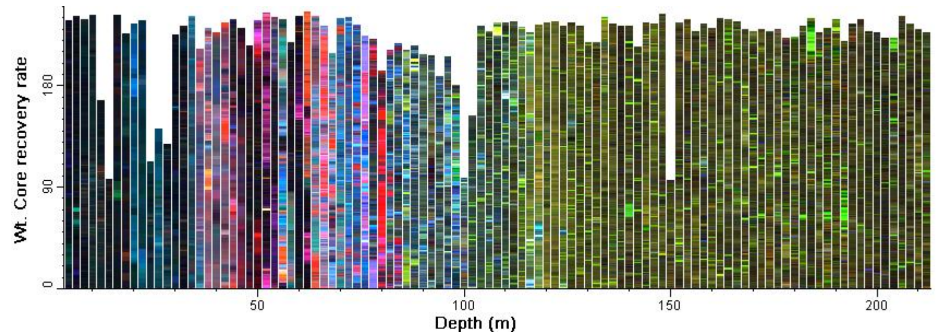
A



B



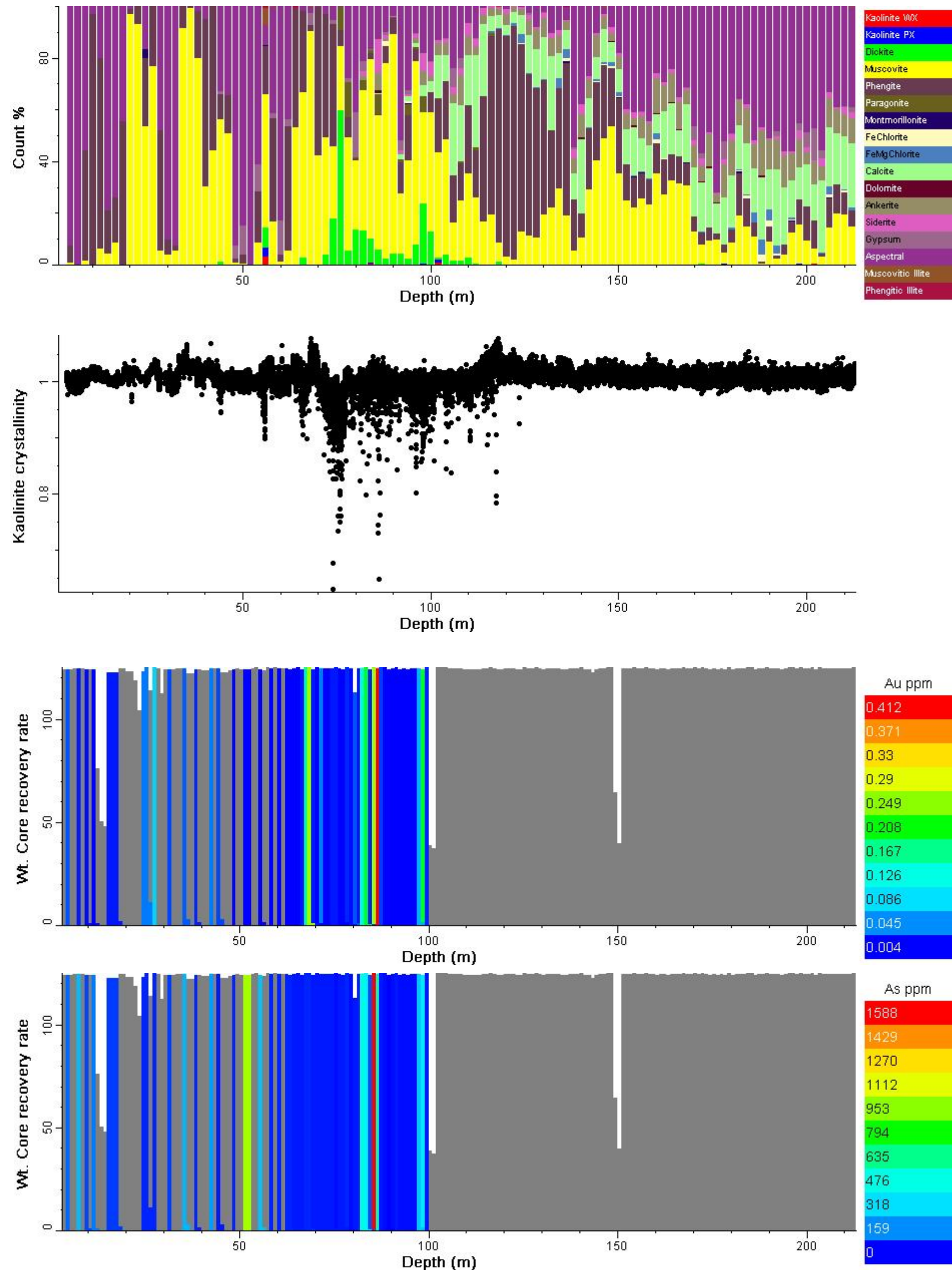
C



18189-LYN007

A. Dominant mineralogy per 2 m interval
B. Kaolinite crystallinity per sample.
C. Au assays in ppm per 1 m interval
D. As assays in ppm per 1 m interval

These plots indicate that the highest gold and arsenic assays occur in intervals dominated by white mica and dickite. Values are however restricted to individual metre samples and there is little broader concentration suggesting an element of nuggeting in the results. Comparing the plots suggests that assaying deeper into the hole to nearer 120 m might have yielded further weak but above-background intercepts.



18189-LYN007

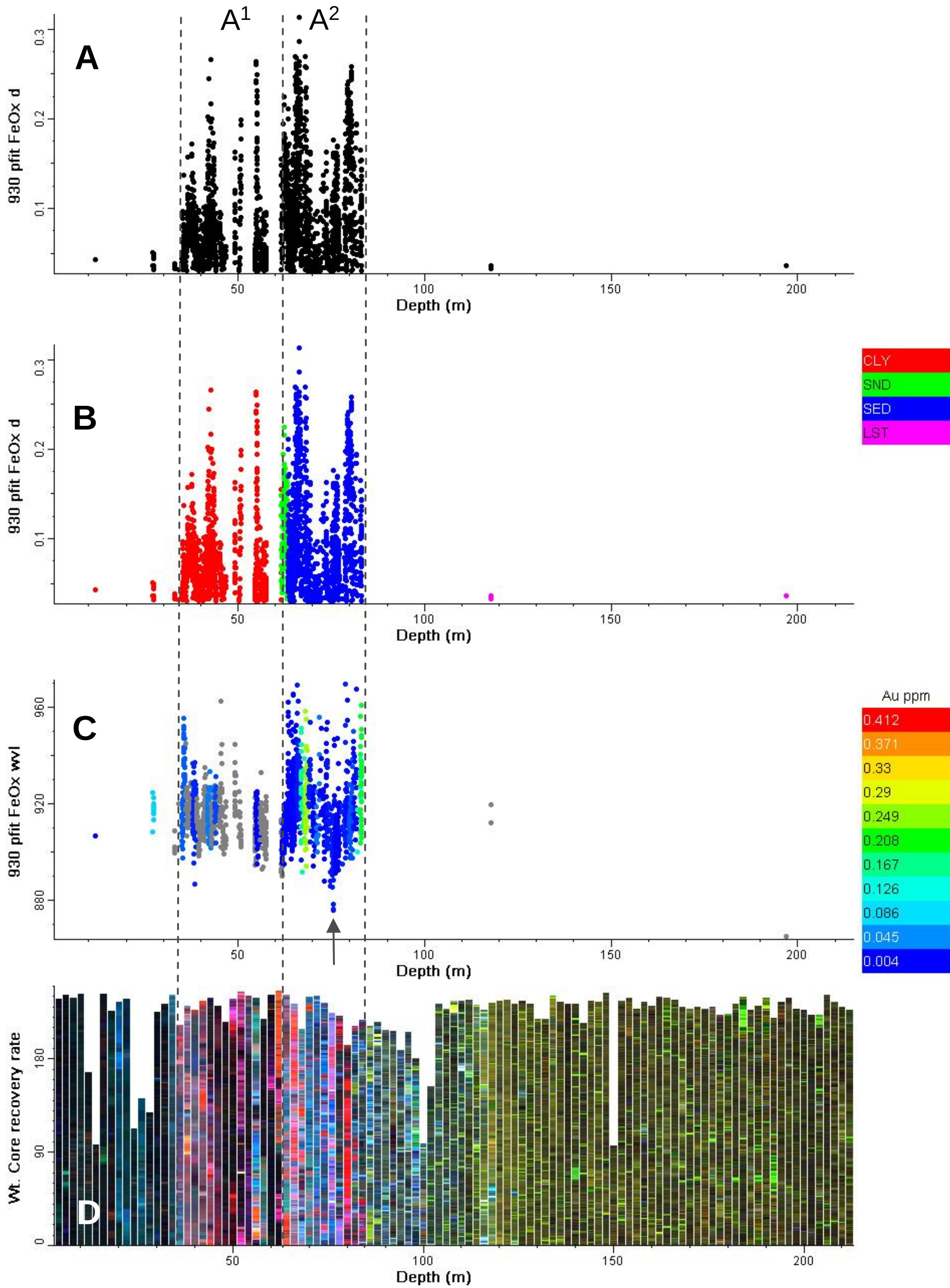
A. Hematite / goethite intensity index
B. Hematite / goethite intensity index coloured by logged lithologies
C. Hematite / goethite intensity index coloured by Au assays
D. False colour composite using 920, 1413, 2178 nm bands in RGB.

Mostly goethitic iron oxides occur from 35-83 metres (plot A) reaching their maximum from 63-83 m. This lower interval (A^2) equates to the upper half of the logged SED unit (plot B) while the upper portion of goethite occurrence in the logged Clay zone (A^1) looks light a weathering effect of a different lithology.

The Fe^{3+} absorption wavelength (C) confirms a largely goethitic composition, but indicates a few hematitic occurrences near 73-75 metres within zone A^2 (arrowed). Hematite was seen to be important in the Sulphide Creek holes.

Some of the Au and As occurs in the zone (A^2) in plot B.

In plot C the most goethitic bearing intervals are coloured red.



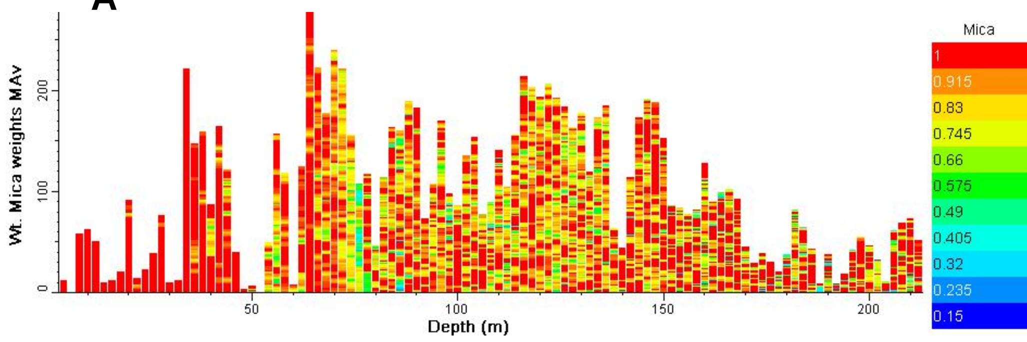
18189-LYN007

A. Proportion (weights) of all white mica bearing samples per 2 m interval
B. Proportion (weights) of all kaolinite group samples per 2 m interval
C. Au assays per 2 m interval in ppm.

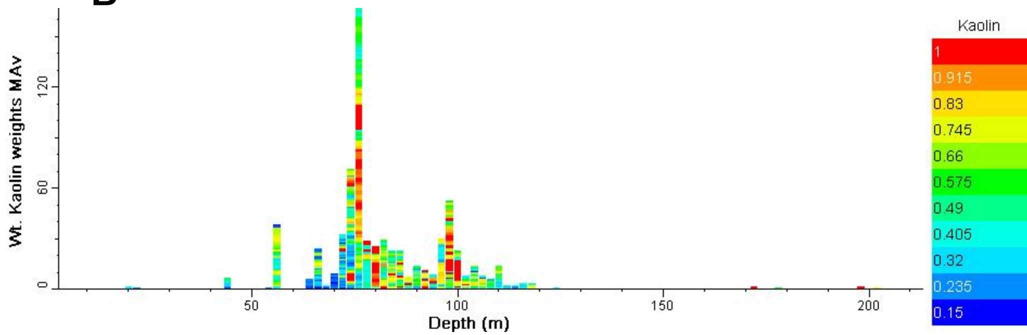
The highest Au and As assays (plot c) occur primarily in the interval where kaolin group minerals (mainly dickite) concentrate (plot B).

White micas show a gradual depletion in overall distribution in inverse relation to the increase in carbonate and chlorite minerals below 120 m.

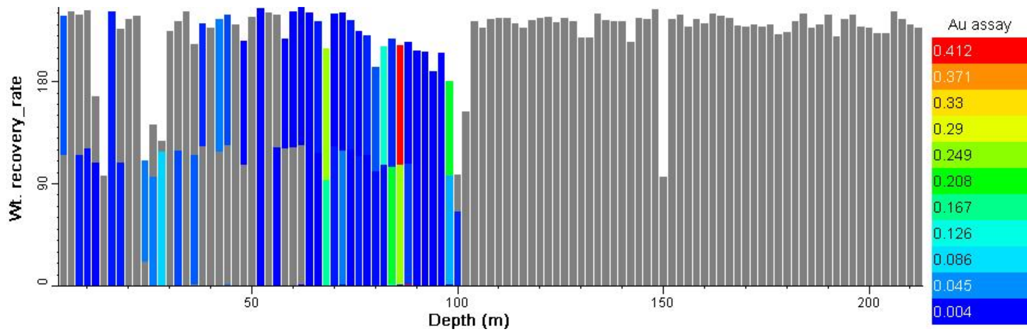
A



B



C



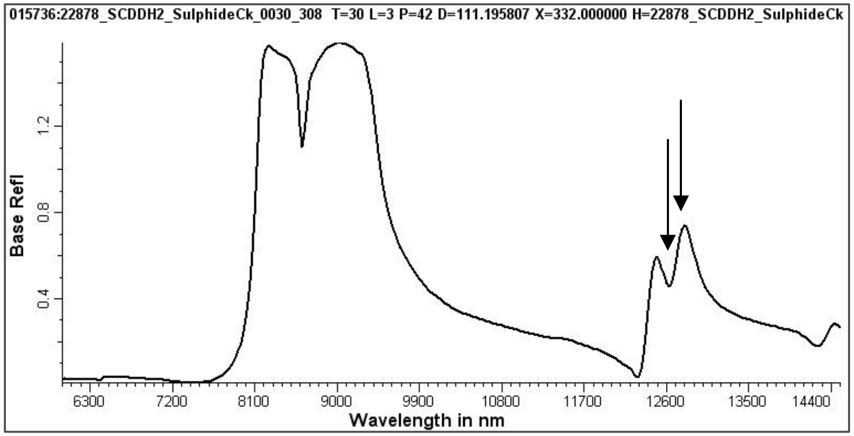
18189-LYN007

A

A/B/C - Pure quartz development + Au

In plot (C) the 12800 minus 12640 pure quartz index (arrowed in plot B) is coloured by the Au assays.

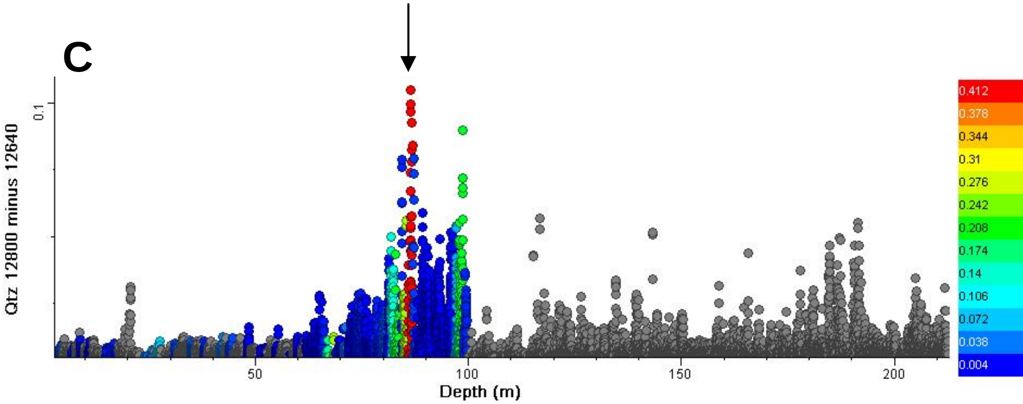
B



The core image in A comes from the interval of maximum Cu grade (arrowed in C).

The highest assays of both Au and As occur in the interval of maximum, purest quartz developed.

C



High quartz indices lower in the hole occur as veins in the carbonate unit (not assayed).

18189-LYN007

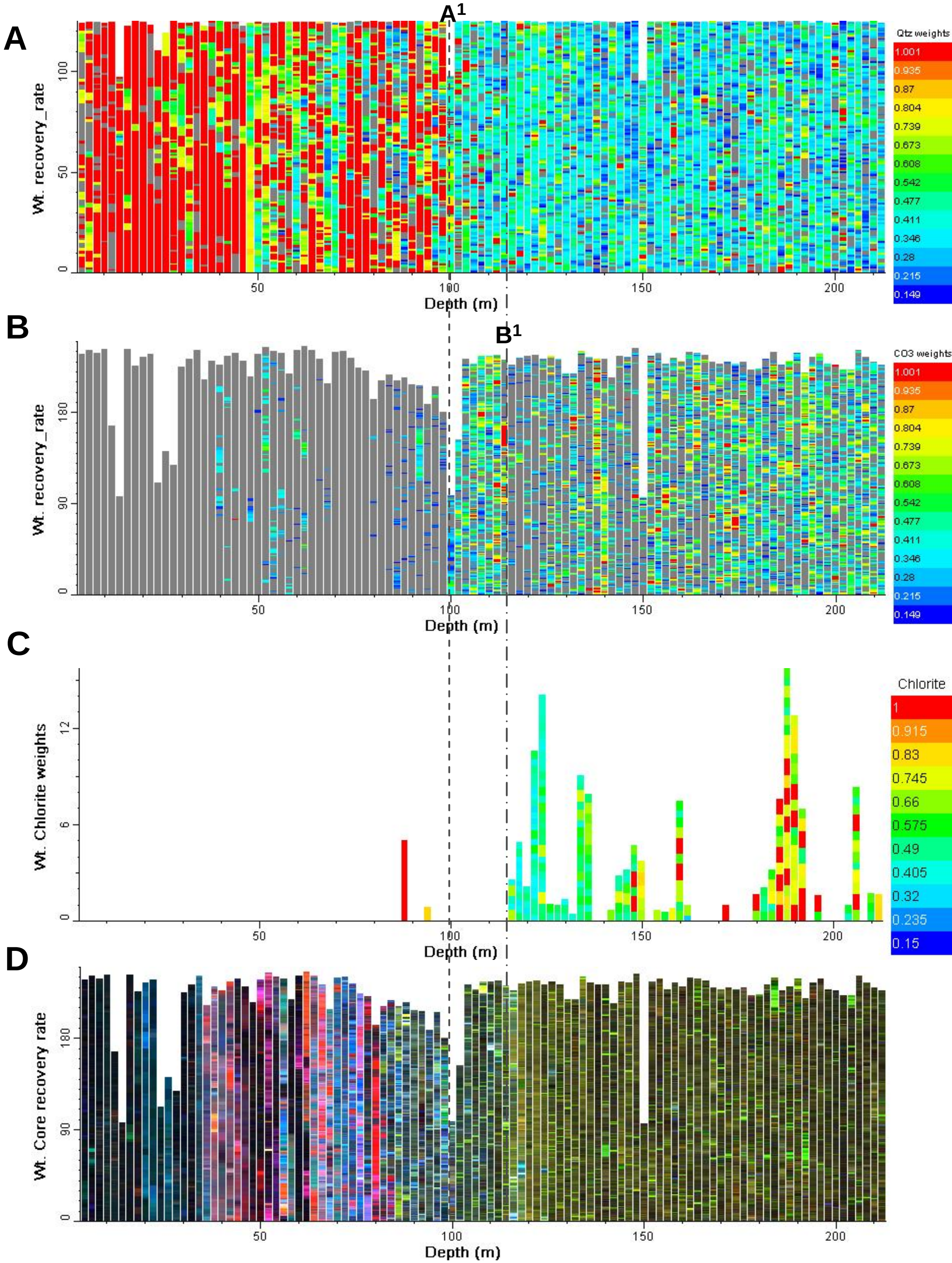
A. Quartz weights per 2 m interval
B. Carbonate weights per 2 m interval
C. Chlorite weights per 2 metre interval
D. False colour composite using 920, 1413, 2178 nm bands in RGB.

The boundary at 100 metres (A[1]) between the sediments and the limestone is clear in this plot of quartz (A) versus carbonates (B).

Plot C indicates that there is also sporadic chlorite developed in the limestone unit, along with the mica previously shown two pages previously.

The limestone unit also appears to contain minor albite.

Between 100 and 115 m in plots B & D a sub-domain boundary (B[1]) is evident in the carbonate and colour composite plots (see also next page).



18189-LYN007

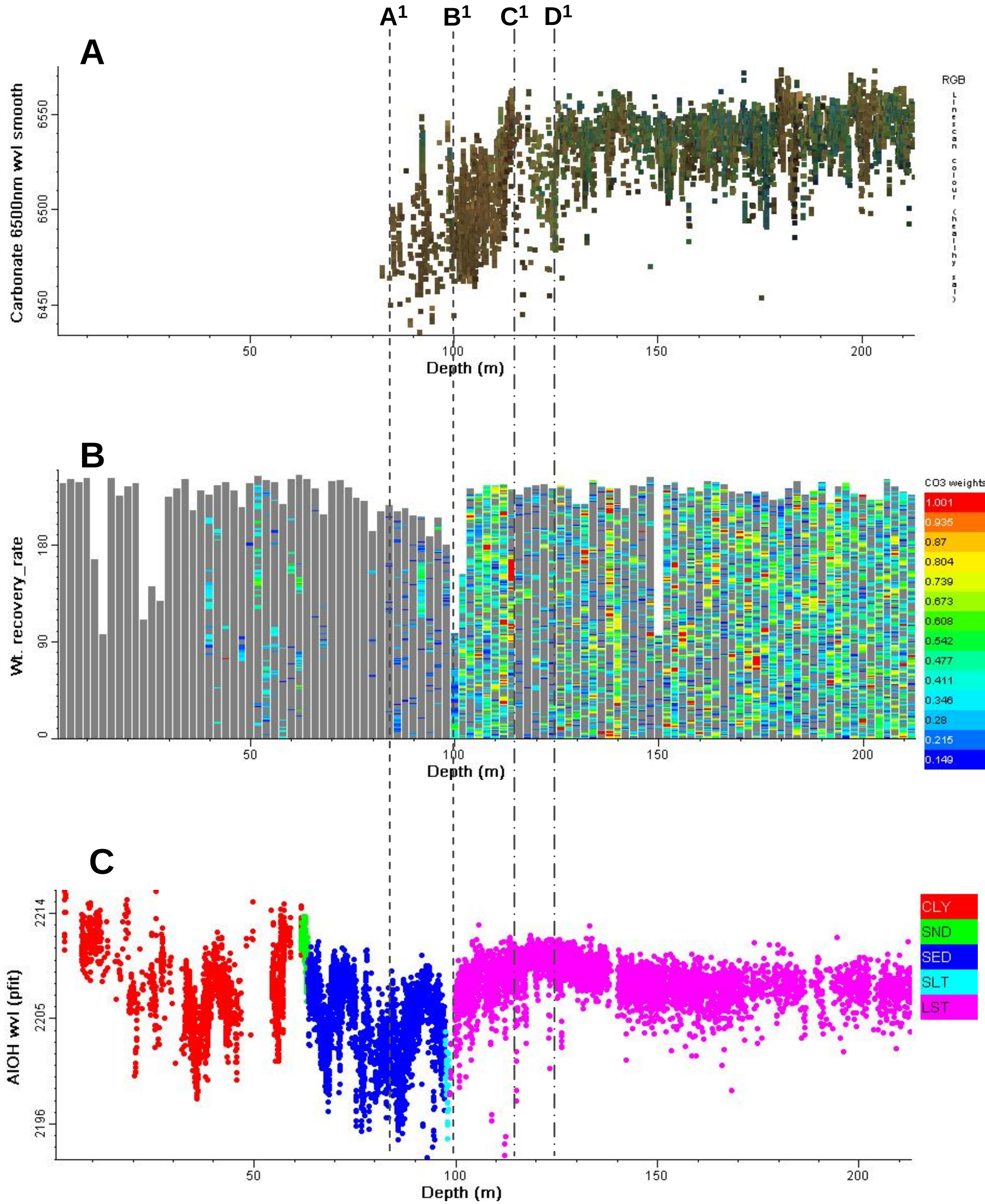
A. Carbonate 6500 nm wavelength coloured by the core false colour composite
B. Carbonate weights per 2 m interval
C. White mica AlOH wavelength.

Plot A illustrates compositional variation in the carbonates of the lower limestone unit. Below ~126 m the composition is fairly stable, but from 83-100, then 100-115 m and then 115-126 m three distinct zones (A^1, B^1, C^1) of varying wavelength and abundance are evident. This compositional “facies” change at the top of the carbonate unit was also observed in LYN004.

Some of the carbonate zones are distinctly browner than others.

In plot C it is evident that these zones are also reflected in the white mica chemistry plot, particularly the interval from 100-115 m.

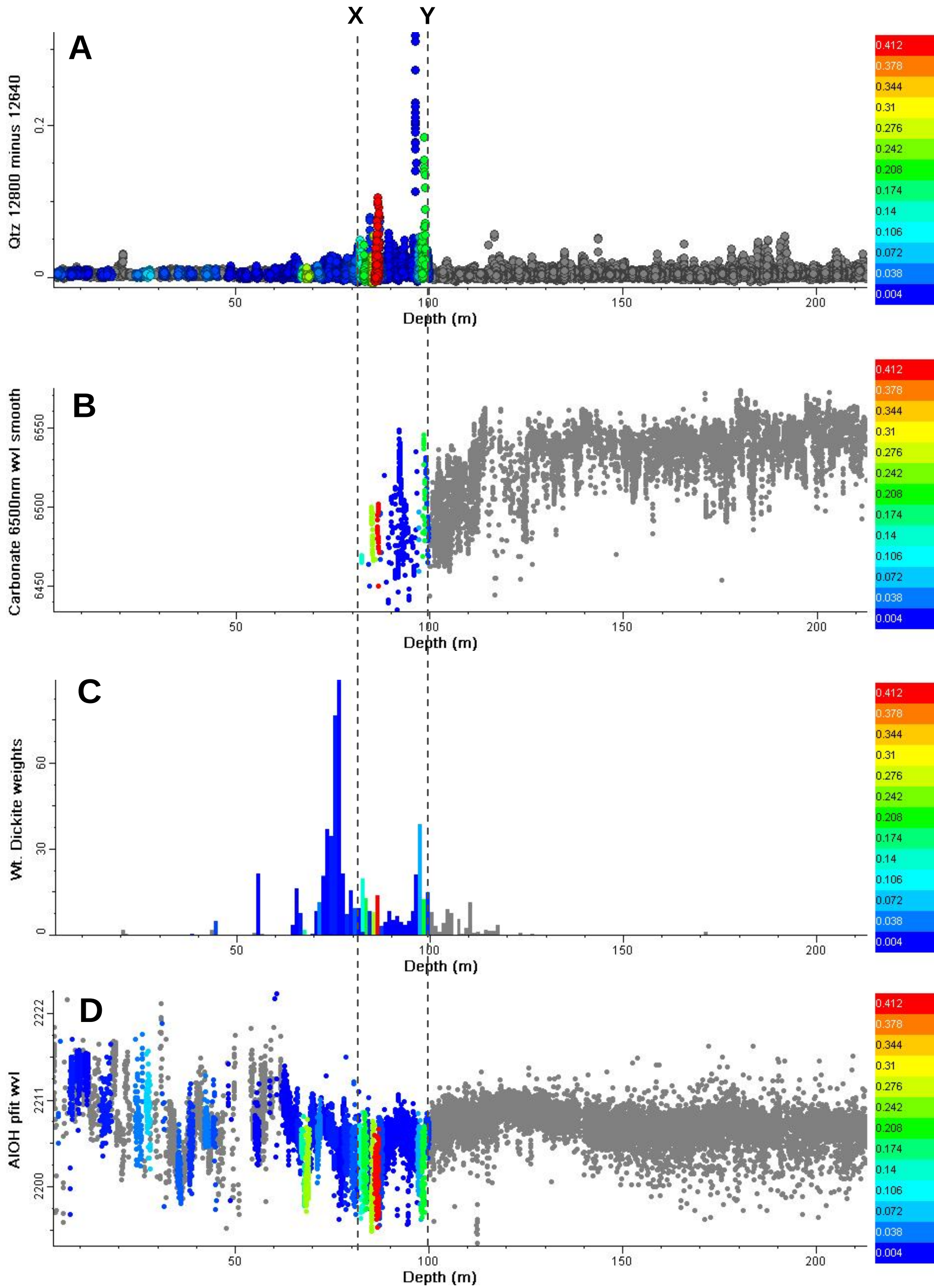
It is not clear if these changes reflect primary changes in lithological composition or proximal alteration effects in the footwall to the goethitic mineralised zone above 83 m.



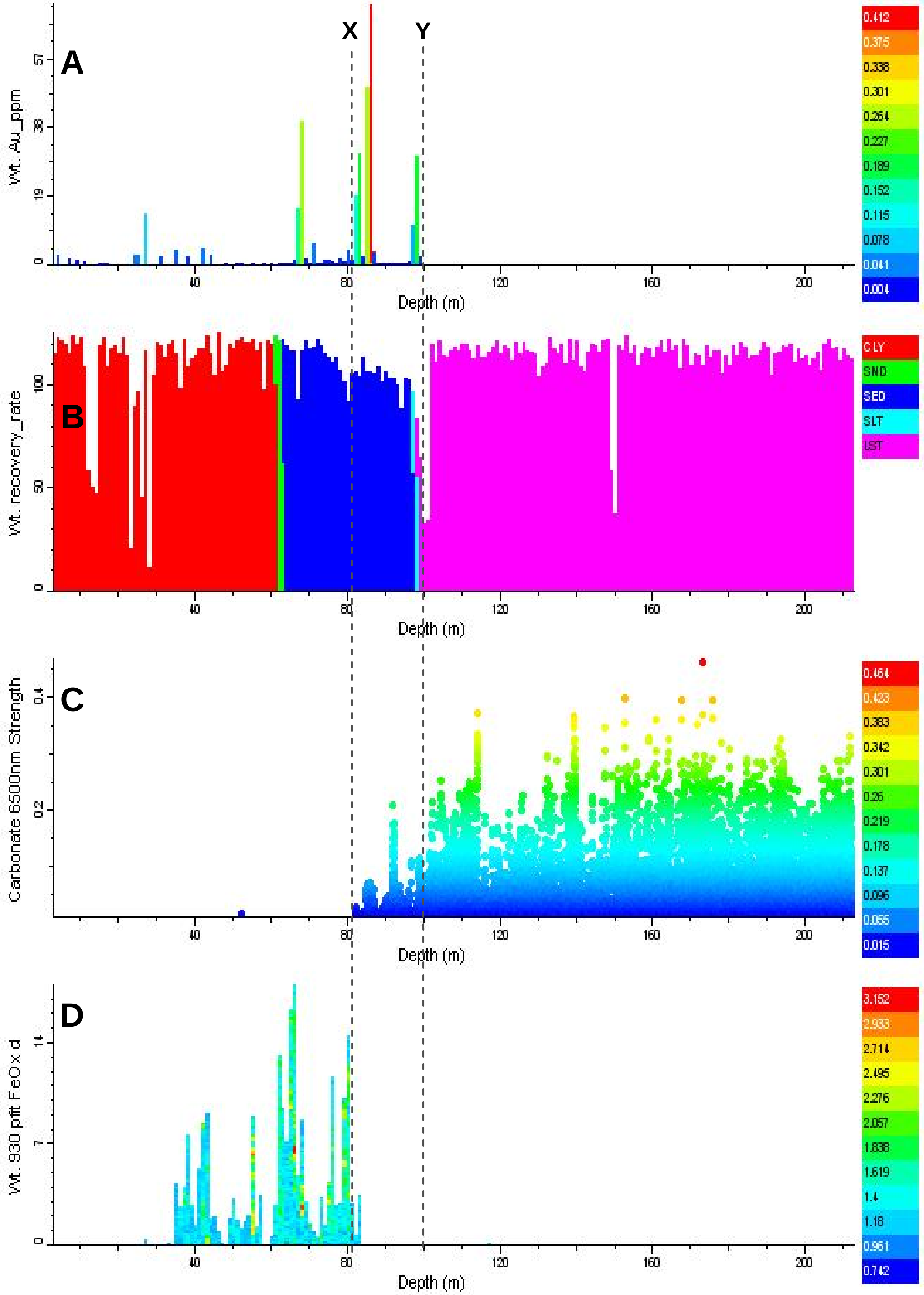
18189-LYN007 Summary - 1

From the foregoing analysis it appears that the most of the Au & As assays are spatially associated with four main characteristics that are unique throughout the length of this drill hole:

1. a relatively increased level of quartz development (A),
2. the shortest wavelengths of carbonate composition (B),
3. they fall within a domain of specific dickite and overall kaolin group development (C), and
4. occupy intervals defined by the shortest wavelength composition of white micas (D).



18189-LYN007 Summary - 2

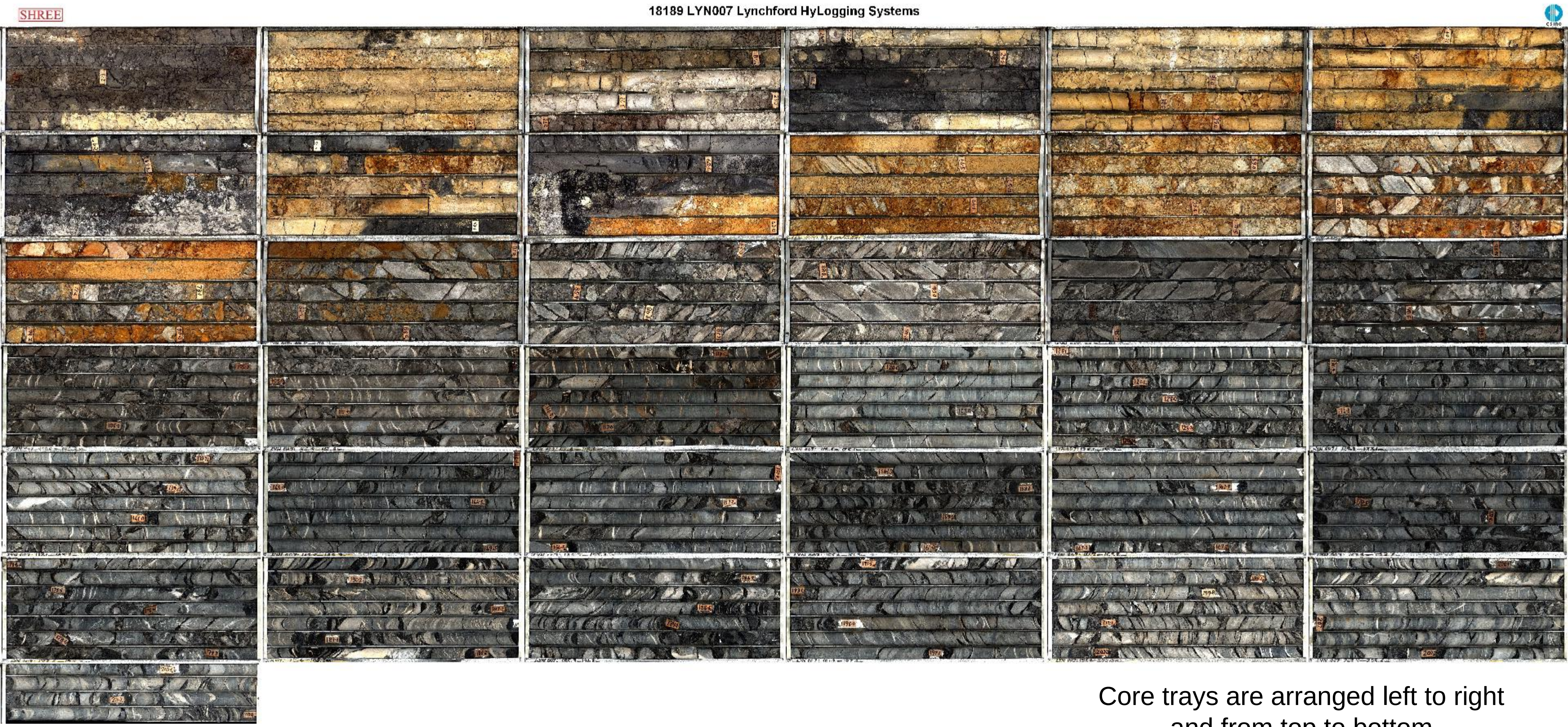


Furthermore while the Au & As assays appear to fall mostly within the logged sedimentary unit it is clear that both the carbonate development below (plot C) and the goethite development above (plot D) transgress the boundary of the SED unit (plot B) and possibly divides it into two.

What is unclear from the spectroscopic data alone is whether these observations reflect primary lithological controls, overprinting hydrothermal influences and / or deep weathering along major structural discontinuities.

However, there seems little doubt that the extremely broken core and poor recoveries reflect considerable structural dislocation, near a ductility contrast (a sedimentary unit and the limestone) that may have focused the hydrothermal quartz and dickite, modified the primary carbonate and white mica compositions, and introduced significant iron oxides.

18189-LYN007 - Drill hole mosaic



Core trays are arranged left to right
and from top to bottom

Recommendations as per Sulphide Creek Drill Hole Analysis

- XRD Validation of the dickite versus kaolinite and the intense goethite is recommended. Dickite can form through diagenetic processes but is considered here to be hydrothermal, and because of its extensive development, little previous recognition and strong association with Au assays validation is recommended to refine the local alteration model.
- Further analysis is required of the silica signatures which are known to be influenced by grain size and surface scattering effects. The observed variation in quartz development is confused by structurally-controlled core breakage and the strong clay / goethite development leading to a distinctive distorted silica signature and an *apparent* relative reduction in quartz in the mineralised zone.
- Spectroscopic mineralogical HyLogging achieves its greatest value when it can be integrated with, even conducted before or simultaneously with, conventional logging.
- Spectroscopic indices developed in this study can be exported to CSV files for import into 3D visualisation pages.
- A free TSG-Viewer is available from www.thespectralgeologist.com for examining the HyLogging and processed TSG data, including the core and tray images.

HUNTINGTON
HYPERSPECTRAL

Acknowledgements

Core scanning, initial masking and depth reconciliation was undertaken by staff of Mineral Resources Tasmania at their Mornington Core library in Hobart.

HyLogging, HyLogger and TSG are trademarks of the CSIRO.

Conversations and local advice from Robert Reid is acknowledged.

Dr Jon Huntington
Huntington Hyperspectral Pty Ltd
ABN 89 132 966 584

Contact

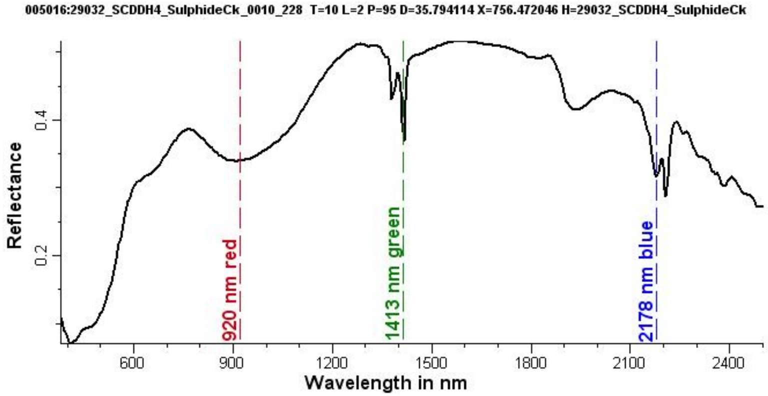
M +61 (0)408 221 934

34 Craiglands Avenue
Gordon NSW 2072
Australia

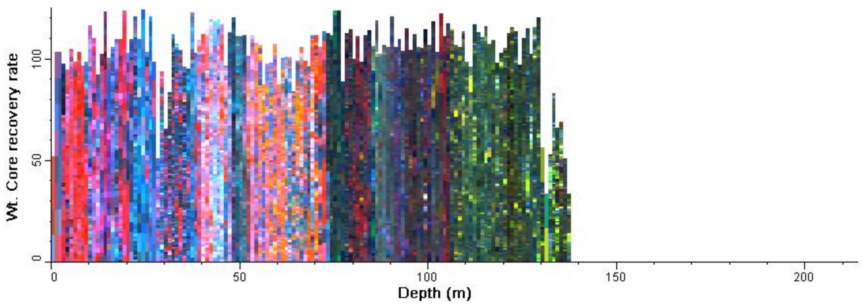
Appendix - Drill Hole Comparisons

False colour plots of all three Lynchford drill holes at the same scale and 1 m intervals.

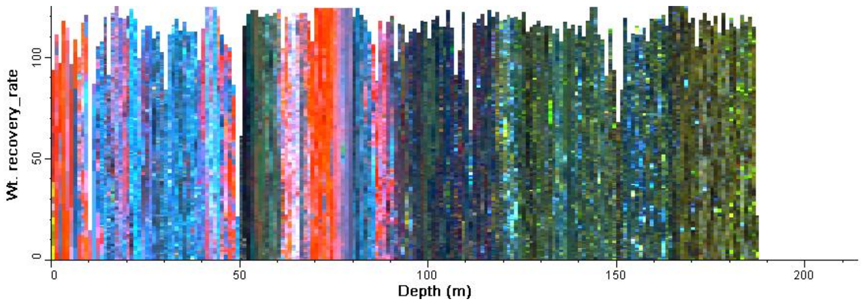
A typical dickite + goethite reflectance spectrum below illustrates the position of three spectral bands (of many possible) used in making these images. Hull quotient versions of the spectra were used to increase colour contrast. The colour look-up tables used with these bands have been inverted such that a relative absorption in a band rendered in red, for example, will appear red, or contribute red to, the other wavebands and colours used in the image. Significance of colours as previously indicated. Very dark or black colours signify little or no relative mineral absorptions.



LYN003



LYN004



LYN007