

GEORGIAN  
BAY  
Fm

- long c-up sequence grey to dark grey mudstone with low proportion 0-5 cm pinstripe very fine-grained sandstone to siltstone beds, which have sharp erosional bases, burrow fills, few rip ups, all rxl, all bioturbated, small sandstone-filled *Chondrites*-like burrows, very organic rich at base with horizontal lamination - ss:slts=1:30 at base, 1:10 at top.

BLUE  
MOUNTAIN  
Fm

- c-up sequence dark grey mudstone with very thin siltstone to very fine-grained sandstone beds, minor lamination, minor burrowing, ss:slts=1:8 at top, very fine-grained sandstone beds have sharp bases, rxl and horizontal burrows.

- dark grey mudstone, horizontal lamination, minor burrowing, organic rich, few thin silty beds in upper 1 m.

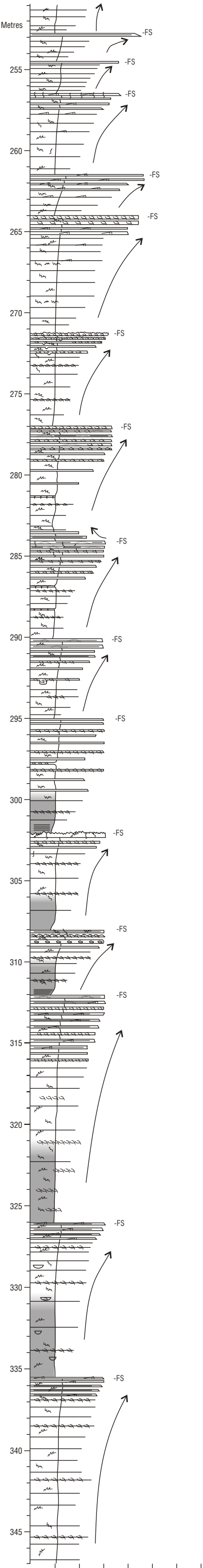
- dark grey mudstone slightly burrowed, general horizontal laminated, uniform, few 0-3 cm very fine-grained sandstone beds near top, organic-rich.

COLLINGWOOD  
Fm

- black mudstone, organic-rich, laminated to massive.

LINDSAY  
Fm

- pale grey fossiliferous fine to medium crystalline limestone, nodular, mottled, f-up with increase of dark grey organic rich shale beds with diffuse bioclastic horizons with fossil fragments floating in mud.



- thinly interbedded greenish grey mudstone, very fine- to fine-grained ss, ss:slts= 1:3, slightly c-up to 10cm, multistoried, fine to medium-grained ss with sharp base and top.

- thinly interbedded greenish grey mudstone, very fine- to fine-grained ss, ss:slts= 1:3,bioturbated, slightly c-up to 8 cm fine-grained ss with sharp base.

- c- up sequence of thinly interbedded greenish grey mudstone and very fine to fine-grained ss, up to 5 cm, sharp bases, horizontal lamination and rxl, upper bed has sharp top with mud filled vertical burrows.

- c- up sequence of thinly interbedded greenish grey mudstone and very fine to medium-grained ss, up to 5 cm, sharp bases, horizontal lamination and rxl, sharp top, burrowing.

- c-up sequence of thinly interbedded greenish grey mudstone and very fine-grained sandstone to siltstone with 2 bioclastic calcarenite beds at top, sandstone up to 10 cm, with sharp bases and scours, horizontal burrows, horizontal lamination and rxl, several horizons sandstone filled *Chondrites*, ss:slts=1:10 at base, 1:2 at top.

- c-up sequence thinly interbedded greenish grey mudstone and thin bioclastic calcarenite and very fine-grained sandstone to siltstone up to 5 cm, sharp bases with scours and gutter casts, horizontal *Planolites* burrows, horizontal lamination, fairly gradational tops, except upper calcarenite have sharp irregular tops - ss:slts=1:10 at base, 1:3 at top.

- c-up sequence thinly interbedded greenish grey mudstone and bioclastic calcarenite and very fine-grained sandstone to siltstone, few sandstone beds have horizontal/LAD lamination and HCS - calcarenite up to 10 cm with sharp bases and tops, large shell fragments, abundant *Planolites* burrow - ss:slts=1:15 at base, 2:1 at top, one 2 mm white ash bed - bioturbated.

- c-up sequence thinly interbedded grey mudstone and thin very fine-grained sandstone to siltstone and abundant bioclastic calcarenite - sandstone beds up to 10 cm with erosional bases, amalgamation, shale rip ups, horizontal and LAD lamination, HCS, vertical spreite burrows - large horizontal *Planolites* - 2 very thin 1 mm white ash beds - thin f-up sequence at top of a few beds.

- c-up sequence thinly interbedded grey mudstone and thin very fine-grained sandstone to siltstone and bioclastic calcarenite, ss:slts»1:10 at base, 1:1 at top, sandstone up to 15 cm with sharp bases, more gradational tops, horizontal lamination, HCS, few calcarenite, one bed has deep gutter cast filled with bryozoans - lots of large horizontal *Planolites*.

- thinly interbedded grey to dark grey mudstone and very fine-grained sandstone to siltstone and bioclastic calcarenite ss:slts»1:3, up to 10 cm thick, sandstones have sharp erosional bases and gradational tops, horizontal lamination - large horizontal *Planolites* burrows in shales - thin 2 mm pale buff ash bed.

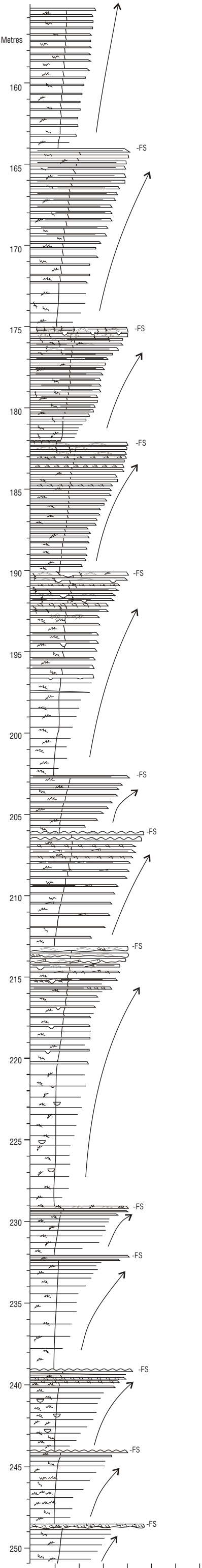
- c-up sequence thinly interbedded grey to dark grey mudstone and very fine-grained sandstone to siltstone and bioclastic calcarenite, bioturbated, up to 12 cm, sharp bases and tops, top bed is amalgamated and has very irregular sharp top and heavily burrowed, few coarse beds.

- c-up sequence thinly interbedded grey to dark grey mudstone and very fine-grained sandstone to siltstone and bioclastic calcarenite, bioturbated, up to 10 cm, sharp bases and tops, horizontal lamination, amalgamated beds with trains of shale rip ups, large bryozoan fragments - top very sharp with shale filled vertical burrows.

- c-up sequence of thinly interbedded grey to dark grey mudstone and very fine-grained sandstone to siltstone and bioclastic calcarenite, up to 10 cm thick, sharp bases with shale rip-ups and rxl and possible HCS and more gradational tops - near base are abundant stringers of fossil fragments in mudstone.

- slightly c-up sequence thinly interbedded grey to dark grey sandstone and 1-5 cm very fine-grained sandstone to siltstone and bioclastic calcarenite, with sharp erosional bases, horizontal lamination and rxl and burrows - mudstone bioturbated - calcarenite very muddy and burrowed and have brachiopod/bryozoan/crinoid fragments floating - also gutter casts - ss:slts»1:20 at base, 1:3 at top.

- thinly interbedded dark grey to grey mudstone and 1-5 cm very fine-grained sandstone to siltstone beds and bioclastic calcarenite, slight c-up at top, ss:slts=1:10 far most, 2:1 in upper 1 m, mudstone general bioturbated and burrows in sandstone, sandstones have horizontal lamination and rxl, one calcarenite near base has fossil fragments disposed in mud.



QUEENSTON  
Fm

- c-up sequence red silty mudstone and very fine- to fine-grained sandstone, burrowing horizontal throughout sandstone beds up to 15 cm with sharp flat bases, horizontal lamination, ss:slts=1:5 at base, 2:1 at top - apparently all diagenetically altered.

- c-up sequence interbedded reddish silty mudstone and very fine- to fine-grained sandstone, no calcarenite, beds up to 10 cm, ss:slts=1:1 at base, 3:1 at top, sharp bases with horizontal lamination and HCS, upper bed has gutter cast base and sharp top and vertical burrows - vertical and horizontal burrows are common throughout.

- c-up sequence thinly interbedded greenish grey silty mudstone and very fine- to fine-grained sandstone and minor bioclastic calcarenite, top of sequence is 5 cm hard massive green mud (ash?), beds up to 10 cm, sharp based, calcarenite increase to top, red staining of sandstone beds at top, ss:sl=1:1 at base, 5:1 at top, horizontal lamination and HCS - few vertical burrows at top.

- c-up sequence thinly interbedded greenish grey silty mudstone and very fine- to fine-grained sandstone and bioclastic calcarenite, ss:slts=1:3 at base, 3:1 at top, beds up to 20 cm with sharp bases and gutter casts, abundant horizontal Planolite/Chondrite burrows and more vertical burrows toward top, upward increase in amalgamated beds and bioclastic lags of large bryozoan/coral/brachiopod fragments up to 2 cm, mostly horizontal lamination and HCS, no rdl - one bed contorted lamination.

- c-up sequence thinly interbedded greenish grey silty mudstone and very fine to fine-grained sandstone with sharp bases and shell lags, beds up to 15 cm, sharp top, abundant horizontal burrows, ss:slts=1:2 at base, 2:1 at top.

- c-up sequence thinly interbedded grey silty mudstone and very fine- to medium-grained sandstone and bioclastic calcarenite beds up to 10 cm, ss:slts =1:5 at base, 1:1 at top, sharp based and f-up with horizontal lamination and rdl and HCS, calcarenites of bryozoan/coral/brachiopod fragments - sharp top with preserved ripples.

GEORGIAN  
BAY  
Fm

- thick c-up sequence interbedded grey mudstone and very fine- to fine-grained sandstone and minor lags of bioclastic calcarenite, ss:slts=1:5 at base, 2:1 at top, sandstone beds up to 20 cm with sharp bases and shell lags and sharp tops and HCS and amalgamation, minor rdl - abundant Planolite/Chondrite burrows, throughout, with vertical burrows near top - sharp top, deep guttercasts.

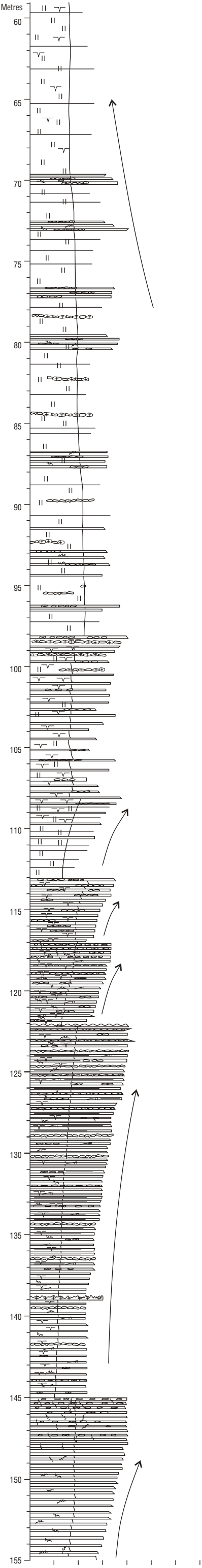
- c-up sequence thinly interbedded greenish grey mudstone and very fine- to fine-grained sandstone beds, sharp bases with gutter casts, HCS, upper bed has sharp top with large horizontal burrows, 3-5 cm.

- c-up sequence thinly interbedded greenish grey mudstone and very fine- to fine-grained sandstone beds, sharp bases and tops, horizontal lamination, burrowing, up to 3 cm.

- c-up sequence thinly interbedded grey mudstone and very fine-grained sandstone to siltstone with few bioclastic calcarenites - ss:slts=1:2, several small steep sided scours with lags of shale rip-ups, abundant tiny horizontal Chondrites, sharp top with preserved ripples.

- c-up sequence thinly interbedded grey mudstone and very fine-grained sandstone to siltstone, up to 3 cm, very thin, thoroughly bioturbated, many coarser beds just horizons of sandstone filled *Planolites/Chondrites*, ss:slts=1:3 - sharp top with preserved ripples.

- thinly interbedded greenish grey mudstone and very fine-grained sandstone to siltstone c-up to 8 cm fine- to medium calcarenite, ss:slts=1:2, beds up to 1 cm, abundant *Planolite/Chondrite* - upper bed has scoured base, large brachiopod fossil fragments and sharp top, burrows.



- thick red silty mudstone with few thin very fine-grained sandstone, massive, uniform, blocky, abundant slickensides, pedogenic, abundant desiccation cracks, abundant tiny green oxidation points and green mudstone horizons with diffuse boundaries, slightly higher sandstone content at top.
- thick red and green muddy to sandy siltstone with thin to thick greenish grey very fine- to fine-grained sandstone beds up to 20 cm, ss:silts»1:10, sandstone tend to occur in bundles, siltstone are massive, blocky, uniform, pedogenic - common thin horizons of nodular gypsum - sandstone have sharp bases and f-up with rip-ups and minor tiny Chondrites like burrows.
- thinly interbedded red muddy siltstone and greenish very fine- to fine-grained sandstone, very calcareous, ss:silts»1:3, - siltstones are massive, uniform, with slickensides - sandstones have sharp bases, rip-ups and gradational tops - desiccation cracks, horizons of gypsum nodules near top.
- slightly c-up sequence of red massive blocky, pedogenic silty mudstone, sandier upward, with thin greenish very fine- to fine-grained sandstone beds - no burrowing, abundant red shale rip-ups - no desiccation cracks until upper 2 m.
- slightly c-up sequence thinly interbedded red muddy siltstone to sandy siltstone and greenish very fine-grained sandstone up to 30 cm thick - desiccation cracks and red shale rip-ups throughout.
- slightly c-up sequence interbedded red muddy siltstone to silty mudstone and greenish grey very fine-grained sandstone up to 15 cm, ss:silts»2:1, sandstone have sharp bases, gradational tops, horizontal lamination and LAD and minor rxl - horizontal burrows and few large vertical burrows - desiccation cracks throughout - abundant red shale rip up lags and flat pebble rip-up conglomeratebeds.
- slightly c-up sequence interbedded red silty mudstone and greenish grey very fine- to fine-grained sandstone, small horizontal burrows throughout, apparent desiccation cracks throughout - abundant red shale rip-ups and some beds are rip-up flat pebble cgl - sandstones have horizontal and LAD lamination and some rxl - one 15 cm bed gypsum with sharp irregular top - upper bed has sharp rippled top.
- slightly c-up interbedded red silty mudstone and greenish grey very fine- to fine-grained sandstone, pervasive diagenetic alteration, sandstone beds 2-5 cm near base and 5-10 cm at top, fairly sharp bases, fining upward, gradational tops, abundant horizontal *Planolite/Chondrite* burrows throughout - near top are rip-up lags and large vertical burrows - ss:silts=1:3 at base, 2:1 at top.

UPPER ORDOVICIAN - SOUTHERN ONTARIO  
LINDSAY/BLEUE MOUNTAIN/GEORGIAN BAY/QUEENSTON/WHIRLPOOL/MANITOULIN/CABOT HEAD/REYNALES FMS  
OGS 83-1 Milton, lot 9, conc VII, Town of Milton, Halton Co. (top of Escarpment W of Milton)(1983)  
30M/12 Brampton 838212  
Lat. 41°32'N Long. 79°58'W  
General strike 335°, dip 1°SW



