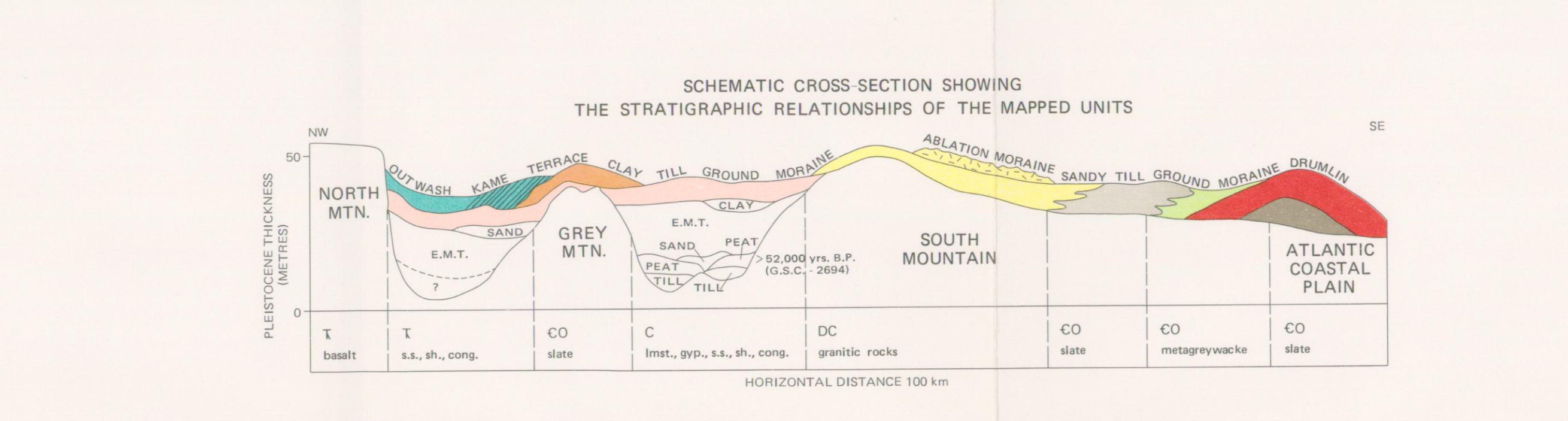


UNIT	DESCRIPTION	TOPOGRAPHIC EXPRESSION AND GEOLOGICAL RELATIONS	CLAY LITHOLOGY AND PROVENANCE	THICKNESS
OUTWASH	Washed sand and gravel, parallel and V-bedding	Flared plains, flat plains (lowland plains), elongate depositional mounds and ridges (ridge till)	A homogenization of local till clasts	
ICE CONTACT STRATIFIED DRIFT	Washed sand and gravel, slight changes in grain size between beds, faceting, soil and till stratification	Shoofly ridges (sills), knobs and kettle topography on valley margins, (some terraces, scars)	A homogenization of local till clasts	
SANDY TILLS (mainly sand BR, silt 10%, clay 5%)				
ABLATION TILL	Surface boulders may represent matrix-less ablation till, rounded and angular clasts, sandy matrix, sand and siltstone sometimes faceted	Knob and kettle topography, (thomsonic mounds)	Usually contains a greater % of faceted (ablation) clasts than the underlying basal melt-out or lodgement phase (15-20%)	2-10 m, av. 5 m
GRANITE TILL (mainly silt)	Orange-brown (10 YR 5/6), silty, yellow-brown (10 YR 5/6), loose, angular, coarse sand clasts (drumlin facies), small clasts, but in some cases compacted with a finer matrix	Topography primarily bedrock controlled. Bedrock (granite) developed on Passaic, blanket of the Atlantic rocks, can occur as a thin, wedge or veneer on drumlins, can overlie Laurentian and Metabasals	The lithological facies of the sandy till sheet (granite facies) developed on Passaic, blanket of the Atlantic rocks, can occur as a thin, wedge or veneer on drumlins, can overlie Laurentian and Metabasals	Till sheet 1-10 m, av. 3 m Drumlin facies 2-20 m
QUARTZITE TILL (mainly silt)	Light bluish grey (5 Y 7/1), loose, angular clasts, heavy coarse sand, siltstone in matrix (metabasals facies), (drumlin facies - can be relatively compact)	Drumlin facies may, in part, be lateral equivalents of Metabasals	granite till siltstone granodiorite Devonian granitic rocks	
SLATE TILL	Light olive brown (5 Y 5/6), loose angular pebble sized clasts		quartzite till 1. meta-gneiss 2. gneiss 3. quartzite 1. slate 2. schist	Meguma Group Carleton-Ontonarian White Rock Formation (Borden)
CLAY TILLS (mainly sand 50%, silt 30%, clay 20%)				
RANDON TILL	Olive grey (5 Y 3/2), compact, facies, clasts faceted, decomposed along fabric lines	Till sheet (ground moraine), in areas of Passaic and Carboniferous bedrock (granite), may be a facies equivalent of the loose, sandy till sheet	Oligocene, contains clasts of shale, limestone and sandstone (Horton & Meguma Group rocks 80-90%), mostly with a high percentage of rounded components, (e.g. from Laurentian Tills)	1-4 m, av. 2 m
LAWRENCE TOWN TILL	Heathen brown (10 YR 4/6), moderately compact, nonconformable, trace and minor Fe-Mn oxide staining on heavy planes, rounded basal inclusions, brownish clay fabric, clay dominated by kaolinite, drumlin facies is a sandy siltstone	Till sheet developed in areas underlain by Carboniferous bedrock (granite) and bearing clasts on the basal surface, usually sandy siltstone or veneer drumlin	Till sheet can contain up to 80% locally derived clasts, (granite facies) contains about 10-20% allochthonous components, (10-70 km transport)	Till sheet 2-4 m Drumlin facies 2-20 m
HARTLEN TILL	Medium-brown grey (10 YR 5/6), greyish brown (10 YR 5/2), compact, nonconformable, facies and massive, contains with basal inclusions clay dominated by kaolinite	Underlies and forms drumlins on the Atlantic upland	Oligocene, contains predominantly locally derived clasts (Meguma Group siltstone, gneiss with Fe-Mn oxide staining)	Drumlin 1-20 m
EMT EAST MILFORD TILL	Olive grey (5 Y 3/2), extremely compact, nonconformable, massive, contains some boulder horizons and basal inclusions (open in section only)	Till sheet developed on Carboniferous bedrock (granite), and on outcrops of Carboniferous rocks, forms the core of drumlins in these areas	Polystratic, contains allochthonous clasts (15-20%), forms the core of drumlins in these areas	Till sheet 5-10 m, av. 8 m Drumlin 10-20 m
BRIDGEWATER CONGLOMERATE	Moderate yellowish brown (10 YR 5/4), limited angular and rounded clasts of boulder and cobble sizes	Till sheet or remnants of ice contact stratified drift, now confined to terraces in river valleys	Siltstone-50-60%, granite-10-20%, vein quartz-0-5%	
BR BEDROCK OR THIN TILL VENEER	40% of the area is bedrock exposure and boulders			



TRIASIC	DEVONIAN	ORDOVICIAN	GAMBRIAN
Ls Lw	Lc Ld	Od Oe	Gd Ge

PLUTONIC ROCKS	MINERALS
Cu diorite porphyry	Antimony Sb
Dc granite	Arsenic As
Dg granodiorite	Baryte Ba
	Beryllium Be
	Cobalt Co
	Copper Cu
	Fluorine F
	Gold Au
	Gypsum
	Iron
	Lead Pb
	Manganese Mn
	Molybdenum Mo
	Silver Ag
	Tungsten W
	Zinc Zn

TILL TYPE	MEAN	RANGE	STANDARD DEVIATION	PERCENTILE				
LAWRENCE TOWN TILL AND EAST MILFORD TILL (Carboniferous & Triassic, secondary rock derived)	n=80	Cu	47	16-220	68	10-310	133	40-350
		Pb	29	10-216	75	74-720	119	32-812
GRANITE TILL (Devonian granitic rock derived)	n=37	Zn	34	42	113	120	132	423
		Co	18	13-34	16	4-50	32	4-80
QUARTZITE and SLATE TILLS (Ordovician-Devonian metamorphic rock derived)	n=21	Co	3	23	10	40	23	84
		Ne	47	30-67	33	2-88	66	8-116

ELEMENT	MEAN	RANGE	STANDARD DEVIATION	PERCENTILE
Cu	47	16-220	68	10-310
Pb	29	10-216	75	74-720
Zn	34	42	113	120
Co	18	13-34	16	4-50
Ne	47	30-67	33	2-88
Mo	1	0-5	6	2-12
U	1.6	1-12.4	12.2	2.1-50.0

SAMPLE	CU	PB	ZN	CO	NE	MO	U	DEPTH
101	47	29	34	18	47	1	1.6	0-10
102	47	29	34	18	47	1	1.6	10-20
103	47	29	34	18	47	1	1.6	20-30
104	47	29	34	18	47	1	1.6	30-40
105	47	29	34	18	47	1	1.6	40-50