The Soils of The Regional Municipality of Niagara

Volume 2

Ontario

Ministry of Agriculture and Food

David Ramsay, Minister

Agriculture Canada

Research Branch

Direction de la recherche

THE SOILS OF THE REGIONAL MUNICIPALITY OF NIAGARA

VOLUME 2

REPORT NO. 60 OF THE ONTARIO INSTITUTE OF PEDOLOGY*

by

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*The Ontario Institute of Pedology serves as a coordinating body between three member agencies working in the areas of soil inventory, interpretation and research. It is made up of components of the Land Resource Research Centre of Agriculture Canada, the Soil and Water Management Branch of the Ontario Ministry of Agriculture and Food, and the Department of Land Resource Science of the University of Guelph.

Land Resource Research Centre Contribution No. 89-17

INTRODUCTION

Volume 2 consists mainly of detailed morphological, chemical and physical descriptions of selected typical soils of the Niagara Region. In addition, there are tables of statistical means and engineering test data. The analytical methods used to obtain chemical, physical and engineering test data are also briefly outlined.

Volume 1 contains descriptions of the environmental setting of the soils, generalized descriptions of the soils, and soil interpretations.

HOW TO USE THE SOIL MAPS AND REPORT

Resource managers, such as farmers or foresters, usually know the characteristics and variations of soils on their own properties or in the immediate vicinity. However, without a soil map and report, comparisons with other soils in the region is very difficult. With the help of a soil map, regional similarities, and differences between soils can be shown. This can be an aid in buying or renting land, or in transferring management techniques to similar soils, in order to reduce the risks of managing new land.

To use the soil maps and report most efficiently, the following procedure is suggested:

1. Locate the area of interest on the soil map index (Figure 1 in Volume 1). Note the number of the soil map on which your area of interest is located.
2. Obtain the appropriate soil map, and locate your specific area of interest. Natural and cultural features on the map, such as streams, contours, roads, buildings, lots and concessions should assist in location.
3. Note the map unit symbols within the map unit delineations that occur in your area of interest.
4. Consult the legend on the map to aid in understanding the symbol and determining the soil components, their slopes, parent materials and drainage.
5. If more information is required on the soil components, locate them by name in Volume 1 of the report. A generalized description of each soil is presented in Volume 1 as well as comments on land use and statistical means.
6. For specific soil interpretations, refer also to Volume 1. It contains soil capabilities for common agricultural field crops, soil suitability for special agricultural and horticultural crops and soil erosion interpretations.
7. For detailed soil profile descriptions, with associated chemical and physical analyses as well as engineering test data, users are referred to Volume 2.

Users should understand that each soil exhibits a range of properties, so that boundaries between different soils, even though they represent the best estimate of where soils change, may only be approximately located. Also, because of the map scale and the nature of the soil mapping, there could be inclusions within any map unit, up to several hectares in size of unidentified soil components. Most soils information is based on the examination of soil characteristics to a depth of about 100 cm below the surface.

ACKNOWLEDGEMENTS

Individuals involved in the detailed descriptions, statistical and laboratory analyses of the Niagara soils, have been acknowledged in Volume 1. All laboratory analyses, except for engineering test data, were provided by the Agriculture Canada laboratory, located at the Department of Land Resource Science, University of Guelph, Guelph.

Engineering test data was provided by the Soils and Aggregates Section Laboratory of the Highway Engineering Division of the Ontario Ministry of Transportation.

The efforts of C.A. Fitzgibbon and C.J. Palmer for the preparation of the tables and data management and D. E. Irvine for the graphical design and layout of Volume 2 are gratefully acknowledged.

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SITE SELECTION, ANALYTICAL METHODS AND SOIL DESCRIPTIONS

A. Site Selection

The candidate soils for detailed descriptions were determined by the extent of the mapped soil and the number of sites of each soil sampled during the course of the mapping. Only the major soils were considered for detailed descriptions and in most cases only one site per soil was selected. Statistical means for properties such as pH, horizon thickness, texture, and depth to carbonates were generated for most horizons by computer from the data base. An attempt was made to locate and sample representative sites based on this data. Because there is considerable variability in soils, the sites described were representative if the soil properties were within the accepted range for that soil. Properties that were considered to be outside that range are indicated in the Status section of the detailed description.

B. Analytical Methods

Most of the methods used for soil analyses are outlined in the Manual on Soil Sampling and Methods of Analysis (1).

(I) The appropriate section numbers are indicated in parentheses after the soil analyses, as follows:
Particle size analysis by pipette method, after pretreatment (2.11)
pH $CaCl_2$ (3.11) pH water (3.13)
Organic carbon by wet oxidation, using ortho-phananthroline-ferrous sulfate as indicator (3.613)
Calcium carbonate equivalent, using 6N HCl and some glassware modifications (3.41)
Cation exchange capacity (3.34)
Electrical conductivity (4.12)
Bulk density by core method (2.21)
Water retention by pressure-plate extraction (2.43)
Shrinkage was determined by a modification that used the COLE rod method (2.13)

(II) Analytical methods not outlined in the above noted manual are:
Saturated hydraulic conductivity followed procedures used by U.S. salinity lab U.S.D.A. as outlined in (2)
Calcite-dolomite ratio determined by a gasometric procedure using the Chittick apparatus (3)
COLE rod method for determining shrinkage limit (4)
Engineering test data for selected soils of the Niagara Region are provided in Table 1. All tests, except for bulk density, porosity, free swell and COLE rod, were done by the Soils and Aggregates Section Laboratory, Highway Engineering Division, Ontario Ministry of Transportation, London, using American Society for Testing Materials (ASTM) methods (5). The test procedures and their ASTM numbers are as follows:
United classification D2487-69
AASHO classification D3282-73
Atterberg limits D423-4-72
Grain size analysis D422-72
Maximum dry density and percent optimum moisture D698-70
Free swell was determined from a method outlined by Holtz and Gibbs (6)
Volume of woody material and von Post Decomposition values, for organic soils, were estimated from guidelines outlined in the CanSIS manual for Describing Soils in the Field (7)

Table 1. Engineering test data for horizons of selected soils from the Niagara Region

Soil	Horizon	Depth cm	Soil Classification Unified	Soil Classification AASHO	Atterberg Limits LL%	Atterberg Limits PL%	Atterberg Limits PI%	Mechanical Analysis % Passing #10	% Passing #40	% Passing #200	% Smaller Than .05mm	% Smaller Than .005mm	Bulk Dens. g/cc	Porosity %	Compaction Max.Dry Dens. t/m^3	Compaction Opt. Moist. %	Free Swell %	Cole Rod
Alluvium 1	Ah	0-16	OH	A-7-6(16)	54.5	32.5	22	100	97	89	89	60	0.93	64	1.4	27.3	50	0.11
(1-ALU)	Bg	16-63	CI	A-7-6(15)	49.5	26.5	23	100	98	89	85	61	1.51	43	1.6	24.0	47	0.09
	IIAb	63-80	CI-CH	A-7-6(15)	50	27	23	90	85	76	76	53	1.14	57	1.7	22.2	62	0.12
	IICkg	80-100	CL	A-7-6(11)	34.5	18	16.5	89	85	78	74	51	1.65	41	1.9	15.7	37	0.07
Berrien	Ap	0-22	SM	A-4(3)	24	22.5	1.5	100	94	51	37	14	1.35	48	1.7	17.4	29	0.02
(BRR)	Bm	22-33	SM	A-4	NP	NP	NP	100	94	41	26	10	1.44	46	1.8	13.1	14	0.01
	Bmgj	33-44															9	0.00
	Btgj	44-60	SM-SC	A-4(4)	21.5	16	5.5	100	96	45	32	21	1.52	43	1.9	11.9	22	0.03
	IIBtg	60-77	CI	A-7-6(14)	47	22	25	100	99	90	86	67	1.51	43	1.6	22.1	63	0.06
	IICkg	77-95	CI	A-7-6(14)	47	22	25	100	100	96	93	78	1.59	41	1.6	23.2	56	0.07
Brooke	Ap	0-16	CH	A-7-6(10)	52	27.5	24.5	100	97	91	86	45	1.31	48	1.5	23.0	60	0.08
very shallow phase (BOK.V)	Bg	16-37	CL	A-6(13)	32	17	15	99	97	83	73	33	1.36	49	1.7	17.4	62	0.09
Chinguacousy	Ap	0-27	CL-CI	A-6(12)	35	20	15	97	94	84	78	38	1.25	52	1.7	18.0	41	0.06
(CGU)	Btgj	27-40	CI	A-7-6(12)	42	18.5	23.5	98	94	85	77	49	1.53	43	1.7	19.1	65	0.09
	Ckgj	40-100	CL	A-6(10)	32	16	16	95	92	83	78	50	1.69	37	1.8	15.3	50	0.08
Chinguacousy	Ap	0-14	CL	A-6(7)	33	21	12	91	82	64	57	24	1.07	59	1.7	17.2	32	0.03
red washed phase	Btgj1	14-30	CL	A-6(11)	32	15	17	98	94	81	75	46	1.73	35	1.8	17.4	40	0.06
(CGU.RW)	Btgj2	30-40	CI	A-6(13)	38.5	16	22.5	99	97	85	79	50	1.63	37	1.7	18.5	47	0.09
	Bmgj	40-66	CL	A-6(11)	32.5	15.5	17	98	96	83	75	37	1.69	36	1.8	15.6	40	0.08
	Ckgj	66-100	CL	A-4(8)	24.5	14.5	10	97	96	86	77	30	1.87	31	2.0	12.8	49	0.03
Colwood	Ap	0-23	OI	A-5(8)	41.5	33.5	8	100	98	87	74	27	1.06	57	1.4	25.4	34	0.07
(CWO)	Bg	23-35	CL	A-4(8)	23.5	15	8.5	100	100	89	75	32	1.69	37	1.9	14.2	15	0.05
	Ckgj1	35-52	ML	A-4(8)	16.5	12.5	4	100	100	80	57	20	1.64	40	2.0	11.6	13	0.03
	Ckgj2	52-80	CL	A-4(8)	23	15	8	100	100	91	75	32	1.55	42	1.9	13.8	20	0.07
	Ckg	80-100	CL-ML	A-4(8)	23.3	16.5	6.8	100	100	97	86	28	1.53	44	1.9	14.6	7	0.04

Soil	Horizon	Depth	Soil Classification		Atterberg Limits			Mechanical Analysis					Bulk Dens.	Poro-sity	Compaction Max.Dry Dens.	Compaction Opt. Moist.	Free Swell	Cole Rod
								% Passing			% Smaller Than							
			Unified	AASHO	LL%	PL%	PI%	#10	#40	#200	.05mm	.005mm	g/cc	%	t/m^3	%	%	
Farmington	Ap	0-11	OI	A-5(9)	42	36	6	98	97	87	73	14	1.01	60	1.3	29.4	24	0.05
very shallow phase	Bm	11-24	OL	A-4(8)	NP	NP	NP	89	88	78	67	16	1.05	58	1.5	26.1	23	0.05
(FRM.V)																		
Fonthill	Ap	0-21	SM	A-4(3)	25	22	3	87	63	37	31	11	1.35	49	1.9	12.7	19	0.01
(FNT)	Bm1	21-54	SM	A-4(1)	17.5	17	0.5	91	57	31	26	10	1.47	45	2.0	9.7	19	0.00
	Bm2	54-74	SM	A-4(1)	19	17	2	91	44	24	20	9	1.43	47	2.0	11.2	11	0.01
	Bm3	74-100	SM	A-4	13.5	11.9	1.6	96	43	26	23	8	1.35	50	1.9	12.8	6	0.01
Fox	Ah	0-10	SM	A-4(1)	NP	NP	NP	100	93	38	35	12	0.86	67	1.5	19.2	11	0.04
red phase	Bm	10-38	SM	A-2	NP	NP	NP	100	91	35	32	11	1.10	59	1.8	14.2	8	0.02
(FOX.R)	Bt	38-66	SM	A-2	NP	NP	NP	100	92	31	25	12	1.09	59	1.9	11.1	9	0.01
	Btj	66-100	SM	A-2	NP	NP	NP	100	89	26	24	12	1.33	51	2.0	10.4	7	0.00
Grimsby	Ap	0-23	SM	A-4(8)	NP	NP	NP	100	97	45	30	9	1.17	56	1.7	14.2	5	0.00
(GMY)	Bm1	23-60	SM	A-2-4(8)	NP	NP	NP	100	98	27	20	9	1.37	49	1.8	12.1	9	0.00
	Bt1	60-95	SM	A-4(8)	NP	NP	NP	100	99	45	28	12	1.43	47	1.8	13.7	4	0.01
	Bt2	95-115	ML	A-4(8)	24	23	1	100	100	84	50	14	1.38	49	1.8	13.9	10	0.00
Haldimand	Ap	0-15	OI-OH	A-7-6(14)	50	29.5	20.5	100	99	93	92	65	1.05	59	1.5	27.4	56	0.08
(HIM)	Btgj1	15-25	CH	A-7-6(18)	55	27	28	100	99	97	97	83	1.27	53	1.5	28.6	80	0.12
	Btgj2	25-38	CH	A-7-6(20)	62	26	36	100	100	99	97	86	1.30	51	1.5	28.3	70	0.12
	Ckgj	38-80	CH	A-7-6(17)	51.5	24	27.5	100	100	99	97	89	1.35	50	1.6	26.1	60	0.12
Haldimand	Ap	0-17	CI	A-6(14)	40	24	16	100	99	93	87	48	1.36	47	1.6	22.5	40	0.05
loamy phase	IIBtgj1	17-28	CH	A-7-6(17)	56.5	24.5	32	100	100	97	92	76	1.51	42	1.5	23.0	71	0.09
(HIM.L)	IIBtgj2	28-42	CH	A-7-6(17)	57	24	33	100	100	99	95	77	1.46	44	1.5	21.4	80	0.09
	IICkgj	42-100	CI	A-7-6(14)	44.5	23.5	21	100	100	98	95	77	1.46	45	1.6	22.1	69	0.08
Jeddo	Ap	0-19	CI	A-6(13)	39	23.5	15.5	99	94	84	71	34	1.29	50	1.6	22.1	31	0.05
washed phase	Bg	19-49	CL	A-6(11)	34.5	17	17.5	97	92	83	66	33	1.56	42	1.7	16.5	40	0.05
(JDD.W)	Ckg	49-100	CL	A-6(10)	26.5	15.5	11	96	91	79	73	36			1.9	14.6	37	0.04
Lincoln	Ap	0-15	CH	A-7-6(11)	52	27.5	24.5	100	97	89	87	62	1.22	52	1.5	27.4	77	0.09
(LIC)	Btg1	15-34	CH	A-7-6(18)	61.5	25	36.5	100	100	98	97	80	1.49	44	1.6	26.4	90	0.08
	Btg2	34-62	CH	A-7-6(16)	51.5	24	27.5	100	100	95	94	76	1.49	44	1.6	21.7	73	0.08
	Ckg	62-100	CI	A-7-6(15)	48.5	22	26.5	100	100	99	97	83	1.51	44	1.6	23.1	57	0.09

Soil	Horizon	Depth cm	Soil Classification Unified	Soil Classification AASHO	Atterberg Limits LL%	Atterberg Limits PL%	Atterberg Limits PI%	Mechanical Analysis % Passing #10	% Passing #40	% Passing #200	% Smaller Than .05mm	% Smaller Than .005mm	Bulk Dens. g/cc	Porosity %	Compaction Max.Dry Dens. t/m^3	Compaction Opt. Moist. %	Free Swell %	Cole Rod
Malton	Ap	0-26	CI	A-7-6(14)	41	24	17	100	100	96	90	42	1.24	51	1.5	24.4	50	0.06
(MAT)	Bg	26-50	CI	A-7-6(14)	46.5	20.5	26	100	100	99	98	58	1.43	46	1.6	20.5	70	0.06
	Ckg	50-85	CI	A-6(11)	39	16.5	22.5	100	100	99	96	64	1.53	43	1.7	20.2	60	0.07
	IICkg	85-100	CI	A-6(12)	39	19	20	90	84	75	72	52	1.52	44	1.8	17.4	61	0.07
Malton	Ap	0-19	OH	A-7-5(18)	51	32.5	18.5	99	98	88	84	42	0.97	61	1.4	26.6	58	0.08
red phase	Bg	19-43	CI	A-7-6(12)	42	18	24	99	98	91	85	56	1.44	46	1.7	19.8	71	0.08
(MAT.R)	Ckg	43-87	CL	A-6(11)	34	16.5	17.5	96	95	90	84	55	1.62	39	1.8	15.5	68	0.06
	IICkg	87-100											1.50	44			53	0.05
Maplewood	Ah	0-20	OH	A-5(12)	61	51	10	100	94	81	73	26	0.72	72	1.2	36.0	40	0.12
(MPW)	Aegj	20-39											1.42	47			10	0.04
	Btg	39-50	CL	A-6(10)	33	17	16	100	98	91	82	39	1.50	28	1.8	17.9	40	0.12
	Bg	50-59											1.51	43			30	0.07
	IIBg	59-89	CI	A-6(11)	36	18.5	17.5	100	99	97	93	37	1.51	45	1.8	16.9	30	0.08
	IICkg	89-100	CI	A-7-6(14)	43.5	19.5	24	100	100	98	90	64	1.42	48	1.6	22.7	50	0.06
Niagara	Ap	0-17	ML	A-7-5(12)	47.2	31.6	15.6	99	99	94	88	38	0.95	63	1.5	26.8	20	0.07
loamy phase	IIBtgj	17-39	CL	A-7-6(11)	41.6	24.8	16.8	100	100	97	94	60	1.28	50	1.6	23.9	40	0.11
(NGR.L)	IIBt	39-53	CI	A-7-6(18)	49	18.5	30.5	100	99	97	91	68	1.45	45	1.6	23.3	50	0.10
	IICk	53-100	CL	A-7-6(15)	49.1	25.9	23.2	100	99	97	93	72	1.45	45	1.6	23.0	50	0.08
Plainfield	Ah	0-14	SP-SM	A-3	NP	NP	NP	100	96	10	9	3	0.92	63	1.5	20.7	9	0.03
dune phase	Bm1	14-26															5	0.00
(PFD.D)	Bm2	26-41	SP	A-3	NP	NP	NP	100	95	2	2	1	1.27	52	1.7	15.0	7	0.02
	Bm3	41-67	SP	A-3	NP	NP	NP	100	94	2	2	2	1.33	50	1.7	15.0	4	0.00
	Bm4	67-105	SP	A-3	NP	NP	NP	100	93	2	2	2	1.26	53	1.7	15.3	9	0.00
	Ck	105-125	SP	A-3	NP	NP	NP	100	96	3	3	2	1.30	51	1.6	20.1	8	0.01
Tavistock	Ap	0-24	CL	A-4(12)	27.5	21	6.5	100	99	84	74	26	1.23	52	1.6	19.8	29	0.05
(TVK)	Bmgj	24-40	ML	A-4(12)	20.8	19	1.8	100	99	84	74	23	1.27	52	1.8	15.5	21	0.02
	Btgj1	40-54	CL	A-6(10)	33	15.3	17.7	100	99	87	76	37	1.46	46	1.7	16.4	40	0.05
	Btgj2	54-65						100	100	90	81	35	1.40	48	1.8	17.3	36	0.05
	IIBg	65-70															51	0.07
	IICkg	70-100	CI	A-7-6(14)	46	22.5	23.5	100	100	98	97	80	1.47	46	1.6	23.4	56	0.07

Soil	Horizon	Depth cm	Soil Classification Unified	Soil Classification AASHO	Atterberg Limits LL%	Atterberg Limits PL%	Atterberg Limits PI%	Mechanical Analysis % Passing #10	% Passing #40	% Passing #200	% Smaller Than .05mm	% Smaller Than .005mm	Bulk Dens. g/cc	Porosity %	Compaction Max.Dry Dens. t/m^3	Compaction Opt. Moist. %	Free Swell %	Cole Rod
Tavistock	Ap	0-27	CL-ML	A-4(8)	27.5	22.5	5.0	99	95	74	60	21	1.22	53	1.7	18.6	20	0.04
(TVK)	Bmgj	27-47	SP-SM	A-4(4)	NP	NP	NP	100	96	54	35	10	1.57	39	1.8	12.5	20	
	Btgj	47-54											1.68	39			30	0.04
	IIBtgj	54-74	CI	A-6(12)	35.5	16.5	19	100	99	91	84	45	1.69	42	1.8	17.8	40	0.10
	IICkgj	74-100	CI	A-6(11)	36	19	17	99	98	95	91	56	1.74	37	1.8	19.2	50	0.05
Toledo	Ap	0-29	OI	A-7-5(9)	46	35.5	10.5	100	98	95	85	43	0.90	64	1.4	27.1	31	0.10
(TLD)	Bg1	29-41	CI	A-7-6(16)	46.5	21	25.5	100	100	98	90	54	1.40	47	1.7	20.9	56	0.13
	Bg2	41-55	CI	A-7-6(16)	46.5	21	25.5	100	100	98	90	54	1.57	43	1.7	20.9	60	0.12
	Ckg	55-100	CI	A-7-6(15)	45.5	20.5	25	100	100	98	94	66	1.52	45	1.7	21.8	48	0.10
Toledo	Ap	0-18	CI	A-7-6(15)	44	25.5	18.5	100	100	98	90	45	1.18	53	1.5	22.1	51	0.08
red phase	Aeg	18-31	CI	A-7-6(15)	49.5	22.5	27	100	100	98	94	57	1.56	41	1.6	22.4	65	0.08
(TLD.R)	Btg	31-46	CI	A-7-6(14)	49.5	21	28.5	100	100	97	91	65	1.59	40	1.6	22.0	70	0.09
	Ckg	46-100	CI	A-7-6(13)	43.5	21.5	22	100	100	98	93	70	1.58	42	1.7	21.5	52	0.06
Trafalgar	Ap	0-15	CL	A-6(9)	33	21.5	11.5	100	95	89	83	33	1.46	45	1.7	17.7	22	0.03
shallow phase	Bmgj	15-34	CL	A-4(8)	28.5	19	9.5	100	87	78	73	30	1.44	46	1.8	15.5	29	0.02
(TFG.S)	Btgj1	34-45	CL	A-6(8)	30	19	11	100	94	86	83	42	1.49	44	1.8	17.5	22	0.05
	Btgj2	45-83	CI	A-6(11)	37	20	17	100	100	97	96	62	1.76	36	1.7	18.9	61	0.07
Tuscola	Ap	0-19	ML	A-4(15)	29	26.5	2.5	100	100	81	55	10	0.97	62	1.6	21.0	24	0.02
red phase	Bm	19-41	ML	A-4	NP	NP	NP	100	100	85	61	6	1.21	53	1.7	17.7	16	0.01
(TUC.R)	Btgj	41-57	ML	A-4(13)	23.5	22	1.5	100	100	98	80	18	1.45	45	1.8	15.8	25	0.01
	Bmgj1	57-74	ML	A-4(13)	23	21.5	1.5	100	100	96	85	11	1.43	46	1.7	16.3	29	0.00
	Bmgj2	74-90	ML	A-4	NP	NP	NP	100	100	96	81	12	1.39	50	1.7	15.6	18	0.00
	Bmgj3	90-100	ML	A-4	NP	NP	NP	100	100	94	74	7	1.40	47	1.7	16.0	13	0.00
Vineland	Ap	0-21	ML	A-4(8)	NP	NP	NP	99	97	75	57	12	1.28	51	1.6	17.4	14	0.11
(VLD)	Bmgj1	21-36	ML	A-4(8)	NP	NP	NP	99	98	81	63	10	1.10	59	1.7	14.2	15	0.02
	Bmgj2	36-47	ML	A-4(8)	NP	NP	NP	99	98	81	63	10	1.28	52	1.7	14.2	9	0.00
	Btgj	47-57	ML	A-4(8)	23.5	23	0.5	100	99	92	65	15	1.40	47	1.7	15.1	20	0.01
	Bmgj3	57-84	ML	A-4(8)	24.5	22	2.5	100	100	91	52	12	1.47	43	1.7	16.0	8	0.03
	Bmgj4	84-100	ML	A-4(8)	24.5	22	2.5	100	100	91	52	12	1.43	47	1.7	16.0	2	0.01
Welland	Ap	0-15	OI	A-7-6(17)	45.5	27.5	18	100	100	95	90	57	1.16	55	1.5	26.2	44	0.07
(WLL)	Btg1	15-34	CH	A-7-6(20)	62	26	36	100	100	98	94	76	1.40	47	1.6	26.0	78	0.09
	Btg2	34-43											1.42	47			88	0.10
	Ckg	43-75	CH	A-7-6(19)	56	27.5	28.5	100	100	99	97	90	1.42	47	1.5	24.7	63	0.08

C. Soil Descriptions and Analyses

The format used to characterize each selected soil, is to provide a generalized summary of soil parent materials, drainage and classification, followed by a table of mean horizon values. The mean values were obtained from laboratory analyses of all soil horizons that were sampled.

Following this generalized soil information, are detailed soil profile descriptions, where available, of typical profiles. The taxonomic classifications and nomenclature used for typical profile descriptions, were those of the Canadian System of Soil Classification (8). Criteria for texture, structure, consistence and mottles are from the CanSIS Manual (7), and colour is from the Munsell charts (9). In addition to site and horizon properties, tables of chemical and physical properties of soil horizons are given for each typical soil profile.

In some instances, no data or blanks appear in the tables because the sample was not analyzed. This happened for various reasons. For example, CEC was not reported for the C horizons because the results were too variable and dependent on the measurement techniques. Organic matter was not usually determined for C horizons because the values are generally low. Similarily, the carbonate content was not usually measured in the A and B horizons when the pH values of these horizons were less than 7.0, because the amounts are generally negligible.

The definitions of soil texture abbreviations used in the tables, are as follows:

GR - Gravel
GL - Gravelly loam
GS - Gravelly sand
CS - Coarse sand
S - Sand
FS - Fine sand
VFS-Very fine sand
LCS - Loamy coarse sand
LS - Loamy sand
LFS-Loamy fine sand
LVFS - Loamy very fine sand
CSL - Coarse sandy loam
SL - Sandy loam
FSL - Fine sandy loam
VFSL - Very fine sandy loam
L - Loam
SIL - Silt loam
SCL - Sandy clay loam
FSCL - Fine sandy clay loam
VFSCL - Very fine sandy clay loam
CL - Clay loam
SICL - Silty clay loam
SC - Sandy clay
SIC - Silty clay
C - Clay
HC - Heavy clay
ORG - Organics

ALLUVIUM

ALLUVIUM 1 (1-ALU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Variable floodplain deposits on an active floodplain

DRAINAGE Variable

USUAL CLASSIFICATION Variable

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	20	0	14	4	50	36	SICL	5.0	6.2	0.0
Bg1	8	50	0	12	4	49	39	SICL	2.0	6.0	0.1
Bg2	7	75	1	13	3	44	43	SIC	1.6	6.4	0.2
Ckg	3		2	8	1	41	51	SIC		7.6	11.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

1-ALU ONTARIO 1985 PROFILE NO.LWSSP003

LOCATION Township of West Lincoln, Lot 31, Con. VI, NTS Map Area 30M/4a, 17 TPT 1875 6990

ELEVATION 186 metres

SITE Pasture field

LANDFORM AND PARENT MATERIALS Floodplain

SLOPE 2% complex

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long to prolonged

STONINESS Nonstony

CLASSIFICATION Orthic Humic Gleysol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Undecided

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ah	0-16 (13-18)	2.5YR4/2m	SIC	moderate to strong, coarse, granular	moderate to strong, medium to coarse, granular	sticky, firm, very plastic	
Bg	16-63 (47-52)	2.5Y5/2m	SIC	moderate to strong, coarse, columnar	moderate to strong, medium to coarse, columnar	sticky, very firm, very plastic	many, fine, prominent, 10YR5/6
IIABg	63-80 (9-18)	10YR3/1m	C	weak, coarse, subangular blocky	weak, coarse, subangular blocky	sticky, firm, plastic	many, fine, prominent, 5YR4/6
IICkg	80+	7.5YR4/2m	SICL	moderate to strong, coarse, subangular blocky	moderate to strong, medium to coarse, subangular blocky	sticky, very firm, very plastic	many, medium, prominent, 10YR4/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ah	0- 16	0	0	1	2	3	4	10	46	44	19	0.93	64
Bg	16- 63	0	0	2	3	4	3	12	46	42	17	1.51	43
IIBg	63- 80	1	3	2	3	3	3	14	36	51	22	1.14	57
IICkg	80+	8	4	2	2	3	8	18	50	32	8	1.65	41

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ah	0- 16	70.3	43.7	39.7	17.7	22.0	2.70		6.6	6.5	3.9	28.4		
Bg	16- 63	54.0	45.3	41.3	24.7	16.6	0.11		6.7	6.4	2.7	22.2		
IIBg	63- 80	61.0	51.3	48.0	24.7	23.3	10.60		7.1	6.7	4.0	38.6		
IICkg	80+	47.3	37.0	33.7	26.7	7.0	0.53	0.3	7.7	7.7			24.0	0.7

ALLUVIUM 2 (2-ALU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly coarse-textured sandy floodplain deposits

DRAINAGE Variable

USUAL CLASSIFICATION Variable

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	25	2	56	19	30	14	FSL	2.4	4.8	
Btgj	1	45	3	60	22	34	6	FSL	0.8	5.4	
Bm	1	100	3	70	23	26	4	FSL		5.4	

ALLUVIUM 3 (3-ALU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly medium-textured loamy floodplain deposits

DRAINAGE Variable

USUAL CLASSIFICATION Variable

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	7	22	1	17	6	59	24	SIL	4.3	6.7	
Bmgj	5	57	0	17	8	64	19	SIL	0.8	6.8	
Btgj	2	70	0	10	4	61	29	SICL	1.0	6.0	
Ckgj	3		5	19	9	71	10	SIL	0.2	7.7	15.3

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

3-ALU ONTARIO 1985 PROFILE NO. LWSP010

LOCATION	Township of West Lincoln, Lot 13, Con. IX, NTS Map Area 30M/4a, 17 TPT 1615 7391
ELEVATION	189 metres
SITE	Apple orchard
LANDFORM AND PARENT MATERIALS	Very gently sloping floodplain terrace; dominantly loamy soil materials
SLOPE	1.5% simple
SOIL WATER REGIME	Imperfectly drained
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Undecided

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-20 (20-22)	10YR3/2m	SIL	weak, medium, subangular blocky	moderate, fine to medium, granular	very friable, very plastic	
Btgj	20-44 (22-26)	10YR4.5/3m	SIL	weak to moderate, medium, subangular blocky	weak to moderate, fine to medium, subangular blocky	friable, very plastic	many, fine, prominent, 10YR4/6
Bmgj	44-52 (6-16)	10YR5/3m	SIL	very weak, medium, platy	very weak, medium platy	friable, slightly plastic	many, fine, prominent, 10YR4/6
Ckgj	52-76 (14-32)	10YR5/3m	SIL	very weak, coarse, subangular blocky	very weak, medium to coarse, subangular blocky	friable, slightly plastic	many, fine, prominent, 10YR4/6
Ckg	76+	2.5Y5/2m	SIL	very weak, coarse, subangular blocky	very weak, coarse, subangular blocky	friable, slightly plastic	many, fine, prominent, 10YR4/6

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-20	0						10	70	19
Btgj	20-44	0						9	68	23
Bmgj	44-52	0	0	0	1	1	20	22	63	15
Ckgj	52-76	7	3	2	1	1	19	27	63	10
Ckg	76+	6	10	1	1	2	8	21	69	10

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-20	1.26	6.9	3.0	19.2			
Btgj	20-44	1.37	6.8	0.8	13.2			
Bmgj	44-52	1.36	7.1	0.6	14.9			
Ckgj	52-76	1.44	7.6		19.9	10.0	2.2	0.1
Ckg	76+	1.50	7.7			17.0	3.1	0.1

ALLUVIUM 4 (4-ALU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly fine-textured clayey floodplain deposits

DRAINAGE Variable

USUAL CLASSIFICATION Variable

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	7	24	0	8	0	44	48	SIC	5.1	6.3	
Bg1	8	48	0	8	1	47	45	SIC	2.2	6.2	
Bg2	8	79	0	8	3	46	46	SIC	1.3	6.4	
Bg3	4		0	16	5	47	37	SICL	0.6	6.4	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

4-ALU ONTARIO 1985 PROFILE NO.EWPP008

LOCATION Township of West Lincoln, Lot 13, Con. IX, NTS Map Area 30M/4a, 17 TPT 1600 7380

ELEVATION 191 metres

SITE Pasture field

LANDFORM AND PARENT MATERIALS Very gently sloping floodplain terrace; dominantly silty clay sediments

SLOPE 1% simple

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long to prolonged

STONINESS Nonstony

CLASSIFICATION Orthic Humic Gleysol, fine clayey, mild humid to subhumid

STATUS Undecided

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap1	0-24 (23-25)	10YR3/2m	SIC	weak, coarse, subangular blocky	weak, medium, subangular blocky	slightly sticky, hard, very plastic	
Ap2	24-38 (10-14)	10YR3/2m	SIC	moderate, medium to coarse, subangular blocky	moderate, fine to medium, subangular blocky	sticky, hard, very plastic	
Bg1	38-69 (30-40)	10YR4/2m	SICL	moderate to strong, very coarse, subangular blocky	moderate to strong, coarse, subangular blocky	sticky, very hard, very plastic	common, fine, distinct and prominent, 10YR4/6
Bg2	69+	10YR5/2m	SIC	moderate, coarse, angular blocky	weak to moderate, medium, angular blocky	slightly sticky, very hard, very plastic	common, medium, prominent, 10YR5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap1	0- 24	0						10	44	46
Ap2	24- 38	0						9	52	40
Bg1	38- 69	0						10	55	35
Bg2	69+	0						4	53	43

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap1	0- 24	1.02	7.0	6.3	33.8	1.0		
Ap2	24- 38	1.24	6.6	2.6	29.6			
Bg1	38- 69	1.33	6.8	1.4	25.4			
Bg2	69+	1.52	7.2	1.0	25.9	1.0		

BENNINGTON SOIL (BNG)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over lacustrine silty clay

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	27	2	47	33	40	13	L	2.2	6.3	0.8
Bm	5	40	0	40	33	45	15	L	2.1	5.8	0.1
Bt1	4	61	0	38	31	38	24	L	0.5	6.5	0.4
Bt2	3	65	0	25	18	55	20	SIL	1.2	4.9	0.0
IIBt	4	86	0	6	0	48	46	SIC	0.6	5.6	0.0
IICk	2		0	4	0	58	38	SICL		7.6	12.4

BENNINGTON SOIL - HEAVY PHASE (BNG.H)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over lacustrine heavy clay

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	27	1	55	28	31	14	VFSL	3.3	5.5	0.0
Bm	1	50	1	62	37	32	6	VFSL	0.7	5.6	0.0
Bt	1	65	3	65	33	24	11	VFSL	6.1	0.5	0.0
IIBt	1	83	1	11	7	34	55	C	0.4	7.0	0.5
IICkgj	1		0	4	0	27	69	HC		7.6	11.5

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

BENNINGTON SOIL - RED PHASE (BNG.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued loamy textures over lacustrine silty clay

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	20	1	75	42	18	7	SL	2.4	6.8	
Bm	1	35	0	71	49	23	6	SL	0.6	6.7	
Btj	2	58	1	76	43	16	8	SL	0.3	6.7	
BC	1	76	0	14	11	71	15	SIL	0.4	7.2	1.4
IICkgj	1		3	10	6	56	34	SICL		7.6	13.8

BENNINGTON SOIL - TILL PHASE (BNG.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over clay loam till

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	15	3	28	10	51	21	SIL	3.9	6.4	
Bm	3	40	2	32	11	50	18	SIL	1.1	5.9	
Bt	1	60	2	24	8	47	29	CL	0.7	6.4	
IIBt	1	70	0	14	5	52	34	SICL	0.4	7.4	1.0
IICk	2		3	20	6	46	34	SICL		7.2	6.5

BENNINGTON SOIL - WASHED TILL PHASE (BNG.WT)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over washed clay loam till, modified by lacustrine processes

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	7	1	49	18	35	16	L	3.2	5.8	
Bm	1	43	0	66	60	25	9	VFSL	0.2	5.9	
Bmgj	1	84	0	69	63	25	6	VFSL	0.1	6.4	
IICk	1		7	38	16	41	21	L		7.6	6.6

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

BERRIEN SOIL (BRR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	10	19	0	66	29	23	11	VFSL	2.9	6.0	
Bmgj	9	43	0	74	34	17	9	VFSL	0.8	6.3	
Aegj	7	44	0	76	33	18	6	VFSL	0.4	5.8	
Btgj	6	60	0	60	25	22	18	VFSL	0.4	6.5	
IIBtgj	5	79	1	12	3	39	49	C	1.3	6.7	
IICkg	11		0	8	2	46	46	SIC		7.6	11.9

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BRR ONTARIO 1985 PROFILE NO.MEFSP010

LOCATION Town of Thorold, Lot 207, NTS Map Area 30M/3b , 17 TPT 4405 6722

ELEVATION 180 metres

SITE Cropland

LANDFORM AND PARENT MATERIALS Nearly level to gently sloping, dissected lacustrine clay plain overlain by loamy and sandy sediments of variable thickness

SLOPE 5% complex

SOIL WATER REGIME Imperfectly drained, conductivity high to medium in sands, low in clays, saturation period short to medium

STONINESS Nonstony

CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol, coarse loamy/clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-22 (19-22)	10YR4/3m	FSL	moderate, medium, granular	strong, medium, granular	nonsticky, very friable, slightly plastic	
Bm	22-33 (11-15)	10YR5/6m	LFS	single grain	single grain	nonsticky, loose, nonplastic	
Bmgj	33-44 (8-11)	10YR5/6m	LFS	single grain	single grain	nonsticky, very friable, nonplastic	common, fine, distinct, 10YR5/8
Btgj	44-60 (16-22)	7.5YR4/4m	VFSL	moderate, coarse, platy	weak to moderate, coarse, platy	nonsticky, very firm, slightly plastic	common, fine, distinct, 7.5YR4/6
IIBtg	60-77 (14-21)	10YR5/1m	C	weak, coarse, columnar	weak, coarse, subangular blocky	very sticky, very firm, very plastic	common, fine, prominent, 10YR5/4
IICkg	77+	10YR5/1m	SIC	weak, coarse, columnar	weak to moderate, coarse, subangular blocky	very sticky, very firm, very plastic	common, fine, prominent, 10YR5/4

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-22	0	1	3	14	24	24	66	25	9	3	1.35	48
Bm	22-33	0	0	3	14	33	32	82	14	4	2	1.44	46
Bmgj	33-44	0	0	3	13	36	28	80	13	7	2		
Btgj	44-60	0	0	2	10	26	29	67	16	17	9	1.52	43
IIBtg	60-77	0	0	1	3	9	10	23	36	41	13	1.51	43
IICkg	77+	0						4	41	56	11	1.59	41

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-22	54.3	33.3	21.7	7.3	14.4	1.90		5.8	5.7	2.6	8.9		
Bm	22-33	51.3	33.3	19.7	7.7	12.0	7.80		6.5	5.6	0.4	6.9		
Bmgj	33-44								6.6	5.7	0.3	7.5		
Btgj	44-60	53.7	33.0	19.3	8.7	10.6	0.42		7.0	6.2	0.3	11.1		
IIBtg	60-77	59.0	48.0	42.7	29.0	13.7			7.5	6.8	4.3	17.4		
IICkg	77+	58.3	48.7	44.0	31.3	12.7		0.2	7.9	7.5			14.0	4.4

BERRIEN SOIL - HEAVY PHASE (BRR.H)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over lacustrine heavy clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	27	6	54	18	30	16	FSL	2.8	5.9	
Bmgj	7	58	4	55	19	30	14	FSL	0.8	6.2	
IIBtgj	2	67	1	14	2	27	60	HC	0.6	7.0	
IICkgj	4		2	6	0	26	69	HC	7.5	9.8	

BERRIEN SOIL - RED PHASE (BRR.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued sandy textures over lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	19	5	73	20	18	9	FSL	2.3	6.0	
Bmgj	4	42	4	73	24	18	9	FSL	0.5	6.3	
Btgj	3	54	0	66	23	19	15	FSL	0.4	6.2	
IICkg	4		2	10	3	48	42	SIC	0.1	7.5	13.8

BERRIEN SOIL - TILL PHASE (BRR.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	12	24	3	66	20	23	11	FSL	2.6	6.3	0.5
Bmgj	9	51	4	77	21	16	7	FSL	0.6	6.1	0.1
IIBtgj	4	63	12	39	12	34	27	CL	0.4	6.7	0.3
IIBm	7	66	9	61	13	24	15	FSL	0.3	6.9	2.7
IICkg	8		5	22	10	51	27	CL		7.5	9.3

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BRR.T ONTARIO 1985 PROFILE NO.EAWP013

LOCATION Town of Niagara-on-the-Lake, Lot 154, NTS Map Area 30M/3g, 17 TPT 5081 8477

ELEVATION 95 metres

SITE Cultivated winter wheat field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping clay till plain overlain by discontinuous areas of loamy and sandy sediments of variable thicknesses

SLOPE 2.5% complex

SOIL WATER REGIME Imperfectly drained, conductivity high to medium in sands, low in clays, saturation period short to medium

STONINESS Slightly stony

CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol, sandy/loamy, alkaline, weakly calcareous, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-29 (25-30)	10YR4/4m	FSL	very weak, medium to coarse, subangular blocky	weak, medium to coarse, subangular blocky	nonsticky, friable, nonplastic	
Bmgj	29-64 (30-37)	10YR7/4m	LFS	very weak, medium to coarse, subangular blocky	weak, medium to coarse, subangular blocky	nonsticky, friable, nonplastic	many, medium, prominent, 7.5YR4/6
IIBtg	64-74 (10-14)	10YR5/2m	CL	moderate, medium to coarse, columnar	moderate to strong, coarse, angular blocky	slightly sticky, very firm, plastic	many, medium, prominent, 10YR5/5
IICkg	74+	10YR5/2m	CL	moderate, medium to coarse, columnar	moderate to strong, coarse, angular blocky	slightly sticky, very firm, plastic	many, medium, prominent, 10YR5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 29	1	4	2	5	34	25	70	20	10
Bmgj	29- 64	0	3	3	6	41	32	86	9	5
IIBg	64- 74	2	3	3	4	7	8	24	49	28
IICkg	74+	5	2	2	3	6	8	20	52	29

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 29	1.26	7.3	1.5	10.7	1.0		
Bmgj	29- 64	1.36	7.2	0.1	10.7	1.0		
IIBg	64- 74	1.64	7.3	0.1	14.4	0.0		
IICkg	74+	1.72	7.6		54.2	5.0	1.5	0.2

BEVERLY SOIL (BVY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	93	17	0	14	6	52	34	SICL	3.6	6.2	0.3
Bmgj	22	42	0	10	4	51	39	SICL	1.4	6.3	0.4
Btgj	84	45	0	7	1	45	48	SIC	1.1	6.3	0.4
Ckgj	76		0	5	1	46	49	SIC	0.1	7.6	14.1

BEVERLY SOIL - COARSE PHASE (BVY.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm sandy textures over lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Apk	1	12	0	65	29	21	14	FSL	3.4	7.6	9.8
Bmgjk	1	22	0	77	34	14	9	FSL	2.1	7.5	12.8
Btgjk	1	34	0	52	22	34	14	FSL	1.0	7.7	16.4
IICkgj	1	45	0	4	0	53	43	SIC		7.7	23.9
IICkg	1		0	1	0	54	45	SIC		7.7	28.1

BEVERLY SOIL - LOAMY PHASE (BVY.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	75	19	1	25	15	51	24	SIL	3.7	6.2	0.4
Bmgj	31	33	1	30	18	47	23	L	1.4	6.1	0.2
IIBtgj	73	50	0	12	6	44	44	SIC	0.9	6.4	0.2
IICkgj	74		0	7	2	49	44	SIC	0.0	7.5	14.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

(1)BVY.L ONTARIO 1985 PROFILE NO.EAWP018

LOCATION	City of St. Catharines, Lot 1, Con. VI, NTS Map Area 30M/3f, 17 TPT 4062 7720
ELEVATION	116 metres
SITE	Abandoned farmland
LANDFORM AND PARENT MATERIALS	Nearly level till plain composed of variable depths of loamy or clayey lacustrine sediments
SLOPE	1.5% simple
SOIL WATER REGIME	Imperfectly drained, conductivity low, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, fine loamy over fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Modal. Ck horizon has lower clay content than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-17 (17-18)	10YR4/3m	SIL	moderate, coarse, granular	moderate to strong, medium to coarse, granular	sticky, very friable, slightly plastic	
Bmgj	17-36 (11-19)	10YR6/5m	SIL	moderate, medium, subangular blocky	moderate to strong, medium to coarse, granular	sticky, friable, slightly plastic	common, medium, prominent, 10YR5/8
IIBtgj	36-67 (32-42)	10YR5/3m	SIC	moderate, coarse, columnar	moderate to strong, coarse, angular blocky	slightly sticky, firm, plastic	common, medium, prominent, 10YR5/6
IICkgj	67+	10YR5/3m	SICL	weak, coarse, platy	weak, coarse, platy	slightly sticky, firm, plastic	common, fine, distinct, 10YR5/5

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-17	0	1	1	1	5	10	18	58	23
Bmgj	17-36	0	4	1	2	5	9	20	60	20
IIBtgj	36-67	0						5	54	41
IICkgj	67+	0						8	64	28

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-17	1.16	5.5	4.2	12.6			
Bmgj	17-36	1.43	5.3	0.8	10.6			
IIBtgj	36-67	1.47	5.8	0.4	20.3			
IICkgj	67+	1.64	7.5			14.3	3.0	0.1

(2)BVY.L ONTARIO 1985 PROFILE NO.MEFP007

LOCATION	City of St. Catharines, Northeast corner of First St. and Ryckert St., Con. VII, NTS Map Area 30M/3f, 17 TPT 4034 7697
ELEVATION	117 metres
SITE	Abandoned farmland
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping lacustrine plain with mainly silty clay and silty clay loam textures. Clays occasionally overlain by 15 to 40 cm of loamy sediments
SLOPE	2.5% complex
SOIL WATER REGIME	Imperfectly drained, conductivity low, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-21 (18-22)	10YR4/3m	SIL	moderate, coarse, granular	strong, medium, granular	slightly sticky, very friable, slightly plastic	
Bmgj	21-27 (6-8)	10YR5/3m	SIL	weak to moderate, coarse, granular	moderate, medium, granular	slightly sticky, very friable, slightly plastic	common, fine, distinct, 10YR5/5
IIBtgj	27-49 (20-22)	10YR4/2m	SICL	weak to moderate, coarse, columnar	weak to moderate, coarse, platy	sticky, firm, plastic	common, fine, distinct, 10YR4/4
IICkgj	49+	10YR5/2m	SICL	moderate to strong, coarse, angular blocky	moderate, coarse, angular blocky	sticky, very firm, very plastic	common, fine, distinct, 10YR5/4

		Sand Fraction %								
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-21	0	1	1	2	6	10	20	60	20
Bmgj	21-27	0	2	2	2	7	11	25	52	23
IIBtgj	27-49	0	0	0	1	5	9	15	51	34
IICkgj	49+	0						5	57	38

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-21	1.30	6.8	3.1	12.7			
Bmgj	21-27	1.42	6.7	0.5	9.1			
IIBtgj	27-49	1.52	7.0	0.4	15.8			
IICkgj	49+	1.66	7.7			16.0	3.2	0.1

BEVERLY SOIL - LOAMY RED PHASE (BVY.LR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	15	18	0	23	13	53	24	SIL	3.6	6.3	0.1
IIBmgj	10	53	0	13	7	51	36	SICL	0.7	6.3	0.7
IIBtgj	13	56	0	9	2	45	46	SIC	0.8	6.1	0.5
IICkgj	11		0	5	1	48	47	SIC		7.5	13.5

BOOKTON SOIL (BOO)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over lacustrine silty clay

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	15	1	68	24	25	7	FSL	2.2	6.4	
Bm	1	25	0	77	24	18	5	LFS	0.6	6.2	
Bt	1	46	1	73	24	19	8	FSL	0.2	6.1	
IIBt	1		0	18	9	43	39	SICL	0.5	6.4	

BOOKTON SOIL - RED PHASE (BOO.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued sandy textures over lacustrine silty clay

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	17	1	51	31	33	16	L	5.4	6.9	2.3
Bm	2	45	1	67	38	23	10	VFSL	0.9	6.6	0.5
Bt	1	55	0	78	25	7	15	FSL	0.6	7.1	1.2
IIBt	1	78	0	19	5	35	46	C	0.1	6.8	
IICk	2		1	9	4	48	43	SIC	0.3	7.6	20.8

BOOKTON SOIL - TILL PHASE (BOO.T)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over clay loam till

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	3	28	4	61	16	28	11	FSL	2.6	5.8	0.0
Bt	3	62	8	54	10	25	21	SCL	1.6	6.3	0.3
Bm	2	76	2	80	17	15	5	LFS	0.8	5.8	0.0
IICk	2		1	6	0	45	49	SIC		7.7	18.0

* although there are local occurences of this soil, the areas are too small to map and therefore do not appear on the soil maps

BRADY

BRADY SOIL (BAY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine loamy sand and sand

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	5	26	1	84	11	10	6	LS	3.0	6.1	0.2
Bmgj1	7	69	0	88	9	9	3	S	0.5	6.0	
Bmgj2	2	88	1	93	6	4	3	FS	0.4	6.0	
Ckgj	2		2	94	1	4	2	S		7.4	6.0

BRADY SOIL - RED PHASE (BAY.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine loamy sand and sand

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	22	6	73	21	20	7	FSL	2.6	5.4	
Bmgj	3	60	4	82	28	16	2	LFS	0.4	5.5	
Btgj	2		16	82	13	13	5	LS	0.3	5.4	

BRANT SOIL (BRT)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine silt loam and loam

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	19	1	22	15	60	18	SIL	2.8	5.5	
Bm1	4	51	0	18	13	64	18	SIL	1.1	5.6	
Bm2	8	68	2	31	21	56	13	SIL	1.1	5.2	
Ck	1		0	27	13	51	22	SIL		7.5	3.4

BRANT SOIL - RED PHASE (BRT.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine silt loam and loam

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	14	20	1	36	25	51	13	SIL	2.4	5.7	
Bt	15	65	0	28	22	54	18	SIL	0.6	5.4	
Bm1	14	73	1	38	32	53	9	SIL	0.4	5.9	0.1
Bm2	13	107	1	39	31	53	8	SIL	0.2	6.3	0.1
Ck	3		1	17	10	69	14	SIL		7.6	7.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

(1)BRT.R ONTARIO 1985 PROFILE NO.EAWP011

LOCATION Town of Niagara-on-the-Lake, Lot 90, Con. X, NTS Map Area 30M/3h, 17 TPT 5388 7891

ELEVATION 149 metres

SITE Plum orchard

LANDFORM AND PARENT MATERIALS Moderately sloping, dissected, lacustrine plain consisting of deep loamy lacustrine sediments

SLOPE 13.5% complex

SOIL WATER REGIME Well drained, conductivity medium to low, saturation period very short

STONINESS Nonstony

CLASSIFICATION Brunisolic Gray Brown Luvisol, loamy, alkaline, strongly calcareous, mild humid to subhumid

STATUS Variant because of bedded Bt horizons

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-10 (10-11)	10YR4/4m	SIL	weak, medium, platy	moderate, medium, granular	slightly sticky, firm, slightly plastic	
Bt1	10-29 (15-28)	7.5YR4/5m	SIL	weak, medium to coarse, platy	weak, medium, subangular blocky	slightly sticky, firm, plastic	
Bm1	29-48 (0-30)	7.5YR5/4m	VFSL	weak, coarse, subangular blocky	weak, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bt2	48-64 (14-28)	5YR4/4m	L	moderate, coarse, subangular blocky	moderate, medium to coarse, subangular blocky	sticky, firm, plastic	
Bt3	64-78 (14-17)	5YR4/4m	L	moderate, medium, subangular blocky	moderate, medium, subangular blocky	sticky, very firm, very plastic	
Bm2	78+	5YR5/4m	SI	massive	weak, coarse, angular blocky	slightly sticky, very friable, nonplastic	

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-10	2	1	2	3	8	19	33	53	14
Bt1	10-29	3	2	1	2	6	15	26	56	18
Bm1	29-48	0				7	46	53	45	2
Bt2	48-64	1	1	1	3	17	25	47	37	15
Bt3	64-78	1	2	2	3	8	14	29	50	21
Bm2	78+	0				4	10	14	83	3

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-10	1.39	6.4	2.3	11.1			
Bt1	10-29	1.69	6.5	0.3	9.0			
Bm1	29-48	1.52	6.1	0.1	6.5			
Bt2	48-64	1.64	6.2	0.1	9.5			
Bt3	64-78	1.57	5.8	0.1	12.0			
Bm2	78+	1.29	5.7	0.1	9.5			

(2)BRT.R ONTARIO 1985 PROFILE NO.EAWP009

LOCATION	Town of Grimsby, Lot 6, Con. I, NTS Map Area 30M/4h, 17 TPT 1838 8369
ELEVATION	85 metres
SITE	Abandoned farmland
LANDFORM AND PARENT MATERIALS	Nearly level lacustrine plain consisting of deep loamy lacustrine sediments
SLOPE	1.5% complex
SOIL WATER REGIME	Moderately well drained, conductivity medium to low, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Orthic Melanic Brunisol, coarse loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-18 (18-21)	10YR4/3m	SIL	weak to moderate, medium, subangular	weak to moderate, coarse, granular	slightly sticky, friable, plastic	
Bm1	18-33 (15-15)	7.5YR5/4m	SIL	blocky, moderate, fine, platy	weak, medium to coarse, subangular blocky	nonsticky, very friable, slightly plastic	
Bm2	33-57 (18-24)	7.5YR4/4m	SIL	weak, medium, platy	weak, medium to coarse, subangular blocky	slightly sticky, very friable, slightly plastic	
Bmgj1	57-75 (18-20)	7.5YR5/4m	SIL	weak, coarse, subangular blocky	weak, coarse, subangular blocky	slightly sticky, friable, slightly plastic	common, medium, distinct, 7.5YR5/6
Bmgj2	75+	7.5YR5/4m	SIL	massive		slightly sticky, very friable, plastic	many, medium, distinct, 7.5YR4/6

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 18	0	0	1	1	3	18	22	67	10
Bm1	18- 33	0	0	0	0	1	15	16	74	9
Bm2	33- 57	0	0	1	0	1	20	21	69	10
Bmgj1	57- 75	0	0	1	2	0	10	14	80	6
Bmgj2	75+	0	1	1	1	1	15	19	74	8

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 18	1.20	6.7	2.4	11.3			
Bm1	18- 33	1.36	6.6	0.6	7.4			
Bm2	33- 57	1.37	6.7	0.2	8.0			
Bmgj1	57- 75	1.42	6.6	0.2	8.4			
Bmgj2	75+	1.40	6.4	0.1	9.2			

BRANTFORD

BRANTFORD SOIL (BFO)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine silty clay

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	20	18	0	13	5	51	36	SICL	3.7	6.4	1.1
Bm	8	43	0	11	3	51	38	SICL	1.8	6.0	1.0
Bt	18	51	0	8	2	45	47	SIC	1.3	6.3	0.4
Ck	18		0	6	1	45	49	SIC	0.2	7.6	15.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BFO ONTARIO 1985 PROFILE NO.MEFP004

LOCATION Township of West Lincoln, Lot 16, Con. V, NTS Map Area 30M/4b, 17 TPT 0646 7205

ELEVATION 204 metres

SITE Alfalfa hay field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping glaciolacustrine clay plain consisting of sediments with dominantly silty clay and heavy clay textures

SLOPE 4.5% complex

SOIL WATER REGIME Moderately well drained, conductivity low, saturation period short

STONINESS Nonstony

CLASSIFICATION Orthic Gray Brown Luvisol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-14 (19-23)	10YR4/3m	SIL	weak to moderate, medium, angular blocky	moderate, coarse, granular	slightly sticky, friable, plastic	
IIBt1	14-43 (28-31)	10YR4/4m	CL	moderate, coarse, angular blocky	moderate to strong, coarse, angular blocky	slightly sticky, friable, plastic	
IIBt2	43-56 (11-14)	10YR4/3m	SIC	weak, medium, columnar	moderate, coarse, angular blocky	sticky, firm, very plastic	
IICkgj	56+	10YR5/2m	SIC	weak to moderate, medium, columnar	moderate to strong, coarse, angular blocky	sticky, very firm, very plastic	common, fine, distinct,10YR5/4

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 14	0	1	1	2	3	10	17	58	25
IIBt1	14- 43	0	2	2	3	5	8	20	43	37
IIBt2	43- 56	0						4	49	47
IICkgj	56+	0						5	48	47

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 14	1.25	6.7	3.2	10.9			
IIBt1	14- 43	1.40	5.3	0.6	11.9			
IIBt2	43- 56	1.38	6.8	0.6	21.2			
IICkgj	56+	1.44	7.6			25.0	6.3	0.2

BRANTFORD SOIL - LOAMY PHASE (BFO.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over lacustrine silty clay

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	11	19	0	21	11	54	25	SIL	4.5	6.6	0.4
Bm	6	27	0	27	14	51	22	SIL	1.2	5.4	0.0
IIBt	15	58	0	9	2	44	47	SIC	0.9	6.4	0.1
IICk	10		0	5	1	47	48	SIC	0.1	7.6	13.0

BRANTFORD SOIL - RED PHASE (BFO.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine silty clay

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	20	0	10	3	54	36	SICL	3.9	6.7	2.3
Bm	1	46	0	6	0	55	39	SIC	2.1	7.0	5.8
Bt	4	51	0	8	4	45	47	SIC	1.6	6.8	0.8
Ck	3		0	5	0	42	53	SIC	0.3	7.7	15.4

BROOKE

BROOKE SOIL - SHALLOW PHASE (BOK.S)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 50 to 100 cm variable textures over mainly limestone and dolostone bedrock

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Luvic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	9	21	2	24	9	44	32	CL	6.0	6.0	0.2
Btg	5	37	0	15	5	34	51	C	1.2	6.4	1.0
Bg	6	46	2	25	11	41	34	CL	1.2	7.0	0.4
Ckg	5	73	5	24	8	41	35	CL	0.1	7.6	17.7
R											

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BOK.S ONTARIO 1985 PROFILE NO.EAWP006

LOCATION Town of Fort Erie, Lot 6, Con. VII, NTS Map Area 30L/14h, 17 TPT 6290 5430

ELEVATION 192 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Nearly level bedrock plain overlain by thin veneer of variable sediments

SLOPE 1% simple

SOIL WATER REGIME Poorly drained, conductivity medium, saturation period long

STONINESS Slightly stony

CLASSIFICATION Orthic Humic Gleysol, fine loamy/clayey, shallow lithic, alkaline, strongly calcareous, mild humid to subhumid

STATUS Undecided

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (18-29)	10YR3/2m	L	moderate, coarse, granular	moderate, medium to coarse, granular	sticky, friable, very plastic	
Bg1	19-33 (8-15)	10YR4/2m	CL	moderate, fine to medium, columnar	moderate, fine to medium, columnar	sticky, firm, very plastic	common, medium, prominent, 10YR4/6
Bg2	33-40 (7-16)	10YR5/2m	L	moderate, medium, columnar	moderate, medium, columnar	sticky, very firm, very plastic	common, medium, prominent, 5YR4/3
IICkg	40-65 (20-30)	5YR5/2m	HC	moderate, coarse, subangular blocky	moderate, coarse, subangular blocky	sticky, very firm, very plastic	common, medium, prominent, 7.5YR5/6
R	65+						

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-19	3	3	3	4	9	12	30	46	24
Bg1	19-33	10	3	3	5	12	16	38	34	28
Bg2	33-40	0	6	3	4	6	12	31	43	26
IICkg	40-65	9						8	31	61
R	65+									

Horizon	Depth cm	Bulk Density g/cm³	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-19	1.20	6.4	5.4	18.1			
Bg1	19-33	1.66	5.5	1.0	18.2			
Bg2	33-40	1.50	6.2	0.9	18.2			
IICkg	40-65	1.67	7.6			23.0	0.6	0.1
R	65+							

BROOKE SOIL - VERY SHALLOW PHASE (BOK.V)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 20 to 50 cm variable textures over mainly limestone and dolostone bedrock

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	12	17	1	13	4	52	35	SICL	4.6	6.7	0.7
Btg	4	28	1	10	3	47	43	SIC	1.1	7.0	0.0
Bg	7	34	4	15	5	50	35	SICL	1.6	6.9	0.3
Ckg	7	43	1	11	4	53	36	SICL	0.2	7.6	17.3
R											

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BOK.V ONTARIO 1985 PROFILE NO.EAWSP008

LOCATION Town of Port Colborne, Lot 22, Con. III, NTS Map Area 30L/14g, 17 TPT 4540 5220

ELEVATION 183 metres

SITE Hay field

LANDFORM AND PARENT MATERIALS Nearly level bedrock plain overlain by thin cover of variable sediments

SLOPE 1% complex

SOIL WATER REGIME Poorly drained, conductivity medium, saturation period long

STONINESS Slightly stony

CLASSIFICATION Orthic Humic Gleysol, loamy, very shallow lithic, mild humid to subhumid

STATUS Undecided

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-16 (14-18)	10YR3/2m	SICL	moderate to strong, coarse, granular	moderate to strong, coarse, granular	sticky, firm, very plastic	
Bg	16-37 (19-23)	10YR3/2m	SICL	moderate to strong, medium, columnar	moderate to strong, medium, columnar	sticky, firm, very plastic	many, fine, prominent, 10YR5/8
R	37+						

		Sand Fraction %											
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0- 16	0	1	2	2	2	6	13	49	38	16	1.31	48
Bg	16- 37	1	1	1	2	6	13	23	44	33	20	1.69	49
R	37+												

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 16	57.0	47.3	42.3	21.7	20.6	0.40		7.2	7.0	6.2	29.5	1.0	
Bg	16- 37	54.3	45.7	42.0	31.3	10.7	0.08		7.3	7.0	1.0	20.5	0.0	
R	37+													

CASHEL SOIL (CSH)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm lacustrine silty clay over clay loam till

DRAINAGE Moderately well

USUAL CLASSIFICATION Orthic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	3	17	1	19	9	53	28	SICL	2.6	5.7	
Bt	2	45	1	10	5	38	52	C	0.9	6.5	
IICk	2		8	10	2	54	36	SICL		7.7	12.0

CASHEL SOIL - RED WASHED PHASE (CSH.RW)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm lacustrine silty clay over washed reddish-hued clay loam till

DRAINAGE Moderately well

USUAL CLASSIFICATION Orthic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	22	0	15	5	43	42	SIC	12.3	5.8	
Bm1	2	55	0	16	6	45	39	SICL	2.6	5.4	
Bm2	2		0	25	7	44	31	CL	0.7	5.1	

* although there are local occurences of this soil, the areas are too small to map and therefore do not appear on the soil maps

CHINGUACOUSY

CHINGUACOUSY SOIL (CGU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	21	19	5	24	9	47	29	CL	3.1	6.5	0.4
Bmgj	17	50	2	19	8	49	32	SICL	0.1	6.4	0.0
Btgj	17	52	2	16	6	45	39	SICL	0.9	6.2	0.2
Ckgj	17		4	16	6	48	36	SICL	0.1	7.5	8.3

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

CGU ONTARIO 1985 PROFILE NO. LWSSP005

LOCATION Town of Niagara-on-the-Lake, Lot 1, Con. V, NTS Map Area 30M/3g, 17 TPT 4941 8354

ELEVATION 99 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Level to nearly level clay till plain

SLOPE 1.5% simple

SOIL WATER REGIME Imperfectly drained, conductivity medium to low, saturation period medium

STONINESS Nonstony

CLASSIFICATION Gleyed Gray Brown Luvisol, fine loamy, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-27 (22-30)	10YR3/2m	CL	weak to moderate, medium, granular	moderate, fine to medium, granular	slightly sticky, friable, very plastic	
Btgj	27-40 (10-19)	10YR4/3m	CL	very weak, coarse, subangular blocky	very weak, coarse, subangular blocky	slightly sticky, firm, very plastic	many, fine, prominent, 10YR4/6
Ckgj	40+	10YR4/3m	CL	weak to moderate, coarse, subangular blocky	moderate, medium to coarse, subangular blocky	slightly sticky, very firm, very plastic	common, medium, prominent, 10YR4/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-27	5	1	2	3	5	11	21	50	29	12	1.25	52
Btgj	27-40	1	4	3	3	4	4	21	43	36	16	1.53	43
Ckgj	40+	6	4	2	2	4	7	20	49	31	10	1.69	37

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-27	57.0	38.0	27.3	13.3	14.0	1.40		7.4	7.1	3.2	18.3	1.0	
Btgj	27-40	49.0	41.0	37.3	25.3	12.0	0.08		7.6	7.2	0.8	19.0	1.0	
Ckgj	40+	39.7	32.3	29.3	22.0	7.3	0.90	0.2	8.1	7.7			10.0	1.4

CHINGUACOUSY SOIL - COARSE PHASE (CGU.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm sandy textures over clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	22	9	56	20	30	14	FSL	2.5	7.0	0.5
IIBmgj	1	42	4	43	19	39	18	L	0.8	6.9	0.0
IIBtgj	4	52	3	25	8	40	35	CL	0.7	7.0	0.3
IICkg	2		3	17	4	45	38	SICL		7.6	8.9

CHINGUACOUSY SOIL - LOAMY PHASE (CGU.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	22	19	3	27	12	50	23	SIL	3.5	6.6	0.7
Bm	11	30	4	31	13	50	19	SIL	1.7	6.3	0.1
IIBtgj1	8	39	2	23	9	41	36	CL	1.1	6.2	0.2
IIBtgj2	30	54	3	18	6	44	38	SICL	0.7	6.2	0.1
IICkgj	19		3	17	5	47	36	SICL	0.1	7.5	6.7

CHINGUACOUSY SOIL - LOAMY RED PHASE (CGU.LR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	12	18	5	27	10	49	24	SIL	4.0	6.3	0.5
IIBmgj	2	38	4	18	7	47	35	SICL	0.9	5.5	0.0
IIBtgj1	8	54	3	18	7	43	39	SICL	0.8	6.0	0.1
IIBtgj2	4	57	2	18	6	41	41	SIC	0.8	6.9	2.0
IICkgj	8		6	16	6	48	36	SICL	0.3	7.4	11.2

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

CGU.LR ONTARIO 1985 PROFILE NO.MEFP012

LOCATION Town of Niagara-on-the-Lake, Lot 95, Con. X, NTS Map Area 30M/3h, 17 TPT 5279 7950

ELEVATION 131 metres

SITE Winter wheat field

LANDFORM AND PARENT MATERIALS Very gently sloping clay till plain overlain by discontinuous loamy lacustrine sediments

SLOPE 3.5% complex

SOIL WATER REGIME Imperfectly drained, conductivity medium, saturation period low to medium

STONINESS Nonstony

CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol, loamy/fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-20 (20-22)	10YR3/3m	SIL	weak, medium, granular	moderate to strong, coarse, granular	slightly sticky, very friable, slightly plastic	
Bmgj	20-33 (12-14)	10YR4/3m	SIL	very weak, coarse, granular	weak, medium, subangular blocky	sticky, friable, very plastic	common, fine, distinct, 10YR5/4
IIBtgj	33-53 (18-21)	7.5YR4/2m	SIC	weak, fine, columnar	weak, fine, columnar	very sticky, firm, very plastic	common, fine, distinct, 7.5YR5/4
IICkgj	53+	7.5YR4/2m	SIC	moderate, coarse, angular blocky	moderate to strong, coarse, subangular blocky	sticky, firm, very plastic	common, fine, distinct, 7.5YR5/4

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-20	2	3	3	4	4	9	23	53	24
Bmgj	20-33	4	3	4	5	5	7	23	53	24
IIBtgj	33-53	4	1	1	1	3	5	11	49	40
IICkgj	53+	1	1	1	1	4	5	12	46	42

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-20	1.22	7.0	2.8	15.0	1.0		
Bmgj	20-33	1.41	7.0	2.0	15.6	1.0		
IIBtgj	33-53	1.49	7.3	0.6	19.8	1.0		
IICkgj	53+	1.54	7.4			11.0	2.5	0.2

CHINGUACOUSY SOIL - RED PHASE (CGU.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	9	20	2	28	9	42	30	CL	3.6	6.5	0.3
Bmgj	6	48	3	24	9	42	34	CL	0.7	6.2	0.1
Btgj	6	60	2	17	7	43	40	SICL	0.8	6.0	0.3
Ckgj	6		7	19	7	41	40	SICL		7.6	13.2

CHINGUACOUSY SOIL - RED WASHED PHASE (CGU.RW)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Washed reddish-hued clay loam till, modified by lacustrine processes

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	21	20	6	40	15	42	18	L	3.6	6.3	0.2
Bmgj	21	51	6	38	14	43	19	L	1.9	6.2	0.5
Btgj	13	54	5	31	12	41	28	CL	1.3	5.9	0.1
Ckgj	14		7	30	12	50	20	SIL		7.5	10.1

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

CGU.RW ONTARIO 1985 PROFILE NO.LWSSP004

LOCATION	Township of Wainfleet, Lot 13, Con. I, NTS Map Area 30L/14f, 17 TPT 3508 4932
ELEVATION	186 metres
SITE	Cultivated corn field
LANDFORM AND PARENT MATERIALS	Very gently sloping till moraine composed of washed clayey and loamy till materials
SLOPE	2.5% simple
SOIL WATER REGIME	Imperfectly drained, conductivity medium to low, saturation period medium
STONINESS	Slightly stony
CLASSIFICATION	Gleyed Gray Brown Luvisol, fine clayey/loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol. Also variant because of high gravel content in surface horizon and lower than normal clay contents in lower horizons

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-14 (14-24)	10YR3/2m	L	moderate, medium, granular	strong, medium, granular	sticky, friable, plastic	
Btgj1	14-30 (0-19)	10YR4/3m	CL	moderate to strong, coarse, columnar	weak to moderate, coarse, subangular blocky	sticky, firm, plastic	common, medium, prominent, 7.5YR4/6
Btgj2	30-40 (8-35)	5YR4/3m	CL	moderate, coarse, subangular blocky	moderate to strong, medium to coarse, subangular blocky	sticky, firm, plastic	common, medium, prominent, 7.5YR4/6
Bmgj	40-66 (20-49)	5YR4/3m	CL	weak, coarse, subangular blocky	moderate,medium to coarse, subangular blocky	slightly sticky, firm, plastic	many, fine, prominent, 7.5YR4/6
Ckgj	66+	5YR4/3m	SIL	weak, coarse, subangular blocky	weak to moderate, medium to coarse, subangular blocky	slightly sticky, firm, plastic	few, fine, distinct, 7.5YR4/4

			Sand Fraction %								Fine Clay	Bulk	
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	<.2um %	Density g/cm^3	Porosity %
Ap	0- 14	11	3	5	10	9	13	40	41	19	14	1.07	59
Btgj1	14- 30	2	2	2	4	7	9	24	37	38	6	1.73	35
Btgj2	30- 40	4	4	3	4	6	10	27	35	38	15	1.63	37
Bmgj	40- 66	0	1	1	2	8	20	32	40	28	11	1.69	36
Ckgj	66+	4	1	1	2	5	13	22	56	22	5	1.87	31

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 14	57.7	42.3	28.3	10.0	18.3	8.50		5.7	5.8	3.4	11.2		
Btgj1	14- 30	48.7	41.3	37.7	24.7	13.0	0.05		6.7	6.7	0.6	18.2		
Btgj2	30- 40	47.7	38.3	34.7	24.0	10.7	19.30		7.0	6.6	0.5	17.6		
Bmgj	40- 66	47.7	37.0	32.0	19.0	13.0	0.10		7.6	7.0	0.4	13.6	1.0	
Ckgj	66+	38.3	30.7	22.3	19.7	2.6	0.06	0.1	8.0	7.6			14.0	

CHINGUACOUSY SOIL - WASHED PHASE (CGU.W)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Washed clay loam till, modified by lacustrine processes

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	21	21	5	34	15	46	20	L	3.0	6.6	0.8
Bmgj	18	48	5	31	13	45	24	L	0.9	6.6	0.4
Btgj	13	55	7	31	12	41	28	CL	0.7	6.7	0.2
Ckgj	13		9	31	11	47	22	L	0.1	7.5	8.6

COLWOOD

COLWOOD SOIL (CWO)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine silt loam

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	16	24	0	36	25	44	20	L	6.2	6.6	0.5
Bg	14	50	0	34	24	44	22	L	0.9	6.8	1.0
Ckg	16		0	27	19	55	18	SIL		7.5	15.2

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

CWO ONTARIO 1985 PROFILE NO.EWPSP004

LOCATION Township of Wainfleet, Lot 29, Con. II, NTS Map Area 30L/14e, 17 TPT 2848 4963

ELEVATION 177 metres

SITE Cultivated soybean field

LANDFORM AND PARENT MATERIALS Level to nearly level lacustrine plain consisting of deep loamy lacustrine sediments

SLOPE 0.5% complex

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long

STONINESS Nonstony

CLASSIFICATION Orthic Humic Gleysol, loamy, alkaline, strongly calcareous, mild humid to subhumid

STATUS Modal. Higher than normal silt content in lowest C horizon

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-23 (23-25)	10YR3/1m	SIL	massive	weak, medium to coarse, subangular blocky	slightly sticky, friable, very plastic	
Bg	23-35 (5-13)	10YR6/2m	L	moderate, medium, prismatic		slightly sticky, very firm, very plastic	common, fine, prominent, 10YR5/6
Ckgj1	35-52 (21-15)	10YR5/2m	SL	massive	weak to moderate, coarse, platy	slightly sticky, friable, plastic	few, fine, faint, 10YR5/4
Ckgj2	52-80 (29-36)	10YR5/3m	SIL	massive		slightly sticky, firm, very plastic	many, coarse, prominent, 10YR5/6
Ckg	80+	10YR5/2m	SI	moderate, coarse, platy	weak, coarse, subangular blocky	slightly sticky, friable, nonplastic	many, coarse, prominent, 10YR5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-23	1	0	0	1	2	19	23	55	22	7	1.06	57
Bg	23-35	0	0	0	0	5	42	47	33	20	8	1.69	37
Ckgj1	35-52	0	0	0	0	5	49	54	31	15	6	1.64	40
Ckgj2	52-80	0	0	0	0	2	21	24	54	22	7	1.55	42
Ckg	80+		0					9	81	10	4	1.53	44

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-23	58.3	49.7	42.0	16.7	25.3	0.06		7.5	7.4	10.3	49.9	4.0	
Bg	23-35	40.0	33.7	27.0	12.7	14.3	0.10		7.8	7.4	0.4	11.1	1.0	
Ckgj1	35-52	41.7	34.7	26.0	12.0	14.0	0.02	0.5	7.9	7.6			12.0	0.3
Ckgj2	52-80	46.3	36.7	29.0	15.0	14.0	0.03	0.7	7.8	7.7			18.0	1.2
Ckg	80+	47.3	38.7	32.3	13.7	18.6	0.06	0.6	7.9	7.5			22.0	1.4

COLWOOD SOIL - RED PHASE (CWO.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine silt loam

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	22	1	34	21	48	18	SIL	2.7	6.4	0.1
Btg	9	52	0	28	18	44	28	CL	0.8	6.5	0.2
Bg	6	82	2	40	25	46	14	L	0.6	6.9	0.4
Ckg	3		0	28	21	57	15	SIL		7.6	12.9

FARMINGTON

FARMINGTON SOIL (FRM)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 10 to 20 cm variable textures over mainly limestone and dolostone bedrock

DRAINAGE Rapid

USUAL CLASSIFICATION Orthic Melanic Brunisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	19	19	4	0	52	44	SIC	5.1	6.4	
R	1										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

FRM ONTARIO 1985 PROFILE NO.EAWP005

LOCATION City of Port Colborne, Lot 33, Con. II, NTS Map Area 30L/14f, 17 TPT 4086 5006

ELEVATION 180 metres

SITE Idle land

LANDFORM AND PARENT MATERIALS Level to nearly level bedrock plain, overlain by thin veneer of variable sediments

SLOPE 1% simple

SOIL WATER REGIME Rapidly drained, conductivity high, saturation period very short

STONINESS Slightly stony

CLASSIFICATION Orthic Humic Regosol, extremely shallow lithic, mild humid to subhumid

STATUS Taxadjunct to Orthic Melanic Brunisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (18-20)	10YR3/3m	SIC	moderate to strong, coarse, granular	moderate to strong, medium, granular	sticky, very friable, very plastic	
R	19+						

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-19	19						4	52	44
R	19+									

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-19	1.23	6.4	5.1	20.2			
R	19+							

FARMINGTON SOIL - SHALLOW PHASE (FRM.S)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 50 to 100 cm variable textures over mainly limestone and dolostone bedrock

DRAINAGE Rapid

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	17	4	39	14	40	21	L	6.2	6.8	0.8
Bm1	6	37	9	44	10	41	15	L	1.5	6.3	0.1
Bt	2	59	6	38	11	34	28	CL	0.5	6.6	0.4
Bm2	2	64	9	50	6	39	11	L	1.0	5.7	0.0
R											

FARMINGTON SOIL - VERY SHALLOW PHASE (FRM.V)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 20 to 50 cm variable textures over mainly limestone and dolostone bedrock

DRAINAGE Rapid

USUAL CLASSIFICATION Orthic Melanic Brunisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	11	19	11	33	14	48	19	L	6.3	6.9	3.7
Bm	10	33	10	32	14	49	19	L	2.6	6.8	2.9
R	11										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

FRM.V ONTARIO 1985 PROFILE NO.EAWSP003

LOCATION	Town of Lincoln, Lot 19, Con. IX, NTS Map Area 30M/3d, 17 TPT 2313 7447
ELEVATION	192 metres
SITE	Abandoned farmland
LANDFORM AND PARENT MATERIALS	Level to very gently sloping bedrock plain, overlain by thin veneer of variable sediments
SLOPE	2% complex
SOIL WATER REGIME	Rapidly drained, conductivity high, saturation period very short
STONINESS	Slightly stony
CLASSIFICATION	Orthic Melanic Brunisol, coarse loamy, very shallow lithic, mild humid to subhumid
STATUS	Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-11 (9-11)	10YR3/3m	SIL	moderate, coarse, granular	moderate, medium to coarse, granular	slightly sticky, very friable, slightly plastic	
Bm	11-24 (9-13)	7.5YR5/6m	SIL	moderate, medium, subangular blocky	moderate, medium, granular	slightly sticky, very friable, slightly plastic	
R	24+						

			Sand Fraction %										
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0- 11	0	0	1	2	7	24	34	60	6	1	1.01	60
Bm	11- 24	0	0	0	1	5	20	27	67	6	1	1.05	58
R	24+												

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 11	68.0	43.3	31.3	10.7	20.6	28.0		7.6	7.2	7.5	28.5	12.0	
Bm	11- 24	63.0	50.3	37.7	11.3	26.4	5.5		7.8	7.1	5.3	20.8	6.0	
R	24+													

FLAMBOROUGH SOIL (FMB)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine sandy loam and very fine sandy loam

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	27	1	56	38	29	15	VFSL	3.6	7.0	0.9
Btg	1	52	0	52	33	25	23	VFSL	0.5	6.0	
Bg	4	83	0	80	37	13	7	LS	0.4	6.7	
Ckg	1		0	52	21	43	5	SL		6.7	

FLAMBOROUGH SOIL - BROWN PHASE (FMB.B)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly brownish-hued lacustrine sandy loam and very fine sandy loam

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	22	0	56	48	36	8	VFSL	2.2	6.1	
Btjgj	1	30	0	51	46	39	10	L	1.3	5.9	
Bg1	1	52	0	56	44	36	8	VFSL	0.5	5.9	
Bmgj	1	72	0	86	35	9	5	LFS	0.3	5.8	
Bg2	1		3	89	43	7	4	FS	0.1	6.4	

FONTHILL

FONTHILL SOIL (FNT)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued coarse sandy loam and gravelly sand

DRAINAGE Rapid

USUAL CLASSIFICATION Orthic Melanic Brunisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	27	24	15	67	14	24	9	CSL	2.1	5.9	1.1
Bm1	36	48	20	72	13	21	7	GCSL	1.2	5.8	0.9
Btj	15	68	19	71	18	20	9	SL	0.4	5.5	
Bm2	20	87	17	80	9	14	6	LCS	0.3	5.4	
Bm3	11	115	16	82	9	12	6	LCS	0.1	5.4	
Ck	4		33	85	3	9	6	GLCS		7.3	19.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

FNT ONTARIO *1985* PROFILE NO. EWPSP005

LOCATION Town of Pelham, Lot 9, Con. VIII, NTS Map Area 30M/3c, 17 TPT 3606 6623

ELEVATION 241 metres

SITE Sour cherry orchard

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping kame moraine deposits consisting mainly of reddish-hued sandy and gravelly soil materials

SLOPE 1% simple

SOIL WATER REGIME Rapidly to well drained, conductivity high, saturation period very short

STONINESS Nonstony

CLASSIFICATION Orthic Melanic Brunisol, sandy, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-21 (9-25)	10YR3/2m	CSL	weak, medium, subangular blocky	weak, fine, subangular blocky	slightly sticky, friable, slightly plastic	
Bm1	21-54 (16-58)	7.5YR4/4m	CSL	moderate, medium, subangular blocky	weak, fine, subangular blocky	nonsticky, friable, nonplastic	
Bm2	54-74 (0-35)	5YR4/3m	LCS	single grain		nonsticky, very friable, nonplastic	
Bm3	74+	5YR3/3m	LCS	single grain		nonsticky, loose, nonplastic	

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-21	12	13	17	19	0	20	69	23	8	3	1.35	49
Bm1	21-54	17	12	22	19	11	8	72	22	6	2	1.47	45
Bm2	54-74	7	20	40	17	5	3	85	11	4	3	1.43	47
Bm3	74+	10	27	36	14	6	3	86	10	4	1	1.35	50

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-21	51.0	32.7	23.3	7.3	16.0	7.30		6.6	6.3	2.7	19.5		
Bm1	21-54	46.7	25.3	17.0	6.0	11.0	4.90		6.8	6.2	0.4	32.5		
Bm2	54-74	46.0	20.7	15.3	6.7	8.6	10.20		5.8	4.9	0.1	12.1		
Bm3	74+	49.3	20.7	14.3	6.0	8.3	5.00		6.1	5.0	0.1	17.1		

FOX SOIL (FOX)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine sand and loamy sand

DRAINAGE Rapid

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	22	8	68	8	23	9	SL	2.2	5.5	
Bm1	4	49	8	80	8	15	5	LS	0.6	5.2	
Bm2	4	79	13	87	6	9	4	S	0.3	5.3	
Bm3	4		4	87	6	9	4	S	0.2	5.5	

FOX SOIL - RED PHASE (FOX.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine sand and loamy sand

DRAINAGE Rapid

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	5	22	2	74	15	17	9	SL	2.3	6.2	
Bm1	5	40	3	80	10	16	4	LS	0.5	5.7	
Bm2	3	59	4	85	11	11	4	LS	0.2	5.7	
Bt	7		1	82	34	12	6	LVFS	0.2	5.8	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

FOX.R ONTARIO 1985 PROFILE NO.EWPSP002

LOCATION Town of Pelham, Lot 1, Con. V, NTS Map Area 30M/3c, 17 TPT 3955 6930

ELEVATION 156 metres

SITE Forested site in St. Johns Conservation area

LANDFORM AND PARENT MATERIALS Moderately sloping, dissected glaciolacustrine sands

SLOPE 13.5% complex

SOIL WATER REGIME Well to rapidly drained, conductivity high, saturation period very short

STONINESS Nonstony

CLASSIFICATION Brunisolic Gray Brown Luvisol, sandy, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ah	0-10 (7-13)	10YR3/1m	FSL	weak, coarse, granular	weak, medium, granular	slightly sticky, very friable, slightly plastic	
Bm	10-38 (23-33)	10YR5/6m	SL	massive	single grain	nonsticky, friable, nonplastic	
Bt	38-66 (15-31)	7.5YR4/4m	FSL	massive	single grain	nonsticky, friable, nonplastic	
Btj	66-100	5YR4/4m	LS	massive	single grain	slightly sticky, friable, slightly plastic	

			Sand Fraction %										
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ah	0-10	0	0	4	25	27	10	67	24	10	8	0.86	67
Bm	10-38	0	0	3	30	29	10	72	23	5	2	1.10	59
Bt	38-66	0	0	5	33	30	8	76	15	9	2	1.09	59
Btj	66-100	0	0	5	42	29	6	81	12	7	2	1.33	51

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ah	0-10	63.7	40.3	30.7	5.7	25.0			4.5	4.8	6.7	30.9		
Bm	10-38	57.0	36.0	22.0	3.3	18.7	14.20		5.0	4.4	0.8	7.4		
Bt	38-66	52.0	26.7	14.7	4.0	10.7	9.10		5.3	6.6	0.3	10.3		
Btj	66-100	45.7	23.0	14.3	5.7	8.6	10.00		5.7	5.0	0.1	32.8		

FRANKTOWN

FRANKTOWN SOIL - SHALLOW PHASE (FKW.S)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 50 to 100 cm variable textures over mainly limestone and dolostone bedrock

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	13	24	3	27	10	48	25	L	4.3	6.3	0.7
Bmgj	7	42	7	46	11	36	18	L	1.0	6.2	0.3
Btgj	14	51	1	17	6	45	38	SICL	0.9	6.8	1.0
Ckgj	5	76	9	33	10	45	22	L	0.1	7.5	21.0
R	13										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

FKW.S ONTARIO 1985 PROFILE NO.EAWP020

LOCATION Town of Fort Erie, Lot 10, Con. II, NTS Map Area 30L/15e, 17 TPT 6413 5043

ELEVATION 184 metres

SITE Idle scrubland

LANDFORM AND PARENT MATERIALS Nearly level bedrock plain overlain by thin veneer of variable sediments

SLOPE 1.5% simple

SOIL WATER REGIME Imperfectly drained, conductivity medium, saturation period medium to short

STONINESS Nonstony

CLASSIFICATION Gleyed Melanic Brunisol, coarse loamy, shallow lithic, mild humid to subhumid.

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-23 (19-23)	10YR3/3m	L	weak to moderate, medium to coarse, subangular blocky	weak to moderate, fine to medium, subangular blocky	slightly sticky, very friable, slightly plastic	
Bm	23-41 (13-18)	10YR4/4m	L	weak to moderate, coarse, subangular blocky	weak to moderate, fine to medium, subangular blocky	slightly sticky, very friable, nonplastic	
Bmgj	41-69 (26-32)	10YR5/3m	FSL	weak to moderate, medium to coarse, subangular blocky	weak, fine to medium, subangular blocky	slightly sticky, friable, nonplastic	few, fine, distinct, 10YR5/6
R	69+						

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-23	9	3	4	7	13	16	43	42	16
Bm	23-41	12	3	6	9	16	17	50	39	11
Bmgj	41-69	2	3	4	10	22	19	59	25	15
R	69+									

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-23	1.08	4.6	4.0	8.8			
Bm	23-41	1.46	4.8	0.4	5.3			
Bmgj	41-69	1.59	5.6	0.3	7.8			
R	69+							

FRANKTOWN SOIL - VERY SHALLOW PHASE (FKW.V)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 20 to 50 cm variable textures over mainly limestone and dolostone bedrock

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Melanic Brunisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	11	18	7	32	11	46	22	L	4.4	6.2	0.3
Bmgj	8	35	9	33	11	45	22	L	1.9	6.1	0.3
R	11										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

FKW.V ONTARIO 1985 PROFILE NO.MEFP006

LOCATION Town of Grimsby, Lot 2, Con. III, NTS Map Area 30M/14h, 17 TPT 1929 8091

ELEVATION 191 metres

SITE Abandoned farmland

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping bedrock plain, overlain by thin veneer of variable sediments

SLOPE 2% complex

SOIL WATER REGIME Imperfectly drained, conductivity medium to high, saturation period medium to short

STONINESS Nonstony

CLASSIFICATION Gleyed Melanic Brunisol, fine loamy, very shallow lithic, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-22 (21-23)	10YR3/1m	SICL	moderate to strong, coarse, granular	strong, coarse, granular	slightly sticky, very friable, slightly plastic	
Bmgj	22-43 (19-22)	10YR4/3m	SICL	massive	weak, coarse, angular blocky	slightly sticky, very friable, plastic	common, fine, distinct, 10YR5/4
R	43+						

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 22	1	3	2	1	3	5	14	54	32
Bmgj	22- 43	0	4	2	2	4	6	18	50	32
R	43+									

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 22	1.19	6.4	5.5	18.9			
Bmgj	22- 43	1.44	6.4	1.1	13.5			
R	43+							

GRIMSBY SOIL (GMY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine fine sandy loam and very fine sandy loam

DRAINAGE Imperfect

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	25	19	1	67	33	25	8	VFSL	2.0	5.6	
Bm1	46	59	1	68	36	25	7	VFSL	0.6	5.5	
Bt	19	80	0	61	36	26	12	VFSL	0.3	5.4	
Bm2	19	83	0	76	41	19	5	LFS	0.3	5.7	
Ck	3		0	78	28	20	2	LFS		7.5	6.3

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

GMY ONTARIO 1985 PROFILE NO.EAWSP002

LOCATION Town of Lincoln, Lot 22, Con. B.F, NTS Map Area 30M/4h, 17 TPT 2130 8289

ELEVATION 87 metres

SITE Peach orchard

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine sand plain

SLOPE 1.5% simple

SOIL WATER REGIME Well to rapidly drained, conductivity high, saturation period short to very short

STONINESS Nonstony

CLASSIFICATION Brunisolic Gray Brown Luvisol, coarse loamy, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-23 (22-26)	10YR3/2m	FSL	weak, coarse, platy	weak to moderate, coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bm	23-60 (30-40)	7.5YR4/4m	LFS	weak to moderate, coarse, subangular blocky	weak to moderate, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bt1	60-95 (25-35)	7.5YR4/4m	FSL	moderate, coarse, subangular blocky	moderate, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bt2	95-115	7.5YR4/4m	VFSL	weak to moderate, coarse, platy	weak to moderate, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-23	0	0	2	4	35	33	74	20	6	1	1.17	56
Bm	23-60	0	1	1	3	34	37	76	19	5	0	1.37	49
Bt1	60-95	0	0	0	0	40	35	75	13	11	2	1.43	47
Bt2	95-115	0	0	0	0	2	66	68	22	10	3	1.38	49

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-23	55.7	44.3	36.7	5.0	31.7	2.80		6.8	6.1	2.5	17.3		
Bm	23-60	51.0	35.0	23.0	3.0	20.0	3.90		6.6	5.5	0.6	6.9		
Bt1	60-95	54.3	37.3	21.7	8.0	13.7	0.40		6.6	5.6	0.1	8.3		
Bt2	95-115	58.0	43.3	26.7	9.7	17.0	0.10		6.3	5.9	0.1	12.1		

GRIMSBY SOIL - BROWN PHASE (GMY.B)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly brownish-hued lacustrine fine sandy loam and very fine sandy loam

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	3	20	2	63	30	29	8	VFSL	1.9	5.1	
Bm1	3	46	2	68	30	26	6	VFSL	0.7	4.8	
Bm2	3	75	2	75	26	19	6	FSL	0.5	5.1	
Bm3	3		1	78	26	17	5	LFS	0.5	5.2	

HALDIMAND SOIL (HIM)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine heavy clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	105	15	1	11	2	44	45	SIC	4.1	6.2	0.7
Bmgj	22	31	1	7	1	40	53	C	1.9	6.2	1.2
Btgj	99	35	0	5	1	32	63	HC	1.6	6.2	0.3
Ckgj	99		0	2	0	33	65	HC	0.1	7.6	12.7

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

(1)HIM ONTARIO 1985 PROFILE NO.LWSP013

LOCATION Town of Niagara-on-the-Lake, Lot 7, Con. VIII, NTS Map Area 30M/3g, 17 TPT 4719 7983

ELEVATION 113 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Nearly level to gently sloping lacustrine clay plain consisting of sediments with mainly heavy clay and silty clay textures

SLOPE 5% complex

SOIL WATER REGIME Imperfectly drained, conductivity low, saturation period medium to long

STONINESS Nonstony

CLASSIFICATION Gleyed Gray Brown Luvisol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (17-25)	10YR3/3m	SIC	very weak, coarse, subangular blocky	moderate to strong, fine to medium, granular	slightly sticky, friable and firm, very plastic	
Btgj	19-40 (15-22)	10YR4/3m	C	moderate to strong, coarse, angular blocky	moderate to strong, coarse, subangular blocky	slightly sticky, firm, very plastic	few, fine, faint, 10YR4/4
Ckgj1	40-58 (7-19)	10YR4/2m	HC	weak to moderate, medium to coarse, subangular blocky	weak to moderate, medium to coarse, subangular blocky	slightly sticky, firm, very plastic	few, fine, faint, 10YR4/3
Ckgj2	58+	10YR4/2m	HC	moderate to strong, coarse, angular blocky	moderate to strong, medium to coarse, angular blocky	slightly sticky, firm, very plastic	few, fine, faint, 10YR4/4

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 19	0						8	47	45
Btgj	19- 40	0						3	38	59
Ckgj1	40- 58	0						2	36	62
Ckgj2	58+	1						3	37	61

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 19	1.20	7.0	2.8	19.9	0.6		
Btgj	19- 40	1.38	7.1	1.2	20.6	0.3		
Ckgj1	40- 58	1.46	7.7			10.7	3.0	0.3
Ckgj2	58+	1.49	7.8			15.4	4.2	0.4

(2)HIM ONTARIO 1985 PROFILE NO.EAWSP001

LOCATION	Township of West Lincoln, Lot 15, Con. IX, NTS Map Area 30M/4a, 17 TPT 1500 7175
ELEVATION	191 metres
SITE	Cultivated soybean field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping glaciolacustrine clay plain consisting of sediments with mainly heavy clay and silty clay textures
SLOPE	1.5% complex
SOIL WATER REGIME	Imperfectly drained, conductivity low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Gray Brown Luvisol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-15 (13-23)	10YR4/2m	SIC	massive	massive	sticky, very firm, very plastic	
Btgj1	15-25 (7-10)	10YR5/3m	HC	strong, coarse, angular blocky	strong, coarse, angular blocky	sticky, very firm, very plastic	many, medium, prominent, 10YR5/6
Btgj2	25-38 (9-16)	10YR4/2m	HC	weak, medium, columnar	weak, medium, columnar	sticky, very firm, very plastic	common, fine, distinct, 10YR4/4
Ckgj	38+	10YR4/2m	HC	weak, medium, columnar	weak, medium, columnar	sticky, very firm, very plastic	few, fine, distinct, 10YR4/4

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm3	Porosity %
Ap	0- 15	0						6	44	50	17	1.05	59
Btgj1	15- 25	0						3	30	68	27	1.27	53
Btgj2	25- 38	0						1	29	70	26	1.30	51
Ckgj	38+	0						1	35	64	15	1.35	50

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-15	63.0	48.7	42.7	24.3	18.4	10.70		6.6	6.5	3.7	26.1		
Btgj1	15-25	58.0	49.0	45.7	28.7	17.0	0.10		6.5	6.3	1.2	28.5		
Btgj2	25-38	58.3	52.7	49.0	32.7	16.3	0.58		7.3	6.8	1.0	29.8		
Ckgj	38+	54.7	47.3	43.3	30.7	12.6	0.13	0.2	7.8	7.7			19.0	4.6

HALDIMAND SOIL - LOAMY PHASE (HIM.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over lacustrine heavy clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	49	18	1	19	9	49	32	SICL	4.0	6.1	0.6
Bmgj	12	27	0	22	13	47	31	CL	1.9	5.8	0.3
IIBtgj	45	42	0	7	2	34	59	C	1.2	5.9	0.1
IICkgj	49		0	3	0	33	64	HC	0.1	7.5	13.4

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

(1)HIM.L ONTARIO 1985 PROFILE NO. LWSSP006

LOCATION Township of West Lincoln, Lot 7, Con. III, NTS Map Area 30M/4a, 17 TPT 1902 6475

ELEVATION 181 metres

SITE Hay - pasture field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine clay plain with heavy clay sediments often overlain by veneer of sediments with lower clay contents

SLOPE 3% complex

SOIL WATER REGIME Imperfectly drained, conductivity low, saturation period medium to long

STONINESS Nonstony

CLASSIFICATION Gleyed Gray Brown Luvisol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-17 (16-22)	10YR4/3m	SICL	weak, coarse, granular	weak, coarse, granular	slightly sticky, very hard, very plastic	
IIBtgj1	17-28 (10-23)	10YR4/3m	HC	very weak, coarse, subangular blocky	very weak, coarse, subangular blocky	slightly sticky, very hard, very plastic	many, fine prominent, 7.5YR4/6
IIBtgj2	28-42 (10-16)	10YR3/3m	HC	weak to moderate, coarse, subangular blocky	weak to moderate, medium to coarse, subangular blocky	slightly sticky, very hard, very plastic	common, fine, distinct, 10YR4/4
IICkgj	42+	10YR3/2m	HC	moderate, coarse, angular blocky	moderate, medium to coarse, angular blocky	slightly sticky, very hard, very plastic	common, fine, distinct, 10YR4/4

		Sand Fraction %											
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0- 17	0						10	54	36	11	1.36	48
IIBtgj1	17- 28	0						3	35	62	24	1.51	42
IIBtgj2	28- 42	0						1	29	69	24	1.51	45
IICkgj	42+	0						1	36	63	17	1.51	45

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 17	56.3	42.3	36.3	16.7	19.6	0.04		5.7	5.4	4.0	14.7		
IIBtgj1	17- 28	59.7	49.0	44.0	29.3	14.7	0.13		6.3	5.4	1.6	20.0		
IIBtgj2	28- 42	61.3	50.3	45.3	30.0	15.3	0.06		7.2	6.6	1.1	25.1		
IICkgj	42+	54.3	44.3	39.7	28.3	11.4	0.13	0.2	7.7	7.6			12.0	3.1

(2)HIM.L ONTARIO 1985 PROFILE NO.MEFP005

LOCATION	Township of West Lincoln, Lot 7, Con. II, NTS Map Area 30M/4a, 17 TPT 1900 6469
ELEVATION	183 metres
SITE	Hay field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping lacustrine clay plain with heavy clay sediments often overlain by veneer of sediments with lower clay contents
SLOPE	4.5% complex
SOIL WATER REGIME	Imperfectly drained, conductivity low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Gray Brown Luvisol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-18 (16-18)	10YR4/3m	CL	moderate, fine to medium, subangular blocky	weak to moderate, coarse, granular	slightly sticky, friable, very plastic	
IIBtgj	18-32 (14-18)	10YR4/3m	C	weak to moderate, medium, columnar	weak, medium, columnar	sticky, very firm, very plastic	common, fine, distinct, 10YR4/5
IIBC	32-41 (8-12)	10YR4/2m	HC	moderate, coarse, columnar	moderate, coarse, angular blocky	sticky, very firm, very plastic	common, fine, distinct, 10YR4/4
IICkgj	41-77	10YR4/2m	HC	moderate to strong, coarse, columnar	moderate to strong, coarse, angular blocky	sticky, very firm, very plastic	common, fine, distinct, 10YR5/4,

		Sand Fraction %								
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-18	1	0	1	2	5	12	20	51	29
IIBtgj	18-32	0						5	38	57
IIBC	32-41	0						3	36	61
IICkgj	41-77	0						2	27	71

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-18	1.36	6.2	3.8	13.3			
IIBtgj	18-32	1.42	6.1	1.0	22.0			
IIBC	32-41		7.2	0.9	22.7	1.0		
IICkgj	41-77	1.55	7.8			16.0	4.0	0.2

HOLLY SOIL (HOY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Organic soil, swamp associated, 40 to 160 cm deep over loamy mineral soil materials

DRAINAGE Very poor

USUAL CLASSIFICATION Terric Mesisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Peat Material and Texture	Stage of Decomposition	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Om1	4	46						woody forest peat	mesic	77.3	5.5	
Om2	3	64						sedge fen peat	mesic	84.0	5.7	
Om3	3	97						sedge fen peat	mesic	70.8	5.7	
IIBg	4	115	0	16	9	55	29	SICL		12.4	6.9	0.7
IICkg	3		0	30	16	52	18	SIL		0.2	7.3	28.4

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

HOY ONTARIO 1985 PROFILE NO. LWS30

LOCATION Town of Fort Erie, Lot 33, Con. B.F, NTS Map Area 30L/14a, 17 TPT 5488 4644

ELEVATION 177 metres

SITE Wetland consisting of reeds, tall sedge, grasses and some small shrubs

LANDFORM AND PARENT MATERIALS Basin swamp with organic sediments consisting of woody sedge fen peat underlain by sedge fen peat. Loamy mineral sediment occurs at 149 cm depth

SLOPE 0.5 % simple

SOIL WATER REGIME Very poorly drained, conductivity high, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Terric Mesisol, mesic, euic, mild, peraquic, loamy

STATUS Undecided. pH of upper horizons is somewhat higher than normal

MORPHOLOGICAL DESCRIPTION, CHEMICAL AND PHYSICAL ANALYSES

Horizon	Depth cm	Colour (moist)	Peat Material and Texture	Stage of Decomposition	von Post Scale	Woody Material Volume %	Organic Matter %	pH $CaCl_2$	$CaCO_3$ %
Om1	0-50	10YR2/1	woody sedge fen peat	mesic	5	<10	81.6	6.0	
Om2	50-74	10YR2/2	sedge fen peat	mesic	5	<10	81.3	6.4	
Om3	74-108	10YR2/1	sedge fen peat	mesic	5	<10	63.7	6.1	
Om4	108-149	2.5Y3/2	sedge fen peat	mesic	5	<10	35.6	5.3	
IIBg	149-170	2.5Y3/2	SICL				19.2	7.0	
IICkg	170+	5Y5/1	SIL					7.3	28.7

JEDDO SOIL (JDD)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Humic Luvic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	19	17	2	22	10	46	32	CL	4.3	6.1	0.8
Bg	11	40	3	25	11	40	35	CL	1.1	6.6	0.4
Btg	6	44	2	17	8	38	45	C	1.4	6.1	0.3
Ckg	11		4	19	6	42	39	SICL	0.2	7.6	12.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

JDD ONTARIO 1985 PROFILE NO.LWSP007

LOCATION Town of Niagara-on-the-Lake, Lot 125, Con. V, NTS Map Area 30M/3g, 17 TPT 5188 8408

ELEVATION 98 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Level to nearly level clay till plain

SLOPE 1% simple

SOIL WATER REGIME Poorly drained, conductivity medium to low, saturation period long

STONINESS Nonstony

CLASSIFICATION Orthic Humic Gleysol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Humic Luvic Gleysol. Clay contents of B horizon are higher than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-13 (10-17)	10YR3/2m	SICL	weak, coarse, granular	weak, medium to coarse, granular	slightly sticky, hard, very plastic	
Bg1	13-24 (7-16)	2.5Y4/2m	SIC	very weak, coarse, subangular blocky	weak, medium to coarse, subangular blocky	slightly sticky, very hard, very plastic	many, medium, prominent, 10YR4/6
Bg2	24-49 (24-28)	10YR4/2m	SIC	very weak, coarse, subangular blocky	very weak, coarse, subangular blocky	slightly sticky, very hard, very plastic	many, medium, prominent, 7.5YR4/6
Ckg	49+	10YR4/2m	SICL	very weak, coarse, subangular blocky	weak, medium to coarse, subangular blocky	slightly sticky, very hard, very plastic	many, medium, prominent, 10YR4/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 13	6	3	2	2	3	7	17	50	34
Bg1	13- 24	0	3	2	1	3	4	12	42	46
Bg2	24- 49	0	3	2	1	2	4	12	43	45
Ckg	49+	1	1	1	2	3	4	11	50	39

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 13	1.11	7.1	4.4	19.5	1.0		
Bg1	13- 24	1.49	6.3	0.9	17.4			
Bg2	24- 49	1.64	6.4	0.5	20.7			
Ckg	49+	1.74	7.6			9.0	1.5	0.3

JEDDO SOIL - COARSE PHASE (JDD.C)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm sandy textures over clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	15	8	62	12	24	14	FSL	2.2	7.2	1.2
Bg	1	27	7	61	13	20	19	FSL	0.7	6.8	0.0
IIBg	1	43	1	9	0	46	45	SIC	0.6	7.3	0.7
IICkg	1		2	8	0	52	40	SIC		7.7	9.6

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

JEDDO SOIL - LOAMY PHASE (JDD.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Humic Luvic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	19	21	2	32	15	43	25	L	3.8	6.7	0.5
IIBtg	10	49	2	16	6	42	42	SICL	0.7	6.7	0.1
IIBmgj	6	51	2	29	10	36	35	CL	0.8	6.5	0.1
IICkg	14		3	14	4	45	41	SIC		7.6	10.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

JDD.L ONTARIO 1985 PROFILE NO.EAWP012

LOCATION	Town of Niagara-on-the-Lake, Lot 124, Con. V, NTS Map Area 30M/3g, 17 TPT 5151 8481
ELEVATION	95 metres
SITE	Alfalfa hay field
LANDFORM AND PARENT MATERIALS	Level to nearly level clay till plain
SLOPE	0.5% simple
SOIL WATER REGIME	Poorly drained, conductivity medium to low, saturation period long
STONINESS	Nonstony
CLASSIFICATION	Humic Luvic Gleysol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Orthic Humic Gleysol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (17-21)	10YR3/3m	L	moderate, coarse, granular	moderate, coarse, granular	sticky, extremely hard, plastic	
IIBtg1	19-29 (9-15)	10YR4/2m	C	moderate, fine to medium, columnar	moderate, medium to coarse, angular blocky	sticky, extremely hard, plastic	many, medium, prominent, 10YR4/6
IIBtg2	29-56 (23-30)	10YR4/1m	SIC	moderate, fine to medium, columnar	moderate, medium to coarse, angular blocky	sticky, extremely hard, plastic	many, medium, prominent, 10YR4/6
IICkg	56+	10YR4/1m	SICL	moderate, fine to medium, columnar	moderate, medium to coarse, angular blocky	sticky, extremely hard, plastic	common, medium, prominent, 10YR4/6

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 19	3	5	3	3	8	11	29	47	24
IIBtg1	19- 29	2	1	1	2	4	6	15	38	47
IIBtg2	29- 56	2	2	3	2	3	6	16	45	39
IICkg	56+	2	2	2	2	4	6	16	50	34

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 19	1.34	6.7	3.2	15.9			
IIBtg1	19- 29	1.49	5.5	0.7	17.3			
IIBtg2	29- 56	1.58	7.0	0.2	19.1	1.0		
IICkg	56+	1.78	7.7			12.0	2.4	0.4

JEDDO SOIL - LOAMY RED PHASE (JDD.LR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	23	6	42	16	36	22	L	2.9	6.7	0.2
IIBtg	5	48	2	23	9	39	39	CL	0.8	6.7	0.2
IICkg	6		6	22	9	43	35	CL		7.5	11.6

JEDDO SOIL - RED PHASE (JDD.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	18	2	19	7	44	37	SICL	4.9	6.3	0.1
Bmgj	3	37	2	20	8	39	41	C	1.2	7.2	1.9
Bg	3	43	3	17	6	40	43	SIC	1.1	6.1	0.5
Ckg	4		1	16	5	40	44	SIC	0.1	7.7	13.0

JEDDO SOIL - RED WASHED (JDD.RW)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Washed reddish-hued clay loam till, modified by lacustrine processes

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	8	26	7	31	13	44	25	L	4.6	6.6	1.0
Bg	3	42	7	26	11	44	30	CL	0.6	7.1	2.5
Bmgj	4	62	6	35	12	40	25	L	0.5	6.2	0.3
Ckg	7		4	29	11	49	22	SIL		7.6	11.4

JEDDO SOIL - WASHED PHASE (JDD.W)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Washed clay loam till, modified by lacustrine processes

DRAINAGE Poor

USUAL CLASSIFICATION Humic Luvic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	12	18	2	31	17	45	24	L	3.6	6.6	0.3
Btg1	8	41	3	28	12	44	28	CL	0.8	6.8	0.3
Btg2	6	53	2	27	12	42	31	CL	0.6	6.9	0.2
Ckg	10		6	27	10	51	22	SIL	0.1	7.6	10.9

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

(1)JDD.W ONTARIO 1985 PROFILE NO.MEFP013

LOCATION Town of Niagara-on-the-Lake, Lot 165, Con. III, NTS Map Area 30M/3g, 17 TPT 5036 8655

ELEVATION 91 metres

SITE Vineyard

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping washed clay till plain

SLOPE 0.5% simple

SOIL WATER REGIME Poorly drained, conductivity medium, saturation period medium to long

STONINESS Slightly stony

CLASSIFICATION Humic Luvic Gleysol, fine loamy, alkaline, strongly calcareous, mild humid to subhumid

STATUS Modal. Clay contents are significantly lower than in normal Jeddo soils

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-18 (17-19)	10YR3/2m	L	moderate, medium to coarse, granular	weak to moderate, coarse, granular	slightly sticky, very friable, slightly plastic	
Btgj	18-44 (23-26)	5YR5/3m	CL	weak to moderate, medium, columnar	weak to moderate, medium to coarse, columnar	slightly sticky, friable, plastic	many, fine, prominent, 7.5YR5/6
Btg	44-61 (12-20)	5YR5/2m	L	weak, coarse, subangular blocky	weak, coarse, subangular blocky	slightly sticky, friable, plastic	many, fine, prominent, 7.5YR5/6
Ckg	61+	5YR5/2m	L	moderate to strong, coarse, platy	weak to moderate, coarse, platy	slightly sticky, friable, plastic	common, fine, prominent, 7.5YR5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 18	3	2	2	2	7	16	29	50	21
Btgj	18- 44	1	4	2	2	7	15	30	41	28
Btg	44- 61	1	2	2	2	7	15	28	47	25
Ckg	61+	4	5	3	3	7	14	33	50	17

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 18	1.24	7.0	4.4	19.6	1.0		
Btgj	18- 44	1.49	7.0	0.5	18.3			
Btg	44- 61	1.55	7.3	0.3	18.9	1.0		
Ckg	61+	1.63	7.9		54.2	14.0	2.2	0.3

(2)JDD.W ONTARIO 1985 PROFILE NO.MSKP001

LOCATION	Town of Grimsby, Lot 12, Con. II, NTS Map Area 30M/4h, 17 TPT 1575 8238
ELEVATION	191 metres
SITE	Forage field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping washed till moraine with soil materials having predominantly clay loam and loam textures
SLOPE	3% simple
SOIL WATER REGIME	Poorly drained, conductivity medium to low, saturation period medium
STONINESS	Slighty stony
CLASSIFICATION	Humic Luvic Gleysol, fine loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Modal. Clay contents are significantly lower than in normal Jeddo soils

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-18 (15-25)	10YR3/3m	L	strong, coarse, angular blocky	moderate, coarse, angular blocky	nonsticky, friable, plastic	
Bmgj	18-26 (0-8)	10YR5/3m	L	weak to moderate, coarse, subangular blocky	weak to moderate, medium, subangular blocky	slightly sticky, friable, slightly plastic	common, medium, prominent, 10YR5/6
Btg	26-70 (36-55)	10YR4/2m	CL	moderate to strong, coarse, angular blocky	weak, coarse, subangular blocky	slightly sticky, firm, slightly plastic	many, medium, prominent, 10YR5/6
Ckg	70+	10YR4/2m	SIL	weak, coarse, subangular blocky	weak, coarse, subangular blocky	slightly sticky, firm, slightly plastic	many, medium, prominent, 10YR5/8

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 18	2	3	4	7	9	8	31	50	19
Bmgj	18- 26	3	7	6	6	8	7	34	48	18
Btg	26- 70	3	5	4	4	6	8	25	49	27
Ckg	70+	4	3	2	2	5	6	18	57	25

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 18	1.25	5.9	2.9	10.7			
Bmgj	18- 26	1.58	5.7	0.6	7.6			
Btg	26- 70	1.63	6.9	0.2	14.0			
Ckg	70+	1.67	7.7			16.0	3.1	0.2

(3)JDD.W ONTARIO 1985 PROFILE NO.LWSSP009

LOCATION	Town of Lincoln, Lot 9, Con. II, NTS Map Area 30M/3e, 17 TPT 2705 8171
ELEVATION	88 metres
SITE	Apple orchard
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping clay till plain
SLOPE	1.5% complex
SOIL WATER REGIME	Poorly drained, conductivity medium, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Orthic Humic Gleysol, fine loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Humic Luvic Gleysol. Clay contents are much lower than in normal Jeddo soils

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (9-35)	10YR3/2m	CL	weak to moderate, medium, subangular blocky	moderate, fine to medium, subangular blocky	slightly sticky, firm, slightly plastic	
Bg	19-49 (5-40)	2.5Y4/2m	L	very weak, very coarse, subangular blocky	weak, medium to coarse, subangular blocky	slightly sticky, firm, plastic	many, medium, prominent, 10YR4/6
Ckg	49+	2.5Y4/2m	SIL	very weak, coarse, subangular blocky	very weak, medium to coarse, subangular blocky	slightly sticky, very firm, plastic	many, medium, prominent, 10YR5/6

		Sand Fraction %											
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0- 19	3	2	2	3	4	22	32	41	27	13	1.29	50
Bg	19- 49	6	5	4	4	5	23	40	36	24	12	1.56	42
Ckg	49+	4	2	2	3	6	8	21	56	22	7		

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 19	59.7	42.0	35.3	15.3	20.0	0.90		6.9	6.8	3.9	17.1		
Bg	19- 49	57.0	46.0	39.3	20.7	18.6	0.08		7.2	7.2	0.7	18.1	1.0	
Ckg	49+							0.3	8.0	7.6			14.0	2.3

LINCOLN SOIL (LIC)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine heavy clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	190	15	0	10	2	41	49	C	5.0	5.9	0.3
Bg1	155	40	0	5	1	32	63	HC	1.7	6.1	0.3
Bg2	61	56	0	4	1	31	65	HC	1.2	6.3	0.3
Ckg	178		0	3	0	33	64	HC	0.1	7.6	13.9

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

LIC ONTARIO 1985 PROFILE NO.EWPSP006

LOCATION Township of West Lincoln, Lot 28, Con. IX, NTS Map Area 30M/4g, 17 TPT 1045 7566

ELEVATION 197 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine clay plain

SLOPE 1% simple

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long to prolonged

STONINESS Nonstony

CLASSIFICATION Humic Luvic Gleysol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Orthic Humic Gleysol. Deeper than normal to top of C horizon

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-15 (8-16)	10YR3/2m	C	weak, coarse granular	massive	sticky, firm, plastic	
Btg1	15-34 (14-22)	10YR4/2m	C	massive	massive	sticky, very firm, very plastic	many, fine, prominent, 10YR4/6
Btg2	34-62 (20-28)	10YR4/2m	HC	weak, coarse, subangular blocky	massive	sticky, very firm, very plastic	few, fine, prominent, 10YR5/6
Ckg	62+	10YR5/2m	SIC	weak to moderate, medium to coarse, subangular blocky	very weak, medium to coarse, subangular blocky	sticky, very firm, very plastic	many, medium, prominent, 10YR4/6

Horizon	Depth cm	Sand Fraction % Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm3	Porosity %
Ap	0-15	1	1	2	3	4	2	12	38	50	19	1.35	52
Btg1	15-34	0						6	39	55	30	1.49	44
Btg2	34-62	0						3	34	63	26	1.22	44
Ckg	62+	0						2	48	50	12	1.51	44

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-15	64.0	50.7	42.3	25.0	17.3	1.40		6.3	6.4	4.5	29.6		
Btg1	15-34	60.7	51.7	47.0	30.3	16.7	0.13		6.2	6.2	1.0	18.9		
Btg2	34-62	61.7	55.3	50.0	33.7	16.3	0.32		7.2	6.8	0.9	23.4		
Ckg	62+	51.7	45.0	40.0	29.0	11.0	0.13	0.2	8.0	7.9			24.0	5.4

LINCOLN SOIL - LOAMY PHASE (LIC.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over lacustrine heavy clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	60	19	1	19	8	49	32	SICL	4.4	6.0	0.3
Bmgj	11	27	0	19	10	50	31	SICL	1.5	5.9	0.0
IIBg	59	41	0	8	2	35	57	C	1.2	6.3	0.2
IICkg	59		0	3	0	34	63	HC	0.2	7.6	15.8

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

LIC.L ONTARIO 1985 PROFILE NO.MEFP008

LOCATION Town of Niagara-on-the-Lake, Lot 1, Con. IX, NTS Map Area 30M/3g, 17 TPT 4973 7985

ELEVATION 119 metres

SITE Abandoned farmland

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping glaciolacustrine clay plain

SLOPE 2.5% complex

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long

STONINESS Nonstony

CLASSIFICATION Humic Luvic Gleysol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Orthic Humic Gleysol. Deeper than normal to top of C horizon

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-15 (14-16)	10YR3/1m	SICL	weak, coarse, granular	weak, coarse, granular	sticky, friable, plastic	
IIBtg1	15-31 (14-16)	10YR4/2m	C	weak, medium, columnar	moderate, coarse, subangular blocky	sticky, friable, very plastic	common, medium, prominent, 10YR5/8
IIBtg2	31-53 (20-24)	10YR4/2m	HC	massive	massive	sticky, firm, very plastic	common, fine, prominent, 10YR4/5
IICkg	53+	10YR5/1m	HC	weak, coarse, columnar	weak, coarse, columnar	sticky, firm, very plastic	common, fine, prominent, 10YR5/4

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 15	1	4	3	3	3	5	18	44	38
IIBtg1	15- 31	0						6	34	59
IIBtg2	31- 53	0						4	33	64
IICkg	53+	0						3	36	61

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 15	1.31	6.4	4.1	19.4			
IIBtg1	15- 31	1.45	4.9	1.0	18.9			
IIBtg2	31- 53	1.44	6.3	0.9	26.9			
IICkg	53+	1.52	7.8			15.0	4.1	0.5

LOCKPORT SOIL (LKP)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued silty clay loam at least 1 m thick over Queenston shale bedrock

DRAINAGE Well

USUAL CLASSIFICATION Orthic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	16	2	21	5	56	23	SIL	3.9	7.0	1.0
Btgj	1	51	0	11	3	52	37	SICL	0.6	5.9	0.0
Ck	1		0	20	6	60	20	SIL	0.0	7.5	6.0

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

LOCKPORT SOIL - COARSE PHASE (LKP.C)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm sandy textures over LKP soils

DRAINAGE Well

USUAL CLASSIFICATION Orthic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	28	2	58	8	29	13	SL	2.0	5.4	0.0
Ae	1	45	2	71	7	20	9	SL	0.6	5.8	0.0
IIBt	1	75	0	5	0	53	42	SIC	0.3	6.5	0.0
IICk	1		0	3	0	61	36	SICL		7.5	5.2

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

LOCKPORT SOIL - LOAMY PHASE (LKP.L)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over LKP soils

DRAINAGE Well

USUAL CLASSIFICATION Orthic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	5	19	1	29	7	47	24	L	2.8	5.9	0.0
IIBt	4	42	0	7	1	49	44	SIC	0.8	6.0	0.0
IICk	4		0	12	4	58	32	SICL		7.5	7.0

LORRAINE

LORRAINE SOIL (LRR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Organic soil, fen-associated, 40 to 160 cm deep over clayey mineral soil materials

DRAINAGE Very poor

USUAL CLASSIFICATION Terric Mesisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Peat Material and Texture	Stage of Decomposition	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Om1	5	23						woody fen peat	mesic	73.3	5.0	
Om2	5	42						sedge fen peat	mesic	80.2	4.8	
Om3	4	66						woody fen peat	mesic	76.7	4.9	
IIBg	3		0	6	3	50	44	SIC		2.0	6.3	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

LRR ONTARIO 1985 PROFILE NO. LWS25

LOCATION City of Port Colborne, Lot 11, Con. III, NTS Map Area 30L/14g, 17 TPT 4981 5345

ELEVATION 183 metres

SITE Humberstone Marsh; alder or woody shrub with occasional maple

LANDFORM AND PARENT MATERIALS Horizontal fen with organic sediments consisting of woody fen peat. Clayey mineral sediment occurs at 74 cm depth

SLOPE 0.5 % simple

SOIL WATER REGIME Very poorly drained, conductivity high, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Terric Mesisol, mesic, euic, mild, peraquic, clayey

STATUS Undecided. Underlying mineral soil has heavier textures than usual

MORPHOLOGICAL DESCRIPTION, CHEMICAL AND PHYSICAL ANALYSES

Horizon	Depth cm	Colour (moist)	Peat Material and Texture	Stage of Decomposition	von Post Scale	Woody Material Volume %	Organic Matter %	pH $CaCl_2$	$CaCO_3$ %
Om1	0-29	5YR2.5/1	woody fen peat	mesic	5	<10	73.5	5.0	
Om2	29-45	5YR2.5/1	woody fen peat	mesic	5	<10	78.3	5.0	
Om3	45-74	5YR2.5/1	woody fen peat	mesic	5	<10	64.8	5.1	
IICkg	74+	5Y4/1	HC				1.6	7.0	2.7

MALTON SOIL (MAT)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm lacustrine silty clay over clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	17	21	0	14	4	48	38	SICL	4.9	6.7	1.0
Bg	13	45	0	9	2	49	42	SIC	1.1	6.6	0.5
IICkg	13		6	16	4	46	38	SICL	0.2	7.7	12.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

MAT ONTARIO 1985 PROFILE NO.EAWSP015

LOCATION Town of Grimsby, Lot 3, Con. IV, NTS Map Area 30M/4h, 17 TPT 1865 7928

ELEVATION 191 metres

SITE Hay field

LANDFORM AND PARENT MATERIALS Nearly level till plain overlain by 40 to 100 cm of clayey lacustrine sediments

SLOPE 1% simple

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long to prolonged

STONINESS Nonstony

CLASSIFICATION Orthic Humic Gleysol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-26 (25-27)	10YR3/3m	SICL	moderate, medium, subangular blocky	moderate, fine to medium, subangular blocky	sticky, friable, plastic	
Bg	26-50 (23-25)	10YR5/1m	SIC	moderate, medium, columnar	moderate, medium, columnar	sticky, firm, very plastic	many, coarse, prominent, 10YR5/6
Ckg	50-85 (34-36)	10YR5/1m	SIC	moderate to strong, medium, columnar	moderate to strong, medium, columnar	sticky, firm, very plastic	many, coarse, prominent, 10YR5/6
IICkg	85+	10YR5/1m	SIC	weak to moderate, coarse, columnar	moderate, coarse, angular blocky	sticky, firm, very plastic	many, coarse, prominent, 10YR5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-26	0						7	60	33	16	1.24	51
Bg	26-50	0						2	53	45	19	1.43	46
Ckg	50-85	0						3	53	44	12	1.53	43
IICkg	85+	6	2	2	2	4	3	13	43	44	11	1.52	44

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-26	53.3	43.0	38.0	18.3	19.7	0.90		5.8	5.8	4.7	20.1		
Bg	26-50	50.7	45.0	40.7	25.0	15.7	0.80		7.0	6.5	0.6	25.9		
Ckg	50-85	48.7	42.7	39.0	27.7	11.3	0.56	0.4	7.9	7.8		141.4	18.0	3.3
IICkg	85+	52.0	39.7	28.7	11.3	17.4	0.90	0.5	7.9	7.8			19.0	3.4

MALTON SOIL - LOAMY RED PHASE (MAT.LR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm reddish-hued loamy textures over MAT soils

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Texture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	28	1	16	8	55	29	SICL	4.2	5.9	
IIBg	1	60	0	7	0	53	41	SIC	2.6	5.3	
IIBmgj	1	72	0	6	0	52	41	SIC	0.9	7.1	0.8
IIICkg	1		3	21	2	45	34	CL		7.6	26.7

MALTON SOIL - RED PHASE (MAT.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued lacustrine silty clay over clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Texture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	7	18	0	17	8	44	39	SICL	6.7	6.1	
Bg1	5	38	0	11	4	45	44	SIC	1.4	6.2	
Bg2	3	56	0	12	5	41	47	SIC	0.7	7.0	2.6
IICkg	7		5	21	6	43	36	CL		7.7	16.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

MAT.R ONTARIO 1985 PROFILE NO. EAWSP019

LOCATION	Town of Fort Erie, Lot 3, Con. III, NTS Map Area 30L/15e, 17 TPT 6711 5295
ELEVATION	192 metres
SITE	Idle scrubland
LANDFORM AND PARENT MATERIALS	Nearly level till plain overlain by 40 to 100 cm of lacustrine clay sediments
SLOPE	1% simple
SOIL WATER REGIME	Poorly drained, conductivity low, saturation period long
STONINESS	Nonstony
CLASSIFICATION	Orthic Humic Gleysol, fine clayey/loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Modal. Somewhat lower clay contents in IICkg horizon than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (15-23)	10YR3/2m	SICL	moderate to strong, medium, subangular blocky	moderate to strong, fine to medium, subangular blocky	slightly sticky, friable, plastic	
Bg	19-43 (19-28)	5YR5/3m	SIC	moderate, coarse, columnar	moderate, coarse, angular blocky	sticky, firm, very plastic	many, medium, prominent, 7.5YR5/8
Ckg	43-87 (44-49)	5Y5/1m	SICL	moderate, coarse, columnar	moderate, coarse, angular blocky	sticky, firm, very plastic	many, coarse, prominent, 10YR5/6
IICkg	87+	5GY6/1m	CL	weak to moderate, coarse, angular blocky	weak to moderate, medium, platy	slightly sticky, firm, plastic	many, coarse, prominent, 7.5YR5/6

		Sand Fraction %											
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0- 19	1	1	1	2	5	7	16	46	38	18	0.97	61
Bg	19- 43	1	1	1	2	4	6	13	45	42	17	1.44	46
Ckg	43- 87	1	2	1	2	3	5	13	50	38	11	1.62	39
IICkg	87+	9	3	3	4	8	11	29	44	26	9	1.50	44

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 19	60.7	47.0	39.3	17.3	22.0	3.50		6.7	6.5	6.0	23.9		
Bg	19- 43	49.7	39.7	35.3	24.3	11.0	0.32		7.6	7.4	0.5	21.0	6.6	
Ckg	43- 87	44.3	34.3	30.3	22.3	8.0		0.4	7.9	7.7			22.8	0.9
IICkg	87+							0.9	7.6	7.7			26.6	0.5

MALTON SOIL - WASHED PHASE (MAT.W)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm lacustrine silty clay over washed clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	15	0	10	3	47	43	SIC	5.3	6.6	
Bmgj	1	33	0	8	0	45	47	SIC	1.9	6.1	
Btg	1	44	0	5	0	41	54	SIC	1.0	5.5	
IIBC	1	57	6	26	9	41	33	CL	0.5	7.1	0.6
IICkgj	1		9	29	10	47	24	L		7.6	7.8

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

MAPLEWOOD SOIL (MPW)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over lacustrine silty clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	25	23	0	52	31	32	16	L	4.1	6.9	1.2
Bg1	25	43	1	48	29	35	17	L	0.9	7.0	3.9
Bg2	5	57	0	54	36	32	14	VFSL	0.3	7.5	12.8
IICkg	35		0	19	11	51	30	SICL		7.6	21.7

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

MPW ONTARIO 1985 PROFILE NO.EWPP001

LOCATION Township of West Lincoln, Lot 1, Con. VI, NTS Map Area 30M/3d, 17 TPT 3110 7145

ELEVATION 180 metres

SITE Grazed woodlot

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine plain with 40 to 100 cm of loamy soil over dominantly clayey sediments

SLOPE 1% complex

SOIL WATER REGIME Poorly drained, conductivity medium to low, saturation period long

STONINESS Nonstony

CLASSIFICATION Humic Luvic Gleysol, fine loamy over fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Orthic Humic Gleysol. IIBg horizon has higher silt content than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ah	0-20 (15-28)	10YR2/1m	SICL	moderate to strong, medium, granular	moderate, fine to medium, granular	slightly sticky, very friable, plastic	
Aegj	20-39 (12-23)	10YR5/3m	SL	weak to moderate, medium to coarse, subangular blocky	weak to moderate, medium to coarse, subangular blocky	slightly sticky, firm, plastic	many, medium, prominent, 7.5YR5/6
Btg	39-50 (5-11)	10YR4/2m	SICL	moderate, coarse, subangular blocky	moderate, coarse, subangular blocky	sticky, very firm, very plastic	many, medium, prominent, 10YR4/6
Bg	50-59 (8-20)	10YR4/2m	SIL	moderate, coarse, subangular blocky	moderate, coarse, subangular blocky	sticky, very firm, very plastic	many, medium, prominent, 10YR4/6
IIBg	59-89 (14-24)	10YR4/2m	SICL	moderate, coarse, subangular blocky	moderate, coarse, subangular blocky	sticky, firm, very plastic	many, medium, prominent, 10YR4/6
IICkg	89+	2.5Y5/2m	SICL	moderate, coarse, subangular blocky	moderate, coarse, subangular blocky	sticky, very firm, very plastic	many, medium, prominent, 2.5Y5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ah	0-20	0	1	2	2	4	10	19	53	28
Aegj	20-39	0	5	3	2	4	13	27	54	20
Btg	39-50	0	1	2	1	2	3	9	56	35
Bg	50-59	0						7	69	24
IIBg	59-89	0						5	65	30
IICkg	89+	0						2	59	39

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ah	0-20	0.72	5.8	11.4	49.7			
Aegj	20-39	1.42	5.1	0.6	11.4			
Btg	39-51	1.50	5.6	0.4	18.3			
Bg	50-59	1.51	5.8	0.3	15.7			
IIBg	59-89	1.51	6.4	0.5	18.2			
IICkg	89+	1.42	7.5			23.0	7.5	0.2

MAPLEWOOD SOIL - HEAVY PHASE (MPW.H)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over lacustrine heavy clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	18	0	43	23	34	23	L	3.9	5.8	
Btgj	3	52	0	28	13	38	34	CL	1.1	5.6	
Bg	5	55	0	51	25	28	21	L	0.6	6.2	
IICkg	4		0	3	0	28	69	HC		7.7	16.0

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

MAPLEWOOD SOIL - RED PHASE (MPW.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued loamy textures over lacustrine silty clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	5	30	1	41	23	38	21	L	3.1	6.4	0.2
Bg	3	56	2	54	30	29	17	SL	0.7	7.0	0.3
IICkg	3		0	6	0	43	51	SIC		7.6	17.3

MAPLEWOOD SOIL - TILL PHASE (MPW.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	5	19	1	41	18	40	19	L	3.3	6.3	0.7
Bg	7	51	2	36	14	41	23	L	0.7	6.7	0.9
IICkg	6		4	24	9	44	32	CL		7.5	14.3

MAPLEWOOD SOIL - TILL RED PHASE (MPW.TR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued loamy textures over clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	26	1	24	15	49	27	SIL	4.3	6.2	
Bg	3	50	1	23	13	54	23	SIL	0.9	6.6	

MORLEY

MORLEY SOIL (MOY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued silty clay loam at least 1 m thick over Queenston shale bedrock

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	7	20	0	13	4	42	45	SIC	4.5	6.7	0.6
Bg1	7	48	0	12	3	43	45	SIC	1.1	6.9	0.2
Bg2	4	85	0	12	5	48	40	SICL	0.4	7.3	1.0
Ckg	2		0	3	0	64	33	SICL		7.7	1.6
R	7										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

MOY ONTARIO 1985 PROFILE NO. EWPP007

LOCATION Town of Lincoln, Lot 6, Con. III, NTS Map Area 30M/3e, 17 TPT 2815 8020

ELEVATION 95 metres

SITE Idle grass area beside vineyard

LANDFORM AND PARENT MATERIALS Level to nearly level shale bedrock plain overlain by dominantly clayey reddish coloured sediments

SLOPE 0.5% simple

SOIL WATER REGIME Poorly drained, conductivity medium to low, saturation period medium to long

STONINESS Nonstony

CLASSIFICATION Humic Luvic Gleysol, fine clayey, alkaline, weakly calcareous, mild humid to subhumid

STATUS Taxadjunct to Orthic Humic Gleysol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-33 (26-33)	10YR3/2m	SIC	strong, very coarse, prismatic	moderate, medium to coarse, subangular blocky	slightly sticky, very firm, very plastic	
Btg	33-46 (0-23)	5YR4/2m	SIC	strong, very coarse, prismatic	strong, coarse, angular blocky	sticky, very firm, very plastic	common, fine, distinct, 5YR4/3
Bm	46-68 (11-31)	5YR4/3m	SICL	strong, very coarse, prismatic	massive	slightly sticky, firm, very plastic	
Ck	68+	2.5YR5/4m	SICL	massive	strong, coarse, subangular blocky	slightly sticky, very firm, very plastic	

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-33	0						9	44	48
Btg	33-46	0						3	41	56
Bm	46-68	0						6	60	34
Ck	68+	0	3	3	2	3	4	14	58	28

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-33	1.12	6.9	5.6	28.0			
Btg	33-46	1.59	7.2	2.1	22.7	1.0		
Bm	46-68	1.76	7.4	0.4	9.6	1.0		
Ck	68+	1.62	7.7			2.0	1.0	0.2

MORLEY SOIL - SHALLOW PHASE (MOY.S)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 50 to 100 cm reddish-hued silty clay loam over Queenston shale bedrock

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	18	1	15	3	51	34	SICL	3.8	6.8	0.5
Bg1	5	52	0	9	2	54	37	SICL	0.8	5.6	0.2
Bg2	2	60	2	14	2	48	38	SICL	0.8	5.4	0.1
Ckg	3	75	1	17	4	58	25	SIL	0.3	7.6	4.3
R	6										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

MOY.S ONTARIO 1985 PROFILE NO. EAWP017

LOCATION Town of Grimsby, Lot A, Con. I, NTS Map Area 30M/4h, 17 TPT 2065 8221

ELEVATION 99 metres

SITE Vineyard

LANDFORM AND PARENT MATERIALS Very gently sloping shale bedrock plain, overlain by dominantly clayey reddish coloured sediments

SLOPE 1% complex

SOIL WATER REGIME Poorly drained, conductivity medium to low, saturation period medium to long

STONINESS Nonstony

CLASSIFICATION Orthic Luvic Gleysol, fine clayey, shallow lithic, neutral, weakly calcareous, mild humid to subhumid

STATUS Taxadjunct to Orthic Humic Gleysol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-10 (9-18)	5YR3/3m	SICL	moderate to strong, coarse, columnar	weak, coarse, subangular blocky	sticky, firm, very plastic	
Aeg	10-20 (0-18)	5YR4/6m	SICL	moderate to strong, coarse, columnar	weak, coarse, subangular blocky	sticky, firm, very plastic	many, medium, prominent, 7.5YR5/6
Btg	20-41 (14-28)	2.5YR3.5/3m	SIC	moderate to strong, coarse, columnar	weak to moderate, medium to coarse, subangular blocky	sticky, firm, very plastic	common, fine prominent, 5YR4/6
IIBg	41-55 (6-20)	5YR3.5/3m	SIL	moderate to strong, medium to coarse, angular blocky	weak to moderate, medium to coarse, subangular blocky	sticky, firm, very plastic	common, fine prominent, 5YR4/6
IICkg	55-65 (7-17)	2.5YR4/3m	SIL	moderate to strong, medium to coarse, angular blocky	strong, medium, angular blocky	sticky, firm, plastic	common, medium prominent, 2.5YR4/7
R	65+						

			Sand Fraction %							
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 10	0	1	5	5	4	3	18	49	33
Aeg	10- 20	0						5	57	37
Btg	20- 41	0						6	50	44
IIBg	41- 55	0	0	1	2	4	5	12	61	26
IICkg	55- 65	0	1	1	1	3	6	13	71	16
R	65+									

Horizon	Depth cm	Bulk Density g/cm3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 10	1.45	6.9	3.2	16.7			
Aeg	10- 20		5.0	1.1	11.9			
Btg	20- 41	1.58	4.8	0.8	15.0			
IIBg	41- 55	1.73	6.5	0.4	12.1			
IICkg	55- 65	1.81	7.3			6.0	2.6	0.3

NIAGARA SOIL (NGR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine heavy clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	19	18	1	14	5	46	40	SICL	3.8	6.1	0.2
Btgj1	15	42	0	4	0	35	61	HC	1.2	6.3	0.4
Btgj2	6	57	0	3	0	33	64	HC	0.8	6.7	0.3
Ckgj	16		0	2	0	36	62	HC		7.7	11.8

GENERALIZED PROFILE DESCRIPTIONS AND ANALYSES

NGR ONTARIO 1985 PROFILE NO. LWSP008

LOCATION City of Niagara Falls, Lot 1, Con. III, NTS Map Area 30L/14h, 17 TPT 5830 5970

ELEVATION 178 metres

SITE Winter wheat field

LANDFORM AND PARENT MATERIALS Nearly level lacustrine clay plain. Sediments are composed of reddish coloured heavy clay, sometimes overlain by thin veneer of clay loam

SLOPE 1.5% complex

SOIL WATER REGIME Imperfectly drained, conductivity low, saturation period medium to long

STONINESS Nonstony

CLASSIFICATION Gleyed Gray Brown Luvisol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-15 (12-19)	10YR3/3m	SIC	weak to moderate, very coarse, columnar	very weak, medium to coarse, subangular blocky	sticky, very plastic	
Btgj	15-31 (14-18)	7.5YR4/4m	HC	weak, very coarse, prismatic	massive	slightly sticky, very plastic	many, fine, distinct, 7.5YR4/6
Ckgj1	31-50 (18-27)	5YR4/3m	HC	weak to moderate, very coarse, prismatic	weak, very coarse, subangular blocky	slightly sticky, very plastic	common, fine, distinct, 7.5YR4/4
Ckgj2	50+	5YR3/3m	HC	very weak, very coarse, prismatic	weak, very coarse, subangular blocky	slightly sticky, very plastic	few, fine, prominent, 7.5YR4/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-15	0	2	3	3	4	3	15	43	42
Btgj	15-31	0						4	33	64
Ckgj1	31-50	0						1	35	64
Ckgj2	50+	0						1	36	63

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC mc/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-15	1.27	5.3	4.4	15.3			
Btgj	15-31	1.48	6.5	1.2	23.1			
Ckgj1	31-50	1.47	7.7			11.0	2.8	0.2
Ckgj2	50+	1.47	7.7			11.0	2.8	0.2

NIAGARA SOIL - LOAMY PHASE (NGR.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued lacustrine heavy clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	12	17	1	17	5	53	30	SICL	4.4	6.6	0.5
Bmgj	3	24	0	20	9	55	25	SIL	2.2	6.6	0.0
IIBtgj	10	42	0	9	3	39	52	C	0.9	6.7	0.4
IICkgj	11		0	3	0	37	60	HC	0.1	7.6	10.6

NGR.L ONTARIO 1986 PROFILE NO.EWPSP001

LOCATION City of Welland, Lot 16, Con. VI, NTS Map Area 30L/14g, 17 TPT 4642 5936

ELEVATION 180 metres

SITE Abandoned farmland

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine clay plain. Clay and heavy clay textures predominate

SLOPE 1% complex

SOIL WATER REGIME Imperfectly drained, conductivity low, saturation period medium

STONINESS Nonstony

CLASSIFICATION Gleyed Gray Brown Luvisol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol. Higher clay contents than normal in B and C horizons

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-17 (14-20)	10YR3/2m	SICL	moderate, medium, granular	moderate, fine, granular	slightly sticky, friable, very plastic	
IIBtgj	17-39 (37-39)	7.5YR5/4m	HC	strong, medium, columnar	moderate, medium, columnar and angular blocky	very sticky, very firm, very plastic	many, fine, prominent, 7.5YR5/8
IIBt	39-53 (50-54)	5YR5/3m	C	strong, coarse, columnar	moderate, medium, columnar	very sticky, very firm, very plastic	
IICk	53+	5YR4/2m	C	strong, medium, columnar	moderate to strong, medium, angular blocky	very sticky, very firm, very plastic	

		Sand Fraction %										
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-17	0						10	57	33	11.5	0.95	63
IIBtgj	17-39	0						4	36	60	23.1	1.28	50
IIBt	39-53	0						6	38	56	20.1	1.45	45
IICk	53+	0						5	39	56	15.4	1.45	45

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-17	59.0	37.2	31.4	25.8	5.6	31.56	0.31	7.5	7.0	5.9	24.6	1.1	
IIBtgj	17-39	35.4	26.2	23.5	20.2	3.3	4.08	0.13	7.1	6.8	1.1	21.9		
IIBt	39-53	27.8	25.9	23.9	19.6	4.3	3.14	0.20	7.4	6.9	0.8	20.3		
IICk	53+	31.4	26.7	24.3	19.3	5.0	2.20	0.30	8.1	7.6			10.3	1.65

ONEIDA

ONEIDA SOIL (OID)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly clay loam till

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	21	4	20	8	50	30	CL	2.4	6.7	0.7
Bmj	4	52	2	18	7	49	33	SICL	0.8	6.4	0.6
Btj	10	56	3	17	6	48	35	SICL	1.0	6.6	0.5
Ck	8		3	13	4	51	36	SICL		7.5	6.9

ONEIDA SOIL - COARSE RED PHASE (OID.CR)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm sandy textures over reddish-hued clay loam till

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	18	2	62	14	26	12	FSL	1.2	7.1	0.5
IIBt	1	35	1	37	11	34	29	CL	0.6	7.2	0.2
IICk	1		5	24	8	46	30	CL		7.7	8.6

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

ONEIDA SOIL - LOAMY PHASE (OID.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over clay loam till

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	19	7	32	12	48	20	L	2.5	6.6	0.2
IIBt	6	58	2	18	7	46	36	SICL	0.8	6.2	0.2
IICk	4		4	17	6	50	33	SICL		7.5	5.9

ONEIDA SOIL - LOAMY RED PHASE (OID.LR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued clay loam till

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	12	6	40	8	43	17	L	4.1	5.6	0.0
Bm	1	36	8	39	10	41	20	L	0.7	5.2	0.0
IIBt	2	62	8	19	5	39	42	SIC	0.7	6.3	0.6
IICk	2		5	23	7	46	31	CL	0.1	7.7	16.1

ONEIDA SOIL - RED WASHED PHASE (OID.RW)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Washed reddish-hued clay loam till, modified by lacustrine processes

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	22	3	40	17	39	21	L	3.9	6.4	0.7
Bm1	5	39	7	39	17	41	20	L	1.4	5.7	0.9
Bm2	2	64	3	38	19	41	21	L	0.2	5.8	0.0
Bt	5	75	5	29	10	41	30	CL	0.9	6.1	0.7
Ck	4		11	36	15	41	23	L		7.4	11.4

ONEIDA SOIL - WASHED PHASE (OID.W)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Washed clay loam till, modified by lacustrine processes

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	10	22	6	35	12	47	18	L	2.8	6.1	0.4
Bm	6	55	12	37	11	42	21	L	1.1	6.1	1.3
Bt	12	65	6	29	8	41	30	CL	1.1	6.1	0.6
Ck	8		6	27	7	46	27	L	0.2	7.5	10.9

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

OID.W ONTARIO 1985 PROFILE NO.EAWP014

LOCATION Town of Lincoln, Lot 10, Con. VII, NTS Map Area 30M/3e, 17 TPT 2655 7605

ELEVATION 189 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Very gently to gently sloping washed clay till plain.
Clay loam textures predominate but loam and gravelly loam textures also occur.

SLOPE 5% complex

SOIL WATER REGIME Moderately well drained, conductivity high, saturation period short

STONINESS Nonstony

CLASSIFICATION Orthic Melanic Brunisol, sandy skeletal, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Brunisolic Gray Brown Luvisol. Also variant because of high gravel contents and great depth of solum

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-20 (20-20)	10YR3/3m	GL	moderate to strong, coarse, granular	moderate to strong, coarse, granular	slightly sticky, nonplastic	
Bm1	20-40 (16-50)	10YR5/5m	GL	moderate to strong, coarse , granular	moderate to strong, coarse, granular	slightly sticky, nonplastic	
Bm2	40-100 (23-60)	7.5YR4/4m	VGCSL	strong, coarse, granular	strong, coarse, granular	slightly sticky, nonplastic	
Bm3	100-150	10YR4/4m	GCSL	moderate, coarse, granular	moderate, coarse, granular	nonsticky, nonplastic	
IIBg	150-165	10YR5/2m	SIC			sticky, very firm, very plastic	few, fine, prominent, 10YR5/6
IICkg	165+	10YR5/2m	SIC			sticky, very firm, very plastic	

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-20	36	15	8	6	5	10	44	41	14
Bm1	20-40	41	11	10	9	5	9	44	44	12
Bm2	40-100	54	41	14	7	4	5	71	17	11
Bm3	100-150	42	36	17	10	4	7	75	18	7
IIBg	150-165	0						3	42	55
IICkg	165+	0						1	52	47

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-20		6.1	4.7	13.6			
Bm1	20-40		6.2	0.8	8.7			
Bm2	40-100		5.5	0.3	10.0			
Bm3	100-150		6.5	0.3	9.9			
IIBg	150-165		7.1	0.7	19.5	1.0		
IICkg	165+		7.6			27.0	11.0	0.2

ONTARIO

ONTARIO SOIL (OTI)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine heavy clay

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	15	0	11	4	45	44	SIC	3.8	6.2	1.0
Bm	3	37	0	6	0	33	61	HC	1.5	6.1	2.1
Bt	3	42	0	4	0	32	64	HC	1.7	6.5	0.4
Ck	4		0	2	0	28	70	HC	0.7	7.7	15.7

ONTARIO SOIL - LOAMY PHASE (OTI.L)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued lacustrine heavy clay

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	17	0	16	10	58	26	SIL	3.4	6.5	0.0
IIBt	4	48	0	5	0	38	57	HC	0.8	6.1	0.0
IICk	3		0	3	0	32	65	HC		7.5	11.0

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps.

PEEL SOIL (PEL)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm lacustrine silty clay over clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	21	0	18	9	53	29	SICL	4.2	6.5	0.1
Btgj	4	51	0	9	4	49	42	SIC	0.8	6.8	0.5
IIBtgj	1	64	0	15	11	48	37	SICL	0.8	7.2	0.4
IICkgj	3		2	9	2	47	44	SIC		7.6	14.5

PEEL SOIL - LOAMY PHASE (PEL.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over PEL soils

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	20	2	21	9	52	27	SIL	4.8	6.3	0.3
Bmgj	3	34	0	22	11	46	32	CL	0.9	5.9	0.0
IIBtgj	4	59	0	11	4	47	42	SIC	0.5	6.2	1.0
IIICkg	3		3	9	2	53	38	SICL		7.6	15.2

PEEL SOIL - LOAMY RED PHASE (PEL.LR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued PEL soils

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	18	1	26	8	47	27	L	3.6	6.9	
IIAegj	1	37	0	71	7	19	10	SL	0.7	7.0	0.9
IIBtgj	1	38	0	11	5	37	52	C	1.2	6.3	
IIICkgj	1		20	9	0	41	50	GSIC		7.6	9.1

PEEL SOIL - RED PHASE (PEL.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued lacustrine silty clay over clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	10	2	14	4	42	44	SIC	3.7	6.9	0.8
Bmgj	1	30	2	18	7	35	47	C	1.7	5.9	0.0
Btgj	1	48	0	4	0	27	69	HC	1.0	7.1	0.3
IICkg	2		2	18	5	38	44	C		7.7	13.0

PEEL SOIL - WASHED PHASE (PEL.W)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm lacustrine silty clay over washed clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	20	0	17	7	59	24	SIL	3.8	5.3	
Btgj	1	30	0	17	8	48	35	SICL	1.2	5.3	
IIBtgj1	1	45	1	23	9	42	35	CL	0.8	5.9	
IIBtgj2	1	65	1	20	9	42	38	CL	0.5	5.9	
IIICkgj	1		2	14	4	61	25	SIL		7.6	12.0

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

PLAINFIELD SOIL (PFD)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mostly eolian fine sand at least 1 m thick

DRAINAGE Rapid

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	15	1	86	22	9	5	FS	5.0	6.7	1.0
Bm1	3	42	0	94	10	5	1	FS	0.7	6.0	1.3
Bm2	2	85	0	93	14	6	1	FS	0.4	5.7	0.0
Bm3	2	108	0	93	16	6	1	FS	0.5	5.6	
Ck	3		0	99	9	1	0	FS		7.3	13.0

PLAINFIELD SOIL - DUNE PHASE (PFD.D)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Eolian fine sand formed into dunes

DRAINAGE Rapid

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ah	1	14	0	93	20	4	3	FS	16.2	3.8	
Bm1	1	26	0	98	1	1	1	FS	5.1	4.3	
Bm2	1	41	0	98	0	1	1	FS	0.8	4.5	
Bm3	1	67	0	98	1	1	1	S	0.2	4.9	
Bm4	1	105	0	99	0	1	0	FS	0.1	5.3	
Ck	1		0	98	1	1	1	FS		7.0	10.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

PFD.D ONTARIO 1985 PROFILE NO.MEFSP001

LOCATION	Town of Fort Erie, Lot 35, Con. B.F, NTS Map Area 30L/14a, 17 TPT 5480 4610
ELEVATION	177 metres
SITE	Woodland
LANDFORM AND PARENT MATERIALS	Nearly level eolian sand plain containing numerous, strongly sloping eolian sand dunes. Fine sand textures predominate
SLOPE	16% complex
SOIL WATER REGIME	Rapidly to well drained, conductivity high, saturation period very short
STONINESS	Nonstony
CLASSIFICATION	Orthic Melanic Brunisol, sandy, neutral, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ah	0-14 (10-15)	10YR3/1m	FS	moderate, fine, granular	weak to moderate, fine, granular	nonsticky, very friable, nonplastic	
Bm1	14-26 (10-15)	10YR4/6m	FS	massive	single grain	nonsticky, very friable, nonplastic	
Bm2	26-41 (14-18)	10YR5/6m	FS	single grain		nonsticky, loose, nonplastic	
Bm3	41-67 (25-28)	10YR5/5m	S	single grain		nonsticky, loose, nonplastic	
Bm4	67-105 (34-41)	10YR5/4m	FS	single grain		nonsticky, loose, nonplastic	
Ck	105+	10YR6/3m	FS	massive	single grain	nonsticky, loose, nonplastic	

		Sand Fraction %											
Horizon	Depth cm	Grav. >2 mm	VCS >2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ah	0- 14	0	0	2	22	49	20	93	4	3	2	0.92	64
Bm1	14- 26	0	0	1	22	74	1	98	1	1	1		
Bm2	26- 41	0	0	3	38	57	0	98	1	1	0	1.27	52
Bm3	41- 67	0	0	6	44	47	1	98	1	1	1	1.33	50
Bm4	67-105	0	0	4	39	56	0	99	1	0	1	1.26	53
Ck	105+	0	0	2	25	70	1	98	2	1	1	1.30	51

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ah	0- 14	71.7	32.7	23.3	6.7	16.6			4.1	3.8	16.2	36.8		
Bm1	14- 26								4.8	4.3	5.1	12.5		
Bm2	26- 41								5.4	4.5	0.8	9.3		
Bm3	41- 67	48.0	10.0	4.5	0.9	3.6			5.8	4.9	0.2	8.3		
Bm4	67-105	45.3	9.7	4.0	0.6	3.4			6.4	5.3	0.1	8.9		
Ck	105+	38.3	10.3	3.0	0.3	2.7		0.1	8.2	7.0			10.0	0.9

PORT COLBORNE (PCE)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Organic soil, fen-associated, greater than 160 cm deep

DRAINAGE Very poor

USUAL CLASSIFICATION Fibric Mesisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Peat Material and Texture	Stage of Decomposition	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Of1	1	23						woody fen peat	fibric	91.8		
Of2	1	41						woody fen peat	fibric	89.0	3.4	
Of3	1	68						woody fen peat	fibric	89.7	4.0	
Om1	1	97						woody fen peat	mesic	87.0	4.8	
Om2	1	125						sedge fen peat	mesic	85.6	4.7	
Om3	1	200						woody sedge fen peat	mesic	45.2	5.0	
Of4	1	224						woody fen peat	fibric	55.8	4.9	
IIBg	1		0	9	0	59	32	SICL		2.1	5.8	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

PCE ONTARIO 1985 PROFILE NO. LWS22

LOCATION Township of Wainfleet, Lot 3, Con. III, NTS Map Area 30L/14f, 17 TPT 3905 5320

ELEVATION 177 metres

SITE Wainfleet Marsh; mainly alder or woody shrubs with some birch and poplar

LANDFORM AND PARENT MATERIALS Horizontal fen with organic sediments consisting of woody fen peat with a layer of sedge fen peat. Loamy mineral sediment occurs at 224 cm depth

SLOPE 0.5 % simple

SOIL WATER REGIME Very poorly drained, conductivity high, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Fibric Mesisol, sphagnic, euic, mild, humid

STATUS Undecided

MORPHOLOGICAL DESCRIPTION, CHEMICAL AND PHYSICAL ANALYSES

Horizon	Depth cm	Colour (moist)	Peat Material and Texture	Stage of Decomposition	von Post Scale	Woody Material Volume %	Organic Matter %	pH $CaCl_2$	$CaCO_3$ %
Of1	0-23	5YR3/3	woody fen peat	fibric	3	10-20	91.8		
Of2	23-41	5YR3/2	woody fen peat	fibric	3	10-20	89.0	3.4	
Of3	41-68	5YR2.5/1	woody fen peat	fibric	3	<10	89.7	4.0	
Om1	68-97	5YR2.5/1	woody fen peat	mesic	5	<10	87.0	4.8	
Om2	97-125	10YR2/1	sedge fen peat	mesic	5	<10	85.6	4.7	
Om3	125-200	10YR2/1	woody sedge fen peat	mesic	5	<10	45.2	5.0	
Of4	200-224	10YR2/1	woody fen peat	fibric	3	<10	55.8	4.9	
IIBg	224+	5Y4/1	SICL				2.1	5.8	

PORTSMOUTH (PUH)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Organic soil, swamp-associated, greater than 160 cm deep

DRAINAGE Very poor

USUAL CLASSIFICATION Typic Mesisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Peat Material and Texture	Stage of Decomposition	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Om1	3	28						woody forest peat	mesic	69.0	5.0	
Om2	3	77						woody forest peat	mesic	81.6	4.8	
Om3	3	110						woody forest peat	mesic	62.1	4.9	
Om4	3	146						woody sedge fen peat	mesic	74.5	5.4	
Om5	2							woody sedge fen peat	mesic	68.0	4.7	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

PUH ONTARIO 1985 PROFILE NO. LWS24

LOCATION City of Port Colborne, Lot 16, Con. III, NTS Map Area 30L/14g, 17 TPT 4868 5229

ELEVATION 180 metres

SITE Humberstone Marsh; treed wetland

LANDFORM AND PARENT MATERIALS Basin swamp with organic sediments consisting of woody forest peat underlain by sedge fen peat and woody fen peat. Clayey mineral sediment occurs at 184 cm depth

SLOPE 0.5 % simple

SOIL WATER REGIME Very poorly drained, conductivity high, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Typic Mesisol, mesic, euic, mild, peraquic

STATUS Undecided

MORPHOLOGICAL DESCRIPTION, CHEMICAL AND PHYSICAL ANALYSES

Horizon	Depth cm	Colour (moist)	Peat Material and Texture	Stage of Decomposition	von Post Scale	Woody Material Volume %	Organic Matter %	pH $CaCl_2$	$CaCO_3$ %
Om1	0-22	10YR2/1	woody forest peat	mesic	5	<10	80.7	3.8	
Om2	22-58	10YR2/1	woody forest peat	mesic	5	<10	90.1	3.7	
Om3	58-82	5YR2.5/1	sedge fen peat	mesic	5	<10	89.5	3.9	
Om4	82-90	10YR3/4	woody sedge fen peat	mesic	5	<10	88.3	4.1	
Oh	90-110	10YR2/1	sedge fen peat	humic	7	<10	79.6	4.8	
Om5	110-152	10YR2/2	woody fen peat	mesic	5	<10	69.5	3.7	
Om6	152-184	10YR3/2	sedge fen peat	mesic	5	<10	55.2	3.9	
IIBg1	184-190	2.5YR4/2					28.4	2.8	
IIBg2	190+	5Y4/1	SIC				5.8	6.9	

QUARRY SOIL (QRY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Organic soil, swamp-associated, 40 to 160 cm deep over clayey mineral soil materials

DRAINAGE Very poor

USUAL CLASSIFICATION Terric Mesisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Peat Material and Texture	Stage of Decomposition	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Om1	4	43						woody forest peat	mesic	74.0	5.6	
Om2	4	69						woody forest peat	mesic	68.7	5.6	
Om3	2	85						woody forest peat	mesic	71.7	5.3	
IIBg	2	112	0	6	0	46	48	SIC		1.9	6.1	
IICkg	2		0	19	7	53	28	SICL		0.3	7.5	11.9

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

QRY ONTARIO 1985 PROFILE NO. LWS14

LOCATION City of Port Colborne, Lot 22, Con. I, NTS Map Area 30L/14g, 17 TPT 4505 4915

ELEVATION 177 metres

SITE Cultivated onion field

LANDFORM AND PARENT MATERIALS Basin swamp with organic sediments consisting of woody forest peat. Clayey mineral sediment occurs at 90 cm depth

SLOPE 0.5 % simple

SOIL WATER REGIME Very poorly drained, conductivity high, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Terric Mesisol, mesic, euic, mild, peraquic, clayey

STATUS Undecided

MORPHOLOGICAL DESCRIPTION, CHEMICAL AND PHYSICAL ANALYSES

Horizon	Depth cm	Colour (moist)	Peat Material and Texture	Stage of Decomposition	von post Scale	Woody Material Volume %	Organic Matter %	pH $CaCl_2$	$CaCO_3$ %
Om1	0-58	10YR2/1	woody forest peat	mesic	5	<10	60.3	5.2	
Om2	58-76	10YR2/2	woody forest peat	mesic	5	10-20	71.8	5.4	
Om3	76-90	10YR2/1	woody forest peat	mesic	5	<10	59.9	5.4	
IIBg	90+	5Y5/1					2.1	6.7	

RIDGEVILLE SOIL (RVE)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued coarse sandy loam and gravelly sand

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Melanic Brunisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	8	22	8	60	17	29	11	FSL	2.9	5.9	
Bmgj1	13	62	14	77	17	17	6	LCS	0.5	6.2	
Bmgj2	5	83	21	83	13	12	5	GLCS	0.2	6.0	
Ckg	2		16	59	12	34	7	CSL		7.3	6.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

RVE ONTARIO 1985 PROFILE NO.MEFP003

LOCATION Town of Pelham, Lot 1, Con. V, NTS Map Area 30M/3c, 17 TPT 3930 6945

ELEVATION 189 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping kame moraine deposits consisting mainly of reddish sandy and gravelly soil materials

SLOPE 2% complex

SOIL WATER REGIME Imperfectly drained, conductivity high, saturation period short

STONINESS Nonstony

CLASSIFICATION Gleyed Melanic Brunisol, sandy, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-22 (19-22)	10YR3/2m	CSL	moderate, medium, granular	weak, medium, granular	slightly sticky, very friable, slightly plastic	
Bmgj1	22-42 (20-26)	10YR5/4m	CSL	single grain		nonsticky, very friable, nonplastic	common, fine, distinct, 10YR5/6
Bmgj2	42-70 (25-30)	7.5YR5/4m	GLCS	single grain		nonsticky, loose, nonplastic	common, fine, distinct, 7.5YR5/6
Bmgj3	70-100 (28-34)	7.5YR4/4m	GLCS	single grain		nonsticky, loose, nonplastic	common, fine, distinct, 7.5YR4/6
Bm	100+	7.5YR4/3m	GCS	single grain		nonsticky, loose, nonplastic	

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 22	16	10	15	18	4	19	65	26	9
Bmgj1	22- 42	17	15	18	17	10	10	70	24	6
Bmgj2	42- 70	28	10	31	22	9	8	80	14	6
Bmgj3	70-100	32	37	30	11	4	4	86	9	5
Bm	100+	32	25	41	16	2	5	88	8	4

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 22	1.17	6.9	3.0	14.9			
Bmgj1	22- 42	1.30	6.8	0.2	10.5			
Bmgj2	42- 70	1.30	6.6	0.2	11.0			
Bmgj3	70-100	1.31	6.5	0.1	10.8			
Bm	100+	1.27	6.0	0.1	7.3			

SHERKSTON

SHERKSTON SOIL (SRK)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Organic soil, fen-associated, greater than 160 cm deep

DRAINAGE Very poor

USUAL CLASSIFICATION Typic Fibrisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Peat Material and Texture	Stage of Decomposition	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Om1	1	55						woody fen peat	mesic	79.1	5.7	
Of1	1	88						sedge fen peat	fibric	92.1	5.4	
Of2	1	172						woody sedge fen peat	fibric	67.0	5.5	
Om2	1	192						sedge fen peat	mesic	35.9	5.4	
Om3	1	254						sedge fen peat	mesic	69.1	5.7	
Om4	1	384						woody forest peat	mesic	66.6	5.8	
IICg	1		2	19	4	41	40	SIC		1.4	7.0	1.7

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

SRK ONTARIO 1985 PROFILE NO. LWS15

LOCATION City of Port Colborne, Lot 8, Con. I, NTS Map Area 30L/14g, 17 TPT 5097 4860

ELEVATION 177 metres

SITE Treed wetland

LANDFORM AND PARENT MATERIALS Horizontal fen with organic sediments consisting of woody fen peat and sedge fen peat underlain by woody forest peat. Clayey mineral sediment occurs at 384 cm

SLOPE 0.5 % simple

SOIL WATER REGIME Very poorly drained, conductivity high, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Typic Fibrisol, mesic, euic, mild, peraquic

STATUS Undecided

MORPHOLOGICAL DESCRIPTION, CHEMICAL AND PHYSICAL ANALYSES

Horizon	Depth cm	Colour (moist)	Peat Material and Texture	Stage of Decomposition	von Post Scale	Woody Material Volume %	Organic Matter %	pH $CaCl_2$	$CaCO_3$ %
Om1	0-55	10YR2/1	woody fen peat	mesic	5	10-20	79.1	5.7	
Of1	55-88	10YR3/4	sedge fen peat	fibric	3	<10	92.1	5.4	
Of2	88-172	10YR2/2	woody sedge fen peat	fibric	3	<10	67.0	5.5	
Om2	172-192	10YR3/2	sedge fen peat	mesic	5	<10	35.9	5.4	
Om3	192-254	10YR2/2	sedge fen peat	mesic	5	<10	69.1	5.7	
Om4	254-384	10YR2/1	woody forest peat	mesic	5	10-20	66.6	5.8	
IICkg	384+	10YR4/1	SICL				1.4	7.0	1.7

SILVER HILL SOIL - RED PHASE (SIH.R)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over reddish-hued lacustrine silt loam

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	23	1	65	23	19	16	FSL	3.2	5.8	0.0
Bg1	1	50	5	79	26	12	9	LFS	0.4	6.2	0.4
Bg2	1	75	4	77	20	13	10	FSL	0.2	6.9	0.0
IIBC	1	82	11	34	12	41	25	L		7.3	0.5
IICkg	1		7	34	10	41	25	L		7.6	8.7

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

SMITHVILLE

SMITHVILLE SOIL (SHV)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine heavy clay

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	17	14	0	11	3	45	44	SIC	3.8	6.3	0.2
Bt	15	33	0	5	1	34	61	HC	1.6	6.3	0.2
Ck	15		0	3	0	34	63	HC	0.1	7.5	13.2

SMITHVILLE SOIL - LOAMY PHASE (SHV.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over lacustrine heavy clay

DRAINAGE Moderately well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	5	20	1	18	8	49	33	SICL	3.6	5.9	0.7
IIBt	5	47	0	6	2	31	63	HC	0.9	5.9	1.8
IICk	5	100	0	3	0	36	61	HC	0.3	7.5	16.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

SHV.L ONTARIO 1985 PROFILE NO.MEFP002

LOCATION	Township of West Lincoln, Lot 30, Con. V, NTS Map Area 30M/4a, 17 TPT 1910 6830
ELEVATION	192 metres
SITE	Hay - pasture field
LANDFORM AND PARENT MATERIALS	Very gently sloping area on glaciolacustrine plain, sediments are composed of silty clay, clay and heavy clay, sometimes overlain by thin veneer of clay loam
SLOPE	5% complex
SOIL WATER REGIME	Moderately well drained, conductivity medium, saturation period short
STONINESS	Nonstony
CLASSIFICATION	Orthic Gray Brown Luvisol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Brunisolic Gray Brown Luvisol. Clay contents in B and C horizons somewhat lower than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-20 (17-21)	10YR4/3m	CL	weak, coarse, granular	weak to moderate, coarse, granular	slightly sticky, firm, very plastic	
IIBt	20-33 (12-16)	10YR4/3m	C	massive	very weak, coarse, subangular blocky	sticky, very firm, very plastic	
IIBC	33-44 (9-13)	10YR4/2m	HC	very weak, coarse, angular blocky	weak, coarse, subangular blocky	sticky, firm, very plastic	
IICk	44+	10YR4/2m	SIC	weak, coarse, angular blocky	weak to moderate, coarse, angular blocky	very sticky, very firm, very plastic	

		Sand Fraction %								
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 20	0	1	2	2	5	12	22	49	28
IIBt	20- 33	0						5	35	59
IIBC	33- 44	0						3	35	62
IICk	44+	1						5	45	51

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 20	1.28	5.5	3.0	15.2			
IIBt	20- 33	1.56	5.6	1.1	26.6			
IIBC	33- 44	1.45	7.1	0.8	28.8	1.0		
IICk	44+	1.57	7.6		34.9	16.0	4.3	0.2

TAVISTOCK

TAVISTOCK SOIL (TVK)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	31	22	1	50	29	35	15	L	3.7	6.3	0.2
Bmgj	24	43	0	53	33	32	15	VFSL	1.1	6.2	0.0
Btgj	17	54	0	43	28	36	21	L	0.6	6.3	0.6
IIBtgj	12	64	0	21	12	44	35	CL	0.6	6.4	0.3
IICkgj	25		0	7	2	49	44	SIC		7.5	16.7

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

(1)TVK ONTARIO 1985 PROFILE NO.LWSSP012

LOCATION City of Niagara Falls, Lot 28, NTS Map Area 30M/3g, 17 TPT 5125 7706

ELEVATION 183 metres

SITE Hay field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine plain with 40 to 100 cm of loamy soil over dominantly clayey sediments

SLOPE 3% complex

SOIL WATER REGIME Imperfectly drained, conductivity medium to low, saturation period medium to long

STONINESS Nonstony

CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol, loamy/fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Modal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-24 (18-28)	10YR3/3m	SIL	very weak, medium to coarse, subangular blocky	weak, fine to medium, subangular blocky	slightly sticky, friable, slightly plastic	
Bmgj	24-40 (12-21)	10YR5/4m	SIL	very weak, very coarse, subangular blocky	weak, fine to medium, subangular blocky	slightly sticky, very friable, slightly plastic	common, fine, distinct, 7.5YR4/6
Btgj1	40-54 (9-18)	10YR4/3m	SIL	moderate to strong, medium to coarse, subangular blocky	moderate to strong, medium, subangular blocky	sticky, firm, very plastic	many, medium, prominent, 10YR4/6
Btgj2	54-65 (7-14)	10YR4/4m	SIL	moderate, coarse, platy	moderate, coarse, platy	sticky, very plastic	many, medium, distinct, 10YR4/6
IIBg	65-70 (4-8)	10YR4/1m	SIC	strong, coarse, subangular blocky	strong, medium to coarse, subangular blocky	slightly sticky, very plastic	many, medium, prominent, 10YR5/6
IICkg	70+	10YR4/2m	SIC	strong, coarse, angular blocky	strong, medium to coarse, angular blocky	slightly sticky, very plastic	common, fine, prominent, 10YR4/6

			Sand Fraction %								Fine		
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-24	0	1	1	3	8	17	30	56	13	5	1.23	52
Bmgj	24-40	0	1	1	3	9	17	30	58	12	4	1.27	52
Btgj	40-54	0	0	1	2	4	11	17	57	26	13	1.46	46
Bmgj	54-65	0	0	1	2	4	16	23	58	20	9	1.40	48
IIBg	65-70	0						10	49	41	10		
IICkg	70+	0						4	48	48	9	1.47	46

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-24	52.3	39.3	29.7	8.7	21.0	0.18		5.7	5.3	3.1	11.4		
Bmgj	24-40	51.0	39.7	28.7	7.0	21.7	0.12		5.9	5.3	0.8	9.7		
Btgj	40-54	52.3	41.0	34.0	19.7	14.3	0.08		6.1	5.4	0.6	17.7		
Bmgj	54-65	58.3	43.3	28.7	15.3	13.4	0.09		6.8	6.2	0.4	13.5		
IIBg	65-70								7.5	7.3	0.4	24.9	2.0	
IICkg	70+	57.7	47.7	43.0	26.7	16.3	0.13	0.2	7.8	7.6			17.0	5.4

(2)TVK ONTARIO 1985 PROFILE NO.EWPP003

LOCATION	Town of Pelham, Lot 20, Con. X, NTS Map Area 30M/3d, 17 TPT 3158 6221
ELEVATION	184 metres
SITE	Cultivated corn field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping lacustrine plain with 40 to 100 cm of loamy soil over dominantly clayey sediments
SLOPE	1.5% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium to low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, coarse loamy/fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Modal. Bt horizons are somewhat redder in colour than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-27 (25-28)	10YR3/3m	L	strong, medium, subangular blocky	strong, fine, subangular blocky	slightly sticky, friable, plastic	
Bmgj	27-47 (12-33)	10YR5/4m	VFSL	moderate, fine to medium, subangular blocky	weak to moderate, fine, subangular blocky	slightly sticky, friable, slightly plastic	many, fine, distinct, 10YR5/6
Btgj	47-54 (0-15)	7.5YR3/4m	VFSL	massive	massive	slightly sticky, firm, plastic	common, fine, distinct, 7.5YR4/6
IIBtgj	54-74 (14-22)	7.5YR4/4m	SIC	strong, coarse, columnar	massive	sticky, firm, very plastic	many, medium, distinct, 7.5YR4/6
IICkgj	74+	10YR4/3m	SIC	massive	massive	sticky, very firm, plastic	common, fine, prominent, 10YR4/6

		Sand Fraction %								
Horizon	Depth cm	Grav. <2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-27	0	1	1	3	15	29	49	38	13
Bmgj	27-47	0	1	2	4	25	36	68	29	3
Btgj	47-54	0	0	2	5	28	33	68	12	20
IIBtgj	54-74	1	1	0	1	3	5	10	48	42
IICkgj	74+	1						5	53	42

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-27	1.22	6.7	3.2	11.4			
Bmgj	27-47	1.57	6.4	0.6	6.8			
Btgj	47-54	1.68	6.7	0.3	12.0			
IIBtgj	54-74	1.69	7.4	0.4	21.0	2.0		
IICkgj	74+	1.74	7.6			10.0	1.7	0.2

TAVISTOCK SOIL - HEAVY PHASE (TVK.H)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over lacustrine heavy clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	7	17	1	34	23	43	23	L	4.0	6.4	0.6
Bmgj	7	36	0	43	28	39	18	L	1.2	5.9	
IIBtgj	6	68	0	13	6	29	58	C	0.6	6.1	
IICkg	5		0	5	0	30	65	HC		7.6	14.6

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

TAVISTOCK SOIL - RED PHASE (TVK.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued loamy textures over lacustrine silty clay

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	14	22	1	52	31	34	14	VFSL	3.1	6.0	0.6
Bmgj	20	45	0	60	39	30	10	VFSL	0.9	6.0	0.3
Btgj	10	59	0	56	36	27	17	VFSL	0.4	6.7	0.5
IIBtgj	6	77	0	20	11	40	40	SICL	0.4	5.2	0.0
IICkgj	10		0	10	4	50	40	SICL	0.1	7.5	12.7

TAVISTOCK SOIL - TILL PHASE (TVK.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	16	22	4	50	29	34	16	L	3.2	6.4	0.5
Bmgj	14	42	4	52	30	32	16	VFSL	1.1	6.3	0.2
Btgj	9	55	1	42	28	36	22	L	0.5	6.4	0.1
IIBtgj	9	80	2	25	12	43	32	CL	0.5	6.8	1.1
IICkgj	12		4	18	7	46	36	SICL	0.0	7.6	11.9

TAVISTOCK SOIL - TILL RED PHASE (TVK.TR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm reddish-hued loamy textures over clay loam till

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	21	2	53	41	34	13	VFSL	3.4	6.8	1.2
Bmgj	4	49	2	59	46	31	10	VFSL	0.9	6.9	0.2
Btgj	3	67	5	37	27	49	14	SIL	1.0	6.9	0.3

TOLEDO

TOLEDO SOIL (TLD)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine silty clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	160	18	0	13	5	49	38	SICL	4.8	6.2	0.3
Bg1	153	43	0	9	3	43	48	SIC	1.3	6.3	0.3
Bg2	47	59	0	10	4	42	48	SIC	1.0	6.6	0.6
Ckg	148		0	5	1	48	47	SIC	0.1	7.6	15.2

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TLD ONTARIO 1985 PROFILE NO.LWSSP002

LOCATION Township of Wainfleet, Lot 4, Con. V, NTS Map Area 30L/14f, 17 TPT 3883 5730

ELEVATION 177 metres

SITE Ploughed field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine clay plain

SLOPE 1.5% simple

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long

STONINESS Nonstony

CLASSIFICATION Orthic Humic Gleysol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Modal. Ap horizon somewhat thicker than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-29 (24-35)	10YR3/2m	SIC	very weak, coarse, subangular blocky	very weak, coarse, subangular blocky	sticky, friable, very plastic	
Bg1	29-41 (8-16)	10YR5/1m	SIC	weak to moderate, coarse, columnar	weak, coarse, subangular blocky	sticky, firm, very plastic	many, medium, prominent, 10YR5/8
Bg2	41-55 (11-17)	10YR5/1m	SICL	weak, coarse, columnar	weak, coarse, subangular blocky	sticky, firm, very plastic	many, medium, prominent, 10YR5/8
Ckg	55+	10YR4/2m	SIC	weak, coarse, subangular blocky	weak, coarse, subangular blocky	sticky, firm, very plastic	many, medium, prominent, 10YR5/6

Horizon	Depth cm	Grav. <2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-29	0						7	51	42	17	0.90	64
Bg1	29-41	0						9	48	43	19	1.40	47
Bg2	41-55	0	0	0	0	2	9	11	52	38	15	1.57	43
Ckg	55+	0						3	54	43	12	1.52	45

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-29	62.5	46.8	42.2	18.7	23.5	2.30		5.2	5.2	5.7	25.8		
Bg1	29-41	53.0	48.7	44.7	24.7	20.0	0.13		6.4	6.1	0.7	25.8		
Bg2	41-55	47.3	41.3	39.0	25.0	14.0			7.4	6.9	0.5	28.4		
Ckg	55+	45.7	40.3	37.7	26.3	11.4	5.80	0.2	7.9	7.6			16.0	2.3

TOLEDO SOIL - COARSE PHASE (TLD.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm sandy textures over lacustrine silty clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	15	0	55	24	29	16	VFSL	3.1	7.0	0.3
IIBtg	3	48	0	13	6	50	37	SICL	0.4	7.0	0.2
IICkg	2		1	14	8	47	39	SICL		7.7	12.5

TOLEDO SOIL - LOAMY RED PHASE (TLD.LR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued lacustrine silty clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	13	22	1	30	17	46	24	L	3.5	6.2	0.2
IIBg	6	44	1	24	11	37	39	CL	0.7	6.9	0.4
IIBtgj	9	47	0	11	5	47	42	SIC	0.8	6.7	0.2
IICkg	10		1	9	3	50	41	SIC		7.7	14.7

TOLEDO SOIL - PEATY PHASE (TLD.P)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm peaty material over lacustrine silty clay

DRAINAGE Very poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Oh	3	28						ORG	46.0	6.0	
IIBg	3		0	15	9	51	34	SICL	0.6	6.1	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TLD.P ONTARIO 1985 PROFILE NO.EAWP004

LOCATION Township of Wainfleet, Lot 9, Con. II, NTS Map Area 30L/14f, 17 TPT 3674 5012

ELEVATION 180 metres

SITE Woodland

LANDFORM AND PARENT MATERIALS Level area on lacustrine plain near edge of Wainfleet Marsh. Dominantly clayey sediments overlain by organic soil layer

SLOPE 0.5% simple

SOIL WATER REGIME Very poorly drained, conductivity high in organic soil, low in clay, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Orthic Humic Gleysol, fine loamy, alkaline, extremely calcareous, mild humid to subhumid

STATUS Variant, lower organic matter content in surface horizon than typical peaty phase

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ah	0-33 (28-36)	10YR2/1m	CSL	moderate to strong, fine to medium, granular	moderate to strong, fine to medium, granular	very friable	
IIBg1	33-50 (13-20)	10YR5/1m	CL	moderate, medium to coarse, columnar	moderate to strong, coarse, columnar	sticky, very firm, very plastic	many, medium, prominent, 10YR5/6
IIBg2	50-87 (32-40)	10YR5/1m	CL	moderate to strong, coarse, columnar	moderate to strong, coarse, columnar	sticky, very firm, very plastic	many, medium, prominent, 10YR5/8
IICkg	87+	10YR5/2m	SIL	weak to moderate, coarse, columnar	weak to moderate, coarse, columnar	sticky, very firm, very plastic	many, medium, prominent, 7.5YR4/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ah	0-33	0	16	17	10	7	4	54	25	20
IIBg1	33-50	0	0	0	1	5	15	21	52	27
IIBg2	50-87	0	1	2	9	6	15	32	34	35
IICkg	87+	0						4	74	22

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ah	0-33	0.64	6.5	18.0	107.5			
IIBg1	33-50	1.61	6.5	0.7	13.8			
IIBg2	50-87	1.55	6.1	0.5	16.4			
IICkg	87+	1.54	7.5			18.0	1.5	0.2

TOLEDO SOIL - RED PHASE (TLD.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine silty clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	43	18	1	16	6	47	37	SICL	5.4	6.2	1.2
Bg	41	47	0	9	3	44	47	SIC	1.3	6.6	1.1
Ckg	31		0	6	1	48	46	SIC	0.1	7.6	16.3

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TLD.R ONTARIO 1985 PROFILE NO.LWSSP011

LOCATION City of Niagara Falls, Lot 17, Con. II, NTS Map Area 30M/3a, 17 TPT 5823 6625

ELEVATION 175 metres

SITE Cultivated corn field

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine clay plain

SLOPE 1.5% complex

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long

STONINESS Nonstony

CLASSIFICATION Orthic Luvic Gleysol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Orthic Humic Gleysol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-18 (18-20)	10YR3/2m	SICL	weak, very coarse, subangular blocky	weak, coarse, subangular blocky	slightly sticky, very plastic	
Aeg	18-31 (8-14)	2.5Y4/2m	SIC	weak to moderate, very coarse, columnar	massive	slightly sticky, very plastic	many, fine, prominent, 7.5YR5/8
Btg	31-46 (14-20)	5YR4/2m	SIC	weak to moderate, coarse, columnar	weak to moderate, very coarse, subangular blocky	slightly sticky, firm, very plastic	many, fine, prominent, 7.5YR4/6
Ckg	46+	5YR4/2m	SIC	weak, very coarse, columnar	moderate to strong, coarse, angular blocky	slightly sticky, firm, very plastic	common, medium, prominent, 10YR4/6

		Sand Fraction %										
Horizon	Depth cm	Grav. <2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-18	0						4	63	33	14	1.18	53
Aeg	18-31	0						6	50	44	20	1.56	41
Btg	31-46	0						4	45	51	20	1.59	40
Ckg	46+	0						4	53	43	13	1.58	42

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-18	59.0	43.3	35.7	16.3	19.4	1.00		6.8	6.8	5.8	21.1		
Aeg	18-31	53.0	48.0	44.7	27.3	17.4	0.04		6.8	6.6	1.8	20.4		
Btg	31-46	54.3	49.3	45.7	31.3	14.4	0.13		7.4	7.1	0.6	24.7	1.0	
Ckg	46+	51.0	44.0	40.0	30.0	10.0	0.10	0.2	8.0	7.8			14.0	2.0

TRAFALGAR SOIL (TFG)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued silty clay loam at least 1 m thick over Queenston shale bedrock

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	17	1	12	2	51	37	SICL	3.0	6.6	0.6
Bmgj	3	45	0	7	0	55	38	SICL	0.6	6.2	0.0
Btgj	2	59	1	5	0	49	46	SIC	0.7	5.4	0.0
Ckgj	3	100	0	10	4	58	32	SICL		7.6	3.7
R	4										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TFG ONTARIO 1985 PROFILE NO.EAWP010

LOCATION Town of Grimsby, Lot 13, Con. I, NTS Map Area 30M/4h, 17 TPT 1562 8412

ELEVATION 88 metres

SITE Pear orchard

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping shale bedrock plain, overlain by dominantly clayey reddish coloured sediments

SLOPE 2.5% complex

SOIL WATER REGIME Imperfectly drained, conductivity medium to high, saturation period short to medium

STONINESS Nonstony

CLASSIFICATION Gleyed Gray Brown Luvisol, fine loamy, alkaline, weakly calcareous, mild humid to subhumid

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol. Also lower clay contents than normal in A and C horizons

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-16 (11-21)	5YR4/3m	SIL	strong, coarse, angular blocky	strong, medium to coarse, subangular blocky	slightly sticky, very firm, very plastic	
Btgj	16-48 (28-34)	5YR4/3m	SICL	strong, medium to coarse, columnar	strong, medium to coarse, columnar	sticky, very firm, very plastic	few, fine, distinct,5YR5/3
Ck	48+	2.5YR4/3m	SIL	moderate, medium to coarse, columnar	moderate, medium to coarse, columnar	sticky, very firm, very plastic	

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0- 16	2	4	4	3	5	5	21	56	23
Btgj	16- 48	0	0	2	3	3	3	11	52	37
Ck	48+	0	1	2	4	7	6	20	60	20

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0- 16	1.24	7.0	3.9	16.9	1.0		
Btgj	16- 48	1.59	5.9	0.6	13.7			
Ck	48+	1.79	7.5			6.0	2.2	0.2

TRAFALGAR SOIL - LOAMY PHASE (TFG.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over TFG soils

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	2	25	1	44	20	39	17	L	2.4	6.7	0.4
IIBtgj	2	47	1	18	5	43	39	SICL	0.8	6.5	0.0
IICkgj	2		0	7	0	64	29	SICL		7.5	6.5

TRAFALGAR SOIL - SHALLOW PHASE (TFG.S)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 50 to 100 cm reddish-hued silty clay loam over Queenston shale bedrock

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	7	16	2	16	3	50	34	SICL	2.7	6.6	0.5
Bmgj	4	39	3	20	4	46	34	SICL	1.4	5.9	0.0
Btgj	3	65	1	9	1	52	39	SICL	0.7	5.8	0.0
Ckgj	6	80	0	11	3	65	24	SIL		7.5	4.5
R	7										

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TFG.S ONTARIO 1985 PROFILE NO.EAWSP007

LOCATION	Town of Grimsby, Lot 19, Con. I, NTS Map Area 30M/4h, 17 TPT 1258 8480
ELEVATION	91 metres
SITE	Abandoned vineyard
LANDFORM AND PARENT MATERIALS	Nearly level shale bedrock plain, overlain by dominantly clayey reddish coloured sediments
SLOPE	1.5% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium to high, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, coarse loamy, shallow lithic, mild humid to subhumid
STATUS	Variant because of lower clay contents in A and B horizons and non-existent C horizon

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-15 (14-16)	5YR4/3m	SIL	moderate, medium, subangular blocky	moderate, medium, subangular blocky	slightly sticky, very firm, very plastic	
Bmgj	15-34 (16-19)	5YR4/3m	SIL	moderate, medium to coarse, subangular blocky	moderate, medium to coarse, subangular blocky	sticky, very firm, plastic	few, fine, distinct, 5YR4/4
Btgj1	34-45 (10-14)	5YR4/3m	SIL	moderate, coarse, angular blocky	medium, angular blocky	sticky, very firm, plastic	few, fine, distinct, 5YR4/6
Btgj2	45-83 (38-40)	5YR3/3m	SIL	moderate, coarse, columnar	moderate, coarse, columnar	slightly sticky, very firm, very plastic	common, medium, distinct, 5YR4/4
R	83+						

			Sand Fraction %										
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-15	0	2	3	1	2	3	11	69	20	8	1.46	45
Bmgj	15-34	0	8	7	4	4	4	27	56	18	6	1.44	46
Btgj1	34-45	0	3	8	6	5	6	27	50	23	7	1.49	44
Btgj2	45-83	0						6	52	42	7	1.76	36
R	83+												

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-15	56.3	43.7	35.3	13.7	21.6	0.04		7.5	6.9	2.4	15.3		
Bmgj	15-34	56.0	40.7	31.7	13.0	18.7	0.10		6.1	5.6	1.6	11.2		
Btgj1	34-45	55.0	42.0	33.3	14.3	19.0	0.06		5.7	5.3	2.2	12.1		
Btgj2	45-83	50.3	42.3	37.7	27.7	10.0	0.21		6.2	5.9	1.0			
R	83+													

TUSCOLA

TUSCOLA SOIL (TUC)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly lacustrine silt loam

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	31	21	0	34	21	48	18	L	3.5	6.4	0.2
Bmgj	27	55	0	33	22	50	17	SIL	0.8	6.4	0.2
Btgj1	24	60	0	28	20	49	23	SIL	0.5	6.3	0.1
Btgj2	5	83	0	22	16	54	24	SIL	0.4	6.0	0.0
Ckgj	17		0	23	13	58	19	SIL		7.6	9.8

TUSCOLA SOIL - RED PHASE (TUC.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine silt loam

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	28	23	1	43	29	42	15	L	2.7	6.1	0.1
Bmgj	31	57	0	42	30	44	14	L	0.7	5.7	0.2
Btgj1	20	61	0	31	22	45	24	L	0.4	6.1	0.0
Btgj2	5	72	1	24	18	52	24	SIL	0.3	6.2	0.0
Ckgj	13		1	27	16	57	16	SIL		7.5	9.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TUC.R ONTARIO 1985 PROFILE NO. EAWSP016

LOCATION	Town of Pelham, Lot 3, Con. X, NTS Map Area 30M/3c, 17 TPT 3879 6389
ELEVATION	186 metres
SITE	Hay - pasture field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping lacustrine plain with local hummocky and dissected areas. Reddish, surficial loamy sediments grade into clayey sediments at depths greater than 1 metre
SLOPE	3% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium to low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, coarse loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Modal. Clay contents are lower than normal and depth to C horizon is deeper than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (18-20)	10YR4/3m	VFSL	massive	weak, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bm	19-41 (19-26)	10YR5/6m	SIL	massive	very weak, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	
Btgj	41-57 (15-18)	7.5YR4/4m	SIL	massive	very weak, coarse, platy	nonsticky, friable, slightly plastic	few, fine, prominent, 7.5YR5/8
Bmgj1	57-74 (15-18)	7.5YR4/4m	SI	massive	weak, very coarse, subangular blocky	nonsticky, friable, nonplastic	common, medium, distinct, 7.5YR5/6
Bmgj2	74-90 (14-19)	7.5YR5/3m	SIL	massive	massive	slightly sticky, friable, very plastic	common, medium, prominent, 7.5YR5/6
Bmgj3	90+	7.5YR6/3m	SIL	massive	massive	nonsticky, friable, slightly plastic	many, medium, prominent, 7.5YR5/6

			Sand Fraction %										
Horizon	Depth cm	Grav. >2 mm	VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0- 19	0	1	2	3	8	35	48	44	9	3	0.97	62
Bm	19- 41	0	1	1	1	4	36	43	52	4	1	1.21	53
Btgj	41- 57	0						10	78	12	4	1.45	45
Bmgj1	57- 74	0	0	0	0	0	11	12	81	8	3	1.43	46
Bmgj2	74- 90	0	0	0	0	1	19	20	75	6	3	1.39	50
Bmgj3	90+	0	0	0	0	1	44	46	51	3	2	1.40	47

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 19	70.7	44.0	31.0	5.7	25.3	7.80		6.1	5.5	3.5	12.0		
Bm	19- 41	54.7	44.3	20.3	4.7	15.6	1.90		6.2	5.4	0.9	4.5		
Btgj	41- 57	49.0	38.3	28.0	9.7	18.3	0.13		5.7	5.2	0.3	8.8		
Bmgj1	57- 74	52.3	43.0	35.7	10.0	25.7	0.03		5.8	4.9	0.1	8.5		
Bmgj2	74- 90	50.7	41.7	35.7	11.3	24.4	0.42		6.0	4.9	0.0	7.4		
Bmgj3	90+	57.0	45.3	24.3	5.3	19.0	0.40		5.8	4.8	0.1	7.1		

VINELAND

VINELAND SOIL (VLD)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine fine sandy loam and very fine sandy loam

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	62	23	1	65	38	25	9	VFSL	2.7	6.1	0.5
Bmgj1	79	53	1	70	39	23	7	VFSL	0.6	6.1	0.2
Bmgj2	30	60	0	75	39	20	6	VFSL	0.3	6.1	0.2
Btgj1	46	74	1	61	41	28	12	VFSL	0.8	6.3	0.1
Btgj2	12	83	0	61	40	28	12	VFSL	0.2	6.3	0.2
Ckgj	21		1	65	37	29	6	VFSL		7.5	8.1

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

VLD ONTARIO 1985 PROFILE NO.LWSSP001

LOCATION Town of Pelham, Lot 15, Con. VIII, NTS Map Area 30M/3c, 17 TPT 3372 6567

ELEVATION 198 metres

SITE Pear orchard

LANDFORM AND PARENT MATERIALS Nearly level to very gently sloping lacustrine sand plain. Reddish surficial sandy sediments grade into clayey sediments at depths greater than 1 metre

SLOPE 3.5% complex

SOIL WATER REGIME Imperfectly drained, conductivity medium to high, saturation period medium

STONINESS Nonstony

CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol, coarse loamy, mild humid to subhumid

STATUS Modal. Silt content of the upper subsurface horizons are higher than normal, and depth to C horizon is greater than normal

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-21 (19-23)	10YR3/3m	VFSL	very weak, coarse, subangular blocky	weak to moderate, medium to coarse, subangular blocky	friable, slightly plastic	
Bmgj1	21-36 (13-17)	10YR5/6m	SIL	massive		friable, slightly plastic	common, fine, distinct, 7.5YR5/6
Bmgj2	36-47 (10-15)	10YR5/4m	L	weak to moderate, coarse, subangular blocky	weak to moderate, medium, subangular blocky	friable, slightly plastic	many, medium, distinct, 7.5YR4/6
Btgj	47-57 (7-12)	5YR4/4m	L	weak, coarse, subangular blocky	weak, coarse, subangular blocky	firm, plastic	many, medium, prominent, 7.5YR5/8
Bmgj3	57-84 (23-30)	5YR4/4m	VFSL	massive		friable, slightly plastic	many, medium, prominent, 7.5YR5/8
Bmgj4	84+	7.5YR5/4m	VFSL	massive		friable, slightly plastic	many, coarse, distinct, 7.5YR4/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-21	0	0	1	2	12	39	54	38	8	3	1.28	51
Bmgj1	21-36	1	1	1	1	8	31	42	52	6	1	1.10	59
Bmgj2	36-47	1	1	1	1	7	32	42	50	8	2	1.28	52
Btgj	47-57	0	1	1	1	3	34	40	47	13	4	1.40	47
Bmgj3	57-84	0	0	1	1	1	50	53	37	10	4	1.47	44
Bmgj4	84+	0	0	0	0	1	61	62	33	4	1	1.43	47

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-21	49.0	38.0	29.3	6.0	23.3	5.30		6.0	6.2	2.2	13.8		
Bmgj1	21-36	52.3	41.7	31.0	5.3	25.7	9.50		6.0	5.5	1.0	7.7		
Bmgj2	36-47	50.7	39.3	26.7	4.0	22.7	0.56		6.0	5.1	0.3	7.9		
Btgj	47-57	54.7	41.3	30.3	9.2	21.1	0.06		5.9	5.4	0.3	9.4		
Bmgj3	57-84	54.0	41.7	30.0	9.0	21.0	0.07		6.2	5.7	0.3	9.7		
Bmgj4	84+	57.3	45.3	24.7	6.3	18.4	0.18		6.4	5.5	0.1	7.7		

VINELAND SOIL - BROWN PHASE (VLD.B)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly brownish-hued lacustrine fine sandy loam and very fine sandy loam

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	20	23	1	69	35	22	9	VFSL	2.9	6.5	0.3
Bm	7	40	1	78	35	17	5	LFS	1.3	6.1	2.1
Bmgj1	18	57	0	77	41	17	6	LFS	0.8	6.4	0.4
Btgj	15	74	1	68	34	19	13	VFSL	0.4	6.4	0.0
Bmgj2	10	83	0	81	44	12	7	LFS	0.4	6.1	0.1
Ckgj	12		1	63	41	29	8	VFSL		7.6	14.5

VITTORIA

VITTORIA SOIL (VIT)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over lacustrine silt loam

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	9	25	2	70	35	20	10	VFSL	2.9	6.2	0.3
Bmgj	8	53	2	70	33	23	7	VFSL	0.5	6.3	0.1
Btgj	6	67	0	64	34	24	12	VFSL	0.4	6.3	0.0
IICkgj	5		0	17	10	64	19	SIL		7.5	17.8

VITTORIA SOIL - RED PHASE (VIT.R)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over reddish-hued lacustrine silt loam

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	12	26	2	69	28	22	9	VFSL	2.8	6.5	0.8
Bmgj	10	45	3	72	29	20	8	FSL	0.7	6.5	0.1
Btgj	9	60	3	63	20	23	14	FSL	0.3	6.6	0.2
IIBtgj	7	80	1	46	30	39	15	L	0.7	6.6	0.1
IICkg	7		1	34	22	56	10	SIL		7.7	12.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

VIT.R ONTARIO 1985 PROFILE NO.MEFP009

LOCATION	City of St. Catharines, Lot 3, Con. II, NTS Map Area 30M/3f, 17 TPT 3908 8113
ELEVATION	95 metres
SITE	Rhubarb field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping glaciolacustrine plain overlain by reddish-hued loamy and sandy sediments
SLOPE	1% simple
SOIL WATER REGIME	Imperfectly drained, conductivity high in sands; medium to low in underlying sediments, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, sandy/loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Modal. C horizon has higher silt content than normal

Horizon	Depth (range) cm	Colour moist	dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-35 (33-35)	10YR3/2m		SL	moderate, medium, granular	moderate, medium, granular	nonsticky, very friable, slightly plastic	
Bmgj1	35-46 (8-12)	10YR6/4m		LS	single grain		nonsticky, very friable, nonplastic	common, fine, distinct, 10YR5/6
Btgj	46-58 (10-14)	10YR5/4m		LS	massive		nonsticky, very friable, slightly plastic	common, fine, prominent, 10YR5/8
Bmgj2	58-90 (32-36)	10YR4/3m		FS	single grain		nonsticky, loose, nonplastic	common, fine, prominent, 10YR5/6
IICkg	90+	5YR5/2m		SI	massive		slightly sticky, very friable, slightly plastic	common, fine, prominent, 7.5YR5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-35	0	0	3	30	33	9	75	18	7
Bmgj1	35-46	0	0	2	26	44	9	81	15	4
Btgj	46-58	0	1	3	26	42	8	80	11	9
Bmgj2	58-90	0	1	5	25	53	8	91	6	3
IICkg	90+	0						8	84	9

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-35	1.27	6.9	2.3	10.8			
Bmgj1	35-46	1.38	6.8	0.3	12.9			
Btgj	46-58	1.48	7.1	0.1	10.3			
Bmgj2	58-90	1.37	7.0	0.1	10.1	1.0		
IICkg	90+	1.51	7.6			10.0	1.6	0.2

WAINFLEET

WAINFLEET SOIL (WAF)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Organic soil, fen-associated, greater than 160 cm deep

DRAINAGE Very poor

USUAL CLASSIFICATION Mesic Fibrisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Peat Material and Texture	Stage of Decomposition	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Om1	1	22						woody fen peat	mesic	76.8	3.5	
Of1	1	54						woody fen sedge	fibric	90.5	3.7	
Of2	1	89						woody sedge fen peat	fibric	89.4	4.9	
Om2	1	121						woody sedge fen peat	mesic	89.1	5.2	
Om3	1	162						woody sedge fen peat	mesic	87.5	5.4	
IIBg	1		0	15	13	56	29	SICL		1.0	6.4	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WAF ONTARIO 1985 PROFILE NO. LWS21

LOCATION Township of Wainfleet, Lot 3, Con. III, NTS Map Area 30L/14f, 17 TPT 3903 5362

ELEVATION 177 metres

SITE Wainfleet Marsh, mainly alder and woody shrubs with some birch and poplar

LANDFORM AND PARENT MATERIALS Horizontal fen with organic sediments consisting of woody fen peat. Loamy mineral sediment occurs at 162 cm depth

SLOPE 0.5 % simple

SOIL WATER REGIME Very poorly drained, conductivity high, saturation period prolonged

STONINESS Nonstony

CLASSIFICATION Mesic Fibrisol, mesic, euic, mild, peraquic

STATUS Undecided

MORPHOLOGICAL DESCRIPTION, CHEMICAL AND PHYSICAL ANALYSES

Horizon	Depth cm	Colour (moist)	Peat Material and Texture	Stage of Decomposition	von Post Scale	Woody Material Volume %	Organic Matter %	pH $CaCl_2$	$CaCO_3$ %
Om1	0-22	5YR2.5/1	woody fen peat	mesic	5	10-20	76.8	3.5	
Of1	22-54	5YR3/3	woody fen peat	fibric	3	10-20	90.5	3.7	
Of2	54-89	10YR2/2	woody sedge fen peat	fibric	3	10-20	89.4	4.9	
Om2	89-121	10YR2/1	woody sedge fen peat	mesic	5	<10	89.1	5.2	
Om3	121-162	10YR2/1	woody sedge fen peat	mesic	5	<10	87.5	5.4	
IIBg	162+	5Y5/1	SICL				1.0	6.4	

WALSHER SOIL (WSH)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over lacustrine silt loam

DRAINAGE Well

USUAL CLASSIFICATION Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	6	18	5	63	31	28	9	VFSL	2.1	5.7	
Bm1	7	45	5	68	32	25	7	VFSL	0.7	5.7	
Bt	2	63	1	64	30	23	13	VFSL	0.5	6.6	
Bm2	6	77	6	64	22	29	7	FSL	0.3	5.7	
IIBm	4		2	34	22	51	15	SIL	0.2	5.8	

WALSINGHAM SOIL (WAM)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mostly eolian fine sand at least 1 m thick

DRAINAGE Imperfect

USUAL CLASSIFICATION Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	1	23	0	83	40	11	6	VFSL	2.8	6.3	
Bmgj	2	37	0	90	28	7	3	FS	1.1	7.0	3.5
Btgj	1	73	0	80	46	10	10	LFS	0.2	6.5	0.0
Ckgj	4		0	85	14	10	5	LFS	0.1	7.3	12.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WAM ONTARIO 1985 PROFILE NO.MEFP001

LOCATION Township of Wainfleet, Lot 2, Con. I, NTS Map Area 30L/14f, 17 TPT 3994 4824

ELEVATION 177 metres

SITE Abandoned farmland

LANDFORM AND PARENT MATERIALS Level to nearly level lacustrine clay plain overlain by variable depths of dominantly eolian sands

SLOPE 1% simple

SOIL WATER REGIME Imperfectly drained, conductivity high, saturation period medium

STONINESS Nonstony

CLASSIFICATION Gleyed Melanic Brunisol, sandy, neutral, weakly calcareous, mild humid to subhumid

STATUS Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-25 (21-28)	10YR3/2m	FS	weak to moderate, fine, granular	weak, fine, granular	nonsticky, very friable,nonplastic	
Bmgj1	25-40 (11-15)	10YR4/6m	FS	single grain		nonsticky, very friable, nonplastic	common, fine, distinct, 10YR5/6
Bmgj2	40-56 (13-15)	10YR5/4m	S	single grain		nonsticky, loose, nonplastic	common, fine, distinct, 10YR4/6
Bmgj3	56-76 (14-22)	10YR5/3m	S	single grain		nonsticky, loose, nonplastic	many, fine, distinct, 7.5YR6/8
Bmgj4	76-93	10YR5/3m	S	single grain		nonsticky, loose, nonplastic	common, medium, distinct, 7.5YR5/6
Ckg	93+	10YR5/2m	S	massive	massive	nonsticky, loose, nonplastic	common, medium, prominent, 10YR6/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %
Ap	0-25	0	1	6	5	75	9	94	3	3
Bmgj1	25-40	0	0	1	36	58	2	96	3	1
Bmgj2	40-56	0	0	1	42	48	6	97	2	1
Bmgj3	56-76	1	1	2	44	48	2	97	2	1
Bmgj4	76-93	1	0	2	50	34	12	97	2	1
Ckg	93+	1	0	1	41	49	1	93	5	2

Horizon	Depth cm	Bulk Density g/cm^3	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio	Elec. Cond. mmhos/cm
Ap	0-25	1.12	5.6	4.6	14.2			
Bmgj1	25-40	1.26	6.8	1.2	8.9			
Bmgj2	40-56	1.40	6.5	0.6	8.2			
Bmgj3	56-76	1.45	6.6	0.3	8.3			
Bmgj4	76-93	1.57	6.8	0.1	9.6			
Ckg	93+	1.75	7.4			6.0	0.3	0.1

WAUSEON

WAUSEON SOIL (WUS)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm sandy textures over lacustrine silty clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	4	16	3	58	20	26	16	FSL	3.4	6.2	0.3
Bmgj	5	41	3	77	27	14	9	FSL	0.8	6.5	0.0
IIBtg	2	68	1	8	0	42	50	SIC	0.5	7.1	0.6
IICkg	6		1	5	1	43	52	SIC		7.7	14.9

WAUSEON SOIL - TILL PHASE (WUS.T)*

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm loamy textures over clay loam till

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	3	23	1	42	14	37	21	L	4.3	6.5	
Bg	3	47	4	56	14	26	18	FSL	0.4	6.4	
Btg	1	60	1	57	13	20	23	SCL	0.2	6.9	
IICkg	2		4	40	25	27	33	CL		7.6	11.8

* although there are local occurences of this soil, the areas were too small to map and therefore do not appear on the soil maps

WELLAND SOIL (WLL)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly reddish-hued lacustrine heavy clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	61	16	1	12	3	40	48	SIC	5.9	6.0	0.6
Bg1	63	39	0	7	2	32	61	HC	1.4	6.3	0.7
Bg2	21	56	0	8	2	30	62	HC	0.9	6.3	0.5
Ckg	56		0	3	0	31	66	HC	0.2	7.6	12.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WLL ONTARIO 1985 PROFILE NO.MEFSP011

LOCATION Town of Fort Erie, Lot 17, Con. XIII, NTS Map Area 30L/14h, 17 TPT 5650 5841

ELEVATION 180 metres

SITE Abandoned farmland

LANDFORM AND PARENT MATERIALS Level lacustrine clay plain composed dominantly of reddish, heavy clay sediments

SLOPE 0.5% simple

SOIL WATER REGIME Poorly drained, conductivity low, saturation period long to prolonged

STONINESS Nonstony

CLASSIFICATION Humic Luvic Gleysol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid

STATUS Taxadjunct to Orthic Humic Gleysol

Horizon	Depth (range) cm	Colour moist dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-15 (14-16)	10YR4/2m	SIC	moderate, coarse, granular	moderate, coarse, granular	slightly sticky, friable, plastic	
Btg1	15-34 (16-20)	7.5YR4/2m	HC	very weak, coarse, subangular blocky	massive	sticky, very firm, very plastic	common, fine, prominent, 7.5YR5/6
Btg2	34-43 (8-10)	7.5YR5/2m	HC	weak, coarse, columnar	massive	sticky, very firm, very plastic	common, fine, prominent, 7.5YR5/5
Ckg	43+	7.5YR5/2m	HC	weak, coarse, columnar	weak, coarse, columnar	sticky, very firm, very plastic	common, fine, prominent, 7.5YR5/6

Horizon	Depth cm	Grav. >2 mm	Sand Fraction % VCS 2-1 mm	CS 1-.5 mm	MS .5-.25 mm	FS .25-.1 mm	VFS .1-.05 mm	Sand %	Silt %	Clay %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0- 15	0						7	45	48	19	1.16	55
Btg1	15- 34	0						3	28	69	30	1.40	47
Btg2	34- 43	0						1	22	77	29	1.42	47
Ckg	43+	0						1	26	73	21	1.42	47

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	5 kPa	33 kPa	1500 kPa	Available Moisture %	Hydr. Cond. cm/hr	Elec. Cond. mmhos/cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0- 15	67.0	44.0	38.0	20.0	18.0	9.00		5.9	5.2	4.2	16.8		
Btg1	15- 34	61.7	55.3	50.7	30.7	20.0	0.13		6.7	6.5	1.1	28.9		
Btg2	34- 43	63.3	57.7	52.3	36.0	16.3			7.4	7.3	1.0	30.9	1.0	
Ckg	43+	59.0	52.3	47.7	34.7	13.0	0.10	0.6	7.8	7.7			11.0	3.0

WELLAND SOIL - LOAMY PHASE (WLL.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm loamy textures over reddish-hued lacustrine heavy clay

DRAINAGE Poor

USUAL CLASSIFICATION Orthic Humic Gleysol

MEAN HORIZON VALUES

Horizon	No. of Samples	Depth to Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	17	19	0	23	12	46	31	CL	4.6	6.0	0.2
IIBg1	10	43	0	8	2	34	58	C	1.0	6.3	0.0
IIBg2	5	46	0	11	5	30	59	C	0.8	6.3	1.4
IICkg	16		0	5	1	32	63	HC	1.1	7.7	14.0

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