The Soils of Elgin County

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THE SOILS OF ELGIN COUNTY

Volume 2

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by

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TABLE OF CONTENTS

INTRODUCTION

This volume of the soil report consists mainly of detailed morphological, physical, and chemical descriptions of selected soils which occur in Elgin County. The descriptions represent typical soils in regards to their materials, drainage, and associated physical and chemical properties. Some descriptions, however, differ slightly in soil horizonation from horizon sequences which were most frequently encountered during the mapping stage of the survey.

Also included in this volume are tables of statistical means and engineering test data. The analytical methods used to obtain physical, chemical and engineering test data are also briefly outlined. Descriptions of the physiographic setting of the soils, generalized descriptions of the soils, and soil interpretations are contained in Volume 1 of the report.

SAMPLING AND SITE SELECTION

Three types of soil assessments were carried out during the survey at site inspections. The most common type of assessments were field checks which were carried out to: 1) confirm soil types and landscape conditions; and 2) establish appropriate map units and boundaries. At these sites, soil information needed to identify the soil types according to the field legend was collected. Sampling was not undertaken at these sites for soil characterization.

At some of the field checks, the soils were sampled for a limited number of soil properties. Sampling was undertaken at these sites for one of the following purposes: 1) to develop a soil database that could be used to describe the soils and make interpretations; or 2) to confirm the soil type according to the field legend. Only mineral soils were sampled. In addition to these sites, sampling was also undertaken at a number of sites during the legend building stage of the survey. At all sites which were sampled, the horizon sequence and general characteristics of the soil were described, including soil colour and drainage. Samples were also taken from each soil horizon, and laboratory analyses were carried out to determine particle size distribution (soil texture), calcium carbonate content, pH in $CaCl_2$, and organic matter content.

The information collected from the sampled sites provided a soil database on each major soil type mapped in the County. Statistical analysis of the data was then carried out, and generalized profiles were developed which described the common horizon sequences. Ranges and mean values for all of the measured properties were determined for the horizons in each generalized profile. Using the profiles as a guide, representative sites were then located and detailed soil descriptions were carried out. At least one detailed description was carried out for most major soil types.

At sites which were selected for detailed descriptions, soil pits were excavated to expose the soil profile. The soil profile was then described in detail, including descriptions of horizon type and thickness, horizon colour, primary and secondary structure, and consistency. Mottle size, type, and colour were also described when they were present. A wide range of laboratory analyses were also carried out on samples from these sites to determine: particle size distribution (soil texture); calcium carbonate content; pH in $CaCl_2$; pH in H_2O; bulk density; porosity; moisture retention; available moisture; saturated hydraulic conductivity; electrical conductivity; cation exchange capacity; calcite/dolomite ratio; and engineering properties such as Atterberg Limits.

ANALYTICAL METHODS

Most of the methods used for soil analyses are outlined in the Canada Soil Survey Committee publication titled "Manual on soil sampling and methods of analysis" (1). The applicable sections from that manual for the analyses are shown in brackets, and the analyses are as follows:

a) Particle size analysis by pipette method, after pretreatment (2.11)

b) pH in $CaCl_2$ (3.11), pH in H_2O (3.13)

c) Organic carbon by wet oxidation, using ortho-phananthroline-ferrous sulfate as indicator (3.613)

d) Calcium carbonate equivalent, using 6N HCl and some glassware modifications (3.41)

e) Cation exchange capacity (3.34)

f) Electrical conductivity (4.12)

g) Bulk density by core method (2.21)

h) Water retention by pressure-plate extraction (2.43)

i) Shrinkage was determined by a modification which used the COLE rod method (2.13)

A number analytical methods were also used which are not outlined in the above noted manual.

Those analyses, with appropriate references shown in brackets, are as follows:

a) Saturated hydraulic conductivity followed procedures used by U.S. salinity lab., U.S.D.A., as outlined in (2)

b) Calcite/dolomite ratio determined by a gasometric procedure using the Chittick apparatus (3)

c) COLE rod method for determining shrinkage limit (4)

d) Engineering test data for selected soils provided in Table 1, not including bulk density, porosity, free swell and COLE rod, were done by the Materials and Testing Laboratory of the Geotechnical Section, Highway Engineering Division, Ontario Ministry of Transportation, London. The tests used American Society for Testing Materials (ASTM) methods (5), and the procedures and their ASTM numbers are as follows: Unified 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.

e) Free swell was determined from a method outlined by Holtz and Gibbs (6)

SOIL DESCRIPTIONS AND ANALYSES

Two types of soil descriptions and analyses are presented. General soil descriptions are given for most of the soils which occur in the County. They include brief summaries of the parent materials, drainage, and usual taxonomic classification of each soil. The general descriptions also include tables which give the common horizon sequence for each soil, and mean horizon values for a number of basic soil properties. The mean values shown in the tables were determined through statistical analysis of the data collected from all sampled sites.

Detailed soil descriptions of typical profiles of the major soils in the County accompany some of the general descriptions. These descriptions provide actual data from specific sites which were described in detail and analyzed for a wide range of soil properties. Analyses for engineering test purposes were also carried out on samples taken at sites where the soils were described in detail. The results of these analyses are given in Table 1.

The taxonomic classifications and nomenclature used in the general and detailed descriptions were those of "The Canadian System of Soil Classification" (7). Criteria applied to determine soil texture, structure, consistence and mottles were those defined in the CanSIS "Manual for describing soils in the field"(8). Soil colours are from Munsell soil colour charts (9).

In some descriptions, no data or blank spaces may appear in the tables where analyses were not carried out on certain horizons. For example, organic matter content was usually not determined for C horizons because the values are generally negligible. For the same reason, the carbonate content was not usually measured in the A and B horizons when the pH values of those horizons were less than 7.0.

The following are definitions of the abbreviations used in the tables:

Physical and Chemical Analyses

Grav.	- Gravel
VCS	- Very coarse sand
CS	- Coarse sand
MS	- Medium sand
FS	- Fine sand
VFS or VF sand	- Very fine sand
$CaCl_2$	- Calcium chloride
$CaCO_3$	- Calcium carbonate equivalent
Avail. Moist.	- Available Moisture
Hydr. Cond.	- Hydraulic Conductivity (saturated)
Elec. Cond.	- Electrical Conductivity
CEC	- Cation Exchange Capacity
Cal/Dol Ratio	- Calcite/Dolomite Ratio

Soil Textures and Textural Modifiers

C	- Clay
CL	- Clay loam
CS	- Coarse sand
FS	- Fine sand
FSL	- Fine sandy loam
GCS	- Gravelly coarse sand
GLCS	- Gravelly loamy coarse sand
GCSL	- Gravelly coarse sandy loam
GLS	- Gravelly loamy sand
GSL	- Gravelly sandy loam
GSCL	- Gravelly sandy clay loam
HC	- Heavy clay
L	- Loam
LFS	- Loamy fine sand
LS	- Loamy sand
LVFS	- Loamy very fine sand
S	- Sand
SCL	- Sandy clay loam
SL	- Sandy loam
SI	- Silt

SIC	- Silty clay
SICL	- Silty clay loam
SIL	- Silt loam
VFS	- Very fine sand
VFSL	- Very fine sandy loam
VGCS	- Very gravelly coarse sand
VGSL	- Very gravelly sandy loam
VG	- A textural modifier applied when the material contains >50% gravel
G	- A textural modifier applied when the material contains 20% to 50% gravel

Engineering Analyses

Unified	- Unified Soil Classification System
AASHO	- American Association of State Highway Officials
LL	- Liquid limit
PL	- Plastic limit
PI	- Plasticity index
Bulk Dens.	- Bulk density
Max. dry Dens.	- Maximum dry density
Opt. Moist	- Optimum moisture

Table 1. Engineering test data for horizons of selected soils

Soil	Horizon	Depth cm	Soil Classification		Atterberg Limits			Mechanical Analysis					Bulk Dens. g/cc	Poro-sity %	Compaction Max.dry Dens. t/m³	Compaction Opt. Moist %	Free Swell %	Cole Rod
			Unified	AASHO	LL%	PL%	PI%	% Passing #10	% Passing #40	% Passing #200	% Smaller Than .05mm	% Smaller Than .005mm						
Berrien till phase	Ap	0-31	SM	A-2	NP	NP	NP	100	99	29	17	5	1.17	54	1.7	16.1	13	0.01
	Bm	31-41	SP-SM	A-2	NP	NP	NP	100	98	11	7	3	1.37	48	1.8	14.0	8	0.01
	Bmgj	41-56	SP-SM	A-2	NP	NP	NP	100	98	11	7	3	1.38	48	1.8	14.0	9	0.00
	IIBtgj	56-65	CI	A-6(13)	39.5	18.0	21.5	100	98	77	73	45	1.44	45	1.7	17.6	57	0.09
	IICkg	65-100	CL	A-6(15)	34.0	17.5	16.5	100	99	96	95	59	1.59	40	1.8	18.8	29	0.06
Beverly	Ap1	0-12	CI	A-6(11)	36.5	20.0	16.5	100	100	94	91	40	1.46	44	1.7	19.2	41	0.03
	Ap2	12-25	CI	A-6(12)	39.0	20.5	18.5	100	100	94	90	47	1.49	43	1.7	18.8	35	0.07
	Btgj	25-33	CI	A-7-6(13)	43.0	21.5	21.5	100	100	96	94	50	1.43	46	1.7	20.6	50	0.10
	Ckgj1	33-57	CL	A-6(12)	39.5	19.5	20.0	100	100	98	94	53	1.52	43	1.7	19.2	50	0.06
	Ckgj2	57-100	CL	A-6(10)	32.5	19.0	13.5	100	100	98	93	48	1.59	42	1.8	17.0	31	0.03
Brady	Ap	0-32	SM	A-2	NP	NP	NP	100	98	19	18	8	1.48	44	1.8	13.3	17	0.01
	Bmgj	32-55	SM	A-2	NP	NP	NP	100	98	15	15	10	1.29	51	1.8	12.3	15	0.00
	Aegj	55-71	SM	A-2	NP	NP	NP	100	97	13	12	5	1.39	48	1.8	12.4	3	0.01
	Btgj	71-80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	0.05
	BCgj	80-85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0.00
	Ckgj	85-100	SW-SM	A-3	NP	NP	NP	100	100	9	0	0	1.35	50	1.7	14.2	2	0.00
Brant	Ap	0-28	ML	A-4(8)	26.0	19.0	7.0	100	100	96	78	27	1.41	46	1.7	15.6	21	0.03
	Bt1	28-37	CL	A-6(9)	29.5	17.5	12.0	100	100	97	80	28	1.41	46	1.8	16.4	30	0.08
	Bt2	37-42	CL	A-6(9)	29.5	17.5	12.0	100	100	97	80	28	1.34	50	1.8	16.4	31	0.06
	Ck	42-61	ML	A-4(8)	21.5	18.0	3.5	100	99	97	84	17	1.52	43	1.8	14.5	12	0.02
	Ckgj	61-100	ML	A-4(8)	21.5	18.0	3.5	100	99	97	84	17	1.58	42	1.8	14.5	11	0.01
Burford	Ap	0-30	OL	A-4(2)	31.5	24.5	7.0	89	71	44	39	14	-	-	1.7	16.0	32	0.02
	Bm	30-40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	0.01
	Bt	40-56	GC	A-1	31.0	18.5	12.5	24	20	15	13	7	-	-	-	-	33	0.05
	Ck1	56-84	GP-GM	A-1	NP	NP	NP	38	13	7	7	4	-	-	2.3	4.9	30	-
	Ck2	84-115	GP-GM	A-1	NP	NP	NP	59	11	4	4	2	-	-	2.0	9.8	26	-

Table 1. Engineering test data for horizons of selected soils (continued)

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/m³	Compaction Opt. Moist %	Free Swell %	Cole Rod
Caledon	Ap	0-26	SM	A-2	NP	NP	NP	95	82	24	23	9	1.43	46	1.9	11.4	11	0.00
	Bm	26-40	SM	A-3	NP	NP	NP	91	73	13	10	5	1.39	48	1.9	12.5	1	0.00
	Bt	40-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	0.01
	IICk	50-82	SW-SM	A-1	NP	NP	NP	81	36	9	9	5	-	-	1.9	11.0	9	0.01
	IIICk	82-120	SP	A-3	NP	NP	NP	87	61	4	4	3	-	-	1.8	12.3	0	0.01
	IVCk	120-140	SP	A-1-6	NP	NP	NP	92	32	3	3	2	-	-	1.9	11.9	0	0.01
Colwood	Ap1	0-15	CL	A-4(8)	34.0	27.5	6.5	100	100	86	71	25	1.20	52	1.6	21.7	36	0.07
	Ap2	15-32	CL	A-4(8)	34.5	25.5	9.0	100	99	84	69	27	1.27	50	1.6	19.5	35	0.06
	Bg	32-51	CL	A-4(8)	26.5	19.0	7.5	100	100	89	68	22	1.48	41	1.8	15.3	32	0.04
	IIBg	51-56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	IIIBg	56-71	CL-ML	A-4(8)	25.5	19.0	6.5	100	100	88	72	25	1.47	42	1.8	14.1	31	0.04
	IIICkg	71-84	CL	A-4(8)	24.5	18.0	6.5	100	100	88	71	22	1.41	45	1.8	15.6	27	0.04
	IVCkg1	84-96	ML	A-4(7)	NP	NP	NP	100	100	69	44	9	1.45	44	1.7	15.2	13	0.00
	IVCkg2	96-100	SM	A-4(3)	NP	NP	NP	100	100	48	27	7	1.45	46	1.7	16.1	5	0.00
Ekfrid	Ap	0-22	MH	A-7-5(18)	58.0	33.5	24.5	100	99	91	89	67	1.16	54	1.4	28.6	69	0.08
	Btgj	22-53	CH	A-7-6(20)	68.0	27.5	40.5	100	100	98	97	87	1.31	49	1.5	26.4	82	0.11
	Ckgj	53-73	CH	A-7-6(20)	57.5	23.5	34.0	100	100	97	96	88	1.38	47	1.6	24.0	80	0.12
	Ckg	73-100	CH	A-7-6(19)	55.0	22.5	32.5	100	100	99	98	88	1.41	47	1.6	23.7	64	0.11
Gobles	Ap	0-20	CL	A-6(9)	37.5	24.5	13.0	99	96	83	79	39	1.22	51	1.6	21.4	34	0.05
	Btgj	20-37	CH	A-7-6(18)	52.0	22.5	29.5	100	98	90	89	59	1.39	45	1.6	23.8	70	0.10
	Ckgj	37-60	CL	A-6(12)	38.5	19.0	19.5	99	97	91	88	62	1.46	44	1.7	18.2	50	0.07
	Ckg	60-100	CL	A-6(10)	32.5	18.0	14.5	98	96	90	89	55	1.62	39	1.8	16.4	40	0.05
Gobles loamy phase	Ap	0-13	CL	A-6(9)	34.0	22.5	11.5	99	97	88	83	33	1.36	47	1.7	19.4	45	0.05
	Bmgj	13-20	-	-	-	-	-	-	-	-	-	-	1.45	45	-	-	31	0.05
	IIBtgj	20-42	CI	A-7-6(14)	43.0	20.5	22.5	98	95	87	84	50	1.51	42	1.7	21.5	44	0.08
	IICkgj	42-100	CL	A-6(10)	33.5	17.5	16.0	97	94	86	84	48	1.58	41	1.8	16.9	40	0.06

Table 1. Engineering test data for horizons of selected soils (continued)

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/m³	Compaction Opt. Moist %	Free Swell %	Cole Rod
Granby	Ap1	0-15	SM	A-2	NP	NP	NP	100	100	24	23	6	1.00	59	1.5	20.0	31	0.00
	Ap2	15-35	SM	A-2	NP	NP	NP	100	100	24	23	6	1.21	53	1.5	20.0	23	0.00
	Bg	35-54	SW-SM	A-3	NP	NP	NP	100	99	9	8	4	1.38	49	1.7	13.5	0	0.00
	Ckg1	54-76	SW-SM	A-3	NP	NP	NP	100	99	9	8	4	1.41	48	1.7	13.5	0	0.00
	Ckg2	76-100	SW-SM	A-3	NP	NP	NP	100	99	9	8	4	1.47	46	1.7	13.5	0	0.00
Kelvin	Ap	0-19	CI	A-6(10)	37.5	21.0	16.5	99	96	69	67	43	1.36	48	1.6	20.5	55	0.07
	Bg1	19-33	CH	A-7-6(18)	51.0	20.5	30.5	100	98	89	87	66	1.55	41	1.6	22.9	71	0.10
	Bg2	33-53	CH	A-7-6(18)	51.0	20.5	30.5	100	98	89	87	66	1.45	44	1.6	22.9	88	0.11
	Ckg	53-100	CI-CH	A-7-6(18)	50.0	20.5	29.5	99	97	93	92	74	1.44	45	1.6	22.2	69	0.08
Kintyre	Ap	0-32	ML	A-4(8)	22.0	20.0	2.0	93	81	39	31	14	1.32	50	1.8	14.9	25	0.00
	Bm	32-70	SM	A-2	NP	NP	NP	91	84	33	30	9	1.37	49	1.9	12.2	12	0.00
	Bt	70-90	ML	A-2-4	19.5	16.0	3.5	91	79	34	31	17	1.35	49	1.9	13.1	32	0.04
	IICk	90-100	SM-SC	A-2-4	26.0	19.0	7.0	64	20	13	12	5	-	-	2.0	12.1	40	0.00
Muriel	Ap	0-21	CL	A-6(10)	35.0	20.5	14.5	99	96	81	77	47	1.44	44	1.7	17.7	41	0.07
	Bmgj	21-29	CI	A-7-6(14)	44.0	20.0	24.0	99	97	84	82	54	1.43	45	1.7	18.5	40	0.07
	Btgj	29-47	CI	A-7-6(14)	44.0	20.0	24.0	99	97	84	82	54	1.38	47	1.7	18.5	55	0.09
	Ckgj	47-100	CI	A-6(13)	38.5	17.0	21.5	99	96	84	82	55	1.55	41	1.7	17.6	50	0.07
Normandale	Ap	0-27	SM	A-2	NP	NP	NP	100	99	26	19	9	1.12	56	1.6	16.3	15	0.01
	Bmgj1	27-56	SM	A-2	NP	NP	NP	100	99	30	19	7	1.21	53	1.7	17.4	12	0.01
	Bmgj2	56-63	SM	A-2	NP	NP	NP	100	100	21	12	6	1.28	52	1.7	14.0	11	0.00
	Aegj	63-75	SM	A-2	NP	NP	NP	100	100	21	12	6	1.46	46	1.7	14.0	9	0.01
	Btgj	75-82	-	-	-	-	-	-	-	-	-	-	1.53	43	-	-	19	0.01
	BCgj	82-99	SM	A-2	NP	NP	NP	100	100	25	10	3	1.44	46	1.7	16.6	6	0.00
	Ckg	99-120	SM	A-3	NP	NP	NP	100	100	20	7	4	-	-	1.6	17.0	3	0.01
Plainfield	Ap	0-22	SM	A-2	NP	NP	NP	100	98	17	15	10	1.24	53	1.8	13.1	8	0.00
	Bm	22-58	SW-SM	A-2	NP	NP	NP	100	98	11	10	5	1.38	49	1.8	13.4	5	0.00
	Bt	58-65	-	-	-	-	-	-	-	-	-	-	1.33	51	-	-	5	0.00
	Ck	65-100	SW-SM	A-3	NP	NP	NP	100	100	9	6	4	1.45	47	1.7	14.2	2	0.00

Table 1. Engineering test data for horizons of selected soils (continued)

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/m³	Compaction Opt. Moist %	Free Swell %	Cole Rod
Shedden	Ap	0-34	SM	A-2	NP	NP	NP	97	92	28	22	9	0.99	62	1.8	14.8	7	0.01
	Bm	34-68	SM	A-3	NP	NP	NP	95	89	23	17	10	1.24	54	1.9	11.6	4	0.00
	Bt	68-80	SM	A-3	NP	NP	NP	92	83	23	16	11	1.35	50	2.0	10.0	10	0.00
	Ck	80-99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.01
	IICk	99-111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00
	IIICk	111-120	SM	A-2	NP	NP	NP	99	93	26	0	0	1.44	47	1.8	12.0	2	0.00
Silver Hill	Ap	0-29	SM	A-4(1)	NP	NP	NP	100	99	38	24	4	1.15	55	1.6	19.6	4	0.01
	Bg1	29-44	-	-	-	-	-	-	-	-	-	-	1.28	53	-	-	12	0.01
	Bg2	44-61	-	-	-	-	-	-	-	-	-	-	1.49	45	-	-	13	0.00
	IICkg	61-84	SM	A-2-4	NP	NP	NP	100	100	17	9	2	1.45	47	1.7	16.0	10	0.00
	IIICkg1	84-103	ML	A-4(8)	17.5	16.0	1.5	100	100	86	78	3	1.53	43	1.8	13.7	6	0.00
	IIICkg2	103-120	ML	A-4(8)	17.5	16.0	1.5	100	100	86	78	3	1.60	41	1.8	13.7	0	0.00
Strathburn	Ap	0-22	CH	A-7-6(18)	54.0	26.5	27.5	100	97	87	86	67	1.28	48	1.5	25.8	55	0.10
	Bg1	22-37	CH	A-7-6(20)	70.0	27.0	43.0	100	99	96	95	82	1.25	50	1.5	23.2	70	0.11
	Bg2	37-52	CH	A-7-6(20)	72.5	27.5	45.0	100	99	94	94	83	1.23	51	1.5	24.3	90	0.11
	Bg3	52-62	CH	A-7-6(20)	57.5	23.5	34.0	100	99	97	97	83	1.32	48	1.6	21.3	85	0.13
	Ckg	62-100	CH	A-7-6(19)	56.5	23.0	33.5	100	100	97	97	85	1.41	46	1.5	24.4	69	0.11
St. Williams	Ap	0-26	SM	A-4(8)	NP	NP	NP	100	100	36	26	9	1.11	56	1.6	20.2	23	0.00
	Bg1	26-42	SM	A-2	NP	NP	NP	100	100	28	16	4	1.44	46	1.7	13.9	13	0.00
	Bg2	42-72	SM	A-2	NP	NP	NP	100	100	28	16	4	1.46	45	1.7	13.9	17	0.00
	Ckg	72-100	SM	A-2	NP	NP	NP	100	100	21	12	3	1.46	46	1.7	14.9	10	0.01
Tavistock till phase	Ap	0-26	CL-CI	A-6(9)	34.5	21.0	13.5	99	99	92	83	31	1.17	54	1.7	18.0	31	0.04
	Btgj	26-50	CL	A-6(9)	31.0	18.0	13.0	99	97	92	84	30	1.44	45	1.8	15.8	30	0.05
	Ckgj	50-58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	0.02
	IICkgj	58-100	CL	A-6(10)	31.0	16.0	15.0	98	96	89	87	53	1.57	41	1.8	16.0	31	0.04
Toledo	Ap	0-18	MH-CH	A-7-6(16)	53.0	29.5	23.5	100	99	88	88	45	1.08	56	1.5	26.4	66	0.10
	Bg1	18-33	CH	A-7-6(19)	54.5	24.5	30.0	100	100	96	92	55	1.26	50	1.6	23.0	71	0.12
	Bg2	33-48	-	-	-	-	-	-	-	-	-	-	1.31	49	-	-	71	0.10
	Ckg1	48-72	CH	A-7-6(18)	50.5	21.5	29.0	100	100	98	98	67	1.30	51	1.6	22.9	60	0.05
	Ckg2	72-100	CL-CI	A-6(11)	34.5	17.5	17.0	100	100	98	98	60	1.39	48	1.7	18.7	55	0.06

Table 1. Engineering test data for horizons of selected soils (continued)

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/m³	Compaction Opt. Moist %	Free Swell %	Cole Rod
Tuscola	Ap	0-17	ML	A-4(8)	30.5	25.0	5.5	100	100	93	87	14	1.21	54	1.5	21.8	14	0.02
	Bmgj	17-30	ML	A-4(8)	24.0	22.0	2.0	100	100	95	85	12	1.28	51	1.7	17.0	20	0.02
	Btgj	30-51	ML	A-4(8)	24.0	22.0	2.0	100	100	95	85	12	1.45	44	1.7	17.0	26	0.01
	Ckgj1	51-60	-	-	-	-	-	-	-	-	-	-	1.52	43	-	-	10	0.00
	Ckgj2	60-83	CL	A-4(8)	27.5	18.5	9.0	99	99	97	96	49	1.49	44	1.8	17.1	21	0.02
	Ckgj3	83-100	ML	A-4(8)	22.0	18.5	3.5	99	98	97	95	28	1.52	43	1.8	15.7	10	0.01
Vittoria	Ap	0-22	SM	A-4(2)	NP	NP	NP	100	99	45	28	5	1.36	48	1.7	14.6	9	0.01
	Bmgj1	22-44	SM	A-4(4)	NP	NP	NP	100	100	56	38	5	1.38	48	1.8	13.6	8	0.00
	Bmgj2	44-68	SM	A-2	NP	NP	NP	100	100	22	12	4	1.47	45	1.8	14.5	4	0.00
	Bmgj3	68-76	SM	A-2	NP	NP	NP	100	100	22	12	4	-	-	1.8	14.5	4	0.00
	Ckg	76-79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00
	IICkg1	79-95	ML	A-4(8)	22.0	18.5	3.5	100	100	95	90	23	1.60	41	1.9	13.0	9	0.01
	IICkg2	95-100	ML	A-4(8)	22.0	18.5	3.5	100	100	95	90	23	-	-	1.9	13.0	6	0.01
Walsingham	Ap	0-26	SM	A-2-4	NP	NP	NP	100	99	17	10	4	1.30	56	1.7	14.7	10	0.01
	Bmgj	26-47	SM	A-2-4	NP	NP	NP	100	100	17	8	4	1.56	43	1.8	13.7	7	0.02
	Btgj	47-83	SM	A-2-4	NP	NP	NP	100	100	17	8	4	1.45	46	1.8	13.7	2	0.00
	Ckgj	83-100	SP-SM	A-2-4	NP	NP	NP	100	99	7	4	3	1.46	46	1.7	15.1	5	0.00
Waterin	Ap	0-30	SM	A-2	NP	NP	NP	100	100	25	25	8	1.44	46	1.7	15.3	11	0.01
	Bg	30-47	SP-SM	A-3	NP	NP	NP	100	100	8	6	2	1.48	44	1.7	14.5	3	0.01
	Ckg1	47-64	SP	A-3	NP	NP	NP	100	100	1	0	0	1.40	47	1.7	16.2	3	0.00
	Ckg2	64-100	SP	A-3	NP	NP	NP	100	100	1	0	0	1.38	48	1.7	16.2	6	0.02
Wauseon	Ap	0-25	SM	A-2	NP	NP	NP	100	99	30	20	10	1.35	47	1.7	16.0	24	0.03
	Bg1	25-53	SM	A-2	NP	NP	NP	100	99	22	13	7	1.47	44	1.8	13.0	15	-
	Bg2	53-64	SM	A-2	NP	NP	NP	100	99	22	13	7	1.42	47	1.8	13.0	10	-
	Bg3	64-74	SM	A-2	NP	NP	NP	100	99	22	13	7	1.34	50	1.8	13.0	0	-
	IICkg	74-100	CI	A-6(16)	37.0	18.0	19.0	100	99	96	94	65	1.50	44	1.7	18.8	40	0.08

ALLUVIUM (AL) - clayey

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly fine to very fine (clayey) textured alluvial material

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 $CaCl_2$	$CaCO_3$ %
Apk	11	22	5	30	14	46	24	L	3.8	7.3	7.6
Bmgjk1	11	47	2	26	13	45	29	CL	1.8	7.4	7.1
Bmgjk2	6	76	1	21	8	44	35	CL	1.9	7.3	4.5
Ckg	5		6	22	2	35	43	C		7.5	26.6

ALLUVIUM (AL) - loamy

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly medium (loamy) textured alluvial material

DRAINAGE Variable

USUAL CLASSIFICATION Variable

MEAN HORIZON VALUES

Horizon	Depth to No. of Samples	Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Apk	17	20	1	39	17	43	18	L	3.0	7.3	8.9
Bmgjk1	13	66	1	43	17	41	17	L	1.3	7.4	9.3
Bmgjk2	8	84	1	45	16	37	18	L	0.9	7.4	5.9
Ckg	7		11	58	13	30	11	SL	0.1	7.5	19.1

BENNINGTON SOIL - TILL PHASE (BN.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of medium (loamy) textured material over fine to very fine (clayey) textured glacial till material

DRAINAGE — Well

USUAL CLASSIFICATION — Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	Depth to No. of Samples	Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	3	23	1	42	22	44	15	L	7.2	6.0	
Bm	5	62	1	54	27	37	10	VFSL	0.6	6.6	
IIBt	2	92	1	21	8	45	34	CL	0.5	6.4	
IICk	3		3	18	6	48	34	SICL		7.4	12.9

BERRIEN SOIL (BE)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of coarse (sandy) textured material over fine to very fine (clayey) textured lacustrine material

DRAINAGE — Imperfect

USUAL CLASSIFICATION — Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	Depth to No. of Samples	Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	17	24	1	71	15	18	11	SL	3.2	6.5	0.3
Bmgj	11	51	2	81	19	13	6	LS	0.8	6.7	0.1
Btgj	8	54	3	69	15	16	15	SL	0.6	6.8	0.6
IICkgj	14		1	10	1	50	40	SIC		7.5	20.3

BERRIEN SOIL -TILL PHASE (BE.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of coarse (sandy) textured material over fine to very fine (clayey) textured glacial till material

DRAINAGE — Imperfect

USUAL CLASSIFICATION — Gleyed Brunisolic Gray Brown Luvisol

MEAN HORIZON VALUES

Horizon	Depth to No. of Samples	Horizon Base (cm)	Gravel %	Sand %	VF Sand %	Silt %	Clay %	Tex-ture	Organic Matter %	pH in $CaCl_2$	$CaCO_3$ %
Ap	36	24	2	71	15	18	11	FSL	3.0	6.6	0.6
Bmgj	37	53	2	78	18	13	9	FSL	0.6	6.6	0.3
Btgj	17	61	4	71	11	11	18	FSL	0.5	6.9	0.3
IICkgj	24		2	16	4	44	40	SIC		7.6	20.4

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BERRIEN. TILL PHASE SOIL ONTARIO 1989 PROFILE NO. LWSD009

LOCATION — Township of Malahide, Lot 20, Conc. II, NTS
Map area 40I/10, 17 TNT 0525 2500

ELEVATION — 209 metres

SITE — Cultivated corn field

LANDFORM AND PARENT MATERIALS — Very gently sloping silty clay loam textured till plain, overlain by sandy textured eolian or lacustrine material

SLOPE — 2.5% simple

SOIL WATER REGIME — Imperfectly drained, conductivity high in sandy material and low in underlying till material, saturation period short to medium

STONINESS — Nonstony

CLASSIFICATION — Gleyed Brunisolic Gray Brown Luvisol, sandy over fine silty, alkaline, stongly calcareous, mild humid to subhumid

STATUS — Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BERRIEN. TILL PHASE SOIL ONTARIO 1989 PROFILE NO. LWSD009 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-31 (23-33)	10YR3/3m	LFS	weak, coarse, platy	weak, coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bm	31-41 (5-23)	10YR5/6m	FS	weak, coarse, subangular blocky	weak, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bmgj	41-56 (5-16)	2.5Y5/4m	FS	weak, coarse, subangular blocky	weak, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	many, fine, distinct, 10YR4/6
IIBtgj	56-65 (7-10)	10YR4/3m	SICL	moderate, coarse, angular blocky	moderate to strong, medium to coarse, angular blocky	sticky, firm, very plastic	common, fine, faint,10YR4/4
IICkgj	65-100	10YR4/3m	SICL	moderate, coarse, columnar	strong, coarse, angular blocky	sticky, firm, very plastic	many, fine to medium, prom. 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	0-31	0	0	1	4	52	28	86	10	4		1.17	54
Bm	31-41	0	0	0	4	68	23	96	4	0		1.37	48
Bmgj	41-56	0	0	1	14	63	12	91	7	2	1	1.38	48
IIBtgj	56-65	0	0	0	0	0	0	9	55	36	9	1.44	45
IICkgj	65+	1	0	0	0	0	0	7	59	34	6	1.59	40

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-31	39.3	21.0	15.4	3.5	11.9	1.21	0.1	5.2	4.7	2.9	10.9		
Bm	31-41	34.4	10.5	7.8	1.6	6.2	5.79	0.1	5.7	5.1	0.7	6.8		
Bmgj	41-56	33.2	8.8	7.5	2.5	5.0	9.96	0.1	6.2	5.6	0.4	8.6		
IIBtgj	56-65	27.0	21.1	19.9	11.7	8.2	0.24	0.2	7.7	7.3	0.6	21.4	1.8	
IICkgj	65+	23.3	19.5	19.4	14.1	5.3	3.07	0.1	8.2	7.7			28.7	3.3

BEVERLY SOIL (BV)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Stratified, clayey textured lacustrine materials which most often have silty clay loam or silty clay textures

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	17	23	0	15	5	54	31	SICL	3.3	6.6	.2
Btgj	12	46	0	8	2	50	43	SIC	0.9	7.0	.7
Ckgj	20		0	4	0	56	40	SIC		7.5	21.9

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BEVERLY SOIL ONTARIO 1989 PROFILE NO. LWSD032

LOCATION — Township of Southwold, Lot 5, 3rd Range South of Union Road, NTS Map Area 40I/11, 17 TMT 7550 2582

ELEVATION — 210 metres

SITE — Harvested wheat field seeded with oilseed radish

LANDFORM AND PARENT MATERIALS — Gently sloping dissected channel in nearly level lacustrine clay plain

SLOPE — 6% complex

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

STONINESS — Nonstony

CLASSIFICATION — Gleyed Brunisolic Gray Brown Luvisol, fine silty, alkaline, strongly calcareous, mild humid to subhumid

STATUS — Variant. Bed of silt loam material at depth thicker than usual

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BEVERLY SOIL ONTARIO 1989 PROFILE NO. LWSD032 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap1	0-12 (7-13)	10YR3/2m	SICL	weak, very coarse, subangular blocky	weak to moderate, fine to medium, subangular blocky	sticky, friable, very plastic	
Ap2	12-25 (9-22)	10YR3/2m	SICL	strong, coarse, subangular blocky	strong, medium to coarse, subangular blocky	sticky, firm, very plastic	
Btgj	25-33 (0-18)	7.5YR4/4m	SICL	weak to moderate, coarse, subangular blocky	weak, medium to coarse, subangular blocky	very sticky, firm, very plastic	common, fine, distinct,10YR4/6
Ckgj1	33-57 (18-49)	10YR4/3m	SICL	weak, very coarse, platy	moderate to strong, fine to medium, subangular blocky	sticky, firm, very plastic	common, fine, distinct,10YR4/4
Ckgj2	57+	10YR4/3m	SIL	strong, medium to coarse, platy		very sticky, firm, very plastic	common, medium 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 %
Ap1	0-12	0	0	1	1	4	6	12	59	29	10	1.46	44
Ap2	12-25	0	0	0	1	3	5	10	60	30	11	1.49	43
Btgj	25-33	0	0	0	0	0	0	4	60	37	14	1.43	46
Ckgj1	33-57	0	0	0	0	0	0	3	67	30	7	1.52	43
Ckgj2	57+	0	0	0	0	0	0	2	75	23	4	1.59	42

		% Moisture Retention (g/g)											
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	Hydr. Cond. cm/hr	Elec. Cond. mmhos /cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap1	0-12	31.4	22.8	22.2	11.9	10.3	0.72	0.2	7.6	7.0	2.0	18.6	0.8	
Ap2	12-25	26.5	21.3	21.1	11.8	9.3	<.15	0.2	7.6	7.2	1.8	19.0	0.4	
Btgj	25-33	25.9	22.4	22.2	12.1	10.1	<.15	0.2	7.5	7.0	0.6	22.2	0.5	
Ckgj1	33-57	35.5	26.6	25.7	8.5	17.2	0.17	0.2	7.9	7.5		24.0	11.6	3.4
Ckgj2	57+	29.2	22.9	22.2	12.7	9.5	<.15	0.2	8.1	7.4			27.5	2.6

BEVERLY SOIL - COARSE PHASE (BV.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm of sandy textured material over clayey textured lacustrine material

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	21	0	65	19	21	14	FSL	2.4	7.3	1.9
Aegj	1	34	0	74	14	17	9	FSL	1.7	7.1	0.5
IIBtgj	1	45	0	12	4	45	43	SIC	0.8	7.3	0.8
IICkgj	1		0	6	0	52	42	SIC	0.0	7.6	19.0

BEVERLY SOIL - LOAMY PHASE (BV.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm of loamy textured material over clayey textured lacustrine material

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	23	0	42	19	39	19	L	2.9	6.6	0.8
IIBtgj	13	50	0	14	4	46	41	SIC	1.0	7.0	0.5
IICkgj	19	92	0	9	3	52	39	SICL		7.6	18.5

BOOKTON SOIL (BO)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm of sandy textured material over clayey textured lacustrine material

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	3	87	9	9	4	S	1.0	7.1	0.8
Bm	3	57	0	85	7	6	9	LS	0.7	7.0	0.2
IIBt	2	74	0	48	8	21	31	SCL	0.7	6.8	0.4
IICk	2		1	14	8	40	47	SIC		7.6	19.8

BOOKTON SOIL - TILL PHASE (BO.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm of sandy textured material over clayey textured glacial till material

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	24	2	78	14	15	7	LFS	2.3	5.9	0.1
Bm1	6	51	6	83	14	13	4	LFS	0.7	6.2	
Bm2	5	68	3	87	13	8	4	FS	0.3	6.8	0.4
IIBt	3	94	2	34	9	36	30	CL	0.5	6.9	0.1
IICk	3		4	26	7	41	33	CL		7.5	11.0

BRADY SOIL (BY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured lacustrine or fluvial material, ocassionally having a veneer of fine sand or loamy fine sand textured eolian material

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	24	1	80	10	14	7	LS	3.9	6.2	0.1
Bm	9	62	0	86	9	11	3	LS	1.0	6.1	
Bmgj	7	67	1	89	7	8	3	S	0.7	6.1	
Btgj	9	89	1	79	9	10	11	SL	0.4	6.4	1.7
Ckgj	8		3	93	11	5	3	S	0.1	7.4	17.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BRADY SOIL ONTARIO 1989 PROFILE NO. JDAD018

LOCATION — Township of Malahide, Lot 78, South Side of Talbot Road, NTS Map Area 40I/14, 17 TMT 9922 3340

ELEVATION — 218 metres

SITE — Cultivated tobacco field

LANDFORM AND PARENT MATERIALS — Nearly level to very gently sloping lacustrine sand plain, with predominantly fine sand textured material overlying medium sand texured material

SLOPE — 1% complex

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

STONINESS — Nonstony

CLASSIFICATION — Gleyed Brunisolic Gray Brown Luvisol, sandy, alkaline, strongly calcareous, mild humid to subhumid

STATUS — Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BRADY SOIL ONTARIO 1989 PROFILE NO. JDAD018 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-32 (30-34)	10YR2/1m	LS	weak, very coarse, subangular blocky	weak, fine to medium, subangular blocky	friable, nonplastic	nonsticky, very
Bmgj	32-55 (19-25)	10YR4/3m	FS	weak, very coarse, subangular blocky	weak, medium, subangular blocky	nonsticky, very friable, nonplastic	common, fine, prominent, 10YR5/6
Aegj	55-71	10YR5/3m	FS	weak, medium, subangular blocky		nonsticky, loose, nonplastic	common, fine prominent, 10YR5/6
Btgj	71-80 (3-10)	7.5YR4/4m	SCL	moderate, medium, subangular blocky	moderate, fine, subangular blocky	sticky, very friable, very plastic	common, fine, distinct, 7.5YR5/6
BCgj	80-85 (3-29)	10YR4/4m	FS	weak, medium to coarse, subangular blocky		nonsticky, loose, nonplastic	few, fine, distinct, 10YR5/6
Ckgj	85+	10YR6/3	S	weak, medium to coarse, subangular blocky		nonsticky, loose, nonplastic	

			Sand Fraction %								Fine		
		Grav. %	VCS	CS	MS	FS	VFS				Clay	Bulk	
	Depth	>2	2-1	1-.5	.5-.25	.25-.1	.1-.05	Sand	Silt	Clay	<.2um	Density	Porosity
Horizon	cm	mm	mm	mm	mm	mm	mm	%	%	%	%	g/cm^3	%
Ap	0-32	0	0	1	28	50	7	86	8	5	3	1.48	44
Bmgj	32-55	1	0	1	28	53	6	89	9	2	1	1.29	51
Aegj	55-71	0	0	1	34	53	6	93	5	2	1	1.39	48
Btgj	71-80	0	0	1	19	34	4	58	19	23	9		
BCgj	80-85	0	0	1	36	52	5	93	5	2	1		
Ckgj	85+	0	0	0	43	49	4	97	2	1	^1	1.35	50

		% Moisture Retention (g/g)						Elec.						
						Avail.	Hydr.	Cond.			Organic			
	Depth	0	10	33	1500	Moist.	Cond.	mmhos	pH	pH	Matter	CEC	$CaCO_3$	Cal/Dol
Horizon	cm	kPa	kPa	kPa	kPa	%	cm/hr	/cm	H_2O	$CaCl_2$	%	me/100g	%	Ratio
Ap	0-32	23.2	12.5	11.7	3.0	8.7	0.46	0.2	7.1	6.7	2.4	34.9		
Bmgj	32-55	37.3	9.2	8.1	2.0	6.1	8.04	0.1	7.2	6.6	0.6	9.2		
Aegj	55-71	38.9	6.6	4.6	0.8	3.8	10.80	0.1	7.3	6.5	0.1	4.9		
Btgj	71-80							0.2	7.8	7.1	0.5	11.2	0.5	
BCgj	80-85							0.1	7.5	6.6	0.1	5.8		
Ckgj	85+	28.1	3.7	3.3	0.6	2.7		0.1	8.2	7.4		6.8	22.4	1.1

BRANT SOIL (BT)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS	Loamy textured lacustrine materials which most often have silt loam textures
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	5	22	1	35	20	50	15	SIL	3.7	6.8	0.3
Bm	4	50	0	38	29	55	8	SIL	1.3	6.9	0.3
Bt	4	51	0	29	22	48	23	L	0.5	6.9	1.4
Ck	7		1	19	14	66	14	SIL		7.6	27.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BRANT SOIL ONTARIO 1989 PROFILE NO. KADD034

LOCATION	Township of Dunwich, Lot 15, Conc. XI, NTS Map Area 40I/11, 17 TMT 6625 1800
ELEVATION	203 metres
SITE	Harvested wheat field
LANDFORM AND PARENT MATERIALS	Strongly sloping, dissected, lacustrine plain with materials having loamy textures
SLOPE	16% complex
SOIL WATER REGIME	Moderately well drained, conductivity medium, saturation period very short
STONINESS	Nonstony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, coarse loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Variant. Usually well drained, and a Bm horizon usually overlies the Bt horizon

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BRANT SOIL ONTARIO 1989 PROFILE NO. KADD034 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-28 (26-28)	10YR3/2m	SIL	weak, coarse, platy platy		slightly sticky, friable, plastic	
Bt1	28-37 (16-33)	10YR4/3m	SIL	moderate, coarse, angular blocky	weak, fine, angular blocky	slightly sticky, friable, plastic	
Bt2	37-42 (16-33)	10YR4/3m	SIL	moderate, coarse, angular blocky	weak, fine, angular blocky	slightly sticky, friable, plastic	
Ck	42-61 (14-21)	10YR5/3m	SIL	weak, coarse, platy		slightly sticky, friable, plastic	
Ckgj	61+	2.5Y4/4m	SIL	weak, coarse, platy		slightly sticky, friable, slightly plastic	few, fine, distinct, 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	0-28	0	0	0	0	1	32	34	50	16	6	1.41	46
Bt1	28-37	0	0	0	0	0	21	21	53	26	11	1.41	46
Bt2	37-42	0	0	0	0	1	14	15	63	21	7	1.34	50
Ck	42-61	0	0	1	0	1	18	20	72	8	3	1.52	43
Ckgj	61+	0	0	0	0	1	16	17	76	7	2	1.58	42

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-28	28.0	21.2	20.0	6.6	13.4	0.23	0.1	6.4	6.1	1.8	12.3		
Bt1	28-37	38.0	24.4	23.0	4.0	19.0	2.72	0.1	6.9	6.3	1.0	16.4		
Bt2	37-42	39.6	25.2	23.5	7.3	16.2	<.15	0.2	7.9	7.3	0.9	15.9	1.6	
Ck	42-61	32.8	22.7	21.9	4.5	17.4	1.07	0.1	8.2	7.6		13.7	27.0	1.4
Ckgj	61+	26.3	20.5	19.3	4.3	15.0	0.58	0.1	8.2	7.6		11.0	28.4	1.4

BRISBANE SOIL (BI)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Fluvial sandy textured material and gravel

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	5	72	7	20	8	SL	2.7	5.3	
Bm	1	32	3	71	8	21	7	SL	1.6	6.2	
Bmgj1	1	55	18	76	6	16	8	SL	0.7	6.9	
Bmgj2	1	96	15	82	4	10	8	LS	0.3	7.0	
Bmgj3	1	110	7	91	3	5	4	S	0.3	6.8	
Ckgj	1		9	92	3	6	2	S		7.4	8.5

BURFORD SOIL (BU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Fluvial sandy textured material and gravel

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	24	13	69	11	20	11	SL	2.5	7.2	3.1
Bm	3	54	18	74	13	18	8	SL	0.9	7.1	0.9
Bt	2	74	20	72	8	13	16	GSL	0.7	7.1	0.5
Ck	2		22	86	7	9	6	GLS		7.6	18.7

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

BURFORD SOIL ONTARIO 1989 PROFILE NO. LWSD025

LOCATION	Township of Yarmouth, Lot 7, Conc. V, NTS Map Area 40I/11, 17 TMT 8630 2980
ELEVATION	229 metres
SITE	Roadcut
LANDFORM AND PARENT MATERIALS	Very gently sloping fluvial ridge, with sandy loam material with some gravel overlying very gravelly coarse sand material
SLOPE	3% complex
SOIL WATER REGIME	Rapidly drained, conductivity high, saturation period very short
STONINESS	Nonstony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, coarse loamy over sandy-skeletal, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-30 (18-33)	10YR2/2m	SL	weak, coarse, subangular blocky	weak to moderate, medium to coarse, granular	slightly sticky, hard, slightly plastic	
Bm	30-40 (0-23)	10YR4/4	SL	weak, medium to coarse, subangular blocky	weak to moderate, fine to medium, subangular blocky	slightly sticky, slightly hard, slightly plastic	
Bt	40-56 (10-18)	10YR3/3	VGSL	moderate to strong, fine, subangular blocky		sticky, hard, slightly plastic	
Ck1	56-84	10YR3/4	VGCS	single grain		nonsticky, loose, nonplastic	
Ck2	84-115	10YR5/4	VGCS	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/cm³	Porosity %
Ap	0-30	15	6	13	28	10	7	64	24	12	5		
Bm	30-40	7	5	14	33	10	6	69	24	7	2		
Bt	40-56	71	12	11	16	8	8	55	26	19	7		
Ck1	56-84	70	29	34	16	6	2	88	10	2			
Ck2	84+	50	42	42	10	1	0	96	3	1			

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-30							0.2	7.4	7.1	4.1	19.5	1.3	
Bm	30-40							0.1	7.7	7.2	1.0	11.4	0.4	
Bt	40-56							0.3	7.7	7.4	2.1	18.1	7.1	
Ck1	56-84							0.1	8.3	7.6		6.0	38.2	1.3
Ck2	84+							0.1	8.4	7.7		5.2	43.8	1.4

CALEDON SOIL (CA)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured lacustrine or fluvial material over fluvial sandy textured material and gravel

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	22	3	66	17	25	9	SL	3.0	6.6	
Bm	2	47	3	71	17	24	6	SL	0.8	6.8	
Bt	2	64	4	38	11	38	25	L	0.5	5.8	
IIBt	1	75	24	61	5	14	25	GSCL	0.6	6.4	
IICk	2		33	80	3	12	9	GLS	0.2	7.3	20.5

CALEDON SOIL (CA) ..continued

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

CALEDON SOIL ONTARIO 1989 PROFILE NO. KADD007

LOCATION	Township of Southwold, Lot 3, 2nd Range East of River Road, NTS Map Area 40I/11, 17 TMT 8232 2940
ELEVATION	210 metres
SITE	Cultivated corn field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping fluvial terrace, with sandy lacustrine or fluvial material overlying gravelly sand fluvial material
SLOPE	5% complex
SOIL WATER REGIME	Well drained, conductivity high, saturation period short
STONINESS	Nonstony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, sandy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical. Calcareous material at depth usually consists of stratified sand and gravelly sand

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-26 (26-30)	10YR3/3m	LS	weak, medium, platy		nonsticky, friable, nonplastic	
Bm	26-40 (15-44)	10YR5/6m	S	single grain		nonsticky, friable, nonplastic	
Bt	40-50 (3-33)	5YR3/4m	SL	single grain		nonsticky, friable, nonplastic	
IICk	50-82 (6-33)	10YR6/4m	GCS	single grain		nonsticky, loose, nonplastic	
IIICk	82-120 (26-31)	10YR6/3m	CS	single grain		nonsticky, loose, nonplastic	
IVCk	120+	10YR6/3m	CS	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/cm³	Porosity %
Ap	0-26	6	3	7	34	30	8	82	14	4	1	1.43	46
Bm	26-40	10	4	8	39	32	5	90	8	3		1.39	48
Bt	40-50	11	6	11	33	22	3	75	6	19	10		
IICk	50-82	25	19	26	40	9	1	95	4	2	1		
IIICk	82-120	13	8	18	38	32	2	97	2	1			
IVCk	120+	9	10	36	34	14	1	96	4	0			

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	22.0	9.4	8.2	2.2	6.0	1.19	0.1	6.6	6.0	1.3	9.1		
Bm	26-40	28.4	7.4	6.6	1.7	4.9	3.36	0.1	6.9	6.3	0.1	8.0		
Bt	40-50							0.1	7.6	7.1	0.3	13.2	0.2	
IICk	50-82							0.2	8.4	7.6			35.5	2.5
IIICk	82-102							0.1	8.5	7.6		14.4	31.8	1.8
IVCk	102+							0.1	8.5	7.6		6.8	40.2	2.0

CAMILLA SOIL (CM)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured lacustrine or fluvial material over fluvial sandy textured material and gravel

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	8	25	3	70	11	21	8	SL	3.0	6.5	0.6
Bmgj	4	47	7	72	8	18	10	SL	0.9	6.8	1.2
Btgj	6	63	14	64	9	22	15	SL	0.7	6.8	0.6
IICkgj	9		34	84	6	12	5	GLS	0.1	7.5	25.6

COLWOOD SOIL (CW)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Stratified, loamy textured lacustrine materials which most often have silt loam textures

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	10	31	1	31	15	48	20	L	3.9	6.8	0.4
Bg1	10	59	2	28	17	52	20	SIL	0.8	7.0	0.5
Bg2	6	82	1	30	18	50	20	SIL	0.8	7.0	1.2
Ckg	5		0	20	16	67	14	SIL		7.5	6.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

COLWOOD SOIL ONTARIO 1989 PROFILE NO. JDAD021

LOCATION — Township of Southwold, Lot 6, 3rd Range West of River Road, NTS Map Area 40I/11, 17 TMT 7990 3140

ELEVATION — 219 metres

SITE — Cultivated soybean field

LANDFORM AND PARENT MATERIALS — Nearly level to very gently sloping lacustrine plain, with materials having loamy textures

SLOPE — 1% complex

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

STONINESS — Nonstony

CLASSIFICATION — Orthic Humic Gleysol, coarse silty, alkaline, strongly calcareous, mild humid to subhumid

STATUS — Variant. More stratified than usual; very fine sand and loamy very fine sand layers occur infrequently

COLWOOD SOIL ONTARIO 1989 PROFILE NO. JDAD021 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap1	0-15	10YR3/2m	L	weak, medium to coarse, subangular blocky	weak, fine, granular	slightly sticky, friable, plastic	
Ap2	15-32 (16-18)	10YR3/2m	L	weak, coarse, subangular blocky		slightly sticky, firm, plastic	
Bg	32-51 (21-25)	2.5Y5/3m	L	weak, very coarse, subangular blocky		slightly sticky, friable, plastic	many, fine, prominent, 7.5YR4/6
IIBg	51-56 (5-7)	2.5Y4/3m	VFS	weak, coarse, subangular blocky		slightly sticky, friable, plastic	common, fine, prominent,10YR5/8
IIIBg	56-71 (14-16)	2.5Y5/3m	L	weak, coarse, prismatic	moderate, medium to coarse, angular blocky	slightly sticky, friable, plastic	many, fine, prominent,10YR4/6
IIICkg	71-84 (9-17)	2.5Y5/2m	SIL	weak, very coarse, prismatic	weak, very coarse, angular blocky	slightly sticky, firm, very plastic	many, fine, prominent,10YR5/6
IVCkg1	84-96 (5-13)	10YR5/2m	VFSL	weak, coarse, platy	moderate, very coarse, angular blocky	nonsticky, friable, nonplastic	many, medium, prominent,10YR4/6
IVCkg2	96+	10YR5/2m	LVFS	weak, coarse, angular, blocky		nonsticky, friable, nonplastic	many, medium, prominent,10YR5/8

			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 %
Ap1	0-15	0	0	0	2	7	23	32	47	21	7	1.20	52
Ap2	15-32	0	1	0	2	5	26	34	47	19	7	1.27	50
Bg	32-51	0	0	0	0	4	30	35	50	15	5	1.48	41
IIBg	51-56												
IIIBg	56-71	0	1	0	0	3	31	35	49	16	6	1.47	42
IIICkg	71-84	0	0	0	0	4	25	30	55	15	5	1.41	45
IVCkg1	84-96	0	0	0	0	5	58	63	32	5	2	1.45	44
IVCkg2	96+	0	0	0	0	28	52	80	18	2	1	1.45	46

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

COLWOOD SOIL ONTARIO 1989 PROFILE NO. JDAD021 (continued)

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	Hydr. Cond. cm/hr	Elec. Cond. mmhos /cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap1	0-15	33.4	28.3	27.4	9.0	18.4	1.31	0.5	7.2	7.0	5.1	25.3	0.4	
Ap2	15-32	32.0	26.3	25.7	9.4	16.3	0.18	0.4	7.0	6.8	4.9	25.3		
Bg	32-51	27.4	21.0	20.5	7.1	14.4	1.09	0.2	7.4	7.1	0.6	14.1	0.4	
IIBg	51-56													
IIIBg	56-71	26.4	21.8	21.6	8.0	13.6	0.32	0.2	7.6	7.2		13.7	0.8	0.6
IIICkg	71-84	32.0	23.6	23.1	9.0	14.1	0.19	0.3	7.7	7.4		14.6	5.5	0.5
IVCkg1	84-96	32.0	19.0	17.6	1.4	16.2	0.76	0.2	8.0	7.5		10.5	17.5	0.8
IVCkg2	96+	32.0	13.2	3.2	0.8	2.4	3.24	0.2	8.1	7.6		8.3	21.2	0.9

EKFRID SOIL (EK)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Mainly heavy clay textured lacustrine material

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	19	0	17	4	39	43	C	3.4	6.8	0.5
Btgj	10	38	0	6	1	34	60	HC	1.4	7.0	0.6
Ckgj1	13	63	0	3	0	38	60	HC		7.6	19.7
Ckgj2	8		0	2	0	39	60	HC		7.7	26.8

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

EKFRID SOIL ONTARIO 1989 PROFILE NO. LWSD019

LOCATION	Township of Dunwich, Lot 16, Conc. III, NTS Map Area 40I/12, 17 TMT 5630 2915
ELEVATION	210 metres
SITE	Hay field
LANDFORM AND PARENT MATERIALS	Nearly level lacustrine clay plain, with materials having horizons with heavy clay textures
SLOPE	2% complex
SOIL WATER REGIME	Imperfectly drained, conductivity low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical. Bmgj horizon is frequently absent

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-28 (21-36)	10YR3/2m	SIC	strong, coarse, subangular blocky	strong, medium, subangular blocky,	sticky, firm, plastic	
Btgj	28-41 (3-14)	10YR4/2m	HC	moderate to strong, medium to coarse, subangular blocky	weak to moderate, fine to medium, subangular blocky	sticky, firm, very plastic	common, medium distinct,10YR5/4
Ckgj1	41-46 (3-13)	10YR5/2m	HC	moderate to strong, medium to coarse, subangular blocky	weak to moderate, medium, subangular blocky	slightly sticky, very firm, very plastic	common, medium, distinct,10YR5/4
Ckgj2	46-88 (35-45)	10YR5/2m	SIC	strong, medium, columnar	weak to moderate, medium, subangular blocky	slightly sticky, very firm, very plastic,	common, medium, distinct,10YR5/4
Ckg	88+	5Y6/1m	SICL	moderate, medium to coarse, subangular blocky	moderate, medium, subangular blocky	sticky, very firm, very plastic	many, medium, prominent,10YR6/6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

EKFRID SOIL ONTARIO 1989 PROFILE NO. LWSD019 (continued)

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	0-28	0	0	0	0	0	0	10	41	49	17	1.16	53
Btgj	28-41	0	0	0	0	0	0	4	36	60	19	1.41	45
Ckgj1	41-46	0	0	0	0	0	0	2	39	60	14		
Ckgj2	46-88	0	0	0	0	0	0	1	42	57	13	1.42	46
Ckg	88+	0	0	0	0	0	0	4	60	36	9	1.48	45

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-28	36.6	28.0	26.1	22.3	2.8	0.68	0.1	6.3	6.0	4.5	31.5		
Btgj	28-41	29.9	23.7	22.4	18.7	3.7	<.15	0.3	7.5	7.2	1.4	25.7	2.6	
Ckgj1	41-46							0.3	7.9	7.6		28.1	13.5	2.4
Ckgj2	46-88	30.1	24.7	23.2	18.7	4.5	0.54	0.2	8.2	7.7			24.9	4.2
Ckg	88+	26.9	21.8	20.4	16.7	3.7	0.94	0.3	8.4	7.8			36.7	4.1

EKFRID SOIL ONTARIO 1989 PROFILE NO. LWSD028

LOCATION	Township of Dunwich, Lot 7, Conc. I, NTS Map Area 40I/12, 17 TMT 5065 2705
ELEVATION	206 metres
SITE	Chisel ploughed wheat field
LANDFORM AND PARENT MATERIALS	Very gently sloping lacustrine clay plain, with textures consisting mainly of heavy clay
SLOPE	2% simple
SOIL WATER REGIME	Imperfectly drained, conductivity low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical. Bmgj horizon is frequently absent

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

EKFRID SOIL ONTARIO 1989 PROFILE NO. LWSD028 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-22 (19-23)	10YR3/2m	C	weak to moderate, coarse to very coarse, subangular blocky	moderate to strong, fine to medium, subangular blocky	sticky, firm, very plastic	
Btgj	22-53 (27-38)	10YR3/3m	HC	moderate to strong, very coarse, prismatic	strong, coarse, subangular blocky	sticky, very firm, very plastic	common, fine, distinct,10YR4/5
Ckgj	53-73 (15-25)	10YR4/3m	HC	weak, very coarse, columnar	moderate to strong, coarse to very coarse, subangular blocky	sticky, very firm, very plastic	common, fine, distinct,10YR4/5
Ckg	73+	10YR4/2m	HC	weak, very coarse, columnar	moderate, medium to coarse, subangular blocky	sticky, very firm, very plastic	common, fine, prominent, 10YR4/5

			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 %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-22	0	0	0	0	0	0	7	34	59	21	1.16	54
Btgj	22-53	0	0	0	0	0	0	3	27	70	29	1.31	49
Ckgj	53-73	0	0	0	0	0	0	4	27	69	19	1.38	47
Ckg	73+	0	0	0	0	0	0	1	24	75	15	1.41	47

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	48.9	36.6	35.6	21.3	14.3	1.08	0.2	6.4	5.9	4.6	36.5		
Btgj	22-53	39.4	34.4	33.7	21.7	12.0	<.15	0.2	6.9	6.6	1.7	31.1		
Ckgj	53-73	35.4	29.1	28.5	18.2	10.3	<.15	0.5	7.8	7.6		36.1	4.8	1.9
Ckg	73+	41.7	29.9	28.7	18.7	10.0	<.15	0.7	7.9	7.7			22.1	4.3

EKFRID SOIL - LOAMY PHASE (EK.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 15 to 40 cm of loamy textured material over mainly heavy clay textured lacustrine material

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	3	18	0	50	9	28	22	L	4.4	7.1	0.3
IIBtgj	2	38	0	15	4	33	53	C	1.2	7.5	2.4
IICkgj1	3	88	0	4	0	36	60	HC		7.6	22.3
IICkgj2	2		0	1	0	36	63	HC		7.5	27.0

FOX SOIL (FX)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured lacustrine or fluvial material, occasionally having a veneer of sandy textured eolian material

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	9	29	1	85	8	10	5	LS	2.0	6.9	0.5
Bm1	7	55	1	88	8	8	4	S	0.5	7.0	0.4
Bm2	6	92	1	89	8	7	4	S	0.3	6.9	0.4
Bt	4	97	1	77	11	12	11	FSL	0.3	6.8	0.3
Ck	5		1	89	8	7	4	FS	0.1	7.5	9.5

FROME SOIL (FR)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured lacustrine or fluvial material

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 $CaCl_2$	$CaCO_3$ %
Ap	3	27	1	79	5	12	9	LS	4.7	6.6	
Bg	3	62	2	85	7	9	5	LS	1.0	7.0	1.5
Ckg	3		6	92	3	6	2	S	0.3	7.4	21.5

GOBLES SOIL (GO)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Clayey textured glacial till material

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	41	20	1	20	7	45	35	CL	3.6	7.1	1.1
Bmgj	12	39	3	17	7	43	40	SIC	1.4	7.1	1.1
Btgj	30	44	1	13	4	41	47	SIC	1.0	7.2	0.9
Ckgj	56		2	10	2	45	44	SIC	0.1	7.5	20.5

GOBLES SOIL (GO) ..continued

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

GOBLES SOIL ONTARIO 1989 PROFILE NO. EAWD006

LOCATION	Township of Bayham, Lot 3, Conc. X, NTS Map Area 40I/15, 17TNT 1275 4167
ELEVATION	243 metres
SITE	Cultivated soybean field
LANDFORM AND PARENT MATERIALS	Very gently sloping till moraine, with materials having mainly clayey textures
SLOPE	2% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium to low, saturation period medium to long
STONINESS	Slightly stony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, fine loamy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Variant. A Bmgj horizon usually overlies the Btgj horizon

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-20 (20-20)	10YR3/3m	SICL	moderate, coarse, subangular blocky	weak to moderate, medium, platy	sticky, friable, very plastic	
Btgj	20-37 (15-23)	10YR5/3m	SIC	moderate, medium to coarse, subangular blocky	moderate, medium, subangular blocky	sticky, friable, very plastic	many, fine, prominent,10YR5/6
Ckgj	37-60 (10-25)	10YR5/3m	SICL	moderate, medium to coarse, subangular blocky	moderate, medium, subangular blocky	sticky, friable, very plastic	many, medium, prominent,10YR5/6
Ckg	60+	10YR5/2m	SICL	moderate, medium to coarse, subangular blocky	weak to moderate, medium, subangular blocky	sticky, friable, very plastic	many, medium, prominent,10YR5/6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

GOBLES SOIL ONTARIO 1989 PROFILE NO. EAWD006 (continued)

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	0-20	2	0	1	4	7	6	19	52	29	12	1.22	51
Btgj	20-37	0	0	0	0	0	0	8	41	51	21	1.39	45
Ckgj	37-60	1	0	0	0	0	0	10	53	38	8	1.46	44
Ckg	60+	3	2	1	2	4	6	15	56	28	8	1.62	39

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-20	33.6	26.5	25.0	10.2	14.8	<.15	0.2	6.4	6.0	4.0	20.8		
Btgj	20-37	30.9	26.1	25.4	15.7	9.7	<.15	0.2	7.4	7.0	1.1	28.3	0.7	
Ckgj	37-60	25.7	20.7	20.0	14.1	5.9	<.15	0.2	8.1	7.7			21.8	3.4
Ckg	60+	24.1	18.1	17.2	11.2	6.0	<.15	0.2	8.3	7.7			28.1	2.4

GOBLES SOIL - COARSE PHASE (GO.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 15 to 40 cm of sandy textured material over clayey textured glacial till material

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	22	3	72	13	19	10	FSL	2.6	6.7	0.2
Bmgj	2	30	1	76	29	17	8	FSL	0.8	6.5	0.2
IIBtgj	5	45	1	27	11	35	38	CL	0.8	7.0	0.5
IICkgj	5		1	10	2	48	41	SIC		7.5	11.5

GOBLES SOIL - LOAMY PHASE (GO.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 15 to 40 cm of loamy textured material over clayey textured glacial till material

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	38	23	1	32	14	48	20	L	3.1	6.9	0.7
Bmgj	5	34	2	46	19	38	16	L	1.1	6.8	0.3
IIBtgj	31	46	1	19	8	44	36	SICL	0.8	7.1	0.7
IICkgj	37		3	16	5	48	35	SICL	0.1	7.6	19.4

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

GOBLES. LOAMY PHASE SOIL ONTARIO 1989 PROFILE NO. LWSD029

LOCATION — Township of South Dorchester, Lot 6, Conc. IX, NTS Map Area 40I/15, 17 TNT 0443 4650

ELEVATION — 270 metres

SITE — Cultivated soybean field

LANDFORM AND PARENT MATERIALS — Very gently sloping till moraine, with loamy textured material overlying silty clay loam textured material

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, fine silty, alkaline, strongly calcareous, mild humid to subhumid

STATUS — Typical

GOBLES. LOAMY PHASE SOIL ONTARIO 1989 PROFILE NO. LWSD029 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-13 (13-20)	10YR3/2m	SIL	weak, medium to coarse, subangular blocky	weak, medium to coarse, granular	slightly sticky, slightly hard, very plastic	
Bmgj	13-20 (0-23)	10YR4/3m	SIL	moderate to strong, very coarse, platy	moderate to strong, medium, subangular blocky	sticky, hard, very plastic	many, fine, prominent,10YR4/6
IIBtgj	20-42 (5-26)	10YR3/3m	SICL	moderate to strong, coarse, subangular blocky	moderate, medium to coarse, subangular blocky	very sticky, very hard, very plastic	common, fine, distinct,10YR4/4
IICkgj	42+	10YR4/3m	SICL	strong, coarse to very coarse, subangular blocky	strong, medium to coarse, subangular blocky	sticky, very hard, very plastic	many, medium, 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	0-13	1	1	2	3	4	9	19	57	23	9	1.36	47
Bmgj	13-20	5	2	2	3	5	9	21	55	24	8	1.45	45
IIBtgj	20-42	1	1	1	2	4	6	15	48	37	16	1.51	42
IICkgj	42+	2	0	0	0	0	0	9	59	32	7	1.58	41

		% Moisture Retention (g/g)											
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-13	42.1	26.3	21.8	18.7	3.1	<.15	0.3	7.2	7.1	3.2	22.2	0.5	
Bmgj	13-20	40.3	25.5	21.9	17.4	4.5	<.15	0.2	7.5	7.2	0.9	16.8	1.2	
IIBtgj	20-42	37.1	27.5	25.5	19.4	6.1	<.15	0.1	7.4	7.0	0.8	24.9	0.7	
IICkgj	42+	29.8	21.4	19.6	14.4	5.2	0.23	0.2	8.1	7.7			27.3	2.5

GOBLES SOIL - WASHED PHASE (GO.W)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of loamy textured lacustrine modified glacial till material over clayey textured glacial till material

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	23	5	39	13	42	19	L	3.5	6.9	1.0
Bmgj	9	46	6	41	13	45	15	L	1.2	6.8	0.4
Btgj	4	51	1	36	12	41	24	L	0.8	7.2	0.8
Ckgj	8		10	38	10	44	18	L		7.5	14.7

GRANBY SOIL (GY)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured lacustrine or fluvial material, occasionally having a veneer of sandy textured eolian material

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	28	0	70	7	18	12	SL	6.7	6.8	0.3
Bg1	4	60	1	79	7	15	7	LS	1.5	7.0	0.9
Bg2	2	79	1	92	3	5	3	S	0.9	6.7	
Ckg	6		2	82	3	11	7	LS		7.5	20.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

GRANBY SOIL ONTARIO 1989 PROFILE NO. KADD026

LOCATION	Township of Malahide, Lot 89, North Side of Talbot Road, NTS Map Area 40I/15, 17 TNT 0350 3525
ELEVATION	225 metres
SITE	Idle land
LANDFORM AND PARENT MATERIALS	Nearly level fluvial sand plain, with medium sand textures predominating
SLOPE	1% complex
SOIL WATER REGIME	Poorly drained, conductivity high, saturation period long
STONINESS	Nonstony
CLASSIFICATION	Orthic Humic Gleysol, sandy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap1	0-15 (13-17)	10YR3/1m	LS	weak, coarse, granular		nonsticky, very friable, nonplastic	
Ap2	15-35 (15-22)	10YR3/1m	LS	weak, coarse, platy		slightly sticky, firm, plastic	
Bg	35-54 (14-21)	10YR5/2m	S	single grain		nonsticky, loose, nonplastic	common, medium, prominent, 7.5YR5/8
Ckg1	54-76 (18-26)	10YR6/2m	S	single grain		nonsticky, loose, nonplastic	common, medium, prominent, 7.5YR5/8
Ckg2	76+	10YR5/1m	S	single grain		nonsticky, loose, nonplastic	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

GRANBY SOIL ONTARIO 1989 PROFILE NO. KADD026 (continued)

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 %
Ap1	0-15	0	1	1	33	42	4	81	11	9	4	1.00	59
Ap2	15-35	0	0	0	28	47	5	81	12	7	3	1.21	53
Bg	35-54	0	0	0	47	45	3	95	4	1		1.38	49
Ckg1	54-76	0	0	0	64	33	1	98	1	1		1.41	48
Ckg2	76+	0	0	1	63	33	1	99	0	1		1.47	46

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	Hydr. Cond. cm/hr	Elec. Cond. mmhos /cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap1	0-15	50.4	28.3	23.5	6.2	17.3	5.56	0.4	7.2	6.8	7.8	31.1		
Ap2	15-35	34.6	20.1	19.5	5.0	14.5	4.56	0.2	6.9	6.5	3.9	20.8		
Bg	35-54	29.3	13.6	6.4	2.8	3.6	3.78	0.1	8.1	7.2	0.1	5.2	6.7	
Ckg1	54-76	27.6	10.1	4.5	0.3	4.2	23.16	0.1	8.2	7.5		5.6	29.4	1.1
Ckg2	76+	26.2	8.5	2.7	0.5	2.2	18.24	0.3	7.7	7.3		6.0	27.1	1.5

HIGHGATE SOIL (HI)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured eolian or lacustrine material over gravelly sandy textured lacustrine beach material

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	19	23	6	69	15	22	9	FSL	2.7	6.6	0.2
Bm	12	46	7	78	12	17	5	LFS	0.6	6.5	
Bmgj	14	59	6	76	18	17	7	FSL	0.6	6.6	0.2
Btgj	14	67	8	68	11	18	14	FSL	0.6	6.7	0.5
IICkgj	5		21	71	12	21	8	GCSL		7.5	17.2

KELVIN SOIL (KE)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Clayey textured glacial till material

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	44	24	1	22	7	40	38	CL	4.8	6.7	0.5
Bg1	33	51	0	18	6	38	44	C	1.4	6.9	0.2
Bg2	20	84	1	18	5	39	43	C	0.8	6.8	0.2
Ckg	40		2	12	3	43	46	SIC	0.1	7.5	17.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

KELVIN SOIL ONTARIO 1989 PROFILE NO. LWSD030

LOCATION — Township of Dunwich, Lot B, Conc. V North of Conc. A, NTS Map Area 40I/11, 17 TMT 6280 3060

ELEVATION — 221 metres

SITE — Alfalfa field

LANDFORM AND PARENT MATERIALS — Nearly level to very gently sloping till plain, with clay and silty clay textures predominating

SLOPE — 1% complex

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 — Typical. Clay content higher than usual in upper horizons

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

KELVIN SOIL ONTARIO 1989 PROFILE NO. LWSD030 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-19 (19-21)	10YR3/2m	CL	weak to moderate, very coarse, subangular blocky	moderate, coarse, subangular blocky	sticky, hard, very plastic	
Bg1	19-33 (7-17)	2.5Y4/2m	C	moderate, coarse, subangular blocky	moderate to strong, medium to coarse, subangular blocky	sticky, firm, very plastic	many, medium, prominent, 7.5YR4/4
Bg2	33-53 (20-32)	10YR4/2m	C	moderate, medium, prismatic	moderate, coarse, subangular blocky	sticky, firm, very plastic	common, fine, prominent, 10YR4/6
Ckg	53+	7.5YR4/2m	SIC	moderate, very coarse, prismatic	moderate to strong, medium to coarse, subangular blocky	sticky, firm, very plastic	many, coarse, 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	0-19	0	1	2	9	11	4	27	36	37	15	1.36	48
Bg1	19-33	1	0	1	5	7	3	16	34	50	20	1.55	41
Bg2	33-53	0	0	0	0	0	0	9	34	57	24	1.45	44
Ckg	53+	1	0	0	0	0	0	8	45	47	9	1.44	45

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	30.2	23.7	22.9	13.3	9.6	<.15	0.2	6.8	6.6	2.9	24.9		
Bg1	19-33	36.8	30.0	29.0	16.3	12.7	0.22	0.2	6.7	6.3	1.2	27.6		
Bg2	33-53	31.5	24.8	24.5	9.3	15.2	<.15	0.3	7.1	6.7	0.8	30.2		
Ckg	53+	29.7	24.2	23.7	15.8	7.9	5.05	0.6	7.9	7.7			18.2	2.8

KELVIN SOIL - COARSE PHASE (KE.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm of sandy textured material over clayey textured glacial till material

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	25	1	69	9	16	15	FSL	4.70	6.8	0.8
IICkg	5		0	27	3	32	41	C		7.6	17.1

KELVIN SOIL - LOAMY PHASE (KE.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm of loamy textured material over clayey textured glacial till material

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	21	0	41	16	36	23	L	2.9	7.0	0.8
IIBg	2	42	0	37	19	32	31	CL	0.7	7.2	0.3
IICkg	4		2	15	5	45	40	SIC	0.2	7.5	16.4

KELVIN SOIL - WASHED PHASE (KE.W)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of loamy textured lacustrine modified glacial till material over clayey textured glacial till material

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	27	0	16	9	59	25	SIL	4.2	6.7	0.1
Bg	4	61	2	22	11	55	23	SIL	1.1	7.0	0.6
Ckg	3		12	30	11	49	20	L		7.5	20.8

KINTYRE SOIL (KT)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured eolian or lacustrine material over stratified, gravelly sandy textured lacustrine beach material

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	22	23	6	75	13	17	8	FSL	2.4	6.7	0.7
Bm	26	51	7	78	14	16	6	LFS	0.6	6.7	0.9
Bt	12	70	10	72	12	13	15	SL	0.7	7.1	0.6
IICk	17		38	84	5	10	6	GLCS		7.5	24.3

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

KINTYRE SOIL ONTARIO 1989 PROFILE NO. EAWD027

LOCATION	Township of Aldborough, Lot 3, Conc. II, NTS Map Area 40I/12, 17 TMT 3525 1533
ELEVATION	213 metres
SITE	Wheat field
LANDFORM AND PARENT MATERIALS	Nearly level to very gently sloping lacustrine beach, with sandy textured material overlying gravelly sandy textured material
SLOPE	1% simple
SOIL WATER REGIME	Rapidly drained, conductivity high, saturation period very short
STONINESS	Nonstony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, coarse loamy over sandy-skeletal, neutral, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-32 (30-35)	10YR3/3m	FSL	weak, coarse, subangular blocky	weak to moderate, medium to coarse, subangular blocky	slightly sticky, very friable, slightly plastic	
Bm	32-70 (27-39)	10YR6/6m	LFS	single grain		nonsticky, very friable, nonplastic	
Bt	70-90 (24-28)	10YR5/4m	SL	weak, coarse, sublangular blocky	weak to moderate, medium to coarse, subangular blocky	slightly sticky, very friable, slightly plastic	
IICk	90+	10YR4/3m	GLCS	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 %
Ap	0-32	7	8	7	13	28	11	67	24	9	3	1.32	50
Bm	32-70	4	5	4	14	46	11	80	15	4	1	1.37	49
Bt	70-90	1	2	9	25	19	10	67	16	17	7	1.35	49
IICk	90+	40	48	27	5	3	2	85	10	5	2		

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

KINTYRE SOIL ONTARIO 1989 PROFILE NO. EAWD027 (continued)

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-32	31.2	17.9	17.1	4.2	12.9	2.64	0.2	6.8	6.0	2.5	15.0		
Bm	32-70	28.7	14.7	11.4	2.6	8.8	6.12	0.1	6.4	5.8	0.3	10.1		
Bt	70-90	28.4	14.6	14.3	4.8	9.5	3.60	0.2	6.6	6.3	0.8	16.8		
IICk	90+							0.2	8.0	7.3		12.8	16.3	2.2

MAPLEWOOD SOIL (MA)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of loamy textured material over clayey textured lacustrine material

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	37	0	34	14	42	24	L	4.0	6.1	
Bg	3	68	0	28	12	46	26	L	1.4	6.6	
IIBg	3	102	0	10	3	56	34	SICL	1.4	6.7	
IICkg	1		0	2	0	62	36	SICL		7.5	25.9

MAPLEWOOD SOIL - TILL PHASE (MA.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of loamy textured material over clayey textured glacial till material

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	24	0	54	33	30	16	VFSL	3.1	7.1	0.7
Bg	5	46	2	61	33	21	18	VFSL	1.0	6.9	1.9
Ckg	6	68	0	36	28	52	13	SIL	7.6	20.8	
IICkg	5		2	8	1	55	37	SICL		7.7	21.6

MIDDLEMARCH SOIL (MI)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Ice-contact stratified drift material consisting mainly of sandy textured material over stratified gravelly sandy textured material

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	22	6	73	17	17	10	FSL	2.8	6.8	1.0
Bm	7	52	4	73	15	19	8	FSL	1.0	6.5	0.3
Btgj	4	79	2	76	18	12	13	FSL	0.4	7.0	2.5
IICkgj	4	96	18	69	15	19	13	FSL		7.6	22.7
IIICkgj	2		3	84	41	14	3	LFS		7.7	23.1

MUIRKIRK SOIL (MK)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy textured eolian or lacustrine material over stratified, gravelly sandy textured lacustrine beach material

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	25	13	60	14	25	15	FSL	10.0	6.8	
IIBg	1	51	21	80	5	14	5	GLCS	2.2	6.9	
IICkg	4		42	82	6	14	5	GLCS		7.4	18.2

MURIEL SOIL (MU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Clayey textured glacial till material

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	7	20	2	18	8	48	34	SICL	2.0	7.2	2.8
Bt	1	30	7	14	9	35	52	C	1.8	7.0	0.2
Ck	7		1	11	4	50	39	SICL		7.6	15.4

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

MURIEL SOIL ONTARIO 1989 PROFILE NO. JDAD005

LOCATION	Township of Southwold, Lot 34, North Side of Talbot Road East Branch, NTS Map Area 40I/14, 17 TMT 7775 3515
ELEVATION	233 metres
SITE	Cultivated soybean field
LANDFORM AND PARENT MATERIALS	Very gently to gently sloping till plain, with materials having mainly clayey textures
SLOPE	8% complex
SOIL WATER REGIME	Moderately well drained, conductivity medium to low, saturation period short to very short
STONINESS	Slightly stony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-21 (20-23)	10YR3/3m	CL	strong, medium to coarse, angular blocky		sticky, very firm, very plastic	
Bmgj	21-29 (5-8)	10YR5/3m	CL	strong, medium to coarse, angular blocky	strong, fine to medium, angular blocky	sticky, firm, very plastic	many, fine, distinct,10YR4/4
Btgj	29-47 (14-26)	10YR3/3m	C	strong, very fine to fine, angular blocky	weak, coarse, subangular blocky	sticky, firm, very plastic	common, fine, distinct,10YR4/4
Ckgj	47+	10YR4/3m	SICL	moderate, medium, prismatic	strong, medium, angular blocky	sticky, friable, very plastic	common, fine, distinct,10YR4/5

			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 %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-21	1	1	2	4	8	9	24	41	35	14	1.44	44
Bmgj	21-29	1	2	1	4	7	8	22	40	38	13	1.43	45
Btgj	29-47	0	1	1	3	6	7	17	39	43	15	1.38	47
Ckgj	47+	2	2	1	3	7	7	20	45	35	9	1.55	41

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

MURIEL SOIL ONTARIO 1989 PROFILE NO. JDAD005 (continued)

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	28.6	22.2	21.5	18.4	3.1	1.27	0.2	7.3	6.9	2.3	19.6		
Bmgj	21-29	26.2	21.0	19.9	15.5	4.4	0.76	0.1	7.3	6.9	1.9	23.1		
Btgj	29-47	28.5	22.3	20.1	16.3	3.8	<.15	0.2	7.8	7.3		22.5	1.4	0.6
Ckgj	47+	26.0	19.7	17.8	13.9	3.9	<.15	0.2	8.1	7.6		23.1	17.5	2.3

MURIEL SOIL - LOAMY PHASE (MU.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 15 to 40 cm of loamy textured material over clayey textured glacial till material

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	15	4	34	11	45	21	L	2.3	7.1	0.4
IIBt	4	34	1	15	5	43	42	SIC	0.8	7.3	4.3
IICk	5		2	10	2	48	41	SIC		7.6	15.5

MURIEL SOIL - WASHED PHASE (MU.W)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of loamy textured lacustrine modified glacial till material over clayey textured glacial till material

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	23	11	43	14	42	14	L	2.3	7.1	1.4
Bm	1	62	1	28	17	59	12	SIL	0.8	7.3	0.8
Ck1	1	69	3	32	11	56	12	SIL	0.4	7.5	16.6
Ck2	1		3	26	14	61	13	SIL		7.6	23.7

NORMANDALE SOIL (NO)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy to loamy textured lacustrine material with very fine sand content often exceeding 30%

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	50	25	1	76	29	16	7	FSL	2.8	6.3	0.5
Bmgj1	41	53	1	79	35	15	6	LFS	0.8	6.4	0.3
Bmgj2	13	70	0	79	36	15	6	LFS	0.3	6.0	0.1
Btgj	23	74	1	74	30	14	12	VFSL	0.4	6.5	0.1
Ckgj	28		1	77	42	18	6	LFS	0.1	7.5	15.0

NORMANDALE SOIL (NO) ..continued

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

NORMANDALE SOIL ONTARIO 1989 PROFILE NO. LWSD012

LOCATION	Township of Aldborough, Lot 8, Conc. X, NTS Map Area 40I/12, 17 TMT 4647 1145
ELEVATION	204 metres
SITE	Cultivated corn field
LANDFORM AND PARENT MATERIALS	Very gently sloping lacustrine plain, with materials having mainly fine sand texures and a high very fine sand content
SLOPE	1% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium to high, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, sandy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Variant. One or more horizons having very fine sand, loamy very fine sand, or fine sandy loam textures usually occur within the profile

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-27 (22-29)	10YR3/2m	LFS	weak, coarse, angular blocky		nonsticky, very friable, nonplastic	
Bmgj1	27-56 (26-38)	10YR4/6m	FS	single grain		nonsticky, very friable, nonplastic	common, medium, distinct,10YR5/8
Bmgj2	56-63 (3-14)	10YR5/6m	FS	weak to moderate, coarse, angular blocky	weak to moderate, medium to coarse, angular blocky	nonsticky, very friable, nonplastic	many, medium, prominent,5YR5/8
Aegj	63-75 (6-16)	2.5Y6/4m	FS	single grain		nonsticky, very friable, nonplastic	common, medium, prominent,10YR4/5
Btgj	75-82 (2-12)	10YR5/4m	FS	single grain		nonsticky, very friable, nonplastic	many, coarse, distinct, 10YR4/6
BCgj	82-99 (15-24)	2.5Y5/4m	FS	single grain		nonsticky, very friable, nonplastic	common, coarse, prominent,10YR5/6
Ckg	99+	5Y5/3m	FS	single grain		nonsticky, very friable, nonplastic	few, coarse, distinct,2.5Y5/4

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	0-27	1	0	0	2	54	29	86	9	5	2	1.12	56
Bmgj1	27-56	0	0	0	1	55	29	86	12	2		1.21	53
Bmgj2	56-63	0	0	0	1	62	30	93	6	1		1.28	52
Aegj	63-75	0	0	0	0	62	32	94	5	1		1.46	46
Btgj	75-82	0	0	0	0	58	30	89	4	7	3	1.53	43
BCgj	82-99	0	0	0	0	44	48	93	5	2	2	1.44	46
Ckg	99+	0	0	0	0	64	33	97	2	1	1		

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	42.3	19.9	17.4	4.5	12.9	3.09	0.2	6.6	6.0	3.8	14.6		
Bmgj1	27-56	34.3	23.1	16.1	4.0	12.1	1.20	0.1	7.0	6.4	1.9	10.2		
Bmgj2	56-63	34.6	16.4	14.8	2.6	12.2		0.1	6.8	6.1	0.5	10.2		
Aegj	63-75	30.2	9.5	9.4	1.2	8.2		0.1	6.7	6.0	0.1	7.8		
Btgj	75-82	32.4	16.1	12.9	5.6	7.3		0.2	7.6	7.1	0.1	8.7	0.9	
BCgj	82-99	34.2	11.2	9.4	9.1	0.3	3.60	0.1	7.0	6.4		6.8		
Ckg	99+	29.4	9.7	5.6	0.5	5.1	9.60	0.1	8.4	7.6		7.8	16.9	1.4

PLAINFIELD SOIL (PF)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Eolian fine sand or eolian modified lacustrine fine 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	28	22	0	88	15	8	4	FS	1.7	6.3	0.5
Bm1	27	52	0	92	14	6	2	FS	0.6	6.0	0.1
Bm2	22	88	1	94	13	4	2	FS	0.2	6.1	0.1
Bt	8	90	0	82	18	10	8	LFS	0.2	6.3	0.2
Ck	15		0	93	16	5	3	FS		7.5	18.1

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

PLAINFIELD SOIL ONTARIO 1989 PROFILE NO. TPHD016

LOCATION	Township of Bayham, Lot 26, Conc. IV, NTS Map Area 40I/10, 17 TNT 2190 2560
ELEVATION	205 metres
SITE	Strawberry field
LANDFORM AND PARENT MATERIALS	Very gently sloping eolian sand plain, with materials having fine sand textures
SLOPE	3.5% complex
SOIL WATER REGIME	Rapidly drained, conductivity high, saturation period very short
STONINESS	Nonstony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, sandy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical. Thin, weakly developed Bt horizon overlies Ck horizon which occurs at 195 cm depth

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-25 (25-32)	10YR4/3m	FS	single grain		nonsticky, loose, nonplastic	
Bm1	25-60 (25-35)	10YR5/4m	FS	single grain		nonsticky, loose, nonplastic	
Bm2	60-88 (12-51)	10YR4/4m	FS	single grain		nonsticky, loose, nonplastic	
Bm3	88+	10YR4/4m	FS	single grain		nonsticky, loose, nonplastic	

PLAINFIELD SOIL ONTARIO 1989 PROFILE NO. TPHD016 (continued)

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	0-25	0	0	0	9	61	23	94	4	2	1	1.34	50
Bm1	25-60	0	0	0	7	57	32	96	3	1	0	1.34	50
Bm2	60-88	0	0	0	11	56	28	96	3	1	0	1.44	48
Bm3	88+	0	0	0	8	58	30	96	2	1	1	1.42	49

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-25	34.0	11.5	8.8	1.5	7.3	15.60	0.1	6.5	5.8	1.0	9.2		
Bm1	25-60	35.5	7.0	6.0	1.9	4.1	8.40	0.1	6.6	5.8	0.3	12.1		
Bm2	60-88	31.3	4.7	3.7	0.5	3.2	14.40	0.1	6.8	6.1	0.3	7.3		
Bm3	88+	32.4	5.2	4.3	1.1	3.2	15.60	0.1	6.8	6.0	0.2	7.8		

PLAINFIELD SOIL ONTARIO 1989 PROFILE NO. LWSD022

LOCATION	Township of Malahide, Lot 78, South Side of Talbot Road, NTS Map Area 40I/14, 17 TMT 913 3347
ELEVATION	219 metres
SITE	Cultivated tobacco field, recently irrigated
LANDFORM AND PARENT MATERIALS	Very gently sloping eolian modified lacustrine sand plain, with fine sand textures predominating
SLOPE	3% complex
SOIL WATER REGIME	Rapidly drained, conductivity high, saturation period very short
STONINESS	Nonstony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, sandy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

PLAINFIELD SOIL ONTARIO 1989 PROFILE NO. LWSD022 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-22 (20-26)	10YR3/1m	S	single grain		nonsticky, very friable, nonplastic	
Bm	22-58 (12-98)	10YR4/4m	FS	single grain		nonsticky, very friable, nonplastic	
Bt	58-65 (3-60)	7.5YR4/4m	FS	single grain		nonsticky, very friable, nonplastic	
Ck	65+	10YR5/3m	FS	single grain		nonsticky, 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 %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-22	1	0	1	35	47	5	88	7	4	2	1.24	53
Bm	22-58	0	0	0	33	56	4	94	4	2		1.38	49
Bt	58-65	0	0	0	30	56	4	91	4	6	3	1.33	51
Ck	65+	0	0	0	19	74	4	97	2	1		1.45	47

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	37.5	12.0	9.4	6.6	2.8	16.80	0.2	6.7	6.1	2.4	11.4		
Bm	22-58	28.1	7.7	5.6	3.5	2.1	14.40	0.1	7.0	6.3	0.3	6.5		
Bt	58-65	29.8	6.6	5.2	3.1	2.1		0.2	7.5	6.4	0.4	6.5		
Ck	65+	27.7	6.5	5.7	2.3	3.4	18.00	0.1	8.5	7.5		5.6	22.1	1.6

SHEDDEN SOIL (SH)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Ice-contact stratified drift material consisting mainly of sandy textured material over stratified, gravelly sandy textured material

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	15	20	3	74	18	16	10	FSL	3.0	6.7	1.0
Bm	11	48	4	84	18	11	4	LFS	0.8	6.6	0.3
Bt	11	68	4	74	19	10	17	FSL	0.5	6.9	0.4
Ck	17	90	9	78	19	13	8	LFS		7.6	18.1
IICk	9	104	21	81	10	9	10	GLCS		7.6	18.4
IIICk	4		1	73	35	20	7	VFSL		7.5	13.7

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

SHEDDEN SOIL ONTARIO 1989 PROFILE NO. KADD008

LOCATION — Township of Southwold, Lot 6, Conc. IV, NTS Map Area 40I/14, 17 TMT 7075 3515

ELEVATION — 233 metres

SITE — Roadcut

LANDFORM AND PARENT MATERIALS — Very gently to gently sloping ice-contact stratified drift, with sandy material overlying stratified sand and gravelly sand.

SLOPE — 5% complex

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

STONINESS — Nonstony

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

STATUS — Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

SHEDDEN SOIL ONTARIO 1989 PROFILE NO. KADD008 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-34 (29-35)	10YR3/2m	LFS	weak, medium, granular	weak, fine to medium, granular	nonsticky, very friable, slightly plastic	
Bm	34-68 (22-57)	2.5Y5/6m	LFS	single grain		nonsticky, very friable, nonplastic	
Bt	68-80 (4-15)	10YR4/4m	LS	single grain		nonsticky, very friable, slightly plastic	
Ck	80-99 (0-21)	2.5Y6/4m	S	single grain		nonsticky, very friable, nonplastic	
IICk	99-111 (4-14)	10YR6/3m	S	single grain		nonsticky, very friable, nonplastic	
IIICk	111+	10YR7/3m	FS	single grain		nonsticky, 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 %	Fine Clay <.2um %	Bulk Density g/cm^3	Porosity %
Ap	0-34	3	1	2	21	43	16	82	12	6	2	0.99	62
Bm	34-68	4	1	3	21	42	17	84	13	3		1.24	54
Bt	68-80	6	3	3	21	43	14	84	6	10	5	1.35	50
Ck	80-99	3	3	5	28	49	11	96	2	2	1		
IICk	99-111	12	14	10	32	32	6	94	4	2	2		
IIICk	111+	0	1	2	18	41	33	94	4	1	1	1.44	47

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-34	50.4	19.6	15.9	4.4	11.5	11.75	0.1	6.6	6.0	3.8	17.9		
Bm	34-68	35.1	11.0	10.0	3.0	7.0	15.96	0.1	7.1	6.5	1.2	14.4		
Bt	68-80	31.3	7.3	6.1	1.7	4.4		0.1	7.7	7.0	0.4	10.3	0.6	
Ck	80-99							0.1	8.5	7.6		12.1	22.8	1.8
IICk	99-111							o.1	8.3	7.6		8.0	30.5	1.6
IIICk	111+	30.6	9.0	4.1	0.9	3.2		0.1	8.4	7.7		6.2	21.0	1.6

SILVER HILL SOIL (SL)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of sandy textured eolian or lacustrine material over loamy textured lacustrine material

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	27	0	76	12	15	9	FSL	4.1	6.5	0.8
Bg	5	62	1	82	14	13	6	LFS	0.8	6.7	0.6
Ckg	3	82	1	80	11	15	4	LS		7.5	16.4
IICkg	6		0	38	16	53	9	SIL		7.6	24.5

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

SILVER HILL SOIL ONTARIO 1989 PROFILE NO. TPHD014

LOCATION — Township of Bayham, Lot 26, Conc. IV, NTS Map Area 40I/10, 17 TNT 2210 2620

ELEVATION — 203 metres

SITE — Apple orchard

LANDFORM AND PARENT MATERIALS — Nearly level to very gently sloping lacustrine plain, with sandy textured eolian or lacustrine material overlying loamy textured lacustrine material

SLOPE — 1% simple

SOIL WATER REGIME — Poorly drained, conductivity high in sandy material and medium to low in underlying loamy material, saturation period long

STONINESS — Nonstony

CLASSIFICATION — Orthic Humic Gleysol, sandy over coarse silty, alkaline, strongly calcareous, mild humid to subhumid

STATUS — Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

SILVER HILL SOIL ONTARIO 1989 PROFILE NO. TPHD014 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-29 (27-32)	10YR3/1m	LFS	weak, medium, angular blocky		nonsticky, very friable, nonplastic	
Bg1	29-44 (5-16)	2.5Y6/2m	FS	weak, medium, subangular blocky		nonsticky, very friable, nonplastic	common, coarse, prominent, 10YR5/6
Bg2	44-61 (7-37)	2.5Y5/2m	FS	weak, coarse, subangular blocky	weak, medium, subangular blocky	nonsticky, very friable, nonplastic	common, coarse, prominent, 10YR5/6
IICkg	61-84 (10-40)	2.5Y5/2m	VFSL	weak, medium, subangular blocky		nonsticky, very friable, nonplastic	common, coarse, prominent, 10YR4/6
IIICkg1	84-103 (10-20)	10YR5/1m	SIL	moderate, coarse, subangular blocky	moderate, medium, subangular blocky	slightly sticky, friable, slightly plastic	many, coarse, prominent, 10YR4/6
IIICkg2	103+	5Y5/1m	SI	moderate, coarse, columnar		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/cm³	Porosity %
Ap	0-29	0	0	0	3	41	33	78	15	6	3	1.15	55
Bg1	29-44	0	0	0	1	47	41	89	6	4	2	1.28	53
Bg2	44-61	0	0	0	0	40	48	88	8	4	2	1.49	45
IICkg	61-84	0	0	0	0	27	37	65	32	3	2	1.45	47
IIICkg1	84-103	0	0	0	0	2	18	20	75	4	2	1.53	43
IIICkg2	103+	0	0	0	0	1	14	15	81	4	2	1.60	41

		% Moisture Retention (g/g)						Elec.						
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	Hydr. Cond. cm/hr	Cond. mmhos /cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-29	39.2	23.4	21.7	5.6	16.1	5.76	0.1	7.5	6.9	4.4	22.8		
Bg1	29-44	30.7	12.8	10.8	2.5	8.3	1.80	0.1	7.7	7.1	0.6	8.3	0.8	
Bg2	44-61	30.5	15.2	9.2	1.8	7.4	3.96	0.1	7.9	7.2	0.3	9.2	0.2	
IICkg	61-84	32.1	13.4	8.8	7.0	1.8	7.20	0.1	8.2	7.6		8.7	17.7	1.0
IIICkg1	84-103	29.8	22.3	21.0	2.4	18.6	0.32	0.1	8.3	7.7			24.9	1.2
IIICkg2	103+	25.2	19.9	19.2	1.2	18.0	0.19	0.2	8.2	7.6			26.6	1.3

SPRINGWATER SOIL (SP)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Eolian fine sand or eolian modified lacustrine fine sand material

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 $CaCl_2$	$CaCO_3$ %
Ap	3	30	0	81	17	11	7	LFS	6.5	6.2	
Bg1	3	67	0	89	16	7	4	FS	1.1	6.2	0.9
Bg2	1	100	0	95	4	3	2	FS	0.5	0.0	
Ckg	3		0	97	20	2	2	FS		7.5	18.3

STRATHBURN SOIL (ST)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Mainly heavy clay textured lacustrine material

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	24	0	8	1	36	55	C	4.9	6.9	1.1
Bg1	11	44	0	4	0	31	65	HC	1.6	7.0	0.6
Bg2	8	72	0	3	0	31	66	HC	0.9	7.2	0.4
Ckg	8		0	3	1	35	62	HC	0.2	7.5	12.4

STRATHBURN SOIL (ST) ..continued

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

STRATHBURN SOIL ONTARIO 1989 PROFILE NO. JDAD011

LOCATION	Township of Dunwich, Lot 14, Conc. I, NTS Map Area 40I/12, 17 TMT 5350 3022
ELEVATION	210 metres
SITE	Cultivated soybean field
LANDFORM AND PARENT MATERIALS	Nearly level, clayey, lacustrine plain with materials having mainly heavy clay textures
SLOPE	1% simple
SOIL WATER REGIME	Poorly drained, conductivity low, saturation period long
STONINESS	Nonstony
CLASSIFICATION	Orthic Humic Gleysol, very fine clayey, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-22 (22-25)	2.5Y3/2m	C	strong, fine to medium, angular blocky		sticky, firm, very plastic	
Bg1	22-37 (13-17)	10YR5/2m	HC	strong, medium, subangular blocky		sticky, very firm, very plastic	common, medium, prominent, 7.5YR4/6
Bg2	37-52 (13-19)	2.5Y4/2m	HC	strong, very fine to fine, angular blocky		sticky, firm, very plastic	common, fine, prominent,10YR4/6
Bg3	52-62 (10-16)	2.5Y4/2m	HC	strong, fine to medium, subangular blocky		sticky, firm, very plastic	common, fine, prominent,10YR4/6
Ckg	62+	10YR4/2m	HC	strong, fine, columnar	strong, very fine to fine, subangular blocky	sticky, friable, 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/cm³	Porosity %
Ap	0-22	0	1	2	4	4	2	13	34	53	17	1.28	48
Bg1	22-37	0	0	0	0	0	0	6	32	62	26	1.25	50
Bg2	37-52	0	0	0	0	0	0	2	27	71	32	1.23	51
Bg3	52-62	0	0	0	0	0	0	2	30	68	23	1.32	48
Ckg	62+	0	0	0	0	0	0	2	36	61	17	1.41	46

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	34.7	30.6	30.0	19.1	10.9	0.27	0.3	7.8	7.4	4.5	32.5	1.1	
Bg1	22-37	38.0	33.8	33.0	21.7	11.3	1.44	0.4	7.7	7.3	2.1	31.5	0.7	
Bg2	37-52	40.4	35.8	35.0	22.6	12.4	<.15	0.5	7.7	7.4	0.9	34.5	0.4	
Bg3	52-62	31.8	27.6	27.1	18.4	8.7	<.15	0.5	7.8	7.6		35.9	4.1	1.4
Ckg	62+	33.1	28.7	28.3	19.3	9.0	<.15	0.6	8.1	7.8			19.3	3.1

STRATHBURN SOIL - COARSE PHASE (ST.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 15 to 40 cm of sandy textured material over mainly heavy clay textured lacustrine material

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	19	1	71	7	15	14	FSL	2.1	7.2	0.9
Bmgj	2	29	0	81	5	10	9	LS	0.8	7.2	1.0
IICkg	4		0	2	0	32	66	HC		7.7	27.5

ST. WILLIAMS SOIL (SW)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy to loamy textured lacustrine materials with very fine sand content often exceeding 30%

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	26	0	70	23	19	11	FSL	4.5	6.5	0.5
Bg1	14	55	1	72	33	18	9	VFSL	1.0	6.6	0.4
Bg2	7	88	0	75	32	15	10	VFSL	0.5	6.5	0.7
Ckg	17		0	77	35	18	5	LFS		7.5	16.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

ST. WILLIAMS SOIL ONTARIO 1989 PROFILE NO. LWSD013

LOCATION — Township of Aldborough, Lot 8, Conc. X, NTS Map Area 40I/12, 17 TMT 4652 1141

ELEVATION — 203 metres

SITE — Cultivated corn field

LANDFORM AND PARENT MATERIALS — Depression in very gently sloping lacustrine plain, with materials having fine sand and loamy fine sand textures and a high very fine sand content

SLOPE — 2% complex

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

STONINESS — Nonstony

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

STATUS — Typical

ST. WILLIAMS SOIL ONTARIO 1989 PROFILE NO. LWSD013 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-26 (23-26)	10YR3/1m	LFS	weak, coarse, angular blocky	weak, coarse, angular blocky	nonsticky, very friable, nonplastic	
Bg1	26-42 (11-25)	2.5Y4/2m	FS	single grain		nonsticky, very friable, nonplastic	common, fine, prominent,10YR5/6
Bg2	42-72 (22-30)	2.5Y5/2m	LFS	single grain		nonsticky, very friable, nonplastic	many, medium, prominent,10YR4/6
Ckg	72+	5Y4/1m	FS	single grain		nonsticky, very friable, nonplastic	many, coarse, 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	0-26	0	0	0	1	49	34	85	9	6	3	1.11	56
Bg1	26-42	0	0	0	0	43	44	88	9	4	2	1.44	46
Bg2	42-72	0	0	0	0	40	42	83	10	7	3	1.46	45
Ckg	72+	0	0	0	0	52	41	94	4	2	2	1.46	46

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	41.6	28.6	21.6	5.2	16.4	0.88	0.3	6.7	6.3	4.1	32.5		
Bg1	26-42	29.9	19.9	16.3	3.0	13.3	0.26	0.1	7.0	6.5	0.8	11.2		
Bg2	42-72	26.2	16.6	11.8	1.7	10.1	<.15	0.1	7.2	6.6	0.6	10.2		
Ckg	72+	26.2	20.1	19.3	6.5	12.8	7.44	0.3	7.8	7.4		8.7	15.4	0.6

TAVISTOCK SOIL (TA)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm of loamy textured material over clayey textured lacustrine material

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	27	0	40	19	39	20	L	3.3	6.9	0.4
Bmgj	12	52	1	41	20	39	20	L	0.7	7.0	0.7
Btgj	4	53	2	38	16	32	30	CL	0.9	7.0	0.5
IICkgj	8		0	8	2	52	40	SIC		7.6	25.0

TAVISTOCK SOIL - TILL PHASE (TA.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 40 to 100 cm of loamy textured material over clayey textured glacial till material

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	26	26	1	29	16	52	18	SIL	3.0	7.0	0.7
Bmgj	25	49	1	34	19	50	16	SIL	1.2	7.1	0.5
Btgj	12	54	1	31	14	45	23	L	0.7	7.2	1.0
IICkgj	23		2	15	6	46	34	SICL		7.3	19.4

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TAVISTOCK SOIL. TILL PHASE ONTARIO 1989 PROFILE NO. LWSD010

LOCATION	Township of Yarmouth, Lot13, Range I North of Edgeware Road, NTS Map Area 40I/14, 17 TMT 9027 3877
ELEVATION	244 metres
SITE	Cultivated corn field
LANDFORM AND PARENT MATERIALS	Very gently sloping clayey textured till moraine, overlain by loamy textured lacustrine material
SLOPE	3.5% simple
SOIL WATER REGIME	Imperfectly drained, conductivity medium to low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, fine silty, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical. A Bmgj horizon often does not overly the Btgj horizon

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-26 (24-27)	10YR3/2m	SIL	weak to moderate, coarse, subangular blocky		slightly sticky, friable, plastic	
Btgj	26-50 (14-44)	10YR4/4m	SIL	weak to moderate, coarse, subangular blocky	moderate, medium to coarse, subangular blocky	slightly sticky, friable, very plastic	many, fine, distinct,7.5YR4/4
Ckgj	50-58 (1-22)	10YR4/4m	SIL	moderate, medium to coarse, subangular blocky	moderate, fine to medium, subangular blocky	slightly sticky, friable, very plastic	many, fine, distinct,10YR4/6
IICkgj	58+	10YR4/3m	CL	moderate to strong, coarse, subangular blocky	moderate to strong, medium to coarse, subangular blocky	sticky, firm, very plastic	common, medium prominent,10YR4/6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TAVISTOCK SOIL. TILL PHASE ONTARIO 1989 PROFILE NO. LWSD010 (continued)

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	0-26	1	2	1	2	4	12	20	62	18	6	1.17	54
Btgj	26-50	1	1	1	1	3	16	22	58	20	9	1.44	45
Ckgj	50-58	2	1	1	1	2	21	25	61	14	7		
IICkgj	58+	4	1	1	2	3	3	10	58	32	6	1.57	41

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	36.9	27.3	23.3	8.5	14.8	0.85	0.3	7.5	7.1	4.1	21.4	0.8	
Btgj	26-50	31.5	22.4	21.4	9.4	12.0	1.42	0.1	7.6	7.1	0.8	15.5	0.5	
Ckgj	50-58							0.3	8.0	7.6		13.6	9.7	0.9
IICkgj	58+	20.9	17.5	16.7	11.1	5.6	10.80	0.2	8.3	7.7			26.3	2.7

TOLEDO SOIL (TO)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Stratified, clayey textured lacustrine materials which most often have silty clay loam or silty clay textures

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	21	21	0	21	4	39	40	C	4.9	6.8	0.4
Bg1	19	47	0	15	3	41	45	SIC	1.4	6.9	0.3
Bg2	19	76	0	13	3	39	47	C	0.7	6.9	0.3
Ckg	23		0	8	2	42	50	SIC		7.6	16.7

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TOLEDO SOIL ONTARIO 1989 PROFILE NO. TPHD024

LOCATION	Township of Southwold, Lot 19, South Side of Talbot Road East Branch, NTS Map Area 40I/11, 17 TMT 7613 2763
ELEVATION	214 metres
SITE	Idle land
LANDFORM AND PARENT MATERIALS	Nearly level lacustrine clay plain
SLOPE	2% simple
SOIL WATER REGIME	Poorly drained, conductivity low, saturation period long
STONINESS	Nonstony
CLASSIFICATION	Orthic Humic Gleysol, fine clayey over fine silty, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-18 (17-23)	10YR3/1m	SIC	weak, coarse, subangular blocky	moderate, medium, granular	sticky, friable, very plastic	
Bg1	18-33 (11-20)	10YR5/1m	SIC	moderate to strong, very coarse, subangular blocky	strong, medium, subangular blocky	very sticky, friable, very plastic	common, medium, prominent,10YR5/6
Bg2	33-48 (0-11)	10YR5/1m	SIC	weak, medium, prismatic	weak to moderate, medium, subangular blocky	sticky, very firm, very plastic	common, medium, prominent, 7.5YR5/6
Ckg1	48-72 (17-39)	10YR7/1m	SICL	moderate to strong, coarse, subangular blocky	moderate, medium, subangular blocky	sticky, very firm, very plastic	many, coarse, prominent, 10YR5/6
Ckg2	72+	10YR6/1m	SICL	weak, very coarse, subangular blocky		sticky, very firm, very plastic	many, coarse, prominent,10YR5/6

TOLEDO SOIL ONTARIO 1989 PROFILE NO. TPHD024 (continued)

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	0-18	0	0	0	0	0	0	3	54	42	17	1.08	56
Bg1	18-33	0	0	0	0	0	0	3	54	43	18	1.26	50
Bg2	33-48	0	0	0	0	0	0	3	56	41	16	1.31	49
Ckg1	48-72	1	0	0	0	0	0	8	59	33	9	1.30	51
Ckg2	72+	0	0	0	0	0	0	2	63	35	8	1.39	48

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	42.8	33.2	32.5	16.3	16.2	<.15	0.4	7.4	7.1	6.3	46.8	0.5	
Bg1	18-33	38.5	31.5	31.2	16.7	15.5	<.15	0.1	7.6	7.1	3.1	43.2	0.2	
Bg2	33-48	39.1	33.0	32.4	16.6	15.8		0.3	7.7	7.3	1.5	34.3	1.7	
Ckg1	48-72	33.9	28.7	28.6	16.0	12.6	1.09	0.2	8.0	7.6		29.3	23.1	2.4
Ckg2	72+	29.3	23.7	23.4	15.0	8.4	<.15	0.2	8.0	7.6		30.2	25.1	2.4

TOLEDO SOIL - COARSE PHASE (TO.C)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 15 to 40 cm of sandy textured material over clayey textured lacustrine material

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	25	0	72	10	15	14	SL	3.4	7.4	3.1
Ckg	1	38	1	89	9	7	4	S	0.5	7.6	19.9
IICkg1	1	62	0	0	1	49	49	SIC		7.6	26.8
IICkg2	1		0	0	1	43	56	SIC		7.6	24.1

TOLEDO SOIL - LOAMY PHASE (TO.L)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS 15 to 40 cm of loamy textured material over clayey textured lacustrine material

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	27	0	45	17	32	23	L	3.7	6.5	0.3
IIBg	5	64	0	34	15	33	34	CL	0.7	6.7	0.2
IICkg	7		1	10	4	47	43	SIC		7.6	21.6

TUSCOLA SOIL (TU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS Stratified, loamy textured lacustrine materials which most often have silt loam and loam textures

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	55	24	1	33	19	51	16	SIL	2.8	6.9	0.6
Bmgj	23	48	0	32	22	52	16	SIL	0.6	7.0	0.6
Btgj	26	52	0	21	15	54	24	SIL	0.6	7.0	0.5
Ckgj	68		0	17	12	67	15	SIL		7.6	19.5

TUSCOLA SOIL (TU) ..continued

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. LWSD002

LOCATION	Township of Bayham, Lot 16, Conc. III, NTS Map Area 40I/10, 17 TNT 1805 2515
ELEVATION	199 metres
SITE	Apple orchard
LANDFORM AND PARENT MATERIALS	Very gently sloping lacustrine plain, with materials having mainly loamy textures
SLOPE	3% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium to low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Melanic Brunisol, coarse silty, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct. Usual classification is Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-25 (21-26)	10YR3/3m	SIL	weak to moderate, coarse, platy	weak, fine to medium, subangular blocky	nonsticky, friable, slightly plastic	
Bmgj1	25-34 (6-12)	2.5Y4/4m	VFSL	weak, coarse to very coarse, subangular blocky	weak, fine to medium, subangular blocky	nonsticky, friable, nonplastic	common, fine to medium, prominent,10YR5/8
Bmgj2	34-65 (20-32)	2.5Y4/4m	SIL	weak, very coarse, subangular blocky	weak, fine to medium, subangular blocky	nonsticky, friable, nonplastic	many, fine to medium,prominent, 7.5YR5/8
Bmgj3	65-90 (23-28)	2.5Y4/4m	SI	weak, very coarse, subangular blocky	weak, fine to medium, subangular blocky	nonsticky, friable, nonplastic	many, fine to medium,prominent, 10YR5/8
Ckgj	90+	2.5Y4/4m	SI	moderate, medium, platy	moderate, fine to medium, platy	slightly sticky, friable, nonplastic	few, medium, prominent,10YR5/8

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. LWSD002 (continued)

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	0-25	0	0	0	1	11	22	35	55	10	4	1.34	48
Bmgj1	25-34	0	0	0	2	16	31	50	44	6	2	1.32	50
Bmgj2	34-65	0	1	1	1	5	8	17	75	7	2	1.39	48
Bmgj3	65-90	0	0	0	0	0	0	7	86	8	2		
Ckgj	90+	0	0	0	0	0	0	4	91	5	2	1.43	46

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-25	30.2	23.4	21.2	8.7	12.5	5.28	0.1	7.3	6.6	2.6	15.5		
Bmgj1	25-34	32.0	24.1	20.7	6.6	14.1	0.65	0.1	7.3	6.7	1.0	10.3		
Bmgj2	34-65	30.7	23.6	20.9	9.0	11.9	0.98	0.1	7.5	6.9	0.3	11.5		
Bmgj3	65-90							0.1	7.7	7.1	0.3	9.7	0.5	
Ckgj	90+	27.9	23.2	22.0	7.3	14.7	0.52	0.1	8.3	7.7			23.0	1.7

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. LWSD004

LOCATION	Township of Bayham, Lot 17, Conc.III, NTS Map Area 40I/10, 17 TNT 1840 2490
ELEVATION	199 metres
SITE	Apple orchard
LANDFORM AND PARENT MATERIALS	Very gently sloping lacustrine plain, with materials having mainly loamy textures
SLOPE	2% simple
SOIL WATER REGIME	Imperfectly drained, conductivity medium to low, saturation period medium to long
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, coarse silty, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. LWSD004 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-17 (14-19)	10YR3/2m	SIL	weak, coarse, platy	weak, medium to coarse, granular	slightly sticky, friable, slightly plastic	
Bmgj	17-30 (7-16)	2.5Y4/4m	SIL	weak, very coarse, angular blocky	weak, very coarse, angular blocky	slightly sticky, friable, plastic	few, fine, distinct,10YR4/6
Btgj	30-51 (11-21)	10YR4/4m	SIL	moderate, very coarse, angular blocky	moderate, medium to coarse, angular blocky	slighty sticky, friable, plastic	many, fine, distinct,10YR4/6
Ckgj1	51-60 (4-13)	2.5Y5/4m	SI	moderate, very coarse, angular blocky	moderate, medium to coarse, angular blocky	slightly sticky, friable, plastic	many, medium, distinct,10YR5/6
Ckgj2	60-83 (22-32)	10YR5/3m	SIL	weak, very coarse, angular blocky	weak, coarse to very very coarse, angular blocky	sticky, firm, very plastic	many, medium, prominent,10YR5/6
Ckgj3	83+	10YR5/3m	SI	strong, coarse, platy	strong, medium to coarse, platy	sticky, friable, very plastic	many, medium, prominent,10YR5/6

			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	0-17	0	0	0	1	4	17	23	65	12	5	1.21	54
Bmgj	17-30	0	0	0	0	0	0	8	79	12	4	1.28	51
Btgj	30-51	0	0	0	1	2	8	12	71	16	7	1.45	44
Ckgj1	51-60	0	0	0	0	0	0	8	84	8	3	1.52	43
Ckgj2	60-83	3	0	0	0	0	0	4	77	19	4	1.49	44
Ckgj3	83+	0	0	0	0	0	0	4	87	9	3	1.52	43

		% Moisture Retention (g/g)						Elec.						
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	Hydr. Cond. cm/hr	Cond. mmhos /cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap	0-17	35.9	30.0	26.3	18.4	7.9	0.35	0.1	6.5	6.0	3.8	16.1		
Bmgj	17-30	39.4	30.5	25.8	15.1	10.7	0.81	0.1	6.4	5.6	1.0	12.1		
Btgj	30-51	41.7	29.2	24.4	18.4	6.0	0.23	0.1	7.2	6.5	0.5	15.0		
Ckgj1	51-60	29.2	23.3	19.5	12.1	7.4		0.1	8.3	7.7			20.9	2.3
Ckgj2	60-83	25.9	20.3	19.0	14.1	4.9	2.53	0.1	8.4	7.8			34.4	2.6
Ckgj3	83+	23.2	19.7	18.6	16.4	2.2	<.15	0.1	8.4	7.8			32.0	2.3

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. LWSD031

LOCATION	Township of Southwold, Lot 7, 1st Range South of Union Road, NTS Map Area 40I/11, 17 TMT 7645 2672
ELEVATION	213 metres
SITE	Cultivated soybean field
LANDFORM AND PARENT MATERIALS	Nearly level lacustrine plain, with materials having mainly loamy textures
SLOPE	1% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Brunisolic Gray Brown Luvisol, coarse silty, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Variant. Calcareous parent material usually occurs within 1 m of the surface

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap1	0-16 (14-21)	10YR3/2m	L	weak, coarse to very coarse, subangular blocky	weak, medium to coarse, subangular blocky	slightly sticky, very friable, slightly plastic	
Ap2	16-32 (14-17)	10YR3/2m	L	weak, coarse, platy	weak, coarse to very coarse, subangular blocky	slightly sticky, friable, slightly plastic	
Bmgj1	32-59 (13-28)	2.5Y5/4m	VFSL	weak, coarse, platy		slightly sticky, firm, slightly plastic	common, fine, distinct,10YR4/6
Bmgj2	59-82 (13-37)	10YR5/4m	SIL	weak, coarse, platy		slightly sticky, friable, very plastic	many, medium, distinct,10YR4/6
Btgj	82-90 (0-17)	10YR4/3m	SIL	weak to moderate, very coarse, prismatic	weak, coarse, subangular blocky	sticky, firm, very plastic	many, fine, prominent,10YR4/6
Bmgj3	90-124 (24-73)	10YR5/3m	SIL	weak, very coarse, prismatic		slightly sticky, friable, slightly plastic	many, fine, prominent,10YR5/6
IIBmgj	124-154 (13-32)	7.5YR5/3m	SIC	weak, very coarse, subangular blocky		sticky, firm, very plastic	many, fine, prominent,10YR5/8
IIICkgj	154+	10YR5/3m	SIL	moderate to strong, medium to coarse, platy		slightly sticky, friable, slightly plastic	many, coarse, prominent,10YR4/6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. LWSD031 (continued)

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 %
Ap1	0-16	1	2	1	1	15	26	47	40	13	5	1.12	56
Ap2	16-32	2	2	1	1	13	28	46	41	13	6	1.27	51
Bmgj1	32-59	0	2	0	1	26	26	55	35	10	4	1.44	46
Bmgj2	59-82	0	0	1	1	6	22	30	59	10	4	1.50	44
Btgj	82-90	0	2	1	1	4	8	16	64	20	8	1.49	44
Bmgj3	90-124	0	0	0	0	4	24	29	60	11	4	1.50	44
IIBmgj	124-154	0	0	0	0	0	0	3	57	40	13		
IIICkgj	154+	0	0	0	0	0	0	5	82	13	3		

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	Hydr. Cond. cm/hr	Elec. Cond. mmhos /cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol Ratio
Ap1	0-16	42.6	26.8	24.7	7.3	17.4	13.80	0.4	7.8	7.1	4.5	22.6	2.2	
Ap2	16-32	36.5	25.9	24.8	7.0	17.8	2.28	0.3	7.7	7.1	4.6	23.1	1.7	
Bmgj1	32-59	33.6	20.7	19.0	4.4	14.6	0.60	0.2	7.7	7.0	0.8	9.6	0.3	
Bmgj2	59-82	37.4	21.8	20.2	5.0	15.2	0.72	0.2	7.9	7.2	0.2	9.2	0.3	
Btgj	82-90	32.2	24.2	23.1	9.9	13.2	2.52	0.2	7.9	7.3	0.3	14.6	0.5	
Bmgj3	90-124							0.1	7.7	7.2	0.2	8.7	0.2	
IIBmgj	124-154							0.3	7.6	7.2	0.3	21.3	0.3	
IIICkgj	154+							0.2	8.1	7.6			28.4	1.6

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. TPHD033

LOCATION	Township of Southwold, Lot 6, 2nd Range South of Union Road, NTS Map Area 40I/11, 17 TMT 633 2585
ELEVATION	213 metres
SITE	Cultivated corn field
LANDFORM AND PARENT MATERIALS	Nearly level lacustrine plain, with materials having loamy textures
SLOPE	1.5% complex
SOIL WATER REGIME	Imperfectly drained, conductivity medium, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Brunisolic Gray Brown Luvisol, coarse loamy over fine silty, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-28 (25-29)	10YR3/3m	L	weak, coarse, platy		slightly sticky, friable, plastic	
Bmgj	28-34 (0-8)	10YR6/4m	FSL	weak, coarse, platy		slightly sticky, friable, plastic	common, fine, distinct,10YR5/5
Ae	34-40 (4-9)	10YR7/3m	L	weak, coarse, platy		slightly sticky, friable, plastic	
Btgj	40-52 (7-16)	7.5YR4/2m	L	weak to moderate, coarse, platy	moderate to strong, medium, subangular blocky	sticky, firm, very plastic	common, fine, prominent,10YR5/6
Ckgj	52-116 (69-72)	10YR5/4m	SIL	strong, coarse, platy	strong, medium, platy	sticky, very firm, very plastic	common, fine, distinct, 10YR5/6
Ck	116+	10YR5/3m	SIL	moderate to strong, coarse, platy	moderate to strong, medium, platy	nonsticky, very friable, nonplastic	

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

TUSCOLA SOIL ONTARIO 1989 PROFILE NO. TPHD033 (continued)

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	0-28	0	1	1	5	23	20	50	36	13	5	1.35	48
Bmgj	28-34	0	1	1	7	26	26	61	28	10	3		
Ae	34-40	1	0	1	5	23	16	47	38	15	5	1.26	53
Btgj	40-52	0	0	1	5	17	13	37	44	19	7	1.46	46
Ckgj	52-116	0	0	0	0	0	0	5	75	20	4	1.42	47
Ck	116+	0	0	0	0	0	39	39	57	3	1	1.56	43

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-28	36.6	25.6	20.9	10.6	10.3	3.00	0.2	7.5	7.0	3.5	16.8	0.5	
Bmgj	28-34	36.0	24.5	18.9	11.6	7.3		0.1	7.4	6.9	0.8	11.4		
Ae	34-40	36.0	24.5	18.9	11.6	7.3		0.1	7.5	6.4	0.7	9.2		
Btgj	40-52	30.4	20.4	16.6	12.3	4.3	0.56	0.2	7.8	7.4	0.8	15.0	4.5	
Ckgj	52-116	37.2	23.9	20.7	15.1	5.6	0.29	0.2	8.0	7.6			28.3	2.6
Ck	116+	28.9	21.8	13.9	6.3	7.6	2.88	0.1	8.2	7.7		12.8	26.5	1.2

VITTORIA SOIL (VI)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of sandy textured eolian or lacustrine material over loamy textured lacustrine material

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	24	2	76	21	17	8	FSL	3.0	6.4	0.4
Bmgj1	20	49	3	85	21	11	4	LFS	0.7	6.5	0.3
Bmgj2	13	71	1	90	27	7	3	FS	0.3	6.5	0.5
IIBtgj	8	93	0	48	31	38	13	L	0.3	6.2	
IICkgj	16		0	25	16	61	14	SIL		7.5	23.6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

VITTORIA SOIL ONTARIO 1989 PROFILE NO. LWSD001

LOCATION	Township of Bayham, Lot 16, Conc. III, NTS Map Area 40I/10, 17TNT 1785 2510
ELEVATION	199 metres
SITE	Apple orchard
LANDFORM AND PARENT MATERIALS	Very gently sloping lacustrine plain, with sandy textured eolian or lacustrine material overlying loamy textured lacustrine material
SLOPE	2% simple
SOIL WATER REGIME	Imperfectly drained, conductivity high in sandy material and medium to low in underlying loamy material, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Melanic Brunisol, sandy over coarse silty, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct. Usual classification is Gleyed Brunisolic Gray Brown Luvisol

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-22 (20-24)	10YR3/3m	FSL	moderate, coarse, platy	weak, very coarse, subangular blocky	nonsticky, friable, nonplastic	
Bmgj1	22-44 (13-28)	2.5Y4/4m	FS	weak, coarse, platy	weak, very coarse, subangular blocky	nonsticky, friable, nonplastic	common, fine, distinct,10YR4/6
Bmgj2	44-68 (14-30)	2.5Y5/4m	FS	single grain		nonsticky, friable, nonplastic	common, medium, distinct,10YR5/6
Bmgj3	68-76 (6-17)	2.5Y5/4m	FS	weak, coarse, platy	weak, medium, platy	nonsticky, friable, nonplastic	common, coarse, distinct,10YR4/6
Ckg	76-79 (3-10)	2.5Y4/3m	FS	weak, coarse, platy	weak, medium, platy	nonsticky, friable, nonplastic	
IICkg1	79-95 (5-23)	2.5Y5/2m	SI	massive		slightly sticky, firm, plastic	many, fine to medium,prominent, 10YR5/8
IICkg2	95+	2.5Y4/3m	SI	massive		slightly sticky, firm, plastic	few, fine, prominent, 10YR5/6

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

VITTORIA SOIL ONTARIO 1989 PROFILE NO. LWSD001 (continued)

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	0-22	0	0	1	4	40	26	71	24	4	2	1.36	48
Bmgj1	22-44	0	0	0	4	50	32	87	12	1		1.38	48
Bmgj2	44-68	0	0	0	4	59	28	91	8	1		1.47	45
Bmgj3	68-76	0	0	0	5	62	26	93	5	2			
Ckg	76-79	0	1	1	8	64	21	94	4	2	1		
IICkg1	79-95	0	0	0	0	0	0	8	85	7	3	1.60	41
IICkg2	95+	0	0	0	0	0	0	8	88	4	2		

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	28.6	17.7	14.5	3.5	11.0	0.48	0.2	7.9	7.3	2.0	24.9	0.8	
Bmgj1	22-44	27.8	18.7	17.5	2.1	15.4	0.48	0.1	7.8	7.1	0.4	13.8	0.2	
Bmgj2	44-68	28.7	11.5	6.9	1.1	5.8	2.16	0.1	7.8	7.0	0.2	7.4	0.5	
Bmgj3	68-76							0.1	7.8	7.1	0.1	10.9	0.2	
Ckg	76-79							0.1	8.4	7.7		9.1	14.1	1.0
IICkg1	79-95	22.7	18.2	16.1	6.7	9.4	<.15	0.1	8.3	7.7			25.0	1.8
IICkg2	95+							0.1	8.4	7.7			27.1	1.5

WALSHER SOIL (WA)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of sandy textured material over loamy textured lacustrine material

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	22	2	79	15	15	5	LFS	2.2	6.0	
Bm1	5	50	1	86	13	11	3	LFS	0.8	5.8	
Bm2	3	66	0	78	13	18	5	LFS	0.4	5.7	
IIBtgj	2	105	1	33	22	52	16	SIL	0.4	6.3	
IICkgj	4		0	32	23	58	10	SIL		7.4	15.0

WALSINGHAM SOIL (WM)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Eolian fine sand or eolian modified lacustrine fine sand material

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	44	22	1	86	18	9	5	LFS	2.70	6.30	0.40
Bmgj1	44	64	0	92	19	6	2	FS	0.50	6.20	0.20
Bmgj2	20	76	0	95	18	4	2	FS	0.30	6.20	0.10
Btgj	18	83	0	81	20	7	6	LFS	0.40	6.00	0.20
Ckgj	37		0	94	23	4	2	FS	0.00	7.50	14.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WALSINGHAM SOIL ONTARIO 1989 PROFILE NO. LWSD003

LOCATION — Township of Bayham, Lot 21, Conc. II, NTS Map Area 40I/10, 17 TNT 1950 2350

ELEVATION — 195 metres

SITE — Apple orchard

LANDFORM AND PARENT MATERIALS — Nearly level to very gently sloping eolian sand plain, with fine sand textures predominating

SLOPE — 1% simple

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

STONINESS — Nonstony

CLASSIFICATION — Gleyed Brunisolic Gray Brown Luvisol, sandy, alkaline, strongly calcareous, mild humid to subhumid

STATUS — Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WALSINGHAM SOIL ONTARIO 1989 PROFILE NO. LWSD003 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-26 (23-32)	10YR3/3m	FS	weak to moderate, coarse, platy		nonsticky, friable, nonplastic	
Bmgj	26-47 (10-21)	2.5Y5/6m	FS	weak, very coarse, subangular blocky	weak, coarse to very coarse, subangular blocky	nonsticky, very friable, nonplastic	common, medium, distinct,10YR4/6
Btgj	47-83 (31-43)	2.5Y4/4m	FS	single grain		nonsticky, very friable, nonplastic	many, coarse, distinct,10YR4/6
Ckgj	83+	10YR5/3m	FS	single grain		nonsticky, very friable, nonplastic	common, coarse, 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	0-26	0	0	0	6	65	18	90	6	3	1	1.30	56
Bmgj	26-47	0	0	0	6	72	18	95	4	1		1.56	43
Btgj	47-83	0	0	0	5	68	19	92	4	4	2	1.45	46
Ckgj	83+	0	0	0	11	75	11	98	1	1		1.46	46

		% Moisture Retention (g/g)												
Horizon	Depth cm	0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	Hydr. Cond. cm/hr	Elec. Cond. mmhos /cm	pH H_2O	pH $CaCl_2$	Organic Matter %	CEC me/100g	$CaCO_3$ %	Cal/Dol_o Ratio
Ap	0-26	31.9	17.9	11.3	6.3	5.0	4.32	0.1	7.8	7.2	2.5	13.8	0.6	
Bmgj	26-47	26.8	10.3	7.3	1.6	5.7	6.12	0.1	7.7	7.0	0.3	11.5	0.2	
Btgj	47-83	29.2	10.8	7.9	1.8	6.1	0.60	0.1	7.5	6.9	0.2	17.5		
Ckgj	83+	27.7	6.3	3.8	0.6	3.2	23.40	0.1	8.3	7.6		13.8	13.0	1.2

WALSINGHAM SOIL ONTARIO 1989 PROFILE NO. LWSD017

LOCATION	Township of Bayham, Lot 15, Conc. IV, NTS Map Area 40I/10, 17 TNT 1755 2836
ELEVATION	214 metres
SITE	Rye field
LANDFORM AND PARENT MATERIALS	Very gently sloping eolian sand plain, with textures being fine sand
SLOPE	2% complex
SOIL WATER REGIME	Imperfectly drained, conductivity high, saturation period medium
STONINESS	Nonstony
CLASSIFICATION	Gleyed Melanic Brunisol, sandy, neutral, strongly calcareous, mild humid to subhumid
STATUS	Taxadjunct to Gleyed Brunisolic Gray Brown Luvisol. Weakly developed Btgj horizon is absent

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-29 (25-31)	10YR3/3m	FS	weak, coarse, platy	very weak, coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bmgj1	29-50 (11-24)	10YR5/8m	FS	single grain		nonsticky, very friable, nonplastic	many, coarse, distinct,7.5YR5/6
Bmgj2	50-61 (10-24)	2.5Y5/4m	FS	single grain		nonsticky, very friable, nonplastic	common, fine, distinct,10YR4/6
Bmgj3	61-100 (38-42)	2.5Y5/4m	FS	single grain		nonsticky, very friable, nonplastic	common, medium, distinct,10YR5/6
Ckg	100+	5Y5/3m	FS	single grain		nonsticky, very friable, nonplastic	few, fine, prominent,5YR4/6

			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	0-29	0	0	1	6	70	12	89	7	4		1	1.23	53
Bmgj1	29-50	0	0	0	7	80	9	96	3	1		0	1.34	51
Bmgj2	50-61	0	0	0	3	90	5	98	2	1		0	1.32	51
Bmgj3	61-100	0	0	0	1	76	19	97	3	0		0	1.39	49
Ckg	100+	0	0	0	1	71	25	97	2	1		1	1.55	44

WALSINGHAM SOIL ONTARIO 1989 PROFILE NO. LWSD017 (continued)

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	34.4	15.5	11.2	6.2	5.0	6.00	0.1	5.7	4.9	3.0	21.4		
Bmgj1	29-50	41.6	13.0	9.5	7.1	2.4	18.00	0.1	5.6	4.9	0.8	16.5		
Bmgj2	50-61	33.6	6.3	4.2	3.0	1.2	15.60	0.1	5.4	4.8	0.2	8.3		
Bmgj3	61-100	33.1	8.1	5.0	2.9	2.1	15.60	0.1	5.6	5.0	0.1	7.8		
Ckg	100+	27.5	14.1	2.9	1.0	1.9	15.60	0.1	8.3	7.3		8.3	19.9	1.3

WATERIN SOIL (WN)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Eolian fine sand or eolian modified lacustrine fine sand material

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	28	0	79	17	12	8	LFS	4.8	6.6	0.3
Bg1	12	58	0	86	18	9	5	LFS	1.1	6.6	0.4
Bg2	11	94	0	88	19	8	4	FS	0.6	6.5	0.2
Ckg	9		5	93	16	5	3	FS	0.1	7.4	14.1

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WATERIN SOIL ONTARIO 1989 PROFILE NO. TPHD015

LOCATION	Township of Bayham, Lot 26, Conc. IV, NTS Map Area 40I/10, 17 TNT 2180 2511
ELEVATION	199 metres
SITE	Apple orchard
LANDFORM AND PARENT MATERIALS	Very gently sloping eolian sand plain, with fine sand textures predominating
SLOPE	3% simple
SOIL WATER REGIME	Poorly drained, conductivity high, saturation period long
STONINESS	Nonstony
CLASSIFICATION	Orthic Humic Gleysol, sandy, alkaline, strongly calcareous, mild humid to subhumid
STATUS	Typical

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-30 (28-34)	10YR3/1m	LFS	single grain		nonsticky, loose, nonplastic	
Bg	30-47 (9-23)	10YR6/2m	FS	single grain		nonsticky, loose, nonplastic	common, fine, prominent, 10YR5/6
Ckg1	47-64 (7-15)	10YR6/1m	FS	single grain		nonsticky, loose, nonplastic	common, medium, prominent, 10YR5/6
Ckg2	64+	10YR6/1m	FS	single grain		nonsticky, loose, nonplastic	many, coarse, 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	0-30	0	0	0	6	64	17	87	8	4	1	1.44	46
Bg	30-47	0	0	0	10	79	6	95	3	2	1	1.48	44
Ckg1	47-64	0	0	0	5	86	5	96	2	2	1	1.40	47
Ckg2	64+	0	0	0	3	87	8	98	1	1	1	1.38	48

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WATERIN SOIL ONTARIO 1989 PROFILE NO. TPHD015 (continued)

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-30	30.3	19.2	17.1	7.1	10.0	12.24	0.1	7.3	6.6	2.4	19.9		
Bg	30-47	27.4	8.3	6.1	2.1	4.0	12.60	0.1	7.5	7.0	0.2	7.8	0.4	
Ckg1	47-64	30.0	7.6	7.0	0.6	6.4	18.00	0.1	8.4	7.6		8.3	7.9	1.2
Ckg2	64+	30.4	5.8	4.4	0.9	3.5	14.40	0.1	8.4	7.6		8.3	12.3	1.8

WATTFORD SOIL (WF)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — Sandy to loamy textured lacustrine material with very fine sand content often exceeding 30%

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	23	1	73	36	20	7	VFSL	2.4	6.3	0.2
Bm1	6	39	1	79	32	17	4	LFS	0.5	6.3	0.1
Bm2	3	76	0	74	36	20	6	VFSL	0.2	6.2	
Bt	5	78	0	74	28	15	11	FSL	0.2	6.6	
Ck	5		0	75	29	18	7	FSL	0.3	7.5	18.2

WAUSEON SOIL (WU)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS — 40 to 100 cm of sandy textured material over clayey textured lacustrine material

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	23	1	57	19	25	20	FSL	5.4	6.6	0.3
Bg1	2	42	0	77	25	16	8	FSL	0.7	6.9	0.4
Bg2	2	62	2	81	23	11	9	FS	0.6	6.9	0.1
IICkg	2		0	5	0	44	52	SIC		7.4	10.0

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WAUSEON SOIL ONTARIO 1989 PROFILE NO. LWSD023

LOCATION — Township of Malahide, Lot 24, Conc. II, NTS Map Area 40I/10, 17 TNT 0683 2640

ELEVATION — 214 metres

SITE — Mature corn field

LANDFORM AND — Nearly level to very gently sloping lacustrine plain, with sandy eolian material overlying clayey lacustrine material

SLOPE — 1% complex

SOIL WATER REGIME — Poorly drained, conductivity high in sandy material and low in clayey material, saturation period long

STONINESS — Nonstony

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

STATUS — Typical

DETAILED PROFILE DESCRIPTIONS AND ANALYSES

WAUSEON SOIL ONTARIO 1989 PROFILE NO. LWSD023 (continued)

Horizon	Depth (range) cm	Colour m-moist d-dry	Texture	Primary Structure	Secondary Structure	Consistence	Mottles
Ap	0-25 (23-27)	10YR3/1m	LFS	weak, very coarse, subangular blocky	weak, medium to coarse, subangular blocky	nonsticky, very friable, nonplastic	
Bg1	25-53 (22-33)	2.5Y4/3m	LFS	single grain		nonsticky, very friable, nonplastic	few, medium, prominent,2.5Y5/6
Bg2	53-64 (6-19)	2.5Y6/3m	FS	single grain		nonsticky, very friable, nonplastic	many, coarse, prominent, 10YR4/6
Bg3	64-74 (5-11)	2.5Y6/3m	FS	single grain		nonsticky, very friable, nonplastic	common, medium, prominent,10YR5/6
IICkg	74+	2.5Y5/2m	SICL	weak, coarse to very coarse, subangular blocky		sticky, very firm, very plastic	many, coarse, 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 %	Fine Clay <.2um %	Bulk Density g/cm³	Porosity %
Ap	0-25	0	0	1	4	60	17	82	10	7	2	1.35	47
Bg1	25-53	0	0	0	3	58	24	85	9	6	2	1.47	44
Bg2	53-64	0	0	0	3	67	20	90	5	4	1	1.42	47
Bg3	64-74	1	0	0	1	50	43	94	4	2	1	1.34	50
IICkg	74+	0	0	0	0	0	0	6	56	38	7	1.50	44

Horizon	Depth cm	% Moisture Retention (g/g) 0 kPa	10 kPa	33 kPa	1500 kPa	Avail. Moist. %	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	0-25	28.3	17.6	16.6	3.9	12.7	0.54	0.3	7.4	7.1	3.4	16.8	0.7	
Bg1	25-53						2.08	0.3	7.2	6.9	1.2	9.2	0.5	
Bg2	35-64						1.50	0.2	7.4	7.0	0.4	6.0	0.2	
Bg3	64-74						7.44	0.2	7.9	7.5	0.3	5.2	2.6	
IICkg	74+	28.9	22.1	21.3	13.9	7.4	0.75	0.3	7.9	7.6			25.9	3.1

WAUSEON SOIL - TILL PHASE (WU.T)

GENERALIZED PROFILE CHARACTERISTICS

PARENT MATERIALS: 40 to 100 cm of sandy textured material over clayey textured glacial till material

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	34	1	67	8	20	13	FSL	6.2	7.1	1.5
Bg	3	65	1	74	6	17	9	FSL	0.6	7.0	0.4
Ckg	4	86	1	91	41	7	2	FS		7.5	18.7
IICkg	3		2	13	4	45	41	SIC		7.5	23.6

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