



**WAGENINGEN EVALUATING PROGRAMS
FOR ANALYTICAL LABORATORIES**

Certificate of Analysis



International Soil-Analytical Exchange

REFERENCE MATERIAL

ISE sample 836



General Information

In this report an overview is given of analytical data for this sample collected in our proficiency testing program. The consensus values are calculated using a robust statistical model. With this NDA model, the mean and standard deviation are calculated using all reported data when at least 4 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

This report is divided into two sections: Consensus Values and Indicative Values. The division is made on the reliability of the data. Consensus Values are based on at least 8 results and a maximum relative uncertainty of 6.25%. Indicative Values are based on a maximum relative uncertainty of 35% and a minimum of 4 and maximum of 7 results, or a relative uncertainty greater than 6.25% when there are at least 8 results.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation), the uncertainty of the mean (consensus or indicative) value and the relative uncertainty.

All values, expressed on a weight basis (kg or %), are reported as oven-dried (105°C) material. Moisture is reported in the material as received.

Sample information

WEPAL reference materials are from natural sources only. There is no spiking, mixing or other alterations of the samples. For sample preparation, the ISE samples are dried at 40°C and milled to pass a 0.5 mm sieve.

This ISE sample 836 of River clay, from Netherlands, is prepared for the WEPAL proficiency programs. The sample has been used in 2 periods (or rounds). The results on which the values in this report are based were taken from the periods given in the following table:

Year	Round	Number
2024	4	1
2021	1	4



Consensus Values ISE 836



Method: Real totals

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Al	g/kg	69.6	2.81	4.0	34	69.5	1.77	0.602	0.865
As	mg/kg	43.6	6.90	15.8	27	43.0	4.00	1.66	3.81
Ba	mg/kg	1243	64.7	5.2	29	1239	28.0	15.0	1.21
Br	mg/kg	17.5	1.72	9.8	14	17.8	1.40	0.574	3.29
Ca	g/kg	37.9	2.42	6.4	36	37.5	1.30	0.504	1.33
Cd	mg/kg	15.4	1.24	8.0	24	15.2	0.500	0.316	2.05
Co	mg/kg	25.0	4.45	17.8	26	24.9	3.43	1.09	4.37
Cr	mg/kg	423	63.2	14.9	35	424	41.5	13.4	3.16
Cu	mg/kg	226	20.9	9.2	34	227	10.1	4.47	1.98
Fe	g/kg	46.2	2.77	6.0	39	46.0	1.47	0.555	1.20
Ga	mg/kg	17.6	2.26	12.8	15	17.6	1.60	0.728	4.14
K	mg/kg	22377	1616	7.2	42	22090	915	312	1.39
Mg	mg/kg	12368	1037	8.4	36	12297	715	216	1.75
Mn	mg/kg	1187	85.4	7.2	38	1181	53.0	17.3	1.46
Mo	mg/kg	2.28	0.365	16.0	14	2.23	0.210	0.122	5.35
Na	mg/kg	3832	406	10.6	31	3860	272	91.1	2.38
Ni	mg/kg	80.7	11.3	14.1	34	79.8	6.74	2.43	3.01
P	mg/kg	4080	446	10.9	33	3970	329	97.1	2.38
Pb	mg/kg	441	44.3	10.1	33	442	39.0	9.64	2.19
Rb	mg/kg	119	4.07	3.4	19	118	3.33	1.17	0.981
S	mg/kg	1225	190	15.5	34	1228	116	40.7	3.33
Si	g/kg	232	10.5	4.5	28	233	5.47	2.47	1.07
Sn	mg/kg	45.6	5.38	11.8	19	45.2	4.06	1.54	3.39
Sr	mg/kg	199	10.0	5.1	24	200	5.40	2.56	1.29
Y	mg/kg	28.7	1.84	6.4	18	28.5	1.14	0.543	1.90
Zn	mg/kg	1373	130	9.5	36	1369	90.2	27.1	1.98
Zr	mg/kg	298	14.1	4.7	19	294	7.67	4.05	1.36
C-elementary	g/kg	64.0	2.59	4.0	63	64.0	1.93	0.407	0.637
Sb	mg/kg	5.69	0.600	10.5	15	5.73	0.300	0.194	3.40
V	mg/kg	114	12.0	10.5	30	115	5.50	2.73	2.39
Ti	mg/kg	4695	338	7.2	32	4730	236	74.6	1.59
N - elementary	g/kg	3.25	0.225	6.9	102	3.25	0.142	0.028	0.857
Ce	mg/kg	80.3	6.95	8.7	18	80.4	3.94	2.05	2.55
La	mg/kg	41.2	2.87	7.0	16	41.1	1.90	0.897	2.18
Nb	mg/kg	16.4	1.62	9.9	14	16.0	1.10	0.542	3.30
Nd	mg/kg	32.9	3.66	11.1	15	33.0	2.06	1.18	3.59
Th	mg/kg	11.8	1.24	10.5	12	12.0	0.550	0.448	3.80



Consensus Values ISE 836



Method: Real totals

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Hg	µg/kg	6184	572	9.2	28	6176	411	135	2.18

(cont.)

Method: Acid extractable (So-called totals)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
As	mg/kg	39.6	4.79	12.1	32	39.7	3.06	1.06	2.67
Ba	mg/kg	991	128	12.9	20	1003	91.5	35.7	3.60
Ca	g/kg	35.0	2.95	8.4	23	34.8	1.94	0.768	2.20
Cd	mg/kg	14.8	1.90	12.9	36	14.8	1.07	0.396	2.68
Co	mg/kg	22.0	1.99	9.1	31	21.9	1.21	0.447	2.03
Cr	mg/kg	310	38.0	12.3	35	313	20.8	8.04	2.59
Cu	mg/kg	213	24.1	11.3	37	212	13.6	4.96	2.33
Fe	g/kg	39.9	6.84	17.2	21	40.4	3.34	1.87	4.68
Mg	mg/kg	10074	641	6.4	21	10030	456	175	1.74
Mn	mg/kg	1111	101	9.1	25	1090	71.0	25.2	2.26
Mo	mg/kg	1.99	0.348	17.4	23	2.02	0.253	0.091	4.54
N	g/kg	3.07	0.356	11.6	46	3.07	0.214	0.066	2.13
Ni	mg/kg	70.3	6.48	9.2	34	70.4	3.50	1.39	1.98
P	mg/kg	3654	285	7.8	31	3637	157	64.0	1.75
Pb	mg/kg	409	55.7	13.6	34	414	30.4	11.9	2.92
S	mg/kg	1143	126	11.0	20	1137	92.8	35.1	3.07
Sn	mg/kg	39.5	3.71	9.4	18	39.3	2.07	1.09	2.77
Zn	mg/kg	1280	126	9.8	36	1276	83.0	26.2	2.04
V	mg/kg	63.6	7.71	12.1	20	65.0	4.93	2.16	3.39
Be	mg/kg	1.73	0.226	13.0	16	1.79	0.152	0.071	4.08
Ag	mg/kg	5.25	0.391	7.4	9	5.29	0.290	0.163	3.10
Hg	µg/kg	5772	810	14.0	24	5828	446	207	3.58

Method: Aqua Regia (ISO 11466)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Ag	µg/kg	5192	347	6.7	9	5034	296	145	2.78
Al	g/kg	28.2	5.71	20.2	41	28.6	4.09	1.11	3.95
As	mg/kg	39.9	4.03	10.1	47	40.1	2.83	0.734	1.84
Ba	mg/kg	981	140	14.2	21	976	84.0	38.1	3.88
Be	mg/kg	1.83	0.260	14.2	16	1.90	0.190	0.081	4.44
Ca	g/kg	35.5	2.96	8.3	36	35.6	1.87	0.617	1.74
Cd	mg/kg	14.7	1.33	9.0	59	14.7	0.820	0.217	1.47
Co	mg/kg	21.6	2.61	12.1	47	21.4	1.68	0.477	2.21



Consensus Values ISE 836



Method: Aqua Regia (ISO 11466)									(cont.)
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cr	mg/kg	312	36.0	11.5	60	315	23.4	5.80	1.86
Cu	mg/kg	223	21.2	9.5	60	223	13.8	3.42	1.54
Fe	g/kg	40.7	4.07	10.0	43	40.5	2.19	0.776	1.90
Hg	µg/kg	5752	689	12.0	29	5860	446	160	2.78
K	mg/kg	6155	1436	23.3	39	6150	838	287	4.67
Mg	mg/kg	10181	1192	11.7	41	10186	714	233	2.29
Mn	mg/kg	1103	116	10.5	48	1105	84.3	21.0	1.90
Mo	mg/kg	2.03	0.273	13.4	32	2.04	0.180	0.060	2.97
Na	mg/kg	300	47.3	15.8	28	302	22.7	11.2	3.72
Ni	mg/kg	68.5	8.31	12.1	61	67.7	4.50	1.33	1.94
P	mg/kg	3823	246	6.4	38	3849	148	49.9	1.31
Pb	mg/kg	396	48.2	12.2	61	389	30.0	7.71	1.95
S	mg/kg	1089	84.7	7.8	27	1086	52.0	20.4	1.87
Se	mg/kg	2.06	0.263	12.7	16	2.10	0.155	0.082	3.98
Sn	mg/kg	35.5	3.79	10.7	11	34.4	1.70	1.43	4.03
Sr	mg/kg	141	18.7	13.3	13	139	9.80	6.49	4.59
Tl	mg/kg	1.17	0.120	10.2	15	1.17	0.074	0.039	3.31
U	mg/kg	1.71	0.059	3.5	10	1.72	0.045	0.023	1.37
V	mg/kg	65.5	8.28	12.7	25	65.1	5.50	2.07	3.16
Zn	mg/kg	1307	113	8.7	59	1297	76.5	18.4	1.41

Method: Extraction with boiling 2M HNO₃

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cd	mg/kg	15.4	1.86	12.1	30	15.3	0.950	0.424	2.76
Co	mg/kg	19.9	2.23	11.2	27	19.7	1.14	0.537	2.70
Cr	mg/kg	281	24.3	8.7	31	280	15.0	5.46	1.94
Cu	mg/kg	214	17.6	8.2	31	216	9.82	3.94	1.84
Hg	µg/kg	5859	738	12.6	24	5830	464	188	3.21
Ni	mg/kg	58.5	5.65	9.6	31	58.5	2.90	1.27	2.17
Pb	mg/kg	388	34.6	8.9	31	389	24.2	7.76	2.00
Tl	mg/kg	0.836	0.097	11.6	11	0.822	0.051	0.037	4.38
Zn	mg/kg	1288	141	11.0	31	1301	104	31.8	2.47

Method: Extraction with 0.1M NaNO₃

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cu	µg/kg	907	115	12.7	9	902	85.2	48.0	5.29
Zn	µg/kg	289	38.4	13.3	8	287	21.8	17.0	5.87



Consensus Values ISE 836



Method: Extraction with 0.01M CaCl₂ 1:10

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cu	µg/kg	1005	73.1	7.3	8	1016	52.5	32.3	3.21
K	mg/kg	34.9	3.57	10.2	14	35.1	2.27	1.19	3.41
Mg	mg/kg	170	9.92	5.8	13	170	6.00	3.44	2.02
N - NH ₄ (as N)	mg/kg	11.1	2.01	18.2	18	11.6	1.80	0.593	5.35
Na	mg/kg	49.2	5.39	11.0	12	48.8	3.30	1.95	3.96

Method: Soil characteristics

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
pH - H ₂ O	...	7.51	0.214	2.8	184	7.50	0.145	0.020	0.262
pH - KCl	...	6.95	0.206	3.0	74	6.95	0.150	0.030	0.430
pH - CaCl ₂	...	6.98	0.138	2.0	59	6.98	0.100	0.022	0.321
Fraction < 2 µm	%	28.3	9.41	33.2	59	27.2	7.68	1.53	5.40
TIC=Tot.Inorg C(as CaCO ₃)	%	8.18	1.54	18.8	68	8.11	0.855	0.233	2.84
EC-SC (ISO 11265)	mS/m	15.6	2.40	15.4	86	15.7	1.35	0.323	2.07
Fraction < 63 µm	%	94.1	4.15	4.4	41	93.4	2.73	0.811	0.862
Org.matter (L.O.I.)	%	11.5	1.15	10.0	71	11.5	0.670	0.171	1.48
Fraction < 16 µm	%	61.4	12.3	20.1	23	62.4	8.50	3.21	5.23
TC=Total C (org.+inorg.)	g/kg	63.6	3.09	4.9	81	63.5	1.90	0.429	0.675
TOC=Total Org. C	g/kg	52.5	5.16	9.8	90	51.9	2.99	0.680	1.30
C - org others (W&B a.o.)	g/kg	34.4	6.20	18.0	92	34.4	3.96	0.808	2.35

Method: Other determinations

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Moisture-content	%	5.17	0.473	9.2	92	5.13	0.324	0.062	1.19

Method: Pot. CEC using 1M NH₄-acetate at pH=7

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
CEC	cmol+/kg	23.2	5.89	25.4	64	23.0	4.37	0.920	3.97
Na	cmol+/kg	0.267	0.074	27.6	84	0.280	0.050	0.010	3.76
K	cmol+/kg	0.356	0.061	17.2	100	0.358	0.038	0.008	2.15
Mg	cmol+/kg	2.52	0.485	19.2	100	2.55	0.318	0.061	2.41
Ca	cmol+/kg	31.4	9.18	29.3	95	31.3	6.17	1.18	3.76



Consensus Values ISE 836

Method: Act. CEC using cobaltihexamine (AFNOR NFX 31 130)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
CEC	cmol+/kg	24.6	1.67	6.8	20	24.5	0.992	0.467	1.90
Na	cmol+/kg	0.248	0.027	11.0	15	0.250	0.013	0.009	3.54
K	cmol+/kg	0.227	0.031	13.4	16	0.231	0.020	0.010	4.20
Ca	cmol+/kg	22.7	3.44	15.1	17	22.7	2.03	1.04	4.59
Mg	cmol+/kg	2.47	0.267	10.8	17	2.50	0.160	0.081	3.28

Method: Mehlich-3

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
B	mg/kg	1.84	0.301	16.4	25	1.82	0.180	0.075	4.10
Ca	mg/kg	10126	1632	16.1	37	10000	1050	335	3.31
Cu	mg/kg	65.0	7.38	11.3	42	64.2	4.46	1.42	2.19
Fe	mg/kg	311	66.0	21.2	38	302	35.0	13.4	4.30
K	mg/kg	141	10.5	7.4	41	141	6.56	2.04	1.44
Mg	mg/kg	376	35.8	9.5	39	377	21.9	7.17	1.91
Mn	mg/kg	59.7	15.2	25.4	40	58.9	9.90	3.00	5.03
Na	mg/kg	64.5	5.01	7.8	27	64.0	2.73	1.21	1.87
P	mg/kg	255	46.6	18.3	47	251	27.0	8.50	3.33
Zn	mg/kg	282	36.8	13.1	40	281	22.6	7.28	2.58
Al	mg/kg	631	70.6	11.2	24	628	33.3	18.0	2.86

Method: Extraction with 0.01M CaCl₂ - 0.005M DTPA 1:10 (w/v)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cu	mg/kg	54.0	10.1	18.7	37	54.0	6.06	2.08	3.84
Zn	mg/kg	147	37.1	25.2	37	146	21.1	7.63	5.18

Method: Extraction with 1M KCl 1:10 (w/v)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
N - NH ₄ (as N)	mg/kg	28.9	6.55	22.7	21	30.0	4.05	1.79	6.19

Method: Phosphorus and related analysis

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
P - Olsen (as P)	mg/kg	202	57.2	28.3	67	204	35.2	8.74	4.32
P - AL (as P)	mg/kg	684	84.7	12.4	23	677	50.0	22.1	3.23



Consensus Values ISE 836

Method: UK Soil Methods

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
P – NaHCO ₃ (1/20)	mg/l	166	10.9	6.6	21	165	5.00	2.97	1.79
K - NH ₄ NO ₃ (1/5)	mg/l	106	12.3	11.7	25	106	8.84	3.09	2.92
Mg - NH ₄ NO ₃ (1/5)	mg/l	202	19.1	9.4	25	204	14.8	4.77	2.36
pH - H ₂ O (2/5)	...	7.61	0.139	1.8	27	7.60	0.090	0.033	0.439



Indicative Values ISE 836



Method: Real totals

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
I	mg/kg	8.92	4.64	52.0	6	11.2	2.80	2.37	26.5
Se	mg/kg	2.54	1.20	47.1	5	2.76	0.760	0.669	26.3
Be	mg/kg	2.60	0.493	19.0	4	2.59	0.260	0.308	11.9
Tl	mg/kg	1.79	0.354	19.7	11	1.87	0.186	0.133	7.43
Ag	mg/kg	5.08	0.930	18.3	7	5.10	0.420	0.439	8.65
Bi	mg/kg	8.75	2.53	28.9	6	8.90	2.10	1.29	14.7
Sc	mg/kg	15.1	3.44	22.8	10	14.7	1.90	1.36	8.99
U	mg/kg	3.05	0.879	28.8	10	3.42	0.272	0.347	11.4
Cs	mg/kg	14.5	3.88	26.7	9	15.0	1.60	1.62	11.1

Method: Acid extractable (So-called totals)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Al	g/kg	28.2	8.17	29.0	19	28.9	5.81	2.34	8.32
B	mg/kg	47.2	18.8	39.8	15	46.2	12.9	6.06	12.8
K	mg/kg	5345	2050	38.4	22	5506	1491	546	10.2
Li	mg/kg	55.3	4.94	8.9	5	56.6	2.77	2.76	4.99
Na	mg/kg	270	66.0	24.4	20	280	45.4	18.4	6.82
Se	mg/kg	2.29	0.631	27.6	14	2.30	0.453	0.211	9.21
Sr	mg/kg	146	14.5	9.9	7	146	9.90	6.85	4.69
Y	mg/kg	16.8	1.06	6.3	4	16.7	0.487	0.663	3.95
Sb	mg/kg	3.87	0.895	23.1	15	3.78	0.497	0.289	7.46
Tl	mg/kg	1.28	0.266	20.8	8	1.24	0.161	0.118	9.19
Ti	mg/kg	479	129	26.9	7	470	54.7	60.9	12.7
La	mg/kg	24.7	1.40	5.7	4	24.6	0.777	0.872	3.54

Method: Aqua Regia (ISO 11466)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
B	mg/kg	38.8	11.4	29.4	18	40.4	7.97	3.37	8.67
Bi	mg/kg	5.72	0.510	8.9	4	5.69	0.297	0.319	5.58
La	mg/kg	26.1	2.04	7.8	4	26.1	0.940	1.28	4.89
Li	mg/kg	54.8	9.58	17.5	10	53.7	4.20	3.79	6.92
Sb	mg/kg	3.49	1.03	29.4	17	3.61	0.570	0.311	8.91
Th	mg/kg	4.84	0.530	10.9	4	4.86	0.278	0.331	6.84
Ti	mg/kg	570	189	33.2	14	556	67.5	63.2	11.1
Te	mg/kg	0.572	0.036	6.2	4	0.581	0.019	0.022	3.89



Indicative Values ISE 836

Method: Extraction with boiling 2M HNO₃

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Mo	mg/kg	0.563	0.160	28.4	25	0.596	0.094	0.040	7.10

Method: Extraction with 0.1M NaNO₃

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cd	µg/kg	11.8	2.27	19.2	8	12.3	1.00	1.00	8.50
Ni	µg/kg	108	19.8	18.4	8	107	15.6	8.73	8.12

Method: Extraction with 0.01M CaCl₂ 1:10

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
B	µg/kg	386	74.9	19.4	8	384	32.0	33.1	8.59
Fe	mg/kg	1.19	0.541	45.3	6	1.18	0.200	0.276	23.1
Mn	mg/kg	1.54	0.875	56.9	7	1.60	0.790	0.413	26.9
N - NO ₃ (as N)	mg/kg	1.07	2.05	192.2	16	6.67	4.37	0.641	60.1
P	mg/kg	3.06	0.592	19.3	13	3.01	0.392	0.205	6.70
Zn	µg/kg	1014	396	39.0	8	990	226	175	17.2

Method: Soil characteristics

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Fraction > 63 µm	%	6.17	4.39	71.1	38	6.65	2.61	0.890	14.4
Active Lime (as CaCO ₃)	%	3.56	1.34	37.7	12	3.73	0.790	0.484	13.6

Method: Other determinations

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
B - Hot water	mg/kg	1.19	0.505	42.4	22	1.31	0.362	0.134	11.3
delta 13C	‰ V-PDB	-21.8	0.264	1.2	7	-21.8	0.130	0.125	0.573
delta 15N	‰ Air	5.13	0.303	5.9	7	5.12	0.190	0.143	2.79

Method: Fluoride (Swiss standard procedure)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
F - Total	mg/kg	708	243	34.3	6	655	106	124	17.5

Method: Pot. CEC using 1M or 0.1M BaCl₂-TEA at pH=8.1 (ISO 13536 OR BZE)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
CEC	cmol+/kg	32.3	8.65	26.8	8	34.1	4.80	3.82	11.8
Na	cmol+/kg	0.262	0.032	12.3	4	0.262	0.020	0.020	7.69
K	cmol+/kg	0.253	0.082	32.5	4	0.243	0.038	0.051	20.3
Mg	cmol+/kg	2.57	0.478	18.6	4	2.59	0.319	0.299	11.6



Indicative Values ISE 836

Method: Pot. CEC using 1M or 0.1M BaCl ₂ -TEA at pH=8.1 (ISO 13536 OR BZE)									(cont.)
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Ca	cmol+/kg	25.5	5.03	19.7	4	25.2	2.62	3.14	12.3
Method: Pot. CEC using 1M NH ₄ Cl (BZE)									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Na	cmol+/kg	0.271	0.056	20.6	5	0.290	0.036	0.031	11.5
K	cmol+/kg	0.368	0.044	12.0	6	0.362	0.033	0.023	6.12
Mg	cmol+/kg	2.26	0.531	23.5	5	2.23	0.303	0.297	13.1
Ca	cmol+/kg	21.0	5.76	27.4	5	22.4	3.21	3.22	15.3
Method: Extraction with 0.01M CaCl ₂ - 0.005M DTPA 1:10 (w/v)									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Fe	mg/kg	139	45.7	32.8	38	139	26.1	9.28	6.65
Mn	mg/kg	27.5	10.5	38.2	39	30.4	7.85	2.10	7.64
Method: Extraction with 1M KCl 1:10 (w/v)									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
N - NO ₃ (as N)	mg/kg	5.42	3.97	73.3	24	6.02	3.20	1.01	18.7
Method: Phosphorus and related analysis									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
P - Bray (as P)	mg/kg	142	66.6	46.9	52	151	43.1	11.5	8.13
Al - Ox	mg/kg	1902	219	11.5	5	1875	126	123	6.45
Fe - Ox	mg/kg	10439	1312	12.6	5	10420	513	734	7.03
P - Ox	mg/kg	3291	196	6.0	5	3210	123	110	3.34
P - w (as P)	mg/l soil	38.8	7.89	20.3	8	39.5	4.56	3.49	8.98
Method: Water soluble 1:10 (w/v) (Neth standard VPR C85-06)									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
SO ₄	mg/kg	69.4	23.5	33.9	6	71.3	14.4	12.0	17.3