



**WAGENINGEN EVALUATING PROGRAMS
FOR ANALYTICAL LABORATORIES**

Certificate of Analysis



International Soil-Analytical Exchange

REFERENCE MATERIAL

ISE sample 830



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 830 of Sandy soil, from Netherlands, is prepared for the WEPAL proficiency programs. The sample has been used in 1 period (or round). The results on which the values in this report are based were taken from the period given in the following table:

Year	Round	Number
2025	2	2



Consensus Values ISE 830



Method: Real totals

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Al	g/kg	19.5	1.52	7.8	12	19.5	0.685	0.549	2.81
As	mg/kg	8.37	1.12	13.4	11	8.50	0.600	0.421	5.03
Ba	mg/kg	209	13.7	6.5	10	210	10.9	5.41	2.58
Ca	g/kg	2.60	0.363	14.0	11	2.58	0.209	0.137	5.26
Co	mg/kg	1.79	0.240	13.4	9	1.70	0.111	0.100	5.59
Cr	mg/kg	41.8	4.20	10.1	15	41.3	2.60	1.36	3.25
Cu	mg/kg	11.5	1.64	14.3	14	11.7	0.950	0.549	4.76
Fe	g/kg	9.78	0.658	6.7	13	9.96	0.360	0.228	2.33
K	mg/kg	8675	455	5.2	14	8660	268	152	1.75
Mn	mg/kg	245	42.2	17.2	13	239	22.2	14.6	5.97
Na	mg/kg	4813	709	14.7	9	4726	416	295	6.14
Pb	mg/kg	37.4	4.26	11.4	14	37.5	2.35	1.42	3.81
Rb	mg/kg	32.6	3.52	10.8	8	33.1	2.60	1.55	4.77
Si	g/kg	416	24.3	5.8	10	413	14.0	9.61	2.31
Sr	mg/kg	47.3	2.29	4.8	9	47.3	1.00	0.956	2.02
Zn	mg/kg	39.0	4.53	11.6	15	39.2	3.24	1.46	3.75
Zr	mg/kg	232	23.2	10.0	10	236	14.3	9.17	3.95
C-elementary	g/kg	15.3	0.839	5.5	32	15.4	0.440	0.185	1.21
V	mg/kg	29.3	4.44	15.2	11	28.7	2.30	1.67	5.71
Ti	mg/kg	1037	146	14.1	11	1049	72.1	55.0	5.31
N - elementary	g/kg	1.16	0.135	11.6	52	1.16	0.080	0.023	2.01
Hg	µg/kg	88.6	12.5	14.1	12	87.6	7.00	4.52	5.10

Method: Acid extractable (So-called totals)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Al	g/kg	5.83	0.816	14.0	16	5.72	0.543	0.255	4.37
As	mg/kg	7.58	0.557	7.3	23	7.50	0.452	0.145	1.92
Ba	mg/kg	31.5	3.96	12.6	14	32.0	2.62	1.32	4.20
Ca	g/kg	1.67	0.120	7.1	18	1.67	0.069	0.035	2.11
Cd	mg/kg	0.275	0.028	10.2	22	0.274	0.019	0.007	2.72
Co	mg/kg	1.48	0.119	8.0	18	1.49	0.074	0.035	2.37
Cr	mg/kg	30.8	3.35	10.9	25	31.3	2.80	0.838	2.73
Cu	mg/kg	11.0	0.983	9.0	27	11.0	0.494	0.237	2.15
Fe	g/kg	8.81	0.802	9.1	19	8.84	0.485	0.230	2.61
K	mg/kg	615	105	17.1	17	618	62.4	31.8	5.18
Mg	mg/kg	600	64.7	10.8	17	592	33.4	19.6	3.27
Mn	mg/kg	235	18.4	7.8	19	233	11.0	5.27	2.24



Consensus Values ISE 830



Method: Acid extractable (So-called totals)									(cont.)
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
N	g/kg	1.14	0.142	12.5	29	1.13	0.070	0.033	2.90
Ni	mg/kg	10.3	0.851	8.3	25	10.0	0.790	0.213	2.07
P	mg/kg	775	68.4	8.8	23	755	43.0	17.8	2.30
Pb	mg/kg	32.1	2.38	7.4	26	32.2	1.33	0.583	1.81
S	mg/kg	200	29.1	14.6	16	198	17.1	9.10	4.56
Zn	mg/kg	35.2	3.06	8.7	28	35.2	2.06	0.723	2.05
V	mg/kg	24.8	1.54	6.2	16	24.6	0.894	0.480	1.94
Be	mg/kg	0.232	0.027	11.7	8	0.232	0.018	0.012	5.18
Hg	µg/kg	97.2	11.4	11.7	16	95.7	7.90	3.56	3.67

Method: Aqua Regia (ISO 11466)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Al	g/kg	5.61	0.532	9.5	20	5.52	0.326	0.149	2.65
As	mg/kg	7.68	0.436	5.7	22	7.64	0.270	0.116	1.51
Ca	g/kg	1.63	0.204	12.5	18	1.61	0.095	0.060	3.68
Cd	mg/kg	0.285	0.039	13.6	23	0.288	0.025	0.010	3.54
Co	mg/kg	1.46	0.140	9.5	22	1.46	0.075	0.037	2.54
Cr	mg/kg	27.8	2.60	9.3	29	27.9	1.60	0.602	2.16
Cu	mg/kg	10.9	0.742	6.8	28	10.8	0.440	0.175	1.61
Fe	g/kg	8.80	0.667	7.6	21	8.94	0.400	0.182	2.07
Hg	µg/kg	95.8	9.96	10.4	15	94.0	6.40	3.21	3.35
K	mg/kg	569	57.4	10.1	19	561	38.2	16.4	2.89
Mg	mg/kg	588	46.5	7.9	20	587	20.3	13.0	2.21
Mn	mg/kg	221	14.4	6.5	23	221	10.0	3.76	1.71
Mo	mg/kg	1.41	0.160	11.4	17	1.43	0.110	0.049	3.44
Ni	mg/kg	9.98	0.709	7.1	28	9.92	0.430	0.167	1.68
P	mg/kg	797	62.1	7.8	17	799	27.6	18.8	2.36
Pb	mg/kg	32.0	2.51	7.8	29	31.9	1.45	0.582	1.82
S	mg/kg	196	18.8	9.6	12	196	11.1	6.78	3.46
V	mg/kg	25.1	1.08	4.3	15	25.1	0.590	0.350	1.40
Zn	mg/kg	35.0	2.79	8.0	29	34.4	2.00	0.648	1.85

Method: Extraction with boiling 2M HNO₃

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Co	mg/kg	0.940	0.021	2.2	8	0.941	0.013	0.009	0.964
Cr	mg/kg	13.5	0.934	6.9	11	13.5	0.730	0.352	2.61
Cu	mg/kg	10.4	0.490	4.7	11	10.4	0.200	0.185	1.78



Consensus Values ISE 830



Method: Extraction with boiling 2M HNO₃

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Ni	mg/kg	3.73	0.257	6.9	10	3.78	0.155	0.102	2.73
Pb	mg/kg	31.8	3.33	10.5	11	31.9	1.73	1.26	3.95
Zn	mg/kg	28.8	1.92	6.7	11	29.1	0.700	0.725	2.52

(cont.)

Method: Soil characteristics

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
pH - H ₂ O	...	6.63	0.187	2.8	101	6.65	0.130	0.023	0.352
pH - KCl	...	5.91	0.205	3.5	42	5.87	0.135	0.039	0.668
pH - CaCl ₂	...	5.98	0.151	2.5	28	5.96	0.090	0.036	0.597
EC-SC (ISO 11265)	mS/m	6.82	1.05	15.4	41	6.82	0.750	0.205	3.00
Fraction > 63 µm	%	76.4	5.44	7.1	14	76.4	3.40	1.82	2.38
Org.matter (L.O.I.)	%	3.03	0.189	6.2	48	3.03	0.115	0.034	1.13
TC=Total C (org.+inorg.)	g/kg	15.3	0.518	3.4	39	15.2	0.300	0.104	0.680
TOC=Total Org. C	g/kg	14.8	1.54	10.4	51	14.9	0.900	0.270	1.82
C - org others (W&B a.o.)	g/kg	12.8	1.63	12.8	46	13.1	1.14	0.301	2.35

Method: Other determinations

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Moisture-content	%	1.00	0.171	17.1	42	1.00	0.110	0.033	3.29

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	6.43	1.24	19.4	36	6.48	0.650	0.259	4.04
K	cmol+/kg	0.356	0.058	16.2	59	0.360	0.036	0.009	2.64
Mg	cmol+/kg	0.682	0.109	16.0	59	0.670	0.056	0.018	2.60
Ca	cmol+/kg	4.53	0.863	19.1	55	4.47	0.526	0.145	3.21

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

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
CEC	cmol+/kg	5.62	0.224	4.0	8	5.56	0.153	0.099	1.76

Method: Mehlich-3

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Ca	mg/kg	1070	102	9.5	20	1085	69.5	28.4	2.65
Fe	mg/kg	672	120	17.9	23	686	63.0	31.3	4.65
K	mg/kg	140	18.9	13.5	20	141	11.0	5.27	3.77
Mg	mg/kg	89.7	11.3	12.6	20	90.5	6.62	3.16	3.52



Consensus Values ISE 830



Method: Mehlich-3									(cont.)
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Mn	mg/kg	102	20.3	19.9	24	102	10.8	5.18	5.09
P	mg/kg	212	39.2	18.5	28	215	29.0	9.25	4.36
Zn	mg/kg	7.12	1.36	19.1	23	6.98	0.980	0.354	4.97
Al	mg/kg	781	114	14.6	12	775	66.1	41.0	5.25
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. %
Zn	mg/kg	3.25	0.574	17.7	17	3.25	0.350	0.174	5.35
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	9.70	1.51	15.6	15	9.90	0.900	0.488	5.03
Method: Phosphorus and related analysis									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
P - Olsen (as P)	mg/kg	52.8	9.43	17.9	37	52.4	5.76	1.94	3.67
P - AL (as P)	mg/kg	254	32.3	12.7	11	252	22.9	12.2	4.80
Method: UK Soil Methods									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
K - NH ₄ NO ₃ (1/5)	mg/l	184	26.9	14.6	13	185	20.6	9.32	5.07
Mg - NH ₄ NO ₃ (1/5)	mg/l	101	16.2	16.1	12	103	10.7	5.83	5.79
pH - H ₂ O (2/5)	...	6.52	0.226	3.5	14	6.53	0.125	0.075	1.16
Method: PEP-Ammoniumacetate-EDTA extraction									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
AAE10-Ca	mg/kg	1106	135	12.2	10	1099	69.8	53.2	4.81
AAE10-Mg	mg/kg	84.2	7.41	8.8	10	85.4	4.85	2.93	3.48
AAE10-K	mg/kg	137	11.9	8.7	10	137	7.77	4.70	3.43
Method: PEP-Test measurements									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
pH-H ₂ O	...	6.72	0.081	1.2	9	6.73	0.040	0.034	0.500



Consensus Values ISE 830

Method: PEP-Physical parameters

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
C-org	%	1.12	0.139	12.5	8	1.12	0.081	0.062	5.51
Humus	%	1.92	0.240	12.5	8	1.93	0.141	0.106	5.52



Indicative Values ISE 830



Method: Real totals

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Br	mg/kg	5.97	0.669	11.2	7	6.00	0.360	0.316	5.29
Cd	mg/kg	0.270	0.049	18.3	9	0.278	0.038	0.021	7.62
Ga	mg/kg	4.00	1.31	32.9	7	4.60	1.20	0.621	15.5
Mg	mg/kg	807	279	34.6	9	843	149	116	14.4
Mo	mg/kg	1.52	0.228	15.0	7	1.62	0.103	0.108	7.08
Ni	mg/kg	10.9	2.76	25.2	13	11.6	1.73	0.958	8.75
P	mg/kg	833	209	25.1	12	844	108	75.5	9.07
S	mg/kg	213	63.5	29.8	10	207	52.0	25.1	11.8
Sn	mg/kg	3.39	1.18	34.8	4	3.33	0.550	0.737	21.8
Y	mg/kg	8.82	0.964	10.9	7	8.90	0.600	0.456	5.17
Ce	mg/kg	19.7	7.03	35.7	7	22.7	3.35	3.32	16.8
La	mg/kg	9.16	2.52	27.5	7	9.06	1.24	1.19	13.0
Nb	mg/kg	5.10	2.44	47.9	5	6.00	1.30	1.37	26.8
Nd	mg/kg	7.79	1.50	19.3	5	8.16	0.580	0.839	10.8
Sc	mg/kg	2.58	0.845	32.8	5	2.82	0.469	0.472	18.3
Th	mg/kg	2.88	0.717	24.9	5	2.90	0.220	0.401	13.9

Method: Acid extractable (So-called totals)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Li	mg/kg	7.60	1.17	15.4	6	7.45	0.728	0.598	7.87
Mo	mg/kg	1.36	0.284	20.9	17	1.37	0.154	0.086	6.33
Na	mg/kg	55.1	20.1	36.5	13	62.8	14.5	6.98	12.7
Rb	mg/kg	4.20	0.386	9.2	4	4.25	0.176	0.241	5.74
Se	mg/kg	0.255	0.107	41.8	5	0.270	0.060	0.060	23.4
Sn	mg/kg	2.57	0.705	27.4	12	2.63	0.476	0.254	9.89
Sr	mg/kg	8.14	1.38	16.9	6	8.35	0.827	0.703	8.64
Sb	mg/kg	0.360	0.210	58.4	5	0.408	0.132	0.118	32.7
Tl	mg/kg	0.073	0.016	22.4	6	0.076	0.009	0.008	11.4
Ti	mg/kg	114	25.5	22.4	4	116	11.9	15.9	14.0
U	mg/kg	0.516	0.025	4.8	5	0.520	0.016	0.014	2.69

Method: Aqua Regia (ISO 11466)

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Ba	mg/kg	31.3	1.44	4.6	7	31.2	0.700	0.681	2.17
Be	mg/kg	0.230	0.018	8.0	6	0.232	0.009	0.009	4.08
Li	mg/kg	6.57	0.481	7.3	4	6.45	0.255	0.301	4.58
Na	mg/kg	40.4	10.6	26.2	8	43.2	9.78	4.68	11.6

Method: Aqua Regia (ISO 11466)									(cont.)
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Sb	mg/kg	0.406	0.009	2.2	5	0.409	0.004	0.005	1.26
Se	mg/kg	0.230	0.056	24.4	5	0.234	0.035	0.031	13.6
Sn	mg/kg	2.03	0.486	23.9	5	2.06	0.260	0.271	13.4
Sr	mg/kg	7.90	1.11	14.1	7	7.73	0.740	0.527	6.66
Ti	mg/kg	115	23.5	20.4	8	122	14.1	10.4	9.00
U	mg/kg	0.490	0.050	10.1	4	0.491	0.027	0.031	6.32

Method: Extraction with boiling 2M HNO3									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cd	mg/kg	0.271	0.089	32.8	10	0.285	0.049	0.035	13.0
Hg	µg/kg	80.3	10.1	12.6	7	80.0	5.60	4.77	5.94
Mo	mg/kg	0.276	0.030	10.7	7	0.270	0.009	0.014	5.06
Tl	mg/kg	0.045	0.004	9.4	4	0.046	0.002	0.003	5.85

Method: Extraction with 0.1M NaNO3									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cu	µg/kg	51.3	5.55	10.8	4	51.8	2.95	3.47	6.76
Zn	µg/kg	54.7	8.50	15.5	4	53.7	4.00	5.31	9.71

Method: Extraction with 0.01M CaCl2 1:10									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cu	µg/kg	44.3	7.49	16.9	4	43.9	3.43	4.68	10.6
K	mg/kg	90.7	8.44	9.3	6	90.5	5.92	4.31	4.75
Mg	mg/kg	73.9	4.53	6.1	5	74.8	2.81	2.53	3.42
N - NH4 (as N)	mg/kg	3.57	1.30	36.4	7	3.63	0.830	0.613	17.2
N - NO3 (as N)	mg/kg	10.3	0.586	5.7	7	10.1	0.340	0.277	2.68
Na	mg/kg	12.9	1.09	8.5	5	13.0	1.10	0.608	4.73
P	mg/kg	0.891	0.303	33.9	7	0.906	0.176	0.143	16.0
Zn	µg/kg	300	1.85	0.6	4	301	0.990	1.16	0.386

Method: Soil characteristics									
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Fraction < 2 µm	%	4.72	1.64	34.7	31	4.95	1.10	0.368	7.80
TIC=Tot.Inorg C(as CaCO3)	%	0.272	0.355	130.6	19	0.262	0.249	0.102	37.5
Fraction < 63 µm	%	23.5	5.86	25.0	18	22.6	3.86	1.73	7.37
Fraction < 16 µm	%	13.5	5.85	43.3	7	15.0	5.43	2.76	20.4
Fraction 2 - 50 µm (USDA)	%	7.18	3.51	48.9	4	6.73	1.71	2.19	30.5



Indicative Values ISE 830

Method: Other determinations

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
B - Hot water	mg/kg	0.333	0.153	46.0	13	0.290	0.120	0.053	16.0

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

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Na	cmol+/kg	0.071	0.030	42.6	47	0.071	0.017	0.005	7.76

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

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Na	cmol+/kg	0.060	0.005	8.5	5	0.060	0.002	0.003	4.76
K	cmol+/kg	0.311	0.034	10.8	6	0.312	0.022	0.017	5.53
Ca	cmol+/kg	4.33	0.257	5.9	7	4.36	0.194	0.121	2.80
Mg	cmol+/kg	0.669	0.018	2.7	7	0.671	0.010	0.009	1.29

Method: Mehlich-3

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
B	mg/kg	0.420	0.195	46.5	12	0.470	0.125	0.071	16.8
Cu	mg/kg	1.23	0.303	24.6	20	1.24	0.160	0.085	6.88
Na	mg/kg	17.3	5.82	33.6	13	16.2	3.20	2.02	11.7

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	2.02	0.460	22.8	18	2.05	0.275	0.135	6.70
Fe	mg/kg	142	44.8	31.6	18	141	30.4	13.2	9.31
Mn	mg/kg	29.0	13.1	45.0	18	28.3	6.98	3.85	13.3

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

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
N - NH4 (as N)	mg/kg	4.64	1.43	30.9	13	5.25	1.02	0.497	10.7

Method: Phosphorus and related analysis

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
P - Bray (as P)	mg/kg	140	46.0	32.9	23	144	30.5	12.0	8.59



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Method: UK Soil Methods

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
P – NaHCO ₃ (1/20)	mg/l	57.1	10.9	19.0	11	58.8	7.80	4.10	7.18

Method: PEP-Ammoniumacetate-EDTA extraction

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
AAE10-P	mg/kg	164	44.4	27.0	8	157	25.0	19.6	11.9

Method: PEP-Water extraction

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
H2O10-Mg	mg/kg	6.17	0.348	5.6	7	6.23	0.225	0.164	2.66
H2O10-K	mg/kg	41.1	0.257	0.6	7	41.1	0.230	0.122	0.295
H2O10-P	mg/kg	7.51	0.613	8.2	7	7.69	0.500	0.290	3.86

Method: PEP-Test measurements

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
CO ₂ -K	K-test	4.81	0.197	4.1	7	4.80	0.070	0.093	1.94
CO ₂ -P	P-test	12.3	0.508	4.1	7	12.5	0.040	0.240	1.95
CC-Mg	Mg-test	7.23	0.786	10.9	7	7.21	0.485	0.371	5.14
CaCO ₃	%	0.296	0.155	52.5	4	0.295	0.070	0.097	32.8

Method: PEP-Physical parameters

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Ton (clay)	%	5.41	1.31	24.2	7	5.49	0.765	0.618	11.4
Schluff (silt)	%	11.0	1.76	16.1	7	11.0	0.800	0.832	7.58
Sand	%	80.9	2.47	3.1	6	81.3	1.19	1.26	1.56
TOC_400	%	1.19	0.116	9.7	5	1.18	0.070	0.065	5.43