Inter-laboratory Quality Control Material Data Sheet

QC Material ID: 14160-QC-PR12165

Product Type: Soil

Issue Date: 13 June 2025

Expiry Date: 1 September 2028

Test Name	Methods	n Value	Assigned Value	Assigned Range
Acid P (mg/kg)	Extr Acid P 9G1 9G2 (mg/kg)	13	54.8	35.5 - 74.1
Air-Dry Moist Content (%)	Air-Dry Moisture Content 2A1 (%)	28	2.46	2.06 - 2.86
Ammonium Nitrogen (mg/kg)	Amm-N 7C1 7C2 (mg/kg) **	20	20.5	17.8 - 23.1
Aqua Regia Aluminium (mg/kg)	Aqua Regia Al 17A2 17B1 17B 2 17C1 (mg/kg)	14	51,300	22488 - 80012
Aqua Regia Arsenic (mg/kg)	Aqua Regia As 17A2 17B1 17B 2 17C1 (mg/kg)	12	3.04	0.43 - 5.64
Aqua Regia Boron (mg/kg)	Aqua Regia B 17A2 17B1 17B 2 17C1 (mg/kg)	10	4.40	2.47 - 6.33
Aqua Regia Cadmium (mg/kg)	Aqua Regia Cd 17A2 17B1 17 B2 17C1 (mg/kg)	10	0.0920	0.003 - 0.181
Aqua Regia Calcium (mg/kg)	Aqua Regia Ca 17A2 17B1 17 B2 17C1 (mg/kg)	13	977	815 - 1138
Aqua Regia Chromium (mg/kg)	Aqua Regia Cr 17A2 17B1 17B 2 17C1 (mg/kg)	12	90.1	77.9 - 102.3
Aqua Regia Cobalt (mg/kg)	Aqua Regia Co 17A2 17B1 17 B2 17C1 (mg/kg)	13	8.16	1.81 - 14.51
Aqua Regia Copper (mg/kg)	Aqua Regia Cu 17A2 17B1 17 B2 17C1 (mg/kg)	14	21.0	13.9 - 28.1
Aqua Regia Iron (mg/kg)	Aqua Regia Fe 17A2 17B1 17B 2 17C1 (mg/kg)	13	201,000	138731 - 263269
Aqua Regia Lead (mg/kg)	Aqua Regia Pb 17A2 17B1 17 B2 17C1 (mg/kg)	13	16.0	8.3 - 23.7
Aqua Regia Magnesium (mg/kg)	Aqua Regia Mg 17A2 17B1 17 B2 17C1 (mg/kg)	15	400	44 - 756
Aqua Regia Manganese (mg/kg)	Aqua Regia Mn 17A2 17B1 17 B2 17C1 (mg/kg)	14	520	467 - 573
Aqua Regia Molybdenum (mg/kg)	Aqua Regia Mo 17A2 17B1 17 B2 17C1 (mg/kg)	10	2.04	0.00 - 4.97

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Version 2

Aqua Regia Nickel (mg/kg)	Aqua Regia Ni 17A2 17B1 17B 2 17C1 (mg/kg)	11	9.80	4.8 - 14.8
Aqua Regia Potassium (mg/kg)	Aqua Regia K 17A2 17B1 17B 2 17C1 (mg/kg)	14	290	157 - 423
Aqua Regia Selenium (mg/kg)	Aqua Regia Se 17A2 17B1 17 B2 17C1 (mg/kg)	8	1.36	0.00 - 2.93
Aqua Regia Sodium (mg/kg)	Aqua Regia Na 17A2 17B1 17 B2 17C1 (mg/kg)	10	49.7	35.9 - 63.5
Aqua Regia Sulphur (mg/kg)	Aqua Regia S 17A2 17B1 17B 2 17C1 (mg/kg)	12	479	400 - 558
Aqua Regia Zinc (mg/kg)	Aqua Regia Zn 17A2 17B1 17 B2 17C1 (mg/kg)	17	68.6	23.8 - 113.4
Bray P (mg/kg)	Extr P Bray 9E1 9E2 (mg/kg)	9	8.93	3.50 - 14.36
CaCl2 Extractable B (mg/kg)	CaCl2 Extractable B 12C1 12C 2 (mg/kg)	18	2.62	1.05 - 4.19
Colwell P (mg/kg)	Extr P Colwell 9B1 9B2 (mg/kg)	22	71.8	56.6 - 86.9
Electrical Cond (dS/m)	Elec Cond 3A1 (dS/m)	35	0.122	0.110 - 0.134
Exch Aluminium (cmol+/kg)	Exch Al 15G1 (cmol+/kg) **	11	0.0763	0.0286 - 0.1240
Exch Calcium (cmol+/kg)	Exch Ca 15A1 (cmol+/kg) **	17	3.75	3.54 - 3.96
Exch Calcium (cmol+/kg)	Exch Ca 15D3 (cmol+/kg)	15	3.38	3.14 - 3.61
Exch Magnesium (cmol+/kg)	Exch Mg 15A1 (cmol+/kg) **	18	0.897	0.761 - 1.033
Exch Magnesium (cmol+/kg)	Exch Mg 15D3 (cmol+/kg)	15	0.880	0.797 - 0.963
Exch Magnesium (cmol+/kg)	Exch Mg 15E1 (cmol+/kg)	3 *	0.910	0.851 - 0.969
Exch Potassium (cmol+/kg)	Exch K 15A1 (cmol+/kg) **	17	0.376	0.352 - 0.400
Exch Potassium (cmol+/kg)	Exch K 15D3 (cmol+/kg)	17	0.352	0.299 - 0.405
Exch Potassium (cmol+/kg)	Exch K 15E1 (cmol+/kg)	3 *	0.343	0.322 - 0.364
Exch Sodium (cmol+/kg)	Exch Na 15A1 (cmol+/kg) **	10	0.0604	0.0438 - 0.0770
Exch Sodium (cmol+/kg)	Exch Na 15D3 (cmol+/kg)	16	0.0575	0.0427 - 0.0723
Exch Sodium (cmol+/kg)	Exch Na 15E1 (cmol+/kg)	3 *	0.0500	0.0316 - 0.0684

Ext Copper (mg/kg)	Extr Cu 12A1 (mg/kg)	21	1.74	1.38 - 2.09
Ext Iron (mg/kg)	Extr Fe 12A1 (mg/kg)	22	43.8	30.1 - 57.4
Ext Manganese (mg/kg)	Extr Mn 12A1 (mg/kg)	23	15.0	10.3 - 19.7
Ext Potassium (mg/kg)	Extr K 18A1 (mg/kg)	13	130	94 - 166
Ext Silicon (mg/kg)	Extr Si 13D1 13D2 (mg/kg)	5 *	291	193 - 389
Ext Sulphur (mg/kg)	Extr S 10B1 10B2 10B3 (mg/kg)	9	182	167 - 197
Ext Sulphur (mg/kg)	Extr S 10D1 (mg/kg)	12	63.4	53.0 - 73.8
Ext Zinc (mg/kg)	Extr Zn 12A1 (mg/kg)	22	3.16	2.51 - 3.81
Ext Zinc (mg/kg)	Extr Zn 12D1 (mg/kg)	3 *	7.30	7.12 - 7.48
M3-Aluminium (mg/kg)	M3-Al 18F1 (mg/kg)	16	1,200	874 - 1526
M3-Boron (mg/kg)	M3-B 18F1 (mg/kg)	13	1.45	1.01 - 1.89
M3-Calcium (mg/kg)	M3-Ca 18F1 (mg/kg)	13	719	689 - 748
M3-Copper (mg/kg)	M3-Cu 18F1 (mg/kg)	14	2.71	2.37 - 3.05
M3-Iron (mg/kg)	M3-Fe 18F1 (mg/kg)	15	88.2	59.4 - 117.0
M3-Magnesium (mg/kg)	M3-Mg 18F1 (mg/kg)	15	113	101 - 125
M3-Manganese (mg/kg)	M3-Mn 18F1 (mg/kg)	13	27.9	25.2 - 30.6
M3-Phosphorus (mg/kg)	M3-P ICP 18F1 (mg/kg)	14	9.02	5.91 - 12.13
M3-Potassium (mg/kg)	M3-K 18F1 (mg/kg)	14	139	129 - 149
M3-Sodium (mg/kg)	M3-Na 18F1 (mg/kg)	12	13.0	11.8 - 14.2
M3-Sulphur (mg/kg)	M3-S 18F1 (mg/kg)	12	82.9	73.8 - 92.1
M3-Zinc (mg/kg)	M3-Zn 18F1 (mg/kg)	12	3.81	3.49 - 4.12
Nitrate Nitrogen (mg/kg)	Nitrate N 7B1 7B2 (mg/kg)	11	9.34	7.74 - 10.94



Nitrate Nitrogen (mg/kg)	Nitrate N 7C1 7C2 (mg/kg)	18	8.90	8.31 - 9.49
Olsen P (mg/kg)	Extr P Olsen 9C1 9C2 (mg/kg)	16	17.9	15.2 - 20.6
Organic Carbon W&B (%)	Org C W&B 6A1 (%) **	17	2.40	1.87 - 2.93
PBI Colwell (L/kg)	PBI Colwell 9I2a 9I2b 9I2c (L/kg)	14	875	637 - 1112
PBI Unadjusted (L/kg)	PBI Unadjusted 9I4a 9I4b 9I4c (L/kg)	12	819	516 - 1121
pH CaCl2 (pH units)	pH CaCl2 4B1 4B2 4B3 4B4 (pH Units)	28	4.91	4.82 - 5.00
pH Water (pH units)	pH Water 4A1 4A3 (pH Units)	37	5.43	5.25 - 5.61
Total Carbon (%)	Total C 6B2 (%)	30	2.82	2.64 - 3.00
Total Nitrogen (%)	Total N 7A1 7A2 7A3 (%) **	12	0.210	0.185 - 0.235
Total Nitrogen (%)	Total N 7A5 (%)	23	0.214	0.199 - 0.229
Total Organic Carbon (%)	Total Org C 6B1 6B3 (%) **	25	2.80	2.50 - 3.09
Total Phosphorus (%)	Total P Not Specified (%) **	18	0.244	0.211 - 0.277
Water Ext Cl (mg/kg)	Water Ext Cl 5A1 5A2 5A3 (mg/kg)	22	15.6	4.5 - 26.8

** n Values < 8 are indicative only and should be used with caution*

*** These methods should be reported on an oven dried basis (105°C) by using the formula given in method 2A1 of Rayment and Lyons 2011.*

Instructions for use: Due to possible moisture reabsorption, re-dry the sample at 40°C to constant weight prior to analysis

Description: 150g+ irradiated, packaged in plastic jar

Homogeneity: This QC material has been assessed as homogeneous for use in an Inter-Laboratory Proficiency Study

Stability: An expiry period consistent with the shelf life of the product, experience, and technical advice has been applied

Storage: Keep samples at a stable temperature < 25°C (eg in air conditioned storage). Reseal containers after each use. Do not store in sunlight.

Values: The *Assigned Value* is the consensus median from an inter-laboratory proficiency round excluding outliers; *n Values* are the number of results used to calculate the assigned value. The *Assigned Range* is 2 standard deviations of *n Values*.



Methods: Multiple methods were used in the preparation of these assigned values.

