Inter-laboratory Quality Control Material Data Sheet

QC Material ID: 13964-QC-PR12181

Product Type: Soil

Issue Date: 13 June 2025

Expiry Date: 1 March 2029

Test Name	Methods	n Value	Assigned Value	Assigned Range
Acid P (mg/kg)	Extr Acid P 9G1 9G2 (mg/kg)	12	46.8	29.2 - 64.5
Air-Dry Moist Content (%)	Air-Dry Moisture Content 2A1 (%)	27	0.687	0.519 - 0.854
Ammonium Nitrogen (mg/kg)	Amm-N 7C1 7C2 (mg/kg) **	18	25.2	23.7 - 26.7
Aqua Regia Aluminium (mg/kg)	Aqua Regia Al 17A2 17B1 17B 2 17C1 (mg/kg)	17	6,920	3599 - 10241
Aqua Regia Arsenic (mg/kg)	Aqua Regia As 17A2 17B1 17B 2 17C1 (mg/kg)	14	1.62	1.18 - 2.06
Aqua Regia Boron (mg/kg)	Aqua Regia B 17A2 17B1 17B 2 17C1 (mg/kg)	12	0.925	0.36 - 1.49
Aqua Regia Cadmium (mg/kg)	Aqua Regia Cd 17A2 17B1 17 B2 17C1 (mg/kg)	13	0.0300	0.0211 - 0.0389
Aqua Regia Calcium (mg/kg)	Aqua Regia Ca 17A2 17B1 17 B2 17C1 (mg/kg)	20	1,330	495 - 2155
Aqua Regia Chromium (mg/kg)	Aqua Regia Cr 17A2 17B1 17B 2 17C1 (mg/kg)	19	29.4	21.4 - 37.4
Aqua Regia Cobalt (mg/kg)	Aqua Regia Co 17A2 17B1 17 B2 17C1 (mg/kg)	18	11.6	9.7 - 13.6
Aqua Regia Copper (mg/kg)	Aqua Regia Cu 17A2 17B1 17 B2 17C1 (mg/kg)	19	6.30	4.58 - 8.02
Aqua Regia Iron (mg/kg)	Aqua Regia Fe 17A2 17B1 17B 2 17C1 (mg/kg)	20	12,500	10721 - 14279
Aqua Regia Lead (mg/kg)	Aqua Regia Pb 17A2 17B1 17 B2 17C1 (mg/kg)	19	8.97	7.69 - 10.25
Aqua Regia Magnesium (mg/kg)	Aqua Regia Mg 17A2 17B1 17 B2 17C1 (mg/kg)	20	1,020	824 - 1206
Aqua Regia Manganese (mg/kg)	Aqua Regia Mn 17A2 17B1 17 B2 17C1 (mg/kg)	21	350	291 - 409
Aqua Regia Molybdenum (mg/kg)	Aqua Regia Mo 17A2 17B1 17 B2 17C1 (mg/kg)	12	0.383	0.152 - 0.614

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Version 2

Aqua Regia Nickel (mg/kg)	Aqua Regia Ni 17A2 17B1 17B 2 17C1 (mg/kg)	12	5.06	4.88 - 5.24
Aqua Regia Potassium (mg/kg)	Aqua Regia K 17A2 17B1 17B 2 17C1 (mg/kg)	17	1,140	725 - 1555
Aqua Regia Selenium (mg/kg)	Aqua Regia Se 17A2 17B1 17 B2 17C1 (mg/kg)	10	0.345	0.000 - 0.702
Aqua Regia Sodium (mg/kg)	Aqua Regia Na 17A2 17B1 17 B2 17C1 (mg/kg)	16	40.1	4.2 - 76.0
Aqua Regia Sulphur (mg/kg)	Aqua Regia S 17A2 17B1 17B 2 17C1 (mg/kg)	14	130	106 - 154
Aqua Regia Zinc (mg/kg)	Aqua Regia Zn 17A2 17B1 17 B2 17C1 (mg/kg)	21	20.2	13.1 - 27.3
Bray P (mg/kg)	Extr P Bray 9E1 9E2 (mg/kg)	9	33.4	23.6 - 43.2
CaCl2 Extractable B (mg/kg)	CaCl2 Extractable B 12C1 12C 2 (mg/kg)	14	0.204	0.081 - 0.327
Colwell P (mg/kg)	Extr P Colwell 9B1 9B2 (mg/kg)	20	34.5	28.6 - 40.4
Electrical Cond (dS/m)	Elec Cond 3A1 (dS/m)	32	0.264	0.246 - 0.282
Exch Aluminium (cmol+/kg)	Exch Al 15G1 (cmol+/kg) **	10	0.0369	0.0000 - 0.0813
Exch Calcium (cmol+/kg)	Exch Ca 15A1 (cmol+/kg) **	17	3.60	3.27 - 3.93
Exch Calcium (cmol+/kg)	Exch Ca 15D3 (cmol+/kg)	17	3.78	3.01 - 4.55
Exch Calcium (cmol+/kg)	Exch Ca 15E1 (cmol+/kg)	3 *	4.03	3.94 - 4.12
Exch Magnesium (cmol+/kg)	Exch Mg 15A1 (cmol+/kg) **	16	0.516	0.449 - 0.582
Exch Magnesium (cmol+/kg)	Exch Mg 15D3 (cmol+/kg)	16	0.540	0.451 - 0.629
Exch Potassium (cmol+/kg)	Exch K 15A1 (cmol+/kg) **	15	0.815	0.705 - 0.925
Exch Potassium (cmol+/kg)	Exch K 15D3 (cmol+/kg)	16	0.805	0.703 - 0.908
Exch Potassium (cmol+/kg)	Exch K 15E1 (cmol+/kg)	3 *	0.794	0.723 - 0.865
Exch Sodium (cmol+/kg)	Exch Na 15A1 (cmol+/kg) **	12	0.0415	0.0178 - 0.0652
Exch Sodium (cmol+/kg)	Exch Na 15D3 (cmol+/kg)	13	0.0405	0.0361 - 0.0449
Exch Sodium (cmol+/kg)	Exch Na 15E1 (cmol+/kg)	3 *	0.0360	0.0206 - 0.0514

Ext Copper (mg/kg)	Extr Cu 12A1 (mg/kg)	14	0.530	0.500 - 0.560
Ext Iron (mg/kg)	Extr Fe 12A1 (mg/kg)	20	56.1	28.5 - 83.7
Ext Manganese (mg/kg)	Extr Mn 12A1 (mg/kg)	21	70.3	58.1 - 82.5
Ext Potassium (mg/kg)	Extr K 18A1 (mg/kg)	12	378	298 - 458
Ext Silicon (mg/kg)	Extr Si 13D1 13D2 (mg/kg)	4 *	122	42 - 202
Ext Sulphur (mg/kg)	Extr S 10B1 10B2 10B3 (mg/kg)	8	30.3	29.4 - 31.2
Ext Sulphur (mg/kg)	Extr S 10D1 (mg/kg)	13	29.0	26.6 - 31.4
Ext Zinc (mg/kg)	Extr Zn 12A1 (mg/kg)	20	1.34	1.22 - 1.46
Ext Zinc (mg/kg)	Extr Zn 12D1 (mg/kg)	3 *	2.24	2.12 - 2.36
M3-Aluminium (mg/kg)	M3-Al 18F1 (mg/kg)	15	482	349 - 615
M3-Boron (mg/kg)	M3-B 18F1 (mg/kg)	11	0.102	0.095 - 0.110
M3-Calcium (mg/kg)	M3-Ca 18F1 (mg/kg)	15	759	703 - 815
M3-Copper (mg/kg)	M3-Cu 18F1 (mg/kg)	15	0.698	0.496 - 0.900
M3-Iron (mg/kg)	M3-Fe 18F1 (mg/kg)	13	116	92 - 140
M3-Magnesium (mg/kg)	M3-Mg 18F1 (mg/kg)	15	69.8	61.5 - 78.1
M3-Manganese (mg/kg)	M3-Mn 18F1 (mg/kg)	15	105	91 - 118
M3-Phosphorus (mg/kg)	M3-P ICP 18F1 (mg/kg)	16	69.2	57.5 - 80.9
M3-Potassium (mg/kg)	M3-K 18F1 (mg/kg)	15	315	279 - 351
M3-Sodium (mg/kg)	M3-Na 18F1 (mg/kg)	12	9.34	7.01 - 11.67
M3-Sulphur (mg/kg)	M3-S 18F1 (mg/kg)	13	32.7	28.8 - 36.6
M3-Zinc (mg/kg)	M3-Zn 18F1 (mg/kg)	15	1.84	1.63 - 2.05
Nitrate Nitrogen (mg/kg)	Nitrate N 7B1 7B2 (mg/kg)	10	98.9	90.0 - 107.8



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Nitrate Nitrogen (mg/kg)	Nitrate N 7C1 7C2 (mg/kg)	18	97.5	87.3 - 107.7
Olsen P (mg/kg)	Extr P Olsen 9C1 9C2 (mg/kg)	14	15.8	15.2 - 16.4
Organic Carbon W&B (%)	Org C W&B 6A1 (%) **	14	1.05	0.91 - 1.20
PBI Colwell (L/kg)	PBI Colwell 9I2a 9I2b 9I2c (L/kg)	13	36.0	30.5 - 41.5
PBI Olsen (L/kg)	PBI Olsen 9I3a 9I3b 9I3c (L/kg)	3 *	41.9	37.7 - 46.1
PBI Unadjusted (L/kg)	PBI Unadjusted 9I4a 9I4b 9I4c (L/kg)	10	30.6	24.6 - 36.7
pH CaCl2 (pH units)	pH CaCl2 4B1 4B2 4B3 4B4 (pH Units)	28	5.20	5.13 - 5.27
pH Water (pH units)	pH Water 4A1 4A3 (pH Units)	36	5.70	5.49 - 5.91
Total Carbon (%)	Total C 6B2 (%)	30	1.20	1.14 - 1.26
Total Nitrogen (%)	Total N 7A1 7A2 7A3 (%) **	9	0.111	0.072 - 0.150
Total Nitrogen (%)	Total N 7A5 (%)	26	0.119	0.101 - 0.137
Total Organic Carbon (%)	Total Org C 6B1 6B3 (%) **	20	1.20	1.14 - 1.26
Total Phosphorus (%)	Total P Not Specified (%) **	21	0.0225	0.0181 - 0.0269
Water Ext Cl (mg/kg)	Water Ext Cl 5A1 5A2 5A3 (mg/kg)	22	15.7	3.7 - 27.7

** 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.

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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.

