Inter-laboratory Quality Control Material Data Sheet

QC Material ID: 13959-QC-PR12182

Product Type: Soil

Issue Date: 13 June 2025

Expiry Date: 11 September 2028

Test Name	Methods	n Value	Assigned Value	Assigned Range
Acid P (mg/kg)	Extr Acid P 9G1 9G2 (mg/kg)	9	6.20	2.20 - 10.20
Air-Dry Moist Content (%)	Air-Dry Moisture Content 2A1 (%)	25	3.61	3.19 - 4.02
Ammonium Nitrogen (mg/kg)	Amm-N 7C1 7C2 (mg/kg) **	20	47.0	43.4 - 50.6
Aqua Regia Aluminium (mg/kg)	Aqua Regia Al 17A2 17B1 17B 2 17C1 (mg/kg)	15	24,000	1761 - 46239
Aqua Regia Arsenic (mg/kg)	Aqua Regia As 17A2 17B1 17B 2 17C1 (mg/kg)	15	4.58	3.33 - 5.83
Aqua Regia Boron (mg/kg)	Aqua Regia B 17A2 17B1 17B 2 17C1 (mg/kg)	12	14.1	2.8 - 25.4
Aqua Regia Cadmium (mg/kg)	Aqua Regia Cd 17A2 17B1 17 B2 17C1 (mg/kg)	7 *	0.0510	0.0480 - 0.0540
Aqua Regia Calcium (mg/kg)	Aqua Regia Ca 17A2 17B1 17 B2 17C1 (mg/kg)	16	6,010	4972 - 7048
Aqua Regia Chromium (mg/kg)	Aqua Regia Cr 17A2 17B1 17B 2 17C1 (mg/kg)	16	34.7	27.0 - 42.4
Aqua Regia Cobalt (mg/kg)	Aqua Regia Co 17A2 17B1 17 B2 17C1 (mg/kg)	13	10.3	8.2 - 12.4
Aqua Regia Copper (mg/kg)	Aqua Regia Cu 17A2 17B1 17 B2 17C1 (mg/kg)	18	15.3	11.1 - 19.4
Aqua Regia Iron (mg/kg)	Aqua Regia Fe 17A2 17B1 17B 2 17C1 (mg/kg)	17	23,800	18166 - 29434
Aqua Regia Lead (mg/kg)	Aqua Regia Pb 17A2 17B1 17 B2 17C1 (mg/kg)	13	10.4	8.6 - 12.2
Aqua Regia Magnesium (mg/kg)	Aqua Regia Mg 17A2 17B1 17 B2 17C1 (mg/kg)	17	4,350	3223 - 5477
Aqua Regia Manganese (mg/kg)	Aqua Regia Mn 17A2 17B1 17 B2 17C1 (mg/kg)	18	275	235 - 315
Aqua Regia Molybdenum (mg/kg)	Aqua Regia Mo 17A2 17B1 17 B2 17C1 (mg/kg)	10	0.702	0.084 - 1.320

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Version 2

Aqua Regia Potassium (mg/kg)	Aqua Regia K 17A2 17B1 17B 2 17C1 (mg/kg)	15	4,680	4265 - 5095
Aqua Regia Selenium (mg/kg)	Aqua Regia Se 17A2 17B1 17 B2 17C1 (mg/kg)	10	0.435	0.144 - 0.726
Aqua Regia Silicon (mg/kg)	Aqua Regia Si 17A2 17B1 17B 2 17C1 (mg/kg)	9	681	0 - 2167
Aqua Regia Sodium (mg/kg)	Aqua Regia Na 17A2 17B1 17 B2 17C1 (mg/kg)	15	269	222 - 316
Aqua Regia Sulphur (mg/kg)	Aqua Regia S 17A2 17B1 17B 2 17C1 (mg/kg)	15	627	529 - 725
Aqua Regia Zinc (mg/kg)	Aqua Regia Zn 17A2 17B1 17 B2 17C1 (mg/kg)	18	54.8	38.9 - 70.7
Bray P (mg/kg)	Extr P Bray 9E1 9E2 (mg/kg)	8	1.87	1.28 - 2.46
CaCl2 Extractable B (mg/kg)	CaCl2 Extractable B 12C1 12C 2 (mg/kg)	16	1.05	0.324 - 1.776
Colwell P (mg/kg)	Extr P Colwell 9B1 9B2 (mg/kg)	20	16.0	12.6 - 19.4
Electrical Cond (dS/m)	Elec Cond 3A1 (dS/m)	31	0.529	0.497 - 0.560
Exch Aluminium (cmol+/kg)	Exch Al 15G1 (cmol+/kg) **	10	0.0106	0.0000 - 0.0255
Exch Calcium (cmol+/kg)	Exch Ca 15A1 (cmol+/kg) **	19	23.0	19.1 - 26.9
Exch Calcium (cmol+/kg)	Exch Ca 15D3 (cmol+/kg)	12	21.9	20.3 - 23.5
Exch Calcium (cmol+/kg)	Exch Ca 15E1 (cmol+/kg)	3 *	17.0	16.1 - 17.9
Exch Magnesium (cmol+/kg)	Exch Mg 15A1 (cmol+/kg) **	17	6.99	6.41 - 7.56
Exch Magnesium (cmol+/kg)	Exch Mg 15D3 (cmol+/kg)	15	6.95	6.21 - 7.69
Exch Magnesium (cmol+/kg)	Exch Mg 15E1 (cmol+/kg)	3 *	6.18	5.02 - 7.34
Exch Potassium (cmol+/kg)	Exch K 15A1 (cmol+/kg) **	18	1.73	1.44 - 2.01
Exch Potassium (cmol+/kg)	Exch K 15D3 (cmol+/kg)	15	1.71	1.50 - 1.92
Exch Potassium (cmol+/kg)	Exch K 15E1 (cmol+/kg)	3 *	1.46	1.28 - 1.64
Exch Sodium (cmol+/kg)	Exch Na 15A1 (cmol+/kg) **	17	0.704	0.645 - 0.763
Exch Sodium (cmol+/kg)	Exch Na 15D3 (cmol+/kg)	13	0.677	0.625 - 0.729

Exch Sodium (cmol+/kg)	Exch Na 15E1 (cmol+/kg)	3 *	0.597	0.464 - 0.730
Ext Copper (mg/kg)	Extr Cu 12A1 (mg/kg)	21	3.30	2.81 - 3.79
Ext Iron (mg/kg)	Extr Fe 12A1 (mg/kg)	22	84.5	51.4 - 117.6
Ext Manganese (mg/kg)	Extr Mn 12A1 (mg/kg)	21	22.9	19.4 - 26.3
Ext Potassium (mg/kg)	Extr K 18A1 (mg/kg)	13	641	525 - 757
Ext Silicon (mg/kg)	Extr Si 13D1 13D2 (mg/kg)	3 *	1,170	1140 - 1200
Ext Sulphur (mg/kg)	Extr S 10B1 10B2 10B3 (mg/kg)	9	213	192 - 234
Ext Sulphur (mg/kg)	Extr S 10D1 (mg/kg)	13	212	176 - 248
Ext Zinc (mg/kg)	Extr Zn 12A1 (mg/kg)	20	7.65	6.60 - 8.70
Ext Zinc (mg/kg)	Extr Zn 12D1 (mg/kg)	3 *	12.4	11.8 - 13.0
M3-Aluminium (mg/kg)	M3-Al 18F1 (mg/kg)	15	450	421 - 478
M3-Boron (mg/kg)	M3-B 18F1 (mg/kg)	12	1.13	0.70 - 1.55
M3-Calcium (mg/kg)	M3-Ca 18F1 (mg/kg)	12	4,360	4152 - 4568
M3-Copper (mg/kg)	M3-Cu 18F1 (mg/kg)	15	3.70	2.72 - 4.68
M3-Iron (mg/kg)	M3-Fe 18F1 (mg/kg)	17	400	275 - 525
M3-Magnesium (mg/kg)	M3-Mg 18F1 (mg/kg)	14	882	812 - 952
M3-Manganese (mg/kg)	M3-Mn 18F1 (mg/kg)	15	53.3	48.3 - 58.4
M3-Phosphorus (mg/kg)	M3-P ICP 18F1 (mg/kg)	14	5.82	4.15 - 7.48
M3-Potassium (mg/kg)	M3-K 18F1 (mg/kg)	15	616	486 - 746
M3-Sodium (mg/kg)	M3-Na 18F1 (mg/kg)	10	154	148 - 160
M3-Sulphur (mg/kg)	M3-S 18F1 (mg/kg)	13	213	180 - 246
M3-Zinc (mg/kg)	M3-Zn 18F1 (mg/kg)	17	10.5	7.8 - 13.2

Nitrate Nitrogen (mg/kg)	Nitrate N 7B1 7B2 (mg/kg)	11	12.0	10.5 - 13.5
Nitrate Nitrogen (mg/kg)	Nitrate N 7C1 7C2 (mg/kg)	18	12.1	11.2 - 13.0
Olsen P (mg/kg)	Extr P Olsen 9C1 9C2 (mg/kg)	17	5.61	4.16 - 7.06
Organic Carbon W&B (%)	Org C W&B 6A1 (%) **	14	1.23	1.04 - 1.42
PBI Colwell (L/kg)	PBI Colwell 9I2a 9I2b 9I2c (L/kg)	14	153	132 - 174
PBI Olsen (L/kg)	PBI Olsen 9I3a 9I3b 9I3c (L/kg)	3 *	147	147 - 147
PBI Unadjusted (L/kg)	PBI Unadjusted 9I4a 9I4b 9I4c (L/kg)	10	150	137 - 163
pH CaCl2 (pH units)	pH CaCl2 4B1 4B2 4B3 4B4 (pH Units)	29	7.40	7.22 - 7.58
pH Water (pH units)	pH Water 4A1 4A3 (pH Units)	36	7.75	7.60 - 7.90
Total Carbon (%)	Total C 6B2 (%)	25	1.48	1.33 - 1.63
Total Nitrogen (%)	Total N 7A1 7A2 7A3 (%) **	11	0.146	0.122 - 0.169
Total Nitrogen (%)	Total N 7A5 (%)	21	0.154	0.139 - 0.169
Total Org C IR (%)	Total Org Carbon IR 6B4a 6B4b (%)	4 *	1.46	1.16 - 1.76
Total Organic Carbon (%)	Total Org C 6B1 6B3 (%) **	21	1.33	1.15 - 1.51
Total Phosphorus (%)	Total P Not Specified (%) **	20	0.0176	0.0134 - 0.0218
Water Ext Cl (mg/kg)	Water Ext Cl 5A1 5A2 5A3 (mg/kg)	22	16.2	6.7 - 25.7

** 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.

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.

