

AS4454:2012 COMPOSTS, SOIL CONDITIONERS AND MULCHES REPORT

1 sample supplied by Goulburn Mulwaree Council on the 28 September 2023. Lab Job No. P5832.

Analysis requested by Daniel McNaught. **Your Job: PO P0001880.**

100 Sinclair Street GOULBURN NSW 2580

		Product Name:	Sample 1	Guideline
		Product Type:	260923	AS4454:2012 Mature Compost
		Manufacturing Site:	Compost	
		Manufactured Date:	GMC	
		Test Code:	26/09/2023	
		Standard Applicable:	CA-PACK-011 AS4454:2012	
Parameter	Method Reference		P5832/1	
Wet Bulk Density (kg/L)	AS4454:2012 Appendix J		0.56	..
Dry Bulk Density (kg/L)	AS4454:2012 Appendix J		0.46	..
Moisture Content (%)	AS4454:2012 Appendix I		17	> 25
pH	AS4454:2012 Appendix B		7.48	> 5
Electrical Conductivity (dS/m)			4.92	< 10
Total Organic Carbon (%)			18.7	≥ 20
Total Carbon (%)	AS4454:2012 Appendix C		21.2	..
Total Nitrogen (%)			2.07	≥ 0.8 <i>see note 7</i>
Carbon/Nitrogen Ratio	Calculation - Total Organic Carbon/Total Nitrogen		9.0	..
Estimated Organic Matter (% OM)	Calculation - Total Organic Carbon x 1.7		31.8	..
Ammonium Nitrogen (mg/L N)			117	< 100
Ammonium Nitrogen (mg/kg N)			585	..
Nitrate Nitrogen (mg/L N)	AS4454:2012 Appendix B Dissolved Nutrients		8.1	..
Nitrate Nitrogen (mg/kg N)			40.4	≥ 10 <i>see note 7</i>
Phosphate Phosphorus (mg/L P)			25.1	≤ 5 <i>see note 7</i>
Phosphate Phosphorus (mg/kg P)			125	..
Ammonium/Nitrate Ratio	Calculation - Ammonium/Nitrate		14.5	< 0.5
Nitrogen Drawdown Index (NDI ₁₅₀)	AS4454:2012 Appendix O		0.1	> 0.5
Total Calcium (%)			1.90	..
Total Magnesium (%)			0.32	..
Total Potassium (%)	AS4454:2012 Appendix D Total Salts		1.25	..
Total Sodium (%)			0.18	<1 Na
Total Sulphur (%)			0.23	..
Total Phosphorus (%)	AS4454:2012 Appendix D		0.41	≤ 0.1 <i>see note 10</i>
Total Zinc (mg/kg)			200	< 300 Zn
Total Manganese (mg/kg)			368	..
Total Iron (mg/kg)			10,169	..
Total Copper (mg/kg)	AS4454:2012 Appendix D Total Metals		37.7	< 150 Cu
Total Boron (mg/kg)			20.3	< 100 B
Total Silicon (mg/kg)			1,118	..
Total Aluminium (mg/kg)			4,467	..
Total Molybdenum (mg/kg)			3.35	..
Total Cobalt (mg/kg)	AS4454:2012 Appendix D Total Metals		4.07	..
Total Selenium (mg/kg)			<1	< 5 Se
Total Cadmium (mg/kg)			<0.5	< 1 Cd
Total Lead (mg/kg)			48.7	< 150 Pb
Total Arsenic (mg/kg)			7.16	< 20 As
Total Chromium (mg/kg)	AS4454:2012 Appendix D Total Heavy Metals		27.5	< 100 Cr
Total Nickel (mg/kg)			8.13	< 60 Ni
Total Mercury (mg/kg)			<0.1	< 1 Hg
Total Silver (mg/kg)			<1	..

Product Name: 260923 Product Type: Compost Manufacturing Site: GMC Manufactured Date: 26/09/2023 Test Code: CA-PACK-011 Standard Applicable: AS4454:2012		Sample 1	Guideline
Parameter	Method Reference	P5832/1	
Polychlorinated Biphenyls (mg/kg)		<0.1 ND	< 0.2
Organochlorine Pesticides - DDT, DDD, DDE (mg/kg)	Sub** - Symbio Laboratories B1398638 Pesticides and PCBs	<0.02 ND	< 0.5
Organochlorine Pesticides - Other (mg/kg) ^{see note 9}		<0.02 ND	< 0.02
Salmonella spp (Absent in 25 g)	Sub** - Symbio Laboratories B1398650-A (M16.1 AS 5013.10)	ND	Absent in 25 g
E. coli (MPN/g DW)	Sub** - Symbio Laboratories B1398650-A (M8.3 AS 5013.15)	<3.0 ND	< 100 MPN/g
Faecal Coliforms (MPN/g DW)		<3.0 ND	< 1000 MPN/g
Particle Size Grading > 16 mm Sieve (% DW)		Nil	.. see note 5
Particle Size Grading 5–16 mm Sieve (% DW)	AS4454:2012 Appendix G Particle Size Grading	6.6	.. see note 5
Particle Size Grading < 5 mm Sieve (% DW)		93.4	.. see note 5
Plastics Light Flexible or film > 5 mm (% DW)		<0.01	≤ 0.05
Stones and Lumps of Clay > 5 mm (% DW)	AS4454:2012 Appendix I Visible Contaminants	2.49	≤ 5
Glass, metal and rigid plastics > 2 mm (% DW)		0.03	≤ 0.5
Wettability (min)	AS4454:2012 Appendix E	1m 51s	<5
Plant Growth Test - Germination (%)		12	> 90
Plant Growth Test - Root Elongation (%)	TMECC 05.05-B	43	> 90
Oxygen Consumption Rate (mgO ₂ /g/min)	SOUR Testing	0.19	..
Specific Oxygen Uptake Rate (mgO ₂ /gVVS/hr)		0.05	≤ 1
Solvita Compost Maturity Index	Solvita NH3	5	..
	Solvita CO2	3	..
	Solvita Maturity Index	3	7 - 8
Viable Plant Propagules (7 days)	AS4454:2012 Appendix M	Nil	..
Viable Plant Propagules (21 days)	AS4454:2012 Appendix M	NR	Nil after 21 days

Notes:

- Methods from AS4454:2012 Composts, soil conditioners and mulches.
- Indicative guidelines are based on those in AS4454:2012 for raw mulches, pasteurized product, composted product, mature composts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Conversions for 1 mg/kg = 1 ppm; 1 % = 10,000 ppm; kg/ha = mg/kg x 2.24.
- Coarse Mulch > 70% >16mm, Fine Mulch <20% >16mm and <20% <5mm, Soil Conditioner <20% >16mm.
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate.
- Guide only to be used if a product claims to contribute to plant nutrition.
- The full test observes the potential growth of viable plant propagules in a 21 day test period. In order to pass there should be Nil after 21 days
- Other Organochlorines include: Aldrin, Dieldrin, Chlordane, Heptachlor, HCB, Lindane, BHC Other Organophosphorus include: Guthion, Bromophos-ethyl, Chlorpyrifos, Chlorpyrifos-methy, Diazinon, Dichlorvos, Dimethoate, Ethion, Fenitrothion, Malathion, Parathion, Ronnel.
- Guide only to be used if a product claims to be used for phosphorus sensitive plants.
- < LOR Less than limit of reporting. ND Not detected. NA Not applicable. NR Not required.
- All testing has been done so in accordance with AS4454:2012 as a Composted Product.
- Testing completed in a NATA accredited laboratory.
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full. Results only relate to the item tested.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer SCU.edu.au/eal/t&cs or on request).
- This report was issued on 18/10/2023.

Quality Checked: Brian Smith
 Compost & Landscape Soils Co-ordinator

RESULTS OF COMPOST ANALYSIS

1 sample supplied by Goulburn Mulwaree Council on the 28 September 2023. Lab Job No. P5832.

Analysis requested by Daniel McNaught. **Your Job: PO P0001880.**

100 Sinclair Street GOULBURN NSW 2580

		Sample 1
Product Name:		260923
Product Type:		Compost
Manufacturing Site:		GMC
Manufactured Date:		26/09/2023
Test Code:		SS-SING-253
Standard Applicable:		
Method Reference		P5832/1
PFAS Extended 28 Suite - Low Level		
Perfluorobutanoic acid (PFBA) (mg/kg)	Subcontracted: SGS report SE254698	0.0066
Perfluoropentanoic acid (PFPeA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorohexanoic acid (PFHxA) (mg/kg)	Subcontracted: SGS report SE254698	0.0110
Perfluoroheptanoic acid (PFHpA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorooctanoic Acid (PFOA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0008
Perfluorononanoic acid (PFNA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorodecanoic acid (PFDA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluoroundecanoic acid (PFUnA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorododecanoic acid (PFDoA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorotridecanoic acid (PFTrDA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorotetradecanoic acid (PFTeDA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorohexadecanoic acid (PFHxDA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0032
Perfluorobutane sulfonate (PFBS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluoropentane sulfonate (PFPeS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorohexane sulfonate (PFHxS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluoroheptane sulfonate (PFHpS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorooctane sulfonate (PFOS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Sum PFOS and PFHXS (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Sum of US EPA PFAS (PFOS+PFOA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Sum of enHealth PFAS (PFHxS+PFOS+PFOA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorononane sulfonate (PFNS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorodecane sulfonate (PFDS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorododecane sulfonate (PFDoS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2 FTSA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
Perfluorooctane sulfonamide (PFOSA) (mg/kg)	Subcontracted: SGS report SE254698	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA) (mg/kg)	Subcontracted: SGS report SE254698	<0.008
N-Ethylperfluorooctane sulfonamide (N-EtFOSA) (mg/kg)	Subcontracted: SGS report SE254698	<0.008
2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE) (mg/kg)	Subcontracted: SGS report SE254698	<0.016
2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE) (mg/kg)	Subcontracted: SGS report SE254698	<0.016
N-Methylperfluorooctanesulfonamidoacetic acid (N-MeFOSAA) (mg/kg)	Subcontracted: SGS report SE254698	<0.008
N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA) (mg/kg)	Subcontracted: SGS report SE254698	<0.008
Total of PFAS (n=30) (mg/kg)	Subcontracted: SGS report SE254698	<0.08

* <LOR Less than limit of reporting.

Notes:

1. PFAS in Solids - Per- and Polyfluoroalkyl Substances (PFAS) - Extended 28 Suite - Low Level (0.0008-0.0016 mg/kg).
2. Testing subcontracted to SGS Australia.
3. Testing completed in a NATA accredited laboratory.
4. Analysis conducted between sample arrival date and reporting date.
5. This report is not to be reproduced except in full. Results only relate to the item tested.
6. All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer SCU.edu.au/eal/t&cs or on request).
7. This report was issued on 18/10/2023.

