

Material: Bioretention Soil
Source: Bourne Amenity Ltd
Date: 15/03/2018
Tested Against: SUDs Guidelines 2015 Chapter 18
Tested By: NRM Laboratories (Report ID 93942-18) and STRI (Report ID A16684/1)

Parameter	Unit	SUDs 2015 Specification	Result	Compliance
Texture:				
Clay (<0.002mm)	%	< 5	4	Yes
Silt (0.002 - 0.63mm)				
Very Fine Sand (0.05 - 0.15mm)	%	< 20%	10	Yes
Fine Sand (0.15 - 0.25mm)				
Medium Sand (0.25 - 0.50mm)	%	35 - 65%	56	Yes
Coarse Sand (0.50 - 1.0mm)	%	50 - 60%	30	No
Very Coarse Sand (1.0 - 2.0mm)				
Stones (2 - 6mm)	%	< 10%	1.2	Yes
Organic Matter (LOI)	% w/w	3 - 5%	2.17	Yes
Ph (1:2.5 water extract)	units	5.5 - 8.5	7.2	Yes
Exchangeable Sodium Percentage	%	< 15*	3.7	Yes
Phytotoxic Contaminants:				
Total Zinc	mg/kg	< 300*	43.6	Yes
Total Copper	mg/kg	< 200*	4.3	Yes
Total Nickel	mg/kg	< 180*	<10	Yes
Available Nutrients:				
Nitrogen	mg/l	0.10 - 0.30	0.04	No
Phosphorus	mg/l	16 - 100	30	Yes
Potassium	mg/l	120 - 900	411	Yes
Magnesium	mg/l	51 - 600*	55	Yes
Carbon:Nitrogen Ratio	:1	< 20:1*		Yes
Calcium Carbonate	% m/m	< 5*	<0.1	Yes
Additional Analysis:				
Electrical Conductivity (1:25 water extract)	µS/cm	<1500	454	Yes
Electrical Conductivity (1:2 CaSO ₄ extract)	µS/cm	<3300	2451	Yes
Additional Criteria:				
Saturated Hydraulic Conductivity	mm/h	100 - 300	78	No
Total Porosity	%	> 30%	42.1	Yes

* Based on BSI BS3882:2015 Topsoil Guidelines

Parameter	Unit	Guidelines	Value	Result	Compliance
Heavy Metals and Hydrocarbons					
Total Antimony (Sb)	mg/kg	S4UL	<500	0.1	Yes
Total Arsenic (As)	mg/kg	S4UL	<37	7.4	Yes
Total Barium (Ba)	mg/kg	S4UL	<1300	<10	Yes
Total Beryllium (Be)	mg/kg	S4UL	<1.7	0.2	Yes
Total Cadmium (Cd)	mg/kg	S4UL	<11	<0.1	Yes
Total Chromium III (Cr)	mg/kg	S4UL	<910	10.3	Yes
Hexavalent Chromium (Cr Vi)	mg/kg	S4UL	<6	<0.1	Yes
Total Cyanide (Cn)	mg/kg	Dutch Action Value (DAV)	<20	<1	Yes
Total Lead (Pb)	mg/kg	SP1010 (Defra Category 4)	<200	6.0	Yes
Total Mercury (Hg)	mg/kg	S4UL	<1.2	<0.2	Yes
Total (mono) Phenols	mg/kg	S4UL^	<550	<1	Yes
Total Selenium (Se)	mg/kg	S4UL	<250	<0.1	Yes
Total Vanadium (V)	mg/kg	S4UL	<410	25.2	Yes
Water Soluble Boron (B)	mg/kg	S4UL	<290	1.0	Yes
Water Soluble Sulphate (SO4)	g/l	BRE Special Digest 1:2005 (BRE)	<1.2	0.02	Yes
Acenaphthylene	mg/kg	S4UL^	<420	<0.05	Yes
Acenaphthene	mg/kg	S4UL^	<510	<0.05	Yes
Anthracene	mg/kg	S4UL^	<5400	<0.05	Yes
Benzo (a) Anthracene	mg/kg	S4UL^	<11	<0.1	Yes
Benzo (a) Pyrene	mg/kg	S4UL^	<2.7	<0.1	Yes
Benzo (b) Fluoranthene	mg/kg	S4UL^	<3.3	<0.1	Yes
Benzo (g,h,i) Perylene	mg/kg	S4UL^	<340	<0.1	Yes
Benzo (k) Fluoranthene	mg/kg	S4UL^	<93	<0.1	Yes
Chrysene	mg/kg	S4UL^	<22	<0.1	Yes
Dibenzo (a,h) Anthracene	mg/kg	S4UL^	<0.28	<0.1	Yes
Fluoranthene	mg/kg	S4UL^	<560	<0.1	Yes
Fluorene	mg/kg	S4UL^	<400	<0.05	Yes
Indeno (1,2,3-cd) Pyrene	mg/kg	S4UL^	<36	<0.1	Yes
Naphthalene	mg/kg	S4UL^	<5.6	<0.05	Yes
Phenanthrene	mg/kg	S4UL^	<220	<0.1	Yes
Pyrene	mg/kg	S4UL^	<1200	<0.1	Yes
Aliphatic TPH (C5 - C6)	mg/kg	S4UL^	<78	<0.1	Yes
Aliphatic TPH (C6 - C8)	mg/kg	S4UL^	<230	<0.1	Yes
Aliphatic TPH (C8 - C10)	mg/kg	S4UL^	<65	<0.1	Yes
Aliphatic TPH (C10 - C12)	mg/kg	S4UL^	<330	<1	Yes
Aliphatic TPH (C12 - C16)	mg/kg	S4UL^	<2400	<1	Yes
Aliphatic TPH (C16 - C21)	mg/kg	S4UL^	<92000	6.0	Yes
Aliphatic TPH (C21 - C35)	mg/kg	S4UL^	<92000	19.1	Yes
Aliphatic TPH (C35 - C44)	mg/kg	S4UL^	<92000	<1	Yes
Aromatic TPH (C5 - C7)	mg/kg	S4UL^	<140	<0.01	Yes
Aromatic TPH (C7 - C8)	mg/kg	S4UL^	<290	<0.01	Yes
Aromatic TPH (C8 - C10)	mg/kg	S4UL^	<83	<0.1	Yes
Aromatic TPH (C10 - C12)	mg/kg	S4UL^	<180	<1	Yes
Aromatic TPH (C12 - C16)	mg/kg	S4UL^	<330	<1	Yes
Aromatic TPH (C16 - C21)	mg/kg	S4UL^	<540	6.4	Yes
Aromatic TPH (C21 - C35)	mg/kg	S4UL^	<1500	21.6	Yes
Aromatic TPH (C35 - C44)	mg/kg	S4UL^	<1500	<1	Yes
Benzene	mg/kg	S4UL^	<0.17	<0.02	Yes
Toluene	mg/kg	S4UL^	<290	<0.2	Yes
Ethylbenzene	mg/kg	S4UL^	<110	<0.04	Yes
O-xylene	mg/kg	S4UL^	<140	<0.1	Yes
M-xylene	mg/kg	S4UL^	<140	<0.2	Yes
P-xylene	mg/kg	S4UL^	<130	<0.2	Yes
MTBE	mg/kg	Sail Guideline Values	<470	<0.05	Yes