


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>1917 Accredited to ISO/IEC 17025:2017</p>	The James Hutton Institute Issue No: 032 Issue date: 02 February 2021	
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Testing performed at the above address only		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
BIOLOGICAL MATERIALS	<u>Chemical Tests</u> Moisture Content and Loss of Material on Ignition Isotopes: ^{13}C , ^{15}N , Total Carbon, Total Nitrogen Qualitative identification / composition	Documented In-House Methods DM007 using Gravimetry AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS) FM001 using Fourier Transform - Infra Red Spectroscopy (FTIR)
BOTANICAL MATERIAL AND ANIMAL FEEDINGSTUFFS	<u>Chemical Tests</u> Total Carbon and Total Nitrogen <u>Isotopic Tests</u> Isotopes: ^{13}C , ^{15}N , Total Carbon and Total Nitrogen	Documented In-House Methods DM001 using Elemental Analyser / Dumas Combustion Documented In-House Methods AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS)



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CHEMICAL PRODUCTS, CHEMICALS: ORGANIC CHEMICALS: INORGANIC	<u>Chemical Tests</u>	Documented In-House Methods
	Qualitative identification / composition	EM001 using Scanning Electron Microscopy (SEM) FM001 using FTIR
	Qualitative identification / characterisation	GM001 and GM003 using XRD EM002 using EDS and SEM
	Quantitative estimation of phase composition	GM004 using X-ray Diffraction (XRD)
	<u>Isotopic Tests</u>	Documented In-House Methods
Isotopes: ¹³ C, ¹⁵ N, Total Carbon and Total Nitrogen	AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS)	
FIBRE PRODUCTS – NATURAL / ARTIFICIAL	<u>Chemical Tests</u>	Documented In-House Methods
	Qualitative identification / composition	EM001 using SEM FM001 using FT-IR EM002 using SEM and Energy Dispersing Spectroscopy (EDS)
PLASTICS AND PRODUCTS	<u>Chemical Tests</u>	Documented In-House Methods
	Qualitative identification / composition	FM001 using FTIR
ROCKS / GEOLOGICAL MATERIALS, SEDIMENTS AND SOILS, CLAY AND CLAY PRODUCTS	<u>Geological Tests</u>	Documented In-House Methods
	Semi-quantitative mineralogical composition	GM005 using XRD
	Qualitative identification / characterisation	GM001 and GM003 using XRD FM001 using FTIR EM001 using SEM EM002 using EDS and SEM
	Qualitative X-ray mapping	EM003 using EDS and SEM
	Quantitative estimation of mineralogical composition	GM002 and GM004 using X-ray Diffraction (XRD)
	Cation Exchange Capacity using Cobalt Hexamine Trichloride	GM006 by colorimetry using a Discrete Analyser



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ROCKS / GEOLOGICAL MATERIALS, SEDIMENTS AND SOILS	<u>Isotopic Tests</u> Isotopes: Nd, Sm and Sr	Documented In-House Methods AM004 and AM005 using Thermal Ionisation Mass Spectrometry (TIMS)
PARTICULATE MATTER, SEDIMENTS AND SOILS, CLAY AND CLAY PRODUCTS	<u>Physical Tests</u> Particle size distribution	Documented In-House Methods DM011 using laser diffraction particle size analyser
SEDIMENTS AND SOILS	<u>Chemical Tests</u> Exchangeable acidity Exchangeable cations: Ca, Mg, Na, K Moisture Content and Loss of Material on Ignition	Documented In-House Methods DM002 using Titration DM004 Extraction Procedure BM014 using ICP-OES DM007 using Gravimetry
	<u>Chemical Tests (cont'd)</u> Nutrients: Ca, Mg, K, P Total Carbon and Total Nitrogen pH Phosphorus	Documented In-House Methods DM005 Extraction Procedure BM014 using ICP-OES DM001 using Elemental Analyser / Dumas Combustion DM006 using Glass Electrode DM003 sodium hydroxide fusion and BM003 using a Discrete Analyser
SEDIMENTS AND SOILS	<u>Isotopic Tests</u> Isotopes: ¹³ C and ¹⁵ N	Documented In-House Methods AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS)



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<p>WATER / WATERS</p> <p>WATERS (and soil extracts)</p> <p>FLEXIBLE SCOPE ENCOMPASSING: ROCKS / GEOLOGICAL MATERIALS, SEDIMENTS, SOILS, ANIMAL TISSUE, LEACHATES, WATERS, CHEMICAL PRODUCTS (Liquids, Solids, Organic, Inorganic) ANIMAL FEEDINGSTUFFS, BOTANICAL MATERIAL, CROPS</p>	<p><u>Chemical Tests</u></p> <p>Alkalinity, ammonium, nitrite phosphate, total oxidisable nitrogen and nitrate (by calculation)</p> <p>Anions: chloride, nitrate and sulphate</p> <p>pH</p> <p><u>Chemical Tests</u></p> <p>Conductivity</p> <p>Total Organic Carbon (TOC) Total Nitrogen (TN)</p> <p><u>Isotopic Tests</u></p> <p>Isotopes: Sr</p> <p><u>Chemical Tests</u></p> <p>Inorganic elements <i>The organisation holds a flexible scope of accreditation for these tests. Please contact the organisation for details of the further individual determinands they can analyse using this method.</i></p>	<p>Documented In-House Methods</p> <p>BM003 using a Discrete Analyser</p> <p>BM002 using Ion Chromatography</p> <p>DM006 using Glass Electrode</p> <p>Documented In-House Methods</p> <p>DM012 by Glass Electrode</p> <p>BM019 using Non-Dispersive Infra-Red Spectroscopy and Chemiluminescence</p> <p>Documented In-House Methods</p> <p>AM005 using Thermal Ionisation Mass Spectrometry (TIMS)</p> <p>Documented In-House Method by acid digestion method DM009, and Inductively Coupled Plasma – Optical Emission Spectroscopy (ICP-OES), Developed and Validated according to Method BM014 (flexible scope)</p> <p>Documented In-House Method by acid digestion method DM009, and Inductively Coupled Plasma – Mass Spectrometry (ICP-MS), Developed and Validated according to Method BM015 (flexible scope)</p>
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