

Environmental Services

Leicestershire and Staffordshire Scientific Services run a comprehensive and **very highly regarded environmental analysis service**. Last year the partnership analysed more than 15,000 environmental samples.

Tests carried out include the analysis of:

1. Airborne and traffic pollutants
2. Surface and groundwater, effluent and seepages
3. Paint, concrete and aggregates,
4. Contaminated land
5. Plants and soil,
6. Heavy Metals
7. Chemical Emergencies
8. Fuels including biofuel
9. Air Pollution
10. Waste materials
11. Landfill Gas
12. Radiation Monitoring
13. Packaging Materials

As well as testing pollution levels in the Midlands, we test pollutants around the M25, at the proposed site of the 2012 Olympics and in Qatar and New Zealand. Clients include land developers, builders and architects, environmental consultancies, specialist renovators and civil engineers.

Please call us if you have any queries.

Leicester 0116 305 5640

Stafford 01785 277 825

1. Airborne and Traffic Pollutants:

Leicestershire and Staffordshire Scientific Services have been preparing, supplying and analysing diffusion tubes for NOX analysis for over 15 years. A nitrogen dioxide passive diffusion tube collects the pollutants during the exposure period. It is then resealed and returned to the laboratory for analysis. The laboratory participates in the Workplace Analysis Scheme for Proficiency (WASP) for nitrogen dioxide tubes and utilises a QA/QC solution supplied by Netcen. The laboratory also participates in a field inter-comparison scheme which is controlled by Netcen and organised by the Health and Safety Laboratory (an Agency of the Health and Safety Executive - HSE).

We offer NOX determination, NOX speciation, SOX analysis and VOC measurement.

2. Surface and Ground Water

Surface and ground waters can be sampled for pollution control, source identification or valuation purposes. Investigations can relate to a specific pollution incident or be for long term monitoring to detect contamination at an early stage.

Leicestershire and Staffordshire Scientific Services offer expertise in sampling, and in chemical and bacteriological analysis of environmental waters. Call us for details.

3. Materials testing – including paint, concrete and aggregates

Leicestershire and Staffordshire Scientific Services offer a testing service for a wide range of products and raw materials to British Standard specifications where applicable. This service is popular among architects, building and civil engineering companies as well as with public sector highways and environmental health departments.

Materials tested include:

- Concrete: composition, chloride, sulphate, BS1881
- Aggregates: BS 812 Pt 117
- Mortar: quality of the mix
- Asphalts – leaching test BSEN 1744
- Paint: pigment, solvent content, lead
- Soil: BS 1377 Part 3, contamination
- Red shales: sulphate content also known as the 'red ash test'
- Blastfurnace slag: BS 1047 sulphate content etc.
- Wood preservatives: Presence of active ingredients
- Metals and alloys: Composition/impurities

Where necessary, physical testing of these materials can be arranged through the Staffordshire County Council Highways Laboratory which is UKAS accredited.

The above list is not exhaustive please call us if you have any queries.

4. Contaminated Land and Soil Analysis

We have much experience of carrying out chemical analysis for the assessment of contaminated or derelict land prior to redevelopment or reclamation. We screen soils for Environmental Impact testing, and take guidance from the Environment Agency where available. We can carry out an ecological risk assessment for contaminants in soils.

Topsoil can be tested to BS3882, and the TPH (total petroleum hydrocarbons) of soils can be tested under the Environment Agency's Hazardous Waste Regulations .

The laboratory will be happy to take part at any stage in the investigative process.

5. Plant and Soil Analysis

Leicestershire and Staffordshire Scientific Services offer analysis of nutrients, phytotoxins, pesticide and herbicide residues in soil and plant samples. Farmers and landscapers need to have soil checked before moving it. Also the service is of value to organisations involved in the management of parks, gardens, playing fields, weed and pest control and where investigation of possible malicious damage to soil or plants is suspected. Certification is also required for

premium grade topsoil, which we can provide.

The British Standard BS3882 for topsoils that are moved or traded contains tests for nutrient levels, metals toxic to plants, contamination, phosphate, nitrogen content and cations.

6. Heavy metals

The laboratory has state of the art technology for testing metals such as lead, mercury, chromium and arsenic, etc.

7. Chemical Emergencies

Scientific staff employed by the laboratory attend chemical emergencies at the request of the Police, Fire and Rescue Services and Environmental Health Inspectors. Chemical spillages, unknown chemicals and fly-tipped materials are identified and advice on safe handling is given.

8. Fuel Analysis : Petroleum Act Analysis and Biofuel Analysis

a. Petroleum Analysis

Leicestershire and Staffordshire Scientific Services provide an analytical and flash point testing service to officers enforcing licences issued under the: Petroleum (Regulation) Acts 1928 and 1936 and the Petroleum (Mixtures) Order 1929.

The enforcement of this legislation is a statutory duty undertaken principally by the Fire and Rescue Service and Trading Standards Services

b. Biofuel Analysis

Biofuels are analysed according to the European Standards EN14103 for fatty acid methyl ester (FAME) and linolenic methyl ester content and to European Standard EN14105: the determination of free total glycerol and mono-, di- and tri- glyceride contents.

9a. Air Pollution

We undertake health and safety monitoring of air in line with the MDHS (Methods for Determination of Hazardous Substances) published by the Health and Safety Executive. This may be indoors (eg. from particular factory processes) or outdoors (eg. From open excavations), for example. The laboratory can identify: particulate matter, airborne dust, fibres and

metals (a large list including lead, cadmium, chromium, nickel and platinum), acidic, alkaline gases and organic vapours.

Fumes from soldering flux in the electrical industry ('colophony') can also be measured to verify that the resin acids in rosin are within the Health and Safety Executive guidelines for the protection of workers.

b. Indoor Air Quality

A service can be provided for Health and Safety professionals to determine Workplace Exposure Limits as defined by the Health and Safety Executive's list EH40 to help protect your workers.

Additionally dust exposure can be tested. This is classified into 'inhalable dust' which is breathed into the airways and deposited in the respiratory tract and can be cleared by mucus and 'respirable dust' which is small enough to penetrate deep into the lungs and therefore can lead to chronic health problems.

Leicestershire and Staffordshire Scientific Services can undertake "Comfort Surveys", usually in office environments, where some factor in the workplace has affected the health of employees and consequently their ability to carry out their duties. This phenomenon is sometimes known as "Sick Building Syndrome" and often there is no obvious reason although there are instances where a single cause has been found.

Investigations are designed to meet the client's specific requirements but usually contain the following key elements: ventilation, humidity and temperature, dust, solvent or other gaseous pollutants.

10a. Waste Disposal

Materials are analysed by the laboratory to determine the extent of contamination so that appropriate procedures for disposal are implemented. Leicestershire and Staffordshire Scientific Services offer testing and advice to local authorities, industrial waste producers, civil engineering companies,



landfill site operators and regulatory bodies.

There are regulations (see below) to impose controls over the disposal of all waste materials'. Leicestershire and Staffordshire Scientific Services carries out testing to identify wastes and to determine the extent of contamination so that appropriate procedures for disposal can be implemented.

Materials may be submitted as a result of fly-tipping by the roadside, or on wasteland, or during farm excavation by builders. Midland Scientific Partnership offers this service to local authorities, industrial waste producers, civil engineering companies, landfill site operators and regulatory bodies.

For more information refer to 'The Collection and Disposal of Waste Regulations 1988' and Environwise – a Government information service about sustainable practices. Call us for further information and sampling advice.

b. Tip Effluent (Leachates)

Leicestershire and Staffordshire Scientific Services analyse 'tip effluent' (leachate) from water courses near to landfill sites, boreholes and treatment lagoons for pollution. The Environment Agency imposes acceptable 'consent conditions' to discharge effluent to water courses. We can analyse effluents prior to requests for consent from the Environment Agency. Leicestershire and Staffordshire Scientific Services can also offer an independent analysis when there is a dispute.

c. Solids

Materials such as industrial filter cakes, foundry sand, sewage sludge, process wastes from metal finishing, food industry waste, slurries, solvents and contaminated soils can be examined for total contaminant concentrations. Pollutants which can leach into water can also be determined. Other miscellaneous materials, varying in toxicity, from cyanide and asbestos to chalk and talc can be tested.

11. Landfill Gas

Landfill gas is produced when domestic refuse or chemical waste decomposes. It consists of methane and carbon dioxide. Leicestershire and Staffordshire Scientific Services has instrumentation for monitoring these gases.

12. Radiation Monitoring

Our environment contains a continuous background of radiation from the ground, air and outer space. Man-made radiation is also associated with nuclear energy. Leicestershire and Staffordshire Scientific Services monitor foods, milk, water, soils and plants for total radiation levels (Gamma radionuclides).

13. Packaging Materials

The packaging regulations relate to the amount of metals such as Cadmium, Chromium, Mercury and Lead in materials which may go to be recycled or for landfill.



Who to contact

If you would like any information or help, in the first instance, contact the Business Development Manager on 0116 305 5644, who will put you in touch with the relevant part of the service.

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working in partnership

