

SELECTED PROJECT LIST PROFILES (1993-2016)

The Projects reviewed in brief are those where Dr Roger S Brown was directly involved either in a hands on monitoring role or else in a technical consultancy aspect.

Stack Emission/Process Related Projects

Name of Client	Scope of Project
UK University	Provided Consultancy and Testing facilities for the implementation of US EPA 202 in a project to evaluate differing measurement devices using a combustion test rig and differentiate between particulate matter, organic and inorganic condensable matter.
Gas Turbine Manufacturer	Developed in conjunction with the client a Patentable method to evaluate the aerosol emissions from the lubrication systems of Gas Turbines and to split the droplet and aerosol fractions to allow a control method to be developed if required.
Gas Turbine Manufacturer	Performed a Series of Witness Trials in Germany on a Gas Compressor Gas Turbine to ensure that the Emissions testing was performed according to international standard and that the engines met the required performance guarantees.
Gas Turbine Manufacturer	Conducted a Series of Witness Trials in France to investigate and provide verification that a PEMS (Predictive Emissions Monitoring System) compared within expected uncertainties with traditional Stack Emission Techniques.
Pharmaceutical Company (Eire)	Testing during commissioning of a thermal oxidiser using multi-point high resolution FT-IR analysis determine mass flows of key species and pollutant generation to determine the efficiency of destruction of Class I, II and III VOCs and the subsequent efficiency of the Scrubber system installed.
Pharmaceutical Company	Provided routine monitoring services for dioxins/heavy metals and combustion gases as part of the sites EPA Legislative responsibilities.
Pharmaceutical Company	Testing of a wet scrubber using a high resolution FT-IR analysis and on-line GC method to determine mass flows of key species and pollutant generation to determine the efficiency of destruction of halogenated VOCs and the subsequent efficiency of the Scrubber system installed.
Pharmaceutical Company (Eire)	Monitoring Report on two Chemical Incinerators and a boiler for permitting by the Irish EPA. The project included DRE trials for indicator VOCs and monitoring using a Semi-Vost sampling methodology.
RDF Energy Company	Directed and conducted monitoring to show particulate stratification within a multi-fuelled power station to assist in the validation or otherwise of in-situ particulate analysis systems.
Alternate Fuel Energy Recovery Facility	Provided emission testing using FT-IR to assist in proving the hydrogen chloride emissions from a bio-mass power station which was developed into a routine monitoring contract for compliance assessment.
Alternate Fuel Energy Recovery Facility	Provided routine monitoring services for dioxins/heavy metals and combustion gases as part of the sites IPC/IPPC responsibilities.
Environment Agency	Chairman of STA consortium preparing the MCerts Specification for Manual Stack Testing in conjunction with the STA & NPL.
RDF Facility	Directed and conducted an ambient air field monitoring study in the Greenwich area around a large municipal Waste to Energy Facility for NO _x , SO ₂ , PM _{10s} , CO, VOCs hydrogen chloride, mercury, Dioxins/Furans, TSP and Heavy Metals.

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Stack Emission/Process Related Projects Cont.

Name of Client	Scope of Project
Energy Recovery Facility	Conducted and Directed Emission monitoring at the Edmonton Waste Incinerator for over 10 years to meet compliance requirements involving a wide range of sampling techniques. These campaigns covered direct testing for particulates, heavy metals, dioxins/furans according to US EPA Methods and more recently CEN BS EN1948 Parts 1-3.
Cement Manufacturer (Eire)	Directed a major baseline survey of Irish Cement plants in Ireland with respect to the EU Hazardous Waste Directive species producing the protocols for testing and ensuring that the site sampling ports and services complied with necessary health & Safety requirements.
Clinical Waste Management Company	Conducted and Directed a two-year contract to monitor LAAPC Controlled Clinical Waste Incinerators. Mediated with the Local Authorities concerned where monitoring issues arose.
Environment Agency (EA)	Directed and managed a £0.6M 3 year project to provide Compliance Check Monitoring of the Mineral Industry Processes throughout the UK on behalf of the EA.
National Steel Manufacturer	Directed a major project to investigate Dioxin/Furan and Heavy Metal Emissions from Sinter Plants throughout the UK. This involved the Health and Safety aspects of working on potentially hazardous sites with high carbon monoxide levels as well as designing compatible work protocols.
UK Tyre Recycling Plant	Directed the evaluation of a major study to correlate data between cross duct and extractive Emissions Monitoring Packages. Carried out an extensive particulate emissions monitoring to validate opacity meter systems, this developed into a three-year repeat contract.
Clinical Waste Management Company	A Dioxin/Furan emission study to evaluate the effect operating conditions have on the emission of Dioxin/Furans e.g. Carbon injection rates, Lime injection rates.
Pharmaceutical Manufacturer	Contract for the emission monitoring of incinerator emissions including Particulates/Dioxins & Furans for three years.
Clinical Waste Management Company	Directed a study into the dioxin/furan emissions from a clinical waste incinerator, to establish if data obtained using low resolution mass spectrometry was valid.
Bio-Science Company	Prepared a report to successfully modify a site licence issued originally based on erroneous and non-representative data.
Alternative Fuel Company	Directed an investigation into the combustion of Auto Recycling Surplus on a Chicken Litter Incinerator.
Chemical Plant	Evaluation of NOx emissions using a dilution stack method to determine the efficiency of a specialised type of scrubber. The emissions measured ranged from 250,000ppm (input) to relatively low levels across the unit. The object of the study was to confirm the validity of the data prior to submission to HMIP and to allow the operator to improve his scrubber efficiency by varying the operating parameters
Roadstone Plants	Directed emissions monitoring campaigns at numerous sites to show compliance with the LAAPC.

SELECTED PROJECT LIST PROFILES Cont.

Stack Emission/Process Related Projects Cont.

Name of Client	Scope of Project
Clinical Incineration Facility	Directed Emission monitoring of an EA controlled Merchant Incinerator on a quarterly basis for over 9 years
County Council Waste Management	Emission testing of two municipal waste incinerators on a quarterly basis for 5 years up to closure of the plant in 1996.
Crematorium Facility	Emissions survey including dioxin monitoring of a crematorium.
Chemical Works	Emission testing of a NOx/metal catalyst plant.
Regional Incinerator	Particulate emissions testing and opacity meter evaluation.
Chemical Plant	NOx monitoring of a Metal dissolution in nitric acid process, and the subsequent optimisation of air flows to increase recovery of nitric acid and reduce emissions.
Pharmaceutical Company	Particulate and NOx monitoring of a large combustion boiler Plant and evaluation of a particulate analyser system.
Metropolitan Waste Authority	Emission survey of Refuse incineration plant.
Bio-Science Centre	Routine Clinical incinerator emission trials for a period of 3 years.
Plastics Manufacturing	Compliance monitoring of dust, isocyanates and VOCs.
Steel Manufacturing Company	A study of dioxin/furan emissions of different types of scrap metals.
Tyre Recycling Plant	Particulate emissions study and calibration of monitoring equipment
Secondary Aluminium Smelting	Emissions monitoring of VOCs, HCl HF for IPC Authorisation monitoring carried out over a 12-month period to establish process variation with emissions profile.
Brass Foundry	Emissions monitoring for local authority licence

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Ambient Air Related Projects

Name of Client	Scope of Project
International Waste Management Co	Directed and conducted an ambient air monitoring study in the Newhaven Area for gaseous, particulate species, trace organic micro-pollutants over a 3 month period and managed a diffusion tube study for nitric oxide, nitrogen dioxide and sulphur dioxide over a year as part of the commissioning requirements for a large Energy from Waste Plant.
International Waste Management Co	Directed and conducted an ambient air monitoring study in the Newport South Wales Area for gaseous, particulate species, trace PM ₁₀ organic micro-pollutants over a 52 week period as part of the requirements for planning and PPC approval.
International Waste Management Co	Directed and conducted an ambient air monitoring study in the Shropshire Area for gaseous, particulate species, trace organic micro-pollutants over a 52 week period as part of the requirements for planning and IPC approval.
International Waste Management Co	Directed and conducted an ambient air monitoring study in the Mansfield Area for gaseous, particulate species, trace organic micro-pollutants over a 32 week period as part of the requirements for planning and IPPC approval.
National Waste Management Co	Directed and conducted an ambient air field monitoring study in the Southampton and Basingstoke areas for gaseous and particulate species as part of EA PPC Requirements.
Gas Turbine Manufacturer	Directed and conducted an ambient air study offshore in Niger Delta, to investigate premature failure of critical components of various Engines
Oil Company (Georgia Russia)	Managed and directed a major air monitoring survey around various pumping stations on a gas pipe line.
National Television Media Company	Investigation of the ingress of fumes into a large office block requiring a walk through survey and ambient and occupational measurements together with meteorological correlation of information (3 year study).
Waste Management Co	18-month investigation of dust precipitation around a landfill site with subsequent correlation of data with meteorological data for compliance with an EA authorisation.
Waste Management Co	Directed and conducted an ambient air field monitoring study in the Portsmouth area for hydrogen chloride, mercury, Dioxins/Furans, TSP and Heavy Metals.
Major House Builder	Ambient air monitoring programme using an automated air monitoring station in Windsor.
Waste Management Co	Conducted a 56 Week long ambient air monitoring study in the Hampshire area for hydrogen chloride, mercury, Dioxins/Furans, TSP and Heavy Metals.
Oil Company (Kazakhstan)	Managed and directed a major air monitoring survey around a gas field as part of an acquisition strategy for a major UK Energy company.

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Miscellaneous Projects

Name of Client	Scope of Project
A UK Innovation Company	Provided emissions consultancy to evaluate the VOC emissions from Commercial Ovens and potentially develop a test method to quickly evaluate the efficiency of catalyst systems used to eliminate or minimise emissions.
An International Food Manufacturing	Provided Consultancy on testing the VOC emissions from a scrubbing facility before and after the abatement device to confirm scrubbing efficiency
International Security Company	Conducted a series of Trials with Diesel and a Covert Marking Agent to investigate the Environmental Emissions with respect to PCDDs/PCDFs/PCBs and PBBs: Provided Project Management of ISO17025 testing
Food Manufacturer	Advised on how to identify and abate fumes arising from a fresh vegetable food wrapping machine
Food Manufacturer	Reviewed and Audited the testing by a third party of a pilot plant for the disposal of Food Related by-products to allow a permit to be applied for by the potential operator
US Pharmaceutical Co (Eire)	Reviewed both QAL2 and Compliance Reports prior to submission to the regulator to ensure regulatory continuity
International Waste Management Co	Conducted soil sampling, analysis and reporting for PCDDs/PCDFs as part of Legislative compliance requirements for a number of EfW Plants in the UK.
Carbon Fibre Manufacturer	Investigated the viability of Instrumental techniques to monitor combustion gases and evaluate the validity of the data obtained from gas filter correlation analysers versus Fourier Transform Infra Red (FT-IR) Analysis Techniques.
International Power Consultancy	Produced a Report into the feasibility and implementation of ISO 13833 for the determination of Biomass being combusted from C-14 in Flue Gases for Renewable Obligation Certificates for submission to the power regulator.
A UK Innovation Company	Directed Research for an SME for 2 years looking to develop a small scale pyrolysis unit for in-situ waste treatment. Research was into the mechanism of destruction, the permitting and the emissions into all media.
UK Instrument Company	MCerts Performance Standard for Continuous Ambient Air Monitoring Consultancy resulting in extension of scope of an existing MCerts Accreditation.
UK Instrument Company	MCerts CEMs Performance Standard and EN 15267 parts 1-3 consultancy and successful certification of a multi component CEMs (AMS) system.
UK Council	Auditing of Ambient Air Monitoring Stations with traceable certification for calibration standards for NO ₂ and NO _x .
UK Certification Body	Consultancy on the extension of MCERTS for a Swedish Instrument Company to include mercury and ammonia. Review of existing documentation and advice on way to proceed to gain certification.

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Miscellaneous Projects Cont.

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US Multi-National	Consultancy on EN 15267-3 and MCERTS for a range of analysers involving the commissioning of test facilities in Germany and liaising with UK Certification Body
International Turbine Manufacturer	Witness Performance Emission Trial in Germany on a DLE Turbine prior to sign off of engine.
UK Water Company	Factory Acceptance Performance tests of Ambient Air Analysers for use in Africa
UK Certification Body	Witness Trials of Instrumentation in the UK and Germany to extend MCERTs on Emission Monitors to new species N ₂ O and NO ₂ , and compliance with EN 15267-3.
Waste Management Co	Conducted soil sampling for PCDDs/PCDFs as part of Legislative compliance requirements in the North of UK for 15 Years
Rail Company	Health and Safety Study into dust arising from Sanding and Filling operations on Tube Train rolling stock.
Waste Management Co	Conducted a sampling analysis campaign with interpretation for Reference Data in Groundwater, Soil and Foliage sample media as part of Site Protection and Monitoring Programme for a PPC Licence for a Hazardous Waste Disposal Site.
National Television Media Co	Investigation of the ingress of fumes into a large office block requiring a walk through survey and ambient and occupational measurements together with meteorological correlation of information (3 year study).
Turbine Manufacturer	Extended and developed and ultra low level Particulate method based on European BS EN 13284-1 and US EPA methods (US EPA 202, 5B, and 5G).
National Measurement Institute	Retained consultant on air quality for 2 years (2002-2004), headed up the Source Emission Group, re-engineered the current mobile laboratory and managed the Volatile Organics Laboratory.
US Pharmaceutical Manufacturer	Conducted soil, effluent, ash and vegetation sampling for PCDDs/PCDFs as part of Legislative compliance requirements
National Measurement Institute	Provide marketing & technical support for environmental stack field testing services.
Environment Agency (EA)	Conducted Instrumentation Audits to determine suitability for purpose to provide compliance data at Rugby Cement Chinnor and Castle Cement Clithero sites.
German Technical Bank	Technical assessment of an integrated gasification combined cycle power plant in Spain.
UK House Builder	Assessment of air pollution for Environmental Statement for a Tyre Recycling Facility.
UK Incinerator Manufacturer	Assessment of Environmental Statement for a small < 1 tonne/hr refuse
Cement Manufacturer	Particulate emissions study and calibration of monitoring equipment.

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Miscellaneous Projects Cont.

Name of Client

Scope of Project

Bio-Sciences Co.	Feasibility Study into the fitting of continuous emissions package to an existing clinical incinerator.
Toxic Waste Disposal Company	Project managed and conducted a nationwide soil and grass survey in Wales and England for PCDDs/PCDFs and Heavy Metals
Toxic Waste Disposal Company	Project managed a routine soil and grass survey around the Southampton area for 4 years.
Multi National Chemical Manufacturer	Ambient air monitoring programme using an automated air monitoring station around a chemical fertiliser plant in Severnside over a six month period.
International Incinerator/Power Plant Contactor	Conducted water analysis of Boiler Flushing Water Prior to Discharge to Sewer for key parameters using a proportional water sampler

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Training Projects

Name of Client	Scope of Project
Brazilian Scientific Institute	Conducted Training for Isokinetic Sampling Techniques and Ambient Air for Particulates and Polychlorinated dibenzo-p-dioxins (PCDDs) and Polychlorinated dibenzofurans (PCDFs) to EU and US EPA Protocols
UK Instrumentation Company	Conducted Training for Isokinetic Sampling Techniques for Particulates and Polychlorinated dibenzo-p-dioxins (PCDDs) and Polychlorinated dibenzofurans (PCDFs) to EU and US EPA Protocols to Two Regional Indian Legislators one in West Bengal and the other in Andhra Pradesh
UK Waste Management Company	Conducted Training for Management of a Diffusion Tube Study around an Energy from Waste Plant.
UK Instrumentation Company	Conducted Training for Isokinetic Sampling Techniques for Isocyanates to US EPA Conditional Method 036 to a Chemical Company.
Pharmaceutical Company	Conducted a training program in the use of US EPA Method 5/23 Stack Sampling Methods, with theoretical & practical sessions at the client site. Followed by subsequent consultancy to oversee monitoring.
National Measurement Institute	Training Courses in US EPA Method 5 and BS6069 Part 4.3 sampling methods covering theory, application and health & safety aspects of stack testing.
Pharmaceutical Company	Conducted a training program in the use of US EPA Method 5/23 Stack Sampling Methods, with theoretical & practical sessions at the client site. Followed by subsequent consultancy to oversee monitoring.
Gas Turbine Manufacturer	Provide Source Testing Training in low-level Particulate methods and consultancy on ambient air and fuel testing.
Carbon Fibre Manufacturer	Conducted a training program in the use of US EPA Method 5 and BS EN13284-1 Stack Sampling Methods, with theoretical & practical sessions at the client site.
UK Instrumentation Company	Conducted Numerous Training Courses for Isokinetic Sampling Techniques for Particulates according to BS EN 13284-1 and BS ISO 9096.
UK Instrumentation Company	Authored Technical Manual for the operation of an Isokinetic sampler designed for sampling to BS ISO 9096