

Environmental Protection & Pollution Control



North West



ENVIRONMENT
AGENCY



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In the North West

The Environment Agency is one of the most powerful environmental regulators in the world, responsible for protecting and improving the environment throughout England and Wales.

The north west region is one of great contrast. It ranges from areas highly praised for their natural beauty, such as the Lake District National Park, the Bowland Fells and the Peak District, to the major centres of industry and population in Merseyside and Greater Manchester. The region covers an area of almost 14,500 square kilometres, it extends from the Scottish border to south Cheshire, and from the Irish Sea to the Pennines.

The variation within the region brings with it an accompanying diversity of environmental problems and issues. Industry is located mainly within the Mersey catchment, but there are some significant industrial sources situated on estuaries and coastal sites in other parts of the region. Intensive agriculture, principally dairy farming, is a feature in areas like the Eden and Weaver valleys, while the west Lancashire plain supports one of the nation's premier market gardening industries.

The north west presents some of the toughest environmental challenges faced anywhere in the country. Pollution Prevention and Control forms a fundamental part of the Agency's environmental protection work.

Integrated Pollution Control

In 1990, a new system of Integrated Pollution Control (IPC) was introduced for the more complex, and potentially

polluting, industrial processes. These processes are now regulated in a manner which takes into account emissions to air, land and water. Under this approach, companies must apply best techniques not entailing excessive cost to prevent or minimise the release of harmful substances to the environment. Where emissions occur to more than one media, air, land or water, then the best practical environmental option must be taken into account.

In the north west, there are approximately 500 industrial processes subject to IPC. These include about a quarter of Britain's large chemical plants and a wide range of other processes such as oil refineries, power stations, waste incinerators, cement production and paper-making. The operators of these processes must comply with conditions set in their IPC authorisations, which include limits and operating standards, and they must monitor their releases and report the results.

The Environment Agency carries out regular site inspections to check compliance with authorisations and commissions independent monitoring of releases to ensure that operators' results are valid. Special monitoring programmes may also be set up in response to particular problems. One example was in Clitheroe, where mobile laboratories and fixed analytical stations have been deployed for short periods to monitor the effects of

Protection Control



Photograph by Stuart Rogers

emissions to air from Castle Cement's Ribblesdale works and from neighbouring factories.

IPC exerts pressure for continuing improvement, both by specifying improvement programmes in authorisations, and by subjecting authorisations to complete review at least once every four years to ensure that plants are kept abreast of new developments in pollution control technology. Examples of such improvements include those leading to significant reductions in the releases to air of sulphur dioxide from power stations and other combustion plants, and of volatile organic compounds from the chemical industry.

Air Pollution

Air pollution from industrial processes not subject to IPC is, in the main, regulated by local authorities rather than the Agency. Local authorities are also responsible for environmental monitoring of airborne pollutants, but Agency staff take the results of this monitoring

into consideration when assessing the environmental impact of releases to air from IPC processes.

Water Pollution

Rivers and the sea have long been used for the disposal of domestic and industrial effluents which have historically had a devastating impact on the environment, particularly in heavily populated and industrialised areas. The Mersey Basin, home to nearly five million people and birthplace of the Industrial Revolution, has been a typical example. It has been labelled the most polluted major river catchment in the UK.

Domestic Effluents

Domestic waste contains organic matter and ammonia which can break down and remove dissolved oxygen from water. A measure of the polluting potential of

an effluent is in terms of Biochemical Oxygen Demand (BOD). The wastewater from most homes in the region is piped to sewage treatment works, operated by North West Water Ltd. (NWW) before being discharged into rivers or the sea.

The north west suffers from a legacy of inadequate sewerage and sewage treatment facilities; many Victorian sewers in the region are now too small to carry the liquid waste created today. The result is that far too much untreated sewage enters the region's rivers from storm overflows which should only operate during heavy rainfall, but actually discharge during dry periods due to the large volumes of waste discharged to sewer.

NWW, in consultation with the Environment Agency, has formulated a development programme costing over £4 billion which is aimed at renewing sewers and improving sewage treatment works throughout the region. This includes a £500 million programme to enable the region's 33 designated bathing waters to comply with EC Bathing Water Directive standards.



Treating effluent discharge



Industrial Effluents

Like domestic effluent, industrial wastes can also exert high BODs and also frequently contain toxic substances which require proper treatment so as not to cause damage to the receiving water. The waste produced by industry varies enormously in composition and can be discharged to rivers, estuaries or the sea directly, or after treatment at a sewage works.

Disused or badly managed mines and tip sites can also pollute waters by leaching contaminants, often over many years.

Agricultural Inputs

In rural areas such as Cheshire, north Lancashire and Cumbria, the main threat to the water environment is usually from farms, particularly dairy farms. Farm waste is potentially lethal to river life.

For example, the liquids created from silage making (the winter feed made from compressed grass) can be 200 times more polluting than raw sewage.

Cattle and pig slurry, dairy washings, milk and pesticides are also highly polluting and pose a serious threat to rivers and streams in the event of spillages or misuse.

River Quality

In the north west there are more stretches of river classified as 'bad' than in any other region. In 1994 there were 3,054 kilometres of river classified as 'good' in the north west; 1,766 kilometres which were 'fair'; 763 kilometres which were 'poor' and 160 kilometres 'bad'.

Good quality rivers can be used for drinking with only simple treatment and are clean enough for fish like salmon and trout to live in.

Fair quality rivers can be used for drinking after more advanced treatment, with coarse fish like perch, roach, bream and chub living in them.

Poor quality rivers are too polluted to support any large fish populations, but plenty of invertebrates such as insect larvae can live in them. Badly polluted rivers have no fish at all, but may contain some invertebrates such as bloodworms.

The Environment Agency plays a key role in helping to secure continuing improvement in pollution prevention as well as by setting limits for discharges. All discharges to the water environment, whether from industry, sewage treatment works or other sources, require the written permission of the Environment Agency in the form of a consent or an IPC authorisation. This is a legal requirement and the permission will contain conditions relating to the quality and quantity of the discharge. Without a permission, discharges to watercourses are illegal.

Regular samples of effluent are taken and analysed at Environment Agency laboratories. Whenever the conditions of a consent are breached, the Agency will investigate and prosecute where appropriate. Monitoring of the water environment is also carried out on a regular basis.

Solid Waste

Solid waste is composed primarily of domestic, industrial/commercial, and construction/demolition wastes, and can range from extremely hazardous materials such as asbestos and PCBs, to relatively inert soils and building materials. Agricultural, mine and quarry waste and sewage sludge are not classified as 'controlled' waste, and are normally excluded from waste management legislation and licensing regulations.

Disposal facilities can range from incinerators through treatment plants to landfill sites. Waste handling is covered by the Duty of Care Waste Carrier Regulations. Special waste is controlled by a system of consignment notes which track its path from 'cradle to grave'. All facilities keeping, treating and disposing of controlled waste are regulated by the Environmental Protection Act and the Waste Management Licensing Regulations.

Monitoring is carried out at licensed sites and includes sampling all environmental media.

Enforcement on licensed sites would normally involve breaches of licence conditions. In the wider community, it includes investigation of reported incidences of fly tipping and other illegal activities related to the handling of waste.

Waste in the North West

The north west of England produces more solid waste than any other region, some 12 million tonnes annually from household, business and industry. The safe handling, treatment and disposal of this waste is essential to the health and well-being of the environment and the community.

Issues of particular relevance in the region include:

Bulk Industrial Waste

The chemical industry which is concentrated in the Mersey Valley produces large volumes of liquid and sludge wastes.

Producers have made significant strides in reducing the volumes of these wastes over the last 10 years, bringing overall volumes down from 27 million tonnes per annum in 1987 to less than 7 million tonnes in 1994. There is, however, considerable scope for further reduction.



Transfer Station - The whole cycle of waste management is covered by regulation - from the time waste is collected to when it is finally disposed of. More sophisticated approaches to waste management (increased recovery, recycling, specialised treatment and disposal facilities for special waste) require an increase in waste handling and generate an increase in waste movements. Transfer Stations are needed to separate and bulk-up waste for onward transmission to recovery, treatment or disposal.



Liner installation at Landfill Site - Landfill sites are no longer simply holes in the ground into which waste material can be tipped. Sites licensed to accept biodegradable waste are now routinely engineered as containment sites using clay or synthetic materials (or a combination of the two) and designed to collect and treat the leachate and landfill gas produced by the decomposition of wastes within the site. North West Waste Regulation Authorities led the country in the development of containment and treatment at landfill sites in their efforts to prevent leachate escaping to contaminate surface or ground water or gas migrating to present a risk of explosion in the vicinity of landfill sites. On many sites, the gas collected is not simply flared-off but used as a fuel to generate electricity and recover some of the energy from the waste.



Special Waste

The concentration of chemical plants in the region also produces large volumes of special waste (the region generates over 100,000 special waste movements per annum). The north west has one of only two special waste incinerators in the UK which provides an essential disposal route for much of this material.

Cross-boundary Movements of Domestic Waste

Almost all the domestic waste generated in the north west is disposed of within the region and, at present, around 95% of it goes to landfill.

In the more densely populated Mersey Valley however, a major problem is developing as replacement sites are becoming increasingly scarce and planning permissions increasingly difficult to obtain.

This problem is compounded by objections from local authorities in Cheshire and Lancashire to the continued importation of large volumes of domestic waste (around 1.5 million tonnes per annum) from Greater Manchester and Merseyside. A fresh look at waste management across this part of the region is clearly required.



Documents showing new legislation

The subject of waste has generated more legislation than almost any other topic over the last five years. Increasing environmental standards and controls and the introduction of the landfill tax are intended to enforce the 'polluter pays' principle and to increase the cost competitiveness of alternative methods of waste management, such as recycling and recovery.

In addition, in line with its drive for deregulation, the government has introduced the concept of exemptions from waste licensing to reduce the burden on small operators and exclude operations which have no impact (or a beneficial impact) on the environment, or encourage recycling and the re-use of materials.

Clinical Waste

Clinical waste is a problem of growing significance in the region. The adoption of higher environmental standards for incinerators has led to the closure of most of the old hospital-based incinerators and new facilities have not been provided to replace them.

A More Sustainable Future

Significant changes including new legislation, the landfill tax, and the National Waste Strategy are expected over the next ten years.

These changes bring sustainability to the fore and set a new agenda for waste regulation:

- working with industry to minimise waste
- encouraging recycling and recovery
- considering alternative approaches to waste management with particular emphasis on composting and energy recovery
- tightening controls on waste management activities to protect the environment
- exploring more sustainable methods of final disposal including a more sustainable approach to landfill
- involving the region in implementing the National Waste Strategy.

Monitoring the Nuclear Industry

The region is also the centre for Britain's nuclear industry, with several nuclear licensed sites covering all aspects of the nuclear fuel cycle - fuel manufacture at British Nuclear Fuels Ltd. (BNFL) Springfields near Preston, fuel enrichment at URENCO Capenhurst on the Wirral, power production at British Energy's Heysham power stations, and fuel reprocessing at BNFL Sellafield on the Cumbrian coast.



The North West plays a significant role in recycling as well as waste disposal. It supports a number of important waste recycling facilities, including the UK's only aluminium can recycling plant, one of only two de-inking plants for recycling newsprint and facilities for recycling glass, solvents and plastics. Waste aluminium cans and paper from all over the UK are brought into the region for recycling.

The disposal of liquid, gaseous and solid wastes from these sites is authorised by the Agency, with limits set to ensure that the radiation exposure of local people is as low as reasonably practicable and within national and international standards.

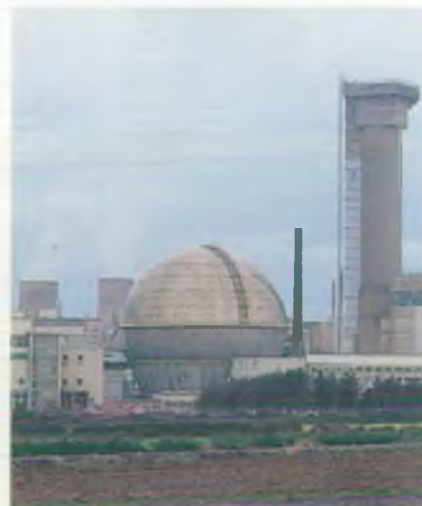
The operators' waste management arrangements are regularly inspected and assessed by Agency staff to ensure compliance with authorisation limits and conditions.

Operators are required to monitor their releases and their impact on the environment and report the results. The Agency commissions independent analysis of some releases, particularly liquid effluent, to ensure that the operators' results are valid.

The Agency also commissions a programme of environmental monitoring around the nuclear sites. This complements the monitoring carried out by the Ministry of Agriculture, Fisheries and Food and the operators, and helps

to confirm that the exposure of local people is within accepted levels.

More extensive environmental surveys are occasionally commissioned to ensure that all possible routes for exposure of local people are identified and assessed. A survey of the Ribble estuary to assess the impact of discharges of radioactive liquid effluents from BNFL Springfields is an example of this.



BNFL Sellafield

Radioactive materials are also used in many establishments other than nuclear sites, such as hospitals, research laboratories and engineering firms.

The Agency is responsible for registering such users, of which there are about 800 in the north west, and authorising disposals of radioactive waste, where appropriate. Again, Agency staff regularly inspect to ensure compliance with registration and authorisation conditions.

The Environment Agency

In all its operations the Agency has powers of enforcement and prosecution in order to safeguard the environment in all its forms. We would prefer to advise and assist. However, we will not hesitate to use our statutory powers to prosecute offenders where necessary.

Agency staff are on call 24 hours a day, all year round, to respond quickly to emergencies and major spillages, and to give on-the-spot expert advice, minimising the worst effects of a pollution incident.

The programme of environmental improvements within the north west is already well established and will continue as the benefits of further planned investments by industry and North West Water Ltd are seen.

The process of planning for environmental improvements and setting targets for their achievement will be subject to public consultation through Local Environment Agency Plans (LEAPs).

The Agency recognises that people have an interest in the environment and, by law, is required to provide environmental information to anyone requesting it.

A large quantity of information is held on Public Registers; particularly in relation to IPC authorisations, consents to discharge to water and waste management licences, together with the results of monitoring carried out by or on behalf of the Agency.

Anyone is entitled to inspect these Registers and should contact their local area office (right) for details.

How to contact the Environment Agency

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For general enquiries please call your local Environment Agency Office. If you are unsure who to contact or which is your local office please call our general enquiry line.

**ENVIRONMENT AGENCY
GENERAL ENQUIRY LINE**

0645 333 111

The 24 hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

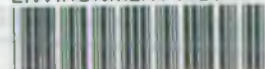
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