

Contaminated Land Strategy 2001



Oldham
Council

Executive summary

This document sets out Oldham MBC's strategy for dealing with any land within its boundaries, which may be affected by ground contamination. The strategy supports the Council's key relevant policy aims of protecting human health and the environment, promoting regeneration, and encouraging the re-use of previously developed land. It will also ensure that the Council fulfils its duty under the new contaminated land regime to inspect its district for land which may be "contaminated land" as defined in section 78A(2) of Part IIA of the Environmental Protection Act 1990.

The Council will develop an integrated approach to managing land contamination issues in the district through the new contaminated land regime, regeneration programmes, the development control system and the building control system.

In particular, the Council will:

- Review all the land within the district to identify potential sources of contamination and the potential impact on human health or the environment
- Use an objective risk scoring system to rank sites in order of priority for detailed inspection
- Carry out initial inspections of sites
- Encourage, wherever possible, the voluntary remediation of any land affected by ground contamination
- Implement procedures to ensure that anyone affected by the Council's actions in relation to land contamination is informed appropriately, has a clear understanding of the reasons for action and is involved in decision making where appropriate.

The Council will ensure that it provides any information required by the Environment Agency to prepare a national report on the state of contaminated land.

To set the strategy in context, this document includes a brief description of the industrial history, current land use, geology and ecology of the Oldham area.

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Introduction

1.1 Strategic policy of Oldham Metropolitan Borough Council

1.1.1 The Council's mission statement is:

“to make Oldham a better place, which local people will be proud to call home.”

In working to achieve this the Council identified a number of objectives in its *Oldham Framework*, eight of which are directly or indirectly related to the contaminated land strategy identified in the *Oldham Corporate Plan*. These are:

- **Putting people first**
 - ❖ To work in partnership to improve the health of the people of the Borough.

- **Creating confident communities**
 - ❖ To improve the Council's approach to consultation by involving local people in decisions affecting their lives.

- **Competing in the wider economy**
 - ❖ To promote social, economic and environmental well being through the regeneration of the Borough whilst recognising the need to protect the natural and built environment.
 - ❖ To tackle social exclusion by promoting regeneration and development that meets the needs of local people.

- **Achieving a quality environment**
 - ❖ To improve the image of the Borough by raising the standards of cleanliness in the natural and built environment thereby developing a sense of civic pride in the community.
 - ❖ To improve levels of public safety creating confidence within local communities.

- ❖ To promote sustainable development objectives that deliver high standards of urban design and seek to protect our heritage of buildings and green spaces, whilst meeting the community and economic needs.
- ❖ To adopt the sustainable principles of Local Agenda 21 to commit the Council, and encourage businesses and the community to take account of the long-term and global consequences of their decisions.

1.1.2 Sustainable development

The government has directed local authorities to re-cycle pre-used sites and buildings rather than use greenfield sites or erect new buildings, (Planning Policy Guidance No.3: Housing). In pursuing its commitment to sustainable development Oldham has included this directive in compiling its new Unitary Development Plan. In enforcing the practice of using brownfield sites in preference to greenfield sites for new development, a planning application on a greenfield site has already been rejected where a comparable brownfield site was available for use.

1.1.3 Land contamination

It is recognised that Oldham has a significant problem with contaminated land due to its past industrial history, particularly associated with the cotton mills, of which there were 320 at the height of the boom. The processes carried out at the mill have left a legacy of residual contamination. In addition to this every mill had at least one water storage reservoir and most of these have been filled with unknown material over the years, probably without removal of the waterproof lining. These mills also required supporting industries such as engineering works and foundries, both of which could have been the cause of local contamination. Oldham has a significant number of landfill sites, the majority of which were in existence prior to 1974 and therefore there are few records of the type of waste they received. There are many coalmines, often shallow workings, in and around the Borough, some of which have incomplete records so the exact locations of mine shafts are unknown or unclear.

A list of industries, which have been proved to cause contamination, can be found in Appendix 3.

1.1.4 Public access to information

Oldham MBC is bound to adhere to the requirements of the Environmental Information Regulations 1992 (SI3240/92) with regard to public access to information on contaminated or potentially contaminated sites in the borough.

Under this legislation authorities must make available, on request any information they hold relating to the environment, in relation to:

- The condition of any water or air, the condition of any flora or fauna, the condition of any soil or the condition of any natural site or other land.
- Any activities or measures, which adversely affect, or designed to protect any of the above.

Requests for information will be acknowledged within three working days and will be dealt with as quickly as possible.

If a request is refused the authority must give a reason for the refusal in writing, stating that the information is confidential and specifying one of the four reasons below:

- That the information can be treated as confidential and its disclosure in response to that request would (apart from a request under the Regulations) contravene any statutory provision or rule of law or would involve a breach of any agreement.
- The information is personal information contained in records held by the authority in relation to an individual who has not given his consent to its disclosure. (Personal information would mean information, which could be used to identify an individual, or would be an expression of opinion about an individual).
- The information held is held by the authority in consequence of having been supplied by a person who:
 1. Was not under, and could not have been put under, any legal obligation to supply it to the authority
 2. Did not supply it in circumstances such that the authority is entitled apart from the Regulations to disclose it
 3. Has not consented to its disclosure
- The disclosure of the information in response to that request would, in the circumstances, increase the likelihood of damage to the environment affecting anything to which this information relates.

For the purposes of the Regulations information is capable of being treated as confidential if:

- It would affect international relations, national defence or public security.
- It would affect matters, which are or have been an issue in any legal proceedings or in any enquiry (including any disciplinary enquiry) or are the subject of any investigations undertaken with a view to any such proceedings or enquiry.
- It would affect the confidentiality of the deliberations of the authority (such as a report to committee).

- It would involve the supply of a document or other record that is uncompleted, (such as a draft report) or of any internal communication of the authority (such as a memo).
- It would affect the confidentiality of matters to which any commercial or industrial confidentiality attaches.

This strategy is available for the general public both as hard copy documents at the Council reception and at other council offices such as Henshaw House and Westend House, and as an electronic document on the council web site. (www.oldham.gov.uk)

1.1.5 Consultation and involvement of community groups and business

Any comments or suggestions put forward by interested parties during the consultation process have been taken into account in the preparation of the final draft.

The strategy was presented to the Department of Transport and the Regions by 1st July 2001. Comments were invited from any interested parties before that date for consideration. The strategy is to be reviewed annually and comments can be submitted for consideration at any time.

1.2 Regulatory context

The Contaminated Land regime was inserted into Part IIA of the Environmental Protection Act 1990 by way of Section 57 of the Environment Act 1995.

The Part IIA regime adopts a *suitable for use* approach to remediation, and applies the *polluter pays* principle to apportioning liability. The person responsible for remediation, *the appropriate person*, will normally be the one who caused or knowingly permitted the contamination. If, after enquiry, such a person cannot be found, then the responsibility will fall to the current owner or occupier of the land in question. If the *appropriate person* cannot be found then the local authority may have to bear the cost of remediation.

1.2.1 Regulatory role of local authorities under Part IIA

The primary regulatory role under Part IIA will be with local authorities, reflecting their existing functions under statutory nuisance procedures, and will complement their planning authority roles.

Oldham MBC's role as a regulatory authority will be:

- To inspect the borough to identify contaminated land;
- To determine whether any particular site meets the statutory definition of contaminated land;
- To establish whether sites should be designated as *special sites* and make appropriate arrangements to transfer the site to the Environment Agency;
- To establish who may be the *appropriate person(s)* responsible for remediation of the land.
- To decide, after consultation, what remediation might be required at each site and ensure such remediation takes place by:
 1. Reaching a voluntary agreement
 2. Serving a remediation notice, where necessary
 3. Carrying out remediation work if no *appropriate persons* can be identified
 4. Apportioning the liability for meeting the costs of remediation among *appropriate persons*
- To record in a public register decisions made on contaminated land, the remediation required, and any subsequent regulatory actions.
- To consult the Environment Agency where there is pollution of controlled waters.

The Council is obliged to set out its approach for inspection as a written strategy, which must be formally adopted and published by 1st July 2001.

1.2.2 Regulatory role of Environment Agency

The Environment Agency has an important regulatory and complementary role under the Part IIA regime, which includes the following duties:

- To provide information and advice to local authorities including site specific guidance;
- To regulate *special sites*;
- To maintain a register of *special sites* remediation;
- To prepare a national report on the state of contaminated land;

1.2.3 Definition of contaminated land under Part IIA

A legal definition of contaminated land can be found in the Environmental Protection Act 1990, Part IIA, Section 78A(2). In this it defines contaminated land as:

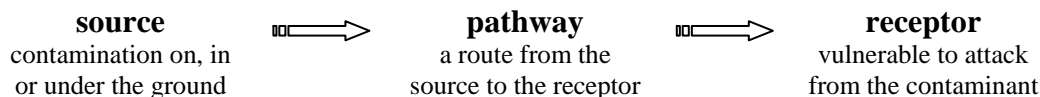
“any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, or under the land, that:

- *significant harm is being caused or there is significant possibility of such harm being caused; or*
- *Pollution of controlled waters is being, or is likely to be caused.”*

The contaminated land definition indicates that unless any contamination present in, on or under the land poses a significant risk to a receptor such as humans or an aquifer, i.e. a “*pollutant linkage*” can be formed, then no immediate action by the Local Authority is necessary.

1.2.4 Principles of pollutant linkages

For a site to be considered statutorily contaminated a *pollution linkage* must be demonstrated to exist, this consists of three parts:



For land to be classified as statutorily contaminated all three stages of the pollution linkage must be present. Thus it is possible for a site to contain a pollutant, but not to be considered statutorily contaminated if there is not a demonstrable pathway to a vulnerable receptor.

1.2.4 Principles of risk assessment

Land can only be designated if at least one pollutant linkage exists. In some cases a pollutant linkage will be obvious, for example, contaminated ground water seeping into a river. In other cases, however the potential to cause harm may be less clear and a risk-based assessment will have to be undertaken to determine the likelihood of significant harm occurring.

Statutory guidance makes it clear that the definition of contaminated land is “*based on the principles of risk assessment*”

Risk can be defined as the combination of:

- The probability, or frequency, of occurrence of a defined hazard; and

- The magnitude of the consequences.

A risk assessment approach is designed to protect sensitive receptors without wasting available resources and finances on remediating sites that do not pose a significant risk.

1.2.5 Requirements for strategic approach

Under Section 78B(1) of Part IIA:

“ Every local authority shall cause its area to be inspected from time to time for the purpose –

- (a) Of identifying contaminated land; and*
- (b) Of enabling the authority to decide whether any such land is land which is required to be designated as a special site.”*

Section B.9 of the statutory guidance states that the approach to inspection should:

- Be rational, ordered and efficient
- Be proportionate to the seriousness of any actual or potential risk
- Seek to ensure that the most serious problems are located first
- Ensure that resources are concentrated on investigating in areas where the authority is most likely to identify contaminated land
- Ensure that the local authority efficiently identifies requirements for the detailed inspection of particular areas of land.

Section B.10 to B.14 of the statutory guidance set out other issues local authorities must consider in developing a strategic approach to inspection.

1.2.7 Apportioning liability: “Appropriate Persons”

Section 78F of Part IIA sets out who is to be considered as an “appropriate person” to bear some or all the responsibility for any action deemed by the enforcing authority to be necessary to bring about the remediation of any contaminated land. The guidance introduces two terms to designate different categories of appropriate person:

“Class A person”: a person who is an appropriate person by virtue of section 78F(2) – that is, because he has caused or knowingly permitted a pollutant to be in, on or under the land;

“Class B person”: a person who is in an appropriate person by virtue of section 78F(4) – that is because he is the owner or occupier of the land in circumstances where no Class A person can be found with respect to a particular remediation action.

The statutory guidance sets out in detail (3, Chapter D) how the enforcing authority should determine who are the appropriate persons. In situations where no Class A or Class B appropriate persons can be found, or those who would otherwise be liable are exempted by one of the relevant statutory provisions, then the enforcing authority itself will have to bear the costs of any remediation.

1.3 Development of the strategy

This strategy has been developed to meet the requirements of the statutory guidance, and with specific reference to “Contaminated Land Inspection Strategies – Technical Advice for Local Authorities” issued by DETR in May 2001 (DETR 2001).

The following approach was adopted in compiling the strategy.

Stage 1: Formation of a steering group, lead by the Contaminated Land Team.

Stage 2: Preparatory consultation with appropriate external bodies, including the Environment Agency.

Stage 3: Preparation of consultation draft for approval by elected members and the steering group.

Stage 4: Publication of draft strategy for public consultation.

Stage 5: Draft strategy presented to committee for final approval.

Stage 6: Publication of the adopted strategy and its presentation to the DETR, via the Environment Agency, by 1st July 2001.

The overall approach will be to establish a comprehensive information and staffing infrastructure to enable the Council to research all the land within its boundaries. A database, incorporating a GIS will be established to record and manipulate the findings of this research.

1.3.1 Internal Consultation (stage 1)

An internal steering group was formed, led by the Contaminated Land Team and consisting of members from the following departments:

- Chief Executive's
- Economic Development
- Education & Leisure
- Environment & Transportation
 - Housing
- Operational Services
- Policy Performance & Regeneration
- Property Services
- Social Services

(For a detailed member list see Appendix 1)

Consultation on contents of the draft document has been with the steering group and through the Environment and Transport committee. This consultation ensured that all those departments, which would be directly affected by Part IIA and the Councils strategy, were agreed on the proposals and committed to implementing them effectively.

1.3.2 External liaison (stage 2)

- **Consultation with the Environment Agency**

There is a strong link between local authorities and the Environment Agency with regard to environmental protection. General consultation during the development of the strategy has been through the meetings of the Manchester Area Pollution Advisory Council (MAPAC) Land and Water Group, which are also attended by a representative of the Environment Agency. Under the new regime the Environment Agency has a duty to provide certain environmental information to local authorities to assist them in carrying out their inspection duties.
- **Consultation with neighbouring local authorities**

Historically, the Greater Manchester authorities have worked together on pollution control and the main forum for this is the Manchester Area Pollution Advisory Council, which comprises of elected representatives from the member authorities. Working groups, made up of mainly officers from the respective Environmental Health departments, carries out work on specific pollution control issues. The Land and Water Group deal with contaminated land issues.

Consultation was also carried out with other national and local bodies. (For a full list see Appendix 2)

The completed strategy document is now available on the council website, www.oldham.gov.uk

1.3.3 Consultation draft for elected members and the steering group (stage 3)

The draft strategy document was presented to the Environment and Transport Committee on 21st March 2001. This remained a working document amended by consultation both internal and external. The completed Contaminated Land Strategy was presented to the Environment and Transport Committee on the 27th June 2001.

1.4 Objectives of the strategy

The primary objectives of this Contaminated Land Strategy are to:

- Meet the Council's statutory duty to prepare and present a strategy to the DETR by the 1st July 2001;
- To detail the strategic approach to be followed for the inspection of land within Oldham MBC and to demonstrate meeting the criteria stated in the statutory guidance in paragraphs B.9 and B.15;
- To make information available to all relevant sections of the Council to enable consideration to be made about land contamination in policy making processes, and bringing sites forward for economic development;
- To make information available to all relevant sections of the Council to enable potential liability issues associated with their own land to be fully assessed;
- To minimise the potential for any unnecessary blight of land;
- To provide information to the Environment Agency for its national report on contaminated land;
- To make available to any stakeholders and interested parties information about the Council's intention with respect to Contaminated Land;
- To provide a mechanism whereby the Strategy is reviewed on a regular basis to allow for any changes in statutory guidance, or for other reasons.

2 Characteristics of the area

2.1.1 Geographical location

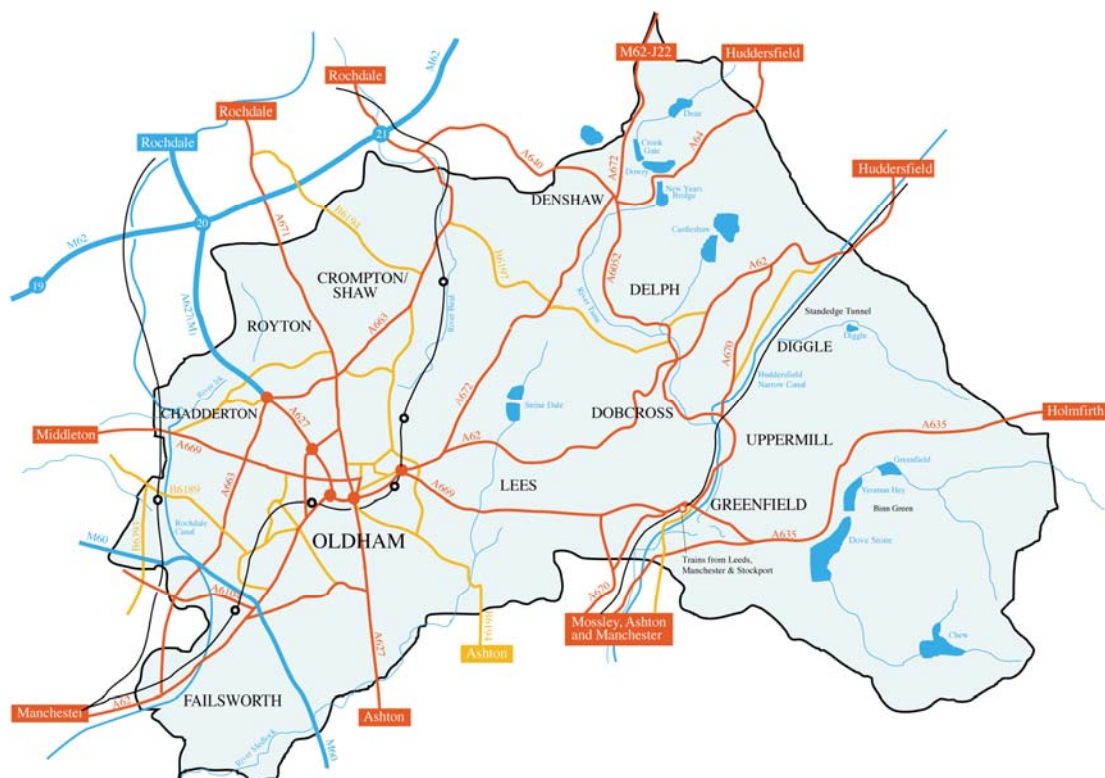
Oldham Metropolitan Borough Council is located in the north of England, within 10 miles northeast of Manchester City.



The newly opened eastern link of the M60 provides easy access to the M60 round Manchester and links westwards to the M5 and M6. The A627 (M) provides a rapid road link to the M62.

There is an international airport at Manchester, and ports at Liverpool in the west and Hull in the east.

Map 1. To show the geographical location of Oldham



Map 2. To show the main features of Oldham MBC

2.1.2 Brief History

- 865 The Danes land in East Anglia, leading to settlement of Aldehulme (Oldham).
1756 Oldham is a major participant in the hat-making industry.
1821 The founding of the world's largest manufacturers of textile machinery, Platt Brothers & Co.
1851 Bradbury's of Wellington Works produced the first sewing machine made in Europe, and later went on to produce motorcycles, mail carts, prams and cycles.
1870 Faulkener produces gas fired frying ranges.
1871 Oldham has more cotton spindles than any other country in the world except America.
1880 John Rouse produces the first mobile chip range.
1897 Ferranti developed new techniques for using electricity. Later they went on to produce items such as domestic radios, televisions, record players and commercial computers
1909 Oldham spins more cotton than France and Germany combined.
1971 The development of the technology for coin operated machinery by Coin Control in King Mill, Royton.
1974 Oldham becomes a Metropolitan Borough.
1978 The birth of the worlds first *in vitro fertilization* baby Louise Brown at Boundary Park Hospital.

2.1.3 Size (hectares)

The administrative area of Oldham MBC covers approximately 11,083 hectares, stretching from the boundary with Manchester City Council in the west, to the western edge of the Pennines and the boundary with Yorkshire in the east.

2.1.4 Population distribution (geographical)

The population in 1998 was 219,200.
90% of these people live in the mainly urban districts of Chadderton, Failsworth, Lees, Oldham, Royton and Shaw; 10% in mainly rural area of Saddleworth.

2.1.5 Details of authority ownership of land

The details of land and property, which the Council owns or leases, will be collated as an overlay on the GIS. This will enable the contaminated land team to take Council liability into account when prioritising the order in which to carry out site investigations.

2.1.6 Current land use characteristics

The current land use in the Borough is as follows:

	<i>Area (Ha)</i>	<i>%</i>
Total area of Oldham MBC	11,083	100
Green belt /agricultural land	6,582	59
Open space / protected open land	900	8
Employment land	768	7
Shopping / commercial land	109	1
Housing land	2,724	25

Source: Policy, Performance and Regeneration, 2000

From the above figures it can be deduced that 90% of the population lives in the urban area (41% of the land area), and the remaining 10% of the population in green belt and agricultural land (59% of the land area).

2.1.7 Protected locations (natural habitats etc.)

In the 1996 UDP there were 36 conservation areas in the Borough, plus 2 ancient monuments. According to English Nature there are also 2 Sites of Special Scientific Interest (SSSIs) within the boundaries of the Borough, and one, the South Pennine Moors, overlaps the northeastern edge of the Borough.

These areas will be collated as one or more overlays on the GIS.

2.1.8 Key property types, e.g. ancient monuments

The details of key property types within the Council's area will be collated as an overlay on the GIS. This will enable the contaminated land team to consider them as a receptor when determining if a site is statutorily contaminated.

2.1.9 Key water resource / protection issues

Oldham Metropolitan Borough contains the sources and upper catchment areas of three rivers: the Tame in Saddleworth in the east, the Medlock in the south and the Irk in the northeast. Two of these contain reservoirs, the vast majority being on the tributaries of the Tame. There are two major canals: The Huddersfield Narrow Canal, which runs through Saddleworth in the east and the Rochdale Canal, which runs along the western edges of the borough. The Huddersfield Canal has recently undergone extensive restoration works, including that of the Standedge Tunnel, the highest (196.6m.), longest (5.20Km.) and deepest (194.5m.) canal tunnel in the country. There is also the much smaller Hollingworth Branch Canal in the south. In addition to these Oldham MBC monitors about 200 private water supplies and the Environment Agency issues licences for about 50 private water abstraction sites in the area.

All surface waters need to be regarded both as potential pathways, and/or receptors. Contaminants can be held in solution or adsorbed onto fine clay particles suspended in the water and transported significant distances, thus providing a pathway to a remote receptor. All the inhabitants of a river including animals, birds, plants, fish, insects and micro-organisms can be adversely affected by contamination and need to be considered as a receptor, as do farm animals which may be using the stream or river as drinking water.

The Environment Agency advises that land use activities which can pose an unacceptable risk of pollution or physical disturbance to the flow of groundwaters, or depletion of their supply yields must be discouraged. In some cases it may however be possible to demonstrate adequate mitigation of such risks. Wherever groundwater is vulnerable to land use activities the site-specific considerations of both the geology and proposed operational controls must be considered at the planning stage to ensure adequate protection. Sites falling within source protection zones may be subject to more stringent requirements and in some cases could be refused planning approval if the extent nature of the proposed activity will have an adverse effect. Careful consideration also needs to be given where vulnerable groundwaters occur in minor or even non-aquifer situations, especially in the vicinity of private water abstraction.

All the surface and ground waters in the Council's area will be recorded on the GIS as separate overlays to be considered as potential pathways and receptors when a site is being investigated as potentially contaminated.

2.1.10 Known information on contamination

The Council has already begun work on the identification of contaminated land in its area. It has a comprehensive list of all the known landfill sites and the sites of existing and demolished mills with their associated reservoirs (lodges). Some of these sites have been the subject of investigation; this has been limited to determination of methane gassing potential, a few having had remediation in the form of gas control.

Other sites, which have been the subject of site investigation reports, mainly limited to development requirements, have been located within the Council's area and noted for future reference.

2.1.11 Current and past industrial history

The town of Oldham played a significant part in the Industrial Revolution, its mills spinning the raw cotton into yarn for the Manchester mills to weave into cloth. At the height of its boom in the 1920s Oldham had 320 mills in operation. The high rainfall caused high humidity, which lubricated the yarn as it was spun, and local coal reserves were used to power the steam engines making it an ideal situation for the spinning mills. However, as there were not enough rivers or streams to serve this number of mills, every one had at least one reservoir for the storage of water (known locally as *lodges*). Most of these have been filled with unknown material over the years, probably without removal of the waterproof lining first. There were a number of other industries operating to serve the mills. Engineering works made and serviced the textile machines; foundries made the iron for the structural skeleton of the buildings; brick works provided bricks for the fabric of the mills; and transport was serviced by extensive railway and canal systems.

Oldham also has a significant number of landfill sites, the majority of which were in existence prior to 1974 and therefore there are few records of the waste they received. There are many coalmines, often shallow workings, in and around the Borough, some of which have incomplete records so that the exact locations of mine shafts are unknown or unclear.

Oldham has examples of many other types of contaminating industries including a tannery, gas works, and vitriol works (sulphuric acid production).

2.1.12 Broad hydrogeological characteristics

- **Major aquifers:**

The major aquifer within the Borough is the Permian-Triassic Sandstone (including the Sherwood Sandstone Group), which underlies a small part of the Borough to the west of Failsworth. It forms part of a much larger outcrop called the Manchester and East Cheshire aquifer unit, which extends from Irlam in the west to Failsworth and Stockport in the east and continues southwards into Macclesfield Borough. This aquifer unit as a whole is heavily exploited for both public and industrial supply.

The sandstones are generally covered with drift deposits, which are dominated by glacial boulder clay. Where present, such low permeability drift will limit aquifer recharge and thereby reduce the vulnerability of the groundwater to pollution. However, where granular and more permeable deposits are present, they should be regarded as being capable of transmitting water to the aquifer beneath.

- **Minor aquifers:**

Minor aquifers within the Borough boundaries are dominated by rocks of Carboniferous age, comprising the Coal Measures and Millstone Grit Series. They underlie the majority of Oldham Borough. The more permeable unconsolidated drift (superficial) deposits also form localised minor aquifers.

Groundwater within the Carboniferous rocks forms an important local resource. In the upland areas, to the east of the Borough, which may be remote from mains water, this may be the only source of water supply. The absence of superficial drift deposits in these upland areas renders the groundwater highly vulnerable to pollution from surface activities. The groundwater supports numerous licensed water abstractions including a major public supply, with designated Source Protection Zones around it, just outside the Borough boundary at Milnrow (Butterworth Hall). This particular abstraction exploits groundwater in the Coal Measures, which is abstracted from a former mineshaft. It should be noted that Inner Protection Zones (Zone 1) have been placed around all the various shafts, which may provide potential pathways for rapid infiltration of water into the mine system. Many of these shafts are located within Oldham Borough. Groundwater in the Carboniferous rocks also feeds ponds and watercourses, although some streams may lose water to the aquifer and thereby provide a component of aquifer recharge.

The Coal Measures outcrop under most of the Borough beneath Oldham, Shaw, Royton, and Chadderton whilst rocks of the Millstone Grit Series occur in the east. The majority of the groundwater flow in the solid rock will be concentrated as fissure flow within the sandstone units of the Coal Measures, and the gritstone and the flag units of the Millstone Grit. These units can be considered as individual minor aquifers separated by shale/mudstone units. However, a major influence on groundwater movement is likely to be the presence of old coal workings within the Coal Measures of the Borough, as highlighted above. These can give rise to a complex and rapid groundwater flow. Groundwater levels may be permanently modified by mine

workings and in some areas the levels in the mines may not have fully recovered since working ceased. In general, groundwater levels in the sandstone and flag units will be variable and may reach ground level, giving rise to springs.

Drift cover over these strata is absent in a number of extensive areas including those beneath and to the east of Oldham. Where present, much of the drift is glacial boulder clay although peat occurs particularly on the high ground to the east. Boulder Clay is found in the west beneath Failsworth and much of Oldham, and in the river valleys of the Tame and its tributaries, and its presence will limit aquifer recharge and vulnerability.

Other more permeable deposits include glacial sand and gravel beneath and to the north west of Chadderton, Royton and Shaw, and alluvium along watercourses. These deposits often occur as complex or mixed drift sequences and can be classified as minor aquifers in their own right and have some potential for local exploitation. The presence of such deposits may reduce the vulnerability of the underlying aquifer, but they should also be considered as capable of transmitting water to it.

Groundwater levels in the drift deposits will generally be close to ground level with flow ultimately towards surface waters. Groundwater quality in the drift deposits is variable and may be highly susceptible to surface pollution.

- **Non-aquifers:**

The only solid rock non-aquifer in the Borough is the Manchester Marl unit which is a stratum separating the Sherwood Sandstone Group above from the Collyhurst Sandstone below. The outcrop of this unit is very limited, confined to a few locations in the south west of the Borough, to the west of Failsworth. Where glacial boulder clays are thickly developed and laterally extensive they may be considered as nonaquifers.

2.1.13 Specific local features (e.g. areas of naturally metal enriched soils)

A comprehensive geological report was commissioned from the Greater Manchester Geological Unit, which provides this information. This can be found as Appendix 5.

2.1.14 Redevelopment history and controls

In Planning Policy Guidance No.3 the Government has directed local authorities to recycle as much of its pre-used sites and buildings as possible. In PPG3 it suggests that local authorities should use their Unitary Development Plan to address this. In preparing the draft UDP for Oldham has begun drawing up a list of such sites, which could be available for redevelopment.

In PPG3 the Government stated a requirement that 60% of new housing should be built on pre-used sites. This yearly percent is to be achieved by 2008. In the Draft Regional Planning Guidance for the North West being prepared by the North West Regional Assembly it is proposed that at least 65% of new housing to be built on pre-used sites.

This requirement to use sites, which are potentially contaminated means that the methods for detecting and remediating these sites needs to be efficiently and competently carried out.

3 The local authority strategy

Land contamination has a significant impact on a local Council's economy and its environment. The new legislation requires local authorities to:

- Investigate their areas for contaminated land;
- Determine if any of these sites cause a significant risk;
- Oversee a programme of remediation.

In its approach to designing the strategy the Council will aim to be:

- Open to scrutiny at all stages of the development;
- Accountable for its actions.

3.1 Aims of the strategy

3.1.1 Authority priorities relating to the potential problem (e.g. those affected, particular risks)

The Council aims to:

- Ensure compliance with the new contaminated land legislation inserted into Part IIA of the Environmental Protection Act 1990 by way of Section 57 of the Environment Act 1995;
- Fulfil its objectives under its commitment to the sustainable principles of Local Agenda 21;
- It will aim to protect sites housing particularly vulnerable groups such as schools, hospitals, and places of residence;
- Remediate any sites of immediate hazard as a priority, and as quickly as possible.

3.1.2 Authority priorities relating to work the authority has already undertaken

A certain amount of work has begun associated with several gassing landfill sites. This has involved the installation of gas protection and monitoring schemes.

The Council proposes to continue working within the following areas:

- The sites of former cotton mills already identified will have risk assessments carried out on them to determine if they present a significant risk;
- The sites of the 400+ landfill sites and sites of unknown fill will have a risk assessment carried out on them to determine if they present a significant risk;
- Continue monitoring the seven gas remediation schemes already in place;

3.1.3 Authority targets

The authority intends to investigate the possible presence of risks emanating from any existing or former landholdings of the Council. This work will be carried out during the first 5 years of the strategy.

3.1.4 Other relevant aims and targets

The Council will:

- Encourage site owners to remediate voluntarily rather than issue remediation notices, however it will not refrain from issuing one if necessary;
- Be available to support and advise developers and other site owners in their remediation work.

3.2 Objectives

3.2.1 Evaluation of contamination

Carrying out a desktop study will assess the initial evaluation. This work is carried out using historical maps with additional information from the local studies library. Once the industrial history has been researched the contaminants likely to be on site can be deduced using the Industry Profiles. (See Appendix 3)

3.2.2 Identification of possible receptors

Once a plot of land has been identified as potentially contaminated then a potential receptor will be looked for together with a possible link between the two. If neither a receptor nor a link can be seen then no further action need be taken regarding the site, except to record all the information gathered for future use. If a link to a receptor can be demonstrated then the site will be deemed statutorily contaminated. At this stage the Council will need to consider whether the site is a *special site*. The types of uses, which would make a site a *special site*, can be found in Appendix 7. If the Council believes it to be a *special site* the responsibility for it can be passed to the Environment Agency.

It is intended that possible receptors, for example housing, allotments and rivers, will be collated as overlays on the GIS. The interrogation of this information will enable the identification of possible receptors to be carried out quickly and accurately.

3.2.3 Risk assessment

Once it has been shown that a contaminant may be present on a particular site, and that there is a demonstrable pathway to a vulnerable receptor, then intrusive site investigation will take place to establish which, if any, contaminants exist and in what quantities. This information may already exist in a site investigation report already in the Council's possession, having been previously commissioned by the Council or presented to the Council by third parties, developers etc. If this information is not available a site investigation report will have to be commissioned by the party proposing the remediation.

All information on contaminants will initially be evaluated against current governmental generic guidelines or by use of prescribed risk assessment models.

A new set of generic guidelines and a risk assessment model, the Contaminated

Land Exposure Assessment or CLEA model have recently been published by DEFRA which have now replaced the generic guidelines previously issued by the Interdepartmental Committee on Redevelopment of Contaminated Land (ICRCL).

The Council will also adopt the principles and practices put forward by DETR and Environment Agency sponsored technical guidance, and other good practice publications. Relevant publications include CLR 1,2, 4 & 11, BS 10175:2001, CIRIA Special Publication 103. (For details see Appendix 8)

3.2.4 Collation and review of evidence

The information collected from desktop studies, site investigations and site reports will be collected and stored on the GIS as a series of overlays depicting known or possible sources. These can then be compared with overlays depicting pathways and receptors. From these comparisons it will be possible to assess which sites are statutorily contaminated, and in need of remediation.

If a significant risk is shown to exist then an appropriate remediation strategy will be drawn up and executed. This will be site specific and will not necessarily follow any set pattern. The level of risk will determine the priority the site receives with the overall remediation plan for the Borough.

A site whose current use is not causing harm can be left unremediated. If the proposed use changes, or new information is obtained about the site then the site will have to be reviewed and its status changed if necessary.

3.2.5 Liaison arrangements

The Environment Agency will be consulted during the investigations. It is a statutory consultee, and it also has sole responsibilities for controlled waters and *special sites*. Liaison with Local Authorities and statutory bodies of adjacent areas may also be necessary if a contaminating site in Oldham's area lies across a border or is polluting a neighbour's site.

The Contaminated Land Team will seek out site information the other sections and departments in the Council and collate it on the GIS.

It is intended that the Contaminated Land Team will make the findings of its research available to the rest of the Council, probably as a read only extension to its GIS. As this will include sites that are still under investigation it will include information not published on the Contaminated Land Register. This information will also be available to any other interested parties such as house owners, solicitors, and developers on request.

3.2.6 Assessment of council owned land

It is intended that all the land within the Authority's ownership will be assessed for the presence of contamination. If this is found to be the case then appropriate remediation will be carried out. This work will need to be timetabled along with other remediation work according to the degree of risk. Council owned sites would not necessarily take precedence over other contaminated sites requiring remediation.

3.2.7 Prioritisation

Using a systematic risk assessment methodology developed by MAPAC, sites identified as being potentially contaminated through the identification procedure, will be arranged into a prioritised order. The procedure is designed to score sites with a greater potential for contamination in proximity to the most sensitive receptor(s) where a pathway may exist, higher. In this way sites most likely to cause harm will be dealt with first.

The methodology is biased so sites that may have implications for human health are scored higher. Other receptors are prioritised in the following order (highest priority first):

- Controlled waters, property in the form of crops and livestock
- Ecological systems
- Property in the form of buildings (where no risk to human health exists)

As potentially contaminated sites are arranged into a prioritised order, the next stage of investigation will be initiated.

Where additional information becomes available that would change the prioritisation of a site, the site will be reprioritised if necessary. The aim will be to deal with the sites in order of prioritisation and justification will be needed to move a site up the order of priority based upon risk assessment.

4 Local authority priority actions and timescales

4.1 Priorities

The priorities are:

- Dealing with urgent sites;
- Purchasing a suitable Geographical Information System;
- Assessing the sites known to be potentially contaminated;
- Desktop studies on the rest of the land within the Council's area.

4.1.1 Dealing with urgent sites

Priority of remediation will be given to sites, which present the greatest risk. If there are two sites of equal urgency then priority will be given to Council owned land.

4.1.2 Assessing potentially contaminated sites

Those potentially contaminated sites will need to be assessed to determine if a risk, if any, exists. If a risk is found then each site will be prioritised accordingly.

4.1.3 Desktop studies

Once all the sites addressed above have been assessed and remediation begun, then attention can be turned to the rest of the Borough. Eventually all the land within the Council's area will need desktop studies to be carried out. Once this has been done then invasive site investigation can begin on those sites.

4.2 Timescales

The timescales for investigation and remediation will be dependant upon the staff resource available, the potential number of statutorily contaminated sites resulting from the initial desk top survey and the potential for sites to be redeveloped in the foreseeable future. It is envisaged that the time needed to survey the whole area and begin the necessary remediation, given the current staffing levels, will take between 5-10 years.

Given the local authorities own extensive landholdings and previous land ownership it is intended that these will be dealt with within the first five years of the strategy.

5 Procedures

5.1 Internal management arrangements for inspection and identification

This Authority intends that the responsibility for the inspection and identification of sites would fall to the Contaminated Land Team within the Environmental Health Group of the Environment and Transportation Department. They will be responsible for managing and carrying out the programme of research needed to identify potentially contaminated sites and assessing the need for further research and possible remediation.

The Contaminated Land Team can be contacted at:

Westend House
West End Street
Oldham
OL9 6DW
Tel: 0161 911 3445 / 4465
Fax: 0161 911 3444
email: env.health@oldham.gov.uk

The work of other departments could by their nature bring them into contact with information, which would be of use in the identification of potentially contaminated sites. It is therefore important that a strong link exists between the Contaminated Land Team and other departments to ensure exchange of information.

Other internal department and sections likely to receive this type of information are:

- Architecture and Building Control
- Corporate Services and Treasurers (Property)
- Economic Development
- Education and Leisure (Buildings and Development)
- Engineering
- Legal and Democratic Services
- Housing Association Development
- Planning Section
- Operational Services
- Policy, Performance and Regeneration
- Social Services (Buildings)

Consultation has already been carried out with our statutory consultees, (see Appendix 2), and a copy of the finished strategy will be sent to them in due course. Links have also been established with other external bodies (see Appendix 2) and it is expected that these will develop into close working relationships involving, at least, the exchange of information.

5.2 Local authority interest

5.2.1 Inspecting and assessing local authority owned / leased land

The Authority owns a considerable amount of land and premises. Land, which the Authority has an interest in will be examined for possible contamination and pollution linkages. If appropriate, remediation programmes will be devised and actioned.

Once a plot of land has been shown to require remediation then the Council will need to locate the *appropriate person*. This, in the first instance, will be the person who was originally responsible for the contamination. In some circumstances, on sites with successive contaminating processes then there may be more than one *appropriate person*. If the original polluter/s no longer exist, then the present owner of the site is deemed to be the *appropriate person*. In the end, if no appropriate person can be found, and urgent remediation work needs to be done then the Council has the power to step in and take control of the remediation itself.

If the *appropriate person* can be located then the Council will be able to request them to fund the remediation even if the Council currently owns the site.

5.2.2 Identifying, inspecting and assessing former Local Authority landholdings and other areas where the authority may be the *appropriate person*.

The Council will need to conduct research into land, which it has sold in the past. It will need to decide if the sites were contaminated, and if they are whether they caused any of the pollution on site. If they did cause any pollution then that will make the Council the *appropriate person*, and as such the Council will be liable for funding the cost of remediation.

5.3 Information collection

5.3.1 Actual harm or pollution of controlled waters

This information would be collated from:

- Site investigation reports already held on file within the Council;
- Site investigation reports carried out or commissioned by the Contaminated Land Team;
- Liaison arrangements with the Environment Agency;
- Site investigation reports submitted by developers as part fulfilling various planning conditions.

5.3.2 Receptors

The information on receptors will be identified by the contaminated land team and collated on the GIS. These would typically be collated under headings such as:

- Schools;
- Houses;
- Gardens;
- Water courses;
- Allotments;
- Aquifers;
- Playing fields.

(See Appendix 6)

5.3.3 The possible presence of contaminants

Information on the possible presence of contaminants would be investigated by the use of desk- top studies. This involves researching the industrial history of land using an assortment of sources such as:

- Ordnance Survey historical maps going back to the 1800s;
- Kelly's Trade Directories;
- Conveyancing documents held by the Council;
- Rent documents from the estates section.

Once the industrial history has been researched then the possible contaminants on site can be predicted. The Department of the Environment have produced a series of

documents called Industry Profiles, which list the major trades and industries which have existed in this country and all the contaminants associated with them, (see Appendix 3). Once a contaminant is suspected and a possible receptor identified then invasive site investigation will be undertaken to determine if the contaminant is present on site and to what degree of contamination.

5.3.4 Other information

Information about the geomorphology and geology of the soil and underlying rocks will also be held as layers on the GIS. This information will be useful in determining how the contamination may move or react on site. This will be important in assessing whether a pollutant present on site will actually cause harm or remain safely inert. A mobile contaminant may not remain on site, but may move causing contamination on a neighbouring site or to the groundwater.

5.4 Requests for information and complaints

Occasionally, the Council may receive a complaint or information regarding contaminated land. Under the previous regulatory system, contaminated land could be termed a statutory nuisance, warranting action under the provisions of the Environmental Protection Act 1990 Part III. These provisions have now been revoked, and instances of nuisance from or on land would need to be checked against the new criteria for determination of contaminated land, namely that significant harm is occurring, or is a significant possibility, or that pollution of controlled waters is occurring, or likely to occur.

5.4.1 Complaints and Service Requests

Under normal arrangements, Contaminated Land Officers will respond to a complaint or enquiry as quickly as possible and in any case, within

- 2 working days
- 10 working days if in writing

Complaints are logged on the Environmental Services main database, FLARE, with a reference number.

5.4.2 Maintaining confidentiality

All complainants will be asked to supply their names and addresses, and details of the site being complained about. The identities of complainant's will, as far as is practicable, remain confidential.

5.4.3 Dealing with anonymously provided information

Anonymous complaints will be dealt with on their merits. The Council will use its discretion when evaluating such information.

5.5 Information evaluation

5.5.1 Evaluating information on actual harm or pollution

Once a pollutant has been shown to exist on site it then needs to be assessed to determine whether it is causing actual harm or pollution. To do this the *source – pathway – receptor* model needs to be considered. (See Section 1.2.4)

5.5.2 Contaminant sources vs. receptors

There are two possible ways of searching for and assessing information about statutory pollution.

- i. When a source or potential source has been found then the *source – pathway – receptor* model can be considered to assess if a pathway exists linking the source to a receptor.
- ii. Alternatively vulnerable receptors such as schools, playing fields, or protected environmental habitats can be considered, and a pathway from a possible source looked for.

It is proposed that the Council will adopt both methods of working for two different sets of conditions:

- i. Will be used with the extensive list of possible sources, which the Council already holds on file.

- ii. Will be used when beginning research into the uninvestigated areas of the Borough.

5.5.3 Planning and Development Control

The planning applications process is expected to be a key mechanism by which potentially contaminated land is dealt with in the Borough. Currently, conditions and/or advisory notes are attached to planning applications in relation to:

- Development generally, identifying the need to contact the Planning Authority if potential contamination is identified.
- Where contamination is either thought or known to exist on or in the vicinity of a site as a result of information held by the Authority.
- Where a site is on or within 250m of a former/current landfill site.

Further procedures will be developed in order to help ensure that any necessary planning conditions are implemented and to prevent situations arising where contaminated land (within the statutory definition) is not created due to the introduction of a more sensitive receptor.

Whilst historically, applications for planning and areas of land designated for development may have been decided with the best information available and within the appropriate guidance and regulations of that time. The onus has always been on developers to investigate sites properly before proceeding with a development. There could be however situations where investigation and remediation have not been undertaken to current standards and guidelines afforded under PartIIA.

Such sites will be included in those to be reviewed as part of the investigation procedure, to ascertain whether the issue of contaminated land has been appropriately addressed.

5.5.4 Identify any key geological areas

A comprehensive geological report covering the Borough has been commissioned from Greater Manchester Geological Unit at the University of Manchester, (see Appendix 5).

5.5.5 Identify any specific potential pollutant linkage

- **Rivers**

Rivers can act as linkages and have the potential to carry pollutants over great distances to vulnerable receptors. They also need to be regarded as receptors in their own right due to the ecological systems that they carry.

If a site is found to be contaminating, or has the potential to contaminate, a river or another surface body of water the Environment Agency will need to be consulted.

- **Aquifers**

As aquifers may transport some pollutants they can be regarded as a linkages as well as being vulnerable receptors. Most of the Borough overlies a minor aquifer, with a small part of the Borough to the west of Failsworth overlying a major aquifer.

If a site is found to be contaminating, or has the potential to contaminate, an aquifer the Environment Agency will need to be informed.

- **Mines**

It is possible that old underground mine working may provide a pollutant linkage as well as being a possible source of contamination. Mines information has been requested from the Greater Manchester Geological Unit for future use on the GIS.

- **Plants**

Plants can provide a linkage from a pollutant to a human consumer. The siting and condition of allotments in the Borough will therefore need to be investigated.

5.5.6 Identify any particular individual sites

Sites will be assessed to determine if they are linked to a vulnerable receptor and therefore likely to require remediation. Any sites that are proven to be contaminated will be remediated.

5.5.7 Identify any gaps in information and how these are to be remedied

It is anticipated that work will continue on two levels:

- The sites already known about, i.e. existing land fill sites, old cotton mills and their accompanying lodges (water storage ponds), will be investigated to detect the presence of contaminants if there is a receptor present. If there is a receptor present and a linkage can be demonstrated then intensive site investigations will be undertaken. If there is no receptor or linkage it is probable that the site can remain uninvestigated until there is a change in its use or the surrounding area.
- Desktop studies will be carried out on sites close to vulnerable receptors. Further investigations will continue if the sites are shown to be potentially contaminated.

Ultimately the whole of the Borough will be investigated, and it is anticipated that this will take between 5 and 10 years to complete.

6 General liaison and communication strategies

6.1.1 Other statutory bodies

Communication between this Authority and the Environment Agency was established on the formation of the latter in 1990 both parties having responsibilities for enforcement of the legislation within the Environmental Protection Act 1990 and this authority has a close working relationship with the Environment Agency Offices based at Warrington. Links have already been established between this Authority and other statutory bodies as part of the initial consultation process. (See Appendix 2)

Liaising with other statutory bodies was part of the original consultation process. These bodies will be consultees throughout the process and in many cases will be valuable contacts in the implementation phase of the strategy.

6.1.2 Owners, occupiers and other interested parties

Once a site has been identified as a statutorily contaminated site, and is not posing an immediate hazard, the *appropriate person* is informed. From that date a period of negotiation begins between them and the Local Council during which time no remediation notice may be served. This period is statutorily laid down as being at least three months long. After that time the site will be included in the register, together with the *appropriate person's* response, if any.

In the first instance it is hoped that remediation can be carried out by mutual agreement. The legislation allows the local authority to require owners/occupiers to come up with an appropriate remediation programme. During this time the land will not be placed on the contaminated land register. After the notice has expired the land will be noted on the register, together with an outline of the intended remediation. The progress of the remediation will be monitored by the Contaminated Land Team to ensure that the work is carried out to the Council's satisfaction. If communications break down the authority still has the option of serving a remediation notice.

It is intended that third parties, (i.e. site lessees, or owners / users of potential receptor sites) and any other *appropriate person* will be kept informed at all times.

6.1.3 The wider community

The Contaminated Land Register will be available for general scrutiny at the Council offices and on its website.

7 Programme for inspection

7.1 General considerations

7.1.1 Local issues

During its past industrial history the Borough contained a large number of mills and lodges, about 300 mills at the height of production, and their supporting industries. Most of these have now gone, but leave a legacy of potential contamination.

The Borough now contains large areas of derelict land, which need to be assessed to determine the level of potential contamination.

The area contains a mixture of urban to agricultural land uses, the ratio of urban land to agricultural land being 40:60, which gives rise to the possibility of differing types of activities, which may cause potential contamination of the land.

The area also contains 201 private water supplies.

7.1.2 Criteria for selecting areas and individual sites

A method to prioritise the order in which the sites should be remediated, taking into account a number of scientific and social factors, has been developed by Salford City Council. It is proposed that this Authority, together with the other authorities within the Greater Manchester Area.

7.1.3 Site Inspections

It is intended that the Authority will carry out site inspections, including invasive ground investigations, as quickly as practicable within the constraints of budget and staffing levels.

7.1.4 Timetable

Once the sites have been identified as potentially contaminated then a more detailed programme of investigation will have to be carried out to determine if the site is statutorily contaminated.

It is intended that the first assessment of large or potentially most hazardous sites will be investigated during the first 5 years of the programme. The rest of the Borough will then be investigated during the following 5-10 years.

7.2 Arrangements for carrying out detailed inspection

7.2.1 Ensuring compliance with statutory guidance

The arrangements for carrying out a detailed inspection will be carried out in accordance with the statutory guidance, paragraphs B19 – 25 from the Environmental Protection Act 1990.

7.2.2 Site specific liaison

Once the Local Authority has identified land as contaminated it is obliged to give notice in writing of that fact to the following:

- The Environment Agency;
- English Nature, in the case of an Ecological System Effect;
- The owner of the land;
- Any person who appears to the authority to be in occupation of the whole or any part of the land;
- Each person who appears to the authority to be an *appropriate person*.

7.2.3 Methods of inspection

- **Collection of documentary information**

All documentary information available about a site will be collated and studied. This information can be in the form of desktop studies, previous site investigation reports or geological studies. With this information a preliminary assessment can be made of what the site might be contaminated with, if there are any vulnerable receptors and whether there are any pathways or linkages between. If there is no receptor then the site need not be investigated further. The information that it is a potentially contaminated site will need to be recorded should the use of the site change in the future.

- **Visit to the area and visual inspection**

If it is suspected that the site is contaminated then a site visit will be required to collect information about the physical condition of the site, its present use and its situation in relation to neighbouring plots.

- **Intrusive sampling**

Following the site visit a programme for intrusive sampling will be actioned.

7.2.4 Health and safety procedures

When taking soil or water samples and on site visits the appropriate health and safety procedures will be observed. All personnel involved will have attended the relevant health and safety courses before being allowed to carry out any of the above procedures, and will be supplied with appropriate protective clothing.

7.2.5 Potential *special sites*

During its investigations into contaminated land in its area it is the responsibility of the Local Authority to identify potential *special sites* in accordance with the guidelines laid down in the guidance (DETR Circular 02/2000). The types of sites, which need to be classified as special sites, can be found in Appendix 7.

Once a site has been identified as contaminated land it may also need to be classified as a *special site*. If this is the case the Local Authority will then refer it to the Environment Agency for them to oversee the remediation. In the event of the two bodies failing to agree on the designation of a certain site then the matter will be referred to the Secretary of State for a decision.

In practice it is assumed that it will become a joint exercise between the Authority and the Environment Agency, as each will have access to different types of information. Local Authorities will have the benefit of local knowledge whilst the Environment Agency will have more information relating to controlled waters.

7.2.6 Making arrangements for external appointments of consultants etc.

If the site is being remediated by the Council it may be necessary for the Council to employ consultants, in which case the Council's existing procedures will be adopted.

It is expected that developers as part of redevelopment schemes will carry out most of the remediation. In these circumstances the developers will therefore be expected to employ consultants.

7.2.7 "Risk communication" strategy

The general public will be consulted and informed as necessary by the Contaminated Land Team through letters to households and public meetings in accordance with the Council's Consultation Strategy.

7.2.7 Frequency of inspection

It is expected that inspections will be carried out once per site until the whole Borough has been categorised. If new information is obtained or the site use is changed then there is a provision within the strategy for the site to be reassessed.

Once the whole Borough has had an initial inspection then it will be possible to draw up a programme of re-inspection.

7.2.8 Format of information resulting from inspection

The information collected during the various stages of inspection will be in a variety of formats for example reports, raw data, maps and photographs. All this information will be transferred to a GIS. The system, which will be used, has to be able to store all this type and quantity of information, and will also be able to carry out spatial interrogations.

8 Review mechanisms

8.1.1 Review of assumption and information (triggers for inspection)

The initial basis by which sites are categorised as potentially contaminated will be robust and will not be upgraded unless there are any changes in the information or uses of the site. If new information is received about the site or a change of use is proposed then the categorisation of the site will be reviewed. If the category of the site is changed then the site will be reassessed using the site prioritisation method quoted above (see Section 3.2.7).

8.1.2 Review of Strategy Document (timetable and triggers for early review)

The strategy document is to be reviewed on a 12 monthly basis.

8.1.3 Audit of inspection procedures

All procedures will be designed to enable regular and efficient audits. The Council intends to use ISO 9002 as its model and it is proposed that this be adopted for contaminated land procedures as they are developed.

9 Information management

9.1.1 General principles

At the centre of the information management will be a new Geographical Information System designed to Oldham's specifications. This will have the dual function of:

- Providing the information for a rapid initial assessment to be made of any plot of land within the Borough;
- Storing all the information gathered for each site researched in the past and in the future.

9.1.2 Information content

- **Register**

The contaminated land register will only contain a small part of the information collected by the Council. The contents are carefully defined in the Act and are confined to land, which is proved to be contaminated by established scientific methods.

- **Other information**

During the course of its investigations the Council will accumulate other information which although important will not fall within the strict definition required for the register. This information could be:

- a) Sites which have been remediated in the past;
- b) Sites which are polluted but do not cause a risk until their use is changed;
- c) Sites which may be contaminated due to past use but which have not yet had a site investigation carried out on them.

9.1.3 Storage systems

All newly collated information will be stored on a database supported by a GIS. Information presently held on paper will also be added to this system.

9.1.4 Administration

The Contaminated Land Team will act as co-ordinators for collecting all the information necessary to carry out the proposed strategy, and will be responsible for keeping the database up-dated.

9.1.5 Use by other LA departments

The information collated by the Contaminated Land Team will need to be made available to those other sections and departments which require it.

9.1.6 Confidentiality of information

Any information collected by the local authority itself can be regarded as being in the public domain.

9.1.7 Arrangements for giving access to information

As covered in an earlier section some of this information will include sites that are still under investigation and therefore not published on the Contaminated Land Register. This information will also be available to any other interested parties such as house owners, solicitors, and developers on request.

9.1.8 Dealing with requests for information

In advance of any designations under PartIIA, Environmental Services can provide certain information to assist enquirers in determining whether or not land they have an interest in might be affected by ground contamination or landfill gas.

Information can be supplied on:

- Recorded licenced, pre licencing and un-licenced landfill sites
- Historical map searches, highlighting the potential for ground contamination
- Departmental file contents (where appropriate)
- Private water supplies
- EPA I, Part B industrial processes authorised by this authority
- EPA I, Part A industrial processes authorised by the Environment Agency.

Requests for searches into both contaminated land, landfill sites and other environmental information should be made in writing and include a plan, clearly marking the site boundaries. Note that the Council has to make a reasonable charge for Officer time in undertaking the search. The Investigating Officer will confirm the charge prior to undertaking the search.

9.1.9 Provision of information to the Environment Agency

The Environment Agency is required to prepare an annual report for the Secretary of State on the State of Contaminated Land in England. Under Section 78U(2) of EPA 1990, local authorities are required to provide the Environment Agency with the information necessary to write the report.

Appendices

Appendix 1

Internal consultees

Department	Section
Chief Executive's	Legal & Democratic Services - Solicitors Section
Economic Development	
Education & Leisure	Buildings & Development
Environment & Transportation	Building Control Development Control Environmental Protection Public Health - Contaminated Land Waste & Minerals Planning
Housing	Housing Association Development
Operational Services	Buildings & Assets Green Spaces
Policy Performance & Regeneration	Environmental Programmes
Property Services	Corporate & Property Services
Social Services	Building Section

Appendix 2

External consultees

Statutory consultees

Environment Agency
English Heritage
English Nature
Food Standards Agency
MAFF (now DEFRA)
North West Development Agency
Peak District National Park Authority

Additional consultees

British Waterways
Centrica
Council for the Protection of Rural England
Groundwork Oldham & Rochdale
High Peak Borough Council
Kirklees M.B.C
Lattice Property
National Trust
North West Water Ltd.
Petroleum officer
Railtrack
Training and Enterprise Council
United Utilities
West Pennine Health Authority

Appendix 3

Potentially contaminating uses

(Source: *Industry Profiles*, the Department of the Environment)

Airports

Animal and animal products processing works

Asbestos manufacturing works

Ceramics, cement and asphalt manufacturing works

Charcoal works

Chemical works:

Coatings (paints and printing inks) manufacturing works

Cosmetics and toiletries manufacturing works

Disinfectants manufacturing works

Explosives, propellants and pyrotechnics manufacturing works

Fertiliser manufacturing works

Fine chemicals manufacturing works

Inorganic chemicals manufacturing works

Linoleum, vinyl and bitumen-based floor covering manufacturing works

Mastics, sealants, adhesives and roofing felt manufacturing works

Organic chemicals manufacturing works

Pesticides manufacturing works

Pharmaceuticals manufacturing works

Rubber processing works (including manufacturing tyres or other rubber products)

Soap and detergent manufacturing works

Dockyards and dockland

Dry-cleaners

Engineering works:

Aircraft manufacturing works

Electrical and electronic equipment manufacturing works (including works manufacturing equipment containing PCBs)

Mechanical engineering works and ordnance works

Railway engineering works

Shipbuilding, repair and shipbreaking (including naval shipyards)

Vehicle manufacturing works

Fibreglass and fibreglass resins manufacturing works

Gas works, coke works and other coal carbonisation plants

Glass manufacturing works

Metal manufacturing, refining and finishing works:

Electroplating and other metal finishing works

Iron and steel works

Lead works

Non-ferrous metal works (excluding lead works)

Precious metal recovery works

Oil refineries and bulk storage of crude oil and petroleum products

Photographic processing industry

Potentially contaminating uses continued

Power stations (excluding nuclear power stations)

Printing and bookbinding works

Pulp and paper manufacturing works

Railway land

Road vehicle fuelling, service, and repair:

- Garages and filling stations

- Transport and haulage centres

Sewage works and sewage farms

Textile works and dye works

Timber products manufacturing works

Timber treatment works

Waste recycling, treatment and disposal sites:

- Drum and tank cleaning and recycling plants

- Hazardous waste treatment plants

- Landfills and other waste treatment or waste disposal sites

- Metal recycling centres

- Solvent recovery works

Appendix 4

Glossary

[the figures in brackets at the end of some of the definitions are the sections of the Environment Act 1995 which legally defines the word or phrase]

Agenda 21: the objective that local communities will have an input into the managing and development of their community.

Appropriate Person: the person(s) who will be responsible for paying for the remediation because either they were the original polluter, or they now own or use the site. [78A(9)]

Aquifer: a porous underground rock, which acts as a reservoir for the local water supply.

Contaminant: a substance which is in, on or under the ground and which has the potential to cause harm or to cause pollution of controlled waters.

Contaminated land register: the public register of statutorily contaminated land; that is land, which is contaminated and can be proved to pose a real threat to life or the environment. [78R]

Controlled waters: this includes water on the ground (lakes, streams, and rivers), water within the ground, and coastal waters. [78A(9)]

Enforcing authority: the public body who is responsible for managing the remediation of a site. It is usually the local authority but may also be the Environment Agency.

DEFRA: the Department for Environment, Food and Rural Affairs.

DETR: Department for the Department of the Environment, Transport and the Regions, now divided up and part of DEFRA.

DoE: Department of the Environment, now part of the Department of the Environment, Transport and the Regions (DETR).

EA: Environment Agency.

GIS: Geographical Information System. A computer map based database, which can store different types of information and can also perform complex spatial analyses of this information.

Pathway: one or more routes through which a contaminant can reach a receptor.

Glossary continued

Pollutant linkage: the relationship between a contaminant source, a pathway and a receptor.

Polluter pays principle: the government's intention that, ideally, the original polluter should fund the cost of remediation.

Public register: see Contaminated Land Register.

Receptor:

- a) A living organism, a group of living organisms, an ecological system or property which is being, or could be, harmed by a contaminant, (Table A of DETR Circular 02/2000);
- b) Controlled waters, which are being, or could be, polluted by a contaminant.

Register: see Contaminated Land Register.

Remediation: the process by which the pollution on a site is either removed or made safe so that it can no longer cause harm.

Remediation notice: is a notice specifying what an appropriate person is to do by way of remediation and the time periods within which each stage of the remediation is to be achieved. [78E(1)]

Remediation statement: This is a statement prepared and published by the person carrying out the remediation. It will detail the complete remediation programme, including action completed, that in progress and that yet to be completed, together with the expected time scales. [78H(7)]

Risk assessment: method for assessing the likelihood and frequency of a hazard occurring, and the severity of the probable consequences. This type of approach allows for the environment and public health to be protected, without wasting resources on unnecessary remediation.

Significant harm: means any harm, which is considered to be significant according to the guidance in the Act. [78A(5)]

Source: the point or area from which the contamination originated.

Special Sites:

- a) Water pollution cases;
- b) Industrial cases;
- c) Defence cases.

Glossary continued

Statutorily contaminated: contaminated according to the definition in the Act. A site may be polluted but if it is not causing significant harm under its present use it will not need remediation until the use is changed.

Suitable for use: the objective that a site will be cleaned up to the level that the next occupant needs.

Sustainable Development: the objective that the present generation will not use resources or pollute the environment to a level which will cause subsequent generations to suffer.

Appendix 5

Geology of Oldham

Greater Manchester Geological Unit

1 Geology of Oldham

1.1 Introduction.

Geology has an important role to play under the new Part II A of the Environmental Protection Act, 1990. A thorough understanding of the geology of the borough will be essential in gaining an understanding of potential pathways and pollutant linkages as well as an improved understanding of the geological barriers that can block potential pathways and pollutant linkages.

The following paragraphs summarise the geology of the Oldham borough with specific reference to solid and drift geology that may have an influence on the contaminated land regime.

1.2 Overview of Geology in Oldham

1.2.1 *Structural geology*

The geological structure of the Greater Manchester region is dominated by the Rossendale and Pennine anticlines, which lie beyond the limits of the Oldham boundary. Faulting is moderate across the whole of the borough and predominantly trends in a northwest to southeast direction.

1.2.2 *Stratigraphy*

The westerly to southwesterly dip in the solid geology means that generally speaking the oldest rocks are found in the eastern areas with gradually younger rocks encountered westwards through the borough.

In summary, geologically the area comprises:

- 1) The Millstone Grit of the uplands forming the eastern border of the borough
- 2) The Lower Coal Measures flanking the above on the west, and also forming a broad spread of faulted ground around the Milnrow and Shaw areas
- 3) The Middle Coal Measures, for the most part occupying the drift covered central and western parts of the borough
- 4) The Permian beds of the south-western corner of the borough around Failsworth
- 5) Drift deposits of glacial sand and gravels and glacial clays with post-glacial deposits of peat and alluvium. Drift deposits cover around a half of the surface of the Oldham borough.

1.3 Drift Geology

1.3.1 Sands and Gravels

Glacial sand and gravel deposits cover the area running along the northwestern border of the borough through the towns of Chadderton, Royton and Shaw. Other smaller deposits exist north of Oldham around Hayside and along the River Tame near Greenfield in the south central region of the borough. These deposits have been worked at numerous locations in the borough and boreholes indicate them to be between 3 and 6 m thick.

The inherent properties of sand and gravels lend them to being a potential pathway. Moderate to high permeability's, with low attenuation characteristics, mean that most contaminants will pass quickly through this geological formation. The geographical distribution of these deposits would seem to suggest that they are in hydraulic continuity with the Rivers Medlock, Beal and Tame, three of the potential receptors in the Oldham borough.

1.3.2 Glacial Clay (Boulder Clay)

Glacial clay represents a significant proportion of drift deposits in the borough predominantly in the southwest of Oldham from the town centre down to Failsworth. Boulder clay is also present in the Tame valley around the Greenfield area. The dominant clay in this area is a typical hard boulder clay that is grey or yellow-brown in colour, rather sandy and containing numerous stones and boulders. Sand layers which can be greater than 1m in thickness can be found within these boulder clay deposits. These sand layers are often saturated and can therefore act as local aquifers for the extraction of water via wells, (common in allotment areas). The sand layers can also act as important pathways for the migration of contaminants including landfill and mine gases.

Second edition geological maps describe the clay as "Yellow Clay" with borehole data indicating that the boulder clay drift deposits in the area range from a maximum of 43m (just above Failsworth) to a minimum of around 5m. The boulder clay has been locally worked and turned into bricks in many areas of Oldham, with the finished brick pits often subsequently filled.

Boulder clay has important properties for resisting the movement of contaminants from near surface deposits to groundwater receptors as it generally has low permeability with good attenuation characteristics. However, boulder clay can also contain fissures and sand layers that will have a much-increased permeability and may be in hydraulic continuity with local streams and rivers. As such these fissures and sand layers may act as pathways.

1.3.3 Alluvium

The only alluvium deposits noticeable in the borough are small and exist along the River Tame where it runs through the Greenfield area. Borehole data from Second Edition, drift geological map, sheet 271 southwest, dated 1948, indicates alluvium

here to be 3m thick. The only other small alluvium deposit present can be found adjacent to the River Beal on the northeastern side of Shaw.

The alluvium deposits are generally in direct hydraulic continuity with local streams and rivers and are susceptible to contamination from the past and present heavy industry located in the area. Alluvium deposits have minimal attenuation characteristics and have the geological properties to act as potential pathways and pollutant linkages.

1.3.5 River Terrace Gravels

Minor river terrace deposits are identified along the River Medlock extending down from Daisy Nook, through Woodhouses and down to Medlock Vale. These deposits mainly comprise sandy gravel and are in direct hydraulic continuity with local rivers. As with the alluvium, these deposits are susceptible to contamination from the potentially contaminating industries that have been and are present along the River Medlock. They have minimal attenuation characteristics and have the geological properties to act as potential pathways and pollutant linkages.

1.3.4 Peat

The majority of the Peat deposits are located in the east of the borough on and around Saddleworth Moor. Other deposits exist north of Oldham at Hayside, and Shaw Side (due east of Shaw). Borehole data from the Second Edition, drift geological map, 271 northwest, dated 1948, indicates depths from 2-3 metres.

Peat deposits principally consist of accumulated sphagnum moss, which are generally saturated but have low values of hydraulic conductivity (permeability). The properties of the peat suggest that it would not be a preferential pathway for contaminants however, peat deposits can and do provide natural sources of both methane and carbon dioxide.

1.4 Solid Geology

1.4.1 Millstone Grit

The oldest rocks found in the Oldham Borough are the Millstone Grit series from the Namurian, which is the lowermost epoch of the Carboniferous period (330 – 315 Million Annum (Ma). Only the upper part of the Millstone Grit series lies within the Oldham borough with the lowest bed present being the main ‘Third Grit’ otherwise known as the Gorpley Grit.

The Gorpley Grit is located in the upland areas of Oldham forming the eastern border of the borough. It is poorly exposed but wherever seen displays a coarse and massive character. Overlying the Gorpley Grit is the Holcombe Brook Grit and the upper boundary of the Millstone Grit series commonly known as the Rough Rock.

The Millstone Grit series is noted as a minor aquifer and wells within the area do extract water from it making it a potential receptor. Its relatively high permeability could also see it act as a potential pathway for contaminants to migrate along.

1.4.2 *Lower Coal Measure*

The lower coal measures are from the Westphalian series of the Carboniferous period (315-296 Ma). These measures dominate the central, northern, and western areas of the borough.

The lower coal measures generally comprise shaly mudstones interspersed with sandstone layers and coal seams. Coal seams such as the Blenfire Mine, the Oldham Great Mine and the Upper Foot Mine have been regularly worked in the above areas.

The presence of sandstone layers within the Lower Coal Measures is the main factor behind its classification as a minor aquifer and these sandstone layers also have the ability to act as local pathways for migrating contaminants. In addition, mining activity within the Lower Coal Measures may lead to shafts and tunnels acting as preferential pathways for contaminants.

1.4.3 *Middle Coal Measures*

The Middle Coal Measures are also from the Westphalian epoch of the Carboniferous period (315 - 296 Ma). These measures are commonly found in the southwestern areas of the region and the area directly south of Oldham town. The Middle Coal Measures can be up to 500m in thickness and comprise a variable series of thin workable coal seams, fireclays, shales and sandstones.

In the older (lower) portion of the Middle Coal Measures series the Huntcliffe and Bardsley sandstones dominate. Where encountered, these rocks are described as fine-grained yellowish flagstones with sandy shale partings. Shales, mudstones and coal seams dominate the younger rocks of this series. Coal seams such as the Roger Mine, Ashton Great Mine and the Major Mine were all regularly worked particularly in the Failsworth and Bardsley areas.

The presence of sandstone layers within the Middle Coal Measures is the main factor behind its classification as a minor aquifer. These sandstone layers also have the ability to act as local pathways for migrating contaminants. In addition, mining activity within the Middle Coal Measures may lead to shafts and tunnels acting as preferential pathways for contaminants.

1.4.4 *Permio-Triassic Rocks*

The only rocks of this era in the Oldham borough are the tripartite sequence of red marls (calcareous clays) with thin limestones, (known as the Manchester Marls), that lie between two beds of red sandstone, the Collyhurst Sandstone below and the Sherwood Sandstone above. This sequence is found in a relatively small area of the southwestern part of the borough, just below Failsworth.

Both the Collyhurst Sandstone and the members of the Sherwood Sandstone Group are classified as major aquifers. Through their relatively high permeabilities and their usage as aquifers in the northwest region, they both have the potential to act as receptors and pathways for migrating contaminants.

Appendix 6

Categories of *Significant Harm* receptors

- Human beings
- Any ecological system, or living organism forming part of such a system, within a location which is an area notified as an area of special scientific interest under section 28 of the Wildlife and Countryside Act 1981;
 - Any land declared a national nature reserve under section 35 of that Act;
 - Any area designated as a marine nature reserve under section 36 of that Act;
 - An area of special protection for birds established under section 3 of that Act;
 - Any European site within the meaning of regulation 10 of the Conservation (Natural Habitats etc) Regulations 1994 (ie. Special Areas of Conservation and Special Protection Areas);
 - Any Candidate Special Areas of Conservation or potential Special Protection Areas given equivalent protection;
 - Any habitat or site afforded policy protection under paragraph 13 of Planning Policy Guidance No. 9 (PPG9) on nature conservation (ie. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites);
 - Any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.
- Property in the form of:
 - Crops including timber;
 - Produce grown domestically, or on allotments, for consumption;
 - Livestock;
 - Other owned or domesticated animals;
 - Wild animals, which are the subject of shooting or fishing rights.
- Property in the form of buildings:

For this purpose building means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building.

Appendix 7

Special sites

These are sites where the enforcing authority will be the Environment Agency.

They consist of three main groups:

- Water-pollution cases;
- Industrial cases;
- Defence.

Water-pollution cases

- **Wholesomeness of drinking water.** Where contaminated land affects controlled waters used, or intended to be used, for the supply of drinking water. [Water Supply (Water Quality) Regulations 1989 (S.I. 1989/1147 as amended by S.I. 1989/1384, S.I. 1991/1837 and S.I. 1999/1524), and the Private Water Supplies Regulations 1991 (S.I. 1991/2790)]
- **Surface-water classification criteria.** Where controlled waters are being affected so that those waters do not meet or are not likely to meet relevant surface water criteria. [Surface Waters (Dangerous Substances) (Classification) Regulations: S.I. 1989/2286, S.I. 1992/337, S.I. 1997/2560 and S.I. 1998/389]
- **Major aquifers.** Where particularly difficult pollutants are affecting major aquifers. [S.I. 2000/227, Schedule 1: (paragraph 1, pollutant list; paragraph 2, major aquifer description)]

Industrial Cases

- **Waste acid tar lagoons** (regulation 2(1)(b)). Typically the retention basins (or lagoons) for waste acid tar which arose from the use of concentrated sulphuric acid in the production of lubricating oils and greases, or the reclamation of base lubricants from mineral oil residues. It does not include tars resulting from the coal product manufacture, or where these tars are placed in pits or wells.
- **Oil refining** (regulation 2(1)(c)(i)). As for waste acid tar lagoons, activities related to coal are not included.
- **Explosives** (regulation 2(1)(c)(ii)).

- **IPC (Integrated Pollution Control) sites** (regulation 2(1)(d)). Sites which are regulated under Part I of the 1990 Act and which have become contaminated will generally be regulated under those powers, but Part IIA powers may be needed in the following cases:
 - i. Land on which past activities were authorised under *central control* but which have ceased;
 - ii. Land where the activities are continuing but the contamination arises from a non-*central control* process on the land;
 - iii. Land where the contamination arises from an authorised central control process but a remediation notice could nevertheless be served.

This does not cover land where the Part I authorisation is obtained in order to carry out remediation under Part IIA. It also does not cover land, which has been contaminated by an activity, which ceased before the application of central controls, but would have been subject to those controls if it had continued after they came into force.

- **Nuclear sites** (regulation 2(1)(e)). The designation of a nuclear site as contaminated land under these regulations will have effect only in relation to non-radioactive contamination. Any harm, or pollution of controlled waters, attributable to radioactivity will be dealt with under a separate regime yet to be introduced.

Defence cases

Any contaminated land at current military, naval and airforce bases and other properties, including those of visiting forces; the Atomic Weapons Establishment; and certain lands at Greenwich Hospital (section 30 of the Armed Forces Act 1996).

Appendix 8

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