



“Working towards a Better Future”

Update Bulletin

To the 2003 Inspection Strategy for the Identification of Contaminated Land (In accordance with the Environmental Protection Act 1990, Part II A)

Prepared by South Ayrshire Council, Environmental Health

November 2005



“Environmental Health - raising standards protecting you”

For further detail refer to “The Inspection Strategy for the Identification and Remediation of Contaminated Land 2001 Reviewed 2003” prepared by the Department of Development Safety & Regulation

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1. Commitment & Purpose

“South Ayrshire Council is a great place in which to live and work. It has one of the most pleasing environments in Scotland. If this is to continue, however, effort has to be put into not only protecting what exists at present, but also into building on the area’s strengths for the future”.



South Ayrshire Council is committed to the responsibility placed upon them to inspect the land within South Ayrshire Council with respect to the identification of Statutory Contaminated Land as determined under the Environmental Protection Act 1990. This Update Bulletin advises of the progress made to the end of 2005.

On the 14th July 2000, a new statutory regime came into force in Scotland when the Environment Act 1995 modified the Environmental Protection Act with regard to the powers available to Local Authorities for dealing with contaminated land by inserting a new part (PartIIA).

The Scottish Ministers introduced the Contaminated Land (Scotland) Regulations 2000. The objective is to identify and remove land which is causing harm to human health and the environment.

‘ Our Vision ’ – In partnership with the community, to make South Ayrshire a better place to live by:

- Narrowing the gap between rich and poor
- Increasing earnings and maintaining high employment
- Ensuring the healthiest life for all people
- Improving Public safety and reducing crime
- Protecting the environment.

2. Identification Strategy & Approach

South Ayrshire Council's strategy on contaminated land sits comfortably with its strategic objectives in terms of Local Agenda 21² which are:

1. To develop and implement a corporate sustainable development programme which will inform and support other strategies and service plans
2. To measure, monitor and improve South Ayrshire Council's environmental performance
3. To improve the understanding and awareness of sustainability issues in South Ayrshire Council and the wider community and to encourage full community participation in the implementation of the strategy
4. To devise and implement suitable sustainable indicators to reflect local and national priorities
5. To establish partnerships with business, voluntary and other public sector bodies to develop sustainable initiatives.

All Local Authorities are required to take a strategic approach to inspecting land in their area for contamination.

The statutory guidance requires that the general approach adopted should:

- Be rational, ordered and efficient
- Be proportionate to the seriousness of actual or potential risk
- Seek to ensure the most pressing and serious problems are located first
- Ensure that resources are concentrated on investigating 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.

South Ayrshire Council has undertaken to progress using the following steps:





Desk based identification of potential locations (S57 Model)

South Ayrshire Council Environmental Health has undertaken to develop their GIS (Geographical Information System) to be able to model the likelihood for land to be potentially contaminated based on primarily identifying areas of historical land use, which may have resulted in man made contaminants being introduced to the land and water environment.

Working in partnership with Jacobs Babbie, South Ayrshire Council has developed a model (S57 Model*) of the potential for contaminated land across the entire South Ayrshire area using public domain data. A key element of the data used is relative to historical land uses, such as, but not limited to, gas works, steel works, collieries and other former industrial based activities, including land filling of waste materials

The S57 Model provides a prioritised list of locations where the potential for contaminated land, as defined under the legislation, may exist. The potential presence of “pollutant linkages” are considered. A pollutant linkage occurs when a source of contamination can affect a receptor by moving along a pathway. At the desk based identification stage in the assessment process, South Ayrshire Council is unaware of land ownership pertinent to the locations that have been provided from the S57 Model.



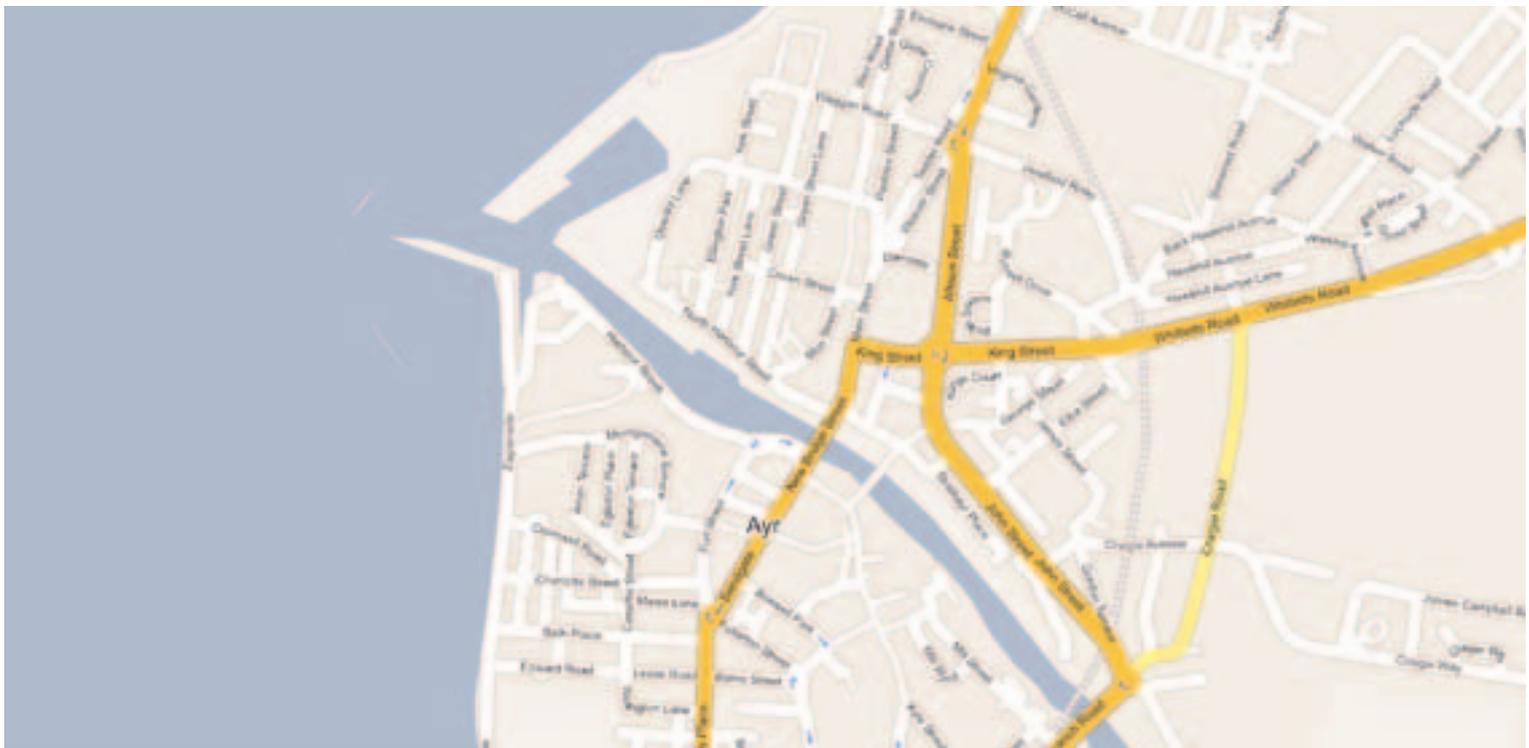
Reconnaissance walkover

The next stage in the inspection process is Reconnaissance. Reconnaissance involves the visual inspection of the locations produced by the desk based assessment from the S57 Model*. Each location is visited by either a representative of South Ayrshire Council, Environmental Health or a nominated environmental professional on their behalf. The results of the Reconnaissance are recorded within South Ayrshire Council's Land Quality Management Database.**

The Reconnaissance walkover is designed to provide current data on the visual condition of the location and to provide further information to assess the potential for statutory contaminated land. In particular, the presence of visible pollution of contaminants which are known to be harmful to humans and the environment.

Often however contaminants of concern may be buried and the area being inspected is grassed over, such as closed landfills. The 'pollutant linkage' potential may not be visible. However, these areas may still be of concern, whilst appearing to be 'naturalised'. For example, there is the potential for landfill gases (source) to be escaping (pathway) and potentially affect nearby properties (receptor) and their occupants, or polluted leachate (source) being generated within the buried waste mass, which can leak (pathway) into surface water courses (receptor) or into the underlying groundwater aquifers, which could be being used for drinking water supply by humans (receptor) or industry (receptor).

** The Land Quality Management Database was developed by Jacobs Babbie for use specifically with the S57 Model.



Reprioritisation – Production of the Conceptual Site Model

The main outcome of the Reprioritisation stage is the development of a Conceptual Site Model (CSM), which is an integral part of compiling a robust assessment of the physical factors that contribute to the concerns regarding a potential pollutant linkage. South Ayrshire Council Environmental Health, supported by Jacobs Babbie technical and management consultants, are undertaking the preparation of the CSM which forms the basis for future risk assessment and is developed in accordance with the framework set out in CLR11³.

A two phase approach is used. Phase I involves a review of publicly available information on the previous land use and environmental setting, which is reviewed in association with the results from the Reconnaissance phase.

The Phase II of the reprioritisation exercise is to decide what investigation or monitoring may be required and present proposals to take this further.

Similarly, the outcome from the Reprioritisation stage could be to confirm that the site does not have contaminated land issues such that the area of land may be Reprioritised and removed from the area being inspected by South Ayrshire Council.

From 2001 to date, many hectares of land have been assessed via this method, and the data is provided in Diagram 3 under Progress to Date.

3 - CLR11: Contaminated Land Research Report No.11, 2004 Model Procedures for the Management of Land Contamination.



Investigation and Monitoring

The investigation and monitoring stage progresses from the outcome of the Reprioritisation stage. The purpose of the investigation and monitoring stage is to commence physical works which allow more detailed assessment of the suspected pollutant linkages. Investigation may include the installation of boreholes to assess the local properties of the soil and made ground at a site. The boreholes can be used to install permanent monitoring locations to test for gases emanating from the ground and also permit the sampling of ground water for chemical testing.

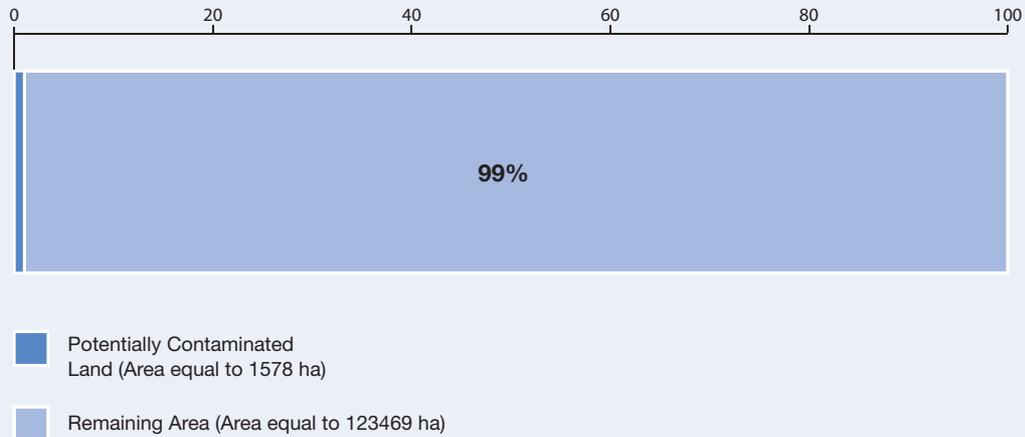
South Ayrshire Council has commenced voluntary investigation and monitoring at two sites within their area. Both sites are closed landfills where the potential pollutant linkages include gas migration and ground water pollution. The closed landfill close to Murray Gardens in Maybole has been monitored for gas generation since its closure in 1971, and had a history of past usage which included a former sewage treatment works. In 2005 an intrusive investigation was undertaken by South Ayrshire Council to assess the presence of the pollutant linkages and formulate a monitoring strategy and recommendations for remediation.

The closed landfill at Helenton was also investigated in 2005, again for the potential for gas migration and the potential for pollution of ground water.

The interpretation of investigation and monitoring results are done on a risk-based approach and follows through the recommendations given in CLR11. Progress to date is given in diagram 4.

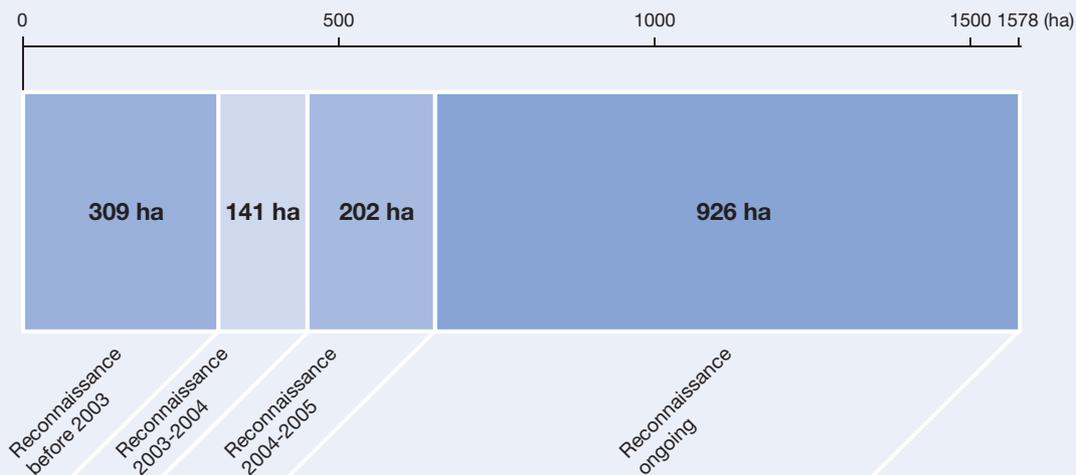
3. Progress to Date

Diagram 1 – Desk based assessment results



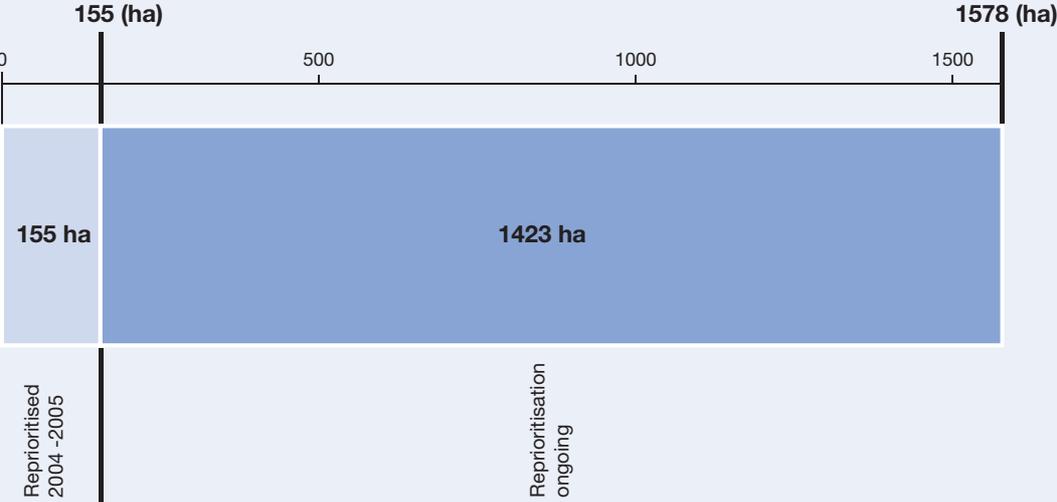
The output from the S57 Model* in 2001 was a list of 2752 locations, which equates approximately to 1578 hectares (ha) and constitutes less than 1% of the total area of South Ayrshire, 123,469 ha.

Diagram 2 – Reconnaissance Progress



Of the 1578 hectares (ha) identified by the S57 Model*, 309.28 ha were surveyed between 2001 and 2003, 140.52 ha were surveyed between 2003 and 2004 and a further 201.56 ha between 2004 and 2005.

Diagram 3 – Reprioritisation Progress



Of the 652 ha that have been formally walked over, 155 ha have been processed through reprioritisation.

Diagram 4 – Monitoring and Investigation



Of the 155 ha reprioritised, 9.6 ha is currently subject to investigation and monitoring.

4. Specific Initiatives



South Ayrshire Council, in 2001, set out in the Inspection Strategy how it would progress the identification and remediation of statutorily contaminated land. This was further reviewed in 2003. This Update Bulletin, issued in 2005, builds upon the work which has already been undertaken and now includes the following specific initiatives:

- assessment of the former gas works at South Harbour in Ayr
- assessment of all former gas works in South Ayrshire Council's area
- assessment of all closed landfill sites in South Ayrshire.

These specific initiatives are being run in parallel with the formal identification process, as set out in South Ayrshire Council's Inspection Strategy. These specific initiatives are aimed at focusing on two types of former land use where there is a reasonable possibility that, had measures not been taken at the closure of these former uses, then the potential exists for a pollutant linkage.

The former South Harbour gas works was located within an area known for its archeological significance, as it was within an area associated with Cromwell's Fort.

5. Programme

Stages Review	2005	2006	2007	2008*	Comment
Model Setup	✓	✓	✓	✓	S57 Model completed 2001 and will be updated from time to time as revised versions of data become available.
Reconnaissance	230 ha	230 ha	230 ha	230 ha	Reconnaissance Programmed to complete by 2008, area is estimated.
Reprioritisation	155 ha	175 ha	175 ha	175 ha	Area is estimated.
Ground Investigation and Monitoring**	9.6 ha				2005 <ul style="list-style-type: none"> Murray Gardens (closed landfill)
Specific Initiatives	3 initiatives	ongoing			<ul style="list-style-type: none"> Closed Landfills Gas work sites South Harbour Gasworks
Voluntary Remediation	ongoing	ongoing	ongoing	ongoing	<ul style="list-style-type: none"> Murray Gardens
Determinations	none	–	–	–	

* The Scottish Executive has indicated commitment of funding to 2008 for Local Authorities.

** The area of land assigned for Ground Investigation and monitoring cannot be reasonably forecast and is dependant upon prioritisation.

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