Kingsmill Reservoir Hydrological Assessment

Siltation Management Options Review

Prepared for

Ashfield District Council

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Executive Summary

This report has been prepared in response to instruction from Ashfield District Council dated 3rd November 2010. The report contains the results and recommendations arising from a detailed hydrological study of Kingsmill Reservoir, Sutton-in-Ashfield, Nottinghamshire. Progressive silt deposition has supported development of a wide range of wetland and shallow water habitats with significant increase in biodiversity at the reservoir site. Silt deposition has also led to a reduction in the navigable area of the reservoir with adverse impact on the ability of Sutton-in-Ashfield Sailing Club to carryout sailing and racing activities.

The study has led to the identification of three silt management options as follows:

Option 1: Do nothing and allow natural progression
Option 2: Selective silt removal by dredging
Option 3: Silt containment and selective silt removal by dredging

Option 1 is the lowest cost option with no new capital expenditure required and minimum increase in ongoing weed management costs. This option would deliver no improvement in the recreational capacity of the reservoir. Silt balance studies suggest that there would continue to be progressive loss of navigable water and within a period of approximately ten years the viability of Sutton-in-Ashfield Sailing Club could be in question.

Option 2 would reinstate the reservoir to its 1984 configuration in all areas except the upstream reservoir inlet which would remain largely an area of shallow wetlands as at present. This option would deliver significant benefit to both the sailing club and the Adventure Base without adversely effecting local ecology or habitat creation potential. Maintaining deeper water areas close to the reservoir margins would minimise the risk of water body shrinkage and maintain the landscape value of the reservoir site for all reservoir users and visitors. Selective dredging of silt from marginal areas of the reservoir is estimated to cost in the region of £300,000 although cost estimates range from £205,000 to £1,665,000 depending on silt disposal options. Silt balance studies suggest that under this option the de-silting operation would need to be repeated on a 10-year cycle to meet navigable water objectives.

Option 3 incorporates both selective de-silting and construction of an upstream silt containment structure to minimise silt migration into the reservoir in the future. This approach offers the most complete strategy for management of silt accumulation within the reservoir. As with Option 2 this option would deliver significant benefit to both the sailing club and the Adventure Base without adversely effecting local ecology or habitat creation potential. The estimated cost of implementing Option is in region of £650,000 although cost estimates range from £435,000 to £2,010,000 depending on silt disposal options. The opportunity to manage future silt accumulation from the containment structure would mean significantly lower de-silting costs in future years.

It is recommended that, subject to the availability of funding, consideration is given to the implementation of Option 3 incorporating the construction of a silt containment structure at the upstream end of the reservoir and selective de-silting around the western boundary. The preferred silt management option is to retain silt within the site for use in island construction subject to future assessment of silt composition and contaminant migration risk

It is recommended that consideration be given to assessment of potential funding or co-funding opportunities for implementation of Option 3. The project may be suitable for an application for co-funding from the EU Life Environment Programme which has a 2011 application deadline of May 2011 for projects that could commence from May 2012.

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1. Introduction and background

1.1 This report has been prepared in response to instruction from Ashfield District Council dated 3rd November 2010. The report contains the results and recommendations arising from a detailed hydrological study of Kingsmill Reservoir, Sutton-in-Ashfield, Nottinghamshire.

1.2 Kingsmill Reservoir is located in Sutton-in-Ashfield, Nottinghamshire. The reservoir has significant local leisure and recreational value and is well used by the local population. In particular, the reservoir is used for a range of water sports under the co-ordination of the Sutton-in-Ashfield Sailing Club and the Nottinghamshire County Council Adventure Base both of which are based at the site.

1.3 In recent years silt deposition in the reservoir has reduced the area capable of supporting water sports with adverse impact on other recreational activities at the site. This hydrological study aims to investigate the sources and impacts of reservoir siltation with a view to provision of guidance on future management options aimed at preserving the recreational value of the reservoir without adverse impact on its ecological status.

1.4 The study has included detailed hydrological analysis of the reservoir and the surface water catchment in which it is located. Consultation with reservoir user groups and other interested parties has formed an important part of the impact assessment process and supported evaluation of the value of potential future siltation management options.

2. Scope of work

2.1 The primary objective of the study has been to define costed options for reducing the impact of siltation on the current and future recreational functioning of Kingsmill Reservoir.

2.2 The study has been undertaken as a series of separate tasks as follows:

- Task 1: Establish the source(s), current/future rate of siltation and the current/future distribution of silt within the reservoir

- Task 2: Establish the current/future impact of siltation on primary reservoir functions including water sports, nature conservation, fishing etc.

- Task 3: Establish whether reservoir siltation is currently affecting downstream water bodies/water supplies

- Task 4: Provide advice with regard to the Council's legal and regulatory responsibilities in relation to downstream landowners, water bodies/water supplies

- Task 5: Define, evaluate and provide budget costs for potential silt management options designed to improve reservoir functioning to include desilting, desilt and island creation, no desilt and allow natural progression.

- Task 6: Develop recommendations based on evaluation of cost/benefit relationships and practical achievability of selected management options.

2.3 The study has resulted in the identification and evaluation of potential silt management options and the provision of guidance for Ashfield District Council (ADC). Although the project scope extends to consideration of wider environmental and economic issues associated with reservoir de-silting such issues are addressed from a hydrological perspective only. Where additional specialist advice is required for full environmental and economic analysis it is identified and referenced in this report.

2.4 Assessment of reservoir hydrology has been based on the results of a site hydrological survey, catchment analysis based on published Ordnance Survey data and Institute of Hydrology catchment models. Analysis of past, present and future siltation rates has been supported by reference to a 1984 survey of reservoir water depth and a new bathymetric survey undertaken in January 2011.

2.5 Analysis of the current and potential future impact of siltation on reservoir functions has been undertaken through consultation with key reservoir user groups and independent assessment of the potential social and environmental consequences of no managed intervention. In considering options for current and future silt management at the site it has been necessary to balance potential benefits with any potentially adverse environmental impacts that would arise from silt management operations.

2.6 In preparing this report detailed consideration has been given to a number of existing reports, surveys and assessment related to operational and environmental aspects of Kingsmill Reservoir. Key documents consulted include the following:

- Kingsmill Reservoir Draft Management Strategy (ADC 2010)
- A Post-project Appraisal Report on Kingsmill Reservoir (Aquascience 2007)

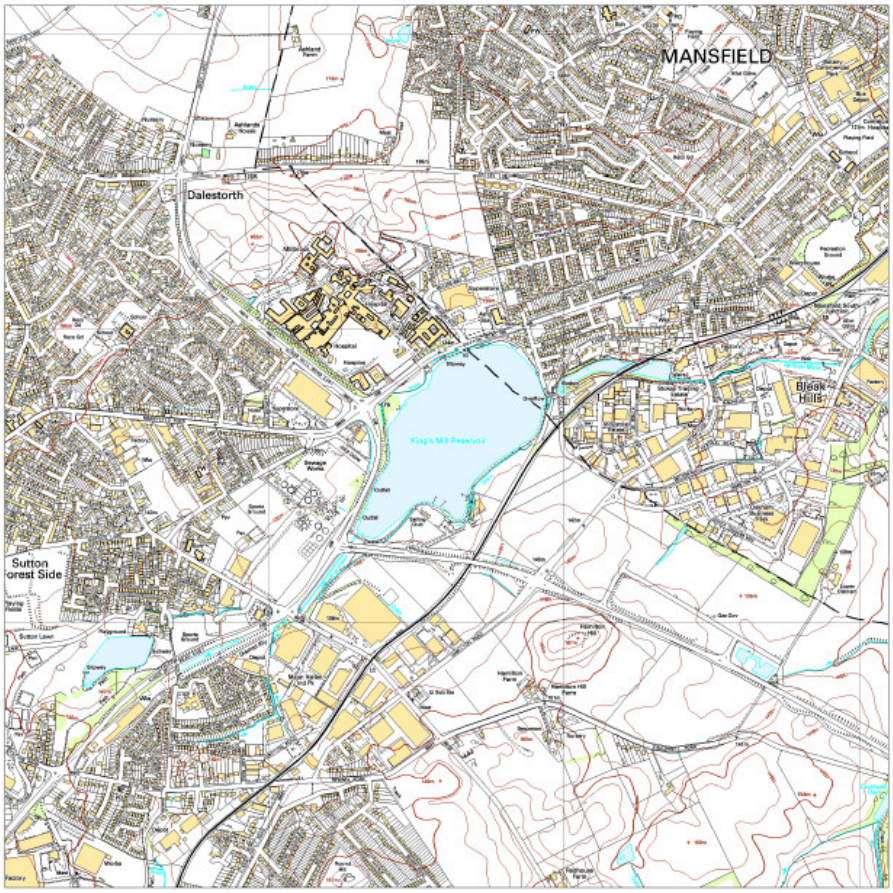
- Historic maps provided by ADC
- 1984 bathymetric survey map provided by Sutton-in-Ashfield Sailing Club
- Envirocheck survey and data sheets

2.7 Conclusions regarding the operational and financial implications of the proposed silt management options are based on professional experience at other sites and consultation with both regulatory authorities and specialist contractors.

3. Site location and hydrological history

3.1 Kingsmill Reservoir is located at NGR SK515596 adjacent to the A38 trunk road in Sutton-in-Ashfield, Nottinghamshire. Site location is shown in Figure 1. The reservoir is formed by impoundment of the River Maun to establish an on-line water body orientated south west to north east to the east of Sutton-in-Ashfield town centre.

Figure 1: Site location



3.2 The southern boundary of the reservoir and the main vehicular access to the site is formed by the recently constructed A617 road. The western and north western boundaries are formed by the A38. Kingsmill Hospital is located immediately adjacent to the north western site boundary and mixed residential and industrial development is situated to the immediate east.

Figure 2: General view of Kingsmill Reservoir looking north.

3.3 The reservoir site, including marginal areas, covers a surface area of approximately 31.8ha with deeper water towards the centre and shallows at the south western end. A general view of the reservoir is presented in Figure 2 . Inflow to the reservoir occurs via large road culverts beneath the A617. The River Maun flows through the most northerly culvert with the other two providing additional capacity to accommodate extreme flood flow when required.

Figure 3: River Maun inlet culverts at the upstream end of Kingsmill Reservoir

3.4 At the downstream end the reservoir discharges to an elongate pond that forms part of the Hermitage Nature Reserve. Discharge is achieved via a sluice and spillway outfall into a steeply

sloping stone and concrete lined channel designed to drop hydraulic energy prior to discharge into the nature reserve. A view of the nature reserve pond is shown in Figure 4 and the reservoir outfall is shown as Figure 5.

Figure 4: Hermitage Nature Reserve pond looking east

3.5 The reservoir is bounded on all sides by a stone surfaced public footpath that provides access to all parts of the site. At the southern end of the reservoir several jetties have been installed to allow access to the water for the sailing club and adventure base that operate from the site.

Figure 5: Reservoir overflow

3.6 It is understood that the reservoir was originally established as a relatively small mill pond until 1839 when surrounding agricultural land was cleared and flooded to form the larger water body present today. Land beneath the reservoir is reported to consist of a thick sequence of clay providing ideal conditions for retention of surface water.

3.7 The reservoir dam is essentially and earth and rockfill dam which was reportedly constructed with a clay core derived from cut and fill operations within the site, and reinforced with substantial volumes of magnesian limestone obtained from local quarries. The reservoir overflows via spillway and dyke connecting, via the Hermitage Nature Reserve, to the River Maun downstream.

3.8 Although no specific reference material has been identified during this study it is understood that the reservoir has been drained on at least one occasion in the last twenty years in order to allow essential engineering work on the dam wall.

4. Reservoir status, use and development context

4.1 In assessing silt accumulation impacts at Kingsmill Reservoir and developing a range of potential silt management options consideration has to be given to the wide range of reservoir functions and uses. There are potential conflicts between recreational/leisure objectives for the reservoir and opportunities to increase its environmental and ecological value. Achieving a balanced approach that supports maintenance of recreational functions whilst minimising adverse environmental impact will be a key requirement of any silt management strategy.

4.2 Kingsmill Reservoir is currently subject to a number local and regional planning and conservation designations which demonstrate its strategic importance with regard to its environmental significance as well as its recreational value. The reservoir is located in the southern part of the Magnesian Limestone Natural Area and forms part of the Greenwood Community Forest area of Nottinghamshire. The reservoir is designated a Local Wildlife Site and is under review with regard to upgrading its status to a Local Nature Reserve (LNR).

4.3 Under the Local Biodiversity Action Plan for Nottinghamshire (LBAP) a number of habitats and species have been identified at the reservoir site leading to the development of action plans for their maintenance and restoration.

4.4 Immediately downstream of Kingsmill reservoir the Hermitage Nature Reserve is designated as a Local Nature Reserve by Natural England.

4.5 There are a number of consented abstractions from and discharges to the reservoir and the River Maun upstream and downstream of the site. Environment Agency records indicate that there have been a number of pollution incidents within and in the vicinity of the reservoir in recent years. Full

details of all registered hydrological and land use features within a 2km radius of the reservoir dam are included with Envirocheck data and maps at Appendix A and discussed in subsequent sections of this report.

Leisure and recreational use

4.6 The reservoir site is fully accessible to the general public and well used by a range of specialist activity and interest groups including Sutton-in-Ashfield Sailing Club and the Mill Adventure Base operated by Nottinghamshire County Council. The reservoir is also used by the Kingsmill Model Boat Club, local anglers and the Nottinghamshire Anglers Association and other groups including the RSPB and local conservation groups.

4.7 The sailing club was established in 1959 and has up to 90 members. Although staging a wide range of events the club is primarily a racing club and requires an adequate length of accessible open water. It is understood that sailing cannot be effectively undertaken at water depths of less than approximately 1.2m.

4.8 The Adventure Base offers a wide range of water based activities including sailing, canoeing and wind surfing. Access to as much open water as possible provides the greatest opportunity to design and stage water based events to support Adventure Base objectives.

Nature conservation status

4.9 The reservoir has been subject to frequent ecological review and the implementation of a range of measures designed to improve and manage water quality. It is apparent from the range of habitats and ecological designations around the reservoir margins that the progressive shallowing of water at the upstream end of the site and around the north western boundary has supported the growth and development of a range of shallow water habitats now considered important.

4.10 A water quality improvement programme based on the use of open water straw bale installations has been successfully used to promote habitat growth to minimise algal bloom development in reservoir waters. Mid-reservoir rafts have also been used to promote reed growth in areas away from reservoir margins. Monitoring over several years has demonstrated a progressive and significant improvement in reservoir water quality.

Geothermal energy scheme

4.11 Under the terms of an agreement between ADC and Kingsmill Hospital the hospital has installed a geothermal energy system based on use of the reservoir as a heat source. A closed loop pipeline runs from the hospital under the A38 and into the northern end of the reservoir where it connects to a series of seven groups of 20 ‘slim jim’ geo lake plates that promote transfer of heat between

the geothermal fluid and the reservoir water. There is no direct discharge to or abstraction from the reservoir.

4.12 The geothermal plates have been installed at the deepest part of the reservoir at approximately 2.5m below the water surface. Connecting pipelines are designed to be fixed to the reservoir bed and hence allow over sailing. It is understood that in recent month the pipes have become free and currently float on the water surface obstructing access to part of the northern section of the reservoir.

Land drainage

4.13 The reservoir receives land drainage water from urban areas to the north and west of the site under the terms of a number of surface drainage easements between ADC and third parties. Surface water discharges to the reservoir via a number of piped outfalls around the northern reservoir boundary.

4.14 It is understood that surface water drainage from the following areas discharges directly to the reservoir:

- Residential areas to the north of the reservoir
- Morrisons supermarket and car parking areas to the north of the reservoir
- Areas of hardstanding associated with Kingsmill Hospital
- Road drainage from the adjacent A38
- Storm sewer overflow from the adjacent sewage treatment works

The majority of these drainage systems are relatively recently constructed and expected to incorporate standard provision for silt interception during normal operating conditions.

Downstream users

4.15 There are no licensed abstractions from the reservoir or the River Maun downstream of the site within a 1km radius of the reservoir outlet. There are however, a number of licensed abstraction further downstream at distances of between 1.2km and 2.0km downstream of the reservoir outlet. Full details of all licensed abstractions in the area are included in the Envirocheck datasheets at Appendix A.

4.16 There are a number of consented discharges to the reservoir and the River Maun system downstream of the site. The majority of consents for direct discharge to the reservoir relate to former discharge of surface water and trade effluent from the sewage treatment works located on the western boundary of the reservoir. It is understood that although these consents remain active there is no longer direct discharge of treated sewage effluent to the reservoir. A further discharge

of trade effluent from Kingsmill Hospital to a small tributary of the reservoir is also covered by consent. Full details of the location and nature of all consented discharges within a 1km radius of the reservoir outlet are included in Envirocheck maps and datasheets at Appendix A.

Kingsmill Reservoir Draft Management Plan 2010-2014

4.17 ADC have prepared a detailed management plan for the reservoir. The Kingsmill Reservoir Management Plan 2010-2014 (Draft) sets out a range of strategic objectives and action plans related to maintaining and improving the reservoir with regard to its recreational, environmental and social functions. Selected strategic objectives defined in the plan are summarised as follows:

- Encourage increased public access and use of the reservoir
- Maintain and/or promote enhancement of existing habitats (reedbed, swam and carr of wet woodland) for gains in biodiversity and to support existing wildlife.
- Maintain, and if possible enhance, new habitats
- Conserve viable populations of key vertebrates and invertebrates
- Manage a smaller area of open water to allow limited sailing
- Develop the Adventure Base as a conservation centre for the reservoir
- Work with Nottinghamshire Anglers Association to ensure that sustainable fishing is consistent with habitat management and conservation proposals for the reservoir
- Encourage and sustain community involvement

4.18 The Management Plan identifies progressive reservoir siltation as an *'opportunity to develop the reservoir as a major conservation centre in the district with its range of habitats, providing specialist training in wetland habitat management skills, conservation and environmental education'*. It is apparent therefore that whilst progressive siltation is considered to be problematic with regard to sailing and associated water based recreational activities it is perceived as beneficial with regard to the ecological and conservation value of the site.

4.19 On the basis of the strategic objectives of the draft Management Plan it is concluded that when assessing silt management options care must be taken to ensure that any management strategy does not compromise ecological and nature conservation objectives in favour of maintaining or developing existing water based recreational facilities. The Management Plan tends to indicate that the long term future of the reservoir may be determined by its nature conservation value rather than its role as a water sports venue.

5. Reservoir hydrology

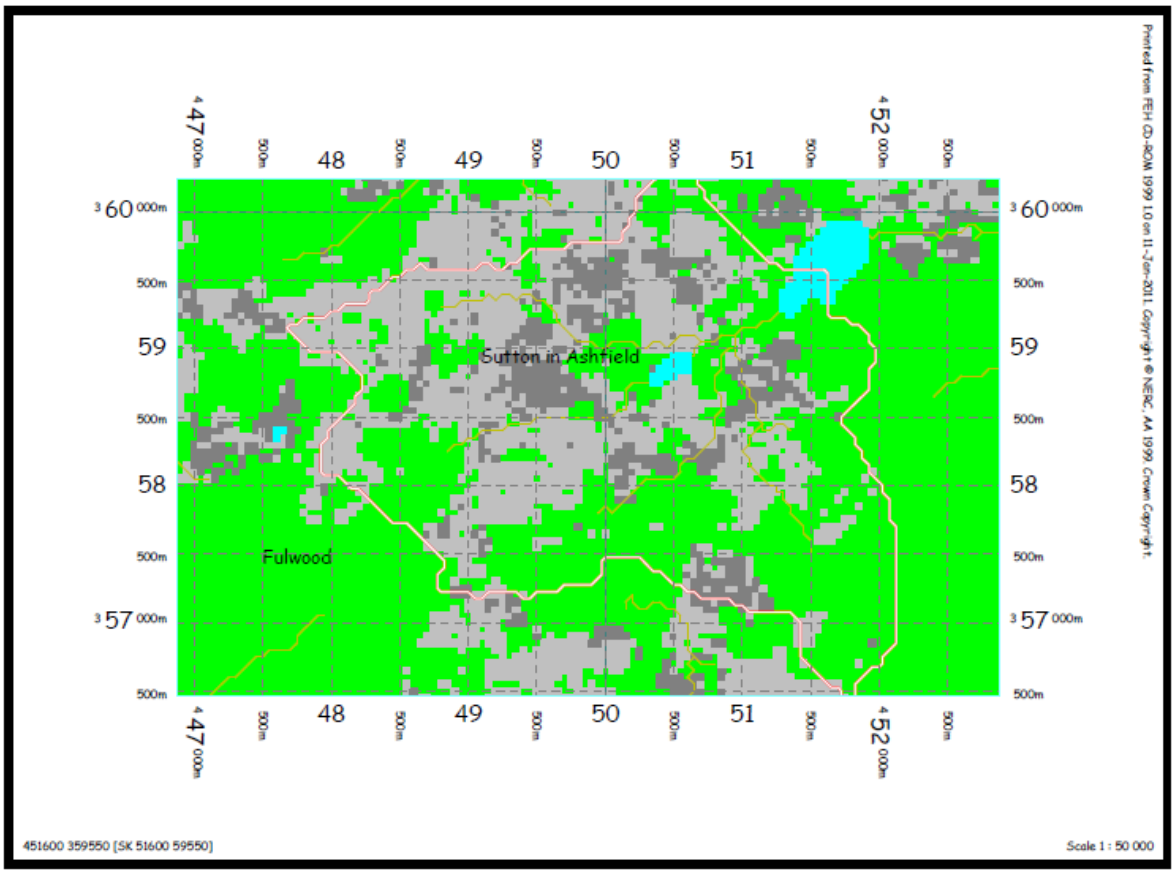
5.1 To allow detailed consideration of past, present and future reservoir siltation it is necessary to first define basic hydrological characteristics of the reservoir, the catchment that feeds it and the downstream water systems into which it drains.

5.2 Kingsmill Reservoir is formed by damming the River Maun at Sutton in Ashfield to produce a surface water body with a surface area of approximately 23ha. With the exception of local surface water drainage outfalls the River Maun represents the only significant inflow into the reservoir.

Catchment definition

5.3 At the reservoir inlet the River Maun catchment, including several tributaries, extends to a total area of 9.7km^2 of which the majority is mixed residential and industrial development. The location of the reservoir in relation to the River Maun is shown on Drawing 052/02/01. The extent of the River Maun catchment at the reservoir is illustrated graphically in Figure 6 below.

Figure 6: River Maun catchment area at Kingsmill Reservoir



5.4 Hydrological data for the catchment as a whole has been obtained from the Institute of Hydrology Flood Estimation Handbook (FEH) models as summarised in Table 1.

Table 1: River Maun Catchment descriptors at Kingsmill Reservoir

Catchment descriptor	Value
Area	9.70 km^2
Average drainage path length	2.60 km
Average drainage path slope	29.6 m/km
Proportion wetness	0.35%
Standard average annual rainfall	727 mm
Standard percentage runoff	17.3%
Percentage urban development (1990)	31.2%

5.5 Immediately upstream of the reservoir inlet the River Maun splits into two separate watercourses each of which is formed by two separate tributaries. Flows in the river are therefore derived from four separate sub-catchments as shown on Drawing 052/02/02 and summarised in Table 2 below.

5.6 As indicated in Table 2, Sub-catchments B and C have similar hydrological characteristics although Sub-catchment B is slightly more urbanised. Sub-catchment A has a higher percentage urban development than the other three sub-catchments. However, it is Sub-catchment D that is most significantly hydrologically different to other sub-catchments. Although having the lowest percentage urban development Sub-catchment D is characterised by a significantly higher standard percentage runoff rate indicating that the percentage of rainfall draining to the river from this sub-catchment is much higher than for the other sub-catchments. Reference to drawing 052/02/02 confirms that within Sub-catchment D ground levels exhibit greater topographic variability with the potential for rapid surface runoff. It is therefore reasonable to conclude that approximately 40% of runoff to the River Maun at this location is derived from Sub-catchment D.

Table 2: River Maun Sub-catchment Descriptors

Sub-catchment	Land Use	Hydrological Characteristics
Sub-catchment A New Cross & Sutton Forest Side	Predominantly residential including the northern part of The Lawns Playing Fields	Sub-catchment area 1.63km^2 48% urban development 20.3 % runoff percentage
Sub-catchment B The Lawn Playing Fields	Predominantly residential with localised industrial development and the central/southern part of The Lawns Playing Fields	Sub-catchment area 1.98km^2 34% urban development 15.3 % runoff percentage
Sub-catchment C Kirkby Hardwick	Mixed residential and industrial development with large areas of green open space	Sub-catchment area 2.33km^2 26% urban development 14.4 % runoff percentage
Sub-catchment D Round Hill	Mixed residential and industrial development with large areas of green open space	Sub-catchment area 1.82km^2 15% urban development 46.3 % runoff percentage

5.7 Ordnance Survey mapping of the area supported by site reconnaissance surveys has confirmed that all branches of the River Maun are extensively culverted within all four sub-catchments. Culverts extend beneath both residential and industrial areas of the catchment. Sections of the river that have remained open have typically been canalised to promote efficient drainage of surface water through trapezoidal channel sections. This approach to surface water drainage tends to lead to rapid surface water flow rates as natural flow attenuation features are lost.

5.8 At the downstream end the reservoir drains via an overflow weir to a steep stone outfall channel constructed along the front of the reservoir dam wall into a small longitudinal pond area which forms part of the Hermitage Nature Reserve. Flows from this feature are controlled by a downstream dam and weirs which allow flow back to the main river channel which runs eastwards to the Bleak Hills area and beyond.

Inflow rates

5.9 Analysis of long term average inflow rates to Kingsmill Reservoir from the River Maun has been undertaken using standard hydrological techniques and the Institute of Hydrology WINFAP flow modelling tool.

5.10 A general indication of the total annual flow into the reservoir from the River Maun can be obtained by reference to meteorological data and catchment characteristics. With a catchment area of 9.7km^2, an average annual rainfall of 727mm and a standard percentage runoff of 17.3% the total annual inflow would approximate to 1.22million cubic metres. As discussed in later sections of this report the average annual inflow rate equates to approximately three times the total storage volume in the reservoir.

5.11 If distributed equally throughout the year the average daily inflow rate would be approximately 3,340m^3/day. However, occasional more extreme flooding would account for a significant proportion of annual inflow with the effect that the average daily flow rate would be substantially lower than estimated above.

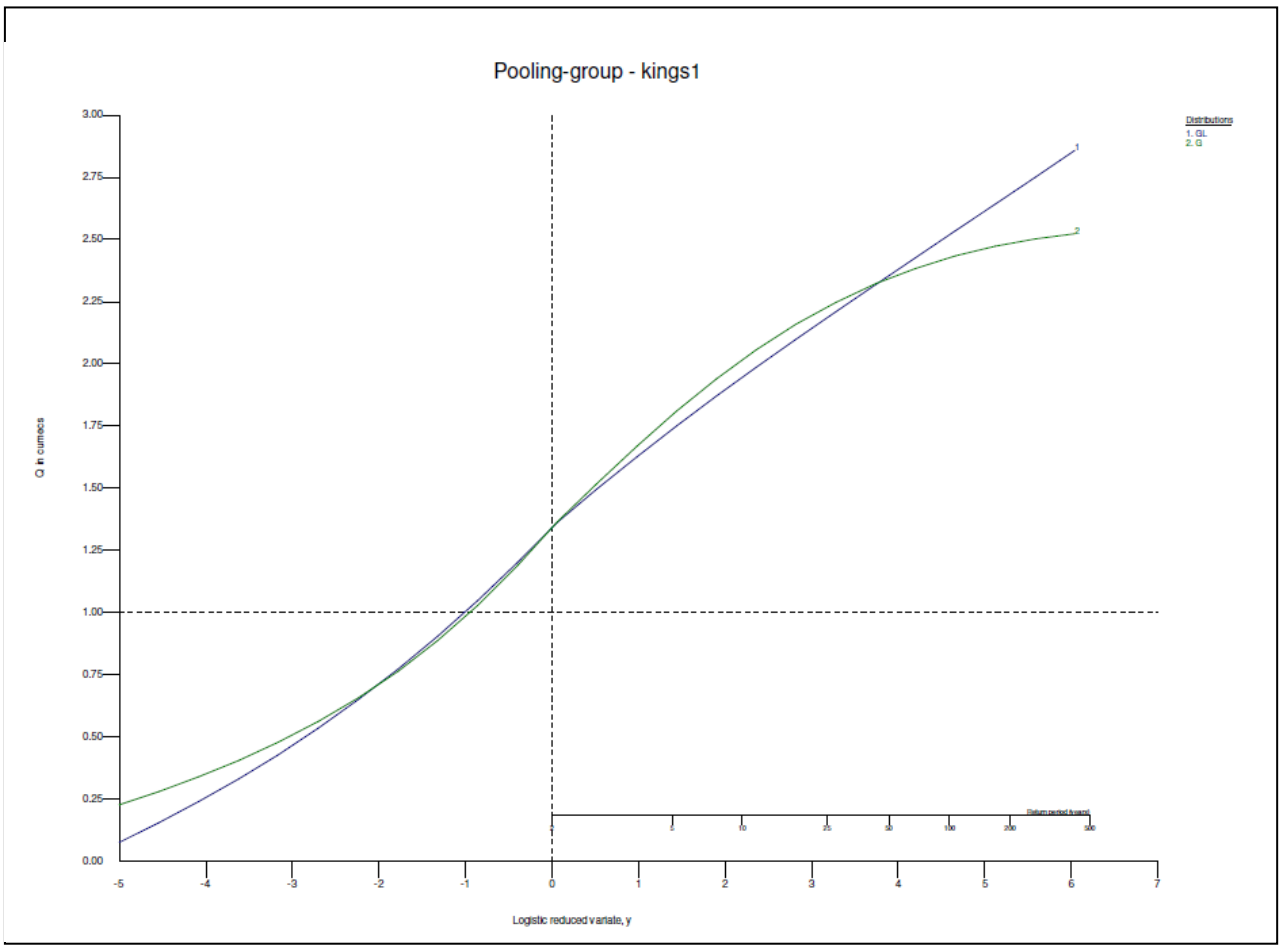
5.12 The magnitude of extreme flood flow into the reservoir can provide an indication the potential for erosion and silt entrainment. Flood flow analysis is based on the use of the catchment descriptors described in Tables 1 and 2 above. Peak flow rates for the mean annual flood flow through to the 1 in 500 year flood flow are shown graphically in Figure 7 and summarised in tabular format in Table 3.

Table 3: Predicted flood flows in River Maun at Kingsmill Reservoir inlet

Flood return period (years)	Flow (m^3/sec) Generalised Logistic	Flow (m^3/sec) Gumble
2	1.345	1.345
5	1.737	1.795
10	1.946	2.018
25	2.186	2.229
50	2.355	2.344
100	2.520	2.427
200	2.683	2.485
500	2.898	2.528

5.13 The General Logistic distribution is usually considered most appropriate for application in England & Wales. The predicted 1 in 100 year peak flood flow of 2.52m^3/sec equates to a rate of approximately 9,000m^3/hr if such conditions were to persist for in excess of an hour.

Figure 7: Flood frequency curve for the River Maun at Kingsmill Reservoir



5.14 The sectional dimensions of the River Maun channel varies considerably along each of the four sub-catchments. The largest channel section is present at the downstream end close to the reservoir inlet with channel width and depth progressively reducing upstream. In the hydraulic design of earth channels it is usually assumed that flow velocities in excess of $1m^3$/sec have the potential to result in both earth bank erosion and mobilisation of bed sediment. As flow rate is directly related to flow velocity and cross sectional area it is possible to estimate critical channel sectional areas below which sediment mobilisation might be expected. The results are presented in Table 4 below.

Table 4: Discharge-area-velocity relationships for sediment mobilisation

Flood return period (years)	Flow rate (m^3/sec)	Sectional area at critical flow velocity (m^2)
Average annual daily flow	0.039	0.039
2	1.345	1.345
5	1.737	1.737
10	1.946	1.946
25	2.186	2.186
50	2.355	2.355
100	2.520	2.520
200	2.683	2.683
500	2.898	2.898

5.15 The smallest channel sections occur at the upstream end of the catchment where tributary channels are estimated to have a minimum bed depth of 0.5m and minimum channel depth of 1.0m. Assuming 60 degree bank slopes the bank to bank sectional area at such location would be approximately $1m^2$. It is apparent therefore that under flood conditions there is potential for liberation and mobilisation of sediment from the upstream sections of the River Maun under all flood flow rates but not under average daily flow conditions. It must be concluded therefore that sediment migration in the river primarily occurs during discrete flood events.

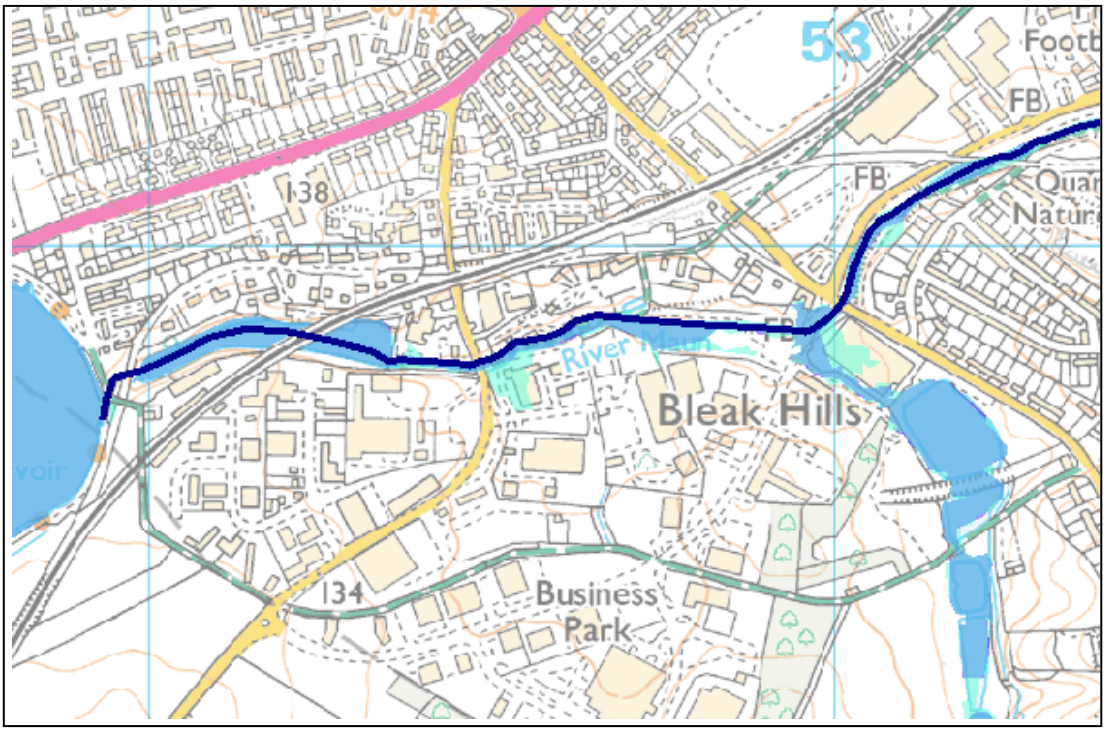
Flood management function

5.16 With an estimated capacity of approximately $370,000m^3$ Kingsmill Reservoir has an important role in relation flow regulation and flood management in the Sutton-in-Ashfield area. Hydrological analysis has demonstrated that flood flows in the River Maun can be significant with up to $9,000m^3$/hour discharging to the reservoir in response to a 1 in 100 year flood event. The reservoir also receives a significant contribution from local land drainage systems with inflows increasingly significantly during high intensity rainfall conditions.

5.17 As discussed earlier in this report the reservoir discharges via a steep dyke into the Hermitage Pond which in turn overflows into the continuation of the River Maun downstream. There is significant industrial development immediately downstream of the Hermitage Pond with extensive residential development further downstream. The current Environment Agency flood zone map for the area, an extract from which is included as Figure 8, indicates that land along the Maun Valley downstream of the Hermitage Pond is currently at risk of flooding in response to a 1 in 100 year flood event with more land at risk in response to a more extreme flood event.

Figure 8: EA flood zone map extract showing flood risk downstream of Kingsmill Reservoir

(Source: EA February 2011)



5.18 Any significant change in the flood attenuation capacity of the reservoir could lead to a reduced capacity to regulate flood flows in the River Maun leading to increased flood risk downstream of the site. Such effects would become more pronounced as flood flows in the river increase in both magnitude and frequency in response to future climate change.

Water quality

5.19 It is understood that recent water quality monitoring at Kingsmill Reservoir has tended to be focused on the biological quality of the water and conditions for algal growth. However, the Environment Agency has undertaken both biological and chemical water quality monitoring at the reservoir and in the River Maun upstream and downstream of the reservoir on an annual basis since the early 1990's. Details are included with the Envirocheck datasheets at Appendix A.

5.20 Agency monitoring data indicates that the chemical quality of water in the River Maun immediately upstream of the inlet to the reservoir has steadily improved from 'fairly good' in 1993 to 'very good' from 2005 to 2008.

5.21 Over the same timescale the chemical quality of water in the reservoir has improved from 'poor' in 1993 to 'fairly good' from 2006 to 2008. It is apparent therefore that water quality within the reservoir is poorer than the quality of water draining to it from the River Maun. Such effects are likely to be the result of a number of factors including the contribution of urban surface water drainage into the reservoir, stormwater discharges from the adjacent sewage treatment works and biochemical processes within the reservoir itself.

5.22 The chemical quality of water draining from the reservoir to the Hermitage Pond and River Maun downstream is of a similar standard to that within the reservoir with quality ratings rising from 'fair' in 1993 to 'fairly good' in 1999 to 2008. Monitoring records show that the biological quality of water along this same stretch of the river has remained 'poor' throughout the fifteen year monitoring period.

5.23 The Environment Agency has indicated that it does not hold any recent data related to the chemical composition of silt within the reservoir but that spot samples may have been obtained and analysed approximately 10 years ago. It is anticipated that given the range of industrialised catchment areas that drain to the reservoir there is high probability that the reservoir silt will contain significant concentrations of heavy metals and hydrocarbons typical of runoff from roads and urban areas.

5.24 The sailing club and Adventure Base have reported that silt found on the masts of boats when capsized in deeper parts of the reservoir is typically a black sludge. This contrasts with the generally medium to coarse grained sandy silt present in shallow areas at the reservoir inlet and around the western margins. It is assumed therefore that organic processes within the reservoir contribute to silt composition in deeper waters.

6. Reservoir siltation

6.1 Reservoir siltation is a natural process occurring in all reservoirs to an extent that is dependant on reservoir size, design and the nature of the catchments draining to it. The accumulation of silt in Kingsmill Reservoir has occurred progressively over many years as particulate matter has entered the reservoir with surface water from the River Maun and multiple land drainage discharges. No evidence has been found to indicate that silt deposits have been removed from the reservoir in the past and hence the current accumulation may be the result of many years inflow.

6.2 The relative size of a reservoir can be used to categorise its sediment trap efficiency. Studies undertaken in the United States have produced data to suggest that reservoirs with the capacity to store more than 10% of average annual inflow would be expected to trap between 75% and 100% of inflowing sediment. Reservoirs with the capacity to store 1% of average annual inflow would trap 30% to 55% of inflowing sediment. Sediment trap efficiency would reduce to zero for reservoirs with the capacity to store less than 0.1% of average annual inflow.

6.3 With the capacity to store more than 30% of average annual inflow it is apparent that Kingsmill Reservoir has a high sediment trap efficiency with no significant potential for sediment migration downstream.

6.4 Within the context of this study the primary interest in reservoir siltation is identification of current and future silt sources and evaluation of silt accumulation rates. Discussion related to potential silt sources is only relevant to the extent that options for source control may be identifiable. Reference can be made to both natural silt sources such as river bank erosion or silt entrainment in runoff from agricultural land and man-made sources such as silt contained in trade effluent discharges or runoff from roads and car parks.

Sources of silt

6.5 As discussed at Section 5 the River Maun catchment upstream of the reservoir largely consists of mixed industrial and residential land use with few areas of green open space. There is therefore the potential for silt generation and migration as a consequence of both natural and man-made activities.

6.6 On the basis of the site hydrological survey and discussion with user groups at the reservoir it is apparent that there has been progressive siltation within the reservoir leading to an increase in silt deposition at the upstream end of the site and around the western and northern boundaries. There is no evidence of significant sediment deposition around the eastern boundary.

6.7 Reservoir siltation can result from either (i) influx of silt with inflow to the reservoir and/or (ii) internal erosion and dispersion of eroded material. The site survey has confirmed that the reservoir boundary is formally established with no significant evidence of bank side or bed erosion.

6.8 Flood flow velocity calculations summarised at Section 5 have indicated that there is potential for both erosion and entrainment of silt in surface water flowing in the upstream sections of the River Maun catchment. There is therefore potential for both generation of silt within the river system and transportation of silt entering the river from adjacent industrial and residential land.

6.9 As discussed above the main inflow into the reservoir is the River Maun at the upstream boundary. There are several other small inflows to the reservoir each of which is associated with

stormwater drainage from adjacent roads, car parks or recent commercial development. It is understood that discharge of treated sewage effluent from the sewage works on the western bank of the reservoir ceased approximately 14 years ago.

6.10 Environment Agency records indicate the presence of 2 active discharge consents for discharges to the upstream end of the reservoir. Details are included on the Envirocheck datasheets at Appendix A. Both consents are owned by Severn Trent Water and relate to treated sewage and stormwater overflow discharges from the adjacent sewage treatment works. It is understood that although the consent remains valid treated sewage effluent is no longer discharged to the reservoir but that stormwater overflow still discharges directly to the reservoir.

6.11 It is understood that there are a number of other consented and un-consented trade effluent discharges to the River Maun further upstream. The discharge of surface water from roads and car parks is not classed as trade effluent and therefore usually permitted without requirement for a consent.

6.12 On the basis of evidence considered during this study it is concluded that reservoir sediment sources are:

- Greenfield runoff at the upstream end of Sub-catchment D
- In-channel erosion at the upstream end of all tributaries
- Runoff to the River Maun from industrial and commercial land in all sub-catchments
- Urban stormwater sewer discharges to the River Maun in all sub-catchments
- Direct residential, commercial and road drainage discharges to the reservoir
- Direct stormwater sewer overflow discharge to the reservoir.

The type and distribution of silt in the reservoir suggest that migration of sediment from the River Maun during flood conditions is the dominant source of reservoir silt.

Silt accumulation rates and influencing factors

6.13 A detailed appraisal of past and present reservoir silt deposition has been undertaken to establish the current average rate and distribution of silt and the effect that continued accumulation would have on reservoir functions. The analysis has been based on a comparative study of reservoir water depths recorded in a 1984 survey and current water depths determined by bathymetric survey.

1984 bathymetric survey

6.14 A relatively detailed bathymetric survey of the reservoir was undertaken in 1984 on behalf of the local sailing club. The survey is presented as a hand coloured drawing showing spot water depths

with contours that were subsequently added in 1993. The survey covers the entire reservoir area. The method of depth measurement is unknown but assumed to be measurement from a graduated staff or similar device. The resultant bathymetric map is presented with depth contours plotted at 0.5m intervals.

6.15 The 1984 survey is currently kept at the sailing club in framed format. A photographic copy of the original survey drawing is included at Appendix B of this report. To provide a basis for comparison with the recent bathymetric survey the 1984 survey has been digitised and re-contoured by three dimensional contouring software. The results are presented as Drawing 052/02/03.

6.16 The original contoured drawing indicated the presence of a deeper water channel along the central axis of the reservoir upstream of the spillway outfall. The maximum recorded water depth was 2.7m in this area. The central body of the reservoir recorded an average water depth of approximately 2.0 to 2.2 m. Water depths decrease significantly in the upstream direction towards the River Maun inlet and along the western reservoir boundary.

6.17 The digitised and re-contoured version of the 1984 survey incorporates contours at 0.2m intervals and hence provides a more detailed interpretation of the water depths across the reservoir. However, the resulting contour profile is generally consistent with the hand drawn version from 1993 indicating maximum water depth just upstream of the outfall and significant shallowing towards the south and west.

Recent bathymetric survey

6.18 The reservoir was re-surveyed on Friday 14th January 2011 using a handheld digital sonar gauge from a boat provided by the Adventure Base. The survey was designed to approximately replicate the distribution of measurement points observed on the 1984 survey although access to some parts of the reservoir is now restricted due to increased silt deposition and the presence of shallow water. The survey ultimately incorporated approximately twice the number of depth measurements than were included in the original 1984 survey.

6.19 Shallow areas of the reservoir, primarily the upstream and western boundary areas, had to be surveyed with the use of a flat bottomed canoe with depth measurements of less than 0.8m taken by measuring staff. The central, deeper water areas of the reservoir were surveyed using a plastic hull motor boat.

6.20 The results of the recent bathymetric survey are presented as Drawing 052/02/04 with water depths represented by contours at 0.2m intervals to allow direct comparison with the 1984 survey. In comparing the two surveys it is necessary to acknowledge that each was produced by a different survey technique that would tend to lead to slight variation in results even if undertaken

at the same time. Some of the differences between the two surveys may therefore be attributable to survey method. However, the following conclusions can be drawn:

- in general, the water depth in the central part of the reservoir remains at around 2.0m on average showing little variation since 1984 although there has been a redistribution of silt towards the downstream end of the system and away from the central area;

- the deepest areas of water are to the west of and upstream of the reservoir outfall where a maximum water depth of 2.9m was measured in 2011 compared to 2.7m in 1984;

- water levels at the upstream end of the reservoir are significantly shallower in 2011 when compared to 1984. Deposition of silt at the upstream end of the reservoir has resulted in loss of water depth and extension of the shallow water areas further northwards into the main body of the reservoir;

- Shallow water areas around the north western boundary of the reservoir now extend further into the reservoir than in 1984;

- The southern corner of the reservoir in the vicinity of the Adventure Base is now exhibiting water levels that are deeper than observed in 1984. It is noted that in 1984 the Adventure Base jetty does not appear to have been constructed. It is possible therefore that localised desilting of this corner of the reservoir took place during jetty construction works although this has not been confirmed.

6.21 Drawings 052/02/03 and 052/02/04 show the 1.2m contour highlighted to illustrate the extent to which shallower water now extends across some parts of the reservoir when compared to the original survey in 1984. The extent to which silt accumulation has extended further into the main body of the reservoir from the north western boundary is apparent.

6.22 The additional silt volume in the reservoir has been estimated by calculation in the change in water volume, assuming that the overflow spillway elevation has remained approximately at the same elevation throughout the 26 year period since 1984. Water depth change analysis has been focused on areas of the reservoir where change has clearly occurred. It has been assumed that the volume of silt present within the central, deepest, part of the reservoir has remained relatively stable with some local re-distribution but no significant change in the total volume. The total volume of water in this area is estimated to be approximately 220,000m^3.

6.23 Water volume change calculations have been prepared for eight separate zones around the reservoir by comparison of current and 1984 water depth contours. Detailed results are presented at Appendix C and summarised in Table 5 below.

Table 5: Peripheral water volume change 1984-2011

Location	1984 water volume (m^3)	2011 water volume (m^3)	Volume change (m^3)	Adjusted volume change (m^3)
Upstream main inlet	9375	3375	-6000	-6000
Opposite sailing club	17100	14700	-2400	-2400
Adventure Centre corner	6675	10800	+4125	
Western boundary	8900	8700	-200	-200
Opposite Adventure Centre	42900	48750	+5850	
Eastern boundary	40200	40200	0	0
Geothermal pipe area	9675	4575	-5100	-5100
Northern corner	13800	15450	+1650	+1650
Totals			**-2075**	**-12050**

6.24 On the basis of this analysis it is apparent that the total volume of water in the reservoir has reduced from approximately 368,625m^3 to 366,550m^3 since 1984. This represents a net reduction of 2,075m^3 or 0.6% of the reservoir water volume. It is clear however that this type of analysis does not provide a full picture of the changes that have taken place as silt accumulation has occurred at already marginal areas of the reservoir where additional silt deposition has a disproportionate impact on loss of deep water.

6.25 Table 5 indicates that greatest loss of water and hence most significant silt deposition has occurred at the upstream end of the reservoir, at the River Maun inlet and around the northern boundary in the area currently occupied by the geothermal pipes that serve the adjacent hospital. The additional volume of silt deposited in these areas is approximately 13,500m^3. The survey results also indicate a fairly significant reduction in silt volume in the southern corner of the reservoir close to the Adventure Centre jetty. As discussed above such effects may have occurred as a result of jetty construction in this area.

6.26 If accepted at face value the recent bathymetric survey suggests that since 1984 there has been some re-distribution of silt within the reservoir and a net increase in silt volume of approximately 2,075m^3. With an estimated bulk density of 1.6tonne/m^3 this equates to approximately 3,320 tonne of silt. Assuming equal distribution across all years this would equate to annual silt accumulation rate of approximately 80m^3/year or 125 tonnes/year. This is not consistent with field data and on-site observations or with the reservoir silt volume balance.

6.27 However, if the silt distribution dynamics are considered in more detail the following conclusions can be drawn:

- the apparent loss of silt from the Adventure Base corner may reflect changes that occurred due to localised past de-silting or inaccuracies in the original survey and could therefore be discounted from the water balance.

- The apparent loss of silt from the area opposite the Adventure Base is more likely to be part of the re-distribution of silt within the central reservoir area as it is balanced by increases in silt further downstream. On this basis this area could be discounted from the water balance.

Adjustment of the water volume change to account for these factors results in a net loss of water volume and hence silt accumulation of approximately 12,000m^3. With an estimated bulk density of 1.6tonne/m^3 this equates to approximately 20,000 tonne of dry silt. Assuming equal distribution across all years this would equate to an annual silt accumulation rate of approximately 460m^3/year or 740 tonnes/year. This adjusted value is considered to be the most representative estimate of silt accumulation rates between 1984 and 2011 and will therefore be referenced in all following calculations.

6.28 The additional volume of silt deposited since 1984 consists of 8,600m^3 deposited in the upstream end of the reservoir, 5,100m^3 deposited in the vicinity of the geothermal pipes and loss of 1,650m^3 from the northern boundary of the reservoir. It is silt deposition in these two areas that is having greatest impact on reservoir sailing activity.

6.29 The average daily inflow rate to the reservoir from the River Maun has previously been estimated at 1.22million m^3/annum. If all the accumulating silt were to be distributed equally in inflowing river water the net silt concentration would be approximately 605mg/litre. Generic water quality indicators for lowland rivers and streams suggests that the sediment content typically ranges from 100 to 400mg/litre depending on catchment characteristics and local conditions. However, hydrological analysis has indicated that silt entry into the reservoir from the river is most likely to occur during high flow conditions in the river when silt entrainment concentrations can be significantly higher than average values. On this basis it can be reasonably concluded that it is entirely feasible for the River Maun to be the predominant source of silt entry into the reservoir without the need to infer other sources.

6.30 Sediment may also enter the reservoir via the multiple stormwater drainage systems present around the western perimeter and formerly via the sewage treatment works outfall. The recent bathymetric survey suggests that once direct discharge of treated effluent from the sewage treatment works ceased there may have been migration of silt from the works outfall area to locations further north along the reservoir boundary. This tends to indicate the presence of

reservoir currents around the north western boundary and hence a mechanism for silt migration to this area.

6.31 It is understood that the stormwater drainage systems in the catchment are relatively recent installations likely to be equipped with interceptor systems to remove silt and other contaminants prior to discharge to the reservoir during normal flow conditions. Such systems typically operate with sediment content limits of approximately 30mg/l. Similarly, available records indicate that when discharging to the reservoir the sewage outfall had a 50mg/l limit on suspended solids. Given that the inflow volumes from each of these sources is likely to be substantially lower than the flow rate in the River Maun the impact of other inflows on silt distribution within the reservoir is considered likely to be relatively low. It is also noted that the physical nature and appearance of silt deposited around the western boundary is consistent with that found in the upstream end of the reservoir and the bed of the River Maun upstream of the reservoir inlet.

7. Impact of siltation on reservoir functions

7.1 The reservoir acquires silt on a continuous basis leading to progressive siltation of the reservoir margins and consequent reduction in water levels and associated weed growth. Over several years silt accumulation has led to progressive reduction in water depths within the reservoir and significant reduction in the area available for a number of sports, leisure and recreational activities.

7.2 In contrast, progressive siltation has resulted in the creation of many new shallow water habitats and associated development of species diversity at the site. The ADC Management Plan for the reservoir has identified continued siltation as an opportunity to enhance and develop the nature conservation value of the site.

7.3 It is considered likely that this process would eventually result in negative environmental impacts if silt accumulation continued un-managed and the area of open water continued to decrease. However, the point at which such impacts become negative has not yet been defined and may be many years away.

7.4 Assessment of the impact of reservoir siltation on reservoir functioning is a key contributor to the development and justification of possible future silt management strategies. The impact on specific reservoir activities is summarised in the following paragraphs.

Sutton-in-Ashfield Sailing Club

7.5 The sailing club was established in 1959 and has developed a membership of up to 90 members. The club also provides a base for sailing activities undertaken by local Sea Scouts and Sea Cadet groups. It is understood that the club promotes itself as a racing club and the potential to race is

dependent on the presence on a clear stretch of water of sufficient length and depth. The club believe that the racing ability at Kingsmill is an important factor in securing and developing membership of the club as non-racing sailing activity can be undertaken at other venues in the region.

7.6 The club cite two changes in the reservoir that are having a significant negative impact on their activities. These are (i) progressive reduction in the navigable area of open water and (ii) seasonal growth of weed in the sediment substrate. It is understood that a minimum water depth of 1.2m is required for sailing club craft. The current limit of water with a depth in excess of 1.2m is shown on Drawing 052/02/04.

7.7 It is apparent that during the period 1984 to 2011 there has been a relatively significant reduction in the area of open water suitable for sailing activities. Over this period this area has reduced from approximately 175,000m^2 to 165,000m^2 a reduction of approximately 1ha or approximately 6% of the navigable area. As a consequence there has been progressive inward relocation of the fixed buoys that indicate the edge of the safe sailing areas within the reservoir.

7.8 The sailing club is concerned that continuation of the siltation process will lead to further reduction in the area of accessible open water with a risk that the club will no longer be able to offer racing based activities. Under such conditions the club considers that it will become difficult to maintain or develop its membership.

7.9 The seasonal presence of weed within the reservoir appears to further restrict sailing activities with the potential for negative impact on future membership recruitment. Weed growth is known to be related to silt deposition and the development of shallower water around the reservoir margins.

7.10 Open water access is currently further restricted by the presence of the geothermal pipes at surface. The pipes prevent access to part of the northern area of the reservoir. It is understood that the contractor responsible for management of the geothermal system is currently working on development of techniques to secure the pipes to the reservoir bed as designed.

Mill Adventure Base

7.11 The water based activities of the Adventure Base include sailing, kayaking, canoeing, raft building and use of inflatables. There are no immersion sports. It is understood that a water depth of at least 1m is required for these activities.

7.12 Whilst a reducing area of accessible open water has an impact on Adventure Base activities the shape and configuration of open water is less significant than is the case with the sailing club. However, continued reduction in open water area will continue to adversely affect the scope of water based activities which may reduce the value of such activities in the future.

7.13 The Adventure Base report that the seasonal presence of weed in the reservoir is a more immediate problem with the potential for direct impact on some water based activities as craft become entangled in some areas of the reservoir. It is noted that new weed cutting equipment has been obtained with the aim of improving management of the weed problem.

Other recreational use

7.14 Other recreational uses at the reservoir include cycling, walking, fishing, bird watching and model boat sailing. Non-water based activities are unlikely to be adversely affected by progressive reservoir siltation until such time as siltation affects the visual appearance of the reservoir to an extent that reduces the attraction to the area. Under such conditions use of the site by the general public for walking, cycling and bird watching etc. may decline. Such impacts would be contrary to the objectives of the Management Plan for the reservoir.

7.15 The Model Boat Club is based around the two sailing club jetties and makes use of open water at the southern end of the reservoir. At current rates of siltation it is considered unlikely that progressive reservoir siltation would have any significant adverse impact on model boat sailing at the site.

7.16 It is understood that along the north western boundary the reservoir is becoming less attractive to the fishing community due to the progressive extension of very shallow water further away from the shoreline. The recent bathymetric survey indicates that water of less than 0.6m depth extends as far as 50m from the shoreline in some northern and north western locations around the reservoir. The eastern and south eastern boundaries are relatively unaffected by siltation with no apparent impact on fishing activity.

Downstream users

7.17 Environment Agency records indicate that there are no surface water abstractions from the River Maun system within 1km downstream of the reservoir outfall. However, there are two licensed surface water abstractions within a distance of 1 and 2km downstream. These are as summarised in Table 6.

Table 6: Licensed abstractions from the River Maun within 2km of Kingsmill Reservoir outfall

License No.	Operator	Source	Use
03/28/70/0083	Eve Trackway Ltd	River Maun	Process water
03/28/70/0044	Mansfield Town Football Club	River Maun	Spray irrigation

7.18 Water quality monitoring has indicated that water draining from the reservoir is ‘fairly good’ quality and remains at this quality downstream of the Hermitage Pond in the vicinity of the licensed

abstractions. There is no evidence to suggest that reservoir siltation has had any impact on downstream water quality. Water used for spray irrigation is unlikely to be highly sensitive to changes in downstream water quality. Whether any such changes would affect the suitability of water for process use is dependant on the specific use and water quality constraints associated with it.

7.19 It is understood that there are fishing interests at both the Hermitage Pond and the River Maun downstream. There is currently no evidence to suggest that reservoir siltation has adversely affected fish or fishing downstream of the reservoir however, it is understood that such activities could be significantly affected by any significant change in the chemical or biological quality of water draining from the reservoir.

Flood management

7.20 As discussed at Section 5 the reservoir has an important flood management function providing protection for land, businesses and properties downstream. The ability of a reservoir to regulate flood flows in the River Maun depends on the storage capacity within the reservoir and the extent to which flood flows can be attenuated. It is clear that with increasing silt deposition for a fixed reservoir water level the internal storage capacity is progressively reduced.

7.21 Bathymetric studies have indicated that water storage capacity within the reservoir is reducing at a rate of approximately 450m^3/year, or 0.1% of reservoir capacity per year, with total reduction of approximately 12,000m^3 since 1984. This can be compared to the estimated peak 1 in 100 flood flow of approximately 9,000m^3/hr from the River Maun to the reservoir. The current estimated reservoir water storage capacity of approximately 370,000m^3 remains considerably in excess of the total calculated inflow from all sources during 1 in 100 year storm events and more extreme flood events.

7.22 On the basis of available evidence it must be concluded that for the foreseeable future reservoir siltation at the same or similar rate to past siltation is unlikely to have and significant adverse impact on the flood regulation function of the reservoir. However, if silt were allowed to continue to accumulate along the reservoir margins for a considerable number of years into the future there may be a tendency for flow through the reservoir to become focussed along a central channel that would tend to promote rapid transmission of flood flows from reservoir inlet to outlet with the potential for an increase in the rate of overflow from the reservoir outfall to the Hermitage Pond.

Land drainage

7.23 Stormwater drainage outfalls to the reservoir are located around the northern and western boundaries. It is assumed that in accordance with standard drainage practice the invert level of all

drainage outfalls has been established a small distance above the normal overflow elevation at the reservoir outfall.

7.24 In relation to the reservoir, all stormwater drains should continue to function as designed unless the system capacity were to be reduced by either a rise in reservoir water level above drainage invert level or the development of a physical obstruction due to silt deposition around the drainage outfall.

7.25 Reservoir water levels are controlled by the elevation of the reservoir outfall and spillway. There is no evidence to suggest that any change in reservoir water level is either necessary or desirable for the foreseeable future and hence there is no expectation that stormwater drainage functions would be adversely affected by a rise in reservoir water level.

7.26 The north and western parts of the reservoir are areas where significant silt deposition has occurred over the last 26 years. However, visual inspection of this area has confirmed that although in some places there is no standing water around outfalls silt deposition is not resulting in any obstruction to flow.

7.27 Natural silt deposition should not lead to silt deposits at an elevation above the prevailing reservoir water level unless as a result of wind action. However, the development of increasingly shallow water conditions and associated vegetation growth could lead to progressive blockage of drainage outfalls with resultant reduction in drainage capacity and potential for system backup further upstream. It may therefore be necessary to ensure that management measures are in place to ensure that all stormwater outfalls to the reservoir remain free and unblocked by either silt or vegetation.

8. Future trends

8.1 Reservoir siltation is a natural process and silt will continue to accumulate within the reservoir unless measures are taken to control it. The River Maun catchment that drains to the reservoir is already well developed with a mix of predominantly residential and industrial land use. There is limited potential for major landuse change within the catchment and an expectation that any future changes would have to be implemented in a manner that does not have adverse impact on the reservoir.

8.2 It is however, anticipated that meteorological conditions within the catchment will change in response future climate change. Latest Government research suggests that rainfall intensity will increase by around 20% to 2085 and by up to 30% to 2115. Local climatic conditions are likely to be characterised by more frequent occurrence of more extreme events including high intensity rainfall.

8.3 As silt entrainment and migration to the reservoir is directly associated with flood flows in the River Maun and surface water runoff from local stormwater drainage systems it is reasonable to assume that climate change is likely to lead to an increase in the rate of silt deposition in future years. With no other proven basis for calculation it is considered appropriate to conclude that the percentage change in silt deposition could mirror the average change in rainfall intensity. On this basis silt deposition rates within the reservoir would increase by 5% over the next fifteen years, a further 10% over the following thirty years and a further 10% over another thirty years with further 10% over the following thirty years leading to a net 30% increase with respect to current rates by 2115.

8.4 On this basis it can be concluded that climate change impacts at the 10% level over the next fifteen years are unlikely to have any observable impact on reservoir siltation rates and likely to have little impact on the development of suitable silt management options. Over longer timescales, were siltation rates may increase by up to 30% relative to current rates there could be a significant impact on the suitability of silt management options with regard to both operational feasibility and economic cost.

8.5 It is concluded that potential climate change impacts on siltation rates are a material consideration with regard to the definition of suitable long term silt management options as a significant increase in siltation rate may render certain options impractical or uneconomic.

9. Regulatory considerations

9.1 Any proposals for management of silt within the reservoir need to take account of the prevailing legislative and regulatory regime within which such works could be undertaken. Particular attention is to be given to identification of regulatory requirements within the reservoir itself and ADC obligations and responsibilities to downstream users of the River Maun system.

9.2 Regulatory issues considered in this section of the report are restricted to those issues relevant to silt management within the reservoir. There is no intension to provide a comprehensive summary of all water resource legislation where not relevant to this study. No reference is made to legislation related to the reservoir dam or responsibilities associated with it.

9.3 The following Acts and regulations are considered relevant to this study and discussion related to the council's obligations and responsibilities under each is presented in the following paragraphs of this report. It should be noted that discussions are primarily focussed on the technical and hydrological aspects of each instrument and no attempt is made to provide a full legal interpretation.

9.4 As discussed in subsequent sections of this report silt management options may include a range of actions based on removal of silt from the reservoir, on-site deposition for dewatering and offsite transportation and disposal. Options for upstream silt containment are also considered. The potential impacts of such options therefore may include the following:

- water pollution
- environmental damage
- flood risk impacts

On this basis it is considered that the following Acts, regulations and guidance are relevant.

Reservoirs Act 1975

9.5 This study has demonstrated that Kingsmill Reservoir currently has a capacity of around 370,000m^3 which brings it within the scope of the Reservoirs Act 1975 which applies to above ground impoundment of water in excess of 25,000m^3. The 1975 Act primarily relates to reservoir dam design, integrity and safety in relation to a clearly defined monitoring and inspection regime. For the purpose of the Act the council is likely to be considered to be the 'undertaker' and hence assumes responsibility for compliance with the Act. There may however, be a case for assignment of responsibilities to other users of the reservoir depending on the number of days per year that they conduct activities on the reservoir.

9.6 The 1975 Act has no direct relevance to de-silting or silt containment proposals unless such activities would affect the condition, functioning or the structural integrity of the reservoir dam. ADC responsibilities under the Act are addressed through the current dam inspection and monitoring programme undertaken by an appropriately qualified and registered consultant engineer.

9.7 It is worth referencing Section 11 of the Act which refers the recording of water levels. There is a requirement for the undertakers, as defined by the Act, to keep a record of water levels, depth of water and flow of water over the spillway or overflow. It is understood that this function is currently undertaken by the Environment Agency through the use of an automated monitoring station.

Flood and Water Management Act 2010

9.8 The Flood and Water Management Act 2010 introduces legislation to update the Reservoirs Act 1975. It is anticipated that the 2010 Act will be implemented during 2011/2012.

9.9 The primary impact of the 2010 Act related to reservoirs is as follows:

(i) a reduction of the threshold for application of the 1975 Act to reservoirs with an above ground storage capacity of over 10,000m^3,

(ii) introduction of a procedure for designation of large raised reservoirs in relation to risk

(iii) introduction of a requirement for undertakers to prepare a Flood Plan for all high risk reservoirs.

9.10 The reduction in the applicability threshold of the Act to 10,000m^3 will have no impact on legislative responsibilities in relation to Kingsmill Reservoir as the reservoir capacity is considerably in excess of the original 25,000m^3 threshold.

9.11 Definitions included in the 2010 Act suggest that Kingsmill Reservoir will almost certainly be defined as a high risk reservoir due to the height of the dam above downstream properties. The risk assessment process will be undertaken by the Environment Agency during the next two years. Undertakers responsible for high risk reservoirs will be required to prepare a Flood Plan in accordance with a format defined by the Environment Agency. The plan will incorporate definition of emergency action procedures to be implemented in response to a failure or partial failure of the reservoir dam.

9.12 As the proposed de-silting activities would be located at the western side of the reservoir well away from the dam there is no reason to consider that de-silting would have a direct impact on the structural integrity of the reservoir dam. In the context of the total reservoir volume the increase in water storage capacity that would result from de-silting is unlikely to be significant in relation to reservoir and dam hydraulics. However, it is recommended that prior to implementation of any de-silting activity the council should obtain a formal opinion from the current dam inspection engineer.

Water Resources Act 1991

9.13 As the River Maun immediately downstream of the reservoir is classified as main river the provisions of the Water Resources Act 1991 and the local Land Drainage bylaws are relevant. As a consequence a flood defence consent would be required for any works in, under or over a watercourse within 7m of bank top. Such provisions could be relevant to any necessary pollution prevention measures at or downstream of the reservoir outfall.

Water Resources Act 1991 – Part II pollution offences

9.14 Any discharge of trade effluent or other fluid, with the exception of clean site drainage water, is likely to require a Consent to Discharge from the EA. A consent would normally specify conditions related to the quality and quantity with which a discharge must comply. The discharge may be independently monitored by the EA. Whilst there would be no intension to generate effluent discharges to either the reservoir of the River Maun a downstream pollution incident could generate liability under the Act

Groundwater protection policy and practice

9.15 The Environment Agency policy with regard to groundwater protection (*Policy and practice GP3 pt4 Legislation and policies*) sets out the general approach related to development and groundwater. The policy is based on assessment of groundwater vulnerability to pollution with the objective of directing potentially polluting development to areas of low groundwater vulnerability.

9.16 Groundwater protection would only become an issue if related to silt disposal or temporary storage on the Magnesian Limestone which is classified as a 'Primary Aquifer'.

PPS25 Development and Flood Risk

9.17 The reservoir performs a significant and important flood management function in relation to attenuation of flood flows in the River Maun and protection of land adjacent to the River Maun downstream of the site. Reservoir de-silting would increase the flood attenuation capacity of the reservoir and make a positive impact on flood risk minimisation in the area. Any other development including silt containment structures may be considered as new development for the purposes of PPS25 and subject to a flood risk assessment. The council will need to be satisfied that construction of upstream structures would not generate liability for increased flood risk either upstream or downstream of the site.

10. Management options review

10.1 This study has resulted in new information to confirm and quantify the rate of progressive siltation of Kingsmill Reservoir. It has been demonstrated that silt deposition is primarily restricted to specific areas within the reservoir and at these locations there has been progressive reduction in water depth. Progressive siltation is having the following effects on the reservoir:

- creation of new habitats and increase in species biodiversity
- enhancement in ecological variability and improved conservation opportunities
- reduction in open water areas suitable for water based activities
- increasing chemical water quality deterioration risk due to silt mobilisation and dispersion
- increasing the growth of weed by providing substrate and shallowing water

It is considered that although siltation has delivered ecological benefits continued un-controlled siltation leading to more extensive loss of deeper water would eventually result in negative ecological effects.

10.2 There is a requirement to consider options for more active management of reservoir siltation to minimise future short and medium term adverse impact on water based recreational activities whilst maintaining the current ecological benefits. At face value there is a direct conflict between

the requirements of recreational activities to minimise silt deposition in the reservoir and the ecological objectives based on the maintenance and enhancement of shallow water habitats. In this context any silt management strategy is likely to have to balance the costs and benefits to all reservoir functions.

Silt management options

10.3 The condition of the reservoir at the time of the previous bathymetric survey in 1984 appears to have been suitable for water based activities practiced by both the sailing club and the adventure base. Bathymetric analysis has indicated that approximately 12,000m^3 of silt has been deposited in the reservoir since that time.

10.4 The total volume of silt in the reservoir is unknown but the total depth of silt is reported to be significant and total silt volumes could be many tens of thousands of cubic metres. Removal of all silt from the reservoir is not considered to be a realistic option. It is recommended therefore that returning the reservoir to its 1984 state, at which recreational activities were unconstrained, is the appropriate baseline reference against which to consider silt management options.

10.5 Removal of accumulated silt from the reservoir could be achieved by dredging the upstream and north western boundary areas. Silt deposits are generally too far from the reservoir shoreline to make land based silt excavation a feasible option. Silt removal would therefore be achieved by water based dredging using either grab or suction dredging techniques. In general suction dredging requires pumping large volumes of silt laden water to large silt lagoons where dewatering takes place. This approach is unlikely to be feasible at Kingsmill Reservoir and therefore pontoon based grab dredging methods are likely to be the most appropriate option.

10.6 Removal of all silt deposited since 1984 would inevitably result in major disturbance, and in some cases total loss, of some of the shallow water habitats created at the reservoir inlet and around the margins. Such an approach is inconsistent with the objectives of the draft Management Plan for the reservoir.

10.7 In its present configuration there are several areas of the reservoir in which silt accumulation is having adverse impact on water based recreational activity but is not contributing to the development of new habitat or site biodiversity. These locations are the offshore areas of shallow water along the north western boundary, excluding the marginal shoreline areas where new habitats have already developed, and the downstream end of the reservoir inlet, opposite the sailing club building, where shallowing water is restricting boat access.

10.8 It would appear therefore that there may be scope for considering selective silt removal at locations that would have the greatest benefit for water based recreational activity and the minimum adverse impact on reservoir ecology.

10.9 In addition to selected removal of accumulated silt it is also appropriate to consider options for future control and management of silt within the reservoir to reduce the impact of future silt deposition on water based recreational activities whilst preserving the potential for ecological enhancement. The most effective methods of reservoir silt management tend to be based on strategies for silt containment in areas of the reservoir where silt removal can be achieved relatively easily and at acceptable cost. In this regard the current configuration of Kingsmill Reservoir provides an ideal opportunity for development of a silt containment facility.

10.10 It is therefore concluded, on the basis of hydrological analysis and in accordance with the strategic objectives of the Kingsmill Reservoir draft Management Plan, that there are three silt management options that should be considered. They are:

Option 1: Do nothing and allow natural progression
Option 2: Selective silt removal by dredging
Option 3: Silt containment and selective silt removal by dredging

Each of these three options is considered in detail with regard to feasibility, benefits and costs in the following sections of this report.

Option 1: Do nothing and allow natural progression

10.11 Hydrological analysis has indicated that under the current hydrological regime the reservoir is receiving approximately 750tonnes of additional silt each year. As discussed at Section 8 of this report there is potential for silt accumulation rates to increase in future years in response to increased rainfall intensity and enhanced erosion that could result from climatic change. It is apparent therefore that the consequence of doing nothing to manage silt accumulation in the future will lead to increased silt deposition within the reservoir and consequent reduction in the volume and depth of water around the reservoir margins.

10.12 Using the calculated average annual silt accumulation rates with allowance for climate change effects and assuming silt distribution patterns remain the same it has been possible to produce predictive water depth maps for 5, 10, and 20 years in the future. Water depth maps including the 1.2m depth boundary for the years 2016, 2021 and 2031 are presented as Drawing 052/02/05.

Operational and environmental impacts

10.13 It is apparent from reference to Drawing 052/02/05 that with no silt management action the area of open water within the reservoir will progressively reduce with declining opportunity for continuation of the full range of water based recreational activities. It is possible that by 2021 the accessible area of open water would be too small for the continuation boat racing activity which could significant affect the ability of the Sutton-in-Ashfield Sailing Club to retain and attract members putting the future of the club at risk.

10.14 Similarly, the water based activities of the Mill Adventure Base may have to be limited to activities that could be effectively implemented within a smaller body of water. However, given that the centre provides a relatively wide range of activities and that it may have a longer term future as a centre for conservation management and education these changes may not have a critical impact on its future use or viability. It is however, apparent that silt deposition around the existing jetty areas could restrict access to the water from both the Sailing Club and the Adventure Base.

10.15 Drawing 052/02/05 suggests that by 2021 the reservoir would have a significantly smaller area of open water with expansive dry margins and shallow water habitats around all sides. Such changes may have a significant adverse impact on fisheries and bird populations at the reservoir. It is understood that such a major change in the open water/shallow water habitat areas at the site may not be considered ecologically beneficial. There can be little doubt that such changes would have the potential for serious deterioration in the 'visitor experience' at the reservoir where the current expectation is to see a large body of open water with large bird populations.

Practical and regulatory constraints

10.16 The do-nothing option does not introduce any practical constraints with regard to silt management operations other than issues that may relate to progressively decreasing access to open water and the potentially increasing public safety risk that could result from the development of extensive areas of silt around the reservoir margins.

10.17 Whilst there are unlikely to be any legislative implications of allowing continued siltation of the reservoir such a policy may eventually lead to a deterioration in the ecological status of the site and an increased risk of transferring the impact of any water pollution incidents to downstream environments as contamination attenuation capacity is reduced in relation to a decreasing volume of water. Deterioration in ecological status may affect the potential to retain the proposed 'Local Nature Reserve' designation in the future.

10.18 Whilst increasing risk of adverse downstream water quality impacts arising from external pollution incidents within the reservoir is unlikely to introduce any site based liability on the part of the

council it may introduce a requirement under current pollution prevention regulations to take additional pollution control measures to prevent deterioration of downstream water quality.

Budget cost estimates

10.19 There would clearly be no new capital or management costs associated with a 'do-nothing' option at the reservoir other than potentially increasing weed control costs related to increasing areas of shallow water. However, this option could lead to increased reservoir management costs in the medium to longer term future in relation to the following issues:

- A requirement for additional pollution control measures
- Habitat management costs
- Costs related to provision of alternative resources to support current recreational activities
- Upstream drainage improvement works related to loss of reservoir capacity

It is also apparent that as silt volumes within the reservoir continue to increase the cost of returning the reservoir to a navigable condition will increase with time as more silt would need to be removed.

Option 2: Selective silt removal by dredging

10.20 This option is based on acceptance that silt will continue to enter the reservoir and disperse to the current depositional areas but that silt volumes will be managed by selective de-silting on a multi-annual basis as required. The objective of this approach would be to maintain adequate deep open water to secure the water based activities of both the sailing club and the adventure base whilst minimising any adverse impact on reservoir habitats.

10.21 Silt would be removed from areas indicated on Drawing 052/02/06 by water based grab dredger. The total volume of silt to be removed initially is estimated to be 7,500m^3 with the potential for continuous de-silting on a ten-year cycle.

10.22 Removal of silt from the north western boundary and downstream inlet areas of the reservoir as indicated would result in north western and south western extension of deeper water allowing the boundary of the sailable area to be returned to the 1984 position. Removal of smaller volumes of silt from more limited areas of the reservoir would be unlikely to deliver adequate additional open water to benefit sailing activities.

10.23 Dredged silt could either be removed from site or re-used to form an island elsewhere within the reservoir. These options are discussed later in this report.

Operational and environmental impacts

10.24 It is anticipated that selective silt extraction could be undertaken within a period of approximately one month with additional time required for delivery and set-up of plant and equipment at site and for removal of dredged silt and site cleanup on completion. It would therefore be appropriate to assume that parts of the reservoir would be unavailable for water based activities for a period of up to two months.

10.25 The requirement for use of heavy plant for silt removal and lorries for silt transportation off-site or within the site may make some or all parts of the reservoir inaccessible to the general public. As a consequence full or partial site closure may need to be considered during the dredging period.

10.26 The selective dredging process, involving removal of silt close to but several metres away from the reservoir margins, may introduce a degree of instability in silt deposits that remain at the margins and adjacent to dredged areas. In the area opposite the sailing club such effects are unlikely to have any adverse impact. At the western boundary, marginal areas dredging may lead to inward migration of some of the remaining shoreline silt deposits with potential local impact on shallow water habitats that have developed there. Such effects are however, likely to be localised and small-scale.

10.27 Removal of silt by dredging would inevitably lead to widespread re-mobilisation of fine particulate matter within the reservoir. As a consequence there is likely to be a significant short term increase the concentration of suspended solids and turbidity in reservoir water. However, such effects are unlikely to be significantly different to the effects that would result from silt re-mobilisation that occurs in response to high magnitude flood flows from the River Maun at the reservoir inlet and therefore unlikely to lead to ecological or environmental damage.

10.28 Silt depositional studies prepared for this report have indicated that for fine to medium grained silt with a typical settling velocity of 1×10^{-5} m/sec and 'normal' flow conditions from the River Maun into the reservoir approximately 95% of all liberated silt would settle within a surface area of approximately 4,000m^2. This is equivalent to an area of approximately 70m x 70m or a distance of 70m from the dredging site. The majority of re-mobilised silt would therefore re-settle well within the reservoir boundary for all proposed de-silting locations. As a consequence it is considered unlikely that silt removal would lead to an observable increase in particulate matter in water draining from the reservoir to the Hermitage pond. There may however, be a measurable and persistent increase in overflow water turbidity as particularly fine material remains in suspension for longer periods of time.

10.29 The turbulent nature of the reservoir overflow to the receiving dyke and the presence of the Hermitage pond itself will provide buffering capacity with regard to downstream water quality

impacts with the expectation that any deterioration in water quality due to increased turbidity would be fully mitigated before discharge from the downstream end of the Hermitage pond.

10.30 If overflow water turbidity were a significant concern the configuration of the outfall and connecting dyke would provide an opportunity to consider the temporary use of a flocculent dosing system to ensure that very fine particulates settle rapidly on entry to the Hermitage Pond. Such a process may have to be accompanied by a commitment to remove the additional volume of sediment from the upstream end of the Hermitage Pond until water achieves satisfactory clarification.

Practical and regulatory constraints

10.31 There are a number of practical constraints associated with large scale de-silting of the reservoir. As discussed above, the majority of priority areas for silt removal are not within reach of the reservoir edge and hence water based plant will be required. Whilst there should be no difficulty in securing suitable water access for dredging plant and associated equipment there may be a requirement to isolate areas of the site from public access for the duration of the dredging process.

10.32 The most significant practical consideration relates to options for management and disposal of material removed from the reservoir. Although it has not been possible to determine the typical chemical composition of reservoir silt during this study it is understood from discussions with the Environment Agency and general knowledge of the catchment that silt deposited in the reservoir may contain elevated concentration of heavy metals and hydrocarbons. Such contaminants are typically associated with effluent from sewage treatment works, roads and car parks, industrial yards and operating areas and stormwater sewer discharges. All of these features are present within the reservoir catchment.

10.33 Silt extracted from the reservoir will be fully saturated and have a bulk density of approximately two tonnes per cubic metre. In this form the material is usually unsuitable for off-site movement until allowed to dewater. Silt dewatering is typically undertaken in purpose built silt lagoons that can drain freely or by mechanical dewatering equipment. It is understood that some contractors can offer the option of wet silt disposal by mixing with a water absorbing additive and transferring straight to road vehicles for transportation. Such options are likely to attract a premium cost.

10.34 If relatively uncontaminated it would be technically feasible to consider options for silt disposal by land spreading. However, it appears unlikely that there would be suitable land available within the reservoir site and therefore an alternative site would have to be identified. It is also important to note that the site is underlain by the Magnesian Limestone aquifer and therefore minimising groundwater quality impacts through leaching silt drainage would be a material consideration when deciding silt disposal options.

10.35 In practice silt disposal options at Kingsmill Reservoir are likely to be limited to the following:

- Excavation and on-site storage to allow dewatering with subsequent transportation by road vehicle to a surface spreading disposal area or licensed landfill facility depending on silt composition and disposal area risk assessment

- Direct disposal to on-site containers equipped with stabilising/dewatering additions and subsequent transportation by road vehicle to a surface spreading disposal area or licensed landfill facility depending on silt composition and disposal area risk assessment
- Re-distribution within the reservoir by (i) re-use to form a new island or (ii) re-distribution to the deeper areas of the reservoir

10.36 The type of disposal option selected may have an impact on the design of any de-silting programme for the reservoir. If silt lagoons are used for silt dewatering they may need to stay in place for six to twelve months to allow the silt to dry. If all 7,500m^3 of silt were to be removed by road vehicle a total of approximately 300 vehicle movements could be required. It may not be practical or economic to move that much material in a single de-silting period and de-silting may have to be undertaken in smaller volumes over a number of years.

10.37 Re-distribution of silt within the reservoir may be a feasible option if a maximum water depth of approximately 2.0m would be considered acceptable. Water at this depth is unlikely to compromise the potential for continuation of leisure and recreational activities but may have an impact on aquatic ecology and deeper water habitats in particular. The re-distribution of silt that is contaminated could lead to wide scale deterioration in water quality within the reservoir with potential adverse water quality impacts in Hermitage Pond downstream. It is probable that over time the natural flow of water through the reservoir would lead to natural re-distribution of the deposited silt from the deeper water areas back to reservoir margins and upstream of the dam.

10.38 An alternative option for internal silt re-distribution would be the formation of an island at a suitable location within the reservoir. From a technical perspective it would be most effective to construct an island in the deepest water available to maximise silt tipping depth without requiring excessive area. Reservoir silt present in the areas proposed for selective de-silting is likely to be particularly fine-grained. It may be technically difficult to construct an island within the reservoir without some form of boundary containment to prevent continuous silt migration from tipping areas. A perimeter boundary of large stone blocks i.e. magnesian Limestone could be formed and silt tipped within it to form an island.

10.39 Placement of all 7,500m^3 of dredged silt in a new island would lead to development of an island with a diameter of approximately 60m which would be a reasonably significant structure within the reservoir but could be designed and located to have minimum impact on leisure and recreational activities.

10.40 Regulatory issues associated with selective de-silting of the reservoir are likely to be restricted to matters related to pollution prevention and public safety. The design of any de-silting and silt removal/re-distribution strategy would have to be discussed and agreed in detail with the Environment Agency in accordance with relevant pollution prevention policy.

10.41 Consideration may need to be given to wider planning and health & safety issues associated with the potential for a large number of lorry movements, above ground spreading of silt or temporary on-site storage of potentially hazardous material. There may be a requirement to obtain waste management consents for storage of large volumes of potentially contaminated silt.

Budget cost estimates

10.42 The selective de-silting option would incur costs in relation to:

- Site management, control and public safety
- Silt extraction costs
- Temporary silt storage costs
- Silt transportation and disposal costs
- Pollution prevention measures costs
- Technical advisory costs

As discussed above there are a number of alternative approaches to silt management and disposal and options related to the location and volume of silt to be removed.

10.43 There are still a number of data gaps that preclude the preparation of detailed budget cost estimates for de-silting options. These are primarily related to silt storage and disposal options, land availability, silt chemical composition, ecological control measures and potential pollution control measures. However, an indication of the potential range of budget costs has been prepared following analysis of typical waste disposal and transportation costs and consultation with specialist dredging companies regarding typical silt extraction costs. Indicative costs are summarised inn Table 7 below.

10.44 Reference to Table 7 suggests that a reasonable average working estimate for the majority of de-silting options would be £300,000. The exception to this is the option to disposal of all silt at a licensed landfill facility for which the total cost could be up to five times greater at around £1.5m.

Table 7: Budget estimate costs for removal and disposal of 7,500m^3 of silt from Kingsmill Reservoir

Activity	Potential budget cost range (£)	Comments/assumptions
Site management, control and public safety	10-20,000	General estimate based on experience at other sites
Silt extraction costs	75,000-100,000	Based on approximate rate of £10/m^3 advised by specialist contractors
Silt management options		
A. Temporary storage and off-site disposal to landfill	1,250,000-1,500,000	Assumed approximately £50k for lagoon storage and transportation + landfill costs at approx £100/tonne dry
B. Temporary storage and off-site disposal to land	170,000-200,000	Assume approximately £50k for lagoon storage and transportation at approx £10/tonne
C. Wet transportation and off-site disposal to land	250,000-350,000	Assume wet disposal cost of extra £10/tonne and transportation at approx £10/tonne
D. Internal re-distribution	75,000-100,000	Assume dredging and re-distribution costs approx. double dredging costs alone
E. Internal island construction	175,000-200,000	Assume as above with additional £100k allocated to island boundary construction and landscaping works
Regulatory consents	10,000	General estimate
Pollution prevention measure	10,000	General estimate
Technical advisory costs	25,000-50,000	Estimate based on potential need for hydrological, ecological, engineering input
Total costs Disposal option A	**1,380,000 – 1,665,000**	
Total costs Disposal option B	**300,000 – 365,000**	
Total costs Disposal option C	**380,000 – 515,000**	
Total costs Disposal option D	**205,000 – 265,000**	
Total costs Disposal option E	**305,000 – 365,000**	

10.45 It is important to note that Option 2 relates to selective removal of silt from the reservoir but does not include any measures to prevent continued silt accumulation in the future. On the basis of reservoir bathymetric analysis and other information referenced in the report it would be reasonable to assume that the de-silting process would need to be repeated at maximum 10year intervals.

Option 3: Silt containment and selective silt removal by dredging

10.46 The most comprehensive silt management option would involve construction of upstream silt containment structures to minimise silt entry to the main body of the reservoir together with selected de-silting to replace lost deep water required for water based recreational activities. Selective silt removal options are discussed in detail in relation to Option 2 above.

10.47 As the majority of silt enters the reservoir at the River Maun inlet at the upstream end of the reservoir where the reservoir width is at a minimum this would be the most appropriate location for installation of silt containment measures designed to minimise future entry of silt into the reservoir.

10.48 Whilst silt containment measures would not reduce the volume of silt entering the upstream end of the reservoir they would act to contain silt in an area that could be readily accessed for future de-silting at comparatively low cost and prevent migration of silt to areas of deeper water required to maintain navigation for sailing and recreational activities.

10.49 In considering options for silt containment it has been necessary to consider hydrological engineering options in relation to the environmental context of the reservoir site itself. It has been assumed that it would not, for example, be considered appropriate to install engineered structures that conflict with the landscape or general visual appearance of the reservoir.

10.50 The most appropriate approach would be to consider the construction of a ground level height embankment across the neck of the upstream area of the reservoir approximately in the location currently occupied by reed bed growth promotion structure as shown in Figure 9.

Figure 9: Potential location of silt containment structure across reservoir inlet.

10.51 At this location the reservoir is approximately 140m wide. The embankment would be constructed from one side by progressive tipping of coarse stone into the reservoir to form an embankment wide enough for vehicular access. Embankment design would need to be informed by assessment of reservoir bed conditions and suitability for embankment construction.

10.52 The embankment would need to incorporate a wide weir at the sailing club side of the reservoir. The weir would be designed to retain flow capacity adequate to convey a design flood flow i.e. 1 in 1000 year flood flow, in the River Maun. In this context the embankment would not provide any impounding function but would retain silt by lengthening water flow paths and providing physical restriction on sub-surface particulate flow. An indication of a possible containment structure configuration is shown on Drawing 052/02/06.

10.53 Containment structure installation would have to be accompanied by selective de-silting of the reservoir if benefit in relation to leisure and recreational activity is to be achieved. However, the proposed dredging area opposite the sailing club could be dredged by land-based excavator at lower cost if the containment embankment is constructed first. The primary benefit of this approach would be to minimise future silt deposition in navigable areas of the reservoir and significantly reduce future de-silting costs.

Operational and environmental impacts

10.54 Further reservoir bed investigation would be required to determine the suitability of the silt for supporting a stone embankment. If bed conditions are geotechnically unsuitable there may be a requirement for advance silt removal or bed stabilisation works prior to embankment construction.

With a requirement for vehicular access the embankment would need to have a minimum 5m width at surface making it up to 20m wide at the reservoir bed depending upon embankment stability considerations and the geotechnical properties of the reservoir bed.

10.55 The weir section of the embankment could be constructed with stone to a lower level and pre-cast concrete surface and side walls to maintain stability and prevent erosion. The weir would remain below water level at all times and hence a bridge would be required to facilitate pedestrian or vehicular access from one side of the reservoir to the other.

10.56 There would be a requirement for use of heavy plant and the importation of relatively large quantities of stone to the reservoir site. Site access around the sailing club area and the opposite side of the reservoir could be restricted for several weeks during the construction programme.

10.57 Embankment construction would inevitably result in some disturbance of reservoir bed silt deposits in the construction area with potential deterioration in water quality immediately downstream. However, such disturbance is likely to be less extensive than that resulting from silt dredging and mobilised particulate matter may settle out relatively quickly within the reservoir. Further assessment of silt composition would need to be undertaken to establish whether there would be other water quality impacts i.e. toxicity issues associated with silt re-mobilisation.

10.58 The objective of Option 3 is to minimise the volume of silt entering the main body of the reservoir. With no change in the volume of silt entering the site from the River Maun construction of the containment structure would lead to deposition of larger volumes of silt in the upstream end of the reservoir. This area is currently extensively silted with water depths typically less than 0.6m across the area. The scheme would be designed to allow rapid low-cost de-silting from the embankment within a 25m distance upstream and downstream. These areas would therefore retain a reasonable depth of water as appropriate.

10.59 With no de-silting in the future the majority of the area upstream of the embankment would tend to progress from shallow water to areas of variable shallow water inundation related to inflows from the River Maun. The river channel extension into the reservoir would remain in-situ with a water depth comparable to that at present.

10.60 The natural development of shallow water conditions in the upstream area of the reservoir may provide opportunity for development or extension of a range of wetland and shallow water habitats with associated increase in biodiversity. Although advice should be sought from a qualified ecological consultant prior to any decision to progress with Option 3 it appears on the basis of information available during the preparation of this report that there is unlikely to be overriding negative ecological impact that would affect the feasibility of silt containment options.

10.61 There would be a requirement to commit to relatively regular de-silting of the parts of the reservoir that could be reached from the embankment i.e. approximately 25m either side. Removal of silt from these areas, particularly the upstream side, would retain future silt deposition space and minimise the risk of migration into the reservoir. Bathymetric studies indicate that a volume of approximately 5,000m^3 of silt could be removed from the upstream end of the reservoir by excavator on the embankment. This is approximately equivalent to the volume of silt entering the reservoir over a period of 10 years.

10.62 As discussed in relation to Option 2 provision would need to be made for the relocation of excavated silt either within the reservoir or off-site. However, with a requirement for limited de-silting on a ten-year cycle the council may have adequate opportunity to identify long term silt disposal options as part of other construction or development works within the area.

Practical and regulatory constraints

10.63 As identified above the most significant practical constraint on Option 3 implementation would be the potential to develop an achievable embankment design with particular regard to reservoir bed suitability for construction and the ability to place rock fill in a manner that allows embankment construction without stone dispersal over a large area.

10.64 Reservoir bed suitability can be determined by geotechnical investigation and analysis. On the basis of currently available information there is no reason to indicate that it would not be technically possible to construct a rockfill embankment as proposed.

10.65 Embankment construction would have to be accompanied by selective silt removal. The same practical constraints associated with silt removal as described in relation to Option 2 would be also be relevant under Option 3. The only variation would be that under Option 3 silt present in the reservoir opposite the sailing club could be removed from the embankment once constructed without the need for water based extraction.

10.66 The weir section of the embankment would need to be constructed such that it allowed unrestricted flood flow from the River Maun to prevent an increase in flood risk upstream in the river. This should be entirely achievable but will need to be subject to detailed hydrological design and engineering to ensure that the twin aims of silt retention and flood flow are achievable.

10.67 Although the reservoir and the River Maun upstream are not designated as ‘main river’ by the Environment Agency the construction of the embankment would constitute works within a watercourse and may require flood defence consent from the Environment Agency. If required a consent application may need to be accompanied by a flood risk assessment to confirm that there would be no adverse impact on flood risk in the River Maun upstream of the site.

10.68 As with Option 2 there would be a requirement to comply with prevailing water quality regulation to prevent downstream deterioration in water quality in the River Maun.

Budget cost estimates

10.69 In common with Option 2 there would be a requirement for selective silt extraction and hence costs associated with dredging, silt storage transportation and disposal. However, the volume of silt to be removed by water borne dredger would be significantly reduced as silt from the area opposite the sailing club could be removed by excavator from land once the embankment was constructed. There would however, be additional costs associated with construction of the embankment and the technical or regulatory support services required to implement it.

10.70 Option 3 would incur costs in relation to:

- Site management, control and public safety
- Silt extraction costs
- Temporary silt storage costs
- Silt transportation and disposal costs
- Pollution prevention measures costs
- Embankment construction costs
- Technical advisory costs

As discussed in relation to Option 2 there are a number of alternative approaches to silt management and disposal and options related to the location and volume of silt to be removed. These issues are not restated here but are referenced in budget cost indicators below.

10.71 Data gaps that would have an impact on budget cost estimation include uncertainty regarding reservoir bed stability, technical and regulatory support requirements and the same silt disposal option uncertainties described in relation to Option 3. However, an indication of the potential range of budget costs has been prepared following analysis of typical waste disposal and transportation costs and consultation with specialist dredging companies regarding typical silt extraction costs. Indicative costs are summarised inn Table 8 below.

Table 8: Budget estimate costs for silt containment structure installation and selective removal of 7,500m^3 of silt from Kingsmill Reservoir.

Activity	Potential budget cost range (£)	Comments/assumptions
Site management, control and public safety	20,000-30,000	General estimate based on experience at other sites
Silt extraction costs	60,000-75,000	Based on approximate rate of £10/m^3 for water based + £5/tonne for land based dredging
Silt management options		
A. Temporary storage and off-site disposal to landfill	1,250,000-1,500,000	Assumed approximately £50k for lagoon storage and transportation + landfill costs at approx £100/tonne dry
B. Temporary storage and off-site disposal to land	170,000-200,000	Assume approximately £50k for lagoon storage and transportation at approx £10/tonne
C. Wet transportation and off-site disposal to land	250,000-350,000	Assume wet disposal cost of extra £10/tonne + transportation at approx £10/tonne
D. Internal re-distribution	75,000-100,000	Assume dredging and re-distribution costs approx. double dredging costs alone
E. Internal island construction	175,000-200,000	Assume as above with additional £100k allocated to island boundary construction and landscaping works
Containment embankment construction	200,000-300,000	General estimate based on material volumes and estimated labour/plant rates
Regulatory consents	20,000	General estimate
Pollution prevention measure	10,000	General estimate
Technical advisory costs	50,000-75,000	Estimate based on potential need for hydrological, ecological, engineering input
Total costs Disposal option A	**1,610,000 – 2,010,000**	
Total costs Disposal option B	**530,000 – 710,000**	
Total costs Disposal option C	**610,000 – 860,000**	
Total costs Disposal option D	**435,000 – 610,000**	
Total costs Disposal option E	**535,000 – 710,000**	

10.72 Reference to Table 8 indicates that although net silt extraction costs are likely to be lower under Option 3 due to the capacity for on land extraction from the upstream end of the reservoir, the additional costs associated with embankment design and construction leads to a reasonable average working estimate of approximately £600,000 to implement Option 3.

10.73 There would however, be a significant difference in the ongoing de-silting costs for Option 3 when compared to Option 2. Future de-silting could be restricted to silt removal by land based excavator from the embankment. It is anticipated that de-silting would be required every 10 years with estimated costs in the region of approximately £25,000-50,000 depending on silt disposal options. This compares to an estimated future de-silting cost of around £300,000 every 10 years for Option 2.

11. Conclusions and recommendations

11.1 This hydrological assessment has been prepared to investigate silt accumulation characteristics at Kingsmill Reservoir, Sutton-in-Ashfield, Nottinghamshire and to allow development of guidance with regard to future silt management options. The study has incorporated site hydrological survey, bathymetric survey, new hydrological analysis and consultation with reservoir user groups. The study has resulted in the following general conclusions:

(i) At its entry to the reservoir the River Maun drains a catchment area of approximately 9km^2 composed of mixed industrial, commercial and residential development. Approximately 40% of runoff to the river drains from the southern sub-catchment in the vicinity of Round Hill.

(ii) The River Maun supplies approximately 1.22m cubic metres of water per year to the reservoir. This is approximately three times the reservoir capacity. Flood flow velocities in the River Maun and its tributaries are high enough to liberate and mobilise sediment for transfer and deposition in the reservoir.

(iii) The total volume of silt deposited in the reservoir between 1984 and 2011 is estimated to be approximately 12,000m^3 or 20,000 tonne. The majority of silt deposition has occurred at the reservoir inlet and around the north western boundary.

(iv) Progressive silt deposition has supported development of a wide range of wetland and shallow water habitats with significant increase in biodiversity at the reservoir site. Silt deposition has also led to a reduction in the navigable area of the reservoir adverse impact on the ability of Sutton-in-Ashton Sailing Club to carryout sailing and racing activities.

(v) If no action is taken to manage silt accumulation in the reservoir long term silt balance predictions indicate that by 2021 direct access to the water for sail boats may be severely restricted and the area of navigable water would be further reduced. By 2031 the reservoir may no longer be able to support a wide range of water based activity as extensive silt deposits accumulate around all reservoir margins.

(vi) Unmanaged accumulation of silt may eventually begin to have negative impact on reservoir ecology and landscape value as the body of deeper open water would progressively reduce in response to silt accumulation. Available evidence suggests that for the foreseeable future continued silt accumulation is unlikely to have any significant adverse impact on the reservoirs flood management function.

11.2 An assessment of potential options for current and future silt management at the reservoir has been undertaken with the aim of identifying options that would increase the area of navigable water for recreational activities whilst minimising risk of adverse ecological or wider environmental impact. It is concluded that removal of all accumulated silt from the reservoir is neither technically or economically feasible.

11.3 The study has led to the identification of three options as follows:

Option 1: Do nothing and allow natural progression
Option 2: Selective silt removal by dredging
Option 3: Silt containment and selective silt removal by dredging

Each option has been assessed in relation to operational, environmental and economic considerations and the benefits that each would deliver.

11.4 The options review has led to the following general conclusions:

(vii) Option 1 is the lowest cost option with no new capital expenditure required and minimum increase in ongoing weed management costs. This option would deliver no improvement in the recreational capacity of the reservoir. Silt balance studies suggest that there would continue to be progressive loss of navigable water and within a period of approximately ten years the viability of Sutton-in-Ashfield Sailing Club could be in question. Similarly, the range of water based activities that could be supported by the Adventure Base may be reduced.

(viii) Option 2 would reinstate the reservoir to its 1984 configuration in all areas except the upstream reservoir inlet which would remain largely an area of shallow wetlands as at present. This option would deliver significant benefit to both the sailing club and the

Adventure Base without adversely effecting local ecology or habitat creation potential. Maintaining deeper water areas close to the reservoir margins would minimise the risk of water body shrinkage and maintain the landscape value of the reservoir site for all reservoir users and visitors. Selective dredging of silt from marginal areas of the reservoir is estimated to cost in the region of £300,000 although cost estimates range from £205,000 to £1,665,000 depending on silt disposal options. Silt balance studies suggest that under this option the de-silting operation would need to be repeated on a 10-year cycle to meet navigable water objectives.

(ix) Option 3 incorporates both selective de-silting and construction of an upstream silt containment structure to minimise silt migration into the reservoir in the future. This approach offers the most complete strategy for management of silt accumulation within the reservoir. As with Option 2 this option would deliver significant benefit to both the sailing club and the Adventure Base without adversely effecting local ecology or habitat creation potential. The proposed silt containment structure could be designed to form part of the public pathway around the site and enhance the visitor experience in general. The estimated cost of implementing Option is in region of £650,000 although cost estimates range from £435,000 to £2,010,000 depending on silt disposal options. The opportunity to manage future silt accumulation from the containment structure would mean significantly lower de-silting costs in future years.

(x) There are a number data deficiencies or uncertainties that would need to be addressed to confirm the technical feasibility of the proposed management options and to increase confidence in the budget cost estimates. Additional information is required in relation to:

- The geotechnical suitability of the reservoir bed for containment structure and island construction
- The physical and chemical composition of the silt in proposed de-silting areas
- Detailed technical definition of silt disposal options related to mechanical dewatering and availability of land for spreading
- Confirmation that de-silting activities would not have significant adverse impact on reservoir ecology or biological water quality

If Option 3 were selected technical studies related to containment structure/island design, flood risk and habitat management may be required to support achievement regulatory compliance and definition of impact mitigation measures.

Cost/benefit considerations

11.5 Reservoir de-silting is typically a high cost operation and the budget cost estimates included in this report confirm that de-silting costs at Kingsmill Reservoir would be significant for Options 2

and 3. In preparing recommendations regarding option selection it is appropriate to consider the benefits that would be delivered by each of the alternative.

11.6 Option 1 the 'do nothing' option would deliver no benefit to any of the reservoir user groups or associated organisations and may within a timescale of approximately ten years lead to significant adverse impact on the viability of the sailing club and water based activities at the Adventure Base. It is therefore reasonable to conclude that selection of the 'do nothing' option would be consistent with acceptance that water based recreational activities would not have a long term future at the site.

11.7 Options 2 and 3 would deliver similar levels of benefit in relation to base recreational and nature conservation functions of the reservoir. Option 3 would minimise the process of marginal silt re-accumulation between de-silting programmes. The primary differences between the two options are (i) the total cost of each option, (ii) the level of site disturbance and loss of public access associated with each and (iii) the variation in future de-silting costs.

11.8 Cost benefit comparisons should take account of the range of beneficiaries that would result from each alternative option. The most immediate beneficiaries from Options 2 and 3 would be members of the sailing club and users of the Adventure Base services. The sailing club has a membership of up to 90 members although the club is used by other groups that benefit from both the area of open water at the reservoir and the sailing club facilities. Loss of navigable access to the water would also adversely affect the visitor experience at the reservoir site and could lead to a decline in visitor numbers.

11.9 Options 2 and 3 aim to maintain the reservoir water body in a condition close to its current state with a large navigable open water area and varied marginal habitat development. The results delivered by this approach would benefit all users and visitors of the reservoir through potential improvement in fishing opportunities, bird watching and species diversity, nature conservation objectives and landscape interest. Option 3 could provide an opportunity to develop additional visitor 'benefit' if the proposed silt containment structure were developed as part of the reservoir path system and the contained area provided options for further habitat diversity and management.

11.10 Given the marginal difference in the benefits that could be delivered by Options 2 and 3 it is probable that financial issues will dictate which option is the most appropriate for implementation at Kingsmill Reservoir. As summarised above, Option 2 is the least cost option but incurs high future management costs. Option 3 is the most costly option but future management costs would be substantially reduced. If averaged over a ten year period the estimated Option 2 costs would be approximately £60,000/annum. Over the same period the average Option 3 costs would be £70,000/annum. However, if considered over a twenty year period Option 2 costs would fall to

£45,000/annum whilst Option 3 costs would fall to £37,500/annum. The differential increases with increasing timescale.

Recommendations

11.11 The recommendations presented in this report are based primarily on delivery of the best hydrological solution for silt management at Kingsmill Reservoir. Account has also been taken of cost benefit relationships for each of the three options considered and the strategic objectives of the draft Management Plan for the reservoir. No reference has been made to option affordability or the availability of funds for scheme implementation.

11.12 It is recommended that, subject to the availability of funding, consideration is given to the implementation of Option 3 incorporating the construction of a silt containment structure at the upstream end of the reservoir and selective de-silting around the western boundary. Although the full, benefits of such a scheme would not be realised until all works are completed it would be possible to stagger the works over two or more years to reduce scheme expenditure in any individual year.

11.13 Implementation of Option 3 would provide a secure future for the Sutton-in-Ashfield Sailing Club and the water based activities of the Adventure Base. It would also provide optimum opportunity for developing nature conservation interest at the site with the potential to establish the 'contained' upstream area of the reservoir as a field laboratory. The presence of a field laboratory could significantly enhance nature conservation and education opportunities at the site, help to attract increased visitors, and compliment the nature conservation aims of the Adventure Base.

11.14 The preferred silt management option is to retain silt within the site for use in island construction subject to future assessment of silt composition and contaminant migration risk.

11.15 Actions required to implement Option 3 are as follows:

<u>Feasibility confirmation</u>

- Silt sampling and testing programme to determine silt chemical composition and treatment/disposal options
- Preliminary geotechnical investigation to determine reservoir bed suitability for containment structure and island construction
- Ecological review to confirm Option 3 suitability with regard to ecological and biological water quality impacts

Pre-works technical studies

- Silt containment structure and silt island design and specification
- Regulatory consultation, pollution prevention measure agreement and consent application as required
- Flood risk assessment as required
- Detailed works specification and contractor tendering

Works implementation

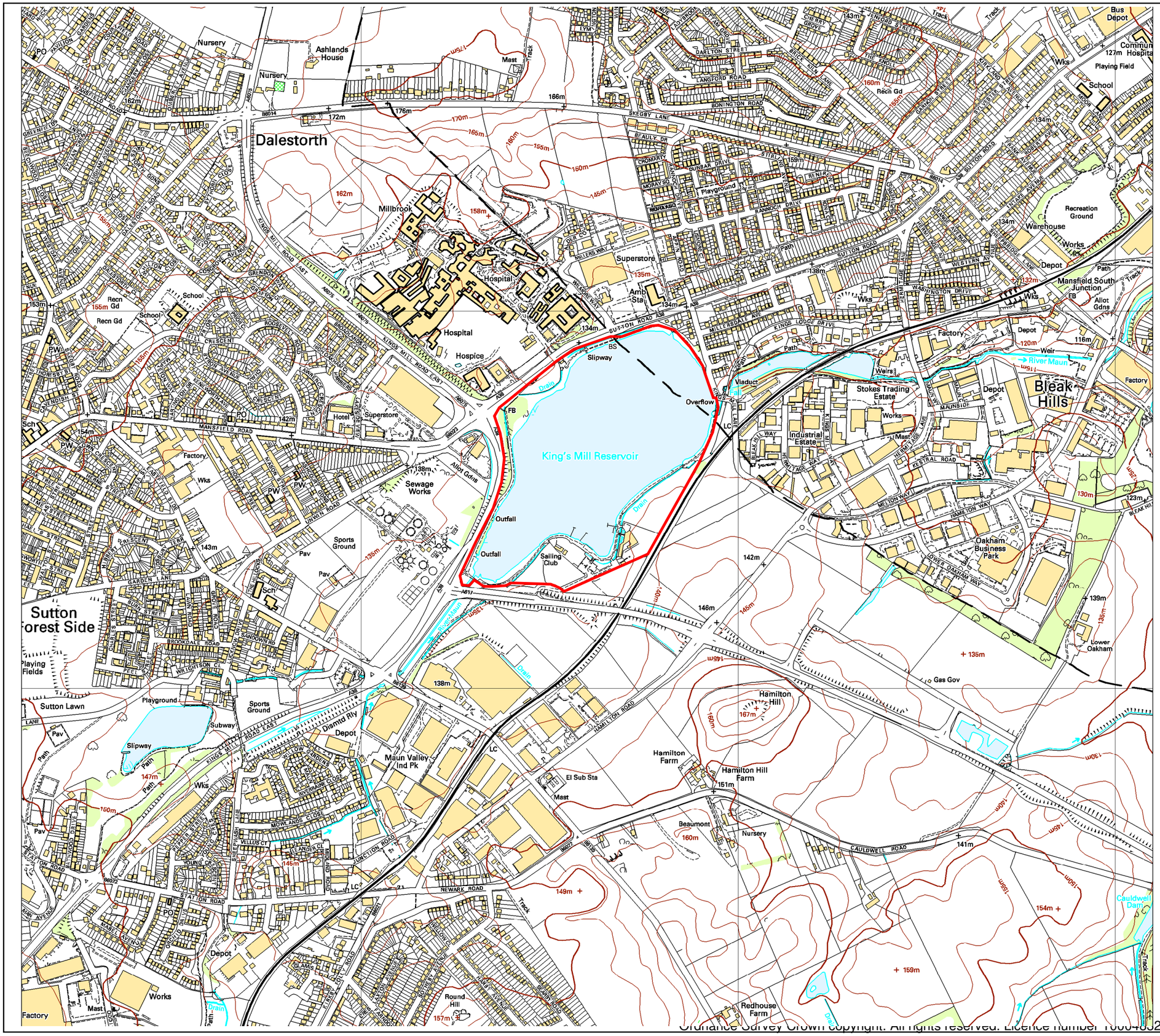
- Contract management planning
- Health & safety risk assessment and public access management planning

11.16 It is recommended that consideration be given to assessment of potential funding or co-funding opportunities for implementation of Option 3. The project may be suitable for an application for co-funding from the EU Life Environment Programme which has a 2011 application deadline of May 2011 for projects that could commence from May 2012.

For S M Foster Associates Limited

Stephen M Foster
BSc MSc CGeol MCIWEM CSci CEnv FIQ
Principal Consultant

Drawings



S M Foster Associates Limited
Hydrological and Hydrogeological Consultants

7 Bownas Road, Boston Spa, Wetherby
West Yorkshire, LS23 6EX, UK
Tel: 01937 849950, Fax: 01937 849951
Email:stephen.foster@smfassociates.co.uk

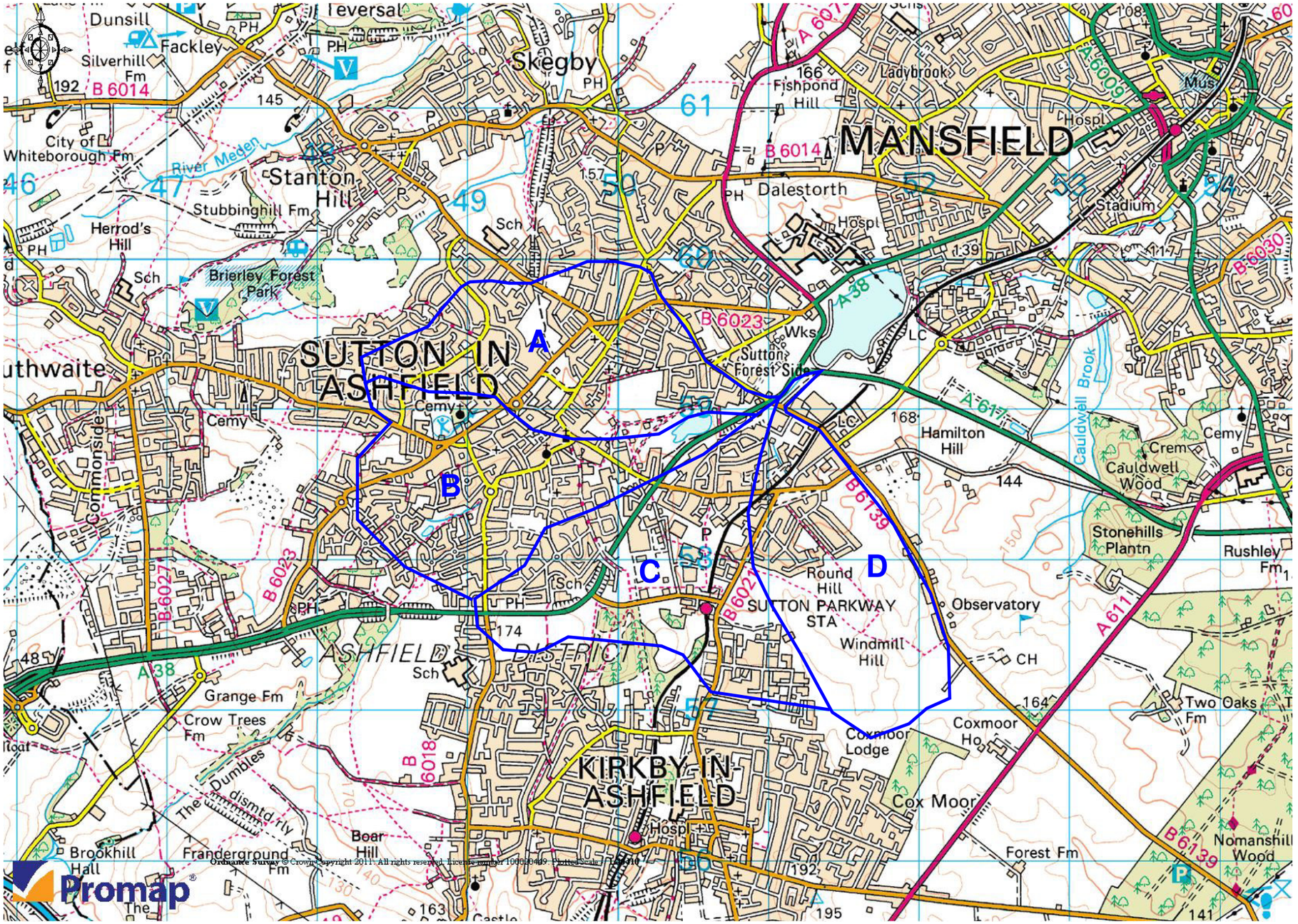
Approximate site boundary

CLIENT:
ASHFIELD DISTRICT COUNCIL

PROJECT:
KINGSMILL RESERVOIR
Hydrological
Assessment

Ref: 076/02/smf1	Date:January 2011
Approved:	Rev:

DRAWING 052/02/01
LOCAL HYDROLOGY



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West Yorkshire, LS23 6EX, UK
Tel: 01937 849950, Fax: 01937 849951
Email:stephen.foster@smfassociates.co.uk

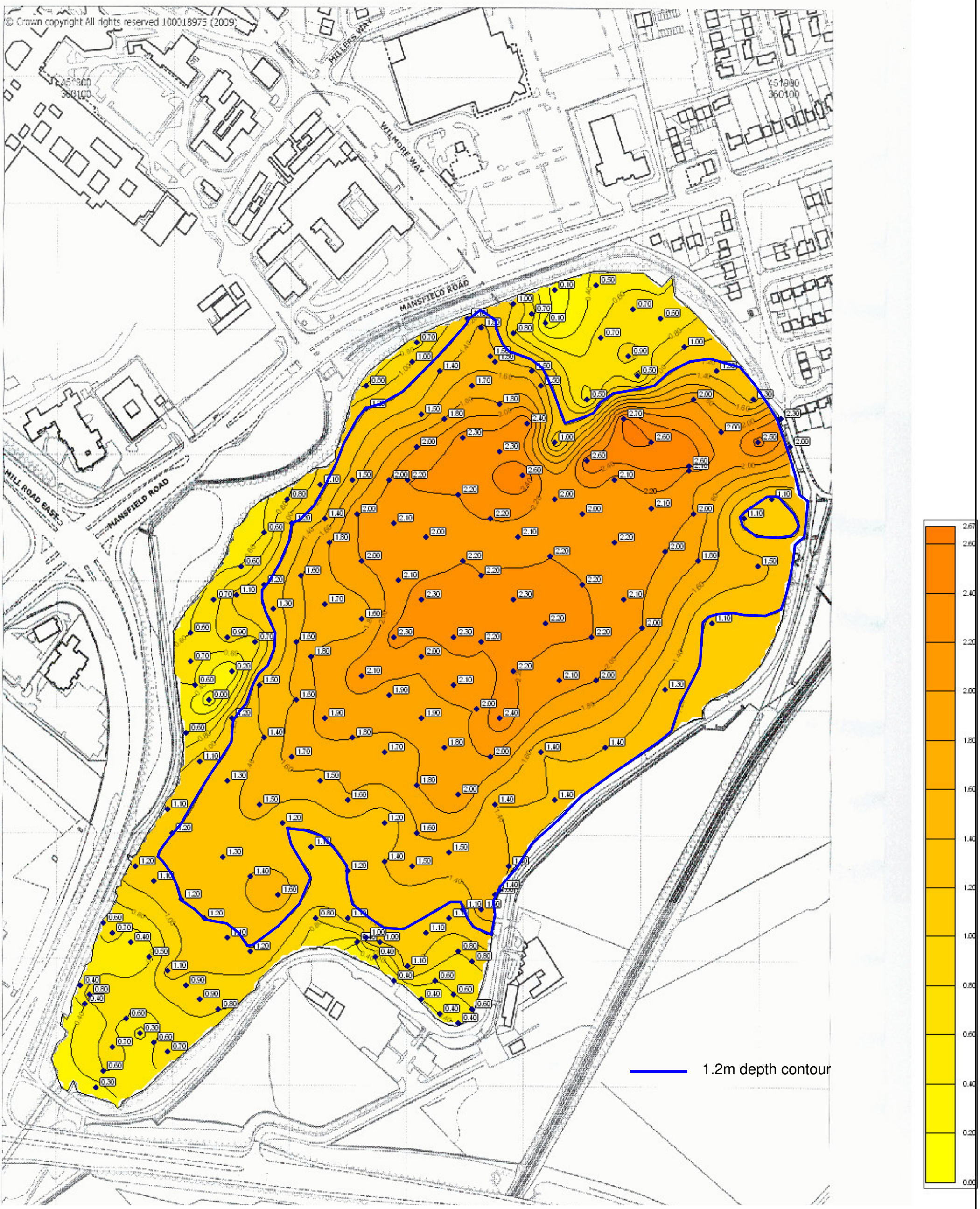
Approximate sub-catchment Boundary and reference

CLIENT:
ASHFIELD DISTRICT COUNCIL

PROJECT:
Kingsmill Reservoir
Hydrological Assessment

Ref: 074/02/smf1	Date:Dec 2010
Approved:	Rev:

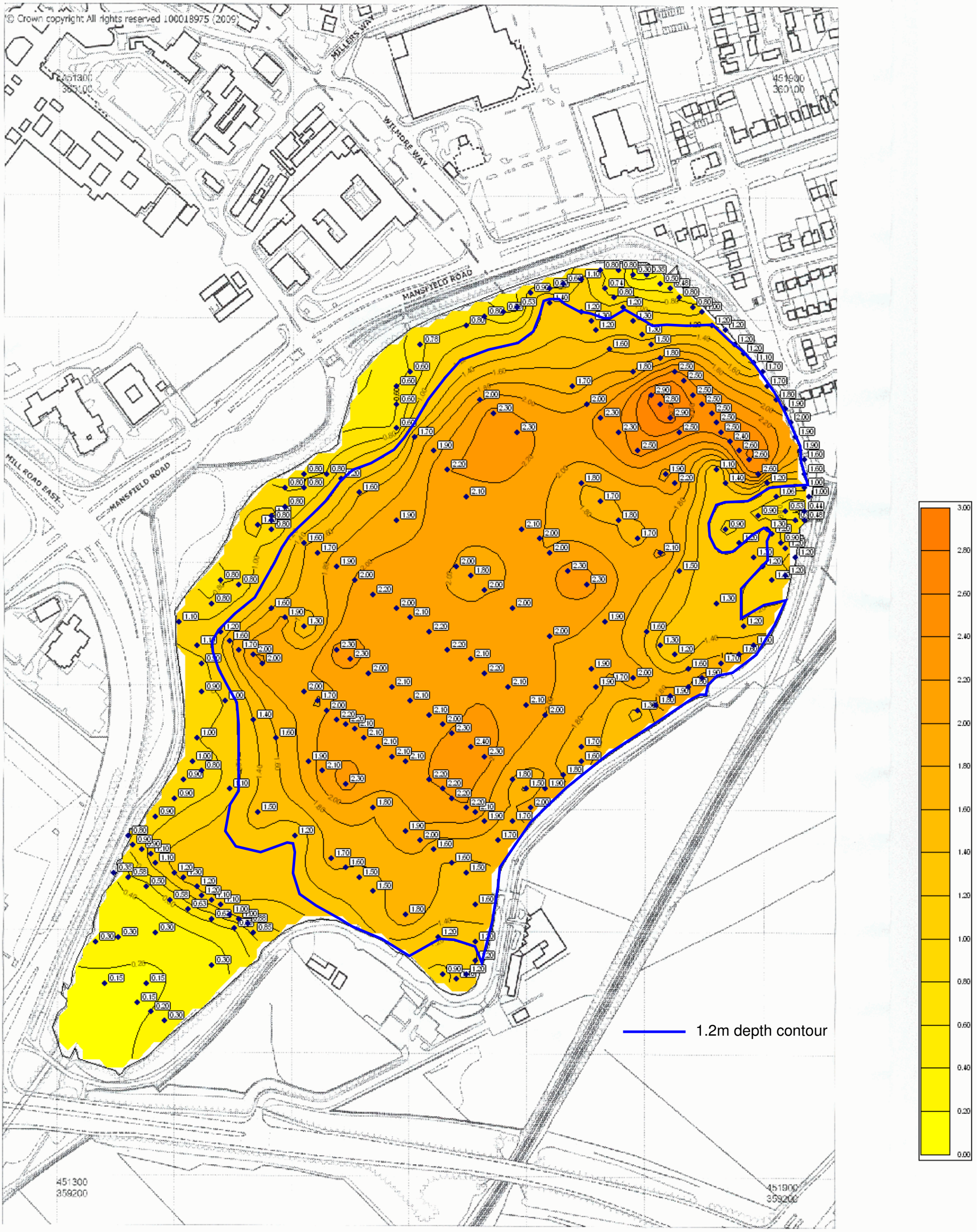
DRAWING 052/02/02
RIVER MAUN CATCHMENT AREAS



Scale:	**Approved:**
Ref: 052/02/04/v1	**Date:** January 2011
Ashfield District Council	KINGSMILL RESERVOIR HYDROLOGICAL STUDY

Drawing 052/02/03
Water depths 1984

S M Foster Associates Limited
Hydrological and Hydrogeological Consultants

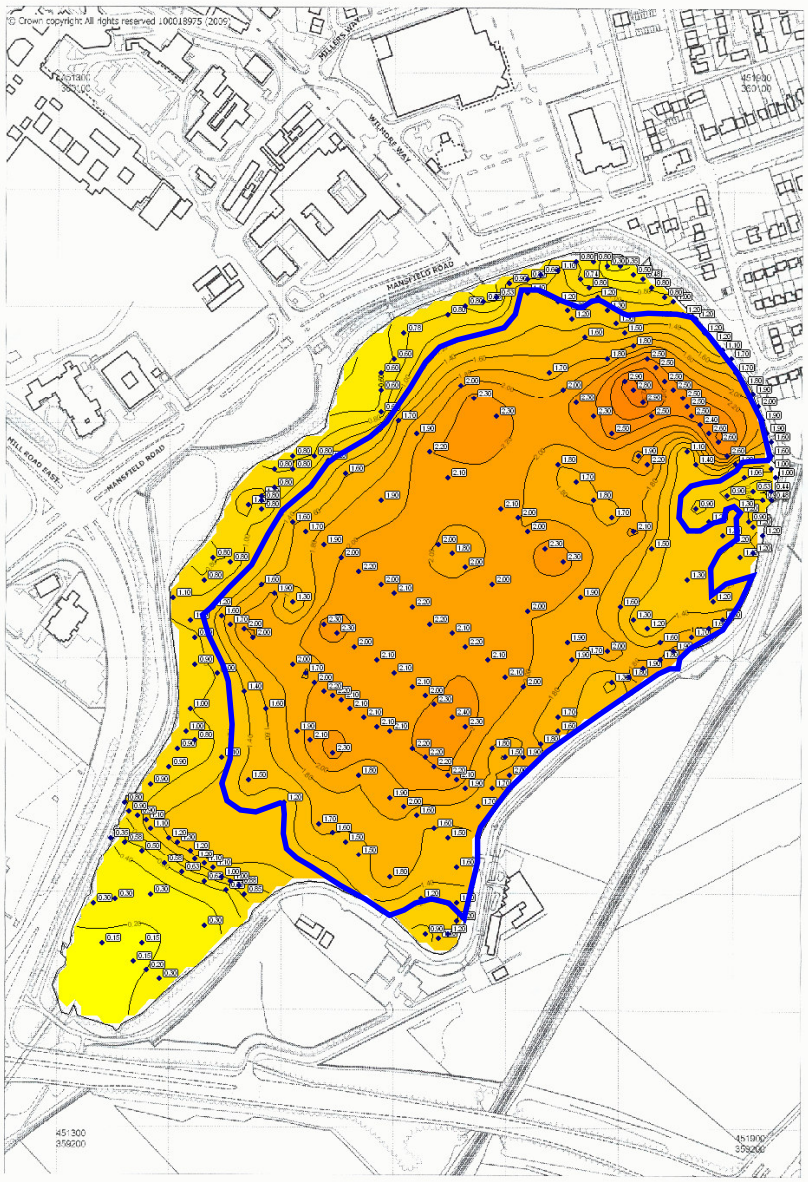


Scale:	**Approved:**
Ref: 052/02/04/v1	**Date:** January 2011
Ashfield District Council	KINGSMILL RESERVOIR HYDROLOGICAL STUDY

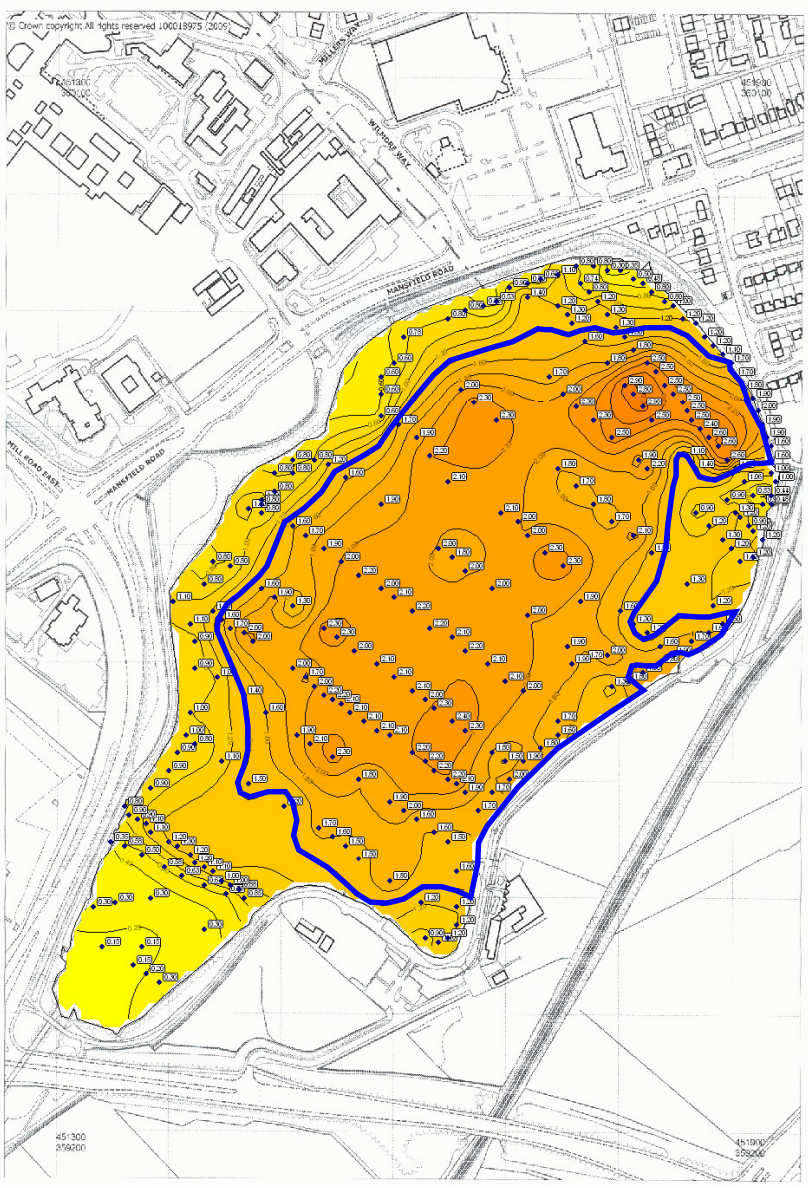
Drawing 052/02/04
Water depths January 2011

S M Foster Associates Limited
Hydrological and Hydrogeological Consultants

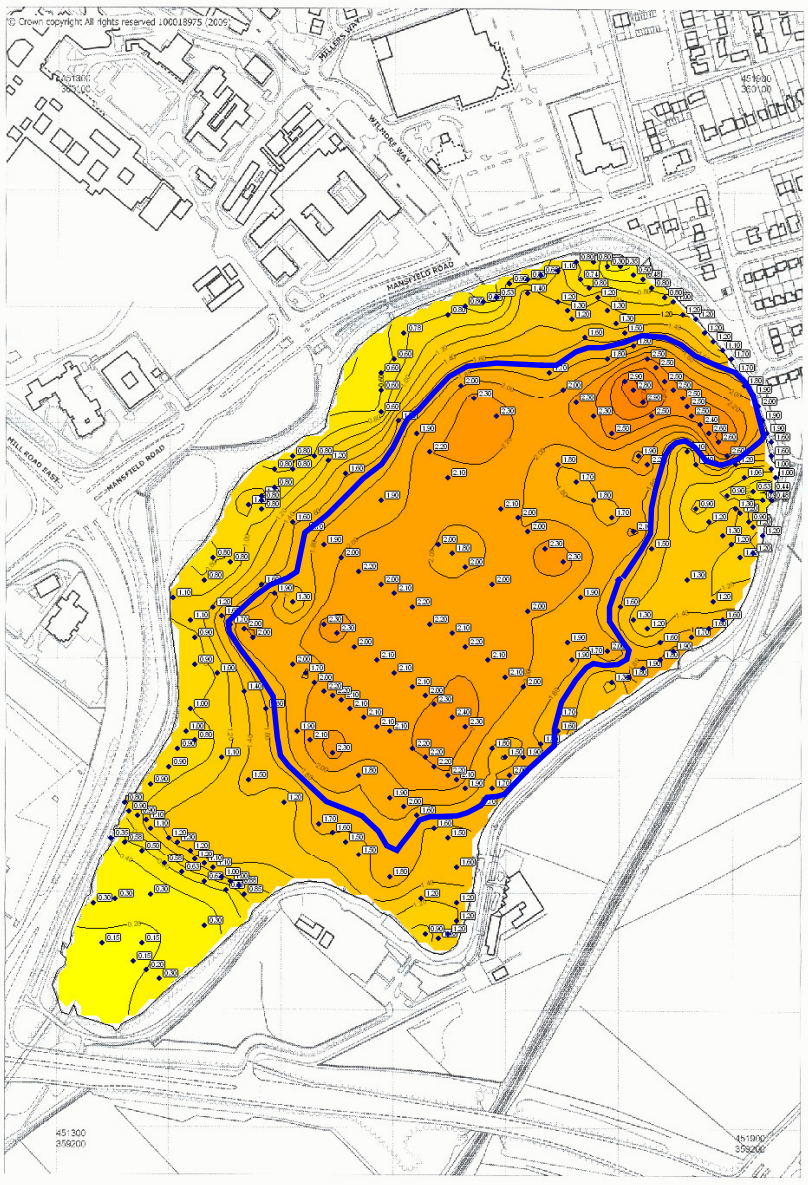
2011



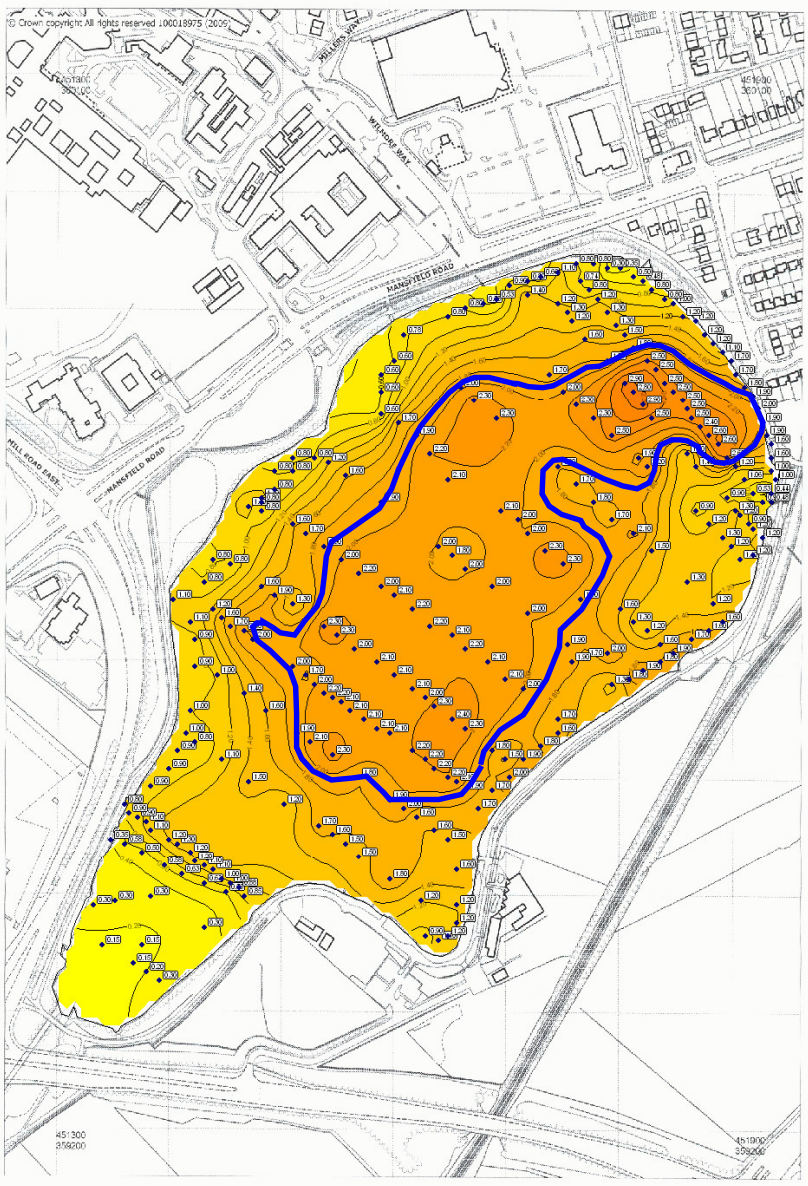
2016



2021



2031



1.2m navigable water limit. Diagram water depth are not relevant to this figure

Scale:	**Approved:**
Ref: 052/02/04/v1	**Date:** January 2011
Ashfield District Council	KINGSMILL RESERVOIR HYDROLOGICAL STUDY

Drawing 052/02/05

Predicted extent of navigable water 2011-2031

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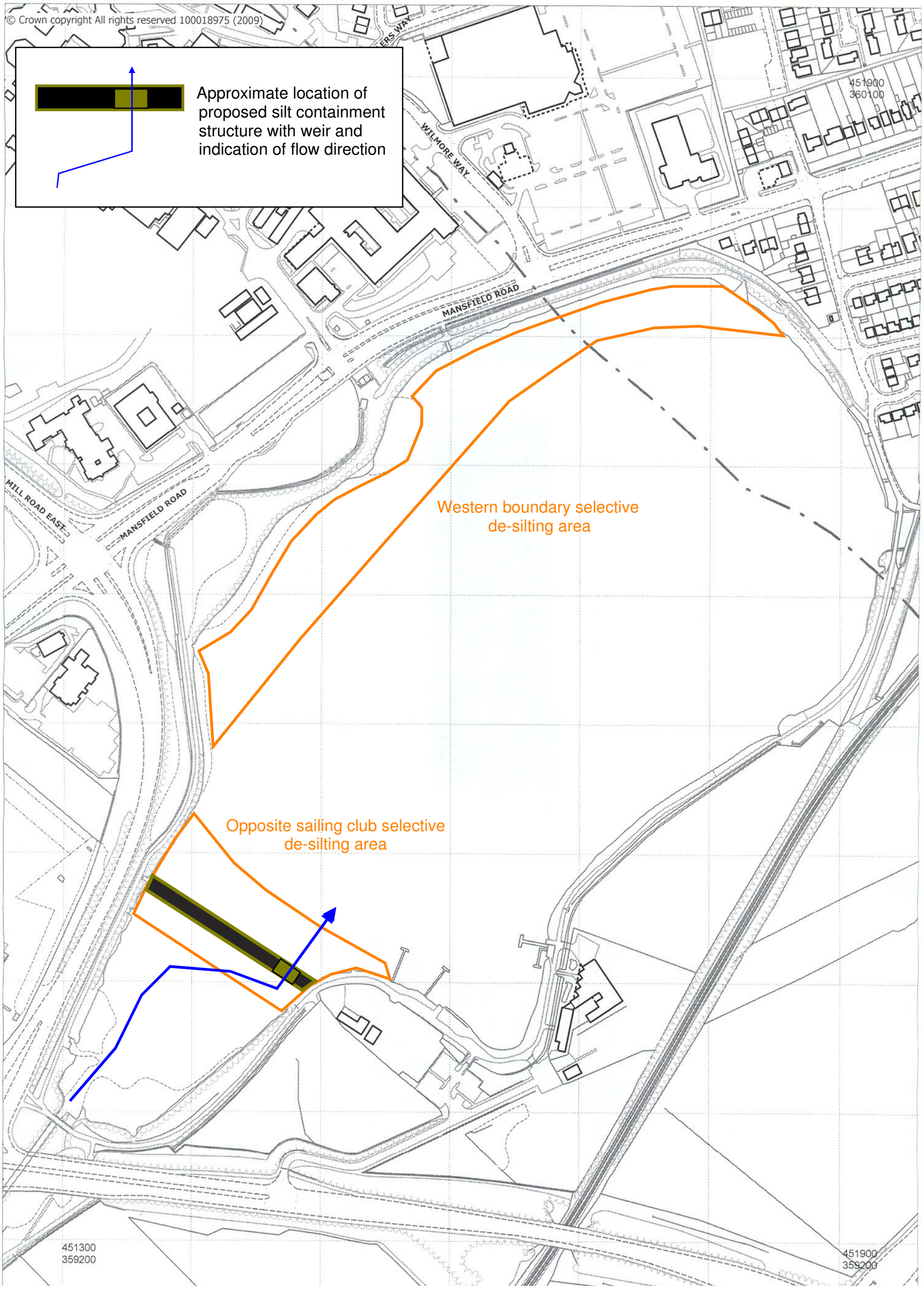

Scale:	**Approved:**
Ref: 052/02/04/v1	**Date:** January 2011
Ashfield District Council	KINGSMILL RESERVOIR HYDROLOGICAL STUDY

Drawing 052/02/06
Selected de-silting locations and containment structure

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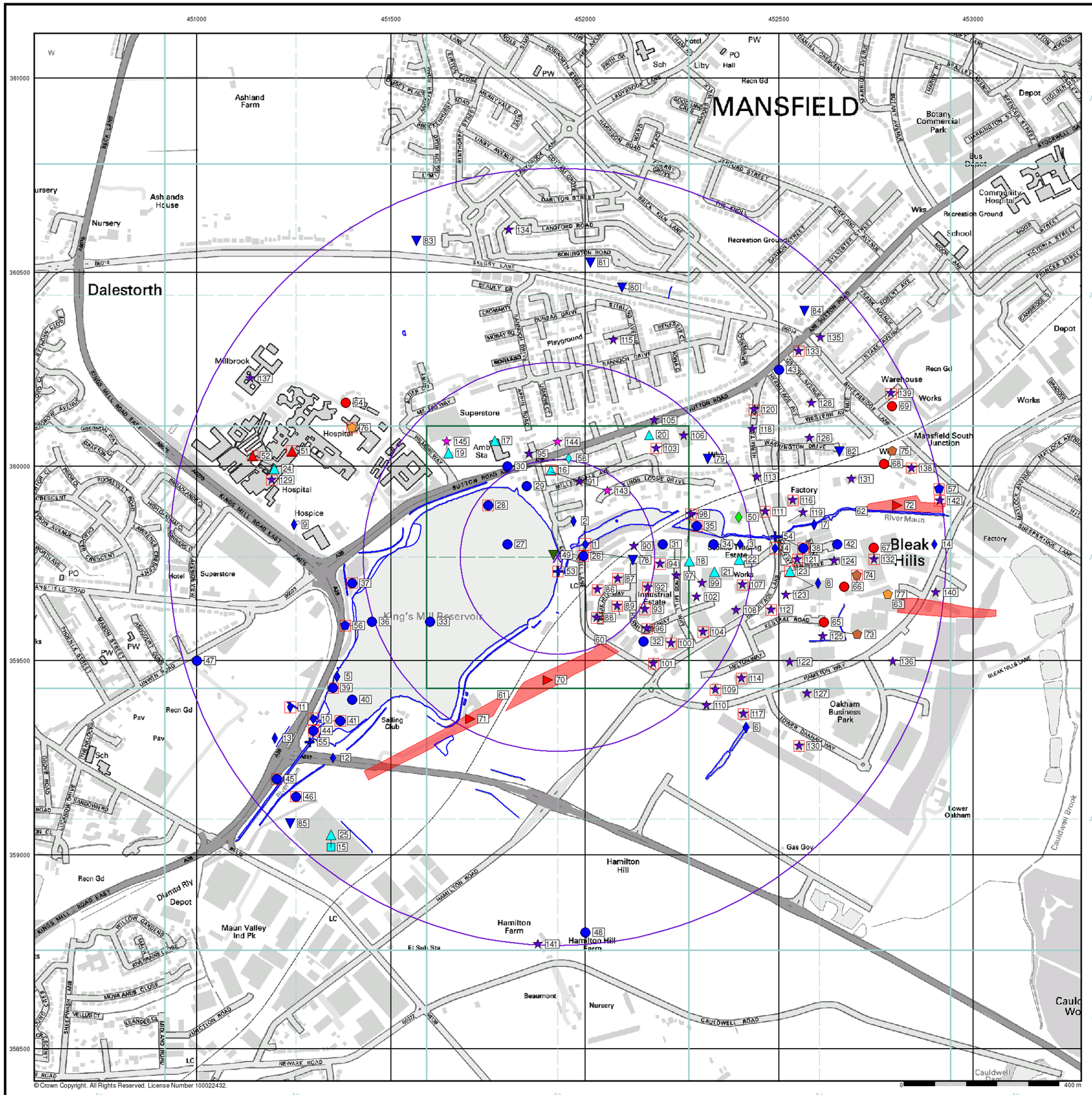
Hydrological and Hydrogeological Consultants

Appendix A

Envirocheck data sheets



Envirocheck®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

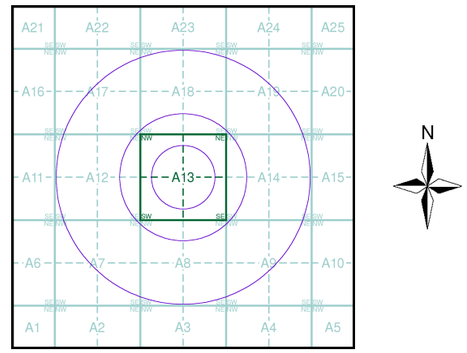
Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice A



Order Details

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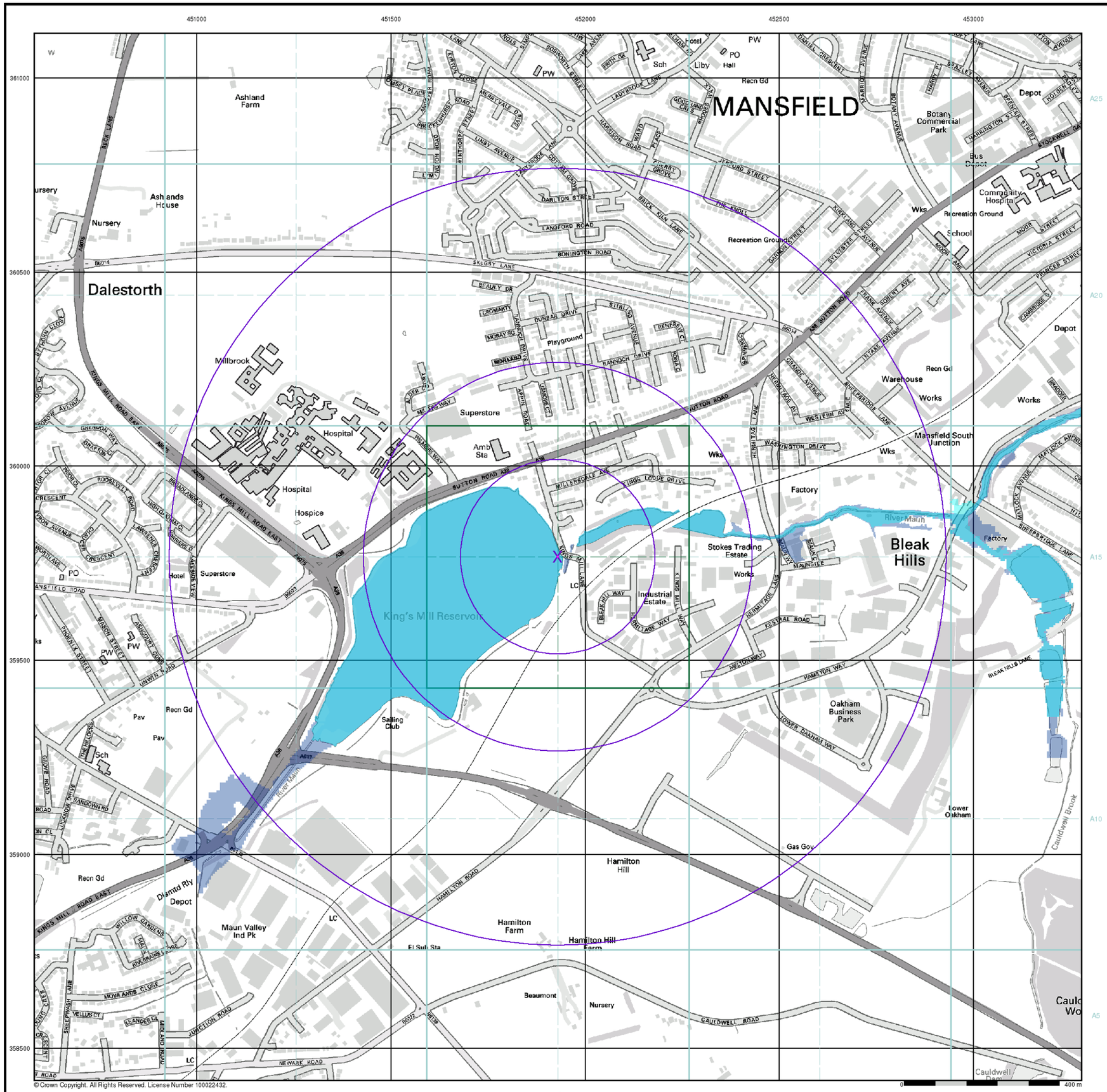
Customer Ref:	Kingsmill
National Grid Reference:	451930, 359770
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Site at 451600, 359600

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Envirocheck®

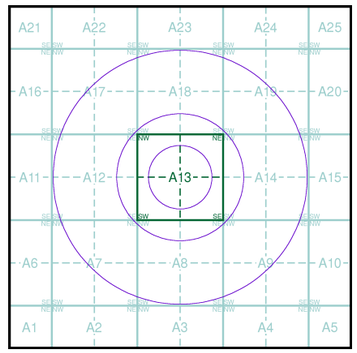
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



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Search Buffer (m):	1000

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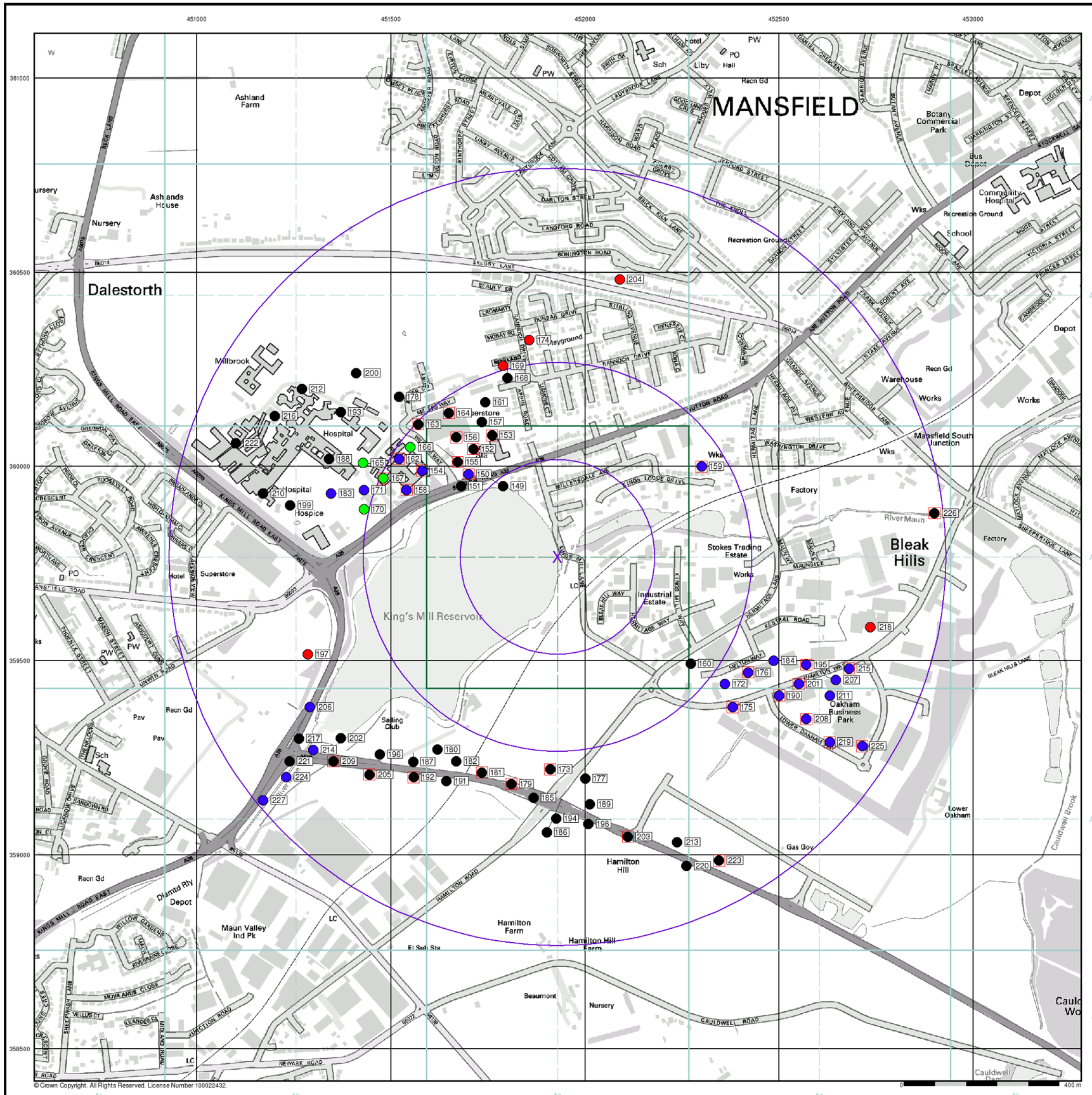


Envirocheck®

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Map ID
- Several of Type at Location

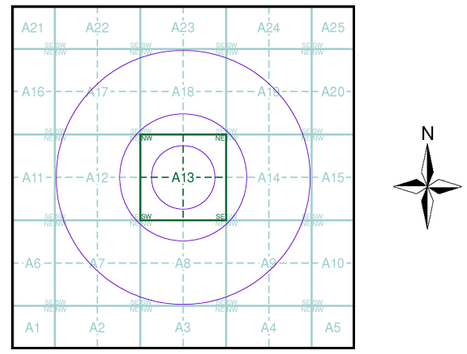
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



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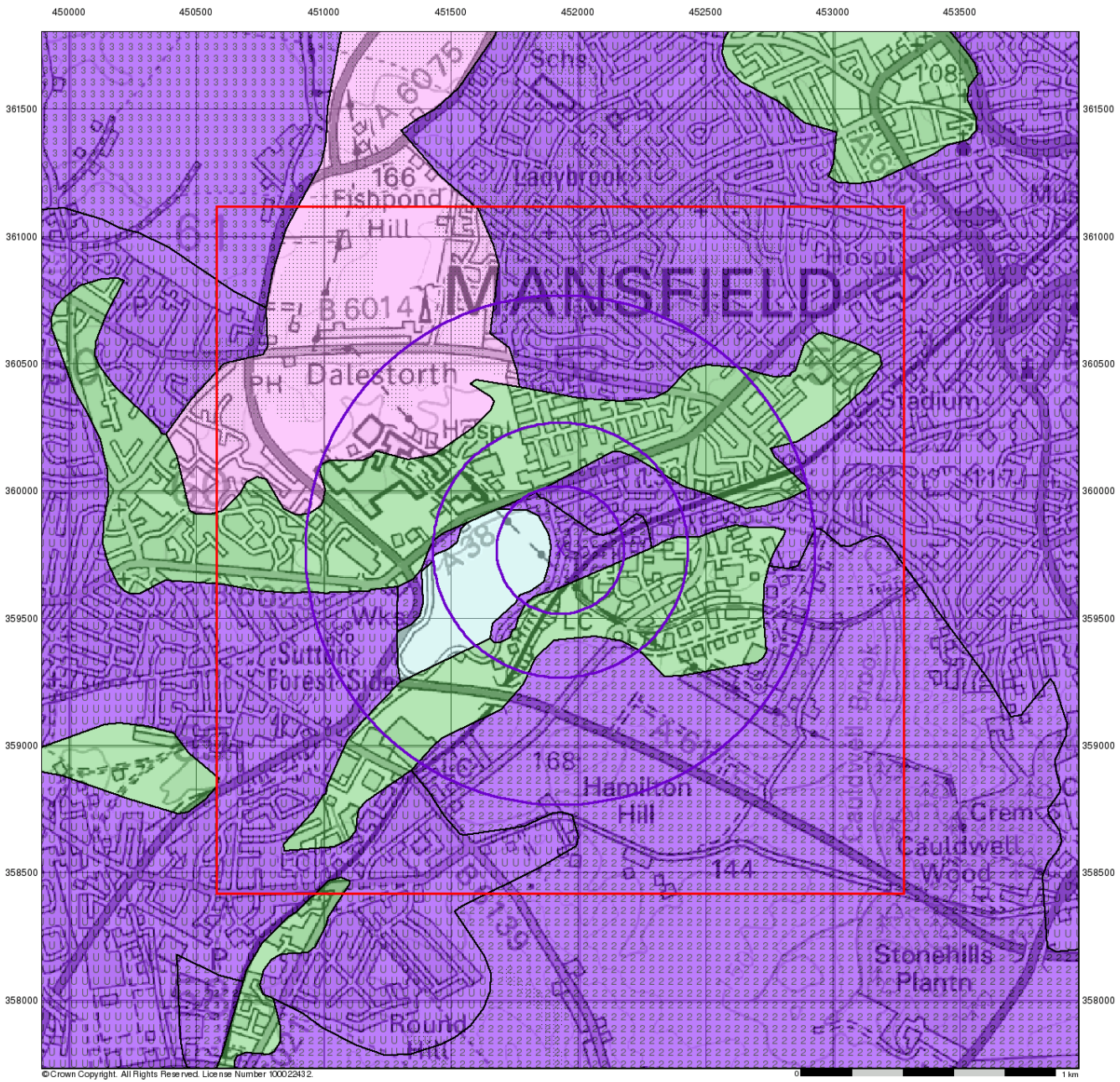


Envirocheck®

Groundwater Vulnerability

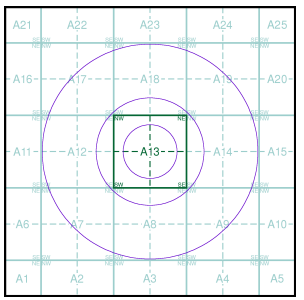
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



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National Grid Reference:	451930, 359770
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Search Buffer (m):	1000

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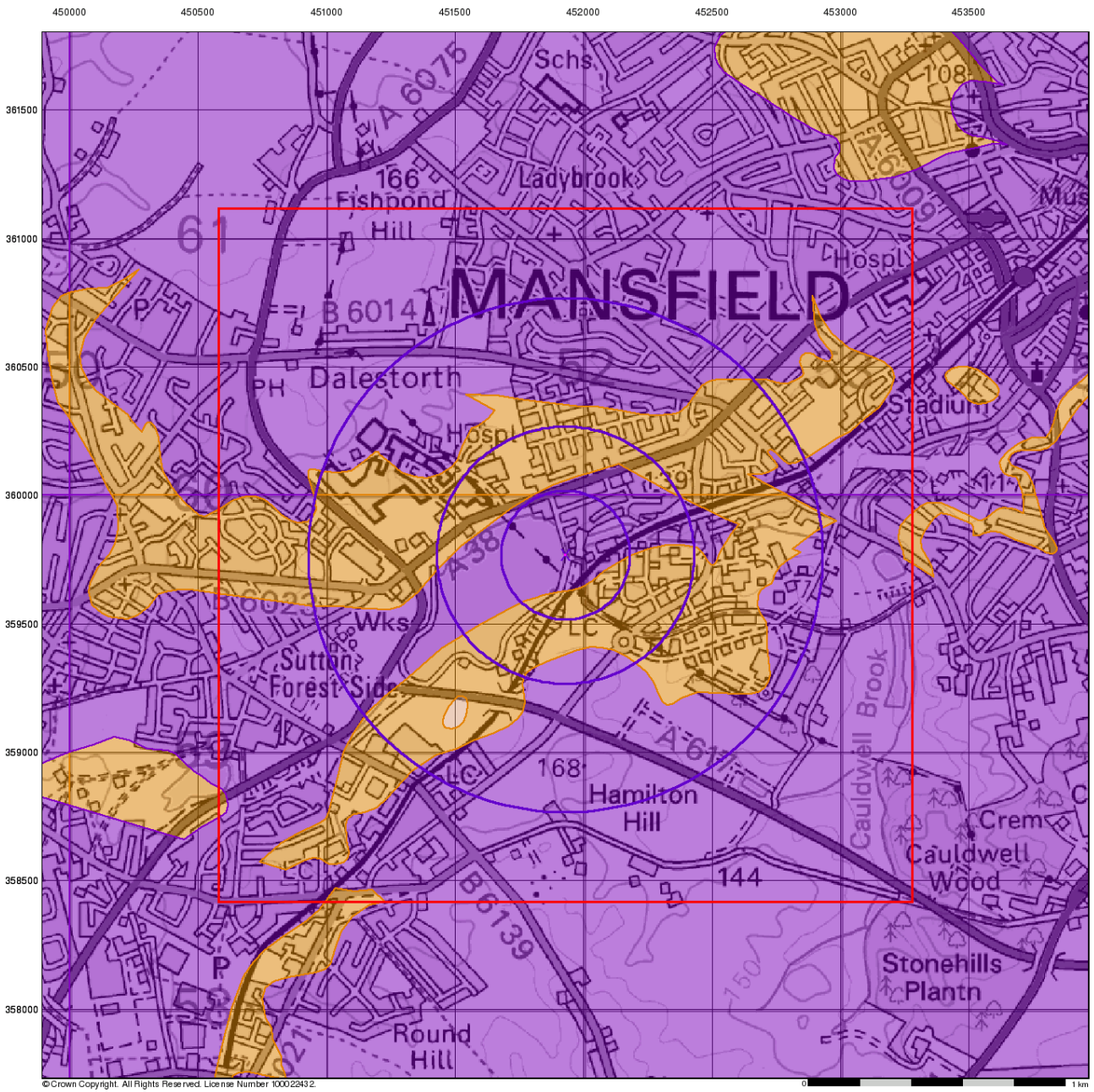


Envirocheck®

Bedrock Aquifer Designation

General

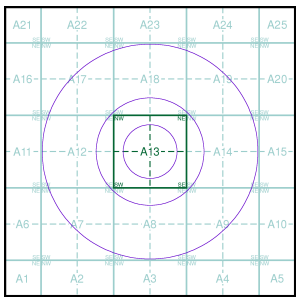
Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



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Search Buffer (m):	1000

Site Details

Site at 451600, 359600

Landmark® Information Group
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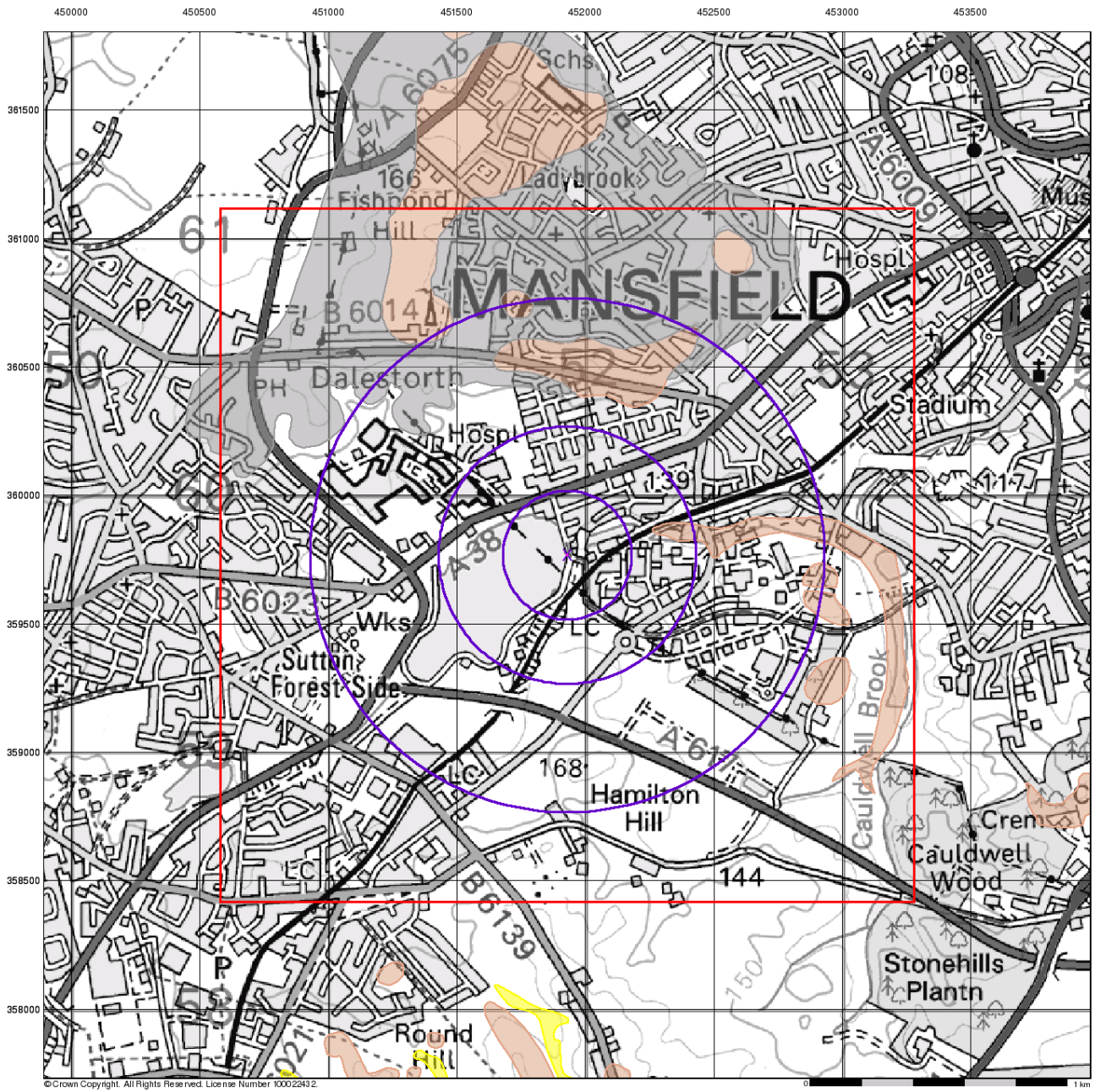
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Envirocheck®

Superficial Aquifer Designation

General

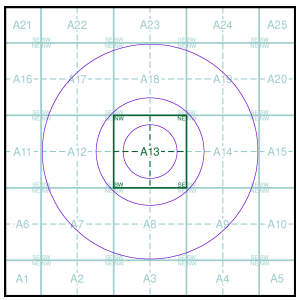
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



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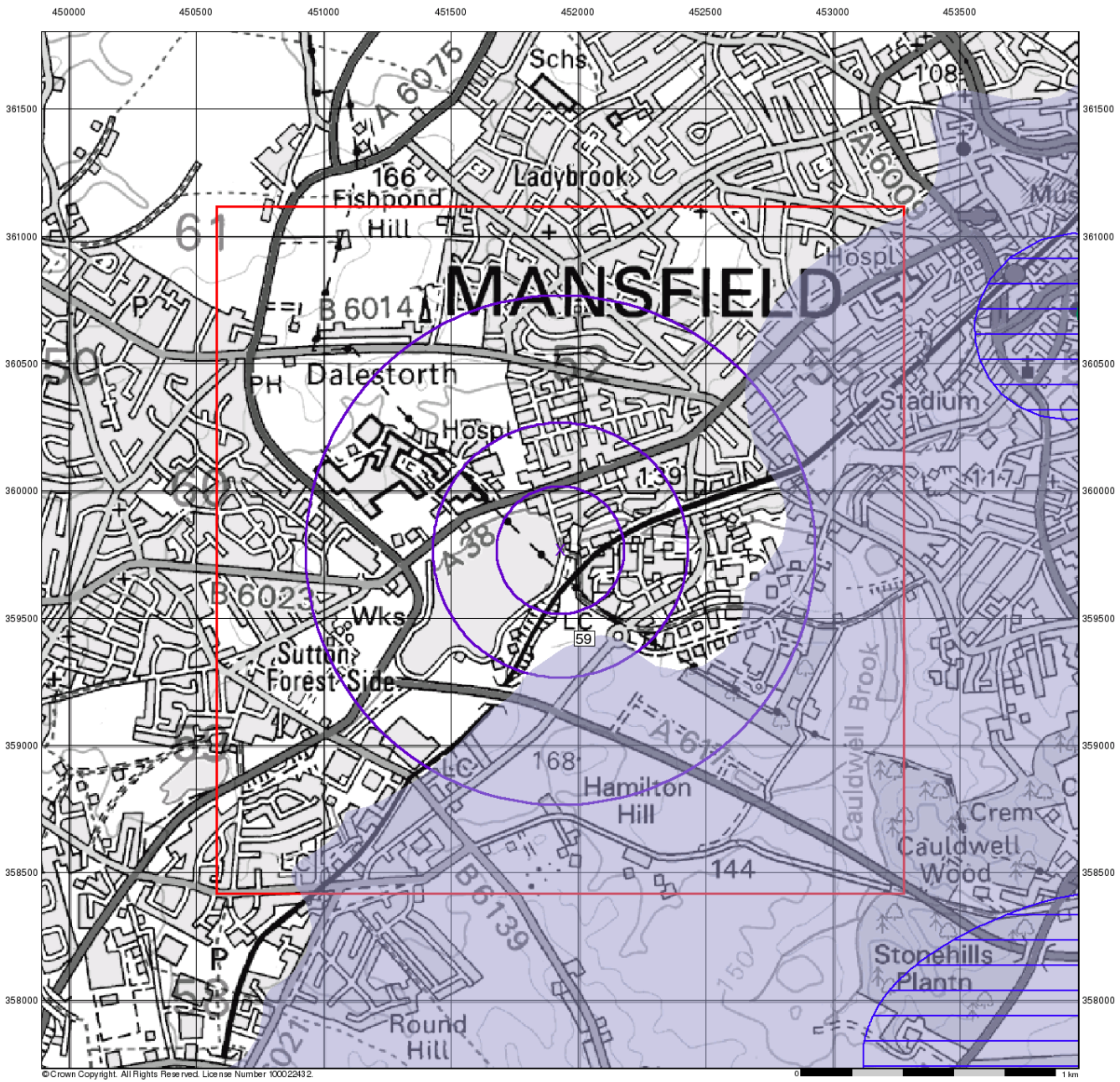
Site Details

Site at 451600, 359600



Envirocheck®

Source Protection Zones

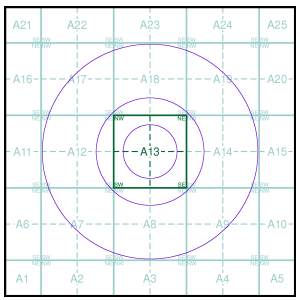
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

- Source Protection Zone I
- Source Protection Zone II
- Source Protection Zone III
- Zone of Special Interest
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



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Search Buffer (m):	1000

Site Details

Site at 451600, 359600

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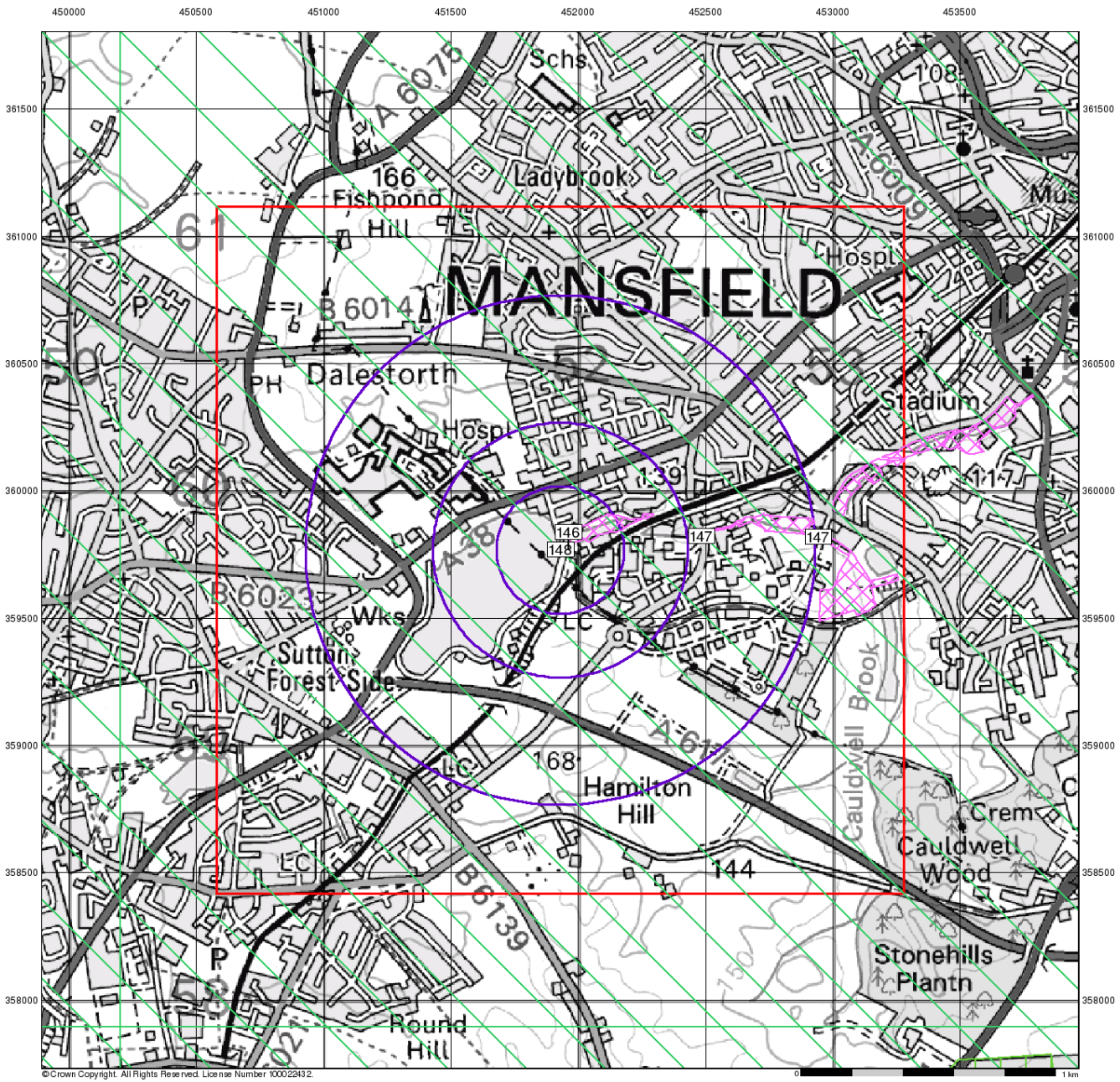
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Envirocheck®

Sensitive Land Uses

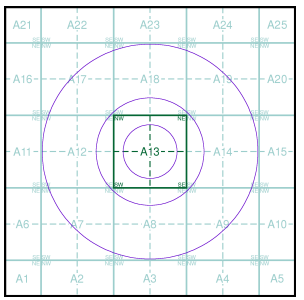
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	33767559_1_1
Customer Ref:	Kingsmill
National Grid Reference:	451930, 359770
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Site at 451600, 359600

Landmark® Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
33767559_1_1

Customer Reference:
Kingsmill

National Grid Reference:
451930, 359770

Slice:
A

Site Area (Ha):
0.01

Search Buffer (m):
1000

Site Details:

Site at 451600, 359600

Client Details:

Mr S Foster
SM Foster Associates Ltd
7 Bownas Road
Boston Spa
Wetherby
West Yorkshire
LS23 6EX

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Peter Brett Associates Copyright Notice

Radon Potential dataset Copyright Notice

Report Version v47.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
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Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control	pg 9				1
Local Authority Pollution Prevention and Controls	pg 9		1	7	4
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 10		Yes		
Pollution Incidents to Controlled Waters	pg 11		13	7	27
Prosecutions Relating to Authorised Processes	pg 18		1		
Prosecutions Relating to Controlled Waters	pg 19			1	
Registered Radioactive Substances	pg 19				8
River Quality	pg 20		2		1
River Quality Biology Sampling Points	pg 21		1		
River Quality Chemistry Sampling Points	pg 21		1		2
Substantiated Pollution Incident Register	pg 23				8
Water Abstractions	pg 24		1		(*11)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 27	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 27	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones	pg 27			1	
Extreme Flooding from Rivers or Sea without Defences	pg 27	Yes	Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 28	Yes	Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 29		1	1	2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
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Local Authority Recorded Landfill Sites					
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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
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BGS 1:625,000 Solid Geology	pg 36	Yes	n/a	n/a	n/a
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas	pg 36	Yes	n/a	n/a	n/a
Mining Instability	pg 36	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards				n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 36	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 36	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 36		Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 37	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
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Contemporary Trade Directory Entries	pg 38		24	41	56
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Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves	pg 49		1		1
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 49	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Kings Mill Lane, Mansfield, ., ., Ng18 5hy Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: Tsc1045 Permit Version: 1 Effective Date: 14th April 2009 Issued Date: 14th April 2009 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Appeal by applicant: Revised by Secretary of State (Section 39)** Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	74	1	451980 359820
1	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Kings Mill/Hermitage Lane - Stm Of Kings Mill Lane, Hermitage Lane, Mansfield, Notts Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/03474/O Permit Version: 1 Effective Date: 1st February 1973 Issued Date: 1st February 1973 Revocation Date: 30th March 2008 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Maun (Idle) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	79	1	452000 359800
2	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Kings Mill/Hermitage Lane - Stm Of Kings Mill Lane, Hermitage Lane, Mansfield, Notts Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/03474/O Permit Version: 2 Effective Date: 31st March 2008 Issued Date: 31st March 2008 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Maun (Idle) **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	102	1	451970 359860
3	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Hermitage Lane Area - Sws, Hermitage Lane, Mansfield, Notts Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/02921/O Permit Version: 1 Effective Date: 8th April 1971 Issued Date: 8th April 1971 Revocation Date: 2nd April 2000 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Maun (Idle) **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A14NW (E)	472	1	452400 359800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Mansfield District Council Property Type: Sewerage Network - Sewers - Water Company Location: Hermitage Lane Industrial Estate Hermitage Lane, Hermitage Lane, Mansfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/07498/O Permit Version: 1 Effective Date: 3rd February 1978 Issued Date: 3rd February 1978 Revocation Date: 2nd April 2000 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A14NW (E)	522	1	452450 359800
4	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Combined Sewer Overflow Serving, Hermitage Lane, Mansfield, ., Ng21 0et Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: Tsc917 Permit Version: 1 Effective Date: 14th April 2009 Issued Date: 14th April 2009 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Appeal by applicant: Revised by Secretary of State (Section 39)** Positional Accuracy: Located by supplier to within 10m	A14NW (E)	563	1	452490 359810
4	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Kings Mill/Hermitage Lane - Stm Of Kings Mill Lane, Hermitage Lane, Mansfield, Notts Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/03474/O Permit Version: 1 Effective Date: 1st February 1973 Issued Date: 1st February 1973 Revocation Date: 30th March 2008 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Maun (Idle) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A14NW (E)	572	1	452500 359800
5	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/09286/R Permit Version: 1 Effective Date: 4th July 1984 Issued Date: 4th July 1984 Revocation Date: 11th February 1998 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	647	1	451360 359460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Buckingham Group Contracting Limited Property Type: General Construction Work Location: A617 South Of Lower Oakham Way Hamilton Road, ., Sutton In Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: Npswqd003311 Permit Version: 1 Effective Date: 10th December 2008 Issued Date: 10th December 2008 Revocation Date: 3rd July 2009 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Of River Maun **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	654	1	452414 359329
7	**Discharge Consents** Operator: Cemex Uk Materials Limited Property Type: Undefined Or Other Location: Premises At Hermitage Lane, Mansfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/10919/T Permit Version: 1 Effective Date: 26th November 1987 Issued Date: 26th November 1987 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A14NW (E)	666	1	452590 359850
8	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Proposed New Central Depot - Sws, Hermitage Lane, Mansfield Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/02693/O Permit Version: 1 Effective Date: 20th February 1970 Issued Date: 20th February 1970 Revocation Date: 2nd April 2000 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Maun (Idle) Tributary **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A14SW (E)	674	1	452600 359700
9	**Discharge Consents** Operator: Skanska J.V. Projects Limited Property Type: Hospitals Location: Kings Mill Hospital Site Drainage, Mansfield Road, Sutton In Ashfield, Nottinghamshire, Ng17 4jt Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/46300/T Permit Version: 1 Effective Date: 11th October 2006 Issued Date: 11th October 2006 Revocation Date: 17th August 2007 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: A Stream Feeding Kingsmill Res **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A12NW (W)	685	1	451250 359850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/09286/R Permit Version: 1 Effective Date: 4th July 1984 Issued Date: 4th July 1984 Revocation Date: 11th February 1998 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	747	1	451310 359350
10	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Sutton-In-Ashfield Sps No 2, Sutton-In-Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/46176/O Permit Version: 1 Effective Date: 9th September 2005 Issued Date: 9th September 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Lake/Reservoir - with outlet Receiving Water: Kingsmill Reservoir **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	755	1	451300 359350
10	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Sutton-In-Ashfield Sps No 2, Sutton-In-Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45397/O Permit Version: 1 Effective Date: 29th November 2000 Issued Date: 29th November 2000 Revocation Date: 8th September 2005 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Lake/Reservoir - with outlet Receiving Water: The Kingsmill Reservoir **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	755	1	451300 359350
10	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Sutton-In-Ashfield Sps No 2, Sutton-In-Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45397/O Permit Version: 1 Effective Date: 29th November 2000 Issued Date: 29th November 2000 Revocation Date: 8th September 2005 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Lake/Reservoir - with outlet Receiving Water: The Kingsmill Reservoir **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	755	1	451300 359350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Discharge Consents** Operator: Mowlem Plc Property Type: General Construction Work Location: Sutton In Ashfield Stw Site Sutton In Ashfield Stw, Kings Mill Road East,, Mansfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45994/T Permit Version: 1 Effective Date: 4th June 2004 Issued Date: 4th June 2004 Revocation Date: 1st October 2004 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Lake/Reservoir - with outlet Receiving Water: Kingsmill Reservoir **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	768	1	451250 359410
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw, Unwin Road, Sutton In Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45949/R Permit Version: 2 Effective Date: 1st January 2010 Issued Date: 14th October 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw, Unwin Road, Sutton In Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45949/R Permit Version: 2 Effective Date: 1st January 2010 Issued Date: 14th October 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw, Unwin Road, Sutton In Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45949/R Permit Version: 1 Effective Date: 31st December 2004 Issued Date: 27th May 2004 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw, Unwin Road, Sutton In Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45949/R Permit Version: 1 Effective Date: 31st December 2004 Issued Date: 27th May 2004 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw, Unwin Road, Sutton In Ashfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Uncategorised Lower Trent Reference: T/70/45949/R Permit Version: 1 Effective Date: 31st December 2004 Issued Date: 27th May 2004 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Crude Effluent Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45053/R Permit Version: 3 Effective Date: 31st December 2000 Issued Date: 31st December 2000 Revocation Date: 30th December 2004 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45053/R Permit Version: 3 Effective Date: 31st December 2000 Issued Date: 31st December 2000 Revocation Date: 30th December 2004 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45053/R Permit Version: 3 Effective Date: 31st December 2000 Issued Date: 31st December 2000 Revocation Date: 30th December 2004 Discharge Type: Discharge Of Other Matter-Crude Effluent Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45053/R Permit Version: 2 Effective Date: 1st March 1998 Issued Date: 12th February 1998 Revocation Date: 30th December 2000 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45053/R Permit Version: 1 Effective Date: 12th February 1998 Issued Date: 12th February 1998 Revocation Date: 28th February 1998 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45053/R Permit Version: 2 Effective Date: 1st March 1998 Issued Date: 12th February 1998 Revocation Date: 30th December 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewage Disposal Works - Water Company Location: Sutton In Ashfield Stw - Obsolete, Unwin Road, Sutton In Ashfield, Nottingham Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45053/R Permit Version: 1 Effective Date: 12th February 1998 Issued Date: 12th February 1998 Revocation Date: 28th February 1998 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Maun **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	791	1	451240 359380
12	**Discharge Consents** Operator: Mcalpine Capital Projects Limited Property Type: General Construction Work Location: Mansfield/Ashfield Regen Route Construction Site, Kings Mill Road East, Mansfield, Nottinghamshire, Ng18 5bg Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/45950/T Permit Version: 1 Effective Date: 25th February 2004 Issued Date: 25th February 2004 Revocation Date: 1st October 2004 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: Unnamed Trib River Maun **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	777	1	451350 359250
13	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Unwin Road/Short Street-Storm Of Unwin Road Sso, Short Street Sso, Sutton In Ashfield, Ashfield Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/03489/O Permit Version: 1 Effective Date: 24th February 1973 Issued Date: 24th February 1973 Revocation Date: 29th November 2000 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Maun (Idle) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	866	1	451200 359300
14	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: Undefined Or Other Location: Multiple Sites And Outlets, Mansfield, Nottinghamshire Authority: Environment Agency, Midlands Region Catchment Area: Maun Catchment To Conjure Alders Reference: T/70/03244/O Permit Version: 1 Effective Date: 23rd June 1972 Issued Date: 23rd June 1972 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Maun (Idle) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A14NE (E)	972	1	452900 359800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Local Authority Integrated Pollution Prevention And Control** Name: Impress Holding Location: Forest Works, Coxmoor Road, Sutton-in-Ashfield, Nottinghamshire, NG17 5LA Authority: Ashfield District Council, Environmental Health Permit Reference: 6.4.25 Dated: 2nd July 2004 Process Type: Other Activities Description: SG6 Printing and coating of metal packaging **Status: Permit Issued** Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	949	2	451345 359020
16	**Local Authority Pollution Prevention and Controls** Name: Kingsmill Garage Location: 237 Sutton Road, MANSFIELD, Nottinghamshire, NG Authority: Mansfield District Council, Environmental Health Department Permit Reference: EPA/PS/5/98 Dated: 20th January 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorisation revokedRevoked** Positional Accuracy: Automatically positioned to the address	A13NW (N)	221	3	451912 359987
16	**Local Authority Pollution Prevention and Controls** Name: Sutton Road Service Station Location: Sutton Road, KIRKBY-IN-ASHFIELD, Nottinghamshire, NG17 Authority: Ashfield District Council, Environmental Health Permit Reference: 1.04.68 Dated: 3rd March 1993 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the road within the address or location	A13NW (N)	256	2	451886 360019
17	**Local Authority Pollution Prevention and Controls** Name: Save Service Stations Location: Sutton Road, MANSFIELD, Nottinghamshire, NG18 5HL Authority: Mansfield District Council, Environmental Health Department Permit Reference: Epa/Ps/10/98 Dated: 20th January 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	338	3	451767 360063
18	**Local Authority Pollution Prevention and Controls** Name: Cemex Location: Hermitage Lane, MANSFIELD, Nottinghamshire, NG18 5HB Authority: Mansfield District Council, Environmental Health Department Permit Reference: EPA/5/92 Dated: 29th March 1993 Process Type: Local Authority Air Pollution Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Authorised** Positional Accuracy: Automatically positioned to the address	A14SW (E)	340	3	452269 359752
19	**Local Authority Pollution Prevention and Controls** Name: Morrisons Service Station Location: Sutton Road, Wilmore Way, MANSFIELD, Nottinghamshire, NG18 5HL Authority: Mansfield District Council, Environmental Health Department Permit Reference: Epa/Ps/1/98 Dated: 25th January 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	387	3	451648 360031
20	**Local Authority Pollution Prevention and Controls** Name: Pentagon Location: Sutton Road, MANSFIELD, Nottinghamshire, NG18 5HX Authority: Mansfield District Council, Environmental Health Department Permit Reference: Epa/17/92 Dated: 3rd November 1993 Process Type: Local Authority Air Pollution Control Description: PG6/34 Respraying of road vehicles **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	390	3	452165 360077

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	**Local Authority Pollution Prevention and Controls** Name: Stokes Coatings Ltd Location: Francis Way, Hermitage Lane, MANSFIELD, Nottinghamshire, NG18 5GT Authority: Mansfield District Council, Environmental Health Department Permit Reference: Epa/13/92 Dated: 17th August 1993 Process Type: Local Authority Air Pollution Control Description: PG6/23 Coating of metal and plastic **Status: Authorised** Positional Accuracy: Automatically positioned to the address	A14SW (E)	406	3	452333 359724
22	**Local Authority Pollution Prevention and Controls** Name: Stokes Coatings Ltd Location: Francis Way, Hermitage Lane, Mansfield Authority: Mansfield District Council, Environmental Health Department Permit Reference: 13/92 Dated: 17th August 1993 Process Type: Local Authority Air Pollution Control Description: PG6/31 Powder coating processes (including sheradizing) **Status: Authorised** Positional Accuracy: Manually positioned to the road within the address or location	A14SW (E)	468	3	452397 359750
23	**Local Authority Pollution Prevention and Controls** Name: Ebeniste Pine Location: Maunside, Green Line Industrial Estate, MANSFIELD, Nottinghamshire, NG18 5GU Authority: Mansfield District Council, Environmental Health Department Permit Reference: Epa/3/96 Dated: 16th May 1997 Process Type: Local Authority Air Pollution Control Description: PG6/33 Wood coating **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A14SW (E)	662	3	452587 359693
23	**Local Authority Pollution Prevention and Controls** Name: Ebeniste Pine Location: Maunside, Green Line Industrial Estate, MANSFIELD, Nottinghamshire, NG18 5GU Authority: Mansfield District Council, Environmental Health Department Permit Reference: Epa/2/96 Dated: 16th May 1997 Process Type: Local Authority Air Pollution Control Description: PG6/2 Manufacture of timber and wood-based products **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A14SW (E)	662	3	452587 359693
24	**Local Authority Pollution Prevention and Controls** Name: Kings Mill Hospital Location: Mansfield Road, Sutton-In-Ashfield, Ng17 4jl Authority: Ashfield District Council, Environmental Health Permit Reference: 5.01.23 Dated: 15th December 1992 Process Type: Local Authority Pollution Prevention and Control Description: PG5/1Clinical waste incineration processes under 1 tonne an hour **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	764	2	451199 359990
25	**Local Authority Pollution Prevention and Controls** Name: Impress Holding Location: P O Box 1, Forest Works, Coxmoor Road, SUTTON-IN-ASHFIELD, Nottinghamshire, NG17 5LH Authority: Ashfield District Council, Environmental Health Permit Reference: Not Given Dated: 14th June 1993 Process Type: Local Authority Pollution Prevention and Control Description: PG6/7 Printing and coating of metal packaging **Status: Transferred to LAIPPC** Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	949	2	451345 359020
	Nearest Surface Water Feature	A13NE (NE)	6	-	451934 359770

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Hermitage Dam, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Crude Sewage Note: Other Affected; Raw Sewage Discharge Incident Date: 3rd June 1998 Incident Reference: 2804561 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (E)	70	1	451995 359790
26	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Other Location: Below Waterfall At, Mansfield End Of Res Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Natural Note: Amenity Affected; Kinsmill Reservoir; Blue-Green Algae Incident Date: 19th June 1996 Incident Reference: 2800839 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Algal Bloom Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	76	1	451995 359805
26	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Kings Lodge Lane, Off Kings Mill Road, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Not Supplied Incident Date: 27th November 1995 Incident Reference: Not Supplied Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (E)	77	1	452000 359795
26	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Sws O/Flow By, Hermitage Hse, Kingsmill Reservoir Authority: Environment Agency, Midlands Region Pollutant: Storm Sewage Note: Not Supplied Incident Date: 15th May 1996 Incident Reference: Not Supplied Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (E)	81	1	452005 359795
26	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Sws O/Flow By Hermitage House, Kingsmill Res Authority: Environment Agency, Midlands Region Pollutant: Storm Sewage Note: Amenity Affected; Sewage Overflow In Operation Incident Date: 15th May 1996 Incident Reference: 2800681 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	81	1	452000 359805
26	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Kings Lodge Lane, Off Kings Mill Road, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Amenity Affected; Motor Cycle In Watercourse Incident Date: 27th November 1995 Incident Reference: 1800591 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	83	1	452005 359800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Mansfield. Authority: Environment Agency, Midlands Region Pollutant: Storm Sewage Note: Discharge From Storm Overflow. Incident Date: 15th December 1998 Incident Reference: 2805446 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (E)	84	1	452010 359790
26	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Other Location: The Hermitage Dam, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Natural Note: Wildlife Affected; River Maun; Blue-Green Algae Incident Date: 24th June 1996 Incident Reference: 2800870 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Algal Bloom Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	85	1	452005 359805
26	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Pond Below Kingsmill Resevoir Authority: Environment Agency, Midlands Region Pollutant: Crude Sewage Note: Raw Sewage Gushing Out Of Small Outlet Pipe Incident Date: 21st January 1999 Incident Reference: 2805575 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (E)	86	1	452010 359795
27	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Other Location: Kingsmill Resevoir, Macworth Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Natural Note: Amenity Affected; Green Discol & Chem Smell Incident Date: 27th August 1996 Incident Reference: 2801232 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Algal Bloom Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	134	1	451800 359800
28	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Commercia Garage, 237 Sutton Road , MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Petrol Note: Other Affected; Fire Brigade Suspect Possible Underground Leak From Tank Incident Date: 6th February 1998 Incident Reference: 2803977 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Groundwater Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	186	1	451800 359900
28	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: William Morrisons, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Crude Sewage Note: Amenity Affected; Kingsmill Reservoir; Blocked Drain. Sewage Discharge To Watercourse Incident Date: 5th February 1997 Incident Reference: 2801975 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	224	1	451750 359900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Kinsmill Lane, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Petrol Note: Petrol Spill/Leakage To Property; No Adverse Effects Incident Date: 2nd March 1998 Incident Reference: 2804083 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Not Given Cause of Incident: Leaking Tank Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	200	1	451850 359950
30	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Sutton Road, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Petrol Note: Smell Of Petrol And Gas From Toilet; Other Adverse Effects Incident Date: 1st February 1998 Incident Reference: 2803938 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Not Given Cause of Incident: Leaking Tank Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	268	1	451800 360001
31	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Unknown Location: Kingsmill Reservoir Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Foam Note: Brown Scum On Surface/Dead Fish; Amenity Effected Incident Date: 19th June 1997 Incident Reference: 2802791 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Weather Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (E)	273	1	452200 359800
32	**Pollution Incidents to Controlled Waters** Property Type: Power Generation/Distribution Location: Emeb Transformer, Dale Farm Dairy, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Other Oil Note: 90 Gall Insulating Oil To Grnd; Other Adverse Effects Incident Date: 20th November 1997 Incident Reference: 2803664 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Not Given Cause of Incident: Vandalism Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SE (SE)	310	1	452150 359550
33	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Other Location: Sutton Road, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Natural Note: Amenity Affected; Kingsmill Reservoir; Blue-Green Algae Incident Date: 14th June 1996 Incident Reference: 2800824 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Algal Bloom Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	370	1	451600 359600
34	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Unknown Location: Clumber Builders Pond Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Natural Note: No Adverse Effect Incident Date: 10th August 1995 Incident Reference: Not Supplied Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Algal Bloom Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	422	1	452350 359800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Unknown Location: Clumber Builders Pond Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Natural Note: No Adverse Effects; River Maun; Very Green Possibly Algae Incident Date: 10th August 1995 Incident Reference: 1800060 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Algal Bloom Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	422	1	452350 359795
35	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Other Location: Sk 520 598 Downstream Of, Kingsmill Resevoir Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Foam Note: Amenity Affected; Foam Incident Date: 30th October 1996 Incident Reference: 2801462 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	472	1	452400 359795
36	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: Sutton Resevoir Authority: Environment Agency, Midlands Region Pollutant: Oils - Unknown Note: Oil/Grey Cloud Entering Resevoir From Culvert; Amenity Effected Incident Date: 12th March 1998 Incident Reference: 2804143 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	508	1	451450 359600
37	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: A38, Sutton Road, Kingsmill Reservoir, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Chemicals - Paints / Dyes Note: Other Adverse Effects Incident Date: 17th November 1995 Incident Reference: Not Supplied Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	534	1	451400 359700
37	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: A38 Road, Sutton Road, Kingsmill Res, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Chemicals - Paints / Dyes Note: Other Adverse Effects; Green Discol Incident Date: 17th November 1995 Incident Reference: 1800555 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	535	1	451400 359695
38	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: Hermitage Lane, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Unknown Note: Other Adverse Effects; River Maun; Detergent & Paraffin Discharging From Pipe Incident Date: 22nd April 1997 Incident Reference: 2802418 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	572	1	452500 359795

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	**Pollution Incidents to Controlled Waters** Property Type: Construction Location: From Hemitage Lane Turn Left, Maun Valley Trail Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Other Affected; Wheelbarrow Load Builders Rubble Dumped Into Watercourse Incident Date: 24th September 1998 Incident Reference: 2805131 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	574	1	452500 359820
39	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: A38 Side Of Kingsmill Resevior, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Organic Wastes: Unknown Note: Amenity Affected; Kingsmill Reservoir; Milky Disch From Pipe Incident Date: 7th October 1996 Incident Reference: 2801395 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	617	1	451400 359450
39	**Pollution Incidents to Controlled Waters** Property Type: Private Sewage (Non-PLC): Surface Water Outfall Location: Kingsmill Resevoir, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Amenity Affected; Reservoir; Cloudy White Disch Incident Date: 21st October 1996 Incident Reference: 2801504 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	638	1	451350 359500
39	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: Surface Water Drain, To Kings Mill Reservoir Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Amenity Affected; Kings Mill Reservoir; Milky White Discharge Incident Date: 13th November 1996 Incident Reference: 2801566 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	661	1	451350 359450
40	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Storm Tank Location: Kingsmill Reservior Opposite, Bank To Hospital Authority: Environment Agency, Midlands Region Pollutant: Storm Sewage Note: Tampons/San Towels In Res; Public Water Supply Effected Incident Date: 20th August 1997 Incident Reference: 2803226 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Weather Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	645	1	451400 359400
41	**Pollution Incidents to Controlled Waters** Property Type: Construction Location: End Of Kingsmill Resevoir, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Diesel (Including Agricultural) Note: Amenity Affected; Kingsmill Reservoir; Diesel Incident Date: 29th September 1996 Incident Reference: 2001325 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Vandalism Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	714	1	451350 359350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
41	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Kingsmill Reservoir, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Diesel (Including Agricultural) Note: Amenity Affected; Oil Incident Date: 30th April 1998 Incident Reference: 2804403 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	717	1	451350 359345
42	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Junction Of Quarry Lane & , Sheep Bridge Lane , MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Gas Oil Note: Amenity Affected; Diesel Slick 8 Foot Wide Incident Date: 15th November 1998 Incident Reference: 2805312 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Leaking Underground Pipe Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NE (E)	722	1	452650 359800
43	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Hermitage Lane Sutton Road, MANSFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Petrol Note: 10 Litres Petrol To Drains; Other Adverse Effects Incident Date: 28th January 1998 Incident Reference: 2803923 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Not Given Cause of Incident: Collision Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	748	1	452500 360250
44	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Sutton In Ashfield Sewage Treatment , Works Authority: Environment Agency, Midlands Region Pollutant: Storm Sewage Note: Discharge Of 6x Storm Overflow. Incident Date: 15th December 1998 Incident Reference: 2805447 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	772	1	451300 359320
44	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Coxmoor Road, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Sewage Debris/Litter Note: Not Supplied Incident Date: 8th November 1995 Incident Reference: Not Supplied Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Inadequate Construction Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	784	1	451300 359300
44	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Coxmoor Road, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Sewage Debris/Litter Note: Amenity Affected; River Maun; Sewage Debris Incident Date: 8th November 1995 Incident Reference: 1800511 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Inadequate Construction Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	787	1	451300 359295

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
45	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Unknown Location: Junction Kingsmill Road East, /Coxmore Road, Macworth Authority: Environment Agency, Midlands Region Pollutant: Oils - Diesel (Including Agricultural) Note: Amenity Affected; Oil Seeping Under Boom Incident Date: 23rd March 1997 Incident Reference: 2802219 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	885	1	451250 359200
45	**Pollution Incidents to Controlled Waters** Property Type: Textile industry Location: Kingsmill Reservoir, Railway Side Authority: Environment Agency, Midlands Region Pollutant: Oils - Gas Oil Note: Amenity Affected; Diesel Entering Reservoir From River Maun Incident Date: 26th February 1997 Incident Reference: 2802088 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Leaking Underground Pipe Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	923	1	451205 359195
45	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Unknown Location: Coxmore Road, Kingsmill Res, Macworth Authority: Environment Agency, Midlands Region Pollutant: Oils - Unknown Note: Amenity Affected; Oil In Inlet Stream To Reservoir Incident Date: 12th January 1997 Incident Reference: 2801829 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	924	1	451200 359200
45	**Pollution Incidents to Controlled Waters** Property Type: Textile industry Location: Kingsmill Reservoir, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Oils - Gas Oil Note: Diesel In Reservior And Feeder Stream; Amenity Effected Incident Date: 17th June 1997 Incident Reference: 2802799 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Leaking Underground Pipe Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	927	1	451200 359195
46	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Unknown Location: Junction A38/A60 Roads Authority: Environment Agency, Midlands Region Pollutant: Oils - Unknown Note: Amenity Affected; River Maun; Oil On Surface Incident Date: 13th March 1996 Incident Reference: 2000386 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	888	1	451250 359195
46	**Pollution Incidents to Controlled Waters** Property Type: Engineering Location: Kingsmill Reservoir, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Chemicals - Other Organic Note: Amenity Affected; Kingsmill Reservoir; White Discolouration Incident Date: 24th February 1996 Incident Reference: 2000281 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Accidental Spillage/Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	914	1	451255 359150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	**Pollution Incidents to Controlled Waters** Property Type: Engineering Location: Coxmoor Road, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Chemicals - Other Organic Note: Other Adverse Effects Incident Date: 12th April 1996 Incident Reference: Not Supplied Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	918	1	451250 359150
46	**Pollution Incidents to Controlled Waters** Property Type: Engineering Location: Coxmoor Road, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Chemicals - Other Organic Note: Other Adverse Effects; Kingsmill Reservoir; Blue/Green Liquid & Chem Smell Incident Date: 12th April 1996 Incident Reference: 2800955 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	918	1	451255 359145
46	**Pollution Incidents to Controlled Waters** Property Type: Engineering Location: Kingsmill Reservoir, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Chemicals - Other Organic Note: Not Supplied Incident Date: 24th February 1996 Incident Reference: Not Supplied Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Watercourse Cause of Incident: Accidental Spillage/Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	921	1	451250 359145
47	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Foul Sewer Location: Unwin Road, SUTTON IN ASHFIELD Authority: Environment Agency, Midlands Region Pollutant: Crude Sewage Note: Sewage Coming Down Rd Incident Date: 12th December 1998 Incident Reference: 2805438 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Not Given Cause of Incident: Vandalism Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m	A12SW (W)	967	1	451000 359500
48	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Combined Sewer Overflow Location: Pond Below Kingsmill Res, MANSFIELD, Nottinghamshire, NG18 Authority: Environment Agency, Midlands Region Pollutant: Crude Sewage Note: Raw Sewage; Amenity Affected; Incident Date: 20th May 1999 Incident Reference: 2806074 Catchment Area: Trent Catchment : Maun To Conjure Alders Receiving Water: Pond/Lake Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Approximate location provided by supplier	A8SE (S)	970	1	452000 358800
49	**Prosecutions Relating to Authorised Processes** Location: River Maun, Kingsmill Reservoir, Kirkby, Sutton-In-Ashfield, Nottinghmashire, Ng17 4 Prosecution Text: Site Drains Filled With Silt Were Discharged Into A Nearby Watercourse Prosecution Act: Wra91 S85(I) Hearing Date: 27th February 2003 Verdict: Guilty Fine: 3000 Costs: 1863 Positional Accuracy: Manually positioned within the geographical locality	A13NE (NE)	19	1	451945 359777

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	**Prosecutions Relating to Controlled Waters** Location: River Maun, Located Btwn Mill Pond, & Hermitage Lane, Mansfield, Ng18 Prosecution Text: A fault with a diesel storage tank led to oil contaminating a nearby watercourse Prosecution Act: Wra91 S85(1) Hearing Date: 19th January 2005 Verdict: Guilty Fine: 5000 Cost: 1595 Positional Accuracy: Manually positioned to the address or location	A14NW (E)	478	1	452396 359870
51	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: Kings Mill Centre, Mansfield Road, SUTTON-IN-ASHFIELD, Nottinghamshire, NG17 4JT Authority: Environment Agency, Midlands Region Permit Reference: AS5997 Dated: 31st July 1995 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	736	1	451245 360036
51	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: Kings Mill Hospital, Mansfield Road, SUTTON-IN-ASHFIELD, Nottinghamshire, NG17 4JT Authority: Environment Agency, Anglian Region Permit Reference: AO8963 Dated: 22nd December 1994 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	736	1	451245 360036
51	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: Kings Mill Hospital, Mansfield Road, SUTTON-IN-ASHFIELD, Nottinghamshire, NG17 4JL Authority: Environment Agency, Anglian Region Permit Reference: AB8597 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	736	1	451245 360036
52	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: X Ray Department, Kings Mill Hospital, SUTTON-IN-ASHFIELD, Nottinghamshire, NG17 4JL Authority: Environment Agency, Midlands Region Permit Reference: BH7750 Dated: 13th June 2000 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Substantial variation to a registration under the Act of an open source which is also the subject of an authorisation **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	759	1	451207 359998
52	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: X Ray Department, Kings Mill Hospital, SUTTON-IN-ASHFIELD, Nottinghamshire, NG17 4JL Authority: Environment Agency, Midlands Region Permit Reference: AA8788 Dated: 4th November 1991 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	759	1	451207 359998

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: Mansfield Road, Sutton-In-Ashfield, Nottinghamshire, NG17 4JL Authority: Environment Agency, Midlands Region Permit Reference: Bw4016 Dated: 1st December 2003 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA **Status: Application has been authorised and any conditions apply to the operatorAuthorised** Positional Accuracy: Automatically positioned to the address	A12NW (W)	767	1	451193 359978
52	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: Mansfield Road, Sutton-In-Ashfield, Nottinghamshire, NG17 4JL Authority: Environment Agency, Midlands Region Permit Reference: Bt5733 Dated: 24th April 2003 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Minor variation to a registration under the Act of an open source which is also the subject of an authorisation **Status: Application has been authorised and any conditions apply to the operatorAuthorised** Positional Accuracy: Automatically positioned to the address	A12NW (W)	767	1	451193 359978
52	**Registered Radioactive Substances** Name: Sherwood Forest Hospitals Nhs Trust Location: Mansfield Road, SUTTON-IN-ASHFIELD, Nottinghamshire, NG17 4JL Authority: Environment Agency, Midlands Region Permit Reference: Bm4473 Dated: 13th May 2002 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A12NW (W)	767	1	451193 359978
	River Quality Name: Maun R GQA Grade: River Quality E Reach: O/L Kingsmill Res. To Mansfield Stw Estimated Distance (km): 4.6 Flow Rate: Flow less than 0.62 cumecs Flow Type: River Year: 2000	A13NW (N)	41	1	451920 359806
	River Quality Name: Maun R GQA Grade: River Quality E Reach: I/L Kingsmill Res. To O/L Kingsmill Res. Estimated Distance (km): 1 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A13SW (W)	124	1	451807 359746
	River Quality Name: Cauldwell Bk GQA Grade: River Quality B Reach: Stonehills Farm Bridge To Conf. R. Maun Estimated Distance (km): 2 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A14NE (E)	964	1	452891 359833

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
53	**River Quality Biology Sampling Points** Name: Maun Reach: Outlet Kingsmill Reservoir To Mansfield Sewage Treatment Works Estimated Distance: 4.60 Positional Accuracy: Located by supplier to within 100m Year: 1990 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 1995 GQA Grade: River Quality Biology GQA Grade D - Fair Year: 2000 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 2002 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 2003 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 2004 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 2005 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 2006 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 2007 GQA Grade: River Quality Biology GQA Grade E - Poor Year: 2008 GQA Grade: River Quality Biology GQA Grade E - Poor	A13SW (SW)	73	1	451900 359700
53	**River Quality Chemistry Sampling Points** Name: Maun River Reach: Il Kingsmill Reservoir To Ol Kingsmill Reservoir Estimated Distance: 1.00 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: Not Supplied Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied	A13SE (S)	37	1	451930 359730

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	**River Quality Chemistry Sampling Points** Name: Maun River Reach: Ol Kingsmill Reservoir To Mansfield Stw Estimated Distance: 4.60 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied	A14NW (E)	564	1	452490 359820

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
55	**River Quality Chemistry Sampling Points** Name: Maun River Reach: Sutton Woodhouse To Il Kingsmill Reservoir Estimated Distance: 3.00 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied	A7NE (SW)	798	1	451290 359290
56	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, Lower Trent Area Incident Date: 14th December 2006 Incident Reference: 456530 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Crude Sewage	A12SE (W)	559	1	451400 359590
56	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, Lower Trent Area Incident Date: 7th December 2006 Incident Reference: 455089 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Crude Sewage	A12SE (W)	562	1	451406 359563

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, East Area Incident Date: 28th July 2010 Incident Reference: 807040 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Other Pollutant: Noise	A14NE (E)	982	1	452895 359941
57	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, East Area Incident Date: 16th July 2010 Incident Reference: 802709 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Other Pollutant: Noise	A14NE (E)	983	1	452896 359943
57	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, East Area Incident Date: 6th July 2010 Incident Reference: 798518 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Other Pollutant: Noise	A14NE (E)	990	1	452903 359946
57	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, East Area Incident Date: 21st July 2010 Incident Reference: 804581 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Other Pollutant: Noise	A14NE (E)	992	1	452905 359941
57	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, East Area Incident Date: 9th July 2010 Incident Reference: 800287 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Other Pollutant: Noise Pollutant: Atmospheric Pollutants And Effects: Dust	A14NE (E)	994	1	452907 359944
57	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, East Area Incident Date: 24th July 2010 Incident Reference: 805711 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Other Pollutant: Noise	A14NE (E)	999	1	452912 359942
58	**Water Abstractions** Operator: Totalfinaelf Uk Limited Licence Number: 03/28/70/0099 Permit Version: 1 Location: King'S Mill Service Station - Borehole Authority: Environment Agency, Midlands Region Abstraction: Environmental: Pump & Treat: Pollution Remediation Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Area At King'S Mill Service Station Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 20th September 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A13NW (N)	249	1	451880 360010

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Mr Anthony Salata Licence Number: 03/28/70/0076 Permit Version: 102 Location: Lower Oakham - Drain Tributary Of Cauldwell Brook Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lower Oakham - Drain Tributary Cauldwell Brook Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 22nd February 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (SE)	1224	1	452680 358800
	Water Abstractions Operator: Mr Anthony Salata Licence Number: 03/28/70/0076 Permit Version: 101 Location: Lower Oakham - Drain Tributary Of Cauldwell Brook Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lower Oakham - Drain Tributary Cauldwell Brook Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 31st March 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (SE)	1224	1	452680 358800
	Water Abstractions Operator: John Ball Ltd Licence Number: 03/28/70/0076 Permit Version: 100 Location: Lower Oakham - Drain Tributary Of Cauldwell Brook Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lower Oakham - Drain Tributary Cauldwell Brook Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 14th March 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9SE (SE)	1224	1	452680 358800
	Water Abstractions Operator: Eve Trakway Ltd Licence Number: 03/28/70/0083 Permit Version: 100 Location: Sutton In Ashfield - River Maun Authority: Environment Agency, Midlands Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Sutton In Ashfield - R Maun Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A7SW (SW)	1251	1	451000 358930

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Wrightwear Licence Number: 03/28/70/0028 Permit Version: 100 Location: Reed Mill Pond - Cauldwell Brook Authority: Environment Agency, Midlands Region Abstraction: Textiles And Leather: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Reed Mill Pond - Cauldwell Brook Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15NW (E)	1272	1	453200 359800
	Water Abstractions Operator: Mr Anthony Salata Licence Number: 03/28/70/0102 Permit Version: 2 Location: Lower Oakham - Lagoon Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lower Oakham - Lagoon Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 31st March 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NW (E)	1394	1	453220 359240
	Water Abstractions Operator: John Ball Ltd Licence Number: 03/28/70/0102 Permit Version: 1 Location: Lower Oakham - Lagoon Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lower Oakham - Lagoon Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 16th March 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NW (E)	1394	1	453220 359240
	Water Abstractions Operator: John Ball Ltd Licence Number: 03/28/70/0077 Permit Version: 100 Location: Lower Oakham - Lagoon Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lower Oakham - Lagoon Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 14th March 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A10NW (E)	1394	1	453220 359240

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Coxmoor Golf Club Licence Number: 03/28/70/0084 Permit Version: 100 Location: Coxmoor Golf Club - Tributary Of Cauldwell Brook Authority: Environment Agency, Midlands Region Abstraction: Golf Courses: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Coxmoor Golf Club - Trib Cauldwell Brook Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A3SE (S)	1643	1	452220 358150
	Water Abstractions Operator: Mansfield Town Football Club Ltd Licence Number: 03/28/70/0044 Permit Version: 100 Location: Field Mill Ground - River Maun Authority: Environment Agency, Midlands Region Abstraction: Sports Grounds/Facilities: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Field Mill Ground - River Maun Authorised Start: 01 April Authorised End: 31 August Permit Start Date: 8th September 1976 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1850	1	453700 360300
	Water Abstractions Operator: Ashfield District Council Licence Number: 03/28/70/00471 Permit Version: Not Supplied Location: Coxmoor Road, ASHFIELD Authority: Environment Agency, Midlands Region Abstraction: Impounding Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 0 Yearly Rate (m3): 0 Details: River Maun Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A1SE (SW)	1867	1	450675 358385
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H2) - Deeps, permeable, coarse textured solids which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential Map Sheet: Sheet 18 Nottinghamshire Scale: 1:100,000	A13NE (N)	0	1	451929 359767
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Desination: Principal Aquifer	A13NE (N)	0	4	451929 359767
	Superficial Aquifer Designations No Data Available				
59	**Source Protection Zones** Name: Various Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A8NE (S)	362	1	452023 359417
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Boundary Accuracy: As Supplied	A13NE (N)	0	1	451929 359767

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Boundary Accuracy: As Supplied	A13SE (E)	19	1	451947 359764
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Boundary Accuracy: As Supplied	A13NE (E)	34	1	451960 359779
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Boundary Accuracy: As Supplied	A13NE (NE)	56	1	451978 359795
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Boundary Accuracy: As Supplied	A13NE (N)	0	1	451929 359767
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Boundary Accuracy: As Supplied	A13NE (NE)	56	1	451978 359795
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	**Historical Landfill Sites** Licence Holder: Nottinghamshire County Council, Department of Planning and Transportation Location: Adjacent To Kings Mill Lane, Sutton In Ashfield Name: Kings Mill Tip Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD22140 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: 4/78/78/55KW, 4/78/78/55NW	A13SE (SE)	241	1	452040 359553
61	**Historical Landfill Sites** Licence Holder: Midland Land Reclamation Limited Location: South East of Kings Mill Reservoir, Kings Mill Lane, Sutton in Ashfield Name: Kings Mill Cutting/Disused Railway Cutting Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD22141 First Input Date: 31st December 1984 Last Input Date: 31st December 1989 Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 3000/0094 BGS Ref: Not Supplied Other Ref: 4/84/151/55NW, 4/14/83/0490	A8NW (S)	383	1	451789 359412
62	**Historical Landfill Sites** Licence Holder: Mansfield Plant Hire Limited Location: Mansfield, Nottinghamshire Name: Sheepbridge Lane Depot Between Railway Bridge and Sutton Road Junction Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD22138 First Input Date: 3rd July 1978 Last Input Date: 31st December 1979 Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 3000/0052 BGS Ref: Not Supplied Other Ref: 2/78/76/55NW	A14NE (E)	792	1	452713 359885
63	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Sheepbridge Lane, Mansfield, Nottinghamshire Name: Mansfield Plant Hire Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD35517 First Input Date: 31st December 1978 Last Input Date: 31st December 1979 Specified Waste Type: Not Supplied EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: Not Supplied	A14SE (E)	887	1	452808 359649
64	**Licensed Waste Management Facilities (Locations)** Licence Number: 43174 Location: Mansfield Road, Sutton In Ashfield, Nottinghamshire, NG17 4JL Operator Name: Kings Mill Centre For Healthcare Services Operator Location: Not Supplied Authority: Environment Agency - Midlands Region, East Area Site Category: Incinerators **Licence Status: Surrendered** Issued: 10th February 1992 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 30th July 1998 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A17SE (NW)	676	1	451383 360164

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
65	**Licensed Waste Management Facilities (Locations)** Licence Number: 43206 Location: Kestral Park H W R C, Kestral Road, Kestral Park Ind Est, Mansfield, Nottinghamshire, NG18 5FT Operator Name: Veolia Environmental Services (U K) Plc Operator Location: Not Supplied Authority: Environment Agency - Midlands Region, East Area Site Category: Household Waste Amenity Sites **Licence Status: Transferred** Issued: 10th June 1996 Last Modified: 11th December 2003 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SE (E)	706	1	452615 359599
66	**Licensed Waste Management Facilities (Locations)** Licence Number: 43168 Location: Hermitage Lane H W R C, Hermitage Lane, Maunside, Mansfield, Nottinghamshire, NG18 5HA Operator Name: Waste Recycling Ltd Operator Location: Not Supplied Authority: Environment Agency - Midlands Region, East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Issued** Issued: 13th January 1993 Last Modified: 3rd July 1994 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SE (E)	743	1	452668 359691
67	**Licensed Waste Management Facilities (Locations)** Licence Number: 43731 Location: Hermitage Lane Depot, Maunside, Green Lane Ind Est, Mansfield, Nottinghamshire, NG18 5GU Operator Name: Mansfield District Council Operator Location: Not Supplied Authority: Environment Agency - Midlands Region, East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Issued** Issued: 15th January 2008 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SE (E)	814	1	452743 359762
68	**Licensed Waste Management Facilities (Locations)** Licence Number: 43182 Location: Bleak Hill Sidings, Sheepbridge Lane, Mansfield, Nottinghamshire, NG18 5EP Operator Name: Inter County Services Nottingham Ltd Operator Location: Not Supplied Authority: Environment Agency - Midlands Region, East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Modified** Issued: 23rd October 1989 Last Modified: 19th February 2004 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NE (E)	875	1	452770 360007

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	**Licensed Waste Management Facilities (Locations)** Licence Number: 43546 Location: Future House, Sheepbridge Lane, Mansfield, Nottinghamshire, NG18 5DN Operator Name: A K Waste Management Ltd Operator Location: Not Supplied Authority: Environment Agency - Midlands Region, East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Issued** Issued: 25th November 2003 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	946	1	452791 360155
	Local Authority Landfill Coverage Name: Mansfield District Council - Has not been able to supply Landfill data		0	3	451929 359767
	Local Authority Landfill Coverage Name: Nottinghamshire County Council - Has no landfill data to supply		0	9	451929 359767
	Local Authority Landfill Coverage Name: Ashfield District Council - Has no landfill data to supply		38	2	451905 359738
70	**Registered Landfill Sites** Licence Holder: Notts C.C. Licence Reference: 4/78/ 78/55NW Site Location: Kings Mill Railway Cutting, Sutton In Ashfield, Nottinghamshire Licence Easting: 451900 Licence Northing: 359450 Operator Location: As Site Address Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Landfill - Railway cutting Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st June 1978 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Construction Ind. Wastes Incinerator Residues	A13SW (S)	319	1	451900 359450
71	**Registered Landfill Sites** Licence Holder: Midland Land Reclamation Ltd Licence Reference: 4/84/151/55NW Site Location: South East Of Reservoir Kings Mill Lane, Sutton In Ashfield, Nottinghamshire Licence Easting: 451700 Licence Northing: 359350 Operator Location: As Site Address Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Landfill - Railway cutting Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st May 1984 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Excavated Natural Materials $ Hardcore And Rubble Prohibited Waste: Biodegradable/Putrescible Waste Poisonous, Noxious, Polluting Wastes	A8NW (SW)	476	1	451700 359350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
72	**Registered Landfill Sites** Licence Holder: Mansfield Plant Hire Ltd Licence Reference: 2/78/ 76/55NW Site Location: Depot On Sheepbridge Lane, Mansfield, Nottinghamshire Licence Easting: 452800 Licence Northing: 359900 Operator Location: As Site Address Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Landfill Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st June 1978 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Construction And Demolition Wastes; Excavated Natural Materials $ Prohibited Waste: Combustible Waste; Liable To Cause A Nuisance; Putrescible Waste; Wastes Likely To Cause Pollution	A14NE (E)	881	1	452800 359900
73	**Registered Waste Transfer Sites** Licence Holder: South Herts Waste Management Ltd Licence Reference: 2/96/456/55NW Site Location: Kestral Park H.W.S/Recycling Centre, Mansfield, Nottinghamshire Operator Location: 125 Highlands Boulevard, LEIGH ON SEA, Essex, SS9 3TH Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Civic Amenity Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 6th June 1996 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Household Waste From Private Dwellings; Max.Waste Permitted By Licence; Similar Com.Waste Suitable Recycling Prohibited Waste: Asbestos; Waste N.O.S.	A14SE (E)	724	1	452628 359579
74	**Registered Waste Transfer Sites** Licence Holder: Wastenotts Ltd Licence Reference: 2/92/118/55NW/M1 Site Location: Hermitage Lane H.W.C, Mansfield, Nottinghamshire Operator Location: Templeborough House, Mill Close, ROTHERHAM, South Yorkshire, S60 1BZ Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Civic Amenity Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Site Closed Dated: 1st January 1993 Preceded By Licence: 2/81/118/55NW R Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Bonded Asbestos As Accid. Admixtures; Household W. From Private Dwellings; Max.Waste Permitted By Licence; Similar Comm'L Waste Suit.For Recycl'G Prohibited Waste: Asbestos; Clinical Wastes; Special Wastes	A14SE (E)	774	1	452700 359700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
74	**Registered Waste Transfer Sites** Licence Holder: Wastenotts Ltd Licence Reference: 2/81/118/55NW R Site Location: Hermitage Lane Depot, Mansfield, Nottinghamshire Operator Location: Adam House, Players Court, Players Street, NOTTINGHAM, Nottinghamshire, NG7 5LZ Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Civic Amenity - with transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 11th January 1983 Preceded By Licence: Not Given Superseded By Licence: 2/92/118/55NW/M1 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Civic Amenity/Refuse Amenity Waste Household Waste	A14SE (E)	774	1	452700 359700
75	**Registered Waste Transfer Sites** Licence Holder: Inter County Services (Nottingham) Ltd Licence Reference: 2/89/206/55NW Site Location: Bleak Hill Sidings, Sheepbridge Lane, MANSFIELD, Nottinghamshire, NG18 5EP Operator Location: 15 Portland Court, Sherwood, NOTTINGHAM, Nottinghamshire, NG18 5EP Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 23rd October 1989 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Construction Ind. Wastes Household + Commercial Waste Ind. Non-Haz. Inert, Non-Flammable Ind. Non-Haz. Potentially Combustible	A14NE (E)	885	1	452780 360010
76	**Registered Waste Treatment or Disposal Sites** Licence Holder: Central Notts Area Health Auth Licence Reference: 2/91/251/56SW Site Location: Boilerhouse Complex, King's Mill Hospital, SUTTON IN ASHFIELD, Nottinghamshire, NG17 4JL Operator Location: Acute Unit, Kings Mill Hosp, SUTTON IN ASHFIELD, Nottinghamshire, NG17 4JL Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Incineration Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 10th February 1992 Preceded By Licence: Not Given Superseded By Licence: 2/91/251/56sw/M1 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Clinical Waste Gp.Aa -Soil.Surg.Dr.Etc Clinical Waste Gp.Ab -Mat'L.Infect.Etc Clinical Waste Gp.Ac -Human Tiss. Etc Clinical Waste Gp.B - Disc.Syringe Etc Clinical Waste Gp.C -Lab./P.M.Room Etc Clinical Waste Gp.D -Pharm./Chem. -Etc Clinical Waste Gp.E -Bedpan Liner Etc Household Waste Max.Waste For Incineration Prohibited Waste: Waste N.O.S.	A12NE (NW)	626	1	451400 360100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
76	**Registered Waste Treatment or Disposal Sites** Licence Holder: Kings Mill Centre Healthcare Services Licence Reference: 2/91/251/56SW/M1 Site Location: Boilerhouse Complex, King's Mill Hospital, SUTTON IN ASHFIELD, Nottinghamshire, NG17 4JL Operator Location: Kings Mill Centre, Mansfeld Road, SUTTON IN ASHFIELD, Nottinghamshire, NG17 4JL Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Transfer - with Baling(compaction) Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence has completion certificateSurrendered Dated: 10th February 1992 Preceded By Licence: 2/91/251/56sw Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Clin.Waste Grps Aa,B,C,B,C,D,E Max.Waste Permitted By Licence Metal (Iron, Steel, Aluminium) Paper/Cardboard Plastics(Finished Prods) Prohibited Waste: Waste N.O.S.	A12NE (NW)	626	1	451400 360100
77	**Registered Waste Treatment or Disposal Sites** Licence Holder: Notts C.C. Licence Reference: 2/77/ 67/55NW R Site Location: Mansfield Incinerator, Hermitage Lane, Mansfield, Nottinghamshire Operator Location: Trent Bridge House, Fox Road, NOTTINGHAM, Nottinghamshire, NG2 6BJ Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Incineration Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 17th May 1978 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Civic Amenity/Refuse Amenity Waste	A14SE (E)	857	1	452780 359670

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
78	**BGS Recorded Mineral Sites** Site Name: King'S Mill Location: Mansfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 37180 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Permian Geology: Cadeby Formation (Lower Magnesian Limestone) Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A13NE (E)	65	4	451992 359782
79	**BGS Recorded Mineral Sites** Site Name: Hermitage Brick Works Location: Mansfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 37182 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Permian Geology: Edlington Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	465	4	452316 360024
80	**BGS Recorded Mineral Sites** Site Name: Sandy Hill Location: Skegby Lane, Mansfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 37551 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Glaciofluvial Deposits, Mid Pleistocene Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A18NE (N)	718	4	452095 360465
81	**BGS Recorded Mineral Sites** Site Name: Sandy Hill Location: Skegby Lane, Mansfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 37173 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Glaciofluvial Deposits, Mid Pleistocene Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A18NE (N)	767	4	452013 360529
82	**BGS Recorded Mineral Sites** Site Name: King'S Mill Location: Mansfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 37181 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Permian Geology: Edlington Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NE (E)	777	4	452655 360043
83	**BGS Recorded Mineral Sites** Site Name: Skegby Lane Sand Pit Location: Skegby Lane, Mansfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 37169 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Till, Mid Pleistocene Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	896	4	451565 360585

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	**BGS Recorded Mineral Sites** Site Name: Sutton Road Pit Location: Sutton Road, Mansfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 37553 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Permian Geology: Edlington Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	901	4	452565 360405
85	**BGS Recorded Mineral Sites** Site Name: King'S Mill Clay Pit Location: Sutton-In-Ashfield, Nottinghamshire Source: British Geological Survey, National Geoscience Information Service Reference: 27103 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Permian Geology: Edlington Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7SW (SW)	970	4	451240 359085
	BGS 1:625,000 Solid Geology Description: Permian mudstones (including Middle and Upper Marls, Eden and St Bees shales)	A13NE (N)	0	4	451929 359767
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NE (N)	0	5	451929 359767
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NE (N)	0	-	451929 359767
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards No Hazard				
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	4	451929 359767
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	234	4	451929 360000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	4	451929 359767
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	234	4	451929 360000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	4	451929 359767
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	234	4	451929 360000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	4	451929 359767
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	234	4	451929 360000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	4	451929 359767

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	126	4	451975 359650
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	234	4	451929 360000
	Radon Potential - Radon Affected Areas Affected Area: The property is in a radon affected area, as between 1 and 3% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	4	451929 359767
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	4	451929 359767

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
86	**Contemporary Trade Directory Entries** Name: 47 Laundry Services Location: 6, Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Ironing & Home Laundry Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	126	-	452032 359694
86	**Contemporary Trade Directory Entries** Name: John Austhill Location: 7, Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Carpets & Rugs - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	126	-	452029 359691
87	**Contemporary Trade Directory Entries** Name: Creative Steelworks Location: 4, Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Steel Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	128	-	452039 359701
87	**Contemporary Trade Directory Entries** Name: Rout 1 Location: 2-3, Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	130	-	452044 359706
87	**Contemporary Trade Directory Entries** Name: Kingswood Bodyworks Location: 1, Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	152	-	452065 359698
87	**Contemporary Trade Directory Entries** Name: Big Steve'S Motorcycle Paint Shop Location: Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Motor Cycle Repairs **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (SE)	158	-	452054 359671
87	**Contemporary Trade Directory Entries** Name: Tremic Tools Ltd Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Engineers - General **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (E)	163	-	452089 359738
87	**Contemporary Trade Directory Entries** Name: G & P Precision Engineers Nottingham Ltd Location: 38, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (E)	165	-	452084 359711
87	**Contemporary Trade Directory Entries** Name: G & P Precision Engineering Ltd Location: 38, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	165	-	452084 359711
88	**Contemporary Trade Directory Entries** Name: 47 Domestic Laundry Services Location: 15-16, Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Ironing & Home Laundry Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	147	-	452013 359647
88	**Contemporary Trade Directory Entries** Name: Gundel Transport Services Location: 44, Bleak Hill Way, Mansfield, Nottinghamshire, NG18 5EZ Classification: Road Haulage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	186	-	452030 359611
89	**Contemporary Trade Directory Entries** Name: The Oldenburg Group Incoperated (Europe) Location: Hermitage House, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Materials Handling Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	207	-	452090 359637

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
89	**Contemporary Trade Directory Entries** Name: Perry Engineering Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	220	-	452090 359617
89	**Contemporary Trade Directory Entries** Name: P Atkins Ltd Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Fuel Injection Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (SE)	227	-	452122 359648
89	**Contemporary Trade Directory Entries** Name: Family First Trust Ltd Location: Unit 8 Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Recycling Centres **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (SE)	234	-	452121 359634
89	**Contemporary Trade Directory Entries** Name: Cpi Thermotics Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Packaging Materials Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (SE)	239	-	452121 359624
89	**Contemporary Trade Directory Entries** Name: Printing & Rollercoating Ltd Location: 4, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	257	-	452139 359620
90	**Contemporary Trade Directory Entries** Name: Bevel Pane Panels Location: 35a, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: PVC-U Products - Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	217	-	452146 359768
91	**Contemporary Trade Directory Entries** Name: Jack Loggin Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5HR Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (N)	221	-	451912 359987
92	**Contemporary Trade Directory Entries** Name: Absolute Cooling Location: Unit 14,Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Air Conditioning & Refrigeration Contractors **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (E)	228	-	452148 359704
92	**Contemporary Trade Directory Entries** Name: K & P Woodworking & Machinery Location: Unit 14, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Woodworking Machinery **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (E)	228	-	452148 359704
92	**Contemporary Trade Directory Entries** Name: Nottingham Air Conditioning Location: Unit 14, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Air Conditioning & Refrigeration Contractors **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (E)	228	-	452148 359704
92	**Contemporary Trade Directory Entries** Name: G R P Kingstown Ltgd Location: 10, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Glass Fibre - Materials & Tools **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	239	-	452155 359689
92	**Contemporary Trade Directory Entries** Name: Quickits Ltd Location: Unit 15,16,Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Engineering Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (E)	241	-	452162 359704

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	**Contemporary Trade Directory Entries** Name: Mansfield Radiators Ltd Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Car Radiator Servicing & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (E)	246	-	452162 359688
93	**Contemporary Trade Directory Entries** Name: Mansfield Cryogenics Location: Unit 2,Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Gas - Industrial & Medical Suppliers **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A13SE (SE)	255	-	452145 359632
93	**Contemporary Trade Directory Entries** Name: Fast Pack Packaging Location: Unit 7,Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Packaging & Wrapping Equipment & Supplies **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	262	-	452154 359632
93	**Contemporary Trade Directory Entries** Name: G B Textile Services Location: 2 Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Hosiery Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	272	-	452156 359618
93	**Contemporary Trade Directory Entries** Name: Bsf Engineering Location: 2 Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Engineering Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	272	-	452156 359618
94	**Contemporary Trade Directory Entries** Name: Richards Motor Services Ltd Location: 21, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Mechanical Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (E)	265	-	452194 359749
94	**Contemporary Trade Directory Entries** Name: D J N Distributors Location: 20, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Dust Extraction Plant & Equipment Manufacturers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	269	-	452198 359777
94	**Contemporary Trade Directory Entries** Name: Anvil Autos Location: 20, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	269	-	452198 359777
94	**Contemporary Trade Directory Entries** Name: E J Rose Automatics Location: 22, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Gearboxes **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	279	-	452208 359786
94	**Contemporary Trade Directory Entries** Name: H & D Autobodies Location: 22, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	279	-	452208 359786
95	**Contemporary Trade Directory Entries** Name: Save Service Station Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5HL Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (N)	276	-	451856 360032
96	**Contemporary Trade Directory Entries** Name: P Atkins Fuel Injection Ltd Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Diesel Fuel Injection Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (SE)	284	-	452145 359582

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	**Contemporary Trade Directory Entries** Name: B B Manufacturing Location: Unit 2,Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (SE)	295	-	452159 359582
97	**Contemporary Trade Directory Entries** Name: Dave'S Transits Location: Kings Mill Way, Hermitage Lane Ind Esta, Mansfield, Nottinghamshire, NG18 5ER Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (E)	310	-	452235 359718
98	**Contemporary Trade Directory Entries** Name: Reddington Motors Location: 24, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	324	-	452253 359768
98	**Contemporary Trade Directory Entries** Name: H K Motors Location: 24, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	324	-	452253 359768
98	**Contemporary Trade Directory Entries** Name: Mpr Electric Gates Ltd Location: Unit 23B,Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Wrought Ironwork **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	336	-	452263 359805
98	**Contemporary Trade Directory Entries** Name: Cannon Hygiene Ltd Location: 23b, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Hygiene & Cleansing Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	337	-	452263 359806
98	**Contemporary Trade Directory Entries** Name: Mpr Security Fabrications Location: B, 23, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Gate Manufacturers - Automated **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	337	-	452263 359806
99	**Contemporary Trade Directory Entries** Name: Brian Weiss Location: Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Road Haulage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (E)	352	-	452278 359721
100	**Contemporary Trade Directory Entries** Name: G B Textile Services Location: 2-3 Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Textile Manufacturing **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	357	-	452224 359566
100	**Contemporary Trade Directory Entries** Name: Brymar International Location: 2-3 Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Lingerie & Hosiery Manufacturers & Wholesalers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	357	-	452224 359566
100	**Contemporary Trade Directory Entries** Name: Sm Glazing Location: 3, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: PVC-U Products - Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	357	-	452224 359566

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
100	**Contemporary Trade Directory Entries** Name: Three Sixty Precision Location: 2, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Precision Engineers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	361	-	452231 359569
100	**Contemporary Trade Directory Entries** Name: S L S Precision Engineers Ltd Location: 1, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	364	-	452240 359578
100	**Contemporary Trade Directory Entries** Name: A D Stretch Wrap Ltd Location: 1, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Packaging Materials Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	364	-	452240 359578
101	**Contemporary Trade Directory Entries** Name: Baggaley & Jenkins Remedials Ltd Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Damp & Dry Rot Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	369	-	452176 359493
101	**Contemporary Trade Directory Entries** Name: Baggaley & Jenkins (Remedials) Ltd Location: Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Damp & Dry Rot Control **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	369	-	452176 359493
102	**Contemporary Trade Directory Entries** Name: Mf Textiles Ltd Location: 21, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Textile Manufacturing **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A14SW (E)	373	-	452287 359665
103	**Contemporary Trade Directory Entries** Name: Pentagon Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5HX Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	405	-	452209 360059
103	**Contemporary Trade Directory Entries** Name: Masterfit Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5HX Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	405	-	452209 360059
104	**Contemporary Trade Directory Entries** Name: B S Engineering Ltd Location: 5, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (E)	412	-	452310 359611
104	**Contemporary Trade Directory Entries** Name: Dukeries Bodyworks Location: 2, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	422	-	452304 359574
104	**Contemporary Trade Directory Entries** Name: Thunderbird Racing International Location: 2, Kings Mill Way, MANSFIELD, Nottinghamshire, NG18 5ER Classification: Car Kit Assemblers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	422	-	452304 359574
104	**Contemporary Trade Directory Entries** Name: D J N Distributors Location: 2, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER Classification: Filter Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	422	-	452304 359574

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
104	**Contemporary Trade Directory Entries** Name: Mansfield Anodisers Ltd Location: 46, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Metal Finishing Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A14SW (SE)	455	-	452340 359571
105	**Contemporary Trade Directory Entries** Name: Pentagon Mansfield Location: Sutton Rd, Mansfield, Nottinghamshire, NG18 5HX Classification: Car Dealers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A18SE (NE)	431	-	452179 360118
106	**Contemporary Trade Directory Entries** Name: Magnet Trade Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5HT Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	452	-	452255 360080
107	**Contemporary Trade Directory Entries** Name: Quest Unique Glass Designs Ltd Location: Unit 1,Abbey Ind Park,Hermitage La, Mansfield, Nottinghamshire, NG18 5GH Classification: Glass Engravers & Decorators **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A14SW (E)	468	-	452391 359691
107	**Contemporary Trade Directory Entries** Name: Bennys Cabinets Ltd Location: Unit 2-5 Abbey Trade Park, Hermitage Way, Mansfield, Nottinghamshire, NG18 5HD Classification: Kitchen Furniture Manufacturers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A14SW (E)	482	-	452406 359695
108	**Contemporary Trade Directory Entries** Name: T 4 Design Location: Unit 1-3, Hermitage Way, Mansfield, Nottinghamshire, NG18 5ES Classification: Glass Products - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (E)	481	-	452390 359630
109	**Contemporary Trade Directory Entries** Name: Infranet Technologies Ltd Location: Enterprise Ct,Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Radio Communication Equipment **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14SW (SE)	523	-	452336 359438
109	**Contemporary Trade Directory Entries** Name: County Trading Ltd Location: 4, Enterprise Court, Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Brake & Clutch Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	524	-	452337 359438
110	**Contemporary Trade Directory Entries** Name: Kvm Energy Ltd Location: Mansfield I Centre,Hamilton Way, Mansfield, Nottinghamshire, NG18 5BR Classification: Heating Equipment - Sales & Service **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	542	-	452313 359384
111	**Contemporary Trade Directory Entries** Name: Hallmarque Ltd Location: Unit 1 Hermitage La, Mansfield, Nottinghamshire, NG18 5HB Classification: Metal Finishing Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (E)	543	-	452459 359884
111	**Contemporary Trade Directory Entries** Name: Aseptic Supplies & Maintenance Ltd Location: Hermitage La, Mansfield, Nottinghamshire, NG18 5HF Classification: Valve Manufacturers & Suppliers **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (E)	543	-	452459 359884

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
112	**Contemporary Trade Directory Entries** Name: Goldstar Commercial Location: 2 Kestral Rd, Mansfield, Nottinghamshire, NG18 5FT Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Manually positioned to the address or location	A14SW (E)	548	-	452457 359622
112	**Contemporary Trade Directory Entries** Name: Combined Energy Solutions Location: Kestral House, Kestral Road, Mansfield, Nottinghamshire, NG18 5FT Classification: Mechanical Handling Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (E)	567	-	452479 359631
112	**Contemporary Trade Directory Entries** Name: Delta European Development Centre Location: 3, Kestral Road, MANSFIELD, Nottinghamshire, NG18 5FT Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (E)	567	-	452479 359631
112	**Contemporary Trade Directory Entries** Name: Mansfield Tyres Ltd Location: Kestral Road, Mansfield, Nottinghamshire, NG18 5FT Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (E)	613	-	452528 359638
112	**Contemporary Trade Directory Entries** Name: Mansfield Tyre Ltd Location: Kestral Road, Mansfield, Nottinghamshire, NG18 5FT Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (E)	613	-	452528 359638
113	**Contemporary Trade Directory Entries** Name: Upvc Trade Counter Location: Bridge House,Hermitage La, Mansfield, Nottinghamshire, NG18 5HB Classification: Cladding Suppliers & Installers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (E)	553	-	452442 359972
114	**Contemporary Trade Directory Entries** Name: Gallant Location: Maunside Ct,1 Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Air Conditioning Equipment & Systems **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A14SW (SE)	568	-	452403 359454
114	**Contemporary Trade Directory Entries** Name: Oji Intertech Ltd Location: 19, Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Car Component Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	568	-	452403 359454
115	**Contemporary Trade Directory Entries** Name: Jones & Palmer Ltd Location: 5, Kenmore Close, Mansfield, Nottinghamshire, NG19 6RA Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (N)	577	-	452073 360325
116	**Contemporary Trade Directory Entries** Name: Claremont Location: Hermitage Lane, Mansfield, Nottinghamshire, NG18 5EB Classification: Textile Manufacturing **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (E)	585	-	452493 359924
116	**Contemporary Trade Directory Entries** Name: J P Samples Location: Unit 2, Halls Work Space, Hermitage Lane, Mansfield, Nottinghamshire, NG18 5HB Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (E)	624	-	452536 359913

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
117	**Contemporary Trade Directory Entries** Name: Oakham Industries Ltd Location: Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Engineers - General **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	592	-	452390 359396
117	**Contemporary Trade Directory Entries** Name: Cannon Engineers & Associates Ltd Location: 20, Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	626	-	452408 359363
117	**Contemporary Trade Directory Entries** Name: Closures Ltd Location: 20-22, Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Packaging & Wrapping Equipment & Supplies **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	626	-	452408 359363
118	**Contemporary Trade Directory Entries** Name: Saurus General Engineering Ltd Location: Unit G Hermitage La, Mansfield, Nottinghamshire, NG18 5HA Classification: Engineers - General **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (NE)	600	-	452431 360096
119	**Contemporary Trade Directory Entries** Name: Cemex Readymix Uk Ltd Location: Hermitage Lane, Mansfield, Nottinghamshire, NG18 5HB Classification: Concrete & Mortar Ready Mixed **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (E)	602	-	452524 359859
120	**Contemporary Trade Directory Entries** Name: Environmental Coatings Uk Ltd Location: Unit 1,Hermitage La, Mansfield, Nottinghamshire, NG18 5HB Classification: Paint Manufacturers **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	613	-	452432 360116
120	**Contemporary Trade Directory Entries** Name: Upvc Trade Counter Location: Hermitage La, Mansfield, Nottinghamshire, NG18 5HB Classification: Building Block Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	618	-	452433 360124
120	**Contemporary Trade Directory Entries** Name: Biffa Location: Hermitage La, Mansfield, Nottinghamshire, NG18 5HB Classification: Medical Waste Disposal **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	633	-	452436 360146
121	**Contemporary Trade Directory Entries** Name: Craft Signs Location: 1, Maun Way, Mansfield, Nottinghamshire, NG18 5GX Classification: Screen Process Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (E)	618	-	452547 359760
121	**Contemporary Trade Directory Entries** Name: Castlestone Location: Unit 1, Maun Close, Mansfield, Nottinghamshire, NG18 5GY Classification: Stone Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (E)	628	-	452557 359792
122	**Contemporary Trade Directory Entries** Name: Sangenic International Ltd Location: 29, Hamilton Way, MANSFIELD, Nottinghamshire, NG18 5BU Classification: Plastics - Injection Moulding **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	657	-	452527 359497

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
123	**Contemporary Trade Directory Entries** Name: Ebeniste Ltd Location: Maunside, Green Line Industrial Estate, Mansfield, Nottinghamshire, NG18 5GU Classification: Bed & Mattress Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (E)	663	-	452588 359693
124	**Contemporary Trade Directory Entries** Name: Valmont Location: Maunside, Green Line Ind Est, Mansfield, Nottinghamshire, NG18 5GU Classification: Lighting Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14SE (E)	713	-	452642 359756
125	**Contemporary Trade Directory Entries** Name: Hb Traditional Joinery Location: 10, Kestral Road, Mansfield, Nottinghamshire, NG18 5FT Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (E)	714	-	452613 359562
126	**Contemporary Trade Directory Entries** Name: C C P Location: 19, Washington Drive, Mansfield, Nottinghamshire, NG18 5GP Classification: Printers - Glass, Metal, Plastics Etc. **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	718	-	452578 360073
127	**Contemporary Trade Directory Entries** Name: Commercial Vehicle International Parts Location: Unit 4A, Hamilton Way, Mansfield, Nottinghamshire, NG18 5BU Classification: Brake & Clutch Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	734	-	452573 359415
128	**Contemporary Trade Directory Entries** Name: Hy-Ram Engineering Co Ltd Location: 30, Grange Avenue, Mansfield, Nottinghamshire, NG18 5EY Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	766	-	452584 360164
129	**Contemporary Trade Directory Entries** Name: Kings Mill Hospital Location: Mansfield Road, Sutton-in-Ashfield, Nottinghamshire, NG17 4JL Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	767	-	451193 359978
129	**Contemporary Trade Directory Entries** Name: The Childrens Therapy Centre Kings Mill Site Location: Mansfield Road, Sutton-in-Ashfield, Nottinghamshire, NG17 4JL Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	767	-	451193 359978
129	**Contemporary Trade Directory Entries** Name: Health Care Projects Location: Kings Mill Hospital,Mansfield Rd, Sutton-in-Ashfield, Nottinghamshire, NG17 4JT Classification: Hospitals **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	768	-	451192 359978
130	**Contemporary Trade Directory Entries** Name: Rickaby & Lee Transport Ltd Location: Lower Oakham Way, Mansfield, Nottinghamshire, NG18 5BY Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	767	-	452554 359322
130	**Contemporary Trade Directory Entries** Name: Worldwide Refinishing Systems Location: Spectrum House, Lower Oakham Way, Mansfield, Nottinghamshire, NG18 5BY Classification: Bath Resurfacing **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	790	-	452551 359280

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
131	**Contemporary Trade Directory Entries** Name: Biffa Waste Services Ltd Location: Leigh Works, Hermitage Lane, Mansfield, Nottinghamshire, NG18 5HB Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	783	-	452686 359967
132	**Contemporary Trade Directory Entries** Name: Interiors Foam Ltd Location: Mansfield D C Depot, Maunside, Green Line Industrial Estate, Mansfield, Nottinghamshire, NG18 5GU Classification: Foam Products - Rubber & Plastics **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (E)	816	-	452745 359761
132	**Contemporary Trade Directory Entries** Name: Mansfield District Council Location: Hermitage Lane Depot,Maunside, Mansfield, Nottinghamshire, NG18 5GU Classification: Waste Disposal Services **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A14SE (E)	816	-	452745 359761
133	**Contemporary Trade Directory Entries** Name: C & N Motors Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5EX Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned in the proximity of the address	A19SW (NE)	817	-	452551 360297
133	**Contemporary Trade Directory Entries** Name: Auto Court Ltd Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5EX Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned in the proximity of the address	A19SW (NE)	817	-	452551 360297
134	**Contemporary Trade Directory Entries** Name: Elite Fascias & Soffits Location: 3, Bonington Road, Mansfield, Nottinghamshire, NG19 6QH Classification: Fascias and Soffits **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (N)	852	-	451804 360609
135	**Contemporary Trade Directory Entries** Name: Regency Splendour Location: 109, Sutton Road, Mansfield, Nottinghamshire, NG18 5ET Classification: Fireplaces & Mantelpieces **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	882	-	452606 360332
136	**Contemporary Trade Directory Entries** Name: Glenair (Uk) Ltd Location: 40, Lower Oakham Way, Mansfield, Nottinghamshire, NG18 5BY Classification: Electronic Equipment - Manufacturers & Assemblers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (E)	906	-	452794 359497
137	**Contemporary Trade Directory Entries** Name: Millbrook Mental Health Unit Location: Kings Mill Hospital, Mansfield Road, Sutton-in-Ashfield, Nottinghamshire, NG17 4JT Classification: Hospitals **Status: Active** Positional Accuracy: Manually positioned to the address or location	A17SW (NW)	916	-	451138 360227
138	**Contemporary Trade Directory Entries** Name: W H Paint Finishers Ltd Location: Bleak Hill Sidings, Mansfield, Nottinghamshire, NG18 5EP Classification: Powder Coatings **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	940	-	452841 359996
138	**Contemporary Trade Directory Entries** Name: Fieldmill Garage Location: Bleak Hill Sidings, Mansfield, Nottinghamshire, NG18 5EP Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	951	-	452842 360031

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
138	**Contemporary Trade Directory Entries** Name: Auto Radiator Services Location: Bleak Hill Sidings, Mansfield, Nottinghamshire, NG18 5EP Classification: Car Radiator Servicing & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	958	-	452852 360020
139	**Contemporary Trade Directory Entries** Name: P & G Tyres Ltd Location: 4e Gibbons Rd, Mansfield, Nottinghamshire, NG18 5DZ Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19SE (NE)	957	-	452788 360188
139	**Contemporary Trade Directory Entries** Name: G Riggott Location: Isocrylic Building, Gibbons Road, Mansfield, Nottinghamshire, NG18 5DZ Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	988	-	452824 360186
140	**Contemporary Trade Directory Entries** Name: Whistler Technology Plc Location: Mansfield I Centre, Hamilton Way, Mansfield, Nottinghamshire, NG18 5BR Classification: Electronic Component Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (E)	978	-	452903 359676
141	**Contemporary Trade Directory Entries** Name: Keywest Pest Control Location: Barn 3, Hamilton Hill Farm, Cauldwell Road, Sutton-in-Ashfield, Nottinghamshire, NG17 5LU Classification: Pest & Vermin Control **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	999	-	451878 358769
142	**Contemporary Trade Directory Entries** Name: Theaker Recycle Location: 42, Sheepbridge Lane, Mansfield, Nottinghamshire, NG18 5DH Classification: Recycling Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	1000	-	452914 359940
142	**Contemporary Trade Directory Entries** Name: Theaker Recycling Ltd Location: 42, Sheepbridge Lane, Mansfield, Nottinghamshire, NG18 5DH Classification: Recycling Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	1000	-	452914 359940
143	**Fuel Station Entries** Name: Kingsmill Garage Location: 237 Sutton Road, MANSFIELD, Nottinghamshire, NG18 5HR Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A13NW (N)	220	-	451912 359986
144	**Fuel Station Entries** Name: Fleetwood Caravans Location: 288 Sutton Road, MANSFIELD, Nottinghamshire, NG18 5HL Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A13NW (N)	276	-	451856 360032
145	**Fuel Station Entries** Name: Morrisons Mansfield Location: Sutton Road, Mansfield, Nottinghamshire, NG18 5HX Brand: MORRISONS Premises Type: Hypermarket **Status: Open** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	401	-	451644 360047

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
146	**Local Nature Reserves** Name: The Hermitage Multiple Area: N Area (m2): 14638.89 Source: Natural England Designation Date: 21st June 2004	A13NE (E)	33	7	451962 359772
147	**Local Nature Reserves** Name: Oakham Multiple Area: Y Area (m2): 55318.26 Source: Natural England Designation Date: 30th November 2005	A14NW (E)	560	7	452487 359820
148	**Nitrate Vulnerable Zones** Name: Not Supplied Description: NVZ Area Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A13NE (N)	0	8	451929 359767

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Newark And Sherwood District Council - Environmental Services	November 2009	Annual Rolling Update
Gedling Borough Council - Environmental Health Department	November 2010	Annual Rolling Update
Ashfield District Council - Environmental Health	September 2009	Annual Rolling Update
Bolsover District Council - Environmental Health Department	September 2010	Annual Rolling Update
Mansfield District Council - Environmental Health Department	September 2010	Annual Rolling Update
Discharge Consents		
Environment Agency - Midlands Region	October 2010	Quarterly
Environment Agency - North East Region	October 2010	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Midlands Region	January 2011	Quarterly
Integrated Pollution Controls		
Environment Agency - Midlands Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Midlands Region	October 2010	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Newark And Sherwood District Council - Environmental Services	April 2010	Annual Rolling Update
Gedling Borough Council - Environmental Health Department	December 2009	Annual Rolling Update
Ashfield District Council - Environmental Health	January 2010	Annual Rolling Update
Mansfield District Council - Environmental Health Department	March 2010	Annual Rolling Update
Bolsover District Council - Environmental Health Department	September 2010	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Newark And Sherwood District Council - Environmental Services	April 2010	Annual Rolling Update
Gedling Borough Council - Environmental Health Department	December 2009	Annual Rolling Update
Ashfield District Council - Environmental Health	January 2010	Annual Rolling Update
Mansfield District Council - Environmental Health Department	March 2010	Annual Rolling Update
Bolsover District Council - Environmental Health Department	September 2010	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Newark And Sherwood District Council - Environmental Services	April 2010	Annual Rolling Update
Gedling Borough Council - Environmental Health Department	December 2009	Annual Rolling Update
Ashfield District Council - Environmental Health	December 2010	Annual Rolling Update
Mansfield District Council - Environmental Health Department	March 2010	Annual Rolling Update
Bolsover District Council - Environmental Health Department	September 2010	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2010	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - North East Region	December 1998	Not Applicable
Environment Agency - Midlands Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Midlands Region	December 2011	Monthly
Prosecutions Relating to Controlled Waters		
Environment Agency - Midlands Region	December 2011	Monthly
Registered Radioactive Substances		
Environment Agency - Anglian Region	October 2010	Quarterly
Environment Agency - Midlands Region	October 2010	Quarterly
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	January 2010	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	January 2010	Annually

Agency & Hydrological	Version	Update Cycle
Substantiated Pollution Incident Register		
Environment Agency - Midlands Region - East Area	October 2010	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2010	Quarterly
Water Abstractions		
Environment Agency - Midlands Region	October 2010	Quarterly
Environment Agency - North East Region	October 2010	Quarterly
Water Industry Act Referrals		
Environment Agency - Midlands Region	October 2010	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	January 2011	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	October 2010	Annually
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	October 2010	Annually
Source Protection Zones		
Environment Agency - Head Office	October 2010	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	November 2010	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	November 2010	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	November 2010	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	November 2010	Quarterly
Flood Defences		
Environment Agency - Head Office	November 2010	Quarterly

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Midlands Region - East Area	October 2010	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2010	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Midlands Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Midlands Region - East Area	October 2010	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2010	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Midlands Region - East Area	October 2010	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2010	Quarterly
Local Authority Landfill Coverage		
Ashfield District Council - Environmental Health	May 2000	Not Applicable
Bolsover District Council	May 2000	Not Applicable
Derbyshire County Council	May 2000	Not Applicable
Gedling Borough Council - Environmental Health Department	May 2000	Not Applicable
Mansfield District Council - Environmental Health Department	May 2000	Not Applicable
Newark And Sherwood District Council - Environmental Services	May 2000	Not Applicable
Nottinghamshire County Council - Environment Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Ashfield District Council - Environmental Health	May 2000	Not Applicable
Bolsover District Council	May 2000	Not Applicable
Derbyshire County Council	May 2000	Not Applicable
Gedling Borough Council - Environmental Health Department	May 2000	Not Applicable
Mansfield District Council - Environmental Health Department	May 2000	Not Applicable
Newark And Sherwood District Council - Environmental Services	May 2000	Not Applicable
Nottinghamshire County Council - Environment Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	May 2010	Bi-Annually
Explosive Sites		
Health and Safety Executive	July 2010	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Mansfield District Council - Planning Department	April 2010	Annual Rolling Update
Nottinghamshire County Council	August 2007	Annual Rolling Update
Derbyshire County Council	August 2010	Annual Rolling Update
Gedling Borough Council	January 2010	Annual Rolling Update
Bolsover District Council	January 2011	Annual Rolling Update
Newark And Sherwood District Council - Planning Department	January 2011	Annual Rolling Update
Ashfield District Council	May 2010	Annual Rolling Update
Planning Hazardous Substance Consents		
Mansfield District Council - Planning Department	April 2010	Annual Rolling Update
Nottinghamshire County Council	August 2007	Annual Rolling Update
Derbyshire County Council	August 2010	Annual Rolling Update
Gedling Borough Council	January 2010	Annual Rolling Update
Newark And Sherwood District Council - Planning Department	January 2011	Annual Rolling Update
Ashfield District Council	May 2010	Annual Rolling Update
Bolsover District Council	November 2010	Annual Rolling Update

Geological	Version	Update Cycle
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	October 2010	Bi-Annually
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
Brine Compensation Area		
Cheshire Brine Subsidence Compensation Board	November 2002	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Mining Report Service	January 2006	As notified
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	February 2009	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2010	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2010	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2010	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2010	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2010	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2010	Annually
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	May 2007	As notified
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	May 2007	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries		
Thomson Directories	November 2010	Quarterly
Fuel Station Entries		
Catalist Ltd - Experian	October 2010	Quarterly
Sensitive Land Use	**Version**	**Update Cycle**
Areas of Adopted Green Belt		
Ashfield District Council - Planning Department	December 2010	As notified
Bolsover District Council	December 2010	As notified
Gedling Borough Council	December 2010	As notified
Newark And Sherwood District Council	December 2010	As notified
Areas of Unadopted Green Belt		
Ashfield District Council - Planning Department	December 2010	As notified
Bolsover District Council	December 2010	As notified
Gedling Borough Council	December 2010	As notified
Newark And Sherwood District Council	December 2010	As notified
Areas of Outstanding Natural Beauty		
Natural England	July 2010	Bi-Annually
Environmentally Sensitive Areas		
Natural England	October 2010	Annually
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	December 2010	Bi-Annually
Marine Nature Reserves		
Natural England	September 2010	Bi-Annually
National Nature Reserves		
Natural England	December 2010	Bi-Annually
National Parks		
Natural England	January 2011	Bi-Annually
Nitrate Sensitive Areas		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2009	Not Applicable
Nitrate Vulnerable Zones		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	November 2010	Annually
Ramsar Sites		
Natural England	December 2010	Bi-Annually
Sites of Special Scientific Interest		
Natural England	December 2010	Bi-Annually
Special Areas of Conservation		
Natural England	December 2010	Bi-Annually
Special Protection Areas		
Natural England	December 2010	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Countryside Council for Wales	
Scottish Natural Heritage	
Natural England	
Health Protection Agency	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	**Ashfield District Council - Environmental Health** Urban Road, Kirby In Ashfield, Nottinghamshire, NG17 8DA	Telephone: 01623 450000 Fax: 01623 457530 Website: www.ashfield-dc.gov.uk
3	**Mansfield District Council - Environmental Health Department** Civic Centre, Chesterfield Road South, Mansfield, Nottinghamshire, NG19 7BH	Telephone: 01623 463463 Fax: 01623 463900 Website: www.mansfield.gov.uk
4	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
5	**The Coal Authority - Mining Report Service** 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0845 7626848 Email: thecoalauthority@coal.gov.uk
6	**Ashfield District Council - Planning Department** Urban Road, Kirby in Ashfield, Nottinghamshire, NG17 8DA	Telephone: 01623 450000 Fax: 01623 751735 Website: www.ashfield-dc.gov.uk
7	**Natural England** Northminster House, Northminster Road, Peterborough, Cambridgeshire, PE1 1UA	Telephone: 0845 600 3078 Fax: 01733 455103 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
8	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
9	**Nottinghamshire County Council - Environment Department** 5th Floor, Trentbridge House, Fox Road, Nottingham, Nottinghamshire, NG2 6BJ	Telephone: 0115 977 4383 Website: www.nottinghamshire.gov.uk
-	**Health Protection Agency - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@hpa.org.uk Website: www.hpa.org.uk
-	**Landmark Information Group Limited** The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.

Appendix B

1984 Bathymetric Survey Original

KINGS. MILL RESERVOIR

SURVEYED FEB 1984.
CONTOURED JUNE 1993

0.0 To 0.49 | 0.5 To 0.99 | 1.0 To 1.49 | 1.5 To 1.99 | 2.0 To 2.49 | 2.5 To 2.7

DEPTHS IN METRES.

F.I.GASCOIGNE. JUNE 93

Appendix C

Hydrological Calcualtions

			1986	1986		2011	2011	
Zone	Area	Percentage	Depth	Totals	Area	Percentage	Depth	Totals
A	15000	10	0.8	1200	15000	50	0.15	1125
Upstream inlet	15000	25	0.5	1875	15000	50	0.3	2250
	15000	30	0.7	3150	15000			
	15000	35	0.6	3150	15000			
		100		9375		100		3375
B	15000	10	0.9	1350	15000	5	1.3	975
Opposite sailing club	15000	70	1.1	11550	15000	60	1.1	9900
	15000	10	1.3	1950	15000	15	0.9	2025
	15000	10	1.5	2250	15000	10	0.7	1050
					15000	10	0.5	750
		100		17100		100		14700
C	7500	15	0.5	562.5	7500	20	1.1	1650
Adventure Centre	7500	25	0.7	1312.5	7500	10	1.3	975
Corner	7500	20	0.9	1350	7500	50	1.5	5625
	7500	30	1.1	2475	7500	20	1.7	2550
	7500	10	1.3	975	7500			0
		100		6675		100		10800
D	10000	25	1.1	2750	10000	50	0.6	3000
Western boundary	10000	30	0.7	2100	10000	20	0.9	1800
	10000	10	0.1	100	10000	10	1.1	1100
	10000	15	0.9	1350	10000	10	1.3	1300
	10000	20	1.3	2600	10000	10	1.5	1500
		100		8900		100		8700
E	30000	10	1.1	3300	30000	15	1	4500
Opposite Adventure	30000	40	1.3	15600	30000	10	1.3	3900
Centre	30000	25	1.5	11250	30000	20	1.5	9000
	30000	25	1.7	12750	30000	20	1.7	10200
					30000	15	1.9	8550
					30000	20	2.1	12600
		100		42900		100		48750
F	30000	50	1.3	19500	30000	5	0.5	750
Eastern boundary	30000	20	1.1	6600	30000	5	0.9	1350
	30000	20	1.5	9000	30000	5	1.1	1650
	30000	10	1.7	5100	30000	10	1.3	3900
					30000	25	1.5	11250
					30000	25	1.7	12750
					30000	15	1.9	8550
		100		40200		90		40200
G	7500	15	1.5	1687.5	7500	60	0.5	2250
Geothermal pipe entry area	7500	35	1.3	3412.5	7500	25	0.7	1312.5
	7500	20	1.1	1650	7500	15	0.9	1012.5
	7500	15	0.9	1012.5				
	7500	15	1.7	1912.5				
		100		9675		100		4575
H	15000	20	0.5	1500	15000	30	0.7	3150
Northern corner	15000	30	0.7	3150	15000	25	0.9	3375
	15000	15	0.9	2025	15000	15	1.1	2475
	15000	10	1.1	1650	15000	15	1.3	2925
	15000	5	1.3	975	15000	10	1.5	2250
	15000	20	1.5	4500	15000	5	1.7	1275
		100		13800		100		15450
Totals				148625				146550
Difference (m^3)						2075		
Difference (tonne)						3320		