Environmental Permit EPR/XP3092NX

Sidegate Lane Battery Recycling Facility

Site Condition Report

July 2025

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Document Details

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Document Review History

Date	Description	Summary of Changes
November 2013	Version 1	Original document
July 2025	Version 2	Updated document for Battery Recycling Facility

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Introduction

The Environmental Permitting (England and Wales) Regulations 2016 (as amended) require the production of a Site Condition Report (SCR) for any facility that may cause a significant risk to land or groundwater.

This document constitutes the SCR provided to support the development and permit application for Sidegate Lane Battery Recycling Facility (the Site). It is written in line with the requirements of the Environment Agency SCR template.

This report comprises a number of sections; different sections are required to be completed during the lifetime of the facility as detailed below. This report is comprised of Sections 1 to 7.

Permit Application:	Sections 1, 2 and 3 must be completed and submitted with the application.
Permit Life:	Sections 4, 5, 6 and 7 must be maintained.
Permit Surrender:	Add a new document reference in Section 1, Complete sections 8, 9 and 10 and submit with the surrender application.

1 Site Details

Name of Applicant:	SUEZ Recycling and Recovery UK Ltd
Activity Address:	Sidegate Lane Battery Recycling Facility, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN
National Grid Reference:	SP 9147 7033
Document reference and dates for Site Condition Report at Permit Application and Surrender:	This report is prepared and submitted in support of a permit variation to allow the operation of a Battery Recycling Facility at Sidegate Lane. July 2025
Document references for site plans (including location and boundaries):	Figure 1 – Site Permit Boundary Figure 2 – Site Layout Plan

Note:
The permit application process requires the submission of a site plan to the Environment Agency. Plans must be submitted with the application that shows:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If the above information is not shown in the figures accompanying the Site Management Plan, then addition plans must be provided in this SCR.

2 Condition of the Land at Permit Issue

2.1 Environmental Setting

Environmental Setting:

- Geology;
- Hydrogeology, and;
- Hydrology.

2.1.1 Geology

The geology of the Site and immediate area is interpreted based on a review of British Geological Survey (BGS) 1:50,000 scale, Solid and Drift Map Sheet 186 'Wellingborough'. This indicates that the Site is directly underlain by Jurassic-age bedrock:

Group	Formation	Description
Great Oolite Group	Blisworth Limestone Formation (formerly Great Oolite Limestone)	Pale grey to off-white or yellowish limestones with thin marls and mudstones,
Inferior Oolite Group	Grantham Formation (formerly Estuarine Series)	Mudstones, sandy mudstones and argillaceous siltstone-sandstone
	Northamptonshire Sandstone Formation;	Sandy, ooidal ironstone, greenish grey where fresh, weathering to brown limonitic sandstone.
Lias Group	Whitby Mudstone Formation (formerly Upper Lias Clay)	Medium and dark grey fossiliferous mudstone and siltstone, laminated and bituminous in part, with thin siltstone or silty mudstone beds and rare fine-grained calcareous sandstone beds

The Site is directly underlain by the Northampton Sandstone Formation, which was mined in the area up to the 1960s for iron and steel production in Corby, Northamptonshire.

Where present, the thickness of the overlying Grantham Formation is anticipated to be relatively thin at the Site.

It is also likely that the bedrock is overlain by a variable thickness of Made Ground, due to the activities of historical mining and open cast working, and landfilling.

An east-west trending minor fault is located approximately 350m south of the Site, with a downthrow to the south.

2.1.2 Hydrogeology

The Northamptonshire Sandstone Formation is considered, by the Agency, to represent a Secondary A Aquifer; permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

The Blisworth Limestone Formation, which outcrops approximately 650m north west is considered to be a Principle Aquifer.

The Site is not located within a Source Protection Zone (SPZ); the closest groundwater abstraction being in excess of 1.5 km away.

2.1.3 Hydrology

The Site is located within the surface water catchments of the River Ise; approximately 2km to the south west.

The nearest named surface water feature is the Harrowden Brook; a tributary of the River Ise, approximately 1 km to the west and which has a “Grade A - Very Good” chemical status.

Surface water drainage in the vicinity of the Site incorporates several small streams. The majority of which, originate as springs from the Northampton Sandstone Formation.

2.2 Pollution History

Pollution History:

- Pollution Incidents, that may have affected land;
- Historical Land Use, and associated contaminants;
- Any visual/olfactory evidence of existing contamination, and;
- Evidence of damage to pollution prevention measures.

2.2.1 Pollution Incidents

No records of potentially harmful discharges to the public sewer or controlled waters were identified by GroundSure (2012) within 500m of the Site.

Further, no pollution incidents are recorded by the Environment Agency within 250m of the Site.

Since the previous review of site condition in 2013, no further pollution incidents to groundwater have been recorded. However, fires have occurred at the Transfer Station in May 2019, February 2024 and also in February 2025. Each fire event may have resulted in a short-term impact on air quality downwind of the site but is considered not to have impacted the local soils or water environment.

2.2.2 Historical Land Use and Present Site Use

The GroundSure (2012) report which accompanied TerraConsult (2012) shows the Site to have been 'undeveloped' for the majority of its recorded history.

A tramway was recorded as cutting across the southern limits of the Site, in a north easterly direction, between approximately 1900 and the late 1950's. A second tramway was later constructed, at grade, through the centre of the Site, in an approximate north-south direction. Both tramways were later removed prior to 1972; the later track being replaced by an access track, which partially followed the original route of the tramway.

The northern part of the Site was later used by SITA (now SUEZ) for the compositing of green waste from 2004 to 2011. The Site was operated solely as a waste transfer station from 2014 until 2024.

Liquor from the composting material was diverted to a lagoon in the northern part of the Site, which was then emptied using a bowser and the liquid was taken to the adjacent operational landfill for treatment with the landfill leachate.

Historically, the lands to the south and west of the Site have been predominantly agricultural; arable and pasture farmland. However, the history of lands to the north, east/ south east is relatively complex; with periods of agricultural use, mining (ironstone workings in which the Northampton Sandstone Formation was extracted by opencast and deep mining methods) and subsequent infilling, with older areas of workings often being worked more than once.

A former landfill site is located to the north. Referred to as Finedon Landfill, it was operational between 1968 and 1993 and operated under the principle of co-disposal for inert, domestic, commercial and industrial wastes. Importantly, the waste boundary is understood to have included the whole of the proposed development Site.

Sidegate Lane Landfill Site, operated by SUEZ, borders the Site to the north/north east and east/south east. It covers an area of approximately 16.2Ha, formed by excavation into open cast backfill to form a suitable engineered void which was then lined, and is operated under the principle of both engineered and hydraulic containment to Construction Quality Assurance (CQA) standards. It is surrounded by historically deposited wastes.

Therefore, potential contaminants are likely associated with the adjacent landfills (historic and current):

- Metals and metalloids / metal compounds;
- Ammoniacal nitrogen, sulphate and chloride;
- Hydrocarbons – petroleum hydrocarbons, BTEX, solvents;
- PAHs, and;
- Pesticides e.g. mecoprop.

In addition, Asbestos Containing Materials (ACMs) could be present on-Site.

The Site has been operated as a Transfer Station facility since 2014.

2.2.3 Visual/Olfactory Evidence of Existing Contamination

There is no visual or olfactory evidence for existing contamination at the Site.

2.2.4 Evidence of Damage to Pollution Prevention Measures

There is no evidence for damage to the pollution prevention measures present at the Site.

2.3 Previous Assessments

Evidence of Historic Contamination:

- Historical Site Investigation;
- Historical Assessments, and;
- Remediation and Verification Reports.

2.3.1 Historical Site Investigations, Assessments, Remediation and Verification Reports

Available reports, pertaining to the Site include:

Hyder Consulting, February 2008

Sidegate Lane Landfill. Materials Recycling Facility and Transfer Station

(Report No. 5001-BM01213-BMR-01)

And including Envirocheck Report (Reference BM01213, dated November 2007)

TerraConsult, May 2012

Sidegate Lane Landfill, Phase 1 Site Investigation Report for Proposed RDF Facility

And including GroundSure Report (Reference PO10378, dated June 2012)

The relevant details of the available reports are presented in the following Sections.

2.3.2 Hyder Consulting, February 2008

Hyder Consulting (UK) Ltd were commissioned by SITA (Currently SUEZ) to provide geotechnical and environmental advice in support of proposals for a material recycling facility (MRF) and transfer station at the Site. These proposals were later rescinded with the Site being developed into a Composting Pad.

A ground investigation was undertaken by Geotechnics Ltd between 17 and 19 December 2007 under the supervision of Hyder comprising 3 No. 150mm diameter cable percussion boreholes to depths of between 4.63m and 9.95m; terminating on hard strata, and 6 No. trial pits between 3.8m and 4.3m depths, which were backfilled upon completion.

The proven ground conditions were consistent with the documented geology that being:

Strata	Thickness (m)	Basal Depth (mBGL)	Description
Made Ground	0.90 – 5.60	5.60	Very soft to firm slightly sandy slightly gravelly CLAY with some gravel and cobble-sized fragments of plastic, clinker, flint, limestone, slate, timber, metal wire, peat and domestic refuse.
Grantham Formation (formerly Estuarine Series)	1.30 – 3.50	4.00	Weak, iron stained, fine to medium grained SANDSTONE
Northamptonshire Sandstone Formation;	0.32 – 4.55	Not Proven	Firm to very stiff friable slightly sandy slightly gravelly CLAY (slightly clayey sandy GRAVEL)

Limited groundwater was encountered during the investigation such that no groundwater samples were collected.

Representative soil samples were analysed for a range of determinands which were inline their appropriate Soil Guidance Value (SGV) levels; negating any potential risk to receptors. The Made Ground was classified as Non Hazardous material.

Concentrations of water soluble sulphate in soil and groundwater were within the Design Sulphate Class DS2 with an Aggressive Chemical Environment for Concrete (ACEC) classification of AC-2.

The results of gas monitoring varied, with the Site being classified as characteristic gas situation Class 3 (based on BS 8485:2007); “moderate hazard potential”. The report recommended that Category 2 gas protection measures were necessary and that further gas monitoring be undertaken.

2.3.3 TerraConsult, May 2012

TerraConsult were commissioned by SITA to undertake a preliminary risk assessment and flood risk assessment for the Site, in support of proposals of a Refuse Derived Fuel (RDF) facility.

The specific activities carried out were as follows:

- undertake a desk study of available information to include a review of existing reports and history of the site;
- carry out a site walk over;
- review existing site investigation and environmental information for the site;
- develop a preliminary conceptual site model and refine this according to the findings of the investigation;
- assess the stability of the site due to historic mining/quarrying;

- provide preliminary geotechnical information on the ground conditions for foundation and floor slab design;
- provide recommendations for intrusive site investigation and laboratory testing, and;
- carry out a flood risk assessment.

The report confirmed the findings of Hyder (2008), concluding that there is no significant source of contaminants presented at the Site, with a negligible risk to all receptors including; human health, controlled waters and ecological receptors.

The characteristic gas situation was confirmed as Category 3; requiring that 2 ‘points’ of gas protection are built into design proposals for all buildings:

- Reinforced concrete ground bearing foundation raft with limited service penetrations that are cast into slab – 1.5 points;
- Taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation, gas membrane (recommend proprietary reinforced gas membrane) sealed around service penetrations, membrane to extend across wall cavities – 0.5 points.

Supporting Information:	In addition to the above reports: • Envirocheck Report *Reference BM01213, November 2007* • GroundSure Report *Reference PO10378, June 2012*

3 Permitted Activities

Permitted Activities:	The site will operate as a Battery Recycling Facility, As part of the Battery Recycling Facility the following installation activities listed under Schedule 1 of The Environmental Permitting (England and Wales) Regulations 2016 will be undertaken on the site: • Section 5.3 Part A(1)(a)(ii) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment. • Section 5.6 Part A(1)(a) Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3. Directly Associated Activities (e.g. treatment of metal waste in a shredder) will also support the site operations. There will be no more than 75 tonnes of non-hazardous waste treated on site per day. The Transfer Station activity is varied to allow acceptance of batteries of various chemistries (i.e. lead batteries, Ni-Cd batteries, mercury-containing batteries and alkaline batteries) and fluorescent tubes, for storage and transfer only. The permit will retain the existing waste codes for the transfer station activity, although only batteries will be accepted.
Non-permitted Activities Undertaken:	N/A at this time
References: Plan showing activity layout; Env Risk Assessment.	Figure 1 Figure 2

4 Changes to the Activity

Have there been any changes to the activity boundary?	N/A at this time
Have there been any changes to the permitted activities?	To be outlined in this document and pursued by Permit Variation in 2025.
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	See Stage 1 - 3 Risk Assessment in Appendix D.
Checklist of supporting information:	*Plan showing any changes to the boundary (where relevant)* *Description of the changes to the permitted activities (where relevant)* *List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)*

4.1 Changes to the Activity

Open windrow composting activities at the Site ceased in March 2011.

Transfer of road sweeping detritus was conducted at the Site on the area previously used for composting. The run-off from this process was drained to the onsite lagoon before tankering away for disposal.

A Permit Variation is to be submitted in 2025 to apply for a change of activity at the Site. The site will operate as a Battery Recycling Facility. As part of the battery recycling operation, lithium-ion batteries will be stored and treated on site. The treatment operation will consist of battery discharge, dismantling, shredding, and subsequent separation and sorting of shredder outputs to send for further recovery. The site will also receive other Lithium-ion battery scrap materials, sourced from battery manufacturing or in support of other waste recycling for separation and sorting. Batteries of other chemistries and fluorescent tubes will be accepted for storage and transfer only.

The processing (i.e. shredding, separation and sorting) of lithium batteries is to be wholly conducted within the current building on hardstanding. This waste is dry with no interaction with rainwater under normal operations.

A contingency area of saline fluid is to be provided in the northern portion of the Site to contain batteries that are not fully discharged on arrival to Site to allow for safe discharge before processing. This Will consist of open IBCs containing solution, which are stored undercover on bunded pallets.

5 Measures Taken to Protect Land

Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can't, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Supporting Information:	Inspection records and summary of findings of inspections for all pollution prevention measures, and; Records of maintenance, repair and replacement of pollution prevention measures.

5.1 Inspection Records

N/A at this time

6 Pollution Incidents That May Have Had an Impact on Land, and Their Remediation

Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.	
Supporting Information:	Records of pollution incidents that may have impacted on land, and; Records of their investigation and remediation.

6.1 Pollution Incidents

A diesel spill occurred on site in December 2024 following a collision between a tanker and the weighbridge.

Since the previous review of site condition in 2013, no further pollution incidents to groundwater have been recorded. However, fires have occurred at the Transfer Station in May 2019, February 2024 and also in February 2025. Each fire event may have resulted in a short-term impact on air quality downwind of the site but is considered not to have impacted the local soils or water environment.

6.2 Investigation and Remediation Records

The diesel spill was remediated with spill kit granules upon identification to a condition that the Environment Agency were satisfied with upon inspection.

7 Soil Gas and Water Quality Monitoring (Where Applicable)

Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.	
Checklist of supporting information	Description of soil gas and/or water monitoring undertaken Monitoring results (including graphs)

7.1 Monitoring Networks

Whilst no permit specific monitoring points for groundwater have been installed, as the Site sits adjacent to Sidegate Lane Landfill Site, it will share the benefit of the monitoring network and regular groundwater sampling conducted under landfill permit EPR/BV1046IV.

Monitoring at boreholes SL/35 and in future SL/36 will give indications of upgradient conditions in the subsurface environment, while SL/27 and in future SL/29 will enable assessment of downgradient conditions.

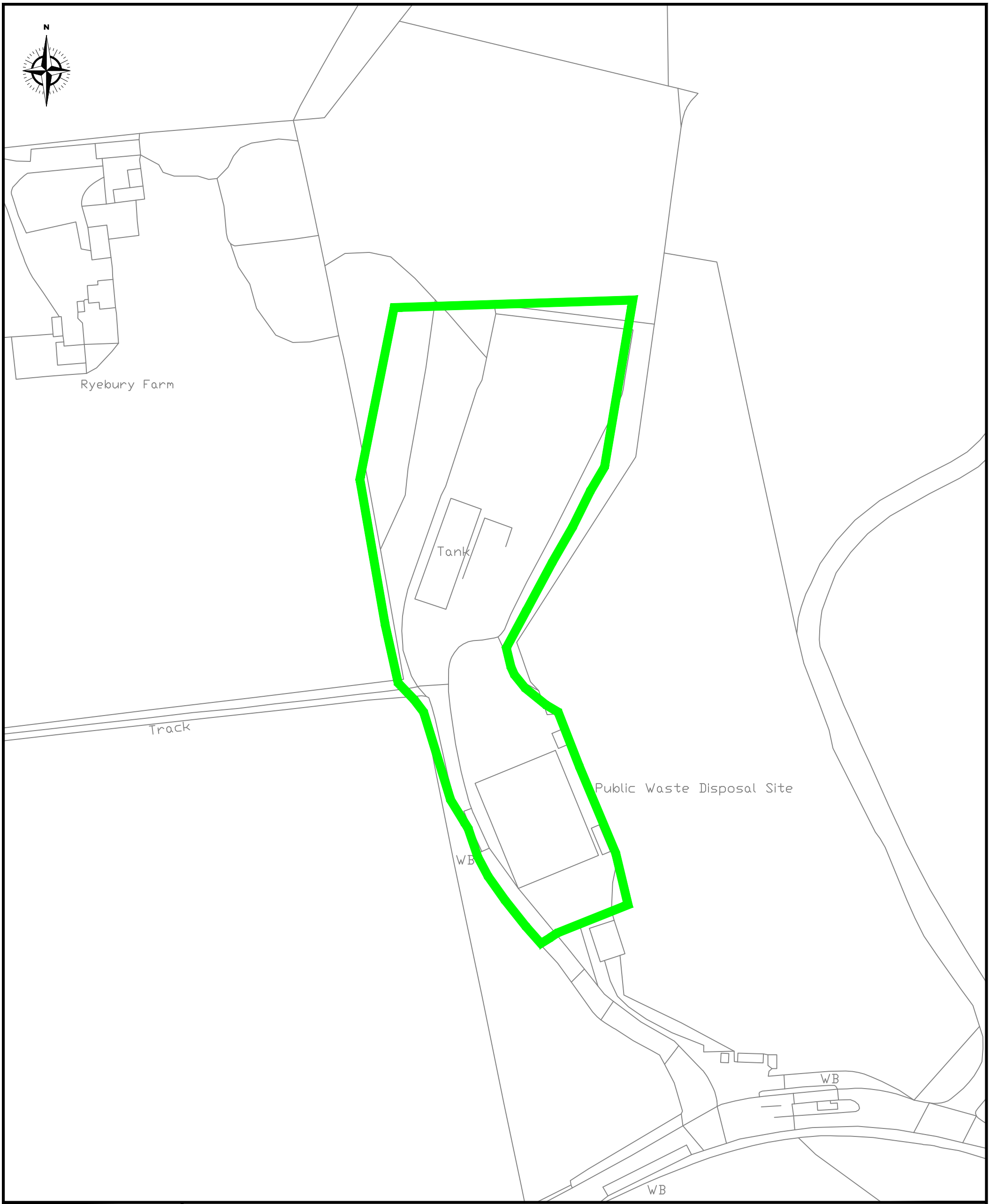
Summary data from the borehole network above is presented in Appendix E.

Recycling and recovery UK

Figures

Figure 1

Site Permit Boundary



Notes

1. Reproduced from the Ordnance Survey Map with the permission of the Controller of His Majesty's Stationary Office, Crown Copyright and Database Rights 2025 Ordnance Survey AC0000808122/100004910.

Permit Boundary

0 10 20 30 40m 60 80 100

Metres
1:1250

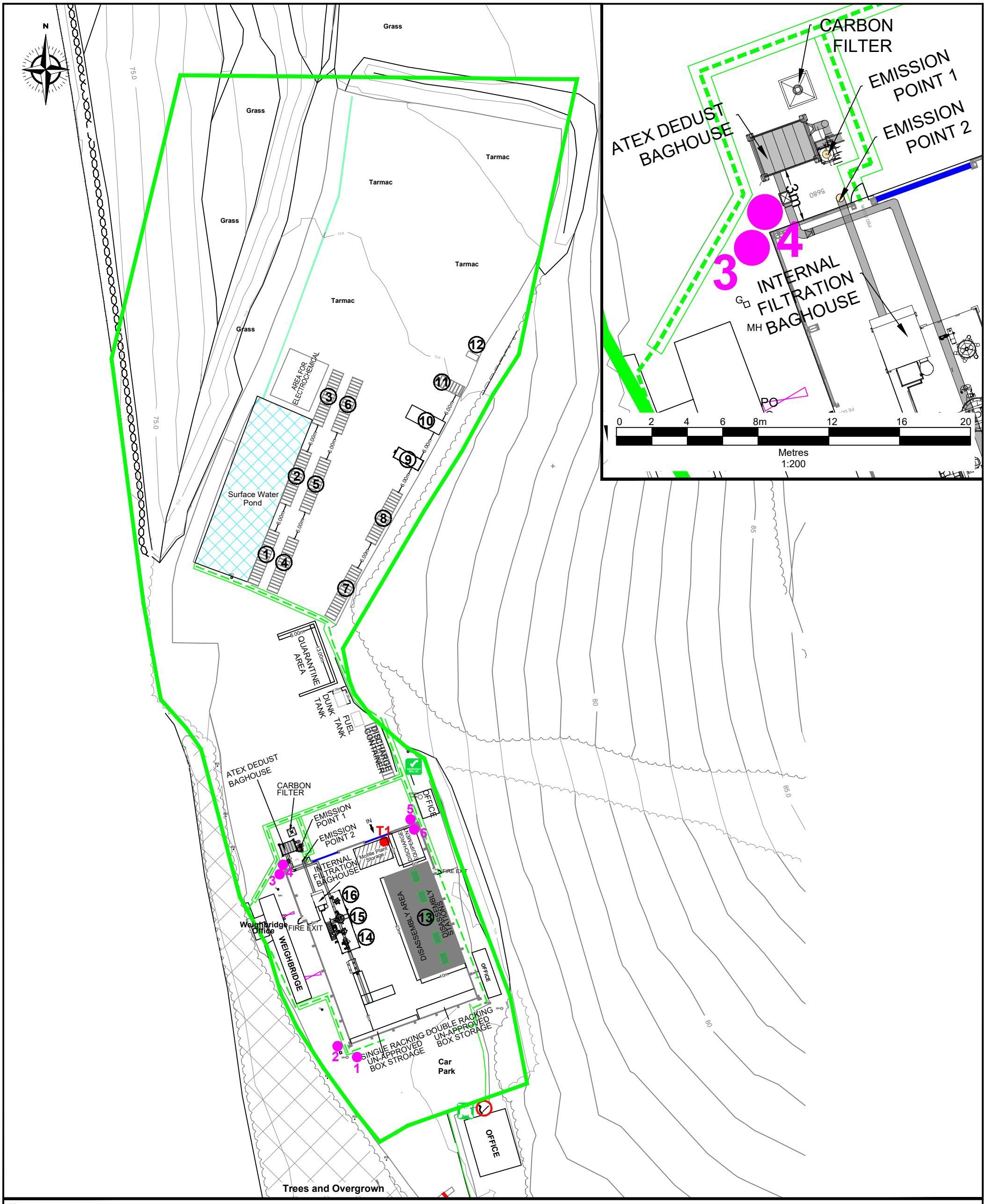
Darwen Resource Recovey Park, Lower Eccleshill Road, Darwen, BB3 0RP
Tel:(01254)819700, Fax:(01254)819749, Email: richard.bisset@suez.com

Site	Sidegate Lane Battery Recycling Facility
Title	Permit Boundary Plan
Scale	1:1250 @ A3
Date	June 2025
Drawing Ref	Sgl-LITH-PER-0625-01
Drawn by	JA
Checked by	GGD

Rev	subject	date

Figure 2

Site Layout Plan



Key

- Permit Boundary
- CCTV
- Thermal Camera
- Safe Walkway
- Fire Assembly Point
- Smoking Area
- Spill Kit

0 10 20m 30 40 50

Metres
1:750

suez

Darwen Resource Recovey Park, Lower Eccleshill Road, Darwen, BB3 0RP
Tel:(01254)819700, Fax:(01254)819749, Email: richard.bisset@sita.co.uk

Site	Sidegate Lane Battery Recycling Facility
Title	Proposed Site Layout
Scale	1:750 @ A3
Date	June 2025
Drawing Ref	Sgl-LITH-LAY-0625-01
Drawn by	JA
Checked by	GGD

Rev	subject	date

Appendices

Appendix A

Sidegate Lane Landfill. Materials Recycling Facility and Transfer Station. Hyder. Geoenvironmental Assessment. February 2008. *(Report No. 5001-BM01213-BMR-01)*

SITA (UK) Limited

Sidegate Lane Landfill. Materials Recycling Facility and Transfer Station

Geo-environmental Assessment Report

February 2008

Report no: 5001-BM01213-BMR-01

Hyder Consulting

SITA (UK) Limited

Sidegate Lane Landfill. Materials Recycling Facility and Transfer Station

Geo-environmental Assessment Report

Author: S Berry / D Ouston

Checker: S Williams

Approver: C. Bruce

Report no: 5001-BM01213-BMR-01 **Date:** February 2008

Hyder Consulting (UK) Limited
2212959
Aston Cross, Rocky Lane, Aston, Birmingham B6 5RQ, United Kingdom
Tel: +44 (0)870 000 3007 Fax: +44 (0)870 000 3907 www.hyderconsulting.com

Executive Summary

This executive summary should not be read in isolation, but should be read in conjunction with the remainder of the report.

Hyder Consulting (UK) Ltd were commissioned by Sita (UK) Limited to provide geotechnical and environmental advice for the proposed construction of a material recycling facility (MRF) and transfer station at the Sidegate Lane Landfill, Northamptonshire.

A ground investigation was undertaken by Geotechnics Ltd between 17 and 19 December 2007 under the supervision of Hyder Consulting (UK) Ltd, with the details of the ground investigation presented within the Factual Report No PC073274 dated February 2008 prepared by Geotechnics Ltd.

The ground conditions encountered during the ground investigation comprised variable depths of granular and cohesive Made Ground overlying Grantham and Northampton Sand Formation.

The Made Ground occurred as both a cohesive and granular material to maximum depth of 5.60m bgl, with both material types containing domestic refuse reported as cloth, timber, organic matter, newspaper, cans, carpet, glass, galvanised sheets and radiators. Perched groundwater was recorded during the fieldwork with a maximum standing water level of 4.7m bgl.

Elevated concentrations of methane upto 80.2% vol., carbon dioxide upto 27.1% vol. and depleted oxygen to 0.1% vol were recorded, with very low flow rates.

Contamination testing indicates that the determinands analysed are all below their appropriate SGVs, with the material classified as non-hazardous waste.

It is considered that the preferred foundation option would be to utilise a shallow foundation, with the full depth of Made Ground excavated and replaced with either screened Made Ground and imported structural fill or replaced entirely with structural fill. The foundation will need to adopt the appropriate gas protection measures for the building that should include a well constructed suspended floor slab, gas resistant membrane and a passively ventilated under floor sub-space.

Contents

Tables

1 Introduction

Sita (UK) Limited propose to construct a material recycling facility (MRF) and transfer station at the Sidegate Lane Landfill, Northamptonshire.

Hyder Consulting (UK) Ltd were commissioned by Sita (UK) Limited to provide geotechnical and environmental advice to include a desk study review, procure and manage a ground investigation and provide an assessment with recommendations on both the geotechnical and contamination aspects of the site.

This report provides an assessment on the ground conditions in relation to the proposed development and summarises the geotechnical properties of the strata and provides foundation recommendations and assesses the potential contamination, waste disposal criteria and hazardous gases for the proposed development.

This report should be read in conjunction with the Factual Report, Ground Investigation at Sidegate Landfill, Report No. PC073274 dated February 2008 prepared by Geotechnics Ltd.

2 The Site

2.1 Location

Sidegate Lane landfill is located adjacent to Wellingborough Road 'A510', approximately 3.5 kilometres to the north-east of Wellingborough Town Centre, Northamptonshire. The approximate National Grid Reference for the site is SP 914 704. A site location plan is included within Appendix A.

2.2 Description

The site for the proposed materials recycling facility is located within the north-western corner of the main landfill site, with the area being covered in rough grass, with the operational landfill site bounding the study area to the south, east and north.

The site for the proposed material recycling facility is relatively flat and level, although, the site rises relatively steeply at its northern boundary and falls away in the south-western corner.

The landuse surrounding the landfill site is predominantly occupied by arable and pasture farmland.

3 Desk Study

3.1 Site History

A review of the history of the site was made using County Series maps and Ordnance Survey maps dating from 1887 to 2007, Appendix B. A summary of the historical landuse within the site is described within Table 1.

Map Date	Map Scale	Land Use On Site	Surrounding Land Use
1887 to 1888	1:2,500; 1:10,560	Agricultural or pasture farmland dissected by field boundaries	Agricultural or pasture farmland, with a tramway leading to a quarry to the north of the site.
1900	1:2,500	No Change.	A quarry served by a new tramway is now present to the south-east of the site. The tramway to the north of site is now no longer being operated.
1901	1:10,560	No Change.	Thingdon Mines and quarry sites are shown to be operational to the north of the site served by tramway lines.
1925	1:2,500	No Change.	The quarry to the south-east of the site has extended north-eastwards. A covered reservoir exists ~150m to the south on the junction between Sidegate Lane and Wellingborough Road. A building is now present to the north-west of the site.
1927	1:10,560	No Change.	The quarries to the north of the site have been re-named as Glebe Ironstone Mines.
1938	1:10,560	No Change.	The building to the north-west of the site has been extended.
1958 to 1959	1:10,560	A new tramway passes through centre of site, in a north/south orientation.	Ryebury Farm is located ~120m west of the site, with Thingdon Mines and Glebe Ironstone Quarries now being disused.

Map Date	Map Scale	Land Use On Site	Surrounding Land Use
1972 to 1974	1:2,500	The tramway through the centre of the site no longer exists and has been replaced by an access track that partially follows the original tramway route and field boundary. A refuse / slag heap occupies the site and land to the east of Ryebury Farm.	Further out-buildings have been constructed as part of the Ryebury Farm estate to the west of the site, with additional ancillary buildings constructed on the site of covered reservoir to the south-west of the site.
1974 to 1980	1:10,560	The refuse / slag heap to the east of Ryebury Farm is still present.	No significant changes with further refuse / slag heaps to the east of the site.
1993	1:2,500	The refuse / slag heaps no longer appear on the site.	No Change.
1985 to 1995	1:10,000	No change	The refuse / slag heaps to the east of the site no longer exist.
1999	1:10,000	No Change.	Open cast workings are shown to exist ~ 250m northeast of the site.
2007	1:10,000	The site directly to the south-east of the study area is shown to be occupied by Sidegate Landfill.	The open cast workings to the northeast of the site no longer appear, with quarries occupying the land to the east of the site.

Table 1. Historical Landuse Summary

3.2 Anticipated Geology

Based on a review of the BGS (1:50,000) Solid and Drift Map Wellingborough Sheet 186 the presence of the following strata is anticipated within the site. An abstract from the geological map for the site is presented within Appendix C.

Strata	Age
Made Ground	Recent
Grantham Formation	Jurassic
Northampton Sand Formation	Jurassic

The Grantham Formation typically comprises a sequence of clay, silt, sand, mudstone, argillaceous siltstone and sandstone, which is commonly ferruginous (rich in iron).

The Northampton Sand Formation is composed of green and brown ferruginous sandstones and limestones. This formation was mined in the area up to the 1960s for iron and steel production in Corby, Northamptonshire.

Made Ground comprising varying materials and different thickness is expected within the site due to the historical legacy of the mine and opencast working within the area and landfilling, with contamination of the underlying ground conditions expected associated with these materials.

The geological map shows an east-west trending minor fault that downthrows to the south. The minor fault is located approximately 350m to the south of the site.

3.3 Hydrogeology and Hydrology

Reference to the Envirocheck Report and Environment Agency (EA) Groundwater Vulnerability Maps indicates that the underling bedrock is considered to represent a minor aquifer. The EA classifies a minor aquifer as fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although these aquifers will seldom produce large quantities for abstraction, they are important both for local supplies and in supplying base flow to rivers.

There are no surface watercourses within the site, with the nearest major watercourse being the River Ise, which is located approximately 2km to the south-west of the site, with a tributary of the River Ise located approximately 600m to the west of the site.

4 Site Investigation

4.1 Fieldwork

A ground investigation was undertaken by Geotechnics Ltd between 17 and 19 December 2007 under the supervision of Hyder Consulting (UK) Ltd, with the details of the ground investigation presented within the Factual Report entitled, Ground Investigation at Sidegate Landfill, Wellingborough, Northamptonshire, Report No PC073274 dated February 2008 prepared by Geotechnics Ltd.

4.2 Cable Percussive Boreholes

Three (3 No.) 150mm diameter boreholes were drilled by cable percussion techniques to depths ranging between 4.63m bgl (BH3) and 9.95m bgl (BH1), with the boreholes all terminating on encountering hard stratum.

Representative disturbed and undisturbed (U100) samples of the soil were obtained at regular intervals and standard penetration tests were undertaken in appropriate deposits, in order to allow an inspection and measurement of the engineering properties of the proved strata.

Groundwater and gas monitoring standpipes were installed within all of the boreholes.

4.3 Trial Pits

Six (6 No.) trial pits were machine excavated using a 3CX backhoe excavator between 3.8m bgl (TP3; TP4) and 4.3m bgl (TP1; TP2). The trial pits were backfilled with the arisings on completion, with the arisings compacted with the excavator bucket.

4.4 Geotechnical and Chemical Laboratory Testing

The laboratory testing was scheduled by Hyder Consulting (UK) Ltd, with all geotechnical tests carried out conform to the BS1377:1990 Methods of Tests for Soils for Civil Engineering Purposes and were carried out at the UKAS accredited laboratories of Geotechnics Ltd. The chemical and contamination testing was undertaken at the UKAS accredited laboratories of STL. The results of the geotechnical, chemical and contamination laboratory testing are presented within the factual report.

5 Proven Ground Conditions

5.1 Introduction

The proven ground conditions were in general agreement with the findings of the desk study. The in-situ and laboratory testing results together with the proven ground conditions and geotechnical parameters for the ground investigation are presented in the following sections. A summary of the proven ground conditions is included within Table 2.

Stratum Encountered	Range of Thickness (m)	Max. Depth to Base (m BGL)
A. MADE GROUND was encountered as both a cohesive and granular material, typically described as a very soft to firm slightly sandy slightly gravelly clay with some gravel and cobble size fragments of plastic; clinker, flint, limestone, slate, timber, metal wire and pockets of peat. The granular Made Ground is described as a gravelly fine to medium sand with fragments of plastic and pockets of fibrous organic matter. Trial pits TP2, TP4, TP5 and TP6 encountered domestic refuse comprising cloth, newspaper, cans, carpet, glass, galvanised sheets and radiators.	0.90 to 5.60	5.60
B. GRANTHAM FORMATION. Typically comprises a firm to stiff fissured clay with iron staining. A weak iron stained fine to medium grained sandstone was encountered within TP3 between 3.30m and 3.80m bgl.	1.30 to 3.50	4.0
C. NORTHAMPTON SAND FORMATION. The Northampton Sand Formation was encountered as both a cohesive and granular material. The cohesive material is typically described as a firm to very stiff friable slightly sandy slight gravelly clay, with the granular material described as slightly clayey sandy gravel. A very weak sandstone band was encountered within boreholes BH2 and BH3.	0.32 to 4.55	Not Proven

Table 2. Summary of Proven Ground Conditions

5.2 Made Ground

Made Ground was encountered in all of the exploratory holes (except TP03) to depths of between 0.90m bgl (BH3) and 5.6m bgl (BH2). The overall depth of Made Ground was not proven within trial pits TP01, TP02, TP05 and TP06.

Made Ground occurs as both a cohesive and granular material with both material types containing domestic refuse reported as cloth, timber, organic matter, newspaper, cans, carpet, glass, galvanised sheets and radiators.

Made Ground occurs as both a cohesive and granular material, with the cohesive Made Ground being described very soft to firm slightly sandy slightly gravelly clay. In its cohesive form the Made Ground is classed as a clay of intermediate to high plasticity. The granular Made Ground is described as a gravelly fine to medium sand.

The geotechnical parameters derived for the Made Ground are summarised in Table 3.

Parameter	No of Tests	Range of Results	Average Result
Moisture Content (%)	9	18 - 31	25
Liquid Limit (%)	7	40 - 52	45
Plastic Limit (%)	7	19 - 26	23
Plasticity Index (%)	7	17 - 33	22
CBR Top (%)	3	0.45 - 6.7	3.7
CBR Bottom (%)	3	0.58 – 6.7	4.1
Soluble Sulphate (2:1 soil extract) g/l	3	<0.060 – 0.24	0.128
PSD (%)	1		
Cobbles		11	
Gravel		54	
Sand		23	
Silt & Clay		12	

Table 3. Made Ground - Geotechnical Parameters

5.3 Grantham Formation

Grantham Formation was encountered within borehole BH03 and trial pits TP03 and TP04, to depths of between 3.80m and 4.0m. The overall depth was not proven within trial pits TP03 and TP04.

The Grantham Formation is described as a firm to stiff fissured clay with iron staining. A weak iron stained fine to medium grained sandstone was encountered within TP3 between 3.30m and 3.80m bgl.

A single SPT 'N' value of 18 was recorded within borehole BH03, which indicates a material with a consistency of stiff. Atterberg test results indicate the material to vary between a clay of intermediate to very high plasticity.

Undrained shear strength values based on laboratory tests range between 80kN/m^2 and 154kN/m^2, which indicates a consistency of stiff to very stiff.

Geotechnical parameters derived from in-situ and laboratory testing for cohesive material are summarised in Table 4.

Parameter	No of Tests	Range of Results	Average Result
Moisture Content (%)	5	20 - 36	26
Plasticity Index (%)	5	18 - 57	33
Liquid Limit (%)	5	37 - 74	55
Plastic Limit (%)	5	17 - 29	22
SPT 'N' Value	1	18	
CBR Top (%)	2	1.6 - 11	6.3
CBR Bottom (%)	2	2.7 – 7.6	5.1
Undrained Shear Strength (kN/m^2)	2	80 - 154	117
Coefficient of Compressibility m2/MN (Mv)	1		
0 – 50kPa		0.17	
50 – 100kPa		0.11	
100 – 200kPa		0.07	
200 – 400kPa		0.12	

Table 4. Grantham Formation – Geotechnical Parameters

5.4 Northampton Sand Formation

Northampton Sand Formation was encountered within all of the boreholes, with the overall depth not proven. The Northampton Sand Formation was encountered to depths of between 4.70m (BH03) and 9.95m (BH01).

The Northampton Sand Formation was encountered as both a cohesive and granular material. The cohesive material is typically described as a firm to very stiff friable slightly sandy slightly gravelly clay, with the granular material described as slightly clayey sandy gravel.

A very weak sandstone band was encountered within boreholes BH2 and BH3, at a depth of 5.60m and 4.00, respectively.

SPT 'N' values within the cohesive Northampton Sand Formation range between 9 (BH01) and 43 (BH01), which indicates a material with a consistency of firm to very stiff.

A single Atterberg test result indicates the material to be a silt of high plasticity.

SPT 'N' values within the sandstone ranges between 50 for 50mm and 50 for 20mm, which indicates a moderately weak to moderately strong rock. Geotechnical parameters derived from in-situ testing are summarised in Table 5.

Parameter	No of Tests	Range of Results	Average Result
Moisture Content (%)	1	-	36
Plasticity Index (%)	1	-	26
Liquid Limit (%)	1	-	68
Plastic Limit (%)	1	-	42
SPT 'N' Value (Soil)	4	9 - 43	26
SPT 'N' Value (Rock)	4	50 for 15mm to 50 for 50mm	50 for 50mm

Table 5. Northampton Sand Formation – Geotechnical Parameters

5.5 Gas Monitoring

During the gas monitoring regime, elevated levels of methane and carbon dioxide were recorded within all of the gas monitoring wells, with a maximum methane concentration recorded as 80.2% (vol.) within borehole BH2, with a maximum carbon dioxide concentration recorded as 27.1% (vol.) within borehole BH3.

Depleted oxygen was measured during the monitoring regime within all of the gas monitoring wells with a minimum level of <0.1% (vol.).

A maximum gas flow rate 0.2 l/hr was recorded within borehole BH01. The gas monitoring results are presented within the Factual Report prepared by Geotechnics Ltd.

5.6 Groundwater Monitoring

Groundwater was recorded during the fieldwork within cable percussive boreholes BH01 and BH02, at depths of 9.0m and 0.80m bgl, respectively. Short term groundwater monitoring indicates a maximum standing water level of 4.7m bgl (BH02), with no standing waters encountered within the monitoring wells installed within boreholes BH1 and BH3.

5.7 Review of Landfill Licence Arrangements

The fill material within the landfill site was proven to comprise both inert and domestic waste that had been placed within an unlined former quarry within the last 10 years. The surface of the landfill was subsequently capped with a general thickness of cohesive material ranging between 0.6m and 0.8m, with the surface of the site covered by rough grassland.

No active landfill gas management system was operational to the capped landfill during the fieldworks at the site, although the installation of gas standpipe monitoring wells within the boreholes will enable hazardous gases to be monitored.

6 Contamination Assessment

6.1 Introduction

6.1.1 Definition of Contaminated Land

Contaminated Land is defined in Section 78(2) of the Environmental Protection Act (EPA) 1990 as

"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that

- significant harm is being caused or there is a significant possibility of such harm being caused; or
- pollution of controlled waters is being, or is likely to be caused."

Guidance on this definition of contaminated land is contained within the DETR Circular 02/2000. The main points and definitions are detailed below and are taken from Chapters A and B of the circular. In order for a determination of Contaminated Land to be made, this guidance must be followed.

The Water Act 2003 has introduced "significance" into the pollution of controlled waters by changing the second clause to the following:

"significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused".

6.1.2 Pollutant Linkages

Contaminated Land is determined on a risk-based approach and the initial step to any determination is that the Local Authority must satisfy itself that a contaminant, pathway and receptor are present with respect to the land under consideration.

A **contaminant** is defined as:

A substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters.

A **receptor** is defined as either:

- a living organism, a group of organisms, an ecological system or a piece of property which
  - *is in a category listed in Table A of the EPA 1990 as a type of receptor, and*
  - *is being, or could be, harmed, by a contaminant; or*
- controlled waters, which are being, or could be polluted by a contaminant.

A **pathway** is defined as one or more routes or means by, or through, which a receptor:

- is being exposed to, or affected by a contaminant, or
- could be so exposed or affected.

A pathway can only be identified if it can expose an identified receptor to an identified contaminant.

The relationship between the above three elements is called a "pollutant linkage". All three elements of a pollutant linkage must be identified in respect of the land under consideration for the land to be determined as Contaminated Land.

6.1.3 Determination

Once the presence or likely presence of each of the three elements has been established, then a risk assessment is required to:

- determine if a significant pollutant linkage exist, and to
- compare contamination concentrations against generic assessment criteria

This report will address the above issues and follow guidance given in the DETR Circular regarding the definitions of significant harm. This will be done through a Tier 1 Human Health Risk Assessment.

6.2 Tier 1 Human Health Risk Assessment

6.2.1 Introduction

The results of chemical analysis on soil samples collected have been assessed using the Contaminated Land Exposure Assessment (CLEA) guidelines.

The basis of the CLEA model (as detailed in R & D Publication CLR 7, produced by DEFRA and the Environment Agency, March 2002) is to compare the 95% Upper Confidence Limit (UCL) for the recorded on-site concentrations against the appropriate Soil Guideline Value (SGV). If the 95% UCL exceeds the relevant SGV, the site is deemed to be in a contaminated state and further assessment will be required. This process is known as the Mean Value Test.

If the contaminant concentrations exceed the relevant SGV, the Maximum Value Test (as detailed in the Environment Agency R & D Publication CLR 7) is undertaken. This ascertains whether the maximum value belongs to the same data set as the other results or whether it represents an outlier or 'hot spot' of contamination.

In accordance with the proposed use of the site as a Materials Recycling Facility and Transfer Station, and the standard land uses in the CLEA

model, the site has been accessed according to a commercial/industrial end use.

An averaging area [as defined in CLR 7 as 'that area (together with a consideration of depth) of soil to which a receptor is exposed or which otherwise contributes to the creation of hazardous conditions'] comprising the site area has been used.

Where there is no published CLEA guideline value, a Hyder Derived Action Value has been derived using the CLEA model.

6.2.2 Human Health Assessment-Soils

Detailed assessment of the chemical analyses for the site together with the relevant SGV, Mean and Maximum Value test results are presented in Appendix D. The assessment is summarised in the following sections.

Arsenic

Seven samples of Made Ground and one sample of natural soils were analysed for arsenic. Low levels of arsenic were detected in all eight soil samples analysed, with values ranging from 14 to 34 mg/kg. Results correspond with the calculated 95% UCL of 27.08 mg/kg which was below the CLEA SGV of 500 mg/kg indicating that arsenic is not a contaminant of concern for the site.

Cadmium

Seven samples of Made Ground and one sample of natural soils were analysed for cadmium. Very low levels of cadmium were detected in all eight soil samples analysed, with values ranging from 0.5 to 7.3 mg/kg. Results correspond with the calculated 95% UCL of 2.96 mg/kg which was far below the CLEA SGV of 1400 mg/kg indicating that cadmium is not a contaminant of concern for the site.

Chromium

Seven samples of Made Ground and one sample of natural soils were analysed for chromium. Very low levels of chromium were detected in all eight soil samples analysed, with values ranging from 16 to 120 mg/kg. Results correspond with the calculated 95% UCL of 75.96 mg/kg which was far below the CLEA SGV of 5000 mg/kg indicating that chromium is not a contaminant of concern for the site.

Copper

Seven samples of Made Ground and one sample of natural soils were analysed for copper. Very low levels of copper were detected in all eight soil samples analysed, with values ranging from 19 to 420 mg/kg. Results correspond with the calculated 95% UCL of 173.97 mg/kg which was far below the CLEA SGV of 46300 mg/kg indicating that copper is not a contaminant of concern for the site.

Mercury

Seven samples of Made Ground and one sample of natural soils were analysed for mercury. Very low levels of mercury were detected in all eight

soil samples analysed, with values ranging from 0.25 to 26 mg/kg. Results correspond with the calculated 95% UCL of 13.04 mg/kg which was far below the CLEA SGV of 4808 mg/kg indicating that mercury is not a contaminant of concern for the site.

Nickel

Seven samples of Made Ground and one sample of natural soils were analysed for nickel. Very low levels of nickel were detected in all eight soil samples analysed, with values ranging from 0.3 to 55 mg/kg. Results correspond with the calculated 95% UCL of 36.82 mg/kg which was far below the CLEA SGV of 5000 mg/kg indicating that nickel is not a contaminant of concern for the site.

Selenium

Seven samples of Made Ground and one sample of natural soils were analysed for selenium. Very low levels of selenium were detected in all eight soil samples analysed, with values ranging from 0.3 to 98 mg/kg. Results correspond with the calculated 95% UCL of 47.53 mg/kg which was far below the CLEA SGV of 8000 mg/kg indicating that selenium is not a contaminant of concern for the site.

Zinc

Seven samples of Made Ground and one sample of natural soils were analysed for zinc. Very low levels of zinc were detected in all eight soil samples analysed, with values ranging from 5 to 480 mg/kg. Results correspond with the calculated 95% UCL of 253.37 mg/kg which was far below the CLEA SGV of 325000 mg/kg indicating that zinc is not a contaminant of concern for the site.

Lead

Seven samples of Made Ground and one sample of natural soils were analysed for lead. Low levels of lead were detected in all eight soil samples analysed, with values ranging from 0.25 to 160 mg/kg. Results correspond with the calculated 95% UCL of 64.38 mg/kg which was far below the CLEA SGV of 750 mg/kg indicating that lead is not a contaminant of concern for the site.

pH

Seven samples of Made Ground and one sample of natural soils were analysed for pH. Alkaline pH values were detected in all eight soil samples analysed with values ranging from 8.1 to 10.1. This range of values is outside the normal range and is therefore worthy of consideration in particular when placing building materials (e.g. concrete, pipework) in the ground during construction works, as the alkaline values can accelerate the degradation of the building materials.

Speciated TPH

Three samples of Made Ground and one sample of natural soils were analysed for speciated TPH, using the CLEA SGV. All results obtained were below the relevant CLEA SGV for both aliphatic and aromatic

hydrocarbons indicating that the speciated TPH is not a contaminant of concern to the site.

Speciated PAH

Seven samples of Made Ground and one sample of natural soils were analysed for the 16 priority PAH as originally defined by the USEPA (United States Environmental protection Agency) and are divided into carcinogenic and non carcinogenic. All results obtained were below the relevant CLEA SGV. Results obtained thus indicate that PAHs are not a contaminant of concern across this site.

6.3 Tier 1 Controlled Waters Risk Assessment

Limited groundwater was encountered during the site investigation such that groundwater samples were not collected. No chemical analysis of the groundwater was carried out.

Drainage is important on the site, especially in cases of torrential rainfall to prevent excessive seepage of rainfall to the landfill potentially accumulating as leachates which may affect the groundwater.

6.4 Waste Characterisation

An assessment of the waste characterisation was undertaken on samples retrieved during the ground investigation. Soil samples taken from trial pit TP1 at a depth of between 1.30m and 1.50m bgl and TP2 at a depth of 1.00m bgl were tested to provide a representative classification of the waste beneath the site.

Based on an initial assessment of the waste using the Cat-Waste Soil Model, the waste material tested as part of the fieldworks can be classified as non hazardous. However, basic hygiene precautions should be followed when construction staff come in contact with any waste material on site.

7 Ground Gas Assessment

Based on the gas monitoring results described in Section 5.5 and presented within the Factual Report prepared by Geotechnics Ltd, an assessment to characterise the site in relation to ground gas has been undertaken with reference to BS 8485:2007.

As part of the assessment it is necessary to determine the site characterisation from the hazardous gas flow rate and where the flow rate has not been provided the detection limit of the equipment used is to be adopted. Based on this approach, the site characteristic gas situation is considered to be Class 2 that refers to a low hazard potential situation that is governed by the very low flow rates reported within the Factual Report.

After the determination of the characteristic gas situation, it is necessary to determine the required gas protection measures based on the proposed end use for the site to be an industrial building. Based on the guidance provided within BS 8485:2007 and as the methane concentrations exceed 20%, the characteristic gas situation is increased to Class 3, 'moderate hazard potential', with category 2 gas protection measures to be adopted.

It is, therefore, considered that the appropriate gas protection measures for the building should adopt the following requirements:-

- Well constructed suspended floor slab
- Gas resistant membrane
- Passively ventilated under floor sub-space

8 Geotechnical Assessment

It is understood that the proposed development at the existing landfill site is to comprise the construction of a material recycling facility (MRF) and transfer station with associated hardstanding areas (access road and car parking areas). Potential risks associated with any building development over a domestic refuse site include the following:-

- Generation and migration of landfill gas;
- Excessive settlements due to the biodegradation and compressibility of the refuse;
- Contamination of groundwaters by leachate;
- Potential for subterranean fires;

8.1 Shallow Foundations

The ground profile beneath the footprint of the proposed MRF comprises both granular and cohesive Made Ground (inert and domestic waste) to a maximum depth of 5.60m bgl (BH2). No superficial deposits were encountered within the exploratory holes, with the Grantham and Northampton Sand Formations forming the bedrock geology at the site. A maximum standing water level of 4.70m bgl was recorded during the short term monitoring regime.

The eastern side (adjacent to the existing access track) of the proposed MRF indicates cohesive Made Ground to a depth of 0.90m bgl (BH3) overlying the Grantham Formation that is described as a firm to stiff slightly sandy clay.

The Made Ground should not be considered as a suitable founding material due to its variable nature that is likely to lead to unacceptable high post construction settlements. The proven Made Ground is variable in composition, consistency and thickness and so conventional strip foundations or trench fill foundations are unlikely to be practical in these areas.

The Grantham Formation may be considered a suitable founding material, depending on the imposed loadings and maximum permitted total and differential settlements. An allowable bearing capacity of 100kN/m2 is considered to be suitable for a 1 m wide foundation with total settlements limited to 25mm for shallow foundations placed within this material. Any soft material encountered at the formation level should be over-excavated and replaced with suitable structural fill or lean mix concrete.

To improve the load bearing capacity and/or to reduce settlements to shallow foundations over the Made Ground, the following options may be adopted:-

- Over-excavate and then screen and re-compact the inert Made Ground. The Made Ground is considered suitable for reuse after screening to remove all organic matter, plastic, fabrics, metal and

cobbles. An allowable bearing pressure of between 75 and 100kN/m^2 is considered achievable based on this approach. It may be necessary to partially replace the over-excavated Made Ground with imported granular fill to make up the short fall in material removed during the screening process.

- Over-excavate the Made Ground and replace entirely with imported granular fill. This approach is likely to achieve an allowable bearing pressure in the order of 150kN/m^2. The costs when compared with excavate and re-compaction of the in-situ inert material may prove this approach to be unfavourable.

Pockets of soft soil or loose rock in the bottom of an overdig excavation should be removed and the resulting voids and any natural voids should be filled in the same manner as specified for normal foundation excavations.

The cohesive materials encountered during the fieldworks are highly susceptible to changes in moisture content with relation to strength and so if the excavations are to be left open, it is recommend that the formation strata be protected following excavation to prevent deterioration of the founding material at formation level.

Based on the NHBC Standards (Chapter 4.2) Building near Trees, the Plasticity Index results for both the cohesive Made Ground and Grantham Formation indicates a material with a low volume change potential. The potential volume change of the soils can cause subsidence or heave damage to foundations, the structures they support and services. It is, therefore, recommended that a tree survey is undertaken so that foundations, superstructure and services can incorporate adequate precautions to consider ground movements.

8.2 Deep Foundations

When traditional shallow (ie. strip and raft foundations) cannot be founded on competent soils at a depth of less than 3m, the foundation loads could be transferred to the underlying Grantham and Northampton Sand Formation by piles.

It is considered that bored piles are preferred over driven piles due to the presence of obstructions within the Made Ground, i.e. old radiators reported within trial pit TP2, although large obstructions are likely to hinder the installation of all pile types. Piles and ground beams should be designed to withstand the effects of clay movement from the shrinkage potential of the near surface cohesive material encountered across the site with consideration of the presence of trees, with the design to include the affect from negative skin friction through the Made Ground.

Load and integrity testing should be carried out where appropriate on the working piles and on test piles loaded to failure.

8.3 Ground Improvement

Studies have been undertaken to investigate the effects of ground treatment techniques such as dynamic compaction and preloading at domestic refuse sites.

The findings from these studies illustrate that as a result of the continued biodegradation of the domestic waste with time, excessive secondary settlements are likely to result in unacceptable post construction settlements to the proposed development.

Additional ground treatment techniques include the use of vibro-compaction or vibro-replacement options to improve the bearing capacity characteristics of the Made Ground. It is, however, considered that these techniques may not achieve full depth treatment of the Made Ground without pre-boring as well as being hindered by the presence of obstructions.

8.4 Foundation Summary

To assist with the assessment of the suitability of the foundation options considered within this section, Table 6 outlines the advantages and disadvantages of each option to consider technical efficiency, residual risk, relative cost, effects on adjacent properties to be retained and environmental impacts.

Option	Advantage	Disadvantage	Conclusion
Over-dig with partial or full replacement with imported structural fill to adopt Shallow Foundations: Strip and Pseudo Reinforced Raft Foundation	▪ Simple foundation construction founded on imported granular fill. ▪ Low risk if founded on suitable bearing stratum below its allowable bearing capacity and settlements are within tolerable limits. ▪ Moderate cost associated with excavation works, screening process and importation of structural fill. ▪ Environmental impacts limited to plant movements and disposal of excavated materials. ▪ Removal of biodegradable materials removes the risks associated with long term settlements. ▪ Obstructions can be removed from the materials. ▪ Reduced gas generation within the removed / replaced Made Ground.	▪ The Made Ground will need to be excavated to a maximum depth of 5.60m and replaced with either screened Made Ground and imported granular fill or entirely with imported granular fill to provide a formation material with adequate bearing capacity and with settlements within acceptable limits. ▪ Large excavation required with battered slopes (~1:2.5) to allow the excavation of the Made Ground and the replacement and compaction of the imported fill. ▪ Importation of large volumes of granular structural fill to replace the over-excavated Made Ground. ▪ Requires accurate sorting of degradable fill and so the process can be relatively labour intensive and require manual handling of material for disposal.	Low risk with moderate cost.
Deep Foundations: Piled	▪ Low risk in relation to settlements. ▪ Influence from shrinkage potential of near surface cohesive materials does not affect foundations founded on piles.	▪ High mobilisation and installation cost. ▪ May not achieve design depths due to presence of obstructions within the Made Ground.	Low risk, but high cost.

Option	Advantage	Disadvantage	Conclusion
Ground Improvement: Dynamic Compaction	▪ Partial or full treatment of the Made Ground	▪ High mobilisation cost. Only cost effective when large areas are to be treated. ▪ High vibrations are generated. ▪ Long term settlements may continue for many years	Moderate risk, high cost
Ground Improvement: Preloading	▪ Partial or full treatment of the Made Ground ▪ Relative low cost	▪ Large volumes of earth required to provide the earth mound. ▪ Duration of treatment is unpredictable and so requires trial surcharge exercise to develop technique. ▪ Requires plant movements and doube handling of materials. ▪ Treatment is to be monitored and controlled, with the continuation of long term settlements.	Moderate risk, relatively low cost

Table 6. Foundation Option Assessment

The preferred foundation option for the site would be to utilise shallow foundations, with the full depth of Made Ground excavated and replaced with either screened Made Ground and imported structural fill or replaced entirely with structural fill. This is considered the most economic effective option, with the risks associated with long term settlement reduced.

8.5 Excavations

For all excavations, where man entry is necessary it is a statutory requirement of the Health and Safety at Work Act that excavations should be adequately supported and this applies throughout the period of the construction works.

The consequences of stability of excavations can vary, but usually pose a problem to the Contractor either by collapse into an already excavated trench or by the removal of support to plant, equipment or materials located adjacent to the excavation. The need to ensure stability and limit ground movements is of prime importance where excavations are adjacent to structures, roads, utilities or where man entry is envisaged. The suitability of the Contractor's proposals for ground support will be particularly important in such areas.

Based on the ground conditions proven during the ground investigation, excavations should be achievable using a suitable size of conventional excavation plant, with the occurrence of large obstructions within the Made Ground to be removed. Strong sandstone units within the Grantham and Northampton Sand Formations may require rock excavation equipment to assist the excavations.

Excavations within the Made Ground, Grantham and Northampton Sand Formation are unlikely to remain stable even in the short term, with localised spalling from granular zones and so close lateral support will be required at all times or the sides of the excavation battered back to a safe angle above groundwater seepages.

8.6 Groundwater Control

Perched groundwaters were proven within the exploratory holes undertaken during the fieldworks and it is expected that sump pumping should prove adequate for the groundwater control provided adequate support is provided to the excavation.

8.7 Pavement Design

A review of the field descriptions and the classification test results has been undertaken to establish equilibrium CBR values from HD25/94. Based on a low water table with poor construction conditions and intermediate pavement thickness, the pavement design is summarised within Table 7.

It is recommended that the subgrade should be proof rolled and any soft spots removed and replaced with suitable material.

Material	CBR (%)	Sub-base and capping design (mm)	Sub-base only design (mm)	Frost Susceptibility	Min. Construction Thickness (mm)
Cohesive Made Ground	3	Sub-base 150 Capping 350	Sub-base 300	Min Plasticity Index is 17% and so is deemed frost susceptible	450
Grantham Formation	2	Sub-base 150 Capping 450	-	Min Plasticity Index is 18% and so is deemed frost susceptible	600

Table 7. Pavement Design

8.8 Chemical Considerations for Buried Concrete

The classification for the site in terms of concrete in aggressive ground is based on the guidance provided within BRE Special Digest 1, 2005. The chemical test results are as detailed in Table 8.

Chemical test results indicate that the water soluble sulphate concentrations for both the soils and groundwater across the site are within the Design Sulphate Class DS2 with the site being within brownfield soil conditions with a mobile groundwater regime, with an aggressive chemical environment for concrete classification (ACEC) being AC-2.

Stratum	Water Soluble sulphate contents (SO4) g/l	Total Potential Sulphate (SO4) %	pH
Made Ground	0.060 – 0.65	0.035 – 0.20	7.8 – 8.6
Grantham Formation	0.060	0.12	8.5
Northampton Sand Formation	0.090	0.024	8.1
Groundwater	0.23 – 0.54	-	7.5

Table 8. Sulphate and pH results

9 Conclusions and Recommendations

The following summarises the findings from the ground investigation undertaken by Geotechnics Ltd between 17 and 19 December 2007 under the supervision of Hyder Consulting (UK) Ltd, at Sidegate Landfill, Wellingborough, Northamptonshire.

The ground conditions encountered during the ground investigation comprised variable depths of granular and cohesive Made Ground overlying Grantham and Northampton Sand Formation. The depth to the base of the Made Ground varies between 0.90m (BH3) and 5.6m bgl (BH2). The overall depth of Made Ground was not proven within trial pits TP01, TP02, TP05 and TP06.

Made Ground occurs as both a cohesive and granular material with both material types containing domestic refuse reported as cloth, timber, organic matter, newspaper, cans, carpet, glass, galvanised sheets and radiators.

Groundwater was recorded during the fieldwork between 0.80m and 9.0m bgl, with a maximum standing water level of 4.7m bgl.

The results of gas monitoring show highly variable ground gas concentrations. The concentrations of methane ranged from 0.2 to 80.2% vol., carbon dioxide ranged from 0.3 to 27.1% vol. and depleted oxygen varies between 0.1 to 19.7% vol. Very low flow rates were recorded during the monitoring regime with a maximum rate recorded being 0.2 l/hr.

Representative soil samples were analysed for a range of determinands including, arsenic, cadmium, chromium, copper, mercury, nickel, selenium, zinc, lead, pH, speciated total petroleum hydrocarbons and speciated polyaromatic hydrocarbons. The chemical tests undertaken indicate that the determinands are all below their appropriate SGV levels.

Recommendations

It is understood that the proposed development at the existing landfill site is to comprise the construction of a material recycling facility (MRF) and transfer station with associated hardstanding areas (access road and car parking areas). The Made Ground is not considered suitable as a foundation bearing stratum due to its variable nature and depths as well as the presence of obstructions within the Made Ground.

It is considered that the most cost affective option that would reduce the risks associated with long term settlement would be to utilise shallow foundations, with the full depth of Made Ground excavated and replaced with either screened Made Ground and imported structural fill or replaced entirely with structural fill.

It is recommended that a tree survey is undertaken so that foundations, superstructure and services can incorporate adequate precautions to consider ground movements.

The findings from the preliminary contamination assessment has identified that the tested determinands are below their appropriate SGV's and so with

consideration to the recommendation to remove and replace the Made Ground, it is considered that this would negate any risk to receptors and therefore the need for a Quantitative Risk Assessment (QRA), with the Made Ground classified as non hazardous material.

Chemical test results indicate that the water soluble sulphate concentrations for both the soils and groundwater across the site are within the Design Sulphate Class DS2 with the site being within brownfield soil conditions with a mobile groundwater regime, with an aggressive chemical environment for concrete classification (ACEC) being AC-2.

The gas monitoring results obtained to date are highly variable. Based on guidance provided within BS 8485:2007, the characteristic gas situation for the site is considered to be Class 3, 'moderate hazard potential', with Category 2 gas protection measures to be adopted.

The appropriate gas protection measures for the building should include a well constructed suspended floor slab, gas resistant membrane and a passively ventilated under floor sub-space.

It is recommended that gas monitoring at the site is continued.

10 References

a) BS8485:2007 Code of Practice for the Characterisation and remediation from ground gas in affected developments.

b) BRE Special Digest 1. 2005. Concrete in Aggressive Ground.

c) British Geological Survey (BGS). Geological Survey of Great Britain (England and Wales). Sheet No.186, Wellingborough, Solid & Drift Map, 1:50,000 Scale.

d) Charles, J. A. and Watts, K. S. 2001. Building on Fill: Geotechnical Aspects. BRE 2nd Edition

e) Clayton, M.R.R. 1995. The Standard Penetration Test (SPT): Method & Use. CIRIA Report 143.

f) Design Manual for Roads and Bridges. Volume 7. Pavement Design and Maintenance. Part 2. HD 25/94 Foundations.

g) Gannon, J. A; Masterton, G. G. T; Wallace, W. A; Muir Wood, D. 1999. Piled foundations in weak rock. CIRIA Report 181.

h) Landmark Information Group (16 November 2007) Envirocheck Report –Sita UK, Carrol Spring Farm, Sidegate Lane Wellingborough, Northamptonshire. Report Reference: 23558870_1_1.

i) NHBC. Part 4 Foundations. Building near Trees. Chapter 4.2

j) Ordnance Survey (OS). Explorer 224, Corby, Kettering and Wellingborough, Rockingham Forest, 1:25,000 Scale.

k) Powell, J. H. (1998). A Guide to British Stratigraphical Nomenclature. CIRIA Special Publication 149. Construction Industry Research and Information Association, London.

l) R & D Publication CLR7: Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research (March 2002).

Appendix A

Site Location Plan

Status	PRELIMINARY		
Scales	1:50,000	Original Size	A4
Height Datum	N/A	Grid	N/A
Filename:			

Project
SIDEGATE LANE LANDFILL
NORTHAMPTONSHIRE

Title
SITE LOCATION PLAN

Hyder Consulting
Hyder Consulting (UK) Limited
Aston Cross Business Village
50 Rocky Lane
Aston
Birmingham B6 5RQ
United Kingdom
Tel: +44 (0)870 000 3007
Fax: +44 (0)870 000 3907

Drawing No.	Project No.	Issue
G001	BM01213	P1

50mm on Original

Appendix B

Envirocheck Report

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Envirocheck® Report: Datasheet

Order Details:

Order Number:
23558870_1_1

Customer Reference:
BM01213

National Grid Reference:
491380, 270250

Slice:
A

Site Area (Ha):
6.54

Search Buffer (m):
1000

Site Details:

Sita UK, Carrol Spring Farm
Sidegate Lane
WELLINGBOROUGH
Northamptonshire
NN8 1RN

Client Details:

Mr D Hicks
Hyder Consulting Ltd
Aston Cross
Rocky Lane
Aston
Birmingham
B6 5RQ

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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.

Report Version v31.0

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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					
Discharge Consents	pg 1		1	2	5
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control	pg 3			4	
Local Authority Integrated Pollution Prevention And Control	pg 3		1	1	
Local Authority Pollution Prevention and Controls	pg 4				1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature					
Pollution Incidents to Controlled Waters	pg 4				8
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality	pg 5				3
River Quality Biology Sampling Points	pg 6				1
River Quality Chemistry Sampling Points	pg 6				1
Substantiated Pollution Incident Register					
Water Abstractions	pg 7		2	1	1 (*4)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 8	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				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	pg 10	1			
Historical Landfill Sites	pg 10	1	1	2	1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 11		2		
Licensed Waste Management Facilities (Locations)	pg 11	5	1		2
Local Authority Recorded Landfill Sites					
Registered Landfill Sites	pg 13	2	2		
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 15		1		1

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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					
BGS Recorded Mineral Sites					
BGS 1:625,000 Solid Geology	pg 17	Yes	n/a	n/a	n/a
Brine Compensation Areas			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability	pg 17	Yes	n/a	n/a	n/a
Natural and Mining Cavities	pg 17		1		1
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 17		Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards			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 18		Yes	n/a	n/a
Radon Potential - Radon Affected Areas		Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures		Yes	n/a	n/a	n/a
Shallow Mining Hazards			Yes	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 20		3	3	15
Fuel Station Entries					

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Summary

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					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 22	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 22				1
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Nene Valley Waste Ltd Property Type: Undefined Or Other Location: Finedon Hill Ext Sidegate La Landfill, Sidegate Lane, Wellingborough, Nn8 1rn Authority: Environment Agency, Anglian Region Catchment Area: River Ise (Kettering) Reference: Pmnf09927 Permit Version: 1 Effective Date: 10th May 1996 Issued Date: 10th May 1996 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Process Water Discharge Environment: Freshwater Stream/River Receiving Water: Tributary River Ise **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	A13SE (SE)	142	1	491540 270000
2	**Discharge Consents** Operator: G T Oakes Property Type: Sewage Disposal Works - Other Location: The Water Garden Greenacres, Finedon Road, Wellingborough, Nn8 4bw Authority: Environment Agency, Anglian Region Catchment Area: Bourne Brook Catchment Reference: Pmnf12178 Permit Version: 1 Effective Date: 27th April 1998 Issued Date: 27th April 1998 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary River Ise **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	280	1	490990 270030
3	**Discharge Consents** Operator: Wayland Timber Products Ltd Property Type: Undefined Or Other Location: Prems At Anglian Timber Ltd Carrol Spring Fm, Sidegate Ln, Wellingbor Authority: Environment Agency, Anglian Region Catchment Area: Not Supplied Reference: Pmlf00929 Permit Version: 1 Effective Date: 18th May 1989 Issued Date: 18th May 1989 Revocation Date: Not Supplied Discharge Type: Unknown Discharge Environment: Onto Land Receiving Water: Land **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A14SW (SE)	294	1	491830 270060
4	**Discharge Consents** Operator: Efco Uk Ltd (Fao P A Smith) Property Type: Undefined Or Other Location: Efco Uk Ltd, Meadow Close, Ise Valley Ind Est Authority: Environment Agency, Anglian Region Catchment Area: Not Given Reference: Pmnf04630 Permit Version: 1 Effective Date: 15th November 1991 Issued Date: 15th November 1991 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Ise **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	654	1	490680 269820

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Anglian Water Services Ltd. Property Type: Sewage Disposal Works - Water Company Location: Finedon Road Ind Est, Finedon Road, Wellingborough, Nn8 Authority: Environment Agency, Anglian Region Catchment Area: Not Given Reference: Aw5nf698 Permit Version: 1 Effective Date: 22nd December 1980 Issued Date: 22nd December 1980 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Ise **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	667	1	490750 269710
6	**Discharge Consents** Operator: Anglian Water Services Ltd. Property Type: Undefined Or Other Location: Finedon Rd Ind Estate, Wellingborough, Northants Authority: Environment Agency, Anglian Region Catchment Area: Not Given Reference: Pmnf00349 Permit Version: 1 Effective Date: 15th December 1988 Issued Date: 15th December 1988 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Harrowden Brook **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	786	1	490550 269780
6	**Discharge Consents** Operator: Richardson Burdett Property Type: Not Supplied Location: Richardson Burdett, Isle Valley Ind Est, Wellingborough Authority: Environment Agency, Anglian Region Catchment Area: Not Given Reference: Pmnf04253 Permit Version: 1 Effective Date: 9th April 1991 Issued Date: 9th April 1991 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Harrowden Brook **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	797	1	490550 269760
7	**Discharge Consents** Operator: The Secretary Property Type: Undefined Or Other Location: Central Batching Plant, Finedon Road, Wellingborough Authority: Environment Agency, Anglian Region Catchment Area: Not Supplied Reference: Pr5lf3047 Permit Version: 1 Effective Date: 29th March 1967 Issued Date: 29th March 1967 Revocation Date: 26th February 1992 Discharge Type: Trade Effluent Discharge Environment: Onto Land Receiving Water: Land **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A7SW (SW)	965	1	490520 269520

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**Integrated Pollution Prevention And Control** Name: Sita Uk Limited Location: Carrol Spring Farm, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Authority: Environment Agency, Anglian Region Permit Reference: UP3035MS Original Permit Ref: Bv1046iv Effective Date: 29th June 2007 **Status: Effective** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Automatically positioned to the address Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A14SW (SE)	258	1	491768 270022
8	**Integrated Pollution Prevention And Control** Name: Edl (Uk) Lfg Generation Limited Location: Carrol Spring Farm, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Authority: Environment Agency, Anglian Region Permit Reference: HP3638UE Original Permit Ref: Hp3638ue Effective Date: 17th May 2007 **Status: Effective** Application Type: Transfer App. Sub Type: Whole limited change in management Positional Accuracy: Automatically positioned to the address Activity Code: 1.1 A(1) (B) (III) Activity Description: Combustion; Waste Derived Fuel Greater Or Equal To 3Mw But Less Than 50Mw Primary Activity: Y	A14SW (SE)	258	1	491768 270022
8	**Integrated Pollution Prevention And Control** Name: Sita Uk Limited Location: Sidegate Lane Landfill, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Authority: Environment Agency, Anglian Region Permit Reference: Bv1046iv Original Permit Ref: Bv1046iv Effective Date: 17th August 2005 **Status: Superseded By Variation** Application Type: Application App. Sub Type: New Positional Accuracy: Automatically positioned to the address Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A14SW (SE)	258	1	491768 270022
8	**Integrated Pollution Prevention And Control** Name: Edl Operations (Lfg 1) Ltd Location: Carrol Spring Farm, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Authority: Environment Agency, Anglian Region Permit Reference: Bx1772iu Original Permit Ref: Bx1772iu Effective Date: 21st December 2004 **Status: Superseded By Variation** Application Type: Application App. Sub Type: New Positional Accuracy: Automatically positioned to the address Activity Code: 1.1 A(1) (B) (III) Activity Description: Combustion; Waste Derived Fuel Greater Or Equal To 3Mw But Less Than 50Mw Primary Activity: Y	A14SW (SE)	258	1	491768 270022
9	**Local Authority Integrated Pollution Prevention And Control** Name: Sidegate Lane Landfill Location: Sidegate Lane, Wellingborough Authority: Wellingborough Borough Council, Environmental Health Department Permit Reference: BV 1046 Dated: Not Supplied Process Type: Waste Management Description: Landfill Site **Status: Application Not Yet Authorised** Positional Accuracy: Manually positioned within the geographical locality	A13NE (E)	126	2	491585 270329

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Local Authority Integrated Pollution Prevention And Control** Name: Sidegate Lane Generating Plant Location: Sidegate Lane, Wellingborough Authority: Wellingborough Borough Council, Environmental Health Department Permit Reference: BX 1772 Dated: Not Supplied Process Type: Energy Industries Description: Generating Plant **Status: Permit Issued** Positional Accuracy: Manually positioned to the address or location	A14SW (E)	434	2	491968 270029
11	**Local Authority Pollution Prevention and Controls** Name: Blake Performance Fabrics Limited Location: Meadow Close, Isle Valley, WELLINGBOROUGH, Northamptonshire, NN8 4BH Authority: Wellingborough Borough Council, Environmental Health Department Permit Reference: Epa/29/1992 Dated: 11th October 1993 Process Type: Local Authority Air Pollution Control Description: PG6/8 Textile and fabric coating of finishing processes **Status: Authorisation revokedRevoked** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	813	2	490603 269656
	Nearest Surface Water Feature	A13SE (SE)	134	-	491511 269997
12	**Pollution Incidents to Controlled Waters** Property Type: Engineering Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Chemicals - Acid Note: Tributary Of River Ise Incident Date: 25th April 1994 Incident Reference: 1986 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Fire Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	576	1	490900 269700
13	**Pollution Incidents to Controlled Waters** Property Type: Rail Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Oils - Diesel (Including Agricultural) Note: River Ise Incident Date: 22nd April 1994 Incident Reference: 1983 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Vandalism Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	639	1	490800 269700
13	**Pollution Incidents to Controlled Waters** Property Type: Road Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Oils - Other Oil Note: Tributary River Ise Incident Date: 26th November 1998 Incident Reference: 3570 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	643	1	490800 269695
14	**Pollution Incidents to Controlled Waters** Property Type: Other Farming Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Organic Wastes: Unknown Note: Tributary Of Ise Incident Date: 7th March 1994 Incident Reference: 1929 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	646	1	492000 269700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Pollution Incidents to Controlled Waters** Property Type: Metal industry Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Chemicals - Alkali Note: River Ise Tributary Incident Date: 17th January 1995 Incident Reference: 2261 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Vandalism Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	661	1	490900 269600
16	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Unknown Note: Tributary Of River Ise Incident Date: 22nd July 1993 Incident Reference: 1743 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	716	1	490800 269600
17	**Pollution Incidents to Controlled Waters** Property Type: Oil Industry (Not Garages) Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Oils - Diesel (Including Agricultural) Note: Harrowden Brook Incident Date: 3rd July 1995 Incident Reference: 2423 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Leaking Underground Pipe Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	781	1	490700 269600
18	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Kettering District Authority: Environment Agency, Anglian Region Pollutant: Unknown Note: Tributary Of Langton Bk Incident Date: 23rd January 1992 Incident Reference: 1241 Catchment Area: Not Given Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A15SW (E)	958	1	492501 270001
	River Quality Name: Ise GQA Grade: River Quality A Reach: Harrowden Bk....Swanspool Bk. Estimated Distance (km): 2.5 Flow Rate: Flow less than 2.5 cumecs Flow Type: River Year: 2000	A7NW (SW)	708	1	490680 269729
	River Quality Name: Ise GQA Grade: River Quality A Reach: Pycthley Bk....Harrowden Bk. Estimated Distance (km): 6.5 Flow Rate: Flow less than 2.5 cumecs Flow Type: River Year: 2000	A7NW (SW)	797	1	490569 269729

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	River Quality Name: Harrowden Bk. GQA Grade: River Quality B Reach: Headwaters...Ise Estimated Distance (km): 5 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A7NW (SW)	814	1	490536 269750
19	**River Quality Biology Sampling Points** Name: Ise Reach: Harrowden Brook To Swanspool Brook Estimated Distance: 2.50 Positional Accuracy: Located by supplier to within 100m Year: 1990 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 1995 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2000 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2002 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2003 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2004 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2005 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2006 GQA Grade: River Quality Biology GQA Grade B - Good	A7NW (SW)	733	1	490600 269800
20	**River Quality Chemistry Sampling Points** Name: Harrowden Brook Reach: Headwaters To Ise Estimated Distance: 5.00 Objective: River Ecosystem Class 4: Fair Quality Positional Accuracy: Located by supplier to within 100m Year: 1990 GQA Grade: Not Supplied Compliance: Not Supplied Year: 1993 GQA Grade: Not Supplied Compliance: Not Supplied Year: 1994 GQA Grade: Not Supplied Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Compliant Year: 1996 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Compliant Year: 1997 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Compliant Year: 1998 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Compliant Year: 1999 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Compliant Year: 2000 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Compliant Year: 2001 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Compliant Year: 2002 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Compliant Year: 2003 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Compliant Year: 2004 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Compliant Year: 2005 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Compliant	A7NW (SW)	821	1	490500 269800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	**Water Abstractions** Operator: Mid-Northants Water Board Licence Number: 5/32/09/*g/085 Permit Version: Not Supplied Location: Finedon Hill Well Authority: Environment Agency, Anglian Region Abstraction: Public Water Supply Abstraction Type: Not Supplied Source: Well And Borehole Daily Rate (m3): 36 Yearly Rate (m3): 181840 Details: Northampton Sanstone; Status: Revoked 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	A13SW (SW)	130	1	491200 270040
22	**Water Abstractions** Operator: D Clarke Ltd Licence Number: 5/32/06/*s/016 Permit Version: Not Supplied Location: River Ise At, FINEDON Authority: Environment Agency, Anglian Region Abstraction: Spray Irrigation Abstraction Type: Not Supplied Source: Stream Daily Rate (m3): 34 Yearly Rate (m3): 818280 Details: Status: Revoked 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	A18SW (NW)	209	1	491200 270600
23	**Water Abstractions** Operator: D Clarke Ltd Licence Number: 5/32/06/*s/016 Permit Version: Not Supplied Location: River Ise At, FINEDON Authority: Environment Agency, Anglian Region Abstraction: Spray Irrigation Abstraction Type: Not Supplied Source: Stream Daily Rate (m3): 34 Yearly Rate (m3): 818280 Details: Status: Revoked 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	A12NE (W)	257	1	491000 270300
24	**Water Abstractions** Operator: The Borough Engineer Licence Number: 5/32/09/*s/099e Permit Version: Not Supplied Location: River Ise At, FINEDON Authority: Environment Agency, Anglian Region Abstraction: Industrial Processing (Miscellaneous) Abstraction Type: Not Supplied Source: Stream Daily Rate (m3): 19911 Yearly Rate (m3): 54552000 Details: Status: Revoked 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	A7NW (SW)	649	1	490700 269800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: The Borough Engineer Licence Number: 5/32/09/*s/099e Permit Version: Not Supplied Location: Harrowden Brook, WELLINGBOROUGH Authority: Environment Agency, Anglian Region Abstraction: Industrial Processing (Miscellaneous) Abstraction Type: Not Supplied Source: Stream Daily Rate (m3): 1909 Yearly Rate (m3): 613710 Details: Status: Revoked 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	A7SW (SW)	1069	1	490400 269500
	Water Abstractions Operator: H Clapham Licence Number: 5/32/09/*G/0159 Permit Version: 100 Location: Well, Stone Cross Farm Authority: Environment Agency, Anglian Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Northampton Sanstone; Status: Perpetuity Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st January 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A5SW (SE)	1644	1	492600 268900
	Water Abstractions Operator: R Bridgeford & Son Ltd Licence Number: 5/32/09/*g/141 Permit Version: Not Supplied Location: Well At, Ladywell Allotments Authority: Environment Agency, Anglian Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well And Borehole Daily Rate (m3): 0 Yearly Rate (m3): 1360 Details: Northampton Sanstone; Status: Revoked 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	A1SW (SW)	1841	1	489900 268900
	Water Abstractions Operator: R Bridgeford & Son Ltd Licence Number: 5/32/09/*g/141 Permit Version: Not Supplied Location: Well At, Ladywell Allotments Authority: Environment Agency, Anglian Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well And Borehole Daily Rate (m3): 0 Yearly Rate (m3): 1360 Details: Northampton Sanstone; Status: Revoked 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	A1NW (SW)	1850	1	489800 269000
	Groundwater Vulnerability Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 31 Bedfordshire Scale: 1:100,000	A13NE (NE)	0	1	491578 270377

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Drift Deposits None				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	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
25	**BGS Recorded Landfill Sites** Site Name: Carrol Springs Location: WELLINGBOROUGH, Northants Authority: British Geological Survey, National Geoscience Information Service Ground Water: Threat to ground water Surface Water: Threat to surface water Geology: N/A Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good	A13NE (NE)	0	3	491443 270325
26	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Sidegate Lane Name: Sidegate Lane Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD02249 First Input Date: 31st December 1968 Last Input Date: 1st December 1993 Specified Waste Type: Deposited Waste included Commercial and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 329 Other Ref: W/A	A13NE (E)	0	1	491458 270267
27	**Historical Landfill Sites** Licence Holder: T.B. Page and Sons Limited Location: Sidegate Lane, Wellingborough Name: Carol Spring Farm Operator Location: 151 Midland Road, Wellingborough Nn8 1na Boundary Accuracy: As Supplied Provider Reference: EAHLD02243 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 2800/0188 BGS Ref: Not Supplied Other Ref: W/4	A13SE (SE)	195	1	491701 270039
28	**Historical Landfill Sites** Licence Holder: T.B. Page and Sons Limited Location: Sidegate Lane, Wellingborough Name: Carol Spring Farm Operator Location: 151 Midland Road, Wellingborough Nn8 1na Boundary Accuracy: As Supplied Provider Reference: EAHLD02242 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 2800/0188 BGS Ref: Not Supplied Other Ref: W/4	A13SE (SE)	273	1	491716 269949
29	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Rushden Name: Rushden Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD02248 First Input Date: 31st December 1965 Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: W/C	A14SW (E)	423	1	491952 270017

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Finedon Name: Rushden UDC Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD02247 First Input Date: 31st December 1964 Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: WU/64/192	A14SE (E)	773	1	492311 269999
31	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Sidegate Lane Landfill - New Area Licence Number: 70673 Location: Nene Valley Waste Limited, Sidegate Lane Landfill Site, Sidegate Lane, Wellingborough, Northants, NN8 1RN Licence Holder: Nene Valley Waste Limited Authority: Environment Agency - Anglian Region, Northern Area Site Category: Co-disposal Landfill Sites Max Input Rate: Not Supplied **Licence Status: Active** Issued 30th November 1995 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A13NE (E)	7	1	491498 270293
32	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Sidegate Lane Landfill Licence Number: 70670 Location: Nene Valley Waste Limited, Carrol Spring Farm, Sidegate Lane, Finedon, Wellingborough, Northants, NN8 1RN Licence Holder: Nene Valley Waste Ltd Authority: Environment Agency - Anglian Region, Northern Area Site Category: Co-disposal Landfill Sites Max Input Rate: Not Supplied **Licence Status: Active** Issued 4th December 1992 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A13SE (E)	170	1	491724 270136
33	**Licensed Waste Management Facilities (Locations)** Licence Number: 73234 Location: Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Operator Name: Nene Valley Waste Limited Operator Location: Sidegate Lane, Wellingborough, Northants, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Household, Commercial And Industrial Waste Landfills **Licence Status: IPPC** Issued: 17th August 2005 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: BV1046IV Positional Accuracy: Located by supplier to within 100m	A13SE (S)	0	1	491400 270200
33	**Licensed Waste Management Facilities (Locations)** Licence Number: 70673 Location: Sidegate Lane Landfill Site, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Operator Name: Nene Valley Waste Limited Operator Location: Sidegate Lane Landfill Site, Sidegate Lane, Wellingborough, Northants, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Co-disposal Landfill Sites **Licence Status: Issued** Issued: 30th November 1995 Last Modified: Not Supplied Expires: 17th August 2005 Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: BV1046IV Positional Accuracy: Located by supplier to within 100m	A13SE (S)	0	1	491400 270200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	**Licensed Waste Management Facilities (Locations)** Licence Number: 73144 Location: Sidegate Lane Landfill, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Operator Name: Sita Uk Operator Location: Sidegate Lane Landfill Site, Sidegate Lane, Wellingborough, Northants, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Composting **Licence Status: Issued** Issued: 12th January 2004 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 100m	A13NE (N)	0	1	491400 270300
35	**Licensed Waste Management Facilities (Locations)** Licence Number: 73050 Location: Sidegate Lane Landfill Site, Sidegate Lane, Wellingborough, NN8 1RN Operator Name: Nene Valley Waste Limited Operator Location: Sidegate Lane Lanfill Site, Sidegate Lane, Wellingborough, Northants, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Physico-chemical Treatment Facilities **Licence Status: Surrendered** Issued: 28th November 1997 Last Modified: 2nd October 2001 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 14th August 2006 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A13SE (S)	0	1	491400 270100
35	**Licensed Waste Management Facilities (Locations)** Licence Number: 70670 Location: Carrol Spring Farm, Sidegate Lane, Finedon, Wellingborough, Northamptonshire, NN8 1RN Operator Name: Nene Valley Waste Ltd Operator Location: Sidegate Lane Landfill Site, Sidegate Lane, Wellingborough, Northants, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Co-disposal Landfill Sites **Licence Status: Closed** Issued: 4th December 1992 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 100m	A13SE (S)	0	1	491400 270100
36	**Licensed Waste Management Facilities (Locations)** Licence Number: 73161 Location: Not Supplied Operator Name: E D L (uk) L F G Generation Ltd Operator Location: Sheridan House, 17 St Anns Road, Harrow, Middlesex, HA1 1JU Authority: Environment Agency - Anglian Region, Northern Area Site Category: Physical Treatment Facilities **Licence Status: Transferred** Issued: 21st December 2004 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 100m	A13SE (SE)	222	1	491700 270000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
37	**Licensed Waste Management Facilities (Locations)** Licence Number: 73061 Location: Higham Road, Burton Latimer, Kettering, Northamptonshire, NN15 5PU Operator Name: Eady Mr Rodney Operator Location: Belvedere House, Higham Road, Burton Latimer, Kettering, Northants, NN15 5PU Authority: Environment Agency - Anglian Region, Northern Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Issued** Issued: 19th December 1997 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 100m	A12SW (W)	730	1	490500 270200
38	**Licensed Waste Management Facilities (Locations)** Licence Number: 70676 Location: Brookside Works, Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Operator Name: John Redden Limited Operator Location: Brookside Works, Finedon Road, Wellingborough, Northants, NN8 4BN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Issued** Issued: 26th November 1990 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 100m	A7SE (SW)	747	1	490900 269500
	Local Authority Landfill Coverage Name: Northamptonshire County Council - Has supplied landfill data		0	7	492839 264669
	Local Authority Landfill Coverage Name: Wellingborough Borough Council - Has no landfill data to supply		0	8	492713 269648
39	**Registered Landfill Sites** Licence Holder: Nene Valley Waste Ltd Licence Reference: W/041 Site Location: Sidegate Lane Landfill Site, Carrol Spring Farm, Sidegate Lane, Wellingborough, Northamptonshire, Nn8 1rn Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Carroll Spring Farm, Sidegate Lane, Finedon, WELLINGBOROUGH, Northamptonshire, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Landfill 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: Operational as far as is knownOperational Dated: 4th December 1992 Preceded By Licence: WDA /4801B Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good Authorised Waste: Asbestos Liquid Wastes Northants Cat. A1 -Solid Inert (Soils) Northants Cat. A2 -Sol.Inert (Inc.Dem) Northants Cat. B - Slowly Decompose Northants Cat. C - Putresc./Domestic Whole & Shredded Tyres Whole Tyres Prohibited Waste: Sodium/Potassium/Calcium Oxides Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Northants Cat. D - Difficult 6<Ph<9 Northants Cat. F - Prohibited At L/F	A13NE (E)	0	1	491458 270270

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	**Registered Landfill Sites** Licence Holder: Northants C.C. Licence Reference: WDA /4801B Site Location: Sidegate Lane Landfill, Wellingborough, Northamptonshire Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Northampton House, NORTHAMPTON, Northamptonshire, NN1 2HZ Authority: Environment Agency - Anglian Region, Northern Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Record supersededSuperseded Dated: 23rd November 1982 Preceded By Licence: Not Given Superseded By Licence: W/041 Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good Authorised Waste: Asbestos Northamptonshire Category C * Northamptonshire Category D Northamptonshire Category F * Northants/Lincs Category A * Northants/Lincs Category B * Waste In Cont'Rs In Acc.With Iwm Cop Prohibited Waste: Cont'Rs >5 L, Unless Open + Not Liquid	A13NE (E)	0	1	491458 270270
41	**Registered Landfill Sites** Licence Holder: T B Page & Sons Ltd Licence Reference: W/004 Site Location: Carol Springs Farm, Sidegate Lane, Wellingborough, Northamptonshire Licence Easting: 491730 Licence Northing: 270000 Operator Location: 151 Midland Road, WELLINGBOROUGH, Northamptonshire, NN8 1NA Authority: Environment Agency - Anglian Region, Northern Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st November 1985 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Northants/Lincs Cat. A -Sol.Inert * Prohibited Waste: Asbestos Northants Cat. C -Sol. Putres./Dom. * Northants/Lincs Cat. B -Sol.Semiinert*	A13SE (SE)	143	1	491649 270059

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**Registered Landfill Sites** Licence Holder: Nene Valley Waste Ltd Licence Reference: W/046 Site Location: Sidegate Lane Landfill, Finedon Hill Extension, Wellingborough, Northamptonshire Licence Easting: 491700 Licence Northing: 270300 Operator Location: Carroll Spring Farm, Sidegate Lane, Finedon, WELLINGBOROUGH, Northamptonshire, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Landfill 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: Operational as far as is knownOperational Dated: 30th November 1995 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: Bonded Asbestos Fibrous Forms Of Asbestos Northants Cat. A1 -Solid Inert (Soils) Northants Cat. A2 -Sol.Inert (Inc.Dem) Northants Cat. B - Slowly Decompose Northants Cat. C - Putresc./Domestic Prohibited Waste: Sodium/Potassium/Calcium Oxides Waste N.O.S. Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Northants Cat. D - Difficult 6<Ph<9 Northants Cat. F - Special	A13NE (E)	192	1	491700 270300
43	**Registered Waste Treatment or Disposal Sites** Licence Holder: Nene Valley Waste Ltd Licence Reference: W/053 Site Location: Sidegate Lane (Flue Gas Treatment Plant), Wellingborough, Northamptonshire Operator Location: Carrol Spring Farm, Sidegate Lane, WELLINGBOROUGH, Northamptonshire, NN8 1RN Authority: Environment Agency - Anglian Region, Northern Area Site Category: Treatment 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: 28th November 1997 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: Flue Gas Treatment Waste (Maybe Spec.) Max.Waste Permitted By Licence Spec.Waste (Epa'90:S62/1996 Regs) Prohibited Waste: Waste N.O.S.	A13SE (E)	113	1	491670 270160

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Waste Treatment or Disposal Sites				
44	Licence Holder: John Redden Ltd Licence Reference: W1001 Site Location: Brookside Works, Wellingborough Road, Finedon, WELLINGBOROUGH, Northamptonshire, NN8 4BN Operator Location: As Site Address Authority: Environment Agency - Anglian Region, Northern Area Site Category: Scrapyard 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: 26th November 1990 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: Batteries Haz.Items/Mat'Ls Assoc.With Vehicles Max.Waste Permitted By Licence Oils Petrol Scrap Metal As In Scrap Met.Dealer Act Prohibited Waste: Clinical Wastes Flammable Solvents Medical (Misuse Of Drugs Act) Percussive/Explosive Waste Radioactive Wastes Spec.Waste (Epa'90:S62/1996 Regs)N.O.S Transformers/Equip Assumed To Cont.Pcb	A7SE (SW)	790	1	490900 269450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Inferior Oolite	A14SW (E)	0	3	491799 270132
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Mining Instability Mining Evidence: Conclusive Iron Ore Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A12SE (W)	0	-	491000 270251
	Natural and Mining Cavities Cavity Type: Gulls fissures due to cambering:- fissure formed by land slipping along valley sides Origin: Natural Cavity Number: 1 Commodity: Not Supplied Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	216	4	491100 270000
	Natural and Mining Cavities Cavity Type: Gulls fissures due to cambering:- fissure formed by land slipping along valley sides Origin: Natural Cavity Number: 1 Commodity: Not Supplied Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	618	4	490800 270800
	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	A13SW (S)	0	3	491382 270000
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	87	3	491382 270000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	135	3	491594 270376
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	141	3	491510 269989
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	152	3	491564 270000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	186	3	491683 270343
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14SW (E)	221	3	491776 270207
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	3	491500 270375
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	42	3	491500 270375
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	55	3	491175 270175
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	55	3	491200 270275
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	83	3	491525 270375
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	85	3	491150 270150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	87	3	491382 270000
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	91	3	491350 270000
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	109	3	491450 270000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	136	3	491300 269975
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	145	3	491700 270225
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	167	3	491725 270200
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	170	3	491725 270225
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	177	3	491175 270000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NE (S)	214	3	491400 269875
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	0	3	491382 270000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	87	3	491382 270000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	3	491500 270375
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	42	3	491500 270375
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	55	3	491200 270275
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	87	3	491382 270000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	91	3	491350 270000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	136	3	491300 269975
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	145	3	491700 270225
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	177	3	491175 270000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8NE (S)	214	3	491400 269875

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Potential - Radon Affected Areas Affected Area: The property is in a radon affected area, as over 30% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	0	3	491382 270000
	Radon Potential - Radon Protection Measures Protection Measure: Full radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	0	3	491382 270000
	Shallow Mining Hazards Risk: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	26	3	491508 270325

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
45	**Contemporary Trade Directory Entries** Name: C Payne Location: Sidegate Works,Finedon Rd, Wellingborough, Northamptonshire, NN8 4BW Classification: Precision Engineers **Status:** **Active** Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	168	-	491076 270110
45	**Contemporary Trade Directory Entries** Name: Emtech Location: Sidegate Works, Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Plant & Machinery Repairs **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	184	-	491065 270095
45	**Contemporary Trade Directory Entries** Name: Tyrep Ltd Location: Sidegate Works, Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Tyre Repairs & Retreading **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	184	-	491065 270095
46	**Contemporary Trade Directory Entries** Name: Sita Waste Care Ltd Location: Carrol Spring Farm, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Classification: Waste Disposal Services **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	258	-	491768 270022
47	**Contemporary Trade Directory Entries** Name: S I T A Location: Sidegate La, Wellingborough, Northamptonshire, NN8 1RN Classification: Waste Disposal Services **Status:** **Active** Positional Accuracy: Manually positioned to the road within the address or location	A8NE (SE)	283	-	491671 269910
48	**Contemporary Trade Directory Entries** Name: Pack David & Sons Ltd Location: Finedon Hill Farm, Sidegate Lane, Wellingborough, Northamptonshire, NN8 1RN Classification: Road Haulage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	438	-	491435 269653
49	**Contemporary Trade Directory Entries** Name: Adhesive Applications Location: Unit 5,Brookside Garage,Wellingborough Rd, Wellingborough, Northamptonshire, NN8 4BW Classification: Machinery - Industrial & Commercial **Status:** **Active** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	579	-	490966 269656
50	**Contemporary Trade Directory Entries** Name: T H Sheppard & Sons Location: Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Scrap Metal Merchants **Status:** **Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A7NE (SW)	598	-	490859 269704
50	**Contemporary Trade Directory Entries** Name: Brookside Motors Location: Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Car Dealers - Used **Status:** **Active** Positional Accuracy: Automatically positioned in the proximity of the address	A7NE (SW)	598	-	490859 269704
51	**Contemporary Trade Directory Entries** Name: G M Engineering Location: Unit 3 Sidegate Works,Finedon Rd, Wellingborough, Northants, NN8 4BW Classification: Precision Engineers **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A7NE (SW)	690	-	490782 269648
52	**Contemporary Trade Directory Entries** Name: John Redden Ltd Location: Brookside Garages, Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Scrap Metal Merchants **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	694	-	490928 269546

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	**Contemporary Trade Directory Entries** Name: Master Tyres Location: Brookside Works, Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Tyre Repairs & Retreading **Status: Active** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	694	-	490928 269546
52	**Contemporary Trade Directory Entries** Name: Wellingborough Vehicle Dismantlers Location: Brookside Garages, Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Car Breakers & Dismantlers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	694	-	490928 269546
52	**Contemporary Trade Directory Entries** Name: Jacksons Recovery Ltd Location: Brookside Works, Finedon Road, Wellingborough, Northamptonshire, NN8 4BW Classification: Car Breakdown & Recovery Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	694	-	490928 269546
53	**Contemporary Trade Directory Entries** Name: Howden'S Joinery Location: 16-20, Meadow Close, Ise Valley Industrial Estate, Wellingborough, Northamptonshire, NN8 4BH Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	745	-	490702 269648
54	**Contemporary Trade Directory Entries** Name: D S Smith Priory Packaging Ltd Location: 33-35, Meadow Close, Ise Valley Industrial Estate, Wellingborough, Northamptonshire, NN8 4BH Classification: Boxes & Cartons **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	782	-	490632 269671
55	**Contemporary Trade Directory Entries** Name: Richardson Burdett Location: 37-39, Meadow Close, Ise Valley Industrial Estate, Wellingborough, Northamptonshire, NN8 4BH Classification: Commercial Vehicle Bodybuilders & Repairers **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	784	-	490594 269716
56	**Contemporary Trade Directory Entries** Name: Hulco (Uk) Ltd Location: 21, Meadow Close, Ise Valley Industrial Estate, Wellingborough, Northamptonshire, NN8 4BH Classification: Conveyors & Conveyor Belts **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	885	-	490567 269587
57	**Contemporary Trade Directory Entries** Name: Bonham Lilley Timber Ltd Location: 10-14, Meadow Close, Ise Valley Industrial Estate, Wellingborough, Northamptonshire, NN8 4BH Classification: Door Manufacturers - Domestic **Status: Active** Positional Accuracy: Manually positioned to the address or location	A7SW (SW)	888	-	490629 269520
57	**Contemporary Trade Directory Entries** Name: A G D Location: 6-8, Meadow Close, Ise Valley Industrial Estate, Wellingborough, Northamptonshire, NN8 4BH Classification: Door & Gate Operating Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A7SW (SW)	929	-	490584 269505
58	**Contemporary Trade Directory Entries** Name: Jewson Ltd Location: 5-11, Meadow Close, Ise Valley Industrial Estate, Wellingborough, Northamptonshire, NN8 4BH Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A7SW (SW)	992	-	490508 269493

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
59	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Surface Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	(S)	0	5	492117 267536
60	**Sites of Special Scientific Interest** Name: Finedon Top Lodge Quarry Multiple Area: N Area (m2): 11662.77 Source: Natural England Reference: 1003667 Designation Details: Geological Conservation Review Designation Date: 1st July 1986 Date Type: Notified	A9NE (SE)	914	6	492391 269796

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
East Northamptonshire District Council - Environmental Health Department	August 2006	Annual Rolling Update
Kettering Borough Council - Environmental Health Department	January 2007	Annual Rolling Update
Bedford Borough Council - Environmental Health Department	June 2007	Annual Rolling Update
Wellingborough Borough Council - Environmental Health Department	March 2007	Annual Rolling Update
Discharge Consents		
Environment Agency - Anglian Region	October 2007	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Anglian Region	November 2007	As notified
Integrated Pollution Controls		
Environment Agency - Anglian Region	October 2007	Quarterly
Integrated Pollution Prevention And Control		
Environment Agency - Anglian Region	October 2007	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Kettering Borough Council - Environmental Health Department	January 2007	Annual Rolling Update
Bedford Borough Council - Environmental Health Department	July 2007	Annual Rolling Update
East Northamptonshire District Council - Environmental Health Department	May 2006	Annual Rolling Update
Wellingborough Borough Council - Environmental Health Department	October 2007	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Kettering Borough Council - Environmental Health Department	January 2007	Annual Rolling Update
Bedford Borough Council - Environmental Health Department	July 2007	Annual Rolling Update
East Northamptonshire District Council - Environmental Health Department	May 2007	Annual Rolling Update
Wellingborough Borough Council - Environmental Health Department	October 2007	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Kettering Borough Council - Environmental Health Department	January 2007	Annual Rolling Update
Bedford Borough Council - Environmental Health Department	July 2007	Annual Rolling Update
East Northamptonshire District Council - Environmental Health Department	May 2006	Annual Rolling Update
Wellingborough Borough Council - Environmental Health Department	October 2007	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2007	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Anglian Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Anglian Region	November 2007	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Anglian Region	November 2007	As notified
Registered Radioactive Substances		
Environment Agency - Anglian Region	October 2007	Quarterly
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	September 2007	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	October 2006	Annually
Substantiated Pollution Incident Register		
Environment Agency - Anglian Region - Central Area	October 2007	Quarterly
Environment Agency - Anglian Region - Northern Area	October 2007	Quarterly
Water Abstractions		
Environment Agency - Anglian Region	October 2007	Quarterly
Water Industry Act Referrals		
Environment Agency - Anglian Region	October 2007	Quarterly

Agency & Hydrological	Version	Update Cycle
Groundwater Vulnerability		
Environment Agency - Head Office	January 1999	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Source Protection Zones		
Environment Agency - Head Office	April 2005	Variable
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	October 2007	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	October 2007	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	October 2007	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	October 2007	Quarterly
Flood Defences		
Environment Agency - Head Office	October 2007	Quarterly
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Anglian Region	October 2007	Quarterly
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Anglian Region - Central Area	August 2007	Quarterly
Environment Agency - Anglian Region - Northern Area	August 2007	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Anglian Region - Central Area	August 2007	Quarterly
Environment Agency - Anglian Region - Northern Area	August 2007	Quarterly
Local Authority Landfill Coverage		
Bedford Borough Council - Environmental Health Department	May 2000	Not Applicable
Bedfordshire County Council	May 2000	Not Applicable
East Northamptonshire District Council - Community Services - Planning Department	May 2000	Not Applicable
Kettering Borough Council - Environmental Health Department	May 2000	Not Applicable
Northamptonshire County Council	May 2000	Not Applicable
Wellingborough Borough Council	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Bedford Borough Council - Environmental Health Department	April 2003	Not Applicable
Bedfordshire County Council	May 2000	Not Applicable
East Northamptonshire District Council - Community Services - Planning Department	May 2000	Not Applicable
Kettering Borough Council - Environmental Health Department	May 2000	Not Applicable
Northamptonshire County Council	May 2000	Not Applicable
Wellingborough Borough Council	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Anglian Region - Central Area	March 2003	Not Applicable
Environment Agency - Anglian Region - Northern Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Anglian Region - Central Area	March 2003	Not Applicable
Environment Agency - Anglian Region - Northern Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Anglian Region - Central Area	March 2003	Not Applicable
Environment Agency - Anglian Region - Northern Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	October 2007	Bi-Annually
Explosive Sites		
Health and Safety Executive	August 2007	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Wellingborough Borough Council	April 2005	Annual Rolling Update
Kettering Borough Council	July 2007	Annual Rolling Update
Bedfordshire County Council	June 2007	Annual Rolling Update
Northamptonshire County Council	November 2007	Annual Rolling Update
Bedford Borough Council	September 2007	Annual Rolling Update
East Northamptonshire District Council - Community Services - Planning Department	September 2007	Annual Rolling Update
Planning Hazardous Substance Consents		
Wellingborough Borough Council	April 2005	Annual Rolling Update
Kettering Borough Council	July 2007	Annual Rolling Update
Bedfordshire County Council	June 2007	Annual Rolling Update
Northamptonshire County Council	November 2007	Annual Rolling Update
Bedford Borough Council	September 2007	Annual Rolling Update
East Northamptonshire District Council - Community Services - Planning Department	September 2007	Annual Rolling Update

Geological	Version	Update Cycle
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	October 2007	Bi-Annually
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
Brine Compensation Areas		
Cheshire Brine Subsidence Compensation Board	November 2002	As notified
Coal Mining Affected Areas		
The Coal Authority - Mining Report Service	January 2006	As notified
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Natural and Mining Cavities		
Peter Brett Associates	December 2005	Variable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	April 2007	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	November 2006	Annually
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	May 2007	Annually
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	May 2007	Annually
Shallow Mining Hazards		
British Geological Survey - National Geoscience Information Service	August 2002	Not Applicable

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries		
Thomson Directories	August 2007	Quarterly
Fuel Station Entries		
Catalist Ltd - (Fuel Station Data)	October 2007	Quarterly
Sensitive Land Use	**Version**	**Update Cycle**
Areas of Outstanding Natural Beauty		
Natural England (formerly The Countryside Agency)	November 2006	Annually
Environmentally Sensitive Areas		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	June 2006	Annually
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Bedford Borough Council	January 2000	Variable
East Northamptonshire District Council - Community Services - Planning Department	January 2000	Variable
Wellingborough Borough Council	January 2000	Variable
Marine Nature Reserves		
Natural England	October 2007	Bi-Annually
National Nature Reserves		
Natural England	May 2007	Bi-Annually
National Parks		
Natural England (formerly The Countryside Agency)	October 2006	Annually
Nitrate Sensitive Areas		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2003	Not Applicable
Nitrate Vulnerable Zones		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	May 2007	Annually
Ramsar Sites		
Natural England	October 2007	Bi-Annually
Sites of Special Scientific Interest		
Natural England	October 2007	Bi-Annually
Special Areas of Conservation		
Natural England	October 2007	Bi-Annually
Special Protection Areas		
Natural England	October 2007	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Ordnance Survey® Licensed Partner
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	THE COAL AUTHORITY
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Countryside Council for Wales	CYNGOR CEFN GWLAD CYMRU COUNTRYSIDE COUNCIL FOR WALES
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Health Protection Agency	Health Protection Agency
Ove Arup	ARUP
Peter Brett Associates	pba

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	**Wellingborough Borough Council - Environmental Health Department** Croyland Abbey, Tithe Barn Road, Wellingborough, Northamptonshire, NN8 1BJ	Telephone: 01933 229777 extn 4705 Fax: 01933 441375 Email: environment@wellingborough.gov.uk Website: www.wellingborough.gov.uk
3	**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
4	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
5	**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
6	**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
7	**Northamptonshire County Council** County Hall, Northampton, Northamptonshire, NN1 1DN	Telephone: 01604 236236 Website: www.northamptonshire.gov.uk
8	**Wellingborough Borough Council** Croyland Abbey, Tithe Barn Road, Wellingborough, Northamptonshire, NN8 1BJ	Telephone: 01933 229777 Fax: 01933 441375 Website: www.wellingborough.gov.uk
-	**Landmark Information Group Limited** The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB	Telephone: 0870 850 6670 Fax: 0870 850 6671 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.

Envirocheck® Report:

Historical Data Report Datasheet

Order Details:

Order Number:
23558870_1_1

Customer Reference:
BM01213

National Grid Reference:
491380, 270250

Slice:
A

Site Area (Ha):
6.54

Search Buffer (m):
1000

Site Details:

Sita UK, Carrol Spring Farm
Sidegate Lane
WELLINGBOROUGH
Northamptonshire
NN8 1RN

Client Details:

Mr D Hicks
Hyder Consulting Ltd
Aston Cross
Rocky Lane
Aston
Birmingham
B6 5RQ

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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Report Version v31.0

Envirocheck®
Historical Data Report
A Landmark service

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Historical Building Plans Information					
Areas Cleared Due To Enemy Action					
Above Ground Fuel Tanks (100m)				n/a	n/a
Asbestos (100m)				n/a	n/a
Benzene/Benzole/Naphtha, Naphthalene/Kerosene (100m)				n/a	n/a
Electricity Generation (100m)				n/a	n/a
Electricity Sub-Stations (100m)				n/a	n/a
Gas Industry (100m)				n/a	n/a
Gas Storage (100m)				n/a	n/a
Gas Use (100m)				n/a	n/a
Oil Industry (100m)				n/a	n/a
Oil Storage (100m)				n/a	n/a
Oil Use (100m)				n/a	n/a
Paint based Oils (100m)				n/a	n/a
Paraffin (100m)				n/a	n/a
Petrol and Diesel Industry (100m)				n/a	n/a
Petrol and Diesel Storage (100m)				n/a	n/a
Petrol and Diesel Use (100m)				n/a	n/a
Potential Fuel Gas (100m)				n/a	n/a
Potential Fuel Oil (100m)				n/a	n/a
Potential Fuel Use (100m)				n/a	n/a
Potential Petrol and Diesel (100m)				n/a	n/a
Potential Tanks (100m)				n/a	n/a
Potentially Fuel-related Tanks (100m)				n/a	n/a
Underground Fuel Tanks (100m)				n/a	n/a
Historical Land Use Information					
Former Marshes					
Historical Flood Liabilities	pg 1				1
Potentially Contaminative Industrial Uses (Past Land Use)	pg 1	5	8	20	26
Potentially Infilled Land (Non-Water)	pg 3	1	3	7	11
Potentially Infilled Land (Water)					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Historical Tanks and Energy Facilities					
Electrical Sub Station Facilities (100m)				n/a	n/a
Electricity Industry Facilities (100m)				n/a	n/a
Gas Industry Facilities (100m)				n/a	n/a
Gas Monitoring Facilities (100m)				n/a	n/a
Miscellaneous Power Facilities (100m)				n/a	n/a
Oil Industry Facilities (100m)				n/a	n/a
Petroleum Storage Facilities (100m)				n/a	n/a
Potential Tanks (100m)				n/a	n/a
Tanks (100m)				n/a	n/a

Historical Land Use Information

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Historical Flood Liabilities** Use: Area liable to flood Date of Mapping: 1888	A12SW (W)	736	1	490516 269997
2	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1888	A13NW (W)	0	1	491274 270275
3	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901 - 1938	A13SE (SE)	0	1	491515 270170
4	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901 - 1958	A13SE (S)	0	1	491438 270117
5	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1958	A13NE (NE)	0	1	491455 270283
6	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901 - 1927	A13SE (SE)	0	1	491521 270193
7	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901	A13SE (SE)	3	1	491557 270167
8	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1888	A13NE (N)	117	1	491397 270531
9	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901	A13SW (S)	135	1	491343 269956
10	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Factory or works - use not specified Date of Mapping: 1995	A13SW (SW)	163	1	491079 270115
11	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901	A8NE (S)	196	1	491465 269912
12	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901	A8NW (S)	233	1	491380 269854
13	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927 - 1938	A8NW (S)	234	1	491376 269853
14	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1888 - 1938	A18SW (NW)	250	1	491129 270607
15	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901 - 1938	A18SW (NW)	258	1	491147 270629
16	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1888	A13SE (SE)	267	1	491719 269955
17	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901	A14NW (E)	290	1	491812 270311
18	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901 - 1938	A14SW (E)	293	1	491840 270092
19	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Cement, lime & plaster products [manufacture] Date of Mapping: 1888	A14NW (E)	346	1	491860 270340
20	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901	A14SW (E)	347	1	491902 270129
21	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927 - 1938	A14SW (E)	350	1	491905 270127

Historical Land Use Information

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901 - 1938	A8NW (S)	352	1	491324 269739
23	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1887	A18SW (N)	365	1	491394 270779
24	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1887	A18SE (N)	366	1	491413 270781
25	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927 - 1938	A14SW (E)	380	1	491938 270175
26	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1888	A9NW (SE)	384	1	491746 269834
27	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Heap, unknown constituents Date of Mapping: 1989	A14SW (E)	407	1	491940 270031
28	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901 - 1958	A9NW (SE)	410	1	491803 269843
29	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901	A14NW (E)	432	1	491953 270345
30	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Heap, unknown constituents Date of Mapping: 1927	A14NW (E)	434	1	491960 270331
31	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901 - 1927	A18SW (N)	444	1	491302 270853
32	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927 - 1938	A14NW (NE)	463	1	491856 270584
33	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901	A19SW (NE)	483	1	491738 270784
34	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1887	A17SE (NW)	486	1	491028 270823
35	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1901	A19SW (NE)	505	1	491772 270783
36	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927 - 1938	A14SW (E)	506	1	492064 270184
37	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Clay bricks & tiles [manufacture] Date of Mapping: 1888	A12NW (W)	529	1	490708 270266
38	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1927 - 1938	A19SW (NE)	532	1	491749 270839
39	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Motor vehicles: maintenance & repair e.g. garages Date of Mapping: 1989	A7NE (SW)	540	1	490982 269692
40	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1887	A18NE (N)	549	1	491624 270928
41	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927	A19SW (NE)	586	1	491837 270833
42	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1888 - 1938	A8NE (SE)	590	1	491721 269589

Historical Land Use Information

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1927 - 1958	A14NW (E)	594	1	492054 270498
44	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1927 - 1938	A14SE (E)	644	1	492199 270112
45	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1888	A14NE (E)	646	1	492182 270338
46	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1958	A14SE (E)	675	1	492233 270185
47	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Factory or works - use not specified Date of Mapping: 1989	A7NE (SW)	675	1	490743 269707
48	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Factory or works - use not specified Date of Mapping: 1989	A7SE (SW)	682	1	490936 269555
49	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901	A9NE (SE)	694	1	492170 269844
50	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1958	A19NW (NE)	711	1	491888 270955
51	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1927	A18NW (N)	726	1	491363 271139
52	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Railways Date of Mapping: 1901 - 1989	A7NW (SW)	789	1	490523 269824
53	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Cement, lime & plaster products [manufacture] Date of Mapping: 1887	A19NW (NE)	860	1	491784 271197
53	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1901	A19NW (NE)	864	1	491783 271203
54	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1887	A23SW (N)	934	1	491387 271349
55	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1887	A23SE (N)	935	1	491579 271338
56	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927 - 1938	A3NW (S)	980	1	491129 269139
57	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1927	A23SE (N)	984	1	491655 271373
58	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: Mineral railway Date of Mapping: 1927	A23SW (N)	997	1	491280 271405
59	**Potentially Contaminative Industrial Uses (Past Land Use)** Use: General quarrying Date of Mapping: 1927 - 1938	A23SW (N)	1000	1	491319 271411
60	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A13SE (SE)	0	1	491497 270165
61	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A13NE (N)	117	1	491397 270531
62	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A13SW (S)	135	1	491343 269956

Historical Land Use Information

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
63	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A8NE (S)	196	1	491465 269912
64	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A13SE (SE)	267	1	491719 269955
65	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A14NW (E)	290	1	491812 270311
66	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A9NW (SE)	384	1	491746 269834
67	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A9NW (SE)	410	1	491803 269843
68	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A14NW (E)	432	1	491953 270345
69	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A19SW (NE)	483	1	491738 270784
70	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A14SW (SE)	496	1	492002 269952
71	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A12NW (W)	529	1	490708 270266
72	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A19SW (NE)	532	1	491749 270839
73	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A18NE (N)	549	1	491624 270928
74	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A14NW (E)	594	1	492054 270498
75	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A14SE (E)	644	1	492199 270112
76	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A14NE (E)	646	1	492182 270338
77	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A18NW (N)	726	1	491363 271139
78	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A19NW (NE)	734	1	491896 270979
79	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A19NW (NE)	864	1	491783 271203
80	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A23SE (N)	935	1	491579 271338
81	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A23SW (N)	1000	1	491319 271411

Historical Map List

No Historical Building Plans information available.

The following mapping has been analysed for Historical Land Use Information:

1:10,560	Mapsheet	Published Date
Northamptonshire	032_SE	1887
Northamptonshire	039_NE	1888
Northamptonshire	032_SE	1901
Northamptonshire	039_NE	1901
Northamptonshire	032_SE	1927
Northamptonshire	039_NE	1927
Northamptonshire	032_SE	1938
Northamptonshire	039_NE	1938
1:10,000	**Mapsheet**	**Published Date**
Ordnance Survey Plan	SP96NW	1989
Ordnance Survey Plan	SP97SW	1995

The following mapping has been analysed for Historical Tanks and Energy Facilities:

1:2,500	Mapsheet	Published Date
Ordnance Survey Plan	SP9170	1972
Ordnance Survey Plan	SP9169	1974

Useful Contacts and Further Information

Contact	Name and Address	Contact Details
1	**Landmark Information Group Limited** 5 - 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Telephone: 01392 441761 Fax: 01392 441709 Email: cssupport@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Historical Building Plans Information

This data set contains potentially contaminative features such as asbestos, petrol, oil and tanks captured from Historical Building Plans. The Historical Building Plans were produced by the London-based firm Charles E. Goad Ltd. as fire insurance plans, dating back to 1885. The firm ceased production of fire insurance plans in 1970. Most of the important towns and cities of the British Isles are covered. Historical Building Plans are usually at the scales of 1:480 (1 inch to 40 feet) for the British Isles. They were updated every 5-6 years by means of revision sheets designed to be pasted on to the original plans.

It should be noted that Historical Building Plans are only available for certain major towns and cities and in some cases there may only be partial coverage of the search area. It cannot therefore be assumed that the absence of responses under the Historical Building Plans section of this report indicates that no hazards exist. Please check the Historical Building Plans Map List table in the Historical Map List section of this report to establish if Historical Building Plans are available for this search area.

Historical Land Use Information

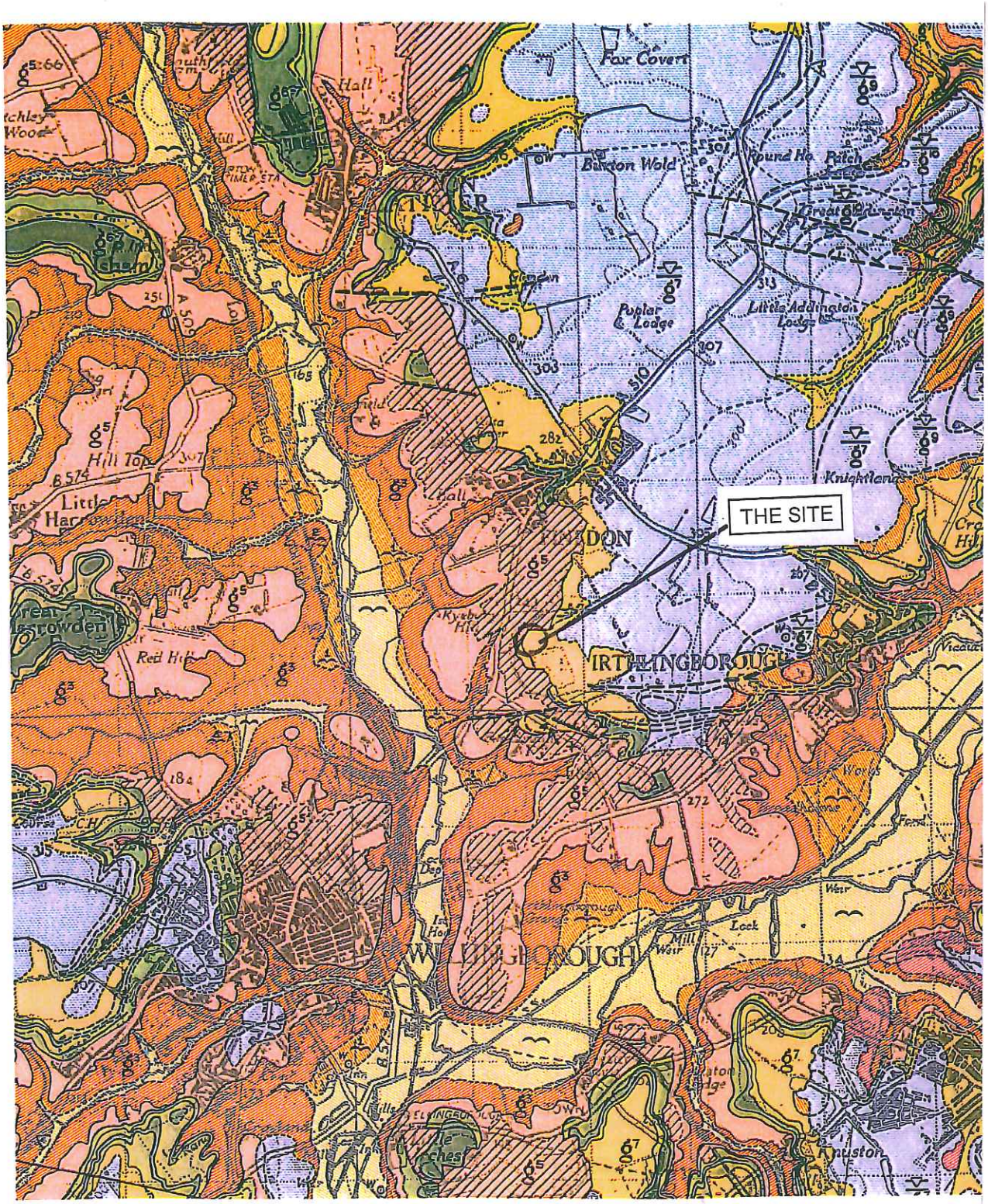
Landmark's Historical Land Use Data is the result of combined analysis of historical map data captured at 1:10,560 and 1:10,000. A unique comprehensive database of Historic Land Use from the 1840's to 1996 it includes 67 different types of potent contaminated past industrial land use. This entailed analysing over 60,000 maps and is drawn from at least four, and up to six historical map editions. In addition a seventh layer was also created, known as the land use layer, containing areas of infilled land which are plotted via comparison between two or more map editions.

Historical Tanks and Energy Facilities

In addition to HLUD, additional analysis uncovered some of the most dangerous sources of contamination (past and present tanks, petrol storage, oil, gas, electricity, miscellaneous facilities). This data set covers over 390,000 Historical Tanks and Energy facilities in Great Britain and was captured from post war 1:2500 and 1:1250 Ordnance Survey historical mapping covering a period from 1943 to 1996.

Appendix C

Geological Map



Status: PRELIMINARY		Project: SIDEGATE LANE LANDFILL NORTHAMPTONSHIRE	
Scales: 1:50,000	Original Size: A4		
Height Datum: N/A	Grid: N/A	Title: GEOLOGICAL MAP ABSTRACT	
Filename:			
© Copyright reserved			

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Aston Cross Business Village
50 Rocky Lane
Aston
Birmingham B6 5RQ
United Kingdom
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Fax: +44 (0)870 000 3907

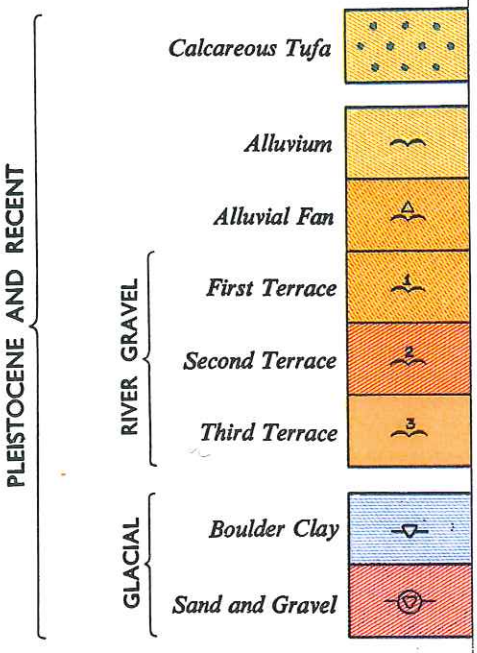
Drawing No.	Project No.	Issue
G002	BM01213	P1

50mm on Original

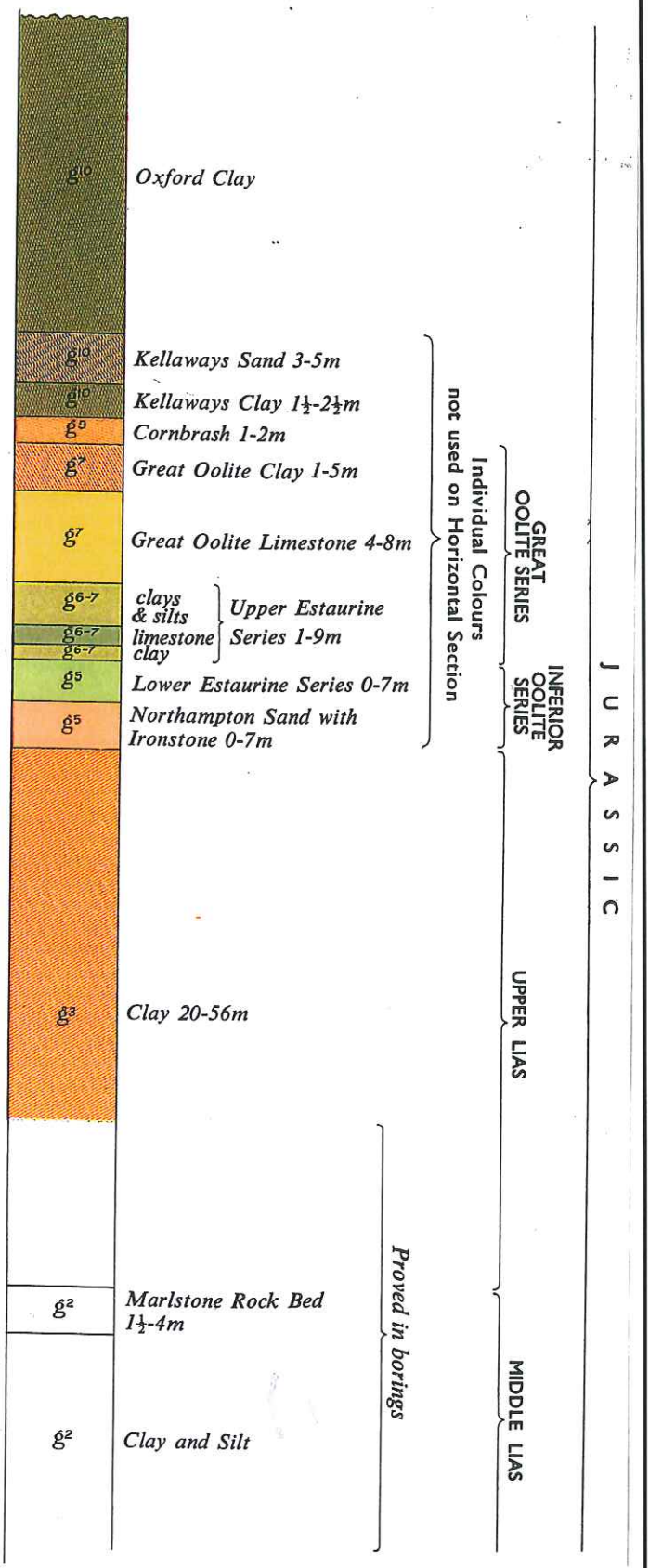
GENERALIZED STRATIGRAPHICAL SECTION

Scale: 1cm to 5metres

INDEX AND EXPLANATION



- Dip of Strata, the angle in degrees
- Horizontal strata
- Anticline
- Geological boundary (Solid)
- Fault, the crossmark on the downthrow side
  Broken lines denote uncertainty
- Geological boundary (Drift)
- Well or boring for water
- Worked out opencast ironstone area



Status: PRELIMINARY		Project: SIDEGATE LANE LANDFILL NORTHAMPTONSHIRE	Hyder Consulting (UK) Limited, Aston Cross Business Village, 50 Rocky Lane, Aston, Birmingham B6 5RQ, United Kingdom. Tel: +44 (0)870 000 3007 Fax: +44 (0)870 000 3907
Scales: As Shown	Original Size: A4	Title: GEOLOGICAL STRATIGRAPHICAL COLUMN	Drawing No.: G003 — Project No.: BM01213 — Issue: P1
Height Datum: N/A	Grid: N/A		
Filename:			

50mm on Original

Appendix D

Tier 1 Risk Assessment – Contamination Test Results

BM01213 Sidegate Lane
Commercial/industrial land

Sample Identity	Method Code	LoD/Units	BH 1	BH 2	BH 3	BH 3	TP 1	TP 2	TP 5	TP 6	Min	Max	Source	Guidelines (G)	Mean Value Test								Maximum Value Test			Outliers
															Mean	Geomean	Stdev	t	sample no	sqrt sample no	Upper 95th Percentile	Upper 95th Percentile > G?	T	10% Critical Value	T> 10% Critical Value?	
Depth (m)			0.70	1.00	0.60	2.00	1.30m-1.50m	1.00	0.30-0.50	0.20-0.50																
Sample Type			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL																
Arsenic 1	30/30C	mg/kg	34	23	15	15	24	14	30	24	14	34	SGV	500	22.38	21.31	7.35	1.812	8	2.83	27.08	No				
Arsenic 1 (log)			1.53148	1.36173	1.17609	1.17609	1.38021	1.14613	1.47712	1.38021	1.14612804	1.53147892			1.33	1.32	0.15		8	2.83	1.33		1.39	2.09	No	
Cadmium 1	30	mg/kg	0.5	0.68	7.3	0.5	0.5	1	0.5	0.5	0.5	7.3	SGV	1400	1.44	0.79	2.38	1.812	8	2.83	2.96	No				
Cadmium 1 (log)			-0.30103	-0.16749	0.86332	-0.30103	-0.30103	0.00000	-0.30103	-0.30103	-0.30103	0.86332286			-0.10	#NUM!	0.40		8	2.83	-0.10		2.39	2.09	Yes	
Chromium 1	30	mg/kg	120	74.0	51.0	16.0	42.0	59	52	35	16	120	SGV	5000	56.13	48.90	30.95	1.812	8	2.83	75.96	No				
Chromium 1 (log)			2.07918	1.86923	1.70757	1.20412	1.62325	1.77085	1.71600	1.54407	1.20411998	2.07918125			1.69	1.67	0.25		8	2.83	1.69		1.53	2.09	No	
Copper 1	30	mg/kg	24	42	420	33	29	98	23	19	19	420	CLEA	46300	86.00	45.16	137.32	1.812	8	2.83	173.97	No				
Copper 1 (log)			1.38021	1.62325	2.62325	1.51851	1.46240	1.99123	1.36173	1.27875	1.2787536	2.62324929			1.65	1.61	0.45		8	2.83	1.65		2.16	2.09	Yes	
Mercury 1	30C	mg/kg	0.25	0.25	0.25	0.25	0.25	0.68	26	21	0.25	26	SGV	4808	6.12	0.88	10.81	1.812	8	2.83	13.04	No				
Mercury 1 (log)			-0.60206	-0.60206	-0.60206	-0.60206	-0.60206	-0.16749	1.41497	1.32222	-0.60206	1.41497335			-0.06	#NUM!	0.89		8	2.83	-0.06		1.65	2.09	No	
Nickel 1	30	mg/kg	55.0	32.0	22.0	15.0	28.0	43	0.3	0.3	0.3	55	SGV	5000	24.45	9.44	19.30	1.812	8	2.83	36.82	No				
Nickel 1 (log)			1.74036	1.50515	1.34242	1.17609	1.44716	1.63347	-0.52288	-0.52288	-0.5228787	1.74036269			0.97	#NUM!	0.84		8	2.83	0.97		0.81	2.09	No	
Selenium 1	30C	mg/kg	0.53	0.54	0.59	0.3	0.3	0.3	98	74	0.3	98	SGV	8000	21.82	1.65	40.13	1.812	8	2.83	47.53	No				
Selenium 1 (log)			-0.27572	-0.26761	-0.22915	-0.52288	-0.52288	-0.52288	1.99123	1.86923	-0.5228787	1.99122608			0.19	#NUM!	1.06		8	2.83	0.19		N/A	N/A	N/A	
Zinc 1	30	mg/kg	240.0	180.0	110.0	36.0	140.0	480	5	5	5	480	CLEA	325000	149.50	64.17	157.95	1.86	8	2.83	253.37	No				
Zinc 1 (log)			2.38021	2.25527	2.04139	1.55630	2.14613	2.68124	0.69897	0.69897	0.69897	2.68124124			1.81	1.62	0.75		8	2.83	1.81		1.16	1.98	No	
Lead 1	30	mg/kg	110	160	65	25	130	160	0.25	0.25	0.25	160	SGV	750	81.31	20.96	67.78	1.812	8	2.83	64.38	No				
Lead 1 (log)			2.04139	2.20412	1.81291	1.39794	2.11394	2.20412	-0.60206	-0.60206	-0.60206	2.20411998			1.32	#NUM!	1.22		8	2.83	#NUM!		#NUM!	2.09	#NUM!	

Notes
SGV - Soil Guideline Vlaues (based on commercial/industrial land use)
CLEA - Generic Assessment Criteria
SFTL - State of Florida Soil Clean Up Target Levels (commercial / industrial)
SARL - State of Arizona Soil Remediation Levels (Non-residential)

N/S- Not scheduled

Author	S Berry
Checker	R Dodds

BM01213 Sidegate Lane
Commercial/industrial land

Sample Identity	Method Code	Lod/Units	BH 1	BH 2	BH 3	BH 3	TP 1	TP 2	TP 5	TP 5	Min	Max	Source	Guidelines (G)	Mean Value Test								Maximum Value Test			Outliers
															Mean	Geomean	Stdev	t	sample no	sqrt sample no	Upper 95th Percentile	Upper 95th Percentile > G?	T	10% Critical Value	T> 10% Critical Value?	
Depth (m)			0.70	1.00	0.60	2.00	1.30-1.50	1.00	0.30-0.50	0.20-0.50																
Sample Type			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL																
Aliphatics >C6-C8	304	mg/kg	N/S	0.14	N/S	0.13	0.12	0.23	N/S	N/S	0.12	0.23	CLEA	1.55E+02	0.16		0.05	1.943	4	2.00	0.20	No				
Aliphatics >C6-C8 (log)			#VALUE!	-0.85387	#VALUE!	-0.88606	-0.92082	-0.63827	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.943	4	2.00	#VALUE!		N/A	N/A	N/A	
Aliphatics >C8-C10	304	mg/kg	N/S	0.13	N/S	0.13	0.12	0.39	N/S	N/S	0.12	0.39	CLEA	3.19E+01	0.19		0.13	1.86	4	2.00	0.32	No				
Aliphatics >C8-C10 (log)			#VALUE!	-0.88606	#VALUE!	-0.88606	-0.92082	-0.40894	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aliphatics >C10-C12	317EPH	mg/kg	N/S	9.4	N/S	1.3	8.1	19	N/S	N/S	1.3	19	CLEA	3.10E+04	9.45		7.29	1.86	4	2.00	16.23	No				
Aliphatics >C10-C12 (log)			#VALUE!	0.97313	#VALUE!	0.11394	0.90849	1.27875	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aliphatics >C12-C16	317EPH	mg/kg	N/S	29	N/S	1.3	17	47	N/S	N/S	1.3	47	CLEA	3.10E+04	23.58		19.30	1.86	4	2.00	41.52	No				
Aliphatics >C12-C16 (log)			#VALUE!	1.46240	#VALUE!	0.11394	1.23045	1.67210	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aliphatics >C16-C21	317EPH	mg/kg	N/S	43	N/S	1.3	24	84	N/S	N/S	1.3	84	CLEA	6.20E+05	38.08		35.04	1.86	4	2.00	70.66	No				
Aliphatics >C16-C21 (log)			#VALUE!	1.63347	#VALUE!	0.11394	1.38021	1.92428	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aliphatics >C21-C40	317EPH	mg/kg	N/S	94	N/S	1.3	120	420	N/S	N/S	1.3	420	CLEA	6.20E+05	158.83		181.42	1.86	4	2.00	327.54	No				
Aliphatics >C21-C40 (log)			#VALUE!	1.97313	#VALUE!	0.11394	2.07918	2.62325	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Total Aliphatics (>C6to C40)	304/317EPH	mg/kg	N/S	170	N/S	6.30000	170.00000	570.00000	N/S	N/S	6.3	570														
Aromatics C6-C7	304	mg/kg	N/S	0.013	N/S	0.013	0.012	0.056	N/S	N/S	0.012	0.056	CLEA	2.57E+01	0.02		0.02	1.943	4	2.00	0.04	No				
Aromatics C6-C7 (log)			#VALUE!	-1.88606	#VALUE!	-1.88606	-1.92082	-1.25181	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.943	4	2.00	#VALUE!		N/A	N/A	N/A	
Aromatics >C7-C8	304	mg/kg	N/S	0.016	N/S	0.013	0.012	0.056	N/S	N/S	0.012	0.056	CLEA	2.71E+01	0.02		0.02	1.943	4	2.00	0.04	No				
Aromatics >C7-C8 (log)			#VALUE!	-1.79588	#VALUE!	-1.88606	-1.92082	-1.25181	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.943	4	2.00	#VALUE!		N/A	N/A	N/A	
Aromatics >C8-C10	304	mg/kg	N/S	0.13	N/S	0.13	0.12	0.32	N/S	N/S	0.12	0.32	CLEA	5.00E+01	0.18		0.10	1.86	4	2.00	0.27	No				
Aromatics >C8-C10 (log)			#VALUE!	-0.88606	#VALUE!	-0.88606	-0.92082	-0.49485	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aromatics >C10-C12	317EPH	mg/kg	N/S	18	N/S	1.3	15	20	N/S	N/S	1.3	20	CLEA	2.63E+02	13.58		8.44	1.86	4	2.00	21.42	No				
Aromatics >C10-C12 (log)			#VALUE!	1.25527	#VALUE!	0.11394	1.17609	1.30103	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aromatics >C12-C16	317EPH	mg/kg	N/S	27	N/S	1.3	21	52	N/S	N/S	1.3	52	CLEA	1.24E+04	25.33		20.90	1.86	4	2.00	44.76	No				
Aromatics >C12-C16 (log)			#VALUE!	1.43136	#VALUE!	0.11394	1.32222	1.71600	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aromatics >C16-C21	317EPH	mg/kg	N/S	40	N/S	1.3	44	92	N/S	N/S	1.3	92	CLEA	9.30E+03	44.33		37.16	1.86	4	2.00	78.88	No				
Aromatics >C16-C21 (log)			#VALUE!	1.60206	#VALUE!	0.11394	1.64345	1.96379	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Aromatics >C21-C40	317EPH	mg/kg	N/S	81	N/S	1.3	240	320	N/S	N/S	1.3	320	CLEA	9.30E+03	160.58		145.40	1.86	4	2.00	295.80	No				
Aromatics >C21-C40 (log)			#VALUE!	1.90849	#VALUE!	0.11394	2.38021	2.50515	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.86	4	2.00	#VALUE!		#VALUE!	1.977	#VALUE!	
Total Aromatics (>C6-C40)	304/317EPH	mg/kg	N/S	170.00000	N/S	6.30000	320.00000	480.00000	N/S	N/S	6.3	480							4	2.00						
Benzene (VOC)	327	mg/kg	N/S	0.13000	N/S	N/S	0.12000	0.13000	N/S	N/S	0.12	0.13	CLEA	1.66	0.13		0.01	1.833	3	1.73	0.13					
Benzene (VOC) (log)			#VALUE!	-0.88606	#VALUE!	#VALUE!	-0.92082	-0.88606	#VALUE!	#VALUE!	#VALUE!	#VALUE!							3	1.73				1.977		
Toluene (VOC)	327	mg/kg	N/S	0.13	N/S	N/S	0.12	0.13	N/S	N/S	0.12	0.13	SGV	150	0.13		0.01	1.833	3	1.73	0.13	No				
Toluene (VOC) (log)			#VALUE!	-0.88606	#VALUE!	#VALUE!	-0.92082	-0.88606	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	
Ethylbenzene (VOC)	327	mg/kg	N/S	0.13	N/S	N/S	0.12	0.13	N/S	N/S	0.12	0.13	SGV	48000	0.13		0.01	1.833	3	1.73	0.13	No				
Ethylbenzene (VOC) (log)			#VALUE!	-0.88606	#VALUE!	#VALUE!	-0.92082	-0.88606	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	
mp-Xylene (VOC)	327	mg/kg	N/S	0.26	N/S	N/S	0.24	0.21	N/S	N/S	0.21	0.26	CLEA	1.43E+02	0.24		0.03	1.833	3	1.73	0.26	No				
mp-Xylene (VOC) (log)			#VALUE!	-0.58503	#VALUE!	#VALUE!	-0.61979	-0.67778	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	
o-Xylene (VOC)	327	mg/kg	N/S	0.11	N/S	N/S	0.12	0.11	N/S	N/S	0.11	0.12	CLEA	1.70E+02	0.11		0.01	1.833	3	1.73	0.12	No				
o-Xylene (VOC) (log)			#VALUE!	-0.95861	#VALUE!	#VALUE!	-0.92082	-0.95861	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	
Tetrachloroethene	327	mg/kg	N/S	0.13	N/S	N/S	0.12	0.13	N/S	N/S	0.12	0.13	SFTL	18	0.13		0.01	1.833	3	1.73	0.13	No				
Tetrachloroethene (log)			#VALUE!	-0.88606	#VALUE!	#VALUE!	-0.92082	-0.88606	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	
1.2.4-Trimethylbenzene	327	mg/kg	N/S	0.13	N/S	N/S	0.12	0.13	N/S	N/S	0.12	0.13	SFTL	95	0.13		0.01	1.833	3	1.73	0.13	No				
1.2.4-Trimethylbenzene (log)			#VALUE!	-0.88606	#VALUE!	#VALUE!	-0.92082	-0.88606	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	
1.3.5-Trimethylbenzene	327	mg/kg	N/S	0.13	N/S	N/S	0.12	0.13	N/S	N/S	0.12	0.13	SFTL	80	0.13		0.01	1.833	3	1.73	0.13	No				
1.3.5-Trimethylbenzene (log)			#VALUE!	-0.88606	#VALUE!	#VALUE!	-0.92082	-0.88606	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	
Trichloroethene	327	mg/kg	N/S	0.13	N/S	N/S	0.12	0.13	N/S	N/S	0.12	0.13	SFTL	9.3	0.13		0.01	1.833	3	1.73	0.13	No				
Trichloroethene (log)			#VALUE!	-0.88606	#VALUE!	#VALUE!	-0.92082	-0.88606	#VALUE!	#VALUE!	#VALUE!	#VALUE!			#VALUE!		#VALUE!	1.833	3	1.73	#VALUE!		#VALUE!	2.04	#VALUE!	

Notes
SGV - Soil Guideline Vlaues (based on commercial/industrial land use)
CLEA - Generic Assessment Criteria
SFTL - State of Florida Soil Clean Up Target Levels (commercial / industrial)
SARL - State of Arizona Soil Remediation Levels (Non-residential)

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BM01213 Sidegate Lane Landfill
Commercial land- PAH / SVOC / Phenol - ALL

															Mean Value Test								Maximum Value Test			Outliers
Sample Identity	Method Code	LoD/Units	BH 1	BH 2	BH 3	BH 3	TP 1	TP 2	TP 5	TP 6	Min	Max	Source	Guidelines (G)	Mean	Geomean	Stdev	t	sample no	sqrt sample no	Upper 95th Percentile	Upper 95th Percentile > G?	T	10% Critical Value	T> 10% Critical Value?	
Depth (m)			0.7	1.0	0.6	2.0	1.30-1.50	1.0	0.30-0.50	0.20-0.50																
Sample Type			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL																
PAH by GCMS																										
Naphthalene	307	mg/kg	0.77	0.87	0.63	0.92	1.4	1.9	0.51	0.6	0.51	1.9	CLEA	2.90E+02	0.95	0.48	0.48	1.753	8	2.83	1.25	No				
Naphthalene (log)			-0.11351	-0.06048	-0.20666	-0.03621	0.14613	0.27875	-0.29243	-0.22185	-0.20065945	0.2787536			0.00	0.18	0.18	1.753	8	2.83	0.11		N/A	N/A	N/A	N/A
Acenaphthylene	307	mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	CLEA	6610	0.50	0.00	0.00	1.753	8	2.83	0.50	No				
Acenaphthylene (log)			-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103			-0.30		0.00	0.00	1.753	8	2.83	-0.30		N/A	N/A	N/A	N/A
Acenaphthene	307	mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	CLEA	88900	0.50	0.00	0.00	1.753	8	2.83	0.50	No				
Acenaphthene (log)			-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103			-0.30		0.00	0.00	1.753	8	2.83	-0.30		N/A	N/A	N/A	N/A
Fluorene	307	mg/kg	0.5	0.5	0.5	0.5	0.5	0.51	0.5	0.5	0.5	0.51	CLEA	57500	0.50	0.00	0.00	1.753	8	2.83	0.50	No				
Fluorene (log)			-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.29243	-0.30103	-0.30103	-0.29242982			-0.30		0.00	0.00	1.753	8	2.83	-0.30		N/A	N/A	N/A	N/A
Phenanthrene	307	mg/kg	3.7	0.87	0.5	0.5	4.7	1.8	0.5	0.51	0.5	4.7	CLEA	57500	1.64	1.79	1.79	1.753	8	2.83	2.77	No				
Phenanthrene (log)			0.56820	-0.06048	-0.30103	-0.30103	0.67210	0.25527	-0.30103	-0.29243	0.67209786			0.14		0.43	0.43	1.753	8	2.83	0.20		N/A	N/A	N/A	N/A
Anthracene	307	mg/kg	0.92	0.5	0.5	0.5	1.4	0.5	0.5	0.5	0.5	1.4	CLEA	431000	0.67	0.37	0.37	1.753	8	2.83	0.71	No				
Anthracene (log)			-0.03621	-0.30103	-0.30103	-0.30103	0.14613	-0.30103	-0.30103	-0.30103	0.14612804			-0.18		0.19	0.19	1.753	8	2.83	-0.17		N/A	N/A	N/A	N/A
Fluoranthene	307	mg/kg	5	1.2	0.5	0.5	12	2.4	0.5	0.5	0.5	12	CLEA	57500	2.83	4.45	4.45	1.753	8	2.83	9.82	No				
Fluoranthene (log)			0.69897	0.07918	-0.30103	-0.30103	1.07918	0.38021	-0.30103	-0.30103	1.07918125			0.27		0.55	0.55	1.753	8	2.83	0.38		N/A	N/A	N/A	N/A
Pyrene	307	mg/kg	4.8	1.2	0.5	0.5	11	2.4	0.5	0.5	0.5	11	CLEA	43100	2.68	4.06	4.06	1.753	8	2.83	8.50	No				
Pyrene (log)			0.68124	0.07918	-0.30103	-0.30103	1.04139	0.38021	-0.30103	-0.30103	1.04139269			0.26		0.54	0.54	1.753	8	2.83	0.37		N/A	N/A	N/A	N/A
Benz (a) anthracene	307	mg/kg	1.8	0.5	0.5	0.5	4.6	0.69	0.5	0.5	0.5	4.6	CLEA	287	1.20	1.63	1.63	1.753	8	2.83	2.14	No				
Benz (a) anthracene (log)			0.25527	-0.30103	-0.30103	-0.30103	0.66276	-0.16115	-0.30103	-0.30103	0.66275783			-0.02		0.40	0.40	1.753	8	2.83	0.03		N/A	N/A	N/A	N/A
Chrysene	307	mg/kg	1.6	0.5	0.5	0.5	5.7	0.98	0.5	0.5	0.5	5.7	CLEA	2870	1.35	2.04	2.04	1.753	8	2.83	2.82	No				
Chrysene (log)			0.20412	-0.30103	-0.30103	-0.30103	0.75587	-0.00877	-0.30103	-0.30103	0.75587486			0.01		0.42	0.42	1.753	8	2.83	0.07		N/A	N/A	N/A	N/A
Benzo (b) fluoranthene	307	mg/kg	1.9	0.5	0.5	0.5	5.2	1.4	0.5	0.5	0.5	5.2	CLEA	287	1.38	1.83	1.83	1.753	8	2.83	2.56	No				
Benzo (b) fluoranthene (log)			0.27875	-0.30103	-0.30103	-0.30103	0.71600	0.14613	-0.30103	-0.30103	0.71600334			0.04		0.42	0.42	1.753	8	2.83	0.10		N/A	N/A	N/A	N/A
Benzo (k) fluoranthene	307	mg/kg	1.1	0.5	0.5	0.5	2.6	0.5	0.5	0.5	0.5	2.6	CLEA	287.00	0.84	0.84	0.84	1.753	8	2.83	1.09	No				
Benzo (k) fluoranthene (log)			0.04139	-0.30103	-0.30103	-0.30103	0.41497	-0.30103	-0.30103	-0.30103	0.41497335			-0.12		0.30	0.30	1.753	8	2.83	-0.09		N/A	N/A	N/A	N/A
Benzo (a) pyrene	307	mg/kg	2.4	0.7	0.5	0.5	5.2	0.85	0.5	0.5	0.5	5.2	CLEA	28.70	1.39	1.86	1.86	1.753	8	2.83	2.62	No				
Benzo (a) pyrene (log)			0.38021	-0.15490	-0.30103	-0.30103	0.71600	-0.07058	-0.30103	-0.30103	0.71600334			0.04		0.41	0.41	1.753	8	2.83	0.11		N/A	N/A	N/A	N/A
Indeno (123cd) pyrene	307	mg/kg	1.7	0.5	0.5	0.5	4.9	1.2	0.5	0.5	0.5	4.9	CLEA	287	1.29	1.71	1.71	1.753	8	2.83	2.33	No				
Indeno (123cd) pyrene (log)			0.23045	-0.30103	-0.30103	-0.30103	0.69020	0.07918	-0.30103	-0.30103	0.69019608			0.02		0.40	0.40	1.753	8	2.83	0.07		N/A	N/A	N/A	N/A
Dibenzo (ah) anthracene		mg/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	CLEA	28.7	0.50	0.00	0.00	1.753	8	2.83	0.50	No				
Dibenzo (ah) anthracene (log)			-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103	-0.30103			-0.30		0.00	0.00	1.753	8	2.83	-0.30		N/A	N/A	N/A	N/A
Benzo (ghi) perylene		mg/kg	2.1	0.51	0.5	0.5	5.4	0.98	0.5	0.5	0.5	5.4	CLEA	43100	1.37	1.93	1.93	1.753	8	2.83	2.69	No				
Benzo (ghi) perylene (log)			0.32222	-0.29243	-0.30103	-0.30103	0.73239	-0.00877	-0.30103	-0.30103	0.73239376			0.03		0.43	0.43	1.753	8	2.83	0.09		N/A	N/A	N/A	N/A

Notes
SGV - Soil Guideline Vlaues (based on commercial/industrial land use)
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SFTL - State of Florida Soil Clean Up Target Levels (commercial / industrial)
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Appendix B

Sidegate Lane Landfill, Phase 1 Site Investigation Report for Proposed RDF Facility. Terraconsult, 2012.

TerraConsult

MAY 2012
Report No 1601/01

SIDEGATE LANE LANDFILL, WELLINGBOROUGH, NORTHAMPTONSHIRE

PHASE 1 SITE INVESTIGATION REPORT FOR PROPOSED RDF FACILITY

Carried out for:

SITA (UK) LTD

TerraConsult

SIDEGATE LANE LANDFILL, WELLINGBOROUGH, NORTHAMPTONSHIRE

PHASE 1 SITE INVESTIGATION REPORT FOR PROPOSED RDF FACILITY

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Issue History

Issue	Status	Date	Prepared By	Signature	Date
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			Checked By: M Hamill BSc	*M Hamill*	**24/05/2012**
			Approved By: C. S. Eccles FGS CGeol CSci C Env UK Registered Ground Engineering Advisor silc SPECIALIST IN LAND CONDITION Chris Eccles Reg. No 115s	*C S Eccles*	**24/05/2012**

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This consultancy contract was completed by TerraConsult Ltd on the basis of a defined programme and scope of works and terms and conditions agreed with the client. This report was compiled with all reasonable skill, and care, bearing in mind the project objectives, the agreed scope of works, the prevailing site conditions, the budget, the degree of manpower and resources allocated to the project as agreed.

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SIDEGATE LANE LANDFILL, WELLINGBOROUGH, NORTHAMPTONSHIRE

PHASE 1 INVESTIGATION REPORT FOR PROPOSED RDF FACILITY

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Appendix C Site Photographs
Appendix D Envirocheck Report
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SIDEGATE LANE LANDFILL, WELLINGBOROUGH, NORTHAMPTONSHIRE

PHASE 1 INVESTIGATION REPORT FOR PROPOSED RDF FACILITY

1 INTRODUCTION

1.1 Background Information

1.1.1 TerraConsult Limited was commissioned by SITA (UK) Ltd to carry out a preliminary site investigation and flood risk assessment for an area of land at the western side of their Sidegate Lane Landfill, Near Wellingborough, Northamptonshire. The purpose of the report is to provide preliminary information on conditions at the site using published information as part of the planning process prior to construction of a facility to produce Refuse Derived Fuel (RDF) and for treating road sweepings.

1.1.2 This report has been devised to generally comply with the relevant principles and requirements of a wide range of guidance including:

- Part IIA of the Environment Protection Act, 1990;
- Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, April 2012);
- National Planning Policy Framework, March 2012;
- BS5930:1999 as amended 2010: "Code of practice for site investigations;"
- BS10175: 2011 "Investigation of Potentially Contaminated Sites - Code of Practice;"
- DEFRA/Environment Agency (2004) Report CLR11 "Model Procedures for the Management of Land Contamination;"
- Environment Agency (2011) Report GPLC1 "Guiding Principles for Land Contamination;
- BS8533: 2011 "Assessing and managing flood risk in development – Code of practice."

1.1.3 TerraConsult's service constraints and report limitations are presented in Appendix A and a description of environmental risk assessment methodology and terminology is presented in Appendix B.

1.2. Previous Investigations

1.2.1 A previous site investigation has been carried out within the area immediately to the north of the proposed development. SITA also have a number of monitoring wells in the vicinity of the development. The findings of the investigation and the monitoring results are discussed in Section 4 of this report.

1.3. Development Proposals and Planning Status

1.3.1 The proposed development of the site is summarised below:

- The demolition or removal of all existing temporary buildings;
- Earthworks in the south eastern part of the development area in order to create a wider level area for the development;
- Construction of a new building approximately 90 m by 40 m in plan, which will house:
  - a RDF facility (produces bailed RDF, organic fines);
  - a road sweepings treatment facility, so the majority of these can be recycled;
- Soils treatment facility to enable the recovery and reuse of soils which might otherwise go to landfill;
- Construction of new offices and welfare facilities for the site;
- New weighbridge facility for the site;
- Increased area of concrete hard standing around the above facilities.

1.3.2 It is understood that SITA will be applying for planning permission for the development in June 2012. This application will follow the requirements of the National Planning Policy Framework (2012) and its twelve core principals; two of which directly relate to potential for pollution and contaminated land:

- Requirement for *"conserving and enhancing the natural environment and reduce pollution"* and setting out a preference for developments to be on land of "*lesser environmental value*"; and
- to encourage the effective use of land by re-using land that has been previously been developed (brownfield land), providing that it is not of high environmental value.

1.3.3 In accordance with these core principals, Clause 109 clarifies that enhancing the natural environment includes preventing:

- *"preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*.

1.3.4 Clause 121 states that developments should also ensure that:

- *"the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;*
- *after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and*
- *adequate site investigation information, prepared by a competent person, is presented."*.

1.3.5 The development follows the core principals of developing land of 'lesser environmental value' and by re-using land that has been previously developed (brownfield land). This report is the first stage of the process to demonstrate that the requirements of Clauses 109 and 121 can be met.

1.3.6 The findings and conclusions of the risk assessments have been set out and recommendations given for the proposed end use of industrial units. If there is a subsequent change in the proposed land use, the risk assessments and conclusions should be reviewed to determine whether they are still applicable.

1.4 Objectives of the Investigation

1.4.1 The main objectives of the investigation were to meet the requirements above, and to provide information for planning purposes and for design of the development. The specific activities carried out are as follows:

- undertake a desk study of available information to include a review of existing reports and history of the site;
- carry out a site walk over;
- review existing site investigation and environmental information for the site;
- develop a preliminary conceptual site model and refine this according to the findings of the investigation;
- assess the stability of the site due to historic mining/quarrying;

- provide preliminary geotechnical information on the ground conditions for foundation and floor slab design;
- provide recommendations for intrusive site investigation and laboratory testing;
- carry out a flood risk assessment.

2 SITE LOCATION AND DESCRIPTION

2.1 Site Location

2.1.1 The site is located approximately on the western side of the Sidegate Lane Landfill, which is to the north east of Wellingborough, Northamptonshire. The approximate National Grid Reference for the development site is SP 915 703. The site location is shown on Figure 1 below.

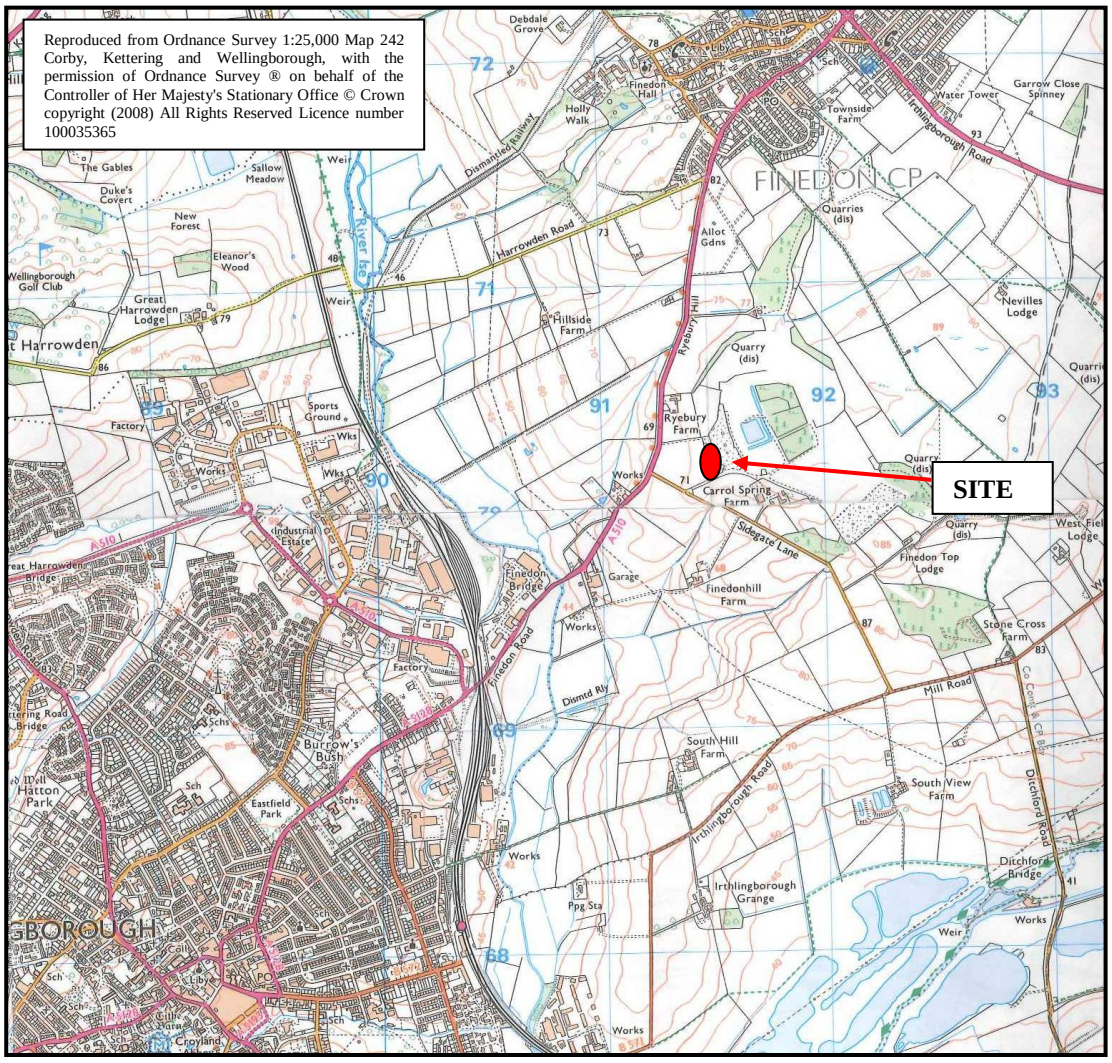

Figure 1: Site Location

2.2 Site Description

2.2.1 A site visit was undertaken on 26th April 2012. The locations of various features are detailed on Drawing No. 1601/1/001. Photographs of the site are presented in Appendix C.

Table 1: Summary of Description of the Site and its Environs	
Site Area and Shape	The site has maximum plan dimensions of 320 m by 70 m and is approximately 2.5 ha in area. The site is irregular in shape but its long axis runs approximately north-south. It is located at Grid Reference SP 915 703. Postcode is NN8 1RN.
Topography	The elevation for most of the area is at approximately 73 to 76 mOD with the elevation being slightly higher in the northern part of the main area of the site. The south eastern part of the site slopes upwards to the east and is the screening bund to Sitegate Lane landfill. Drawing 1601/1/001 gives further detail.
Current Use:	The majority of the northern part of the site is not in use, other than for open storage of waste skips awaiting use (Photo 2 and 11), although there are limited storage of pallets, woodchip and a small pile of compost. In the southern half of the site there is more open storage, car parking, temporary offices and steel storage containers.
Access	Access is via the main landfill asphalted roadway, direct from Sidegate Lane (Photo 1). Access to the development area is from the south.
Existing Buildings& Structures	In the southern part of the site there are a number of temporary office buildings (Photo 1 and 6). In the northern half of the site there is a lagoon which is about 35 m by 12 m in plan (Photo 4 and 12). The lagoon is lined with HDPE and is fenced off.
Site Surface	The southern site access road (Photo 1), the site road running from the south to the composting pad and the car parking area are asphalt. In the southern part of the site, half the area is surfaced with compact gravel (Photo 7) and part of it is unmade ground of woodchip and hardcore (Photo 9). The northern area of the former compost pad is concrete.
Vegetation	The south eastern part of the development area is currently the western screening bund to the landfill site. This area slopes upwards to the west and has long grass and relatively young deciduous trees (Photo 5 and 10).
Storage Tanks	Below Ground Tanks: No evidence/none suspected. Above Ground Tanks: None present.
Services	A number of foul service covers were noted. A soakaway is situated in the old vegetable plot, for the runoff water from the wash down area.
Waste Disposal/ Materials Storage	There is limited waste on site. There was one skip with bed springs and one with chipboard, other than that there was open storage of waste skips awaiting use, limited storage of pallets, woodchip (Photo 13 and 14) and a small pile of compost (Photo 15). There are a number of boulders of ironstone along the western boundary of the development Area (Photo 16).
Surrounding Area	Former open cast area backfilled with refuse pre-SITA to the north, east is Sidegate Lane Landfill, and fields to the south and west.

2.3 History

2.3.1 The following information has been gathered which detail relevant land use changes for the site and its surroundings. The maps used are previous editions of the County Series and Ordnance Survey dating back to 1887. These maps are presented on CD ROM in PDF format in Appendix C. In addition to the maps, TerraConsult have also reviewed 38 aerial maps of the site taken between 1944 and 1972. The information is included in Table 2.

Table 2: Summary of Examined Ordnance Survey Historical Mapping

OS Map Edition	On-site Features	Off-site Features
1887/88 County Series Plan 1:2,500 1:10,560 map	Agricultural or pasture farmland with a field boundary crossing the site.	Agricultural or pasture farmland with a tramway leading to a quarry 150 m north of the site. A Lime kiln is present 250 m east of site.
1900 County Series Plan 1:2,500 & 1901 1:10,560 map	A tramway forms the southern boundary of the site, with a second tramway entering the site from the southwest for a distance of about 60 m, shown to be in a cutting. A "Quarry" is marked in southern part of site.	A quarry served by a new tramway is now present to the east of the site. The tramway to the north is no longer operational. Thingdon Mines and Quarries are operational, and located to the north of the site.
1925 County Series Plan 1:2,500 & 1924 1:10,560 map	The tramway extends northeast across the site.	The quarry to the east of the site has extended eastwards. A covered reservoir and pumping station is present to the south west of the junction between Sidegate Lane and Wellingborough Road. The quarries to the north have been re-named Glebe Ironstone Mines.
1938 1:10,560 map	No changes noted.	No significant changes noted.
1950 1:10,560 map	A new tramway passes through the centre of the site, approximately in a north-south direction, this is also on 1947 aerial but the 1952 aerial appears to indicate that there are no tracks present on the tramway, which is now a track.	Ryebury Farm is located about 100 m north west of the site. Thingdon Mines and Glebe Ironstone Quarries are now disused.
1971 County Series Plan 1:2,500 & 1974 1:10,00 map	The tramway through the centre of the site has been replaced with two access tracks; this is confirmed on the 1970 aerial (rail tracks are still shown on the March 1968 aerial photograph). The northern part of the site is now shown as a landfill.	Further outbuildings have been constructed as part of Ryebury Farm. Further buildings are present as part of the covered reservoir west of the site. The area to the north east of the site is shown as a disused quarry.
1985 County Series Plan 1:2,500 & 1988 1:10,560 map	No changes noted.	No significant changes noted.
1993 County Series Plan 1:2,500 & 1994 1:10,000 map	No changes noted.	Open cast workings are shown about 300 m northeast of the site in the area which was a disused quarry in 1974.
2002 1:10,000 map	No changes noted.	The site to the east is named as Sidegate Landfill with a quarry to the east. The opencast workings to the northeast of the site are not present.

2.3.2 In areas where there has been open cast ironstone workings, the history of the workings and infilling is often relatively complex; with a series of different workings with a range of sizes, extents and infilling with older areas of workings often being worked more than once. This appears to have been the case in the vicinity of this site. Note that the fields to the south and west of the site do not appear to have been open cast.

2.4 Additional Information on the Previous Site Use

2.4.1 The following information regarding previous use of the site was provided by SITA:

- The landfill to the north and west of SITA's site was a co-disposal site for inert, domestic, commercial and industrial wastes.
  Note from the EA website: this was called Finedon Landfill and was operational from 1968 to 1993, and the boundary included the whole of the proposed development site;
- The northern part of the site was used for composting green waste from 2004 to late 2010;
- The lagoon in the northern part of the site collected the liquor from the composting material. The lagoon was emptied using a bowser and the liquid was taken to the adjacent landfill for treatment with the landfill leachate;
- The whole Sidegate Lane site has been quarried/open cast and/or mined for ironstone and limestone. The area to the north of the current landfill was backfilled with refuse prior to any involvement by SITA and is an unlined landfill;
- SITA's Sidegate Lane landfill was formed by excavation into open cast backfill to form a suitable engineered void which was then fully lined;
- The vegetated land in the south east of the development area and the adjacent wooded land is the western screening bund of Sidegate Lane landfill. This screening bund was formed from the open cast backfill which was excavated to form the landfill cells. The open cast backfill and hence the screening bund is mainly composed of the lower Jurassic clays with some of the open cast waste (the lower quality quarried rock).

2.5 Services Search

2.5.1 A services search has not been carried out, however SITA have indicated that the only services on the development site are electrics for the site's lighting.

3. ENVIRONMENTAL SETTING

3.1 Data Summary

3.1.1 A summary of the environmental background information (geology, hydrology, hydrogeology, database information etc.) and regulator consultation information has been tabulated and presented below. The source information for this table is presented on a CD ROM in PDF format in Appendix D or is referred to in Table 3 below. The table below represents the base data used to formulate the conceptual ground model.

Table 3: Data Summary: Environmental Setting & Regulator Contact

	Data Source	Data Summary
Regional Geology	1:50,000 BGS Sheet 186, Solid & Drift	The site was shown to be underlain by Made Ground with the solid sequence comprising the clays of the Grantham formation over Northampton Sands. See Section 3.2 for further description.
Hydrogeology	Environment Agency Web Site, 21/05/2012	The bedrock is a Secondary A Aquifer (Northampton Sands) overlying unproductive strata. Current groundwater quality in the area is good. Groundwater vulnerability is "intermediate"
		No groundwater protection zones are within 1 km of the site. The closest groundwater abstraction is over 1.5 km from the site. The site is in a nitrate vulnerable zone.
Hydrology	Nearest surface water features	See Section 3.4.
	Flooding	Negligible risk from surface waters. Significant risk of pluvial flooding of a small part of the development area in the north west of site – See Section 3.5.
	Drainage Plans	No foul or surface water drainage systems known to be present.
	Buried Culverts	None currently identified
Radon Potential	Building Research Establishment, 2007, BR211 'Radon: Guidance on protective measures for new buildings'	The property is in a Radon Affected Area, as greater than 30% of properties are above the Action Level. Full radon protective measures are necessary.
Other Radiation	Historic land use (see below) GroundSure Report HMD	No reasonable grounds for believing land to be radioactively contaminated (in accordance with 2005 extension of Part IIA of The Environment Protection Act 1990).
Ordnance	Zetica Bomb Risk Map	Very low risk for unexploded ordnance.

Table 3: Data Summary: Environmental Setting & Regulator Contact -Continued		
	Data Source	**Data Summary**
Environmental Database Information	GroundSure Report	Full reference should be made to the report, however a brief summary follows. Industrial uses were identified both on the site and wit in 500 m. The site has been associated with open cast ironstone workings and waste disposal since the 1950s. The only current industrial use within the area apart from agriculture is the adjacent SITA landfill (taking Inert, Household, Commercial & Industrial Waste) and other associated permitted waste management processes (waste transfer station, waste treatment, landfill gas generation etc).
	Industrial Processes (from GroundSure Report)	The SITA site is a registered Integrated Pollution Control (IPC) site. There are no Registered Radioactive Substances sites, Control of Major Accident sites (COMAH), Explosives Sites or Notification of Installations Handling Hazardous Substances (NIHHS) within 250 m of the site.
	Environment Agency Web Site, 21/05/2012	Consented Discharges: SITA has a Consented Discharge to the stream about 160 m south of the site. Pollution Incidents - none within 250 m of the site.
Fuel Stations	Fuel Stations recorded in 250m radius (from GroundSure Report)	There are no recorded fuel stations within 500 m of the site.
Ecology	Sites of Ecological Importance (from GroundSure Report) MAGIC website 21/05/2012 http://magic.defra.gov.uk/website/magic/	There are no sites of Special Scientific Interest (SSSI), Special Protection Areas, Conservation Areas, National Nature Reserves, National Parks, Areas of Outstanding Natural Beauty or RAMSAR (wetlands) within 1 km of the site.
Archaeological & Building Heritage	Borough Council, Verbal Communication on 0/0/2012	Buildings of local or historic interest – there are no buildings on the site or on adjacent land that have been recorded as being of "local interest".
	Natural England Web Site 21/05/2012	The site/buildings are not within areas of outstanding natural beauty or a national park.
	English Heritage Web Site 21/05/2012	There are no scheduled ancient monuments buildings in historic parks and gardens on site or buildings within the curtilage of scheduled ancient monuments.
	MAGIC website 21/05/2012 English Heritage website 21/05/2011 http://list.english-heritage.org.uk/mapsearch.aspx	There are no sites of archaeological interest on site.

3.2 Geology

3.2.1 Based on a review of the BGS (1:50,000) Solid and Drift Map Wellingborough Sheet 186 the presence of the following strata is anticipated within the site:

Strata	Age
Made Ground	Recent
Grantham Formation	Jurassic
Northampton Sand Formation	Jurassic

3.2.2 Where present, the thickness of the Grantham Formation is anticipated to be relatively thin at the site. The Grantham Formation is typically an over-consolidated clay (locally becoming a weak mudstone) with thinner beds of argillaceous siltstone and sandstone, which is commonly ferruginous (rich in iron).

3.2.3 The Northampton Sand Formation is composed of green and brown ferruginous sandstones and limestones. This formation was mined in the area up to the 1960s for iron and steel production in Corby, Northamptonshire.

3.2.4 Made Ground comprising varying materials and different thickness is expected within the site due to the historical legacy of the mine and open cast working within the area, and landfilling. Contamination of the underlying ground conditions is expected, associated with these materials.

3.2.5 The geological map shows an east-west trending minor fault that downthrows to the south. The minor fault is located approximately 350 m to the south of the site.

3.3 Hydrogeology

3.3.1 Reference to the Groundsure Report and Environment Agency (EA) Groundwater Aquifer, Quality and Vulnerability Maps indicates that the underlying bedrock is considered to represent a Secondary A Aquifer. The EA classifies Secondary A Aquifers as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

3.3.2 The Environment Agency have defined Source Protection Zones (SPZs) for 2000 groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The site lies further than 1 km from the nearest SPZ. The closest groundwater abstraction is over 1.5 km from the site.

3.3.3 The site is in a nitrate vulnerable zone and the Environment Agency has classified the groundwater quality in the area as being good.

3.4 Hydrology and Drainage

3.4.1 There are no surface water watercourses within the site. There is an existing lagoon, with the nearest major watercourse being the River Ise, which is located approximately 2 km to the south west of the site. The nearest named water feature is the Harrowden Brook 1 km to the west, and this has a "Grade A - Very Good" chemical status. The Harrowden Brook is a tributary of the River Ise. The nearest water feature is located approximately 160 m south of the site. About 310 m to the west of the site there is another tributary of the River Ise.

3.4.2 Given the above location of the nearest surface water features and that the ground on the adjacent land to the west is the over-consolidated clays of the Grantham Formation it is considered that the site is very unlikely to pose a risk to controlled surface waters.

3.5 Flood Risk Assessment (FRA)

Summary of Data

3.5.1 A summary of the Environment Agency and British Geological Survey (BGS) records relating to flood risk are as follows

- There are no Environment Agency indicative Zone 2 (1 in 1,000 risk per year) or Zone 3 (1 in 100 risk per year) floodplains within 500 m of the site;
- There are no flood defences or flood storage areas within 500 m of the site;
- The site is not located in an area identified as being at potential risk in the event of a reservoir failure;
- The site has not been subject to past flooding as recorded by the Environment Agency;
- the maximum BGS Groundwater Flooding Susceptibility within 50 m of the site is "Very Low;"
- there are no geological indicators of historic flooding within 250 m of the study site;
- the National Flood Risk Assessment (NaFRA) Flood Rating for the study site is "Negligible";
- At the north western perimeter of the development site there is a significant risk of surface water (pluvial) flooding of an area about 40 m by 10 m as based on the JBA Pluvial Flood Maps produced for the Environment Agency in 2008.

Surface Water (Pluvial) Flooding

3.5.2 At the north western perimeter of the development site there is a significant risk of surface water (pluvial) flooding of an area about 40 m by 10 m as based on the JBA Pluvial Flood Maps produced for the Environment Agency in 2008. Surface water (pluvial) flooding is defined as flooding caused by rainfall-generated overland flow, before the runoff enters a watercourse or sewer. In such events, sewerage and drainage systems and surface watercourses may be entirely overwhelmed. Surface water (pluvial) flooding will usually be a result of extreme rainfall events, though may also occur when lesser amounts of rain falls on land which has low permeability and/or is already saturated, frozen or developed. In such cases overland flow and 'ponding' in topographical depressions may occur. The risk of this area flooding is classified as being "Significant" which indicates that this area would be expected to be affected by surface water flooding in a 1 in 75 year rainfall event to a depth of greater than 0.1 m. The JBA maps were produced based on aerial LiDAR survey data and aerial photography and are not always completely accurate, particularly for small areas such as the area indicated in the development area.

3.5.3 Based on the site walkover and the topographic survey of the site, it is assessed that the area of the site indicated by the JBA map which could flood under a 1:75 year rainfall event is a relatively limited area and would be a narrow area at the edge of the existing hard standing. However, the part of the site which is more likely to have pluvial flooding is the ground to the south west of the lagoon as this has a lower elevation. There was also a small ponded area in this location at the time of the site walkover (see foreground in Photograph 4). This area is also of limited extent and could be addressed as part of the drainage design for the development.

Likelihood of Flooding as a Result of the Development

3.5.4 The proposal for the development will not be in any floodplains or similar high risk areas and there are no areas of high risk adjacent to the site. However, the proposed development will nearly treble the area of hard standing and buildings within the site compared to the current areas; this should be taken into account when designing the site drainage.

Flood Risk Assessment

3.5.5 Based on the above information a Stage 1 Flood Risk Assessment can be carried out. This indicates that there is a negligible risk of flooding from surface waters so no further stages are required as part of a flood risk assessment.

3.5.6 There could be a limited part of the site affected by surface water flooding but this risk could be mitigated through the drainage design for the development. The proposed development will significantly increase the area of hard standing relative to the present amount and this will also have to be taken into account as part of the drainage design for the development.

4. PREVIOUS INVESTIGATIONS/REPORTS

4.1 Hyder Report Ref 5001-BM01213-BMR-01

4.1.1 SITA provided TerraConsult with a copy of the following report:

> *Sidegate Lane Landfill. Materials Recycling Facility and Transfer Station. Geo-environmental Assessment Report. February 2008.*

4.1.2 This report is included as a pdf format file in Appendix E of the report. The Hyder report was for an area of land immediately to the north of the proposed development area. It is understood that the proposed development was to comprise the construction of a Material Recycling Facility (MRF) and transfer station with associated hard standing areas (access road and car parking areas). This facility has not been constructed. The investigation was carried out by Geotechnics Ltd and comprised:

- Three 150 mm dia cable percussive boreholes to depths of 4.63 to 9.95 m;
- Groundwater/ground gas monitoring wells and monitoring;
- Six machine excavated trial pits to depths of 3.80 to 4.30 m;
- Chemical contamination testing on eight samples;
- Limited geotechnical testing.

4.1.3 The locations of the exploratory holes are indicated in Drawing 160101/002. The ground conditions encountered were as follows:

Table 4: Ground Conditions as Encountered by the Hyder Investigation		
Stratum Encountered	**Range of Thickness (m)**	**Max. Depth to Base (m BGL)**
A. MADE GROUND. Made Ground was encountered as both a cohesive and granular material, typically described as a very soft to firm slightly sandy slightly gravelly clay with some gravel and cobble size fragments of plastic, clinker, flint, limestone, slate, timber, metal wire and pockets of peat. The granular Made Ground is described as a gravelly fine to medium sand with fragments of plastic and pockets of fibrous organic matter. Trails pits TP2, TP4, TP5 and TP6 encountered domestic refuse comprising cloth, newspaper, cans, carpet, glass, galvanised sheets and radiators.	0.90 to 5.60	5.60
B. GRANTHAM FORMATION. Typically comprises a firm to stiff fissured clay with iron staining. A weak iron stained fine to medium grained sandstone was encountered within TP3 between 3.30 m and 3.80 m bgl.	1.30 to 3.50	4.00
C. NORTHAMPTON SAND FORMATION. The Northampton Sand Formation was encountered as both a cohesive and granular material. The cohesive material is typically described as a firm to very stiff friable slightly sandy slightly gravelly clay, with the granular material described as slightly clayey sandy gravel. A very weak sandstone band was encountered within boreholes BH2 and BH3.	0.32 to 4.55 penetrated	Not proven

Gas Monitoring

4.1.4 Wells were installed in the boreholes. During the gas monitoring, elevated levels of methane and carbon dioxide were recorded within all of the gas monitoring wells; with a maximum methane concentration recorded as 80.2% (vol.) within borehole BH2, with a maximum carbon dioxide concentration recorded as 27.1% (vol.) within borehole BH3.

4.1.5 Depleted oxygen was measured during the monitoring regime within all of the gas monitoring wells, with a minimum level of <0.1% (vol.).

4.1.6 A maximum gas flow rate 0.2 l/hr was recorded within borehole BH1. The gas monitoring results are presented within the Factual Report prepared by Geotechnics Ltd.

Groundwater Monitoring

4.1.7 Groundwater was recorded during the fieldwork within cable percussive boreholes BH1 and BH2, at depths of 9.00 m and 0.80 m bgl, respectively. Short term groundwater monitoring indicates a maximum standing water level of 4.70 m bgl

(BH2), with no standing waters encountered within the monitoring wells installed within boreholes BH1 and BH3.

Ground Gas Assessment

4.1.8 Based on the gas monitoring results described in Section 5.5 of the Hyder report, an assessment to characterise the site in relation to ground gas was been undertaken with reference to BS 8485:2007.

4.1.9 As part of the assessment it is necessary to determine the site characterisation from the hazardous gas flow rate and where the flow rate has not been provided the detection limit of the equipment used has been adopted. Based on this approach, the site characteristic gas situation is considered to be Class 2, which refers to a low hazard potential situation that is governed by the measured very low flow rates.

4.1.10 After the determination of the characteristic gas situation, it is necessary to determine the required gas protection measures based on the proposed end use for the site, of an industrial building. Based on the guidance provided within BS 8485:2007 and as the methane concentrations exceed 20%, the characteristic gas situation is increased to Category 3, 'moderate hazard potential', with the gas protection measures to be designed to incorporate two "points" of protection.

Geotechnical Assessment

4.1.11 Hyder indicated that potential risks associated with any building development over a domestic refuse site include the following:

- Generation and migration of landfill gas;
- Excessive settlements due to the biodegradation and compressibility of the refuse;
- Contamination of groundwaters by leachate;
- Potential for subterranean fires.

4.2 SITA Monitoring Data

4.2.1 As part of the Environmental Permit for the landfill site, SITA has a range of monitoring wells around the perimeter of the site. In the vicinity of the proposed development there are eight monitoring wells (see Drawing No 1601/1/001) and SITA monitor the ground gas concentrations in six of these wells at approximately monthly intervals:

- BH25
- BH26
- BH27
- BH30
- BH31
- BH36

4.2.2 The ground gas concentrations are generally monitored on a monthly basis. The monitoring data is presented in Appendix F with data provided during the approximate period of May 2006 to March 2012. The majority of the monitoring for the period is for methane, carbon monoxide and oxygen only. From mid-2011 the monitoring also included hydrogen sulphide, carbon monoxide and differential pressure. The well gas flow rate has been measured on three wells on one occasion in March 2012. This data is summarised below:

Table 5: Summary of Ground Gas Measurements

Sample Point	Comment	Methane (% v/v)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Atmos-pheric Pressure (mb)	Relative Pressure (mb)	Flow (l/h)
BH25	No of readings	70	70	70	7	7	70	11	0
	Lowest	0.0	0.0	12.4	0	0	959	-0.89	-
	Average	0.6	1.3	19.8	0	0	1004.0	0.01	-
	Highest	26.9	10.8	21.1	0	0	1029	0.61	-
BH26	No of readings	70	70	70	7	7	69	11	0
	Lowest	0.0	0.0	17.3	0.0	0.0	960.0	-0.1	-
	Average	0.0	0.7	20.1	0.0	0.0	1004.3	0.2	-
	Highest	0.2	3.1	21.8	0.0	0.0	1030.0	0.7	-
BH27	No of readings	68	68	68	7	7	68	11	0
	Lowest	0.0	0.0	14.3	0.0	0.0	960.0	-0.9	-
	Average	0.0	1.3	19.7	0.3	0.0	1004.3	0.0	-
	Highest	0.2	4.6	21.0	2.0	0.0	1030.0	0.6	-
BH30	No of readings	71	71	71	10	10	70	14	1
	Lowest	0.0	0.0	14.3	0	0	959	-0.76	0.2
	Average	0.0	3.3	18.6	0	0	1005	-0.03	0.2
	Highest	0.1	5.9	21.1	0	0	1029	0.19	0.2
BH31	No of readings	70	70	70	10	10	69	14	1
	Lowest	0.0	0.0	3.4	0	0	959	-0.44	0.3
	Average	0.0	3.0	17.9	0	0	1004.3	0.02	0.3
	Highest	1.5	28.9	21.2	0	0	1029	0.52	0.3
BH36	No of readings	53	53	53	10	10	52	14	1
	Lowest	0.0	0.0	0.0	0	0	960	-0.69	0.1
	Average	27.7	10.2	8.7	0	0	1004.9	0.26	0.1
	Highest	61.2	19.5	21.5	3	1	1030	2.91	0.1

4.2.3 Data of groundwater quality monitoring by SITA is also presented in Appendix F. Groundwater laboratory test data is presented for four boreholes: BH25, BH27, BH30 and BH35. The testing included the following range of tests:

- Index tests: pH, conductivity, BOD, COD;
- Heavy metals including cadmium, calcium, chromium, copper, lead, magnesium, manganese, mercury, nickel, sodium, zinc;
- Tributyl & triphynl tin;
- Anions: ammoniacal nitrogen, chloride, sulphate;
- VOCs including BTEX;
- SVOCs including PAHs.

4.2.4 No analysis was carried out for arsenic, petroleum hydrocarbons (other than BTEX) or for pesticides (other than mecoprop). The results of the groundwater analysis are discussed in more detail in Section 6.3.

4.3 TerraConsult Groundwater Monitoring Data

4.3.1 As part of the walkover TerraConsult measured the well depths and water levels in seven wells comprising the six of the wells indicated in Section 4.2 above (BH36 was not monitored as the location was covered in pallets) plus the single remaining well from Hyder's investigation BH03. This information is presented below:

Table 6: Groundwater Monitoring on 26th April 2011

Well No	Ground Level (mOD)	Depth to Well Base (m)	Depth to Groundwater (m bgl)	Groundwater Reduced Level (mOD)
BH25	72.95	8.26	5.05	67.90
BH26	73.08	5.74	4.94	68.59
BH27	74.00	8.75	5.76	68.28
BH28	73.99	5.40	Dry	<68.59
BH30	74.46	6.17	2.99	71.47
BH35	74.38	11.09	5.94	68.44
BH03	79.41	0.89	Dry	-

4.3.2 From the above information it can be seen that the general direction of groundwater flow is in a northerly direction following the dip of the strata.

5. HAZARD ASSESSMENT & PRELIMINARY (TIER 1) CONCEPTUAL SITE MODEL

5.1 Hazards Identified with the Proposed Development

5.1.1 The hazard identification is based on the site proposal being an industrial development.

5.2 Potential Sources of Contamination

5.2.1 Contaminants identified to be of potential concern at the site are associated primarily with the landfill present below the site:

- Metals and metalloids / metal compounds;
- Ammonium, sulphate and chloride – common in landfill leachates, potential for creating acidic conditions (with iron chloride) within the fill and for its potential to release ammonia and ammonia compounds into controlled waters, aggressive conditions for below ground concrete;
- Hydrocarbons – petroleum hydrocarbons, BTEX, solvents;
- PAHs
- Pesticides e.g. mecoprop;
- Asbestos Containing Materials (ACM) could be present on site.

5.2.2 Other contaminants that may need consideration include landfill gas or vapours from the landfill on site and the adjacent site together with radon gas from the Northampton Sand.

5.3 Potential Receptors of Contamination

5.3.1 Based on the data previously discussed, the following potential receptors to contamination have been identified:

Table 7: Identified Potential Receptors	
Sensitive Receptors	
A	Humans – Pre development completion, i.e. working on site during demolition and construction.
B	Humans working on site post construction and people in neighbouring land.
C	Controlled waters – surface waters (rivers and streams).
D	Perched groundwater in Made Ground /Landfill in hydraulic continuity to main groundwater body in Secondary A Aquifer).
E	Local flora and fauna during and post demolition and construction.
F	Building structure and services.

5.3.2 The preliminary assessment of risks undertaken for the development considers potential risks to receptors A to F in Table 7 above. The receptors A to F incorporate each of the receptors normally required by the Local Authority to be considered in their planning conditions relating to land contamination;

- Human Health (A & B)
- Property (including buildings, crops, livestock, pets, woodland, service lines) (E & F)
- Adjoining land (D & F)
- Groundwater and surface water (C & D)
- Ecological systems (E)
- Buildings and structures (F)

5.3.3 It should be noted that there are no archaeological sites or ancient monuments considered to be within the zone of influence of the site. They are therefore not considered in the risk assessment.

5.3.4 The closest of each of the above receptor categories to the site are considered to be:

Onsite

- Construction workers;
- Site users;
- Buildings;
- Flora and fauna;
- Secondary A bedrock aquifer.

Offsite

- Surface water 170 m south or 300 m west;
- Industrial/Commercial
  - Adjacent landfill (adjacent to the east)
- Residential
  - Ryebury Farm (120 m north west)

5.3.5 The possible pollutant linkages are discussed below. It should be noted not all may be formed between all sources and receptors.

5.4 Identification of Pathways

Pathways to Human Health

5.4.1 There are various routes by which a potential contaminant may reach a receptor. For example, in areas where contaminated material is exposed, dermal contact with the material, inhalation or ingestion of dust may occur.

5.4.2 The majority of the site is currently not covered in hard standing, but has a cover of granular material or woodchip. This currently breaks many pathways (such as dermal contact, inhalation or ingestion of dust) with potentially contaminated material underneath. During the construction works there will be excavations into the potentially contaminated soils so there will be an elevated risk during the construction works to Receptors A and E (Humans working on site during construction and people in neighbouring land and ecological receptors). However, post development Receptors B and E are unlikely receptors because the whole of the development area will be covered in hard standing. The hard standing will break the majority of pathways (e.g. ingestion of dust, direct contact etc.) from non-volatile contaminants. For volatile contaminants the buildings will have to incorporate full radon protection measures and this together with the type of heavy duty industrial floor will provide a high level of protection against volatile contaminants and landfill gasses. Therefore there will be no viable pathways to Receptors B and E post development and these will not be considered further.

5.4.3 Inhalation or ingestion of dust and water could occur during the construction and development phase at the site. Pathways from dermal contact with soil and groundwater may also arise. It is considered that the risk of short term exposure for ground workers and other construction workers is relatively low unless there are asbestos fibres in the Made Ground.

Pathways to Controlled Waters

5.4.4 As indicated in Section 3.4 it is considered that the site is very unlikely to pose a risk to controlled surface waters as there are no direct pathways; so this will not be considered further.

5.4.5 Based on information in Section 4.3 the direction of groundwater flow at the site is in an approximately northerly direction and is in the direction of the downward dip of the bedding. Down gradient of the development site there is a much larger body of landfill and therefore given the relatively small volume of landfill below the site is there are contaminants present in the groundwater below the site this is likely to have a negligible effect on quality of groundwater down gradient of the site. Therefore this will not be considered further.

5.4.6 In addition to the above, the vertical leaching of contaminants from the Made Ground/Landfill on site into the groundwater will be dramatically reduced after construction of the development because the site will be almost all covered with hard standing.

Other Pathways

5.4.7 Other potential pathways that are possibly less significant to the site but still require consideration are chemical attack on foundations and services and permeation of contaminants through domestic water pipes.

5.5 Pollutant Linkages

5.5.1 For each contamination source there are potential pollutant linkages with all receptors. However, in the context of this site and as discussed in Section 5.3, not all of the pollutant linkages are plausible. The likelihood of the various pathways linking the sources to the receptors is presented in Table 8 below:

Table 8: Matrix of Potential Pathways

Source/ Contaminated Medium	Pathway	Receptor					
		A - Humans using the site pre-development completion	B - Humans living on the site post construction	C – Surface Water	D - Groundwater	E - Flora & fauna	F - Building & Services
Soil/Made Ground/Bund Material	Ingestion	S	-	-	-	-	-
	Dermal Contact/Direct Contact	S	-	-	-	-	P
	Inhalation	S	-	-	-	-	-
	Infrastructure/Drainage	P	P	-	-	-	P
	Groundwater	P	-	-	-	-	P
	Surface water	P	-	-	-	-	P
Groundwater	Ingestion	P	-	-	-	-	-
	Inhalation	S	-	-	-	-	-
	Dermal Contact	P	-	-	-	-	-
	Groundwater	P	-	-	-	-	P
	Surface Water	P	-	-	-	-	-
Gas (CH_4 CO_2)	Migration	S	P	-	-	-	P

Key to harmfulness of source:
S = Significant Pathway P = Possible Pathway U = Unlikely Pathway - =Not Applicable

5.5 Preliminary Contamination Hazard Assessment

5.5.1 Table 8 provides details of the pollution linkages which require further assessment and constitutes the Preliminary Conceptual Site Model. The preliminary hazard assessment has been carried out for each of the linkages and is based on current available guidance published by a number of sources and is summarised in Appendix B. The significant and possible potential pathways are only considered for the hazard assessment.

5.5.2 The preliminary hazard assessment is a qualitative assessment of the risks posed by each viable pollution link identified. The hazard assessment leads to a recommended subsequent activity that could be:

- Action Required (AR) in the short term to break existing source-pathway-receptor (SPR) link;
- Site Investigation Required (SIR) with objectives for risk estimation, or
- No Action Required (NAR) at this stage.

5.5.3 The hazard assessment is summarised in Table 9 below:

Table 9: Preliminary Hazard Assessment

Hazard Identification				Hazard Assessment			
Link	**Source**	**Pathway**	**Receptor**	**Probability**	**Conse-quence**	**Risk**	**Hazard Assessment**
1	Contaminated soil/groundwater	Ingestion (via soil dust) and inhalation (via soil dust and vapours), ingestion through dirty hands, dermal contact with soil/water.	A- Humans using the site during construction.	Likely	Medium	**Moderate/ Low**	SIR - Total soil concentration of relevant contaminants and ground gas vapours for contractors and designer's risk assessments.
2	Contaminated soil/groundwater	Via service pipes	B- Humans using the site after construction. F- Building structures	Low	Medium	**Moderate/ Low**	SIR - Total soil concentration of relevant contaminants and ground gas vapours and designer's risk assessments.
3	Gas – methane & radon	Inhalation, explosion	A & B- Humans using the site during construction and after development completion.	Likely	Severe	**High**	SIR & AR – Gas monitoring wells and monitoring wells for methane, for radon require full protection measures.
4	Contaminated soil/groundwater	Direct contact.	F- Building structures.	Likely	Mild	**Moderate/ Low**	SIR

5.5.4 From Table 9 a range of risk ranking from moderate/low to high was established. Potentially moderate and high risks require quantification and consideration prior to development. The site investigation objectives described above should represent part of a detailed main stage investigation that should include overall characterisation of the ground in association with obtaining and analysing the information described above.

5.6 Geotechnical Hazards Associated with the Development

5.6.1 In addition to the environmental hazards, there are also geotechnical hazards associated with the stability of the ground (including load bearing capacity, slope stability and effects of ground (mining) cavities). Local Authorities follow NPPF (2012) which requires that "*site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining."* Based on the history of the site there are land instability issues that need to be addressed as part of the development.

5.6.2 A summary of the geotechnical considerations is provided below:

Table 10: Summary of Geotechnical Hazards	
Geohazards:	
Mining & Quarrying	There has been open cast ironstone extraction on the site, particularly in the northern part. In the southern part of the site the ironstone extraction is thought to be less extensive.
Highly Compressible Ground	The northern part of the site has been backfilled with domestic refuse. The former excavations over the rest of the site are thought to be backfilled with open cast backfill.
Collapsible Soils	Very low.
Swelling Clay	Yes – Anticipate medium plasticity and medium volume change potential clay present in area not quarried.
Running Sand	No.
Ground Dissolution	No.
Landslip	No.

5.6.3 Further geotechnical investigations are required that are specific to this project. However based on the current level of knowledge the following preliminary guidance can be provided.

Shallow Foundations

5.6.4 The main area of ironstone extraction below the site is thought to be the area to the north of the existing lagoon. South of this, it is likely that the ground was cut into to form a suitable grade for the tramway that ran north-south through the site. It is anticipated that the formation level for the tramway would have become deeper in a northerly direction as the tramway went down the dip. It is not known to what extent the ironstone was quarried laterally from the tramway. The ground profile beneath the footprint of the proposed main RDF building is therefore likely to comprise the order of 3 m of mainly cohesive Made Ground over the Grantham and Northampton Sand Formations forming the bedrock geology at the site.

5.6.5 The Made Ground should not be considered as a suitable founding material due to its variable nature, which is likely to lead to unacceptable high post construction

settlements. The proven Made Ground is variable in composition, consistency and thickness and so conventional strip foundations or trench fill foundations are unlikely to be practical in this area.

5.6.6 In order to utilise shallow foundations for the RDF building the load bearing capacity would need to be improved, variability reduced and total settlement reduced. Shallow foundations could then be used for this building if the following options are be adopted:-

- Over-excavate and then screen and re-compact the inert Made Ground. The Made Ground should be suitable for reuse after screening to remove all organic matter, plastics, fabrics, metal and cobbles. An allowable bearing pressure of between 75 and 100 kN/m^2 is considered likely to be achievable based on this approach. It may be necessary to partially replace the over-excavated Made Ground with imported granular fill to make up the short fall in material removed during the screening process.
- Over-excavate the Made Ground and replace entirely with imported granular fill. This approach is likely to achieve an allowable bearing pressure in the order of 150 kN/m^2. The costs when compared with excavate and re-compaction of the in-situ inert material may prove this approach to be unfavourable.

5.6.7 In the vicinity of the proposed office/welfare building it is likely that there will be a limited thickness of Made Ground and conventional footings should be suitable. The Grantham Formation may be considered a suitable founding material, depending on the imposed loadings and maximum permitted total and differential settlements. An allowable bearing capacity of 100 kN/m^2 is considered to be suitable for a 1 m wide foundation with total settlements limited to 25 mm for shallow foundations placed within this material. Any soft material encountered at the formation level should be over-excavated and replaced with suitable structural fill or lean mix concrete. The base depth of shallow footings should take into account the volume change potential of the clay and the presence of trees.

Deep Foundations

5.6.8 When traditional shallow (i.e. strip and raft foundations) cannot be founded on competent soils at a depth of less than about 1.5 m, it is anticipated that it will be more cost effective for the foundation loads to be transferred to the underlying Grantham and Northampton Sand Formation by use of deep foundations (piles or vibro-stone columns). Site investigation is required to determine the most appropriate type and to determine if there are obstructions within the Made Ground which could add to cost and limit the use of some deep foundation methods.

5.6.9 Piles and ground beams should be designed to withstand the effects of clay movement from the shrinkage potential of the near surface cohesive material encountered across the site with consideration of the presence of trees, with the design to include the affect from negative skin friction through the Made Ground.

Slopes/Retaining Walls

5.6.10 In the south eastern part of the development area is currently the toe of the western screening bund to the Sidegate Land Landfill. This slope has a height of about 13 m, a length of slope of about 98 m and has an average slope angle of about 8º. This is a relatively shallow slope and is assessed to have a relatively high level of stability. It is proposed to remove a width of about 35 m of material from the toe of this slope to create a suitably wide development platform. The outline development proposal indicates that the toe of the newly formed slope will have a 6 m high 31º cut slope into the screening bund and this steepened slope forms the lower portion of the overall 13 m high screening bund. It is anticipated that this outline proposal would not be stable in the long term so as part of the detailed design for the development consideration will be given to a number of different options to form a stable slope. These are likely to include:

- Reprofiling much more of the slope so that the steepest part of the slope is shallower. A maximum slope angle of 20º (1:2.7) is suggested for preliminary design purposes; this option will have an increased land take relative to the current profile;
- Construction of a retaining wall at the toe of the slope to form a stable toe, it is anticipated that a reinforced soil wall would be more economic than a concrete or steel retaining wall;
- Strengthening the toe of the cut slope by installation of soil nails into the cut slope.

5.6.11 Site investigation is required in the material of the western screening bund so that appropriate design parameters can be assessed for the detailed design of this cut slope.

Protection of Concrete

5.6.12 Site investigation is required to determine the appropriate precautions required for the design of below ground concrete. It should be noted that some types of landfill leachate can be highly aggressive to concrete.

6. TIER 2 GEO-ENVIRONMENTAL RISK ASSESSMENT

6.1 Introduction

6.1.1 The assessment of contamination has been carried out based on the existing data as discussed in Section 4 with the methodology in accordance with the overall guidance presented in CLR11 Model Procedures for the Management of Land Contamination using the procedures as indicated in the following sections in accordance with current relevant guidance and legislation:

- **Human Health**
  The overall methodology for assessing the risk to human health from potential contaminants in soil is presented in Appendix G in accordance with the guidelines as set out in the Environment Agency's guidance "Using Soil Guideline Values" SC050021/SGV Introduction, March 2009 and using the CLEA 1.06 model software. These have been used for a Tier 2 assessment of soil contamination for the protection of human health. The limited number of SGVs that have been published are for a soil organic matter of 6%. For this site the CLEA 1.06 software has been used to derive generic assessment criteria are for a soil organic matter of 1% in accordance with the following:

  - Science Report SC050021/SR2: Human health toxicological assessment of contaminants in soil;
  - Science Report SC050021/SR3: Updated technical background to the CLEA model;
  - Science Report SC050021/SR4: CLEA Software (Version) Handbook;
  - Toxicological reports and SGV technical notes;
  - Toxicological data published by LQM/CIEH (2009) and CL:AIRE/EIC/AGS (2009).

- **Controlled Waters**
  The risk posed to controlled waters from total soil concentrations cannot be directly assessed. The risk is assessed either by comparison of results of leachate tests carried out on soil samples, or from the direct testing of samples of groundwater to screening criteria. Leachate testing generally forms a conservative assessment and is not appropriate for organic contaminants. Further details of the Tier 1 methodology is presented in Appendix I. There is a hierarchy of screening criteria which is as follows:

  - Environmental Quality Standards (EQS) for freshwaters;
  - Surface Waters (Abstraction for Drinking Water)(Classification) Regulations (1996)
  - Surface Waters (Fishlife) (Classification) Regulations (1997)

- UK Drinking Water Standards (DWS) (Water Supply (Water Quality) Regulations 2000);
- World Health Organisation Guidelines for Drinking Water (2004)

- **Chemical attack on buildings**
  Generic assessment of the chemical attack on building materials has been assessed using guidance presented in the BRE Special Digest 1: "Concrete in aggressive ground" 2005.

- **Tier 2 Ground Gas Assessment**
  Concentrations and flow rates of ground gases (and vapours) have been assessed in accordance with the guidance given in CIRIA C665 "Assessing risks posed by hazardous gases to buildings" and BS:8485:2007 "Code of practice for the characterization and remediation from ground gas in affected developments". The assessment follows the BS8485:2007 gas characterisation system and the NHBC traffic light system in CIRIA C665. Other gases may need to be assessed on a site specific basis (e.g. hydrogen sulphide, carbon monoxide). The risk due to radon has already been assessed (see Section 3.1) and this assessment indicates that full radon protective measures are necessary.

6.2 Assessment for the Protection of Human Health

6.2.1 The Generic Qualitative Risk Assessment (GQRA) is based on the eight soil test results carried out for Hyder within the area north of the proposed development using a soil with a Soil Organic Matter of 1% with the assessment carried in accordance with the methodology for assessing soil samples set out in Appendix H. A comparison has been made with both the highly conservative criteria for this development assuming a residential end use and also the more appropriate commercial/light industrial end use criteria. A full summary of the chemical test results is presented in Appendix H. Exceedence of applicable Generic Assessment Criteria (GAC) threshold concentrations are indicated in yellow. A discussion of the various exceedences are presented below.

6.2.2 None of the measured concentrations for any of the potential contaminants exceeded GAC's for commercial/light industrial end use.

6.2.3 With respect of the conservative criteria for this development assuming a residential end use, only the criteria for three samples for up to four different PAHs were exceeded, and one sample for arsenic (only 34 mg/kg relative to the residential GAC of 32 mg/kg).

6.2.4 The above assessment indicates that in the area to the north of the proposed development the concentrations of contaminants are relatively low and if similar conditions extend below the development then no specific remedial works will be required due to the concentration of contaminants in the Made Ground.

6.2.5 It should be noted that there was no analysis for fragments of bulk Asbestos Containing Materials (ACMs) (e.g. asbestos cement sheeting) or for discrete asbestos fibres within the soil matrix as part of the Hyder investigation. Asbestos presents a potential risk that requires investigation.

6.2.6 The samples tested by Hyder have been assessed for their potential waste classifications. The results of this initial assessment indicate all of the materials encountered during the investigation would not be classified as hazardous waste and would require landfill WAC testing to confirm whether they would be classified as non-hazardous waste or would be classified as inert waste.

6.3 Assessment for the Protection of Controlled Waters

6.3.1 The risks to controlled waters (groundwater and surface waters) have been assessed by carrying out a Tier 1 assessment in accordance with the EA Remedial Targets Methodology in accordance with the methodology in Appendix I using SITA's ground water monitoring data from four wells in the vicinity of the development. SITA's data is presented in Appendix F and TerraConsult has highlighted any results higher than the relevant water quality screening criteria in yellow. For the majority of the test results the measured concentrations were lower than the screening criteria. The exceptions to this are as follows:

Table 11: Summary of Groundwater Exceedences (number of samples exceeding indicated together with the range of the exceedences)

	Ammoniacal Nitrogen (µg/l)	Chloride (mg/l)	Sulphate (mg/l)	Calcium (mg/l)	Copper (µg/l)	Iron (mg/l)	Mangan-ese (µg/l)	Magns-ium (mg/l)	Potass-ium (mg/l)	Sodium (mg/l)
Criterion	0.5 (DWS)	250 FEQS	400 FEQS	250 DWS	28 FEQS	1.0 FEQS	50 FEQS	50 DWS	10 DWS	170 FEQS
BH25	All 14 31 – 66	8 of 15 267 – 323	All 7 457 – 513	6 of 7 287-345	None	None	All 7 460-5370	All 7 51-60	All 7 36-47	3 No 180-229
BH27	13 of 14 0.6 – 8.2	None	All 8 425 – 577	All 8 278-422	None	None	All 7 97-619	None	5 of 8 11-20.5	None
BH30	2 of 51 0.6 – 1.8	35 of 50 251 – 587	None	6 of 9 271-324	None	1 No 2.61	All 9 460-5370	None	None	3 No 175-239
BH35	13 of 40 0.5 – 7.3	6 of 42 276 – 460	10 of 14 501 – 793	11 of 14 276-504	5 No 32 - 68	2 No 2.3 & 6.6	All 13 78-1280	3 of 14 51-54	10 of 14 13-249	2 No 206-282
In addition to the above one sample from BH30 had concentrations of four PAHs in excess of the appropriate DWS for four individual PAHs.										
DWS = Drinking Water Standards FEQS = Freshwater Environmental Quality Standard										

6.3.2 Regarding PAHs only a single sample from borehole BH30 had any exceedences of the screening criteria. This was on a sample taken on 4th March 2010. The exceedences are as follows:

- Benzo[a]pyrene concentration of 0.093 µg/l compared to a 0.01 µg/l criterion;
- Benzo[b]fluoranthene concentration of 0.078 µg/l compared to a 0.03 µg/l criterion;
- Benzo[ghi]perylene concentration of 0.037 µg/l compared to a 0.002 µg/l criterion;
- Benzo[k]fluoranthene concentration of 0.047 µg/l compared to a 0.03 µg/l criterion.

6.3.3 It should be noted that there are no chemical test results on groundwater samples for arsenic, petroleum hydrocarbons or for pesticides other than mecoprop.

6.3.4 Overall given that the wells are installed in or around an old unlined landfill adjacent to a modern lined landfill the measured concentrations of contaminants are relatively low. The elevated concentrations of calcium, iron, manganese and magnesium are likely to be due to background concentrations from the Northampton Sand Formation with the elevated concentrations of ammoniacal nitrogen, chloride, sulphate, potassium, sodium and PAHs from backfilled materials/landfill.

6.4 Chemical Attack on Below Ground Concrete

6.4.1 Below ground concrete structures are at potentially at risk in areas of elevated sulphates and where there is low pH. An assessment of the soil and groundwater data (following the protocol established in BRE Special Digest 1, 2005) indicates that ACEC Class AC-2 conditions prevail. Therefore the design of concrete in terms of the durability and structural performance should be to meet the requirements of AC-2 conditions.

6.5 Ground Gases

Landfill Type Gases

6.5.1 Up to seventy rounds of gas monitoring have been carried out in the six wells adjacent to the development area by SITA. Atmospheric conditions vary from 959 to 1030 mbar during the six year monitoring period from early 2006 to March 2012. Typically thirteen of the monitoring visits were carried out with atmospheric pressures less than 1000 mbar. With this relatively large data set the worst case ground gas conditions are not likely to be any worse than the gas conditions measured so far.

6.5.2 As indicated in Table 5, four of the six ground gas monitoring wells generally have relatively low gas concentrations: BH25, BH26, BH27 and BH30. These wells are all more than 50 m from the edge of the current SITA landfill and are adjacent to the older backfilled open cast workings. The maximum concentrations from these four wells are usually relatively low but in adverse atmospheric conditions the ground gas

concentrations can be much worse as can be seen by the methane concentration of 8th November 2010 which was 26.9 % which is three times higher than the next highest reading and 45 times the average measured concentration for the well.

6.5.3 BH31 and BH35 are immediately adjacent to the more recent lined landfill. Measured concentrations are higher in these two wells, particularly in BH35 which is located along the eastern side of the development area. In this well methane concentrations average 27.7 %. The most adverse measured gas concentrations in BH35 are:

- Methane 61.2 %
- Carbon dioxide 19.5 %
- Oxygen Zero
- Carbon monoxide 3 ppm
- Hydrogen sulphide 1 ppm

6.5.4 As this is the well which is closest to the proposed buildings it is recommended that the above concentrations are used for design purposes but note that the Hyder investigation measures a maximum methane concentration of 80.2 %.

6.5.5 Whilst there is a good database of measured concentrations, there is almost no data on gas flow measurements. Three flows have only been measured in the SITA wells and these are low, ranging from 0.1 to 0.3 l/hr. These flow rates are similar to those measured as part of Hyder's investigation which had a maximum measured flow rate of 0.2 l/hr. In order to carry out a ground gas assessment for the development further measurements of flow rate are required and the risk is assessed from the product of the gas concentration and the flow rate. Based on the available data and Table 8.5 of CIRIA C665, the worst case Characteristic Situation (CS) is CS2 but as the methane concentrations exceed 20%, the characteristic gas situation is increased to CS3, 'moderate hazard potential' which is typical for old landfills or inert landfills. Therefore Characteristic Situation 3 conditions should be assumed at this stage for preliminary design purposes. However it is recommended that further gas monitoring including flow rates is required.

6.5.6 From Table 2 of BS8485:2007 with CS3 conditions and for an industrial building, two points of remediation are required. From Table 3 of BS8485:2007 the two point can be achieved by adopting the following for the development:

- Reinforced concrete ground bearing foundation raft with limited service penetrations that are cast into slab – 1.5 points;
- Taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation, gas membrane (recommend proprietary reinforced gas membrane) sealed around service penetrations, membrane to extend across wall cavities – 0.5 points.

6.5.7 Based on Maps in Annex A of Building Research Establishment, 2007, BR211 'Radon: Guidance on protective measures for new buildings' the site in an area where full radon protection measures are required. Therefore the gas protection measures for the main RDF building and the site office will be required to meet the requirements of both CS3 conditions due to methane and meet the required full protection measures for radon.

6.6 Revised Pollutant Linkage Assessment (for the Whole Site)

6.6.1 The results of the risk assessments indicate that there was no significant source of contaminants present on the adjacent site to the north as shown by the data in Hyder's report. It is anticipated that similar concentrations of contaminants will be present below the development site but an investigation is required in order that this can be confirmed. This will ensure that there will be a negligible risk to humans and ecology from contaminants in the soil. It should be noted that no testing was carried out previously for asbestos containing materials or discrete asbestos fibres and none were identified during the investigation.

6.6.2 Groundwater testing of wells around the perimeter of the development site indicate elevated concentrations of ammoniacal nitrogen, chloride, sodium and sulphate. However as the direction of groundwater flow is to the north it is towards a much larger area of a historic unlined landfill so the elevated concentrations of the landfill related contaminants below the developments at this site will not be significantly detrimental to the quality of groundwater immediately down gradient of the site. Therefore the contaminants present in the groundwater below the site is likely to have a negligible effect on quality of groundwater down gradient of the site. Therefore this will not be considered further. However, it should be noted that there are no chemical test results on groundwater samples for arsenic, petroleum hydrocarbons or for pesticides and it is recommended that the groundwater below the development site is tested for these compounds.

6.6.3 All below ground concrete should be designed to meet the requirements of ACEC Class AC-2.

6.6.4 With regard to ground gas conditions it is recommended that Characteristic Situation 3 conditions should be assumed at this stage for preliminary design purposes. However it is recommended that further gas monitoring including flow rates is required. From Table 2 of BS8485:2007 with CS3 conditions and for an industrial building, two points of remediation are required. From Table 3 of BS8485:2007 the two point can be achieved by adopting the following for the development:

- Reinforced concrete ground bearing foundation raft with limited service penetrations that are cast into slab – 1.5 points;

- Taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation, gas membrane (recommend proprietary reinforced gas membrane) sealed around service penetrations, membrane to extend across wall cavities – 0.5 points.

6.6.5 The development should also have full radon protection measures in accordance with BRE Report 211. It should be noted that this applies both to the main RDF building and the site office building.

7. CONCLUSION

7.1 Environmental Risk Assessment

7.1.1 A preliminary risk assessment has been made based on the source-pathway-receptor model as defined in Part IIA of the Environment Protection Act, 1990, and in accordance with BS 10175: 2011 "Investigation of Potentially Contaminated Sites – Code of Practice". In order to make a more detailed assessment of the potential hazards, a Phase 2 intrusive investigation was carried out to develop a more comprehensive conceptual ground model of the site. The most important aspect of the environmental investigation is the confirmation of the ground gas conditions but testing of the soils and groundwater for contaminants are also required.

7.1.2 The results of the assessment of existing data and the associated risk assessments indicate that there is no significant source of contaminants present at the site so there is a negligible risk to all receptors including humans, controlled waters and ecological receptors. However, gas protection measures will be required for the main RDF building and the site office and for preliminary design purposes it is recommended that these are designed to meet the requirements of both CS3 conditions due to landfill type gases and meet the required full protection measures for radon.

7.2 Flood Risk Assessment

7.2.1 Based on the above information a Stage 1 Flood Risk Assessment can be carried out. This indicates that there is a negligible risk of flooding from surface waters so no further stages are required as part of flood risk assessment.

7.2.2 However there could be a limited part of the site affected by surface water flooding but this risk could be mitigated through the drainage design for the development. The proposed development will significantly increase the area of hard standing relative to the present amount and this will also have to be taken into account as part of the development's drainage design.

7.3 Geotechnical Design

7.3.1 Ground investigations are required to assess the geotechnical risks that are specific to this project and to provide suitable design parameters. The three main areas are the two buildings (main RDF building and the offices, plus the excavation into the slope in the south eastern part of the site. However based on the current level of knowledge the following preliminary guidance can be provided.

Shallow Foundations

7.3.2 The main area of ironstone extraction below the site is thought to be the area to the north of the existing lagoon. South of this, it is likely that the ground was cut into to

form a suitable grade for the tramway than ran north-south through the site. It is anticipated that the formation level for the tramway would have become deeper in a northerly direction as the tramway went down the dip. It is not known to what extent the ironstone was quarried laterally from the tramway. The ground profile beneath the footprint of the proposed main RDF building is therefore likely to comprise the order of 3 m of mainly cohesive Made Ground over the Grantham and Northampton Sand Formations.

7.3.3 The Made Ground should not be considered as a suitable founding material due to its variable nature, which is likely to lead to unacceptable high and variable post construction settlements. In order to utilise shallow foundations for the RDF building the load bearing capacity would need to be improved, variability reduced and total settlement reduced. Shallow foundations could then be used for this building if the following options are be adopted:-

- Over-excavate and then screen and re-compact the inert Made Ground. The Made Ground should be suitable for reuse after screening to remove all organic matter, plastics, fabrics, metal and cobbles. An allowable bearing pressure of between 75 and 100 kN/m^2 is considered likely to be achievable based on this approach.
- Over-excavate the Made Ground and replace entirely with imported granular fill. This approach is likely to achieve an allowable bearing pressure in the order of 150 kN/m^2. The costs when compared with excavate and re-compaction of the in-situ inert material may prove this approach to be unfavourable.

7.3.4 In the vicinity of the proposed office/welfare building it is likely that there will be a limited thickness of Made Ground and conventional footings should be suitable. The Grantham Formation may be considered a suitable founding material, depending on the imposed loadings and maximum permitted total and differential settlements. An allowable bearing capacity of 100 kN/m^2 is considered to be suitable for a 1 m wide foundation with total settlements limited to 25 mm for shallow foundations placed within this material. The base depth of shallow footings should take into account the volume change potential of the clay and the presence of trees.

Deep Foundations

7.3.5 When traditional shallow (i.e. strip and raft foundations) cannot be founded on competent soils at a depth of less than about 1.5 m, it is anticipated that it will be more cost effective for the foundation loads to be transferred to the underlying Grantham and Northampton Sand Formation by use of deep foundations (piles or vibro-stone columns). Site investigation is required to determine the most appropriate type and to determine if there are obstructions within the Made Ground which could add to cost and limit the use of some deep foundation methods.

Slopes/Retaining Walls

7.3.6 In the south eastern part of the development area is currently the toe of the western screening bund to the Sidegate Land Landfill. This slope has a height of about 13 m, a length of slope of about 98 m and has an average slope angle of about 8º. This is a relatively shallow slope and is assessed to have a relatively high level of stability. It is proposed to remove a width of about 35 m of material from the toe of this slope to create a suitably wide development platform. The outline development proposal indicates that the toe of the newly formed slope will have a 6 m high 31º cut slope into the screening bund and this steepened slope will form the lower portion of the overall 13 m high screening bund. It is anticipated that this outline proposal would not be stable in the long term so as part of the detailed design for the development consideration will be given to a number of different options to form a stable slope. These are likely to include:

- Reprofiling much more of the slope so that the steepest part of the slope is shallower. A maximum slope angle of 21º (1:2.7) is suggested for preliminary design purposes;
- Construction of a retaining wall at the toe of the slope to form a stable toe, it is anticipated that a reinforced soil wall would be more economic than a concrete or steel retaining wall;
- Strengthening the toe of the cut slope by installation of soil nails into the cut slope.

7.3.7 Site investigation is required in the material of the western screening bund so that appropriate design parameters can be assessed for the detailed design of this cut slope.

7.4 Recommendations for Further Works

7.4.1 In order to make a quantitative assessment of the potential environmental risks and to provide geotechnical design parameters, we recommend that a Main Ground Investigation is carried out in accordance with BS5930:1999+A2 2010 and BS 10175: 2011. We recommend that this investigation comprises:

- boreholes and trial pits for carrying out insitu testing, installation of wells and sampling for laboratory testing;
- confirmation of the depth of open cast backfill/Made Ground and investigation of it's geotechnical properties to allow for foundation design;
- analytical chemical testing of samples recovered from the original trail pits;
- monitoring of groundwater levels and ground gas conditions including gas flow rates;

- geotechnical laboratory testing including index testing and effective strength tests;
- Full interpretative report.

7.4.2 The detailed scope of the investigation is proposed to be as follows:

- Trial pitting investigation – one days with JCB wheeled excavator, the majority of these pits to be in the western screening bund;
- Concrete coring of four or five locations within the existing slab.
- Three cable percussive boreholes to depths of about 6 m with sampling and SPT tests in each borehole, all three holes located in the area of the proposed RDF building and are to have monitoring wells installed;
- Ten dynamic sample holes to depths of 5 m including SPTs and monitoring wells, these are to be located:
  - one in the area of the proposed RDF building;
  - two in the area of the proposed new office;
  - one adjacent to the new weighbridge location;
  - six of these in the landfill western screening bund for installing piezometers;
- Chemical laboratory analysis (see Appendix 2 for suites):
  - 16 No. soil suites, ten for two different suites;
  - 4 No. samples including Asbestos bulk screen;
  - 4 No. asbestos fibre quantification;
  - 3 No. groundwater suites for a relatively wide range of Hazardous and Non-hazardous substances (formerly termed List 1 and List 2 substances);
- Geotechnical laboratory analysis including PSDs, Atterberg limits and large shear box testing of samples from the landfill's western screening bund;
- Two return visits by TerraConsult to sample groundwaters and monitor groundwater levels and gas concentrations, will arrange for SITA's monitoring technician to carry out subsequent rounds of gas monitoring whilst they are site carrying out other monitoring works;
- Provision of interpretative report to include qualitative environmental risk assessment and recommendations for remediation and further investigation if necessary plus a geotechnical assessment.

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DRAWINGS

List of Drawings

SITA Drawing No 6476c **Sitegate Lane – Proposed Layout**

1601/1/001 **Site Survey and Walkover Information**
1601/1/002 **Aerial Photograph (August 1971)**

EXTEND SCREENING BUND

FUTURE WOOD PROCESSING AREA

EXISTING TARMAC AREA

SOIL MANUFACTURING AREA

30m TURNING CIRCLE

PRODUCT STORAGE BAYS

BALE STORAGE

EXISTING TARMAC AREA

SWEEPING INPUT MATERIAL

FORKLIFT LANE

ROAD SWEEPING TREATMENT

RDF PRODUCTION

ROADWAY

WASTE RECEPTION

BATTER FORMED AT 1IN 2.5

EXISTING PLANTATION

30m TURNING CIRCLE

ROADWAY

LORRY PARKING

CAR PARKING

CAR PARKING

PROPOSED 2 STOREY OFFICES

WEIGHBRIDGE

WEIGHBRIDGE

EXISTING WHEELWASH

WEIGHBRIDGE

EXISTING ACCESS

MANIFOLD 3

MANIFOLD 4

Gas line Buried

MANIFOLD 2

Landfill

Landfill

Landfill

Leachate Tanks

Landfill

Cab

Landfill

SITE: SIDEGATE LANE WELLINGBOROUGH	SCALE: 1:500 @ A0	CLIENT: SUEZ environnement / SITA	NOTES
PROJECT: PROPOSED SITE LAYOUT	DATE: 13/02/2012		
	DRAWING No.: 6476c		

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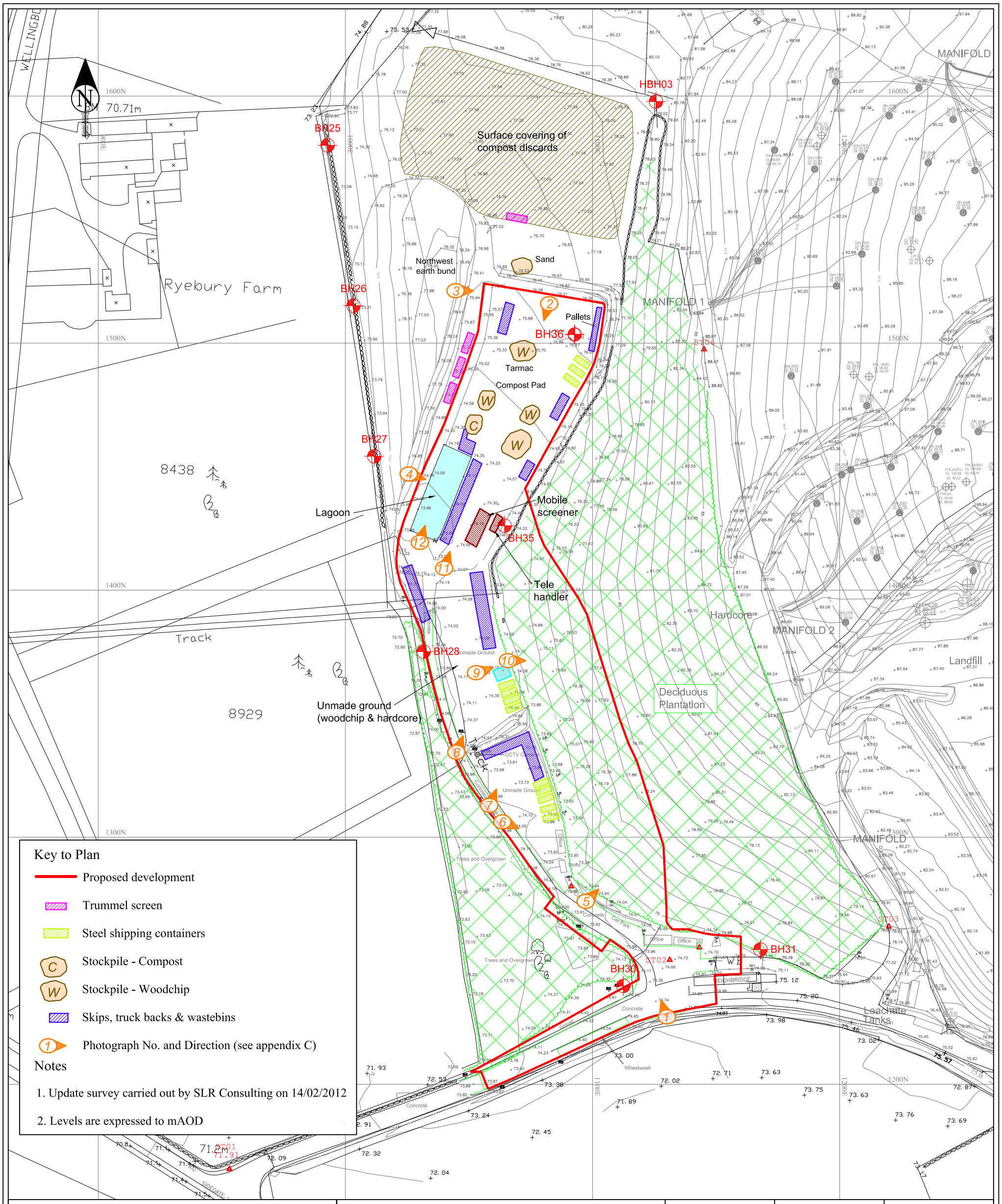

TerraConsult

Bold Business Centre, Bold Lane, Sutton, St Helens WA9 4TX

Client

Site

Sidegate Lane Landfill Site

Title

Site Survey & Walkover Information

Scale	1:1,500	@ A3	
Drawing No.	1601/1/001		
Rev	Date	Description	
File	16011001sitesurvey.dwg		
Date	04/12	Engineer	CSE
Drawn	SK	Checked	FINAL

APPENDICES

List of Appendices

APPENDIX A

Service Constraints and Report Limitations

Service Constraints and Report Limitations

This report and the site investigation (together comprise the "Services") were compiled and carried out by TerraConsult Limited (TCL) for SITA (UK) LTD (the "client") in accordance with the terms of a contract between TCL and the "client." The Services were performed by TCL with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by TCL taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between TCL and the client.

Other than that expressly contained in the above paragraph, TCL provides no other representation or warranty whether express or implied, is made in relation to the Services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of TCL. If a third party relies on this report, it does so wholly at its own and sole risk and TCL disclaims any liability to such parties.

It is TCL's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without TCL 's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of TerraConsult Limited.

The report was written in May 2012 and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of TCL. In the absence of such written advice of TCL, reliance on the report in the future shall be at the client's own and sole risk. Should TCL be requested to review the report in the future, TCL shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between TCL and the client.

The observations and conclusions described in this report are based solely upon the Services that were provided pursuant to the agreement between the client and TCL. TCL has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. TCL is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, TCL did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, radon gas or other radioactive or hazardous materials.

The Services are based upon TCL's observations of existing physical conditions at the site gained from a walkover survey of the site together with TCL's interpretation of information including

documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst TerraConsult Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. Further TCL was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. TCL is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to TCL and including the doing of any independent investigation of the information provided to TCL save as otherwise provided in the terms of the contract between the client and TCL.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and TCL] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.

APPENDIX B

Environmental Risk Assessment Methodology & Terminology

ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY & TERMINOLOGY

Legislation Overview

This report includes hazard identification and environmental risk assessment in line with the risk-based methods referred to in relevant UK legislation and guidance. Government environmental policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use. When considering the current use of land, Part IIA of the Environment Protection Act 1990 (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995, which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment given the current use and circumstances of the land.

Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

> *"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:*
>
> *(a) Significant harm is being caused or there is a significant possibility of such harm being caused;*
>
> *or*
>
> *(b) Pollution of controlled waters is being, or is likely to be, caused."*

In order to assist in establishing if there is a "*significant possibility of significant harm*" there must be a "*pollutant linkage"* for potential harm to exist. That means there must be a source(s) of contamination, sensitive receptors present and a connection or pathway between the two. This combination of source-pathway-receptor is termed a "pollutant linkage or SPR linkage."

Part IIA of The Environmental Protection Act 1990 is supported by a substantial quantity of guidance and other Regulations, especially DEFRA Circular 01/2006 Contaminated Land (this replaces DETR Circular 02/2000). Part IIA defines the duties of Local Authorities in dealing with it. Part IIA places contaminated land responsibility as a part of planning and redevelopment process rather than Local Authority direct action except in situations of very high pollution risk. In the planning process guidance is provided by the National Planning Policy Framework (NPPF, March 2012), which requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA. In practice, Planning Authorities require sites being developed to have a lower level of risk post development than the higher level of risk that is required in order to determine a site as being contaminated in accordance with Part IIA. This is to ensure that there is a suitable zone of safety below the level for Part IIA determination and prevent recently developed sites becoming reclassified as contaminated land if there are future legislative or technical changes (e.g. a substance is subsequently found to be more toxic than previously assessed this increases its hazard)..

The criteria for assessing levels of pollutants and hence determining whether a site represents a hazard are based on a range of techniques, models and guidance. Within this context it is relevant to note that Government objectives are:

(a) to identify and remove unacceptable risks to human health and the environment;
(b) to seek to bring damaged land back into beneficial use;

(c) to seek to ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically sustainable.

These three objectives underlie the "suitable for use" approach to remediation of contaminated land. The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore should be assessed on a site-by-site basis.

The "suitable for use" approach then consists of three elements:

(a) *ensuring that land is suitable for its current use* - in other words, identifying any land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise ("remediating" the land); the contaminated land regime provides the regulatory mechanisms to achieve this;

(b) *ensuring that land is made suitable for any new use, as planning permission is given for that new use* - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before official permission is given for the development and, where necessary to avoid unacceptable risks to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes; and

(c) *limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought* - in other words, recognising that the risks from contaminated land can be satisfactory assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby running the risk of distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

The mere presence of pollutants does not therefore necessarily warrant action, and consideration must be given to the scale of risk involved for the use that the site has, and will have in the future.

Risk Assessment

Current practice recommends that the determination of potential liabilities that could arise from land contamination be carried out using the process of risk assessment, whereby "risk" is defined as:

"(a) The probability, or frequency, or occurrence of a defined hazard; and

(b) The magnitude (including the seriousness) of the consequences."

The UK's approach to the assessment of environmental risk is set out in by the Department of the Environment (1995) publication "A Guide to Risk Assessment and Risk Management for Environmental Protection." This established an iterative, systematic staged process which comprises:

(a) Hazard identification;
(b) Hazard assessment;
(c) Risk estimation;
(d) Risk evaluation;
(e) Risk assessment;

At each stage during the development process the above steps are repeated as more detailed information becomes available for the site.

For an environmental risk to be present, all three of the following elements must be present:

- Source: hazardous substance that has the potential to cause adverse impacts;
- Receptor: target that may be affected by contamination: examples include human occupants/users of site, water resources (rivers or groundwater), or structures;
- Pathway: a viable route whereby a hazardous substance may come into contact with the receptor.

The absence of one or more of each component (source, pathway, receptor) would prevent a pollutant linkage being established and there would be no significant environmental risk.

The identification of potential pollutant linkages is based on a Conceptual Model of the site, which is subject to continual refinement as additional data becomes available. As part of a Phase I Investigation (Desk Study and site walk over) a Preliminary Conceptual Site Model (PCSM) is formed. Based on the PCSM, potential pollutant linkages can be assessed. If the PCSM and hazard assessment indicate that a pollution linkage is not of significance then no further assessment or action is required due to this linkage. For each significant and possible linkage a risk assessment is carried out. The linkages which potentially pose significant risks may require a variety of responses ranging from immediate remedial action or risk management or, more commonly, further investigation and risk assessment. This next stage is termed a Phase II Main Site Investigation and should provide additional data to allow refinement of the Conceptual Site Model and assess the level of risk from each pollutant linkage.

Definition of Risk Assessment Terminology

The criteria used for risk assessment are broadly based on those presented in Section 6.3 of the CIRIA Report 'Contaminated Land Risk Assessment: A Guide to Good Practice' (CIRIA Report C552). The Severity of the risk is classified according to the criteria in Table B.1 below:

Table B.1 Severity/Consequence of Risk	
Severe	Acute risks to human health Catastrophic damage to buildings/property (e.g. by explosion) Major pollution of controlled waters (watercourses or groundwater)
Medium	Chronic (long-term) risk to human health Pollution of sensitive controlled waters (surface waters or aquifers) Significant effects on sensitive ecosystems or species
Mild	Pollution of non-sensitive waters Significant damage to buildings or structures Requirement for protective equipment during site works to mitigate health effects
Minor	Damage to non-sensitive ecosystems or species Minor damage to buildings or structures

The probability of the risk occurring is classified according to criteria given in Table B.2 below:

Table B.2: Probability of Risk Occurring	
High likelihood	Pollutant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
Low likelihood	Pollutant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table B.3 below:

Table B.3: Comparison of Severity and Probability					
		Severity			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High likelihood**	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

The various risk rankings provide guidance for recommended actions, whether this is:

AR - Action Required, Remediation or mitigation or site investigation works required
SIR - Site Investigation Required, further assessment is required.
NAR - No Action Required:

A description of the evaluated risk is as follows:

Table B.4 – Description of the Classified Risks and Likely Action Required	
Evaluated Risk	**Recommended Actions**
Very High Risk	AR: There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	AR: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate Risk	SI: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	NAR: It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Very Low Risk	NAR: There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Management of Contaminated Land

When risk assessment of the site has been completed and this indicates that remedial works are required, the main guidance in managing this process is set out in the DEFRA/EA publication CLR11 (2004) "Model Procedures for the Management of Land Contamination." The stages of managing remediation are as follows:

(a) Options Appraisal and develop Remediation Strategy;
(b) Develop Implementation Plan and Verification Plan;
(c) Remediation, Verification and Monitoring.

The Remediation Strategy sets out the remediation targets, identifies technically feasible remedial solutions and presents an evaluation of the options so that these can be assessed enabling that the most suitable solution is adopted. An outline of the proposed remedial method should be presented. Agreement should be sought of the appropriate statutory bodies for the Remediation Strategy before proceeding to the next stage.

The Implementation Plan is a detailed method statement setting out how the remediation is to be carried out including stating how the site will be managed, welfare procedures, health and safety considerations together with practical measures such as details of temporary works, programme of works, waste management licences and regulatory consents required. Agreement should again be sought of the appropriate statutory bodies for this Plan.

The Verification Plan sets out the requirements for gathering data to demonstrate that the remediation has met the required remediation objectives and criteria. The Verification Plan presents the requirements for a wide range of issues including the level of supervision, sampling and testing regimes for treated materials, waste and imported materials, required monitoring works during and post remediation, how compliance with all licenses and consents will be checked etc. Agreement should again be sought of the appropriate statutory bodies for the Verification Plan. On completion of the remediation a Verification Report should be produced to provide a complete record of all remediation activities on site and the data collected as required in the Verification Plan. The Verification Report should demonstrate that the remediation has met the remedial targets to show that the site is suitable for the proposed use.

APPENDIX C

Site Photographs

Photograph 1: Panorama of Access Road, Offices and Weighbridge (Centre of Photo Looking Approx North)

Photograph 2: Northern Part of Composting Pad (Centre of Photo Looking Approx South)

Photograph 3: Land to North of Composting Pad (Centre of Photo Looking Approx North East)

Photograph 4: Southern Part of Composting Pad (Centre of Photo Looking Approx East)

Photograph 5: Eastern Wooded Bank

Photograph 6: Storage Containers and Offices in Southern Part of Site

Photograph 7: Skips and Storage Containers in Southern Part of Site

Photograph 8: Skips and Bins in Central Part of Site

Photograph 9: Unmade Ground of Woodchip and Hardcore in Centre of Site

Photograph 10: Eastern Wooded Bank

Photograph 11: View of Compost Pad Looking Northwards from Southern End

Photograph 12: Lagoon – View Looking North

Photograph 13: Fine Grade Woodchip (tape measure extended 0.20 m)

Photograph 14: Coarser Grade Woodchip (tape measure extended 0.20 m)

Photograph 15: Compost (tape measure extended 0.20 m)

Photograph 16: Ironstone Boulder (tape measure extended 0.20 m)

APPENDIX D

Envirocheck Report

(Historical Maps & Datasheets on Surrounding Land Use)

This Appendix is provided on a CD ROM as Adobe Acrobat PDF format files

APPENDIX E

Hyder Report

This Appendix is provided on a CD ROM as Adobe Acrobat PDF format files

APPENDIX F

SITA Data

(Gas and Groundwater Monitoring)

SIDEGATE LANE RDF
1601

Site: SIDEGATE LANE RDF FACILITY
GROUNDWATER A CHEMICAL ANALYSIS - SUMMARY

TerraConsult

Sample Point	Date	1,1-Dichloroethane (µg/l)	1,1-Dichloroethene (µg/l)	1,1-Dichloropropene (µg/l)	1,2,3-Trichlorobenzene (VOC) (µg/l)	1,2,4-Trichlorobenzene (VOC) (µg/l)	1,2,4-Trichlorobenzene (SVOC) (µg/l)	1,2-Dibromoethane (µg/l)	1,2-Dichlorobenzene (VOC) (µg/l)	1,2-Dichlorobenzene (SVOC) (µg/l)	1,2-Dichloroethane (µg/l)	1,2-Dichloropropane (µg/l)	1,3-Dichlorobenzene (VOC) (µg/l)	1,3-Dichlorobenzene (SVOC) (µg/l)	1,3-Dichloropropane (µg/l)	1,4-Dichlorobenzene (VOC) (µg/l)	1,4-Dichlorobenzene (SVOC) (µg/l)	2,2-Dichloropropane (µg/l)	2,4-Dichlorophenol (µg/l)	2,4-Dimethylphenol (µg/l)	2,4-Dinitrotoluene (µg/l)	2,6-Dinitrotoluene (µg/l)	2-Chloronaphthalene (µg/l)	2-Chlorophenol (µg/l)	2-Chlorotoluene (µg/l)	2-Methylnaphthalene (µg/l)	2-Methylphenol (µg/l)	2-Nitrophenol (µg/l)	3 & 4-Methylphenol (µg/l)	3,5-Dimethylphenol (µg/l)	4-Bromophenyl ether (µg/l)
	EQS Freshwater Threshold	20 (µg/l)									10 (µg/l)																				
	Drinking Water Standard Threshold										3 (µg/l)	0.1 (µg/l)						0.1 (µg/l)													
SL/25	21/3/2006																														
SL/25	26/9/2006																														
SL/25	11/12/2006																														
SL/25	27/6/2007																														
SL/25	3/9/2007																														
SL/25	5/12/2007																														
SL/25	11/3/2008																														
SL/25	10/6/2008																														
SL/25	24/9/2008															<1.0															
SL/25	12/12/2008																														
SL/25	17/3/2009																<1.0														
SL/25	9/6/2009																														
SL/25	3/9/2009																<1.0														
SL/25	15/12/2009																														
SL/25	4/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/25	2/6/2010																														
SL/25	20/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/25	3/12/2010																														
SL/25	8/3/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/25	24/5/2011																														
SL/25	24/6/2011																			<1.00	<1.00				<1.00			<1.00		1.01	<1.00	
SL/25	25/7/2011																														
SL/25	24/8/2011																														
SL/25	26/9/2011																														
SL/25	18/10/2011																														
SL/25	15/11/2011																														
SL/25	19/12/2011																			<1.00	<1.00				<1.00			<1.00		<1.00	<1.00	
SL/25	19/12/2011																														
SL/27	11/3/2008																														
SL/27	10/6/2008																														
SL/27	24/9/2008															<1.0															
SL/27	12/12/2008																														
SL/27	17/3/2009																<1.0														
SL/27	9/6/2009																														
SL/27	3/9/2009																<1.0														
SL/27	15/12/2009																														
SL/27	4/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/27	2/6/2010																														
SL/27	20/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/27	3/12/2010																														
SL/27	8/3/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/27	24/5/2011																														
SL/27	24/6/2011																			<1.00	<1.00				<1.00			<1.00		<1.00	<1.00	
SL/27	25/7/2011																														
SL/27	24/8/2011																														
SL/27	26/9/2011																														
SL/27	26/9/2011																														
SL/27	27/9/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/27	18/10/2011																														
SL/27	15/11/2011																														
SL/27	19/12/2011																			<1.00	<1.00				<1.00			<1.00		<1.00	<1.00	
SL/30	26/2/2008																														
SL/30	11/3/2008																														
SL/30	10/4/2008																														
SL/30	8/5/2008																														

SIDEGATE LANE RDF
1601

Site: SIDEGATE LANE RDF FACILITY
GROUNDWATER A CHEMICAL ANALYSIS - SUMMARY

TerraConsult

Sample Point	Date	1,1-Dichloroethane (µg/l)	1,1-Dichloroethene (µg/l)	1,1-Dichloropropene (µg/l)	1,2,3-Trichlorobenzene (VOC) (µg/l)	1,2,4-Trichlorobenzene (VOC) (µg/l)	1,2,4-Trichlorobenzene (SVOC) (µg/l)	1,2-Dibromoethane (µg/l)	1,2-Dichlorobenzene (VOC) (µg/l)	1,2-Dichlorobenzene (SVOC) (µg/l)	1,2-Dichloroethane (µg/l)	1,2-Dichloropropane (µg/l)	1,3-Dichlorobenzene (VOC) (µg/l)	1,3-Dichlorobenzene (SVOC) (µg/l)	1,3-Dichloropropane (µg/l)	1,4-Dichlorobenzene (VOC) (µg/l)	1,4-Dichlorobenzene (SVOC) (µg/l)	2,2-Dichloropropane (µg/l)	2,4-Dichlorophenol (µg/l)	2,4-Dimethylphenol (µg/l)	2,4-Dinitrotoluene (µg/l)	2,6-Dinitrotoluene (µg/l)	2-Chloronaphthalene (µg/l)	2-Chlorophenol (µg/l)	2-Chlorotoluene (µg/l)	2-Methylnaphthalene (µg/l)	2-Methylphenol (µg/l)	2-Nitrophenol (µg/l)	3 & 4-Methylphenol (µg/l)	3,5-Dimethylphenol (µg/l)	4-Bromophenyl ether (µg/l)
	EQS Freshwater Threshold	20 (µg/l)									10 (µg/l)																				
	Drinking Water Standard Threshold										3 (µg/l)	0.1 (µg/l)						0.1 (µg/l)														
SL/30	10/6/2008																														
SL/30	23/7/2008																														
SL/30	7/8/2008																														
SL/30	24/9/2008															<1.0															
SL/30	2/10/2008																														
SL/30	19/11/2008																														
SL/30	12/12/2008																														
SL/30	7/1/2009																														
SL/30	18/2/2009																														
SL/30	17/3/2009																<1.0														
SL/30	14/4/2009																														
SL/30	30/4/2009																														
SL/30	9/6/2009																														
SL/30	10/7/2009																														
SL/30	6/8/2009																														
SL/30	7/8/2009																														
SL/30	3/9/2009																<1.0														
SL/30	2/10/2009																														
SL/30	11/11/2009																														
SL/30	15/12/2009																														
SL/30	26/1/2010																														
SL/30	9/2/2010																														
SL/30	4/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/30	28/4/2010																														
SL/30	20/5/2010																														
SL/30	2/6/2010																														
SL/30	16/7/2010																														
SL/30	4/8/2010																														
SL/30	20/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/30	21/10/2010																														
SL/30	8/11/2010																														
SL/30	3/12/2010																														
SL/30	4/1/2011																														
SL/30	16/2/2011																														
SL/30	8/3/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/30	27/4/2011																														
SL/30	24/5/2011																														
SL/30	24/6/2011																			<1.00	<1.00				<1.00			<1.00		<1.00	<1.00	
SL/30	25/7/2011																														
SL/30	24/8/2011																														
SL/30	26/9/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/30	18/10/2011																														
SL/30	15/11/2011																														
SL/30	19/12/2011																			<1.00	<1.00				<1.00			<1.00		<1.00	<1.00	
SL/30	23/1/2012																														
SL/30	20/2/2012																														
SL/30	28/3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0	<0.10	<1.0	<0.10	<0.10	<1.0
SL/35	18/1/2008																														
SL/35	25/1/2008																														
SL/35	7/2/2008																														
SL/35	12/2/2008																														
SL/35	26/2/2008																														
SL/35	7/3/2008																														
SL/35	11/3/2008																														
SL/35	10/4/2008																														
SL/35	8/5/2008																														

SIDEGATE LANE RDF

1601

Site: SIDEGATE LANE RDF FACILITY

GROUNDWATER A CHEMICAL ANALYSIS - SUMMARY

TerraConsult

Sample Point	Date	1,1-Dichloroethane (µg/l)	1,1-Dichloroethene (µg/l)	1,1-Dichloropropene (µg/l)	1,2,3-Trichlorobenzene (VOC) (µg/l)	1,2,4-Trichlorobenzene (VOC) (µg/l)	1,2,4-Trichlorobenzene (SVOC) (µg/l)	1,2-Dibromoethane (µg/l)	1,2-Dichlorobenzene (VOC) (µg/l)	1,2-Dichlorobenzene (SVOC) (µg/l)	1,2-Dichloroethane (µg/l)	1,2-Dichloropropane (µg/l)	1,3-Dichlorobenzene (VOC) (µg/l)	1,3-Dichlorobenzene (SVOC) (µg/l)	1,3-Dichloropropane (µg/l)	1,4-Dichlorobenzene (VOC) (µg/l)	1,4-Dichlorobenzene (SVOC) (µg/l)	2,2-Dichloropropane (µg/l)	2,4-Dichlorophenol (µg/l)	2,4-Dimethylphenol (µg/l)	2,4-Dinitrotoluene (µg/l)	2,6-Dinitrotoluene (µg/l)	2-Chloronaphthalene (µg/l)	2-Chlorophenol (µg/l)	2-Chlorotoluene (µg/l)	2-Methylnaphthalene (µg/l)	2-Methylphenol (µg/l)	2-Nitrophenol (µg/l)	3 & 4-Methylphenol (µg/l)	3,5-Dimethylphenol (µg/l)	4-Bromophenyl ether (µg/l)
	EQS Freshwater Threshold	20 (µg/l)									10 (µg/l)																				
	Drinking Water Standard Threshold										3 (µg/l)	0.1 (µg/l)						0.1 (µg/l)														
SL/35	10/6/2008																														
SL/35	23/7/2008																														
SL/35	7/8/2008																														
SL/35	24/9/2008															<1.0															
SL/35	2/10/2008																														
SL/35	19/11/2008																														
SL/35	12/12/2008																														
SL/35	7/1/2009																														
SL/35	18/2/2009																														
SL/35	17/3/2009																<1.0														
SL/35	14/4/2009																														
SL/35	30/4/2009																														
SL/35	9/6/2009																														
SL/35	10/7/2009																														
SL/35	7/8/2009																														
SL/35	10/8/2009																														
SL/35	3/9/2009																<1.0														
SL/35	1/10/2009																														
SL/35	2/10/2009																														
SL/35	11/11/2009																														
SL/35	15/12/2009																														
SL/35	4/3/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/35	2/6/2010																														
SL/35	20/9/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/35	16/11/2010																														
SL/35	3/12/2010																														
SL/35	8/3/2011	<4.0	<4.0	<4.0	<4.0	<4.0	<2.0	<4.0	<4.0	<2.0	<4.0	<4.0	<4.0	<2.0	<4.0	<4.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
SL/35	27/4/2011																														
SL/35	24/6/2011																		<3.00	<3.00				<3.00			<3.00		<3.00	<3.00	
SL/35	26/9/2011	<10.0	<10.0	<10.0	<10.0	<10.0	<1.0	<10.0	<10.0	<1.0	<10.0	<10.0	<10.0	<1.0	<10.0	<10.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/35	18/10/2011	<10.0	<10.0	<10.0	<10.0	<10.0	<2.0	<10.0	<10.0	<2.0	<10.0	<10.0	<10.0	<2.0	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
SL/35	15/11/2011	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0	<4.0	<4.0	<1.0	<4.0	<4.0	<4.0	<1.0	<4.0	<4.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL/35	19/12/2011	<4.0	<4.0	<4.0	<4.0	<4.0	<2.0	<4.0	<4.0	<2.0	<4.0	<4.0	<4.0	<2.0	<4.0	<4.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
SL/35	23/1/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
SL/35	20/2/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0
SL/35	28/3/2012	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.30	<0.30	<2.0	<2.0	<2.0	<0.30	<2.0	<2.0	<0.30	<2.0	<0.30	<0.30	<2.0

SIDEGATE LANE RDF

1601

TerraConsult

Sample Point	Date	4-Chlorophenol (µg/l)	4-Chlorophenyl ether (µg/l)	4-Chlorotoluene (µg/l)	4-Nitrophenol (µg/l)	1,1,1,2-Tetrachloroethane (µg/l)	1,1,1-Trichloroethane (µg/l)	1,1,2,2-Tetrachloroethane (µg/l)	1,1,2-Trichloroethane (µg/l)	1,2,3-Trichloropropane (µg/l)	1,2,4-Trimethylbenzene (µg/l)	1,2-Dibromo-3-chloropropane (µg/l)	1,3,5-Trimethylbenzene (µg/l)	4-Chloro-3-methylphenol (µg/l)	2,4,5-Trichlorophenol (µg/l)	2,4,6-Trichlorophenol (µg/l)	4-bromofluorobenzene (%Recovery)	2-fluorobiphenyl (%Recovery)	4-fluorophenol (%Recovery)	2,4,6-Tribromophenol (%Recovery)	Cadmium, filtered (mg/l)	Cadmium, total (mg/l)	Chromium, total (mg/l)	Copper, total (mg/l)	Iron, total (mg/l)	Lead, total (mg/l)	Magnesium, total (mg/l)	Manganese, total (mg/l)	Mercury, total (mg/l)	Nickel, total (mg/l)	Potassium, total (mg/l)
	EQS Freshwater Threshold						100 (µg/l)		400 (µg/l)												5 (µg/l)	5 (µg/l)	250 (µg/l)	28 (µg/l)	1 (mg/l)	0.25 (mg/l)		50 (µg/l)	1 (µg/l)	200 (µg/l)	
	Drinking Water Standard Threshold															2 (µg/l)									0.2 (mg/l)	0.010 (mg/l)	50 (mg/l)				10 (mg/l)
SL/25	21/3/2006																													
SL/25	26/9/2006																													
SL/25	11/12/2006																													
SL/25	27/6/2007																													
SL/25	3/9/2007																													
SL/25	5/12/2007																													
SL/25	11/3/2008																				0.0014		<0.005	0.008	<0.05	<0.005	54	5.16		0.016	46
SL/25	10/6/2008																													
SL/25	24/9/2008										<1.0		<1.0								0.0013		<0.005	0.006	0.05	0.012	51	2.68	<0.0001	0.057	44
SL/25	12/12/2008																													
SL/25	17/3/2009										<1.0		<1.0								0.0004		0.005	0.007	0.3	0.007	54	5.37	<0.0001	0.0433	40
SL/25	9/6/2009																													
SL/25	3/9/2009										<1.0		<1.0								0.0011		0.006	0.006	<0.03	0.012	51	0.46	<0.0001	0.0654	47
SL/25	15/12/2009																													
SL/25	4/3/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0003		0.003	0.008	<0.03	0.074	60	1.99	<0.0001	0.0269	36
SL/25	2/6/2010																													
SL/25	20/9/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0006		0.0028	0.009	<0.19	<0.005	56	6.78	<0.0001	0.045	39
SL/25	3/12/2010																													
SL/25	8/3/2011		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0006		0.0039	0.008	<0.19	<0.005	54	4.93	<0.0001	0.042	39.6
SL/25	24/5/2011																													
SL/25	24/6/2011	<1.00														<1.00														
SL/25	25/7/2011																													
SL/25	24/8/2011																													
SL/25	26/9/2011																													
SL/25	18/10/2011																													
SL/25	15/11/2011																													
SL/25	19/12/2011	<1.00														<1.00														
SL/25	19/12/2011																													
SL/27	11/3/2008																				0.0012		<0.005	<0.005	<0.05	<0.005	25	0.11		<0.005	7.9
SL/27	10/6/2008																													
SL/27	24/9/2008										<1.0		<1.0								<0.0005		<0.005	<0.005	0.07	<0.005	26	0.14	<0.0001	0.009	8
SL/27	12/12/2008																													
SL/27	17/3/2009										<1.0		<1.0								<0.0003		0.001	0.002	0.05	0.008	26	0.16	<0.0001	0.0085	7.93
SL/27	9/6/2009																													
SL/27	3/9/2009										<1.0		<1.0								0.0003		0.002	0.003	<0.03	0.011	42	0.14	<0.0001	0.014	12
SL/27	15/12/2009																													
SL/27	4/3/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0003		<0.001	0.004	<0.03	<0.002	22	0.097	<0.0001	0.0015	11
SL/27	2/6/2010																													
SL/27	20/9/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					0.0009		<0.0007	0.005	<0.19	<0.005	31	0.305	<0.0001	0.006	11
SL/27	3/12/2010																													
SL/27	8/3/2011		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					0.0007		<0.0007	0.006	<0.19	<0.005	32	0.262	<0.0001	0.006	20.5
SL/27	24/5/2011																													
SL/27	24/6/2011	<1.00														<1.00														
SL/27	25/7/2011																													
SL/27	24/8/2011																													
SL/27	26/9/2011																													
SL/27	26/9/2011																													
SL/27	27/9/2011		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	97.4	100.8	88	100.8		<0.0006	0.0013	0.003	<0.19	0.006	50	0.619	<0.0001	0.019	16.7
SL/27	18/10/2011																													
SL/27	15/11/2011																													
SL/27	19/12/2011	<1.00														<1.00														
SL/30	26/2/2008																													
SL/30	11/3/2008																				0.0006	0.0006	<0.005	<0.005	<0.05	<0.005	10	0.075		<0.005	2.1
SL/30	10/4/2008																													
SL/30	8/5/2008																													

SIDEGATE LANE RDF

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Sample Point	Date	4-Chlorophenol (µg/l)	4-Chlorophenyl ether (µg/l)	4-Chlorotoluene (µg/l)	4-Nitrophenol (µg/l)	1,1,1,2-Tetrachloroethane (µg/l)	1,1,1-Trichloroethane (µg/l)	1,1,2,2-Tetrachloroethane (µg/l)	1,1,2-Trichloroethane (µg/l)	1,2,3-Trichloropropane (µg/l)	1,2,4-Trimethylbenzene (µg/l)	1,2-Dibromo-3-chloropropane (µg/l)	1,3,5-Trimethylbenzene (µg/l)	4-Chloro-3-methylphenol (µg/l)	2,4,5-Trichlorophenol (µg/l)	2,4,6-Trichlorophenol (µg/l)	4-bromofluorobenzene (%Recovery)	2-fluorobiphenyl (%Recovery)	4-fluorophenol (%Recovery)	2,4,6-Tribromophenol (%Recovery)	Cadmium, filtered (mg/l)	Cadmium, total (mg/l)	Chromium, total (mg/l)	Copper, total (mg/l)	Iron, total (mg/l)	Lead, total (mg/l)	Magnesium, total (mg/l)	Manganese, total (mg/l)	Mercury, total (mg/l)	Nickel, total (mg/l)	Potassium, total (mg/l)
	EQS Freshwater Threshold						100 (µg/l)		400 (µg/l)												5 (µg/l)	5 (µg/l)	250 (µg/l)	28 (µg/l)	1 (mg/l)	0.25 (mg/l)		50 (µg/l)	1 (µg/l)	200 (µg/l)	
	Drinking Water Standard Threshold															2 (µg/l)									0.2 (mg/l)	0.010 (mg/l)	50 (mg/l)				10 (mg/l)
SL/30	10/6/2008																														
SL/30	23/7/2008																														
SL/30	7/8/2008																														
SL/30	24/9/2008										<1.0		<1.0								<0.0005	<0.0005	<0.005	<0.005	2.61	<0.005	14	0.12	<0.0001	<0.005	3.1
SL/30	2/10/2008																														
SL/30	19/11/2008																														
SL/30	12/12/2008																														
SL/30	7/1/2009																														
SL/30	18/2/2009																														
SL/30	17/3/2009										<1.0		<1.0								<0.0003	<0.0003	<0.001	0.001	<0.03	0.007	22	0.12	<0.0001	0.0017	4.63
SL/30	14/4/2009																														
SL/30	30/4/2009																														
SL/30	9/6/2009																														
SL/30	10/7/2009																														
SL/30	6/8/2009																														
SL/30	7/8/2009																														
SL/30	3/9/2009										<1.0		<1.0								<0.0003	<0.0003	0.001	0.002	0.09	0.004	16	0.095	<0.0001	0.0022	3.3
SL/30	2/10/2009																														
SL/30	11/11/2009																														
SL/30	15/12/2009																														
SL/30	26/1/2010																														
SL/30	9/2/2010																														
SL/30	4/3/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0003	<0.0003	<0.001	0.008	<0.03	<0.002	15	0.075	<0.0001	<0.0009	2.46
SL/30	28/4/2010																														
SL/30	20/5/2010																														
SL/30	2/6/2010																														
SL/30	16/7/2010																														
SL/30	4/8/2010																														
SL/30	20/9/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0006	<0.0006	<0.0007	0.002	<0.19	<0.005	16	0.093	<0.0001	<0.002	3.56
SL/30	21/10/2010																														
SL/30	8/11/2010																														
SL/30	3/12/2010																														
SL/30	4/1/2011																														
SL/30	16/2/2011																														
SL/30	8/3/2011		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0006	<0.0006	<0.0007	0.007	<0.19	<0.005	20	0.079	<0.0001	0.002	3.75
SL/30	27/4/2011																														
SL/30	24/5/2011																														
SL/30	24/6/2011	<1.00														<1.00															
SL/30	25/7/2011																														
SL/30	24/8/2011																														
SL/30	26/9/2011		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	95.9	102	111.1	88.1			<0.0007	0.002	<0.19	0.027	18	0.13		<0.002	3.07
SL/30	18/10/2011																														
SL/30	15/11/2011																														
SL/30	19/12/2011	<1.00														<1.00															
SL/30	23/1/2012																														
SL/30	20/2/2012																														
SL/30	28/3/2012	<0.10	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.10	89.1	97.3	94.1	90.4			<0.0020	<0.009	<0.23	<0.006	19.6	0.067		<0.003	4.09
SL/35	18/1/2008																														
SL/35	25/1/2008																														
SL/35	7/2/2008																														
SL/35	12/2/2008																														
SL/35	26/2/2008																														
SL/35	7/3/2008																														
SL/35	11/3/2008																				0.0006	0.0006	<0.005	<0.005	<0.05	<0.005	17	0.085		<0.005	4.2
SL/35	10/4/2008																														
SL/35	8/5/2008																														

SIDEGATE LANE RDF

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TerraConsult

Sample Point	Date	4-Chlorophenol (µg/l)	4-Chlorophenyl ether (µg/l)	4-Chlorotoluene (µg/l)	4-Nitrophenol (µg/l)	1,1,1,2-Tetrachloroethane (µg/l)	1,1,1-Trichloroethane (µg/l)	1,1,2,2-Tetrachloroethane (µg/l)	1,1,2-Trichloroethane (µg/l)	1,2,3-Trichloropropane (µg/l)	1,2,4-Trimethylbenzene (µg/l)	1,2-Dibromo-3-chloropropane (µg/l)	1,3,5-Trimethylbenzene (µg/l)	4-Chloro-3-methylphenol (µg/l)	2,4,5-Trichlorophenol (µg/l)	2,4,6-Trichlorophenol (µg/l)	4-bromofluorobenzene (%Recovery)	2-fluorobiphenyl (%Recovery)	4-fluorophenol (%Recovery)	2,4,6-Tribromophenol (%Recovery)	Cadmium, filtered (mg/l)	Cadmium, total (mg/l)	Chromium, total (mg/l)	Copper, total (mg/l)	Iron, total (mg/l)	Lead, total (mg/l)	Magnesium, total (mg/l)	Manganese, total (mg/l)	Mercury, total (mg/l)	Nickel, total (mg/l)	Potassium, total (mg/l)
	EQS Freshwater Threshold						100 (µg/l)		400 (µg/l)												5 (µg/l)	5 (µg/l)	250 (µg/l)	28 (µg/l)	1 (mg/l)	0.25 (mg/l)		50 (µg/l)	1 (µg/l)	200 (µg/l)	
	Drinking Water Standard Threshold															2 (µg/l)									0.2 (mg/l)	0.010 (mg/l)	50 (mg/l)				10 (mg/l)
SL/35	10/6/2008																														
SL/35	23/7/2008																														
SL/35	7/8/2008																														
SL/35	24/9/2008										<1.0		<1.0								<0.0005	<0.0005	<0.005	<0.005	<0.05	<0.005	15	0.078	<0.0001	<0.005	4.6
SL/35	2/10/2008																														
SL/35	19/11/2008																														
SL/35	12/12/2008																														
SL/35	7/1/2009																														
SL/35	18/2/2009																														
SL/35	17/3/2009										<1.0		<1.0								<0.0003	<0.0003	<0.001	0.004	<0.03	0.007	15	0.12	<0.0001	0.0046	4.74
SL/35	14/4/2009																														
SL/35	30/4/2009																														
SL/35	9/6/2009																														
SL/35	10/7/2009																														
SL/35	7/8/2009																														
SL/35	10/8/2009																														
SL/35	3/9/2009										<1.0		<1.0								0.0003	0.0003	<0.001	0.001	<0.03	0.007	17	0.084	<0.0001	0.0054	4.69
SL/35	1/10/2009																														
SL/35	2/10/2009																														
SL/35	11/11/2009																														
SL/35	15/12/2009																														
SL/35	4/3/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					<0.0003	<0.0003	<0.001	0.008	<0.03	0.003	25	0.11	<0.0001	0.0015	13
SL/35	2/6/2010																														
SL/35	20/9/2010		<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0					0.0007	0.0007	<0.0007	0.021	<0.19	<0.005	23	0.221	<0.0001	0.017	48.3
SL/35	16/11/2010																													0.027	
SL/35	3/12/2010																														
SL/35	8/3/2011		<2.0	<4.0	<10.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<8.0	<4.0	<2.0	<2.0	<2.0					<0.0006	<0.0006	0.0011				53		<0.0001		260
SL/35	27/4/2011																														
SL/35	24/6/2011	<3.00														<3.00															
SL/35	26/9/2011		<1.0	<10.0	<5.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<20.0	<10.0	<1.0	<1.0	<1.0	97.4	93.7	96.5	97.3			<0.0007	0.017	6.58	0.03	45	1.28	<0.0001	0.006	173
SL/35	18/10/2011		<2.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<20.0	<10.0	<2.0	<2.0	<2.0	96.1	97.8	93.3	102.4			<0.0007	0.003	2.34	<0.005	48	0.984	<0.0001		136
SL/35	15/11/2011		<1.0	<4.0	<5.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<8.0	<4.0	<1.0	<1.0	<1.0	85.7	95.7	97.4	102.7			0.0093	0.035	<0.19	<0.005	44	0.416	<0.0001	0.032	194
SL/35	19/12/2011		<2.0	<4.0	<10.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<8.0	<4.0	<2.0	<2.0	<2.0	97.4	103.2	114	99.3			0.0053	0.036	<0.19	0.006	54	0.334	<0.0001	0.039	249
SL/35	23/1/2012		<2.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	99.6	98.4	95	98.4			0.0015	0.068	<0.19	0.006	51	0.198	<0.0001	0.031	238
SL/35	20/2/2012		<2.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	102.6	93.4	96.3	93.7			<0.00070	0.042	<0.19	<0.005	47.4	0.219	<0.0001	0.023	215
SL/35	28/3/2012	<0.30	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<0.30	89.2	97	96.4	99.9			<0.0020	0.032	<0.23	0.006	41.1	0.713	<0.0001	0.04	160

SIDEGATE LANE RDF

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Sample Point	Date	Sodium, total (mg/l)	Zinc, total (mg/l)	Acenaphthene (PAH) (µg/l)	Acenaphthene (SVOC) (µg/l)	Acenaphthylene (PAH) (µg/l)	Acenaphthylene (SVOC) (µg/l)	Alkalinity as CaCO3 (mg/l)	Ammoniacal Nitrogen (NH4-N) (mg/l)	Anthracene (PAH) (µg/l)	Anthracene (SVOC) (µg/l)	Benzene (BTEX) (µg/l)	Benzene (VOC) (µg/l)	Benzo(a)anthracene (PAH) (µg/l)	Benzo(a)anthracene (SVOC) (µg/l)	Benzo(a)pyrene (PAH) (µg/l)	Benzo(a)pyrene (SVOC) (µg/l)	Benzo(b)fluoranthene (PAH) (µg/l)	Benzo(b)fluoranthene (SVOC) (µg/l)	Benzo(ghi)perylene (PAH) (µg/l)	Benzo(ghi)perylene (SVOC) (µg/l)	Benzo(k)fluoranthene (PAH) (µg/l)	Benzo(k)fluoranthene (SVOC) (µg/l)	Biological Oxygen Demand (mg/l)	Bromobenzene (µg/l)	Bromochloromethane (µg/l)	Bromodichloromethane (µg/l)	Bromoform (µg/l)	Bromomethane (µg/l)	Calcium (mg/l)	Carbon Tetrachloride (µg/l)
	EQS Freshwater Threshold	170 (mg/l)	125 (µg/l)							0.4 (µg/l)	0.4 (µg/l)	30 (µg/l)	30 (µg/l)					0.03 (µg/l)	0.03 (µg/l)	0.002 (µg/l)		0.03 (µg/l)									12 (µg/l)
	Drinking Water Standard Threshold								0.5			1 (µg/l)	1 (µg/l)			0.01 (µg/l)	0.01 (µg/l)													250 (mg/l)	
SL/25	21/3/2006																														
SL/25	26/9/2006																														
SL/25	11/12/2006																														
SL/25	27/6/2007																														
SL/25	3/9/2007																														
SL/25	5/12/2007																														
SL/25	11/3/2008	180	0.006					757	66.2															3						299	
SL/25	10/6/2008								58.8																						
SL/25	24/9/2008	201	<0.005					633	54.1			<0.10												5						310	
SL/25	12/12/2008								49.3																						
SL/25	17/3/2009	131	0.027					557	54.2			0.32												4						303	
SL/25	9/6/2009								53.5																						
SL/25	3/9/2009	229	0.039					700	55.6			<0.10												3						238	
SL/25	15/12/2009								50.9																						
SL/25	4/3/2010	112	<0.002	<0.01	<1.0	<0.01	<1.0	640	41.6	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	3	<1.0	<1.0	<1.0	<1.0	<1.0	287	<1.0
SL/25	2/6/2010								59.1																						
SL/25	20/9/2010	147	<0.003	<0.01	<1.0	<0.01	<1.0	706	52.5	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	5	<1.0	<1.0	<1.0	<1.0	<1.0	325	<1.0
SL/25	3/12/2010								31																						
SL/25	8/3/2011	123	0.005	<0.01	<1.0	<0.01	<1.0	525	51.8	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	4	<1.0	<1.0	<1.0	<1.0	See A/C	345	<1.0
SL/25	24/5/2011																														
SL/25	24/6/2011								63.8																						
SL/25	25/7/2011																														
SL/25	24/8/2011																														
SL/25	26/9/2011																														
SL/25	18/10/2011																														
SL/25	15/11/2011																														
SL/25	19/12/2011								60.8																						
SL/25	19/12/2011																														
SL/27	11/3/2008	49	0.006					418	1.5															<1						336	
SL/27	10/6/2008								1.6																						
SL/27	24/9/2008	47	0.008					407	1.7			0.1												2						337	
SL/27	12/12/2008								0.6																						
SL/27	17/3/2009	47	0.021					176	1.4			0.31												3						343	
SL/27	9/6/2009								5.9																						
SL/27	3/9/2009	61	0.044					497	6.7			0.11												1						391	
SL/27	15/12/2009								3.5																						
SL/27	4/3/2010	42	0.005	<0.01	<1.0	<0.01	<1.0	366	<0.3	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	278	<1.0
SL/27	2/6/2010								4.7																						
SL/27	20/9/2010	46.9	<0.003	<0.01	<1.0	<0.01	<1.0	454	3.67	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	319	<1.0
SL/27	3/12/2010																														
SL/27	8/3/2011	74.8	0.007	<0.01	<1.0	<0.01	<1.0	375	2.1	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<1	<1.0	<1.0	<1.0	<1.0	See A/C	400	<1.0
SL/27	24/5/2011																														
SL/27	24/6/2011								6.18																						
SL/27	25/7/2011																														
SL/27	24/8/2011																														
SL/27	26/9/2011																														
SL/27	26/9/2011																														
SL/27	27/9/2011	68.5	0.027	<0.01	<1.0	<0.01	<1.0	670	8.2	<0.01	<1.0	0.2	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	3	<1.0	<1.0	<1.0	<1.0	<1.0	422	<1.0
SL/27	18/10/2011																														
SL/27	15/11/2011																														
SL/27	19/12/2011								7.97																						
SL/30	26/2/2008								<0.3																						
SL/30	11/3/2008	98	0.015					236	<0.3															1						185	
SL/30	10/4/2008								<0.3																						
SL/30	8/5/2008								<0.3																						

SIDEGATE LANE RDF

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Sample Point	Date	Sodium, total (mg/l)	Zinc, total (mg/l)	Acenaphthene (PAH) (µg/l)	Acenaphthene (SVOC) (µg/l)	Acenaphthylene (PAH) (µg/l)	Acenaphthylene (SVOC) (µg/l)	Alkalinity as CaCO3 (mg/l)	Ammoniacal Nitrogen (NH4-N) (mg/l)	Anthracene (PAH) (µg/l)	Anthracene (SVOC) (µg/l)	Benzene (BTEX) (µg/l)	Benzene (VOC) (µg/l)	Benzo(a)anthracene (PAH) (µg/l)	Benzo(a)anthracene (SVOC) (µg/l)	Benzo(a)pyrene (PAH) (µg/l)	Benzo(a)pyrene (SVOC) (µg/l)	Benzo(b)fluoranthene (PAH) (µg/l)	Benzo(b)fluoranthene (SVOC) (µg/l)	Benzo(ghi)perylene (PAH) (µg/l)	Benzo(ghi)perylene (SVOC) (µg/l)	Benzo(k)fluoranthene (PAH) (µg/l)	Benzo(k)fluoranthene (SVOC) (µg/l)	Biological Oxygen Demand (mg/l)	Bromobenzene (µg/l)	Bromochloromethane (µg/l)	Bromodichloromethane (µg/l)	Bromoform (µg/l)	Bromomethane (µg/l)	Calcium (mg/l)	Carbon Tetrachloride (µg/l)
	EQS Freshwater Threshold	170 (mg/l)	125 (µg/l)							0.4 (µg/l)	0.4 (µg/l)	30 (µg/l)	30 (µg/l)					0.03 (µg/l)	0.03 (µg/l)	0.002 (µg/l)		0.03 (µg/l)									12 (µg/l)
	Drinking Water Standard Threshold								0.5			1 (µg/l)	1 (µg/l)			0.01 (µg/l)	0.01 (µg/l)													250 (mg/l)	
SL/30	10/6/2008								<0.3																						
SL/30	23/7/2008								<0.3																						
SL/30	7/8/2008								<0.3																						
SL/30	24/9/2008	116	0.013					286	<0.3			<0.10												1						204	
SL/30	2/10/2008								<0.3																						
SL/30	19/11/2008								<0.3																						
SL/30	12/12/2008								<0.3																						
SL/30	7/1/2009								0.3																						
SL/30	18/2/2009								<0.3																						
SL/30	17/3/2009	239	0.009					444	<0.3			<0.10												1						311	
SL/30	14/4/2009								<0.3																						
SL/30	30/4/2009								<0.3																						
SL/30	9/6/2009								1.8																						
SL/30	10/7/2009								<0.3																						
SL/30	6/8/2009								<0.3																						
SL/30	7/8/2009																														
SL/30	3/9/2009	177	0.009					268	<0.3			<0.10												<1						271	
SL/30	2/10/2009								<0.3																						
SL/30	11/11/2009								<0.3																						
SL/30	15/12/2009								<0.3																						
SL/30	26/1/2010								<0.3																						
SL/30	9/2/2010								<0.3																						
SL/30	4/3/2010	115	0.007	<0.01	<1.0	<0.01	<1.0	237	<0.3	0.011	<1.0	<0.10	<1.0	0.049	<1.0	0.093	<1.0	0.078	<1.0	0.037	<1.0	0.047	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	244	<1.0
SL/30	28/4/2010								<0.3																						
SL/30	20/5/2010								0.6																						
SL/30	2/6/2010								<0.19																						
SL/30	16/7/2010								<0.19																						
SL/30	4/8/2010								<0.19																						
SL/30	20/9/2010	156	<0.003	<0.01	<1.0	<0.01	<1.0	285	<0.19	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	283	<1.0
SL/30	21/10/2010								<0.19																						
SL/30	8/11/2010								<0.19																						
SL/30	3/12/2010								<0.19																						
SL/30	4/1/2011								<0.19																						
SL/30	16/2/2011								<0.19																						
SL/30	8/3/2011	175	0.003	<0.01	<1.0	<0.01	<1.0	263	<0.19	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	3	<1.0	<1.0	<1.0	<1.0	See A/C	324	<1.0
SL/30	27/4/2011								<0.19																						
SL/30	24/5/2011								<0.19																						
SL/30	24/6/2011								<0.19																						
SL/30	25/7/2011								<0.19																						
SL/30	24/8/2011								<0.19																						
SL/30	26/9/2011	157	0.007	<0.01	<1.0	<0.01	<1.0	283	<0.19	<0.01	<1.0	<0.10	<1.0	0.028	<1.0	<0.05	<1.0	<0.05	<1.0	<0.03	<1.0	<0.02	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	283	<1.0
SL/30	18/10/2011								<0.19																						
SL/30	15/11/2011								<0.19																						
SL/30	19/12/2011								<0.19																						
SL/30	23/1/2012								<0.27																						
SL/30	20/2/2012								<0.27																						
SL/30	28/3/2012	169	<0.018	<0.01	<1.0	<0.01	<1.0	305	<0.27	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	313	<1.0
SL/35	18/1/2008								0.4																						
SL/35	25/1/2008								7.3																						
SL/35	7/2/2008								0.4																						
SL/35	12/2/2008								<0.3																						
SL/35	26/2/2008								<0.3																						
SL/35	7/3/2008								<0.3																						
SL/35	11/3/2008	41	0.008					317	0.9															<1						236	
SL/35	10/4/2008								<0.3																						
SL/35	8/5/2008								<0.3																						

SIDEGATE LANE RDF

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Sample Point	Date	Sodium, total (mg/l)	Zinc, total (mg/l)	Acenaphthene (PAH) (µg/l)	Acenaphthene (SVOC) (µg/l)	Acenaphthylene (PAH) (µg/l)	Acenaphthylene (SVOC) (µg/l)	Alkalinity as CaCO3 (mg/l)	Ammoniacal Nitrogen (NH4-N) (mg/l)	Anthracene (PAH) (µg/l)	Anthracene (SVOC) (µg/l)	Benzene (BTEX) (µg/l)	Benzene (VOC) (µg/l)	Benzo(a)anthracene (PAH) (µg/l)	Benzo(a)anthracene (SVOC) (µg/l)	Benzo(a)pyrene (PAH) (µg/l)	Benzo(a)pyrene (SVOC) (µg/l)	Benzo(b)fluoranthene (PAH) (µg/l)	Benzo(b)fluoranthene (SVOC) (µg/l)	Benzo(ghi)perylene (PAH) (µg/l)	Benzo(ghi)perylene (SVOC) (µg/l)	Benzo(k)fluoranthene (PAH) (µg/l)	Benzo(k)fluoranthene (SVOC) (µg/l)	Biological Oxygen Demand (mg/l)	Bromobenzene (µg/l)	Bromochloromethane (µg/l)	Bromodichloromethane (µg/l)	Bromoform (µg/l)	Bromomethane (µg/l)	Calcium (mg/l)	Carbon Tetrachloride (µg/l)
	EQS Freshwater Threshold	170 (mg/l)	125 (µg/l)							0.4 (µg/l)	0.4 (µg/l)	30 (µg/l)	30 (µg/l)					0.03 (µg/l)	0.03 (µg/l)	0.002 (µg/l)		0.03 (µg/l)									12 (µg/l)
	Drinking Water Standard Threshold								0.5			1 (µg/l)	1 (µg/l)			0.01 (µg/l)	0.01 (µg/l)													250 (mg/l)	
SL/35	10/6/2008								<0.3																						
SL/35	23/7/2008								<0.3																						
SL/35	7/8/2008								<0.3																						
SL/35	24/9/2008	48	<0.005					307	<0.3			<0.10												2						208	
SL/35	2/10/2008								<0.3																						
SL/35	19/11/2008								0.5																						
SL/35	12/12/2008								1.2																						
SL/35	7/1/2009								1.2																						
SL/35	18/2/2009								<0.3																						
SL/35	17/3/2009	30	0.011					476	<0.3			<0.10												<1						276	
SL/35	14/4/2009								<0.3																						
SL/35	30/4/2009								<0.3																						
SL/35	9/6/2009								0.5																						
SL/35	10/7/2009								0.7																						
SL/35	7/8/2009																														
SL/35	10/8/2009								<0.3																						
SL/35	3/9/2009	53	0.033					362	<0.3			<0.10												1						231	
SL/35	1/10/2009								0.5																						
SL/35	2/10/2009																														
SL/35	11/11/2009																														
SL/35	15/12/2009								<0.3																						
SL/35	4/3/2010	55	0.004	<0.01	<1.0	<0.01	<1.0	264	<0.3	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	299	<1.0
SL/35	2/6/2010								<0.19																						
SL/35	20/9/2010	76.3	<0.003	<0.01	<1.0	<0.01	<1.0	433	<0.19	<0.01	<1.0	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<0.01	<1.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	339	<1.0
SL/35	16/11/2010																														
SL/35	3/12/2010								0.34																						
SL/35	8/3/2011	104		<0.01	<2.0	<0.01	<2.0	550	0.68	<0.01	<2.0	<0.10	<4.0	<0.01	<2.0	<0.01	<2.0	<0.01	<2.0	<0.01	<2.0	<0.01	<2.0	4	<4.0	<4.0	<4.0	<4.0	See A/C	504	<4.0
SL/35	27/4/2011																														
SL/35	24/6/2011								0.58																						
SL/35	26/9/2011	95.5	0.104	<0.04	<1.0	<0.04	<1.0	594	3.38	<0.04	<1.0	<0.10	<10.0	<0.04	<1.0	<0.04	<1.0	<0.04	<1.0	<0.04	<1.0	<0.04	<1.0	12	<10.0	<10.0	<10.0	<10.0	<10.0	367	<10.0
SL/35	18/10/2011	111		<0.04	<2.0	<0.04	<2.0	467	3.71	<0.04	<2.0	<0.10	<10.0	<0.04	<2.0	<0.04	<2.0	<0.04	<2.0	<0.04	<2.0	<0.04	<2.0	13	<10.0	<10.0	<10.0	<10.0	<10.0	391	<10.0
SL/35	15/11/2011	282	0.017	<0.02	<1.0	<0.02	<1.0	517	<0.19	<0.02	<1.0	<0.10	<4.0	<0.02	<1.0	<0.02	<1.0	<0.02	<1.0	<0.02	<1.0	<0.02	<1.0	2	<4.0	<4.0	<4.0	<4.0	<4.0	316	<4.0
SL/35	19/12/2011	152	0.009	<0.04	<2.0	<0.04	<2.0	553	0.5	<0.04	<2.0	<0.10	<4.0	<0.04	<2.0	<0.04	<2.0	<0.04	<2.0	<0.04	<2.0	<0.04	<2.0	See A/C	<4.0	<4.0	<4.0	<4.0	<4.0	386	<4.0
SL/35	23/1/2012	206	0.02	<0.02	<2.0	<0.02	<2.0	422	<0.27	<0.02	<2.0	<0.10	<1.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	2	<1.0	<1.0	<1.0	<1.0	<1.0	315	<1.0
SL/35	20/2/2012	166	0.0045	<0.02	<2.0	<0.02	<2.0			<0.02	<2.0	<0.10	<1.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	285	<1.0
SL/35	28/3/2012	132	<0.018	<0.02	<2.0	<0.02	<2.0	454	<0.27	<0.02	<2.0	<0.10	<2.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	<0.02	<2.0	3	<2.0	<2.0	<2.0	<2.0	<2.0	319	<2.0

SIDEGATE LANE RDF

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TerraConsult

Sample Point	Date	Chloride (mg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	Chloroform (µg/l)	Chloromethane (µg/l)	Chrysene (PAH) (µg/l)	Chrysene (SVOC) (µg/l)	Chemical Oxygen Demand (mg/l)	Dibenz(a,h)anthracene (PAH) (µg/l)	Dibenz(a,h)anthracene (SVOC) (µg/l)	Dibenzofuran (µg/l)	Dibromochloromethane (µg/l)	Dibromomethane (µg/l)	Dichlorodifluoromethane (µg/l)	Dichloromethane (µg/l)	Diethylphthalate (µg/l)	Dimethylphthalate (µg/l)	Di-n-Butylphthalate (µg/l)	Di-n-octylphthalate (µg/l)	Diphenylamine (µg/l)	Dissolved Oxygen (mg/l)	Ethyl Benzene (BTEX) (µg/l)	Ethyl Benzene (VOC) (µg/l)	Fluoranthene (PAH) (µg/l)	Fluoranthene (SVOC) (µg/l)	Fluorene (PAH) (µg/l)	Fluorene (SVOC) (µg/l)	Hexachlorobenzene (SVOC) (µg/l)	Hexachlorobutadiene (VOC) (µg/l)	Hexachlorobutadiene (SVOC) (µg/l)
	EQS Freshwater Threshold	250 (mg/l)			2.5																		50 (µg/l)	50 (µg/l)			0.1 (µg/l)	0.1 (µg/l)	0.03 (µg/l)	0.6 (µg/l)	0.1 (µg/l)
	Drinking Water Standard Threshold															20 (µg/l)																
SL/25	21/3/2006																															
SL/25	26/9/2006																															
SL/25	11/12/2006																															
SL/25	27/6/2007																															
SL/25	3/9/2007																															
SL/25	5/12/2007																															
SL/25	11/3/2008	248							110														1.4									
SL/25	10/6/2008	267							74														2.4									
SL/25	24/9/2008	281	<1.0						78														2.3	<0.10								
SL/25	12/12/2008	274							82														2									
SL/25	17/3/2009	175	<1.0						70														1.7	<0.10								
SL/25	9/6/2009	284							86														1.5									
SL/25	3/9/2009	323	<1.0						105														2.4	<0.10								
SL/25	15/12/2009	315							100														1.8									
SL/25	4/3/2010	179	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	67	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.2	<0.10	<1.0	0.016	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/25	2/6/2010	202							83														1.9									
SL/25	20/9/2010	219	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	79	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/25	3/12/2010	146							68														2.5									
SL/25	8/3/2011	178	<1.0	<1.0	<1.0	See A/C	<0.01	<1.0	103	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.9	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/25	24/5/2011																															
SL/25	24/6/2011	266																					2.7									
SL/25	25/7/2011																															
SL/25	24/8/2011																															
SL/25	26/9/2011																															
SL/25	18/10/2011																															
SL/25	15/11/2011																															
SL/25	19/12/2011	292																					1.6									
SL/25	19/12/2011																															
SL/27	11/3/2008	82							39														1.3									
SL/27	10/6/2008	71							34														1.4									
SL/27	24/9/2008	77	<1.0						32														2	<0.10								
SL/27	12/12/2008	70							31														2.4									
SL/27	17/3/2009	80	<1.0						<20														2	<0.10								
SL/27	9/6/2009	91							26														1.8									
SL/27	3/9/2009	114	<1.0						33														2.7	<0.10								
SL/27	15/12/2009	99							26														2.2									
SL/27	4/3/2010	97	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	56	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.2	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/27	2/6/2010	92							23														2.1									
SL/27	20/9/2010	96.8	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	46	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/27	3/12/2010																															
SL/27	8/3/2011	144	<1.0	<1.0	<1.0	See A/C	<0.01	<1.0	94	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/27	24/5/2011																															
SL/27	24/6/2011	102																					2.9									
SL/27	25/7/2011																															
SL/27	24/8/2011																															
SL/27	26/9/2011																															
SL/27	26/9/2011																															
SL/27	27/9/2011	105	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	35	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/27	18/10/2011																															
SL/27	15/11/2011																															
SL/27	19/12/2011	105																					1.2									
SL/30	26/2/2008	216							37														1.9									
SL/30	11/3/2008	159							67														2									
SL/30	10/4/2008	196							21														2.8									
SL/30	8/5/2008	194							<20														1.6									

SIDEGATE LANE RDF

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Sample Point	Date	Chloride (mg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	Chloroform (µg/l)	Chloromethane (µg/l)	Chrysene (PAH) (µg/l)	Chrysene (SVOC) (µg/l)	Chemical Oxygen Demand (mg/l)	Dibenz(a,h)anthracene (PAH) (µg/l)	Dibenz(a,h)anthracene (SVOC) (µg/l)	Dibenzofuran (µg/l)	Dibromochloromethane (µg/l)	Dibromomethane (µg/l)	Dichlorodifluoromethane (µg/l)	Dichloromethane (µg/l)	Diethylphthalate (µg/l)	Dimethylphthalate (µg/l)	Di-n-Butylphthalate (µg/l)	Di-n-octylphthalate (µg/l)	Diphenylamine (µg/l)	Dissolved Oxygen (mg/l)	Ethyl Benzene (BTEX) (µg/l)	Ethyl Benzene (VOC) (µg/l)	Fluoranthene (PAH) (µg/l)	Fluoranthene (SVOC) (µg/l)	Fluorene (PAH) (µg/l)	Fluorene (SVOC) (µg/l)	Hexachlorobenzene (SVOC) (µg/l)	Hexachlorobutadiene (VOC) (µg/l)	Hexachlorobutadiene (SVOC) (µg/l)
	EQS Freshwater Threshold	250 (mg/l)			2.5																		50 (µg/l)	50 (µg/l)			0.1 (µg/l)	0.1 (µg/l)	0.03 (µg/l)	0.6 (µg/l)	0.1 (µg/l)
	Drinking Water Standard Threshold															20 (µg/l)																
SL/30	10/6/2008	181							23													1.4									
SL/30	23/7/2008	191							33													1.4									
SL/30	7/8/2008	151							74													<0.5									
SL/30	24/9/2008	176	<1.0						52													2	<0.10								
SL/30	2/10/2008	177							40													2.9									
SL/30	19/11/2008	168							25													3.2									
SL/30	12/12/2008	180							82													3.1									
SL/30	7/1/2009	188							32													1.3									
SL/30	18/2/2009	342							51													2.1									
SL/30	17/3/2009	587	<1.0						87													2.4	<0.10								
SL/30	14/4/2009	495							44													2.2									
SL/30	30/4/2009	418							27													1.5									
SL/30	9/6/2009	314							33													1.3									
SL/30	10/7/2009	343							<20													1.2									
SL/30	6/8/2009	192							32													2.8									
SL/30	7/8/2009																														
SL/30	3/9/2009	331	<1.0						62													2.1	<0.10								
SL/30	2/10/2009	318							35																						
SL/30	11/11/2009	284							<20													4.1									
SL/30	15/12/2009	273							35													4.7									
SL/30	26/1/2010	251							41													7.1									
SL/30	9/2/2010	342							48													3.8									
SL/30	4/3/2010	265	<1.0	<1.0	<1.0	<1.0	0.044	<1.0	103	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4	<0.10	<1.0	0.104	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/30	28/4/2010	382							23													1.9									
SL/30	20/5/2010	374							23													2.8									
SL/30	2/6/2010	359							<20													2.1									
SL/30	16/7/2010	374							20													3.5									
SL/30	4/8/2010	377							47													2.3									
SL/30	20/9/2010	311	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	50	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/30	21/10/2010	330							19																						
SL/30	8/11/2010	344							20													3.8									
SL/30	3/12/2010	213							32																						
SL/30	4/1/2011	363							20													2.8									
SL/30	16/2/2011	409							23													2.8									
SL/30	8/3/2011	363	<1.0	<1.0	<1.0	See A/C	<0.01	<1.0	17	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.3	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0		<1.0	<1.0
SL/30	27/4/2011	415							57													2.8									
SL/30	24/5/2011	429							48													2									
SL/30	24/6/2011	412																				2.9									
SL/30	25/7/2011	223							40													4.8									
SL/30	24/8/2011	370							49													2.8									
SL/30	26/9/2011	376	<1.0	<1.0	<1.0	<1.0	0.018	<1.0		<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.10	<1.0	0.037	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/30	18/10/2011	372							37													2.8									
SL/30	15/11/2011	357							29													2.2									
SL/30	19/12/2011	269																				4.2									
SL/30	23/1/2012	370							43													2.6									
SL/30	20/2/2012	403							27													2.4									
SL/30	28/3/2012	417	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	42	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/35	18/1/2008	32							51													<0.5									
SL/35	25/1/2008	67							<20													2.4									
SL/35	7/2/2008	32							<20													<0.5									
SL/35	12/2/2008	36							<20													<0.5									
SL/35	26/2/2008	35							31													1.8									
SL/35	7/3/2008	35							<20													See A/C									
SL/35	11/3/2008	36							<20													1.7									
SL/35	10/4/2008	31							28													3.1									
SL/35	8/5/2008	34							113													1.7									

SIDEGATE LANE RDF

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Sample Point	Date	Chloride (mg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	Chloroform (µg/l)	Chloromethane (µg/l)	Chrysene (PAH) (µg/l)	Chrysene (SVOC) (µg/l)	Chemical Oxygen Demand (mg/l)	Dibenz(a,h)anthracene (PAH) (µg/l)	Dibenz(a,h)anthracene (SVOC) (µg/l)	Dibenzofuran (µg/l)	Dibromochloromethane (µg/l)	Dibromomethane (µg/l)	Dichlorodifluoromethane (µg/l)	Dichloromethane (µg/l)	Diethylphthalate (µg/l)	Dimethylphthalate (µg/l)	Di-n-Butylphthalate (µg/l)	Di-n-octylphthalate (µg/l)	Diphenylamine (µg/l)	Dissolved Oxygen (mg/l)	Ethyl Benzene (BTEX) (µg/l)	Ethyl Benzene (VOC) (µg/l)	Fluoranthene (PAH) (µg/l)	Fluoranthene (SVOC) (µg/l)	Fluorene (PAH) (µg/l)	Fluorene (SVOC) (µg/l)	Hexachlorobenzene (SVOC) (µg/l)	Hexachlorobutadiene (VOC) (µg/l)	Hexachlorobutadiene (SVOC) (µg/l)
	EQS Freshwater Threshold	250 (mg/l)			2.5																		50 (µg/l)	50 (µg/l)			0.1 (µg/l)	0.1 (µg/l)	0.03 (µg/l)	0.6 (µg/l)	0.1 (µg/l)
	Drinking Water Standard Threshold															20 (µg/l)																
SL/35	10/6/2008	33							<20													1.5									
SL/35	23/7/2008	29							47													1.6									
SL/35	7/8/2008	28							25													2.2									
SL/35	24/9/2008	37	<1.0						32													0.7	<0.10								
SL/35	2/10/2008	35							<20													2.6									
SL/35	19/11/2008	39							<20													2.7									
SL/35	12/12/2008	34							<20													2.9									
SL/35	7/1/2009	31							<20													1.5									
SL/35	18/2/2009	46							<20													1.5									
SL/35	17/3/2009	36	<1.0						100													1.6	<0.10								
SL/35	14/4/2009	37							27													1.6									
SL/35	30/4/2009	39							<20													1.1									
SL/35	9/6/2009	38							21													1.7									
SL/35	10/7/2009	40							<20													1.4									
SL/35	7/8/2009																														
SL/35	10/8/2009	37							23																						
SL/35	3/9/2009	41	<1.0						64													3.3	<0.10								
SL/35	1/10/2009	36							<20													1.6									
SL/35	2/10/2009																														
SL/35	11/11/2009																														
SL/35	15/12/2009	40							26													1.4									
SL/35	4/3/2010	97	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	55	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.9	<0.10	<1.0	0.013	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/35	2/6/2010	53							<20													1.7									
SL/35	20/9/2010	151	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	120	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.8	<0.10	<1.0	<0.01	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0
SL/35	16/11/2010	215																													
SL/35	3/12/2010	112							49													1.9									
SL/35	8/3/2011	389	<4.0	<4.0	<4.0	See A/C	<0.01	<2.0	263	<0.01	<2.0	<2.0	<4.0	<4.0	<4.0	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.4	<0.10	<4.0	<0.01	<2.0	<0.01	<2.0	<2.0	<4.0	<2.0
SL/35	27/4/2011	276																													
SL/35	24/6/2011	286																				<0.5									
SL/35	26/9/2011	242	<10.0	<10.0	<10.0	<10.0	<0.04	<1.0	955	<0.04	<1.0	<1.0	<10.0	<10.0	<10.0	<10.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.10	<10.0	<0.04	<1.0	<0.04	<1.0	<1.0	<10.0	<1.0
SL/35	18/10/2011	230	<10.0	<10.0	<10.0	<10.0	<0.04	<2.0	385	<0.04	<2.0	<2.0	<10.0	<10.0	See A/C	<10.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5	<0.10	<10.0	<0.04	<2.0	<0.04	<2.0	<2.0	<10.0	<2.0
SL/35	15/11/2011	360	<4.0	<4.0	<4.0	<4.0	<0.02	<1.0	268	<0.02	<1.0	<1.0	<4.0	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	2	<0.10	<4.0	<0.02	<1.0	<0.02	<1.0	<1.0	<4.0	<1.0
SL/35	19/12/2011	460	<4.0	<4.0	<4.0	<4.0	<0.04	<2.0	206	<0.04	<2.0	<2.0	<4.0	<4.0	<4.0	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.4	<0.10	<4.0	<0.04	<2.0	<0.04	<2.0	<2.0	<4.0	<2.0
SL/35	23/1/2012	437	<1.0	<1.0	<1.0	<1.0	<0.02	<2.0	145	<0.02	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	4	<0.10	<1.0	<0.02	<2.0	<0.02	<2.0	<2.0	<1.0	<2.0
SL/35	20/2/2012	238	<1.0	<1.0	<1.0	<1.0	<0.02	<2.0	193	<0.02	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.1	<0.10	<1.0	<0.02	<2.0	<0.02	<2.0	<2.0	<1.0	<2.0
SL/35	28/3/2012	227	<2.0	<2.0	<2.0	<2.0	<0.02	<2.0	288	<0.02	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.4	<0.10	<2.0	<0.02	<2.0	<0.02	<2.0	<2.0	<2.0	<2.0

SIDEGATE LANE RDF

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TerraConsult

Sample Point	Date	Hexachloroethane (µg/l)	Indeno 1,2,3-cd pyrene (PAH) (µg/l)	Indeno 1,2,3-cd pyrene (SVOC) (µg/l)	Isophorone (µg/l)	Isopropyl benzene (µg/l)	m,p-xylene (BTEX) (µg/l)	m,p-xylene (VOC) (µg/l)	Mecoprop (µg/l)	Methyl Tert Butyl Ether (µg/l)	Naphthalene (PAH) (µg/l)	Naphthalene (VOC) (µg/l)	Naphthalene (SVOC) (µg/l)	N-butylbenzene (µg/l)	Nitrobenzene (µg/l)	N-nitrosodi-n-propylamine (µg/l)	N-Propylbenzene (µg/l)	Organotin (µg/l)	o-xylene (BTEX) (µg/l)	o-xylene (VOC) (µg/l)	PAH (Total) (µg/l)	Pentachlorophenol (µg/l)	pH (pH units)	Phenanthrene (PAH) (µg/l)	Phenanthrene (SVOC) (µg/l)	Phenols (µg/l)	Phenols (SVOC) (µg/l)	Phenols (monohydric) (mg/l)	p-isopropyl toluene (µg/l)	Pyrene (PAH) (µg/l)	Pyrene (SVOC) (µg/l)
	EQS Freshwater Threshold						30 (µg/l)	30 (µg/l)	20 (µg/l)		10 (µg/l)	10 (µg/l)	10 (µg/l)					0.02 (µg/l)	30 (µg/l)	30 (µg/l)		2 (µg/l)				30 (µg/l)	30 (µg/l)					
	Drinking Water Standard Threshold								0.1 (µg/l)		10 (µg/l)	10 (µg/l)	10 (µg/l)									0.1 (µg/l)										
SL/25	21/3/2006																															
SL/25	26/9/2006																															
SL/25	11/12/2006																															
SL/25	27/6/2007																															
SL/25	3/9/2007																															
SL/25	5/12/2007																															
SL/25	11/3/2008								7.33														7.5					<0.1			
SL/25	10/6/2008																						7.0									
SL/25	24/9/2008						<0.10		9.04										<0.10				7.8					0.1				
SL/25	12/12/2008																						7.0									
SL/25	17/3/2009						<0.10		5										<0.10				7.5					<0.1				
SL/25	9/6/2009																						7.0									
SL/25	3/9/2009						<0.20		5.42										<0.10				7.5					<0.1				
SL/25	15/12/2009																						7.0									
SL/25	4/3/2010	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	4.63	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	0.03	<1.0	7.2	<0.01	<1.0		<1.0	<0.1	<1.0	0.014	<1.0
SL/25	2/6/2010																						7.0									
SL/25	20/9/2010	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	5.97	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	<0.01	<1.0	7.3	<0.01	<1.0		<1.0	<0.15	<1.0	<0.01	<1.0
SL/25	3/12/2010																						7.0									
SL/25	8/3/2011	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	5.18	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	<0.01	<1.0	7.4	<0.01	<1.0		<1.0	<0.15	<1.0	<0.01	<1.0
SL/25	24/5/2011																															
SL/25	24/6/2011																						7.0			<5.00						
SL/25	25/7/2011																															
SL/25	24/8/2011																															
SL/25	26/9/2011																															
SL/25	18/10/2011																															
SL/25	15/11/2011																															
SL/25	19/12/2011																						7.1			<5.00						
SL/25	19/12/2011																															
SL/27	11/3/2008								0.8														7.3					<0.1				
SL/27	10/6/2008																						6.8									
SL/27	24/9/2008						<0.10		0.93										<0.10				8.1					<0.1				
SL/27	12/12/2008																						7.3									
SL/27	17/3/2009						<0.10		1.14										<0.10				7.9					<0.1				
SL/27	9/6/2009																						6.9									
SL/27	3/9/2009						<0.20		1.91										<0.10				7.4					<0.1				
SL/27	15/12/2009																						6.9									
SL/27	4/3/2010	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	0.26	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	0.01	<1.0	7.4	<0.01	<1.0		<1.0	<0.1	<1.0	0.01	<1.0
SL/27	2/6/2010																						6.8									
SL/27	20/9/2010	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	0.94	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	<0.01	<1.0	7.4	<0.01	<1.0		<1.0	<0.15	<1.0	<0.01	<1.0
SL/27	3/12/2010																															
SL/27	8/3/2011	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	0.41	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	<0.01	<1.0	7.4	<0.01	<1.0		<1.0	<0.15	<1.0	<0.01	<1.0
SL/27	24/5/2011																															
SL/27	24/6/2011																						6.8			<5.00						
SL/27	25/7/2011																															
SL/27	24/8/2011																															
SL/27	26/9/2011																															
SL/27	26/9/2011																															
SL/27	27/9/2011	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	0.78	1.4	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	<0.01	<1.0	7.0	<0.01	<1.0		<1.0	<0.15	<1.0	<0.01	<1.0
SL/27	18/10/2011																															
SL/27	15/11/2011																															
SL/27	19/12/2011																						6.9			<5.00						
SL/30	26/2/2008																						7.4									
SL/30	11/3/2008								<0.04														7.6					<0.1				
SL/30	10/4/2008																						7.3									
SL/30	8/5/2008																						7.2									

SIDEGATE LANE RDF

1601

TerraConsult

Sample Point	Date	Hexachloroethane (µg/l)	Indeno 1,2,3-cd pyrene (PAH) (µg/l)	Indeno 1,2,3-cd pyrene (SVOC) (µg/l)	Isophorone (µg/l)	Isopropyl benzene (µg/l)	m,p-xylene (BTEX) (µg/l)	m,p-xylene (VOC) (µg/l)	Mecoprop (µg/l)	Methyl Tert Butyl Ether (µg/l)	Naphthalene (PAH) (µg/l)	Naphthalene (VOC) (µg/l)	Naphthalene (SVOC) (µg/l)	N-butylbenzene (µg/l)	Nitrobenzene (µg/l)	N-nitrosodi-n-propylamine (µg/l)	N-Propylbenzene (µg/l)	Organotin (µg/l)	o-xylene (BTEX) (µg/l)	o-xylene (VOC) (µg/l)	PAH (Total) (µg/l)	Pentachlorophenol (µg/l)	pH (pH units)	Phenanthrene (PAH) (µg/l)	Phenanthrene (SVOC) (µg/l)	Phenols (µg/l)	Phenols (SVOC) (µg/l)	Phenols (monohydric) (mg/l)	p-isopropyltoluene (µg/l)	Pyrene (PAH) (µg/l)	Pyrene (SVOC) (µg/l)
	EQS Freshwater Threshold						30 (µg/l)	30 (µg/l)	20 (µg/l)		10 (µg/l)	10 (µg/l)	10 (µg/l)					0.02 (µg/l)	30 (µg/l)	30 (µg/l)		2 (µg/l)				30 (µg/l)	30 (µg/l)					
	Drinking Water Standard Threshold								0.1 (µg/l)		10 (µg/l)	10 (µg/l)	10 (µg/l)									0.1 (µg/l)										
SL/30	10/6/2008																						7.3								
SL/30	23/7/2008																						8.3								
SL/30	7/8/2008																						8.5								
SL/30	24/9/2008						<0.10		<0.04										<0.10				8.4					<0.1			
SL/30	2/10/2008																						7.2								
SL/30	19/11/2008																						7.3								
SL/30	12/12/2008																						7.5								
SL/30	7/1/2009																						8.3								
SL/30	18/2/2009																						7.5								
SL/30	17/3/2009						<0.10		<0.04										<0.10				8.1					<0.1			
SL/30	14/4/2009																						7.2								
SL/30	30/4/2009																						7.3								
SL/30	9/6/2009																						7.2								
SL/30	10/7/2009																						7.2								
SL/30	6/8/2009																						7.4								
SL/30	7/8/2009																															
SL/30	3/9/2009						<0.20		<0.04										<0.10				7.7					<0.1			
SL/30	2/10/2009																						7.5								
SL/30	11/11/2009																						7.3								
SL/30	15/12/2009																						7.2								
SL/30	26/1/2010																						7.2								
SL/30	9/2/2010																						7.4								
SL/30	4/3/2010	<1.0	0.035	<1.0	<1.0	<1.0	<0.20	<1.0	<0.04	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	0.624	<1.0	7.5	0.031	<1.0		<1.0	<0.1	<1.0	0.096	<1.0
SL/30	28/4/2010																						7.1								
SL/30	20/5/2010																						7.9								
SL/30	2/6/2010																						7.2								
SL/30	16/7/2010																						7.3								
SL/30	4/8/2010																						7.5								
SL/30	20/9/2010	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	<0.04	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<1.0	<0.01	<1.0	7.5	<0.01	<1.0		<1.0	<0.15	<1.0	<0.01	<1.0
SL/30	21/10/2010																						7.6								
SL/30	8/11/2010																						7.5								
SL/30	3/12/2010																						7.1								
SL/30	4/1/2011																						7.1								
SL/30	16/2/2011																						7.4								
SL/30	8/3/2011	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	<0.04	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	<0.01		7.6	<0.01			<1.0	<0.15	<1.0	<0.01	<1.0
SL/30	27/4/2011																						7.6								
SL/30	24/5/2011																						7.7								
SL/30	24/6/2011																						7.1			<5.00					
SL/30	25/7/2011																						7.2								
SL/30	24/8/2011																						7.6								
SL/30	26/9/2011	<1.0	<0.03	<1.0	<1.0	<1.0	<0.20	<1.0	<0.04	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	0.119	<1.0	7.6	<0.01	<1.0		<1.0	<0.15	<1.0	0.036	<1.0
SL/30	18/10/2011																						7.2								
SL/30	15/11/2011																						7.2								
SL/30	19/12/2011																						7.2			<5.00					
SL/30	23/1/2012																						7.4								
SL/30	20/2/2012																						7.2								
SL/30	28/3/2012	<1.0	<0.01	<1.0	<1.0	<1.0		<1.0	<0.04	<1.0		<1.0	<2.0	<1.0	<1.0	<1.0	<1.0			<1.0		<5.0	7.2		<1.0	<0.50	<1.0	<0.15	<1.0	<0.01	<1.0
SL/35	18/1/2008																						7.3								
SL/35	25/1/2008																						7.2								
SL/35	7/2/2008																						7.4								
SL/35	12/2/2008																						7.4								
SL/35	26/2/2008																						7.4								
SL/35	7/3/2008																						7.4								
SL/35	11/3/2008								<0.04														7.5					<0.1			
SL/35	10/4/2008																						7.2								
SL/35	8/5/2008																						7.2								

SIDEGATE LANE RDF

1601

TerraConsult

Sample Point	Date	Hexachloroethane (µg/l)	Indeno 1,2,3-cd pyrene (PAH) (µg/l)	Indeno 1,2,3-cd pyrene (SVOC) (µg/l)	Isophorone (µg/l)	Isopropyl benzene (µg/l)	m,p-xylene (BTEX) (µg/l)	m,p-xylene (VOC) (µg/l)	Mecoprop (µg/l)	Methyl Tert Butyl Ether (µg/l)	Naphthalene (PAH) (µg/l)	Naphthalene (VOC) (µg/l)	Naphthalene (SVOC) (µg/l)	N-butylbenzene (µg/l)	Nitrobenzene (µg/l)	N-nitrosodi-n-propylamine (µg/l)	N-Propylbenzene (µg/l)	Organotin (µg/l)	o-xylene (BTEX) (µg/l)	o-xylene (VOC) (µg/l)	PAH (Total) (µg/l)	Pentachlorophenol (µg/l)	pH (pH units)	Phenanthrene (PAH) (µg/l)	Phenanthrene (SVOC) (µg/l)	Phenols (µg/l)	Phenols (SVOC) (µg/l)	Phenols (monohydric) (mg/l)	p-isopropyl toluene (µg/l)	Pyrene (PAH) (µg/l)	Pyrene (SVOC) (µg/l)
	EQS Freshwater Threshold						30 (µg/l)	30 (µg/l)	20 (µg/l)		10 (µg/l)	10 (µg/l)	10 (µg/l)					0.02 (µg/l)	30 (µg/l)	30 (µg/l)		2 (µg/l)				30 (µg/l)	30 (µg/l)					
	Drinking Water Standard Threshold								0.1 (µg/l)		10 (µg/l)	10 (µg/l)	10 (µg/l)									0.1 (µg/l)										
SL/35	10/6/2008																						7.1								
SL/35	23/7/2008																						8.3								
SL/35	7/8/2008																						8.4								
SL/35	24/9/2008						<0.10		<0.04										<0.10				8.4					<0.1			
SL/35	2/10/2008																						7.3								
SL/35	19/11/2008																						7.4								
SL/35	12/12/2008																						7.5								
SL/35	7/1/2009																						8.4								
SL/35	18/2/2009																						7.6								
SL/35	17/3/2009						<0.10		<0.04										<0.10				8.2					<0.1			
SL/35	14/4/2009																						7.1								
SL/35	30/4/2009																						7.1								
SL/35	9/6/2009																						7.2								
SL/35	10/7/2009																						7.1								
SL/35	7/8/2009																															
SL/35	10/8/2009																						7.2								
SL/35	3/9/2009						<0.20		<0.04										<0.10				7.7					<0.1			
SL/35	1/10/2009																						8.2								
SL/35	2/10/2009																															
SL/35	11/11/2009																															
SL/35	15/12/2009																						7.2								
SL/35	4/3/2010	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	0.26	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	0.027	<1.0	7.5	<0.01	<1.0		<1.0	<0.1	<1.0	0.013	<1.0
SL/35	2/6/2010																						7.0								
SL/35	20/9/2010	<1.0	<0.01	<1.0	<1.0	<1.0	<0.20	<1.0	0.08	<1.0	<0.01	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<0.02	<0.10	<1.0	<0.01	<1.0	7.5	<0.01	<1.0		<1.0	<0.15	<1.0	<0.01	<1.0
SL/35	16/11/2010								0.09																							
SL/35	3/12/2010																						7.0								
SL/35	8/3/2011	<2.0	<0.01	<2.0	<2.0	<4.0	<0.20	<4.0	0.16	<4.0	<0.01	<4.0	<4.0	<4.0	<2.0	<2.0	<4.0	<0.02	<0.10	<4.0	<0.01	<2.0	7.5	<0.01	<2.0		<2.0	<0.15	<4.0	<0.01	<2.0
SL/35	27/4/2011																															
SL/35	24/6/2011																						7.3			<15.00						
SL/35	26/9/2011	<1.0	<0.04	<1.0	<1.0	<10.0	<0.20	<10.0	0.05	<10.0	<0.04	<10.0	<2.0	<10.0	<1.0	<1.0	<10.0	<0.06	<0.10	<10.0	<0.04	<1.0	7.5	<0.04	<1.0		<1.0	<0.15	<10.0	<0.04	<1.0
SL/35	18/10/2011	<2.0	<0.04	<2.0	<2.0	<10.0	<0.20	<10.0	0.07	<10.0	<0.04	<10.0	<4.0	<10.0	<2.0	<2.0	<10.0	<0.20	<0.10	<10.0	<0.04	<10.0	7.3	<0.04	<2.0		<2.0	<0.15	<10.0	<0.04	<2.0
SL/35	15/11/2011	<1.0	<0.02	<1.0	<1.0	<4.0	<0.20	<4.0	<0.04	<4.0	<0.02	<4.0	<2.0	<4.0	<1.0	<1.0	<4.0	<0.20	<0.10	<4.0	<0.02	<5.0	7.2	<0.02	<1.0		<1.0	<0.15	<4.0	<0.02	<1.0
SL/35	19/12/2011	<2.0	<0.04	<2.0	<2.0	<4.0	<0.20	<4.0	<0.04	<4.0	<0.04	<4.0	<4.0	<4.0	<2.0	<2.0	<4.0	<0.10	<0.10	<4.0	<0.04	<2.0	7.2	<0.04	<2.0		<2.0	<0.15	<4.0	<0.04	<2.0
SL/35	23/1/2012	<2.0	<0.02	<2.0	<2.0	<1.0	<0.20	<1.0	<0.04	<1.0	<0.02	<1.0	<4.0	<1.0	<2.0	<2.0	<1.0	<0.10	<0.10	<1.0	<0.02	<10.0	7.3	<0.02	<2.0		<2.0	<0.15	<1.0	<0.02	<2.0
SL/35	20/2/2012	<2.0	<0.02	<2.0	<2.0	<1.0	<0.20	<1.0	<0.04	<1.0	<0.02	<1.0	<4.0	<1.0	<2.0	<2.0	<1.0	<0.10	<0.10	<1.0	<0.02	<2.0	7.0	<0.02	<2.0		<2.0	<0.15	<1.0	<0.02	<2.0
SL/35	28/3/2012	<2.0	<0.02	<2.0	<2.0	<2.0	<0.20	<2.0	<0.04	<2.0	<0.02	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0	<0.06	<0.10	<2.0	<0.02	<10.0	7.1	<0.02	<2.0	<1.50	<2.0	<0.15	<2.0	<0.02	<2.0

SIDEGATE LANE RDF

1601

TerraConsult

Sample Point	Date	sec-butylbenzene (µg/l)	Styrene (µg/l)	Sulphate (SO4) (mg/l)	Temperature, sample (Lab) (ºC)	Tert-butylbenzene (µg/l)	Tetrachloroethene (µg/l)	Toluene (BTEX) (µg/l)	Toluene (VOC) (µg/l)	Total Organic Carbon (mg/l)	Total Oxidised Nitrogen (mg/l)	Tributyltin (µg/l)	Trichloroethene (µg/l)	Triphenyltin (µg/l)	Vinyl Chloride (µg/l)	Xylenes (Total - BTEX) (µg/l)	Date, Sampled	Electrical Conductivity (µS/cm)	Cis-1-2-dichloroethane (mg/l)	Cis-1,3-Dichloropropene (mg/l)	Bis(2-chloroethoxy)methane (µg/l)	Bis(2-chloroethyl)ether (µg/l)	Bis(2-Chloroisopropyl)ether (µg/l)	Bis(2-ethylhexyl)phthalate (µg/l)	Butyl-benzyl-phthalate (µg/l)	Trans-1,2-dichloroethene (µg/l)	Trans-1,3-dichloropropene (µg/l)	Trichlorofluoromethane (µg/l)	Labo Dibromofluoromethane (%Recovery)
	EQS Freshwater Threshold			400 (mg/l)			10 (µg/l)					0.02 (µg/l)	10 (µg/l)	0.02 (µg/l)		30 (µg/l)			40											
	Drinking Water Standard Threshold			250 (mg/l)			10 (µg/l)						10 (µg/l)		0.5 (µg/l)															
SL/25	21/3/2006																												
SL/25	26/9/2006																												
SL/25	11/12/2006																												
SL/25	27/6/2007																												
SL/25	3/9/2007																												
SL/25	5/12/2007																												
SL/25	11/3/2008			457						20.4	2.2							2480											
SL/25	10/6/2008				12					22.1	3.8							2560											
SL/25	24/9/2008		<1.0	475	12			<0.10		21.4	7.8	<0.02						2540	<1.0										
SL/25	12/12/2008				7					20.2	5.6							1290											
SL/25	17/3/2009		<1.0	467	11			<0.10		14.5	0.3	<0.02		<0.02				2360	2.8										
SL/25	9/6/2009				11					17.7	7.1							2640											
SL/25	3/9/2009		<1.0	466	11			<0.10		22.3	9.7	<0.02		<0.02				2640	<1.0										
SL/25	15/12/2009				7					18.9	9.6							2740											
SL/25	4/3/2010	<1.0	<1.0	466	See A/C	<1.0	<1.0	<0.10	<1.0	15.2	0.9	<0.02	<1.0	<0.02	<1.0	<0.20		1800	1.4	<1.0	<2.0	<1.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	
SL/25	2/6/2010				no temp					14	5.2							1430											
SL/25	20/9/2010	<1.0	<1.0	513	11	<1.0	<1.0	<0.10	<1.0	12	9.87	<0.02	<1.0	<0.02	<0.5	<0.20		2480	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	
SL/25	3/12/2010				See A/C					12.9	5.83							2410											
SL/25	8/3/2011	<1.0	<1.0	498	No temp	<1.0	<1.0	<0.10	<1.0	10.8	1.02	<0.02	<1.0	<0.02	<0.5	<0.20		2150	2	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	
SL/25	24/5/2011																24/5/2011												
SL/25	24/6/2011				10					14.6	10.8							2540											
SL/25	25/7/2011																25/7/2011												
SL/25	24/8/2011																24/8/2011												
SL/25	26/9/2011																26/9/2011												
SL/25	18/10/2011																18/10/2011												
SL/25	15/11/2011																15/11/2011												
SL/25	19/12/2011				10					15.7	12.2							2810											
SL/25	19/12/2011																19/12/2011												
SL/27	11/3/2008			460						7.6	1.5							1490											
SL/27	10/6/2008				13					7	1.4							1470											
SL/27	24/9/2008		<1.0	425	14			<0.10		6.6	2.9	<0.02						1470	1										
SL/27	12/12/2008				6					6.5	5.1							1330											
SL/27	17/3/2009		<1.0	453	11			<0.10		6.5	0.8	<0.02		<0.02				1590	3.2										
SL/27	9/6/2009				12					6.55	2.4							1700											
SL/27	3/9/2009		<1.0	528	11			<0.10		9.21	4.2	<0.02		<0.02				1740	1.7										
SL/27	15/12/2009				7					8.46	2							1650											
SL/27	4/3/2010	<1.0	<1.0	428	See A/C	<1.0	<1.0	<0.10	<1.0	8.08	3.6	<0.02	<1.0	<0.02	<1.0	<0.20		1190	<1.0	<1.0	<2.0	<1.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	
SL/27	2/6/2010				no temp					7	<0.29							968											
SL/27	20/9/2010	<1.0	<1.0	506	11	<1.0	<1.0	<0.10	<1.0	6.65	1.92	<0.02	<1.0	<0.02	<0.5	<0.20		1700	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	
SL/27	3/12/2010																												
SL/27	8/3/2011	<1.0	<1.0	577	No temp	<1.0	<1.0	<0.10	<1.0	7.8	2.33	<0.02	<1.0	<0.02	<0.5	<0.20		1670	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	
SL/27	24/5/2011																24/5/2011												
SL/27	24/6/2011				10					5.76	0.61							1910											
SL/27	25/7/2011																25/7/2011												
SL/27	24/8/2011																24/8/2011												
SL/27	26/9/2011																												
SL/27	26/9/2011																26/9/2011												
SL/27	27/9/2011	<1.0	<1.0	578	No temp	<1.0	<1.0	<0.10	<1.0	5.11	0.87	<0.02	<1.0	<0.02	<0.5	<0.20		2020	4.1	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	100.4
SL/27	18/10/2011																18/10/2011												
SL/27	15/11/2011																15/11/2011												
SL/27	19/12/2011				10					6.14	1.75						19/12/2011	2190											
SL/30	26/2/2008				10													1420											
SL/30	11/3/2008			187						6.2	3.4							1150											
SL/30	10/4/2008				10													1290											
SL/30	8/5/2008				11													1350											

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Sample Point	Date	sec-butylbenzene (µg/l)	Styrene (µg/l)	Sulphate (SO4) (mg/l)	Temperature, sample (Lab) (ºC)	Tert-butylbenzene (µg/l)	Tetrachloroethene (µg/l)	Toluene (BTEX) (µg/l)	Toluene (VOC) (µg/l)	Total Organic Carbon (mg/l)	Total Oxidised Nitrogen (mg/l)	Tributyltin (µg/l)	Trichloroethene (µg/l)	Triphenyltin (µg/l)	Vinyl Chloride (µg/l)	Xylenes (Total - BTEX) (µg/l)	Date, Sampled	Electrical Conductivity (µS/cm)	Cis-1-2-dichloroethane (mg/l)	Cis-1,3-Dichloropropene (mg/l)	Bis(2-chloroethoxy)methane (µg/l)	Bis(2-chloroethyl)ether (µg/l)	Bis(2-Chloroisopropyl)ether (µg/l)	Bis(2-ethylhexyl)phthalate (µg/l)	Butyl-benzyl-phthalate (µg/l)	Trans-1,2-dichloroethene (µg/l)	Trans-1,3-dichloropropene (µg/l)	Trichlorofluoromethane (µg/l)	Labo Dibromofluoromethane (%Recovery)
	EQS Freshwater Threshold			400 (mg/l)			10 (µg/l)					0.02 (µg/l)	10 (µg/l)	0.02 (µg/l)		30 (µg/l)			40											
	Drinking Water Standard Threshold			250 (mg/l)			10 (µg/l)						10 (µg/l)		0.5 (µg/l)															
SL/30	10/6/2008				13					3.5	2.1							1250											
SL/30	23/7/2008				11													1330											
SL/30	7/8/2008				12													1320											
SL/30	24/9/2008		<1.0	235	12			<0.10		4.5	1.3	<0.02						1330	<1.0										
SL/30	2/10/2008				11													1330											
SL/30	19/11/2008				9													1320											
SL/30	12/12/2008				7					5.3	4.1							1010											
SL/30	7/1/2009				9													1420											
SL/30	18/2/2009				9													1910											
SL/30	17/3/2009		<1.0	288	10			<0.10		5.3	0.8	<0.02		<0.02				2480	<1.0										
SL/30	14/4/2009				10													2090											
SL/30	30/4/2009				See A/C													1910											
SL/30	9/6/2009				10					4.16	5.4							1610											
SL/30	10/7/2009				11													1810											
SL/30	6/8/2009				see A/C													1610											
SL/30	7/8/2009																												
SL/30	3/9/2009		<1.0	310	11			<0.10		5.18	3.7	<0.02		<0.02				1740	<1.0										
SL/30	2/10/2009				12													1500											
SL/30	11/11/2009				9													1650											
SL/30	15/12/2009				6					4.01	4.5							1660											
SL/30	26/1/2010				NO TEMP													1360											
SL/30	9/2/2010				See A/C													1770											
SL/30	4/3/2010	<1.0	<1.0	305	See A/C	<1.0	<1.0	<0.10	<1.0	5.39	13.9	<0.02	<1.0	<0.02	<1.0	<0.20		1350	<1.0	<1.0	<2.0	<1.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	
SL/30	28/4/2010				11													1440											
SL/30	20/5/2010				NO TEMP													1380											
SL/30	2/6/2010				no temp					4.19	3.6							1120											
SL/30	16/7/2010				11					3.9	2.87							2000											
SL/30	4/8/2010				11					4	2.25							1620											
SL/30	20/9/2010	<1.0	<1.0	347	10	<1.0	<1.0	<0.10	<1.0	2.76	8.44	<0.10	<1.0	<0.10	<0.5	<0.20		1870	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	
SL/30	21/10/2010				9													1810											
SL/30	8/11/2010				10													1810											
SL/30	3/12/2010				See A/C					2.6	2.44							1860											
SL/30	4/1/2011				10													1820											
SL/30	16/2/2011				10													2030											
SL/30	8/3/2011	<1.0	<1.0	339	No temp	<1.0	<1.0	<0.10	<1.0	2.56	9.05	<0.02	<1.0	<0.02	<0.5	<0.20		1840	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	
SL/30	27/4/2011				10													1960											
SL/30	24/5/2011				10													1970											
SL/30	24/6/2011				10					2.72	5.09							1980											
SL/30	25/7/2011				10													1560											
SL/30	24/8/2011				10													1760											
SL/30	26/9/2011	<1.0	<1.0	383	no temp	<1.0	<1.0		<1.0			<0.02	<1.0	<0.02	<0.5	<0.20			<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	100.1
SL/30	18/10/2011				No temp.													2050											
SL/30	15/11/2011				10													1950											
SL/30	19/12/2011				10					3.3	12.6							1810											
SL/30	23/1/2012				10													2020											
SL/30	20/2/2012				No temp													2120											
SL/30	28/3/2012	<1.0	<1.0		10	<1.0	<1.0		<1.0				<1.0		<0.5			2030	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	100.8
SL/35	18/1/2008																	1050											
SL/35	25/1/2008				10													1040											
SL/35	7/2/2008																	1100											
SL/35	12/2/2008				10													1100											
SL/35	26/2/2008				10													1100											
SL/35	7/3/2008				10													1090											
SL/35	11/3/2008			287						4.3	0.6							1090											
SL/35	10/4/2008																	1060											
SL/35	8/5/2008				9													1120											

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Sample Point	Date	sec-butylbenzene (µg/l)	Styrene (µg/l)	Sulphate (SO4) (mg/l)	Temperature, sample (Lab) (ºC)	Tert-butylbenzene (µg/l)	Tetrachloroethene (µg/l)	Toluene (BTEX) (µg/l)	Toluene (VOC) (µg/l)	Total Organic Carbon (mg/l)	Total Oxidised Nitrogen (mg/l)	Tributyltin (µg/l)	Trichloroethene (µg/l)	Triphenyltin (µg/l)	Vinyl Chloride (µg/l)	Xylenes (Total - BTEX) (µg/l)	Date, Sampled	Electrical Conductivity (µS/cm)	Cis-1-2-dichloroethane (mg/l)	Cis-1,3-Dichloropropene (mg/l)	Bis(2-chloroethoxy)methane (µg/l)	Bis(2-chloroethyl)ether (µg/l)	Bis(2-Chloroisopropyl)ether (µg/l)	Bis(2-ethylhexyl)phthalate (µg/l)	Butyl-benzyl-phthalate (µg/l)	Trans-1,2-dichloroethene (µg/l)	Trans-1,3-dichloropropene (µg/l)	Trichlorofluoromethane (µg/l)	Labo Dibromofluoromethane (%Recovery)
	EQS Freshwater Threshold			400 (mg/l)			10 (µg/l)					0.02 (µg/l)	10 (µg/l)	0.02 (µg/l)		30 (µg/l)			40											
	Drinking Water Standard Threshold			250 (mg/l)			10 (µg/l)						10 (µg/l)		0.5 (µg/l)															
SL/35	10/6/2008				12					4.6	2							1020											
SL/35	23/7/2008				12													986											
SL/35	7/8/2008				12													1010											
SL/35	24/9/2008		<1.0	266	12			<0.10		4.2	2.2	<0.02						991	<1.0										
SL/35	2/10/2008				9													988											
SL/35	19/11/2008				9													1030											
SL/35	12/12/2008				8					4	1.8							10900											
SL/35	7/1/2009				9													1080											
SL/35	18/2/2009				7													1230											
SL/35	17/3/2009		<1.0	320	9			<0.10		4.3	1.6	<0.02		<0.02				1190	<1.0										
SL/35	14/4/2009				10													1180											
SL/35	30/4/2009				See A/C													1170											
SL/35	9/6/2009				10					3.7	0.5							1090											
SL/35	10/7/2009				12													1080											
SL/35	7/8/2009																												
SL/35	10/8/2009				See A/C													1110											
SL/35	3/9/2009		<1.0	278	11			<0.10		5.23	<0.3	<0.02		<0.02				1050	<1.0										
SL/35	1/10/2009				12													702											
SL/35	2/10/2009																												
SL/35	11/11/2009																												
SL/35	15/12/2009				7					3.54	0.6							1100											
SL/35	4/3/2010	<1.0	<1.0	571	See A/C	<1.0	<1.0	<0.10	<1.0	16.2	5.2	<0.02	<1.0	<0.02	<1.0	<0.20		1250	<1.0	<1.0	<2.0	<1.0	<1.0	<10.0	<1.0	<1.0	<1.0	<1.0	
SL/35	2/6/2010				no temp					5.74	0.63							773											
SL/35	20/9/2010	<1.0	<1.0	501	11	<1.0	<1.0	<0.10	<1.0	28.9	5.42	<0.02	<1.0	<0.02	<0.5	<0.20		1810	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	
SL/35	16/11/2010				9																								
SL/35	3/12/2010				See A/C					13	6.1							1550											
SL/35	8/3/2011	<4.0	<4.0	793	No temp	<4.0	<4.0	<0.10	<4.0	89	5.33	<0.02	<4.0	<0.02	<2.0	<0.20		2830	<4.0	<4.0	<2.0	<2.0	<2.0	<10.0	<2.0	<4.0	<4.0	<4.0	
SL/35	27/4/2011				10																								
SL/35	24/6/2011				No temp					46.6	1.65							2150											
SL/35	26/9/2011	<10.0	<10.0	750	no temp	<10.0	<10.0	<0.10	<10.0	66.2	<0.29	<0.06	<10.0	<0.06	<5.0	<0.20		2620	<10.0	<10.0	<1.0	<1.0	<1.0	<5.0	<1.0	<10.0	<10.0	<10.0	100.1
SL/35	18/10/2011	<10.0	<10.0	652	No temp.	<10.0	<10.0	<0.10	<10.0	56	<0.29	<0.20	<10.0	<0.20	<5.0	<0.20		2400	<10.0	<10.0	<2.0	<2.0	<2.0	<10.0	<2.0	<10.0	<10.0	<10.0	100.4
SL/35	15/11/2011	<4.0	<4.0	686	10	<4.0	<4.0	<0.10	<4.0	53.8	1.81	<0.20	<4.0	<0.20	<2.0	<0.20		2640	<4.0	<4.0	<1.0	<1.0	<1.0	<5.0	<1.0	<4.0	<4.0	<4.0	100.3
SL/35	19/12/2011	<4.0	<4.0	648	10	<4.0	<4.0	<0.10	<4.0	56.2	11.1	<0.10	<4.0	<0.10	<2.0	<0.20		3160	<4.0	<4.0	<2.0	<2.0	<2.0	<10.0	<2.0	<4.0	<4.0	<4.0	98.4
SL/35	23/1/2012	<1.0	<1.0	792	10	<1.0	<1.0	<0.10	<1.0	49.2	9.11	<0.10	<1.0	<0.10	<0.5	<0.20		3150	<1.0	<1.0	<2.0	<2.0	<2.0	<10.0	<2.0	<1.0	<1.0	<1.0	98.7
SL/35	20/2/2012	<1.0	<1.0	736	No temp	<1.0	<1.0	<0.10	<1.0	49.3	9.44	<0.10	<1.0	<0.10	<0.5	<0.20		2570	<1.0	<1.0	<2.0	<2.0	<2.0	<10.0	<2.0	<1.0	<1.0	<1.0	96.8
SL/35	28/3/2012	<2.0	<2.0	628	10	<2.0	<2.0	<0.10	<2.0	21.7	1.7	<0.06	<2.0	<0.06	<1.0	<0.20		2170	<2.0	<2.0	<2.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0	<2.0	99.9

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		ratory Quality Information - Recovery				
Sample Point	Date	Toluene-d8 (%Recovery)	Terphenyl-d14 (%Recovery)	Phenol-d6 (%Recovery)	Nitrobenzene-d5 (%Recovery)	Monitoring Point Status SAMPLE
	EQS Freshwater Threshold					
	Drinking Water Standard Threshold					
SL/25	21/3/2006					SATISFACTORY
SL/25	26/9/2006					SATISFACTORY
SL/25	11/12/2006					SATISFACTORY
SL/25	27/6/2007					SATISFACTORY
SL/25	3/9/2007					SATISFACTORY
SL/25	5/12/2007					SATISFACTORY
SL/25	11/3/2008					SATISFACTORY
SL/25	10/6/2008					SATISFACTORY
SL/25	24/9/2008					SATISFACTORY
SL/25	12/12/2008					SATISFACTORY
SL/25	17/3/2009					SATISFACTORY
SL/25	9/6/2009					SATISFACTORY
SL/25	3/9/2009					SATISFACTORY
SL/25	15/12/2009					SATISFACTORY
SL/25	4/3/2010					SATISFACTORY
SL/25	2/6/2010					SATISFACTORY
SL/25	20/9/2010					SATISFACTORY
SL/25	3/12/2010					SATISFACTORY
SL/25	8/3/2011					SATISFACTORY
SL/25	24/5/2011					
SL/25	24/6/2011					satisfactory
SL/25	25/7/2011					
SL/25	24/8/2011					
SL/25	26/9/2011					
SL/25	18/10/2011					
SL/25	15/11/2011					
SL/25	19/12/2011					satisfactory
SL/25	19/12/2011					
SL/27	11/3/2008					SATISFACTORY
SL/27	10/6/2008					SATISFACTORY
SL/27	24/9/2008					SATISFACTORY
SL/27	12/12/2008					SATISFACTORY
SL/27	17/3/2009					SATISFACTORY
SL/27	9/6/2009					SATISFACTORY
SL/27	3/9/2009					SATISFACTORY
SL/27	15/12/2009					SATISFACTORY
SL/27	4/3/2010					SATISFACTORY
SL/27	2/6/2010					SATISFACTORY
SL/27	20/9/2010					SATISFACTORY
SL/27	3/12/2010					FROZEN
SL/27	8/3/2011					SATISFACTORY
SL/27	24/5/2011					
SL/27	24/6/2011					satisfactory
SL/27	25/7/2011					
SL/27	24/8/2011					
SL/27	26/9/2011					satisfactory
SL/27	26/9/2011					
SL/27	27/9/2011	101.9	87.6	79.3	97.7	
SL/27	18/10/2011					
SL/27	15/11/2011					
SL/27	19/12/2011					satisfactory
SL/30	26/2/2008					SATISFACTORY
SL/30	11/3/2008					SATISFACTORY
SL/30	10/4/2008					SATISFACTORY
SL/30	8/5/2008					SATISFACTORY

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		ratory Quality Information - Recovery				
Sample Point	Date	Toluene-d8 (%Recovery)	Terphenyl-d14 (%Recovery)	Phenol-d6 (%Recovery)	Nitrobenzene-d5 (%Recovery)	Monitoring Point Status SAMPLE
	EQS Freshwater Threshold					
	Drinking Water Standard Threshold					
SL/30	10/6/2008					SATISFACTORY
SL/30	23/7/2008					SATISFACTORY
SL/30	7/8/2008					SATISFACTORY
SL/30	24/9/2008					SATISFACTORY
SL/30	2/10/2008					SATISFACTORY
SL/30	19/11/2008					SATISFACTORY
SL/30	12/12/2008					SATISFACTORY
SL/30	7/1/2009					SATISFACTORY
SL/30	18/2/2009					SATISFACTORY
SL/30	17/3/2009					SATISFACTORY
SL/30	14/4/2009					SATISFACTORY
SL/30	30/4/2009					SATISFACTORY
SL/30	9/6/2009					SATISFACTORY
SL/30	10/7/2009					SATISFACTORY
SL/30	6/8/2009					SATISFACTORY
SL/30	7/8/2009					SATISFACTORY
SL/30	3/9/2009					SATISFACTORY
SL/30	2/10/2009					SATISFACTORY
SL/30	11/11/2009					SATISFACTORY
SL/30	15/12/2009					SATISFACTORY
SL/30	26/1/2010					SATISFACTORY
SL/30	9/2/2010					SATISFACTORY
SL/30	4/3/2010					SATISFACTORY
SL/30	28/4/2010					SATISFACTORY
SL/30	20/5/2010					SATISFACTORY
SL/30	2/6/2010					SATISFACTORY
SL/30	16/7/2010					SATISFACTORY
SL/30	4/8/2010					SATISFACTORY
SL/30	20/9/2010					
SL/30	21/10/2010					SATISFACTORY
SL/30	8/11/2010					SATISFACTORY
SL/30	3/12/2010					SATISFACTORY
SL/30	4/1/2011					SATISFACTORY
SL/30	16/2/2011					SATISFACTORY
SL/30	8/3/2011					
SL/30	27/4/2011					SATISFACTORY
SL/30	24/5/2011					SATISFACTORY
SL/30	24/6/2011					satisfactory
SL/30	25/7/2011					satisfactory
SL/30	24/8/2011					satisfactory
SL/30	26/9/2011	100.7	112	85.9	100.2	satisfactory
SL/30	18/10/2011					satisfactory
SL/30	15/11/2011					satisfactory
SL/30	19/12/2011					satisfactory
SL/30	23/1/2012					satisfactory
SL/30	20/2/2012					satisfactory
SL/30	28/3/2012	100.6	103.4	69.8	97.9	
SL/35	18/1/2008					Satisfactory
SL/35	25/1/2008					Satisfactory
SL/35	7/2/2008					Satisfactory
SL/35	12/2/2008					SATISFACTORY
SL/35	26/2/2008					SATISFACTORY
SL/35	7/3/2008					SATISFACTORY
SL/35	11/3/2008					SATISFACTORY
SL/35	10/4/2008					SATISFACTORY
SL/35	8/5/2008					SATISFACTORY

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		ratory Quality Information - Recovery				
Sample Point	Date	Toluene-d8 (%Recovery)	Terphenyl-d14 (%Recovery)	Phenol-d6 (%Recovery)	Nitrobenzene-d5 (%Recovery)	Monitoring Point Status SAMPLE
	EQS Freshwater Threshold					
	Drinking Water Standard Threshold					
SL/35	10/6/2008					SATISFACTORY
SL/35	23/7/2008					SATISFACTORY
SL/35	7/8/2008					SATISFACTORY
SL/35	24/9/2008					SATISFACTORY
SL/35	2/10/2008					SATISFACTORY
SL/35	19/11/2008					SATISFACTORY
SL/35	12/12/2008					SATISFACTORY
SL/35	7/1/2009					SATISFACTORY
SL/35	18/2/2009					SATISFACTORY
SL/35	17/3/2009					SATISFACTORY
SL/35	14/4/2009					SATISFACTORY
SL/35	30/4/2009					Satisfactory
SL/35	9/6/2009					SATISFACTORY
SL/35	10/7/2009					SATISFACTORY
SL/35	7/8/2009					SATISFACTORY
SL/35	10/8/2009					Satisfactory
SL/35	3/9/2009					SATISFACTORY
SL/35	1/10/2009					Satisfactory
SL/35	2/10/2009					SATISFACTORY
SL/35	11/11/2009					SATISFACTORY
SL/35	15/12/2009					SATISFACTORY
SL/35	4/3/2010					SATISFACTORY
SL/35	2/6/2010					SATISFACTORY
SL/35	20/9/2010					SATISFACTORY
SL/35	16/11/2010					Satisfactory
SL/35	3/12/2010					SATISFACTORY
SL/35	8/3/2011					
SL/35	27/4/2011					SATISFACTORY
SL/35	24/6/2011					satisfactory
SL/35	26/9/2011	99.7	89.9	81.3	87.6	satisfactory
SL/35	18/10/2011	94.8	88.3	82.7	98.4	
SL/35	15/11/2011	97.8	76.3	73.4	98.1	satisfactory
SL/35	19/12/2011	97.9	102.1	97.2	104.5	satisfactory
SL/35	23/1/2012	101.1	76.3	85.3	89.6	satisfactory
SL/35	20/2/2012	97.8	88.2	80.1	94	satisfactory
SL/35	28/3/2012	99.1	97.5	81.6	99.4	

SIDEGATE LANE RDF FACILITY

TerraConsult

SITA GROUND GAS MONITORING DATA FOR SIDEGATE LANE IN VICINITY OF THE DEVELOPMENT

Job No: 1601

Site	Sample Point	Date	Comment	Methane (% v/v)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Atmospheric Pressure (mb)	Relative Pressure (mb)	Monitoring Point Status GAS	Flow (Internal) (l/h)
Sidegate Lane	SL/25	11/1/2006		0.0	1.7	19.8			1010		SATISFACTORY	
Sidegate Lane	SL/25	9/2/2006		0.0	3.3	20.1			1004		SATISFACTORY	
Sidegate Lane	SL/25	21/3/2006		0.0	1.8	19.6			1002		SATISFACTORY	
Sidegate Lane	SL/25	6/4/2006		0.0	2.2	19.7			1002		SATISFACTORY	
Sidegate Lane	SL/25	16/5/2006		0.0	0.0	20.3			1005		SATISFACTORY	
Sidegate Lane	SL/25	6/7/2006		0.0	0.0	20.4			1005		SATISFACTORY	
Sidegate Lane	SL/25	11/8/2006		0.0	3.2	20.1			1001		SATISFACTORY	
Sidegate Lane	SL/25	26/9/2006		0.0	1.0	19.6			1005		SATISFACTORY	
Sidegate Lane	SL/25	24/10/2006		0.0	1.4	20.8			978		SATISFACTORY	
Sidegate Lane	SL/25	10/11/2006		0.0	1.9	19.0			1020		SATISFACTORY	
Sidegate Lane	SL/25	11/12/2006		0.0	0.3	20.3			999		SATISFACTORY	
Sidegate Lane	SL/25	30/1/2007		0.0	0.8	20.9			1015		SATISFACTORY	
Sidegate Lane	SL/25	13/2/2007		0.6	0.6	18.9			994		SATISFACTORY	
Sidegate Lane	SL/25	21/3/2007		0.0	0.9	20.5			1008		SATISFACTORY	
Sidegate Lane	SL/25	16/4/2007		0.0	0.4	20.0			1016		SATISFACTORY	
Sidegate Lane	SL/25	4/5/2007		0.0	0.7	19.9			1009		SATISFACTORY	
Sidegate Lane	SL/25	27/6/2007		0.0	0.0	20.5			997		SATISFACTORY	
Sidegate Lane	SL/25	25/7/2007		0.0	0.0	20.6			1002		SATISFACTORY	
Sidegate Lane	SL/25	22/8/2007		0.0	0.0	20.5			1005		SATISFACTORY	
Sidegate Lane	SL/25	3/9/2007		0.0	1.8	20.2			1007		SATISFACTORY	
Sidegate Lane	SL/25	11/10/2007		0.0	0.8	20.2			1017		SATISFACTORY	
Sidegate Lane	SL/25	15/11/2007		0.0	0.0	20.9			1018		SATISFACTORY	
Sidegate Lane	SL/25	5/12/2007		0.0	1.1	20.5			995		SATISFACTORY	
Sidegate Lane	SL/25	10/1/2008		0.0	0.7	20.5			995		SATISFACTORY	
Sidegate Lane	SL/25	26/2/2008		0.0	0.5	20.5			993		SATISFACTORY	
Sidegate Lane	SL/25	11/3/2008		0.0	0.6	20.7			976		SATISFACTORY	
Sidegate Lane	SL/25	10/4/2008		0.0	0.8	19.9			988		SATISFACTORY	
Sidegate Lane	SL/25	8/5/2008		0.0	0.8	19.1			1007		SATISFACTORY	
Sidegate Lane	SL/25	10/6/2008		0.1	1.3	17.6			1016		SATISFACTORY	
Sidegate Lane	SL/25	23/7/2008		0.0	0.0	20.2			1013		SATISFACTORY	
Sidegate Lane	SL/25	7/8/2008		0.0	0.1	20.4			992		SATISFACTORY	
Sidegate Lane	SL/25	24/9/2008		0.0	1.4	20.2			1011		SATISFACTORY	
Sidegate Lane	SL/25	2/10/2008		0.0	0.0	21.1			988		SATISFACTORY	
Sidegate Lane	SL/25	19/11/2008		0.0	2.1	19.4			1005		SATISFACTORY	
Sidegate Lane	SL/25	12/12/2008		0.0	0.0	20.8			995		SATISFACTORY	
Sidegate Lane	SL/25	18/2/2009		0.0	1.2	20.9			1015		SATISFACTORY	
Sidegate Lane	SL/25	17/3/2009		0.0	0.7	20.8			1024		SATISFACTORY	
Sidegate Lane	SL/25	14/4/2009		0.0	0.8	19.2			997		SATISFACTORY	
Sidegate Lane	SL/25	1/5/2009		0.0	0.5	20.6			1011		SATISFACTORY	
Sidegate Lane	SL/25	9/6/2009		0.0	1.7	18.7			993		SATISFACTORY	
Sidegate Lane	SL/25	10/7/2009		0.0	2.8	19.5			1005		SATISFACTORY	
Sidegate Lane	SL/25	7/8/2009		0.1	1.7	19.6			1009		SATISFACTORY	
Sidegate Lane	SL/25	3/9/2009		0.0	0.3	20.9			985		SATISFACTORY	
Sidegate Lane	SL/25	2/10/2009		0.0	1.8	20.3			1005		SATISFACTORY	
Sidegate Lane	SL/25	11/11/2009		0.0	1.9	18.8			996		SATISFACTORY	
Sidegate Lane	SL/25	15/12/2009		0.0	1.3	19.0			1007		SATISFACTORY	
Sidegate Lane	SL/25	26/1/2010		0.1	2.6	20.1			1029		SATISFACTORY	
Sidegate Lane	SL/25	9/2/2010		0.0	2.3	19.4			1001		SATISFACTORY	
Sidegate Lane	SL/25	4/3/2010		0.2	0.7	19.4			1018		SATISFACTORY	
Sidegate Lane	SL/25	28/4/2010		0.0	1.3	19.9			1011		SATISFACTORY	
Sidegate Lane	SL/25	20/5/2010		0.0	1.3	19.6			1023		SATISFACTORY	
Sidegate Lane	SL/25	2/6/2010		0.0	1.5	19.4			1013		SATISFACTORY	
Sidegate Lane	SL/25	16/7/2010		0.0	0.6	20.4			996		SATISFACTORY	
Sidegate Lane	SL/25	4/8/2010		0.1	1.2	20.3			996		SATISFACTORY	
Sidegate Lane	SL/25	20/9/2010		0.1	0.5	20.7			1001		SATISFACTORY	
Sidegate Lane	SL/25	21/10/2010		0.0	2.8	19.8			1014		SATISFACTORY	
Sidegate Lane	SL/25	8/11/2010		26.9	3.8	15.8			959		SATISFACTORY	
Sidegate Lane	SL/25	3/12/2010		0.0	0.1	20.5			1005		SATISFACTORY	
Sidegate Lane	SL/25	4/1/2011		7.1	5.7	14.4			1003		SATISFACTORY	
Sidegate Lane	SL/25	16/2/2011		0.2	0.2	19.5			985	-0.06	SATISFACTORY	
Sidegate Lane	SL/25	8/3/2011		6.8	10.8	12.4			1008	0.49	SATISFACTORY	
Sidegate Lane	SL/25	27/4/2011		0.1	1.6	20.5			1019	0.24	SATISFACTORY	
Sidegate Lane	SL/25	24/5/2011		0.1	1.1	20.4	0	0	1017	0.03	SATISFACTORY	
Sidegate Lane	SL/25	24/6/2011		0.0	0.3	20.1			1014	-0.89	SATISFACTORY	
Sidegate Lane	SL/25	25/7/2011		0.0	1.8	19.6	0	0	1004	-0.40	SATISFACTORY	
Sidegate Lane	SL/25	24/8/2011		0.1	0.4	20.3	0	0	1002	0.14	SATISFACTORY	

Sidegate Lane	SL/25	26/9/2011		0.0	0.2	20.7	0	0	1011	0.00	SATISFACTORY	
Sidegate Lane	SL/25	18/10/2011		0.0	0.5	20.3	0	0	1001	-0.01	SATISFACTORY	
Sidegate Lane	SL/25	15/11/2011		0.4	1.8	18.1	0	0	1009	0.00	SATISFACTORY	
Sidegate Lane	SL/25	19/12/2011		0.0	1.1	19.8	0	0	1000	0.61	SATISFACTORY	
	SL/25		**No of reading**	**70**	**70**	**70**	**7**	**7**	**70**	**11**		**0**
		SUMMARY	**Lowest**	**0.0**	**0.0**	**12.4**	**0**	**0**	**959**	**-0.89**		**0.0**
			Average	**0.6**	**1.3**	**19.8**	**0**	**0**	**1004.0**	**0.01**		**0.0**
			Highest	**26.9**	**10.8**	**21.1**	**0**	**0**	**1029**	**0.61**		**0.0**
Sidegate Lane	SL/26	11/1/2006		0.0	0.7	20.2			1010		SATISFACTORY	
Sidegate Lane	SL/26	9/2/2006		0.0	1.4	18.5			1004		SATISFACTORY	
Sidegate Lane	SL/26	21/3/2006		0.0	0.7	20.1			1002		SATISFACTORY	
Sidegate Lane	SL/26	6/4/2006		0.0	1.1	19.9			1002		SATISFACTORY	
Sidegate Lane	SL/26	16/5/2006		0.0	0.0	20.0			1005		SATISFACTORY	
Sidegate Lane	SL/26	6/7/2006		0.0	0.3	20.2			1005		SATISFACTORY	
Sidegate Lane	SL/26	11/8/2006		0.0	3.1	20.1			1001		SATISFACTORY	
Sidegate Lane	SL/26	26/9/2006		0.0	1.2	19.5			1005		SATISFACTORY	
Sidegate Lane	SL/26	24/10/2006		0.0	0.9	20.9			978		SATISFACTORY	
Sidegate Lane	SL/26	10/11/2006		0.0	0.8	19.7			1020		SATISFACTORY	
Sidegate Lane	SL/26	11/12/2006		0.0	0.4	20.3			999		SATISFACTORY	
Sidegate Lane	SL/26	30/1/2007		0.0	0.7	20.5			1015		SATISFACTORY	
Sidegate Lane	SL/26	13/2/2007		0.0	0.8	19.8			994		SATISFACTORY	
Sidegate Lane	SL/26	21/3/2007		0.0	0.9	19.7			1008		SATISFACTORY	
Sidegate Lane	SL/26	16/4/2007		0.2	0.4	19.9			1016		SATISFACTORY	
Sidegate Lane	SL/26	4/5/2007		0.0	0.5	20.4			1009		SATISFACTORY	
Sidegate Lane	SL/26	25/7/2007		0.0	1.5	18.9			1002		SATISFACTORY	
Sidegate Lane	SL/26	22/8/2007		0.0	0.3	20.2			1005		SATISFACTORY	
Sidegate Lane	SL/26	3/9/2007		0.0	0.4	20.8			1007		SATISFACTORY	
Sidegate Lane	SL/26	11/10/2007		0.0	0.6	19.9			1017		SATISFACTORY	
Sidegate Lane	SL/26	15/11/2007		0.0	0.7	20.7			1018		SATISFACTORY	
Sidegate Lane	SL/26	5/12/2007		0.0	0.7	20.6			995		SATISFACTORY	
Sidegate Lane	SL/26	10/1/2008		0.0	0.6	20.4			995		SATISFACTORY	
Sidegate Lane	SL/26	26/2/2008		0.0	0.5	20.1			993		SATISFACTORY	
Sidegate Lane	SL/26	11/3/2008		0.0	0.7	20.6			976		SATISFACTORY	
Sidegate Lane	SL/26	10/4/2008		0.0	0.8	19.7			988		SATISFACTORY	
Sidegate Lane	SL/26	8/5/2008		0.1	0.6	19.4			1007		SATISFACTORY	
Sidegate Lane	SL/26	10/6/2008		0.1	0.8	18.3			1016		SATISFACTORY	
Sidegate Lane	SL/26	23/7/2008		0.0	0.7	20.2			1014		SATISFACTORY	
Sidegate Lane	SL/26	7/8/2008		0.0	0.8	20.2			993		SATISFACTORY	
Sidegate Lane	SL/26	24/9/2008		0.0	0.7	19.9			1011		SATISFACTORY	
Sidegate Lane	SL/26	2/10/2008		0.0	1.0	20.9			988		SATISFACTORY	
Sidegate Lane	SL/26	19/11/2008		0.0	0.9	20.0			1006		SATISFACTORY	
Sidegate Lane	SL/26	12/12/2008		0.0	0.3	19.9			996		SATISFACTORY	
Sidegate Lane	SL/26	7/1/2009		0.0	1.1	17.3					SATISFACTORY	
Sidegate Lane	SL/26	18/2/2009		0.0	0.5	19.8			1016		SATISFACTORY	
Sidegate Lane	SL/26	17/3/2009		0.0	0.3	21.1			1025		SATISFACTORY	
Sidegate Lane	SL/26	14/4/2009		0.0	0.4	19.7			998		SATISFACTORY	
Sidegate Lane	SL/26	1/5/2009		0.0	0.5	20.5			1011		SATISFACTORY	
Sidegate Lane	SL/26	9/6/2009		0.0	0.0	20.8			994		SATISFACTORY	
Sidegate Lane	SL/26	10/7/2009		0.0	2.3	19.8			1006		SATISFACTORY	
Sidegate Lane	SL/26	7/8/2009		0.1	0.8	20.5			1009		SATISFACTORY	
Sidegate Lane	SL/26	3/9/2009		0.0	0.3	20.7			987		SATISFACTORY	
Sidegate Lane	SL/26	2/10/2009		0.0	0.0	20.9			1006		SATISFACTORY	
Sidegate Lane	SL/26	11/11/2009		0.0	0.2	20.7			996		SATISFACTORY	
Sidegate Lane	SL/26	15/12/2009		0.0	0.4	20.3			1008		SATISFACTORY	
Sidegate Lane	SL/26	26/1/2010		0.1	0.5	18.4			1030		SATISFACTORY	
Sidegate Lane	SL/26	9/2/2010		0.0	0.7	17.8			1002		SATISFACTORY	
Sidegate Lane	SL/26	4/3/2010		0.0	0.6	18.5			1018		SATISFACTORY	
Sidegate Lane	SL/26	28/4/2010		0.0	1.0	18.8			1011		SATISFACTORY	
Sidegate Lane	SL/26	20/5/2010		0.0	0.9	19.5			1023		SATISFACTORY	
Sidegate Lane	SL/26	2/6/2010		0.0	0.7	19.8			1013		SATISFACTORY	
Sidegate Lane	SL/26	16/7/2010		0.0	0.3	20.5			996		SATISFACTORY	
Sidegate Lane	SL/26	4/8/2010		0.0	0.6	20.4			997		SATISFACTORY	
Sidegate Lane	SL/26	20/9/2010		0.1	0.4	20.7			1001		SATISFACTORY	
Sidegate Lane	SL/26	21/10/2010		0.0	1.2	20.5			1013		SATISFACTORY	
Sidegate Lane	SL/26	8/11/2010		0.1	1.0	20.9			960		SATISFACTORY	
Sidegate Lane	SL/26	3/12/2010		0.0	0.1	20.7			1006		SATISFACTORY	
Sidegate Lane	SL/26	4/1/2011		0.1	0.0	21.8			1003		SATISFACTORY	
Sidegate Lane	SL/26	16/2/2011		0.1	0.6	20.8			985	0.00	SATISFACTORY	
Sidegate Lane	SL/26	8/3/2011		0.0	1.1	19.5			1008	0.55	SATISFACTORY	
Sidegate Lane	SL/26	27/4/2011		0.1	1.1	20.4			1019	0.28	SATISFACTORY	
Sidegate Lane	SL/26	24/5/2011		0.1	0.2	20.6	0	0	1017	0.08	SATISFACTORY	
Sidegate Lane	SL/26	24/6/2011		0.0	0.9	20.2			1014	0.67	SATISFACTORY	
Sidegate Lane	SL/26	25/7/2011		0.0	0.8	20.2	0	0	1004	0.03	SATISFACTORY	

Sidegate Lane	SL/26	24/8/2011		0.1	0.5	20.1	0	0	1003	0.17	SATISFACTORY	
Sidegate Lane	SL/26	26/9/2011		0.0	0.0	20.9	0	0	1011	0.01	SATISFACTORY	
Sidegate Lane	SL/26	18/10/2011		0.0	0.2	20.5	0	0	1000	-0.08	SATISFACTORY	
Sidegate Lane	SL/26	15/11/2011		0.1	0.3	20.8	0	0	1010	0.02	SATISFACTORY	
Sidegate Lane	SL/26	19/12/2011		0.0	0.3	20.1	0	0	1000	0.21	SATISFACTORY	
	SL/26		**No of reading**	**70**	**70**	**70**	**7**	**7**	**69**	**11**		**0**
		SUMMARY	**Lowest**	**0.0**	**0.0**	**17.3**	**0.0**	**0.0**	**960.0**	**-0.1**		**0.0**
			Average	**0.0**	**0.7**	**20.1**	**0.0**	**0.0**	**1004.3**	**0.2**		**0.0**
			Highest	**0.2**	**3.1**	**21.8**	**0.0**	**0.0**	**1030.0**	**0.7**		**0.0**
Sidegate Lane	SL/27	11/1/2006		0.0	1.5	18.7			1010		SATISFACTORY	
Sidegate Lane	SL/27	9/2/2006		0.0	2.5	19.4			1004		SATISFACTORY	
Sidegate Lane	SL/27	21/3/2006		0.0	3.1	17.4			1002		SATISFACTORY	
Sidegate Lane	SL/27	6/4/2006		0.0	2.1	19.6			1002		SATISFACTORY	
Sidegate Lane	SL/27	16/5/2006		0.0	0.2	19.8			1005		SATISFACTORY	
Sidegate Lane	SL/27	6/7/2006		0.0	0.0	20.3			1005		SATISFACTORY	
Sidegate Lane	SL/27	11/8/2006		0.0	2.0	20.3			1001		SATISFACTORY	
Sidegate Lane	SL/27	26/9/2006		0.0	0.8	19.4			1005		SATISFACTORY	
Sidegate Lane	SL/27	24/10/2006		0.0	2.3	20.2			978		SATISFACTORY	
Sidegate Lane	SL/27	10/11/2006		0.0	1.9	19.6			1020		SATISFACTORY	
Sidegate Lane	SL/27	11/12/2006		0.0	1.1	20.0			999		SATISFACTORY	
Sidegate Lane	SL/27	30/1/2007		0.0	1.1	20.3			1015		SATISFACTORY	
Sidegate Lane	SL/27	13/2/2007		0.0	1.5	18.6			994		SATISFACTORY	
Sidegate Lane	SL/27	21/3/2007		0.0	1.9	19.2			1008		SATISFACTORY	
Sidegate Lane	SL/27	16/4/2007		0.2	1.4	19.1			1016		SATISFACTORY	
Sidegate Lane	SL/27	4/5/2007		0.0	1.1	19.8			1009		SATISFACTORY	
Sidegate Lane	SL/27	25/7/2007		0.0	1.6	19.6			1002		SATISFACTORY	
Sidegate Lane	SL/27	22/8/2007		0.0	2.4	19.8			1005		SATISFACTORY	
Sidegate Lane	SL/27	3/9/2007		0.0	0.8	20.4			1007		SATISFACTORY	
Sidegate Lane	SL/27	11/10/2007		0.0	0.3	20.2			1017		SATISFACTORY	
Sidegate Lane	SL/27	15/11/2007		0.0	0.4	20.8			1018		SATISFACTORY	
Sidegate Lane	SL/27	5/12/2007		0.0	0.2	20.8			995		SATISFACTORY	
Sidegate Lane	SL/27	10/1/2008		0.0	4.6	18.4			995		SATISFACTORY	
Sidegate Lane	SL/27	26/2/2008		0.0	1.4	19.9			993		SATISFACTORY	
Sidegate Lane	SL/27	11/3/2008		0.0	1.4	20.4			975		SATISFACTORY	
Sidegate Lane	SL/27	10/4/2008		0.0	0.5	20.0			988		SATISFACTORY	
Sidegate Lane	SL/27	8/5/2008		0.1	1.2	18.2			1007		SATISFACTORY	
Sidegate Lane	SL/27	10/6/2008		0.0	0.9	18.8			1016		SATISFACTORY	
Sidegate Lane	SL/27	23/7/2008		0.0	0.5	20.4			1013		SATISFACTORY	
Sidegate Lane	SL/27	7/8/2008		0.0	0.6	20.3			993		SATISFACTORY	
Sidegate Lane	SL/27	24/9/2008		0.0	0.9	19.2			1012		SATISFACTORY	
Sidegate Lane	SL/27	2/10/2008		0.0	0.7	21.0			988		SATISFACTORY	
Sidegate Lane	SL/27	19/11/2008		0.0	1.9	19.7			1006		SATISFACTORY	
Sidegate Lane	SL/27	12/12/2008		0.0	2.1	17.3			996		SATISFACTORY	
Sidegate Lane	SL/27	18/2/2009		0.0	1.9	14.3			1016		SATISFACTORY	
Sidegate Lane	SL/27	17/3/2009		0.0	2.2	20.3			1025		SATISFACTORY	
Sidegate Lane	SL/27	14/4/2009		0.0	2.0	18.7			998		SATISFACTORY	
Sidegate Lane	SL/27	1/5/2009		0.1	0.1	20.9			1011		SATISFACTORY	
Sidegate Lane	SL/27	9/6/2009		0.0	1.7	19.9			994		SATISFACTORY	
Sidegate Lane	SL/27	10/7/2009		0.0	1.5	20.1			1006		SATISFACTORY	
Sidegate Lane	SL/27	7/8/2009		0.1	0.7	20.4			1009		SATISFACTORY	
Sidegate Lane	SL/27	3/9/2009		0.0	0.8	20.6			987		SATISFACTORY	
Sidegate Lane	SL/27	2/10/2009		0.0	0.2	20.7			1006		SATISFACTORY	
Sidegate Lane	SL/27	11/11/2009		0.0	1.3	20.2			997		SATISFACTORY	
Sidegate Lane	SL/27	15/12/2009		0.0	0.2	20.7			1008		SATISFACTORY	
Sidegate Lane	SL/27	26/1/2010		0.1	1.2	19.2			1030		SATISFACTORY	
Sidegate Lane	SL/27	9/2/2010		0.0	1.6	17.9			1001		SATISFACTORY	
Sidegate Lane	SL/27	4/3/2010		0.0	3.1	18.7			1018		SATISFACTORY	
Sidegate Lane	SL/27	28/4/2010		0.0	2.9	18.1			1011		SATISFACTORY	
Sidegate Lane	SL/27	20/5/2010		0.0	1.2	20.0			1022		SATISFACTORY	
Sidegate Lane	SL/27	2/6/2010		0.0	0.9	19.9			1013		SATISFACTORY	
Sidegate Lane	SL/27	16/7/2010		0.0	1.0	20.3			995		SATISFACTORY	
Sidegate Lane	SL/27	4/8/2010		0.0	1.1	20.3			997		SATISFACTORY	
Sidegate Lane	SL/27	20/9/2010		0.1	1.2	20.5			1002		SATISFACTORY	
Sidegate Lane	SL/27	21/10/2010		0.0	2.9	19.7			1013		SATISFACTORY	
Sidegate Lane	SL/27	8/11/2010		0.0	3.7	17.2			960		SATISFACTORY	
Sidegate Lane	SL/27	4/1/2011		0.0	2.2	18.5			1003		SATISFACTORY	
Sidegate Lane	SL/27	16/2/2011		0.0	1.7	20.6			985	-0.03	SATISFACTORY	
Sidegate Lane	SL/27	8/3/2011		0.0	0.1	20.9			1007	0.59	SATISFACTORY	
Sidegate Lane	SL/27	27/4/2011		0.1	2.0	20.1			1019	0.27	SATISFACTORY	
Sidegate Lane	SL/27	24/5/2011		0.1	1.4	20.5	0	0	1017	0.09	SATISFACTORY	
Sidegate Lane	SL/27	24/6/2011		0.0	1.2	20.0			1014	-0.91	SATISFACTORY	
Sidegate Lane	SL/27	25/7/2011		0.0	0.5	20.3	2	0	1004	0.01	SATISFACTORY	
Sidegate Lane	SL/27	24/8/2011		0.1	0.1	20.7	0	0	1003	0.00	SATISFACTORY	

Sidegate Lane	SL/27	26/9/2011		0.0	0.4	20.6	0	0	1011	0.05	SATISFACTORY	
Sidegate Lane	SL/27	18/10/2011		0.2	0.0	20.5	0	0	1001	0.01	SATISFACTORY	
Sidegate Lane	SL/27	15/11/2011		0.1	0.5	20.5	0	0	1009	0.05	SATISFACTORY	
Sidegate Lane	SL/27	19/12/2011		0.0	0.9	19.6	0	0	999	0.13	SATISFACTORY	
	SL/27		**No of reading**	**68**	**68**	**68**	**7**	**7**	**68**	**11**		**0**
		SUMMARY	**Lowest**	**0.0**	**0.0**	**14.3**	**0.0**	**0.0**	**960.0**	**-0.9**		**0.0**
			Average	**0.0**	**1.3**	**19.7**	**0.3**	**0.0**	**1004.3**	**0.0**		**0.0**
			Highest	**0.2**	**4.6**	**21.0**	**2.0**	**0.0**	**1030.0**	**0.6**		**0.0**
Sidegate Lane	SL/30	16/5/2006		0.0	0.1	20.0			1005		SATISFACTORY	
Sidegate Lane	SL/30	29/6/2006		0.0	1.4	21.1			1015		SATISFACTORY	
Sidegate Lane	SL/30	6/7/2006		0.0	1.6	19.5			1005		SATISFACTORY	
Sidegate Lane	SL/30	11/8/2006		0.0	3.0	19.6			1001		SATISFACTORY	
Sidegate Lane	SL/30	26/9/2006		0.0	3.4	18.6			1005		SATISFACTORY	
Sidegate Lane	SL/30	24/10/2006		0.0	3.8	20.0			978		SATISFACTORY	
Sidegate Lane	SL/30	10/11/2006		0.0	5.1	16.9			1020		SATISFACTORY	
Sidegate Lane	SL/30	11/12/2006		0.0	4.8	19.2			999		SATISFACTORY	
Sidegate Lane	SL/30	30/1/2007		0.0	1.4	20.6			1015		SATISFACTORY	
Sidegate Lane	SL/30	13/2/2007		0.0	3.8	17.5			994		SATISFACTORY	
Sidegate Lane	SL/30	21/3/2007		0.0	2.8	17.7			1008		SATISFACTORY	
Sidegate Lane	SL/30	16/4/2007		0.0	0.5	20.2			1016		SATISFACTORY	
Sidegate Lane	SL/30	4/5/2007		0.0	0.8	20.1			1009		SATISFACTORY	
Sidegate Lane	SL/30	27/6/2007		0.0	1.2	18.9			997		SATISFACTORY	
Sidegate Lane	SL/30	25/7/2007		0.0	4.8	16.3			1002		SATISFACTORY	
Sidegate Lane	SL/30	22/8/2007		0.0	5.1	17.3			1005		SATISFACTORY	
Sidegate Lane	SL/30	3/9/2007		0.0	5.4	16.9			1007		SATISFACTORY	
Sidegate Lane	SL/30	11/10/2007		0.0	0.5	20.1			1017		SATISFACTORY	
Sidegate Lane	SL/30	15/11/2007		0.0	0.3	20.7			1018		SATISFACTORY	
Sidegate Lane	SL/30	5/12/2007		0.0	0.2	20.6			995		SATISFACTORY	
Sidegate Lane	SL/30	10/1/2008		0.0	3.5	19.6			995		SATISFACTORY	
Sidegate Lane	SL/30	26/2/2008		0.0	3.6	18.4			993		SATISFACTORY	
Sidegate Lane	SL/30	11/3/2008		0.0	3.2	19.9			975		SATISFACTORY	
Sidegate Lane	SL/30	10/4/2008		0.0	3.2	18.6			988		SATISFACTORY	
Sidegate Lane	SL/30	8/5/2008		0.1	0.0	20.2			1007		SATISFACTORY	
Sidegate Lane	SL/30	10/6/2008		0.0	3.3	14.3			1017		SATISFACTORY	
Sidegate Lane	SL/30	23/7/2008		0.0	4.0	16.2			1014		SATISFACTORY	
Sidegate Lane	SL/30	7/8/2008		0.0	1.4	19.4			993		SATISFACTORY	
Sidegate Lane	SL/30	24/9/2008		0.0	5.2	17.2			1012		SATISFACTORY	
Sidegate Lane	SL/30	2/10/2008		0.0	5.9	17.0			988		SATISFACTORY	
Sidegate Lane	SL/30	19/11/2008		0.0	5.2	17.0			1005		SATISFACTORY	
Sidegate Lane	SL/30	12/12/2008		0.0	4.6	15.4			994		SATISFACTORY	
Sidegate Lane	SL/30	7/1/2009		0.0	3.4	16.4					SATISFACTORY	
Sidegate Lane	SL/30	18/2/2009		0.1	0.7	20.6			1015		SATISFACTORY	
Sidegate Lane	SL/30	17/3/2009		0.0	3.3	17.3			1025		SATISFACTORY	
Sidegate Lane	SL/30	14/4/2009		0.0	3.5	17.7			999		SATISFACTORY	
Sidegate Lane	SL/30	1/5/2009		0.1	3.3	19.2			1011		SATISFACTORY	
Sidegate Lane	SL/30	9/6/2009		0.1	3.9	18.6			994		SATISFACTORY	
Sidegate Lane	SL/30	10/7/2009		0.0	3.8	17.6			1006		SATISFACTORY	
Sidegate Lane	SL/30	7/8/2009		0.1	1.0	20.0			1008		SATISFACTORY	
Sidegate Lane	SL/30	3/9/2009		0.1	5.8	18.7			983		SATISFACTORY	
Sidegate Lane	SL/30	2/10/2009		0.0	4.5	18.5			1007		SATISFACTORY	
Sidegate Lane	SL/30	11/11/2009		0.0	1.5	20.0			995		SATISFACTORY	
Sidegate Lane	SL/30	15/12/2009		0.0	3.2	20.3			1009		SATISFACTORY	
Sidegate Lane	SL/30	26/1/2010		0.1	3.7	18.7			1029		SATISFACTORY	
Sidegate Lane	SL/30	9/2/2010		0.0	4.3	16.4			1001		SATISFACTORY	
Sidegate Lane	SL/30	4/3/2010		0.0	3.1	18.1			1018		SATISFACTORY	
Sidegate Lane	SL/30	28/4/2010		0.0	3.5	17.1			1013		SATISFACTORY	
Sidegate Lane	SL/30	20/5/2010		0.0	2.9	17.4			1022		SATISFACTORY	
Sidegate Lane	SL/30	2/6/2010		0.0	3.3	18.2			1014		SATISFACTORY	
Sidegate Lane	SL/30	16/7/2010		0.0	4.7	17.7			995		SATISFACTORY	
Sidegate Lane	SL/30	4/8/2010		0.0	4.1	17.6			996		SATISFACTORY	
Sidegate Lane	SL/30	20/9/2010		0.0	5.7	16.4			1001		SATISFACTORY	
Sidegate Lane	SL/30	21/10/2010		0.0	5.6	17.3			1012		SATISFACTORY	
Sidegate Lane	SL/30	8/11/2010		0.0	5.3	19.7			959		SATISFACTORY	
Sidegate Lane	SL/30	3/12/2010		0.0	3.5	19.4			1008		SATISFACTORY	
Sidegate Lane	SL/30	4/1/2011		0.0	4.2	19.3			1003		SATISFACTORY	
Sidegate Lane	SL/30	16/2/2011		0.0	3.5	20.2			985	-0.01	SATISFACTORY	
Sidegate Lane	SL/30	8/3/2011		0.0	4.0	18.6			1015	0.01	SATISFACTORY	
Sidegate Lane	SL/30	27/4/2011		0.0	0.8	20.2			1020	0.01	SATISFACTORY	
Sidegate Lane	SL/30	24/5/2011		0.1	4.4	18.4	0	0	1018	0.04	SATISFACTORY	
Sidegate Lane	SL/30	24/6/2011		0.0	3.4	18.5			1014	0.04	SATISFACTORY	
Sidegate Lane	SL/30	25/7/2011		0.0	3.1	18.2	0	0	1003	0.08	SATISFACTORY	
Sidegate Lane	SL/30	24/8/2011		0.1	4.9	17.1	0	0	1003	0.03	SATISFACTORY	
Sidegate Lane	SL/30	26/9/2011		0.0	4.8	18.0	0	0	1010	0.00	SATISFACTORY	

Sidegate Lane	SL/30	18/10/2011		0.0	5.1	17.9	0	0	1000	-0.09	SATISFACTORY	
Sidegate Lane	SL/30	15/11/2011		0.0	3.4	20.3	0	0	1011	0.02	SATISFACTORY	
Sidegate Lane	SL/30	19/12/2011		0.0	3.1	19.5	0	0	1003	-0.01	SATISFACTORY	
Sidegate Lane	SL/30	23/1/2012		0.0	2.8	19.1	0	0	1006	0.19	SATISFACTORY	
Sidegate Lane	SL/30	20/2/2012		0.0	3.0	18.8	0	0	1022	0.02	SATISFACTORY	
Sidegate Lane	SL/30	5/3/2012		0.0	2.5	19.1	0	0	1016	-0.76	SATISFACTORY	0.2
			No of reading	**71**	**71**	**71**	**10**	**10**	**70**	**14**		**1**
	SL/30	**SUMMARY**	**Lowest**	**0.0**	**0.0**	**14.3**	**0**	**0**	**959**	**-0.76**		**0.2**
			Average	**0.0**	**3.3**	**18.6**	**0**	**0**	**1005**	**-0.03**		**0.2**
			Highest	**0.1**	**5.9**	**21.1**	**0**	**0**	**1029**	**0.19**		**0.2**
Sidegate Lane	SL/31	16/5/2006		0.0	1.8	18.6			1005		SATISFACTORY	
Sidegate Lane	SL/31	29/6/2006		0.0	3.4	17.8			1015		SATISFACTORY	
Sidegate Lane	SL/31	6/7/2006		0.0	1.8	18.6			1005		SATISFACTORY	
Sidegate Lane	SL/31	11/8/2006		0.0	4.4	16.2			1001		SATISFACTORY	
Sidegate Lane	SL/31	27/9/2006		0.0	4.1	17.7			1002		SATISFACTORY	
Sidegate Lane	SL/31	24/10/2006		0.0	0.8	20.1			978		SATISFACTORY	
Sidegate Lane	SL/31	11/12/2006		0.0	0.0	20.6			999		SATISFACTORY	
Sidegate Lane	SL/31	30/1/2007		1.5	28.9	3.4			1015		SATISFACTORY	
Sidegate Lane	SL/31	13/2/2007		0.0	6.0	15.0			994		SATISFACTORY	
Sidegate Lane	SL/31	21/3/2007		0.0	0.0	20.9			1008		SATISFACTORY	
Sidegate Lane	SL/31	16/4/2007		0.0	0.4	20.1			1016		SATISFACTORY	
Sidegate Lane	SL/31	4/5/2007		0.0	0.2	20.6			1009		SATISFACTORY	
Sidegate Lane	SL/31	27/6/2007		0.0	1.1	19.3			997		SATISFACTORY	
Sidegate Lane	SL/31	25/7/2007		0.0	5.3	15.6			1002		SATISFACTORY	
Sidegate Lane	SL/31	22/8/2007		0.0	4.6	16.4			1005		SATISFACTORY	
Sidegate Lane	SL/31	3/9/2007		0.0	6.4	13.5			1007		SATISFACTORY	
Sidegate Lane	SL/31	11/10/2007		0.0	1.1	19.2			1017		SATISFACTORY	
Sidegate Lane	SL/31	15/11/2007		0.0	0.1	20.8			1018		SATISFACTORY	
Sidegate Lane	SL/31	5/12/2007		0.0	0.2	20.6			995		SATISFACTORY	
Sidegate Lane	SL/31	10/1/2008		0.0	0.1	20.4			995		SATISFACTORY	
Sidegate Lane	SL/31	26/2/2008		0.0	0.0	20.8			993		SATISFACTORY	
Sidegate Lane	SL/31	11/3/2008		0.0	0.0	21.1			976		SATISFACTORY	
Sidegate Lane	SL/31	10/4/2008		0.0	0.2	19.5			988		SATISFACTORY	
Sidegate Lane	SL/31	8/5/2008		0.0	0.0	20.2			1007		SATISFACTORY	
Sidegate Lane	SL/31	10/6/2008		0.0	0.0	20.3			1017		SATISFACTORY	
Sidegate Lane	SL/31	23/7/2008		0.0	0.0	20.5			1014		SATISFACTORY	
Sidegate Lane	SL/31	7/8/2008		0.0	0.0	20.5			993		SATISFACTORY	
Sidegate Lane	SL/31	24/9/2008		0.0	0.0	20.9			1009		SATISFACTORY	
Sidegate Lane	SL/31	2/10/2008		0.0	6.2	13.4			988		SATISFACTORY	
Sidegate Lane	SL/31	19/11/2008		0.0	0.0	20.4			1005		SATISFACTORY	
Sidegate Lane	SL/31	12/12/2008		0.0	0.0	20.1			994		SATISFACTORY	
Sidegate Lane	SL/31	7/1/2009		0.0	0.1	19.2					SATISFACTORY	
Sidegate Lane	SL/31	18/2/2009		0.0	0.8	17.7			1015		SATISFACTORY	
Sidegate Lane	SL/31	17/3/2009		0.0	0.1	21.2			1025		SATISFACTORY	
Sidegate Lane	SL/31	14/4/2009		0.0	0.0	20.4			998		SATISFACTORY	
Sidegate Lane	SL/31	1/5/2009		0.1	0.4	20.3			1011		SATISFACTORY	
Sidegate Lane	SL/31	9/6/2009		0.1	0.0	21.0			994		SATISFACTORY	
Sidegate Lane	SL/31	10/7/2009		0.0	4.6	14.5			1006		SATISFACTORY	
Sidegate Lane	SL/31	7/8/2009		0.1	0.0	21.0			1008		SATISFACTORY	
Sidegate Lane	SL/31	3/9/2009		0.0	0.4	20.9			983		SATISFACTORY	
Sidegate Lane	SL/31	2/10/2009		0.0	0.6	20.7			1007		SATISFACTORY	
Sidegate Lane	SL/31	11/11/2009		0.0	0.1	20.9			996		SATISFACTORY	
Sidegate Lane	SL/31	15/12/2009		0.0	0.1	21.1			1009		SATISFACTORY	
Sidegate Lane	SL/31	26/1/2010		0.1	0.1	21.1			1029		SATISFACTORY	
Sidegate Lane	SL/31	9/2/2010		0.0	0.1	19.1			1001		SATISFACTORY	
Sidegate Lane	SL/31	4/3/2010		0.0	1.9	13.7			1018		SATISFACTORY	
Sidegate Lane	SL/31	28/4/2010		0.0	5.1	14.7			1013		SATISFACTORY	
Sidegate Lane	SL/31	20/5/2010		0.0	4.3	15.8			1023		SATISFACTORY	
Sidegate Lane	SL/31	2/6/2010		0.0	5.7	13.8			1014		SATISFACTORY	
Sidegate Lane	SL/31	16/7/2010		0.0	6.4	13.6			995		SATISFACTORY	
Sidegate Lane	SL/31	4/8/2010		0.0	5.5	16.6			995		SATISFACTORY	
Sidegate Lane	SL/31	20/9/2010		0.0	8.8	13.8			1001		SATISFACTORY	
Sidegate Lane	SL/31	21/10/2010		0.0	8.4	11.3			1012		SATISFACTORY	
Sidegate Lane	SL/31	8/11/2010		0.0	2.0	16.3			959		SATISFACTORY	
Sidegate Lane	SL/31	3/12/2010		0.0	2.9	20.4			1004		SATISFACTORY	
Sidegate Lane	SL/31	4/1/2011		0.0	4.7	16.8			1003		SATISFACTORY	
Sidegate Lane	SL/31	16/2/2011		0.1	5.0	18.7			985	-0.02		
Sidegate Lane	SL/31	8/3/2011		0.0	4.6	17.5			1006	0.52	Satisfactory	
Sidegate Lane	SL/31	27/4/2011		0.1	2.6	18.8			1020	0.04	Satisfactory	
Sidegate Lane	SL/31	24/5/2011		0.1	5.4	16.6	0	0	1017	0.09		
Sidegate Lane	SL/31	24/6/2011		0.0	5.1	15.4			1013	-0.18	Satisfactory	
Sidegate Lane	SL/31	25/7/2011		0.0	4.7	15.1	0	0	1002	0.01		
Sidegate Lane	SL/31	24/8/2011		0.1	5.9	15.5	0	0	1003	0.08		

Sidegate Lane	SL/31	26/9/2011		0.0	7.6	14.9	0	0	1010	0.08		
Sidegate Lane	SL/31	18/10/2011		0.0	7.3	15.7	0	0	1000	0.09		
Sidegate Lane	SL/31	15/11/2011		0.1	4.7	17.2	0	0	1011	-0.01		
Sidegate Lane	SL/31	19/12/2011		0.0	4.6	16.2	0	0	1003	0.01	Satisfactory	
Sidegate Lane	SL/31	23/1/2012		0.0	3.8	16.6	0	0	1007	0.11	Satisfactory	
Sidegate Lane	SL/31	20/2/2012		0.0	4.7	16.1	0	0	1022	-0.04	Satisfactory	
Sidegate Lane	SL/31	5/3/2012		0.0	2.7	16.8	0	0	1015	-0.44		0.3
			No of reading	**70**	**70**	**70**	**10**	**10**	**69**	**14.00**		**1**
	SL/31	**SUMMARY**	**Lowest**	**0.0**	**0.0**	**3.4**	**0**	**0**	**959**	**-0.44**		**0.3**
			Average	**0.0**	**3.0**	**17.9**	**0**	**0**	**1004.3**	**0.02**		**0.3**
			Highest	**1.5**	**28.9**	**21.2**	**0**	**0**	**1029**	**0.52**		**0.3**
Sidegate Lane	SL/36	10/1/2008		32.2	18.7	0.8			995		SATISFACTORY	
Sidegate Lane	SL/36	25/1/2008		32.1	16.7	1.6			1027		SATISFACTORY	
Sidegate Lane	SL/36	26/2/2008		0.0	0.0	21.0			993		SATISFACTORY	
Sidegate Lane	SL/36	7/3/2008		13.9	6.3	15.5			1007		SATISFACTORY	
Sidegate Lane	SL/36	11/3/2008		0.8	0.9	19.9			976		SATISFACTORY	
Sidegate Lane	SL/36	10/4/2008		52.9	17.2	11.3			988		SATISFACTORY	
Sidegate Lane	SL/36	8/5/2008		46.0	17.1	0.9			1008		SATISFACTORY	
Sidegate Lane	SL/36	10/6/2008		40.5	17.1	1.7			1017		SATISFACTORY	
Sidegate Lane	SL/36	23/7/2008		33.8	19.4	0.7			1013		SATISFACTORY	
Sidegate Lane	SL/36	7/8/2008		41.6	19.5	0.8			992		SATISFACTORY	
Sidegate Lane	SL/36	24/9/2008		43.7	19.4	0.7			1011		SATISFACTORY	
Sidegate Lane	SL/36	2/10/2008		0.0	0.0	21.0			988		SATISFACTORY	
Sidegate Lane	SL/36	19/11/2008		5.0	3.0	18.5			1005		SATISFACTORY	
Sidegate Lane	SL/36	12/12/2008		49.2	18.6	2.2			994		SATISFACTORY	
Sidegate Lane	SL/36	7/1/2009		49.6	16.2	2.4					SATISFACTORY	
Sidegate Lane	SL/36	18/2/2009		52.2	15.9	0.3			1015		SATISFACTORY	
Sidegate Lane	SL/36	17/3/2009		39.4	14.7	1.6			1024		SATISFACTORY	
Sidegate Lane	SL/36	14/4/2009		47.1	15.7	1.3			998		SATISFACTORY	
Sidegate Lane	SL/36	1/5/2009		0.2	0.1	20.9			1011		SATISFACTORY	
Sidegate Lane	SL/36	9/6/2009		37.9	16.4	0.3			994		SATISFACTORY	
Sidegate Lane	SL/36	10/7/2009		0.4	0.0	20.4			1006		SATISFACTORY	
Sidegate Lane	SL/36	7/8/2009		0.1	0.1	21.0			1008		SATISFACTORY	
Sidegate Lane	SL/36	3/9/2009		0.0	0.0	20.9			986		SATISFACTORY	
Sidegate Lane	SL/36	2/10/2009		13.2	13.6	7.2			1006		SATISFACTORY	
Sidegate Lane	SL/36	11/11/2009		10.5	18.4	5.5			997		SATISFACTORY	
Sidegate Lane	SL/36	15/12/2009		10.9	14.2	5.9			1008		SATISFACTORY	
Sidegate Lane	SL/36	26/1/2010		0.1	0.1	21.5			1030		SATISFACTORY	
Sidegate Lane	SL/36	9/2/2010		43.0	16.4	0.0			1001		SATISFACTORY	
Sidegate Lane	SL/36	4/3/2010		0.0	0.0	21.0			1018		SATISFACTORY	
Sidegate Lane	SL/36	28/4/2010		51.2	14.0	0.7			1011		SATISFACTORY	
Sidegate Lane	SL/36	20/5/2010		26.2	12.2	4.5			1023		SATISFACTORY	
Sidegate Lane	SL/36	2/6/2010		0.0	0.0	20.2			1013		SATISFACTORY	
Sidegate Lane	SL/36	16/7/2010		0.0	0.0	20.5			996		SATISFACTORY	
Sidegate Lane	SL/36	4/8/2010		48.2	16.4	0.5			997		SATISFACTORY	
Sidegate Lane	SL/36	20/9/2010		0.1	0.0	20.6			1001		SATISFACTORY	
Sidegate Lane	SL/36	21/10/2010		41.4	16.1	2.5			1014		SATISFACTORY	
Sidegate Lane	SL/36	8/11/2010		56.1	15.1	1.7			960		SATISFACTORY	
Sidegate Lane	SL/36	3/12/2010		45.6	15.1	3.0			1006		SATISFACTORY	
Sidegate Lane	SL/36	4/1/2011		47.6	13.5	4.0			1002		SATISFACTORY	
Sidegate Lane	SL/36	16/2/2011		42.4	11.8	7.3			984	0.00		
Sidegate Lane	SL/36	8/3/2011		54.5	13.6	0.9			1007	0.89		
Sidegate Lane	SL/36	27/4/2011		57.6	14.4	0.9			1019	2.91		
Sidegate Lane	SL/36	24/5/2011		0.1	0.0	20.8	0	0	1017	-0.07		
Sidegate Lane	SL/36	24/6/2011		54.1	14.1	0.4			1014	-0.69		
Sidegate Lane	SL/36	25/7/2011		58.4	12.9	1.1	3	1	1004	-0.10		
Sidegate Lane	SL/36	24/8/2011		61.2	14.0	0.5	0	1	1003	0.22		
Sidegate Lane	SL/36	26/9/2011		0.1	0.0	20.6	0	0	1011	0.01		
Sidegate Lane	SL/36	18/10/2011		0.0	0.0	20.5	0	0	1001	0.02		
Sidegate Lane	SL/36	15/11/2011		51.9	14.8	0.4	0	1	1010	0.13		
Sidegate Lane	SL/36	19/12/2011		39.5	14.6	0.6	0	0	999	0.31		
Sidegate Lane	SL/36	23/1/2012		0.0	0.1	20.3	0	0	1007	0.13		
Sidegate Lane	SL/36	20/2/2012		32.8	14.0	0.1	1	0	1023	0.00		
Sidegate Lane	SL/36	5/3/2012		0.4	0.4	20.5	0	0	1015	-0.17		0.1
	SL/36		**No of reading**	**53**	**53**	**53**	**10**	**10**	**52**	**14**		**1**
		SUMMARY	**Lowest**	**0.0**	**0.0**	**0.0**	**0**	**0**	**960**	**-0.69**		**0.1**
			Average	**27.7**	**10.2**	**8.7**	**0**	**0**	**1004.9**	**0.26**		**0.1**
			Highest	**61.2**	**19.5**	**21.5**	**3**	**1**	**1030**	**2.91**		**0.1**

APPENDIX G

Current Guidance on Interpretation of Chemical Analysis of Soils for Human Health Assessment

Current Guidance on Interpretation of Chemical Analysis of Soils

Contaminated land is defined under law through Part IIA of the Environmental Protection Act 1990, implemented through Section 57 of the Environment Act 1995. This supports a 'suitable for use' based approach to the risk assessment of contaminated land. The site specific risk assessment is based upon an assessment of plausible pollutant linkages, referred to as the source-pathway- receptor model, based upon the current or proposed use of the site.

Before undertaking a risk assessment a conceptual site model is devised in order to identify the potential contaminants, pathways and receptors. The individual contaminants, pathways and receptors then need to be further investigated in order to refine the initial assessment and risk assessment undertaken.

In March 2002, the Department for Environment, Food and Rural Affairs (DEFRA) and the EA published the Contaminated Land Exposure Assessment (CLEA) Model and a series of related reports. These were designed to provide a scientifically based framework for the assessment of chronic risks to human health from contaminated land. These reports (CLR7-10) together with associated "SGV" documents were withdrawn and the following documents have been published as revised guidance to the CLEA assessment:

- Environment Agency : 2008: Using Soil Guideline Values SC050021/SGV Introduction, March 2008.
- Environment Agency : 2008: Science Report SC050021/SR2: Human health toxicological assessment of contaminants in soil.
- Environment Agency : 2008: Science Report SC050021/SR3: Updated technical background to the CLEA model.
- Environment Agency : 2008 :Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values Science report SC050021/SR7
- Science Report SC050021/SR4: CLEA Software (Version) Handbook.

Additional guidance on statistical assessment replacing CLR 7 is partly provided in:

- CL:AIRE :2009: Guidance on Comparing Data With a Critical Concentration

A different approach to the statistical appraisal of data is required depending on whether the assessment of risk is to assess whether land is Contaminated Land in accordance with regulations, or whether the assessment is to assess whether the site is suitable for new development in according with Planning guidance. This is discussed further in CL:AIRE :2009 "Guidance on Comparing Data With a Critical Concentration".

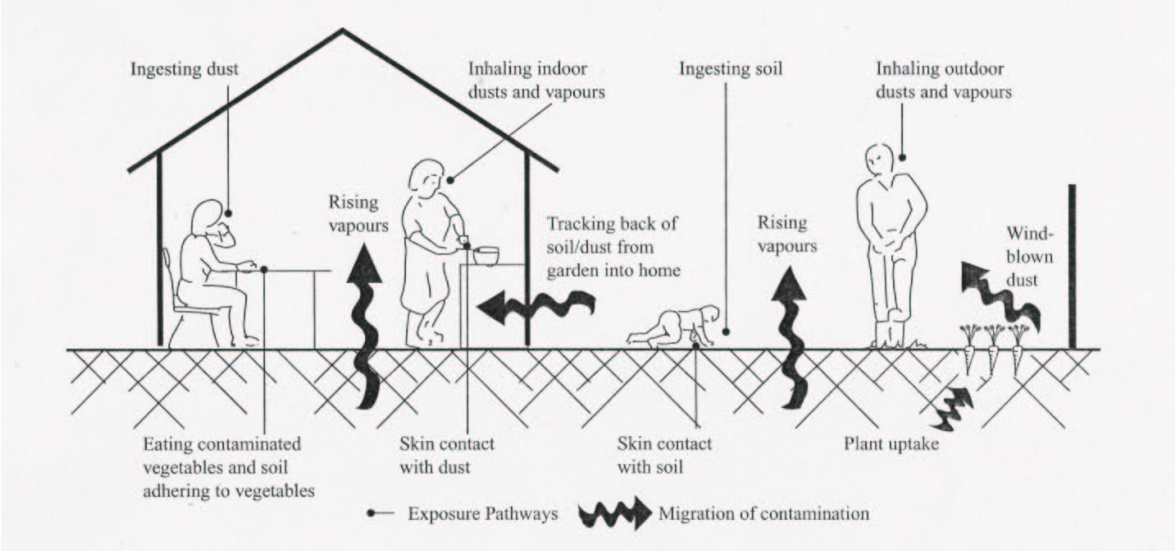
Soil Guideline Values

A program for the derivation of SGVs based on the above guidance is provided by the Environment Agency and is entitled "CLEA Software Version 1.06". These reports, together with supporting toxicology reviews ("Tox" or Supplementary Information Reports) for individual substances (which will be gradually updated), Soil Guideline Value Reports and other guidance referred to in the above documents, provide guidance and the scientific basis for assessing the risk to human health from potential contaminants. Soil Guideline Value Reports (SGV Reports) have been published for a number of contaminants and these are published on the Environment Agency website. Eventually the reports will include SGVs for:

- heavy metals and other inorganic compounds: arsenic, cadmium, chromium, cyanide, lead, mercury nickel, and selenium;
- benzene, ethylbenzene, toluene and xylenes;
- phenol;
- dioxins and dioxin-like polychlorinated biphenyls (PCBs);
- polycyclic aromatic hydrocarbons (PAHs) – 11 substances.

In addition CIEH through LQM and the EIC have published generic assessment criteria (GACs) for a wide variety of other parameters including metals, hydrocarbons, solvents, PAHs and explosive substances for three standard land uses. These have been produced to supplement the Environment Agency guidance. These GACs will be replaced by SGVs when or if the EA publishes any more SGVs.

The CLEA model has been developed to calculate an estimated tolerable daily soil intake (TDSI) for site users given a set 'default' exposure pathways. Ten human exposure pathways are covered in the CLEA model as presented below:



- **Ingestion**
  - ingestion of outdoor soil;
  - ingestion of indoor dust;
  - ingestion of home grown vegetables;
  - ingestion of soil attached to home grown vegetables.

- **Dermal Contact**
  - dermal contact with outdoor soil;
  - dermal contact with indoor dust.

- **Inhalation**
  - inhalation of outdoor dust;
  - inhalation of indoor dust;
  - inhalation of outdoor soil vapour;
  - inhalation of indoor soil vapour.

It should be noted that there are other potential exposure pathways on some sites not included in the CLEA model e.g. certain organic compounds can pass through plastic water pipes into drinking water supply.

The presence and/or significance of each of the above exposure pathways are dependent on the type of land use being considered and the nature of the contaminant under scrutiny. Accordingly, the CLEA model considers for principle 'default' land use types and makes a series of 'default' assumptions with regard to human exposure frequency, duration and critical human target groups for each land use considered:

- residential land use;
- allotments;
- commercial and industrial land use.

The land use categories defined in the CLEA are detailed below.

Residential: This land use category assumes that people live in a variety of dwellings including terraced, detached and semi detached houses up to two storeys high. The structure of buildings varies. Default parameters for building materials and building design are included in CLEA documents to calculate the relevant multi-layer diffusion coefficients for vapour intrusion and to model indoor vapour intrusion. The CLEA model assumes that regardless of the style of housing the residents will have access to either a private garden or community open space nearby, and that soil tracked into the home will form indoor dust. It allows for the ingestion pathways from home grown vegetables.

Allotments: The CLEA model incorporates an assessment of land provided by local authorities specifically for people to grow fruit and vegetables for their own consumption. Consumption of such fruit and vegetables present several exposure pathways; plants absorb contaminants mainly via water uptake through roots, the contaminants move to edible portions of plants via translocation and contaminated soil particles become trapped in the skin and between leaves. At present the model fails to account for exposure through the consumption of animals, and their products (e.g. eggs), which have been reared on contaminated land.

Commercial/Industrial: Although there are a wide variety of workplaces and work-related activities, the CLEA assessment of this land-use assumes that work occurs in a permanent, three-storey structure, where employees spend most time indoors, conducting office-based or light physical work. The model assumes employees sit outside during breaks for most of the year. Limitations in applying this land-use to different industries is detailed in EA publication "Updated technical background to the CLEA model" (2011). The generic model assumes that the site would not be covered by hard standing. Risk of exposure to contaminants would be clearly less where commercial land is essentially all buildings and hard standing.

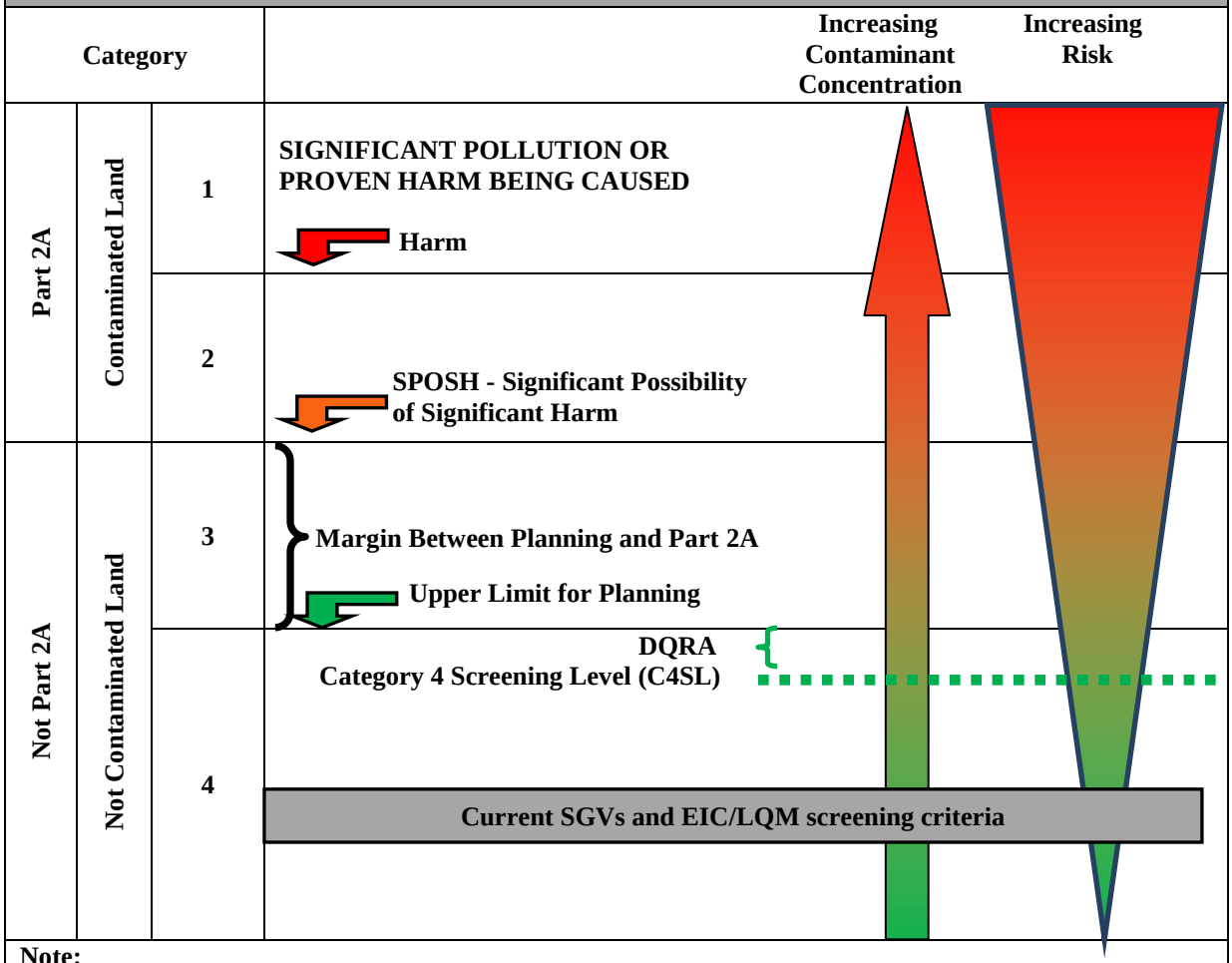
Based on the assumptions of each land use and the associated applicable exposure pathways, a 'Soil Guideline Value' (SGV) may be calculated for each contaminant under consideration for a particular land use in order to determine whether certain contaminant soil concentrations pose a significant risk to human health. The primary purpose of the CLEA SGVs are as 'trigger values' – indicators to a risk assessor that soil concentrations below this level require no further assessment as it can be assumed that the soil is suitable for the proposed use.

Where soil concentrations occur above the SGV then further assessment of the results is required. The Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, 2012) which came into force in early April 2012 provides new clarity on the assessment of risk where soil concentrations exceed the SGV. The guidance introduces a four stage classification system relating to concentration of contaminants and the assessed risk which indicates appropriate actions. Category 1 and 2 sites are classified as "Contaminated Land" as defined in Part IIA of The Environmental Protection Act (1990). Category 3 and 4 sites are not considered as "Contaminated Land" in accordance with the Act. This can be explained using the figure on the following page.

For new developments progressing through the planning regime, it is desirable that the soil concentrations are within Category 4 where there is a valid pollutant linkage. The upper boundary between Category 4 and 3 is not defined in the guidance. From communication with senior personnel in the Homes and Communities Agency this boundary will be at about three to five times higher than the SGV calculated in accordance with CLEA 1.06 but this is contaminant and site specific. This boundary can also be better defined by carrying out a Detailed Quantified Risk Assessment (DQRA) and this is discussed later in this appendix.

There are also difficulties in establishing soil concentrations of contaminants beyond which risks from exposure to these contaminants would be 'unacceptable' and that they would lead to "significant possibility of significant harm" as defined in Part IIA of The Environmental Protection Act (1990) and determine that the land is "contaminated." This ultimately requires detailed 'toxicological' information of the health effects of individual contaminants and also a scientific judgement on what constitutes an 'unacceptable' risk. It is for local authorities or the Environment Agency to determine whether a particular site is contaminated land and it is for local Planning Authorities to determine whether land affected by contamination can be redeveloped.

Relationship Between Contaminant Concentration, Risk and Screening Values



Note:
The vertical scale should not be considered as being linear and will be site and contaminant specific.

- The upper limit for planning could be 3 to 5 times the SGV/EIC/LQM screening concentration.
- SPOSH concentrations could be 10 to 100 times the SGV/EIC/LQM screening concentration.

These SGV levels are a guide to help assessors estimate risk and are guidelines on the level of long-term human exposure to individual chemicals in soil that, unless stated otherwise, are tolerable or pose a minimal risk to human health. Given the SGVs have been derived only for a limited number of contaminants and there was little prospect of further SGVs being published, two professional groupings have produced Generic Assessment Criteria (GACs) in accordance with the CLEA model for a large number of additional contaminants. These GACs were recognised in the new Contaminated Land Statutory Guidance (DEFRA, 2012) and have been produced as follows:

LQM/CIEH : 2009 Nathaniel CP, McCaffrey C, Ashmore MH, Cheng YY, Gillett A, Ogden R & Scott D : 2009 . The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment (2nd edition). Land Quality Press, Nottingham.

CL:AIRE/EIC/AGS: 2009 : Soil Generic Assessment Criteria (GAC) for Human Health Risk Assessment. Contaminated Land: Applications in Real Environments, Environment Industries Commission & Association of Geotechnical and Environmental Specialists. December 2009.

Any concentrations above the level of the SGV warrants further investigation and risk evaluation to determine whether they pose a possibility of significant harm to human health.

Detailed Quantified Risk Assessment (DQRA)

The SGVs and the GACs are based on a number of basic assumptions. There are two main options for developing Site Specific Assessment Criteria by adjusting the CLEA model so that they have greater relevance to the site:

- **Simple adjustment of the generic SGV model**. Such adjustment is restricted to the choice of exposure routes selected for the generic land use, building type, soil type and soil organic matter content within the CLEA software.

- **Detailed adjustment.** It may be relevant to make greater modifications to the model due to the specific use of the land in question. This can include modification to any parameter value, including exposure assumptions, building parameters, and the choice and application of fate and transport models. This is equally relevant to site-specific modifications of existing generic land uses, the development of new land uses, and the inclusion of additional exposure pathways. Much of this can be undertaken using the CLEA software. Depending on the complexity of the detailed adjustments required, it may be necessary to use other tools either alone or in conjunction with the CLEA software. Both options should follow established protocols for DQRA and require sufficient justification and supporting information for the adjustments made. Detailed adjustments are likely to require substantially greater technical justification and supporting documentation, especially if modifications are based on information not contained within the SGV framework documents.

The two choices present the risk assessor with three options/decisions:

(1) Use a published SGV/GAC if it can be demonstrated that the assumptions inherent in the value are appropriate to the site in question. If they are not, proceed to either option 2 or 3 below.

(2) Make simple site-specific adjustments to the generic exposure model used to derive the SGV/GAC. Three examples of when this could be appropriate are:

   a. High density residential development with no exposed contaminated soil at surface. It is appropriate in this case to consider the relevance of direct contact pathways and consumption of homegrown produce.

   b. Soil type is significantly different (specifically when soil type is likely to be less protective e.g. made ground) to that assumed in the SGV/GAC.

   c. Soil organic matter content is significantly different to that assumed in the derivation of the SGV/GAC.

(3) If simple adjustments are not sufficient to reflect site conditions, undertake a DQRA. This may be undertaken using the CLEA software or by using an alternative risk assessment methodology that is relevant, appropriate, authoritative and scientifically based. In the context of this guidance, simple adjustments of a generic land use scenario for soil type or SOM content for example are not considered sufficient to be classed as a DQRA. The resultant screening values from such simple adjustment remain generic in terms of the balance of the assumptions being made.

DQRAs should be conducted with the agreement of the local authority (or the Environment Agency) since it is the authority that determines whether land is Contaminated Land or whether Planning Permission for a new development may be granted.

Lead

For comparative purposes only, the withdrawn SGV for lead has been used in this report. If this initial screening value for lead is exceeded then a different model to the CLEA 1.06 model will be used to derive site specific assessment criteria for lead as the CLEA model does not access the intake factors and levels of lead in the blood appropriately. This assessment will be in accordance with the latest guidance using information from the HPA etc.

Representative Data

The type, quantity and quality of the available soil data influence the method chosen to obtain a site representative soil concentration that is compared with a SGV in the screening process. The soil data should be representative of the exposure scenario being considered. This can include factors such as:

- averaging area over which exposure occurs;
- sample depth;
- heterogeneity of soil

where the 'averaging area' is defined as:

> *That area (together with a consideration of depth) of soil to which a receptor is exposed or which otherwise contributes to the creation of hazardous conditions'.*

Site investigations take discrete samples from a given area (and to a certain depth). It has to be assumed that these samples are to some degree representative of the contaminant concentration throughout that volume of soil. The critical soil volume (taking into account area and depth) which might be usefully compared with a SGV is a site-specific decision, but a starting point is the generic land use scenarios used in the derivation of the SGV. The critical soil volume depends on two factors:

- Contaminant distribution and vertical profile (bands of highly contaminated material or lateral hot spots should not necessarily be averaged out with more extensive cleaner areas of soil without justification)
- Contribution to average exposure underpinning the SGV. Direct contact exposure pathways depend on the adult or child coming into contact with near-surface soils and the area over which that exposure occurs is usually important (i.e. the averaging area). Vapour pathways are less dependent on surface area, for example vapour intrusion may result from a highly concentrated hot spot beneath a building leading to elevated average indoor air concentrations. For the three standard land uses for which SGVs are derived, relevant considerations are:
- For the standard **residential or allotment land use**, the critical soil volume is the area of an individual garden, communal play area or working plot from the surface to a depth of between 0.5m and 1.0m. This is the ground over which children are most likely to come into contact with soil or from which vegetable and fruit produce will be harvested. In the case of volatile contaminants, it may also be appropriate to consider the volume of soil underneath the footprint of the building although vapour intrusion may be driven by a soil volume much smaller than this if the contaminant source is highly concentrated.
- For the standard **commercial land use**, the critical soil volume has to be decided on a case-by- case basis due to the wide range of possible site layouts. However, for non-volatile contaminants, landscaped and recreational areas around the perimeter of office buildings are likely to be most important. For volatile contaminants, the footprint occupied by the building itself should also be considered.
- For **most exposure pathways**, the contamination is assumed to be at or within one metre of the surface.

The use of averaging areas must be justified on the basis of relevance to the exposure scenario. SGVs are relevant only when the exposure assumptions inherent in them are appropriate for the identified exposure averaging area. Further guidance on critical soil volumes and the consideration of averaging exposure areas can be found in:

- *Secondary model procedure for the development of appropriate soil sampling strategies for land contamination* (Environment Agency, 2000);
- *Guidance on comparing soil contamination data with a critical concentration* (CIEH/CL:AIRE, 2009).

It is the mean soil concentration for the individual contaminant within an individual averaging area, which is compared to the SGV. However, as contaminant concentrations vary across a site, and sampling and analysis will introduce measurement errors, the comparison between measured mean concentration and the SGV must take this uncertainty into account.

There are two principal options available to obtain site representative soil concentrations from a site investigation dataset; statistical and non-statistical methods. Data objectives, quality and quantity are likely to determine which approach is most appropriate. If statistical methods such as those presented in CIEH/CL:AIRE (2011) are to be used, sufficient data need to be available or obtained. No one single statistical approach is applicable to all sites and circumstances. The wider range of robust statistical techniques developed by organisations including the US Environmental Protection Agency (USEPA) are also important tools. Risk assessors should choose an appropriate statistical approach on the basis of the specific site and the decision that is being made. For further guidance on the appropriate use of statistical approaches, refer to USEPA 2006 or good environmental monitoring statistics textbooks.

When statistical approaches are inappropriate (this will depend on the objectives of the site investigation), individual or composite samples should be compared directly to the SGV. Guidance on use of alternative data handling approaches such as the use of composite sampling can be found in documents such as:

- *Verification of remediation of land contamination* (Environment Agency, 2010);
- *Sampling and testing of wastes to meet landfill Waste Acceptance Criteria* (Environment Agency, 2005);
- *Guidance on choosing a sampling design for environmental data collection* (USEPA, 2002);
- *Soil Quality – Sampling, ISO 10381 series* (ISO, 2002–2007).

The statistical tests should not be used as arbiters for decisions under Part 2A. They are an additional, useful line of evidence to assist in decision-making. The implications of the basis for the derivation of the site representative soil concentration must be taken into account in any decision-making process and clearly documented.

Where the statistical tests are conducted in accordance with the method described in CL:AIRE 2009:

- For the Planning situation, the regulator needs to check whether the concentration of contaminants is low compared to the SGV/SSTL. This decision is based on whether there is at least a 95% confidence level that the true mean of the dataset is lower than the SGV/SSTL.
- For the Part 2A scenario the regulator needs to determine whether the concentration of contaminants is greater than the SGV/SSTL. This decision is based on whether there is at least a 95% confidence level that the true mean of the dataset is higher than the SGV/SSTL. However, the regulator may proceed with determination if there is just a 51% probability, "on the balance of probabilities".

If the screening levels are exceeded then more sophisticated quantitative risk assessment can be undertaken or remedial action may be taken to break the pollutant linkages. The benefits of undertaking a quantitative risk assessment must be weighed against the likelihood that it will bring about cost savings in the proposed remediation. Further information about the use of soil guideline values is provided in Environment Agency : 2008: Using Soil Guideline Values SC050021/SGV Introduction, March 2008.

APPENDIX H

Summary of Hyder's Chemical Test Results of Soil Samples

Site: SIDEGATE LANE RDF FACILITY

TerraConsult

CHEMICAL STATISTICAL ANALYSIS - based on CLEA v1.06 (Sandy Loam 1% SOM) - HYDER LABORATORY DATA

Job No: 1601

Analyte	Limit of Detection	Hyder BH1 0.70 SOIL	Hyder BH2 1.00 SOIL	Hyder BH3 0.60 SOIL	Hyder BH3 2.00 SOIL	Hyder TP1 1.30 - 1.50 SOIL	Hyder TP2 1.00 SOIL	Hyder TP5 0.30 - 0.50 SOIL	Hyder TP6 0.20 - 0.50 SOIL	Statistical Analysis: n	Standard Deviation	Minimum	Maximum	Statistical Results: Maximum	Residential With Veg. Uptake Tier I Screening Criteria	Pass/ Fail	Statistical Results: Maximum	Commercial & Industrial Tier 1 Screening Threshold	Pass/ Fail	Criteria Source: Source of Screening Criteria	Source of Toxicological Data
Metals																					
Arsenic (total)	<0.5 mg/kg	34	23	15	15	24	14	30	24	8	7.35	14.0	34.0	34.0	32	Fail	34.0	635	Pass	CLEA v1.06	LQM 2009
Cadmium (total)	<0.5 mg/kg	0.5	0.68	7.3	0.5	0.5	1.0	0.5	0.5	8	2.38	0.5	7.3	7.3	10	Pass	7.3	230	Pass	SC050021*	SC050021
Chromium (total)	<0.5 mg/kg	120	74	51	16	42	59	52	35	8	30.95	16.0	120.0	120.0	3010	Pass	120.0	30400	Pass	CLEA v1.06	LQM 2009
Copper (total)	<0.5 mg/kg	24	42	420	33	29	98	23	19	8	137.32	19.0	420.0	420.0	2330	Pass	420.0	71700	Pass	CLEA v1.06	LQM 2009
Mercury (total)	<0.25 mg/kg	0.25	0.25	0.25	0.25	0.25	0.68	26	21	8	10.81	0.3	26.0	26.0	170	Pass	26.0	3640	Pass	SC050021*	SC050021
Nickel (total)	<0.3 mg/kg	55	32	22	15	28	43	0.3	0.3	8	19.30	0.3	55.0	55.0	130	Pass	55.0	1790	Pass	SC050021*	SC050021
Selenium (total)	<0.3 mg/kg	0.53	0.54	0.59	0.3	0.3	0.3	98	74	8	40.13	0.3	98.0	98.0	350	Pass	98.0	13000	Pass	SC050021*	SC050021
Zinc (total)	<5 mg/kg	240	180	110	36	140	480	5	5	8	157.95	5.0	480.0	480.0	3740	Pass	480.0	662000	Pass	CLEA v1.06	LQM 2009
Lead (total)	<0.25 mg/kg	110	160	65	25	130	160	0.25	0.25	8	67.78	0.3	160.0	160.0	450	Pass	160.0	750	Pass	Former SGV	Former SGV
PAH										-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	<0.5 mg/kg	0.77	0.87	0.63	0.92	1.40	1.90	0.51	0.60	8	0.47	0.5	1.9	1.90	1.54	Fail	1.9	200	Pass	CLEA v1.06	LQM 2009
Acenaphthylene	<0.5 mg/kg	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	8	0.00	0.50	0.50	0.50	168	Pass	0.5	84000	Pass	CLEA v1.06	LQM 2009
Acenaphthene	<0.5 mg/kg	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	8	0.00	0.50	0.5	0.50	205	Pass	0.5	8500	Pass	CLEA v1.06	LQM 2009
Fluorene	<0.5 mg/kg	0.50	0.50	0.50	0.50	0.50	0.51	0.50	0.50	8	0.00	0.50	0.5	0.51	163	Pass	0.5	64000	Pass	CLEA v1.06	LQM 2009
Phenanthrene	<0.5 mg/kg	3.70	0.87	0.50	0.50	4.70	1.80	0.50	0.51	8	1.66	0.50	4.7	4.70	92	Pass	4.7	22000	Pass	CLEA v1.06	LQM 2009
Anthracene	<0.5 mg/kg	0.92	0.50	0.50	0.50	1.40	0.50	0.50	0.50	8	0.33	0.50	1.4	1.40	2260	Pass	1.4	530000	Pass	CLEA v1.06	LQM 2009
Fluoranthene	<0.5 mg/kg	5.00	1.20	0.50	0.50	12.00	2.40	0.50	0.50	8	4.02	0.50	12.0	12.00	257	Pass	12.0	23000	Pass	CLEA v1.06	LQM 2009
Pyrene	<0.5 mg/kg	4.80	1.20	0.50	0.50	11.00	2.40	0.50	0.50	8	3.68	0.50	11.0	11.00	563	Pass	11.0	54400	Pass	CLEA v1.06	LQM 2009
Benz(a)anthracene	<0.5 mg/kg	1.80	0.50	0.50	0.50	4.60	0.69	0.50	0.50	8	1.45	0.50	4.6	4.60	3.1	Fail	4.6	92	Pass	CLEA v1.06	LQM 2009
Chrysene	<0.5 mg/kg	1.60	0.50	0.50	0.50	5.70	0.98	0.50	0.50	8	1.80	0.50	5.7	5.70	6	Pass	5.7	138	Pass	CLEA v1.06	LQM 2009
Benzo(b)fluoranthene	<0.5 mg/kg	1.90	0.50	0.50	0.50	5.20	1.40	0.50	0.50	8	1.64	0.50	5.2	5.20	5.6	Pass	5.2	100	Pass	CLEA v1.06	LQM 2009
Benzo(k)fluoranthene	<0.5 mg/kg	1.10	0.50	0.50	0.50	2.60	0.50	0.50	0.50	8	0.74	0.50	2.6	2.60	8.5	Pass	2.6	140	Pass	CLEA v1.06	LQM 2009
Benzo(a)pyrene	<0.5 mg/kg	2.40	0.70	0.50	0.50	5.20	0.85	0.50	0.50	8	1.67	0.50	5.2	5.20	0.83	Fail	5.2	14	Pass	CLEA v1.06	LQM 2009
Indeno(123cd)pyrene	<0.5 mg/kg	1.70	0.50	0.50	0.50	4.90	1.20	0.50	0.50	8	1.53	0.50	4.9	4.90	3.2	Fail	4.9	60	Pass	CLEA v1.06	LQM 2009
Dibenzo(ah)anthracene	<0.5 mg/kg	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	8	0.00	0.50	0.50	0.50	0.76	Pass	0.5	13	Pass	CLEA v1.06	LQM 2009
Benzo(ghi)perylene	<0.5 mg/kg	2.10	0.51	0.50	0.50	5.40	0.98	0.50	0.50	8	1.72	0.50	5.4	5.40	44	Pass	5.4	650	Pass	CLEA v1.06	LQM 2009
BTEX Benzene	<0.002 mg/kg		0.13			0.12	0.13			3	0.01	0.120	0.130	0.13	0.078	Pass	0.1	43.6	Pass	CLEA v1.06	SC050021
Toluene	<0.005 mg/kg		0.13			0.12	0.13			3	0.01	0.120	0.130	0.13	119	Pass	0.1	86200	Pass	CLEA v1.06	SC050021
Ethyl Benzene	<0.01 mg/kg		0.13			0.12	0.13			3	0.01	0.120	0.130	0.13	65.2	Pass	0.1	25000	Pass	CLEA v1.06	SC050021
Xylene (o)	<0.01 mg/kg		0.11			0.12	0.11			3	0.01	0.110	0.120	0.12	45.2	Pass	0.1	10,700	Pass	CLEA v1.06	SC050021
Xylene (m & P)	<0.01 mg/kg		0.26			0.24	0.21			3	0.03	0.210	0.260	0.26	43.6	Pass	0.3	9,990	Pass	CLEA v1.06	SC050021
Petroleum Hydrocarbons																					
TPH (C_6 - C_{40})			340.0		12.6	490.0	1,050.0			4	433.16	13	1050.0	1050.00	-	-	1050.0	-	-	-	
Aliphatic >C_8 - C_8	<0.05 mg/kg		0.14		0.13	0.12	0.23			4	0.05	0.12	0.2	0.23	73	Pass	0.2	8300	Pass	CLEA v1.06	LQM 2009
Aliphatic >C_8 - C_{10}	<1 mg/kg		0.13		0.13	0.12	0.39			4	0.13	0	0.4	0.39	19	Pass	0.4	2100	Pass	CLEA v1.06	LQM 2009
Aliphatic >C_{10} - C_{12}	<1.3 mg/kg		9.4		1.3	8.1	19.0			4	7.29	1	19.0	19.00	93	Pass	19.0	10000	Pass	CLEA v1.06	LQM 2009
Aliphatic >C_{12} - C_{16}	<1.3 mg/kg		29.0		1.3	17.0	47.0			4	19.30	1	47.0	47.00	740	Pass	47.0	61000	Pass	CLEA v1.06	LQM 2009
Aliphatic >C_{16} - C_{21}	<1.3 mg/kg		43.0		1.3	24.0	84.0			4	35.04	1	84.0	84.00	45000	Pass	84.0	1600000	Pass	CLEA v1.06	LQM 2009
Aliphatic >C_{21} - C_{40}	<1.3 mg/kg		94.0		1.3	120.0	420.0			4	181.42	1	420.0	420.00	45000	Pass	420.0	1600000	Pass	CLEA v1.06	LQM 2009
Total Aliphatic >C_6 - C_{40}	<1.3 mg/kg		170.0		6.3	170.0	570.0			4	240.03	6	570.0	570.00	-	-	570.0	-	-	-	
Aromatic C_6 - C_7	<0.01 mg/kg		0.13		0.13	0.12	0.56			4	0.22	0.12	0.56	0.56	65	Pass	0.6	28000	Pass	CLEA v1.06	LQM 2009
Aromatic C_7 - C_8	<0.05 mg/kg		0.16		0.13	0.12	0.56			4	0.21	0.12	0.56	0.56	120	Pass	0.6	59000	Pass	CLEA v1.06	LQM 2009
Aromatic >C_8 - C_{10}	<1 mg/kg		0.13		0.13	0.12	0.32			4	0.10	0	0.3	0.32	27	Pass	0.3	3700	Pass	CLEA v1.06	LQM 2009
Aromatic >C_{10} - C_{12}	<1.3 mg/kg		18.0		1.3	15.0	20.0			4	8.44	1	20.0	20.00	69	Pass	20.0	17000	Pass	CLEA v1.06	LQM 2009
Aromatic >C_{12} - C_{16}	<1.3 mg/kg		27.0		1.3	21.0	52.0			4	20.90	1	52.0	52.00	140	Pass	52.0	36000	Pass	CLEA v1.06	LQM 2009
Aromatic >C_{16} - C_{21}	<1.3 mg/kg		40.0		1.3	44.0	92.0			4	37.16	1	92.0	92.00	250	Pass	92.0	28000	Pass	CLEA v1.06	LQM 2009
Aromatic >C_{21} - C_{40}	<1.3 mg/kg		81.0		1.3	240.0	320.0			4	145.40	1	320.0	320.00	890	Pass	320.0	28000	Pass	CLEA v1.06	LQM 2009
Total Aromatic >C_6 - C_{40}	<1.3 mg/kg		170.0		6.3	320.0	480.0			4	202.85	6	480.0	480.00	-	-	480.0	-	-	-	
Chlorinated Hydrocarbons																					
Tetrachloroethene (PCE)	<0.1 mg/kg		0.13			0.12	0.13			3	0.01	0.12	0.13	0.13	0.94	Pass	0.13	131	Pass	CLEA v1.06	LQM 2009
1,2,4-Trimethylbenzene	<0.1 mg/kg		0.13			0.12	0.13			3	0.01	0.12	0.13				0.13				
1,3,5-Trimethylbenzene	<0.1 mg/kg		0.13			0.12	0.13			3	0.01	0.12	0.13				0.13				
Trichloroethene / Trichloroethylene	<0.1 mg/kg		0.13			0.12	0.13			3	0.01	0.12	0.13	0.13	0.11	Pass	0.13	11.9	Pass	CLEA v1.06	LQM 2009

	Below Detection Limits.
	Below Detection Limit Higher than threshold - assume pass.
	Exceeded Threshold Criteria

Notes

1. Generic Qualitative Assessment Criteria have been used where appropriate based on the current CLEA 1.06 Model (default values, sandy loam 1%SOM). Where no CLEA generic guideline value has been calculated no assessment has been made. The results presented show maximum and mean concentrations. This is to provide a reasonable prediction of the range of data rather than to provide any detailed statistical appraisal.
2. Results lower than detection limit are shaded in grey.
3. When the test result is recorded as being less than the detection limit, the result used for the analysis is the detection limit.
4. Cyanide (total)*, in the absence of a GQAC based on current CLEA 1.06 Model, the Atrisk Soil Value for Cyanide (free) has been used.
5. For metals, where an SGV has been published, this value has been used. Note that the published SGVs do not include the residential without plant uptake scenario. CLEA v1.06 has therefore been used to derive GACs for this scenario. For organics, CLEA v1.06 has been used (as the SGV assumes 6% SOM)

APPENDIX I

Current Guidance for Controlled Waters Risk Assessment

CURRENT GUIDANCE FOR CONTROLLED WATERS RISK ASSESSMENT

Summary of Regulatory Context

Government policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use. When considering the current use of land, Part IIA of the Environment Protection Act 1990 [4] (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995 [5], which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health, controlled waters or the wider environment given the current use and circumstances of the land. Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

> *"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:*
>
> *(a) Significant harm is being caused or there is a significant possibility of such harm being caused; or*
>
> *(b) Pollution of controlled waters is being, or is likely to be, caused."*

Part IIA provides a statutory definition of the pollution of controlled waters under Section 78A(9) as:

> *"the entry into controlled waters of **any** poisonous, noxious or polluting matter or **any** solid waste matter"*

Part IIA is supported by a substantial quantity of guidance and other Regulations, especially for England, The Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, 2012) which came into force in early April 2012. The document re-confirms the duties of Enforcing Authorities in dealing with contamination including the role of the Environment Agency which has powers under Part 7 of The Water Resources Act (1991) to take action to prevent or remedy the pollution of controlled waters, including circumstances where the pollution arises from contamination in the land.

Part IIA introduces the concept of a pollutant linkage; where for potential harm to exist there must be a connection between the source of the hazard and the receptor via a pathway. Risk assessment in contaminated land is therefore directed towards identifying the sources, pathways and receptors that can provide pollutant linkages. This is known as the source-pathway-receptor link (SPR or pollutant linkage).

Part IIA places contaminated land responsibility as a part of the planning and redevelopment process rather than Local Authority or Environment Agency taking direct action except in situations of very high pollution risk or where harm is occurring. In the planning process guidance is provided by National Planning Policy Framework (NPPF) of March 2012. This requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA. Therefore, appropriate risk-based investigation is required to identify the pollutant linkages that can then be assessed, and then mitigated using methods that can be readily agreed with the planners.

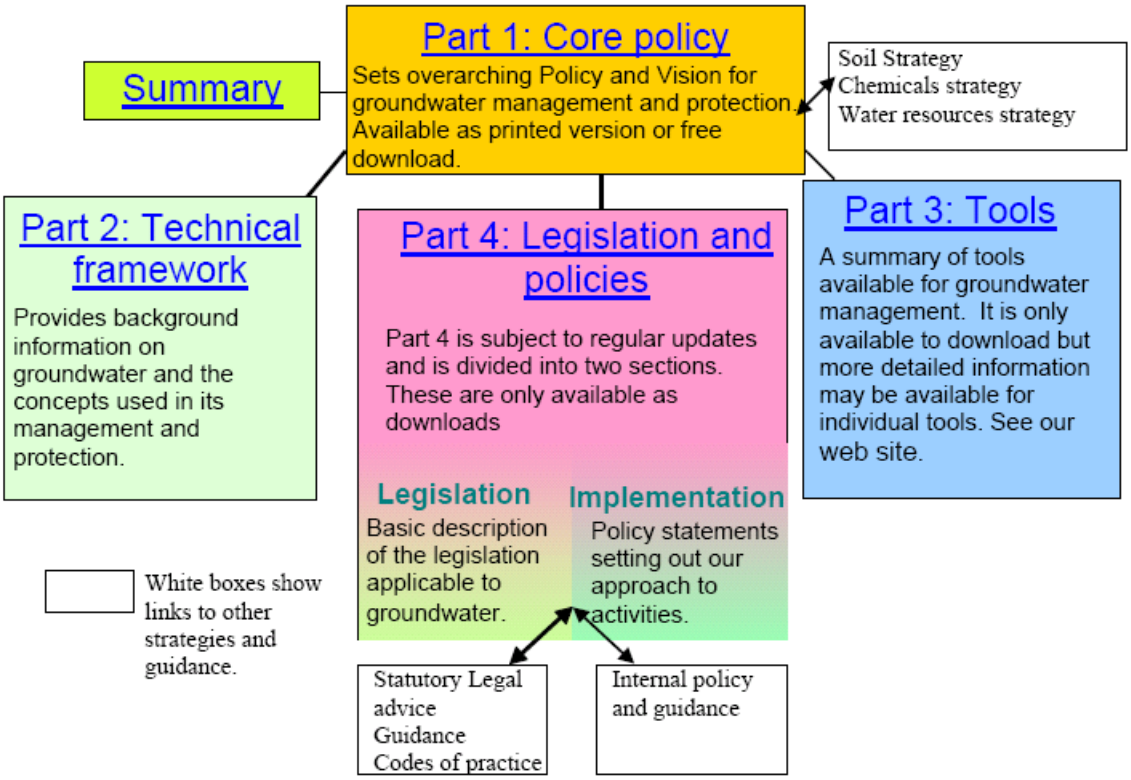
Environment Agency Guidance

Legislation and guidance surrounding the protection of controlled waters in the UK is numerous and can be complex. The Environment Agency's overall position on groundwater is *"To protect and manage groundwater resources for present and future generation in ways that are appropriate for the risks that we identify"* (Groundwater Protection : Policy and Practice GP3, 2006). In brief, the core objectives of the existing legislation serve to enforce this position.

In 1992, the National Rivers Authority published their Policy and Practice for the Protection of Groundwater (PPPG), this document was influential as it provided a focus for key developments such as Source Protection

Zones (SPZs) and Groundwater Vulnerability Maps. The Policy was then revised in 1998, since which there have been substantial changes in legislation, driven by Europe. Key European Directives relating to groundwater include the Groundwater Directive (80/68/EEC) and the Water Framework Directive (2000/60/EC). Aspects of these directives are controlled by primary UK legislation such as the Water Resources Act 1991 as amended by the Water Act 2003. Further to legislative changes, gaps identified in the 1998 PPPG required addressing. These changes are reflected in the forthcoming Environment Agency Policy document entitled *Groundwater Protection: Policy and Practice (GP3)*, a draft version of which was available for public consultation (Parts 1 to 3) ending July 2006 with Part 4 issued in March 2011. Part 4 includes a section on key groundwater legislation and the Environment Agency's interpretation of it.

The following gives a breakdown of the structure of the document (taken from the Environment Agency GP3 draft consultation document, 2006)



Tools available for Risk Assessment of Controlled Waters

In order for a developer of a potentially contaminated site to fulfil their obligations under the legislation, a site assessment would be required to be undertaken in order to identify any potential risks to controlled waters and to derive suitable clean-up criteria if necessary to ensure the protection of controlled waters. A number of tools are available for this purpose and the general approach is detailed further in Part 3 of GP3.

Three main stages apply to any risk assessment of controlled waters, these are:

i) Risk Screening (devise Conceptual Site Model, making reference to groundwater vulnerability maps, site setting etc)
ii) Generic Risk Assessment (EA Remedial Targets Methodology Tier 1 / Comparison of groundwater data with relevant standards)

iii) Detailed Quantitative Risk Assessment (Consideration of aquifer properties and site specific parameters, EA Remedial Targets Methodology Tiers 2 & 3)

The process is summarised below (Taken from the Environment Agency GP3 draft consultation document, 2006):

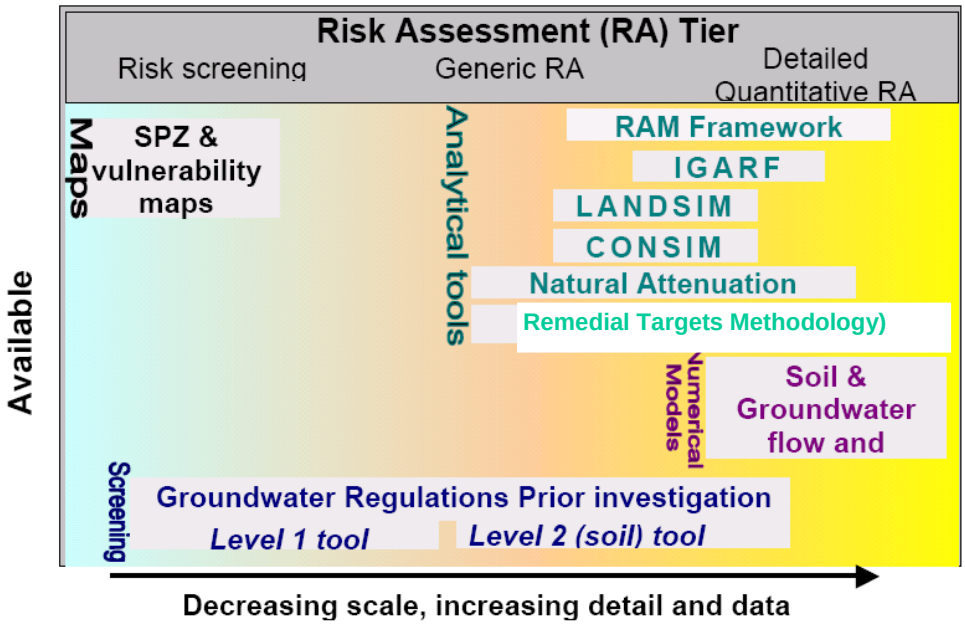


Figure 1-1 Environment Agency groundwater assessment tools, mapped against the different levels of risk assessment.

When assessing groundwater impact the Environment Agency advocate the application of their framework methodology "Remedial Targets Methodology – Hydrogeological Risk Assessment for Land Contamination" Environment Agency (2006). The methodology has four tiers of assessment:

Tier 1 utilises either a soil concentration (calculation of pore water concentrations based on partitioning calculations), leaching test or pore-water concentration of perched water as a source concentration input and these are contrasted directly to water quality standards. No dilution or attenuation is considered at Level 1.

Tier 2 (groundwater) considers dilution of the contaminant within the underlying receiving groundwater or surface water body. To determine a dilution factor the infiltration rate of pore water and the discharge of groundwater beneath the source must be determined. Level 2 Assessment is comprises a comparison between measured groundwater concentrations with to water quality standards.

Tier 3 considers natural attenuation in the form of dispersion, retardation and degradation of the contaminant. As the levels are progressed, the assessment becomes increasingly more detailed and less conservative as the data requirements are increased with each successive tier. The Environment Agency has released Excel Worksheets to carry out basic calculations using a conservative approach up to Tier 3. However, in this case the conceptual model is a simple one and assumes there is a simple migration of contaminants from the source zone into the aquifer receptor. Using these worksheets requires a sensitivity analysis showing how by varying each parameter, what effect it

might have on the outcome of the assessment. Groundwater conceptual models are not always this simple.

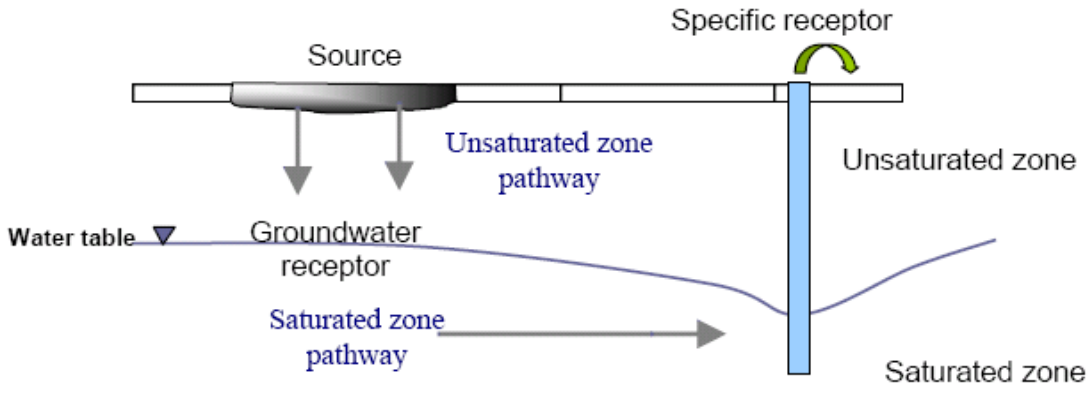
Tier 4 is for more complex conceptual models where multiple sources, multiple pathways, multiple receptors and complex water balances can be assessed. The Tier 4 assessment is not supported by the RTM software.

A slightly more advanced program, ConSim 2, developed on behalf of the Environment Agency, allows for the introduction of additional geological horizons and is used mainly to determine whether soil contaminants will reach their target within a specified timeframe. This model as inbuilt sensitivity, however, due to its greater complexity requires more time to run. The overall approach and basic calculations required within the Remedial Targets Methodology framework are incorporated within ConSim 2. These models assess only the dissolved phase pollutants. There are many further models commercially available for use in controlled waters risk assessment, particularly for more complex situations, however, these should be used with caution and only once agreement has been obtained from the Environment Agency. All have the overall aim of the protection of controlled waters.

General notes on each stage of the controlled waters risk assessment process

Risk Screening

The understanding of the Conceptual Site Model (CSM) is the key to assessing any site. Using a robust CSM, potential pathways or receptors may be screened out from any further assessment at an early stage. For example if the pathway through the unsaturated zone is blocked by the presence of a significant thickness of low permeability clay. A greater understanding of the CSM is achieved with each tier of risk assessment. An example of a basic CSM is given below (taken from the Environment Agency GP3 draft consultation document, 2006):



Generic Risk Assessment

When undertaking the Generic Hydrogeological Risk Assessment (EA Remedial Targets Methodology Tier 1), comparison of chemical analytical results is made with screening criteria. Published values of screening criteria with which chemical test results can be compared are published in the following guidance:

- Updated Recommendations on Environmental Technical Standards, River Basin Management (2015-21), April 2012 by the UK Technical Advisory Group on the Water Framework Directive;
- Environmental Quality Standards (EQS) for freshwaters based on The EC Dangerous Substances Directive (76/464/EEC and Daughter Directives);
- Surface Waters (Abstraction for Drinking Water)(Classification) Regulations (1996)

- Surface Waters (Fishlife) (Classification) Regulations (1997)
- UK Drinking Water Standards (DWS) (Water Supply (Water Quality) Regulations 2000);
- Dutch Ministry of Housing, Spatial Planning and Environment (2001) Intervention Values and Target Values – soil quality standards;
- World Health Organisation Guidelines for Drinking Water (2004)

Should the Level 1 or 2 assessments indicate threshold levels to be exceeded, then there are three alternative ways in which to proceed:

- To devise suitable remedial solutions;
- To carry out more investigation, sampling and analysis;
- To conduct a site-specific Detailed Quantitative Risk Assessment (DQRA) to whether or not the soil materials are suitable for their site-specific intended use or to devise a site-specific clean-up level.

Detailed Quantitative Risk Assessment (DQRA)

The decision to carry out a DQRA will be dependant on the extent and implications of the initial qualitative and generic assessment. The scope of any such assessment will be accurately defined by the outcomes of the former two stages. The CSM will be sufficiently refined by this stage that only certain contaminants of concern, certain pathways and certain receptors will require further assessment, the remainder having been screened out.

Additional site specific data is normally required for this stage of assessment, as explained above, more processes that are capable of affecting contaminant concentrations are considered (such as dilution and attenuation).

Remediation criteria derived will therefore be specific to each site and will be based on a detailed assessment of the potential impact at the identified receptor or *compliance point*. A greater level of confidence can be placed on the predicted impact on the compliance point following a DQRA.

Definition of Controlled Waters

The term 'controlled waters' is defined in Section 104 of the Water Resources Act 1991 as:

> *"Territorial Waters…which extend seawards for three miles…, coastal waters…, inland freshwaters, waters in any relevant lake or pond or of so much of any relevant river or watercourse as is above the freshwater limit, and ground waters, that is to say, any waters contained in underground strata."*

Note that the definition of groundwater under the Water Resources Act 1991 includes all water within underground strata (including soil / pore water in the unsaturated zone). The definition of groundwater under the Groundwater Directive however is limited to water in the saturated zone. For the purposes of Part IIA of the Environmental Protection Act 1990, the Environment Agency recommends that the groundwater within the saturated zone only is considered as the receptor (rather than soil / pore water).

Environment Agency's Aquifer Designations

The Environment Agency have classified different types of aquifer from which groundwater can be extracted. The aquifer designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems. The aquifer designation data is based on geological mapping provided by the British Geological Survey.

The maps are split into two different types of aquifer designation:

- **Superficial (Drift)** – permeable unconsolidated (loose) deposits.
- **Bedrock** – solid permeable formations e.g. sandstone, chalk, limestone.

The aquifer designations displayed on the Environment Agency maps are as follows:

- **Principal Aquifers (formerly termed Major Aquifers) –** These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as a major aquifer.
- **Secondary Aquifers (formerly termed Minor Aquifers) –** These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:
  - **Secondary A** - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers;
  - **Secondary B** - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
  - **Secondary Undifferentiated** - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
- **Unproductive Strata (formerly termed Non-Aquifer) –** These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Hazardous and Non Hazardous Substances

The Groundwater (England and Wales) Regulations 2009 control the disposal to the hydrogeological environment of potentially polluting substances which are divided into Hazardous Substances and Non-hazardous Pollutants (this roughly approximates to the former List 1 and List 2 substances).

Hazardous Substances are the most damaging and toxic and must be prevented from directly or indirectly entering the groundwater environment. Hazardous Substances include mineral oils and hydrocarbons, pesticides, biocides, herbicides, solvents and some metals. Discharge of Hazardous Substances to Controlled Waters must be prevented.

Non-hazardous Pollutants are any pollutants other than Hazardous Substances. Non-hazardous Pollutants are potentially toxic but are less harmful than Hazardous Substances, but their direct discharge to groundwater is generally not permitted and any indirect discharge to groundwater must be limited and be controlled by technical precautions in order to prevent pollution. Non-hazardous Pollutants include ammonia and nitrites, many metals and fluorides.

APPENDIX J

Current Guidance for Ground Gas Risk Assessment

Current Guidance for Ground Gas Risk Assessment

Origin of Ground and Landfill Gases

When carrying out a ground gas risk assessment, the origin or source of the gases is important as potential risks will vary depending on the source. This Appendix relates to the risk of the two main ground gases of concern: methane and carbon dioxide, and does not apply to other ground gases (e.g. radon or vapours from hydrocarbon spills). Methane and carbon dioxide are major constituents of landfill gas but can also occur from a variety of anthropogenic and natural sources, as summarised in Table G1 below:

Table G1. Potential Sources of Ground Gases

Gas	Source	Comments
Landfill Gas	Anaerobic decomposition of degradable waste within landfill sites. Typically 60% methane and 40% carbon dioxide during methanogenic phase.	Composition varies over time, particularly in early stages. Contains a range of minor constituents (particularly carbon monoxide and hydrogen sulphide).
Landfill Associated Gases	- Anaerobic degradation of leachate external to the site; - Degassing of dissolved gases in groundwater; - Evolution of gases following interaction between leachate and groundwater	Can result in secondary (external) production of methane or carbon dioxide.
Made Ground	Anaerobic degradation of organic components	Very variable depending on source
Sewer Gas, Cess Pits	Anaerobic degradation of organic components of sewage producing methane and carbon dioxide.	Often characterised by hydrogen sulphide odour.
Mains Gas	Leakage from underground pipework or storage tanks. Mainly methane but often contains higher alkanes.	An odouriser is added to permit detection of leaks. Typically 90% CH_4, but 1 to 27% C_2-C_4 alkanes, May also contain other trace gases e.g. CO, helium and CO_2 (from degradation of CH_4 in the ground).
Other Anthropogenic Sources	- Degradation of leaked or spilled hydrocarbons or other industrial chemicals; - Anaerobic degradation of organic contaminants in groundwaters (e.g. silage liquor); - Reactions between monitoring well construction components and environment; - Burial grounds/cemeteries.	Hydrocarbon spillages often have an 'oily' odour. Fuel spillages common – Petrol or Diesel and can contain a wide range of VOC's. Can degrade to produce methane / carbon dioxide.
Alluvium / Marsh / Peat Gas	Anaerobic microbial degradation of organic material (usually waterlogged vegetation / peat). Often associated with the presence of alluvial deposits or dredgings.	
Geogenic Gas	Natural seepages of carbon dioxide and hydrocarbon gases derived from geologic sources such as coal seams and deep oil / gas source formations. Can be present in solution in groundwaters.	Methane most common but can contain carbon dioxide and higher alkanes.
Mine Gases	Various types. Most common is "fire damp" with high methane, produced by the desorption of gas trapped in coal. "Black damp" (Stythe gas) with high carbon dioxide and denser than air. "White damp" is high in carbon monoxide.	Methane most common. Can contain higher alkanes, carbon dioxide and carbon monoxide. Often low in oxygen.
Natural Shallow Ground Gas	Various types - high carbon dioxide formed by subsurface aerobic activity leading to depleted oxygen and elevated carbon dioxide; - chemical degradation of rocks (e.g. carbonates) producing carbon dioxide; - carbon dioxide production in root zone of soils by plants.	Gases can be emitted from ground under falling barometric pressure conditions.

This Appendix concentrates on the assessment of risk from methane and carbon dioxide. This Appendix does not provide guidance for the assessment of risk when other gases are present due to 'Other Sources' from the above table (particularly organic compounds such as BTEX and VOC's or for the risk from radon or hydrogen sulphide).

To determine the origin of the gas a range of factors must be considered together, including;

1. Proximity of likely sources;
2. Ground conditions (geology, hydrogeology, anthropogenic pathways etc);
3. Properties of gases present including:
   - Chemical composition;
   - Physical properties;
   - Ratios of components e.g. methane : carbon dioxide.
4. Timeframe of activities such as infilling periods, capping works, installation of gas control systems etc.

Identification of the originating source may be problematic given that there may be more than one source present and trace gas analysis may be required. Identification of the sources of the gases encountered during monitoring is usually carried out through a process of eliminating the most unlikely potential sources (given the site setting) and selecting those which are the more likely candidates.

Hazards Associated with Presence of Ground Gases

Methane gas is combustible and potentially explosive. When the concentration of methane in air is between the limits of 5.0%v/v and 15.0%v/v an explosive mixture is formed. The Lower Explosive Limit (LEL) of methane is 5.0%v/v, which is equivalent to 100% LEL. The 15.0%v/v limit is known as the Upper Explosive Limit (UEL), but concentrations above this level cannot be assumed to represent safe concentrations. Further, the LEL and UEL will vary (up and down) depending upon the proportion of other gases (including oxygen). However, the fact that methane is a colourless, odourless gas means that there is no simple indicator of the presence of the gas until such a time as explosive limits are reached and an incident occurs. Methane is lighter than air and has a low toxicity. However, at high concentrations it can result in asphyxiation due to oxygen displacement.

Carbon dioxide is a colourless, odourless gas, which, although non-flammable, is both toxic and an asphyxiant. As carbon dioxide is denser than air, it will collect in low points and depressions. The UK Health & Safety Executive (HSE) has published information relating to concentrations of carbon dioxide that humans may be exposed to, which uses concentrations contained in the Control of Substances Hazardous to Health Regulations 2002 (as amended). These are the Long Term Occupational Exposure Limit (LTOEL, 8 hour period) and the Short Term Occupational Exposure Limit (STOEL, 15 minute period), which are 0.5% and 1.5% carbon dioxide, respectively.

Parameters Influencing the Rate of Ground Gas Production

Figure G2 is taken from EA guidance document LFTGN 03 illustrates typical ground gas generation curves from biodegradable materials:

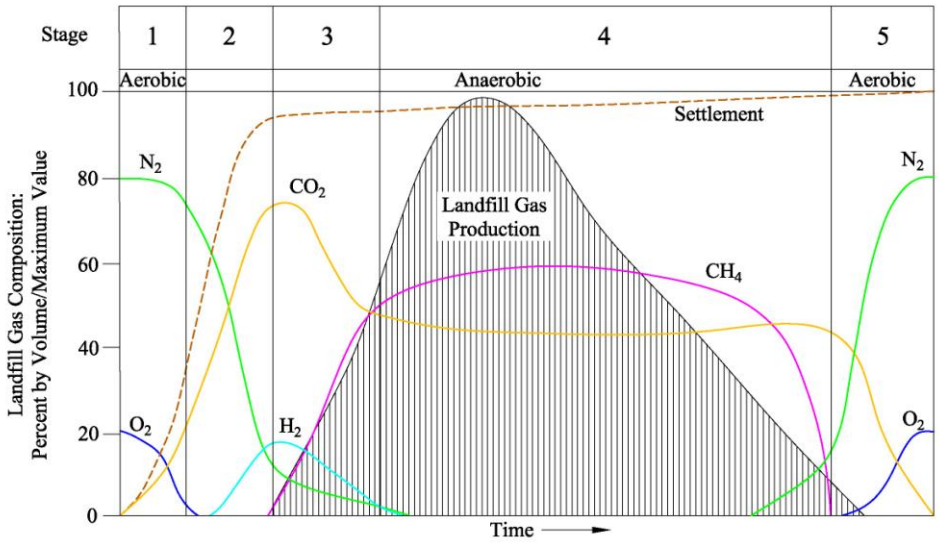


Figure G2. Idealised Representation of Landfill Gas Generation.

The production of methane and carbon dioxide at a landfill site may be expected to be considerable and ongoing. Concentrations of methane will eventually decrease, followed by concentrations of carbon dioxide, but the duration and rate of gas production can vary markedly between sites. Five distinct phases of gas production occur during the process which are, in order of event (as marked on Figure G2), as follows:

An aerobic phase involving oxygen depletion and temperature increase through aerobic respiration;
The establishment of anaerobic conditions and the evolution of carbon dioxide and hydrogen through acidogenic activity;
Commencement of methanogenic activity; the establishment of populations of methanogenic bacteria;
A phase of stable methanogenic activity, which may go on for many tens of years;
A phase of decreasing methanogenic activity, representing depletion of the organic material and a return to aerobic conditions.

The time scale for the return to the normal ground gas concentrations will be highly variable, depending upon the types and quantities of materials present. In addition, the optimum parameters influencing the rate of decomposition and ground gas production within the ground at a site are as follows:

High water content with adequate rainfall and water infiltration to provide moisture content between approximately 20 to 26%;
Conditions that either are or are very close to anaerobic;
High proportion of biodegradable materials;
A pH between 6.5 and 8.5, ideally verging slightly on the acidic between pH 6 to 7;
Temperature between 25°C and 55°C;
The ratio of the biochemical and chemical oxygen demands (BOD:COD);
High permeability;
Small particle size, as finer subsurface materials possess a greater surface area to provide a growing ‘face’ for the micro-organisms but high fines levels reduces permeability and reduces decomposition rate.

For this reason, it is vital that sources of methane and carbon dioxide are identified prior to the commencement of any work on a construction site, and that the ground gas regime is characterised at the worst temporal conditions a site may experience. From this, a risk assessment is carried out to identify the risk at the site from ground gases so that suitable protection measures can be designed and incorporated into a development to prevent a dangerous build-up of gas occurring.

Factors Influencing the Migration and Behaviour of Ground Gases

There are many factors that influence the migration of ground gases which can effect the risk from a gassing source:

- driving force – pressure differential along a pathway, diffusion and dissolved in solution;
- meteorological conditions – short term and seasonal conditions including atmospheric pressure changes (e.g. rapidly falling pressure causes gas to expand increasing emission rates), rainfall, frozen ground and thawing, temperature;
- geological and groundwater conditions – these can have the over riding influence on the direction/pathways and quantity of migrating gas;
- anthropogenic influences – man-made pathways include mine shafts, service runs/drains, foundation piles, underground voids/pits/basements, foundation/building design/construction

Guidance Documents

Currently in the UK, there are no statutory threshold limits for hazardous gases in the ground as site specific variables mean that standard threshold values cannot be applied. The published guidance relating to development of sites where methane and carbon dioxide are present has been produced in response to building projects on or close to landfill sites, as both gases are principal constituents of landfill gas. Much of the historic guidance that has been produced on gas risk assessment focused on landfill sites and as a result there has previously been a lack of clarity when relating the process to gas conditions on non-landfill sites.

Statutory guidance regarding methane in the ground has previously taken a limiting concentration of 1.0 % by volume methane (equal to 20% of the lower explosive limit of methane in air) above which necessary actions will be appropriate. For carbon dioxide the limiting recommended trigger was 1.5 % by volume (the Long Term Exposure Limit for carbon dioxide). Above these concentrations the Building Regulations Approved Document C (1992) stated that consideration should be given to whether actions may be appropriate, whilst more specific solutions would be likely to be necessary at concentrations greater than 5% by volume of carbon dioxide (Building Regulations Approved Document C, 1992). However, the latest fully revised version of Approved Document C (DoE, 2004) no longer endorses this approach and instead requires the use of a risk-based approach in interpreting the findings of a gas monitoring survey. Further, the latest EA documentation on landfill gas (LFTGN 03, 2004) continues to sanction the use of a risk-based approach through a structured approach to the assessment of ground gases and links with the risk assessment process outlined within CLR 11 for soil contaminants.

With the above in mind, recent guidance has been produced in 2006 and 2007 with the aim of providing up to date advice in relation to residential and commercial development. The guidance does

not address issues associated with gas derived from landfills, for this refer to *"Guidance on the Management of Landfill Gas"* (Environment Agency 2004) for an overview.

Recent guidance relevant to gas assessments for residential and commercial development includes;

- **Wilson *et al.* (CIRIA C665, December 2007) *"Assessing Risks Posed by Hazardous Ground Gases for Buildings."***

  This document provides up to date advice on all aspects of ground gas risk assessment such as investigation, monitoring programmes, data collection and interpretation. The guidance presents separate methodologies for the characterisation of:

  - **All development types except low rise housing with gardens and for Low Rise Buildings without a 150mm void** (Situation A) (Table 8.5 CIRIA C665)

  and;

  - **Low rise housing with gardens with a 150mm ventilated sub-floor void** (Situation B) (Table 8.7 CIRIA C665)
    (See below for further explanation of the methods of characterisation)

- **Boyle and Witherington (NHBC / RSK Group, Report 10627-R01(04) January 2007) *"Guidance on the Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present."***
  This document presents the "Traffic Lights System" detailed below and is relevant only for low rise properties (e.g. bungalows and town houses) that have a ventilated sub-floor void (i.e. Situation B as described in CIRIA C665).

- **Wilson and Card (CIEH, expected 2011) *"Ground Gas Handbook for Designers and Regulators"***
  This document is expected to provide practical guidance on ground gas assessments and the design and evaluation of protection measures.

- **British Standard (BS 8485, December 2007) *"Code of Practice for the Characterization and Remediation from Ground Gas in Affected Developments"***
  This document provides an overview of gas characterisation and assessment. The Standard is intended to be used by designers of gas protection measures and regulators involved in the assessment of design solutions. The Standard provides a framework in line with CLR11 allowing designers to judge the adequacy of ground gas and related site investigation data. The document provides an approach to determine appropriate ground gas parameters that can be used to identify a range of possible construction solutions mitigating against the presence of ground gas on a development site.

Each of these documents continues to highlight the importance of, and give further guidance towards, carrying out a tiered risk-based decision-making process in accord with government policy on dealing with contamination from historic or natural sources and highlight the importance of the Conceptual Model in site characterisation. These documents also stress the importance that the assessor should be confident that the ground gas monitoring results are representative of the likely worse case ground gas regime on a site and that the data collected from the site is sufficient. With this in mind, CIRIA C665 sets out ideal monitoring periods as below.

Idealised Frequency and Period of Monitoring (after Table 5.5a and 5.5b, CIRIA C665)						
		Generation Potential of Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	4/1	6/2	6/3	12/6	12/12
	Moderate (Flats)	6/2	6/3	9/6	12/12	24/24
	High (Residential with Gardens)	6/3	9/6	12/6	24/12	24/24

Notes

1. First number is the number of readings and the second is the minimum period in months (e.g. 6/2 – six sets of readings over two months).

2. At least two sets of readings must be at low (preferably under 1,000 mb) and falling pressure.

3. High sensitivity end use on high or very high hazard site will not normally be acceptable unless the source is treated to reduce gassing potential.

Before the latest guidance, good practice for site characterisation had been based upon the method proposed by Wilson and Card (1999). CIRIA C665 (2007) effectively supersedes Wilson and Card (1999) and includes a modified version of the Wilson and Card method (Tables 8.5, 8.6 and Box 8.1). Gas concentrations and flow rates for either methane and/or carbon dioxide measured at a site to 'Characteristic Situations.' Appropriate protection measures are selected from Table 8.6 (if using modified Wilson & Card method) and from Box 8.4 from CIRIA C665 (if using the NHBC traffic lights method). Throughout the risk assessment process, strong regard must be given to the nature of the gassing source, the flow rates and the estimated surface emissions. Note that certain protection measures are stated in CIRIA Report 149 that are now considered wholly inappropriate to certain developments and consequently should not be used without modification. Throughout the process, it is important to remember that these tables are not intended to be used as a definitive design tool and have been prepared to show the typical scope of measures for gas control.

Both the NHBC (2007) and CIRIA (2007) guidance documents and BS 8485 (2007) propose that both ground gas concentrations and flow rates are used to calculate the limiting gas well gas volume flow rates for methane and carbon dioxide, based on the ground gas conditions monitored for during the worse-case temporal conditions. This limiting gas well volume flow rate is termed the Gas Screening Value (GSV, note that this was termed borehole gas volume flow), and is calculated as follows:

$$\textbf{GSV}\ (\text{l/hr}) = \frac{[\text{gas well gas concentration (\%v/v)}]\ \textbf{x}\ [\text{gas well flow rate (l/hr)}]}{100}$$

These GSVs are then compared to generic 'Traffic Lights' contained within the NHBC guidance, which present typical maximum gas concentrations and limiting GSV's, for 'Situation B Development' (Low rise housing with gardens).

Table 8.7 NHBC Traffic light system for 150 mm void

Traffic light	Methane [1]		Carbon dioxide [2]	
	Typical max concentration[3] (% by volume)	Gas screening value [2,4] (litres /hour)	Typical max concentration[3] (% by volume)	Gas screening value [2,4] (litres /hour)
Green	1	0.13	5	0.78
Amber 1	5	0.63	10	1.60
Amber 2	20	1.60	30	3.10
Red				

Notes:

1. The worst-case ground gas regime identified on the site, either methane or carbon dioxide, at the worst-case temporal conditions that the site may be expected to encounter will be the decider as to what Traffic Light is allocated;
2. Borehole Gas Volume Flow Rate, in litres per hour as defined in Wilson and Card (1999), is the borehole flow rate multiplied by the concentration in the air stream of the particular gas being considered;
3. The Typical Maximum Concentrations can be exceeded in certain circumstances should the Conceptual Site Model indicate it is safe to do so;
4. The Gas Screening Value thresholds should not generally be exceeded without the completion of a detailed ground gas risk assessment taking into account site-specific conditions.

Box 8.4 of CIRIA C665 Gas protection measures for low-rise housing development based upon allocated NHBC Traffic light (Boyle and Witherington, 2007)

Traffic Light Classification	Protection Measures Required
Green	Negligible gas regime identified and gas protection measures are not considered necessary.
Amber 1	Low to intermediate gas regime identified, which requires low-level gas protection measures, comprising a membrane and ventilated sub-floor void to create a permeability contrast to limit the ingress of gas into buildings. Gas protection measures should be as prescribed in BRE Report 414. Ventilation of the sub-floor void should facilitate a minimum of one complete volume change per 24 hours.
Amber 2	Intermediate to high gas regime identified, which requires high-level gas protection measures, comprising a membrane and ventilated sub-floor void to create a permeability contrast to prevent the ingress of gas into buildings. Gas protection measures should be as prescribed in BRE Report 414. Membranes should always be fitted by a specialist Contractor. As with Amber 1, ventilation of the sub-floor void should facilitate a minimum of one complete volume change per 24 hours. Certification that these passive protection measures have been installed correctly should be provided.
Red	High gas regime identified. It is considered that standard residential housing would not normally be acceptable without a further Gas Risk Assessment and/or possible remedial mitigation measures to reduce and/or remove the source of gas.

For a 'Situation A Development' (All development except low rise housing with gardens), the GSV value is used to derive the appropriate Characteristic Situation from Table 8.5 of CIRIA C665 (below):

Table 8.5 from CIRIA C665 Modified Wilson and Card Classification

Characteristic Situation (CIRIA R149)	Comparable Partners in Technology gas Regime (see Box 8.2)	Risk Classification	Gas Screening Value (CH_4 or CO_2) (l/hr)[1]	Additional Factors	Typical Source of Generation
1	A	Very low risk	<0.07	Typically methane ≤ 1% and/or carbon dioxide ≤ 5%. Otherwise consider increase to Situation 2	Natural soils with low organic content "Typical" made ground
2	B	Low risk	<0.7	Borehole air flow rate not to exceed 70l/hr. Otherwise consider increase to characteristic Situation 3	Natural soil, high peat/organic content. "Typical" made ground
3	C	Moderate risk	<3.5		Old landfill, inert waste, mineworking flooded
4	D	Moderate to high risk	<15	Quantitative risk assessment required to evaluate scope of protective measures.	Mineworking susceptible to flooding, completed landfill (WMP 26B criteria)
5	E	High risk	<70		Mineworking unflooded inactive with shallow workings near surface
6	F	Very high risk	>70		Recent landfill site

It was intended in CIRIA C665 that the characteristic situation allocated to the development from the table above would then be used in Table 8.6 of CIRIA C665 in order to determine the level of gas protection the development requires. However, BS8485:2007 superseded this document and a different set of mitigation standards were put forward.

The recommended gas protection measures should be selected based on the building type. For the majority of development situations the gas protection measures can be based on Tables 2 and 3 of BS8485:2007 (see below).

The first step in the decision making process is to obtain the level of gas protection necessary in the range 0 to 7 from Table 2. Then a combination of ventilation and /or barrier systems should be chosen from Table 3 to meet that requirement. The guidance value is allocated to reflect the risk associated with the characteristic gas situation and the combined effectiveness of the elements in Table 3. The level of gas protection necessary should take into account the characteristic gas situation and a number of other factors. The whole decision making process should be made transparent, where all parties can see the approach being taken, can understand the various steps and decisions made and be confident that a risk-assessed solution has been designed and installed commensurate with the construction and site constraints.

Where the gas situation is 4 or more (and for NHBC Red situations according to CIRIA C665), the site requires a comprehensive risk assessment to confirm the scope of protection measures. These are higher risk sites and reliance on Table 2 and 3 alone is not sufficient.

BS8485:2007 Table 2 Required gas protection by characteristic gas situation and type of building					
Characteristic Gas Situation, CS	**NHBC traffic light**	**Required gas protection**			
		Non-managed property e.g. private housing	**Public building (a)**	**Commercial buildings**	**Industrial buildings (b)**
1	*Green*	0	0	0	0
2	*Amber 1*	3	3	2	1 (c)
3	*Amber 2*	4	3	2	2
4	*Red*	6 (d)	5(d)	4	3
5			6(e)	5	4
6				7	6
NOTE Traffic light indications are taken from NHBC Report no.:10627-RO1 (04) and are mainly applicable to low-rise residential housing[1]. These are for comparative purposes but the boundaries between the traffic light indications and CS values do not coincide.					
a) Public buildings include, for example, managed apartments, schools and hospitals. b) Industrial buildings are generally open and well ventilated. However, areas such as office pods might require a separate assessment and may be classified as commercial buildings and require a different scope of gas protection to the main building. c) Maximum methane concentration 20% otherwise consider and increase to CS3, d) Residential building on higher traffic light/CS sites is not recommended unless the type of construction or site circumstances allow additional levels of protection to be incorporated, e.g. high-performance ventilation or pathway intervention measures, and an associated sustainable system of management of maintenance of the gas control system, e.g. in institutional and/or fully serviced contractual situations. e) Consideration of issues such as ease of evacuation and how false alarms will be handled are needed when completing the design specification of any gas protection scheme.					

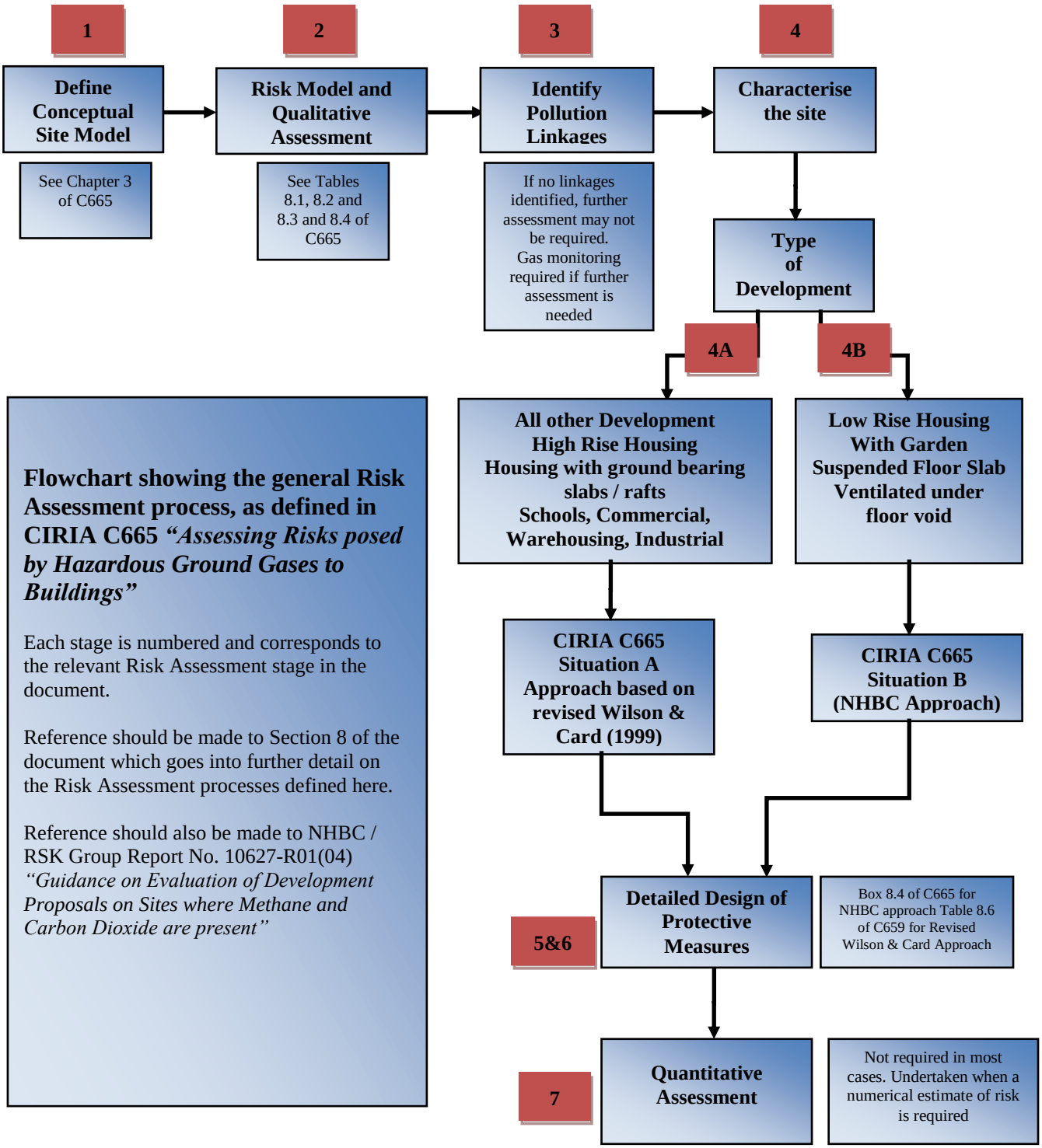
[1] The NHBC guidance and CIRIA C665 guidance refers to low rise housing (which is up to three storeys without lifts) that is constructed with a 150mm ventilated sub-floor void.

For a site which is impacted by migratory gases from an off-source, the development may be protected by imposing pathway intervention methods, which if successfully validated, could also remove the need for further analysis. It is essential that the gas regime in these circumstances has been fully characterised and that the only source impacting the site is located off site and that the pathway is clearly defined and its interception equally proven before construction commences. Pathway intervention methods may include vertical membrane installations, venting trenches, rows of stone columns, activated trenches and various proprietary systems. These systems are particularly relevant to domestic housing where there is limited scope for foundation type solutions.

Having selected the appropriate gas protection for the building from Table 2, an element, or combination of elements should be chosen from Table 3a, Table 3b, Table 3c and Table 3d, and combined to achieve the required gas protection. A combination of elements should be chosen where high gas protection is required, unless professional judgement and risk assessment show otherwise. The scores are not proportionate and are not to be taken as an indication of relative quantitative performance. This method relies upon the method developed in CIRIA C665 and is intended to be consistent with the CIRIA approach while developing the principle. As such, minor inconsistencies in result might be observed between the two methods.

BS8485:2007 Table 3 Solution Scores			
PROTECTION ELEMENT/SYSTEM		**SCORE**	**COMMENTS**
a) Venting/dilution (See Annex A BS8485)			
Passive sub floor ventilation (venting layer can be a clear void or formed using gravel, geocomposites, polystyrene void formers, etc.)[A]	Very good performance	2.5	*Ventilation performance in accordance with Annex A (BS8485)* *If passive ventilation is poor this is generally unacceptable and some form of active system will be required.* *There have to be robust management systems in place to ensure the continued maintenance of any ventilation system. Active ventilation can always be designed to meet good performance.* *Mechanically assisted systems come in two forms: extraction and positive pressurization.*
	Good performance	1	
Subfloor ventilation with active abstraction/pressurization (venting layer can be a clear void or formed using gravel, geocomposites, polystyrene void formers, etc.)[A]		2.5	
Ventilated car park (basement or undercroft)		4	
b) Barriers			
Floor slabs			
Block and beam floor slab		0	*It is good practice to install ventilation in all foundation systems to effect pressure relief as a minimum.* *Breaches in floor slabs such as joints have to be effectively sealed against gas ingress in order to maintain these performances.*
Reinforced concrete ground bearing slab		0.5	
Reinforced concrete ground bearing foundation raft with limited service penetrations that are cast into slab		1.5	
Reinforced concrete cast in situ suspended floor slab with minimal service penetrations and water bars around all slab penetrations and at joints		1.5	
Fully tanked basement		2	
c) Membranes			
Taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation [B,C]		0.5	*The performance of membranes is heavily dependent on the quality of design of the installation, resistance to damage after installation, and the integrity of joints.*
Proprietary gas resistant membrane to reasonable levels of workmanship /in line with good practice under independent inspection (CQA)[B,C]		1	
Proprietary gas resistant membrane installed to reasonable levels of workmanship/in line with current good practice under CQA with integrity testing and independent validation		2	
d) Monitoring and detection (not applicable to non-managed property, or in isolation)			
Intermittent monitoring using hand held equipment		0.5	*Where fitted, permanent monitoring systems ought to be installed in the underfloor venting/dilution system in the first instance but can also be provided within the occupied space as a fail safe.*
Permanent monitoring and alarm system [A]	Installed in the underfloor venting/dilution system	2	
	Installed in the building	1	
e) Pathway Intervention			
Pathway intervention		-	*This can consist of site protection measures for off-site or on-site sources (see Annex A, BS8485)*
NOTE In practice the choice of materials might well rely on factors such as construction method and the risk of damage after installation. It is important to ensure that the chosen combination gives an appropriate level of protection			
A) It is possible to test ventilation systems by installing monitoring probes for post installation validation.			
B) If a 1 200g DPM material is to function as a gas barrier it should be installed according to BRE 212 /BRE 414 being taped and sealed to all penetrations			
C) Polymeric Materials> 1200 g (proportional to thickness) but their physical properties mean that they are more robust and resistant to damage.			

To summarise the main stages in the risk assessment process set out in CIRIA C665 and followed by TerraConsult are as follows:



Flowchart showing the general Risk Assessment process, as defined in CIRIA C665 *"Assessing Risks posed by Hazardous Ground Gases to Buildings"*

Each stage is numbered and corresponds to the relevant Risk Assessment stage in the document.

Reference should be made to Section 8 of the document which goes into further detail on the Risk Assessment processes defined here.

Reference should also be made to NHBC / RSK Group Report No. 10627-R01(04) *"Guidance on Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are present"*







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Appendix C

Sidegate Lane Waste Transfer Station. Phase I and II Overview. SITA: Supplementary Interpretative Report (Reference SGL/1013/02)

SIDEGATE LANE
WASTE TRANSFER DEPOT

PHASE I and II OVERVIEW:
Supplementary Interpretative Report
(SGL/1013/01)

OCTOBER 2013

Report Issue Form

DOCUMENT TITLE:	Sidegate Lane Waste Transfer Depot Phase I and II Overview: Supplementary Interpretative Report

REFERENCE:	SGL/1013/01

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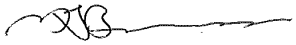
Environmental Risk Manager	Mike Brennan	

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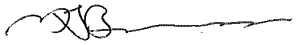
Environmental Risk Manager	Mike Brennan	

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1 INTRODUCTION

1.1 CONTEXT

This report has been prepared by SITA UK Limited's (SITA) in-house Environment Department in support of the planning process for a proposed Waste Transfer Depot at Sidegate Lane, approximately 1km south of Finedon, Northamptonshire (the Site).

The Site location is shown in Figure 1.

1.2 OBJECTIVES OF REPORT

The objectives of this report are to:

- Review the results of previous reports and investigations pertinent to the Site, and;
- Provide a secondary assessment of the underlying ground and groundwater conditions with respect to the presence and/or extent of any contamination.

1.3 PREVIOUS ASSESSMENTS

Available reports, pertaining to the Site include:

Hyder Consulting, February 2008
Sidegate Lane Landfill.
Materials Recycling Facility and Transfer Station
(Report No. 5001-BM01213-BMR-01)
and including Envirocheck Report (Reference BM01213, dated November 2007)

TerraConsult, May 2012
Sidegate Lane Landfill.
Phase 1 Site Investigation Report for Proposed RDF Facility
(Report No. 1601/01)
and including GroundSure Report (Reference PO10378, dated June 2012)

Where appropriate, the investigations and their conclusions are summarised in the context of this report.

1.4 LIMITATIONS

There is a degree of subjectivity in any interpretation. Groundwater conditions are subject to variation, the range of which may not have been recorded within the available timescale. Despite this, it is considered that the coverage of boreholes and associated geochemical samples is sufficient to permit reliable assessment and interpretation of the Site and its immediate environs.

2 BACKGROUND INFORMATION

2.1 SITE LOCATION

The Site is centred upon Ordnance Survey National Grid Reference (OS NGR) NZ 915 703, to the west of Sidegate Lane Landfill Site (operated by SITA), approximately 3.5km north east of Wellingborough and 1km south of Finedon, Northamptonshire (Figure 1).

2.2 SITE DESCRIPTION

The Site is irregular in shape (similar to a hockey stick), covering a total area of approximately 2.5 hectares, to the north of an unnamed road off 'Sidegate Lane' (postcode NN8 1RN) sloping steadily but gently, towards the south.

The Site is not in use. The northern part of the Site is dominated by extensive concrete hardstanding, formerly used for the storage of compost. It is currently used for the open storage of waste skips awaiting use with limited storage of pallets, woodchip and a small pile of compost. There is also a fenced-off, HDPE lined lagoon, measuring approximately 35m by 12m in plan.

The southern half of the Site, sitting slightly lower than the former compost pad, comprises more open storage, car parking, temporary offices and steel storage containers. Half the area is surfaced with compact gravel and the remainder characterised by woodchip and hardcore

2.3 SURRROUNDING LAND USE

Land to the south and west of the Site is predominantly agricultural; arable and pasture farmland.

A former landfill site is located to the north. Referred to as Finedon Landfill, it was operational between 1968 and 1933 and operated under the principle of co-disposal for inert, domestic, commercial and industrial wastes. The waste boundary is understood to include part of the proposed development Site.

Sidegate Lane Landfill Site, operated by SITA, borders the Site to the north/north east and east/south east. It covers an area of approximately 16.24Ha, formed by excavation into open cast backfill to form a suitable engineered void which was then lined, and is operated under the principle of hydraulic containment to Construction Quality Assurance (CQA) standards. It is surrounded by historically deposited wastes.

The south eastern part of the development area is currently the western screening bund to the landfill site.

2.4 SITE HISTORY

Surmising Hyder (2008) and TerraConsult (2012), the Site has been associated with open cast ironstone workings and waste disposal since the 1950s. The only current industrial use within the area apart from agriculture is the adjacent SITA landfill (taking Inert, Household, Commercial & Industrial Waste) and other associated permitted waste management processes (waste transfer station, waste treatment, landfill gas generation etc).

2.5 PROPOSED DEVELOPMENT

The proposed development will include a Waste Transfer Depot of a fully clad portal frame design in the centre, external (open) bulking facilities in the north, and parking areas, weighbridge and associated buildings in the south (Figure 2).

3 GEO-ENVIRONMENTAL SETTING

A summary of key information, detailed in Hyder (2008) and TerraConsult (2012), is provided below:

3.1 GEOLOGY

The geology of the Site and immediate area is interpreted based on a review of British Geological Survey (BGS) 1:50,000 scale, Solid and Drift Map Sheet 186 'Wellingborough'. This indicates that the Site is directly underlain by Jurassic bedrock:

Table 1. Regional Geology

Group	Formation	Description
Great Oolite Group	Blisworth Limestone Formation (formerly Great Oolite Limestone)	Pale grey to off-white or yellowish limestones with thin marls and mudstones,
Inferior Oolite Group	Grantham Formation (formerly Estuarine Series)	Mudstones, sandy mudstones and argillaceous siltstone-sandstone
	Northamptonshire Sandstone Formation	Sandy, ooidal ironstone, greenish grey where fresh, weathering to brown limonitic sandstone.
Lias Group	Whitby Mudstone Formation (formerly Upper Lias Clay)	Medium and dark grey fossiliferous mudstone and siltstone, laminated and bituminous in part, with thin siltstone or silty mudstone beds and rare fine-grained calcareous sandstone beds

The Site is directly underlain by the Northampton Sandstone Formation, which was mined in the area up to the 1960s for iron and steel production in Corby, Northamptonshire.

Where present, the thickness of the overlying Grantham Formation is anticipated to be relatively thin at the Site.

It is also likely that the bedrock is overlain by a variable thickness of Made Ground, due to the activities of historical mining and open cast working, and landfilling.

An east-west trending minor fault is located approximately 350m south of the Site, with a downthrow to the south.

3.2 HYDROGEOLOGY

The Northamptonshire Sandstone Formation is considered, by the Agency, to represent a Secondary A Aquifer (TerraConsult, 2012); permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers; consistent with Hyder (2008).

The Blisworth Limestone Formation, which outcrops approximately 650m north west is considered to be a Principle Aquifer.

The Site is not located within a Source Protection Zone (SPZ); the closest groundwater abstraction being in excess of 1.5 km away but, is in a nitrate vulnerable zone.

3.3 HYDROLOGY

There are no surface water features within the Site, with the exception of the existing rectangular lagoon in the area of the former compost pad.

The Site is located within the surface water catchment of the River Ise; approximately 2km to the south west. The nearest named surface water feature is the Harrowden Brook; a tributary of the River Ise, approximately 600m to the west (and which has a "Grade A - Very Good" chemical status.

Surface water drainage in the vicinity of the Site also incorporates several small unnamed streams and tributaries of the River Ise. The majority of which, originate as springs from the Northampton Sandstone Formation.

3.4 RADON

The property is in a Radon Affected Area, as greater than 30% of properties are above the Action Level. Full radon protective measures are necessary.

4 PRELIMINARY CONCEPTUAL SITE MODEL

The preliminary CSM was discussed in detail in both Hyder (2008) and TerraConsult (2012) together with an assessment of the potential contaminant linkages between these.

The preliminary Conceptual Site Model (CSM) was developed, in the course of both Hyder (2008) and TerraConsult (2012), in order to represent the characteristics of the Site in order to qualitatively assess the potential pollutant linkages at the Site, in the context of its current and historical use, inline with the approach promoted by the Agency in their guidance document 'Model procedures for the management of land contamination' (Contaminated Land Report (CLR) 11).

For there to be an identifiable risk, not only must there be contaminants present on the site (source) i.e. contaminated ground, leachate or landfill gas, but also there must be a receptor and a pathway which allows the source to reach the receptor.

Each of these elements can exist independently but, all three elements must be present to form a pollutant linkage before there can be a potential risk to specific receptors.

Not all of the potential contaminant linkages considered are plausible in reality (i.e. the pathway is broken by the development).The highest risk rating designated for human health receptors was Moderate/Low for construction and site investigation workers from ingestion, direct contact and/or inhalation of contaminated ground and groundwater (including asbestos). Emissions of hazardous gases were designated as an Unknown Risk. The highest risk rating designated for controlled waters was Low based on the potential exposure of groundwater to soluble contaminants within Made Ground deposits.

The following section discusses each element in turn

4.1 SOURCES

Based upon the information from Hyder (2008) and TerraConsult (2012), historical maps and published information it is considered that potential contaminants are associated primarily with the landfill, initially identified within Hyder (2008), beneath the northern part of the Site.

The potential contaminants include:

- Metals and metalloids / metal compounds;
- Ammonium, sulphate and chloride – common in landfill leachate, potential for creating acidic conditions (with iron chloride) within the fill and for its potential to release ammonia and ammonia compounds into controlled waters, aggressive conditions for below ground concrete;
- Hydrocarbons – petroleum hydrocarbons, BTEX, solvents;
- PAHs
- Pesticides e.g. mecoprop;
- Asbestos Containing Materials (ACM) could be present on site.

Both Hyder (2008) and TerraConsult (2012) also considered the potential for the migration of ground/landfill gas or vapours from the waste beneath the northern part of the Site or the current landfill to the east, together with radon gas from the Northampton Sand.

4.2 RECEPTORS

It is considered, as the proposed works primarily to reconfiguring the layout of the Site, the main receptors to any contaminants present will be the construction workers. Other potential receptors include:

- Construction/ site investigation workers;
- Future site users/visitors and adjacent land users;
- Controlled surface waters (unnamed streams/tributaries);
- Underlying groundwater resources (Secondary A aquifer);
- Local flora and fauna (due and post demolition and construction), and;
- Building structure and services (e.g. potable water supplies).

It should be noted that there are no archaeological sites or ancient monuments considered to be within the zone of influence of the site. They are therefore not considered in the risk assessment (TerraConsult, 2012).

4.3 PATHWAYS

The potential pathways for any contaminants present on or beneath the Site to impact on the identified receptors are summarised below:

- Ingestion, inhalation and dermal contact (Human Health);
- Exposure of soluble contaminants in excavations;
- Surface run-off of sediment rich or contaminated waters in excavations;
- Vertical contaminant migration to shallow groundwater, leaching through soils;
- Attack of water supply pipes by aggressive contaminants; and,
- Vegetation/plant uptake.

4.4 POTENTIAL POLLUTANT LINKAGES

4.4.1 Context

This section presents a discussion of the potential pollutant linkages, and provides an indication of the risk level relevant to each linkage.

The risk of a pollutant linkage being realised has been classified based on an evaluation of its likelihood or probability against the potential severity of the consequences.

Professional judgement has been used to estimate the combination of probability and consequence of the harm posed by the pollutant linkages identified above.

4.4.2 Human Health Receptors

Construction / Site Investigation Workers
The main risks posed by the development will be concentrated during the construction works when there will be excavations into the underlying, potentially contaminated, ground in order to permit installation of building foundations.

Consequently, ground workers who are involved in the proposed development works are the receptors most likely to come into direct contact with, inhaling or ingesting contaminated soils or dust, including asbestos.

The period of exposure is likely to be relatively short, for the duration of the excavation/foundation works period only and therefore, the risk is relatively low.

Further, the probability of occurrence and thereby the potential risk, will likely be negated if not significant reduced by the use of appropriate personal protective equipment (PPE) and following basic personal hygiene procedures, as outlined in HSE document entitled 'The Protection of Workers and the General Public During the Development of Contaminated Land' dated 1991.

Future Site Users
Future site users are considered to be at very low to negligible risk of coming into direct contact with, inhaling or ingesting contaminated soils or dust, including asbestos.

It is anticipated that the majority, if not the whole, of the development area will be covered in hard standing which with break the majority of pathways (e.g. ingestion of dust, direct contact etc.) from non-volatile contaminants.

For volatile contaminants the buildings will have to incorporate full radon protection measures and this together with the type of heavy duty industrial floor will provide a high level of protection against volatile contaminants and ground/landfill gases.

Surrounding Land Users and Flora/Fauna
TerraConsult (2012) considered that there will be an elevated risk to surrounding land users and ecological receptors (flora/fauna) during construction works however, the risk can be minimised by ensuring no stockpiling of excavated soils is undertaken where works are carried out in close proximity the Site boundaries. Where stockpiling is necessary, this should be carried out on, and covered by, an impermeable barrier. The risk is considered very low.

Post-development these are considered unlikely receptors because the whole of the development area will be covered in hard standing. Therefore, there will be no viable pathways and these will not be considered further.

4.4.3 Controlled Waters

Surface Waters
Nearby watercourses are considered to be at a negligible risk from the mobilisation of contamination by existing surface water transport (drainage).

Groundwater
Groundwater in the region of the Site is understood to flow north, inline with the dip of the underlying geology.

It is considered that, whilst there is likely to be a connection between the unlined waste beneath the northern part of the Site and groundwater, this is likely to have a negligible impact on the quality of regional groundwater due to the presence of a significantly larger waste mass (landfill) immediately downgradient of the Site.

In addition to the above, it is considered that the vertical leaching of contaminants from the Made Ground/waste on site to the groundwater is restricted due to the extensive covering of the Site with hard standing; most notably in the immediate area of the waste/ former compost pad. This is likely to be reduced further, with addition of more hardstanding as part of the development.

The primary pathway therefore for contamination to groundwater is likely to be restricted to the flow of on-site surface water, specifically that incident to open excavations and or stockpiles.

Even so, in similarity with surrounding land users, the risk can be minimised by ensuring that excavated soils are not stockpiled in close proximity to nearby excavations, to limit mobilisation of any potential contaminants.

4.4.4 Structures and Materials

Potable Water Supplies
Potential contaminants in the ground also can pose a risk to buried pipes. Pipes used to convey potable water can become damaged by hydrocarbons, PAH and phenols and these can taint the water.

Therefore it is recommended that if pipe routes are confirmed in this area, supply pipes should be laid in 'clean' bedding materials and/or lined against potential migration.

5 PREVIOUS INVESTIGATIONS/ASSESSMENTS

5.1 HYDER GEO-ENVIRONMENTAL ASSESSMENT (REF 5001-BH01213-BMR-01)

5.1.1 Overview

Hyder Consulting (UK) Ltd were commissioned by SITA to provide geotechnical and environmental advice in support of proposals for a material recycling facility (MRF) and transfer station at the Site. These proposals were later rescinded with the Site being developed into the now disused Composting Pad.

A ground investigation was undertaken in the northern part of the development Site by Geotechnics Ltd during December 2007 comprising:

- 3x No. 150mm diameter cable percussion boreholes to depths of between 4.63m and 9.95m, terminating on hard strata;
- Combined gas and groundwater monitoring wells and monitoring;
- 6x No. trial pits between 3.8m and 4.3m depths, which were backfilled upon completion, and;
- Geochemical and geotechnical analysis.

The proven ground conditions were consistent with the understood geology:

Table 2. Summary of Ground Conditions

Strata	Thickness (m)	Basal Depth (mBGL)	Description
Made Ground	0.90 – 5.60	5.60	Very soft to firm slightly sandy slightly gravelly CLAY with some gravel and cobble-sized fragments of plastic, clinker, flint, limestone, slate, timber, metal wire, peat and domestic refuse.
Grantham Formation (formerly Estuarine Series)	1.30 – 3.50	4.00	Weak, iron stained, fine to medium grained SANDSTONE
Northamptonshire Sandstone Formation;	0.32 – 4.55	Not Proven	Firm to very stiff friable slightly sandy slightly gravelly CLAY (slightly clayey sandy GRAVEL)

5.1.2 Contamination Assessment

Human Health Risk Assessment – Soils
Representative geochemical (soil) samples were analysed for a range of potential contaminants. The results were assessed using the Contaminated Land Exposure Assessment (CLEA) guidelines.

All determinands were assessed to be inline with their appropriate Soil Guidance Value (SGV). No contaminants of concern were identified although; alkaline pH values were recorded; which may accelerate the degradation of construction materials (e.g. concrete foundations).

Given the consideration to the then-recommendation to remove and replace the Made Ground, it was concluded that this (removal) would negate any risk to receptors and the need for a Quantitative Risk Assessment (QRA), with the material classified as non-hazardous waste.

Controlled waters Risk assessment
Limited groundwater was encountered during the investigation such that no groundwater quality samples were collected for assessment.

Ground Gas Assessment
Variable, elevated concentrations of methane and carbon dioxide, together with depleted oxygen were recorded, with very low flow rates. Accordingly, measures designed to meet Characteristic Situation 3, in addition to those for radon, were recommended following assessment including; a suspended floor slab, gas resistant membrane and a passively vented under floor sub-space.

It was also recommended that routine gas monitoring be continued to ensure that the protection measures remain suitable.

5.2 TERRACONSULT PHASE 1 INVESTIGATION (REF 1601/01)

5.2.1 Overview

TerraConsult were commissioned by SITA to undertake a preliminary Phase 1 risk assessment (desk study) and flood risk assessment for the Site, in support of proposals of a Refuse Derived Fuel (RDF) facility.

The specific activities carried out were as follows:

- undertake a desk study of available information to include a review of existing reports and history of the site;
- carry out a site walk over;
- review existing site investigation and environmental information for the site;
- develop a preliminary conceptual site model and refine this according to the findings of the investigation;
- assess the stability of the site due to historic mining/quarrying;
- provide preliminary geotechnical information on the ground conditions for foundation and floor slab design;
- provide recommendations for intrusive site investigation and laboratory testing, and;
- carry out a flood risk assessment.

5.2.2 Tier 2 Geo-Environmental Risk Assessment

Human Health Risk Assessment – Soils
Comparison was made against highly conservative criteria assuming a residential end use and the more appropriate commercial/light industrial ensure use criteria.

The report confirmed the findings of Hyder (2008), concluding that all potential contaminants/determinands were recorded inline with their appropriate Generic Assessment Criteria (GAC) thresholds for commercial/light industrial end use.

With respect of the conservative criteria for this development assuming a residential end use, only the criteria for 3 samples for up to 4 different Polycyclic Aromatic Hydrocarbons (PAHs) were exceeded, and 1 sample for arsenic (only 34 mg/kg relative to the residential GAC of 32 mg/kg).

If similar conditions extend south, below the main building within the development Site, then no remedial works will be required.

Controlled waters Risk assessment
A Tier 1 Assessment, inline with the Agency's Remedial Targets Methodology, was undertaken to confirm the risks to controlled waters (groundwater and surface waters).

In the absence of samples from beneath the development Site, the results of routine groundwater quality monitoring undertaken by SITA from 4 wells, north and east of the development, upgradient of Sidegate Lane Landfill Site were utilised.

Concentrations of the majority of determinands were recorded inline with their appropriate screening criteria.

Where exceptions were recorded, it is considered that the respective concentrations are relatively low when it is considered that the wells are installed in or around an old unlined landfill adjacent to a modern lined landfill.

The elevated concentrations of calcium, iron, manganese and magnesium were attributed to background concentrations from the Northampton Sand Formation with the elevated concentrations of ammoniacal nitrogen, chloride, sulphate, potassium, sodium and PAHs from backfilled materials/landfill.

However as the direction of groundwater flow is to the north it is towards a much larger area of a historic unlined landfill so the elevated concentrations of the landfill related contaminants below the developments at this site will not be significantly detrimental to the quality of groundwater immediately down gradient of the site.

Therefore the contaminants present in the groundwater below the site are likely to have a negligible effect on quality of groundwater down gradient of the site. Therefore this will not be considered further.

Ground Gas Assessment
Utilising up to 70 rounds of routine gas monitoring undertaken by SITA in 6 wells adjacent to the development area, the characteristic gas situation was confirmed as Category 3; requiring that 2 'points' of gas protection are built into design proposals for all buildings:

- Reinforced concrete ground bearing foundation raft with limited service penetrations that are cast into slab – 1.5 points;
- Taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation, gas membrane (recommend proprietary reinforced gas membrane) sealed around service penetrations, membrane to extend across wall cavities – 0.5 points.

However, it was recommended that further gas monitoring, including flow rates, be undertaken.

6 UPDATED GEO-ENVIRONMENTAL ASSESSMENT (WHOLE SITE)

6.1 HUMAN HEALTH

6.1.1 Construction/Site Investigation Workers and Adjacent Land Users

Hyder (2008) and TerraConsult (2012) confirm that there is no significant source of contaminants present beneath the north of the Site.

It is anticipated, based on a shared, historical land use and similar ground cover, that similar concentrations of contaminants will be present below the main building within the revised development site.

TerraConsult (2012) recommended that a further investigation is required to confirm this.

However, given that groundwater is understood to flow north, it is considered that the worst-case concentrations have already been identified during the investigation by Hyder (2008).

Further, following the findings of a supplementary ground investigation undertaken by SITA during ## 2013 which identified the southern limit of the waste material (previously identified under the northern part of the Site) as being approximately ###m north of the main development building, SITA consider that no further works to confirm the nature of the underlying ground are necessary.

TerraConsult (2012) also noted that no testing was undertaken to confirm the absence/presence of asbestos containing materials or discrete asbestos fibres.

SITA can confirm, owing to the nature of the former compost pad, that no asbestos containing materials have been previously stored on-site. Further, the appointed contractor (Minshall) is contracted for Design and Build Services and hence the potential risk is to be taken into consideration during excavation works and will likely be negated, if not significant reduced, by the use of appropriate personal protective equipment (PPE) and following agreed methods of work.

6.1.2 Future Site Users and Surrounding Land Users

Based on the current development plans, the potential pathway to future site users, and users of adjacent lands, will be broken by the proposed extent of hardstanding cover.

6.1.3 Ground gas

Hyder (2008) and TerraConsult (2012) recommended that 2 'points' of protection, in addition to those for radon, are built into design proposals for the development to meet Characteristic Situation 3. These may include:

Hyder (2008):

- a suspended floor slab/ gas resistant membrane, and;
- a passively vented under floor sub-space

TerraConsult (2012)

- a reinforced concrete ground bearing foundation slab, and;
- a taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation

However, TerraConsult (2012) recommended that further gas monitoring, including flow rates, be undertaken.

Additional data for the period April 2012 to September 2013 is provided in Appendix A and summarised below:

Table 3. Ground Gas Monitoring Summary (April 2012-September 2013)

Sample Point	Comment	Methane (% v/v)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Atmospheric Pressure (mb)	Relative Pressure (mb)	Flow (l/h)
SL/25	Count	18	18	18	18	9	7
	Min	0.0	0.0	0.0	976	-0.24	0.0
	Mean	6.2	6.5	16.1	1000	0.28	0.4
	Max	33.8	28.2	22.1	1023	2.83	0.7
SL/26	Count	18	18	18	18	9	7
	Min	0.0	0.0	5.7	976	-0.42	-1.4
	Mean	0.0	1.2	18.9	1000	0.64	0.2
	Max	0.1	2.9	21.3	1023	1.73	2.5
SL/27	Count	18	18	18	18	9	7
	Min	0.0	0.0	12.2	976	-2.26	-1.3
	Mean	0.0	1.6	19.1	1000	-0.27	-0.1
	Max	0.1	3.8	21.2	1023	0.28	0.4
SL/30	Count	18	18	18	18	9	7
	Min	0.0	2.3	15.5	976	-0.14	-0.3
	Mean	0.0	3.5	18.0	1000	1.32	0.6
	Max	0.1	5.6	20.7	1023	5.89	2.4
SL/31	Count	18	18	18	18	9	7
	Min	0.0	0.0	7.3	976	-0.11	-1.4
	Mean	0.0	4.2	11.9	1000	0.99	0.7
	Max	0.1	8.7	20.7	1023	4.05	2.6
SL/36	Count	18	18	18	18	9	7
	Min	0.0	0	0	976	-0.14	-0.1
	Mean	38.0	11.2	5.5	1000	0.82	0.2
	Max	66.1	19.8	21.2	1023	3.54	0.4

Given that monitoring visits were undertaken with a mean atmospheric pressure of 1000mb, it is considered that the dataset is comparable to that presented in TerraConsult (2012).

The worst case Characteristic Situation (as assessed in accordance with Table 8.5 of CIRIA C665) for the Site is as follows:

Table 4. Characteristic Gas Situations (April 2012–September 2013)

Sample Point	Flow (l/h)	Methane			Carbon Dioxide		
		Max (% v/v)	GSV (l/hr)	Characteristic Situation	Max (% v/v)	GSV (l/hr)	Characteristic Situation
BH25	0.7	33.8	0.2366	2	28.2	0.1974	2
BH26	2.5	0.1	0.0025	1	2.9	0.0725	2
BH27	0.4	0.1	0.0004	1	3.8	0.0152	1
BH30	2.4	0.1	0.0024	1	5.6	0.1344	2
BH31	2.6	0.1	0.0026	1	8.7	0.2262	2
BH36	0.4	66.1	0.2644	2	19.8	0.0792	2

The worst case Characteristic Situation (CS) is CS2 but as peak methane concentrations exceed 20%, the characteristic gas situation is increased to CS3 'moderate hazard potential', consistent with Hyder (2008) and TerraConsult (2012).

It is understood that development buildings will include a level of gas protect as standard; a reinforced foundation slab and a flexible membrane liner (which will also mitigate the risk of radon).

The main building of the development will also benefit from a means of venting to atmosphere, due to large openings for vehicles.

6.1.4 Controlled Waters

Surface Water
Nearby watercourses are considered to be at a negligible risk from the mobilisation of contamination by existing surface water transport (drainage).

Groundwater
TerraConsult (2012) concluded that potential contaminants, present within groundwater beneath the Site will not be significantly detrimental to the quality of groundwater immediately downgradient of the Site.

Recommendations were made for additional testing of arsenic, petroleum hydrocarbons and pesticides (other than mecoprop).

Based on the results of routine groundwater quality monitoring undertaken in adjacent boreholes BH25, BH27, BH30 and BH35 between April 2012 and September 2013 (Appendix B), SITA confirm that all concentrations of arsenic were recorded below the appropriate screening criteria (Drinking Water Standard, DWS of 0.01mg/l).

No hydrocarbons, in addition to various constituent PAHs discussed in TerraConsult (2012), or pesticides, other than mecoprop, were recorded in excess of laboratory limits of detection.

Consequently, no further works to confirm the quality of groundwater beneath the Site are necessary.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

Based on a review of Hyder (2008), TerraConsult (2012) and the results of routine gas and groundwater quality monitoring, the following conclusions can be drawn:

- There is no evidence of significant source of contaminants at the Site.
- The risk to all receptors, including humans, ecological receptors and controlled waters is considered negligible. However, gas protection measures will be required for the main Waste Transfer Depot building, and any additional buildings within the development (e.g. site offices). For design purposes, it is recommended that these meet the requirements of both CS3 and full protection measures for radon.

7.2 RECOMMENDATIONS

Given the above, is it requested that Condition 18 of the Planning Permission be discharged.

8 REFERENCES

Hyder. (2008). Sidegate Lane Landfill. Materials Recycling Facility and Transfer Station (Report No. 5001-BM01213-BMR-01) *and including Envirocheck Report (Reference BM01213, dated November 2007)*

TerraConsult. (2012). Sidegate Lane Landfill. Phase 1 Site Investigation Report for Proposed RDF Facility (Report No. 1601/01) *and including GroundSure Report (Reference PO10378, dated June 2012)*

FIGURES

Figure 1. Site Location

Figure 2. Proposed Development

0 10 25 50m

Scale Bar 1:1000

NORTH

1 Site Layout

1 : 1000

No.	Description	Date
E	Issued for comment	19/06/2013
D	Issued for comment	13/06/2013
C	Scale revised and viewport re-positioned. Issued for planning.	16/07/2012
B	Bale storage & product storage bays connected	11/07/2012
A	Site office repositioned. Additional fire escape exits (inc. external fire escape stair) included for site office. Site boundary revised.	14/06/2012
-	First formal issue for comment	12/06/2012

This drawing is issued for design information or comment unless otherwise revised for Tender or Construction.

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Client

Design Partners

Project

SITA

Sidegate Lane

Drawing

Proposed Site Layo...

PRELIMINARY

Project Number		...awing Number	Revision
P00088		6000	E

Des/Eng	...pproved	Date	Scale
SJo	SITA	12/06/12	1 : 1000

A1

APPENDICES

Appendix A. Ground Gas Monitoring Data

Site	Sample Point	Date	Methane (%v/v)	Carbon Dioxide (%v/v)	Oxygen (%v/v)	Atmospheric Pressure (mb)	Relative Pressure (mb)	Flow (l/hr)
Sidegate Lane	SL/25	26/04/2012	5.5	3.6	17.1	980	0.02	0.4
Sidegate Lane	SL/25	17/05/2012	0.0	2.4	19.5	1008	-0.22	0.1
Sidegate Lane	SL/25	27/06/2012	0.0	0.1	20.2	1008	0.16	
Sidegate Lane	SL/25	09/07/2012	0.1	1.5	19.2	1001	2.83	
Sidegate Lane	SL/25	20/08/2012	0.0	0.5	19.9	1010	-0.24	
Sidegate Lane	SL/25	25/09/2012	0.0	1.3	20.7	976	-0.07	0.7
Sidegate Lane	SL/25	18/10/2012	0.0	0.4	20.8	990	0.00	0.0
Sidegate Lane	SL/25	26/11/2012	29.5	24.6	1.5	986	-0.12	0.4
Sidegate Lane	SL/25	13/12/2012	33.8	26.1	0.0	998		
Sidegate Lane	SL/25	16/01/2013	13.9	15.2	9.3	1002	0.12	
Sidegate Lane	SL/25	26/02/2013	0.0	0.0	21.4	1023		
Sidegate Lane	SL/25	25/03/2013	0.0	0.1	22.1	1008		0.4
Sidegate Lane	SL/25	12/04/2013	28.3	28.2	1.8	982		0.7
Sidegate Lane	SL/25	30/05/2013	0.0	7.1	15.9	999		
Sidegate Lane	SL/25	14/06/2013	0.0	1.1	20.1	1007		
Sidegate Lane	SL/25	30/07/2013	0.0	0.2	21.4	1004		
Sidegate Lane	SL/25	09/08/2013	0.0	0.8	20.3	1007		
Sidegate Lane	SL/25	20/09/2013	0.1	3.0	19.3	1009		
Sidegate Lane	SL/26	26/04/2012	0.0	0.1	21.3	981	0.00	0.0
Sidegate Lane	SL/26	17/05/2012	0.0	0.6	19.9	1008	0.19	0.2
Sidegate Lane	SL/26	27/06/2012	0.0	0.7	19.8	1008	1.73	
Sidegate Lane	SL/26	09/07/2012	0.1	0.8	19.9	1002	1.64	
Sidegate Lane	SL/26	20/08/2012	0.0	0.7	19.7	1011	-0.42	
Sidegate Lane	SL/26	25/09/2012	0.0	0.0	21.0	976	1.52	0.1
Sidegate Lane	SL/26	18/10/2012	0.0	0.0	20.9	991	0.02	-1.4
Sidegate Lane	SL/26	26/11/2012	0.1	0.9	19.5	987	0.05	2.5
Sidegate Lane	SL/26	13/12/2012	0.0	0.1	20.1	998		
Sidegate Lane	SL/26	16/01/2013	0.0	1.6	17.1	1003	0.99	
Sidegate Lane	SL/26	26/02/2013	0.0	1.7	18.3	1023		
Sidegate Lane	SL/26	25/03/2013	0.0	2.3	14.9	1008		0.4
Sidegate Lane	SL/26	12/04/2013	0.0	2.9	5.7	982		-0.1
Sidegate Lane	SL/26	30/05/2013	0.0	2.5	19.5	999		
Sidegate Lane	SL/26	14/06/2013	0.0	2.0	20.7	1007		
Sidegate Lane	SL/26	30/07/2013	0.0	1.4	21.1	1004		
Sidegate Lane	SL/26	09/08/2013	0.0	1.4	20.1	1007		
Sidegate Lane	SL/26	20/09/2013	0.1	1.8	19.9	1009		
Sidegate Lane	SL/27	26/04/2012	0.0	0.0	21.2	981	0.00	-0.4
Sidegate Lane	SL/27	17/05/2012	0.0	1.8	19.3	1008	-0.68	0.1
Sidegate Lane	SL/27	27/06/2012	0.0	0.9	20.1	1009	0.25	
Sidegate Lane	SL/27	09/07/2012	0.1	1.2	19.7	1002	-2.26	
Sidegate Lane	SL/27	20/08/2012	0.0	1.3	18.8	1010	0.12	
Sidegate Lane	SL/27	25/09/2012	0.0	1.4	20.5	976	-0.04	0.2
Sidegate Lane	SL/27	18/10/2012	0.0	0.0	21.0	991	0.06	-1.3
Sidegate Lane	SL/27	26/11/2012	0.0	1.6	18.4	987	-0.16	0.4
Sidegate Lane	SL/27	13/12/2012	0.0	1.0	19.2	998		
Sidegate Lane	SL/27	16/01/2013	0.0	2.5	17.3	1003	0.28	
Sidegate Lane	SL/27	26/02/2013	0.0	2.9	13.8	1023		

Site	Sample Point	Date	Methane (%v/v)	Carbon Dioxide (%v/v)	Oxygen (%v/v)	Atmospheric Pressure (mb)	Relative Pressure (mb)	Flow (l/hr)
Sidegate Lane	SL/27	25/03/2013	0.0	3.8	12.2	1008		0.4
Sidegate Lane	SL/27	12/04/2013	0.0	1.2	21.0	982		-0.1
Sidegate Lane	SL/27	30/05/2013	0.0	2.9	19.7	999		
Sidegate Lane	SL/27	14/06/2013	0.0	2.6	20.3	1007		
Sidegate Lane	SL/27	30/07/2013	0.0	1.9	20.7	1004		
Sidegate Lane	SL/27	09/08/2013	0.0	1.7	20.2	1007		
Sidegate Lane	SL/27	20/09/2013	0.1	0.0	20.5	1009		
Sidegate Lane	SL/30	26/04/2012	0.0	2.8	19.7	980	5.89	0.0
Sidegate Lane	SL/30	17/05/2012	0.0	2.3	18.0	1011	0.53	0.1
Sidegate Lane	SL/30	27/06/2012	0.0	3.4	17.1	1009	-0.03	
Sidegate Lane	SL/30	09/07/2012	0.1	2.9	18.1	1002	-0.05	
Sidegate Lane	SL/30	20/08/2012	0.0	3.3	16.9	1011	0.05	
Sidegate Lane	SL/30	25/09/2012	0.0	4.7	18.0	976	-0.08	0.3
Sidegate Lane	SL/30	18/10/2012	0.0	3.1	19.6	991	5.55	2.4
Sidegate Lane	SL/30	26/11/2012	0.0	3.8	19.4	987	0.14	1.4
Sidegate Lane	SL/30	13/12/2012	0.1	4.3	15.5	998		
Sidegate Lane	SL/30	16/01/2013	0.0	3.8	16.0	1004	-0.14	
Sidegate Lane	SL/30	26/02/2013	0.0	3.3	18.3	1023		
Sidegate Lane	SL/30	25/03/2013	0.0	2.5	20.7	1008		0.1
Sidegate Lane	SL/30	12/04/2013	0.0	2.8	20.1	982		-0.3
Sidegate Lane	SL/30	30/05/2013	0.0	2.8	18.2	999		
Sidegate Lane	SL/30	14/06/2013	0.0	3.6	18.1	1007		
Sidegate Lane	SL/30	30/07/2013	0.0	4.7	16.2	1004		
Sidegate Lane	SL/30	09/08/2013	0.0	3.9	18.3	1007		
Sidegate Lane	SL/30	20/09/2013	0.1	5.6	16.4	1009		
Sidegate Lane	SL/31	26/04/2012	0.0	3.4	14.3	981	3.54	0.0
Sidegate Lane	SL/31	17/05/2012	0.0	0.0	20.7	1009	0.50	0.4
Sidegate Lane	SL/31	27/06/2012	0.0	5.1	11.9	1009	-0.01	
Sidegate Lane	SL/31	09/07/2012	0.1	5.3	11.7	1002	-0.03	
Sidegate Lane	SL/31	20/08/2012	0.0	7.1	9.5	1011	0.47	
Sidegate Lane	SL/31	25/09/2012	0.0	4.5	13.9	976	0.37	1.9
Sidegate Lane	SL/31	18/10/2012	0.0	1.6	11.9	991	4.05	-1.4
Sidegate Lane	SL/31	26/11/2012	0.0	1.4	10.0	987	-0.11	2.6
Sidegate Lane	SL/31	13/12/2012	0.1	2.1	14.4	998		
Sidegate Lane	SL/31	16/01/2013	0.1	2.7	8.6	1004	0.16	
Sidegate Lane	SL/31	26/02/2013	0.0	3.7	14.5	1023		
Sidegate Lane	SL/31	25/03/2013	0.0	1.7	10.2	1008		0.4
Sidegate Lane	SL/31	12/04/2013	0.0	2.0	17.9	982		1.2
Sidegate Lane	SL/31	30/05/2013	0.1	3.7	11.5	999		
Sidegate Lane	SL/31	14/06/2013	0.0	7.5	9.9	1007		
Sidegate Lane	SL/31	30/07/2013	0.0	7.3	9.1	1004		
Sidegate Lane	SL/31	09/08/2013	0.0	8.7	7.6	1007		
Sidegate Lane	SL/31	20/09/2013	0.1	7.2	7.3	1009		
Sidegate Lane	SL/36	26/04/2012	0.0	0.0	21.1	981	0.07	0.3
Sidegate Lane	SL/36	17/05/2012	45.5	11.8	0.2	1009	-0.05	0.2
Sidegate Lane	SL/36	27/06/2012	44.7	12.2	1.0	1008	0.32	
Sidegate Lane	SL/36	09/07/2012	46.5	12.7	1.1	1002	2.78	

Site	Sample Point	Date	Methane (%v/v)	Carbon Dioxide (%v/v)	Oxygen (%v/v)	Atmospheric Pressure (mb)	Relative Pressure (mb)	Flow (l/hr)
Sidegate Lane	SL/36	20/08/2012	40.5	11.6	0.7	1010	0.54	
Sidegate Lane	SL/36	25/09/2012	35.7	11.7	3.3	976	3.54	0.3
Sidegate Lane	SL/36	18/10/2012	2.5	2.9	17.3	991	0.29	0.0
Sidegate Lane	SL/36	26/11/2012	45.4	14.0	2.0	987	0.00	0.4
Sidegate Lane	SL/36	13/12/2012	45.9	13.5	0.0	998		
Sidegate Lane	SL/36	16/01/2013	49.3	14.8	0.9	1003	-0.14	
Sidegate Lane	SL/36	26/02/2013	56.6	16.4	2.1	1023		
Sidegate Lane	SL/36	25/03/2013	48.3	16.8	2.2	1008		0.4
Sidegate Lane	SL/36	12/04/2013	66.1	19.8	2.3	982		-0.1
Sidegate Lane	SL/36	30/05/2013	45.3	13.7	1.6	999		
Sidegate Lane	SL/36	14/06/2013	58.1	13.6	0.4	1007		
Sidegate Lane	SL/36	30/07/2013	53.6	16.1	0.7	1004		
Sidegate Lane	SL/36	09/08/2013	0.0	0.0	21.2	1007		
Sidegate Lane	SL/36	20/09/2013	0.1	0.0	20.5	1009		

Appendix B. Groundwater Quality Monitoring Data

Site	Sample Point	Date	Monitoring Point Status SAMPLE	1,1,1,2-Tetrachloroethane (µg/l)	1,1,1-Trichloroethane (µg/l)	1,1,2,2-Tetrachloroethane (µg/l)	1,1,2-Trichloroethane (µg/l)	1,1-Dichloroethane (µg/l)	1,1-Dichloroethene (µg/l)	1,1-Dichloropropene (µg/l)	1,2,3,4-Tetrachloro-benzene (µg/l)	1,2,3-Trichlorobenzene (µg/l)	1,2,3-Trichlorobenzene (VOC) (µg/l)	1,2,3-Trichloropropane (µg/l)	1,2,4-Trichlorobenzene (µg/l)	1,2,4-Trichlorobenzene ESG SVOC (mg/l)	1,2,4-Trichlorobenzene ESG VOC (µg/l)	1,2,4-Trimethylbenzene (µg/l)	1,2-Dibromo-3-chloropropane (µg/l)	1,2-Dibromoethane (µg/l)	1,2-Dichlorobenzene (µg/l)	1,2-Dichlorobenzene (VOC) (µg/l)	1,2-Dichlorobenzene ESG SVOC (mg/l)	1,2-Dichloroethane (µg/l)	1,2-Dichloropropane (µg/l)	1,3,5-Trichlorobenzene (µg/l)	1,3,5-Trimethylbenzene (µg/l)	1,3-Dichlorobenzene (µg/l)	1,3-Dichlorobenzene (VOC) (µg/l)	1,3-Dichlorobenzene ESG SVOC (mg/l)	1,3-Dichloropropane (µg/l)	1,4-Dichlorobenzene (µg/l)	1,4-Dichlorobenzene (SVOC) (mg/l)	1,4-Dichlorobenzene (VOC) (µg/l)	1-Hexanol, 2-ethyl- [SVOCSW] (mg/l)	1-Methylnaphthalene ESG SVOC (mg/l)	2,2-Dichloropropane (µg/l)	2,3,6-TBA (µg/l)	2,4,5-T (µg/l)	2,4,5-Trichlorophenol (µg/l)	2,4,5-Trichlorophenol (low) (µg/l)	2,4,5-Trichlorophenol ESG SVOC (mg/l)	2,4,6-Tribromophenol (%Recovery)	2,4,6-Trichlorophenol (µg/l)	2,4,6-Trichlorophenol ESG SVOC (mg/l)	2,4-D (µg/l)	2,4-D Methyl Ester (µg/l)	2,4-DB (µg/l)	2,4-Dichlorophenol (µg/l)	2,4-Dichlorophenol (low) (µg/l)	2,4-Dichlorophenol ESG SVOC (mg/l)
Sidegate Lane	SL/25	27/06/2012	satisfactory																																												
Sidegate Lane	SL/25	25/09/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/25	13/12/2012	satisfactory																																												
Sidegate Lane	SL/25	12/04/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/25	14/06/2013	satisfactory																																												
Sidegate Lane	SL/25	20/09/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1	<5			<1	<5	<1		<5		<1	<1	<0.02	<1		<1		<1			<1			<1	<0.04	<0.04				<0.04	<0.04	<0.04			
Sidegate Lane	SL/27	27/06/2012	satisfactory																																												
Sidegate Lane	SL/27	09/07/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	2	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/27	13/12/2012	satisfactory																																												
Sidegate Lane	SL/27	12/04/2013	UTM																																												
Sidegate Lane	SL/27	14/06/2013	satisfactory																																												
Sidegate Lane	SL/27	20/09/2013	Insufficient																																												
Sidegate Lane	SL/30	26/04/2012	satisfactory																																												
Sidegate Lane	SL/30	17/05/2012	satisfactory																																												
Sidegate Lane	SL/30	27/06/2012	satisfactory																																												
Sidegate Lane	SL/30	09/07/2012	satisfactory																																												
Sidegate Lane	SL/30	20/08/2012	satisfactory																																												
Sidegate Lane	SL/30	25/09/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/30	18/10/2012	satisfactory																																												
Sidegate Lane	SL/30	26/11/2012	satisfactory																																												
Sidegate Lane	SL/30	13/12/2012	satisfactory																																												
Sidegate Lane	SL/30	16/01/2013	satisfactory																																												
Sidegate Lane	SL/30	26/02/2013	satisfactory																																												
Sidegate Lane	SL/30	25/03/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/30	12/04/2013	satisfactory																																												
Sidegate Lane	SL/30	30/05/2013	satisfactory																																												
Sidegate Lane	SL/30	14/06/2013	satisfactory																																												
Sidegate Lane	SL/30	30/07/2013	satisfactory																																												
Sidegate Lane	SL/30	09/08/2013	satisfactory																																												
Sidegate Lane	SL/30	20/09/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1	<5			<1	<5	<1		<5		<1	<1	<0.02	<1		<1		<1			<1			<1	<0.02	<0.02				<0.02	<0.02	<0.02			
Sidegate Lane	SL/35	26/04/2012	satisfactory	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0		<2.0				<2.0	<4.0	<2.0	<2.0			<2.0	<2.0		<2.0	<2.0			<2.0	<2.0				<2.0			<2.0	<1.00		86.6	<2.0					2.0	<1.00	
Sidegate Lane	SL/35	17/05/2012	satisfactory																																												
Sidegate Lane	SL/35	27/06/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1			<5	<1	<5	<1		<5		<1	<1	<0.02	<1		<1		<1			<1			<1	<0.02	<0.02				<0.02	<0.02	<0.02			
Sidegate Lane	SL/35	09/07/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	20/08/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	25/09/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	18/10/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1			<5	<1	<5	<1		<5		<1	<1	<0.02	<1		<1		<1			<1			<1	<0.02	<0.02				<0.02	<0.02	<0.02			
Sidegate Lane	SL/35	26/11/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	13/12/2012	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.03	<0.03			<0.020			<0.020	<0.03	<0.03	<0.03			<0.020
Sidegate Lane	SL/35	16/01/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	26/02/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	25/03/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1		<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	12/04/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1		<0.005	<5	<1	<5	<1		<5	<0.005	<1	<1	<0.02	<1		<1	<0.005	<1		<0.005	<1	0.068	<0.002	<1	<0.02	<0.02			<0.020			<0.020	<0.02	<0.02	<0.02			<0.020
Sidegate Lane	SL/35	30/05/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.04		<5	<1			<5	<1	<5	<1		<5		<1	<1	<0.04	<1		<1		<1			<1			<1	<0.10	<0.10				<0.10	<0.10	<0.10			
Sidegate Lane	SL/35	14/06/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.40		<5	<1			<5	<1	<5	<1		<5		<1	<1	<0.40	<1		<1		<1			<1			<1	<0.04	<0.04				<0.04	<0.04	<0.04			
Sidegate Lane	SL/35	30/07/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1			<5	<1	<5	<1		<5		<1	<1	<0.02	<1		<1		<1			<1			<1	<0.10	<0.10				<0.10	<0.10	<0.10			
Sidegate Lane	SL/35	09/08/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1	<5			<1	<5	<1		<5		<1	<1	<0.02	<1		<1		<1			<1			<1	<0.02	<0.02				<0.02	<0.02	<0.02			
Sidegate Lane	SL/35	20/09/2013	satisfactory	<1	<1	<1	<1	<1	<1	<1	<0.02		<5	<1	<5			<1	<5	<1		<5		<1	<1	<0.02	<1		<1		<1			<1			<1	<0.10	<0.10				<0.10	<0.10	<0.10			

Site	Sample Point	Date	Monitoring Point Status SAMPLE	2,4-Dimethylphenol (µg/l)	2,4-Dimethylphenol (low level) (µg/l)	2,4-Dimethylphenol ESG SVOC (mg/l)	2,4-Dinitrophenol ESG SVOC (mg/l)	2,4-Dinitrotoluene (µg/l)	2,4-Dinitrotoluene ESG SVOC (mg/l)	2,6-Dichlorobenzonitrile (µg/l)	2,6-Dinitrotoluene (µg/l)	2,6-Dinitrotoluene ESG SVOC (mg/l)	2-Chloronaphthalene (µg/l)	2-Chloronaphthalene ESG SVOC (mg/l)	2-Chlorophenol (µg/l)	2-Chlorophenol (low level) (µg/l)	2-Chlorophenol ESG SVOC (mg/l)	2-Chlorotoluene (µg/l)	2-fluorobiphenyl (%Recovery)	2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/l)	2-Methylnaphthalene (µg/l)	2-Methylnaphthalene ESG SVOC (mg/l)	2-Methylphenol (µg/l)	2-Methylphenol ESG SVOC (mg/l)	2-Nitroaniline ESG SVOC (mg/l)	2-Nitrophenol (µg/l)	2-Nitrophenol ESG SVOC (mg/l)	3 & 4-Methylphenol (µg/l)	3-&4-Methylphenol ESG (mg/l)	3,3'-Dichlorobenzidine ESG SVOC (mg/l)	3,5-Dimethylphenol (low level) (µg/l)	3-Nitroaniline ESG SVOC (mg/l)	4,6-Dinitro-2-methylphenol ESG SVOC (mg/l)	4-bromofluorobenzene (%Recovery)	4-Bromophenyl ether (µg/l)	4-Bromophenyl-phenylether ESG SVOC (mg/l)	4-Chloro-3-methylphenol (µg/l)	4-Chloro-3-methylphenol ESG SVOC (mg/l)	4-Chloroaniline ESG SVOC (mg/l)	4-Chlorophenol (low) (µg/l)	4-Chlorophenol ESG SVOC (mg/l)	4-Chlorophenyl ether (µg/l)	4-Chlorophenyl-phenylether ESG SVOC (mg/l)	4-Chlorotoluene (µg/l)	4-fluorophenol (%Recovery)
Sidegate Lane	SL/25	27/06/2012	satisfactory																																									
Sidegate Lane	SL/25	25/09/2012	satisfactory			<0.02	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.02		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/25	13/12/2012	satisfactory																																									
Sidegate Lane	SL/25	12/04/2013	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/25	14/06/2013	satisfactory																																									
Sidegate Lane	SL/25	20/09/2013	satisfactory							<0.02								<1		<0.04																								<1	
Sidegate Lane	SL/27	27/06/2012	satisfactory																																									
Sidegate Lane	SL/27	09/07/2012	satisfactory			<0.02	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.02		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/27	13/12/2012	satisfactory																																									
Sidegate Lane	SL/27	12/04/2013	UTM																																									
Sidegate Lane	SL/27	14/06/2013	satisfactory																																									
Sidegate Lane	SL/27	20/09/2013	Insufficient																																									
Sidegate Lane	SL/30	26/04/2012	satisfactory																																									
Sidegate Lane	SL/30	17/05/2012	satisfactory																																									
Sidegate Lane	SL/30	27/06/2012	satisfactory																																									
Sidegate Lane	SL/30	09/07/2012	satisfactory																																									
Sidegate Lane	SL/30	20/08/2012	satisfactory																																									
Sidegate Lane	SL/30	25/09/2012	satisfactory			<0.02	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.02		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/30	18/10/2012	satisfactory																																									
Sidegate Lane	SL/30	26/11/2012	satisfactory																																									
Sidegate Lane	SL/30	13/12/2012	satisfactory																																									
Sidegate Lane	SL/30	16/01/2013	satisfactory																																									
Sidegate Lane	SL/30	26/02/2013	satisfactory																																									
Sidegate Lane	SL/30	25/03/2013	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/30	12/04/2013	satisfactory																																									
Sidegate Lane	SL/30	30/05/2013	satisfactory																																									
Sidegate Lane	SL/30	14/06/2013	satisfactory																																									
Sidegate Lane	SL/30	30/07/2013	satisfactory																																									
Sidegate Lane	SL/30	09/08/2013	satisfactory																																									
Sidegate Lane	SL/30	20/09/2013	satisfactory							<0.02								<1		<0.02																								<1	
Sidegate Lane	SL/35	26/04/2012	satisfactory	See A/C	<2.00			<2.0			<2.0		<2.0		<2.0	<1.00		<2.0	88.3		<2.0		<2.0			<2.0		<2.0			See A/C			85.5	<2.0		<2.0			<3.00		<2.0		<2.0	83.6
Sidegate Lane	SL/35	17/05/2012	satisfactory																																									
Sidegate Lane	SL/35	27/06/2012	satisfactory							<0.02								<1																										<1	
Sidegate Lane	SL/35	09/07/2012	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	20/08/2012	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	25/09/2012	satisfactory			<0.02	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.02		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	18/10/2012	satisfactory							<0.02								<1																										<1	
Sidegate Lane	SL/35	26/11/2012	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	13/12/2012	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	16/01/2013	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	26/02/2013	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	25/03/2013	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	12/04/2013	satisfactory			<0.020	<0.010		<0.005	<0.02		<0.005		<0.002			<0.020	<1				<0.002		<0.005	<0.005		<0.020		<0.020	<0.020		<0.005	<0.050			<0.005		<0.005	<0.005		<0.020		<0.005	<1	
Sidegate Lane	SL/35	30/05/2013	satisfactory							<0.04								<1																										<1	
Sidegate Lane	SL/35	14/06/2013	satisfactory							<0.40								<1																										<1	
Sidegate Lane	SL/35	30/07/2013	satisfactory							<0.02								<1																										<1	
Sidegate Lane	SL/35	09/08/2013	satisfactory							<0.02								<1																										<1	
Sidegate Lane	SL/35	20/09/2013	satisfactory							<0.02								<1		<0.10																										<1	

Site	Sample Point	Date	Monitoring Point Status SAMPLE	4-Nitroaniline ESG SVOC (mg/l)	4-Nitrophenol (µg/l)	4-Nitrophenol ESG SVOC (mg/l)	Acenaphthene (µg/l)	Acenaphthene (PAH) (µg/l)	Acenaphthene ESG SVOC (mg/l)	Acenaphthylene (µg/l)	Acenaphthylene (PAH) (µg/l)	Acenaphthylene ESG SVOC (mg/l)	Acetic acid (mg/l)	Aldrin (µg/l)	Aldrin-R (µg/l)	Alkalinity, Total as CaCO3 (mg/l)	Ammoniacal Nitrogen (NH4-N) (mg/l)	Anthracene (µg/l)	Anthracene (PAH) (µg/l)	Anthracene ESG SVOC (mg/l)	Arsenic, filtered (mg/l)	Azinphos-Ethyl (µg/l)	Azinphos-Methyl (µg/l)	Benazolin (µg/l)	Bentazon (µg/l)	Benzene (µg/l)	Benzene (VOC) XX (µg/l)	Benzene, 1,2,3-trichloro- (µg/l)	Benzo(a)anthracene (µg/l)	Benzo(a)anthracene (PAH) (µg/l)	Benzo(a)anthracene ESG SVOC (mg/l)	Benzo(a)pyrene (µg/l)	Benzo(a)pyrene (PAH) (µg/l)	Benzo(a)pyrene ESG SVOC (mg/l)	Benzo(b)fluoranthene (µg/l)	Benzo(b)fluoranthene (PAH) (µg/l)	Benzo(b)fluoranthene ESG SVOC (mg/l)	Benzo(g,h,i)perylene ESG SVOC (mg/l)	Benzo(ghi)perylene (µg/l)	Benzo(ghi)perylene (PAH) (µg/l)	Benzo(k)fluoranthene (µg/l)	Benzo(k)fluoranthene (PAH) (µg/l)	Benzo(k)fluoranthene ESG SVOC (mg/l)	Benzoic Acid ESG SVOC (mg/l)	Benzyl alcohol ESG SVOC (mg/l)
Sidegate Lane	SL/25	27/06/2012	satisfactory														40.3																												
Sidegate Lane	SL/25	25/09/2012	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	15		<0.02	693	58.3		<0.010	<0.002	0.002	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/25	13/12/2012	satisfactory														33																														
Sidegate Lane	SL/25	12/04/2013	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002		<0.02		767	27.7		<0.010	<0.002	<0.001	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/25	14/06/2013	satisfactory														38.8																														
Sidegate Lane	SL/25	20/09/2013	satisfactory											<0.02		762	43.8					<0.01	<0.01	<0.04	<0.04	<1		<0.01																		
Sidegate Lane	SL/27	27/06/2012	satisfactory														2.1																														
Sidegate Lane	SL/27	09/07/2012	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	14		<0.02	621	2.1		<0.010	<0.002	0.001	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/27	13/12/2012	satisfactory														0.7																														
Sidegate Lane	SL/27	12/04/2013	UTM																																											
Sidegate Lane	SL/27	14/06/2013	satisfactory														0.9																														
Sidegate Lane	SL/27	20/09/2013	Insufficient																																											
Sidegate Lane	SL/30	26/04/2012	satisfactory														<0.27																														
Sidegate Lane	SL/30	17/05/2012	satisfactory														<0.01																														
Sidegate Lane	SL/30	27/06/2012	satisfactory														<0.01																														
Sidegate Lane	SL/30	09/07/2012	satisfactory														<0.01																														
Sidegate Lane	SL/30	20/08/2012	satisfactory														<0.01																														
Sidegate Lane	SL/30	25/09/2012	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	11		<0.02	249	0.03		<0.010	<0.002	0.002	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		0.014	<0.002		0.018	<0.002	<0.002	<0.002		0.011		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/30	18/10/2012	satisfactory														<0.01																														
Sidegate Lane	SL/30	26/11/2012	satisfactory														0.02																														
Sidegate Lane	SL/30	13/12/2012	satisfactory														<0.01																														
Sidegate Lane	SL/30	16/01/2013	satisfactory														0.02																														
Sidegate Lane	SL/30	26/02/2013	satisfactory														0.01																														
Sidegate Lane	SL/30	25/03/2013	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002		<0.02		164	0.14		<0.010	<0.002	<0.001	<0.01	<0.01	<0.02	<0.02		<1	<0.01		0.03	<0.002		0.032	<0.002		0.043	<0.002	<0.002	<0.002		0.025		0.014	<0.002	<0.100	<0.005
Sidegate Lane	SL/30	12/04/2013	satisfactory														<0.01																														
Sidegate Lane	SL/30	30/05/2013	satisfactory														0.02																														
Sidegate Lane	SL/30	14/06/2013	satisfactory														<0.01																														
Sidegate Lane	SL/30	30/07/2013	satisfactory														<0.01																														
Sidegate Lane	SL/30	09/08/2013	satisfactory														<0.01																														
Sidegate Lane	SL/30	20/09/2013	satisfactory											<0.02		396	0.01					<0.01	<0.01	<0.02	<0.02	<1		<0.01																		
Sidegate Lane	SL/35	26/04/2012	satisfactory		<10.0		<2.0			<2.0						415	<0.27	<2.0								<2.0			<2.0			<2.0								<2.0		<2.0				
Sidegate Lane	SL/35	17/05/2012	satisfactory													110	<0.01																														
Sidegate Lane	SL/35	27/06/2012	satisfactory					<0.010			<0.010		<10		<0.02	405	0.01		<0.010		0.003	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010			<0.010			<0.010					<0.010		<0.010			
Sidegate Lane	SL/35	09/07/2012	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	<10.0		<0.02	464	0.03		<0.010	<0.002	0.003	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	20/08/2012	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	< 10.0		<0.02	447	0.09		<0.010	<0.002	0.003	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	25/09/2012	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	13		<0.02	384	0.03		<0.010	<0.002	0.003	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	18/10/2012	satisfactory					<0.010			<0.010				<0.02	376	<0.01		<0.010		0.003	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010			<0.010			<0.010					<0.010		<0.010			
Sidegate Lane	SL/35	26/11/2012	satisfactory	<0.005		<0.050			<0.002			<0.002	< 10.0		<0.02	371	0.19			<0.002	0.002	<0.01	<0.01	<0.02	<0.02		<1	<0.01			<0.002			<0.002			<0.002	<0.002					<0.002	<0.100	<0.005
Sidegate Lane	SL/35	13/12/2012	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	<10.0		<0.02	412	0.01		<0.010	<0.002	0.002	<0.01	<0.01	<0.03	<0.03		<1	<0.01		0.011	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	16/01/2013	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002	< 10.0	<0.02		352	0.2		<0.010	<0.002	0.003	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	26/02/2013	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002		<0.02		363	0.02		<0.010	<0.002	0.001	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	25/03/2013	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002		<0.02		227	0.12		<0.010	<0.002	<0.001	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	12/04/2013	satisfactory	<0.005		<0.050		<0.010	<0.002		<0.010	<0.002		<0.02		459	<0.01		<0.010	<0.002	0.002	<0.01	<0.01	<0.02	<0.02		<1	<0.01		<0.010	<0.002		<0.010	<0.002		<0.010	<0.002	<0.002	<0.002		<0.010		<0.010	<0.002	<0.100	<0.005
Sidegate Lane	SL/35	30/05/2013	satisfactory					<0.020			<0.020			<0.04		443	0.17		<0.020		0.002	<0.02	<0.02	<0.10	<0.10	<1		<0.02		<0.020			<0.020			<0.020					0.026		<0.020			
Sidegate Lane	SL/35	14/06/2013	satisfactory					<0.010			<0.010			<0.40		419	0.3		<0.010		0.002	<0.20	<0.20	<0.04	<0.04	<1		<0.20		<0.010			<0.010			<0.010					<0.010		<0.010			
Sidegate Lane	SL/35	30/07/2013	satisfactory											<0.02		621	0.1					<0.01	<0.01	<0.10	<0.10	<1		<0.01																		
Sidegate Lane	SL/35	09/08/2013	satisfactory											<0.02		502	0.12					<0.01	<0.01	<0.02	<0.02	<1		<0.01																		
Sidegate Lane	SL/35	20/09/2013	satisfactory											<0.02		498	0.3					<0.01	<0.01	<0.10	<0.10	<1		<0.01																		

Site	Sample Point	Date	Monitoring Point Status SAMPLE	Biological Oxygen Demand (mg/l)	Biphenyl ESG SVOC (mg/l)	Bis(2-chloroethoxy)methane (µg/l)	bis(2-Chloroethoxy)methane ESG SVOC (mg/l)	Bis(2-chloroethyl)ether (µg/l)	bis(2-Chloroethyl)ether ESG SVOC (mg/l)	bis(2-Chloroisopropyl)ether ESG SVOC (mg/l)	Bis(2-ethylhexyl)phthalate (µg/l)	Bis(2-ethylhexyl)phthalate... (mg/l)	Bromobenzene (µg/l)	Bromochloromethane (µg/l)	Bromodichloromethane (µg/l)	Bromoform (µg/l)	Bromomethane (µg/l)	Bromoxynil (µg/l)	Butyl-benzyl-phthalate (µg/l)	Butylbenzylphthalate ESG SVOC (mg/l)	Cadmium, filtered (mg/l)	Cadmium, total (mg/l)	Calcium as Ca, filtered (mg/l)	Calcium as Ca, total (mg/l)	Carbofenthion (µg/l)	Carbon Tetrachloride (µg/l)	Chemical Oxygen Demand, settled	Chemical Oxygen Demand, total (mg/l)	Chlordane-cis (µg/l)	Chlordane-trans (µg/l)	Chlorfenvinphos (µg/l)	Chloride as Cl (mg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	Chloroform (µg/l)	Chloromethane (µg/l)	Chlorotoluron (µg/l)	Chloroxuron (µg/l)	Chlorpyriphos (µg/l)	Chlorpyriphos Methyl (µg/l)	Chlorthalonil (µg/l)	Chromium, filtered (mg/l)	Chromium, total (mg/l)	Chrysene (µg/l)	Chrysene (PAH) (µg/l)	Chrysene ESG SVOC (mg/l)	cis-1,2-DCE (µg/l)	Cis-1,3-Dichloropropene (µg/l) (µg/l)
Sidegate Lane	SL/25	27/06/2012	satisfactory																														172														
Sidegate Lane	SL/25	25/09/2012	satisfactory	5.4	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		335		<0.01	<1	40		<0.02	<0.01	<0.03	231	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.017			<0.010	<0.002	1	<1
Sidegate Lane	SL/25	13/12/2012	satisfactory																														112														
Sidegate Lane	SL/25	12/04/2013	satisfactory	<2.0	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		396		<0.01	<1	20		<0.02	<0.01	<0.03	122	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.005			<0.010	<0.002	<1	<1
Sidegate Lane	SL/25	14/06/2013	satisfactory																									156																				
Sidegate Lane	SL/25	20/09/2013	satisfactory	2.5									<1	<1	<1	<1	<5	<0.04			0.0002		366		<0.01	<1	35		<0.02	<0.01	<0.03	197	<1	<5	<1	<1			<0.02	<0.01	<0.01	0.008					<1	<1
Sidegate Lane	SL/27	27/06/2012	satisfactory																									113																				
Sidegate Lane	SL/27	09/07/2012	satisfactory	3.9	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		465		<0.01	<1	12		<0.02	<0.01	<0.03	94	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.012			<0.010	<0.002	3	<1
Sidegate Lane	SL/27	13/12/2012	satisfactory																									79																				
Sidegate Lane	SL/27	12/04/2013	UTM																																													
Sidegate Lane	SL/27	14/06/2013	satisfactory																									107																				
Sidegate Lane	SL/27	20/09/2013	Insufficient																																												
Sidegate Lane	SL/30	26/04/2012	satisfactory																										32				217														
Sidegate Lane	SL/30	17/05/2012	satisfactory																								16						276														
Sidegate Lane	SL/30	27/06/2012	satisfactory																									195																				
Sidegate Lane	SL/30	09/07/2012	satisfactory																								<10						311														
Sidegate Lane	SL/30	20/08/2012	satisfactory																								20						339														
Sidegate Lane	SL/30	25/09/2012	satisfactory	2.2	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		358		<0.01	<1	6		<0.02	<0.01	<0.03	221	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.006			<0.010	<0.002	<1	<1
Sidegate Lane	SL/30	18/10/2012	satisfactory																								13						165														
Sidegate Lane	SL/30	26/11/2012	satisfactory																								15						129														
Sidegate Lane	SL/30	13/12/2012	satisfactory																									230																				
Sidegate Lane	SL/30	16/01/2013	satisfactory																								8						200														
Sidegate Lane	SL/30	26/02/2013	satisfactory																								10						269														
Sidegate Lane	SL/30	25/03/2013	satisfactory	<2.0	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		342		<0.01	<1	5		<0.02	<0.01	<0.03	227	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.001			0.027	<0.002	<1	<1
Sidegate Lane	SL/30	12/04/2013	satisfactory																								9						326														
Sidegate Lane	SL/30	30/05/2013	satisfactory																								15						303														
Sidegate Lane	SL/30	14/06/2013	satisfactory																									329																				
Sidegate Lane	SL/30	30/07/2013	satisfactory																								<5						314														
Sidegate Lane	SL/30	09/08/2013	satisfactory																								6						326														
Sidegate Lane	SL/30	20/09/2013	satisfactory	<2.0									<1	<1	<1	<1	<5	<0.02			<0.0001		381		<0.01	<1	9		<0.02	<0.01	<0.03	299	<1	<5	<1	<1			<0.02	<0.01	<0.01	0.002					<1	<1
Sidegate Lane	SL/35	26/04/2012	satisfactory	5		<2.0		<2.0			<10.0		<2.0	<2.0	<2.0	<2.0	<2.0		<2.0			<0.0006		195		<2.0		345				104	<2.0	<2.0	<2.0	<2.0									<0.0020	<2.0				<2.0
Sidegate Lane	SL/35	17/05/2012	satisfactory	2.9																		<0.0001		261			110					118													0.002						
Sidegate Lane	SL/35	27/06/2012	satisfactory	<2									<1	<1	<1	<1	<5	<0.02			0.0001		189		<0.01	<1	150		<0.02	<0.01	<0.03	117	<1	<5	<5	<1	<0.05	<0.05	<0.02	<0.01	<0.01		0.002		<0.010		<1	<1
Sidegate Lane	SL/35	09/07/2012	satisfactory	<2.0	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	0.0001		272		<0.01	<1	90		<0.02	<0.01	<0.03	611	<1	<5	<5	<1			<0.02	<0.01	<0.01		0.002		<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	20/08/2012	satisfactory	<2.0	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		286		<0.01	<1	106		<0.02	<0.01	<0.03	709	<1	<5	<5	<1	3.75	< 0.50	<0.02	<0.01	<0.01		0.007		<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	25/09/2012	satisfactory	3	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		430		<0.01	<1	85		<0.02	<0.01	<0.03	1920	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.009			<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	18/10/2012	satisfactory	2.7									<1	<1	<1	<1	<5	<0.02			<0.0001		228		<0.01	<1	125		<0.02	<0.01	<0.03	1460	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.003			<0.010		<1	<1
Sidegate Lane	SL/35	26/11/2012	satisfactory	2.3	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		363		<0.01	<1	88		<0.02	<0.01	<0.03	591	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.003				<0.002	<1	<1
Sidegate Lane	SL/35	13/12/2012	satisfactory	<2.0	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.03		<0.005	<0.0001		295		<0.01	<1	89		<0.02	<0.01	<0.03	490	<1	<5	<5	<1	<0.20	<0.20	<0.02	<0.01	<0.01	0.006			<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	16/01/2013	satisfactory	2.1	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		292		<0.01	<1	63		<0.02	<0.01	<0.03	357	<1	<5	<5	<1	< 0.05	< 0.05	<0.02	<0.01	<0.01	0.004			<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	26/02/2013	satisfactory	<2.0	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		241		<0.01	<1	47		<0.02	<0.01	<0.03	120	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.002			<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	25/03/2013	satisfactory	<2.0	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		293		<0.01	<1	36		<0.02	<0.01	<0.03	84	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.002			<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	12/04/2013	satisfactory	2.7	<0.002		<0.005		<0.005	<0.005		<0.005	<1	<1	<1	<1	<5	<0.02		<0.005	<0.0001		254		<0.01	<1	50		<0.02	<0.01	<0.03	73	<1	<5	<5	<1			<0.02	<0.01	<0.01	0.002			<0.010	<0.002	<1	<1
Sidegate Lane	SL/35	30/05/2013	satisfactory	2.7									<1	<1	<1	<1	<5	<0.10			<0.0001		147		<0.02	<1	90		<0.04	<0.02	<0.06	50	<1	<5	<5	<1	<0.10	<0.10	<0.04	<0.02	<0.02	0.006			<0.020		<1	<1
Sidegate Lane	SL/35	14/06/2013	satisfactory	<2.0									<1	<1	<1	<1	<5	<0.04			<0.0001		274		<0.20	<1	8		<0.40	<0.20	<0.60	410	<1	<5	<5	<1			<0.40	<0.20	<0.20	0.007			<0.010		<1	<1
Sidegate Lane	SL/35	30/07/2013	satisfactory	6.2									<1	<1	<1	<1	<5	<0.10			0.0001		261		<0.01	<1	48		<0.02	<0.01	<0.03	209	<1	<5	<1	<1			<0.02	<0.01	<0.01	0.007					<1	<1
Sidegate Lane	SL/35	09/08/2013	satisfactory	4.6									<1	<1	<1	<1	<5	<0.02			<0.0001		268		<0.01	<1	52		<0.02	<0.01	<0.03	223	<1	<5	<1	<1			<0.02	<0.01	<0.01	0.003					<1	<1
Sidegate Lane	SL/35	20/09/2013	satisfactory	<2.0									<1	<1	<1	<1	<5	<0.10			<0.0001		317		<0.01	<1	66		<0.02	<0.01	<0.03	320	<1	<5	<1	<1			<0.02	<0.01	<0.01	0.002					<1	<1

Site	Sample Point	Date	Monitoring Point Status SAMPLE	Cis-1-2-dichloroethene (µg/l)	Clopyralid (µg/l)	Copper, total (mg/l)	Cresols (mg/l)	Cresols ESG (mg/l)	Cyanide, total (mg/l)	Diazinon (µg/l)	Dibenz(a,h)anthracene (µg/l)	Dibenz(a,h)anthracene (PAH) (µg/l)	Dibenzo(a,h)anthracene ESG SVOC (mg/l)	Dibenzofuran (µg/l)	Dibenzofuran ESG SVOC (mg/l)	Dibromochloromethane (µg/l)	Dibromofluoromethane (%Recovery)	Dibromomethane (µg/l)	Dibutyl Tin, as Sn (ng/l)	Dicamba (µg/l)	Dichlobenil (µg/l)	Dichlorodifluoromethane (µg/l)	Dichloromethane (µg/l)	Dichlorprop (µg/l)	Dichlorvos (µg/l)	Dieldrin (µg/l)	Diethyl phthalate (µg/l)	Diethylphthalate ESG SVOC (mg/l)	Diflubezuron (µg/l)	Dimefuron (µg/l)	Dimethoate (µg/l)	Dimethyl phthalate (µg/l)	Dimethylphenols (mg/l)	Dimethylphthalate ESG SVOC (mg/l)	Di-n-Butyl phthalate (µg/l)	Di-n-butylphthalate ESG SVOC (mg/l)	Di-n-octylphthalate (µg/l)	Di-n-octylphthalate ESG SVOC (mg/l)	Diphenyl ether ESG SVOC (mg/l)	Diphenylamine (µg/l)	Dissolved Oxygen (mg/l)	Diuron (µg/l)	Duflubenzuron (µg/l)	Electrical Conductivity @20C	Electrical Conductivity @25C (µS/cm)	Endosulfan I (µg/l)
Sidegate Lane	SL/25	27/06/2012	satisfactory					<0.0005																									<0.0005								2.9			2290		
Sidegate Lane	SL/25	25/09/2012	satisfactory		<0.02	0.001		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002				2560		<0.01
Sidegate Lane	SL/25	13/12/2012	satisfactory					<0.0005																									<0.0005								2.9			1900		
Sidegate Lane	SL/25	12/04/2013	satisfactory		<0.02	<0.001		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<20	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002				2100		<0.01
Sidegate Lane	SL/25	14/06/2013	satisfactory					<0.0005																									<0.0005								5.4			2200		
Sidegate Lane	SL/25	20/09/2013	satisfactory		<0.04	0.001		<0.0005	<0.02	<0.01						<1		<1	<20	<0.04		<1		<0.04	<0.01	<0.01					<0.02		<0.0005											2440		<0.01
Sidegate Lane	SL/27	27/06/2012	satisfactory					<0.0005																									<0.0005								4			1600		
Sidegate Lane	SL/27	09/07/2012	satisfactory		<0.02	<0.001		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002				1890		<0.01
Sidegate Lane	SL/27	13/12/2012	satisfactory					0.0018																									<0.0005								4.4			1410		
Sidegate Lane	SL/27	12/04/2013	UTM																																											
Sidegate Lane	SL/27	14/06/2013	satisfactory					<0.0005																									<0.0005								4.5			2050		
Sidegate Lane	SL/27	20/09/2013	Insufficient																																											
Sidegate Lane	SL/30	26/04/2012	satisfactory																																						5.6				1640	
Sidegate Lane	SL/30	17/05/2012	satisfactory																																						6.4				2120	
Sidegate Lane	SL/30	27/06/2012	satisfactory					<0.0005																									<0.0005								6.5			1810		
Sidegate Lane	SL/30	09/07/2012	satisfactory																																						8.7			2030		
Sidegate Lane	SL/30	20/08/2012	satisfactory																																						5.8			2110		
Sidegate Lane	SL/30	25/09/2012	satisfactory		<0.02	<0.001		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002				1920		<0.01
Sidegate Lane	SL/30	18/10/2012	satisfactory																																						8.5			1920		
Sidegate Lane	SL/30	26/11/2012	satisfactory																																						9.8			1880		
Sidegate Lane	SL/30	13/12/2012	satisfactory					0.0021																									<0.0005								5.8			2040		
Sidegate Lane	SL/30	16/01/2013	satisfactory																																						5.6			2090		
Sidegate Lane	SL/30	26/02/2013	satisfactory																																						5.6			2100		
Sidegate Lane	SL/30	25/03/2013	satisfactory		<0.02	<0.001		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002				1880		<0.01
Sidegate Lane	SL/30	12/04/2013	satisfactory																																						7.5			2130		
Sidegate Lane	SL/30	30/05/2013	satisfactory																																						6.6			1860		
Sidegate Lane	SL/30	14/06/2013	satisfactory					<0.0005																									<0.0005								5.4			2070		
Sidegate Lane	SL/30	30/07/2013	satisfactory																																						6.7			2050		
Sidegate Lane	SL/30	09/08/2013	satisfactory																																						5.5			2080		
Sidegate Lane	SL/30	20/09/2013	satisfactory		<0.02	<0.001		<0.0005	<0.02	<0.01						<1		<1	<20	<0.02		<1		<0.02	<0.01	<0.01					<0.02		<0.0005											2090		<0.01
Sidegate Lane	SL/35	26/04/2012	satisfactory	<2.0		0.051					<2.0			<2.0		<2.0	100.3	<2.0				<2.0	<2.0				<2.0					<2.0			<2.0		<2.0		<2.0	2.3				1660	
Sidegate Lane	SL/35	17/05/2012	satisfactory				<0.0005																										<0.0005												1910	
Sidegate Lane	SL/35	27/06/2012	satisfactory		<0.02	0.027		<0.0005	<0.02	<0.01		<0.010				<1		<1	<20	<0.02		<1		<0.02	<0.01	<0.01			<0.05	<0.05	<0.02		<0.0005							<0.05			1590		<0.01
Sidegate Lane	SL/35	09/07/2012	satisfactory		<0.02	0.024		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1		<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002		5.9			2910		<0.01
Sidegate Lane	SL/35	20/08/2012	satisfactory		<0.02	0.027		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1		<0.02		<1	<5	<0.02	<0.01	<0.01		<0.005		< 0.50	<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002		3.4	< 0.50	< 0.50	3350		<0.01
Sidegate Lane	SL/35	25/09/2012	satisfactory		<0.02	0.022		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002					6380		<0.01
Sidegate Lane	SL/35	18/10/2012	satisfactory		<0.02	0.025		<0.0005	<0.02	<0.01		<0.010				<1		<1	<10	<0.02		<1		<0.02	<0.01	<0.01					<0.02		<0.0005											5510		<0.01
Sidegate Lane	SL/35	26/11/2012	satisfactory		<0.02	0.015		<0.0005	<0.02	<0.01			<0.002		<0.005	<1		<1	<50	<0.02		<1		<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002					3760		<0.01
Sidegate Lane	SL/35	13/12/2012	satisfactory		<0.03	0.021		0.0023	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.03		<1		<0.03	<0.01	<0.01		<0.005	<0.20	<0.20	<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002			<0.20		2840		<0.01
Sidegate Lane	SL/35	16/01/2013	satisfactory		<0.02	0.01		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1		<0.02	<0.01	<0.01		<0.005	< 0.05	< 0.05	<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002			< 0.05		2580		<0.01
Sidegate Lane	SL/35	26/02/2013	satisfactory		<0.02	0.016		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1		<0.02	<0.01	<0.01		<0.005			<0.02		0.0019	<0.005		<0.005		<0.002	<0.002					1690		<0.01
Sidegate Lane	SL/35	25/03/2013	satisfactory		<0.02	0.005		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<10	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002					1590		<0.01
Sidegate Lane	SL/35	12/04/2013	satisfactory		<0.02	0.01		<0.0005	<0.02	<0.01		<0.010	<0.002		<0.005	<1		<1	<20	<0.02	<0.02	<1	<5	<0.02	<0.01	<0.01		<0.005			<0.02		<0.0005	<0.005		<0.005		<0.002	<0.002					1660		<0.01
Sidegate Lane	SL/35	30/05/2013	satisfactory		<0.10	0.028		<0.0005	<0.02	<0.02		<0.020				<1		<1	<20	<0.10	<0.04	<1	<5	<0.10	<0.02	<0.02			<1.00	<0.20	<0.04		<0.0005							<0.20			1110		<0.02
Sidegate Lane	SL/35	14/06/2013	satisfactory		<0.04	0.008		<0.0005	<0.02	<0.20		<0.010				<1		<1	<20	<0.04		<1		<0.04	<0.20	<0.20					<0.40		<0.0005											2260		<0.20
Sidegate Lane	SL/35	30/07/2013	satisfactory		<0.10	0.022		<0.0005	<0.02	<0.01						<1		<1	<20	<0.10		<1		<0.10	<0.01	<0.01					<0.02		<0.0005											1960		<0.01
Sidegate Lane	SL/35	09/08/2013	satisfactory		<0.02	0.015		<0.0005	<0.02	<0.01						<1		<1	<20	<0.02		<1		<0.02	<0.01	<0.01					<0.02		<0.0005											1940		<0.01
Sidegate Lane	SL/35	20/09/2013	satisfactory		<0.10	0.017		<0.0005	<0.02	<0.01						<1		<1	<20	<0.10		<1		<0.10	<0.01	<0.01					<0.02		<0.0005											2290		<0.01

Site	Sample Point	Date	Monitoring Point Status SAMPLE	Endosulfan II (µg/l)	Endosulphan Sulphate (µg/l)	Endrin (µg/l)	Endrin Ketone (µg/l)	Ethion (µg/l)	Ethyl Benzene (µg/l)	Ethyl Benzene (BTEX) (µg/l)	Ethyl Benzene (VOC) (µg/l)	Etrimphos (µg/l)	Fenitrothion (µg/l)	Fenthion (µg/l)	Fluoranthene (µg/l)	Fluoranthene (PAH) (µg/l)	Fluoranthene ESG SVOC (mg/l)	Fluorene (µg/l)	Fluorene (PAH) (µg/l)	Fluorene ESG SVOC (mg/l)	Fluroxypyr (µg/l)	HCH-alpha (µg/l)	HCH-beta (µg/l)	HCH-delta (µg/l)	HCH-gamma (µg/l)	Heptachlor (µg/l)	Heptachlor Epoxide (µg/l)	Heptanoic Acid (mg/l)	Hexachlorobenzene (µg/l)	Hexachlorobenzene ESG SVOC (mg/l)	Hexachlorobutadiene (VOC) (µg/l)	Hexachlorobutadiene ESG SVOC (mg/l)	Hexachlorocyclopentadiene ESG SVOC (mg/l)	Hexachloroethane (µg/l)	Hexachloroethane ESG SVOC (mg/l)	Hexadecanoic acid (mg/l)	Hexadecanoic acid, 1,1-dimethylethyl ester (mg/l)	Indeno 1,2,3-cd pyrene (µg/l)	Indeno 1,2,3-cd pyrene (PAH) (µg/l)	Indeno(1,2,3-cd)pyrene ESG SVOC (mg/l)	Ioxynil (µg/l)	Iron, filtered (mg/l)	Iron, total (mg/l)	Iso-butyric acid (mg/l)	Iso-caproic acid (mg/l)	Isodrin (µg/l)
Sidegate Lane	SL/25	27/06/2012	satisfactory																																											
Sidegate Lane	SL/25	25/09/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	15	<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	0.14		14	16	<0.02
Sidegate Lane	SL/25	13/12/2012	satisfactory																																											
Sidegate Lane	SL/25	12/04/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01		<5	<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	0.09				<0.02
Sidegate Lane	SL/25	14/06/2013	satisfactory																																											
Sidegate Lane	SL/25	20/09/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02							<0.04	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02		<5									<0.04	<0.01				<0.02
Sidegate Lane	SL/27	27/06/2012	satisfactory																																										
Sidegate Lane	SL/27	09/07/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	12	<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	0.25		10	14	<0.02
Sidegate Lane	SL/27	13/12/2012	satisfactory																																										
Sidegate Lane	SL/27	12/04/2013	UTM																																										
Sidegate Lane	SL/27	14/06/2013	satisfactory																																										
Sidegate Lane	SL/27	20/09/2013	Insufficient																																										
Sidegate Lane	SL/30	26/04/2012	satisfactory																																										
Sidegate Lane	SL/30	17/05/2012	satisfactory																																										
Sidegate Lane	SL/30	27/06/2012	satisfactory																																										
Sidegate Lane	SL/30	09/07/2012	satisfactory																																										
Sidegate Lane	SL/30	20/08/2012	satisfactory																																										
Sidegate Lane	SL/30	25/09/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		0.014	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	< 10.0	<0.02	<0.005	<5	<0.005	<0.005		<0.005		0.011		0.011	<0.002	<0.02	0.44		< 10.0	10	<0.02
Sidegate Lane	SL/30	18/10/2012	satisfactory																																										
Sidegate Lane	SL/30	26/11/2012	satisfactory																																										
Sidegate Lane	SL/30	13/12/2012	satisfactory																																										
Sidegate Lane	SL/30	16/01/2013	satisfactory																																										
Sidegate Lane	SL/30	26/02/2013	satisfactory																																										
Sidegate Lane	SL/30	25/03/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		0.038	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02	<0.005	<5	<0.005	<0.005		<0.005				0.024	<0.002	<0.02	<0.01				<0.02
Sidegate Lane	SL/30	12/04/2013	satisfactory																																										
Sidegate Lane	SL/30	30/05/2013	satisfactory																																										
Sidegate Lane	SL/30	14/06/2013	satisfactory																																										
Sidegate Lane	SL/30	30/07/2013	satisfactory																																										
Sidegate Lane	SL/30	09/08/2013	satisfactory																																										
Sidegate Lane	SL/30	20/09/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02							<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02		<5									<0.02	<0.01				<0.02
Sidegate Lane	SL/35	26/04/2012	satisfactory						<2.0						<2.0			<2.0											<2.0				<2.0				<2.0						<0.23			
Sidegate Lane	SL/35	17/05/2012	satisfactory																																										
Sidegate Lane	SL/35	27/06/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010			<0.010		<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	<10	<0.02		<5								<0.010		<0.02	0.32		<10	<10	<0.02
Sidegate Lane	SL/35	09/07/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	<10.0	<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02			<10.0	<10.0	<0.02
Sidegate Lane	SL/35	20/08/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	< 10.0	<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	0.38		< 10.0	< 10.0	<0.02
Sidegate Lane	SL/35	25/09/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	10	<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	0.41		< 10.0	12	<0.02
Sidegate Lane	SL/35	18/10/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010			<0.010		<0.02	<0.10	<0.02		<0.02	<0.01	<0.02		<0.02		<5								<0.010		<0.02	0.32				<0.02
Sidegate Lane	SL/35	26/11/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02			<0.002			<0.002	<0.02	<0.10	<0.02		<0.02	<0.01	<0.02	< 10.0	<0.02	<0.005	<5	<0.005	<0.005		<0.005					<0.002	<0.02	1.13		< 10.0	< 10.0	<0.02
Sidegate Lane	SL/35	13/12/2012	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.03	<0.10	<0.02		<0.02	<0.01	<0.02	<10.0	<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.03	0.08		<10.0	<10.0	<0.02
Sidegate Lane	SL/35	16/01/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02	< 10.0	<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	0.03		< 10.0	< 10.0	<0.02
Sidegate Lane	SL/35	26/02/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02	<0.005	<5	<0.005	<0.005		<0.005	0.812			<0.010	<0.002	<0.02	0.09				<0.02
Sidegate Lane	SL/35	25/03/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	<0.01				<0.02
Sidegate Lane	SL/35	12/04/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01		<5	<1	<0.01	<0.02	<0.02		<0.010	<0.002		<0.010	<0.002	<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02	<0.005	<5	<0.005	<0.005		<0.005				<0.010	<0.002	<0.02	0.03				<0.02
Sidegate Lane	SL/35	30/05/2013	satisfactory	<0.02	<0.02	<0.02	<0.04	<0.02		<5	<1	<0.02	<0.04	<0.04		<0.020			<0.020		<0.10	<0.20	<0.04	<0.02	<0.04	<0.02	<0.04		<0.04		<5								0.021		<0.10	0.03				<0.04
Sidegate Lane	SL/35	14/06/2013	satisfactory	<0.20	<0.20	<0.20	<0.40	<0.20			<1	<0.20	<0.40	<0.40		<0.010			<0.010		<0.04	<2.00	<0.40	<0.20	<0.40	<0.20	<0.40		<0.40		<5								<0.010		<0.04	3.14				<0.40
Sidegate Lane	SL/35	30/07/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02							<0.10	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02		<5										<0.10	0.52				<0.02
Sidegate Lane	SL/35	09/08/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02							<0.02	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02		<5										<0.02	0.31				<0.02
Sidegate Lane	SL/35	20/09/2013	satisfactory	<0.01	<0.01	<0.01	<0.02	<0.01			<1	<0.01	<0.02	<0.02							<0.10	<0.10	<0.02	<0.01	<0.02	<0.01	<0.02		<0.02		<5										<0.10	<0.01				<0.02

Site	Sample Point	Date	Monitoring Point Status SAMPLE	Isophorone (µg/l)	Isophorone ESG SVOC (mg/l)	Iso-Propylbenzene (µg/l)	Isoproturon (µg/l)	Iso-valeric acid (mg/l)	Lead, total (mg/l)	Lindane-delta (µg/l)	Linuron (µg/l)	m,p-xylene (µg/l)	m,p-Xylene (VOC) (µg/l)	M/P-Methylphenol (low level) (µg/l)	Magnesium, filtered (mg/l)	Magnesium, total (mg/l)	Malathion (µg/l)	Manganese, filtered (mg/l)	Manganese, total (mg/l)	MCPA (µg/l)	MCPB (µg/l)	Mecoprop (µg/l)	Mercury, filtered (mg/l)	Mercury, total (mg/l)	Methabenzthiazuron (µg/l)	Methacriphos (µg/l)	Methoxychlor (µg/l)	Methyl Tert Butyl Ether (µg/l)	Metoxuron (µg/l)	Mevinphos (µg/l)	Monolinuron (µg/l)	Monuron (µg/l)	Naphthalene (µg/l)	Naphthalene (PAH) (µg/l)	Naphthalene (VOC) (µg/l)	Naphthalene ESG SVOC (mg/l)	n-Butylbenzene (µg/l)	n-Butyric acid (mg/l)	n-Caproic acid (mg/l)	Nickel, filtered (mg/l)	Nickel, total (mg/l)	Nitrobenzene (µg/l)	Nitrobenzene ESG SVOC (mg/l)	Nitrobenzene-d5 (%Recovery)	Nitrogen, Total Oxidised as N (mg/l)	N-nitrosodi-n-propylamine (µg/l)	N-Nitroso-di-n-propylamine ESG SVOC (mg/l)
Sidegate Lane	SL/25	27/06/2012	satisfactory																																											
Sidegate Lane	SL/25	25/09/2012	satisfactory		<0.005	<1	0.06	19	<0.001	<0.01			<2		53		<0.02	10.01		<0.02	<0.02	0.05	<0.0001			<0.01	<0.01	<1		<0.02				<0.02	<5	<0.002	<1	19	16	0.053			<0.005				<0.005
Sidegate Lane	SL/25	13/12/2012	satisfactory																																											
Sidegate Lane	SL/25	12/04/2013	satisfactory		<0.005	<1			<0.001				<1		70		<0.02	20.51		<0.02	<0.02	0.55	<0.0001			<0.01	<0.01			<0.02				0.022	<5	<0.002	<1			0.054			<0.005				<0.005
Sidegate Lane	SL/25	14/06/2013	satisfactory																																											
Sidegate Lane	SL/25	20/09/2013	satisfactory			<1			<0.001				<1		63		<0.02	11.41			<0.04	2.02	<0.0001			<0.01	<0.01			<0.02				<0.02	<5		<1			0.056							
Sidegate Lane	SL/27	27/06/2012	satisfactory																																											
Sidegate Lane	SL/27	09/07/2012	satisfactory		<0.005	<1	0.05	15	<0.001	<0.01			<2		40		<0.02	1.497		<0.02	<0.02	0.08	<0.0001			<0.01	<0.01	<1		<0.02				<0.02	<5	<0.002	<1	16	14	0.016			<0.005				<0.005
Sidegate Lane	SL/27	13/12/2012	satisfactory																																											
Sidegate Lane	SL/27	12/04/2013	UTM																																											
Sidegate Lane	SL/27	14/06/2013	satisfactory																																											
Sidegate Lane	SL/27	20/09/2013	Insufficient																																											
Sidegate Lane	SL/30	26/04/2012	satisfactory																																											
Sidegate Lane	SL/30	17/05/2012	satisfactory																																											
Sidegate Lane	SL/30	27/06/2012	satisfactory																																											
Sidegate Lane	SL/30	09/07/2012	satisfactory																																											
Sidegate Lane	SL/30	20/08/2012	satisfactory																																											
Sidegate Lane	SL/30	25/09/2012	satisfactory		<0.005	<1	<0.05	11	<0.001	<0.01			<2		16		<0.02	0.024		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01	<1		<0.02				<0.02	<5	<0.002	<1	11	11	0.004			<0.005				<0.005
Sidegate Lane	SL/30	18/10/2012	satisfactory																																											
Sidegate Lane	SL/30	26/11/2012	satisfactory																																											
Sidegate Lane	SL/30	13/12/2012	satisfactory																																											
Sidegate Lane	SL/30	16/01/2013	satisfactory																																											
Sidegate Lane	SL/30	26/02/2013	satisfactory																																											
Sidegate Lane	SL/30	25/03/2013	satisfactory		<0.005	<1	<0.20		<0.001				<1		21		<0.02	<0.002		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01	<1		<0.02				<0.02	<5	<0.002	<1			0.003			<0.005				<0.005
Sidegate Lane	SL/30	12/04/2013	satisfactory																																											
Sidegate Lane	SL/30	30/05/2013	satisfactory																																											
Sidegate Lane	SL/30	14/06/2013	satisfactory																																											
Sidegate Lane	SL/30	30/07/2013	satisfactory																																											
Sidegate Lane	SL/30	09/08/2013	satisfactory																																											
Sidegate Lane	SL/30	20/09/2013	satisfactory			<1			<0.001				<1		23		<0.02	0.008			<0.02	<0.02	<0.0001			<0.01	<0.01			<0.02				<0.02	<5		<1			0.002							
Sidegate Lane	SL/35	26/04/2012	satisfactory	<2.0		<2.0			<0.006			<2.0		1990		30			0.19			<0.04		<0.0001				<2.0					<2.0				<2.0				0.017	<2.0		86.4	1.6	<2.0	
Sidegate Lane	SL/35	17/05/2012	satisfactory						<0.001							36			0.14			<0.02										<0.026														
Sidegate Lane	SL/35	27/06/2012	satisfactory			<1	<0.05	<10	0.001	<0.01	<0.05		<1		32		<0.02	0.028		<0.02	<0.02	<0.02	<0.0001		<0.05	<0.01	<0.01	<1	<0.05	<0.02	<0.05	<0.05		0.021	<5		<1	<10	<10		0.023							
Sidegate Lane	SL/35	09/07/2012	satisfactory		<0.005	<1		<10.0	0.001	<0.01			<1		43		<0.02	0.212		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01	<1		<0.02				<0.02	<5	<0.002	<1	<10.0	<10.0		0.027		<0.005				<0.005
Sidegate Lane	SL/35	20/08/2012	satisfactory		<0.005	<1	< 0.50	< 10.0	<0.001	<0.01	< 0.50		<1		42		<0.02	0.765		<0.02	<0.02	<0.02	<0.0001		< 0.50	<0.01	<0.01		< 0.50	<0.02	< 0.50	< 0.50		<0.02	<5	<0.002	<1	< 10.0	< 10.0		0.04		<0.005				<0.005
Sidegate Lane	SL/35	25/09/2012	satisfactory		<0.005	<1	<0.05	12	0.001	<0.01			<2		60		<0.02	0.349		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01	<1		<0.02				<0.02	<5	<0.002	<1	13	12	0.026			<0.005				<0.005
Sidegate Lane	SL/35	18/10/2012	satisfactory			<1			<0.001	<0.01			<1		34		<0.02	0.11		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01	<1		<0.02				<0.020	<5		<1			0.017							
Sidegate Lane	SL/35	26/11/2012	satisfactory		<0.005	<1		< 10.0	<0.001	<0.01			<1		45		<0.02	0.365		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01	<5		<0.02					<5	<0.002	<1	< 10.0	< 10.0	0.024			<0.005				<0.005
Sidegate Lane	SL/35	13/12/2012	satisfactory		<0.005	<1	<0.10	<10.0	<0.001	<0.01	<0.20		<1		49		<0.02	0.169		<0.03	<0.03	<0.03	<0.0001		<0.20	<0.01	<0.01	<1	<0.20	<0.02	<0.10	<0.20		<0.020	<5	<0.002	<1	<10.0	<10.0	0.028			<0.005				<0.005
Sidegate Lane	SL/35	16/01/2013	satisfactory		<0.005	<1	< 0.05	< 10.0	<0.001		< 0.05		<1		50		<0.02	0.536		<0.02	<0.02	<0.02	<0.0001		< 0.05	<0.01	<0.01		< 0.05	<0.02	< 0.05	< 0.05		<0.020	<5	<0.002	<1	< 10.0	< 10.0	0.027			<0.005				<0.005
Sidegate Lane	SL/35	26/02/2013	satisfactory		<0.005	<1			<0.001				<1		37		<0.02	0.149		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01			<0.02				<0.020	<5	<0.002	<1			0.024			<0.005				<0.005
Sidegate Lane	SL/35	25/03/2013	satisfactory		<0.005	<1	<0.20		<0.001				<1		42		<0.02	0.18		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01	<1		<0.02				0.023	<5	<0.002	<1			0.012			<0.005				<0.005
Sidegate Lane	SL/35	12/04/2013	satisfactory		<0.005	<1			<0.001				<1		46		<0.02	0.654		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01			<0.02				<0.02	<5	<0.002	<1			0.03			<0.005				<0.005
Sidegate Lane	SL/35	30/05/2013	satisfactory			<1	<0.10		<0.001		<0.20		<1		32		<0.04	0.35		<0.10	<0.10	<0.10	<0.0001		<0.05	<0.02	<0.02		<0.10	<0.04	<0.20	<0.20		<0.02	<5		<1			0.032							
Sidegate Lane	SL/35	14/06/2013	satisfactory			<1			<0.001				<1		38		<0.40	0.758		<0.04	<0.04	<0.04	<0.0001			<0.20	<0.20	<1		<0.40				<0.020	<5		<1			0.031							
Sidegate Lane	SL/35	30/07/2013	satisfactory			<1			<0.001				<1		42		<0.02	0.719		<0.10	<0.10	<0.10	<0.0001			<0.01	<0.01			<0.02				<0.02	<5		<1			0.035							
Sidegate Lane	SL/35	09/08/2013	satisfactory			<1			<0.001				<1		39		<0.02	0.598		<0.02	<0.02	<0.02	<0.0001			<0.01	<0.01			<0.02				<0.02	<5		<1			0.029							
Sidegate Lane	SL/35	20/09/2013	satisfactory			<1			<0.001				<1		46		<0.02	0.318			<0.10	<0.10	<0.0001			<0.01	<0.01			<0.02				<0.02	<5		<1			0.022							

Site	Sample Point	Date	Monitoring Point Status SAMPLE	N-Nitrosodiphenylamine ESG SVOC (mg/l)	None Detected (SVOC) (mg/l)	None Detected VOC	N-Propylbenzene (µg/l)	N-Valeric Acid (mg/l)	o,p - DDD (µg/l)	o,p - DDE (µg/l)	o,p - DDT (µg/l)	Octadecanoic acid, methyl ester [SVOCSW] (mg/l)	O-Methylphenol (low level) (µg/l)	Organotin (µg/l)	o-xylene (µg/l)	o-Xylene (VOC) (µg/l)	p,p-DDD (µg/l)	p,p-DDE (µg/l)	p,p-DDT (µg/l)	PAH (Total) (µg/l)	Parathion (µg/l)	Parathion-methyl (µg/l)	PCB-101 (µg/l)	PCB-118 (µg/l)	PCB-138 (µg/l)	PCB-153 (µg/l)	PCB-180 (µg/l)	PCB-28 (µg/l)	PCB-52 (µg/l)	Pencycuron (µg/l)	Pendimethalin (µg/l)	Pentachlorobenzene (µg/l)	Pentachlorophenol (µg/l)	Pentachlorophenol ESG SVOC (mg/l)	Permethrin-cis (µg/l)	Permethrin-trans (µg/l)	pH (pH units)	Phenanthrene (µg/l)	Phenanthrene (PAH) (µg/l)	Phenanthrene ESG SVOC (mg/l)	Phenol (mg/l)	Phenol ESG SVOC (mg/l)	Phenol Index (mg/l)	Phenol-d6 (%Recovery)	Phenols (µg/l)	Phenols (Low Level) (µg/l)	Phenols (monohydric) (mg/l)
Sidegate Lane	SL/25	27/06/2012	satisfactory																																		7.3				<0.0005							
Sidegate Lane	SL/25	25/09/2012	satisfactory	<0.005	<0.05			20	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.1		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/25	13/12/2012	satisfactory																																		7.4				0.0019							
Sidegate Lane	SL/25	12/04/2013	satisfactory	<0.005	< 0.05	<5			<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.172	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.6		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/25	14/06/2013	satisfactory																																		7.2				<0.0005							
Sidegate Lane	SL/25	20/09/2013	satisfactory		<0.05				<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02		<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.04		<0.01	<0.01	6.9				<0.0005							
Sidegate Lane	SL/27	27/06/2012	satisfactory																																		7.5				<0.0005							
Sidegate Lane	SL/27	09/07/2012	satisfactory	<0.005	<0.05			16	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.1		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/27	13/12/2012	satisfactory																																		7.5				0.0018							
Sidegate Lane	SL/27	12/04/2013	UTM																																													
Sidegate Lane	SL/27	14/06/2013	satisfactory																																		6.9				<0.0005							
Sidegate Lane	SL/27	20/09/2013	Insufficient																																												
Sidegate Lane	SL/30	26/04/2012	satisfactory																																		7.2											
Sidegate Lane	SL/30	17/05/2012	satisfactory																																		7.4											
Sidegate Lane	SL/30	27/06/2012	satisfactory																																		7.6				<0.0005							
Sidegate Lane	SL/30	09/07/2012	satisfactory																																		7.6											
Sidegate Lane	SL/30	20/08/2012	satisfactory																																		7.6											
Sidegate Lane	SL/30	25/09/2012	satisfactory	<0.005				12	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.194	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.3		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/30	18/10/2012	satisfactory																																		7.3											
Sidegate Lane	SL/30	26/11/2012	satisfactory																																		7.6											
Sidegate Lane	SL/30	13/12/2012	satisfactory																																		7.7				0.0008							
Sidegate Lane	SL/30	16/01/2013	satisfactory																																		7.5											
Sidegate Lane	SL/30	26/02/2013	satisfactory																																		7.7											
Sidegate Lane	SL/30	25/03/2013	satisfactory	<0.005	<0.05	<5			<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.353	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.7		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/30	12/04/2013	satisfactory																																		7.8											
Sidegate Lane	SL/30	30/05/2013	satisfactory																																		7.3											
Sidegate Lane	SL/30	14/06/2013	satisfactory																																		7.4				<0.0005							
Sidegate Lane	SL/30	30/07/2013	satisfactory																																		7											
Sidegate Lane	SL/30	09/08/2013	satisfactory																																		7.2											
Sidegate Lane	SL/30	20/09/2013	satisfactory		<0.05				<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02		<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02		<0.01	<0.01	7.3				<0.0005							
Sidegate Lane	SL/35	26/04/2012	satisfactory				<2.0						4.19	<0.10	<2.0					<0.04													<2.0				7.2	<2.0					76	<2.0	211	<0.15
Sidegate Lane	SL/35	17/05/2012	satisfactory																																		7.5				<0.0005							
Sidegate Lane	SL/35	27/06/2012	satisfactory		<0.05			<10	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.171	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.02		<0.01	<0.01	7.7		<0.010		<0.0005		<0.05				
Sidegate Lane	SL/35	09/07/2012	satisfactory	<0.005	<0.05			<10.0	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.4		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	20/08/2012	satisfactory	<0.005	<0.05			< 10.0	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.50	<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.3		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	25/09/2012	satisfactory	<0.005	<0.05			14	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	6.9		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	18/10/2012	satisfactory		<0.05				<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02		<0.01	<0.01	7.3		<0.010		0.0009		<0.05				
Sidegate Lane	SL/35	26/11/2012	satisfactory	<0.005	<0.05			< 10.0	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02		<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.5			<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	13/12/2012	satisfactory	<0.005	<0.05			<10.0	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.171	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.02	<0.02	<0.03	<0.050	<0.01	<0.01	7.8		<0.010	<0.002	0.0008	<0.020	<0.05				
Sidegate Lane	SL/35	16/01/2013	satisfactory	<0.005	<0.05			< 10.0	<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.4		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	26/02/2013	satisfactory	<0.005	<0.05				<0.01	<0.02	<0.01	0.22				<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.8		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	25/03/2013	satisfactory	<0.005	<0.05	<5			<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.173	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.7		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	12/04/2013	satisfactory	<0.005		<5			<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02	<0.170	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02	<0.050	<0.01	<0.01	7.6		<0.010	<0.002	<0.0005	<0.020	<0.05				
Sidegate Lane	SL/35	30/05/2013	satisfactory		<0.05	<5			<0.02	<0.04	<0.02					<1	<0.02	<0.02	<0.04	<0.347	<0.02	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.04	<0.04	<0.10		<0.02	<0.02	7.3		<0.020		<0.0005		<0.05				
Sidegate Lane	SL/35	14/06/2013	satisfactory		<0.05	<5			<0.20	<0.40	<0.20					<1	<0.20	<0.20	<0.40	<0.170	<0.20	<0.40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.40	<0.40	<0.04		<0.20	<0.20	7		<0.010		<0.0005		<0.05				
Sidegate Lane	SL/35	30/07/2013	satisfactory		<0.05	<5			<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02		<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.10		<0.01	<0.01	6.6				<0.0005							
Sidegate Lane	SL/35	09/08/2013	satisfactory		<0.05				<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02		<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.02		<0.01	<0.01	6.9				<0.0005							
Sidegate Lane	SL/35	20/09/2013	satisfactory		<0.05				<0.01	<0.02	<0.01					<1	<0.01	<0.01	<0.02		<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.02	<0.02	<0.10		<0.01	<0.01	7.1				<0.0005							

Appendix D

Stage 1 - 3 Hazardous Substances Risk Review

Introductory Commentary

A Stage 1 - 3 Risk Assessment has been carried out in accordance with guidance provided by the Environment Agency (2025) to identify the potential hazardous substances present at the Site.

The site will operate as a battery recycling facility with an annual throughput of 20,000 tonnes. As part of the battery recycling operation, lithium-ion batteries and lithium–ion battery materials will be stored and treated on site. Lithium-ion battery 'materials' include: lithium-ion battery scrap materials sourced from battery manufacturing and pre-shredded lithium-ion batteries from other permitted waste operations. The treatment operation will consist of battery discharge, dismantling, shredding, and subsequent separation and sorting of shredder outputs to send for further recovery. Pre-shredded lithium-ion batteries will be subject to separation and sorting only. Small volumes of other battery types are also accepted for transfer only, including Lead batteries, Ni-Cd batteries, mercury-containing batteries, alkaline batteries and fluorescent tubes.

Hazardous substances present have been identified as those most commonly present within the lithium batteries, other battery types (Lead batteries, Ni-Cd batteries, mercury-containing batteries, alkaline batteries) and fluorescent tubes. Lithium-ion batteries will be processed within the building on site and transferred away for recovery.

A high level overview of the process at the site is provided in **Error! Reference source not found.**. Lithium-ion batteries accepted at the site will be stored outside in dedicated ISO containers pending discharge. Lithium-ion batteries will be discharged in dedicated ISO container outside. Once discharged, lithium-ion batteries will be dismantled before being treated via shredding, sorting and separation within the site building. Output materials from the process will be stored in dedicated containers within the building until full. Once full, output material will be stored in the external yard in IBC containers or material will be stored in dedicated approved packaging in ISO containers located in the external yard. The process for dismantling and shredding lithium batteries takes place within the building, with temporary storage within the building being in bespoke containers. Therefore, all waste temporarily stored or processed within the building benefits from primary containment from bespoke container, and then secondary containment from the concrete base of the roofed building. Full details of the inventory of containers to be used by SUEZ is detailed in Appendix B of Document 1.2 "Operation and Emissions Management Plan" submitted as part of the application.

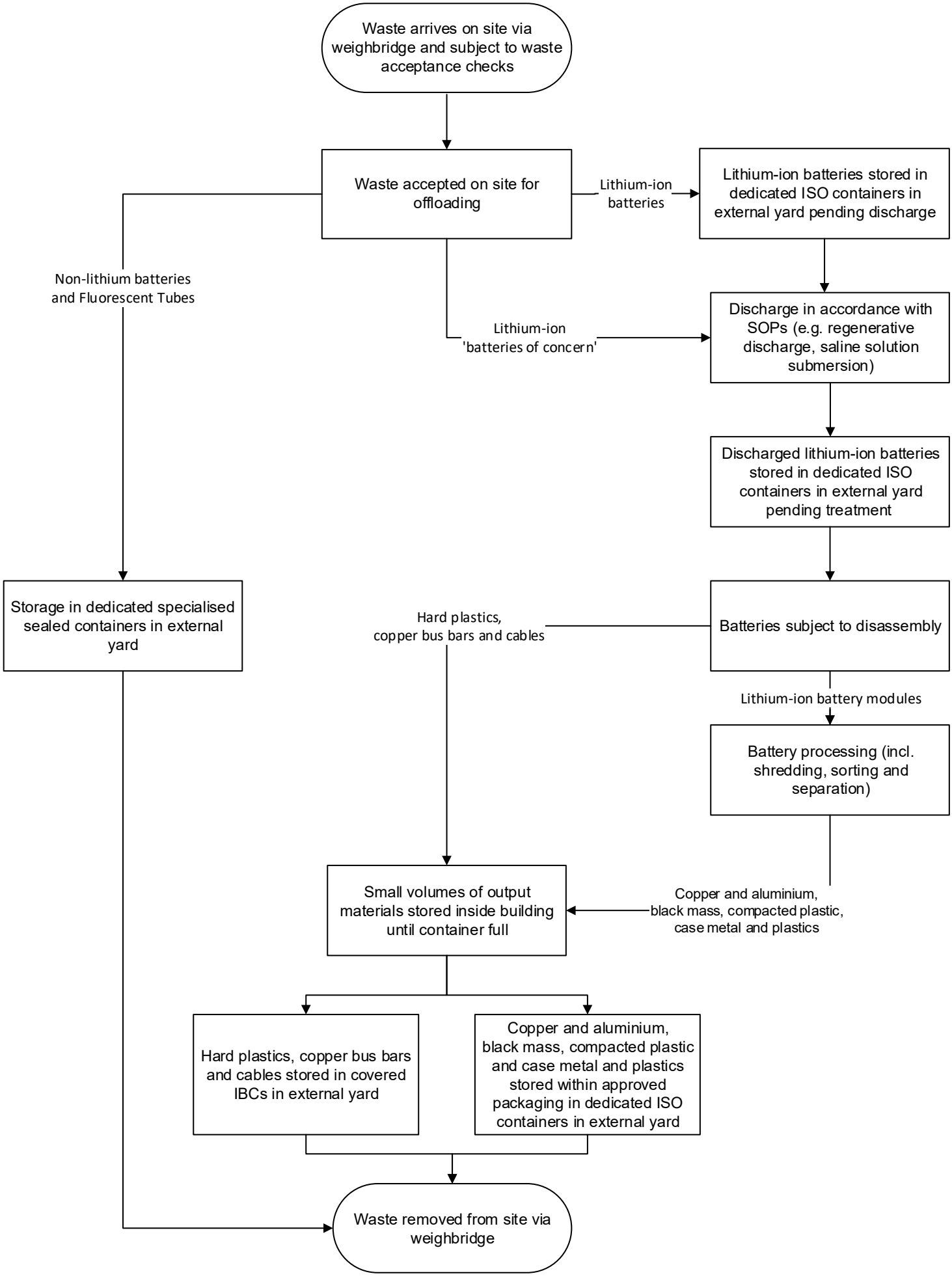
Where safe to handle batteries that cannot be discharged with regenerative discharge equipment will be quarantined before being sent to the electrochemical area for submersion in a salt solution. This is undertaken in covered IBCs stored on bunded pallets. This area is outside in the yard area and therefore able to interact with the environment, but is still within the hardstanding containment.

Batteries of other chemistries are stored outside in the yard area in secured battery containers.

It is noted that there is a surface water lagoon on-site, which has previously been used for drainage on the old Open Windrow Compositing Site and this will continue to be used for site drainage. This area is emptied via tanker where required for safe disposal. This area would also be used for collection and disposal of any fire-fighting water should a fire occur on Site.

With regards to the discharge of “batteries of concern” within saline fluid, this is performed outside in the yard area, on hardstanding near the lagoon within the permit boundary. Primary containment is performed by the container, with secondary containment by the bunded pallet, and tertiary containment by the drainage system into the surface water lagoon.

Figure 1: Process Flow



Stage 1 - 2 Assessment										
Trade name	**Hazardous Substance**	**Composition**	**Classification Labelling Packaging (CLP) Classification (EC No 1272/2008)**	**Physical State**	**Solubility**	**Toxicity**	**Mobility**	**Persistence**	**Potential to pollute soil and groundwater**	**Relevant Hazardous Substance**
NMC	Lithium Nickel Cobalt Aluminium Oxide	LiNi0.8Co0.15Al0.05O2	Health Hazards Skin sensitisation (Category 1), H317 Carcinogenicity (Category 2), H351	Solid (Powder)	No data available	No Data Available	No data available	Not Applicable	Yes	Yes
	Lithium Hexafluorophosphate	F6LiP	Health Hazards Acute toxicity, Oral (Category 3), H301 Skin corrosion (Sub-category 1A), H314 Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Bone, Teeth, H372	Solid (Powder)	No Data Available	High	No Data available	Not Applicable	Yes	Yes
	Lithium tetrafluoroborate	LiBF4	Health Hazards Acute toxicity, (Category 4) Aldrich-901695 H302: Harmful if swallowed. Skin corrosion, (Sub-category 1B) H314: Causes severe skin burns and eye damage. Serious eye damage, (Category 1) H318: Causes serious eye damage. Germ cell mutagenicity, (Category 2) H341: Suspected of causing genetic defects.	Solid (crystalline)	High ca.783 g/l at 20 °C	High	No Data Available	Not applicable	Yes	Yes

Stage 1 - 2 Assessment										
Trade name	**Hazardous Substance**	**Composition**	**Classification Labelling Packaging (CLP) Classification (EC No 1272/2008)**	**Physical State**	**Solubility**	**Toxicity**	**Mobility**	**Persistence**	**Potential to pollute soil and groundwater**	**Relevant Hazardous Substance**
	Ethylene Carbonate	C3H4O3	Health Hazards Acute toxicity, Oral (Category 4), H302 Eye irritation (Category 2), H319 Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373	Solid (Crystalline)	High ca.778 g/l at 20 °C Completely Soluble	High	No Data Available	Low – Readily biodegradable	Yes	Yes
	Dimethyl Carbonate	C3H6O3	Physical Hazard Flammable liquids (Category 2), H225	Liquid	Med 114.7 g/l at 20 °C Completely Soluble	Low	No Data Available	Low – Readily biodegradable	Yes	Yes
	Ethyl Methyl Carbonate	C4H8O3	Physical Hazard Flammable liquids (Category 2), H225	Liquid	Med 46.8 g/l at 20 °C	Low	No Data Available	Low – Readily biodegradable	Yes	Yes
	Propylene Carbonate	C4H6O3	Health Hazard Eye irritation (Category 2), H319	Liquid	Med 175 g/l at 25 °C at 1,013 hPa - soluble	Low	No Data Available	Low – Readily biodegradable	Yes	Yes
	Mercury	Hg	Health Hazard Repr. 1B H360D*** Acute Toxicity 1, 2 H330 Stot RE1 H372** Aquatic Acute 1 H400	Solid or Liquid	Insoluble	High	Low - Readily retarded	High – not rapidly biodegradable	Yes	Yes

Stage 1 - 2 Assessment										
Trade name	**Hazardous Substance**	**Composition**	**Classification Labelling Packaging (CLP) Classification (EC No 1272/2008)**	**Physical State**	**Solubility**	**Toxicity**	**Mobility**	**Persistence**	**Potential to pollute soil and groundwater**	**Relevant Hazardous Substance**
			Aquatic Chronic 1 H410							
	Zinc Powder / Dust	Zn	Health Hazard Water react 1 H260 Pyr Sol 1 H250 Aquatic Acute 1 H400 Aquatic Chronic 1 H410	Solid	Insoluble	Moderate	Moderate	High – not rapidly biodegradable	Yes	Yes
	Cadmium compounds	Cd	Health Hazard Acute Toxicity 4, H332, H302, H312 Acute Aquatic 1 H410 Chronic 1	Solid	Insoluble	High	Low – readily retarded	High – not rapidly biodegradable	Yes	Yes
	Manganese dioxide	MnO2	Health Hazard Acute Toxicity, H332, H302	Solid	Insoluble	Low	Moderate	High – not rapidly biodegradable	Yes	Yes
	Potassium hydroxide	KOH	Health Hazard Skin corrosion (Category 1A), H302 H314 Eye Irritation (Category 2), H319	Solid	High 111g/100ml	High	Moderate	High – not rapidly biodegradable	Yes	Yes
	Nickel	Ni	Health Hazard Carcinogen 2 H351 STOT RE 1 H372**	Solid	Variable	Moderate	Moderate	Moderate - High	Yes	Yes

Stage 1 - 2 Assessment										
Trade name	**Hazardous Substance**	**Composition**	**Classification Labelling Packaging (CLP) Classification (EC No 1272/2008)**	**Physical State**	**Solubility**	**Toxicity**	**Mobility**	**Persistence**	**Potential to pollute soil and groundwater**	**Relevant Hazardous Substance**
			Skin Sensitivity 1 H317 Aquatic Cumulative 3 H412 Chronic 1							
	Lead	Pb	<u>Health Hazard</u> Repr. 1A H360D Acute Tox. 4 * H332 Acute Tox. 4 * H302 STOT RE 2 * H373 Aquatic Acute 1 H400 Aquatic H410 Chronic 1	Solid	Moderate	Low	Moderate	Moderate – High	Yes	Yes

Stage 3 – External Storage						
Relevant Hazardous Substance (RHS)	**Tank/Unit Number**	**Maximum capacity of tank/unit (tonnes)**	**Maximum amount stored at site (tonnes)**	**Maximum amount used annually (tonnes)**	**Details of existing pollution prevention measures**	**Is the RHS a pollution risk?**
N/A	Storage of output materials including Hard plastics, Copper bus bars, Cables/Wiring, Shredded case metals and plastics, Copper and Aluminium residues, Compacted plastics and black mass	See Note 1	See Note 1	See Note 1	<u>Primary Containment Measures</u> Storage in Covered IBC containers (Hard plastics, Copper bus bars, Cables/Wiring) Storage of materials within 1m^3 FIBCs (Shredded Case Metals and plastics) and UN approved packaging (Copper and Aluminium residues, Compacted plastics and black mass) within sealed 40ft ISO container preventing direct interaction between contained waste and external environment <u>Secondary Containment Measures</u>	No

Stage 3 – External Storage						
Relevant Hazardous Substance (RHS)	**Tank/Unit Number**	**Maximum capacity of tank/unit (tonnes)**	**Maximum amount stored at site (tonnes)**	**Maximum amount used annually (tonnes)**	**Details of existing pollution prevention measures**	**Is the RHS a pollution risk?**
					Impermeable surface with drainage to surface water lagoon. Additional drainage system directing surface water run-off from the external impermeable surface in the yard area in front of the site building to an interceptor (9000 litres) through gullies and drains. This runoff is collected in a Class 1 Full retention Interceptor and cellular attenuation tank before discharging to soakaway. The system is equipped with a penstock valve to allow any contamination to be contained in the event of an incident. <u>Environmental Management Systems: Inspections and Procedures</u> As per Section 3.1 of submission 1.2 Operations and Emissions Management Plan, daily visual inspections of containers will take place to identify leaks and spillages on site. Additionally, as per 1.4 Accident Prevention and Management Plan, the lagoon will be checked visually, daily for level of liquid content <u>Emergency Response Procedure</u> Procedures for accident response on identification of any leak or spillage is determined in the IMS Section – Emergency Preparedness and Response as outlined in Section 3.5 of 1.2 Operations and Emissions Management Plan	
N/A	Storage of Lithium-ion batteries in ISO containers	See Note 1	See Note 1	See Note 1	<u>Primary Containment Measures</u> Storage in ISO containers outside in the yard area preventing direct interaction between contained waste and external environment. <u>Secondary Containment Measures</u> Impermeable surface with drainage to surface water lagoon. Additional drainage system directing surface water run-off from the external impermeable surface in the yard area in front of the site building to an interceptor (9000 litres) through gullies and drains. This runoff is collected in a Class 1 Full retention Interceptor and cellular attenuation tank before	No

Stage 3 – External Storage						
Relevant Hazardous Substance (RHS)	**Tank/Unit Number**	**Maximum capacity of tank/unit (tonnes)**	**Maximum amount stored at site (tonnes)**	**Maximum amount used annually (tonnes)**	**Details of existing pollution prevention measures**	**Is the RHS a pollution risk?**
					discharging to soakaway. The system is equipped with a penstock valve to allow any contamination to be contained in the event of an incident. <u>Environmental Management Systems: Inspections and Procedures</u> As per Section 3.1 of submission 1.2 Operations and Emissions Management Plan, daily visual inspections of containers will take place to identify leaks and spillages on site. Additionally, as per 1.4 Accident Prevention and Management Plan, the lagoon will be checked visually, daily for level of liquid content <u>Emergency Response Procedure</u> Procedures for accident response on identification of any leak or spillage is determined in the IMS Section – Emergency Preparedness and Response as outlined in Section 3.5 of 1.2 Operations and Emissions Management Plan	
N/A	Storage of lithium batteries in electrochemical area for submersion in a salt solution. This is undertaken in covered IBCs stored on bunded pallets	See Note 1	See Note 1	See Note 1	<u>Primary Containment Measures</u> Covered IBCs preventing direct interaction between contained waste and external environment. <u>Secondary Containment Measures</u> IBCs stored on bunded pallets concrete area that prevents interaction with the subsurface, and can be drained as required. <u>Tertiary Containment Measures</u> Drainage from site is contained within the surface water lagoon and can be emptied by tanker for disposal offsite. <u>Environmental Management Systems: Inspections and Procedures</u> As per Section 3.1 of submission 1.2 Operations and Emissions Management Plan, daily visual inspections of containers will take place to identify leaks and spillages on site. Additionally, as per	No

Stage 3 – External Storage						
Relevant Hazardous Substance (RHS)	**Tank/Unit Number**	**Maximum capacity of tank/unit (tonnes)**	**Maximum amount stored at site (tonnes)**	**Maximum amount used annually (tonnes)**	**Details of existing pollution prevention measures**	**Is the RHS a pollution risk?**
					1.4 Accident Prevention and Management Plan, the lagoon will be checked visually, daily for level of liquid content <u>Emergency Response Procedure</u> Procedures for accident response on identification of any leak or spillage is determined in the IMS Section – Emergency Preparedness and Response as outlined in Section 3.5 of 1.2 Operations and Emissions Management Plan	
N/A	Storage of Non-lithium ion batteries	See Note 1	See Note 1	See Note 1	Primary Containment Measures Storage in secure battery containers preventing direct interaction between contained waste and external environment. Secondary Containment Measures Impermeable surface with drainage to surface water lagoon. Additional drainage system directing surface water run-off from the external impermeable surface in the yard area in front of the site building to an interceptor (9000 litres) through gullies and drains. This runoff is collected in a Class 1 Full retention Interceptor and cellular attenuation tank before discharging to soakaway. The system is equipped with a penstock valve to allow any contamination to be contained in the event of an incident. Environmental Management Systems: Inspections and Procedures As per Section 3.1 of submission 1.2 Operations and Emissions Management Plan, daily visual inspections of containers will take place to identify leaks and spillages on site. Additionally, as per 1.4 Accident Prevention and Management Plan, the lagoon will be checked visually, daily for level of liquid content Emergency Response Procedure	No

Stage 3 – External Storage						
Relevant Hazardous Substance (RHS)	**Tank/Unit Number**	**Maximum capacity of tank/unit (tonnes)**	**Maximum amount stored at site (tonnes)**	**Maximum amount used annually (tonnes)**	**Details of existing pollution prevention measures**	**Is the RHS a pollution risk?**
					Procedures for accident response on identification of any leak or spillage is determined in the IMS Section – Emergency Preparedness and Response as outlined in Section 3.5 of 1.2 Operations and Emissions Management Plan	

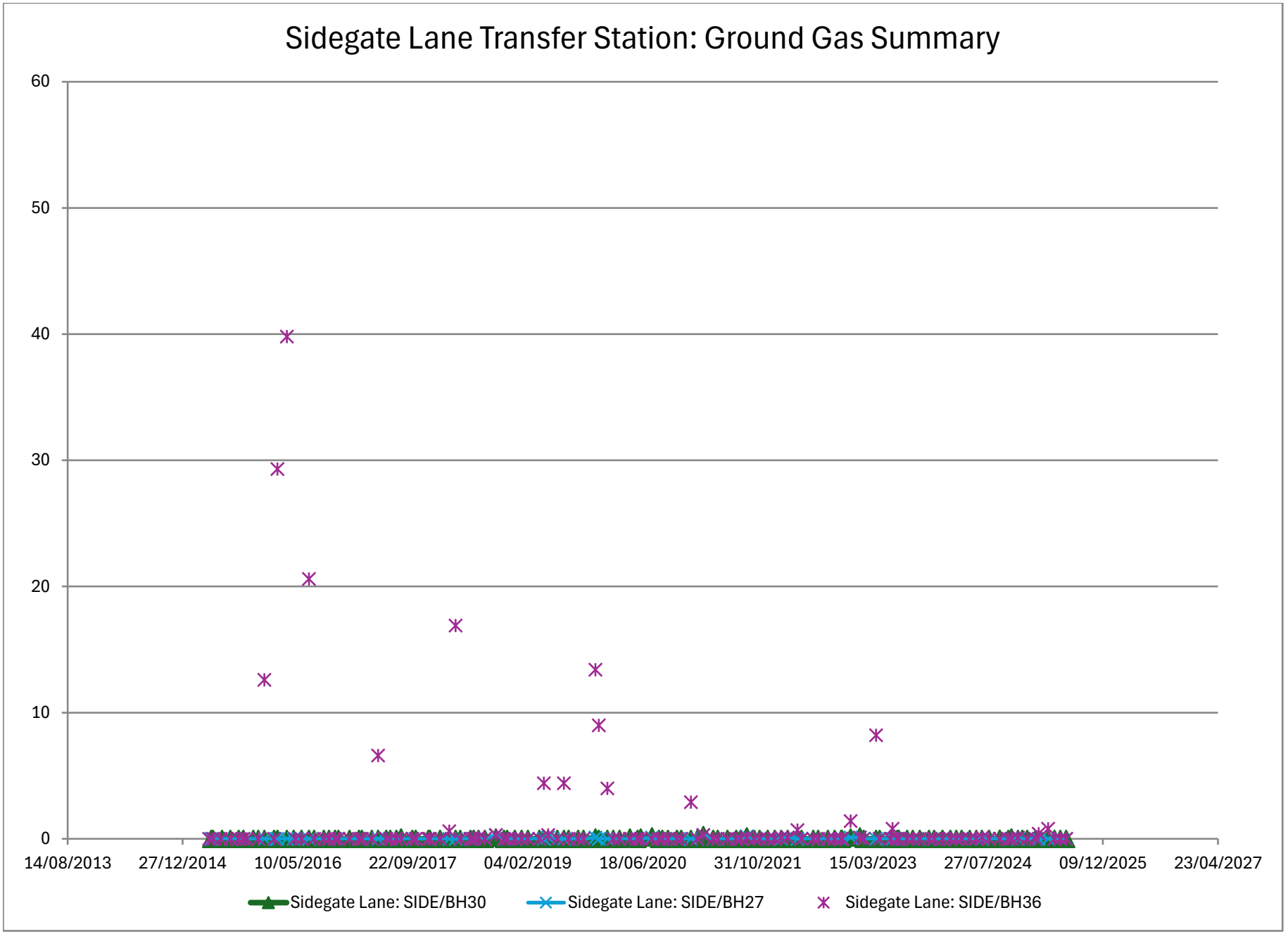
Note 1: Refer to Appendix B of Document 1.2 Operation and Emissions Management Plan submitted as part of the application.

Stage 3 – Internal Storage						
Relevant Hazardous Substance (RHS)	**Tank/Unit Number**	**Maximum capacity of tank/unit (tonnes)**	**Maximum amount stored at site (tonnes)**	**Maximum amount used annually (tonnes)**	**Details of existing pollution prevention measures**	**Is the RHS a pollution risk?**
N/A	Storage of output materials including Hard plastics, Copper bus bars, Cables/Wiring, Shredded case metal and plastics Copper and Aluminium residues, Compacted plastics and black mass	See Note 1	See Note 1	See Note 1	<u>Primary Containment Measures</u> Storage in IBC containers (Hard plastics, Copper bus bars, Cables/Wirings) Storage of materials within 1m^3 FIBCs (Shredded case metal and plastics) and UN approved packaging (Copper and Aluminium residues, Compacted plastics and black mass) container preventing direct interaction between contained waste and external environment <u>Secondary Containment Measures</u> Modern construction building with concrete impermeable hard standing preventing interaction with subsurface <u>Environmental Management Systems: Inspections and Procedures</u> As per Section 3.1 of submission 1.2 Operations and Emissions Management Plan, daily visual inspections of containers will take place to identify leaks and spillages on site. Additionally, as per 1.4 Accident Prevention and Management Plan, the lagoon will be checked visually, daily for level of liquid content <u>Emergency Response Procedure</u> Procedures for accident response on identification of any leak or spillage is determined in the IMS Section – Emergency Preparedness and Response as outlined in Section 3.5 of 1.2 Operations and Emissions Management Plan	No

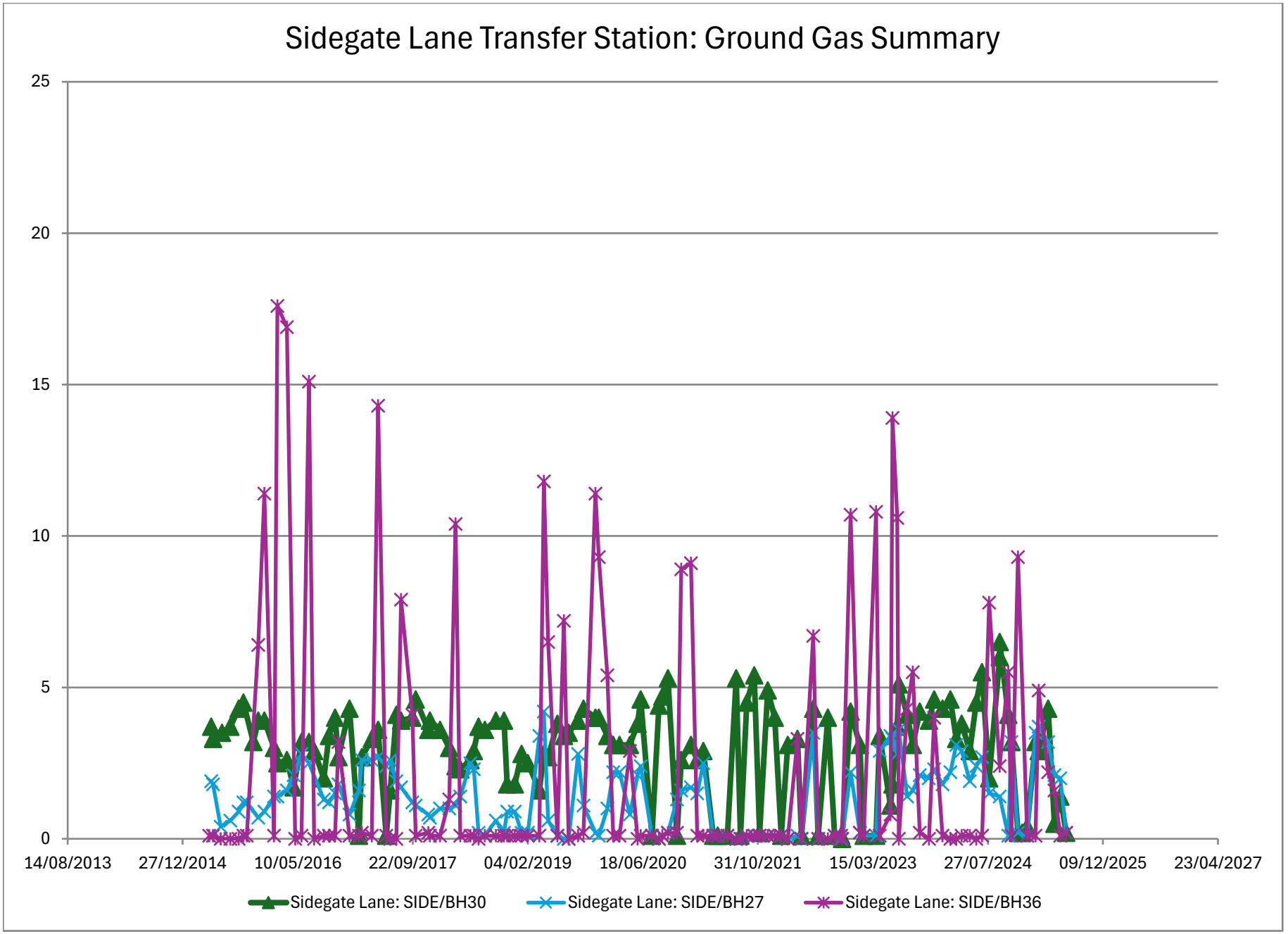
Note 1: Refer to Appendix B of Document 1.2 Operation and Emissions Management Plan submitted as part of the application.

Appendix E

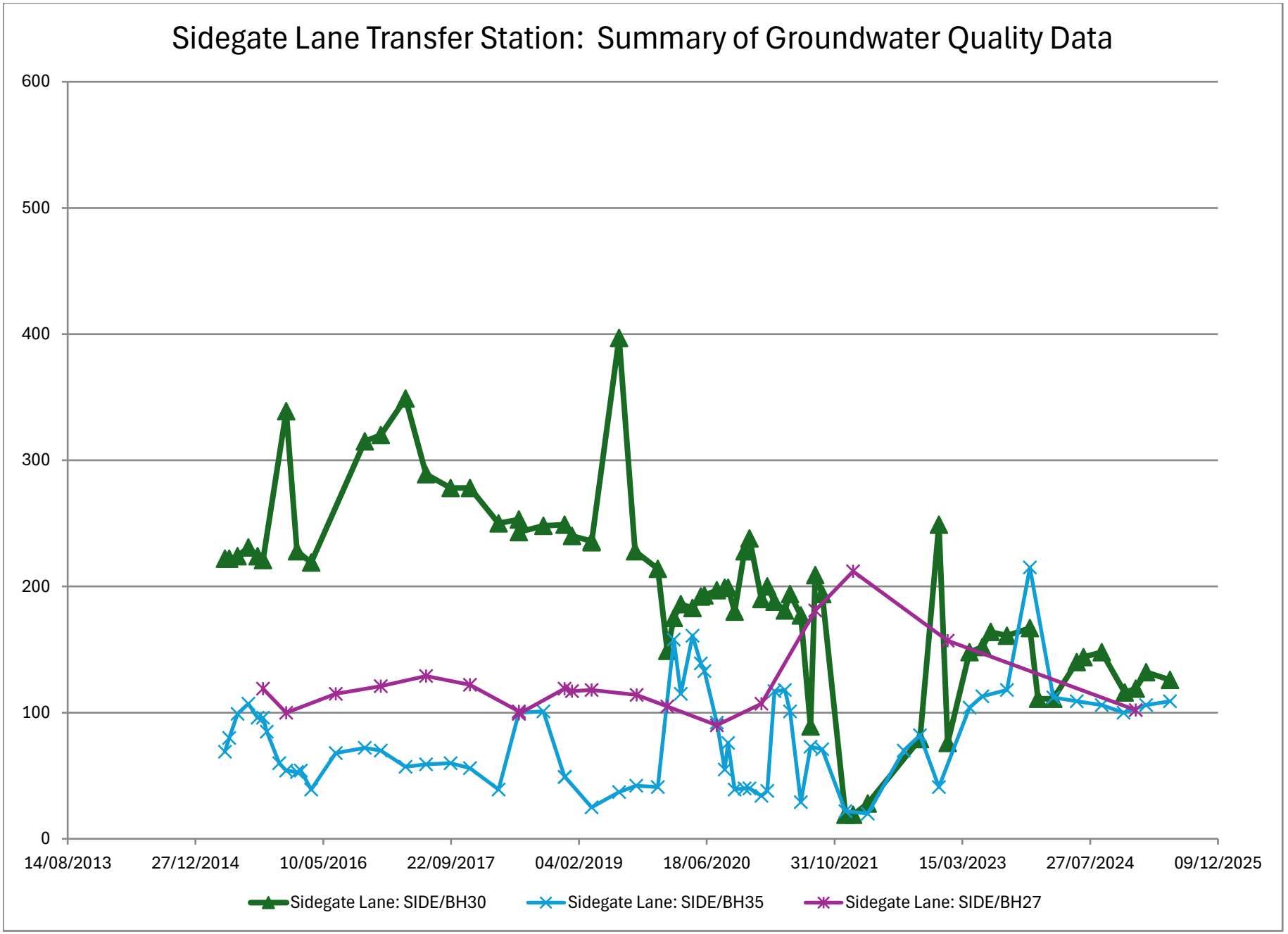
Summary of Key Environmental Monitoring Data adjacent to the Transfer Station

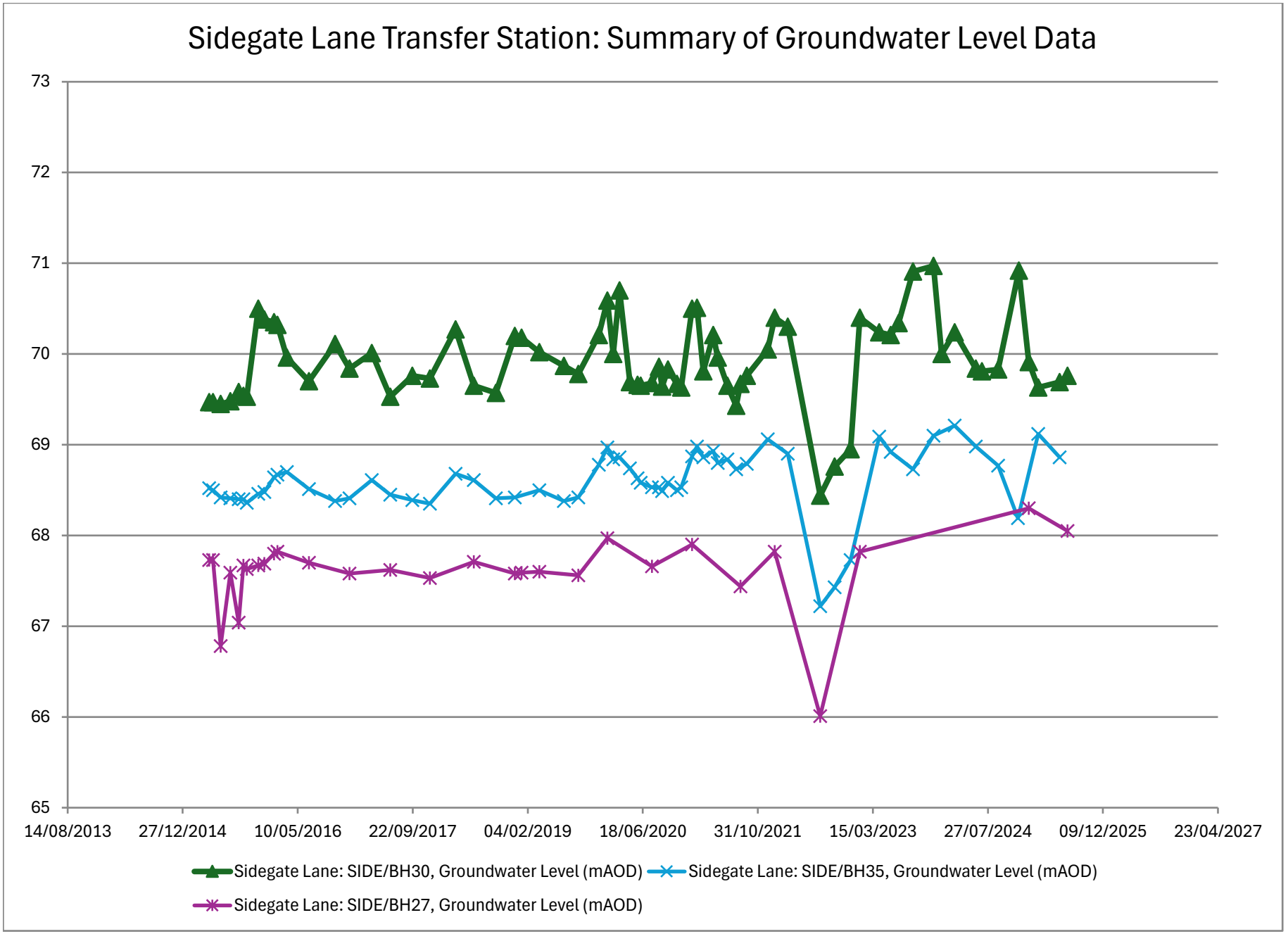

Sidegate Lane Transfer Station: Ground Gas Summary
60
50
40
30
20
10
0
14/08/2013
27/12/2014
10/05/2016
22/09/2017
04/02/2019
18/06/2020
31/10/2021
15/03/2023
27/07/2024
09/12/2025
23/04/2027
Sidegate Lane: SIDE/BH30
Sidegate Lane: SIDE/BH27
Sidegate Lane: SIDE/BH36

General


Sidegate Lane Transfer Station: Ground Gas Summary
25
20
15
10
5
0
14/08/2013
27/12/2014
10/05/2016
22/09/2017
04/02/2019
18/06/2020
31/10/2021
15/03/2023
27/07/2024
09/12/2025
23/04/2027
Sidegate Lane: SIDE/BH30
Sidegate Lane: SIDE/BH27
Sidegate Lane: SIDE/BH36

General


Sidegate Lane Transfer Station: Summary of Groundwater Quality Data
600
500
400
300
200
100
0
14/08/2013
27/12/2014
10/05/2016
22/09/2017
04/02/2019
18/06/2020
31/10/2021
15/03/2023
27/07/2024
09/12/2025
Sidegate Lane: SIDE/BH30
Sidegate Lane: SIDE/BH35
Sidegate Lane: SIDE/BH27


Sidegate Lane Transfer Station: Summary of Groundwater Level Data
73
72
71
70
69
68
67
66
65
14/08/2013
27/12/2014
10/05/2016
22/09/2017
04/02/2019
18/06/2020
31/10/2021
15/03/2023
27/07/2024
09/12/2025
23/04/2027
Sidegate Lane: SIDE/BH30, Groundwater Level (mAOD)
Sidegate Lane: SIDE/BH35, Groundwater Level (mAOD)
Sidegate Lane: SIDE/BH27, Groundwater Level (mAOD)

General