Wokingham Borough Council

Part 2A Inspection, Strathmore Drive, Charvil, Reading

Site Investigation Interpretative Report

7 May 2014

AMEC Environment & Infrastructure UK Limited

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AMEC Environment & Infrastructure UK Limited

Report for

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Executive Summary

AMEC Environment and Infrastructure (AMEC) was commissioned by Wokingham Borough Council (WBC/ the Council) to undertake a Part 2A intrusive site investigation and a subsequent generic human health risk assessment of the former landfill site at Strathmore Drive, Charvil, Reading (the site). The site is centred on National Grid Reference SU 774 758 and is generally flat, although the topography of the area slopes to the north.

The site consists of a former sand and gravel pit, which was in-filled between 1940 and 1953. The site covers an area of approximately 3.6 hectares and currently comprises a number of semi-detached and detached residential properties with front and rear gardens.

BGS records indicate that the site is underlain by River Terrace Deposits which in turn overlie the Middle Chalk Formation. Previous investigations in the immediate vicinity of the site show Made Ground has been encountered to a maximum depth of 4.3 m.

The Environment Agency has classified the Terrace Gravels as a Secondary (A) aquifer and the Upper Chalk Formation as Principal Aquifer. The site lies within a 'Total Catchment (zone three)' groundwater Source Protection Zone (SPZ) for a series of groundwater abstraction boreholes located to the north east of the site. The nearest surface watercourse is a small unnamed tributary of the River Lodden, located approximately 500 m to the northeast of the site.

Ground conditions at the site generally comprised three main types of fill material overlying natural alluvial deposits and or chalk. Fill was often not encountered in peripheral locations within the investigation area, where topsoil was generally encountered over natural sand deposits.

Following a site investigation, the conceptual site model was updated and a generic quantitative risk assessment (GQRA) was carried out.

The human health GQRA has identified exceedences of the GAC for a small number of contaminants, including arsenic, lead and benzo(a)pyrene. The data obtained within this site investigation indicates a marginal exceedance of the GACs, however, in general the respective arithmetic mean does not exceed the GAC for upper 300 mm soils. Based upon Part 2A guidance and the results of the generic human health risk assessment, it is considered unlikely that measured concentrations of the identified contaminants will present a significant risk to residents at the site. Therefore a 'possibility of significant harm' and a 'significant possibility of significant harm' to human health have not been demonstrated at the site as part of this investigation.

The identified exceedances of the water quality targets used in the assessment, with the exception of sulphate and lead, are considered to be marginal. There is considered to be a moderate potential for sulphate and lead to leach from the Made Ground present on site. However, no substantial groundwater has been encountered on site and the concentrations identified are considered unlikely to represent a potential significant risk to the Secondary (A) Aquifer or nearby surface watercourse. However, groundwater samples would be required to confirm this.

The ground gas monitoring undertaken at the site has identified relatively high and widespread concentrations of carbon dioxide at the site although these are associated with a low gassing conditions and hence the potential for carbon dioxide to present a significant risk is considered to be unlikely in the context of Part 2A.

Historic anecdotal information held by the Council suggests that the sources of the landfilled material included food waste from a nearby US army camp. A significant proportion of the fill material was identified as containing ash. Ash waste associated with army activities can potentially contain material with elevated radioactivity depending on its presumed source. We have no evidence to suggest that the ash may be radiologically contaminated at this site but it would be prudent to take a precautionary approach and rule out this potential low risk.

The investigation indicates that the site could be considered likely to fall within Category 3 in accordance of the Part 2A guidance on the basis of human health and controlled waters. A Category 3 site encompasses land which is not considered to meet the legal definition of Contaminated Land and hence regulatory intervention under Part 2A is not warranted. However, it should be noted that this assessment is based upon a preliminary investigation with some uncertainty given the heterogeneous nature of landfilled materials.

It is noted that four of the delineation pits contained material that was possibly landfill derived. Three of these were located south of the previously identified landfill area, one of which (DP12) encountered exceedances of contaminants, and as such would suggest that the extent of the former landfill extends further to the south into the properties on Old Bath Road than was previously indicated. The investigation, however, does appear to confirm that it is only the southern half of the site that was filled as no landfill derived material was found in the delineation pits to the north.

The investigation works undertaken to date have not identified a 'possibility of significant harm' or a 'significant possibility of significant harm' to human health or controlled waters at the site. However, there is some uncertainty given the heterogeneous nature of landfilled materials. In order to provide more certainty further sampling of shallow soil samples, particularly with respect to metals and PAH analysis may be beneficial in providing more evidence to confirm the absence of significant risks to residents. It is also recommended that advice is sought from the Environment Agency as to whether further assessment of the risks to controlled waters is required. A limited radiological walkover survey with an appropriate instrument is recommended in areas where ash material was found in the top 300 mm to rule out the potential low risk associated with the ash and radioactivity.

Contents

1. Introduction

1.1 Background and Objectives

AMEC Environment and Infrastructure (AMEC) has been commissioned by Wokingham Borough Council (WBC/ the Council) to undertake a Part 2A intrusive site investigation and a subsequent generic human health risk assessment of the former landfill site at Strathmore Drive, Charvil, Reading (the site). Although referred to as Strathmore Drive, the site also incorporates part of Kilowna Close and Old Bath Road.

The Council is required to inspect potentially contaminated land within its area in accordance with the Environmental Protection Act (EPA) 1990, the Contaminated Land (England) (Amendment) Regulations (2012) and the Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012). This requirement is further detailed in Section 2.2 of this report.

The site consists of a former sand and gravel pit, which was infilled between 1940 and 1953. Figure 1 shows the original red line boundary of the landfill; however based on evidence from historical records and local knowledge the Council believe that the area of infilling was more likely to have been confined to the south of Strathmore Drive and east of Kilowna Close (green shaded area on plan). This investigation has aimed to characterise the contamination status of the suspected infilled area. The receiving waste was thought to have comprised putrescible waste sourced from a nearby US army camp and municipal waste.

In preparing this report we have assumed that information and/or documents provided to AMEC by the client in connection with the preparation of this report are accurate, complete and not misleading. The main site works were undertaken from 30 September to 3 October 2013. This report presents the factual and interpretative findings of the Phase 2 intrusive site investigation and risk assessment.

The specific approach, which is reflected in this investigation and report, is the determination of 'Contaminated Land' with respect to the risks that may be posed by soil contamination on the site to human receptors. The establishment of whether the site may pose a significant risk to controlled waters and, therefore, fall under the definition of Part 2A land on that basis is outside the scope of this assessment. However, limited leachate testing has been undertaken for initial screening purposes to identify if a potential risk is presented to the underlying groundwaters and if this should be considered further in the future.

1.2 Terms of Reference

The site investigation has been undertaken in accordance with Site Investigation Option A, as detailed within AMEC s proposal (Ref. RP004i1 29968), dated 24 August 2012. Site investigation A is summarised in the proposal as:

Site Investigation A – this comprises an initial phase of investigation, which will be used to verify the findings of the previous investigations, with regards to depth of Made Ground and general composition and contamination

status over a greater area across the site and allow better delineation of the extent of the landfill on site. This investigation will allow an insight into the potential for contamination to exist on site which could present a significant risk to site users as well as investigating the lateral and to some degree the vertical extent of the fill material. Preliminary information will also be gathered with respect to potential for risks to groundwater (although this is not considered the main focus of the investigation). The analytical data collected will be used to undertake a generic quantitative assessment to determine the potential risks to site users and consequently the potential for possibility of significant harm (POSH) to exist at the site in accordance with Part 2A. It should be noted, however, that the evidence obtained during this investigation is unlikely to be sufficient to determine if potential significant possibility of significant harm (SPOSH) exists at the site and/ or allow an assessment on a property by property basis.

1.3 Information Sources

The following sources of information have been used in preparation of this report:

- Environment Agency website, What's in my backyard? (http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e);
- British Geological Survey Geology of Britain viewer (http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html);
- Natural England online database (http://magic.defra.gov.uk/); and
- AMEC 2008 Strathmore Drive, Charvil Desk Study report prepared for Wokingham Borough Council (Ref. 7888001047/R2928), dated January 2008.

2. Legislative Context

2.1 Background to Part 2A

The potential risks associated with contaminants identified at the site have been assessed using a risk based framework established to support the implementation of the contaminated land regime in the UK.

The contaminated land regime is set out within Part 2A of the Environmental Protection Act 1990 (EPA, 1990). The regime came into force in England on 1 April 2000 and was subsequently revised in 2006. The secondary legislation, the Contaminated Land (England) Regulations 2006, were in turn supported by Statutory Guidance issued by the Department of the Environment, Food and Rural Affairs (Defra) in September 2006, Defra Circular 01/2006: Environmental Protection Act 1990: Part 2A Contaminated Land.' The Statutory Guidance was updated in April 2012 and published by Defra as Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance.

Part 2A provides a statutory definition of 'Contaminated Land' and sets out the nature of liabilities that can be incurred as a result of contaminated land and groundwater. Contaminated land is defined 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 significant possibility of such harm being caused; or*
- *Significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused".*

Central to the regulatory system is a rigorous procedure of risk assessment, which is used to establish the existence of 'contaminated land' according to the definition.

2.2 Inspecting Land under Part 2A

Under Part 2A, Local Authorities are required to inspect land within their areas for the purposes of identifying any land that meets the definition of Contaminated Land under EPA 1990. Prior to commencing detailed inspection of a site under Part 2A, the Local Authority (in this case the Council) must have reasonable grounds to suspect that a significant contaminant linkage exists on a site. This is identified during a strategic inspection, with priority given to those areas which are considered most likely to pose the greatest risk to human health or the environment.

Once a potentially significant contaminant linkage has been identified (i.e. the conceptual linkage of a suspected or identified contaminant to relevant receptors by explicit pathways), it is then necessary to demonstrate whether the linkage meets the statutory definition of Contaminated Land, through intrusive investigation and risk assessment.

2.3 Part 2A Assessment Framework

The Statutory Guidance states in paragraph 3.1, that Part 2A takes a risk based approach to defining contaminated land. The Local Authority should ensure that the risk assessment is undertaken in accordance with good practice guidance on risk assessment and in a way which way which will allow robust decisions to be made in line with Part 2A.

The guidance follows established principles of risk assessment, including the concept of a 'contaminant linkage' (i.e. a linkage between a 'contaminant' and a 'receptor' by means of a 'pathway') where:

- A contaminant is a substance which is in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or cause significant pollution of controlled waters;
- A receptor is something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property or controlled waters; and
- A pathway is a route by which a receptor is or might be affected by a contaminant.

A 'significant contaminant linkage' must be identified for any land to be regarded as 'Contaminated Land' on the basis that: significant harm is being caused, or that there is a significant possibility of such harm being caused; significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused.

The conditions for there being a significant possibility of significant harm are set out in Section 4.2 (human health), Section 4.3 (non-human receptors) of the Statutory Guidance. The condition for there being a significant pollution of controlled water and significant possibility of such pollution is set out in Section 4.4 of the Statutory Guidance.

The Statutory Guidance contains a number of other specific requirements on the conduct of risk assessments. This includes the consideration of 'normal' levels of contaminants in soil which result from the natural presence of contaminants at levels that are considered typical in a given area or caused by low level diffuse pollution and common human activity other than specific industrial processes. The guidance also provides clarification on the use of generic assessment criteria (such as the Environment Agency published SGVs and other published GACs) as screening tools in generic quantitative human health risk assessment.

Section 4 of the Statutory Guidance indicates that the Local Authority must first demonstrate that a possibility of significant harm (POSH) exists on a site, before determining whether there is significant possibility of significant harm (SPOSH) in relation to human health. In deciding whether or not the land is contaminated on the grounds of SPOSH to human health, the Local Authority are advised to use the four categories described in paragraphs 4.19 to 4.30 of the Statutory Guidance. Category 1 and 2 include land which is capable of being determined as contaminated land on grounds of SPOSH to human health, whereas Categories 3 and 4 cover land which does not meet the statutory definition of contaminated land.

Note that under Part 2A only current usage of the site is considered. The Statutory Guidance defines current usage to include:

> *"a). The use which is being made of the land currently.*

b). Reasonably likely future uses of the land that would not require a new or amended grant of planning permission..."

On this basis, AMEC has considered all relevant pathways for a residential scenario, even if activities such as growing of vegetables etc. are not currently undertaken at that location.

3. Assessment Framework

There are a range of technical approaches to risk assessment of chemical contaminants, all of which broadly fit within a tiered approach. AMEC's approach to undertaking risk assessments is based on a tiered framework in accordance with CLR11, as outlined below:

Tier 1: Preliminary Risk Assessment	• Development of a conceptual model; • Preliminary Risk Assessment examining potential contaminants, pathways and receptors to identify the potential 'contaminant linkages'; • Identification of further risk assessment requirements.
Tier 2: Generic Quantitative Risk Assessment (GQRA)	• Screening of analytical results against generic assessment criteria (GAC) for soils and groundwater including Soil Guideline Values or Water Quality Targets to identify issues that require more detailed consideration; • Identification of further risk assessment or risk management requirements.
Tier 3: Detailed Quantitative Risk Assessment (DQRA)	• Refinement of conceptual model which may require the collection of additional data; • Application of detailed quantitative risk assessment procedures in accordance with Environment Agency Guidance to further assess potential pollutant linkages: – With respect to human receptors this may involve assessment of site specific exposure scenarios taking into account toxicological properties of substances to derive site specific assessment criteria (SSAC); – With respect to controlled water receptors this may involve simple analytical calculations of groundwater and/or surface water flow and contaminant attenuation to derive remedial target concentrations. • To undertake the assessment proprietary software such as CLEA Software and RBCA may be used; • Identification of further risk assessment or risk management requirements.

The conceptual model is developed at the Preliminary Risk Assessment tier and reviewed and refined during subsequent risk assessment tiers. The conceptual model represents the characteristics of the site and indicates the possible relations between **contaminants**, **pathways** and **receptors.**

4. Environmental Setting

Information with respect to the setting of the site and surrounding area, including the site history, has been summarised below from the AMEC desk study report (Ref. 7888001047/R2928), dated January 2008. This has been updated with current publicly available information, where applicable:

4.1 Site Location and Description

The site, which may be located by National Grid Reference SU 774 758 is situated in the village of Charvil. The site is flat, although the general topography of the area slopes to the north.

A site location map is presented as Figure 1.

The site covers an area of approximately 3.6 hectares and currently comprises a number of semi-detached and detached residential properties with front and rear gardens; 23 of which were investigated during the site investigation, the locations of which were concentrated around the area of suspected infilling. The WBC records show the original outline of the landfill to be approximately rectangular, as shown in Figure 2. Although the site name is Strathmore Dive, the site area covers properties constructed along part of Strathmore Drive, Kilowna Close and Old Bath Road. The site is situated within a predominantly residential area.

4.2 Summary of Site History

A review was made of historical maps obtained from Envirocheck environmental database, as part of the Phase One Desk Study undertaken by AMEC on the site in 2008 (Ref. 7888001047/R2928).

4.2.1 Historical Maps

The table below presents the site development:

Table 4.1 Summary of Historical Development

Date	Site History Summary
1879 (1:2,500)	The site is occupied by agricultural land. To the immediate south of the site is an unnamed public highway, with Marsh Lane located to the west of the site. The surrounding area comprises agricultural land with some isolated residential buildings.
1913 1:2,500)	The site and surrounding area are unchanged. A small gravel pit is identified approximately 200 m to the south west of the site.
1932 (1:2,500)	The site remains unchanged with no survey data or land-use identified. Substantial infrastructure and residential development has occurred in the surrounding area; New Bath Road and Park View Road have been constructed to the north and east of the site with some detached residential properties having also been constructed alongside these roads.
1968 (1:2,500)	The site has been developed to almost its current configuration with Strathmore Drive and Kilowna Close both identified. Construction of the properties along Strathmore Drive is complete although only six properties have been constructed along Kilowna Close. Additional properties have also been constructed along Park View Road and Old Bath Road. A petrol filling station is identified approximately 120 m from the south west section of the site and is located at the junction of Old bath Road and New Bath Road.
1977 (1:2,500)	The site has been developed to its current configuration with six additional properties being constructed along Kilowna Close.

4.2.2 Planning History

A review of the 'planning' history of the site has been undertaken and the findings are set out below.

The initial planning application to construct 38 detached houses on Strathmore Drive and Kilowna Close was submitted in May 1960 by E. E. Reed and Co. (ref 143/60). Included with the planning documents is a sketch plan of the outline of the site with the southern sector of the site annotated with a dashed line identified as 'Line (?) of Old Workings'. The area encompassed by this line corresponds to the land now occupied by Nos. 1-12 Strathmore Drive, Nos. 1-5 Kilowna Close and 19 and 45 Old Bath Road. It should be noted that 45 Old Bath Road was included with the 143/60 application and that 19 Old Bath Road does not appear to have been constructed by 1960.

From the correspondence between WBC and E. E. Reed it appears that the detailed application did not cover Plot Nos. 1-9 or 33-37 as the foundation detail for these properties was not complete. These plot numbers correspond to Nos. 1-12 Strathmore Drive, Nos. 1-5 Kilowna Close. It was considered that these properties would require a separate foundation design as not all the site comprised 'firm ground'.

A separate application was submitted in April 1970 (ref 30/70) for the construction of six detached houses as part of an extension of Kilowna Close. The properties appear to have been constructed with strip foundations, which may indicate no Made Ground.

4.3 Potentially Contaminative Uses of the Site & Surrounding Area

4.3.1 Waste

There are two records of former landfill sites within a 250 m radius of the site (EA). These are the Strathmore Drive and Wee Waif landfill sites. The Strathmore Drive landfill site is shown as directly corresponding to the outline of Strathmore Drive and Kilowna Close. Information supplied by the EA indicates that the Strathmore Road site last received waste in December 1962 and prior to this date may have received inert, industrial and commercial waste.

Anecdotal information held by WBC indicates that the site was a former sand and gravel pit with a maximum depth of extraction of some 3.5 m. Infilling of the resultant void occurred between 1940 and 1953 and included putrescible waste sourced from a nearby US army camp. It is also believed by the Council that municipal waste was disposed of at the site. Prior to the construction of the residential properties on site it is believed that the site was levelled and capped with topsoil.

4.3.2 Other Possible Contaminative Uses

There are no records of any fuel sites or underground petroleum storage tanks at the site, although there was a fuel station located some 120 m to the south west of the site in 2008 (which is still present today) and is understood to have been constructed in the mid-1980s.

4.4 Geology

The geological appraisal has been compiled using the British Geological Survey (BGS) 1:50,000 Series. Reading, Sheet 268 - Drift Edition.

The records indicate that the site is underlain by River Terrace Deposits which in turn overlie the Middle Chalk Formation. The River Terrace Deposits typically comprise well graded sands and gravels whilst the Upper Chalk consists mainly of soft white chalk with flint nodules generally lying within distinct beds.

4.5 Hydrogeology

The hydrogeological appraisal has been compiled using the following references:

- Environment Agency: Policy and Practice for the Protection of Groundwater. Groundwater Vulnerability Map 1:100,000 West London, Sheet 39;
- British Geological Survey: Hydro-geological map of the area between Cambridge and Maidenhead 1:100,000, 1984; and

- Environment Agency "What's in Your Backyard" Web Site (www.environment-agency.gov.uk).

The Environment Agency has classified the Terrace Gravels as a Secondary A aquifer and the Upper Chalk Formation as Principal Aquifer. The site lies within a 'Total Catchment (zone three)' groundwater Source Protection Zone (SPZ) for a series of groundwater abstraction boreholes located to the north east of the site. The closest of these boreholes is located approximately 2.3 km to the north east of the site. The direction of groundwater flow at the site is unknown, although the regional hydro-geological map indicates an eastwards groundwater flow for the Upper Chalk.

Records indicate that there is one private abstraction from the River Terrace Gravel located approximately 150 m to the east of the site and two private water abstractions located some 700 m north of the site (WBC). The abstraction points to the north were sampled in 1999 with no abnormal results reported. Two licenses for spray irrigation purposes are held by Sonning Farm and Sonning Golf Club, which are located approximately 500 m to the northwest and south of the site, respectively.

The Environment Agency website indicates that site is located within a groundwater nitrate vulnerable zone.

4.6 Hydrology

The nearest surface watercourse is a small unnamed tributary of the River Lodden; the tributary is located at a distance of approximately 500 m to the northeast of the site (Ordnance Survey Map Landranger Series Map – Reading, Windsor & surrounding area, Sheet 175).

Historical river water quality data from the Environment Agency website from 2009 at a monitoring point along the River Lodden, north of the site indicates that the river was grade A (very good) for chemistry and biology, 5 for nitrate (high) and 4 for phosphates (high).

The site is not located within an indicative fluvial or tidal floodplain, and is therefore not situated within a Flood Warning Area (EA).

4.7 Ecology

A search on www.magic.gov.uk indicated that the site and surrounding area (up to 1 km search area) is not within a sensitive ecological area relevant to Part 2A.

5. Preliminary Risk Assessment

5.1 Previous Investigations

AMEC has undertaken a review of the following previous investigations undertaken at the study site and at an adjacent property. These include preliminary assessments carried out under the Part 2A contaminated land regime and previous investigations carried out under the planning regime. The findings of which have been taken into account to inform the scope of works, as detailed within AMEC proposal (ref: RP004i1_22968, dated 24 August 2012).

- AMEC, 2008, Strathmore Drive, Charvil – Report on Desk Study and First Stage Risk Assessment;
- Simon Quarrell, 2009, Ground Contamination Assessment and Survey for replacement houses at 43 Old Bath Road, Charvil, Reading, RG10 9QP;
- Terramech Investigations Ltd., 2010, Phase 1 and 2 Environmental and Geotechnical Site Investigation No. 3000/09 at 2 Strathmore Drive, Charvil for Proposed New Residential Development;
- Terramech Investigations Ltd., 2010, Phase 3 Environmental Site Investigation No. 3000/10 at 2 Strathmore Drive, Charvil for Proposed New Residential Development;
- Terramech Investigations Ltd., letter dated 29th March 2009, Site at – 2 Strathmore Drive, Charvil, Berkshire;
- Apple Environmental, 2008, Environmental Report – Intrusive Contaminated Land Investigation and Risk Assessment, 10 Strathmore Drive, Charvil, Reading, RG10 9QT; and
- Edward George Environmental Surveys, 2011, Further Intrusive Contaminated Land Investigation and Risk Assessment – 10 Strathmore Drive, Charvil, Reading, RG10 9QT.

5.1.1 Summary of Main Findings from Previous Investigations

Made Ground has been encountered at numbers 2 and 10 Strathmore Drive to a maximum depth of 4.3 m and 2.0 m bgl, respectively. The Made Ground generally comprises clayey sand and/ or gravel fill, with occasional ash and clinker, ashy fill and glass and metal waste. At both properties the Made Ground has been overlaid by a thin layer of capping or topsoil material. Analysis of the Made Ground at these two locations has identified apparent isolated areas of contamination, with the contaminants of concern predominately arsenic and benzo(a)pyrene.

The previous intrusive investigations have identified low contaminant concentrations for both total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs), with the majority of samples tested recording concentrations less than the laboratory limit of detection for these contaminants.

Following the discovery of metal and PAH contamination at two locations within the rear garden area of 2 Strathmore Drive and widespread glass within the shallow soils, the shallow soils present at the site within the rear garden areas have been replaced with 'clean' imported materials.

Although 43 Old Bath Road is thought to lie outside both the original and updated boundary of the landfill, Made Ground material was encountered to a maximum depth of 4.0 m at this location. The Made Ground generally comprised clayey sand and/ or gravel fill with occasional red brick. Slightly elevated arsenic (above the former SGV of 20 mg/ kg) was identified within Made Ground soils.

Ground gas measurements collected from the site have identified measurable concentrations (up to 13%) of carbon dioxide but negligible methane from the Made Ground on site.

Gas surveys of the service ducts at the site conducted by the EA prior to 1994 did not indicate the presence of elevated levels of methane in the sub-surface soil gas environment. A site investigation of an adjoining property on Old Bath Road was undertaken in 2001 and did not record any elevated methane levels.

5.1.2 AMEC Desk Study (2008)

The desk study identified that the source of contamination on site would be predominately be associated with previous infilling activities undertaken on site. Contaminants associated with Made Ground were noted to include metals, asbestos and hydrocarbons or other deleterious material e.g. glass, within the waste and methane, or other ground gases potentially generated from the waste.

The preliminary risk assessment identified a potential moderate risk to groundwater receptors (Secondary Aquifer underlying the site), current or future residents at the site, buildings and services and construction workers.

5.2 Preliminary Risk Assessment

The preliminary risk assessment is based on the findings made within the AMEC desk study (Ref. 7888001047/R2928), dated January 2008 and updated environmental setting information presented above.

5.2.1 Potential Contaminant Sources

Potential on-site sources of contamination may be associated with the former use of the site as a landfill. For the Strathmore Drive site, the source has been taken as potentially elevated concentrations of contaminants (principally metals, asbestos and hydrocarbons) within the waste material and methane, or other ground gases, being generated from the waste.

There is the potential that Made Ground may have been used to level the site during the development of the building and associated access roads. Contamination may be associated with Made Ground from this period.

5.2.2 Potential Off-site Sources of Contamination

The sources of off-site contamination may be associated with past and present land use in close vicinity to the site. From the desk study review of the historical Ordnance Survey plans, the Wee Wiaf landfill located to the west of the site may represent a possible source of off-site contamination. There was a fuel station with associated underground storage tanks located approximately 120 m to the south west of the site (noted in 2008). Neither of the potential sources of off-site contamination was considered to be significant given the current site setting. Furthermore the site walkover undertaken by AMEC in 2008 did not raise any additional concerns.

5.2.3 Potential Receptors and Pathways

The site overlies Terrace Gravels which form a Secondary A Aquifer and a Principal Aquifer within the Chalk and is located within the 'Total Catchment (zone three)' of an SPZ. Records indicate that there is one private abstraction from the River Terrace Gravel located approximately 150 m to the east of the site and two private water abstractions located some 700 m north of the site.

Contamination may be leached from the waste material and transferred to the underlying groundwater. The site is apparently underlain by sand and gravel deposits of assumed high permeability, i.e. will readily transmit pollutants to the groundwater. From the anecdotal information available, it is strongly suspected that the waste was placed directly on the underlying sand and gravel deposits. Therefore, groundwater should be considered to be vulnerable to on-site contamination.

The nearest surface water feature is located at a distance of approximately 500 m to the northeast of the site. The land between the site and the river is developed with associated drainage/ sewage systems. Surface water is considered to be at low risk of being adversely impacted by the on-site contamination.

Following the cessation of landfilling, the site has been redeveloped to a residential end-use with private gardens; therefore, potential receptors are current and future residents, vegetation, structures and adjacent properties. Aside from the access road and pavements, the site is not generally accessible to the public and has no soft landscaped areas.

With respect to human health, the principal risks are likely through dermal contact, soil ingestion, ingestion of home-grown produce and vapour and dust inhalation as a result of the present of contaminated material in the near surface soils. It is not known whether the site was capped prior to the residential development. However, it is anticipated that some soil cover would have been placed as part of the residential development. The risk of dermal contact with the underlying waste material for the current users of the site is considered to be moderate given the likely range of activities undertaken at the site, such as general garden activities.

Such contact may also occur during excavations undertaken at the site, e.g. construction of ponds or other garden features, and may represent a risk to human health or indeed the general public via dust emissions. Contact with contaminants during such works is typically a short-term hazard. However, the potential risk would be increased by repeated contact with contaminated ground containing low levels of contamination, i.e. ground not obviously contaminated.

In addition to the above, there is a potential for contamination present within near surface soils to present a risk to domestic pets, such as dogs and cats. This is likely to be via direct contact and ingestion pathways.

The migration of certain organic contaminants through the soils and ingress through some (e.g. polyethylene) water service pipes is also a viable significant pollutant linkage. This could potentially contaminant drinking water on site, presenting an indirect risk to current site residents.

It is recognised that waste material within the ground may represent a risk with regards to generation of ground gases, such as methane and carbon dioxide. The presence of hazardous gases in the ground requires consideration for both human health and structures. In the worst case scenario gas accumulation could cause a hazardous situation leading to asphyxiation, poisoning or explosion. Gas also has the potential to migrate off site to adjoining properties.

5.3 Conceptual Model

The plausible potential contaminant linkages (CLs) identified in the preliminary conceptual model are presented in Table 5.2 below and the classification of the likelihoods of the contaminant linkages being realised are set out in Table 5.1 below.

Table 5.1 Likelihood Probability Classifications of Contaminant Receptor Linkage being Realised

Classification	Likelihood
Very unlikely	0 to 5%
Unlikely	5 to 45%
Possible	45 to 55%
Likely	55 to 95%
Almost Certain	95 to 100% (i.e. impact noted during the investigation)

The term 'contaminant' is used in the table to describe a group of contaminants potentially present at the site, based on the limited knowledge of infill material which is potentially present on the site.

The potential contaminant linkages proposed for investigation in this work, as they were considered to be potentially significant, are identified in Table 5.2 below.

Table 5.2 Preliminary Conceptual Model

Item No.	Area/ Building	Potential Contaminant	Potential Receptor	Potential Pathway to Receptor	Associated Hazard	Likelihood of C-R Linkage	Investigated
1	Former landfill on site	Inorganic contaminants: metals and metalloids, sulphate, cyanide and pH	Current site users (residential with gardens)	Inhalation of dusts Dermal contact Ingestion	Harmful to health	Possible	Yes
2			Neighbouring site users	Inhalation of dusts Ingestion of dusts	Harmful to health	Unlikely	No
3			Building foundations	Direct contact (aggressive ground conditions)	Property damage	Unlikely	No
4			Secondary A Aquifer (Superficial Deposits).	Leaching; migration	Groundwater contamination	Possible	Yes
5			Principal Aquifer (Bedrock Geology)	Leaching; migration	Groundwater contamination	Possible	Yes
6			Surface watercourse (unnamed tributary River Lodden 500m northeast of site)	Lateral groundwater migration Surface overland flow Discharge via site drainage	Water pollution	Unlikely	No
7			Property in the form of pets	Inhalation of dusts Dermal contact Ingestion	Harmful to health	Possible	No
8	Former landfill on site	Organic contaminants: Fuel/oil related hydrocarbons, PAHs, VOCs, SVOCs and phenol	Current site users (residential with gardens)	Inhalation of dusts and vapours Dermal contact Ingestion	Harmful to health	Possible	Yes

Table 5.2 (continued) Preliminary Conceptual Model

Item No.	Area/ Building	Potential Contaminant	Potential Receptor	Potential Pathway to Receptor	Associated Hazard	Likelihood of C-R Linkage	Investigated
9			Neighbouring site users	Inhalation of dusts and vapours	Harmful to health	Unlikely	No
10			Current site users (residential with gardens)	Direct contact (aggressive ground conditions); permeation of drinking water pipes	Indirect ingestion of contaminated drinking water	Unlikely	No
11			Secondary A Aquifer (Superficial Deposits).	Leaching; migration	Groundwater contamination	Possible	Yes
12			Principal Aquifer (Bedrock Geology)	Leaching; migration	Groundwater contamination	Possible	Yes
13			Surface watercourse (unnamed tributary River Lodden 500m northeast of site)	Lateral groundwater migration Surface overland flow Discharge via site drainage	Water pollution	Unlikely	No
14			Property in the form of pets	Contact	Harmful to health	Possible	No
15	Former landfill on site	Asbestos	Current site users (residential with gardens)	Inhalation of fibres	Harmful to health	Possible	Yes
16			Neighbouring site users	Inhalation of fibres	Harmful to health	Unlikely	No
17	Former landfill on site	Ground gas (methane and carbon dioxide)	Current site users (residential with gardens)	Inhalation Explosion	Harmful to health	Possible	Yes

Table 5.2 (continued) Preliminary Conceptual Model

Item No.	Area/ Building	Potential Contaminant	Potential Receptor	Potential Pathway to Receptor	Associated Hazard	Likelihood of C-R Linkage	Investigated
18			Neighbouring site users	Inhalation Explosion	Harmful to health	Unlikely	No
19			Buildings	Accumulation of ground gases	Accumulation of explosive atmosphere	Unlikely	No
20*	Former landfill on site	Radium 226 in ash	Current site users	Ingestion, inhalation, direct contact	Harmful to health	Unlikely	No*

* Not considered in this investigation as the extent of the ash only fully identified during this investigation.

Note that although domestic animals/ pets are considered to be property receptors at the site, there is no current UK guidance for the assessment of risks to domestic animals/ pets currently available. As a result, potential risks presented to domestic animals/ pets cannot be determined at this time and are not considered further.

6. Site Investigation

6.1 Site Investigation Strategy and Scope of Works

The site investigation was undertaken between 30 September and 3 October 2013. A site layout plan and exploratory hole location plan is presented as Figure 2.

6.1.1 Hand Dug Pits

A total of twelve hand dug pits were excavated to a maximum depth of 1 m bgl. Where possible samples were collected from soft landscaped areas within each garden, where the potential for exposure to contamination is at its greatest. To minimise disturbance to residents, all hand dug pits were excavated in soft landscaped areas, below grassed lawns and woodchip cover. Under the current usage, as defined by the Statutory Guidance, consideration should also be given to potential changes in use/ surface cover which are reasonable under the current planning permission. As a result, there is the potential for existing hard-standing on site to be removed in the future, which could expose residents to any contamination present beneath.

No samples were retrieved from professionally installed driveway areas, as potential exposure to contamination from these areas was considered low in comparison to other areas on site. The potential for this hard-standing to be removed or significantly altered is also considered to be unlikely.

6.1.2 Delineation Pits

A total of twelve delineation hand dug pits were excavated to 1 m bgl in order to attempt to delineate the periphery of the suspected area of infilling. A limited number of samples were taken and scheduled for chemical analysis from these exploratory holes.

6.1.3 Window Sampler Boreholes

A total of six window sampler boreholes were drilled across the site to a maximum depth of 6 m bgl in order to target the base of Made Ground (where possible). All boreholes were installed with gas and groundwater monitoring standpipes to facilitate subsequent ground gas monitoring. All window sampler boreholes were installed within the front gardens of the residential properties for ease of post works ground gas monitoring.

6.1.4 Chemical Sampling and Analysis

The paragraphs below describe the sampling and analysis of soil samples collected during the site investigation:

Soil Sampling

Sample locations and samples were all given unique reference numbers. Soil arisings were logged in each location, including evidence of contamination (if observed) in order to inform the interpretation of Made Ground composition, distribution and thickness.

Sample materials were obtained using clean, stainless steel sampling equipment or clean nitrile gloves for geological logging, on-site analysis of volatile organic compounds by headspace testing, and laboratory analysis. The drilling and sampling equipment was washed down using deionised water between exploratory holes and between samples.

Care was taken to ensure that the sampling range did not cross strata boundaries.

Soil samples were sealed into laboratory prepared jars and packed into cool-boxes with ice packs, prior to consignment to the analytical laboratory as follows:

- Plastic tub; and
- 2 x 250 g TPH and PAH jar.

Headspace testing was undertaken in samples prior to dispatching samples to the laboratory at the end of the working day.

Soil Analysis

Selected soil samples (38 in total) were scheduled for the following analytical suite, based on the contaminants of concern identified during previous site investigations and AMEC's desk study:

- Metals and metalloids;
- pH;
- Speciated PAHs (EPA 16);
- Total petroleum hydrocarbons (TPH) by TPH Criteria Working Group (TPH-CWG) methodology including BTEX and MTBE (10 samples in total);
- Water soluble sulphate and sulphide (6 samples in total);
- Soil organic matter (8 samples in total);
- Total and free cyanide (15 samples in total);
- Total phenols (15 samples in total);
- Asbestos screen and identification (15 samples in total);

- VOCs (10 samples in total); and
- Leachate analysis (4 samples in total).

The certificates of analysis, methods, accreditation details (MCERTS, ISO 17025) and limits of detection are presented in Appendix B.

6.1.5 Laboratory Quality Assurance/ Quality Control

The works were supervised on a full time basis by AMEC, whose duties included checking the contractors' compliance with the requirements of the project.

During the fieldwork the following procedures were undertaken to ensure the accuracy of the sampling and minimise cross contamination:

i. Samples were only handled using clean nitrile rubber gloves and/or a clean stainless steel sampling trowel;

ii. The sampling equipment was cleaned using deionised water between sampling points;

iii. Soil samples were collected in a manner to minimise disturbance; and

iv. Samples were kept cool and despatched to the testing laboratory on the day after sampling at the latest.

Samples were sent to i2 Analytical (I2). I2 is an MCERTS, and UKAS accredited laboratory and participates in the CONTEST and Aquacheck quality control schemes. I2 carries out its own quality assurance by testing standard samples against certified reference materials to check the calibration of the instruments used for analysis.

All samples were sent by courier accompanied by full Chain of Custody documentation and unique identifiable labels. Samples on site were stored in cool boxes with refrigerant blocks and were located out of direct sunlight. The sample analytical schedule was completed at the end of each working day, in order to enable processing and analysis by the laboratory immediately upon receipt, and to minimise holding times.

6.1.6 Ground Gas and Vapours

A photo ionisation detector (PID) was used to measure the concentration of volatile organic compound vapours (VOCs) within samples taken for specific headspace testing, at the end of each sampling day. No elevated PID readings were recorded.

Note that the ground gas monitoring of the window sampling holes has been undertaken by WBC on sixteen occasions over a period of six months. The results of which have been provided to AMEC for assessment within this report.

6.1.7 Constraints

It should be noted that the following assessment is based upon a preliminary investigation with some uncertainty given the heterogeneous nature of landfilled materials and conditions may vary from those encountered in the exploratory holes.

6.2 Ground Conditions Encountered

The strata encountered on the site has been categorised into eight broad categories of Made Ground, fill material and natural ground, which are summarised as:

- TS – Made Ground topsoil;
- GSS – Made Ground Gravelly sub-soil;
- Fill 1 – Brown topsoil with some fill material;
- Fill 2 – Rust orange and black ash fill material;
- Fill 3 – Light grey ashy fill material;
- Natural – Topsoil;
- Natural – Alluvium; and
- Natural – Chalk.

The ground conditions identified during the site investigation are largely comparable to previous site investigations undertaken at residential properties on site, with the exception of the boreholes which were undertaken at 43 Old Bath Road. However, the previous log descriptions are not detailed sufficiently detailed, including descriptions of Made Ground and Fill inclusions, to indicate what type of material specifically was encountered, however the logs do indicate Fill and natural ground.

6.2.1 Made Ground

Made Ground was found to consist of a number of different infill material types as summarised above. Varying amounts of the different strata was identified across the site. The general sequence below was identified across the site:

Topsoil

Topsoil was encountered in 24 of the 30 exploratory holes undertaken across the site up to depths in the range of 0.1 to 0.6 m below ground level (bgl). It was generally found to consist of brown/ grey silty gravelly fine to medium sand, with gravel consisting of flint and rare chalk.

Gravelly sub-soil

A gravelly sub-soil was found to be underlying the topsoil in 13 of the 30 exploratory holes across the site at depths of between 0.1 to 0.95 m bgl. The sub-soil was generally found to consist of brown/ orange gravel of flint with varying amounts of silt and sand.

6.2.2 Fill Material

The term fill material has been used to describe material that is thought to comprise material deposited into the landfill as waste, rather than being potentially imported material to cover the landfill material. This was found to consist of three main types of fill:

Fill Type 1

Fill type 1 was encountered in a 7 of the 30 of exploratory holes undertaken across the site. When encountered, it was found between depths of 0.0 to 1.2 m bgl, and generally consisted of brown gravelly silty sand with metal, brick and pottery.

Fill Type 2

Fill type 2 was encountered in the 8 of the 30 exploratory holes undertaken across the site and was found to be variable in consistency. This material ranged in depth between 0.1 and 5.9 m bgl.

Fill Type 3

Fill type 3 was encountered in 7 of the 30 exploratory holes undertaken across the site. The top of fill type 3 was found between 0.2 and 0.6 m bgl, and the depth was not proven in any of the exploratory holes. This material was generally found to consist of grey/ brown silty gravelly sand with glass, and occasional bone, metal fragments of batteries, porcelain and clinker.

6.2.3 Natural Ground

Natural ground was encountered in a large number of exploratory holes across the site. The depth at which natural ground was encountered was found to be very variable across the site, ranging between 0.15 and 5.9 m bgl. The following variations in natural ground were encountered during the investigation:

Topsoil and Sub-soil

Natural topsoil and sub-soil was recorded in a number of exploratory holes across the site, such as DP3, DP4, DP5, DP6, DP8, DP10, HP7. Topsoil was identified as being natural topsoil where no observations of Made Ground type inclusions were made during the excavation. Where rare brick is identified, the topsoil could be considered to be reworked topsoil material, rather than a specific Made Ground.

A possible natural sub-soil was encountered in a small number of exploratory holes, such as in HP5 0.25 m bgl, HP10 0.7 m bgl, DP2 0.6 m bgl which was found to consist of brown/orange sandy slightly gravelly silt, with gravel of flint. No Made Ground inclusions were observed to suggest this was not natural material.

Possible Alluvium

Possible Alluvium was identified at 3.5 m bgl in WS3 and 2.5 m bgl in WS6. This consisting of brown very clayey gravelly sand, with gravel consisting of flint, or a sandy silt.

Chalk

Chalk was encountered in three of the window sampler boreholes; at 5.0 m bgl in WS2, 3.7 m bgl in WS4, 5.4 m bgl in WS5. This was generally found to consist of a weathered white Chalk.

6.2.4 Landfill Delineation

The delineation pits undertaken encountered fill material in the following pits, indicating that the location was still within the landfill material, rather than surrounding natural ground:

- DP1 fill type 3 is recorded from 0.6 m bgl which is detailed as ash fill with rare clinker, frequent glass and rare metal fragments and a brick cobble;
- DP2 has Made Ground recorded between 0.25 and 0.6m bgl, which is detailed as sand with glass and rare charcoal and pottery. Natural ground is proven in this pit from 0.6 m bgl, indicating that this pit is within the landfill area, but is likely to be on the periphery of the fill;
- DP5 has Made Ground recorded to 1.0 m bgl, with natural ground detailed below 1.0m bgl. The Made Ground is recorded as including glass, brick, charcoal and rare asphalt fragments. The presence of natural ground at 1.0 m bgl indicates that this pit is within the landfill area, but is likely to be on the periphery of the fill; and
- DP12 has Made Ground recorded from 0.2 m bgl, which is details as sand with glass, rare bone, metal, battery fragment and porcelain, indicating this is located within the landfill material.

Eight of the twelve delineation pits excavated on site (DP3, DP4, DP6, DP7, DP8, DP9, DP10 and DP11) have not contained a proportion of Made Ground, which suggests that these fall outside of the landfill boundary.

6.2.5 Groundwater

Groundwater was not encountered within any of the exploratory hole locations. Furthermore, it is understood that groundwater has not been encountered during subsequent ground gas monitoring of the window sampling installation WS4 and WS6 by WBC. Groundwater has been identified at WS1, WS2, WS3 and WS5 at a depth of between 3.23 m bgl (WS3) and 5.73 m bgl (WS1).

7. Human Health Generic Quantitative Risk Assessment (GQRA)

A Generic Quantitative Risk Assessment (GQRA) has been carried out to evaluate whether the observed soil contaminants at the site could represent a potentially significant risk to human health (site residents).

7.1 Risk Assessment Approach

7.1.1 Generic Assessment Criteria

In order to provide an assessment of risks to humans presented by contaminants identified within the materials at the site a human health Generic Quantitative Risk Assessment (GQRA) has been undertaken. The GQRA involves comparing contaminant concentrations observed at the site with appropriate Generic Assessment Criteria (GAC), where available, in order to identify contaminants of concern and determine whether further management or assessment of risks is required. The assessment criteria used depends upon the source media and the receptor under consideration.

These GAC consist of:

- EA/Defra Soil Guideline Values (SGVs);
- AMEC-derived GAC;
- Chartered Institute of Environmental Health/LQM (CIEH/LQM) GAC; and
- The Environmental Industries Commission/ Association of Geotechnical and Geoenvironmental Specialists/ CL:AIRE (EIC/ AGS/ CL:AIRE) GAC for the assessment of risks to human health.

These GAC have been derived by Defra and the Environment Agency, AMEC, Land Quality Management and the Chartered Institute of Environmental Health (LQM/CIEH, 2009[1]) and EIC/ AGS/ CL:AIRE, 2009[2] for selected substances in soils using the Environment Agency's Contaminated Land Exposure Assessment (CLEA) model.

It should be noted that the SGVs have been derived using a soil with 6% soil organic matter (SOM). AMEC has also derived a series of GAC based on the input parameters of the SGVs for alternative SOM content material (1% and 3% SOM). The CIEH/ LQM GAC and EIC/ AGS/ CL:AIRE GAC have been published for 1%, 2.5% and 6% SOM and additional GAC have been derived by AMEC at 3% SOM for selected contaminants in order to be consistent with those AMEC GAC based on the SGVs.

[1] Land Quality Management/Chartered Institute of Environmental Health (LQM/CIEH, 2009). The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment (2nd Edition). 2009.

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

SGVs, CIEH/LQM GAC and EIC/AGS/CL:AIRE GAC have been derived for the following land use:

- Residential with consumption of home-grown produce;
- Allotments; and
- Commercial (formerly commercial/ industrial).

AMEC GACs have been derived for the same land uses and additionally residential without plant uptake for selected contaminants.

In undertaking this assessment we have used GAC for a 'residential with consumption of home-grown produce' land use. The above GAC have been used where published for particular contaminants. In the absence of an appropriate GAC for a particular contaminant, either a GAC for an appropriate analogue has been adopted or laboratory limit of detection has been used.

The analytical data compared with relevant GAC is presented in Appendix D and the findings are discussed below in Section 7.2.

7.1.2 Source

The source of the contamination is assumed to relate to infill material within the former landfill of the site. Given the current use of the site for residential use with gardens, the sampling strategy has concentrated on shallow soils which are most likely to be in contact with site users.

7.1.3 Zoning

The potential source of contamination at the site is understood to consist of one source (the former landfill). Although several types of fill have been identified within the shallow Made Ground, there is some degree of intermixing evident, which is likely to have occurred during the construction of buildings and roadways on the site and subsequent general gardening activities etc. As a result, it is difficult to accurately attribute any contamination to a particular type of material on site. It is possible that Made Ground material could have been imported to the site as part of the construction of the housing development, however, this is currently unknown. On this basis, and in accordance with the proposal, AMEC has divided the data into the following categories, in order to characterise shallow possible overlying capping/ topsoil material, and other material on site:

- Category 1 - Upper 300 mm of material, which generally consists of topsoil;
- Category 2 - Material between 300 and 700 mm, which generally consists of fill materials;
- Category 3 - Material below 700 mm, which generally consists of Fill type 2 (rust orange and black ash).

In addition to ground type, these categories are also considered relevant for the potential likelihood of residents being exposed to contaminants within site soils, with the first category incorporating all near surface and shallow

data, where the potential for exposure is considered to be the highest. Category 2 relates to material which residents could potentially come into contact with during garden activities or other intrusive activities. Category 3 represents material which is present at a greater depth and hence the potential for residents to be exposed to this material is lower, with exception of potential vapour inhalation.

7.1.4 Soil Conditions and Organic Content

The risk presented by organic contaminants is dependent on the organic contents of the soils. Soil organic matter (SOM) has been analysed from eight samples taken from the site. The laboratory analysis recorded values in the range of 0.6 to 12 % (5.57 % average SOM). The average SOM value for each material depth has been used in order to decide which GAC is appropriate:

- Upper 300 mm – arithmetic mean SOM is 2.0%, therefore, AMEC has compared site data to GACs based on 1% SOM;
- Between 300 and 700 mm – arithmetic mean SOM is 5.6 %, therefore, AMEC has compared site data to GACs based on 6% SOM; and
- Below 700 mm – arithmetic mean SOM is 6.7 %, therefore, AMEC has compared site data to GACs based on 6% SOM.

7.1.5 Pathways and Receptor

This assessment has considered the generic pathways for a residential land-use with gardens, these include dermal contact, ingestion, inhalation of vapours and dust and consumption of home grown vegetables.

The risks to human health have been assessed using the generic critical receptor for a residential land use (i.e. a 0-6 year old female child).

7.1.6 Statistical Approach

Statistical tests have been carried out on selected soil datasets where individual sample concentrations exceed the appropriate assessment criteria and a potential zone or subzone of contamination has been identified within the dataset. The tests were completed using the Contaminated Land Statistics calculator developed by ESI to support the application of a statistical approach developed by CL:AIRE and the Chartered Institute of Environmental Health.

The assessment is undertaken in the context of Part 2A legislation and statistical tests are designed to answer the following question:

> *Is there sufficient evidence that the true mean concentration of the contaminant (μ) is greater than the critical concentration (Cc)?*

The guidance produced by CL:AIRE and the Chartered Institute of Environmental Health, develops two hypotheses - the Null and Alternative Hypotheses. The Null Hypothesis is a theory put forward for testing because it is believed to be true (but has yet to be proved) or because it creates a basis for an argument or proposition. The Alternative Hypothesis is the opposite of the Null Hypothesis and is the question the statistical tests are designed to answer. The outcome of the tests is expressed in terms of the rejection or non rejection of the Null Hypothesis.

For assessing contaminant datasets under Part 2A, the Null and Alternative Hypotheses are defined as follows:

- Null Hypothesis (H0): The true (unknown) mean (μ) is equal to, or less than, the critical concentration (Cc); and
- Alternative Hypothesis (H1): The true (unknown) mean (μ) is greater than the critical concentration (Cc).

Prior to applying any statistical tests, the datasets have been assessed with respect to data quality (i.e. QA/ QC) to ensure that appropriate datasets for each of the defined zones are created and used for the assessment. No anomalous results were identified.

Where further statistical assessment is considered necessary, the outlier and normality tests have been undertaken for the particular contaminant to identify any statistical outliers and confirm the distribution of the datasets.

Outliers cannot be overlooked as they may be potentially significant in the localised areas where they have been identified and indicate the requirement for further assessment. Where outliers have been identified, these have been considered in the context of the dataset as a whole to assess if it should belong to that dataset or not. Outliers that have been taken out of the dataset, with justification, have been put forward for further assessment.

Once the outlier test has been completed, the sample mean[3] of the dataset has been compared against the assessment criteria. Where the calculated sample mean is less than the assessment criteria, no further assessment is undertaken at this stage, because the representative concentration (the Lower Confidence Limit at the 95% confidence level and 51% confidence level) will always be lower than the sample mean. Therefore, for datasets with sample mean less than the GAC, no further statistical tests have been undertaken and the Null Hypothesis cannot be rejected. It is then concluded that there is insufficient evidence to reject the Null Hypothesis in support of the Alternative Hypothesis.

Where the sample mean concentration is greater than the assessment criteria, the statistical tests were carried out at the 95% confidence level and where necessary at the 51% confidence level. The 51% confidence level is a defensible confidence level set on the balance of probabilities.

Where the data was considered to be normally distributed the t-test was used. Where the data was not considered to be normally distributed and the data distribution was negatively skewed the Chebyshev test was used. Where the

[3] Where the term 'mean' is used within this report it refers to the arithmetic mean unless otherwise stated.

data was not considered to be normally distributed and the data distribution was positively skewed, following Barnes et al.[4] , the t-test was used to test the Null Hypothesis rather than the Chebyshev test.

The statistical assessment is presented in Appendix E.

7.2 Findings of the GQRA

7.2.1 Summary Statistics for Upper 300 mm Material

A number of determinands have been identified in excess of the GAC within the material present between the surface and 300 mm bgl, as shown in Table 7.1.

Table 7.1 Contaminants Identified above GAC within Upper 300 mm

Determinand	Total Number of Samples	Minimum	Maximum	Arithmetic Mean	GAC	Number of Results >AC
Arsenic	19	10	53	19.7	32	2
Lead/ log lead	19	23 / 1.36	480 / 2.68	140.2 / 1.98	450 / 2.65	1
Benzo(a)pyrene	19	<0.10	1.9	0.53	0.83	3

Notes:
- shaded means arithmetic mean exceeds GAC
- All concentrations as mg/kg

The location of exceedences within the Upper 300 mm are presented on Figure 3.

7.2.2 Summary Statistics between 300-700 mm

A number of determinands have been identified in excess of the GAC within the material between 300 and 700 mm bgl, as summarised in Table 7.2:

[4] Barnes, Glennie, Davey and Thomas (2010). Land Contamination and Reclamation, 18(2), 2010. Cheby or not Cheby? Is that the question?

Table 7.2 Contaminants Identified above GAC within 300-700 mm bgl

Determinand	Total Number of Samples	Minimum	Maximum	Arithmetic Mean	GAC	Number of results >AC
Arsenic	15	10	87	36.1	32	6
Lead / log lead	15	15 / 1.18	3400 / 3.53	493.7 / 2.3	450 / 2.65	5
Nickel	15	11	170	62.1	130	1
Benzo(a)anthracene	15	<0.2	24	2.2	5.9	1
Chrysene	15	<0.05	22	1.9	9.3	1
Benzo(b)fluoranthene	15	<0.1	25	2.36	7.0	1
Benzo(a)pyrene	15	<0.1	21	1.95	1.0	4
Indeno(1,2,3-cd)pyrene	15	<0.2	9.6	0.99	4.2	1
Dibenzo(a,h)anthracene	15	<0.2	1.6	0.29	0.9	1

Notes:
- shaded means arithmetic mean exceeds GAC
- All concentrations as mg/kg

The locations of the exceedences encountered between 300 and 700 mm bgl are presented on Figure 4.

7.2.3 Summary Statistics below 700 mm

A number of determinands have been identified in excess of the GAC within the material below 700 mm bgl, as summarised in Table 7.3:

Table 7.3 Contaminants Identified above GAC below 700 mm bgl

Determinand	Total Number of Samples	Minimum	Maximum	Arithmetic Mean	GAC	Number of results >AC
Arsenic	4	21	95	58.25	32	3
Lead / log lead	4	30 / 1.48	4300 / 3.63	1320 / 2.61	450 / 2.65	2
Nickel	4	27	170	97.5	130	1
Zinc	4	53	4700	1753.25	3800	1
Benzo(a)pyrene	4	<0.1	2.5	0.92	1.0	1

Notes:
- shaded means arithmetic mean exceeds GAC
- All concentrations as mg/kg

The location of the exceedences below 700 mm bgl are presented on Figure 5.

7.2.4 Discussion of Results

The discussion below focuses on contaminants which have been identified with an arithmetic mean concentration exceeding the respective GAC i.e. arsenic, lead and benzo(a)pyrene within samples taken between 300 and 700 mm bgl, and arsenic and lead from samples taken below 700 mm bgl.

Isolated exceedences of GAC have also been identified within each of the depth zones, as follows:

Upper 300mm

- Arsenic within the upper 300 mm has been identified in exceedance of the GAC in two samples: WS3 0-0.15m bgl (53 mg/kg) and HP10.1-0.3 m bgl (38 mg/kg);
- Lead in the upper 300 mm has been identified in exceedance of the GAC in one sample: WS6 0.0-0.15 m bgl (480 mg /kg); and
- Benzo(a)pyrene in the upper 300 mm has been identified in exceedance of the GAC in three samples: WS6 0.0-0.15 m bgl (1.7 mg /kg), DP1 0.1-0.2 m bgl (1.7 mg /kg) and DP5 0.15-0.30 m bgl (1.9 mg /kg);

300-700mm

- Nickel between 300 and 700 mm has been identified in exceedance of the GAC in one sample: DP12 0.60-0.80 m bgl (170 mg/kg); and
- PAHs, which includes benzo(a)anthracene (24 mg kg), chrysene (22 mg/kg), benzo(b)fluoranthene (25 mg/kg), indeno(1,2,3-cd)pyrene (9.6 mg/kg), and dibenzo(a,h)anthracene (1.6 mg/kg) between 300 and 700 mm have been identified in exceedance of their respective GACs in one sample: WS2 0.2-0.4 m bgl;

Below 700mm

- Nickel below 700 mm bgl has been identified in exceedance of the GAC in one sample: WS3 1.0-1.2 m bgl (170 mg /kg);
- Zinc below 700 mm bgl has been identified in exceedance of the GAC in one sample: WS5 5.0-5.20 m bgl (4700 mg/kg); and
- Benzo(a)pyrene below 700 mm bgl has been identified in exceedance of the GAC in one sample: WS5 5.0-5.20 m (2.5 mg /kg)

The significance of these individual exceedences with respect to potential risks to residents at the site is also discussed below.

Arsenic

The arithmetic mean concentration for arsenic for samples analysed from between 300 and 700 mm bgl are above the GAC (32 mg/kg). The exceedences tend to be encountered within fill type 3 (light grey ashy material), rather than other material types identified in samples taken from this depth. Concentrations in excess of the GAC range between 41 mg/kg and 87 mg/kg.

From review of the dataset it appears that elevated concentrations between 300 and 700 mm bgl dataset above the GAC have been identified at properties within the central southern area of the site:

- HP1 0.40-0.50 m bgl – No. 19 Old Bath Road (Fill type 3);
- HP2 0.30-0.50 m bgl – No. 5 Strathmore Drive (Fill type 3);
- HP3 0.40-0.60 m bgl – No. 1 Kilowna Close (Fill type 2);
- HP8 0.60-0.70 m bgl – No. 31 Strathmore Drive (Fill type 3);
- HP9 0.50 – 0.70 m bgl – No. 9 Strathmore Drive (Fill type 3); and
- DP12 0.60 - 0.80 m bgl – No. 4 Strathmore Drive (Fill type 3).

The arithmetic mean concentration for the material present below 700mm is also in excess of the GAC. However, four samples have been identified with concentrations of arsenic in excess of the GAC. Three out of these four samples scheduled for analysis from this depth have elevated concentrations above the GAC, which are located within the central area of the site:

- WS2 0.80-1.00 m bgl – No. 7 Strathmore Drive (Fill type 2);
- WS3 1.0-1.20 m bgl - No. 8 Strathmore Drive (Fill type 2); and
- WS5 5.00-5.20 m bgl – No. 2 Kilowna Close (Fill type 2).

The arithmetic mean concentration for material present at the surface to 300mm is below the GAC; however two individual exceedences of the GAC have been identified. It is noted that these two arsenic concentrations have been identified at HP1 and WS3, where exceedences of the arsenic GAC have been identified within the deeper Made Ground, which could suggest that some degree of intermixing between ground types has taken place in these areas.

Further statistical assessment of the data sets for 300-700mm and greater than 700mm has been undertaken and is summarised below in Table 7.4.

Table 7.4 Summary Statistics for Arsenic

Location	Number of Samples	Arithmetic Mean	Lower Confidence Level	Enough Evidence to reject Null Hypothesis?[1]	Outliers?
Arsenic 300-700 mm	15	36.13	24.61	Yes (balance of probability of 73%)	No
Arsenic below 700 mm	4	58.25	19.71	Yes (balance of probability of 90%)	No

Notes:
- All units in mg/kg
- [1]Null Hypothesis: The true mean concentration is equal to or less than the critical concentration
- Data includes outliers

GAC for arsenic is 32 mg/kg

No statistical outliers have been identified within both datasets for arsenic, when log-normal is applied to the data set. The results indicate that there is sufficient evidence to reject the null hypothesis, on the balance of probability. However, the arithmetic mean is considered to be marginally above the GAC for both material present between 300-700 mm (1.1 times the GAC) and below 700 mm (1.8 times the GAC). Furthermore, the lower confidence level for both datasets is well below the GAC, given this and the fact that the higher concentrations are identified within the deeper material, where the potential for exposure via ingestion pathways (predominant exposure pathway for arsenic) is lower it is considered unlikely that measured concentrations of arsenic at the site will present a significant risk to residents.

Lead

Due to the absence of current guidance or advice regarding the approach to the assessment of lead in soil in the UK, the former SGV has been used as the GAC. It is worth noting that there is currently uncertainty regarding the appropriateness of the model used to derive the SGV, in particular, the blood lead level used as the toxicological benchmark. There is also a growing body of evidence that lower blood lead levels than previously believed may impair neurological development. Therefore, the potential risks from lead should be reviewed as updated guidance is issued.

AMEC has calculated the arithmetic mean for the concentrations of lead recorded at the site and log of the concentrations. The results presented in Tables 7.1, 7.2 and 7.3 indicate that the log arithmetic mean for all depths is below the GAC. As such the log concentrations have not been considered further within this assessment. However, further consideration of the risks from lead has been undertaken using the standard concentrations, as this is considered health protective with respect to risks to residents from lead identified at the site.

The arithmetic mean concentration is above the GAC (450 mg/kg) for samples taken from between 300 and 700 mm bgl and below 700 mm bgl, but below the GAC for material present at surface to 300 mm. Concentrations in excess of the GAC range between 530 mg/kg to 3200 mg /kg for 300-700 mm and within the dataset below 700 mm bgl, concentrations in excess of the GAC range between 540 mg/kg to 4300 mg/kg.

The exceedences tend to be encountered within fill type 3 (light grey ashy material), rather than other material types identified in samples taken from this depth. Concentrations above the GAC have been identified at properties largely within the southern area of the site:

- HP1 0.40-0.50 m bgl – No. 19 Old Bath Road (Fill type 3);
- HP2 0.30-0.50 m bgl – No. 5 Strathmore Drive (Fill type 3);
- HP3 0.40-0.60 m bgl – No. 1 Kilowna Close (Fill type 2);
- DP1 0.6-0.70 m bgl – No. 17 Old Bath Road (Fill type 3); and
- DP12 0.60 - 0.80 m bgl – No. 4 Strathmore Drive (Fill type 3).

Within the samples taken from below 700 mm bgl, two out of the four samples scheduled for analysis from this depth have elevated concentrations above the GAC, which are located within the central area of the site:

- WS2 0.80-1.00 m bgl – No. 7 Strathmore Drive (Fill type 2); and
- WS3 1.0-1.20 m bgl - No. 8 Strathmore Drive (Fill type 2).

The results of the statistical assessment are summarised below in Table 7.5.

Table 7.5 Summary Statistics for Lead

Location	Number of Samples	Arithmetic Mean	Lower Confidence Level	Enough Evidence to reject Null Hypothesis?[1]	Outliers?
Lead 300 – 700 mm	15	493.67	112.2	Yes (balance of probability of 58 %)	No
Lead below 700 mm	4	1320	<0	Yes (balance of probability of 78%)	No

Notes:
- Assessment based on log lead results
- All units in mg/kg
- [1]Null Hypothesis: The true mean concentration is equal to or less than the critical concentration
- Data includes outliers
- GAC for lead is 450mg/kg

No statistical outliers have been identified within both datasets for lead, when log-normal is applied to the data set. The results indicate that there is sufficient evidence to reject the null hypothesis, on the balance of probability. However, the arithmetic mean is considered to be marginally above the GAC for 300-700 mm (1.1 times the GAC) and below 700 mm (2.9 times the GAC). Furthermore, the higher concentrations of lead have been identified within the deeper Made Ground encountered at the site, where potential exposure via ingestion pathways (predominant route for exposure to lead) is much lower. Note that the measured concentrations of lead within the upper 300 mm of material present across the site are lower than that identified within the deeper Made Ground, with only one marginal exceedance of the GAC (1.1 times the GAC) identified within nineteen samples. As a

result, it is considered unlikely that measured concentrations of lead at the site will present a significant risk to residents.

Other Metals

In general, metal concentrations were found above the laboratory limit of detection (LoD), with the exception of hexavalent chromium and selenium which were not encountered above the LoD (<4.0 mg/kg and <1.0 mg/kg, respectively). All measurable concentrations of boron, cadmium, chromium, copper, mercury and selenium are below their respective GACs and hence are unlikely to present a significant risk to residents at the site.

Individual exceedences of the GAC for nickel and zinc have been identified. Sample concentrations of nickel have been found in excess of the GAC within the 300 and 700 mm bgl and below 700 mm bgl datasets, on one occasion. Zinc has been identified at a concentration in excess of the GAC in one sample within the below 700 m bgl dataset. The concentrations encountered are all considered to be marginally in excess of the GAC, as shown below:

- Nickel between 300 and 700 mm has been identified in exceedance of the GAC in one sample: DP12 0.60-0.80 m bgl (170 mg/kg), which is 1.3 times greater than the GAC;
- Nickel below 700 mm bgl has been identified in exceedance of the GAC in one sample: WS3 1.0-1.2 m bgl (170 mg /kg) which is 1.3 times greater than the GAC; and
- Zinc below 700 mm bgl has been identified in exceedance of the GAC in one sample: WS5 5.0-5.20 m bgl (4700 mg/kg), which is 1.2 times greater than the GAC.

Given these marginal exceedences and apparent isolated nature of these higher concentrations of nickel and zinc, it is considered unlikely that these contaminants will present a significant risk to residents at the site.

Cyanide

All concentrations of free cyanide are below the GAC, with the majority of samples recording a concentration below the laboratory limit of detection (<1.0 mg/kg). As a result, cyanide is unlikely to present a significant risk to residents at the site.

Phenols

All concentrations of monohydric phenols are below the GAC and hence this contaminant is unlikely to present a significant risk to residents at the site.

Benzo(a)pyrene

The arithmetic mean concentration for material present above 300mm and below 700mm is below the GAC of 1.0 mg/kg. However, the arithmetic mean concentration for benzo(a)pyrene in samples analysed from between 300 and 700 mm bgl is above the GAC. These exceedences of the GAC do not appear to be associated with any particular type of material, and are reasonably sporadic in nature across the site. Concentrations in excess of the GAC range between 1.2 mg/kg and 21 mg/kg.

From review of the dataset it appears that elevated concentrations between 300 and 700 mm bgl dataset above the GAC have been identified at the following properties:

- WS2 0.20-0.40 m bgl - No. 7 Strathmore Drive (Fill type 1);
- HP1 0.40-0.50 m bgl – No. 19 Old Bath Road (Fill type 3);
- HP6 0.30-0.50 m bgl – No. 32 Strathmore Drive (Fill type 2); and
- DP12 0.60 - 0.80 m bgl – No. 4 Strathmore Drive (Fill type 3).

It is noted that the three benzo(a)pyrene exceedences encountered within the upper 300 mm dataset are within WS6, DP2 and DP5, which have exceedences identified deeper in the exploratory holes and is again suggestive of some degree of intermixing. The three exceedences of the GAC identified within the upper 300 mm are all considered to be marginally in excess of the GAC (1.7-1.9 times) and hence are unlikely to present a significant risk to residents at the site.

Further statistical assessment of the data set has been undertaken for the 300 to 700 mm dataset. The results of the statistical assessment are summarised below in Table 7.6.

Table 7.6 Summary Statistics for Benzo(a)pyrene

Location	Number of Samples	Arithmetic Mean	Lower Confidence Level	Enough Evidence to reject Null Hypothesis?[1]	Outliers?
Benzo(a)pyrene 300 – 700 mm	15	1.93	<0	Yes (balance of probability of 74%)	No

Notes:
- All units in mg/kg
- [1]Null Hypothesis: The true mean concentration is equal to or less than the critical concentration
- Data includes outliers
- GAC is 1.0 mg/kg

No statistical outliers have been identified within the 300 – 700 mm benzo(a)pyrene data set, when log-normal is applied to the data set. The results indicate that there is sufficient evidence to reject the null hypothesis, on the balance of probabilities. However, the arithmetic mean is considered to be marginally above the GAC (1.9 times the GAC), with the lower confidence level also below the GAC.

The dominant route for exposure to benzo(a)pyrene is via ingestion pathways. The highest concentrations of benzo(a)pyrene has been identified at a relatively shallow depth (0.2-0.4m at WS2 – 21 mg/kg); however in comparison to the other exceedences identified within this zone, such a magnitude of exceedance of the GAC appears to be an isolated occurrence, with the other concentrations identified as 1.2 mg/kg, 3.7 mg/kg and 1.4 mg/kg. Taking into account the concentrations of benzo(a)pyrene identified within the shallower material as a whole across the site (above 300 mm and between 300-700 mm) and apparent isolated nature of this higher

concentrations of benzo(a)pyrene, it is considered unlikely that the measured concentrations of benzo(a)pyrene will present a significant risk to residents.

Other PAHs

Concentrations of other PAHs were generally found to be slightly above the LoD in samples taken from across the site and below their respective GACs. One sample (WS2 0.2-0.4 m bgl) from the dataset between 300 and 700 mm bgl, recorded concentrations of several PAHs, including benzo(a)pyrene which is discussed above, as follows:

- Benzo(a)anthracence – 24 mg/kg (GAC 5.9 mg/kg);
- Chrysene – 22 mg/kg (GAC 9.3 mg/kg);
- Benzo(b)fluoranthene – 25 mg/kg (GAC 7 mg/kg);
- Indeno(123-cd)pyrene – 21 mg/kg (GAC 4.2 mg/kg); and
- Dibenzo(ah)anthracene – 1.6 mg/kg (GAC 0.9 mg/kg).

Given that this appears to be a very isolated occurrence, with no other exceedences of the GACs for other PAHs identified within this dataset or other two datasets, it is considered unlikely that these contaminants will present a significant risk to residents at the site.

Total Petroleum Hydrocarbons

All measured concentrations of TPH recorded at the site are below their respective GACs. Total petroleum hydrocarbons have been assessed with respect to a TPH Hazard Index, allowing an assessment of potential additive risk to be made. This has been undertaken in accordance with the Environment Agency guidance[5]. All of the samples analysed for TPH have recorded a HI of below 1, indicating that additive TPH is not considered to be significant with respect to risk to residents at the site.

Volatile Organic Compounds

All concentrations of volatile organic compounds are below their respective GAC or screening values and hence it is unlikely that these contaminants will present a significant risk to residents at the site.

Asbestos

Asbestos was scheduled for analysis in 15 samples from the site. None of the samples detected asbestos, with the exception of WS5 4.50 m bgl. The asbestos encountered within this sample was observed within a board/ tile, indicating that it was within the cement bound form. The potential risks from bound asbestos such as this is

[5] Environment Agency, 2005, The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils – Science Report P5-080/TR3

relatively low if kept intact, minimising the potential for fibre release. Given the depth of this observed asbestos, it is considered unlikely that this material, or other present within the vicinity of this location, will be disturbed during everyday activities at the site. As such, asbestos is not considered to present a significant risk to residents at the site.

7.3 Normal Background Concentrations

Reference has been made to the BGS and Defra guidance document (Ref. CR/11/145), Normal Background Concentrations of Contaminants in the soils of England, dated 2011. This document provides technical guidance on normal levels of contaminants in English soils for a limited number of determinands. The data obtained from the site has been compared to the urban and principal Normal Background Concentrations (NBCs):

NBCs for benzo(a)pyrene have been provided for two main domains; urban and principal. The site appears to be present within the principal domain, which has an NBC of 0.5 mg/kg. Concentrations of benzo(a)pyrene identified on site have been identified above the NBC in ten of the twenty eight samples and hence these higher concentrations are unlikely to be attributed to background concentrations of benzo(a)pyrene in the area.

NBCs for arsenic have been provided for three main domains; ironstone, mineralization and principal. The study site is shown to be present within the principal domain, which has an NBC for arsenic of 32 mg/kg. The NBC is the equal to the GAC used in the assessment above, with several exceedences of the GAC being identified across the site. As a result this is unlikely to be attributed to background concentrations in the area.

NBCs for lead have been provided for three main domains; urban, mineralization and principal. The study site is shown to be present within the principal domain, which has an NBC for lead of 180 mg/kg. Concentrations of lead in excess of the NBC have been recorded in sixteen samples from across the site, and hence it is unlikely that this is related to background concentrations of lead in the area.

7.4 Potable Water Supply

Soil samples taken from the upper 1.2 m were screened against threshold values set out by Thames Water for the risk assessment of potable supply pipes. Services such as drinking water pipelines are installed into ground within the upper 1.2 m bgl, which is the reason for selecting samples taken from this depth.

It is noted that in our proposal we stated that soil samples would be screened against UK Water Industry Research (UK WIR) 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites' (Ref. 10/WM/03/21). However, Thames Water have produced their own trigger levels for services for potable water, and considering Thames Water provides the drinking water services on site it is considered appropriate to use these threshold concentrations for screening purposes. As such, the trigger values set by Thames Water are considered to be more appropriate.

The screening identified the following isolated exceedences of the trigger levels out of nine samples taken from the upper 1.2 m:

- TPH Aromatic >EC12-21 HP6 0.3-0.5 m bgl (15 mg/kg);
- TPH Aliphatic >EC12-21 HP2 0.3-0.5 m bgl (110 mg/kg);
- TPH Aromatic >EC5-C12 in HP2 0.3-0.5 m bgl (1.7 mg/kg); and
- TPH Aliphatic >EC5-C12 in HP2 0.3-0.5 m bgl (10 mg/kg).

These exceedences appear to be relatively isolated and are marginal in comparison to the threshold concentrations for aromatic >EC12-21, >EC5-12 and aliphatic >EC5-12. It should be noted that AMEC did not observe any olfactory or visual evidence of hydrocarbon contamination on site. On this basis and given the marginal and isolated exceedences of these threshold concentrations, based on the measured concentrations of TPH identified at the site to date the risks to potable water supply pipes and residents through ingestion of contaminated drinking water is considered unlikely to be significant.

Screened data is presented within Appendix D.

7.5 Ground Gas Monitoring

Ground gas monitoring has been undertaken by Wokingham Borough Council on sixteen occasions over a period of six months, following the installation of the window sampler boreholes. The dates and conditions for the ground gas monitoring visits are shown in Table 7.7.

Table 7.7 Ground Gas Monitoring Visits

Monitoring Date	Atmospheric Pressure (mb)	Falling Pressure (yes /no)[1]	Monitored during Worst Case Gassing Conditions
8 October 2013	1021	Yes	No
14 October 2013	1003	Yes	No
22 October 2013	992	Yes	Yes
28 October 2013	991	No	No
5 November 2013	987	No	No
20 November 2013	994	Yes	Yes
2 December 2013	1030	Yes	No
17 December 2013	1020	Yes	No
30 December 2013	1003	No	No
13 January 2014	1001	Yes	No
21 January 2014	1006	Yes	No
3 February 2014	997	Yes	Yes
18 February 2014	1004	No	No
3 March 2014	980	No	No
18 March 2014	1009	No	No
1 April 2014	1007	Yes	No

1 (falling 1.6-3.5mbar 3 hours prior to monitoring)

The gas monitoring data has been assessed using CIRIA document C665 '*Assessing Risks Posed by Hazardous Ground Gases to Buildings'* (dated 2007). This method uses both gas concentrations and borehole flow rates to define a Gas Screening Value and Characteristic Situation. The gas risk assessment methodology is based on the calculation of a Gas Screening Value (GSV) for each of the key parameters (methane and carbon dioxide) which is then compared to the threshold values provided in Table 8.5 or Table 8.7 of CIRIA C665, depending on the proposed development type. These threshold values determine the gas Characterisation Situation (CS) and the ground gas conditions.

Ground gas data has been assessed with respect to Situation B – Low rise housing with gardens. The results of the monitoring are presented in Appendix C and summarised below in Table 7.8. The details of all property constructions are not known; however, this is considered to be a reasonable basis for assessment.

Table 7.8 Summary of Ground Gas Monitoring Results

Monitoring Location	Flow Rate (l/hr)	Methane (steady % v/v)	Carbon Dioxide (steady % v/v)	Oxygen (% v/v)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Calculated GSV[1]		Water Level (m bgl)
							Methane	Carbon Dioxide	
WS1	-0.1 to 0.2	0.0	3.2 to 15.3	4.2 to 16.8	0	0	0	0 to 0.0272	4.07 to Dry (5.92)
WS2	-0.1 to 0.3	0.0	6.5 to 17.5	1.5 to 12.6	0	0	0	0 to 0.0525	3.84 to Dry (4.95)
WS3	-0.1 to 0.1	0.0	0.7 to 6.0	15.2 to 21.0	0	0	0	0 to 0.006	3.23 to Dry (3.65)
WS4	0.0 to 0.3	0.0	2.9 to 3.9	15.5 to 18.0	0	0	0	0 to 0.0096	Dry (2.81)
WS5	0.0 to 0.1	0.0	5.0 to 13.6	4.6 to 16.6	0	0	0	0 to 0.0128	3.52 to Dry (4.98)
WS6	0.0 to 0.2	0.0	4.7 to 11.0	6.8 to 15.8	0	0	0	0 to 0.011	Dry (2.58)

1 - GSVs have been calculated separate for each visit based on the concentration and flow rate recorded.

The six of the sixteen rounds were undertaken at periods of low pressure (<1000 mb), with ten also undertaken during a period of falling pressure. Gas monitoring data is summarised as:

- Methane concentrations were not encountered above 0.0 % v/v on any of the monitoring rounds;
- Carbon dioxide concentrations were found generally found to be elevated, and ranged between 0.7% v/v and 17.5% v/v. The maximum concentration was recorded in WS2 on 5 November 2013. The presence of carbon dioxide corresponds with other gas monitoring data undertaken on the site as part of previous site investigations. Likewise elevated methane has not been recorded at the site previously;
- Oxygen concentrations recorded ranged between 1.5% v/v and 21.0% v/v. The minimum concentration was recorded in WS2 on 5 November 2013;
- Carbon monoxide and hydrogen sulphide concentrations were not recorded above 0.0 ppm on any of the monitoring rounds;
- All of the boreholes were found to be dry on at least two occasions during the monitoring period. A small column of water was noted at WS1, WS2, WS3 and WS5 with groundwater being recorded at depth of between 3.23 m bgl (WS3) and 5.73 m bgl (WS1); and
- Flow readings have been recorded between -0.1 l/hr and 0.3 l/hr. The maximum flow reading was recorded in WS2 on 5 November 2013, which corresponds with the lowest atmospheric pressure recorded during the rounds to date (987 mb). A flow reading of 0.3 l/hr was also identified at WS4 on 13 January 2014, which corresponded with a period of falling pressure and relatively low atmospheric pressure (1001 mb), such conditions are generally regarded as worst-case for ground gas.

The CIRIA C665 assessment assigns a Traffic Light Assessment classification when data is assessed with respect to Situation B – Low rise housing with gardens. Due to the consistently high concentrations of carbon dioxide(above 5 % v/v) recorded in the majority of boreholes (except WS4 and WS3 on most monitoring rounds) the boreholes have been assessed as having Amber 1 and Amber 2 classification, which under CIRIA C665 guidance indicates that a low to high gas regime is present on site. This is based on the concentrations of carbon dioxide being identified at concentrations in excess of 5% on several occasions, rather than the calculated GSVs. Such as classification would potentially require the incorporation of 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. It should be noted that this assessment is with respect to new housing developments and not Part 2A assessments. Given the lower flow rates identified at the site it is considered unlikely, based on current observations, that ground gas will present a significant risk, with respect to Part 2A, to current on site residents.

Note that the concentrations of ground gas recorded at WS3 and WS4 are assessed as having a Green classification (with the exception of WS3 on 22 October which falls into Amber 1), where a negligible gas regime has been identified and gas protection measures are not considered to be necessary.

7.6 Human Health GQRA Summary

7.6.1 Soils

The above assessment has shown that there are no clear patterns with regards to contamination across the site. However, exceedences of arsenic and lead tend to be concentrated to fill type 3 material, which is described as a light grey ashy material within the landfill material, and higher concentrations tend to be concentrated around the central southern area of the site and within the 300-700 mm depth range.

On the basis of the available information the GQRA has established that there is unlikely to be a significant risk presented by the following contaminants which have been recorded at concentrations above the GAC at the site in a limited number of samples:

- Metals, including arsenic and lead;
- Cyanide;
- Phenols;
- PAHs, including benzo(a)pyrene;
- TPH (individual fractions and additive TPH);
- VOCs; and
- Asbestos.

7.6.2 Potable Water Supply

Although exceedences of the threshold concentrations for TPH have been identified within shallow site soils, given the fact that there have been no observed hydrocarbon odours or free phase product and that the exceedences appear to be isolated, the risks to residents at the site from ingesting TPH contaminated potable water are considered unlikely to be significant.

7.6.3 Ground Gas

The ground gas monitoring undertaken at the site to date has identified relatively high and widespread concentrations of carbon dioxide at the site. However, these have been associated with low gassing conditions and hence the potential for carbon dioxide to present a significant risk to both on site and off site residents is considered to be unlikely in the context of Part 2A.

8. Controlled Waters Generic Quantitative Risk Assessment

8.1 Introduction

An initial assessment of the potential risks to controlled waters i.e. Secondary Aquifer and nearby surface watercourse has been undertaken with reference to leachate data collected from the site.

8.2 Leachate Data and Assessment Approach

A total of four leachate samples were scheduled for analysis and compared with adopted Water Quality Targets (WQT). WQTs are based on published water quality/ environmental standards, for determinands where values are available, in order to confirm contaminants of concern and determine whether further assessment of risks may be warranted.

The WQTs adopted comprised the following Generic Assessment Criteria (GAC):

- Water Framework Directive (WFD) Environmental Quality Standards (EQS); and
- Drinking Water Standards (DWS).

Environmental Quality Standards

Water Framework Directive (WFD) Standards have been adopted as WQTs (which are officially implemented 25 December 2013) and are effectively "new" Environmental Quality Standards (EQS) presented within 'The River Basin Districts Typology, Standards and Groundwater Threshold Values (Water Framework Directive) (England and Wales) Directions 2010'.

Drinking Water Standards

UK DWS are set out in the Water Quality (Water Supply 2000) Regulations. These values have been used for assessment of groundwater risk.

8.3 Findings

A small number of samples encountered exceedences of the WQTs, as follows:

- Sulphate in DP12 0.6-0.8 m bgl and WS2 0.2-0.4 m bgl which was in exceedance of the UK DWS and EQS (up to 3.5 times);
- Arsenic is HP1 0.1-0.3 m bgl which was in exceedance of the UK DWS (1.1 times UK DWS);

- Lead in DP12 0.6-0.8 m bgl, HP1 0.1-0.3 m bgl and WS3 1.0-1.2 m bgl which was in exceedance of the UK DWS and EQS (up to 2.3 times the UK DWS and 3.3 times the EQS); and
- Chromium in HP1 0.1-0.3 m bgl and WS3 1.0-1.2 m bgl which was in exceedance of EQS (not UK DWS) by up to 1.5 times the EQS.

The exceedance of the water quality targets above, with the exception of sulphate and lead, are considered to be marginal. There is considered to be a moderate potential for sulphate and lead to leachate from the Made Ground present on site. However, based on the fact that no substantial groundwater has been encountered on site during AMEC's investigation and this preliminary assessment, the concentrations identified are considered unlikely to represent a potential significant risk to the Secondary A Aquifer or nearby surface watercourse. However, groundwater samples would be required to confirm this.

The screened data is presented as Appendix D. Exceedences of screening values are presented as Figure 6.

9. Updated Conceptual Model

An updated conceptual model and assessment for the investigated contaminant linkages is presented below as Table 9.1:

Table 9.1 Updated Conceptual Model Summary

Contaminant Linkage	Potential Source	Exposure Route	Receptor	Assessment Findings	Assessment of Part 2A Status
1/15	Former landfill on site (inorganic contaminants)	Inhalation of dusts, dermal contact and ingestion	Current site users (residential with gardens)	Concentrations of arsenic, lead, nickel, zinc and asbestos (in one sample) have been recorded above their respective GACs. However, the majority of these exceedences of the GAC are marginal and / or isolated occurrences, with the higher concentrations generally present at greater depths where the potential for residents to be exposed to this material is low. Based on the results of this investigation, the potential risks to residents from these contaminants are not considered to be significant and hence the potential for **(POSH) is considered unlikely**.	Category 3 human health
4/11	Former landfill on site (inorganic and organic contaminants)	Leaching and migration	Secondary A Aquifer (Superficial Deposits)	Arsenic, lead and sulphate (chromium with respect to non-drinking water) have been encountered in exceedance of the water quality targets within leachate samples analysed from soil from the site. It is noted that groundwater has not been encountered within window sampler boreholes installed on the site. Furthermore, the exceedences are noted as being marginal with respect to the screening values. As a result, based on this initial assessment **SPOCW is considered unlikely**.	Category 3 water
5/12	Former landfill on site (inorganic and organic contaminants)	Leaching and migration	Principal Aquifer	Not assessed as groundwater not encountered.	Not assessed
8	Former landfill on site (organic contaminants)	Inhalation of dusts, dermal contact and ingestion	Current site users (residential with gardens)	Benzo(a)pyrene and a small amount of other PAHs have been encountered in exceedance of the GAC within soils underlying the site. However, it is noted that these exceedences are generally marginally above the GAC and isolated occurrences. As such, the risk of the contaminant pathway is reduced slightly. The data obtained to date indicate that **POSH is unlikely**.	Category 3 human health

Table 9.1 (continued) Updated Conceptual Model Summary

Contaminant Linkage		Potential Source	Exposure Route	Receptor	Assessment Findings	Assessment of Part 2A Status
17	Former landfill on site (ground gas: methane and carbon dioxide)	Inhalation	Current site users (residential with gardens)		Elevated concentrations of carbon dioxide have been encountered during monitoring of the installed boreholes on site, resulting in Amber 1 and 2 Traffic Light Assessment. Low flows have recorded, indicating that the landfill material is not actively gassing. As such, the risks are reduced for current site users within properties. Based on the flow rates obtained as part of the gas monitoring regime undertaken to date, it is considered that **POSH is considered unlikely**.	Category 3 human health

The full Updated Conceptual Model is presented in Appendix F.

10. Conclusions

10.1 Part 2A Status

Details of the investigated contaminant linkages associated with the site are presented within Table 9.1. On the basis of the investigations undertaken at the site, the primary contaminants of concern in relation to risks to human health have been arsenic, lead, benzo(a)pyrene and asbestos.

For land to be formally determined by the Council as 'contaminated land' on the basis of risks to human health there has to be robust science-based evidence of 'significant harm' or the 'significant possibility of significant harm' (SPOSH) from contaminants on site.

The quantitative risk assessment process undertaken for the human health assessment can be used to assess the 'possibility of significant harm'; however, the assessment of the 'significant possibility of significant harm' is based on judgement and other factors such as the seriousness of the harm in question including the impact on health, quality of life, suffering and perceived scale of harm.

The generic human health risk assessment has identified exceedences of the GAC for a small number of contaminants, including arsenic, lead and benzo(a)pyrene. The data obtained within this site investigation indicates a marginal exceedance of the GACs, and notably indicates that exceedances within the upper 300 mm of soil on the site are sporadic and the arithmetic mean does not exceed the GAC for upper 300 mm soils. The Contaminated Land Statutory Guidance states that GACs represent cautious estimates of levels of contaminants in soil at which there is considered to be no risk to health or, at most, a minimal risk to health. They should not be used as direct indicators of whether a significant possibility of significant harm to human health may exist or as indicators of levels above which detailed risk assessment would automatically be required under Part 2A. In view of this, and the results of the generic human health risk assessment, it is considered unlikely that measured concentrations of the identified contaminants will present a significant risk to residents at the site. Therefore a 'possibility of significant harm' and a 'significant possibility of significant harm' to human health have not been demonstrated at the site as part of this investigation.

Historic anecdotal information held by the Council suggests that the sources of the landfilled material included food waste from a nearby US army camp. A significant proportion of the fill material was identified as containing ash. Ash waste associated with army activities can potentially contain material with elevated radioactivity depending on its presumed source. We have no evidence to suggest that the ash may be radiologically contaminated at this site but it would be prudent to take a precautionary approach and rule out this potential low risk.

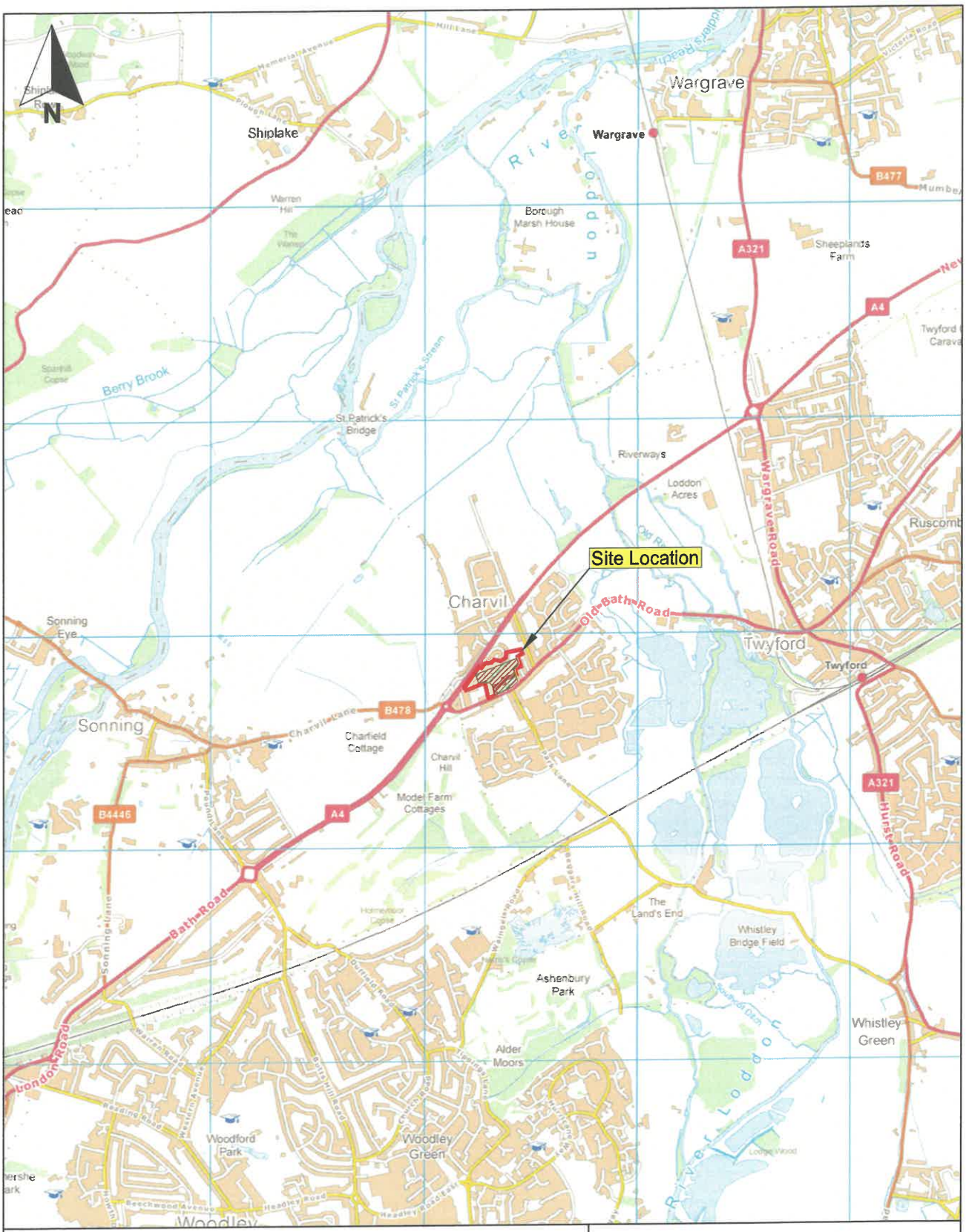
The investigation indicates that the site could be considered likely to fall within Category 3 in accordance of the Part 2A guidance on the basis of human health and controlled waters. A Category 3 site encompasses land which is not considered to meet the legal definition of Contaminated Land and hence regulatory intervention under Part 2A is not warranted. However, it should be noted that this assessment is based upon a preliminary investigation with some uncertainty given the heterogeneous nature of landfilled materials.

10.2 Recommendations

The investigation works undertaken to date have not identified a 'possibility of significant harm' or a 'significant possibility of significant harm' to human health or controlled waters at the site. However, there is some uncertainty given the heterogeneous nature of landfilled materials. In order to provide more certainty further sampling of shallow soil samples, particularly with respect to metals and PAH analysis may be beneficial in providing more evidence to confirm the absence of significant risks to residents. It is also recommended that advice is sought from the Environment Agency as to whether further assessment of the risks to controlled waters is required. A limited radiological walkover survey with an appropriate instrument is recommended in areas where ash material was found in the top 300mm to rule out the potential low risk associated with the ash and radioactivity.

It is noted that four of the delineation pits contained material that was possibly landfill derived. Three of these were located south of the previously identified landfill area, one of which (DP12) encountered exceedances of contaminants, and as such would suggest that the extent of the former landfill extends further to the south into the properties on Old Bath Road than was previously indicated. The investigation, however, does appear to confirm that it is only the southern half of the site that was filled as no landfill derived material was found in the delineation pits to the north.

Figures



Key

Potential boundaty of the landfill

Suspected area of infill

0 km 1.5 km

Scale 1:25,000 @ A4

Wokingham Borough Council
Strathmore Drive Part 2A Site Investigation

Figure 1
Site Location and Outline of Landfill

December 2013
29968-Lon10.dwg parkj

amec

Key

- Potential extent of the landfill (former landfill site boundary)
- Suspected area of infilling (from available information e.g. aerial photography and planning records)
- Delineation pit
- Hand dug pit
- Window sample

0 m 50 m

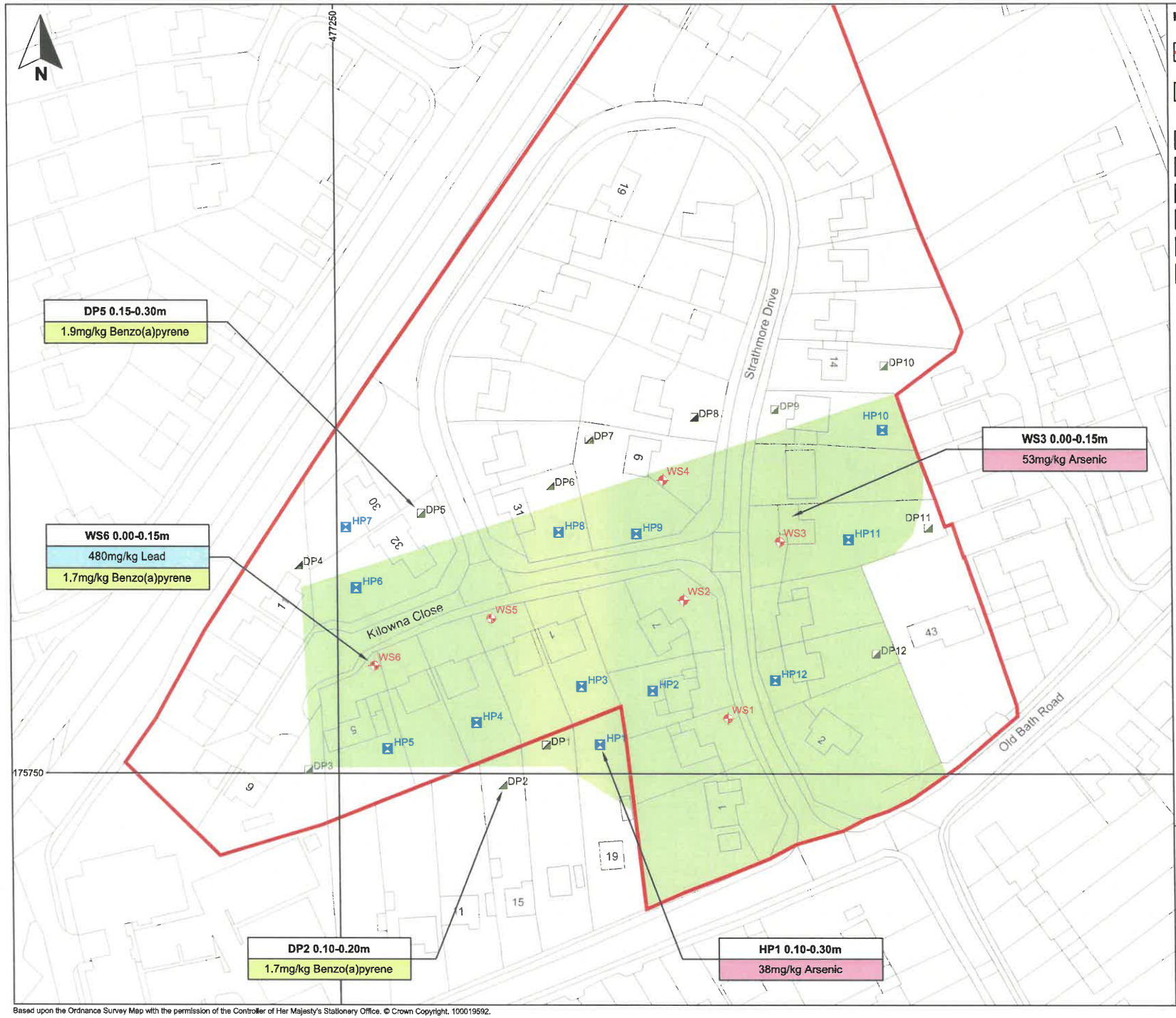
Scale 1:1000 @ A3

Wokingham Borough Council
Strathmore Drive Part 2A Site Investigation

Figure 2
Exploratory Hole Locations

January 2014
29968-Lon05a.dwg squij

amec



Key

- Potential extent of the landfill (former landfill site boundary)
- Suspected area of infilling (from available information e.g. aerial photography and planning records)
- Delineation pit
- Hand dug pit
- Window sample
- Arsenic — Exceedance of Arsenic
- Lead — Exceedance of Lead
- PAH — Exceedance of Benzo(a)pyrene

0 m — 50 m

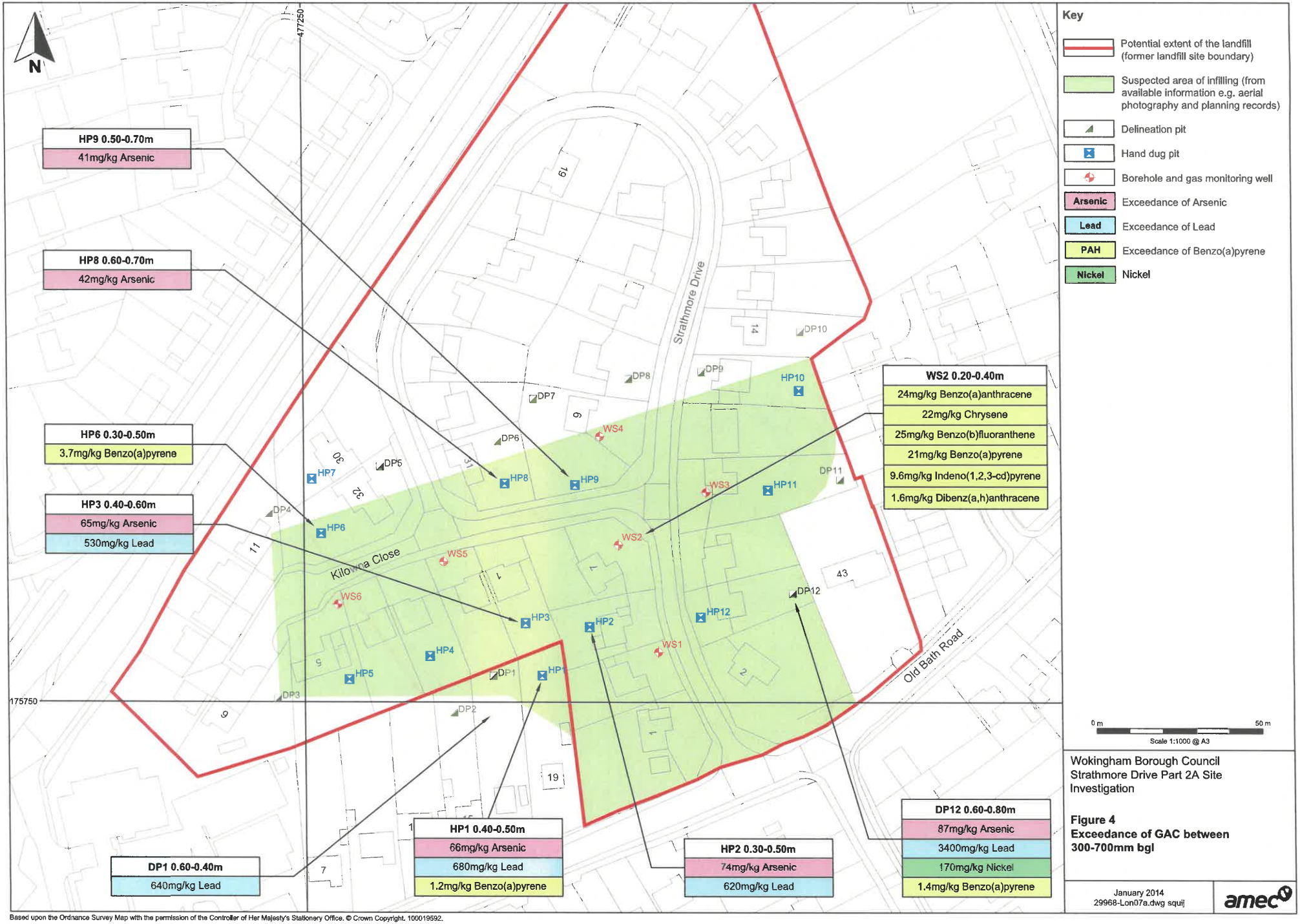
Scale 1:1000 @ A3

Wokingham Borough Council
Strathmore Drive Part 2A Site Investigation

Figure 3
Exceedances of GAC in Upper 300mm

January 2014
29968-Lon06a.dwg squij

amec



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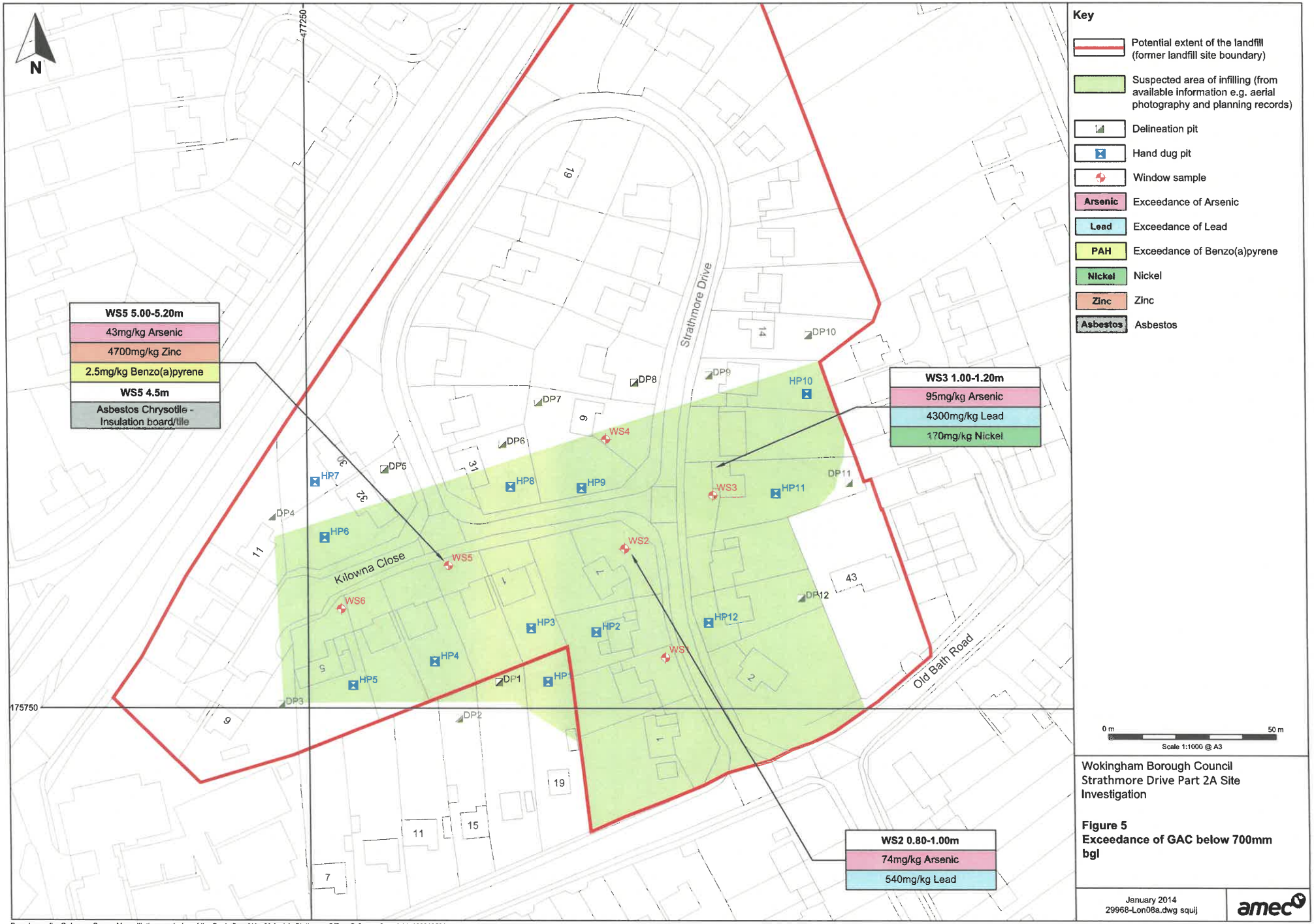
Strathmore Drive Part 2A Site Investigation

Figure 4
Exceedance of GAC between 300-700mm bgl

January 2014
29968-Lon07a.dwg squij

amec

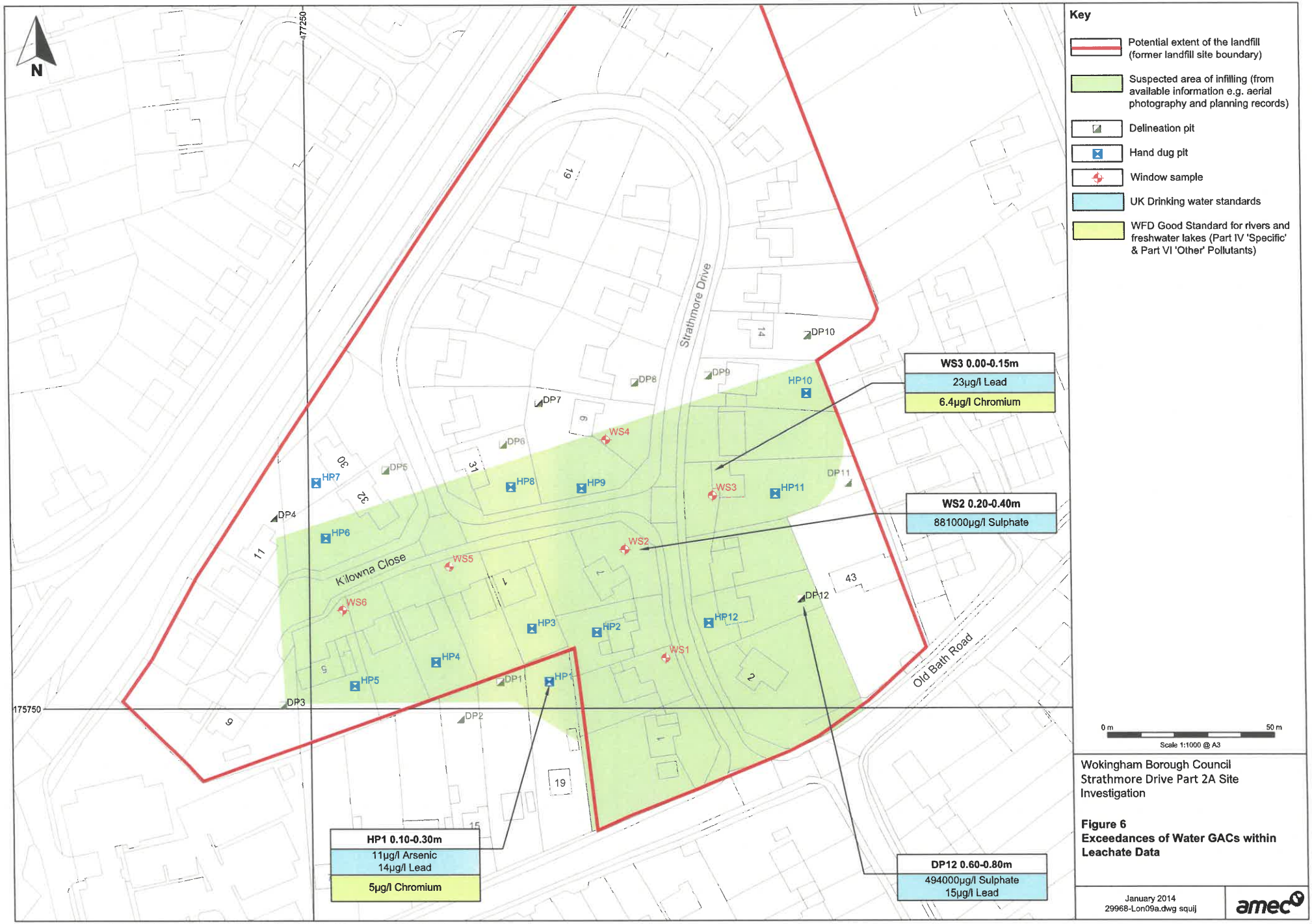


Wokingham Borough Council
Strathmore Drive Part 2A Site Investigation

Figure 5
Exceedance of GAC below 700mm bgl

January 2014
29968-Lon08a.dwg squij

amec



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Strathmore Drive Part 2A Site Investigation

Figure 6
Exceedances of Water GACs within Leachate Data

January 2014
29968-Lon09a.dwg squij

amec

Appendix A
Exploratory Hole Logs

GROUND TECHNOLOGY
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Trial Pit Record

DP1
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Greyish brown slightly gravelly silty fine to medium SAND. Gravel is angular to subangular fine to coarse flint.		0.25			ES	0.00-0.20	
MADE GROUND: Brown silty gravelly fine to medium SAND. Gravel is angular to rounded fine to coarse flint with rare glass. (GRAVEL SUBSOIL)		0.60			ES	0.30-0.60	
MADE GROUND: Brown silty very gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse flint ash clinker and domestic glass pottery and bone. rare metal and brick cobbles. (FILL 3)		1.00			ES	0.60-1.00	
End of Trial Pit at 1.00 m							

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Norfolk, PE34 3AF
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Trial Pit Record

DP2
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Dark brownish grey silty gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (TOPSOIL)					ES	0.10-0.20	
		0.25			ES	0.30-0.40	
MADE GROUND: Brown silty gravelly fine to medium SAND. Gravel is angular to subangular fine to medium ash flint and rare domestic pottery and glass. (GRAVEL SUBSOIL)							
		0.60			ES	0.60-0.70	
Yellowish brown silty gravelly fine to medium SAND, with some decayed root channels. Gravel is rounded fine to coarse flint. (RTD)							
		1.00					
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Norfolk, PE34 3AF
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Trial Pit Record

DP3
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: 0.00E

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Brownish grey silty gravelly fine to medium SAND. Gravel is angular fine to coarse flint. rare brick.					ES	0.00-0.20	
		0.25			ES	0.30-0.50	
Orange brown silty gravelly fine SAND. Gravel is angular to subangular fine to coarse flint. (NATURAL SUBSOIL)							
		1.00					
End of Trial Pit at 1.00 m							

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP4
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Brownish grey silty gravelly fine to medium SAND. Gravel is angular fine to coarse flint.					ES	0.00-0.10	
		0.25					
Brown silty gravelly fine SAND. Gravel is angular to rounded fine to coarse flint.					ES	0.40-0.50	
		1.00					
End of Trial Pit at 1.00 m							

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP5
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Brownish grey slightly silty gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse flint. With rare brick glass and charcoal.		0.15			ES	0.00-0.15	
					ES	0.15-0.30	
MADE GROUND: Greyish brown silty gravelly fine to medium SAND. Gravel is angular fine to coarse flint tarmac brick and rare glass and pottery.		0.30			ES	0.30-0.50	
Brown silty gravelly fine SAND. Gravel is angular to subangular fine to coarse flint.							
End of Trial Pit at 1.00 m		1.00					

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP6
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Brownish grey silty slightly gravelly fine to medium SAND.					ES	0.10-0.20	
		0.25					
Brown slightly gravelly silty fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (NATURAL SUBSOIL)					ES	0.40-0.50	
		1.00					
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP7
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
Greyish brown slightly gravelly silty fine to medium SAND. Gravel is angular to subangular fine to coarse flint.		0.20					
Brown slightly silty gravelly fine to medium SAND. Gravel is angular to subangular coarse flint.							
End of Trial Pit at 1.00 m		1.00					

Date: 30/09/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP8
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Greyish brown silty slightly gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint.		0.20			ES	0.10-0.20	
Brown silty slightly gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (NATURAL SUBSOIL)		0.60			ES	0.30-0.40	
Orangish brown clayey slightly gravelly fine to medium SAND. Gravel is angular fine to medium flint. (NATRUAL SUBSOIL)		1.00			ES	0.60-0.70	
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP9
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Greyish brown silty fine to medium SAND. (TOPSOIL)		0.15			ES	0.00-0.15	
MADE GROUND: Yellowish brown slightly silty fine to medium SAND		0.25			ES	0.30-0.40	
MADE GROUND: Greyish brown silty gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse flint with rare brick. (GRAVEL SUBSOIL)		0.50			ES	0.50-0.60	
Brown slightly gravelly silty fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (NATURAL SUBSOIL)		1.00					
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP10
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Greyish brown silty fine to medium SAND.					ES	0.10-0.20	
		0.25			ES	0.30-0.40	
Brown silty gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (RTD)							
		1.00					
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP11
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.10

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Concrete Slab		0.05					
Greyish brown slightly silty fine to medium SAND.		0.15					
Brown slightly silty slightly gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint.							
End of Trial Pit at 1.10 m		1.10					

Date: 30/09/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

DP12
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Brownish grey silty fine to medium SAND. (TOPSOIL)					ES	0.00-0.20	
		0.20			ES	0.20-0.40	
MADE GROUND: Very stiff brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse flint. (GRAVELLY SUBSOIL)		0.40					
MADE GROUND: Grey / brown silty gravelly SAND with ash, rare bone, metal, battery fragments, porcelain, glass (domestic). (FILL 3)					ES	0.60-0.80	
		1.00					
End of Trial Pit at 1.00 m							

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP1
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Dark brown humic topsoil with tress and grass roots and worms.		0.10			ES ES	0.00-0.10 0.10-0.30	
MADE GROUND: Light and dark brown mottled silty gravelly SAND. Gravel is fine to coarse subangular flint. Occasional concrete cobbles.		0.30			ES	0.40-0.50	
MADE GROUND: Loose light grey and brown mottled ash fill with abundant glass, shoe sole, rare wood, clinker and subangular flint gravel.							
End of Trial Pit at 1.00 m		1.00					

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Norfolk, PE34 3AF
Tel: 01553 817657
www.groundtechnology.co.uk

Trial Pit Record

HP2
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Greyish brown slightly silty gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint with rare ash. (FILL 1)		0.20			ES	0.10-0.20	
					ES	0.30-0.50	
MADE GROUND: Brownish grey silty gravelly fine to coarse ashy SAND. Gravel is angular to subangular fine to coarse ash clinker and domestic pottery glass bone and plastic. (FILL 3)							
End of Trial Pit at 1.00 m		1.00					

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

GROUND TECHNOLOGY
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Norfolk, PE34 3AF
Tel: 01553 817657
www.groundtechnology.co.uk

Trial Pit Record

HP3
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Brownish grey slightly gravelly silty fine to medium SAND. Gravel is rounded fine to medium flint.		0.15			ES	0.00-0.10	
MADE GROUND: Brown, orange and black mottled SILT, SAND and GRAVEL with glass. Frequent porcelain, batteries, rare brick, black ash and charcoal. (FILL 2)					ES	0.40-0.60	
End of Trial Pit at 1.00 m		1.00					

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP4
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Brownish grey silty fine to medium SAND. (TOPSOIL)		0.10					
MADE GROUND: Brown silty gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint with rare pottery and glass. (GRAVEL SUBSOIL)		0.40					
MADE GROUND: Dark brown and brown silty gravelly fine to medium ashy SAND. Gravel is angular fine to coarse ashy and domestic pottery and glass. rare metal and plastic. (FILL 2)		1.00					
End of Trial Pit at 1.00 m							

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP5
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Dark brown gravelly silty SAND with rare brick fragments, ceramics and rootlets. (TOPSOIL)					ES ES1	0.10-0.20	
		0.25					
Brown and orange sandy slightly gravelly SILT. Gravel is fine and medium subangular flint. (NATURAL GRAVEL SUBSOIL)					ES ES2	0.40-0.50	
		1.00					
End of Trial Pit at 1.00 m							

Date: 01/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP6
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Greyish brown silty gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse flint. (TOPSOIL)		0.20			ES	0.00-0.20	
MADE GROUND: Yellowish brown clayey gravelly fine to medium SAND. Gravel is angular coarse flint.		0.30			ES	0.30-0.50	
MADE GROUND: Brown silty gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse flint and ash with rare pottery and glass. (FILL2)		0.50			ES	0.50-0.70	
MADE GROUND: Brownish grey silty gravelly fine to medium ashy SAND. Gravel is angular to subangular fine to coarse flint and ash with rare pottery, glass and bone. Abundant Charcoal (FILL 3).		1.00					
End of Trial Pit at 1.00 m							

Date: 03/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP7
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Brownish grey slightly gravelly silty fine to medium SAND. Gravel is angular to rounded fine to coarse flint.					ES	0.10-0.30	
		0.30					
Yellowish brown silty gravelly fine to medium SAND. Gravel is angular to rounded fine to coarse flint. (NATURAL SUBSOIL)					ES	0.40-0.60	
...from 0.70m very gravelly							
		1.00					
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP8
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Greyish brown silty gravelly fine to medium SAND. Gravel is angular to rounded fine to coarse flint. (TOPSOIL)					ES	0.10-0.20	
MADE GROUND: Grey / brown ash, frequent glass fragments and bottles, porcelain fragments, iron wire, rare copper fragments, silt and fine sand. (FILL 3)		0.60			ES	0.60-0.70	
End of Trial Pit at 1.00 m		1.00					

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP9
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.10

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Dark brown gravelly SILT/SAND with roots and rare occasional fragments of concrete, brick and wood. Gravel is fine to course subangular to rounded flint. (FILL 1)					ES	0.10-0.30	
		0.40					
MADE GROUND: Light grey slightly ashy SILT/SAND FILL, with abundant glass (food containers), light bulbs, batteries, pottery, metal and rare clinker. (FILL 3)					ES	0.50-0.70	
		1.10					
End of Trial Pit at 1.10 m							

Date: 30/09/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP10
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Brownish grey silty gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse flint with a little brick and pottery. (TOPSOIL)					ES	0.20-0.30	
		0.40					
Orangish brown silty gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (GRAVEL SUBSOIL)					ES	0.50-0.60	
		0.70					
Firm yellowish brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse flint. (NATRUAL SUBSOIL)					ES	0.80-0.90	
		1.00					
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Trial Pit Record

HP11
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
TOPSOIL: Grass over mid brown fine sandy silty with rare occasional fine to coarse flint gravel.					ES	0.00-0.20	
		0.20					
Mid brown silty fine sand with rare fie and medium subrounded flint gravel. (GRAVEL SUBSOIL)							
		1.00					
End of Trial Pit at 1.00 m							

Date: 30/09/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks: 1. No fill, odour or visual or evidence of contamination.

Hole Stability:

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Trial Pit Record

HP12
Sheet 1 of 1

Project: Strathmore Drive, Charvil
Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates: -

Orientation of Trial Pit:

Length: - Width: - Depth: 1.00

Description	Legend	Depth (m)	O.D. Level	Water	Sample / Test Type	Sample / Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Dark brown silty slightly gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (TOPSOIL)		0.15			ES	0.00-0.15	
MADE GROUND: Yellowish brown silty gravelly fine to medium SAND. Gravel is angular to rounded fine to coarse flint. (FILL 1)		0.50			ES	0.30-0.40	
MADE GROUND: Brownish grey silty gravelly fine to coarse SAND. Gravel is angular fine to coarse ash pottery glass and oyster shell, rare metal and wood. (FILL 3)		1.00			ES	0.50-0.60	
End of Trial Pit at 1.00 m							

Date: 02/10/2013
Plant: Hand Tools
Logged By: JT / AMEC
Checked By: PL / AMEC

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)
	No Groundwater Encountered		

Groundwater Remarks:

Remarks:

Hole Stability:

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Window Sample Record

WS1
Sheet 1 of 1

Project: Strathmore Drive, Charvil

Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test Type	Sample Test Depth (m)	Remarks and Test Results PID (ppm)	Installations
MADE GROUND: Brown slightly silty gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. rare domestic glass and metal and batteries, rare ash from 1.00m. (FILL 1)				ES	0.10-0.30		
		1.20		ES	1.20-1.40		
MADE GROUND: Yellowish brown clayey gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse flint. Pocket of ash from 1.60m to 1.70m. (FILL 2)							
		2.10					
MADE GROUND: Dark grey and reddish grey silty gravelly fine to coarse ashy SAND. Gravel is angular fine to medium ash with rare flint domestic glass and batteries. (FILL 2)				ES	2.40-2.80		
				ES	3.80-4.00		
		5.70					
Greenish grey silty fine to medium SAND. (ALV)		5.90					
CHALK. (UCHK)		6.00					
Window Sample Complete at 6.00 m							

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Drive Records

Diameter (mm)	To (m)	Recovery (%)
102	2.00	12
89	3.00	50
78	4.00	50
68	5.00	30
58	6.00	30

Date: 01/10/2013
Plant: Dando Terrier
Drilled By: A. Elshof
Logged By: JT / AMEC
Checked By: PL / AMEC

Remarks: 1. Starter pit dug from GL to 1.20mbgl.

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Window Sample Record

WS2
Sheet 1 of 1

Project: Strathmore Drive, Charvil

Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test Type	Sample Test Depth (m)	Remarks and Test Results PID (ppm)	Installations
MADE GROUND: Grass over brown silty gravelly slightly sandy SILT. Gravel is angular to subangular fine to coarse flint with rare chalk. (FILL 1)				ES	0.20-0.40		
		0.40		ES0.2	0.40		
MADE GROUND: Brown slightly silty gravelly fine to medium SAND. Gravel is angular to rounded fine to coarse flint. Rare plastic, brick and glass. (FILL 2)		0.80		ES	0.80-1.00		
				ES0.8	1.00		
MADE GROUND: Dark brown to black silty gravelly fine to coarse ashy SAND. Gravel is angular to subangular fine to coarse flint chalk and ash with rare glass wood and pottery. The ash is concentrated in distinct bands. Occasional clinker. (FILL 2)		1.70					
MADE GROUND: Dark brown and brownish grey silty gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse flint. With orange brown sandy clay pockets. (Fill 2)		2.00		ES	2.00-2.20		
				ES2	2.20		
MADE GROUND: Dark brown and brown silty gravelly fine to coarse ashy SAND. Gravel is angular fine to medium ash glass and pottery, with rare plastic and bone. (FILL 2)							
		3.80		ES	3.80-5.00		
MADE GROUND: Brownish grey silty gravelly fine to coarse SAND. Gravel is angular fine to coarse ash clinker and rare glass and metal. (FILL 2)							
		5.00		ES3.8	5.00		
Structurelss white CHALK, composed of firm slightly gravelly SILT. Gravel is angular to subangular fine and medium very weak chalk (UCHK)				ES	5.50-5.70		
				ES5.5	5.70		
		6.00					
Window Sample Complete at 6.00 m							

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Drive Records

Diameter (mm)	To (m)	Recovery (%)
102	2.00	100
87	3.00	80
78	4.00	30
68	5.00	20
58	6.00	100

Date: 30/09/2013
Plant: Dando Terrier
Drilled By: A. Elshof
Logged By: JT / AMEC
Checked By: PL / AMEC

Remarks:
1. Starter pit dug from GL to 1.20mbgl.
2. WS pushing down obstruction from 3.6m to 6.0m.
3. No perched water but upper chalk slightly damp.
4. No olfactory evidence of contamination.

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Window Sample Record

WS3
Sheet 1 of 1

Project: Strathmore Drive, Charvil

Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test Type	Sample Test Depth (m)	Remarks and Test Results PID (ppm)	Installations
MADE GROUND: Dark greyish grey silty gravelly fine to medium slightly ashy SAND. Gravel is angular to subrounded fine to coarse brick concrete and flint. (TOPSOIL)		0.15		ES ES	0.00-0.15 0.20-0.40		
MADE GROUND: Brownish grey silty gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse flint. (GRAVELLY SUBSOIL)		0.45					
MADE GROUND: Greyish brown silty gravelly fine to coarse slightly ashy SAND. Gravel is angular to subangular fine to coarse ash clinker pottery and glass. Rare plastic. (FILL 2)		1.50		ES	1.00-1.20		
MADE GROUND: Firm to stiff yellowish brown silty slightly gravelly CLAY. Gravel is angular to subangular medium to coarse flint. Rare brick. (FILL 2)		1.85		ES	1.90-2.10		
MADE GROUND: Brownish grey and greyish brown silty gravelly fine to medium SAND. Gravel is angular to subangular fine to medium flint with rare charcoal. Rare fabric and wood. (FILL 2)		2.20		ES	2.20-2.40		
MADE GROUND: Dark grey silty gravelly fine to coarse ashy SAND. Gravel is angular fine to coarse brick ash clinker glass and flint. Rare metal and wood. (FILL 2)		3.50		ES	3.50-3.70		
Greenish grey silty slightly gravelly fine SAND. Gravel is angular to rounded fine to medium flint. Slight organic odour. (ALV)		4.20					
Yellowish grey slightly silty very gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse flint. (ALV)		4.60					
Yellowish grey silty gravelly fine to medium SAND. Gravel is angular to subangular fine to medium flint. (RTD)		5.00					
Window Sample Complete at 5.00 m							

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Drive Records

Diameter (mm)	To (m)	Recovery (%)
102	2.00	100
89	3.00	100
78	4.00	100
68	5.00	100

Date: 30/09/2013
Plant: Dando Terrier
Drilled By: A. Elshof
Logged By: JT / AMEC
Checked By: PL / AMEC

Remarks: 1. Starter pit dug from GL to 1.20mbgl.

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Window Sample Record

WS4
Sheet 1 of 1

Project: Strathmore Drive, Charvil

Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test Type	Sample Test Depth (m)	Remarks and Test Results PID (ppm)	Installations
Greyish brown silty slightly gravelly fine to medium SAND. Gravel is angular fine to coarse flint. (RTD)				ES ES1	0.10-0.30 0.10-0.30		
				ES ES2	1.00-1.20 1.00-1.20		
Brown gravelly silty SAND and GRAVEL. Gravel is subangular to subrounded flint. (RTD)		1.80					
CHALK. (UCHK)		3.60					
Window Sample Complete at 3.70 m		3.70					

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Drive Records

Diameter (mm)	To (m)	Recovery (%)
102	2.00	100
89	3.00	100
78	3.70	100

Date: 30/09/2013
Plant: Dando Terrier
Drilled By: A. Elshof
Logged By: JT / AMEC
Checked By: PL / AMEC

Remarks: 1. Starter pit dug from GL to 1.20mbgl.

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Window Sample Record

WS5
Sheet 1 of 1

Project: Strathmore Drive, Charvil

Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates:

Description	Depth (m)	Sample Test Type	Sample Test Depth (m)	Remarks and Test Results PID (ppm)
MADE GROUND: Brownish grey silty gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. (FILL 1)	0.10	ES	0.20-0.40	
MADE GROUND: Greyish brown slightly silty gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse flint and rare brick. Rare domestic glass metal and plastic. (FILL 1)	0.60	ES	0.60-0.80	
MADE GROUND: Yellowish brown slightly silty gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse flint. (FILL 2)	0.95	ES	1.40-1.60	
MADE GROUND: Brown silty gravelly fine to coarse ashy SAND. Gravel is angular to rounded fine to coarse flint chalk and domestic glass and ash, rare bone and wood. (FILL 2)		ES	3.00-3.20	
MADE GROUND: Soft to firm yellowish brown sandy slightly gravelly CLAY. Gravel is angular to subangular fine to medium flint and chalk. (FILL 2)	4.80 5.00	ES	5.00-5.20	
MADE GROUND: Brown silty gravelly fine to coarse ashy SAND. Gravel is angular fine to medium flint ash and glass. (FILL 2)	5.40	ES	5.60-5.80	
Very weak white with some yellowish brown staining CHALK, Fractures are very closely spaced infilled with comminuted chalk (UCHK)	6.00			
Window Sample Complete at 6.00 m				

Installations

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Drive Records

Diameter (mm)	To (m)	Recovery (%)
102	2.00	50
89	3.00	50
78	4.00	60
68	2.00	100
58	6.00	100

Date: 01/10/2013
Plant: Dando Terrier
Drilled By: A. Elshof
Logged By: JT / AMEC
Checked By: PL / AMEC

Remarks:
1. Void from 3.00m to 3.60m.
2. Possible cemented asbestos at 4.50mbgl.

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Window Sample Record

WS6
Sheet 1 of 1

Project: Strathmore Drive, Charvil

Project ID: GTS-13-315

Client: AMEC (E & I) UK Limited

Engineer: N/A

Ground Level:
Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test Type	Sample Test Depth (m)	Remarks and Test Results PID (ppm)	Installations
MADE GROUND: Dark brownish grey silty gravelly fine to medium SAND. Gravel is angular fine to coarse flint. (TOPSOIL)		0.15		ES ES	0.00-0.15 0.20-0.40		
MADE GROUND: Brown silty gravelly fine to medium SAND. Gravel is angular to subangular fine to medium flint with rare brick. (FILL 1)		0.60					
MADE GROUND: Dark brown and brown silty gravelly fine to coarse ashy SAND. Gravel is angular fine to coarse ash and flint with rare domestic glass and pottery. (FILL 2)				ES	1.00-1.50		
Yellowish brown clayey gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse flint. Some sandy clay bands. (ALV)		2.50		ES	2.70-2.90		
Yellowish brown slightly silty very gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse flint. (RTD)		3.40					
Window Sample Complete at 4.00 m		4.00					

Water Level Observations

Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Drive Records

Diameter (mm)	To (m)	Recovery (%)
102	2.00	100
78	3.00	100
68	4.00	100

Date: 01/10/2013
Plant: Dando Terrier
Drilled By: A. Elshof
Logged By: JT / AMEC
Checked By: PL / AMEC

Remarks: 1. Starter pit dug from GL to 1.20mbgl.

Appendix B
Laboratory Certificates of Analysis

Ed Gilligan
AMEC Environment & Infrastructure UK Limited
17 Angels Gate
City Road
London
EC1V 2SH

t: 0207 8431400
f: 0207 8431410
e:

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 13-46684

Project / Site name:	29968 - Strathmore	**Samples received on:**	02/10/2013
Your job number:	29968	**Samples instructed on:**	02/10/2013
Your order number:	260642	**Analysis completed by:**	09/10/2013
Report Issue Number:	1	**Report issued on:**	09/10/2013
Samples Analysed:	15 soil samples		

Signed: [redacted]

[redacted]
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: [redacted]

[redacted]
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 13-46684
Project / Site name: 29968 - Strathmore
Your Order No: 260642

Lab Sample Number				289157	289158	289159	289160	289161
Sample Reference				WS2	WS2	WS3	WS3	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	0.80-1.00	0.00-0.15	1.00-1.20	0.10-0.30
Date Sampled				30/09/2013	30/09/2013	30/09/2013	30/09/2013	30/09/2013
Time Taken				1030	1040	1145	1215	1500
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	6.2	19	13	24	11
Total mass of sample received	kg	0.001	NONE	0.48	0.43	0.41	0.36	0.47
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	Not-detected	-
General Inorganics								
pH	pH Units	N/A	MCERTS	7.9	7.8	6.8	6.8	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1	-	-	12	-
Free Cyanide	mg/kg	1	NONE	< 1	-	-	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.058	-	-	3.7	-
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	57	-	-	3700	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.029	-	-	1.8	-
Sulphide	mg/kg	1	MCERTS	1.0	-	-	7.0	-
Organic Matter	%	0.1	MCERTS	2.6	7.7	-	8.5	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.94	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	2.1	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.64	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	2.8	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	27	1.6	< 0.20	0.24	< 0.20
Anthracene	mg/kg	0.1	MCERTS	8.8	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	45	2.7	< 0.20	0.35	< 0.20
Pyrene	mg/kg	0.2	MCERTS	34	2.2	< 0.20	0.31	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	24	0.82	< 0.20	0.26	< 0.20
Chrysene	mg/kg	0.05	MCERTS	22	1.1	< 0.05	0.30	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	25	1.4	< 0.10	0.34	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	10	0.43	< 0.20	< 0.20	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	21	0.90	< 0.10	0.18	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	9.6	0.51	< 0.20	< 0.20	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	1.6	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	10	0.62	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	240	12	< 1.6	2.0	< 1.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	74	53	95	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	7.0	4.3	22	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	2.9	1.2	2.8	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	20	30	24	110	20
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	30	24	110	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	86	210	110	1400	26
Lead (aqua regia extractable)	mg/kg	2	MCERTS	160	540	370	4300	34
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	< 0.3	1.6	0.7	0.4
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	32	110	70	170	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	310	860	390	1400	66

Analytical Report Number: 13-46684
Project / Site name: 29968 - Strathmore
Your Order No: 260642

Lab Sample Number				289157	289158	289159	289160	289161
Sample Reference				WS2	WS2	WS3	WS3	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	0.80-1.00	0.00-0.15	1.00-1.20	0.10-0.30
Date Sampled				30/09/2013	30/09/2013	30/09/2013	30/09/2013	30/09/2013
Time Taken				1030	1040	1145	1215	1500
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	15	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	15	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	-

Analytical Report Number: 13-46684

Project / Site name: 29968 - Strathmore

Your Order No: 260642

Lab Sample Number				289157	289158	289159	289160	289161
Sample Reference				WS2	WS2	WS3	WS3	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	0.80-1.00	0.00-0.15	1.00-1.20	0.10-0.30
Date Sampled				30/09/2013	30/09/2013	30/09/2013	30/09/2013	30/09/2013
Time Taken				1030	1040	1145	1215	1500
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	< 4.0	-	-	-
Chloroethane	µg/kg	2	ISO 17025	-	< 2.0	-	-	-
Bromomethane	µg/kg	6	ISO 17025	-	< 6.0	-	-	-
Vinyl Chloride	µg/kg	24	ISO 17025	-	< 24	-	-	-
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1-dichloroethene	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	< 7.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	-
1,1-dichloroethane	µg/kg	6	MCERTS	-	< 6.0	-	-	-
2,2-Dichloropropane	µg/kg	6	NONE	-	< 6.0	-	-	-
Trichloromethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,2-dichloroethane	µg/kg	4	MCERTS	-	< 4.0	-	-	-
1,1-Dichloropropene	µg/kg	7	NONE	-	< 7.0	-	-	-
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	< 7.0	-	-	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Tetrachloromethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,2-dichloropropane	µg/kg	6	MCERTS	-	< 6.0	-	-	-
Trichloroethene	µg/kg	6	MCERTS	-	< 6.0	-	-	-
Dibromomethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
Bromodichloromethane	µg/kg	7	NONE	-	< 7.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	< 8.0	-	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	< 8.0	-	-	-
Dibromochloromethane	µg/kg	2	ISO 17025	-	< 2.0	-	-	-
Tetrachloroethene	µg/kg	8	MCERTS	-	< 8.0	-	-	-
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	< 3.0	-	-	-
Chlorobenzene	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	< 4.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Styrene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Tribromomethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Isopropylbenzene	µg/kg	7	NONE	-	< 7.0	-	-	-
Bromobenzene	µg/kg	11	MCERTS	-	< 11	-	-	-
N-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
2-Chlorotoluene	µg/kg	11	NONE	-	< 11	-	-	-
4-Chlorotoluene	µg/kg	11	NONE	-	< 11	-	-	-
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	< 4.0	-	-	-
Tert-Butylbenzene	µg/kg	4	NONE	-	< 4.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Sec-Butylbenzene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	< 16	-	-	-
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	< 8.0	-	-	-
Butylbenzene	µg/kg	4	NONE	-	< 4.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	< 9.0	-	-	-
Hexachlorobutadiene	µg/kg	7	NONE	-	< 7.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	< 10	-	-	-

Analytical Report Number: 13-46684
Project / Site name: 29968 - Strathmore
Your Order No: 260642

Lab Sample Number				289162	289163	289164	289165	289166
Sample Reference				HP9	HP9	HP11	WS1	WS1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.30	0.50-0.70	0.00-0.20	0.10-0.30	1.20-1.40
Date Sampled				30/09/2013	30/09/2013	30/09/2013	01/10/2013	01/10/2013
Time Taken				1550	1600	1630	0900	0910
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	8.1	6.9	4.0	5.6	8.1
Total mass of sample received	kg	0.001	NONE	0.46	0.45	0.48	1.5	0.53
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	Not-detected	Not-detected
General Inorganics								
pH	pH Units	N/A	MCERTS	7.0	7.1	7.0	7.3	7.9
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1	< 1
Free Cyanide	mg/kg	1	NONE	-	-	-	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Sulphide	mg/kg	1	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	-	-	-	< 2.0	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	0.32	< 0.20
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	1.1	< 0.20
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	0.97	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	0.62	< 0.20
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.63	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.83	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	0.32	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.71	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	0.37	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.48	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	< 1.6	< 1.6	6.4	< 1.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	41	17	19	21
Boron (water soluble)	mg/kg	0.2	MCERTS	5.7	4.2	< 0.2	0.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.9	0.2	0.7	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	18	29	16	23	19
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	29	16	23	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	190	13	92	23
Lead (aqua regia extractable)	mg/kg	2	MCERTS	71	360	23	140	30
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.5	< 0.3	0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	21	54	16	34	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	180	480	63	480	53

Analytical Report Number: 13-46684
Project / Site name: 29968 - Strathmore
Your Order No: 260642

Lab Sample Number				289162	289163	289164	289165	289166
Sample Reference				HP9	HP9	HP11	WS1	WS1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.30	0.50-0.70	0.00-0.20	0.10-0.30	1.20-1.40
Date Sampled				30/09/2013	30/09/2013	30/09/2013	01/10/2013	01/10/2013
Time Taken				1550	1600	1630	0900	0910
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

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Lab Sample Number				289162	289163	289164	289165	289166
Sample Reference				HP9	HP9	HP11	WS1	WS1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10-0.30	0.50-0.70	0.00-0.20	0.10-0.30	1.20-1.40
Date Sampled				30/09/2013	30/09/2013	30/09/2013	01/10/2013	01/10/2013
Time Taken				1550	1600	1630	0900	0910
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	-	-	< 4.0	< 4.0
Chloroethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	< 2.0
Bromomethane	µg/kg	6	ISO 17025	-	-	-	< 6.0	< 6.0
Vinyl Chloride	µg/kg	24	ISO 17025	-	-	-	< 24	< 24
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	< 5.0
1,1-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	-	-	< 7.0	< 7.0
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1-dichloroethane	µg/kg	6	MCERTS	-	-	-	< 6.0	< 6.0
2,2-Dichloropropane	µg/kg	6	NONE	-	-	-	< 6.0	< 6.0
Trichloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
1,2-dichloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	< 4.0
1,1-Dichloropropene	µg/kg	7	NONE	-	-	-	< 7.0	< 7.0
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	-	-	< 7.0	< 7.0
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Tetrachloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
1,2-dichloropropane	µg/kg	6	MCERTS	-	-	-	< 6.0	< 6.0
Trichloroethene	µg/kg	6	MCERTS	-	-	-	< 6.0	< 6.0
Dibromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
Bromodichloromethane	µg/kg	7	NONE	-	-	-	< 7.0	< 7.0
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	-	-	< 7.0	< 7.0
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	-	-	< 8.0	< 8.0
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	-	-	< 8.0	< 8.0
Dibromochloromethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	< 2.0
Tetrachloroethene	µg/kg	8	MCERTS	-	-	-	< 8.0	< 8.0
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	-	-	< 3.0	< 3.0
Chlorobenzene	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	< 4.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Styrene	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
Tribromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	< 7.0
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	7	NONE	-	-	-	< 7.0	< 7.0
Bromobenzene	µg/kg	11	MCERTS	-	-	-	< 11	< 11
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	< 5.0
2-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	< 11
4-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	< 11
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	-	-	< 4.0	< 4.0
Tert-Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	< 4.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	< 5.0
Sec-Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0	< 5.0
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	-	-	< 7.0	< 7.0
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	-	-	< 16	< 16
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	-	-	< 8.0	< 8.0
Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	< 4.0
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	-	-	< 7.0	< 7.0
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	-	-	< 9.0	< 9.0
Hexachlorobutadiene	µg/kg	7	NONE	-	-	-	< 7.0	< 7.0
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	-	-	< 10	< 10

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Lab Sample Number				289167	289168	289169	289170	289171
Sample Reference				WS5	WS5	WS5	WS6	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	5.00-5.20	4.50	0.00-0.15	0.20-0.40
Date Sampled				01/10/1301	01/10/2013	01/10/2013	01/10/2013	01/10/2013
Time Taken				1040	1130	None Supplied	1400	1410
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	-	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	7.2	12	-	12	7.7
Total mass of sample received	kg	0.001	NONE	1.5	1.4	-	1.4	1.3
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile - Insulation board/tile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Not-detected	-
General Inorganics								
pH	pH Units	N/A	MCERTS	7.5	7.0	-	7.5	7.5
Total Cyanide	mg/kg	1	MCERTS	< 1	2	-	< 1	-
Free Cyanide	mg/kg	1	NONE	< 1	< 1	-	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	3.4	-	0.047	-
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	-	3400	-	47	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	1.7	-	0.024	-
Sulphide	mg/kg	1	MCERTS	-	18	-	1.3	-
Organic Matter	%	0.1	MCERTS	-	4.0	-	2.0	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	-	< 2.0	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.43	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	-	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	-	0.26	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	-	0.25	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	1.3	-	3.1	0.76
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.45	-	0.48	0.14
Fluoranthene	mg/kg	0.2	MCERTS	0.64	4.7	-	2.7	1.1
Pyrene	mg/kg	0.2	MCERTS	0.62	4.0	-	4.0	0.88
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.39	2.7	-	2.0	0.49
Chrysene	mg/kg	0.05	MCERTS	0.42	2.7	-	2.1	0.45
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.46	3.5	-	1.8	0.61
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.20	1.2	-	0.61	0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.35	2.5	-	1.7	0.41
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.20	1.2	-	0.66	0.24
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	0.21	-	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.23	1.4	-	0.73	0.30
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	3.6	26	-	20	5.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	43	-	32	16
Boron (water soluble)	mg/kg	0.2	MCERTS	1.0	2.2	-	1.6	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	1.7	-	1.2	1.5
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	-	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	18	42	-	24	27
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	42	-	25	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	190	-	150	70
Lead (aqua regia extractable)	mg/kg	2	MCERTS	110	410	-	480	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	4.6	-	0.7	0.5
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	23	83	-	42	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	310	4700	-	540	590

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Sample Reference				WS5	WS5	WS5	WS6	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	5.00-5.20	4.50	0.00-0.15	0.20-0.40
Date Sampled				01/10/1301	01/10/2013	01/10/2013	01/10/2013	01/10/2013
Time Taken				1040	1130	None Supplied	1400	1410
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	39	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	290	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	330	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	3.9	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	36	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	180	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	220	-	-	-

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Lab Sample Number				289167	289168	289169	289170	289171
Sample Reference				WS5	WS5	WS5	WS6	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.40	5.00-5.20	4.50	0.00-0.15	0.20-0.40
Date Sampled				01/10/1301	01/10/2013	01/10/2013	01/10/2013	01/10/2013
Time Taken				1040	1130	None Supplied	1400	1410
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	< 4.0	-	-	< 4.0
Chloroethane	µg/kg	2	ISO 17025	-	< 2.0	-	-	< 2.0
Bromomethane	µg/kg	6	ISO 17025	-	< 6.0	-	-	< 6.0
Vinyl Chloride	µg/kg	24	ISO 17025	-	< 24	-	-	< 24
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	< 5.0
1,1-dichloroethene	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	< 7.0	-	-	< 7.0
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1-dichloroethane	µg/kg	6	MCERTS	-	< 6.0	-	-	< 6.0
2,2-Dichloropropane	µg/kg	6	NONE	-	< 6.0	-	-	< 6.0
Trichloromethane	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
1,2-dichloroethane	µg/kg	4	MCERTS	-	< 4.0	-	-	< 4.0
1,1-Dichloropropene	µg/kg	7	NONE	-	< 7.0	-	-	< 7.0
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	< 7.0	-	-	< 7.0
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Tetrachloromethane	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
1,2-dichloropropane	µg/kg	6	MCERTS	-	< 6.0	-	-	< 6.0
Trichloroethene	µg/kg	6	MCERTS	-	< 6.0	-	-	< 6.0
Dibromomethane	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
Bromodichloromethane	µg/kg	7	NONE	-	< 7.0	-	-	< 7.0
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	< 7.0	-	-	< 7.0
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	< 8.0	-	-	< 8.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	< 8.0	-	-	< 8.0
Dibromochloromethane	µg/kg	2	ISO 17025	-	< 2.0	-	-	< 2.0
Tetrachloroethene	µg/kg	8	MCERTS	-	< 8.0	-	-	< 8.0
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	< 3.0	-	-	< 3.0
Chlorobenzene	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	< 4.0	-	-	< 4.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Styrene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Tribromomethane	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Isopropylbenzene	µg/kg	7	NONE	-	< 7.0	-	-	< 7.0
Bromobenzene	µg/kg	11	MCERTS	-	< 11	-	-	< 11
N-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	< 5.0
2-Chlorotoluene	µg/kg	11	NONE	-	< 11	-	-	< 11
4-Chlorotoluene	µg/kg	11	NONE	-	< 11	-	-	< 11
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	< 4.0	-	-	< 4.0
Tert-Butylbenzene	µg/kg	4	NONE	-	< 4.0	-	-	< 4.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	< 5.0
Sec-Butylbenzene	µg/kg	5	NONE	-	< 5.0	-	-	< 5.0
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	< 7.0	-	-	< 7.0
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	< 16	-	-	< 16
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	< 8.0	-	-	< 8.0
Butylbenzene	µg/kg	4	NONE	-	< 4.0	-	-	< 4.0
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	< 7.0	-	-	< 7.0
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	< 9.0	-	-	< 9.0
Hexachlorobutadiene	µg/kg	7	NONE	-	< 7.0	-	-	< 7.0
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	< 10	-	-	< 10

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
289157	WS2	None Supplied	0.20-0.40	Light brown sandy topsoil with gravel and vegetation.
289158	WS2	None Supplied	0.80-1.00	Brown sandy topsoil with gravel and vegetation.
289159	WS3	None Supplied	0.00-0.15	Brown sandy topsoil with gravel and vegetation.
289160	WS3	None Supplied	1.00-1.20	Brown sandy topsoil with gravel and vegetation.
289161	WS4	None Supplied	0.10-0.30	Light brown sandy topsoil with gravel and vegetation.
289162	HP9	None Supplied	0.10-0.30	Brown sandy topsoil with gravel and vegetation.
289163	HP9	None Supplied	0.50-0.70	Grey sandy topsoil with gravel and vegetation.
289164	HP11	None Supplied	0.00-0.20	Light brown sandy topsoil with gravel and vegetation.
289165	WS1	None Supplied	0.10-0.30	Brown sandy topsoil with gravel and vegetation.
289166	WS1	None Supplied	1.20-1.40	Brown sandy topsoil with gravel and vegetation.
289167	WS5	None Supplied	0.20-0.40	Brown sandy topsoil with gravel and vegetation.
289168	WS5	None Supplied	5.00-5.20	Brown sandy topsoil with gravel and vegetation.
289169	WS5	None Supplied	4.50	-
289170	WS6	None Supplied	0.00-0.15	Brown sandy topsoil with gravel and vegetation.
289171	WS6	None Supplied	0.20-0.40	Light brown sandy topsoil with gravel and vegetation.

Analytical Report Number : 13-46684

Project / Site name: 29968 - Strathmore

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-UK	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES. Results reported corrected for extraction ratio (soil equivalent) as g/l and mg/kg; and upon the 2:1	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

Analytical Report Number : 13-46684

Project / Site name: 29968 - Strathmore

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 13-46817

Project / Site name:	Strathmore Drive	**Samples received on:**	03/10/2013
Your job number:	29968	**Samples instructed on:**	07/10/2013
Your order number:	260642	**Analysis completed by:**	11/10/2013
Report Issue Number:	1	**Report issued on:**	11/10/2013
Samples Analysed:	24 soil samples		

Signed: [redacted]
[redacted]
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Signed: [redacted]
[redacted]
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 13-46817

Project / Site name: Strathmore Drive

Your Order No: 260642

Lab Sample Number				290044	290045	290046	290047	290048
Sample Reference				HP5	HP3	DP12	DP12	HP4
Sample Number				TS	Fill 2	GSS	Fill 3	TS
Depth (m)				0.10-0.20	0.40-0.60	0.20-0.40	0.60-0.80	0.00-0.20
Date Sampled				01/10/2013	01/10/2013	01/10/2013	01/10/2013	01/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	11	20	5.9	11	5.6
Total mass of sample received	kg	0.001	NONE	0.50	0.43	0.50	0.37	0.52
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	Not-detected
General Inorganics								
pH	pH Units	N/A	MCERTS	8.0	7.5	8.0	7.6	8.0
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1	-	< 1
Free Cyanide	mg/kg	1	NONE	-	-	< 1	-	< 1
Total Sulphate as SO_4	mg/kg	100	ISO 17025	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	-	-	< 2.0	-	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	0.31	< 0.20	< 0.20	0.84	< 0.20
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	1.5	< 0.20	< 0.20	2.4	< 0.20
Pyrene	mg/kg	0.2	MCERTS	1.3	< 0.20	< 0.20	2.0	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.68	< 0.20	< 0.20	1.0	< 0.20
Chrysene	mg/kg	0.05	MCERTS	0.73	< 0.05	< 0.05	1.3	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.79	< 0.10	< 0.10	1.8	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.60	< 0.20	< 0.20	0.93	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.81	< 0.10	< 0.10	1.4	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	0.64	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.84	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	6.8	< 1.6	< 1.6	13	< 1.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	65	17	87	16
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	6.7	0.4	14	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	1.6	< 0.2	2.3	0.5
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	34	35	24	58	26
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	35	24	58	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	56	430	27	560	35
Lead (aqua regia extractable)	mg/kg	2	MCERTS	110	530	62	3400	89
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	< 0.3	< 0.3	1.2	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	23	130	25	170	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	160	1400	120	2000	150

Analytical Report Number: 13-46817

Project / Site name: Strathmore Drive

Your Order No: 260642

Lab Sample Number				290044	290045	290046	290047	290048
Sample Reference				HP5	HP3	DP12	DP12	HP4
Sample Number				TS	Fill 2	GSS	Fill 3	TS
Depth (m)				0.10-0.20	0.40-0.60	0.20-0.40	0.60-0.80	0.00-0.20
Date Sampled				01/10/2013	01/10/2013	01/10/2013	01/10/2013	01/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	< 8.0	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	< 8.0	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	< 10	-	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	< 10	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	< 10	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	< 10	-	< 10

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290044	290045	290046	290047	290048
Sample Reference				HP5	HP3	DP12	DP12	HP4
Sample Number				TS	Fill 2	GSS	Fill 3	TS
Depth (m)				0.10-0.20	0.40-0.60	0.20-0.40	0.60-0.80	0.00-0.20
Date Sampled				01/10/2013	01/10/2013	01/10/2013	01/10/2013	01/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	-	-	< 4.0	-
Chloroethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	-
Bromomethane	µg/kg	6	ISO 17025	-	-	-	< 6.0	-
Vinyl Chloride	µg/kg	24	ISO 17025	-	-	-	< 24	-
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-dichloroethane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
2,2-Dichloropropane	µg/kg	6	NONE	-	-	-	< 6.0	-
Trichloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,2-dichloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	-
1,1-Dichloropropene	µg/kg	7	NONE	-	-	-	< 7.0	-
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	-	-	< 7.0	-
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tetrachloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,2-dichloropropane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
Trichloroethene	µg/kg	6	MCERTS	-	-	-	< 6.0	-
Dibromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
Bromodichloromethane	µg/kg	7	NONE	-	-	-	< 7.0	-
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	-	-	< 8.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	-	-	< 8.0	-
Dibromochloromethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	-
Tetrachloroethene	µg/kg	8	MCERTS	-	-	-	< 8.0	-
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	-	-	< 3.0	-
Chlorobenzene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Styrene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Tribromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Isopropylbenzene	µg/kg	7	NONE	-	-	-	< 7.0	-
Bromobenzene	µg/kg	11	MCERTS	-	-	-	< 11	-
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	-
4-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	-
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	-	-	< 4.0	-
Tert-Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Sec-Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	-	-	< 16	-
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	-	-	< 8.0	-
Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	-
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	-	-	< 9.0	-
Hexachlorobutadiene	µg/kg	7	NONE	-	-	-	< 7.0	-
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	-	-	< 10	-

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290049	290050	290051	290052	290053
Sample Reference				DP9	HP7	HP8	HP8	DP6
Sample Number				TS	Natural Topsoil	TS	Fill 3	Natural Subsoil
Depth (m)				0.00-0.15	0.10-0.30	0.10-0.20	0.60-0.70	0.40-0.50
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection						
				< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
				11	10	9.0	9.5	4.3
				0.44	0.48	0.47	0.43	0.52
				-	-	-	Not-detected	-
				7.6	6.7	6.6	6.9	7.3
				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
				< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
				10	12	15	42	11
				< 0.2	< 0.2	< 0.2	2.1	< 0.2
				< 0.2	< 0.2	0.2	2.5	< 0.2
				< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
				16	19	23	47	18
				16	19	23	47	18
				12	21	27	150	11
				31	49	66	340	15
				< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
				9.7	12	20	69	13
				< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
				43	94	150	1700	40

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290049	290050	290051	290052	290053
Sample Reference				DP9	HP7	HP8	HP8	DP6
Sample Number				TS	Natural Topsoil	TS	Fill 3	Natural Subsoil
Depth (m)				0.00-0.15	0.10-0.30	0.10-0.20	0.60-0.70	0.40-0.50
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	76	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	76	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

Analytical Report Number: 13-46817

Project / Site name: Strathmore Drive

Your Order No: 260642

Lab Sample Number				290049	290050	290051	290052	290053
Sample Reference				DP9	HP7	HP8	HP8	DP6
Sample Number				TS	Natural Topsoil	TS	Fill 3	Natural Subsoil
Depth (m)				0.00-0.15	0.10-0.30	0.10-0.20	0.60-0.70	0.40-0.50
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	-	-	< 4.0	-
Chloroethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	-
Bromomethane	µg/kg	6	ISO 17025	-	-	-	< 6.0	-
Vinyl Chloride	µg/kg	24	ISO 17025	-	-	-	< 24	-
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-dichloroethane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
2,2-Dichloropropane	µg/kg	6	NONE	-	-	-	< 6.0	-
Trichloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,2-dichloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	-
1,1-Dichloropropene	µg/kg	7	NONE	-	-	-	< 7.0	-
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	-	-	< 7.0	-
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tetrachloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,2-dichloropropane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
Trichloroethene	µg/kg	6	MCERTS	-	-	-	< 6.0	-
Dibromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
Bromodichloromethane	µg/kg	7	NONE	-	-	-	< 7.0	-
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	-	-	< 8.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	-	-	< 8.0	-
Dibromochloromethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	-
Tetrachloroethene	µg/kg	8	MCERTS	-	-	-	< 8.0	-
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	-	-	< 3.0	-
Chlorobenzene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Styrene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Tribromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Isopropylbenzene	µg/kg	7	NONE	-	-	-	< 7.0	-
Bromobenzene	µg/kg	11	MCERTS	-	-	-	< 11	-
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	-
4-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	-
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	-	-	< 4.0	-
Tert-Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Sec-Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	-	-	< 16	-
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	-	-	< 8.0	-
Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	-
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	-	-	< 9.0	-
Hexachlorobutadiene	µg/kg	7	NONE	-	-	-	< 7.0	-
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	-	-	< 10	-

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290054	290055	290056	290057	290058
Sample Reference				HP1	HP1	HP10	HP10	HP12
Sample Number				GSS	Fill 3	TS	GSS	TS
Depth (m)				0.10-0.30	0.40-0.50	0.20-0.30	0.50-0.60	0.00-0.15
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied		None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	13	7.3	11	21
Total mass of sample received	kg	0.001	NONE	0.41	0.38	0.49	0.55	0.46
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	7.1	6.7	7.2	7.4	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1	7	-	< 1	-
Free Cyanide	mg/kg	1	NONE	< 1	< 1	-	< 1	-
Total Sulphate as SO_4	mg/kg	100	ISO 17025	-	9200	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	5.9	-	-	-
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	-	5900	-	-	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	2.9	-	-	-
Organic Matter	%	0.1	MCERTS	-	7.2	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	-	< 2.0	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	0.34	1.2	< 0.20	< 0.20	0.39
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.28	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	0.91	2.2	< 0.20	< 0.20	1.3
Pyrene	mg/kg	0.2	MCERTS	0.84	2.0	< 0.20	< 0.20	1.2
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.51	1.1	< 0.20	< 0.20	0.62
Chrysene	mg/kg	0.05	MCERTS	0.55	1.3	< 0.05	< 0.05	0.74
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.65	1.6	< 0.10	< 0.10	1.1
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.45	0.81	< 0.20	< 0.20	0.54
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.67	1.2	< 0.10	< 0.10	0.75
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.37	0.45	< 0.20	< 0.20	0.39
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.39	0.68	< 0.05	< 0.05	0.51
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	5.8	13	< 1.6	< 1.6	7.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	38	66	13	10	15
Boron (water soluble)	mg/kg	0.2	MCERTS	2.2	5.7	< 0.2	< 0.2	3.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.6	0.8	< 0.2	< 0.2	0.4
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	48	61	19	15	21
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	48	61	19	16	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	300	19	9.9	32
Lead (aqua regia extractable)	mg/kg	2	MCERTS	300	680	55	19	85
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.7	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	63	130	14	11	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	490	1500	68	39	180

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290054	290055	290056	290057	290058
Sample Reference				HP1	HP1	HP10	HP10	HP12
Sample Number				GSS	Fill 3	TS	GSS	TS
Depth (m)				0.10-0.30	0.40-0.50	0.20-0.30	0.50-0.60	0.00-0.15
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied		None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	86	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	86	-	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	-

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290054	290055	290056	290057	290058
Sample Reference				HP1	HP1	HP10	HP10	HP12
Sample Number				GSS	Fill 3	TS	GSS	TS
Depth (m)				0.10-0.30	0.40-0.50	0.20-0.30	0.50-0.60	0.00-0.15
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied		None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	< 4.0	-	-	-
Chloroethane	µg/kg	2	ISO 17025	-	< 2.0	-	-	-
Bromomethane	µg/kg	6	ISO 17025	-	< 6.0	-	-	-
Vinyl Chloride	µg/kg	24	ISO 17025	-	< 24	-	-	-
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1-dichloroethene	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	< 7.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	-
1,1-dichloroethane	µg/kg	6	MCERTS	-	< 6.0	-	-	-
2,2-Dichloropropane	µg/kg	6	NONE	-	< 6.0	-	-	-
Trichloromethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,2-dichloroethane	µg/kg	4	MCERTS	-	< 4.0	-	-	-
1,1-Dichloropropene	µg/kg	7	NONE	-	< 7.0	-	-	-
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	< 7.0	-	-	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Tetrachloromethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,2-dichloropropane	µg/kg	6	MCERTS	-	< 6.0	-	-	-
Trichloroethene	µg/kg	6	MCERTS	-	< 6.0	-	-	-
Dibromomethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
Bromodichloromethane	µg/kg	7	NONE	-	< 7.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	< 8.0	-	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	< 8.0	-	-	-
Dibromochloromethane	µg/kg	2	ISO 17025	-	< 2.0	-	-	-
Tetrachloroethene	µg/kg	8	MCERTS	-	< 8.0	-	-	-
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	< 3.0	-	-	-
Chlorobenzene	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	< 4.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Styrene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Tribromomethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Isopropylbenzene	µg/kg	7	NONE	-	< 7.0	-	-	-
Bromobenzene	µg/kg	11	MCERTS	-	< 11	-	-	-
N-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
2-Chlorotoluene	µg/kg	11	NONE	-	< 11	-	-	-
4-Chlorotoluene	µg/kg	11	NONE	-	< 11	-	-	-
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	< 4.0	-	-	-
Tert-Butylbenzene	µg/kg	4	NONE	-	< 4.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Sec-Butylbenzene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	< 16	-	-	-
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	< 8.0	-	-	-
Butylbenzene	µg/kg	4	NONE	-	< 4.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	< 7.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	< 9.0	-	-	-
Hexachlorobutadiene	µg/kg	7	NONE	-	< 7.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	< 10	-	-	-

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290059	290060	290061	290062	290063
Sample Reference				DP1	DP1	DP1	HP2	DP2
Sample Number				TS	GSS	Fill 3	Fill 3	TS
Depth (m)				0.10-0.20	0.25-0.35	0.60-0.70	0.30-0.50	0.10-0.20
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	7.5	6.2	6.0	16	8.0
Total mass of sample received	kg	0.001	NONE	0.56	0.50	0.47	0.37	0.46
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	Not-detected	-
General Inorganics								
pH	pH Units	N/A	MCERTS	7.4	7.5	7.4	7.2	7.5
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1	-
Free Cyanide	mg/kg	1	NONE	-	-	-	< 1	-
Total Sulphate as SO_4	mg/kg	100	ISO 17025	-	-	-	5400	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	1.7	-
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	-	-	-	1700	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	0.86	-
Organic Matter	%	0.1	MCERTS	-	-	-	12	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	-	-	-	< 2.0	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.6	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	1.3	1.1
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	0.28
Fluoranthene	mg/kg	0.2	MCERTS	0.51	< 0.20	< 0.20	0.96	2.9
Pyrene	mg/kg	0.2	MCERTS	0.49	< 0.20	< 0.20	0.84	2.5
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.22	< 0.20	< 0.20	0.60	1.4
Chrysene	mg/kg	0.05	MCERTS	0.31	< 0.05	< 0.05	0.61	1.2
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.39	< 0.10	< 0.10	0.70	1.9
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.21	< 0.20	< 0.20	0.31	1.0
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.27	< 0.10	< 0.10	0.45	1.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	0.88
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.97
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	2.4	< 1.6	< 1.6	7.4	16
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	15	28	74	12
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	1.5	7.4	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.6	0.3	0.6	2.5	0.5
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	24	21	27	55	24
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	21	27	55	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	24	46	320	280	33
Lead (aqua regia extractable)	mg/kg	2	MCERTS	52	58	640	620	240
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	17	22	55	130	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	110	130	360	1100	270

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290059	290060	290061	290062	290063
Sample Reference				DP1	DP1	DP1	HP2	DP2
Sample Number				TS	GSS	Fill 3	Fill 3	TS
Depth (m)				0.10-0.20	0.25-0.35	0.60-0.70	0.30-0.50	0.10-0.20
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	10	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	87	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	23	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	55	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	180	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	1.7	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290059	290060	290061	290062	290063
Sample Reference				DP1	DP1	DP1	HP2	DP2
Sample Number				TS	GSS	Fill 3	Fill 3	TS
Depth (m)				0.10-0.20	0.25-0.35	0.60-0.70	0.30-0.50	0.10-0.20
Date Sampled				02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	-	-	< 4.0	-
Chloroethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	-
Bromomethane	µg/kg	6	ISO 17025	-	-	-	< 6.0	-
Vinyl Chloride	µg/kg	24	ISO 17025	-	-	-	< 24	-
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-dichloroethane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
2,2-Dichloropropane	µg/kg	6	NONE	-	-	-	< 6.0	-
Trichloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,2-dichloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	-
1,1-Dichloropropene	µg/kg	7	NONE	-	-	-	< 7.0	-
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	-	-	< 7.0	-
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tetrachloromethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,2-dichloropropane	µg/kg	6	MCERTS	-	-	-	< 6.0	-
Trichloroethene	µg/kg	6	MCERTS	-	-	-	< 6.0	-
Dibromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
Bromodichloromethane	µg/kg	7	NONE	-	-	-	< 7.0	-
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	-	-	< 8.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	-	-	< 8.0	-
Dibromochloromethane	µg/kg	2	ISO 17025	-	-	-	< 2.0	-
Tetrachloroethene	µg/kg	8	MCERTS	-	-	-	< 8.0	-
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	-	-	< 3.0	-
Chlorobenzene	µg/kg	7	MCERTS	-	-	-	< 7.0	-
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	-	-	< 4.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Styrene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Tribromomethane	µg/kg	7	MCERTS	-	-	-	< 7.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Isopropylbenzene	µg/kg	7	NONE	-	-	-	< 7.0	-
Bromobenzene	µg/kg	11	MCERTS	-	-	-	< 11	-
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	-
4-Chlorotoluene	µg/kg	11	NONE	-	-	-	< 11	-
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	-	-	< 4.0	-
Tert-Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Sec-Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	-	-	< 16	-
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	-	-	< 8.0	-
Butylbenzene	µg/kg	4	NONE	-	-	-	< 4.0	-
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	-	-	< 7.0	-
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	-	-	< 9.0	-
Hexachlorobutadiene	µg/kg	7	NONE	-	-	-	< 7.0	-
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	-	-	< 10	-

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290064	290065	290066	290465	
Sample Reference				DP5	HP6	HP6	WS3	
Sample Number				Nat GSS	TS	Fill 2	GSS	
Depth (m)				0.15-0.30	0.00-0.20	0.30-0.50	0.20-0.40	
Date Sampled				02/10/2013	03/10/2013	03/10/2013	30/09/2013	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	11	8.9	5.9	6.9	
Total mass of sample received	kg	0.001	NONE	0.49	0.45	0.38	0.53	
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected	
General Inorganics								
pH	pH Units	N/A	MCERTS	7.6	7.8	7.6	7.0	
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1	< 1	
Free Cyanide	mg/kg	1	NONE	-	-	< 1	< 1	
Total Sulphate as SO_4	mg/kg	100	ISO 17025	-	-	-	-	
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	
Organic Matter	%	0.1	MCERTS	-	-	-	0.6	
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	-	-	< 2.0	< 2.0	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	
Phenanthrene	mg/kg	0.2	MCERTS	1.2	0.27	1.3	< 0.20	
Anthracene	mg/kg	0.1	MCERTS	0.37	< 0.10	0.37	< 0.10	
Fluoranthene	mg/kg	0.2	MCERTS	3.6	0.87	5.9	< 0.20	
Pyrene	mg/kg	0.2	MCERTS	3.0	0.79	5.5	< 0.20	
Benzo(a)anthracene	mg/kg	0.2	MCERTS	1.5	0.45	3.2	< 0.20	
Chrysene	mg/kg	0.05	MCERTS	1.7	0.43	2.5	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.6	0.72	4.4	< 0.10	
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	1.2	0.31	2.2	< 0.20	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.9	0.49	3.7	< 0.10	
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	1.1	< 0.20	1.9	< 0.20	
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.1	< 0.05	2.1	< 0.05	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	19	4.4	33	< 1.6	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	24	23	30	13	
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	< 0.2	< 0.2	< 0.2	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	0.4	0.2	< 0.2	
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	
Chromium (III)	mg/kg	1	NONE	23	29	42	16	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	29	42	16	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	85	87	12	
Lead (aqua regia extractable)	mg/kg	2	MCERTS	120	290	320	19	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	34	36	50	17	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	410	260	170	57	

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290064	290065	290066	290465	
Sample Reference				DP5	HP6	HP6	WS3	
Sample Number				Nat GSS	TS	Fill 2	GSS	
Depth (m)				0.15-0.30	0.00-0.20	0.30-0.50	0.20-0.40	
Date Sampled				02/10/2013	03/10/2013	03/10/2013	30/09/2013	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
p & m-xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
o-xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	-	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	< 8.0	-	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	27	-	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	27	-	
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	-	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	15	-	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	21	-	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	36	-	

Analytical Report Number: 13-46817
Project / Site name: Strathmore Drive
Your Order No: 260642

Lab Sample Number				290064	290065	290066	290465	
Sample Reference				DP5	HP6	HP6	WS3	
Sample Number				Nat GSS	TS	Fill 2	GSS	
Depth (m)				0.15-0.30	0.00-0.20	0.30-0.50	0.20-0.40	
Date Sampled				02/10/2013	03/10/2013	03/10/2013	30/09/2013	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	4	ISO 17025	-	-	< 4.0	-	
Chloroethane	µg/kg	2	ISO 17025	-	-	< 2.0	-	
Bromomethane	µg/kg	6	ISO 17025	-	-	< 6.0	-	
Vinyl Chloride	µg/kg	24	ISO 17025	-	-	< 24	-	
Trichlorofluoromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	
1,1-dichloroethene	µg/kg	7	MCERTS	-	-	< 7.0	-	
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	ISO 17025	-	-	< 7.0	-	
Cis-1,2-dichloroethene	µg/kg	7	MCERTS	-	-	< 7.0	-	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1-dichloroethane	µg/kg	6	MCERTS	-	-	< 6.0	-	
2,2-Dichloropropane	µg/kg	6	NONE	-	-	< 6.0	-	
Trichloromethane	µg/kg	7	MCERTS	-	-	< 7.0	-	
1,1,1-Trichloroethane	µg/kg	7	MCERTS	-	-	< 7.0	-	
1,2-dichloroethane	µg/kg	4	MCERTS	-	-	< 4.0	-	
1,1-Dichloropropene	µg/kg	7	NONE	-	-	< 7.0	-	
Trans-1,2-dichloroethene	µg/kg	7	NONE	-	-	< 7.0	-	
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Tetrachloromethane	µg/kg	7	MCERTS	-	-	< 7.0	-	
1,2-dichloropropane	µg/kg	6	MCERTS	-	-	< 6.0	-	
Trichloroethene	µg/kg	6	MCERTS	-	-	< 6.0	-	
Dibromomethane	µg/kg	7	MCERTS	-	-	< 7.0	-	
Bromodichloromethane	µg/kg	7	NONE	-	-	< 7.0	-	
Cis-1,3-dichloropropene	µg/kg	7	ISO 17025	-	-	< 7.0	-	
Trans-1,3-dichloropropene	µg/kg	8	ISO 17025	-	-	< 8.0	-	
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2-Trichloroethane	µg/kg	5	MCERTS	-	-	< 5.0	-	
1,3-Dichloropropane	µg/kg	8	ISO 17025	-	-	< 8.0	-	
Dibromochloromethane	µg/kg	2	ISO 17025	-	-	< 2.0	-	
Tetrachloroethene	µg/kg	8	MCERTS	-	-	< 8.0	-	
1,2-Dibromoethane	µg/kg	3	ISO 17025	-	-	< 3.0	-	
Chlorobenzene	µg/kg	7	MCERTS	-	-	< 7.0	-	
1,1,1,2-Tetrachloroethane	µg/kg	4	MCERTS	-	-	< 4.0	-	
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
p & m-xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Styrene	µg/kg	5	MCERTS	-	-	< 5.0	-	
Tribromomethane	µg/kg	7	MCERTS	-	-	< 7.0	-	
o-xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	< 5.0	-	
Isopropylbenzene	µg/kg	7	NONE	-	-	< 7.0	-	
Bromobenzene	µg/kg	11	MCERTS	-	-	< 11	-	
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	
2-Chlorotoluene	µg/kg	11	NONE	-	-	< 11	-	
4-Chlorotoluene	µg/kg	11	NONE	-	-	< 11	-	
1,3,5-Trimethylbenzene	µg/kg	4	ISO 17025	-	-	< 4.0	-	
Tert-Butylbenzene	µg/kg	4	NONE	-	-	< 4.0	-	
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	
Sec-Butylbenzene	µg/kg	5	NONE	-	-	< 5.0	-	
1,3-dichlorobenzene	µg/kg	7	ISO 17025	-	-	< 7.0	-	
P-Isopropyltoluene	µg/kg	16	ISO 17025	-	-	< 16	-	
1,2-dichlorobenzene	µg/kg	5	MCERTS	-	-	< 5.0	-	
1,4-dichlorobenzene	µg/kg	8	MCERTS	-	-	< 8.0	-	
Butylbenzene	µg/kg	4	NONE	-	-	< 4.0	-	
1,2-Dibromo-3-chloropropane	µg/kg	7	ISO 17025	-	-	< 7.0	-	
1,2,4-Trichlorobenzene	µg/kg	9	MCERTS	-	-	< 9.0	-	
Hexachlorobutadiene	µg/kg	7	NONE	-	-	< 7.0	-	
1,2,3-Trichlorobenzene	µg/kg	10	NONE	-	-	< 10	-	

Analytical Report Number : 13-46817

Project / Site name: Strathmore Drive

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
290044	HP5	TS	0.10-0.20	Light brown sandy topsoil with gravel and vegetation.
290045	HP3	Fill 2	0.40-0.60	Brown topsoil and sand with gravel and glass.
290046	DP12	GSS	0.20-0.40	Light brown sandy topsoil with gravel and vegetation.
290047	DP12	Fill 3	0.60-0.80	Grey sandy topsoil with gravel.
290048	HP4	TS	0.00-0.20	Light brown sandy topsoil with gravel and vegetation.
290049	DP9	TS	0.00-0.15	Light brown sandy topsoil with vegetation.
290050	HP7	Natural Topsoil	0.10-0.30	Light brown sandy topsoil with vegetation.
290051	HP8	TS	0.10-0.20	Light brown sandy topsoil with vegetation.
290052	HP8	Fill 3	0.60-0.70	Grey sandy topsoil with gravel.
290053	DP6	Natural Subsoil	0.40-0.50	Light brown sand with gravel.
290054	HP1	GSS	0.10-0.30	Brown sandy topsoil with gravel and chalk.
290055	HP1	Fill 3	0.40-0.50	Grey sandy topsoil with gravel.
290056	HP10	TS	0.20-0.30	Light brown sandy topsoil with vegetation.
290057	HP10	GSS	0.50-0.60	Light brown sandy clay.
290058	HP12	TS	0.00-0.15	Brown sandy topsoil with vegetation.
290059	DP1	TS	0.10-0.20	Light brown sandy topsoil with vegetation.
290060	DP1	GSS	0.25-0.35	Light brown sandy topsoil with gravel.
290061	DP1	Fill 3	0.60-0.70	Light brown sandy topsoil with gravel.
290062	HP2	Fill 3	0.30-0.50	Grey sandy topsoil with gravel and vegetation.
290063	DP2	TS	0.10-0.20	Brown sandy topsoil with vegetation.
290064	DP5	Nat GSS	0.15-0.30	Light brown sandy topsoil with gravel and vegetation.
290065	HP6	TS	0.00-0.20	Light brown sandy topsoil with gravel and vegetation.
290066	HP6	Fill 2	0.30-0.50	Light brown sandy topsoil with gravel and vegetation.
290465	WS3	GSS	0.20-0.40	Light brown sandy clay with gravel and chalk.

Analytical Report Number : 13-46817

Project / Site name: Strathmore Drive

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-UK	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES. Results reported corrected for extraction ratio (soil equivalent) as g/l and mg/kg; and upon the 2:1	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	ISO 17025
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

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Analytical Report Number : 13-46817

Project / Site name: Strathmore Drive

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 13-47385

Project / Site name:	Strathmore Drive	**Samples received on:**	03/10/2013
Your job number:	29968	**Samples instructed on:**	21/10/2013
Your order number:	260642	**Analysis completed by:**	28/10/2013
Report Issue Number:	1	**Report issued on:**	28/10/2013
Samples Analysed:	4 leachate samples		

Signed: [redacted]

[redacted]
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: [redacted]

[redacted]
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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UKAS TESTING
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Analytical i2 Environmental Science

Analytical Report Number: 13-47385
Project / Site name: Strathmore Drive

Your Order No: 260642

Lab Sample Number				293641	293642	293643	293644	
Sample Reference				DP12	HP1	WS2	WS3	
Sample Number				290047	290054	289157	289160	
Depth (m)				0.60-0.80	0.10-0.30	0.20-0.40	1.00-1.20	
Date Sampled				30/09/2013	30/09/2013	30/09/2013	30/09/2013	
Time Taken				None Supplied	None Supplied	1030	1215	
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.0	7.3	7.3	7.0	
Sulphate as SO_4	µg/l	100	ISO 17025	494000	4850	881000	1470	
Ammoniacal Nitrogen as N	µg/l	15	NONE	< 15	< 15	< 15	< 15	
Speciated PAHs								
Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	4.3	11	4.3	6.0	
Boron (dissolved)	µg/l	10	ISO 17025	270	30	420	15	
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.8	5.0	3.7	6.4	
Copper (dissolved)	µg/l	0.7	ISO 17025	7.9	8.7	9.6	6.4	
Lead (dissolved)	µg/l	1	ISO 17025	15	14	4.7	23	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Nickel (dissolved)	µg/l	0.3	ISO 17025	8.6	5.9	7.3	5.3	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Zinc (dissolved)	µg/l	0.4	ISO 17025	83	52	55	56	

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Analytical Report Number : 13-47385

Project / Site name: Strathmore Drive

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammoniacal Nitrogen as N in leachate	Determination of ammoniacal nitrogen in leachate by addition of buffer solution followed by ion selective electrode. Results for ammonia species are calculated from raw ammoniacal nitrogen data,	In-house method	L035-PL	W	NONE
Boron in leachate	Determination of boron by acidification followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-UK		NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Appendix C
Gas Monitoring Data

Situation A - All Development Types Except Low Rise Housing With Gardens
Situation - B - NA

Project Number:	29968
Site:	Strathmore Drive
Data Source:	Whole site

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8	Round 9	Round 10	Round 11	Round 12	Round 13	Round 14	Round 15	Round 16
Monitoring Dates	08/10/2013	14/10/2013	22/10/2013	28/10/2013	05/11/2013	20/11/2013	02/12/2013	17/12/2013	30/12/2013	13/01/2014	21/01/2014	03/02/2014	18/02/2014	03/03/2014	18/03/2014	01/04/2014
Low Pressure (<1000mbar)	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	N	Y	N	N
Falling Pressure (1.6 - 3.5mbar 3 hours prior to monitoring)	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	Y	N	N	N	Y
Monitored during worst case scenario conditions	N	N	Y	N	N	Y	N	N	N	N	N	Y	N	N	N	N

INPUT														OUTPUT						
Monitoring Point	Flow Rate	Atmospheric Pressure	Recorded Methane (Field Measurement)		Hexane	Corrected Methane (Deducting hexane)		Carbon Dioxide	Oxygen	Measured VOCs PID cf	Corrected VOC (Recorded x cf)	CO	H2S	Water level	Depth of Well	Characteristic Situation A				Characteristic Situation B		Notes
																Methane GSV	Carbon Dioxide GSV	Character-istic Situation	Additional Factors	Traffic Light	Traffic Light Assessment	
	(l/hr)	(mb)	Steady (% v/v)	Max (% v/v)	%	Steady (% v/v)	Max (% v/v)	Steady (%)	(%)	ppm	ppm	(ppm)	(ppm)	(m bgl)	(m)	(l/hr)	(l/hr)			GSV	Max. Conc.	
WS1	0.0	1021	0.0	0.0		0.0	0.0000	8.5	11.4			0	0	DRY	5.92	0	0	1	Consider CS2	Green	Amber 1	
WS1	0.0	1003	0.0	0.0		0.0	0.0000	12.8	7.9			0	0	DRY	5.92	0	0	1	Consider CS2	Green	Amber 2	
WS1	0.0	992	0.0	0.0		0.0	0.0000	12.1	8.4			0	0	WET AT BASE	5.92	0	0	1	Consider CS2	Green	Amber 2	
WS1	-0.1	991	0.0	0.0		0.0	0.0000	15.3	4.3			0	0	5.72	5.92	0	0	1	Consider CS2	Green	Amber 2	
WS1	0.1	987	0.0	0.0		0.0	0.0000	14.7	4.6			0	0	5.64	5.92	0	0.0147	1	Consider CS2	Green	Amber 2	
WS1	0.0	994	0.0	0.0		0.0	0.0000	11.2	8.6			0	0	5.56	5.92	0	0	1	Consider CS2	Green	Amber 2	
WS1	0.1	1030	0.0	0.0		0.0	0.0000	5.4	13.2			0	0	5.70	5.92	0	0.0054	1	Consider CS2	Green	Amber 1	
WS1	0.1	1020	0.0	0.0		0.0	0.0000	5.9	14.6			0	0	5.73	5.92	0	0.0059	1	Consider CS2	Green	Amber 1	
WS1	0.2	1003	0.0	0.0		0.0	0.0000	13.6	4.4			0	0	4.78	5.92	0	0.0272	1	Consider CS2	Green	Amber 2	
WS1	0.2	1001	0.0	0.0		0.0	0.0000	7.9	9.2			0	0	4.07	5.92	0	0.0158	1	Consider CS2	Green	Amber 1	
WS1	0.0	1006	0.0	0.0		0.0	0.0000	3.2	16.6			0	0	4.10	5.92	0	0	1		Green	Green	
WS1	0.1	997	0.0	0.0		0.0	0.0000	6.8	12.1			0	0	3.99	5.92	0	0.0068	1	Consider CS2	Green	Amber 1	
WS1	0.0	1004	0.0	0.0		0.0	0.0000	4.3	14.7			0	0	3.69	5.92	0	0	1		Green	Green	
WS1	0.0	980	0.0	0.0		0.0	0.0000	3.2	16.8			0	0	4.09	5.92	0	0	1		Green	Green	
WS1	0.0	1009	0.0	0.0		0.0	0.0000	11.2	4.2			0	0	4.61	5.92	0	0	1	Consider CS2	Green	Amber 2	
WS1	0.2	1007	0.0	0.0		0.0	0.0000	3.5	16.7			0	0	5.09	5.92	0	0.007	1		Green	Green	
WS2	0.1	1021	0.0	0.0		0.0	0.0000	10.9	9.7			0	0	DRY	4.95	0	0.0109	1	Consider CS2	Green	Amber 2	
WS2	0.0	1003	0.0	0.0		0.0	0.0000	11.1	9.8			0	0	DRY	4.95	0	0	1	Consider CS2	Green	Amber 2	
WS2	0.1	992	0.0	0.0		0.0	0.0000	11.2	4.1			0	0	DRY	4.95	0	0.0112	1	Consider CS2	Green	Amber 2	
WS2	0.1	991	0.0	0.0		0.0	0.0000	15.2	4.1			0	0	DRY	4.95	0	0.0152	1	Consider CS2	Green	Amber 2	
WS2	0.3	987	0.0	0.0		0.0	0.0000	17.5	1.5			0	0	DRY	4.95	0	0.0525	1	Consider CS2	Green	Amber 2	
WS2	0.0	994	0.0	0.0		0.0	0.0000	12.5	6.4			0	0	DRY	4.95	0	0	1	Consider CS2	Green	Amber 2	
WS2	0.1	1030	0.0	0.0		0.0	0.0000	9.3	9.9			0	0	DRY	4.95	0	0.0093	1	Consider CS2	Green	Amber 1	
WS2	0.1	1020	0.0	0.0		0.0	0.0000	9.9	9.9			0	0	DRY	4.95	0	0.0099	1	Consider CS2	Green	Amber 1	
WS2	-0.1	1003	0.0	0.0		0.0	0.0000	12.3	5.9			0	0	DRY	4.95	0	0	1	Consider CS2	Green	Amber 2	
WS2	0.0	1001	0.0	0.0		0.0	0.0000	8.8	8.8			0	0	4.21	4.95	0	0	1	Consider CS2	Green	Amber 1	
WS2	0.0	1006	0.0	0.0		0.0	0.0000	7.2	11.2			0	0	4.25	4.95	0	0	1	Consider CS2	Green	Amber 1	
WS2	0.2	997	0.0	0.0		0.0	0.0000	10.6	6.5			0	0	4.13	4.95	0	0.0212	1	Consider CS2	Green	Amber 2	
WS2	0.2	1004	0.0	0.0		0.0	0.0000	7.2	10.9			0	0	3.84	4.95	0	0.0144	1	Consider CS2	Green	Amber 1	
WS2	0.0	980	0.0	0.0		0.0	0.0000	6.5	12.6			0	0	4.25	4.95	0	0	1	Consider CS2	Green	Amber 1	
WS2	0.2	1009	0.0	0.0		0.0	0.0000	11.8	4.7			0	0	4.81	4.95	0	0.0236	1	Consider CS2	Green	Amber 2	
WS2	0.0	1007	0.0	0.0		0.0	0.0000	6.5	13			0	0	DRY	4.95	0	0	1	Consider CS2	Green	Amber 1	
WS3	0.0	1021	0.0	0.0		0.0	0.0000	3.6	17.1			0	0	DRY	3.65	0	0	1		Green	Green	
WS3	0.0	1003	0.0	0.0		0.0	0.0000	0.9	21			0	0	DRY	3.65	0	0	1		Green	Green	
WS3	0.1	992	0.0	0.0		0.0	0.0000	6.0	14.2			0	0	DRY	3.65	0	0.006	1	Consider CS2	Green	Amber 1	
WS3	0.0	991	0.0	0.0		0.0	0.0000	0.7	20.8			0	0	WET AT BASE	3.65	0	0	1		Green	Green	
WS3	0.1	987	0.0	0.0		0.0	0.0000	3.4	16.2			0	0	WET AT BASE	3.65	0	0.0034	1		Green	Green	
WS3	0.1	994	0.0	0.0		0.0	0.0000	2.8	16.1			0	0	DRY	3.65	0	0.0028	1		Green	Green	
WS3	0.1	1030	0.0	0.0		0.0	0.0000	1.9	18.4			0	0	DRY	3.65	0	0.0019	1		Green	Green	
WS3	0.0	1020	0.0	0.0		0.0	0.0000	1.2	19.6			0	0	DRY	3.65	0	0	1		Green	Green	
WS3	0.0	1003	0.0	0.0		0.0	0.0000	2.2	15.9			0	0	3.32	3.65	0	0	1		Green	Green	
WS3	-0.1	1001	0.0	0.0		0.0	0.0000	1.9	16.9			0	0	3.23	3.65	0	0	1		Green	Green	
WS3	0.0	1006	0.0	0.0		0.0	0.0000	1.4	18.3			0	0	3.31	3.65	0	0	1		Green	Green	
WS3	0.0	997	0.0	0.0		0.0	0.0000	3.3	16.2			0	0	3.30	3.65	0	0	1		Green	Green	
WS3	0.0	1004	0.0	0.0		0.0	0.0000	2.6	17.1			0	0	3.31	3.65	0	0	1		Green	Green	
WS3	0.0	980	0.0	0.0		0.0	0.0000	1.6	18.3			0	0	3.55	3.65	0	0	1		Green	Green	
WS3	0.0	1009	0.0	0.0		0.0	0.0000	2.3	16.7			0	0	DRY	3.65	0	0	1		Green	Green	
WS3	0.0	1007	0.0	0.0		0.0	0.0000	2.1	15.2			0	0	DRY	3.65	0	0	1		Green	Green	
WS4	0.0	1021	0.0	0.0		0.0	0.0000	3.6	16.5			0	0	DRY	2.81	0	0	1		Green	Green	
WS4	0.0	1003	0.0	0.0		0.0	0.0000	3.6	17.2			0	0	DRY	2.81	0	0	1		Green	Green	
WS4	0.0	992	0.0	0.0		0.0	0.0000	3.7	16.3			0	0	DRY	2.81	0	0	1		Green	Green	
WS4	0.1	991	0.0	0.0		0.0	0.0000	3.9	16.1			0	0	DRY	2.81	0	0.0039	1		Green	Green	
WS4	0.2	987	0.0	0.0		0.0	0.0000	3.9	15.5			0	0	DRY	2.81	0	0.0078	1		Green	Green	
WS4	0.0	994	0.0	0.0		0.0	0.0000	3.7	15.7			0	0	DRY	2.81	0	0	1		Green	Green	
WS4	0.1	1030	0.0	0.0		0.0	0.0000	3.1	17.2			0	0	DRY	2.81	0	0.0031	1		Green	Green	
WS4	0.0	1020	0.0	0.0		0.0	0.0000	3.3	17.3			0	0	DRY	2.81	0	0	1		Green	Green	
WS4	0.1	1003	0.0	0.0		0.0	0.0000	3.5	17.3			0	0	DRY	2.81	0	0.0035	1		Green	Green	
WS4	0.3	1001	0.0	0.0		0.0	0.0000	3.2	17.4			0	0	DRY	2.81	0	0.0096	1		Green	Green	

INPUT															OUTPUT						
Monitoring Point	Flow Rate	Atmospheric Pressure	Recorded Methane (Field Measurement)		Hexane	Corrected Methane (Deducting hexane)		Carbon Dioxide	Oxygen	Measured VOCs PID cf	Corrected VOC (Recorded x cf)	CO	H2S	Water level	Depth of Well	Characteristic Situation A				Characteristic Situation B		Notes
																Methane GSV	Carbon Dioxide GSV	Character-istic Situation	Additional Factors	Traffic Light	Traffic Light Assessment	
	(l/hr)	(mb)	Steady	Max	%	Steady	Max	Steady	(%)	ppm	ppm	(ppm)	(ppm)	(m bgl)	(m)	(l/hr)	(l/hr)			GSV	Max. Conc.	
			(% v/v)	(% v/v)		(% v/v)	(% v/v)	(%)														
WS4	0.0	1006	0.0	0.0		0.0	0.0000	3.0	17.5			0	0	DRY	2.81	0	0	1		Green	Green	
WS4	0.2	997	0.0	0.0		0.0	0.0000	3.0	17.7			0	0	DRY	2.81	0	0.006	1		Green	Green	
WS4	0.1	1004	0.0	0.0		0.0	0.0000	2.9	17.6			0	0	DRY	2.81	0	0.0029	1		Green	Green	
WS4	0.0	980	0.0	0.0		0.0	0.0000	3.0	17.5			0	0	DRY	2.81	0	0	1		Green	Green	
WS4	0.1	1009	0.0	0.0		0.0	0.0000	3.1	18			0	0	DRY	2.81	0	0.0031	1		Green	Green	
WS4	0.0	1007	0.0	0.0		0.0	0.0000	3.2	17.6			0	0	DRY	2.81	0	0	1		Green	Green	
WS5	0.0	1021	0.0	0.0		0.0	0.0000	11.5	8.6			0	0	DRY	4.98	0	0	1	Consider CS2	Green	Amber 2	
WS5	0.1	1003	0.0	0.0		0.0	0.0000	10.2	11.9			0	0	DRY	4.98	0	0.0102	1	Consider CS2	Green	Amber 2	
WS5	0.1	992	0.0	0.0		0.0	0.0000	12.8	6.6			0	0	DRY	4.98	0	0.0128	1	Consider CS2	Green	Amber 2	
WS5	0.0	991	0.0	0.0		0.0	0.0000	13.6	4.6			0	0	DRY	4.98	0	0	1	Consider CS2	Green	Amber 2	
WS5	0.0	987	0.0	0.0		0.0	0.0000	12.3	8.1			0	0	DRY	4.98	0	0	1	Consider CS2	Green	Amber 2	
WS5	0.1	994	0.0	0.0		0.0	0.0000	9.3	11.8			0	0	DRY	4.98	0	0.0093	1	Consider CS2	Green	Amber 1	
WS5	0.0	1030	0.0	0.0		0.0	0.0000	7.0	13.8			0	0	DRY	4.98	0	0	1	Consider CS2	Green	Amber 1	
WS5	0.0	1020	0.0	0.0		0.0	0.0000	8.4	9.9			0	0	DRY	4.98	0	0	1	Consider CS2	Green	Amber 1	
WS5	0.0	1003	0.0	0.0		0.0	0.0000	10.0	9.1			0	0	4.51	4.98	0	0	1	Consider CS2	Green	Amber 1	
WS5	0.0	1001	0.0	0.0		0.0	0.0000	8.7	11.6			0	0	3.89	4.98	0	0	1	Consider CS2	Green	Amber 1	
WS5	0.1	1006	0.0	0.0		0.0	0.0000	7.0	13.2			0	0	3.94	4.98	0	0.007	1	Consider CS2	Green	Amber 1	
WS5	0.0	997	0.0	0.0		0.0	0.0000	8.4	10.1			0	0	3.82	4.98	0	0	1	Consider CS2	Green	Amber 1	
WS5	0.1	1004	0.0	0.0		0.0	0.0000	6.3	13.4			0	0	3.52	4.98	0	0.0063	1	Consider CS2	Green	Amber 1	
WS5	0.0	980	0.0	0.0		0.0	0.0000	6.0	15			0	0	3.92	4.98	0	0	1	Consider CS2	Green	Amber 1	
WS5	0.1	1009	0.0	0.0		0.0	0.0000	5.0	16.6			0	0	4.46	4.98	0	0.005	1		Green	Green	
WS5	0.0	1007	0.0	0.0		0.0	0.0000	5.3	13.8			0	0	4.87	4.98	0	0	1	Consider CS2	Green	Amber 1	
WS6	0.0	1021	0.0	0.0		0.0	0.0000	8.6	11.3			0	0	DRY	2.57	0	0	1	Consider CS2	Green	Amber 1	
WS6	0.1	1003	0.0	0.0		0.0	0.0000	7.8	13.4			0	0	DRY	2.57	0	0.0078	1	Consider CS2	Green	Amber 1	
WS6	0.0	992	0.0	0.0		0.0	0.0000	9.0	10			0	0	DRY	2.57	0	0	1	Consider CS2	Green	Amber 1	
WS6	0.0	991	0.0	0.0		0.0	0.0000	11.0	6.8			0	0	DRY	2.57	0	0	1	Consider CS2	Green	Amber 2	
WS6	0.1	987	0.0	0.0		0.0	0.0000	8.1	11.8			0	0	DRY	2.57	0	0.0081	1	Consider CS2	Green	Amber 1	
WS6	0.0	994	0.0	0.0		0.0	0.0000	8.1	12.6			0	0	DRY	2.57	0	0	1	Consider CS2	Green	Amber 1	
WS6	0.1	1030	0.0	0.0		0.0	0.0000	8.1	15.1			0	0	DRY	2.58	0	0.0061	1	Consider CS2	Green	Amber 1	
WS6	0.0	1020	0.0	0.0		0.0	0.0000	8.0	15.2			0	0	DRY	2.58	0	0	1	Consider CS2	Green	Amber 1	
WS6	0.1	1003	0.0	0.0		0.0	0.0000	5.8	14.8			0	0	DRY	2.58	0	0.0058	1	Consider CS2	Green	Amber 1	
WS6	0.0	1001	0.0	0.0		0.0	0.0000	6.4	13.9			0	0	DRY	2.58	0	0	1	Consider CS2	Green	Amber 1	
WS6	0.0	1006	0.0	0.0		0.0	0.0000	5.6	15.2			0	0	DRY	2.58	0	0	1	Consider CS2	Green	Amber 1	
WS6	0.1	997	0.0	0.0		0.0	0.0000	5.9	14.6			0	0	DRY	2.58	0	0.0059	1	Consider CS2	Green	Amber 1	
WS6	0.1	1004	0.0	0.0		0.0	0.0000	5.8	14.5			0	0	DRY	2.58	0	0.0056	1	Consider CS2	Green	Amber 1	
WS6	0.2	980	0.0	0.0		0.0	0.0000	5.5	14.6			0	0	DRY	2.58	0	0.011	1	Consider CS2	Green	Amber 1	
WS6	0.1	1009	0.0	0.0		0.0	0.0000	5.7	15			0	0	DRY	2.58	0	0.0057	1	Consider CS2	Green	Amber 1	
WS6	0.0	1007	0.0	0.0		0.0	0.0000	4.7	15.8			0	0	DRY	2.58	0	0	1		Green	Green	

Appendix D
GQRA Tables (screened data)

Data Summary Statistics

Site:	Strathmore Drive	**Project No:**	29968
Data Description:	Made Ground Soil Leachate	**SOM (%):**	N/A
Land Use:	Residential - drinking water	**Completed By:**	ELH
Receptor:	Controlled Waters	**Checked By:**	BW

Assessment Criteria Key

a) UK/EU Drinking Water Standards

Contaminant	Units	Method Detection Limit	Assess-ment Criteria (AC)	Source (see key)	Summary Statistics							Sample Identifiers and Analytical Data			
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	DP12 0.60-0.80 Fill 3	HP1 0.10-0.30 GSS	WS2 0.20-0.40 Fill 1	WS3 1.00-1.20 Fill 2
pH	pH Units	N/A	-		4	4	7	7.3	7.15	0.17320508	-	7	7.3	7.3	7
Sulphate as SO4	µg/l	100	250000	a	4	4	1470	881000	345330	425523.774	2	494000	4850	881000	1470
Ammoniacal Nitrogen as N	µg/l	15	500	a	4	0	15	15	-	-	0	< 15	< 15	< 15	< 15
Heavy Metals / Metalloids					0	0	0	0	-	-	0				
Arsenic (dissolved)	µg/l	1.1	10	a	4	4	4.3	11	6.4	3.16964772	1	4.3	11	4.3	6
Boron (dissolved)	µg/l	10	1000	a	4	4	15	420	183.75	196.102652	0	270	30	420	15
Cadmium (dissolved)	µg/l	0.08	5	a	4	0	0.08	0.08	-	-	0	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	-		4	0	5	5	-	-	-	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	50	a	4	4	1.8	6.4	4.225	1.95682566	0	1.8	5	3.7	6.4
Copper (dissolved)	µg/l	0.7	2000	a	4	4	6.4	9.6	8.15	1.35769412	0	7.9	8.7	9.6	6.4
Lead (dissolved)	µg/l	1	10	a	4	4	4.7	23	14.175	7.49149518	3	15	14	4.7	23
Mercury (dissolved)	µg/l	0.5	1	a	4	0	0.5	0.5	-	-	0	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	20	a	4	4	5.3	8.6	6.775	1.47732867	0	8.6	5.9	7.3	5.3
Selenium (dissolved)	µg/l	4	10	a	4	0	4	4	-	-	0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	-		4	4	52	83	61.5	14.4337567	-	83	52	55	56
Speciated PAHs					0	0	0	0	-	-	0				
Naphthalene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	0.1	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	0.1	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	0.01	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	0.1	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	0.1	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH					0	0	0	0	-	-	0				
Total EPA-16 PAHs	µg/l	0.2	-		4	0	0.2	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2

Data Summary Statistics

Site:	Strathmore Drive	**Project No:**	29968
Data Description:	Made Ground Soil Leachate	**SOM (%):**	N/A
Land Use:	Surface waters	**Completed By:**	ELH
Receptor:	Controlled Waters	**Checked By:**	BW

Assessment Criteria Key

a) WFD Inland Surface Waters (2008/105/EC)
b) WFD Other Surface Waters (2008/105/EC)
c) WFD Good Standard for rivers and freshwater lakes (Part IV 'Specific' & Part VI 'Other' Pollutants)
d) WFD Good standard for transitional and coastal waters (Part IV 'Specific' & Part VI 'Other' Pollutants)
j) Older EQS Values - UK EQS Fresh Water

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics							Sample Identifiers and Analytical Data			
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	DP12 0.60-0.80	HP1 0.10-0.30	WS2 0.20-0.40	WS3 1.00-1.20
pH	pH Units	N/A	-		4	4	7	7.3	7.15	0.17320508	-	7	7.3	7.3	7
Sulphate as SO4	µg/l	100	250000	a	4	4	1470	881000	345330	425523.774	2	494000	4850	881000	1470
Ammoniacal Nitrogen as N	µg/l	15	-		4	0	15	15	-	-	-	< 15	< 15	< 15	< 15
Heavy Metals / Metalloids					0	0	0	0	-	-	0				
Arsenic (dissolved)	µg/l	1.1	50	c	4	4	4.3	11	6.4	3.16964772	0	4.3	11	4.3	6
Boron (dissolved)	µg/l	10	2000	j	4	4	15	420	183.75	196.102652	0	270	30	420	15
Cadmium (dissolved)	µg/l	0.08	0.25	a	4	0	0.08	0.08	-	-	0	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	3.4	c	4	0	5	5	-	-	4	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	4.7	c	4	4	1.8	6.4	4.225	1.95682566	2	1.8	5	3.7	6.4
Copper (dissolved)	µg/l	0.7	28	c	4	4	6.4	9.6	8.15	1.35769412	0	7.9	8.7	9.6	6.4
Lead (dissolved)	µg/l	1	7.2	a	4	4	4.7	23	14.175	7.49149518	3	15	14	4.7	23
Mercury (dissolved)	µg/l	0.5	0.05	a	4	0	0.5	0.5	-	-	4	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	20	a	4	4	5.3	8.6	6.775	1.47732867	0	8.6	5.9	7.3	5.3
Selenium (dissolved)	µg/l	4	-		4	0	4	4	-	-	-	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	125	c	4	4	52	83	61.5	14.4337567	0	83	52	55	56
Speciated PAHs					0	0	0	0	-	-	0				
Naphthalene	µg/l	0.01	2.4	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	0.03	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	0.03	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	0.05	a	4	0	0.01	0.01	-	-	0	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	0.002	a	4	0	0.01	0.01	-	-	4	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	-		4	0	0.01	0.01	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	0.002	a	4	0	0.01	0.01	-	-	4	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH			-		0	0	0	0	-	-	-				
Total EPA-16 PAHs	µg/l	0.2	-		4	0	0.2	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2
* assummed hardness of >250 CaCO3 mg/l					0	0	0	0	-	-	0				

Data Summary Statistics

Site:	Strathmore Drive	**Project No:**	29968
Data Description:	Upper 1.20m	**SOM (%):**	N/A
Land Use:	Residential with plant uptake	**Completed By:**	ELH
Receptor:	Drinking water pipeline	**Checked By:**	BW

Assessment Criteria Key

a) Thames Water Trigger Levels

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics							Sample Identifiers and Analytical Data												
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	WS1	WS3	WS4	WS6	HP1	HP4	HP5	HP6	HP7	HP8	HP9	HP10	HP11	HP12
												0.10-0.30	0.00-0.15	0.10-0.30	0.00-0.15	0.10-0.30	0.00-0.20	0.10-0.20	0.00-0.20	0.10-0.30	0.10-0.20	0.10-0.30	0.20-0.30	0.00-0.20	0.00-0.15
												01/10/2013	30/09/2013	30/09/2013	01/10/2013	02/10/2013	01/10/2013	01/10/2013	03/10/2013	02/10/2013	02/10/2013	30/09/2013	02/10/2013	30/09/2013	02/10/2013
												Fill 1	TS	Nat	TS	GSS	TS	TS	TS	Nat TS	TS	Fill 1	TS	Nat TS	TS
pH	pH Units	N/A	-		36	36	6.6	8	7.34166667	0.38349893	-	7.3	6.8	7.2	7.5	7.1	8	8	7.8	6.7	6.6	7	7.2	7	7.3
TPH-CWG - Aromatic >EC12 - EC21	mg/kg	10	10	a	9	1	10	15	10.5555556	-	1	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC21	mg/kg	8	10	a	9	1	8	110	19.3333333	-	1	< 8.0	-	-	-	-	< 8.0	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC12	mg/kg	1	0.5	a	9	1	1	1.7	1.07777778	-	9	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC12	mg/kg	1	0.5	a	9	1	1	10	2	-	9	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
Naphthalene	mg/kg	0.05	5	a	36	2	0.05	1.6	0.11777778	0.29419246	0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzene	µg/kg	1	100	a	9	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
Toluene	µg/kg	1	100	a	9	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
Ethylbenzene	µg/kg	1	100	a	9	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
p & m-xylene	µg/kg	1	100	a	9	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
o-xylene	µg/kg	1	100	a	9	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	100	a	9	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
p & m-xylene and o-xylene	µg/kg	1	100	a	1	0	1	1	-	-	0														
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	-		9	1	1	10	2	-	-	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	-		9	1	2	87	11.4444444	-	-	< 2.0	-	-	-	-	< 2.0	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	-		9	1	8	23	9.66666667	-	-	< 8.0	-	-	-	-	< 8.0	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	500	a	9	5	8	86	32.3333333	31.6188235	0	< 8.0	-	-	-	-	< 8.0	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	-		9	5	10	180	47.1111111	58.041891	-	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	8	-		9	5	8	86	34.8888889	34.4798653	-	< 8.0	-	-	-	-	< 8.0	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	-		9	1	1	1.7	1.07777778	-	-	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	-		9	0	2	2	-	-	-	< 2.0	-	-	-	-	< 2.0	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	-		9	1	10	15	10.5555556	-	-	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	500	a	9	1	10	21	11.2222222	-	0	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	-		9	1	10	36	12.8888889	-	-	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-
Total Phenols			-		0	0	0	0	-	-	-														
Total Phenols (monohydric)	mg/kg	2	2	a	13	0	2	2	-	-	0	< 2.0	-	-	< 2.0	< 2.0	< 2.0	-	-	-	-	-	-	-	-
VOCs			-		0	0	0	0	-	-	-														
Chloromethane	µg/kg	4	500	a	8	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	µg/kg	2	500	a	8	0	2	2	-	-	0	< 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	µg/kg	6	500	a	8	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	µg/kg	24	500	a	8	0	24	24	-	-	0	< 24	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	500	a	8	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	µg/kg	6	500	a	8	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2-Dichloropropane	µg/kg	6	500	a	8	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloroethane	µg/kg	4	500	a	8	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	µg/kg	1	500	a	8	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloropropane	µg/kg	6	500	a	8	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	µg/kg	6	500	a	8	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	8	500	a	8	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	µg/kg	1	500	a	8	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics							Sample Identifiers and Analytical Data													
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	WS1	WS3	WS4	WS6	HP1	HP4	HP5	HP6	HP7	HP8	HP9	HP10	HP11	HP12
												0.10-0.30	0.00-0.15	0.10-0.30	0.00-0.15	0.10-0.30	0.00-0.20	0.10-0.20	0.00-0.20	0.10-0.30	0.10-0.20	0.10-0.30	0.20-0.30	0.00-0.20	0.00-0.15
												01/10/2013	30/09/2013	30/09/2013	01/10/2013	02/10/2013	01/10/2013	01/10/2013	03/10/2013	02/10/2013	02/10/2013	30/09/2013	02/10/2013	30/09/2013	02/10/2013
												FIII 1	TS	Nat	TS	GSS	TS	TS	TS	Nat TS	TS	FIII 1	TS	Nat TS	TS
1,3-Dichloropropane	µg/kg	8	500	a	8	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	µg/kg	2	500	a	8	0	2	2	-	-	0	< 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	µg/kg	8	500	a	8	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	µg/kg	3	500	a	8	0	3	3	-	-	0	< 3.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	4	500	a	8	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	µg/kg	1	500	a	8	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
p & m-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Tribromomethane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromobenzene	µg/kg	11	500	a	8	0	11	11	-	-	0	< 11	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Propylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorotoluene	µg/kg	11	500	a	8	0	11	11	-	-	0	< 11	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene	µg/kg	11	500	a	8	0	11	11	-	-	0	< 11	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Tert-Butylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Sec-Butylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-dichlorobenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
P-Isopropyltoluene	µg/kg	16	500	a	8	0	16	16	-	-	0	< 16	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichlorobenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-dichlorobenzene	µg/kg	8	500	a	8	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	9	500	a	8	0	9	9	-	-	0	< 9.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	µg/kg	7	500	a	8	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	10	500	a	8	0	10	10	-	-	0	< 10	-	-	-	-	-	-	-	-	-	-	-	-	-
p & m-xylene and o-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-

Data Summary Statistics

Site:	Strathmore Drive	Project No:	29968
Data Description:	Upper 1.20m	SOM (%):	N/A
Land Use:	Residential with plant uptake	Completed By:	ELH
Receptor:	Drinking water pipeline	Checked By:	BW

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics							DP1	DP1	DP2	DP5	DP9	WS2	WS3	WS5	WS6	HP1	HP2	HP3	HP6	HP8
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	0.10-0.20	0.25-0.35	0.10-0.20	0.15-0.30	0.00-0.15	0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.40	0.40-0.50	0.30-0.50	0.40-0.60	0.30-0.50	0.60-0.70
												02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013	30/09/2013	30/09/2013	01/10/1301	01/10/2013	02/10/2013	02/10/2013	01/10/2013	03/10/2013	02/10/2013
												TS	GSS	TS	Nat GSS	TS	Fill 1	GSS	Fill 1	Fill 1	Fill 3	Fill 3	Fill 2	Fill 2	Fill 3
pH	pH Units	N/A	-		36	36	6.6	8	7.34166667	0.38349893	-	7.4	7.5	7.5	7.6	7.6	7.9	7	7.5	7.5	6.7	7.2	7.5	7.6	6.9
TPH-CWG - Aromatic >EC12 - EC21	mg/kg	10	10	a	9	1	10	15	10.5555556	-	1	-	-	-	-	-	-	-	< 10	-	< 10	< 10	-	15	< 10
TPH-CWG - Aliphatic >EC12 - EC21	mg/kg	8	10	a	9	1	8	110	19.3333333	-	1	-	-	-	-	-	-	-	< 8.0	-	< 8.0	110	-	< 8.0	< 8.0
TPH-CWG - Aromatic >EC5 - EC12	mg/kg	1	0.5	a	9	1	1	1.7	1.07777778	-	9	-	-	-	-	-	-	-	< 1.0	-	< 1.0	1.7	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC5 - EC12	mg/kg	1	0.5	a	9	1	1	10	2	-	9	-	-	-	-	-	-	-	< 1.0	-	< 1.0	10	-	< 1.0	< 1.0
Naphthalene	mg/kg	0.05	5	a	36	2	0.05	1.6	0.11777778	0.29419246	0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.94	< 0.05	< 0.05	< 0.05	< 0.05	1.6	< 0.05	< 0.05	< 0.05
Benzene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0
o-xylene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-xylene and o-xylene	µg/kg	1	100	a	1	0	1	1	-	-	0														
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	-		9	1	1	10	2	-	-	-	-	-	-	-	-	-	< 1.0	-	< 1.0	10	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	-		9	1	2	87	11.4444444	-	-	-	-	-	-	-	-	-	< 2.0	-	< 2.0	87	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	-		9	1	8	23	9.66666667	-	-	-	-	-	-	-	-	-	< 8.0	-	< 8.0	23	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	500	a	9	5	8	86	32.3333333	31.6188235	0	-	-	-	-	-	-	-	< 8.0	-	86	55	-	27	76
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	-		9	5	10	180	47.1111111	58.041891	-	-	-	-	-	-	-	-	< 10	-	86	180	-	27	76
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	8	-		9	5	8	86	34.8888889	34.4798653	-	-	-	-	-	-	-	-	< 8.0	-	86	78	-	27	76
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	-		9	1	1	1.7	1.07777778	-	-	-	-	-	-	-	-	-	< 1.0	-	< 1.0	1.7	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	-		9	0	2	2	-	-	-	-	-	-	-	-	-	-	< 2.0	-	< 2.0	< 2.0	-	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	-		9	1	10	15	10.5555556	-	-	-	-	-	-	-	-	-	< 10	-	< 10	< 10	-	15	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	500	a	9	1	10	21	11.2222222	-	0	-	-	-	-	-	-	-	< 10	-	< 10	< 10	-	21	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	-		9	1	10	36	12.8888889	-	-	-	-	-	-	-	-	-	< 10	-	< 10	< 10	-	36	< 10
Total Phenols			-		0	0	0	0	-	-	-														
Total Phenols (monohydric)	mg/kg	2	2	a	13	0	2	2	-	-	0	-	-	-	-	-	< 2.0	< 2.0	< 2.0	-	< 2.0	< 2.0	-	< 2.0	-
VOCs			-		0	0	0	0	-	-	-														
Chloromethane	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0
Chloroethane	µg/kg	2	500	a	8	0	2	2	-	-	0	-	-	-	-	-	-	-	-	< 2.0	< 2.0	< 2.0	-	< 2.0	< 2.0
Bromomethane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0
Vinyl Chloride	µg/kg	24	500	a	8	0	24	24	-	-	0	-	-	-	-	-	-	-	-	< 24	< 24	< 24	-	< 24	< 24
Trichlorofluoromethane	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0
1,1-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
Cis-1,2-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1-dichloroethane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0
2,2-Dichloropropane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0
Trichloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
1,1,1-Trichloroethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
1,2-dichloroethane	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0
1,1-Dichloropropene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
Trans-1,2-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
Benzene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0
Tetrachloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
1,2-dichloropropane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0
Trichloroethene	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0
Dibromomethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
Bromodichloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
Cis-1,3-dichloropropene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
Trans-1,3-dichloropropene	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0
Toluene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics							DP1	DP1	DP2	DP5	DP9	WS2	WS3	WS5	WS6	HP1	HP2	HP3	HP6	HP8
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	0.10-0.20	0.25-0.35	0.10-0.20	0.15-0.30	0.00-0.15	0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.40	0.40-0.50	0.30-0.50	0.40-0.60	0.30-0.50	0.60-0.70
												02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013	30/09/2013	30/09/2013	01/10/1301	01/10/2013	02/10/2013	02/10/2013	01/10/2013	03/10/2013	02/10/2013
												TS	GSS	TS	Nat GSS	TS	Fill 1	GSS	Fill 1	Fill 1	Fill 3	Fill 3	Fill 2	Fill 2	Fill 3
1,3-Dichloropropane	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0
Dibromochloromethane	µg/kg	2	500	a	8	0	2	2	-	-	0	-	-	-	-	-	-	-	-	< 2.0	< 2.0	< 2.0	-	< 2.0	< 2.0
Tetrachloroethene	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0
1,2-Dibromoethane	µg/kg	3	500	a	8	0	3	3	-	-	0	-	-	-	-	-	-	-	-	< 3.0	< 3.0	< 3.0	-	< 3.0	< 3.0
Chlorobenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
1,1,1,2-Tetrachloroethane	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0
Ethylbenzene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0
Styrene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0
Tribromomethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
o-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
Bromobenzene	µg/kg	11	500	a	8	0	11	11	-	-	0	-	-	-	-	-	-	-	-	< 11	< 11	< 11	-	< 11	< 11
N-Propylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0
2-Chlorotoluene	µg/kg	11	500	a	8	0	11	11	-	-	0	-	-	-	-	-	-	-	-	< 11	< 11	< 11	-	< 11	< 11
4-Chlorotoluene	µg/kg	11	500	a	8	0	11	11	-	-	0	-	-	-	-	-	-	-	-	< 11	< 11	< 11	-	< 11	< 11
1,3,5-Trimethylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0
Tert-Butylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0
1,2,4-Trimethylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0
Sec-Butylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0
1,3-dichlorobenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
P-Isopropyltoluene	µg/kg	16	500	a	8	0	16	16	-	-	0	-	-	-	-	-	-	-	-	< 16	< 16	< 16	-	< 16	< 16
1,2-dichlorobenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0
1,4-dichlorobenzene	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0
Butylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0
1,2-Dibromo-3-chloropropane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
1,2,4-Trichlorobenzene	µg/kg	9	500	a	8	0	9	9	-	-	0	-	-	-	-	-	-	-	-	< 9.0	< 9.0	< 9.0	-	< 9.0	< 9.0
Hexachlorobutadiene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0
1,2,3-Trichlorobenzene	µg/kg	10	500	a	8	0	10	10	-	-	0	-	-	-	-	-	-	-	-	< 10	< 10	< 10	-	< 10	< 10
p & m-xylene and o-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0

Data Summary Statistics

Site:	Strathmore Drive	**Project No:**	29968
Data Description:	Upper 1.20m	**SOM (%):**	N/A
Land Use:	Residential with plant uptake	**Completed By:**	ELH
Receptor:	Drinking water pipeline	**Checked By:**	BW

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics: Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	HP9 0.50-0.70 30/09/2013 Fill 3	HP10 0.50-0.60 02/10/2013 GSS	DP1 0.60-0.70 02/10/2013 Fill 3	DP6 0.40-0.50 02/10/2013 Nat SS	DP12 0.20-0.40 01/10/2013 GSS	DP12 0.60-0.80 01/10/2013 Fill 3	WS2 0.80-1.00 30/09/2013 Fill 2	WS3 1.00-1.20 30/09/2013 Fill 2
pH	pH Units	N/A	-		36	36	6.6	8	7.34166667	0.38349893	-	7.1	7.4	7.4	7.3	8	7.6	7.8	6.8
TPH-CWG - Aromatic >EC12 - EC21	mg/kg	10	10	a	9	1	10	15	10.5555556	-	1	-	-	-	-	< 10	-	< 10	-
TPH-CWG - Aliphatic >EC12 - EC21	mg/kg	8	10	a	9	1	8	110	19.3333333	-	1	-	-	-	-	< 8.0	-	< 8.0	-
TPH-CWG - Aromatic >EC5 - EC12	mg/kg	1	0.5	a	9	1	1	1.7	1.07777778	-	9	-	-	-	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC5 - EC12	mg/kg	1	0.5	a	9	1	1	10	2	-	9	-	-	-	-	< 1.0	-	< 1.0	-
Naphthalene	mg/kg	0.05	5	a	36	2	0.05	1.6	0.11777778	0.29419246	0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	< 1.0	-	< 1.0	-
p & m-xylene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	< 1.0	-	< 1.0	-
o-xylene	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	100	a	9	0	1	1	-	-	0	-	-	-	-	< 1.0	-	< 1.0	-
p & m-xylene and o-xylene	µg/kg	1	100	a	1	0	1	1	-	-	0							< 1.0	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	-		9	1	1	10	2	-	-	-	-	-	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	-		9	1	2	87	11.4444444	-	-	-	-	-	-	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	-		9	1	8	23	9.66666667	-	-	-	-	-	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	500	a	9	5	8	86	32.3333333	31.6188235	0	-	-	-	-	< 8.0	-	15	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	-		9	5	10	180	47.1111111	58.041891	-	-	-	-	-	< 10	-	15	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	8	-		9	5	8	86	34.8888889	34.4798653	-	-	-	-	-	< 8.0	-	15	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	-		9	0	0.1	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	-		9	1	1	1.7	1.07777778	-	-	-	-	-	-	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	-		9	0	2	2	-	-	-	-	-	-	-	< 2.0	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	-		9	1	10	15	10.5555556	-	-	-	-	-	-	< 10	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	500	a	9	1	10	21	11.2222222	-	0	-	-	-	-	< 10	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	-		9	1	10	36	12.8888889	-	-	-	-	-	-	< 10	-	< 10	-
Total Phenols			-		0	0	0	0	-	-	-								
Total Phenols (monohydric)	mg/kg	2	2	a	13	0	2	2	-	-	0	-	< 2.0	-	-	< 2.0	-	-	< 2.0
VOCs			-		0	0	0	0	-	-	-								
Chloromethane	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	< 4.0	< 4.0	-
Chloroethane	µg/kg	2	500	a	8	0	2	2	-	-	0	-	-	-	-	-	< 2.0	< 2.0	-
Bromomethane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	< 6.0	< 6.0	-
Vinyl Chloride	µg/kg	24	500	a	8	0	24	24	-	-	0	-	-	-	-	-	< 24	< 24	-
Trichlorofluoromethane	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-
1,1-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
Cis-1,2-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	< 1.0	< 1.0	-
1,1-dichloroethane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	< 6.0	< 6.0	-
2,2-Dichloropropane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	< 6.0	< 6.0	-
Trichloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
1,1,1-Trichloroethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
1,2-dichloroethane	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	< 4.0	< 4.0	-
1,1-Dichloropropene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
Trans-1,2-dichloroethene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
Benzene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	< 1.0	< 1.0	-
Tetrachloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
1,2-dichloropropane	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	< 6.0	< 6.0	-
Trichloroethene	µg/kg	6	500	a	8	0	6	6	-	-	0	-	-	-	-	-	< 6.0	< 6.0	-
Dibromomethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
Bromodichloromethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
Cis-1,3-dichloropropene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
Trans-1,3-dichloropropene	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	< 8.0	< 8.0	-
Toluene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	< 1.0	< 1.0	-
1,1,2-Trichloroethane	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-

Contaminant	Units	Method Detection Limit	Assess-ment Criteria (AC)	Source (see key)	Summary Statistics							HP9	HP10	DP1	DP6	DP12	DP12	WS2	WS3
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	0.50-0.70	0.50-0.60	0.60-0.70	0.40-0.50	0.20-0.40	0.60-0.80	0.80-1.00	1.00-1.20
												30/09/2013	02/10/2013	02/10/2013	02/10/2013	01/10/2013	01/10/2013	30/09/2013	30/09/2013
												FIII 3	GSS	FIII 3	Nat SS	GSS	FIII 3	FIII 2	FIII 2
1,3-Dichloropropane	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	< 8.0	< 8.0	-
Dibromochloromethane	µg/kg	2	500	a	8	0	2	2	-	-	0	-	-	-	-	-	< 2.0	< 2.0	-
Tetrachloroethene	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	< 8.0	< 8.0	-
1,2-Dibromoethane	µg/kg	3	500	a	8	0	3	3	-	-	0	-	-	-	-	-	< 3.0	< 3.0	-
Chlorobenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
1,1,1,2-Tetrachloroethane	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	< 4.0	< 4.0	-
Ethylbenzene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	< 1.0	< 1.0	-
Styrene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-
Tribromomethane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
o-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	< 1.0	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-
Isopropylbenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
Bromobenzene	µg/kg	11	500	a	8	0	11	11	-	-	0	-	-	-	-	-	< 11	< 11	-
N-Propylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-
2-Chlorotoluene	µg/kg	11	500	a	8	0	11	11	-	-	0	-	-	-	-	-	< 11	< 11	-
4-Chlorotoluene	µg/kg	11	500	a	8	0	11	11	-	-	0	-	-	-	-	-	< 11	< 11	-
1,3,5-Trimethylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	< 4.0	< 4.0	-
Tert-Butylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	< 4.0	< 4.0	-
1,2,4-Trimethylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-
Sec-Butylbenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-
1,3-dichlorobenzene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
P-Isopropyltoluene	µg/kg	16	500	a	8	0	16	16	-	-	0	-	-	-	-	-	< 16	< 16	-
1,2-dichlorobenzene	µg/kg	5	500	a	8	0	5	5	-	-	0	-	-	-	-	-	< 5.0	< 5.0	-
1,4-dichlorobenzene	µg/kg	8	500	a	8	0	8	8	-	-	0	-	-	-	-	-	< 8.0	< 8.0	-
Butylbenzene	µg/kg	4	500	a	8	0	4	4	-	-	0	-	-	-	-	-	< 4.0	< 4.0	-
1,2-Dibromo-3-chloropropane	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
1,2,4-Trichlorobenzene	µg/kg	9	500	a	8	0	9	9	-	-	0	-	-	-	-	-	< 9.0	< 9.0	-
Hexachlorobutadiene	µg/kg	7	500	a	8	0	7	7	-	-	0	-	-	-	-	-	< 7.0	< 7.0	-
1,2,3-Trichlorobenzene	µg/kg	10	500	a	8	0	10	10	-	-	0	-	-	-	-	-	< 10	< 10	-
p & m-xylene and o-xylene	µg/kg	1	500	a	8	0	1	1	-	-	0	-	-	-	-	-	< 1.0	< 1.0	-

Data Summary Statistics

Site:	Strathmore Drive	Project No:	29968
Data Description:	300 to 700 mm soils	SOM (%):	5.6%
Land Use:	Residential with plant uptake	Completed By:	ELH
Receptor:	Humans	Checked By:	BW

Assessment Criteria Key

a) 2009 SGV (Res with Plant)
b) 2009 SGV (Allotment)
c) 2009 SGV (Commercial/Industrial)
d) EIC GAC (Res with Plant)
e) EIC GAC (Res without Plant)
f) EIC GAC (Allotment)
g) EIC GAC (Commercial/Ind)
h) AMEC GAC (Res with Plant)
i) AMEC GAC (Res without Plant)
j) AMEC GAC (Allotment)
k) AMEC GAC (Commercial/Ind)
l) LQM CIEH GAC (Res with Plant)
m) LQM CIEH GAC (Res without Plant)
n) LQM CIEH GAC (Commercial/Ind)
o) Dutch Intervention values
p) Dutch Target Values
q) Soil Code: Crops for Consumption
r) Soil Code: Sensitive Species
s) Soil Code: Grazing Animals
t) Soil Code: Background
u) BRE Special Digest
v) Other Generic Criteria
w) Site Specific Assessment Criteria
x) Laboratory limit of detection
y) CLR SGV for Lead (2002)

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics: Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	Sample Identifiers and Analytical Data: WS2	WS3	WS5	WS8	HP1	HP2	HP3	HP6	HP8	HP9	HP10	DP1	DP6	DP12	DP12
												0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.40	0.40-0.50	0.30-0.50	0.40-0.60	0.30-0.50	0.60-0.70	0.50-0.70	0.50-0.60	0.50-0.70	0.40-0.50	0.20-0.40	0.60-0.80
												30/09/2013	30/09/2013	01/10/1301	01/10/2013	02/10/2013	02/10/2013	01/10/2013	03/10/2013	02/10/2013	30/09/2013	02/10/2013	02/10/2013	02/10/2013	01/10/2013	01/10/2013
												Fill 1	GSS	Fill 1	Fill 1	Fill 3	Fill 3	Fill 2	Fill 2	Fill 3	Fill 3	GSS	Fill 3	Nat SS	GSS	Fill 3
General Inorganics			-		0	0	0	0	-	-	-															
pH	pH Units	N/A	-		15	15	8.7	8	7.37333333	0.33348504	-	7.9	7	7.5	7.5	8.7	7.2	7.5	7.8	8.9	7.1	7.4	7.4	7.3	8	7.6
Total Cyanide	mg/kg	1	-		8	1	1	7	1.75	-	-	< 1	< 1	< 1	-	7	< 1	-	< 1	-	-	< 1	-	-	< 1	-
Free Cyanide	mg/kg	1	24	h	8	0	1	1	-	-	0	< 1	< 1	< 1	-	< 1	< 1	-	< 1	-	-	< 1	-	-	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	-		3	3	0.058	9200	4866.686	4823.09973	-	0.058	-	-	-	9200	5400	-	-	-	-	-	-	-	-	-
Water Soluble Sulphate as SO4 (2:1)	mg/kg	2.5	-		3	3	1.7	57	21.5333333	30.7867396	-	57	-	-	-	5.9	1.7	-	-	-	-	-	-	-	-	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	-		3	3	0.029	5900	2533.343	3036.98203	-	0.029	-	-	-	5900	1700	-	-	-	-	-	-	-	-	-
Sulphide	mg/kg	1	-		3	3	0.86	2.9	1.58666667	1.13953207	-	1	-	-	-	2.9	0.86	-	-	-	-	-	-	-	-	-
Organic Matter	%	0.1	-		4	4	0.8	12	5.6	5.08330601	-	2.6	0.8	-	-	7.2	12	-	-	-	-	-	-	-	-	-
Asbestos in Soil Screen / Identification Name	Type	N/A	-		0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos in Soil	Type	N/A	-		0	0	#VALUE!	#VALUE!	-	-	-	Not-detected	Not-detected	Not-detected	-	Not-detected	Not-detected	-	Not-detected	Not-detected	-	-	-	-	Not-detected	-
Heavy Metals / Metalloids			-		0	0	0	0	-	-	-															
Arsenic (aqua regia extractable)	mg/kg	1	32	a	15	15	10	87	36.1333333	25.3486169	6	23	13	19	16	66	74	65	30	42	41	10	28	11	17	87
Boron (water soluble)	mg/kg	0.2	290	l	15	11	0.2	14	2.99333333	3.96420892	0	0.7	< 0.2	1	0.4	5.7	7.4	6.7	< 0.2	2.1	4.2	< 0.2	1.5	< 0.2	0.4	14
Cadmium (aqua regia extractable)	mg/kg	0.2	10	a	15	11	0.2	2.5	0.99333333	0.86805749	0	0.7	< 0.2	0.5	1.5	0.8	2.5	1.6	0.2	2.5	0.9	< 0.2	0.6	< 0.2	< 0.2	2.3
Chromium (hexavalent)	mg/kg	4	4.3	l	15	0	4	4	< 4.0	< 4.0	0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	827	l	15	15	15	61	32.8	15.9765571	0	20	16	18	27	61	55	35	42	47	29	15	27	18	24	58
Chromium (aqua regia extractable)	mg/kg	1	-	-	15	15	16	61	32.8666667	15.9008935	-	20	16	18	27	61	55	35	42	47	29	16	27	18	24	58
Copper (aqua regia extractable)	mg/kg	1	2300	l	15	15	9.9	560	171.86	170.841128	0	86	12	42	70	300	280	490	87	150	190	9.9	320	11	27	560
Lead (aqua regia extractable)	mg/kg	2	450	y	15	15	15	3400	483.466667	838.73584	5	160	19	110	130	680	620	630	320	340	360	19	640	15	62	3400
Mercury (aqua regia extractable)	mg/kg	0.3	169	a	15	5	0.3	1.2	0.41333333	0.24746332	0	0.3	< 0.3	< 0.3	0.5	0.7	< 0.3	< 0.3	< 0.3	< 0.3	0.5	< 0.3	< 0.3	< 0.3	< 0.3	1.2
Nickel (aqua regia extractable)	mg/kg	2	130	a	15	15	11	170	62.0666667	52.2760074	1	32	17	23	22	130	130	120	50	69	54	11	56	13	25	170
Selenium (aqua regia extractable)	mg/kg	1	350	a	15	0	1	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
Zinc (aqua regia extractable)	mg/kg	2	3800	l	15	15	39	2000	678.4	673.825518	0	310	57	310	590	1500	1100	1400	170	1700	480	39	360	40	120	2000
Lead (log)			2.65		15	15	1.17609126	3.53147892	2.27768086	0.67348162	5	2.20411998	1.2787536	2.04139269	2.11394335	2.83250891	2.79239168	2.72427587	2.50514998	2.53147892	2.5563025	1.2787536	2.80617997	1.17609126	1.79239169	3.53147892
Speciated PAHs			-		0	0	0	0	-	-	-															
Naphthalene	mg/kg	0.05	8.7	i	15	2	0.05	1.6	0.21266667	0.44702935	0	0.94	< 0.05	< 0.05	< 0.05	< 0.05	1.6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	850	i	15	1	0.2	2.1	0.32666667	-	0	2.1	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	1000	i	15	1	0.1	0.64	0.136	-	0	0.64	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	780	i	15	1	0.2	2.8	0.37333333	-	0	2.8	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	380	i	15	6	0.2	27	2.28	6.85298267	0	27	< 0.20	< 0.20	0.78	1.2	1.3	< 0.20	1.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.84
Anthracene	mg/kg	0.1	9200	i	15	4	0.1	8.8	0.71266667	2.23872582	0	8.8	< 0.10	< 0.10	0.14	0.28	< 0.10	< 0.10	0.37	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	670	i	15	7	0.2	45	3.98666667	11.448233	0	45	< 0.20	0.64	1.1	2.2	0.96	< 0.20	5.9	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	2.4
Pyrene	mg/kg	0.2	1600	i	15	7	0.2	34	3.16266667	8.64538479	0	34	< 0.20	0.62	0.88	2	0.84	< 0.20	5.5	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	2
Benzo(a)anthracene	mg/kg	0.2	5.9	i	15	7	0.2	24	2.15666667	6.09229357	1	24	< 0.20	0.39	0.49	1.1	0.8	< 0.20	3.2	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	1
Chrysene	mg/kg	0.05	9.3	i	15	7	0.05	22	1.932	5.59599117	1	22	< 0.05	0.42	0.45	1.3	0.61	< 0.05	2.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.3
Benzo(b)fluoranthene	mg/kg	0.1	7	i	15	7	0.1	25	2.358	6.36907282	1	25	< 0.10	0.46	0.61	1.6	0.7	< 0.10	4.4	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.8
Benzo(k)fluoranthene	mg/kg	0.2	10	i	15	7	0.2	10	1.08333333	2.52491773	0	10	< 0.20	0.2	0.2	0.61	0.31	< 0.20	2.2	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.93
Benzo(a)pyrene	mg/kg	0.1	1	i	15	7	0.1	21	1.954	5.35451318	4	21	< 0.10	0.35	0.41	1.2	0.45	< 0.10	3.7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	4.2	i	15	6	0.2	9.6	0.98666667	2.42277546	1	9.6	< 0.20	0.2	0.24	0.45	< 0.20	< 0.20	1.9	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.64
Dibenz(a,h)anthracene	mg/kg	0.2	0.9	i	15	1	0.2	1.6	0.29333333	-	1	1.6	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	47	i	15	6	0.05	10	0.97333333	2.55696155	0	10	< 0.05	0.23	0.3	0.68	< 0.05	< 0.05	2.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.84
Total PAH			-		0	0	0	0	-	-	-															
Speciated Total EPA-16 PAHs	mg/kg	1.6	-		15	7	1.6	240	21.8933333	60.9196129	-	240	< 1.6	3.6	5.6	13	7.4	< 1.6	33	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	13
Monoaromatics			-		0	0	0	0	-	-	-															
Benzene	µg/kg	1	330	a	6	0	1	1	-	-	0	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
Toluene	µg/kg	1	810000	a	6	0	1	1	-	-	0	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	350000	a	6	0	1	1	-	-	0	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	-		6	0	1	1	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
o-xylene	µg/kg	1	-		6	0	1	1	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	160000	c	6	0	1	1	-	-	0	-	-	< 1.0	-	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
p & m-xylene and o-xylene	µg/kg	1	230000	a	0	0	0	0	-	-	0															
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	110	l	6	0	0.1	0.1	-	-	0	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	370	l	6	0	0.1	0.1	-	-	0	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	110	l	6	0	0.1	0.1	-	-	0	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	540	l	6	1	1	10	2.5	-	0	-	-	< 1.0	-	< 1.0	10	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	3000	l	6	1	2	87	16.1666667	-	0	-	-	< 2.0	-	< 2.0	87	-	< 2.0	< 2.0	-	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	-		6	1	8	23	10.5	-	-	-	-	< 8.0	-	< 8.0	23	-	< 8.0	< 8.0	-	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	-		6	4	8	86	43.3333333	34.0215618	-	-	-	< 8.0	-	86	55	-	27	76	-	-	-	-	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	-		6	4	10	180	64.8333333	65.2393031	-	-	-	< 10	-	86	180	-	27	76	-	-	-	-	< 10	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	8	76000	l	6	4	8	86	47.1666667	36.7826952	0	-	-	< 8.0	-	86	78	-	27	76	-	-	-	-	< 8.0	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	280	l	6	0	0.1	0.1	-	-	0	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	611	l	6	0	0.1	0.1	-	-	0	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	151	l	6	0	0.1	0.1	-	-	0	-	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	-	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	346	l	6	1	1	1.7	1.11666667	-	0	-	-	< 1.0	-	< 1.0	1.7	-	< 1.0	< 1.0	-	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	593	l	6	0	2	2	-	-	0	-	-	< 2.0	-	< 2.0	< 2.0	-	< 2.0	< 2.0	-	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	770	l	6	1	10	15	10.8333333	-	0	-	-	< 10	-	< 10	< 10	-	15	< 10	-	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	1230	l	6	1	10	21	11.8333333	-	0	-	-	< 10	-	< 10	< 10	-	21	< 10	-	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	-		6	1	10	36	14.3333333	-	-	-	-	< 10	-	< 10	< 10	-	36	< 10	-	-	-	-	< 10	-
Total Phenols			-		0	0	0	0	-	-	-															
Total Phenols (monohydric)	mg/kg	2	420	a	8	0	2	2	-	-	0	< 2.0	< 2.0	< 2.0	-	< 2.0	< 2.0	-	< 2.0	-	-	< 2.0	-	-	< 2.0	-
VOCs			-		0	0	0	0	-	-	-															
Chloromethane	µg/kg	4	13	d	6	0	4	4	-	-	0	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0	-	-	-	-	-	< 4.0
Chloroethane	µg/kg	2	18000	d	6	0	2	2	-	-	0	-	-	-	< 2.0	< 2.0	< 2.0	-	< 2.0	< 2.0	-	-	-	-	-	< 2.0
Bromomethane	µg/kg	6	5	x	6	0	6	6	-	-	0	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0	-	-	-	-	-	< 6.0
Vinyl Chloride	µg/kg	24	0.99	i	6	0	24	24	-	-	6	-	-	-	< 24	< 24	< 24	-	< 24	< 24	-	-	-	-	-	< 24

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics							Sample Identifiers and Analytical Data														
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	WS2	WS3	WS5	WS6	HP1	HP2	HP3	HP6	HP8	HP9	HP10	DP1	DP6	DP12	DP12
												0.20-0.40	0.20-0.40	0.20-0.40	0.20-0.40	0.40-0.50	0.30-0.50	0.40-0.80	0.30-0.50	0.60-0.70	0.50-0.70	0.50-0.60	0.60-0.70	0.40-0.50	0.20-0.40	0.60-0.80
												30/09/2013	30/09/2013	01/10/1301	01/10/2013	02/10/2013	02/10/2013	01/10/2013	03/10/2013	02/10/2013	30/09/2013	02/10/2013	02/10/2013	02/10/2013	01/10/2013	01/10/2013
												Fill 1	GSS	Fill 1	Fill 1	Fill 3	Fill 3	Fill 2	Fill 2	Fill 3	Fill 3	GSS	Fill 3	Nat SS	GSS	Fill 3
Trichlorofluoromethane	µg/kg	5	5	x	6	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
1,1-dichloroethene	µg/kg	7	820	d	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	7	x	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
cis-1,2-dichloroethene	µg/kg	7	370	d	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	160000	d	6	0	1	1	-	-	0	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	-	< 1.0
1,1-dichloroethane	µg/kg	6	7400	d	6	0	6	6	-	-	0	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0	-	-	-	-	-	< 6.0
p,2-Dichloropropane	µg/kg	6	6	x	6	0	6	6	-	-	0	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0	-	-	-	-	-	< 6.0
Trichloromethane	µg/kg	7	2700	l	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
1,1,1-Trichloroethane	µg/kg	7	29000	l	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
1,2-dichloroethane	µg/kg	4	14	l	6	0	4	4	-	-	0	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0	-	-	-	-	-	< 4.0
1,1-Dichloropropene	µg/kg	7	7	x	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
Trans-1,2-dichloroethene	µg/kg	7	700	d	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
Benzene	µg/kg	1	330	a	6	0	1	1	-	-	0	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	-	< 1.0
Tetrachloromethane	µg/kg	7	89	l	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
1,2-dichloropropane	µg/kg	6	6	x	6	0	6	6	-	-	0	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0	-	-	-	-	-	< 6.0
Trichloroethene	µg/kg	6	490	l	6	0	6	6	-	-	0	-	-	-	< 6.0	< 6.0	< 6.0	-	< 6.0	< 6.0	-	-	-	-	-	< 6.0
Dibromomethane	µg/kg	7	7	x	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
Bromodichloromethane	µg/kg	7	61	d	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
Cis-1,3-dichloropropene	µg/kg	7	7	x	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
Trans-1,3-dichloropropene	µg/kg	8	8	x	6	0	8	8	-	-	0	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0	-	-	-	-	-	< 8.0
Toluene	µg/kg	1	610000	a	6	0	1	1	-	-	0	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	5	2700	d	6	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
1,3-Dichloropropane	µg/kg	8	8	x	6	0	8	8	-	-	0	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0	-	-	-	-	-	< 8.0
Dibromochloromethane	µg/kg	2	2	x	6	0	2	2	-	-	0	-	-	-	< 2.0	< 2.0	< 2.0	-	< 2.0	< 2.0	-	-	-	-	-	< 2.0
Tetrachloroethene	µg/kg	8	4800	l	6	0	8	8	-	-	0	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0	-	-	-	-	-	< 8.0
1,2-Dibromoethane	µg/kg	3	3	x	6	0	3	3	-	-	0	-	-	-	< 3.0	< 3.0	< 3.0	-	< 3.0	< 3.0	-	-	-	-	-	< 3.0
Chlorobenzene	µg/kg	7	1700	l	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
1,1,1,2-Tetrachloroethane	µg/kg	4	4800	l	6	0	4	4	-	-	0	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0	-	-	-	-	-	< 4.0
Ethylbenzene	µg/kg	1	350000	a	6	0	1	1	-	-	0	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	1	x	6	0	1	1	-	-	0	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	-	< 1.0
Styrene	µg/kg	5	43000	d	6	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
Tribromomethane	µg/kg	7	13000	d	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
o-xylene	µg/kg	1	1	x	6	0	1	1	-	-	0	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	5	6300	l	6	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
Isopropylbenzene	µg/kg	7	64000	d	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
Bromobenzene	µg/kg	11	4700	d	6	0	11	11	-	-	0	-	-	-	< 11	< 11	< 11	-	< 11	< 11	-	-	-	-	-	< 11
N-Propylbenzene	µg/kg	5	5	x	6	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
2-Chlorotoluene	µg/kg	11	11	x	6	0	11	11	-	-	0	-	-	-	< 11	< 11	< 11	-	< 11	< 11	-	-	-	-	-	< 11
4-Chlorotoluene	µg/kg	11	11	x	6	0	11	11	-	-	0	-	-	-	< 11	< 11	< 11	-	< 11	< 11	-	-	-	-	-	< 11
1,3,5-Trimethylbenzene	µg/kg	4	4	x	6	0	4	4	-	-	0	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0	-	-	-	-	-	< 4.0
Tert-Butylbenzene	µg/kg	4	4	x	6	0	4	4	-	-	0	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0	-	-	-	-	-	< 4.0
1,2,4-Trimethylbenzene	µg/kg	5	2000	d	6	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
Sec-Butylbenzene	µg/kg	5	5	x	8	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
1,3-dichlorobenzene	µg/kg	7	1700	l	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
P-Isopropyltoluene	µg/kg	16	16	x	6	0	16	16	-	-	0	-	-	-	< 16	< 16	< 16	-	< 16	< 16	-	-	-	-	-	< 16
1,2-dichlorobenzene	µg/kg	5	91000	l	6	0	5	5	-	-	0	-	-	-	< 5.0	< 5.0	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-	< 5.0
1,4-dichlorobenzene	µg/kg	8	167000	l	6	0	8	8	-	-	0	-	-	-	< 8.0	< 8.0	< 8.0	-	< 8.0	< 8.0	-	-	-	-	-	< 8.0
Butylbenzene	µg/kg	4	4	x	6	0	4	4	-	-	0	-	-	-	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0	-	-	-	-	-	< 4.0
1,2-Dibromo-3-chloropropane	µg/kg	7	7	x	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
1,2,4-Trichlorobenzene	µg/kg	9	11000	l	6	0	9	9	-	-	0	-	-	-	< 9.0	< 9.0	< 9.0	-	< 9.0	< 9.0	-	-	-	-	-	< 9.0
Hexachlorobutadiene	µg/kg	7	1200	l	6	0	7	7	-	-	0	-	-	-	< 7.0	< 7.0	< 7.0	-	< 7.0	< 7.0	-	-	-	-	-	< 7.0
1,2,3-Trichlorobenzene	µg/kg	10	6100	l	6	0	10	10	-	-	0	-	-	-	< 10	< 10	< 10	-	< 10	< 10	-	-	-	-	-	< 10
o & m-xylene and o-xylene	µg/kg	1	230000	a	6	0	1	1	-	-	0	-	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	-	-	-	-	-	< 1.0

Data Summary Statistics

Site:	Strathmore Drive	**Project No:**	29968
Data Description:	Deeper than 700 mm soils	**SOM (%):**	6.7%
Land Use:	Residential with plant uptake	**Completed By:**	ELH
Receptor:	Humans	**Checked By:**	BW

Assessment Criteria Key

a) 2009 SGV (Res with Plant)
b) 2009 SGV (Allotment)
c) 2009 SGV (Commercial/Industrial)
d) EIC GAC (Res with Plant)
e) EIC GAC (Res without Plant)
f) EIC GAC (Allotment)
g) EIC GAC (Commercial/Ind)
h) AMEC GAC (Res with Plant)
i) AMEC GAC (Res without Plant)
j) AMEC GAC (Allotment)
k) AMEC GAC (Commercial/Ind)
l) LQM CIEH GAC (Res with Plant)
m) LQM CIEH GAC (Res without Plant)
n) LQM CIEH GAC (Commercial/Ind)
o) Dutch Intervention values
p) Dutch Target Values
q) Soil Code: Crops for Consumption
r) Soil Code: Sensitive Species
s) Soil Code: Grazing Animals
t) Soil Code: Background
u) BRE Special Digest
v) Other Generic Criteria
w) Site Specific Assessment Criteria
x) Laboratory limit of detection
y) CLR SGV for Lead (2002)

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics: Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	Sample Identifiers and Analytical Data: WS1 1.20-1.40 01/10/2013 Fill 2	WS2 0.80-1.00 30/09/2013 Fill 2	WS3 1.00-1.20 30/09/2013 Fill 2	WS5 5.00-5.20 01/10/2013 Fill 2	WS5 4.50 01/10/2013 Pot asb
General Inorganics			-		0	0	0	0	-	-	-					
pH	pH Units	N/A	-		4	4	6.8	7.9	7.375	0.55602758	-	7.9	7.8	6.8	7	-
Total Cyanide	mg/kg	1	-		3	2	1	12	5	6.08276253	-	< 1	-	12	2	-
Free Cyanide	mg/kg	1	24	h	3	0	1	1	-	-	0	< 1	-	< 1	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	-		2	2	3.4	3.7	3.55	0.21213203	-	-	-	3.7	3.4	-
Water Soluble Sulphate as SO4 (2:1)	mg/kg	2.5	-		2	2	3400	3700	3550	212.132034	-	-	-	3700	3400	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	-		2	2	1.7	1.8	1.75	0.07071068	-	-	-	1.8	1.7	-
Sulphide	mg/kg	1	-		2	2	7	18	12.5	7.77817459	-	-	-	7	18	-
Organic Matter	%	0.1	-		3	3	4	8.5	6.73333333	2.40069434	-	-	7.7	8.5	4	-
			-													
Asbestos in Soil Screen / Identification Name	Type	N/A	-		0	0	#VALUE!	#VALUE!	-	-	-	-	-	-	-	le - Insulation board/tile
Asbestos in Soil	Type	N/A	-		0	0	#VALUE!	#VALUE!	-	-	-	Not-detected	-	Not-detected	Not-detected	Detected
			-													
Heavy Metals / Metalloids			-		0	0	0	0	-	-	-					
Arsenic (aqua regia extractable)	mg/kg	1	32	a	4	4	21	95	58.25	32.7554067	3	21	74	95	43	-
Boron (water soluble)	mg/kg	0.2	290	l	4	4	0.8	22	7.95	9.75346092	0	0.8	7	22	2.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	10	a	4	3	0.2	2.9	1.9	1.25698051	0	< 0.2	2.9	2.8	1.7	-
Chromium (hexavalent)	mg/kg	4	4.3	l	4	0	4	4	-	-	0	< 4.0	< 4.0	< 4.0	< 4.0	-
Chromium (III)	mg/kg	1	827	l	4	4	19	110	50.25	40.9257458	0	19	30	110	42	-
Chromium (aqua regia extractable)	mg/kg	1	-	-	4	4	19	110	50.25	40.9257458	-	19	30	110	42	-
Copper (aqua regia extractable)	mg/kg	1	2300	l	4	4	23	1400	455.75	635.058199	0	23	210	1400	190	-
Lead (aqua regia extractable)	mg/kg	2	450	y	4	4	30	4300	1328	1998.41604	2	30	640	4300	410	-
Mercury (aqua regia extractable)	mg/kg	0.3	169	a	4	2	0.3	4.6	1.475	2.09184926	0	< 0.3	< 0.3	0.7	4.6	-
Nickel (aqua regia extractable)	mg/kg	2	130	a,	4	4	27	170	97.5	59.4222181	1	27	110	170	83	-
Selenium (aqua regia extractable)	mg/kg	1	350	a	4	0	1	1	-	-	0	< 1.0	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	2	3800	l	4	4	53	4700	1753.25	2040.98561	1	53	880	1400	4700	-
Lead (log)			2.65		4	4	1.47712125	3.63346846	2.61394183	0.89427518	2	1.47712125	2.73239376	3.63346846	2.61278386	-
Speciated PAHs			-		0	0	0	0	-	-	-					
Naphthalene	mg/kg	0.05	8.7	l	4	1	0.05	0.43	0.145	-	0	< 0.05	< 0.05	< 0.05	0.43	-
Acenaphthylene	mg/kg	0.2	850	l	4	0	0.2	0.2	-	-	0	< 0.20	< 0.20	< 0.20	< 0.20	-
Acenaphthene	mg/kg	0.1	1000	l	4	0	0.1	0.1	-	-	0	< 0.10	< 0.10	< 0.10	< 0.10	-
Fluorene	mg/kg	0.2	780	l	4	0	0.2	0.2	-	-	0	< 0.20	< 0.20	< 0.20	< 0.20	-
Phenanthrene	mg/kg	0.2	380	l	4	3	0.2	1.6	0.835	0.72080973	0	< 0.20	1.6	0.24	1.3	-
Anthracene	mg/kg	0.1	9200	l	4	1	0.1	0.45	0.1875	-	0	< 0.10	< 0.10	< 0.10	0.45	-
Fluoranthene	mg/kg	0.2	670	l	4	3	0.2	4.7	1.9675	2.14023947	0	< 0.20	2.7	0.35	4.7	-
Pyrene	mg/kg	0.2	1600	l	4	3	0.2	4	1.6775	1.80000694	0	< 0.20	2.2	0.31	4	-
Benzo(a)anthracene	mg/kg	0.2	5.9	l	4	3	0.2	2.7	0.995	1.17045575	0	< 0.20	0.82	0.28	2.7	-
Chrysene	mg/kg	0.05	9.3	l	4	3	0.05	2.7	1.0375	1.19539045	0	< 0.05	1.1	0.3	2.7	-
Benzo(b)fluoranthene	mg/kg	0.1	7	l	4	3	0.1	3.5	1.335	1.54991398	0	< 0.10	1.4	0.34	3.5	-
Benzo(k)fluoranthene	mg/kg	0.2	10	l	4	2	0.2	1.2	0.5075	0.47422744	0	< 0.20	0.43	< 0.20	1.2	-
Benzo(a)pyrene	mg/kg	0.1	1	l	4	3	0.1	2.5	0.92	1.11307382	1	< 0.10	0.9	0.18	2.5	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	4.2	l	4	2	0.2	1.2	0.5275	0.47154687	0	< 0.20	0.51	< 0.20	1.2	-
Dibenz(a,h)anthracene	mg/kg	0.2	0.9	l	4	1	0.2	0.21	0.2025	-	0	< 0.20	< 0.20	< 0.20	0.21	-
Benzo(ghi)perylene	mg/kg	0.05	47	l	4	2	0.05	1.4	0.53	0.63921827	0	< 0.05	0.62	< 0.05	1.4	-
			-													
Total PAH			-		0	0	0	0	-	-	-					
Speciated Total EPA-16 PAHs	mg/kg	1.6	-		4	3	1.6	26	10.4	11.4589121	-	< 1.6	12	2	26	-
			-													
Monoaromatics			-		0	0	0	0	-	-	-					
Benzene	µg/kg	1	330	a	2	0	1	1	-	-	0	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	810000	a	2	0	1	1	-	-	0	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	350000	a	2	0	1	1	-	-	0	-	< 1.0	-	< 1.0	-
p & m-xylene	µg/kg	1	-		2	0	1	1	-	-	-	-	< 1.0	-	< 1.0	-
o-xylene	µg/kg	1	-		2	0	1	1	-	-	-	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	160000	d	2	0	1	1	-	-	0	-	< 1.0	-	< 1.0	-
p & m-xylene and o-xylene	µg/kg	1	230000	a	2	0	1	1	-	-	0	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	110	l	2	0	0.1	0.1	-	-	0	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	370	l	2	0	0.1	0.1	-	-	0	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	110	l	2	0	0.1	0.1	-	-	0	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	540	l	2	0	1	1	-	-	0	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	3000	l	2	0	2	2	-	-	0	-	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	-		2	1	8	39	23.5	-	-	-	< 8.0	-	39	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	-		2	2	15	290	152.5	194.454365	-	-	15	-	290	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	-		2	2	15	330	172.5	222.738636	-	-	15	-	330	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	8	76000	l	2	2	15	329	172	222.031529	0	-	15	-	329	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	280	l	2	0	0.1	0.1	-	-	0	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	611	l	2	0	0.1	0.1	-	-	0	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	151	l	2	0	0.1	0.1	-	-	0	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	346	l	2	0	1	1	-	-	0	-	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	593	l	2	1	2	3.9	2.95	-	0	-	< 2.0	-	3.9	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	770	l	2	1	10	36	23	-	0	-	< 10	-	36	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	1230	l	2	1	10	180	95	-	0	-	< 10	-	180	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	-		2	1	10	220	115	-	-	-	< 10	-	220	-
			-													
Total Phenols			-		0	0	0	0	-	-	-					
Total Phenols (monohydric)	mg/kg	2	420	a	3	0	2	2	-	-	0	< 2.0	-	< 2.0	< 2.0	-
			-													
VOCs			-		0	0	0	0	-	-	-					
Chloromethane	µg/kg	4	13	d	3	0	4	4	-	-	0	< 4.0	< 4.0	-	< 4.0	-
Chloroethane	µg/kg	2	18000	d	3	0	2	2	-	-	0	< 2.0	< 2.0	-	< 2.0	-
Bromomethane	µg/kg	6	6	x	3	0	6	6	-	-	0	< 6.0	< 6.0	-	< 6.0	-
Vinyl Chloride	µg/kg	24	0.99	l	3	0	24	24	-	-	3	< 24	< 24	-	< 24	-

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics							Sample Identifiers and Analytical Data				
					Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	WS1	WS2	WS3	WS5	WS5
												1.20-1.40	0.80-1.00	1.00-1.20	5.00-5.20	4.50
												01/10/2013	30/09/2013	30/09/2013	01/10/2013	01/10/2013
												Fill 2	Fill 2	Fill 2	Fill 2	Pot ass
Trichlorofluoromethane	µg/kg	5	5	x	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
1,1-dichloroethene	µg/kg	7	820	d	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	7	x	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
Cis-1,2-dichloroethene	µg/kg	7	370	d	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	180000	d	3	0	1	1	-	-	0	< 1.0	< 1.0	-	< 1.0	-
1,1-dichloroethane	µg/kg	6	7400	d	3	0	6	6	-	-	0	< 6.0	< 6.0	-	< 6.0	-
2,2-Dichloropropane	µg/kg	6	6	x	3	0	6	6	-	-	0	< 6.0	< 6.0	-	< 6.0	-
Trichloromethane	µg/kg	7	2700	l	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
1,1,1-Trichloroethane	µg/kg	7	28000	l	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
1,2-dichloroethane	µg/kg	4	14	l	3	0	4	4	-	-	0	< 4.0	< 4.0	-	< 4.0	-
1,1-Dichloropropene	µg/kg	7	7	x	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
Trans-1,2-dichloroethene	µg/kg	7	700	d	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
Benzene	µg/kg	1	330	a	3	0	1	1	-	-	0	< 1.0	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	7	89	l	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
1,2-dichloropropane	µg/kg	6	6	x	3	0	6	6	-	-	0	< 6.0	< 6.0	-	< 6.0	-
Trichloroethene	µg/kg	6	490	l	3	0	6	6	-	-	0	< 6.0	< 6.0	-	< 6.0	-
Dibromomethane	µg/kg	7	7	x	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
Bromodichloromethane	µg/kg	7	61	d	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
Cis-1,3-dichloropropene	µg/kg	-	7	x	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
Trans-1,3-dichloropropene	µg/kg	8	8	x	3	0	8	8	-	-	0	< 8.0	< 8.0	-	< 8.0	-
Toluene	µg/kg	1	610000	a	3	0	1	1	-	-	0	< 1.0	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	5	2700	d	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
1,3-Dichloropropane	µg/kg	8	8	x	3	0	8	8	-	-	0	< 8.0	< 8.0	-	< 8.0	-
Dibromochloromethane	µg/kg	2	2	x	3	0	2	2	-	-	0	< 2.0	< 2.0	-	< 2.0	-
Tetrachloroethene	µg/kg	8	4800	l	3	0	8	8	-	-	0	< 8.0	< 8.0	-	< 8.0	-
1,2-Dibromoethane	µg/kg	3	3	x	3	0	3	3	-	-	0	< 3.0	< 3.0	-	< 3.0	-
Chlorobenzene	µg/kg	7	1700	l	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
1,1,1,2-Tetrachloroethane	µg/kg	4	4800	l	3	0	4	4	-	-	0	< 4.0	< 4.0	-	< 4.0	-
Ethylbenzene	µg/kg	1	350000	a	3	0	1	1	-	-	0	< 1.0	< 1.0	-	< 1.0	-
p & m-xylene	µg/kg	1	1	x	3	0	1	1	-	-	0	< 1.0	< 1.0	-	< 1.0	-
Styrene	µg/kg	5	43000	d	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
Tribromomethane	µg/kg	7	13000	d	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
o-xylene	µg/kg	1	1	x	3	0	1	1	-	-	0	< 1.0	< 1.0	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	6300	l	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
Isopropylbenzene	µg/kg	7	64000	d	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
Bromobenzene	µg/kg	11	4700	d	3	0	11	11	-	-	0	< 11	< 11	-	< 11	-
N-Propylbenzene	µg/kg	5	5	x	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
2-Chlorotoluene	µg/kg	11	11	x	3	0	11	11	-	-	0	< 11	< 11	-	< 11	-
4-Chlorotoluene	µg/kg	11	11	x	3	0	11	11	-	-	0	< 11	< 11	-	< 11	-
1,3,5-Trimethylbenzene	µg/kg	4	4	x	3	0	4	4	-	-	0	< 4.0	< 4.0	-	< 4.0	-
Tert-Butylbenzene	µg/kg	4	4	x	3	0	4	4	-	-	0	< 4.0	< 4.0	-	< 4.0	-
1,2,4-Trimethylbenzene	µg/kg	5	2000	d	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
Sec-Butylbenzene	µg/kg	5	5	x	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
1,3-dichlorobenzene	µg/kg	7	1700	l	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
P-Isopropyltoluene	µg/kg	16	16	x	3	0	16	16	-	-	0	< 16	< 16	-	< 16	-
1,2-dichlorobenzene	µg/kg	5	91000	l	3	0	5	5	-	-	0	< 5.0	< 5.0	-	< 5.0	-
1,4-dichlorobenzene	µg/kg	8	167000	l	3	0	8	8	-	-	0	< 8.0	< 8.0	-	< 8.0	-
Butylbenzene	µg/kg	4	4	x	3	0	4	4	-	-	0	< 4.0	< 4.0	-	< 4.0	-
1,2-Dibromo-3-chloropropane	µg/kg	7	7	x	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
1,2,4-Trichlorobenzene	µg/kg	9	11000	l	3	0	9	9	-	-	0	< 9.0	< 9.0	-	< 9.0	-
Hexachlorobutadiene	µg/kg	7	1200	l	3	0	7	7	-	-	0	< 7.0	< 7.0	-	< 7.0	-
1,2,3-Trichlorobenzene	µg/kg	10	5100	l	3	0	10	10	-	-	0	< 10	< 10	-	< 10	-
p & m-xylene and o-xylene	µg/kg	1	230000	a	3	0	1	1	-	-	0	< 1.0	< 1.0	-	< 1.0	-

Data Summary Statistics

Site:	Strathmore Drive	Project No:	29968
Data Description:	Upper 300mm soils	SOM (%):	2.0%
Land Use:	Residential with plant uptake	Completed By:	ELH
Receptor:	Humans	Checked By:	BW

Assessment Criteria Key

a) 2009 SGV (Res with Plant)
b) 2009 SGV (Allotment)
c) 2009 SGV (Commercial/Industrial)
d) EIC GAC (Res with Plant)
e) EIC GAC (Res without Plant)
f) EIC GAC (Allotment)
g) EIC GAC (Commercial/Ind)
h) AMEC GAC (Res with Plant)
i) AMEC GAC (Res without Plant)
j) AMEC GAC (Allotment)
k) AMEC GAC (Commercial/Ind)
l) LQM CIEH GAC (Res with Plant)
m) LQM CIEH GAC (Res without Plant)
n) LQM CIEH GAC (Commercial/Ind)
o) Dutch Intervention values
p) Dutch Target Values
q) Soil Code: Crops for Consumption
r) Soil Code: Sensitive Species
s) Soil Code: Grazing Animals
t) Soil Code: Background
u) BRE Special Digest
v) Other Generic Criteria
w) Site Specific Assessment Criteria
x) Laboratory limit of detection
y) CLR SGV for Lead (2002)

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics: Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	WS1 0.10-0.30 01/10/2013 Fill 1	WS3 0.00-0.15 30/09/2013 TS	WS4 0.10-0.30 30/09/2013 Nat	WS6 0.00-0.15 01/10/2013 TS	HP1 0.10-0.30 02/10/2013 GSS	HP4 0.00-0.20 01/10/2013 TS	HP5 0.10-0.20 01/10/2013 TS	HP6 0.00-0.20 03/10/2013 TS	HP7 0.10-0.30 02/10/2013 Nat TS	HP8 0.10-0.20 02/10/2013 TS	HP9 0.10-0.30 30/09/2013 Fill 1	HP10 0.20-0.30 02/10/2013 TS	HP11 0.00-0.20 30/09/2013 Nat TS	HP12 0.00-0.15 02/10/2013 TS	DP1 0.10-0.20 02/10/2013 TS	DP1 0.25-0.35 02/10/2013 GSS	DP2 0.10-0.20 02/10/2013 TS	DP5 0.15-0.30 02/10/2013 Nat GSS	DP9 0.00-0.15 02/10/2013 TS
General Inorganics					0	0	0	0	-	-	-																				
pH	pH Units	N/A			19	19	6.6	8	7.32105263	0.39941478	-	7.3	6.8	7.2	7.5	7.1	8	8	7.8	6.7	6.6	7	7.2	7	7.3	7.4	7.5	7.5	7.6	7.6
Total Cyanide	mg/kg	1	-		4	0	1	1	-	-	-	< 1	-	-	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Free Cyanide	mg/kg	1	24	h	4	0	1	1	-	-	0	< 1	-	-	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	-		1	1	0.047	0.047	0.047	-	-	-	-	-	0.047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Soluble Sulphate as SO4 (2:1)	mg/kg	2.5	-		1	1	47	47	47	-	-	-	-	-	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	-		1	1	0.024	0.024	0.024	-	-	-	-	-	0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphide	mg/kg	1	-		1	1	1.3	1.3	1.3	-	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Matter	%	0.1	-		1	1	2	2	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos in Soil Screen / Identification Name	Type	N/A			0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos in Soil	Type	N/A			0	0	#VALUE!	#VALUE!	-	-	-	Not-detected	-	-	Not-detected	-	Not-detected			-	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Metals / Metalloids			-		0	0	0	0	-	-	-																				
Arsenic (aqua regia extractable)	mg/kg	1	32	a	19	19	10	53	19.7368421	10.697051	2	19	53	14	32	38	16	15	23	12	15	18	13	17	15	14	15	12	24	10
Boron (water soluble)	mg/kg	0.2	290	l	19	8	0.2	5.7	1.07368421	1.60894793	0	0.4	4.3	0.4	1.6	2.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	5.7	< 0.2	< 0.2	3	< 0.2	< 0.2	< 0.2	0.6	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	10	a	19	18	0.2	1.2	0.47894737	0.30473841	0	0.7	1.2	0.3	1.2	0.6	0.5	0.3	0.4	< 0.2	0.2	0.4	< 0.2	0.2	0.4	0.6	0.3	0.5	0.7	< 0.2
Chromium (hexavalent)	mg/kg	4	4.3	l	19	0	4	4	-	-	0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	827	l	19	19	16	48	23.7894737	7.28452858	0	23	24	20	24	48	26	34	29	19	23	18	19	16	21	24	21	24	23	16
Chromium (aqua regia extractable)	mg/kg	1	-	-	19	19	16	48	23.8421053	7.28974285	-	23	24	20	25	48	26	34	29	19	23	18	19	16	21	24	21	24	23	16
Copper (aqua regia extractable)	mg/kg	1	2300	l	19	19	12	150	55.6842105	43.095569	0	92	110	26	150	110	35	56	85	21	27	37	19	13	32	24	46	33	130	12
Lead (aqua regia extractable)	mg/kg	2	450	y	19	19	23	480	140.157895	131.348249	1	140	370	34	480	300	89	110	290	49	66	71	55	23	85	52	58	240	120	31
Mercury (aqua regia extractable)	mg/kg	0.3	169	a	19	7	0.3	1.6	0.41578947	0.30779351	0	0.3	1.6	0.4	0.7	< 0.3	< 0.3	0.6	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	130	a	19	19	9.7	70	27.0368421	16.3354832	0	34	70	21	42	63	23	23	36	12	20	21	14	16	18	17	22	18	34	9.7
Selenium (aqua regia extractable)	mg/kg	1	350	a	19	0	1	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
Zinc (aqua regia extractable)	mg/kg	2	3800	l	19	19	43	540	222.842105	161.128059	0	480	390	66	540	490	150	160	260	94	150	180	88	63	180	110	130	270	410	43
Lead (log)		2.65			19	19	1.36172784	2.68124124	1.98316027	0.38331643	1	2.14612804	2.56820172	1.53147892	2.68124124	2.47712125	1.94939001	2.04139269	2.462398	1.69019608	1.81954394	1.85125835	1.74036269	1.36172784	1.92941893	1.71600334	1.76342799	2.38021124	2.07918125	1.49136169
Speciated PAHs			-		0	0	0	0	-	-	-																				
Naphthalene	mg/kg	0.05	1.5	l	19	0	0.05	0.05	-	-	0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	170	l	19	0	0.2	0.2	-	-	0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	210	l	19	1	0.1	0.26	0.10842105	-	0	< 0.10	< 0.10	< 0.10	0.26	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	160	l	19	1	0.2	0.25	0.20263158	-	0	< 0.20	< 0.20	< 0.20	0.25	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	92	l	19	8	0.2	3.1	0.48578947	0.69742635	0	0.32	< 0.20	< 0.20	3.1	0.34	< 0.20	0.31	0.27	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.39	< 0.20	< 0.20	1.1	1.2	< 0.20
Anthracene	mg/kg	0.1	2300	l	19	3	0.1	0.48	0.14368421	0.10889396	0	< 0.10	< 0.10	< 0.10	0.48	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.28	0.37	< 0.10
Fluoranthene	mg/kg	0.2	260	l	19	9	0.2	3.6	0.91526316	1.05774061	0	1.1	< 0.20	< 0.20	2.7	0.91	< 0.20	1.5	0.87	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	1.3	0.51	< 0.20	2.9	3.6	< 0.20
Pyrene	mg/kg	0.2	560	l	19	9	0.2	4	0.89947368	1.10349683	0	0.97	< 0.20	< 0.20	4	0.84	< 0.20	1.3	0.79	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	1.2	0.49	< 0.20	2.5	3	< 0.20
Benzo(a)anthracene	mg/kg	0.2	3.1	l	19	9	0.2	2	0.52631579	0.5317185	0	0.62	< 0.20	< 0.20	2	0.51	< 0.20	0.68	0.45	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.62	0.22	< 0.20	1.4	1.5	< 0.20
Chrysene	mg/kg	0.05	6	l	19	9	0.05	2.1	0.46789474	0.6085646	0	0.63	< 0.05	< 0.05	2.1	0.55	< 0.05	0.73	0.43	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.74	0.31	< 0.05	1.2	1.7	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	5.8	l	19	9	0.1	2.6	0.62	0.74619032	0	0.83	< 0.10	< 0.10	1.8	0.65	< 0.10	0.79	0.72	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.1	0.39	< 0.10	1.9	2.6	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	8.5	l	19	9	0.2	1.2	0.38105263	0.29344495	0	0.32	< 0.20	< 0.20	0.81	0.45	< 0.20	0.8	0.31	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.54	0.21	< 0.20	1	1.2	< 0.20
Benzo(a)pyrene	mg/kg	0.1	0.83	l	19	9	0.1	1.9	0.52631579	0.61062091	3	0.71	< 0.10	< 0.10	1.7	0.67	< 0.10	0.81	0.49	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.75	0.27	< 0.10	1.7	1.9	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	3.2	l	19	6	0.2	1.1	0.33526316	0.26143553	0	0.37	< 0.20	< 0.20	0.66	0.37	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.39	< 0.20	< 0.20	0.68	1.1	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	0.76	l	19	0	0.2	0.2	-	-	0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	44	l	19	6	0.05	1.1	0.25421053	0.34408196	0	0.48	< 0.05	< 0.05	0.73	0.39	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.51	< 0.05	< 0.05	0.97	1.1	< 0.05
			-																												
Total PAH			-		0	0	0	0	-	-	-																				
Speciated Total EPA-16 PAHs	mg/kg	1.6			19	9	1.6	20	5.49473684	6.11314373	-	6.4	< 1.6	< 1.6	20	5.8	< 1.6	6.8	4.4	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	7.8	2.4	< 1.6	16	19	< 1.6
Monoaromatics			-		0	0	0	0	-	-	-																				
Benzene	µg/kg	1	79	h	2	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	µg/kg	1	120000	h	2	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	µg/kg	1	45000	h	2	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o & m-xylene	µg/kg	1	-		2	0	1	1	-	-	-	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-xylene	µg/kg	1	-		2	0	1	1	-	-	-	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	49000	d	2	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p & m-xylene and o-xylene	µg/kg	1	42000	h	0	0	0	0	-	-	0																				
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	86	l	2	0	0.1	0.1	-	-	0	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	72	l	2	0	0.1	0.1	-	-	0	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	19	l	2	0	0.1	0.1	-	-	0	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	93	l	2	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	740	l	2	0	2	2	-	-	0	< 2.0	-	-	-	-	< 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	-		2	0	8	8	-	-	-	< 8.0	-	-	-	-	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	-		2	0	8	8	-	-	-	< 8.0	-	-	-	-	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	-		2	0	10	10	-	-	-	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	8	45000	l	2	0	8	8	-	-	0	< 8.0	-	-	-	-	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	65	l	2	0	0.1	0.1	-	-	0	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	120	l	2	0	0.1	0.1	-	-	0	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	27	l	2	0	0.1	0.1	-	-	0	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	69	l	2	0	1	1	-	-	0	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	140	l	2	0	2	2	-	-	0	< 2.0	-	-	-	-	< 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	250	l	2	0	10	10	-	-	0	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	990	l	2	0	10	10	-	-	0	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	-		2	0	10	10	-	-	-	< 10	-	-	-	-	< 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			-																												
Total Phenols			-		0	0	0	0	-	-	-																				
Total Phenols (monohydric)	mg/kg	2	180	h	4	0	2	2	-	-	0	< 2.0	-	-	< 2.0	< 2.0	< 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			-																												
VOCs			-		0	0	0	0	-	-	-																				
Chloromethane	µg/kg	4	8.3	d	1	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	µg/kg	2	8300	d	1	0	2	2	-	-	0	< 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	µg/kg	6	6	x	1	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	µg/kg	24	0.47	l	1	0	24	24	-	-	1	< 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	< 5.0	x	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	µg/kg	7	230	d	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	7	7	x	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	7	110	d	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	29000	d	1	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloropropane	µg/kg	6	2400	d	1	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2-Dichloropropane	µg/kg	6	6	x	1	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Data Summary Statistics

Site:	Strathmore Drive	**Project No:**	29968
Data Description:	Upper 300mm soils	**SOM (%):**	2.0%
Land Use:	Residential with plant uptake	**Completed By:**	ELH
Receptor:	Humans	**Checked By:**	BW

Assessment Criteria Key

a) 2009 SGV (Res with Plant)
b) 2009 SGV (Allotment)
c) 2009 SGV (Commercial/Industrial)
d) EIC GAC (Res with Plant)
e) EIC GAC (Res without Plant)
f) EIC GAC (Allotment)
g) EIC GAC (Commercial/Ind)
h) AMEC GAC (Res with Plant)
i) AMEC GAC (Res without Plant)
j) AMEC GAC (Allotment)
k) AMEC GAC (Commercial/Ind)
l) LQM CIEH GAC (Res with Plant)
m) LQM CIEH GAC (Res without Plant)
n) LQM CIEH GAC (Commercial/Ind)
o) Dutch Intervention values
p) Dutch Target Values
q) Soil Code: Crops for Consumption
r) Soil Code: Sensitive Species
s) Soil Code: Grazing Animals
t) Soil Code: Background
u) BRE Special Digest
v) Other Generic Criteria
w) Site Specific Assessment Criteria
x) Laboratory limit of detection
y) CLR SGV for Lead (2002)

Contaminant	Units	Method Detection Limit	Assessment Criteria (AC)	Source (see key)	Summary Statistics: Total Number of Samples	Results Above Detection Limit	Minimum	Maximum	Arithmetic Mean	Standard Deviation	Number of results >AC	Sample Identifiers and Analytical Data: WS1	WS3	WS4	WS6	HP1	HP4	HP5	HP6	HP7	HP8	HP9	HP10	HP11	HP12	DP1	DP1	DP2	DP5	DP9
												0.10-0.30	0.00-0.15	0.10-0.30	0.00-0.15	0.10-0.30	0.00-0.20	0.10-0.20	0.00-0.20	0.10-0.30	0.10-0.20	0.10-0.30	0.20-0.30	0.00-0.20	0.00-0.15	0.10-0.20	0.25-0.35	0.10-0.20	0.15-0.30	0.00-0.15
												01/10/2013	30/09/2013	30/09/2013	01/10/2013	02/10/2013	01/10/2013	01/10/2013	03/10/2013	02/10/2013	02/10/2013	30/09/2013	02/10/2013	30/09/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013	02/10/2013
												Fill 1	TS	Nat	TS	GSS	TS	TS	TS	Nat TS	TS	Fill 1	TS	Nat TS	TS	TS	GSS	TS	Nat GSS	TS
Trichloromethane	µg/kg	7	750	l	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	7	8200	l	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloroethane	µg/kg	4	5.4	l	1	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloropropene	µg/kg	7	7	x	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	7	190	d	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	µg/kg	1	79	h	1	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloromethane	µg/kg	7	18	l	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloropropane	µg/kg	6	8	x	1	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	µg/kg	6	110	l	1	0	6	6	-	-	0	< 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	µg/kg	7	7	x	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	µg/kg	7	16	d	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cis 1,3-dichloropropene	µg/kg	7	7	x	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	8	8	x	1	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	µg/kg	1	120000	h	1	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	600	d	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropane	µg/kg	8	8	x	1	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	µg/kg	2	2	x	1	0	2	2	-	-	0	< 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	µg/kg	8	940	f	1	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	µg/kg	3	3	x	1	0	3	3	-	-	0	< 3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/kg	7	330	l	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	4	900	l	1	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	µg/kg	1	65000	h	1	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p & m-xylene	µg/kg	1	1	x	1	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	µg/kg	5	8100	d	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tribromomethane	µg/kg	7	2800	d	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	µg/kg	1	1	x	1	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	1400	f	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene	µg/kg	7	11000	d	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromobenzene	µg/kg	11	870	d	1	0	11	11	-	-	0	< 11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	µg/kg	5	5	x	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorotoluene	µg/kg	11	11	x	1	0	11	11	-	-	0	< 11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene	µg/kg	11	11	x	1	0	11	11	-	-	0	< 11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	4	4	x	1	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tert-Butylbenzene	µg/kg	4	4	x	1	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	350	d	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sec-Butylbenzene	µg/kg	5	< 5.0	x	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-dichlorobenzene	µg/kg	7	280	l	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Isopropyltoluene	µg/kg	16	< 16	x	1	0	16	16	-	-	0	< 16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichlorobenzene	µg/kg	5	16000	l	1	0	5	5	-	-	0	< 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-dichlorobenzene	µg/kg	8	30000	l	1	0	8	8	-	-	0	< 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzene	µg/kg	4	4	x	1	0	4	4	-	-	0	< 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	7	7	x	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	9	1800	l	1	0	9	9	-	-	0	< 9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	µg/kg	7	210	l	1	0	7	7	-	-	0	< 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	10	1000	l	1	0	10	10	-	-	0	< 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p & m-xylene and o-xylene	µg/kg	1	42000	h	1	0	1	1	-	-	0	< 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix E
Statistical Analysis Summary

Client/client ref	Wokingham Borough Council
Project ref	29968
Site ref	Strathmore Drive
Data description	Data with arithmetic mean above GAC
Contaminant(s)	Arsenic, lead and benzo(a)pyrene
Test scenario	Part 2A: is true mean higher than critical concentration (μ > Cc)?
Date	26.11.2013
User details	ELH

Statistics calculator (version 1)

soil & groundwater

Input data

This spreadsheet has been produced based on the document 'Guidance on Comparing Soil Contamination Data with a Critical Concentration (CIEH/CL:AIRE, 2008)'. Users of this spreadsheet should always refer to this guidance, the User Manual and to relevant guidance on UK legislation and policy, in order to understand how the procedure should be applied in an appropriate context.

ESI Ltd (ESI) do not promise that the spreadsheet will provide any particular facilities or functions. The user must ensure that the spreadsheet meets their needs and they remain solely responsible for the competent use of the spreadsheet. Users are entirely responsible for the consequences of any use of the spreadsheet, ESI do not provide any warranty about the fitness for purpose or performance of any part of the spreadsheet. We do not promise that the media will always be free from defects, computer viruses, software locks or other similar code or that the operation of the spreadsheet will be uninterrupted or error free. The user should carry out all necessary virus checks prior to installing on their computing system.

Client/client ref: Wokingham Borough Council
Project ref: 29968
Site ref: Strathmore Drive
Data description: Data with arithmetic mean above GAC
Contaminant(s): Arsenic, lead and benzo(a)pyrene
Test scenario: Part 2A
Date: 25.11.2013

	Arsenic (300 to 700 mm) (mg/kg)	Lead (300 to 700 mm) (mg/kg)	Benzo(a)pyrene (300 to 700 mm) (mg/kg)	Arsenic (below 700 mm) (mg/kg)	Lead (blow 700 mm) (mg/kg)					
Critical concentration, C_c	32	450	1	32	450					
Notes										
Sample size, n	15	15	15	4	4	0	0	0	0	0
Sample mean, $\bar{X}$	36.1333333	493.666667	1.92733333	58.25	1320	No Data	No Data	No Data	No Data	No Data
Standard deviation, s	25.3486169	838.73584	5.36445905	32.7554067	1998.41604					
Number of non-detects	0	0	8	0	0					
Set non-detect values to:	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit
Outliers?	No	No	No	No	No					
Distribution	Non-normal	Non-normal	Non-normal	Normal	Non-normal					
Statistical approach	One-sample t-test	One-sample t-test	One-sample t-test	Auto: One-sample t-	One-sample t-test	Auto	Auto	Auto	Auto	Auto

Test scenario:	Part 2A: is true mean higher than critical concentration (μ > Cc)?				Evidence level required:	95%	Use Log-Normal distribution to test for outliers			
t statistic, t_0 (or k_0)	0.631526809	0.201637112	0.669507684	1.602788832	0.870689569					
Lower confidence limit (on true mean concentration, μ)	24.6055855	112.236181	<0	19.7073118	<0					
Evidence (upper bound) level (lower bound)	73%	58%	74%	90%	78%					
Base decision on:	evidence level	evidence level	evidence level	evidence level	evidence level					
Result	μ > Cc (BoP)	μ > Cc (BoP)	μ > Cc (BoP)	μ > Cc (BoP)	μ > Cc (BoP)					
Select dataset	○ Y	○ Y	○ Y	○ Y	◉ Y	○ Y	○ Y	○ Y	○ Y	○ Y

Back to data | Go to outlier test | Go to normality test | Show individual summary

Appendix F
Revised Conceptual Site Model

Potential Contaminant Linkages:
Qualitative Risk Assessment Table

Item No.	Area/ Building	Potential Contaminant (Source)	Potential Receptor	Potential Pathway to Receptor	Associated Hazard	Potential Consequence of S-R Link	Likelihood of S-R Linkage	Significance: Risk Classification	Comment
1	Former landfill on site	Inorganic contaminants: metals and metalloids, sulphate, cyanide and pH	Current site users (residential with gardens)	Inhalation of dusts Dermal contact Ingestion	Harmful to health	Severe	Unlikely	Low to Moderate	Metals and metalloids have been identified within soils on site in exceedance of the GAC; however these are not considered to be at sufficient concentrations to represent a signficant risk to site users. It is assumed that current site users could grow and consume home grown vegetables currently or in the future. The likelihood of a linkage is considered unlikely.
2			Neighbouring site users	Inhalation of dusts Ingestion of dusts	Harmful to health	Severe	Unlikely	Low to Moderate	The pathway to off-site users is limited to inhalation and ingestion of dusts.
3			Building foundations	Direct contact (aggressive ground conditions)	Property damage	Mild	Unlikely	Low	Previous site investigation data indicates that aggressive ground conditions is unlikely.
4			Secondary A Aquifer (Superficial Deposits).	Leaching; migration	Groundwater contamination	Moderate	Possible	Moderate	Terrace Gravels forming the Secondary A Aquifer are assessed as a possible linkage, as the landfill was not subject to lining before tipping, and water is understood to be abstracted for domestic purposes approximately 150 m from the site. Not fully assessed - further assessment required.
5			Principal Aquifer (Bedrock Geology)	Leaching; migration	Groundwater contamination	Moderate	Possible	Moderate	Not assessed. Further assessment required.
6			Surface watercourse (unnamed tributary River Lodden 500m northeast of site)	Lateral groundwater migration Surface overland flow Discharge via site drainage	Water pollution	Moderate	Unlikely	Low	The distance from site to the nearest surface water course is considered to be sufficient enough for a linkage to be unlikely
7			Property in the form of pets	Inhalation of dusts Dermal contact Ingestion	Harmful to health	Mild	Possible	Low	The distance from site to the nearest surface water course is considered to be sufficient enough for a linkage to be very unlikely
8	Former landfill on site	Organic contaminants: Fuel/oil related hydrocarbons, PAHs, VOCs, SVOCs and phenol	Current site users (residential with gardens)	Inhalation of dusts and vapours Dermal contact Ingestion	Harmful to health	Severe	Unlikely	Low to Moderate	PAHs (not fule/oil hydrocarbons, VOCs, SVOCs or phenol) have been identified within on site soils in exceedance of the GAC; however these are not considered to be at a sufficient concentration to present a potentially signficant risk to site users. It is assumed that current site users could grow and consume home grown vegetables currently or in the future. The likelihood of a linkage is considered unlikely.
9			Neighbouring site users	Inhalation of dusts and vapours	Harmful to health	Severe	Unlikely	Low to Moderate	The pathway to off-site users is limited to inhalation

Potential Contaminant Linkages:
Qualitative Risk Assessment Table

Item No.	Area/ Building	Potential Contaminant (Source)	Potential Receptor	Potential Pathway to Receptor	Associated Hazard	Potential Consequence of S-R Link	Likelihood of S-R Linkage	Significance: Risk Classification	Comment
10			Current site users (residential with gardens)	Direct contact (aggressive ground conditions); permeation drinking water pipes	Indirect ingestion of contaminated drinking water	Mild	Unlikely	Low	Site investigation and pipeline assessment data indicates that contaminatiion unlikely to permeat pipes on site.
11			Secondary A Aquifer (Superficial Deposits).	Leaching; migration	Groundwater contamination	Moderate	Possible	Moderate	Terrace Gravels forming the Secondary A Aquifer are assessed as a possible linkage, as the landfill was not subject to lining before tipping, and waste is understood to be abstracted for domestic purposes approximately 150 m from the site. Not fully assessed - further assessment required.
12			Principal Aquifer (Bedrock Geology)	Leaching; migration	Groundwater contamination	Moderate	Possible	Moderate	Not assessed. Further assessment required.
13			Surface watercourse (unnamed tributary River Lodden 500m northeast of site)	Lateral groundwater migration Surface overland flow Discharge via site drainage	Water pollution	Moderate	Unlikely	Low	The distance from site to the nearest surface water course is considered to be sufficient enough for a linkage to be very unlikely
14			Property in the form of pets	Contact	Harmful to health	Mild	Possible	Low	Pets on the site are considered a receptor both currently and in future use of the site.
15	Former landfill on site	Asbestos	Current site users (residential with gardens)	Inhalation of dust/fibres	Harmful to health	Severe	Unlikely	Low to Moderate	A piece of cement bounda tile containing asbestos was observed at depth during the site investigation. The nature of the cement-bound matrix reduces the risk to on-site residents
16			Neighbouring site users	Inhalation of dust/fibres	Harmful to health	Severe	Unlikely	Low to Moderate	Due to surface cover in the form of grass etc. Across the site the likelihood of a pathway to off-site users is considered unlikely
17	Former landfill on site	Ground gas (methane and carbon dioxide)	Current site users (residential with gardens)	Inhalation Explosion	Harmful to health	Severe	Unlikely	Low to Moderate	Ground gas being generated from potential putrescible waste on the site is considered possible, however likely to reduce over time. Accumulation of ground gas is also considered unlikely given the age of infilled waste and description of waste from previous site investigations. Although relatively high concentrations of carbon dioxide have been identified at the site these are associated with low flow conditions, and hence the potential likelihood of ground gas presenting a significant risk to site users is considered to be unlikely.
18			Neighbouring site users	Inhalation Explosion	Harmful to health	Severe	Unlikely	Low to Moderate	Ground gas being generated from potential putrescible waste on the site is considered possible, however likely to reduce over time

Potential Contaminant Linkages:
Qualitative Risk Assessment Table

Item No.	Area/ Building	Potential Contaminant (Source)	Potential Receptor	Potential Pathway to Receptor	Associated Hazard	Potential Consequence of S-R Link	Likelihood of S-R Linkage	Significance: Risk Classification	Comment
19			Buildings	Accumulation of ground gases	Accumulation of explosive atmosphere	Severe	Unlikely	Low to Moderate	Ground gas being generated from potential putrescible waste on the site is considered possible, however likely to reduce over time
20	Former landfill on site	Radium 226 in ash	Current site users (residential with gardens)	Ingestion, inhalation, direct contact	Harmful to health	Severe	Unlikely	Low to Moderate	This has not been considered within this current investigation as the extent of ash was only fully identified during this investigation.