Former Brooklands Garage

330 Tilehurst Road

Reading

RG30 2NG

Phase 2 Geo-environmental Assessment Report

in support of Planning Consent 141971

Gables Homes Ltd

SLR Ref: 408.05913.00001
December 2015

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1.0 INTRODUCTION

1.1 Appointment

SLR Consulting Ltd (SLR) was commissioned by Gables Homes Ltd (GHL) in October 2015, to undertake a Phase 2 Geo-Environmental Site Assessment (GESA) of the former Brooklands Garage (also known as Westward Garage) at 330 Tilehurst Road, Reading, RG30 2NG (the Site) (Drawing 1).

The area considered by this assessment comprises two parts:

1) the former Petrol Filling Station (PFS) fronting Tilehurst Road; and

2) the former Garage to the rear (Drawing 2).

This report documents the methodology and results of the Phase 2 investigation and provides an assessment of the on-site conditions. The contamination assessment includes a risk based evaluation, a soil Generic Quantitative Risk Assessment (GQRA) and groundwater quality assessment against previously derived Site Specific Assessment Criteria (SSAC) to assess the potential risks to human health and controlled waters receptors.

The soil gas monitoring program is ongoing; two of the programmed visits have been completed to date and the findings presented in this report. The results of the remaining visits will be presented in a separate addendum upon completion.

Geotechnical parameters were also determined during the site investigation to provide information to aid future foundation design by others. The geotechnical interpretation will be presented as a separate report.

This report has been prepared by the SLR Land Quality Group based at 8 Stow Court, Stow Road, Stow Cum Quy, Cambridge, CB25 9AS. Tel: 44 (0)1223-813805.

1.2 Background

GHL is proposing to redevelop the Site for residential use. Proposals include demolition of existing buildings and construction of two blocks of apartments for the elderly with associated access routes, car parking and landscaping. The proposed development layout is presented as Appendix A.

The PFS part of the Site has been the subject of multiple phases of previous investigation, risk assessment and voluntary remedial action by Total UK (TUK) and its consultants (Arcadis) between 2002 and 2010.

London & Boultbee Ltd (L&B) acquired the PFS section from TUK in 2010. At the time of acquisition the PFS was disused and the earlier fuel storage and distribution infrastructure had been removed (i.e. underground storage tanks (USTs), pump islands and fuel lines).

SLR undertook further groundwater assessment work on the PFS in April 2011 that was submitted voluntarily to the Environment Agency (EA). The EA agreed that no further assessment or remedial action was required at that time.

SLR is not aware of any previous land quality assessment work on the Garage part of the Site.

1.3 Objectives

The objective of this assessment is to:

- Provide information upon the geological and hydrogeological conditions beneath the Site.
- Assess the presence, nature, likely severity and extent of soil, groundwater and ground gas contamination impacts which may be present beneath the Site, their potential impacts and likely requirements for additional investigation, risk assessment and further work.
- Provide geotechnical information to be used by others for future foundation design.

1.4 Scope of Work

The scope of work for the Phase 2 GESA was devised by SLR and outlined in a proposal to GHL dated 2nd October 2015. The scope of work comprised two main stages:

Stage 1 – Desk Study, Site Inspection and Groundwater Sampling

- review of in house geological and hydrogeological data for the property;
- desk study analysis of historical maps to establish the development history of the property as well as past on and off site potentially contaminative activities;
- collection and analysis of environmental data from a proprietary database;
- review of previous investigation data;
- a site walk over inspection;
- public utility search and on site utility tracing survey;
- groundwater sampling from selected existing monitoring wells from both shallow and deep aquifers.

Stage 2 – Intrusive Investigation

- project management and health and safety planning;
- dynamic sample soil boreholes (BH101 to BH105);
- cable percussion boreholes (BH201 to BH202);
- installation of groundwater and soil gas monitoring wells in the boreholes;
- on site supervision by SLR of the borehole investigation and well installations, including collection and screening of soil samples for volatile organic compounds;
- groundwater sampling;
- soil gas monitoring;
- surveying surface elevations of completed investigation locations;
- environmental laboratory analysis of soil and groundwater samples; and
- reporting with GQRA (soil) and comparison to SSAC (groundwater).

The investigation fieldwork is outlined in Appendix B.

1.5 Data Sources

This report has been produced following consultation with the sources of information summarised in Table 1-1.

Table 1-1
Information Sources

Information Type	Source
General topography and site setting	Ordnance Survey (OS), 1:50,000 Landranger Sheet 175 Reading & Windsor.
Site and background information	GroundSure EnviroInsight Report, 9th October 2015. Ref. EMS-328858_443028. GroundSure Historical Ordnance Survey Map Extracts. 9th October 2015. Ref. EMS-328858_443026. Previous Reports Presented in Table 3-1.
Published Hydrogeology and Geology	EA website. British Geological Survey (BGS) 1:50,000 Series, Sheet 268 Reading, Solid and Drift Edition. BGS Website. Hydrogeological Map of the South West Chilterns and the Berkshire and Marlborough Downs (1:100,000), 1978, Sheet 7, BGS.

2.0 DESK STUDY - SITE DETAILS, SETTING AND HISTORY

2.1 Site Vicinity Description

Information has been obtained from OS, EA and BGS mapping, data supplied by Landmark, the Site visit and previous investigation data. Table 2-1 summarises the Site details.

Table 2-1
Site Details

Address	330 Tilehurst Road, Reading, RG30 2NG.	
Site Location	The Site is located on the western side of Reading, approximately 1km from Reading town centre. (Drawing 1). National grid reference 468736,173021 identifies the approximate site location.	
Current Usage	The Site is unoccupied and disused.	
Site Surfacing	The majority of the Site is surfaced with a mixture of tarmac (PFS) and concrete (Garage). Parts of the Garage part are surfaced with gravel.	
Surrounding Land Use	North	Residential properties are adjacent and commercial/industrial units are 20m further north.
	East	Residential.
	South	Tilehurst Road beyond which is Prospect Park Public Open Space.
	West	Residential.

2.2 Physical Site Setting

A summary of the main physical features of the Site are given in Table 2-2.

Table 2-2
Physical Site Features Summary

Published Geography and Geology	Gradient	The Site is relatively level with a slight slope on the PFS side down towards Tilehurst Road.
	Elevation	Approximately 63mAOD.
	Superficial Drift Geology	No Superficial deposits are recorded.
	Solid Geology	• Lambeth Group Formation (interbedded clay, silt and sand). • Chalk (Seaford Chalk Formation And Newhaven Chalk Formation).
Hydrology	Surface Water	The nearest identified surface waters are: • A pond - 400m to the southeast; • Holly Brook - 1.4km to the south; • The River Thames - 1.6m to the north.
	Surface Water Abstractions	There are no identified surface water abstractions within 1km.
Published Hydrogeology	Aquifer Status	Lambeth Group - Secondary A bedrock aquifer. Chalk – Principal bedrock aquifer.
	Groundwater Abstractions	Three historical groundwater abstractions were identified within 2km of the Site, the nearest of which is 1352m northeast which is used for drinking.
	Source Protection Zones (SPZ)	The Site is within the Total Catchment of a SPZ (Zone III).

2.3 Site History

The age and general type of activity and land use can often be determined from the type and layout of structures depicted on OS maps. However, specific elements of site operations cannot normally be determined from such extracts. Large scale (1:2,500/1:1,250) and small scale (1:10,560/1:10,000) historical map extracts were reviewed for selected years between 1881 and 2014. A summary of the review findings are presented given in Appendix C together with a copy of the OS maps provided by GroundSure.

The review shows the Site was agricultural land until construction of a Petrol Filling Station in the 1960s. Additions to the Garage part of the Site are evident from the addition of buildings in the 1970s and 1980s.

Clay pits surrounded the Site to the north, east and west until the pits were replaced with residential development from the 1930s to the 1960s. The industrial units 20m north appeared on maps in the late 1960s to 1970s.

2.4 Environmental Search Data

The EA web site has been consulted with regard to groundwater abstractions, SPZs and former landfill sites.

The GroundSure EnviroInsight report data has also been reviewed to gain information on publicly available environmental data for the Site and immediately surrounding area. A summary of the review and a copy of the GroundSure report is contained in Appendix D.

No significant concerns have been revealed with respect to the Site from the data search.

Groundwater and surface water abstraction data is presented in section 2.2.

3.0 PREVIOUS INVESTIGATION FINDINGS

The previous reports identified the PFS Site as undeveloped until at least the 1960s when it is shown as a garage. This is consistent with the SLR desk study and when the Petroleum Licensing Authority first recorded underground storage tanks (USTs) on site (1966).

When TUK investigated the PFS site in 2002 the petrol filling station was disused and the property was being used for car sales.

3.1 Previous Recorded Geology

Reference should be made to the earlier reports for full details of the previously recorded geology. However three distinct geological units were recognised:

- Made ground – gravelly sand and sandy gravel that extends to depths of between 2.0m and 4.6m[1].

- Lambeth Group – clayey fine to medium sands that extend to depths of up to 10.2m and were underlain by firm to stiff clays and clayey fine sands. The base of this horizon was at approximately 13m.

- Chalk – recorded beneath the Lambeth Group strata and proved to a depth of 30m.

3.2 Previously Recorded Hydrogeology

3.2.1 Arcadis (2002 – 2010)

The previous investigations identified two distinct groundwater bodies beneath the Site, a shallow groundwater body within the Lambeth Group strata at depths of between 7.5m and 8.0m and a deeper aquifer at depths of 22m to 23m within the Chalk.

Groundwater flow within the Lambeth Group was estimated to be towards the north to northeast and towards the south in the Chalk.

3.2.2 SLR Consulting (2011)

Groundwater was encountered in the shallow wells (EX1 to EX13 and EXB) at depths of between 7.58m and 8.09m in the Lambeth Group. MW2, MW4 and MW5 were dry.

Within the deeper wells (MW7 to MW202) groundwater was encountered at depths between 22.89m and 23.74m within the Chalk.

Groundwater flow within the Lambeth Group was estimated to be towards the northeast and towards the south in the Chalk.

Non aqueous phase liquid (NAPL) was not recorded by SLR in any of the monitoring wells.

[1] Unless otherwise stated all depths are in metres below existing ground level.

3.3 Previous Assessment and Remediation Work

3.3.1 Arcadis (2002 – 2010)

The PFS Site has been the subject of multiple phases of investigation, risk assessment and voluntary remedial action by TUK which are detailed in Table 3-1.

The investigation and assessment work undertaken between March 2002 and March 2007 identified the presence of hydrocarbon impacts in both soil and groundwater samples within the Lambeth Group strata. NAPL was also identified in two wells (EXA and EXB) in October 2006 and comprised weathered petrol and diesel.

Within the Chalk strata soil impacts were not identified and dissolved phase groundwater impacts were only recorded in the groundwater in MW7 at trace levels in 2005 (0.091mg/l TPH, 0.054mg/l MTBE, 0.002 mg/l benzene). Concentrations were less than method detection limits (MDL) in all of the other deep wells (MW6, MW8 and MW101 to MW103).

A detailed quantitative risk assessment (DQRA) completed in March 2007 derived SSAC for both residential and commercial end uses. Concentrations of hydrocarbons in some of the earlier shallow soil samples were found to exceed SSAC protective of human health for a residential end use but not a commercial land use.

The petrol station was decommissioned in August 2008 and 14 USTs (tank compartments) and their associated infrastructure were removed. As part of the decommissioning works approximately 354 tonnes of soil were removed from site as hazardous waste, 120 tonnes of inert waste and 1100 tonnes of concrete. Soil samples collected from the decommissioning excavations were found to exceed the human health SSAC for a residential end use at isolated locations and were for the most part from depths of over 3.0m.

The UST excavation void was backfilled with unknown materials for which no chemical analysis data was provided.

Prior to the implementation of a soil vapour extraction (SVE) remediation scheme in 2009, baseline monitoring of the shallow and deep groundwater wells on site was undertaken and exceedances were recorded in five shallow wells for MTBE (methyl-tert-butyl-ether) (EX5, EX7, EX11, EX12 and EXB). MTBE concentrations in EX13 also exceeded the SSAC that are protective of the shallow aquifer. Within the deep Chalk aquifer dissolved phase concentrations were less than MDL.

A SVE remediation pilot test undertaken between January and May 2009 is estimated to have removed 145kg of hydrocarbons (benzene equivalent) from beneath the Site. A further 3 month pilot scale operation of the system removed 77kg of hydrocarbons.

Two post remediation groundwater monitoring events carried out in December 2009 and January 2010 did not record concentrations of hydrocarbons in either the shallow or deep aquifers exceeding the SSAC.

3.3.2 SLR Consulting (2002 – 2010)

In April 2011, SLR was commissioned by London & Boultbee Ltd to undertake an environmental assessment comprising groundwater monitoring, sampling and analysis from the existing well network on the PFS together with a review of the remediation history and previous data.

The April 2011 results showed that dissolved phase TPH groundwater concentrations had for the most part reduced since January 2010. The exceptions were EX10 and EX12, and in the case of EX12 concentrations remained consistently below the peak values recorded in 2009. No evidence of a significant rebound in dissolved phase concentrations was recorded in the shallow aquifer following the 2009 groundwater remediation works.

The SLR 2011 environmental assessment was submitted voluntarily to the EA who confirmed that no further assessment or remediation was required based on a continued commercial use of the Site.

Table 3-1:
Previous Assessment Reports – PFS Site

Date	Report Title and Author
February 2003.	Tier 1 Environmental Assessment Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 94271.01.
August 2003.	Tier 2 Environmental Assessment Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 94271.02.
October 2003.	Site Specific Risk Assessment. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942710301.
February 2005.	Groundwater Monitoring Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 94271.07.
June 2005.	Environmental Risk Management Strategy. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942710601.
September 2005.	Additional Environmental Assessment and Monitoring Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942710806.
March 2006.	Additional Groundwater Monitoring Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942710902.
October 2006.	Additional Site Excavation and Soil Vapour Extraction Pilot Test Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942711006.
January 2007.	Remedial Options Appraisal Report and Remedial Implementation Plan. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942711101_01.
March 2007.	Detailed Quantitative Risk Assessment. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942711201.
September 2008.	Baseline Groundwater Monitoring Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942712001_01.
September 2008.	Environmental Report on Site Decommissioning and Installation of Remediation Infrastructure. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942711802_01.
June 2009.	Additional SVE Pilot Test Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. AGMI Ltd. Report No. 942712209_01.
February 2010.	Additional SVE System Pilot Test Report. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. Arcadis (UK) Ltd. Report No. 942712302_01.
February 2010.	Summary of Environmental Works Completed. Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, Berkshire. Arcadis (UK) Ltd. Report No. 942712401.
May 2011	Groundwater Monitoring Report. Former Westward Service Station, 330 Tilehurst Road, Tilehurst, Reading, RG30 2NG. SLR Consulting Ltd. Report Reference 408.03545.00004.

4.0 SITE INSPECTION

4.1 Walk Over Inspection

A site visit and walkover inspection was undertaken by a consultant from SLR on 15th October 2015.

4.2 Site Description

Drawing 2 identifies the main features noted on and adjacent to Site and copies of photographs are contained in Appendix E.

The Site comprises two parts:

1) the former Petrol Filling Station (PFS) fronting Tilehurst Road; and

2) the former Garage to the rear.

The PFS was largely paved with tarmacadam with a series of manhole chambers leading to the former remediation wells (EX wells). The former remediation wells were set within inspection covers within tarmacadam surfacing. The original 1960s shop building was boarded up and disused.

An access road leads to the former Garage part of the Site which comprises a relatively level irregular shaped parcel of land that is approximately 1m to 1.5m lower than surrounding land.

Key features of the Garage part of the Site are:

Garage Buildings - Brick built car repair workshop with roller shutter doors. Possible asbestos containing material in cement sheet roof.

External yard area - a mixture of gravel surfacing and hard paving (concrete).

Oil Stained Surfaces - Two areas of surface oil staining were observed within the former car repair workshop building and east of the building.

Surface Water Sump - A water filled surface water sump was behind the former car repair workshop building which feeds into the surface water drains flowing off site.

Retaining Walls and Earth Banks – Low (1m) retaining walls and earth banks skirted the southern and northern perimeters of the Garage part of the Site.

Surrounding land gently slopes towards the south. The Garage part of the Site is lower than adjacent land and the front of the PFS part is at approximately the same level as the adjacent residential properties.

5.0 PRELIMINARY CONCEPTUAL SITE MODEL

As part of the evaluation of the Site and in accordance with current best practice, the Site has been considered in terms of a Conceptual Site Model using the principles of a risk assessment comprising the potential *Source – Pathway – Receptor* model of potential contaminant linkages.

Table 5-1 lists the potential sources, pathways and receptors identified at this site within the context of possible contaminant linkages, i.e. a situation where the source(s), pathway(s) and receptor(s) are all present at a site and therefore a real (as opposed to a perceived) risk of potential impact exists.

The Site is proposed for redevelopment into a residential setting and, therefore, the assessment presented below is made in this context.

Table 5-1
Preliminary Risk Assessment

Conceptual Site Model			
Sources	On Site • Historical use of the Site as a petrol filling station since the 1960s, fuel storage and dispensing infrastructure and Garage (vehicle maintenance) including oil storage. Hydrocarbons are a mixture of petrol and diesel which previous site investigations have identified within the shallow groundwater (Lambeth Group geology). NAPL was historically identified floating on shallow groundwater in two wells which was recovered during remediation of the PFS site. Soil and groundwater impacts were treated using SVE techniques and groundwater concentrations were measured below SSAC in 2010. • Unknown fill materials used in UST excavation void. Off Site • Infilling of surrounding land from 1930s to the 1960s.		
Pathways	Pathway	Description	
	Vapour/gas migration into buildings	Onsite	Via migration through shallow made ground and variably permeable shallow soils.
		Offsite	Via migration through shallow soils and preferential pathways e.g. utility corridors.
	Leaching to controlled waters	Ground Water	Via migration through shallow made ground and variably permeable shallow soils.
		Surface Water	Via migration through shallow made ground and variably permeable shallow soils.
	Preferential/other pathways	Site is largely covered with buildings and hard surfacing, which breaks the potential pathway. Hydrocarbon impacts are generally at a greater depth than the depth of utilities limiting the potential for this pathway to become active.	
Receptors	Receptor	Location	
	Onsite residents and workers	The Site is proposed for residential development as accommodation for the elderly.	
	Offsite residents	The nearest residents are adjacent (to the south) and 10m from the Site (north and northwest).	
	Buildings and Services	New buildings and service routes are proposed.	
	Sensitive commercial users	Commercial/industrial units are located 20m north.	

Conceptual Site Model		
	Groundwater	Groundwater is located within the Secondary A aquifer and Principal Chalk Aquifer beneath the Site.
	Surface waters	Nearest down gradient surface water receptor is a pond 400m to the southeast.
Contaminant linkages	Onsite health	Possible: Potential soil impacts associated with oil storage and disposal and other vehicle maintenance activities associated with the Garage part of the Site could present a risk to human health. Previously identified impacts in the PFS part of the Site present a potential risk to onsite human health.
	Offsite health	Possible: Oil staining at the surface and other unidentified impacts from the Garage part of the Site have the potential to migrate off site and impact human health. Previously identified impacts beneath the PFS part of the Site may present a risk to offsite human health.
	Groundwater Lambeth Group	Possible: Impact has been identified in the Secondary A aquifer beneath the Site.
	Chalk	Unlikely. No evidence of impact to the Principal Chalk aquifer has been identified by this assessment.
	Surface water	Possible: The nearest surface water receptor is 400m to the southeast.
	Buildings and services	Possible: The surrounding land was filled from the 1930s to the 1960s and could be a source of landfill gas. The potential is mitigated by the age of the filled features. Buildings, including the below ground elements, are at possible risk of attack if inappropriately designed foundations are used.

Based on the available information, it is considered that there are potential causes of contamination on the Site. Specifically risks to humans, the environment or the development itself could potentially exist as a consequence of past activities on and off Site.

The conceptual presence of complete contaminant linkages are the result of historical uses of the Site as a Petrol Filling Station and vehicle repair Garage.

The primary risks are:

1) Soil and groundwater impact from former petrol, diesel and oil storage;

2) Unknown Made Ground materials within areas of the Site where void filling has taken place;

3) Migration of landfill gas from on and off site sources.

Buildings scheduled for demolition must have an appropriate level of asbestos survey carried out to negate the risk of future human exposure to asbestos.

6.0 RECORDED GEOLOGY AND HYDROGEOLOGY

6.1 Geology

Reference should be made to the appended borehole logs (Appendix F) for full details of the strata encountered by this investigation.

Made Ground

A variably mixed sequence of fine grained and coarse grained Made Ground was recognised on both sections of the Site:

> PFS – The boreholes encountered deep, coarse grained Made Ground to a maximum of 4.1m depth comprising sandy gravel of brick and concrete which contained subordinate quantities of flint, tarmacadam and timber.
>
> Garage – a thin layer of Made Ground was encountered which comprised predominantly clay with subordinate fragments of flint, brick, concrete and clinker.

Lambeth Group

Natural soils were encountered at depth below the PFS and from shallow depth in the Garage (from 0.1m). Natural soils comprised interbedded sand, clayey sand and sandy clay which are consistent with Lambeth Group geology.

Chalk

Encountered within the cable percussion boreholes at 12.2m to 13m depth. The Chalk was disturbed by the boring and consequently recovered at the surface as a gravelly chalk silt and chalk gravel.

6.1.2 Distribution Trends

The greater thickness of Made Ground beneath the PFS is considered to be a result of previous UST decommissioning and soil removal works. The resulting excavations were backfilled with what appears to be a recycled aggregate.

6.2 Visual and Olfactory Field Observations

No visual evidence of significant or widespread impact was noted in any of the soil samples inspected.

Details of the soil head space screening are recorded on the appended borehole logs.

6.3 Groundwater Occurrence

Groundwater was recorded in the single newly installed groundwater monitoring well (BH202) at a depth of 8.783m within the Lambeth Group . Groundwater was encountered in existing wells installed within Lambeth Group at depths of between 7.555m (EXB) and 8.068m (EX2).

Within the Chalk, groundwater was encountered between 23.177m (MW7) and 23.950m (MW103).

Within the Lambeth Group, groundwater elevations reduced from southwest to north / northeast across the Site indicating what is considered to be a continuous groundwater body within the Lambeth Group and a north to northeasterly flow direction.

In the deep boreholes, groundwater elevations reduced from north to south, indicating a southerly flow direction in the deeper chalk groundwater.

The groundwater depths and flow directions are broadly consistent with those noted previously. The groundwater monitoring results are presented in Appendix G.

6.4 NAPL Monitoring Results

NAPL was not recorded in any of the wells.

7.0 RECORDED GROUND GAS DATA

7.1 Recorded Concentrations

Table 7-1 summarises the maximum steady state ground gas concentration in each borehole recorded during the over the two monitoring visits completed to date.

The soil gas monitoring program is ongoing and the final results will be presented as an addendum to this report upon completion. The results recorded to date are presented in Appendix H.

Table 7-1
Maximum Steady State Ground Gas Monitoring Results

Borehole Number	Max. Steady State		Steady State	Maximum Values			
	Max. Methane (%v/v)	Max. Carbon Dioxide (%v/v)	Oxygen (%v/v)	Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Flow (l/hr)	Borehole Gas Pressure (mbar)
BH101	<MDL	4.6	15.4	1	2	0.1	0.5
BH103	<MDL	3.6	19.0	<MDL	4	<MDL	0.02
BH104	<MDL	0.1	21.0	<MDL	<MDL	<MDL	0.06
BH105	<MDL	3.1	16.9	1	2	<MDL	0.02
EX2	<MDL	4.9	12.7	1	2	0.1	<MDL
EX5	<MDL	2.8	21.0	<MDL	3	<MDL	0.07
EX12	<MDL	0.8	20.6	<MDL	5	<MDL	-0.05
EXB	<MDL	6.4	9.9	1	2	2.2	0.08
BH201	0.1	0.4	20.1	<MDL	4	0.1	0.03

Key
% v/v = Percentage volume-by-volume
ppm = Parts per million
<MDL = less than method detection limits
l/hr = Litres per hour
mbar = millibar

7.2 Methane

Methane was detected as a steady state concentration in a single monitoring well (BH201) on one occasion. The measurement of 0.1%v/v was at or just over the instrument MDL.

7.3 Carbon Dioxide

Elevated steady state concentrations of carbon dioxide (CO_2) were noted at or above 1.5% v/v in six of the nine monitoring wells on one or more occasions.

The highest carbon dioxide concentration was recorded in EXB (6.4% v/v).

7.4 Hydrogen Sulphide and Carbon Monoxide

Hydrogen sulphide was detected at trace levels of 1ppm in four monitoring wells on one occasion.

Carbon monoxide was detected in three out of nine wells on both occasions (EX5, EX12 and BH201) and in a further five wells on one occasion at trace concentrations, between 1ppm and 5ppm.

7.5 Gas Flow Rate and Gas Pressure

The flow rate in all three boreholes was noted to be negligible (<1.0l/hr) for eight out of the nine wells. A single higher flow rate of 2/2 lt/hr was recorded in EXB on one occasion.

Borehole gas pressures were negligible (<1mbar) or negative.

7.6 Summary and Discussion

Widespread and elevated methane, hydrogen sulphide and carbon monoxide results have not been recorded across the Site from the nine wells monitored for ground gases on 19th November and 2nd December 2015.

Slightly elevated carbon dioxide concentrations have been recorded, although the corresponding risk to human health and building infrastructure is considered to be limited by the generally low gas flow rates and borehole pressures detected. This is discussed further in Section 12.

9.0 SOIL QUALITY

9.1 Chemical Analysis - Soils

SLR collected representative samples of soil which were submitted for chemical analysis for some or all of the analysis suites outlined in Table 9-1.

Table 9-1
Soil Analysis Suites

Suite Contents	Number of Samples Tested
Speciated PAH	7
Total petroleum hydrocarbons (TPHCWG)	11
MTBE (methyl tertiary butyl ether)	11
BTEX compounds	11
Metals	8
Asbestos (presence/absence)	7
Asbestos quantification	1

The soil analysis results are summarised in Appendix I and a copy of the laboratory test certificates is contained in Appendix J. The results have been compared to SLR's generic assessment criteria (GAC) for a residential land use scenario including plant uptake with a soil organic matter content of 1%.

9.2 Chemical Analysis Results

9.2.1 Petroleum Hydrocarbons

TPH results were close to or below MDL in 9 of 11 samples tested. Concentrations of petroleum range hydrocarbons (aliphatic ECC6-EC10 and aromatic EC7-EC12) were detected within BH201 at 4.5m in excess of the GAC for the respective hydrocarbon fraction.

Heavy range hydrocarbons (EC16-EC35, lubrication oil range) were detected in BH104 at 0.3m depth in excess of the GAC.

9.2.2 BTEX

BTEX compounds were not detected in 9 of the 11 samples tested. The detections were recorded in BH201 (4.50m and 6.0m) with the greatest concentrations at 4.5m, which were in excess of the GAC for residential end use for each respective BTEX compound (benzene, toluene, ethyl benzene and xylenes).

9.2.3 MTBE

MTBE was not detected in the 11 samples tested.

9.2.4 Metals

Metals were detected at generally low concentrations in the 8 samples analysed and none of the metals exceeded their respective GAC.

The maximum lead concentration was 66mg/kg which is well below the Defra Category 4 Screening Level for soil in a domestic setting with plant uptake (200mg/kg).

9.2.5 PAHs

Total PAH results ranged from less than MDLs to 63mg/kg (BH104 0.3m).

Benzo(a)pyrene was detected in excess of its respective GAC in BH102 (0.2m), BH104 (0.3m) and BH201 (0.4m and 0.9m).

Benzo(a)anthracene, chrysene, and benzo(b)flouranthene were also detected in BH104 (0.3m).

9.2.6 Asbestos

Asbestos was not detected in six of the seven samples screened for its presence. A single detection was found in BH102 (0.2m) which was determined to be amosite fibre bundles.

The sample was subject to quantification analysis and the result was less than 0.001%.

10.0 GROUNDWATER QUALITY

10.1 Analytical Chemistry - Groundwater

SLR collected samples of groundwater from selected wells on two occasions which were submitted for chemical analysis for the classes of contaminants listed in Table 10-1.

Table 10-1
Groundwater Analysis Suites

Suite Contents	No. of Samples Tested	
	October 2015	November 2015
TPHCWG	8	4
BTEX compounds	8	4

Three samples were recovered from selected deep (Chalk) wells in October 2015; from boreholes MW7, MW8 and MW103.

Groundwater samples were recovered from the Lambeth Group aquifer in October and November 2015 as follows:

- October 2015 – EX2, EX5, EX11, EX12, EXB
- November 2015 – EX5, EX12, EXB, BH202

The groundwater analysis results are summarised in Appendix K where they have been compared to the 2007 Arcadis SSAC for the shallow aquifer (Lambeth Group) and deep aquifer (Chalk).

10.2 Chemical Analysis Results

10.2.1 TPH

Lambeth Group - within the shallow aquifer, TPH concentrations were generally lower than those recorded in 2011 with approximately an order of magnitude reduction in EXB and EX5 and significant reductions in EX2, EX11 and EX12.

Dissolved phase TPH concentrations were not detected in the Lambeth Group groundwater in BH202 on the down gradient side of the Site.

Chalk - dissolved phase TPH concentrations were not detected in the three samples analysed.

10.2.2 BTEX

Lambeth Group – Low BTEX concentrations were detected in EX5 (ethyl benzene, October 2015), EX11 (o-xylene, October 2015) and EX12 (ethyl benzene and o-xylene in October and November 2015 and ethyl benzene, o-xylene and toluene in October 2015). TEX contaminants were detected in EXB in October 2015 and all BTEX contaminants were detected in EXB in November 2015.

Chalk - dissolved phase concentrations were not detected in the three samples analysed.

None of the BTEX results exceeded the SSAC.

10.2.3 MTBE

Lambeth Group - MTBE was only detected in one well EXB (0.0009mg/l) and did not exceed the SSAC.

Chalk – MTBE was not detected in the three samples analysed.

11.0 REVIEW OF CONCEPTUAL MODEL

11.1 Refined Conceptual Site Model

As part of the evaluation of the Site and in accordance with current best practice, the Site has been considered in terms of a Refined Conceptual Site Model using the principles of a risk assessment comprising the potential Source – Pathway – Receptor model of potential contaminant linkages.

Table 11-1 below lists the potential sources, pathways and receptors identified at this site within the context of possible contaminant linkages within the context of a residential end use.

Table 11-1
Refined Conceptual Site Model

Conceptual Site Model			
Sources	1) TPH soil impact; 2) PAH and asbestos in Made Ground soils; 3) Landfill gas (carbon dioxide) detected in monitoring wells.		
Pathways	Pathway	Description	
	Vapour/gas migration into buildings	Onsite	Via migration through shallow made ground and variably permeable shallow soils.
		Offsite	Via migration through shallow soils and preferential pathways e.g. utility corridors.
	Leaching to controlled waters	Ground Water	Via migration through shallow made ground and variably permeable shallow soils.
		Surface Water	Via migration through shallow made ground and variably permeable shallow soils.
	Preferential/other pathways	Site is largely covered with buildings and hard surfacing, which breaks the potential pathway. Hydrocarbon impacts are generally at a greater depth than utilities limiting the potential for off-site migration.	
Receptors	Receptor	Location	
	Onsite residents and workers	The Site is proposed for residential development as accommodation for the elderly.	
	Offsite residents	The nearest residents are adjacent (to the south) and 10m from the Site (north and northwest).	
	Buildings and Services	New buildings and services are proposed.	
	Sensitive commercial users	Commercial/industrial units are located 20m north.	
	Groundwater	Groundwater is present within the shallow Lambeth Group Secondary A aquifer and deep Chalk Principal bedrock aquifer beneath the Site.	
	Surface waters	Nearest down gradient surface water receptor is a pond 400m to the southeast.	
Contaminant linkages	Onsite health	Possible: Shallow soil impacts could present a risk to human health. Deeper soil impacts are unlikely to present a risk to onsite human health by virtue of their depth (4.5m).	
	Offsite health	Unlikely: Only a single soil sample contained concentrations of petroleum hydrocarbons at shallow depth. Identified impacts beneath the PFS part of the Site are at depths considered to be too great to present a potential risk to human health and are too deep for migration through preferential pathways such as service ducts / trenches.	

Conceptual Site Model		
	Groundwater Lambeth Group	Possible: Impact has been identified in the Secondary A aquifer beneath the PFS part of the Site.
	Chalk	Unlikely: There is no evidence of impact to the Principal Chalk aquifer.
	Surface water	Not present: The distance to the nearest surface water receptor mitigates the risk.
	Buildings and services	Possible: Low levels of carbon dioxide have been detected which may require gas protection measures. Buildings, including the below ground elements, are at possible risk of attack if inappropriately designed foundations are used. The identified hydrocarbon impacts in BH201 are at greater depths than would be expected to have an effect on buildings and services.

11.2 Possible Contaminant Linkages

Harm to Ecosystems

SLR considers there to be no potential contaminant linkages, as it is unlikely that wildlife exists in close proximity to the Site and the subject property is not located within close proximity to a designated ecological site. No further action is required.

Harm to Property (Fauna & Flora)

SLR considers that a potential contaminant linkage exists, as there is a possibility of domestic animals being kept at the Site. Domestic crops may also be grown on site in the future. There are potential risks to surrounding land (residential properties). Further action is required.

Damage to Buildings / Structures

Three potential receptors have been identified:

Water supply pipes – impacted soils and groundwater are present on site. Hydrocarbon contamination can impact below ground potable water supply pipes. Further action is required at the development stage by the use of below ground barrier pipework approved by the local water supply company.

Buried concrete - aggressive compounds can be present within natural soils and Made Ground. The risk of damage to concrete foundations via sulphate attack and also the setting of new cast in-situ concrete where in contact with hydrocarbon impacts should be mitigated by the use of an appropriate concrete design. Further action required at the development stage.

Buildings/construction – explosive and hazardous gas/vapours can arise from soil and groundwater contamination impacts, organic matter in the Made Ground and off-site sources and can be a potential risk to buildings. Further evaluation is required in the form of soil gas testing.

Harm to Human Health

Potential contaminant linkages currently exist between:

- contaminated soils and humans – following redevelopment the Site will largely be covered by hardstanding, therefore isolating any residual contamination and breaking any direct contact pathways with soil and groundwater that might otherwise exist. Potential exposure would be limited to unpaved/soft landscaped areas and potential crop uptake where further action is required.

- hazardous soil gases and humans – carbon dioxide has been recorded at concentrations in excess of 1.5% and two potential sources have been identified (the degradation of petroleum hydrocarbons and off-site filled ground).

  The effect of sealing the vast majority of the Site is that it may impede any ground gas venting to atmosphere. This can increase hazardous soil gas concentrations in the ground, in turn increasing the chance of it entering buildings and especially the parts of buildings which are below ground level, such as service ducts and trenches. The chances of that happening are low if the gas is not under pressure or passive i.e. zero flow, but could bring about a degree of risk that would require mitigation.

  A potential contaminant linkage may be present which should be assessed further to evaluate what, if any, further action is required.

Buildings scheduled for demolition must have an appropriate level of asbestos survey carried out to negate the risk of future human exposure to asbestos.

Pollution of Controlled Waters

Surface waters – SLR considers there to be a low probably of a linkage to surface waters by virtue of distance (400m to the nearest identified pond and 1.4km to the nearest surface water course).

Shallow Groundwater – shallow groundwater exists in the Lambeth Group geology which is a Secondary A aquifer. Hydrocarbons have been detected but at concentrations below the SSAC and concentrations are decreasing therefore further assessment is not required.

Deep Groundwater – contaminants have not been detected in the Chalk Principal Aquifer beneath the Site. The chalk aquifer beneath the Site is within a Zone III SPZ and the nearest identified groundwater abstraction from the chalk is 1352m to the northeast which is up-gradient of the Site. SLR considers there is a low probability of a linkage to the chalk groundwater, and therefore further chalk groundwater assessment is not required.

11.3 Potentially Unacceptable Risks

Having considered the above criteria including the uncertainties and gaps in the conceptual model, it is apparent that the Risk Assessment provides a reasonable level of confidence that impacts exist that require further evaluation.

Those potential contaminant linkages (PCL) on site that can be readily mitigated at the time of construction in any new development have been excluded at this stage from further assessment (i.e. buried concrete, water supply pipes). The remaining potential contaminant linkages (PCL) that require further evaluation are:

PCL 1: Direct contact with soil in unpaved / soft landscaped areas and consumption of home grown produce.

PCL 2: Hazardous and explosive soil gases impacting future development and human health.

The above PCL are evaluated further in the Ground Gas Risk Assessment and Generic Quantitative Risk Assessment (Soil) in sections 12.0 and 13.0, respectively.

12.0 GROUND GAS RISK ASSESSMENT

Working within the National Planning Policy Framework (NPPF), developers are required to undertake ground gas risk assessments to demonstrate to the local planning authority that their proposed construction is adequately protected against any potential hazards associated with ground gas[2].

Accordingly, this section puts forward an assessment of the ground gas regime at the site, including a risk assessment for human health in relation to the proposed residential land use, and recommendations for the level of protective measures necessary.

Those recommendations are based on two rounds of monitoring; further rounds of monitoring are programmed to take place and will be reported as an addendum.

12.1 Guidance Documents

The following semi-quantitative assessment of potentially hazardous soil gases and recommended mitigation measures to protect buildings and their occupants, is based on the guidance provided within CIRIA Report C665, *Assessing risks posed by hazardous ground gases to buildings, 2007;* the NHBC Report*, Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present, March 2007;* the British Standard BS8485:2007, *Code of Practice for the Characterisation and Remediation from Ground Gas Affected Developments, 2007;* and *The Local Authority Guide to Ground Gas,* CIEH, September 2008.

Several organisations publish guidance with respect to ground gases. Many are concerned with the risks to buildings from explosion rather than health risks but some health-based standards are available in Waste Management Paper (WMP) 27 published by the Department of the Environment. WMP 27 states that a concentration of greater than 1% methane (CH_4) in a confined space is considered hazardous to health as the methane can act as an asphyxiant when oxygen is depleted.

The same paper states that carbon dioxide (CO_2) is a hazard to health at 1.5% by volume in air. The Health and Safety Executive (HSE) sets a workplace long-term exposure limit (i.e. an 8-hour time weighted average reference period) of 30ppm for carbon monoxide and 5ppm for hydrogen sulphide.

12.2 Preliminary Generic Quantitative Risk Assessment

The following preliminary ground gas assessment has considered the monitoring data collected on the 19th November and 2nd December 2015 and assumes a conservative worst case scenario using the highest recorded steady state methane and carbon dioxide readings.

12.3 Site Characterisation

Tier 1

Steady state methane concentrations have been recorded at or below the instrument's limit of detection (0.1%).

[2] Prior to the establishment of the NPPF in spring 2012, developer's actions regarding hazardous gases were set out in Planning Policy Statement 23 Planning and Pollution Control, 2004.

Steady state carbon dioxide levels were measured to equal or exceed the 1.5% (v/v) trigger level in six of the nine wells with a maximum recorded value on site of 6.4% v/v (EXB).

Carbon monoxide was detected in eight wells at trace levels with a maximum concentration of 5ppm (EX12).

Hydrogen sulphide was only detected at trace concentrations with a maximum concentration of 1ppm.

Elevated borehole emission flow rates were generally not detected. The only exception to this was an isolated reading from EXB of 2.2l/hr. Elevated borehole gas pressures were generally not recorded, the highest value recorded was 0.5mbar (BH101).

The carbon dioxide concentrations recorded at the Site do exceed the screening criteria and require further consideration of the risk from ground gases, and a Tier 2 assessment.

Tier 2

The assessment method adopted utilises 'Typical Maximum Concentrations' for initial screening purposes and risk based Gas Screening Values (GSVs) for consideration where typical maximum concentrations are exceeded. The GSVs are calculated by multiplying the borehole gas volume flow rate by the concentration of the particular gas being considered as defined by Wilson and Card (1999)[3].

The proposed redevelopment is residential; hence the Site has been classified as a Situation A development, with the gas regime to be based on the system proposed by Wilson and Card.

In order to complete a conservative assessment, the maximum steady state values encountered on site during the monitoring period have been used. Given the maximum recorded gas value (6.4% CO_2) and the maximum flow rate (2.2 l/hr), the preliminary Gas Screening Value (GSV) has been calculated and is shown in Table 12-1.

Table 12-1
Gas Screening Value Calculations

Gas	GSV Calculation	GSV (l/hr)	Hazard Potential[4]
Carbon Dioxide	(6.4/100) x 2.2	0.141	Low (<0.7)

A GSV of 0.141 l/hr CO_2 represents a low hazard potential gas regime. Based on the worst case GSV, the gas regime identified by the initial two monitoring events falls within CIRIA Characteristic Situation (CS) 2 (Low Risk). The GSV was calculated from the highest steady state CO_2 concentration and gas flow rate in EXB.

Although results fall within CS2, further monitoring over an extended period of time would be required to establish a CS value to be adopted in any future redevelopment design proposals.

The current monitoring program is ongoing and the final results will be presented as an addendum to this report.

[3] Reliability and risk in gas protection design. Card and Wilson. Ground Engineering. 1999.
[4] Table 1 (Page 9), BS8485:2007

12.4 Ground Gas Discussion

Ground gas protection measures are likely to be required in any planned structures built on Site and should be based upon the findings of an extended period of further soil gas monitoring over periods of differing barometric pressure. SLR considers the most likely source of the carbon dioxide recorded by this investigation is the degradation of residual petroleum hydrocarbons.

Biological degradation of petroleum hydrocarbons has the potential to act as sources of the bulk ground gases carbon dioxide and methane. For these gases to present a risk to occupants of buildings, it requires their presence in the ground combined with flow towards the surface.

Landfill sites have the potential to generate bulk gases such that significant flow is recorded between the source and the ground surface. Degradation of petroleum hydrocarbons within subsurface soils or groundwater results in a lower rate of gas generation and measurement of significant gas flow from monitoring points is rarely recorded.

Measurement of bulk gases from a petroleum hydrocarbon source combined with a low flow rate can result in petroleum sites being classified as Green or Amber 1 (for a Situation A development) or Characteristic Situation 1 or 2 (for a Situation B development), requiring limited or low-level gas protection measures, which is consistent with the preliminary measurements undertaken by SLR.

The potential for petroleum hydrocarbons to act as a source of ground gas is discussed in CIRIA C665.

13.0 GENERIC QUANTITATIVE RISK ASSESSMENT

13.1 GQRA Assessment Methodology

13.1.1 Human Health Assessment Methodology

With regard to the assessment of the results, it should be noted that the generic risk assessment criteria are drawn from several sources of guidance, some from non-statutory guidance and some informal. SLR uses a combination of assessment criteria that are currently available to assist in the screening of soil data prior to determining whether further action is required. The following assessment criteria have been used for the assessment of contaminant levels in soil:

- Soil Guideline Values – since March 2002, the Department for Environment, Food and Rural Affairs (Defra) and the EA have been involved in publishing a series of reports that provide a scientifically based framework for the assessment of risks to human health from land contamination;
- LQM/CIEH Generic Assessment Criteria (GAC) – Land Quality Management and the Chartered Institute of Environmental Health have published GACs derived following CLR technical guidance and using the EA's CLEA UK model;
- LQM/CIEH Suitable for Use Levels (S4ULs) – in 2015 Land Quality Management and the Chartered Institute of Environmental Health have published S4ULs derived following CLEA technical guidance and using the EA's CLEA UK model, with updated toxicological and exposure parameters and land uses following the publication of the draft C4SLs.
- SLR's own in-house screening criteria derived following CLR technical guidance using the CLEA UK model;
- CLAIRE / AGS / EIC Generic Assessment Criteria (GAC) – these institutions have published publically available GACs derived following CLR technical guidance and using the EA's CLEA UK model, and
- Category 4 Screening Levels (DEFRA).

The SGVs and GAC have been developed as a guide for regulators and developers; if the concentrations recorded on site are lower than the SGV / GAC it is generally accepted that the contaminants in question are present at acceptable concentrations which aren't capable of putting human health at significant risk - as long as the humans make normal use of the site. An exceedance of these values indicates to an assessor that soil contaminant concentrations need to be considered further. SGV / GACs combine both authoritative science and policy judgements.

The SGVs, GAC and S4ULs / C4SLs used have been derived using the CLEA model according to several typical land uses:

- Residential (with and without vegetable growth);
- Allotments;
- Commercial/Industrial;
- Public Open Space residential (POS1);
- Public Open space park (POS2).

The proposed development at the Site falls within a residential land use. The proposed site layout in Appendix A indicates the site will comprise mainly buildings and hardstanding, with some peripheral landscaped areas. The selected GAC for the Site are therefore for the

standard residential use including the growth of vegetables, although in practice the growth of vegetables is unlikely.

The individual sample results for each contaminant were compared to generic assessment criteria (GAC) comprised of published soil guideline values (SGVs) and screening criteria derived using CLEA UK. The GAC and their sources are detailed in Appendix L and the full laboratory results are provided in Appendix I.

The GAC screening sheets are included in Appendix I, with samples exceeding the GAC highlighted in red.

13.2 Generic Quantitative Risk Assessment

When compared against the Residential GACs, the results for metals were lower than the screening criteria indicating an absence of widespread and significant risk from these potential contaminants.

Exceedances of the PAH GAC were recorded in four soil samples for benzo(a)pyrene (BH102 (0.2m), BH104 (0.3m) and BH201 (0.4m and 0.9m). The soil sample from BH104 (0.3m) also contained PAH exceedances for Benzo(a)anthracene, chrysene, and benzo(b)flouranthene.

TPH exceedances were detected in BH104 (0.3m) and BH201 (4.5m and 6.0m).

Having performed the GQRA it is appropriate to ask if the potential contaminant linkage identified by the preliminary risk assessment exists and, if present, to gauge their significance.

The results of the soils chemical analysis and the human health GQRA performed to date demonstrate that the majority of the contaminants detected entrained within the soils do not exceed the Human Health GAC.

The GAC utilised in the GQRA are for the most sensitive human health linkage of direct ingestion. As the Site is to be covered over most of its area by hardstanding, direct contact is limited. Where soft landscaping is proposed, a cover system comprising clean soil will be required above the in-situ soils to break the human contact pathway and support future plant growth once the development is built.

Exceedances of the GAC in BH201 are located at depth; at least 4.5m depth which is considered to be too great for potential human contact with the soil.

14.0 SUMMARY AND CONCLUSIONS

Site Setting and Description	The Site is located on the western side of Reading, approximately 1km from Reading town centre and can be divided into two separate halves on the basis of its past land use: 1) Northwest – a former petrol filling station (PFS); 2) Southeast - a former vehicle maintenance workshop (Garage).
History	The Site was agricultural land until construction of a Garage in the 1960s. Additions to the Workshop part of the Site were evident from the addition of buildings in the 1970s and 1980s. Surrounding land uses were clay pits to the north, east and west until the pits were replaced with residential development from the 1930s to the 1960s and construction of the industrial units 20m north in the 1960s/70s.
Geology	The boreholes recorded a variably mixed sequence of fine grained and coarse grained Made Ground that extended to 4.1m depth beneath the PFS. A thin layer of Made Ground was encountered beneath the Garage and comprised clay with subordinate fragments of flint, brick, concrete and clinker. The Lambeth Group solid geology was encountered beneath the Made Ground and comprised interbedded sand, clayey sand and sandy clay. The Chalk was recorded at depths of between 12.2m (BH201) and 13m (BH202).
Hydrology	The nearest identified surface waters are a pond 400m to the southeast, Holly Brook 1.4km to the south and the River Thames 1.6m to the north. No surface water abstractions were identified within 1km.
Hydrogeology	Groundwater was recorded in the Lambeth Group strata at depths of between 7.555m (EXB) and 8.783m (BH202). The groundwater elevations indicate a continuous groundwater body within the Lambeth Group and a north to northeasterly flow direction. Groundwater was recorded in the deeper chalk aquifer at between 23.177m (MW7) and 23.950m (MW103) with a southerly flow direction.
Soil Quality	Exceedances of the PAH GAC were recorded in four soil samples for benzo(a)pyrene and a single soil sample from BH104 (0.3m) also contained PAH exceedances for Benzo(a)anthracene, chrysene, and benzo(b)flouranthene. TPH exceedances were detected in BH104 (0.3m) and BH201 (4.5m and 6.0m). Asbestos fibres were detected in a single soil sample however the quantification analysis revealed a concentration of less than 0.001%. The results of the soils chemical analysis and the human health GQRA performed to date demonstrate that the majority of the contaminants detected entrained within the soils do not exceed the Human Health GAC. The GAC utilised in the GQRA are for the most sensitive human health linkage of direct ingestion. As the Site is to be covered over most of its area by hardstanding, direct contact is limited. Impacts detected from at least 4.5m depth are considered too deep for potential future human contact. Where soft landscaping is proposed, a cover system comprising clean soil will be required above the in-situ soils to break the human contact pathway and support future plant growth once the development is built. New utility corridors and the below ground elements of buildings should be specified with the appropriate level of resistance to chemical attack.
Water Quality	Non aqueous phase liquid (NAPL) was not recorded in any of the boreholes. Lambeth Group Groundwater Quality – TPH, BTEX and MTBE concentrations have

	reduced since 2011 with dissolved phase concentrations of petroleum hydrocarbons consistently below SSAC. Chalk Groundwater Quality – TPH, BTEX and MTBE concentrations were not detected in the samples analysed.
GQRA	Isolated soil impacts were found to exceed the GQRA screening criteria and are not considered to require further assessment in relation to risks to human health provided a cover system of clean topsoil is installed in future garden and soft landscaping areas to support future plant growth. Hardstanding will cover much of the property breaking the direct contact and ingestion pathways over the majority of the Site. Groundwater impacts did not exceed the SSAC screening criteria for samples from the Lambeth Group geology and dissolved phase impacts were not detected in the Chalk.
Ground Gas Risk Assessment	Concentrations of carbon dioxide were recorded and exceeded the Tier 1 screening values. The concentrations of hazardous ground gases are considered to represent a potential risk to future site occupants and building infrastructure and gas protection measures are likely to be required in any buildings. Further soil gas monitoring is recommended to characterise the soil gas regime and allow development of an appropriate scheme of soil gas protection measures.
Conceptual Site Model	The conceptual site model has identified potential linkages but in the absence of any widespread and significant sources being present in either the soil or groundwater in the area investigated the risk to potential human health and structures identified are not considered to be significant. Elevated concentrations of hazardous soil gases have been identified indicating that further evaluation will be required and this is ongoing. With respect to pollution of groundwater (principal and Secondary A bedrock aquifers) and surface waters, SLR does not consider the low detections of contaminants are indicative of a significant risk to controlled waters.
Conclusions	SLR concludes that no further action is required with regards to groundwater. Widespread soil impacts in excess of GAC have not been detected however the present Made Ground is unsuitable for plant growth and contains isolated concentrations of contaminants in excess of the GAC. A cover system of clean topsoil is recommended for areas that will be soft landscaped. The ground gas assessment is ongoing and will be reported as an addendum report. Buildings scheduled for demolition must have an appropriate level of asbestos survey carried out to negate the risk of future human exposure to asbestos.

15.0 CLOSURE

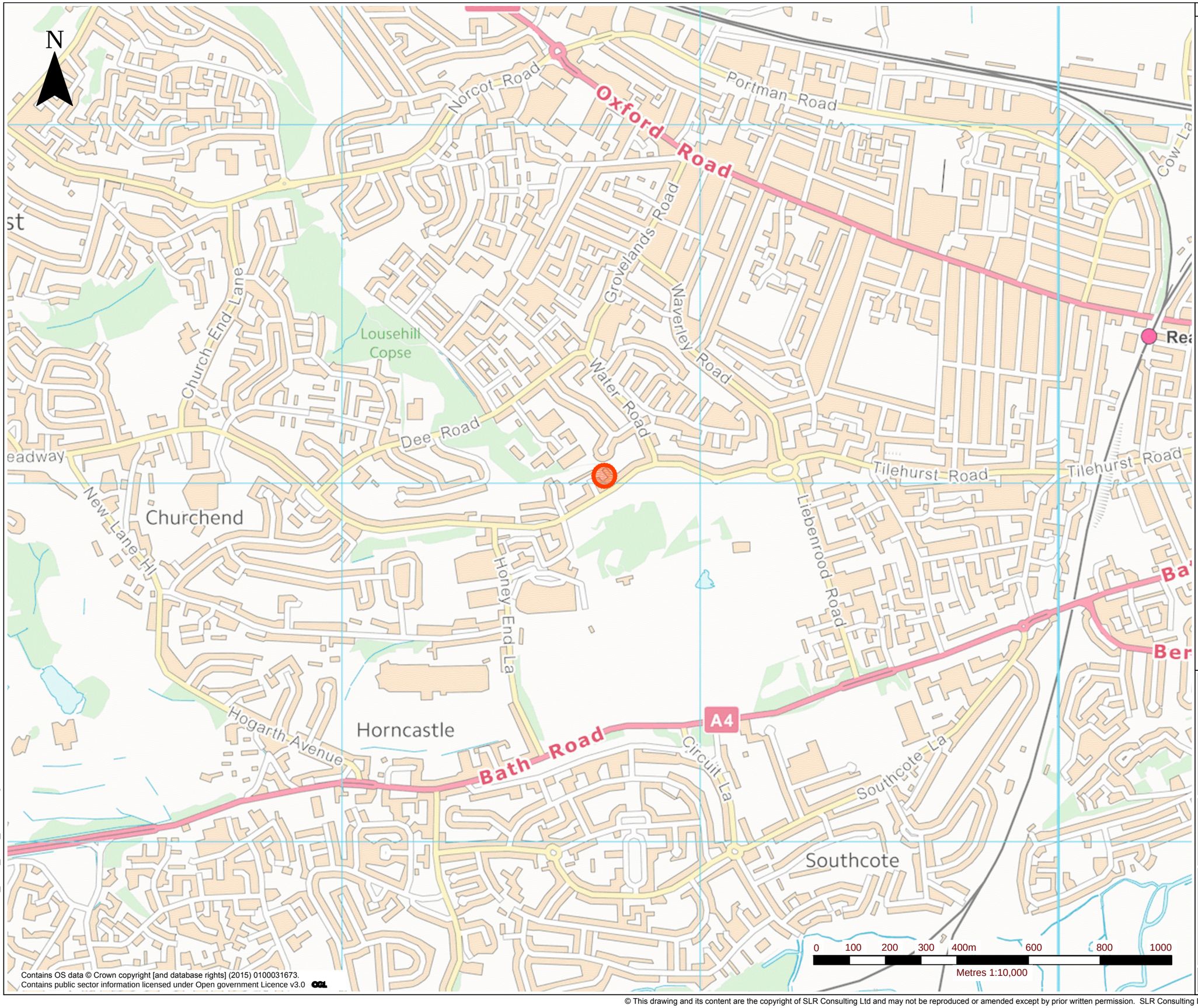
This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected during the desk study, site visits and subsurface investigations, pertaining particularly to the identification of potential soil, water and ground gas contamination within the context of the desk study findings.

The evaluation and conclusions presented do not preclude the existence of contamination, which could not reasonably have been revealed by the desk studies and site visit, nor do they preclude variation of conditions between test holes or the existence of other chemical compounds. Hence, this report should be used for information purposes only and should not be construed as a comprehensive characterisation of all site conditions. Information provided to SLR staff at the subject site has been accepted as being accurate and valid.

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client.

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LEGEND

SITE LOCATION

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BROOKLANDS GARAGE

ENVIRONMENTAL ASSESSMENT

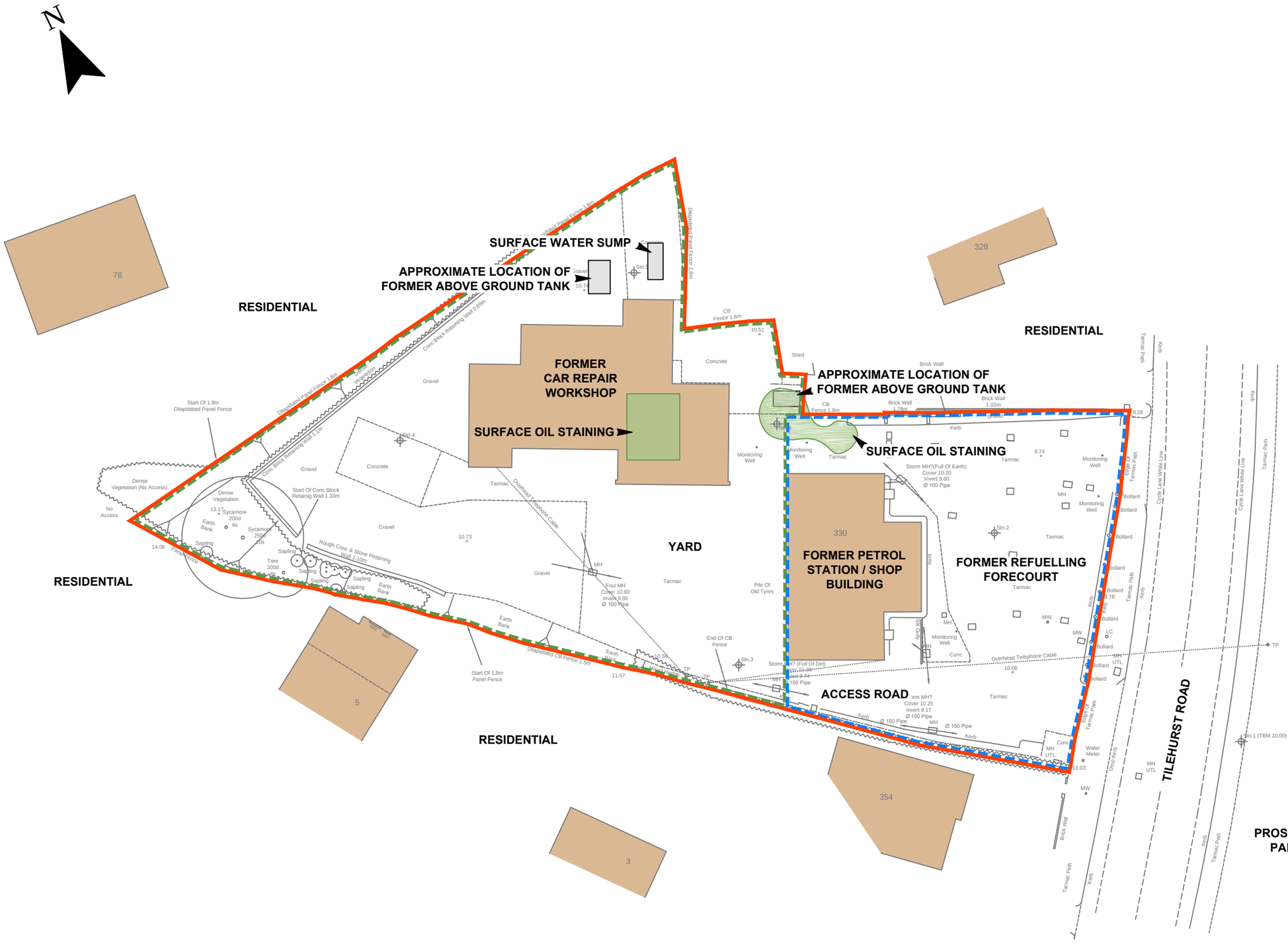
SITE LOCATION PLAN

DWG No. 1

Scale	Date
1:10,000 @ A3	OCTOBER 2015

05913.00001.19.001.0_SITE_LOC_PLAN.dwg

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NOTES

1. DRAWING IS BASED ON PETER JH ROBERTS AND ASSOCIATES SURVEY DRAWING, NUMBER BG-1, DATED SEPTEMBER 2013.

LEGEND

- SITE BOUNDARY
- FORMER CAR REPAIR GARAGE
- FORMER PETROL FILLING STATION

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BROOKLANDS GARAGE

ENVIRONMENTAL ASSESSMENT

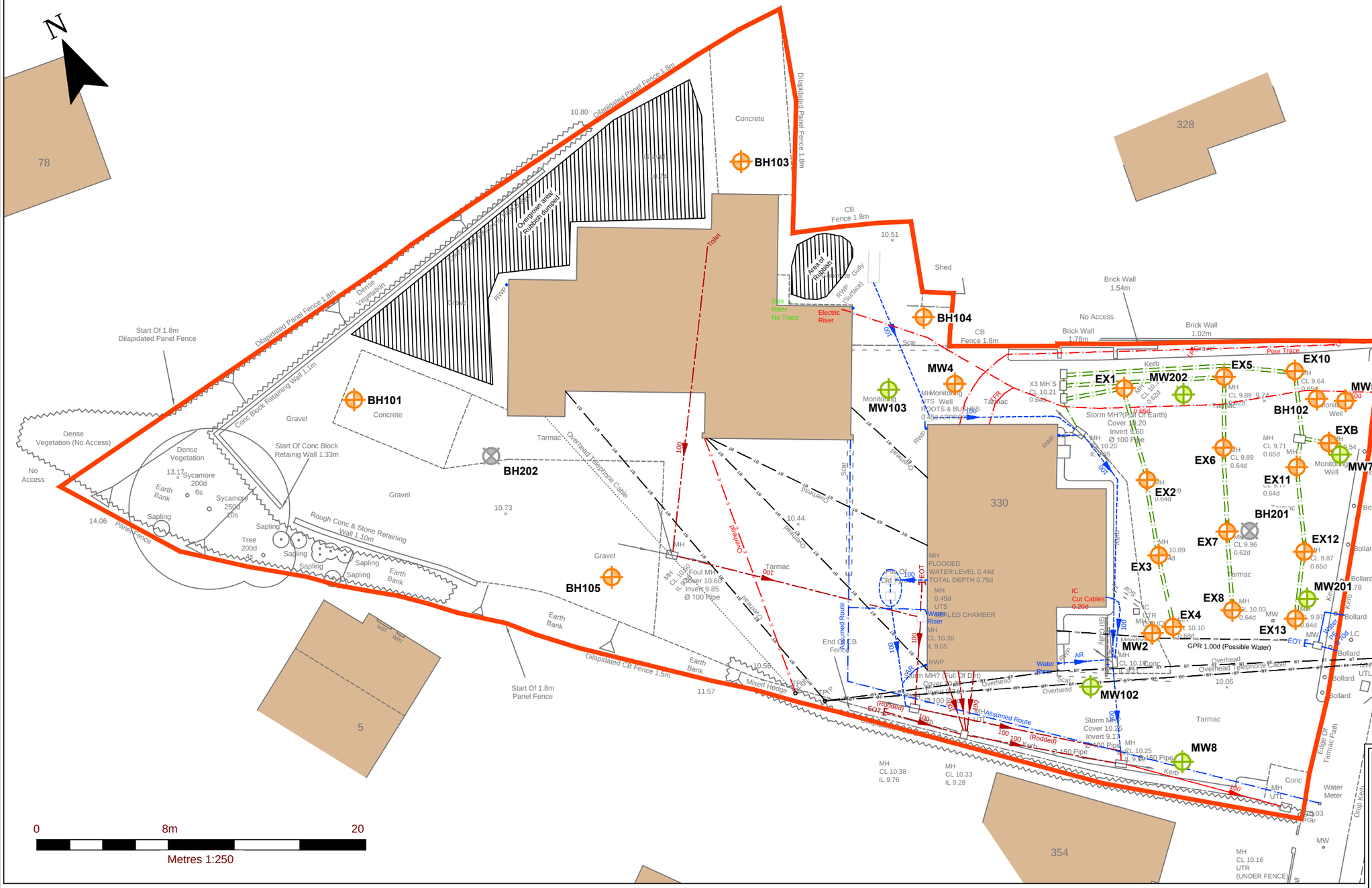
SITE LAYOUT SKETCH

DWG No. 2

Scale	Date
NTS (A3)	OCTOBER 2015

05913.00001.19.002.1_SITE_SKETCH_PLAN.dwg

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LEGEND

- SITE BOUNDARY
- DEEP BOREHOLE (CHALK) — MW
- APPROXIMATE BOREHOLE LOCATIONS
- ARCADIS BOREHOLES (2002 - 2010)
- SHALLOW BOREHOLE (LAMBETH GROUP) — MW
- REMEDIAL BOREHOLE (LAMBETH GROUP) — EX
- SLR CONSULTING LTD (2015)
- DYNAMIC SAMPLE BOREHOLE (LAMBETH GROUP) — BH
- SLR CABLE PERCUSSION BOREHOLE — BH

NOTES

1. DRAWING IS BASED ON PETER JH ROBERTS AND ASSOCIATES SURVEY DRAWING, NUMBER BG-1, DATED SEPTEMBER 2013.

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- COMBINED DRAINAGE
- ELECTRICITY
- WATER
- BRITISH TELECOM
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SLR global environmental solutions
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BROOKLANDS GARAGE

ENVIRONMENTAL ASSESSMENT

BOREHOLE LOCATION PLAN

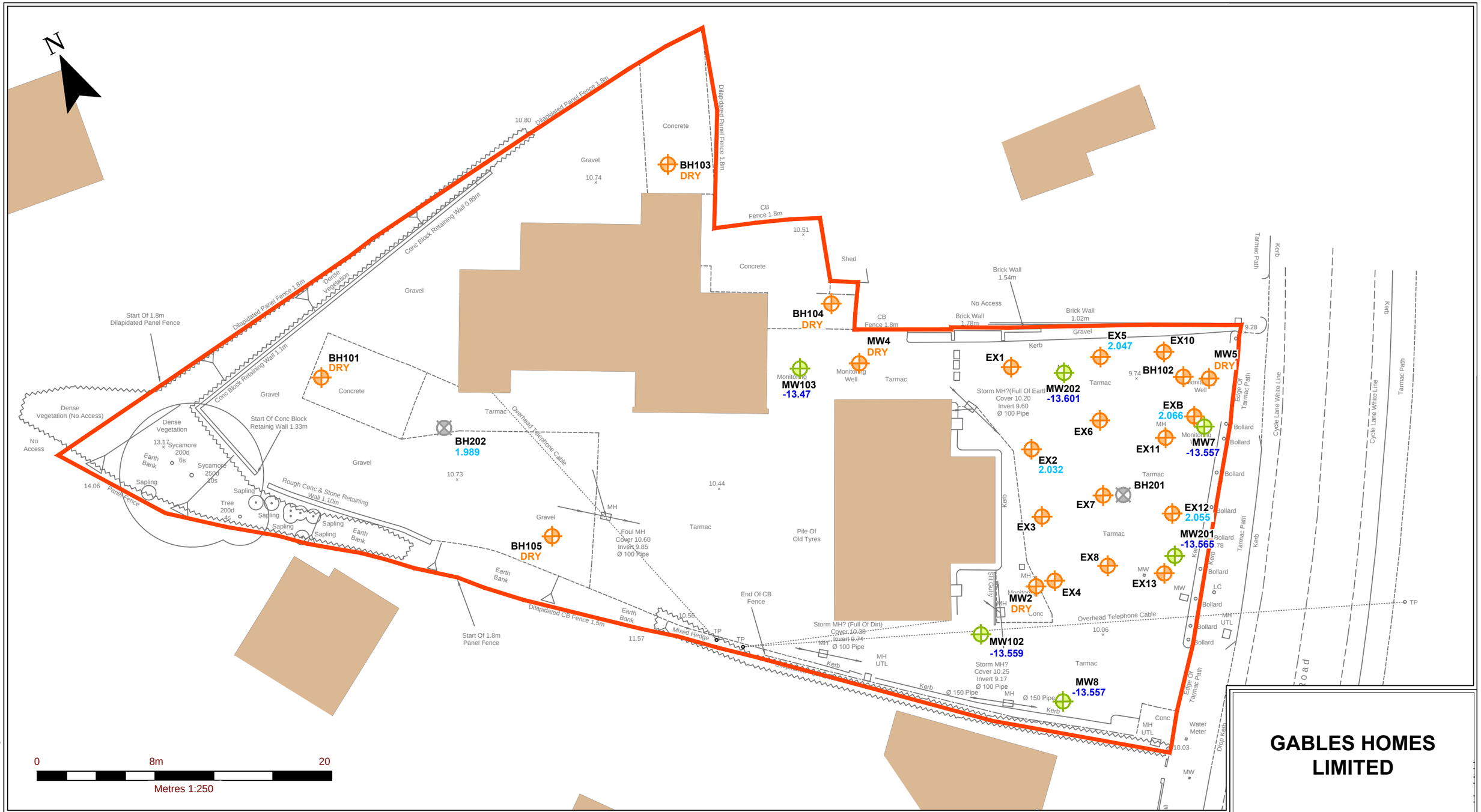
DWG No. 3

Scale: 1:250 @ A3

Date: DECEMBER 2015

05913.00001.19.003.1_BH_LOC_PLAN.dwg

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LEGEND

- SITE BOUNDARY
- APPROXIMATE BOREHOLE LOCATIONS
- ARCADIS BOREHOLES (2002 - 2010)
- MW — SHALLOW BOREHOLE (LAMBETH GROUP)
- EX — REMEDIAL BOREHOLE (LAMBETH GROUP)
- MW — DEEP BOREHOLE (CHALK)
- SLR CONSULTING LTD (2015)
- BH — DYNAMIC SAMPLE BOREHOLE (LAMBETH GROUP)
- BH — SLR CABLE PERCUSSION BOREHOLE
- 2.078 — GROUNDWATER ELEVATION - CHALK
- 2.032 — GROUNDWATER ELEVATION - LAMBETH GROUP
- DRY — DRY WELL

NOTES

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GROUNDWATER ELEVATIONS

DWG No. 4

Scale 1:250 @ A3

Date DECEMBER 2015

05913.00001.19.004.1_GROUNDWATER_ELEVATIONS.dwg

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Scale Bar 1:250

1m 5m 10m 20m

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Client	GABLE HOMES LTD
Status	PLANNING
Scale	1:250
Drawing Size	A3
Drawn By	TVT
Checked By	IC
Date	04.12/14

Drawing Title	PROPOSED COLOUR SITE PLAN
Job-Dwg No	12086-120
Rev	–

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1.0 FIELD WORK

1.1 Principal Tasks

The Site works were undertaken in October and November 2015 and comprised the following main tasks:

- public utility searches and utility tracing survey;
- dynamic sample (DS) boreholes;
- light cable percussion (LCP) boreholes;
- well development, groundwater monitoring and sampling.

Each of the above tasks is discussed below and the approximate exploratory hole locations are shown on Drawing 3.

1.2 Utility Clearance

Public utility records and site drawings were reviewed to ensure that boreholes were positioned clear of known underground and overhead services.

Site Vision Surveys carried out a utility tracing survey on 22nd October 2015.

At all of the borehole locations hand excavated starter pits were dug to 1.20m[1] and each location was screened with a cable avoidance tool to ensure the absence of unrecorded services.

1.3 Drive in Dynamic Sample Boreholes

A total of 5 drive-in (window) dynamic sample (DS) boreholes were sunk using a mini-tracked rig and temporary stainless steel casing between 5th and 6th November 2015.

On completion, soil gas monitoring wells were installed in four of the DS boreholes (BH101, BH103, BH104 and BH105). The wells comprised a 50mm diameter HDPE access tube, slotted (screened) from its base to 1.0m below ground level and surrounded by a granular filter. The well casing was surrounded with bentonite and capped above ground with a lockable security cover that was concreted into place.

Details of the individual well installations are shown on the appended borehole logs.

1.4 Light Cable Percussion Boreholes

Two boreholes (BH201 and BH202) were sunk using conventional cable percussive techniques in 200mm and 150mm diameter temporary steel casing.

Small disturbed samples were recovered throughout the boring depth for screening for VOCs and for laboratory testing.

On completion of boring, the boreholes were backfilled with hydrated bentonite pellets up to the desired monitoring interval. Monitoring wells were installed in the LCP boreholes to

[1] All depths referred to in this report are in metres below existing ground level unless otherwise stated.

permit the monitoring and sampling of groundwater and testing for hazardous soil gases as follows:

- BH201 – shallow well installation (4.1m) within Made Ground for soil gas monitoring;
- BH202 – deeper well installation (10.1m) within Lambeth Group geology for groundwater monitoring and sampling.

The wells comprised a 50mm diameter HDPE access tube with a slotted screen section surrounded by a geotextile wrap and granular filter and above the screen zone was plain casing surrounded with bentonite. The wells were capped at ground level with a gas valve and lockable security cover that was concreted into place.

Details of the individual well installations are shown on the appended borehole logs.

1.5 Soil Sampling

Soil samples from the boreholes were inspected and logged on site by a consultant from SLR. Samples were recovered at approximately 0.5m to 1.0m intervals and screened for volatile organic compounds (VOCs) using a MiniRae Lits photoionisation detector with 10.6eV lamp calibrated to isobutylene. A set of duplicate subsamples were also recovered for laboratory chemical analysis.

The results of the onsite screening are detailed on the appended borehole logs.

Soil samples were selected for environmental laboratory analysis based on the following criteria:

- Exhibited high head space screening values.
- Visual or olfactory evidence of impact.
- Representative of different depths or lithologies.

1.6 Groundwater Monitoring and Sampling

Groundwater sampling has been undertaken on three occasions:

- 15th October 2015 – sampling of the existing Chalk wells;
- 21st – 29th October 2015 – sampling of the existing Lambeth Group wells;
- 19th November 2015 – sampling of the of the existing and newly installed Lambeth Group wells.

On each occasion, the level of groundwater and presence/absence of non-aqueous phase liquid (NAPL) in each well was recorded using an electronic interface probe.

On 15th October 2015 groundwater sampling of selected Chalk wells was undertaken using dedicated disposable bailers. Prior to sampling, three well volumes were removed using inertial tubing and foot valves powered by a surface mounted pump.

Between 21st and 29th October 2015 the existing Lambeth Group wells were sampled using a surface mounted peristaltic pump and low flow techniques in line with the US EPA

methodology[2]. Dedicated disposable sampling tubing was used for each well during the low flow sampling.

On 19th November 2015, BH202 was developed with a peristaltic pump set to high flow rate by removing between three and ten well volumes. Where it failed to recharge, it was pumped dry several times. BH202 together with selected Lambeth Group wells were then sampled using a surface mounted peristaltic pump and low flow techniques in line with the US EPA methodology . Dedicated disposable sampling tubing was used for each well during the low flow sampling.

All the samples were placed in laboratory supplied vessels and immediately stored with ice in cool boxes. Samples were forwarded under chain of custody to Jones Environmental Laboratory Ltd (Jones), a UKAS and MCERTS accredited laboratory in Deeside.

1.7 Soil Gas Testing

Two soil gas monitoring visits were carried out on 19th November 2015 and 2nd December 2015 using an infrared gas analyser (Geotechnical Instruments GA5000).

The monitoring comprised:

- measurement of methane (% volume and % LEL), carbon dioxide (% volume), hydrogen sulphide (ppm), carbon monoxide (ppm) and oxygen (% volume);
- measurement of gas flow rates, borehole gas pressures, atmospheric pressure, temperature and groundwater levels.

A summary of the results are presented in the appendix with a copy of the equipment calibration certificate.

[2] Puls, R W & Barcelona M J, Low-Flow (Minimal Draw Down) Groundwater Sampling Procedures. EPA/540/S-95/504 April 1996.

Appendix C - Historical Map Summary

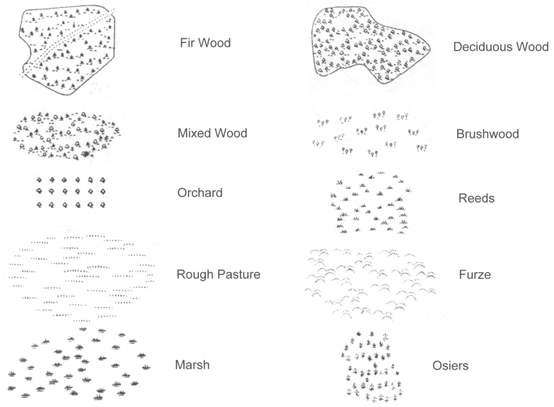
The following table presents a summary of the history of the Site from a review of Ordnance Survey (OS) map extracts.

Site History Summary

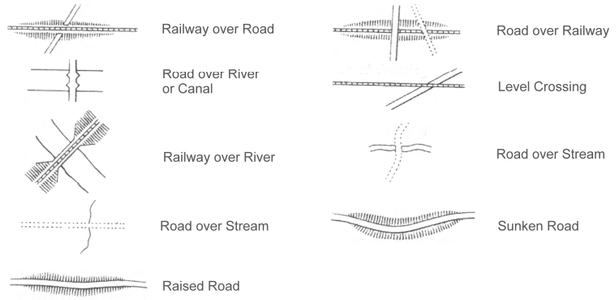
Date	On Site	Off Site
1881	The Site is recorded as unoccupied agricultural land.	A single residential property is adjacent to the east. With this exception, the Site is surrounded by unoccupied agricultural land.
1898-1900	No significant change	A Clay Pit is recorded 20m southeast and an Old Clay Pit is located 50m southwest. A Brick and Tile Works is recorded 100m north and a larger Brick, Tile and Pottery Works 200m northeast / east.
1910-1911	No significant change	The Brick and Tile Works to the north has encroached to within 50m of the Site. The Clay Pit 20m southeast is no longer shown. An Old Brick Works is shown 150m west. Residential dwellings have been constructed in the vicinity including adjacent to the east and 80m west.
1932	No significant change	A miniature Rifle Range is shown 100m north within the grounds of the Brick and Tile Works. Further residential development has taken place 100m west and 50m east. Allotment gardens are shown adjacent to the north east. The site of the Clay Pit to the southeast is now parkland.
1938	No significant change	No significant change
1960-1962	The Site is now a Garage (petrol filling station) with a central building resembling the present day layout and a single small structure in the northeast of the Site.	Residential development now makes up most of the surrounding area, with the remnants of Clay Pits and Brick and Tile Works still visible as pits or old pits. Houses are shown adjacent to the west. The allotment gardens adjacent to the northeast are also residential and the Brick and Tile works to the north has been converted to woodland. Land to the south is now referenced as a golf course.
1968-1976	Three additional, small structures are marked on the Site adjacent to the existing building.	Light industrial units are shown 50m to the north.
1981-1982	A new building has been constructed north of the existing building, partly resembling the present day workshop layout.	No significant change / map is unclear.
1991-1993	A canopy is shown in the south of the Site.	No significant change
2002-2014	No significant change	No significant change

County Series 1:10,560 scale

VEGETATION



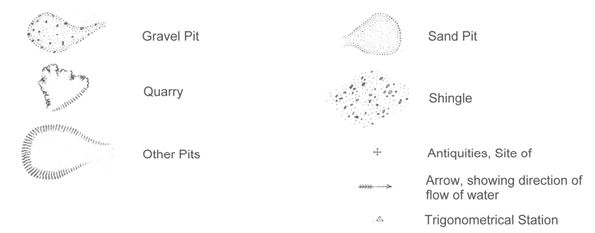
ROADS



RAILWAYS



GENERAL FEATURES



BOUNDARIES



National Grid 1:10,000 scale

HEIGHTS (METRES)

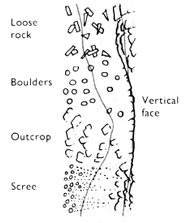
Values are given in metres above mean sea level at Newlyn.

Surface heights determined by: ground survey • 163m; air survey

Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

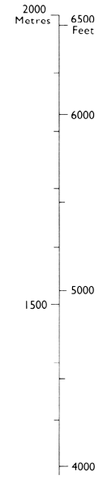
Contours are at 5 metres vertical interval.

ROCK FEATURES



CONVERSION SCALE

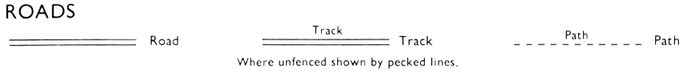
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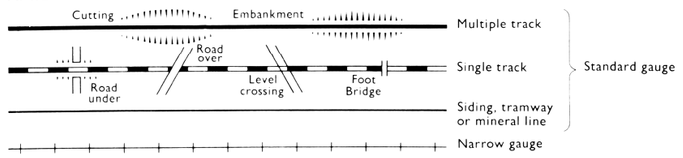
ABBREVIATIONS

BP,BS	Boundary Post or Stone	PO	Post Office
Ch	Church	PC	Public Convenience
CH	Club House	PH	Public House
F Sta	Fire Station	S	Stone
FB	Foot Bridge	Spr	Spring
Fn	Fountain	TCB	Telephone Call Box
GP	Guide Post	TCP	Telephone Call Post
MP,MS	Mile Post or Stone	TH	Town Hall
P	Pole or Post	W	Well
Pol Sta	Police Station	Y	Youth hostel

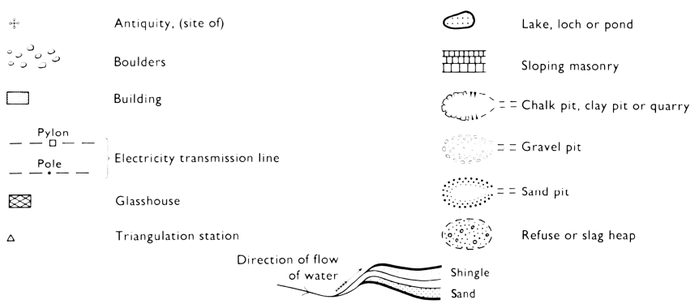
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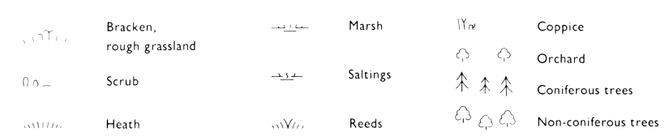
RAILWAYS



GENERAL FEATURES



VEGETATION



In some areas bracken ( ) and rough grassland ( ) are shown separately.

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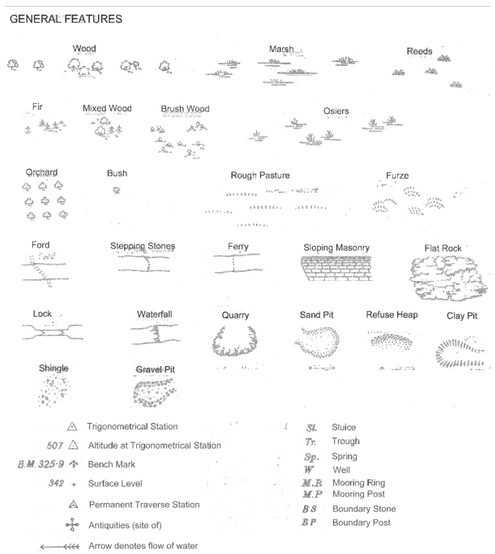
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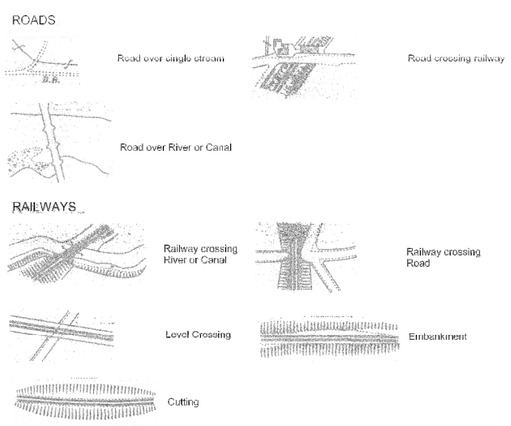
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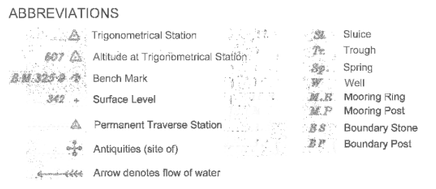
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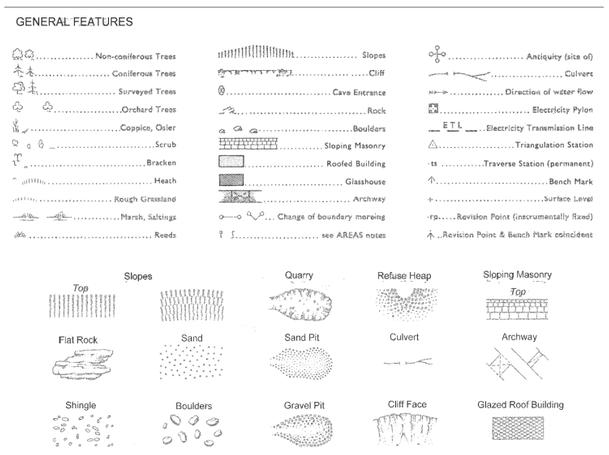
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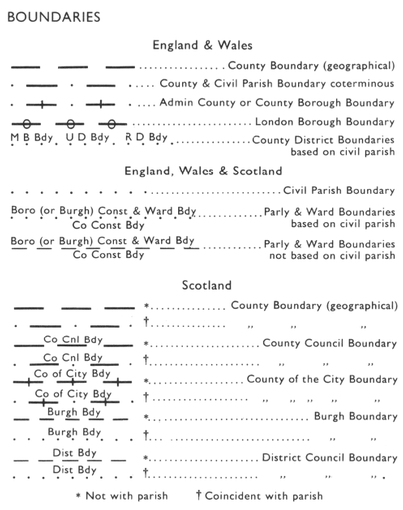


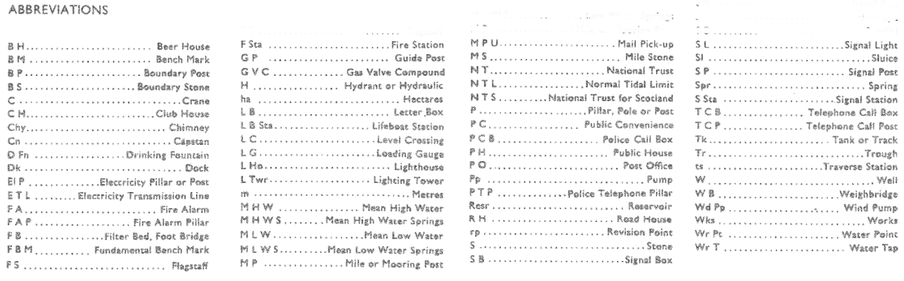




National Grid 1:2,500 / 1:1,250 scale







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Grid Ref: 468736, 173021

Map Name: County Series

Map date: **1881**

Scale: 1:2,500

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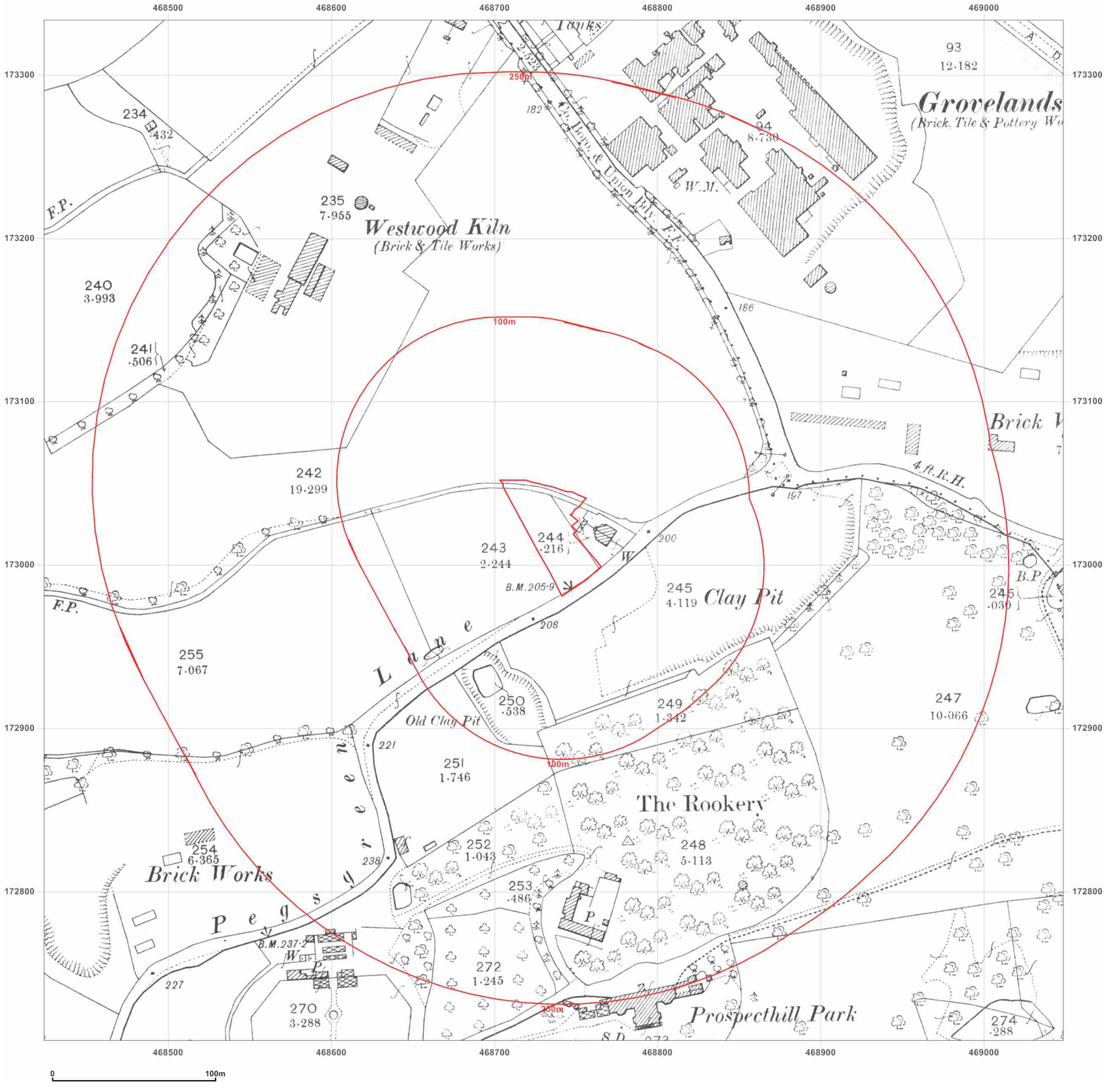
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Map Name: County Series

Map date: **1911**

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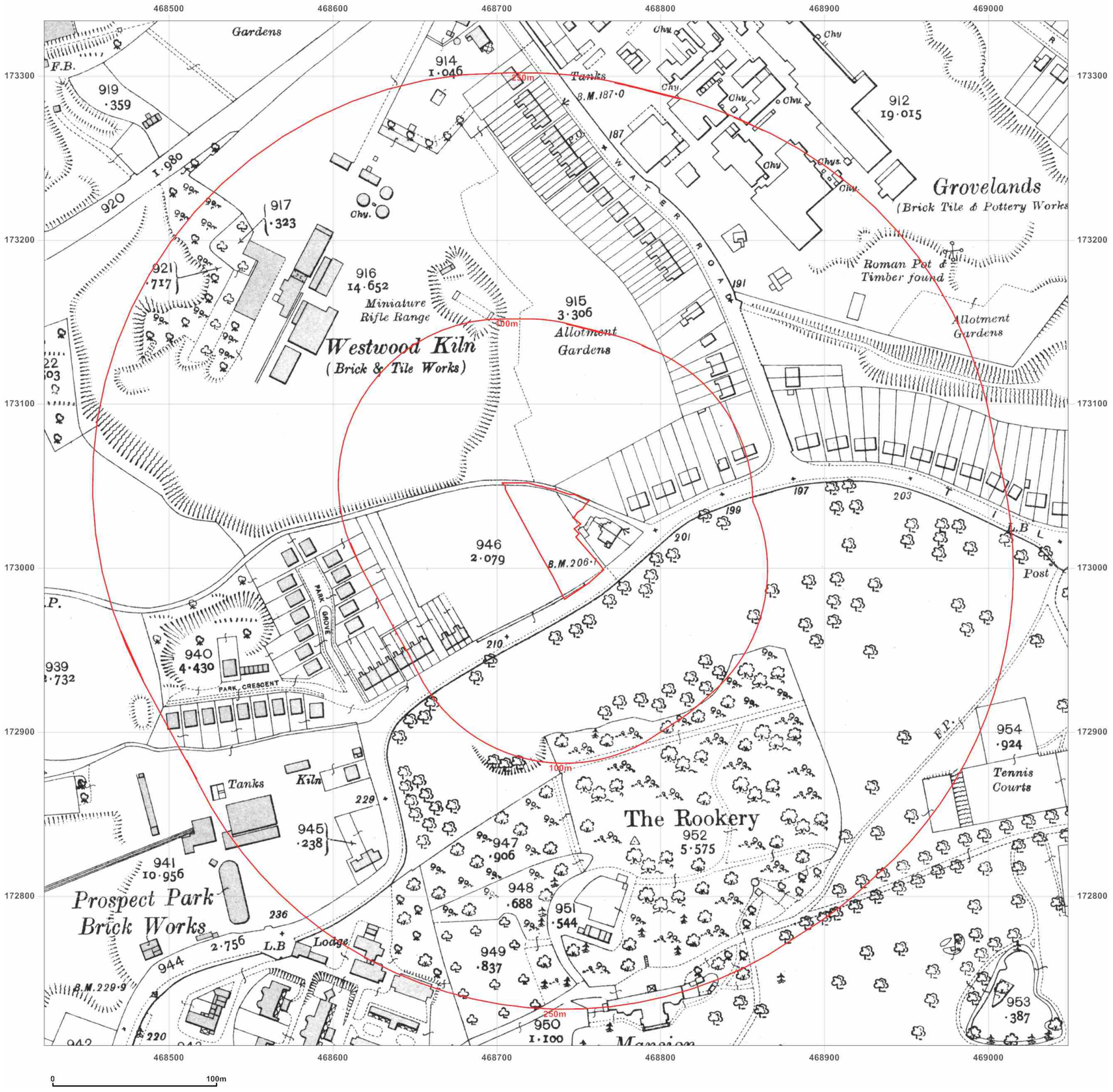
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Map Name: County Series

Map date: **1932**

Scale: 1:2,500

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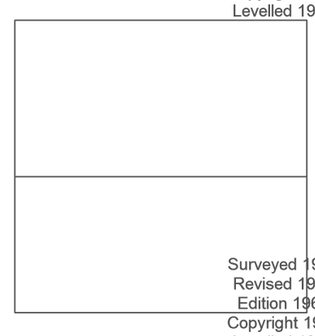
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Edition 1962
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Grid Ref: 468736, 173021

Map Name: National Grid

Map date: **1961**

Scale: 1:1,250

Printed at: 1:2,000

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Grid Ref: 468736, 173021

Map Name: National Grid

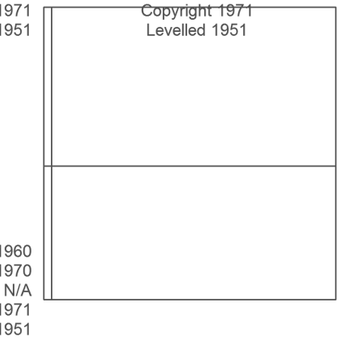
Map date: **1971**

Scale: 1:1,250

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Edition N/A
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Map Name: National Grid

Map date: **1981**

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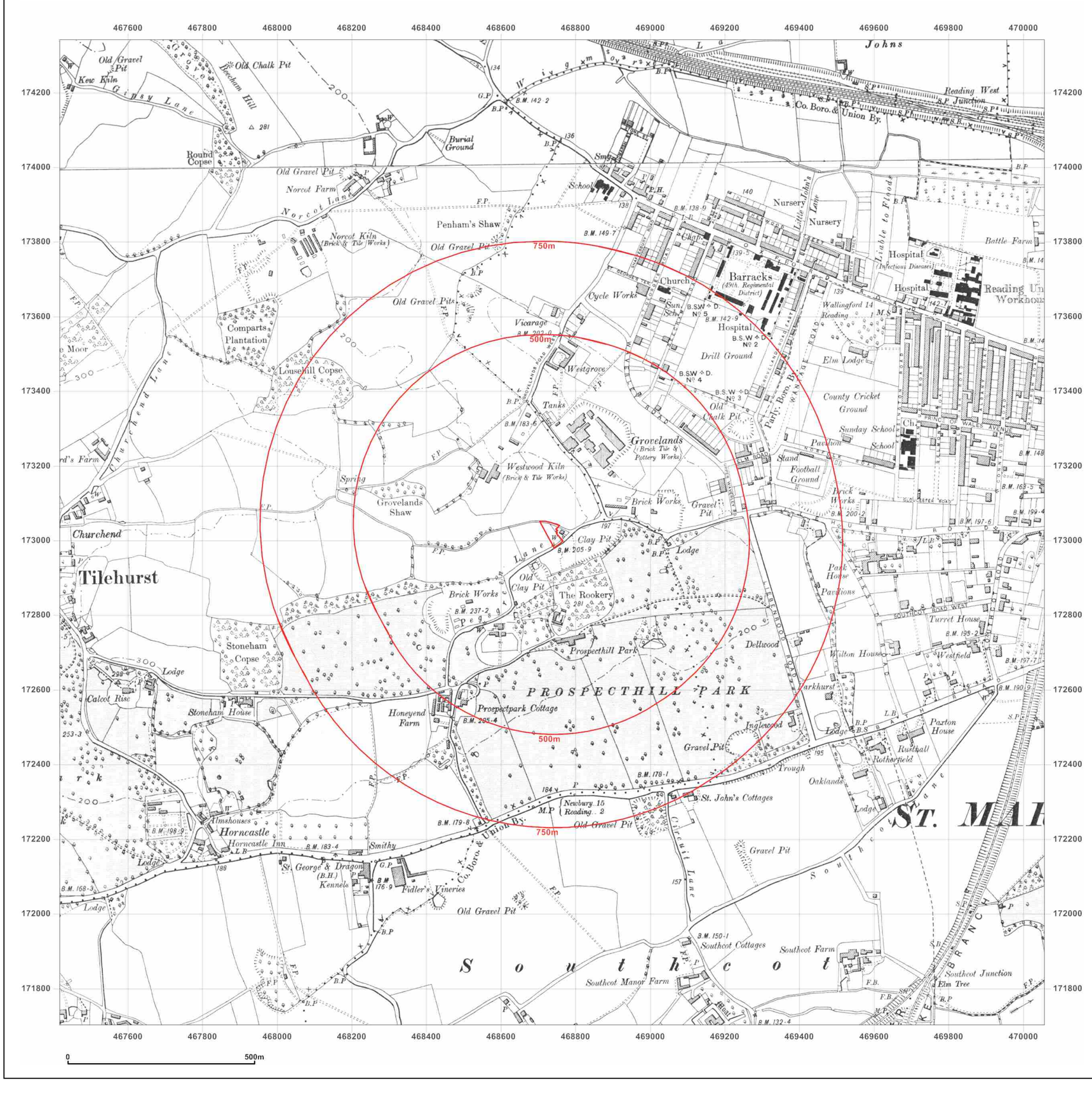
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Map Name: County Series

Map date: **1898-1900**

Scale: 1:10,560

Printed at: 1:10,560

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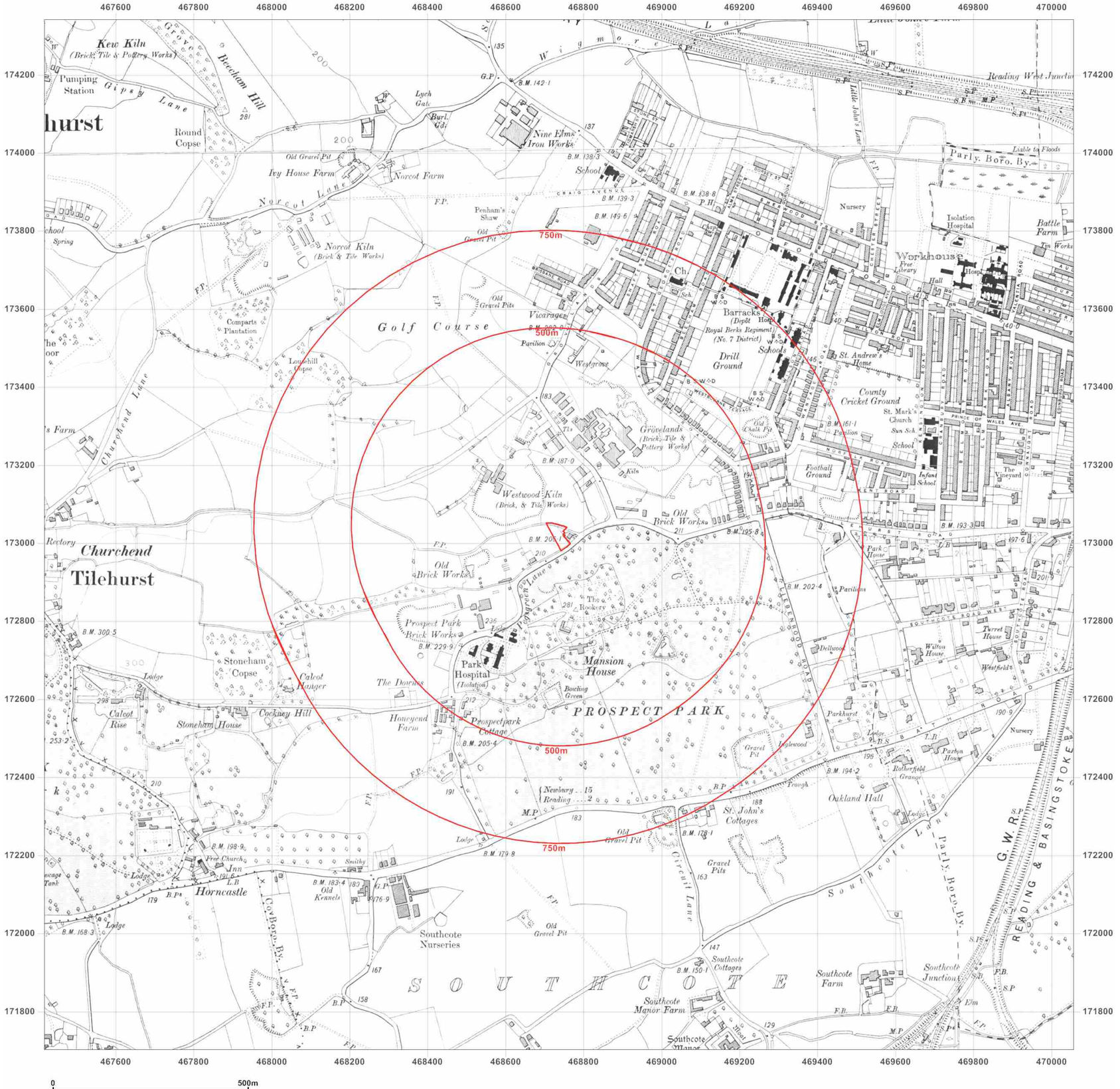
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Map Name: County Series

Map date: **1910**

Scale: 1:10,560

Printed at: 1:10,560

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Map Name: County Series

Map date: **1932**

Scale: 1:10,560

Printed at: 1:10,560

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Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A
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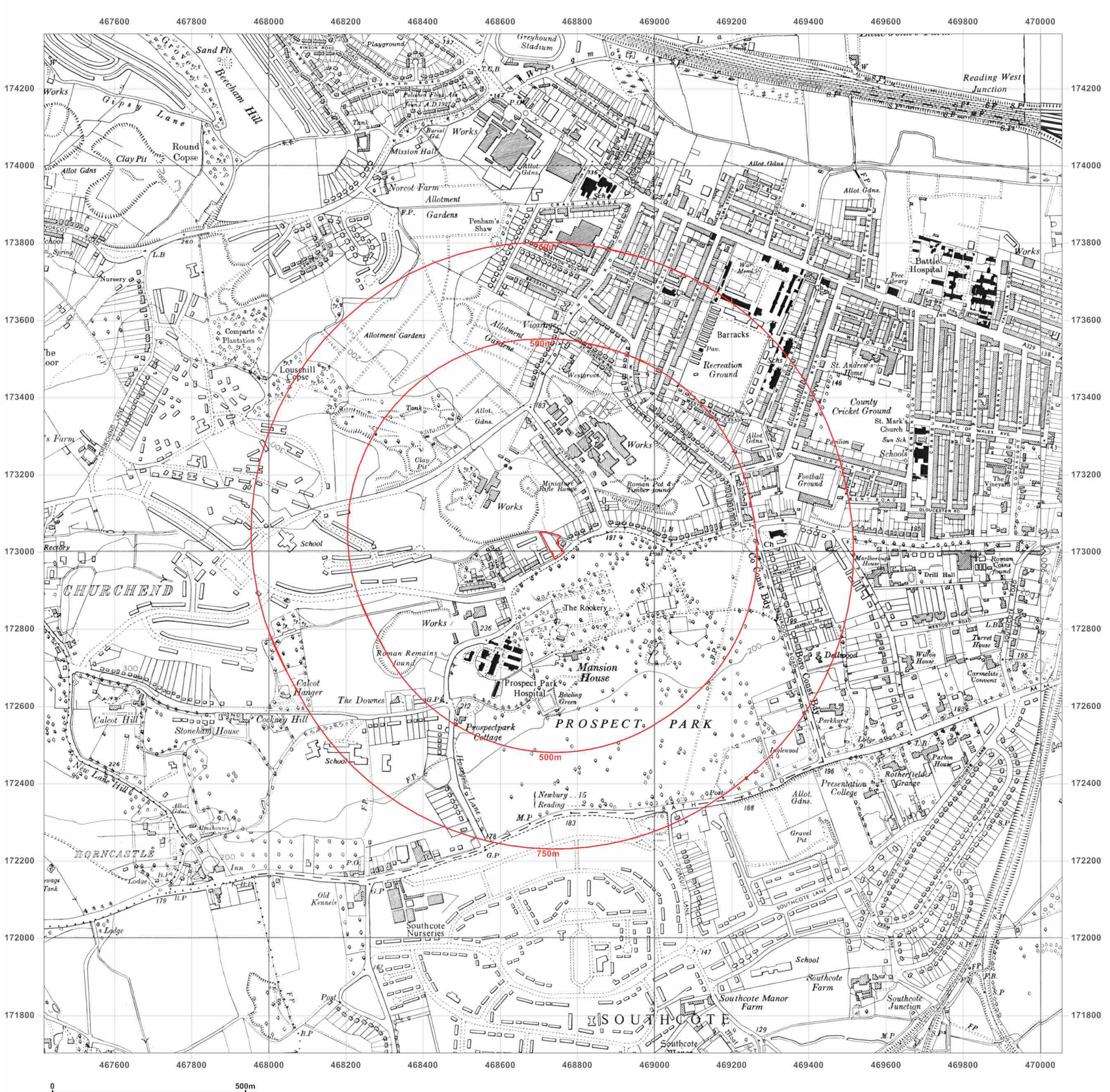
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Grid Ref: 468736, 173021

Map Name: Provisional

Map date: **1961-1962**

Scale: 1:10,560

Printed at: 1:10,560

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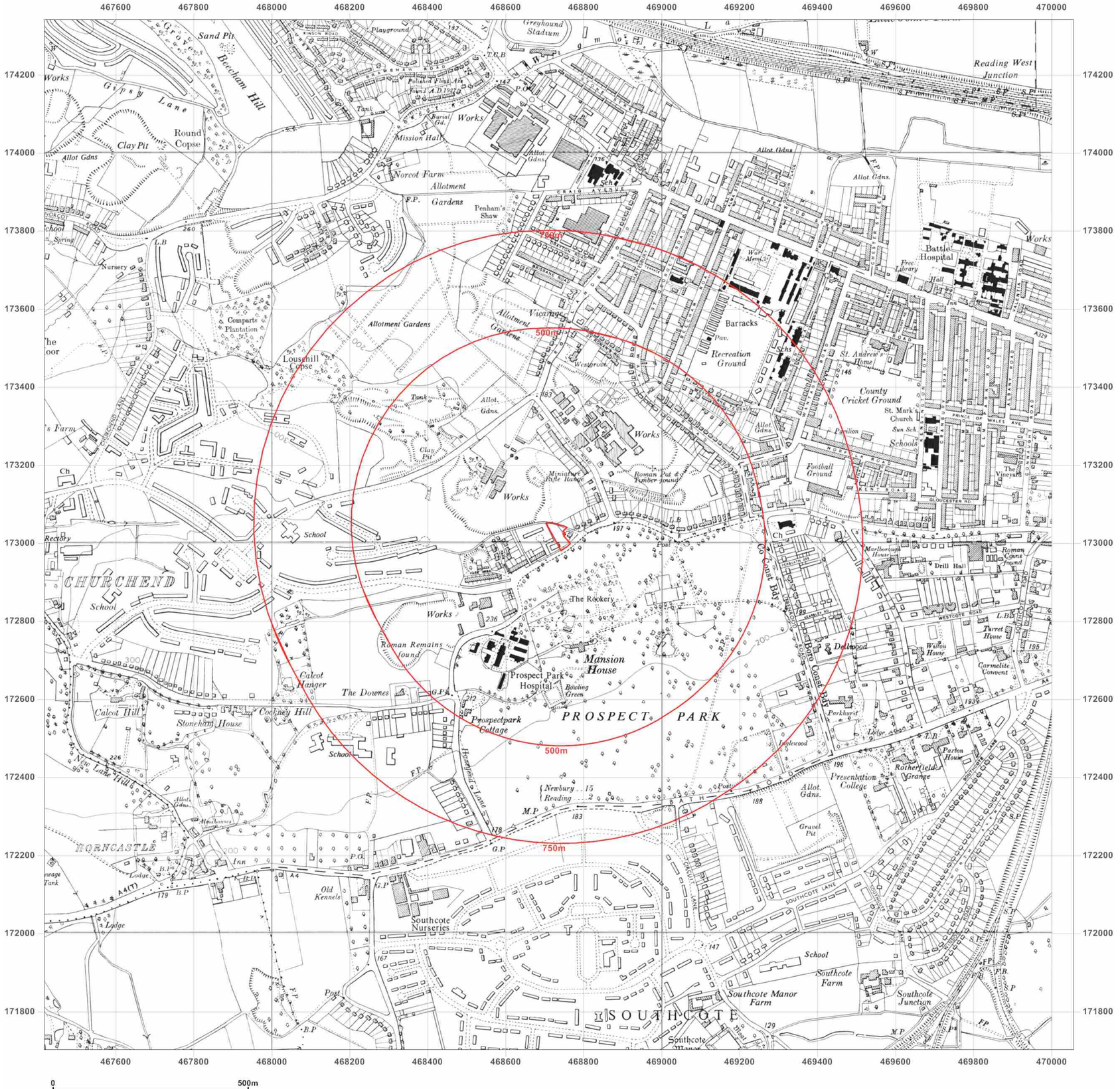
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Report Ref: EMS-328858_443026
Grid Ref: 468736, 173021

Map Name: Provisional

Map date: **1968**

Scale: 1:10,560

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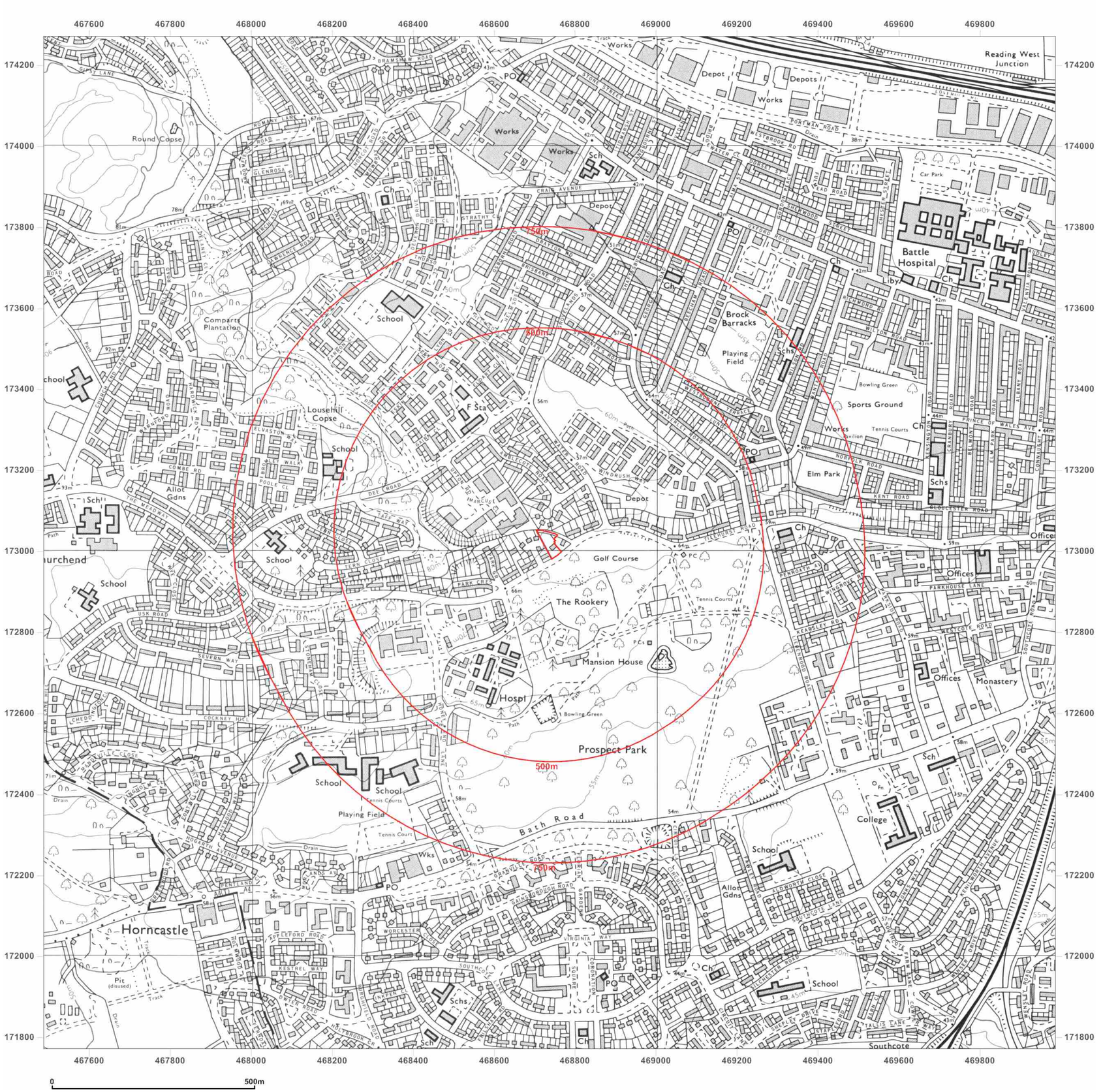
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Grid Ref: 468736, 173021

Map Name: National Grid

Map date: **1976**

Scale: 1:10,000

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Grid Ref: 468736, 173021

Map Name: National Grid

Map date: **1982**

Scale: 1:10,000

Printed at: 1:10,000

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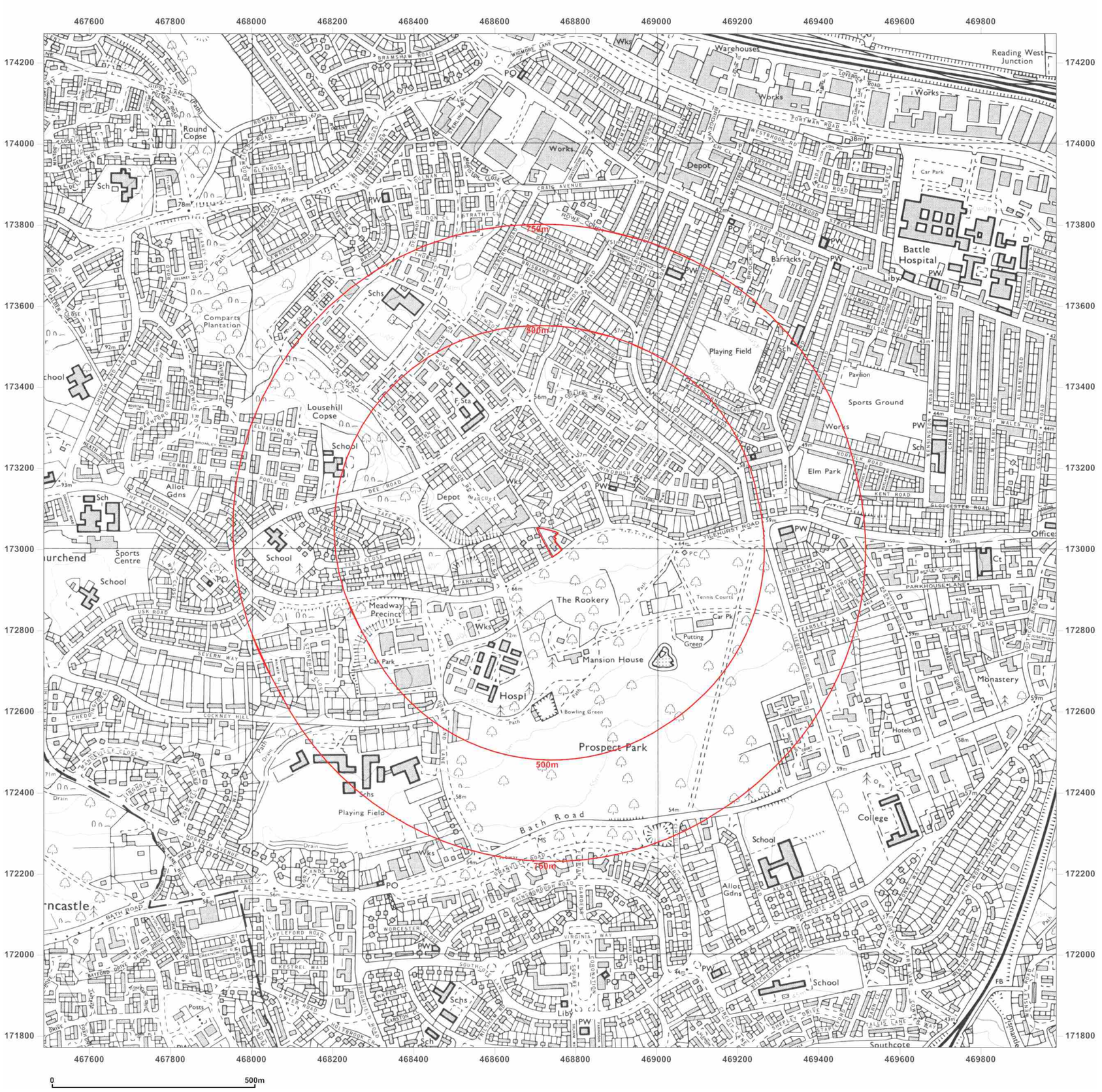
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Grid Ref: 468736, 173021

Map Name: National Grid

Map date: **1991**

Scale: 1:10,000

Printed at: 1:10,000

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Client Ref: EMS_328858_443026
Report Ref: EMS-328858_443026
Grid Ref: 468736, 173021

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

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2002

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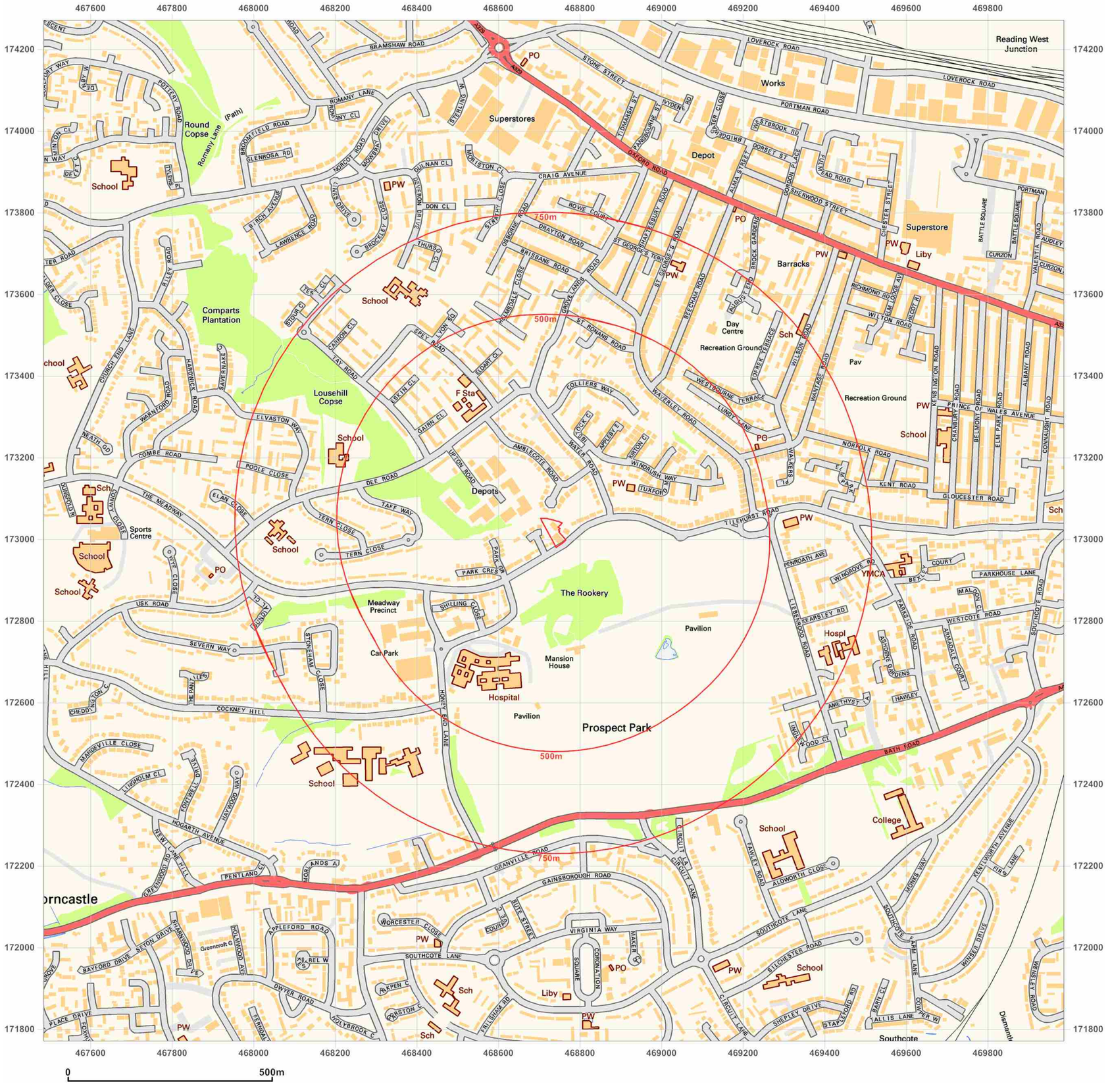
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Report Ref: EMS-328858_443026
Grid Ref: 468736, 173021

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

2010

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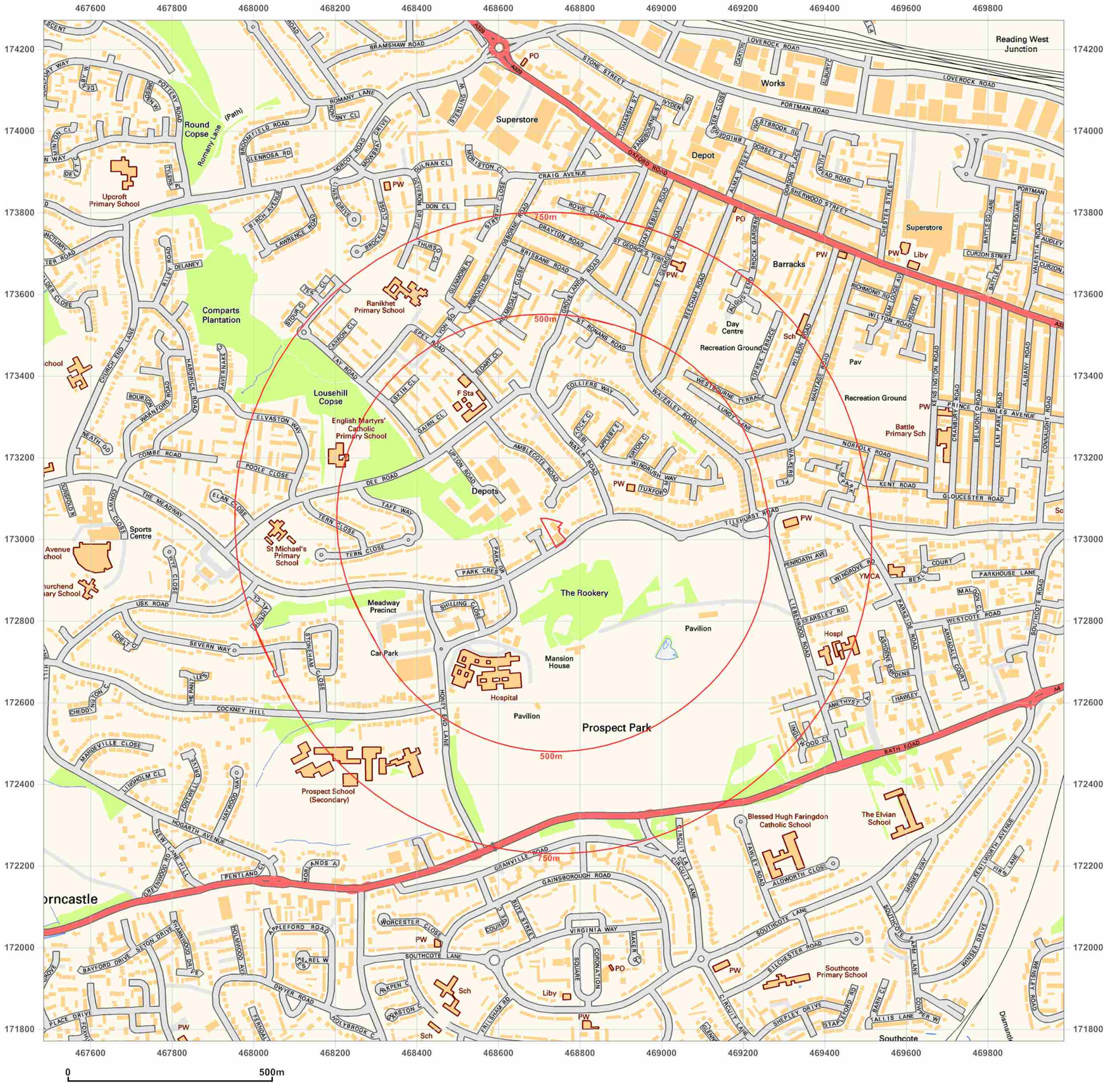
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Report Ref: EMS-328858_443026
Grid Ref: 468736, 173021

Map Name: National Grid

Map date: **2014**

Scale: 1:10,000

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2014

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Environmental Search Data

A copy of the Groundsure Report obtained by SLR is attached and a summary of the search information is provided below:

- *Contaminated Land Register* – no sites are recorded on the contaminated Land Register within 500m of the Site.
- *Control of Major Accident Hazard Sites (COMAH)* – no sites are recorded within 500m.
- *Notifications of Installations Handling Hazardous Substances (NIHHS)* – no sites are recorded within 500m.
- *Planning Hazardous Substance Consents* – no consents are recorded within 500m.
- *Records of Part A(1), IPPC / IPC Authorisations* – no consents are recorded within 500m.
- *Records of Part A(2) and Part B Activities* – three consents are recorded within 500m. All three are historical permits and the closest is 310m southwest for petrol station vapour recovery processes.
- *Records of Water Industry Referrals* – none recorded within 500m of the Site.
- *Discharge consents* – no consents are recorded within 500m.
- *EA recorded pollution incidents* – two incidents are recorded within 500m. Both were classified as no impact to land, air or water. The closest is 278m east for a fuel spill in 2002.
- *Landfill sites* (EA historic records, BGS, Local Authority) – no sites recorded within 1km.
- *Licensed waste management/transfer/treatment facilities* – no sites recorded within 1km.
- *Environmentally sensitive sites* – one local nature reserve is recorded within 500m, 121m west at its closest point, named Lousehill Copse.

Groundwater and surface water abstraction data is discussed in Section 2.2.

Groundsure Enviroinsight

Address:	**Former Brooklands Garage,330 Tilehurst Road,Reading,RG30 2NG,**
Date:	**9 Oct 2015**
Reference:	**EMS-328858_443028**
Client:	**EmapSite**

NW N NE

W E



SW S SE

Aerial Photograph Capture date:	08-Jul-2013
Grid Reference:	468736,173021
Site Size:	0.21ha

Report Reference: EMS-328858_443028
Client Reference: EMS_328858_443028

Groundsure
LOCATION INTELLIGENCE

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Overview of Findings

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Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	3	10	73	65
1.2 Additional Information – Historical Tank Database	0	0	14	21
1.3 Additional Information – Historical Energy Features Database	0	0	7	19
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	6	0	0	1
1.6 Potentially Infilled Land	1	10	44	59

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	2
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency Licensed Waste Sites	0	0	0	0	0	4

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	15	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	1	2
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	Yes
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	13
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	3
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched

	On-site	0-50m	51-250	251-500	501-1000	1000-1500

Section 6: Hydrogeology and Hydrology	0-500m					
6.9 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	No	No
6.10 Detailed River Network entries within 500m of the site	0	0	0	0	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding	
7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Not Prone
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	2
8.7 Records of Local Nature Reserves (LNR)	0	0	1	1	0	4
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	2
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Moderate
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Moderate
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Very Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	Yes
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

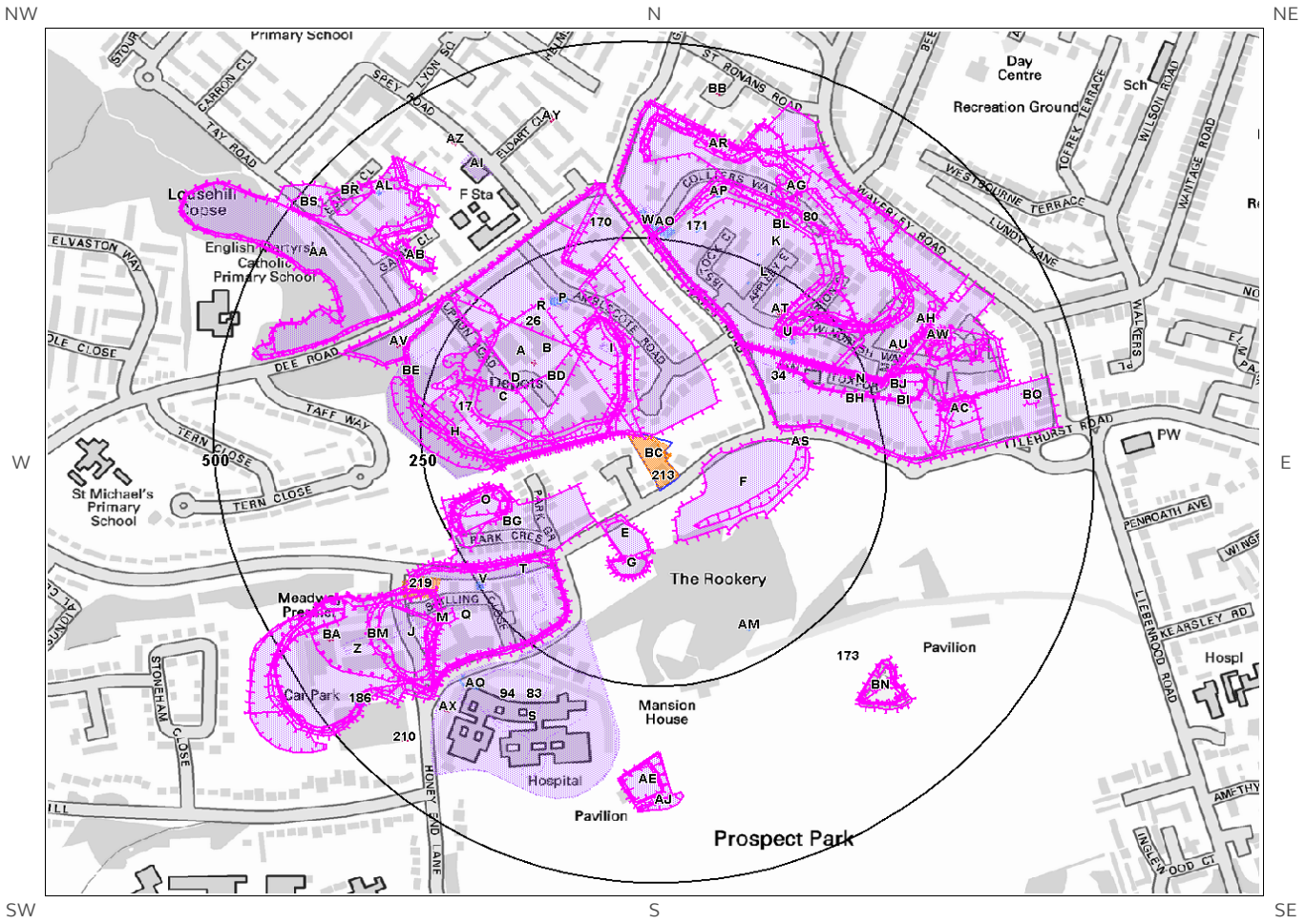
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 151

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Brick and Tile Works	1938
2A	0	On Site	Unspecified Works	1960
3C	0	On Site	Unspecified Depot	1982
4BD	2	N	Unspecified Workings	1991
5B	2	N	Brick and Tile Works	1932
6B	2	N	Brick and Tile Works	1932
7B	14	W	Brick and Tile Works	1910
8C	20	W	Unspecified Pit	1960
9D	25	NW	Unspecified Ground Workings	1932
10D	25	NW	Unspecified Ground Workings	1932
11BE	26	W	Unspecified Pits	1938
12BF	27	NW	Unspecified Pit	1910
13F	29	E	Clay Pit	1898
14E	56	SW	Old Clay Pit	1898
15E	58	SW	Old Clay Pit	1898
16F	60	SE	Clay Pit	1898
17	83	W	Unspecified Depot	1991
18BG	85	SW	Old Brick Works	1910
19G	86	S	Unspecified Pit	1932
20G	86	S	Unspecified Pit	1932
21G	87	S	Unspecified Pit	1960
22H	88	W	Unspecified Ground Workings	1982
23H	88	W	Unspecified Ground Workings	1991
24G	88	S	Unspecified Pit	1910
25G	88	S	Unspecified Pit	1938
26	95	NW	Brick and Tile Kiln Works	1898
27I	96	N	Miniature Rifle Range	1938
28R	98	NW	Brick and Tile Works	1898
29I	98	N	Miniature Rifle Range	1960
30I	99	N	Miniature Rifle Range	1932
31BH	126	E	Brick Works	1898
32BI	127	E	Brick Works	1898

33BJ	128	E	Old Brick Works	1910
34	132	NE	Unspecified Depot	1974
35K	149	NE	Brick Tile and Pottery Works	1938
36J	150	SW	Brick Works	1932
37J	150	SW	Brick Works	1932
38L	150	NE	Brick Tile and Pottery Works	1898
39K	150	NE	Unspecified Works	1960
40L	153	NE	Brick Tile and Pottery Works	1898
41K	153	NE	Brick Tile and Pottery Works	1910
42K	154	NE	Brick Tile and Pottery Works	1932
43K	154	NE	Brick Tile and Pottery Works	1932
44J	154	SW	Brick Works	1938
45M	155	SW	Brick Works	1910
46Q	159	SW	Brick Works	1898
47N	160	NE	Cuttings	1938
48M	160	SW	Brick Works	1898
49J	161	SW	Unspecified Works	1960
50N	162	NE	Cuttings	1960
51O	163	SW	Unspecified Heap	1991
52O	163	SW	Unspecified Heap	1982
53O	163	SW	Unspecified Heap	1974
54O	163	SW	Unspecified Pit	1932
55O	163	SW	Unspecified Pit	1932
56N	165	NE	Cuttings	1932
57O	167	SW	Unspecified Pit	1910
58O	168	SW	Unspecified Pit	1938
59O	168	SW	Unspecified Ground Workings	1960
60P	175	NW	Unspecified Tanks	1938
61P	177	NW	Unspecified Tanks	1932
62P	178	NW	Unspecified Tank	1960
63Q	181	SW	Unspecified Works	1991
64Q	181	SW	Unspecified Works	1982
65Q	181	SW	Unspecified Commercial/Industrial	1974
66R	186	NW	Unspecified Tank	1910
67T	187	SW	Unspecified Tanks	1932
68BK	187	NE	Unspecified Ground Workings	1960
69U	187	NE	Unspecified Kiln	1910
70AN	187	NE	Unspecified Ground Workings	1938
71P	188	NW	Unspecified Tank	1960

72S	188	SW	Isolation Hospital	1932
73S	189	SW	Hospital	1982
74S	189	SW	Hospital	1991
75S	189	SW	Hospital	1974
76S	189	SW	Hospital	1960
77AF	190	NE	Clay Pits	1932
78T	192	SW	Unspecified Tanks	1938
79K	193	NE	Unspecified Ground Workings	1898
80	193	NE	Unspecified Ground Workings	1910
81U	194	NE	Unspecified Tank	1910
82K	196	NE	Unspecified Ground Workings	1898
83	208	SW	Isolation Hospital	1938
84V	239	SW	Unspecified Tanks	1932
85V	241	SW	Unspecified Tanks	1938
86W	249	N	Tanks	1898
87W	254	N	Unspecified Tanks	1910
88AO	254	N	Unspecified Tanks	1938
89W	254	N	Unspecified Tanks	1932
90W	258	N	Unspecified Tanks	1898
91J	262	SW	Railway Sidings	1932
92AD	264	E	Unspecified Ground Workings	1910
93J	270	SW	Railway Sidings	1938
94	273	SW	Isolation Hospital	1910
95X	278	E	Unspecified Ground Workings	1898
96X	279	E	Gravel Pit	1898
97Y	293	SW	Unspecified Ground Workings	1991
98Y	293	SW	Unspecified Ground Workings	1982
99Y	293	SW	Unspecified Ground Workings	1974
100Z	299	SW	Unspecified Pit	1932
101Z	299	SW	Unspecified Pit	1932
102Z	302	SW	Unspecified Pits	1960
103AA	302	NW	Clay Pit	1938
104Z	304	SW	Unspecified Pit	1938
105BM	304	SW	Unspecified Pit	1910
106AA	304	NW	Clay Pit	1932
107AA	309	NW	Clay Pit	1960
108AP	315	N	Unspecified Tank	1938
109AB	316	NW	Unspecified Heap	1938
110AH	317	NE	Unspecified Ground Workings	1938
111AB	319	NW	Unspecified Heap	1960

112J	320	SW	Unspecified Pit	1898
113J	320	SW	Unspecified Pit	1898
114AC	324	E	Unspecified Heap	1910
115AW	325	E	Unspecified Pit	1938
116AC	326	E	Unspecified Ground Workings	1938
117AC	326	E	Unspecified Heap	1960
118AC	327	E	Unspecified Heap	1932
119AC	327	E	Unspecified Heap	1932
120AD	328	E	Unspecified Ground Workings	1932
121AD	328	E	Unspecified Ground Workings	1932
122AD	330	E	Unspecified Ground Workings	1938
123AG	334	NE	Clay Pits	1938
124AE	334	S	Unspecified Pit	1974
125AE	335	S	Unspecified Pit	1982
126AE	335	S	Unspecified Pit	1991
127AF	337	NE	Unspecified Tank	1938
128AG	337	NE	Unspecified Heap	1960
129AH	340	NE	Unspecified Pit	1960
130AE	348	S	Unspecified Pit	1960
131AE	348	S	Unspecified Pit	1932
132AE	348	S	Unspecified Pit	1932
133AR	348	N	Unspecified Ground Workings	1960
134AE	351	S	Unspecified Pit	1938
135AE	351	S	Unspecified Pit	1910
136AD	352	E	Unspecified Ground Workings	1938
137BO	360	NW	Unspecified Ground Workings	1960
138AI	370	NW	Fire Station	1974
139AI	370	NW	Fire Station	1982
140AI	370	NW	Fire Station	1991
141AJ	385	S	Unspecified Ground Workings	1932
142AJ	385	S	Unspecified Ground Workings	1932
143BP	407	SW	Unspecified Ground Workings	1974
144AK	407	SW	Unspecified Ground Workings	1991
145AK	407	SW	Unspecified Ground Workings	1982
146AL	427	NW	Unspecified Tank	1932
147AL	427	NW	Unspecified Tank	1938
148AL	428	NW	Unspecified Tank	1960
149BQ	430	E	Gravel Pit	1898

150BR	437	NW	Unspecified Heap	1960
151BS	464	NW	Unspecified Pit	1960

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 35

ID	Distance (m)	Direction	Use	Date
152R	185	NW	Tanks	1932
153R	188	NW	Unspecified Tank	1899
154R	188	NW	Unspecified Tank	1911
155U	191	NE	Unspecified Tank	1899
156U	191	NE	Unspecified Tank	1911
157AM	204	SE	Unspecified Tank	1899
158AM	204	SE	Unspecified Tank	1881
159AM	204	SE	Unspecified Tank	1911
160AM	204	SE	Unspecified Tank	1932
161L	223	NE	Unspecified Tank	1911
162L	237	NE	Unspecified Tank	1911
163V	244	SW	Tanks	1932
164AN	246	NE	Unspecified Tank	1981
165AN	246	NE	Unspecified Tank	1993
166AO	251	N	Tanks	1932
167AO	251	N	Tanks	1911
168AO	251	N	Tanks	1899
169K	261	NE	Unspecified Tank	1911
170	265	N	Unspecified Tank	1932
171	266	N	Unspecified Tank	1911
172BL	302	NE	Unspecified Tank	1911
173	308	SE	Unspecified Tank	1911
174AP	314	N	Unspecified Tank	1932
175AP	316	N	Unspecified Tank	1961
176AP	317	N	Unspecified Tank	1960
177AQ	331	SW	Unspecified Tank	1993
178AC	333	E	Unspecified Tank	1911
179AQ	333	SW	Tanks	1993
180AF	336	NE	Unspecified Tank	1932
181AF	336	NE	Unspecified Tank	1911
182AQ	341	SW	Tanks	1993
183AQ	341	SW	Unspecified Tank	1971
184AR	376	N	Unspecified Tank	1911

185AL	427	NW	Unspecified Tank	1932
186	444	SW	Unspecified Tank	1911

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 26

ID	Distance (m)	Direction	Use	Date
187A	142	NW	Electricity Substation	1971
188A	142	NW	Electricity Substation	1981
189AS	148	E	Electricity Substation	1993
190AS	149	E	Electricity Substation	1981
191AT	207	NE	Electricity Substation	1993
192AT	208	NE	Electricity Substation	1971
193AT	208	NE	Electricity Substation	1981
194AU	294	NE	Electricity Substation	1985
195AU	295	NE	Electricity Substation	1973
196AU	295	NE	Electricity Substation	1971
197AV	297	W	Electricity Substation	1993
198AV	297	W	Electricity Substation	1981
199AP	315	N	Electricity Substation	1993
200AP	316	N	Electricity Substation	1986
201AW	325	E	Electricity Substation	1993
202AX	376	SW	Electricity Substation	1971
203AX	376	SW	Electricity Substation	1981
204AY	408	N	Electricity Substation	1993
205AY	408	N	Electricity Substation	1993
206AZ	423	NW	Electricity Substation	1971
207AZ	425	NW	Electricity Substation	1971
208BA	435	SW	Electricity Substation	1993
209BA	436	SW	Electricity Substation	1993
210	440	SW	Electricity Substation	1993
211BB	442	N	Electricity Substation	1981
212BB	442	N	Electricity Substation	

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 7

ID	Distance (m)	Direction	Use	Date
213	0	On Site	Garage	1993
214BC	0	On Site	Garage	1971
215BC	0	On Site	Garage	1961
216BC	0	On Site	Garage	1993
217BC	0	On Site	Garage	1981
218BC	0	On Site	Garage	1960
219	286	SW	Garage	1971

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 114

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

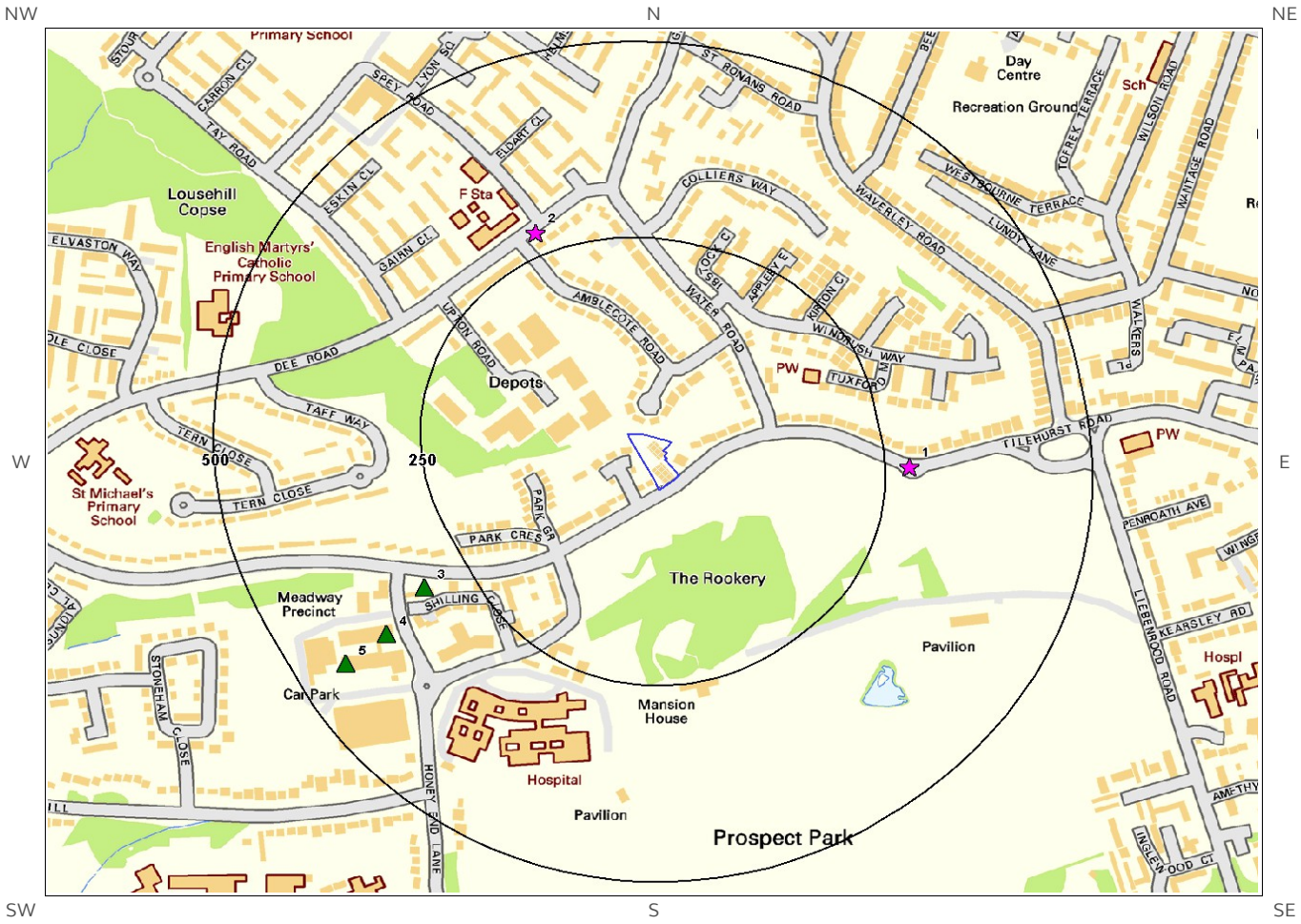
ID	Distance(m)	Direction	Use	Date
220A	0	On Site	Brick and Tile Works	1938
221BD	2	N	Unspecified Workings	1991
222B	2	N	Brick and Tile Works	1932
223B	2	N	Brick and Tile Works	1932
224B	14	W	Brick and Tile Works	1910
225C	20	W	Unspecified Pit	1960
226D	25	NW	Unspecified Ground Workings	1932
227D	25	NW	Unspecified Ground Workings	1932
228BE	26	W	Unspecified Pits	1938
229BF	27	NW	Unspecified Pit	1910
230F	29	E	Clay Pit	1898
231E	56	SW	Old Clay Pit	1898
232E	58	SW	Old Clay Pit	1898
233F	60	SE	Clay Pit	1898
234BG	85	SW	Old Brick Works	1910

235G	86	S	Unspecified Pit	1932
236G	86	S	Unspecified Pit	1932
237G	87	S	Unspecified Pit	1960
238H	88	W	Unspecified Ground Workings	1982
239H	88	W	Unspecified Ground Workings	1991
240G	88	S	Unspecified Pit	1938
241G	88	S	Unspecified Pit	1910
242R	98	NW	Brick and Tile Works	1898
243BH	126	E	Brick Works	1898
244BI	127	E	Brick Works	1898
245BJ	128	E	Old Brick Works	1910
246K	149	NE	Brick Tile and Pottery Works	1938
247J	150	SW	Brick Works	1932
248J	150	SW	Brick Works	1932
249L	150	NE	Brick Tile and Pottery Works	1898
250L	153	NE	Brick Tile and Pottery Works	1898
251K	153	NE	Brick Tile and Pottery Works	1910
252K	154	NE	Brick Tile and Pottery Works	1932
253K	154	NE	Brick Tile and Pottery Works	1932
254J	154	SW	Brick Works	1938
255M	155	SW	Brick Works	1910
256Q	159	SW	Brick Works	1898
257N	160	NE	Cuttings	1938
258M	160	SW	Brick Works	1898
259N	162	NE	Cuttings	1960
260O	163	SW	Unspecified Heap	1982
261O	163	SW	Unspecified Heap	1974
262O	163	SW	Unspecified Heap	1991
263O	163	SW	Unspecified Pit	1932
264O	163	SW	Unspecified Pit	1932
265N	165	NE	Cuttings	1932
266O	167	SW	Unspecified Pit	1910
267O	168	SW	Unspecified Pit	1938
268O	168	SW	Unspecified Ground Workings	1960
269BK	187	NE	Unspecified Ground Workings	1960
270AN	187	NE	Unspecified Ground Workings	1938
271AF	190	NE	Clay Pits	1932
272K	193	NE	Unspecified Ground Workings	1898

273BL	193	NE	Unspecified Ground Workings	1910
274K	196	NE	Unspecified Ground Workings	1898
275AD	264	E	Unspecified Ground Workings	1910
276X	278	E	Unspecified Ground Workings	1898
277X	279	E	Gravel Pit	1898
278Y	293	SW	Unspecified Ground Workings	1982
279Y	293	SW	Unspecified Ground Workings	1974
280Y	293	SW	Unspecified Ground Workings	1991
281Z	299	SW	Unspecified Pit	1932
282Z	299	SW	Unspecified Pit	1932
283Z	302	SW	Unspecified Pits	1960
284AA	302	NW	Clay Pit	1938
285Z	304	SW	Unspecified Pit	1938
286BM	304	SW	Unspecified Pit	1910
287AA	304	NW	Clay Pit	1932
288AA	309	NW	Clay Pit	1960
289AB	316	NW	Unspecified Heap	1938
290AH	317	NE	Unspecified Ground Workings	1938
291AB	319	NW	Unspecified Heap	1960
292J	320	SW	Unspecified Pit	1898
293J	320	SW	Unspecified Pit	1898
294AC	324	E	Unspecified Heap	1910
295AW	325	E	Unspecified Pit	1938
296AC	326	E	Unspecified Ground Workings	1938
297AC	326	E	Unspecified Heap	1960
298AC	327	E	Unspecified Heap	1932
299AC	327	E	Unspecified Heap	1932
300AW	328	E	Unspecified Ground Workings	1932
301AW	328	E	Unspecified Ground Workings	1932
302AW	330	E	Unspecified Ground Workings	1938
303AG	334	NE	Clay Pits	1938
304AE	334	S	Unspecified Pit	1974
305AE	335	S	Unspecified Pit	1982
306AE	335	S	Unspecified Pit	1991
307AG	337	NE	Unspecified Heap	1960
308BN	339	SE	Pond	1938
309BN	339	SE	Pond	1910
310BN	339	SE	Pond	1932

311BN	339	SE	Pond	1960
312AH	340	NE	Unspecified Pit	1960
313BN	347	SE	Pond	1974
314BN	347	SE	Pond	1982
315BN	347	SE	Pond	1991
316AE	348	S	Unspecified Pit	1960
317AE	348	S	Unspecified Pit	1932
318AE	348	S	Unspecified Pit	1932
319AR	348	N	Unspecified Ground Workings	1960
320AE	351	S	Unspecified Pit	1910
321AE	351	S	Unspecified Pit	1938
322AD	352	E	Unspecified Ground Workings	1938
323BN	354	SE	Pond	1898
324BO	360	NW	Unspecified Ground Workings	1960
325BN	362	SE	Pond	1898
326AJ	385	S	Unspecified Ground Workings	1932
327AJ	385	S	Unspecified Ground Workings	1932
328AK	407	SW	Unspecified Ground Workings	1982
329AK	407	SW	Unspecified Ground Workings	1991
330BP	407	SW	Unspecified Ground Workings	1974
331BQ	430	E	Gravel Pit	1898
332BR	437	NW	Unspecified Heap	1960
333BS	464	NW	Unspecified Pit	1960

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- Search Buffers (m) — 250 / 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

3

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
3	310	SW	468457 172854	Address: Meadway Serv Stn, The Meadway, RG3 4AD Process: Petrol Vapour Recovery Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
4	378	SW	468412 172795	Address: Tilehurst Launderama, 58 Meadway Precinct Process: PG6/46 (04) Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
5	440	SW	468362 172757	Address: Johnsons Cleaners UK Limited, Meadway Precinct, Honey End Lane, Tilehurst, Reading, RG30 4AP Process: PG6/46 (04) Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

2

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	278	E	469043 173010	Incident Date: 07-Jun-2002 Incident Identification: 83528 Pollutant: Oils and Fuel Pollutant Description: Petrol	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2	279	NW	468591 173308	Incident Date: 13-Sep-2001 Incident Identification: 30573 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

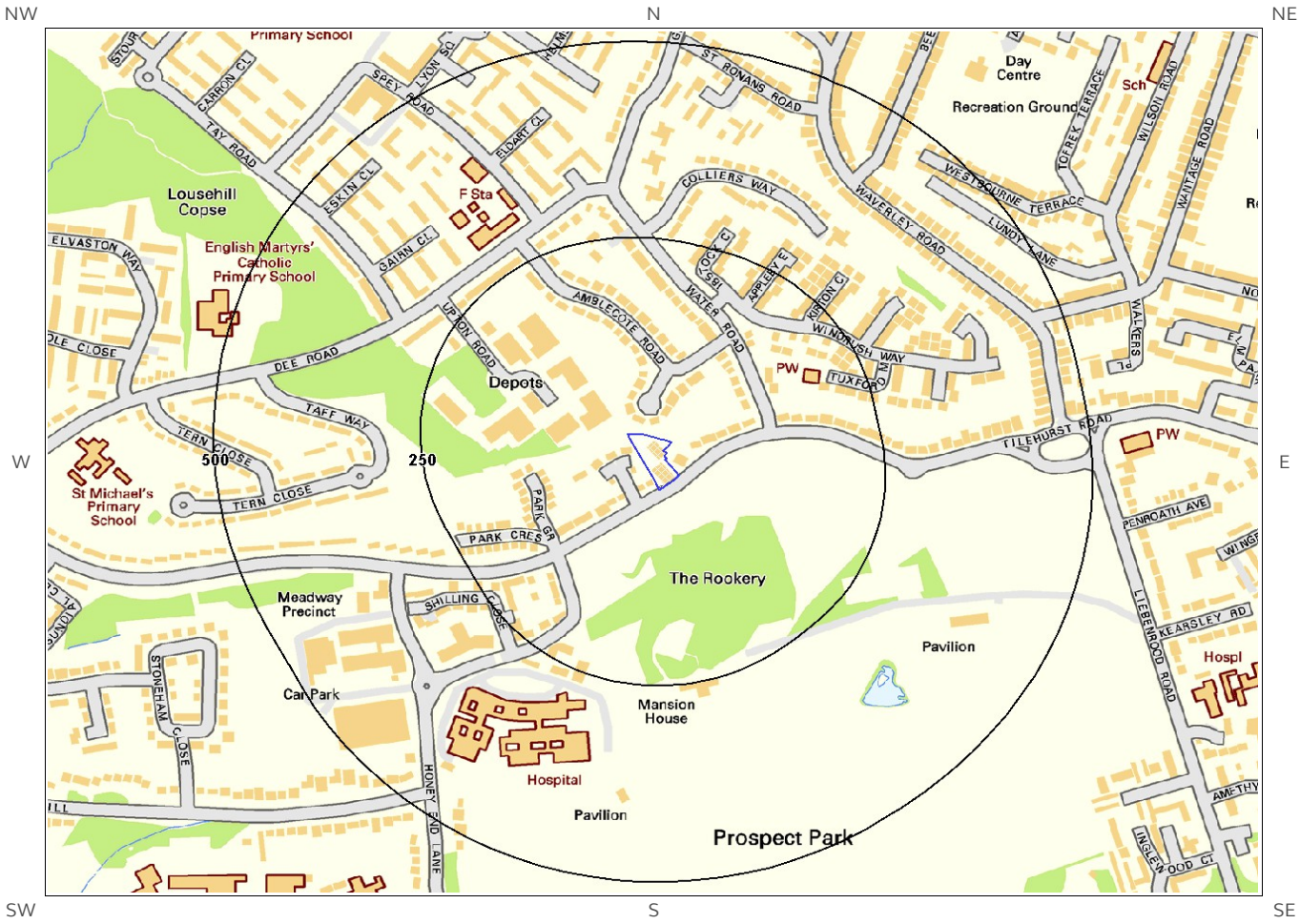
Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?	0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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Site Outline

250
500
Search Buffers (m)

E.A. Active Landfill

E.A. Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

E.A. Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

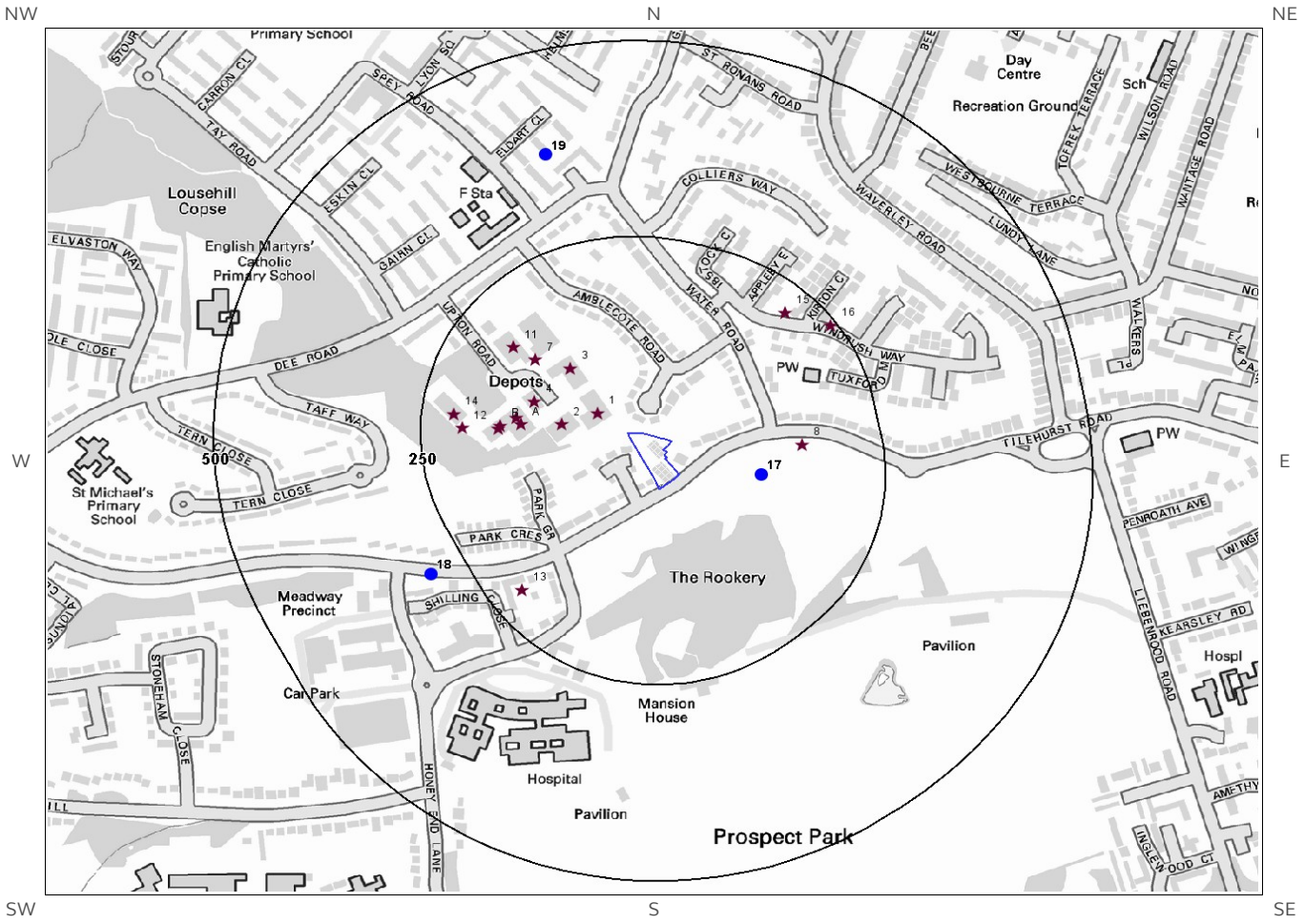
3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

4

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1332	N	468638 174382	Site Address: I T P, Unit 1, Stadium Way, Tilehurst, Reading, Berkshire, RG30 6BX Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ITP002 EPR reference: EA/EPR/BB3302TG/A001 Operator: International Technology Products (U K) Limited Waste Management licence No: 401209 Annual Tonnage: 760.0	Issue Date: 02/05/2014 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: I T P Correspondence Address: -, -
Not shown	1361	N	469219 174322	Site Address: Fleetwood Grab Services Ltd, 1& 1a 40, Wigmore Lane, Reading, Berks, RG30 1NP Type: Treatment of waste to produce soil <75,000 tpy Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FLE026 EPR reference: EA/EPR/JB3534RP/A001 Operator: Fleetwood Grab Services Ltd Waste Management licence No: 104488 Annual Tonnage: 74999.0	Issue Date: 03/12/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Fleetwood Grab Services Ltd Correspondence Address: -, -
Not shown	1366	N	469251 174315	Site Address: Unit 3, 40, Wigmore Lane, Reading, Berkshire, RG30 1NP Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REY002 EPR reference: EA/EPR/MP3195EA/A001 Operator: 1st Reynolds Skip Hire Ltd Waste Management licence No: 86373 Annual Tonnage: 4999.0	Issue Date: 11/08/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Reynolds Skip Hire Correspondence Address: -, -
Not shown	1428	NE	469718 174096	Site Address: Part A, Unit B, 75, Loverock Road, Tilehurst, Reading, Berkshire, RG30 1DZ Type: HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: OAK056 EPR reference: EA/EPR/EP3993VE/A001 Operator: Oakford U K Ltd Waste Management licence No: 101222 Annual Tonnage: 74999.0	Issue Date: 18/11/2009 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Loverock Road Waste Transfer Station Correspondence Address: -, -

4. Current Land Use Map



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Site Outline

Search Buffers (m)
250
500

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 16

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	45	NW	Depot	468666 173078	RG30	Container and Storage	Transport, Storage and Delivery
2	81	W	Depot	468623 173064	RG30	Container and Storage	Transport, Storage and Delivery
3	109	NW	Depot	468633 173135	RG30	Container and Storage	Transport, Storage and Delivery
4	120	W	Works	468590 173093	RG30	Unspecified Works Or Factories	Industrial Features
5A	130	W	Depot	468574 173064	RG30	Container and Storage	Transport, Storage and Delivery
6A	136	W	Business Furniture Online Ltd	468568 173072	16a, Upton Road, Tilehurst, Reading, RG30 4BJ	Office and Shop Equipment	Industrial Products
7	146	NW	Electricity Sub Station	468591 173146	RG30	Electrical Features	Infrastructure and Facilities
8	153	E	Electricity Sub Station	468913 173038	RG30	Electrical Features	Infrastructure and Facilities
9B	155	W	Bowller Roofing Supplies	468548 173061	20, Upton Road, Tilehurst, Reading, RG30 4BJ	General Construction Supplies	Industrial Products
10B	157	W	Depot	468546 173058	RG30	Container and Storage	Transport, Storage and Delivery
11	176	NW	Works	468565 173162	RG30	Unspecified Works Or Factories	Industrial Features
12	200	W	Pylon	468503 173059	RG30	Electrical Features	Infrastructure and Facilities
13	210	SW	Electricity Sub Station	468575 172853	RG30	Electrical Features	Infrastructure and Facilities
14	211	W	Nabishi Systems	468493 173076	16c, Upton Road, Tilehurst, Reading, RG30 4BJ	Radar and Telecommunications Equipment	Industrial Products
15	214	NE	Electricity Sub Station	468893 173206	RG30	Electrical Features	Infrastructure and Facilities
16	243	NE	Tank	468948 173190	RG30	Tanks (Generic)	Industrial Features

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 3

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
17	99	E	468864 172999	Obsolete	Westward Service Station, 330, Tilehurst Road, Tilehurst Road, Tilehurst, Reading, Berkshire, RG30 2NG	Not Applicable	Obsolete
18	295	SW	468465 172872	Esso	Meadway Service Station, The Meadway, The Meadway, Honey End Lane, Tilehurst, Reading, Berkshire, RG30 4AD	Not Applicable	Obsolete
19	369	N	468604 173407	Obsolete	Reading Service Station, Spey Road, Spey Road, Tilehurst, Reading, Berkshire, RG30 4DQ	Not Applicable	Obsolete

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.3 Bedrock and Solid Geology

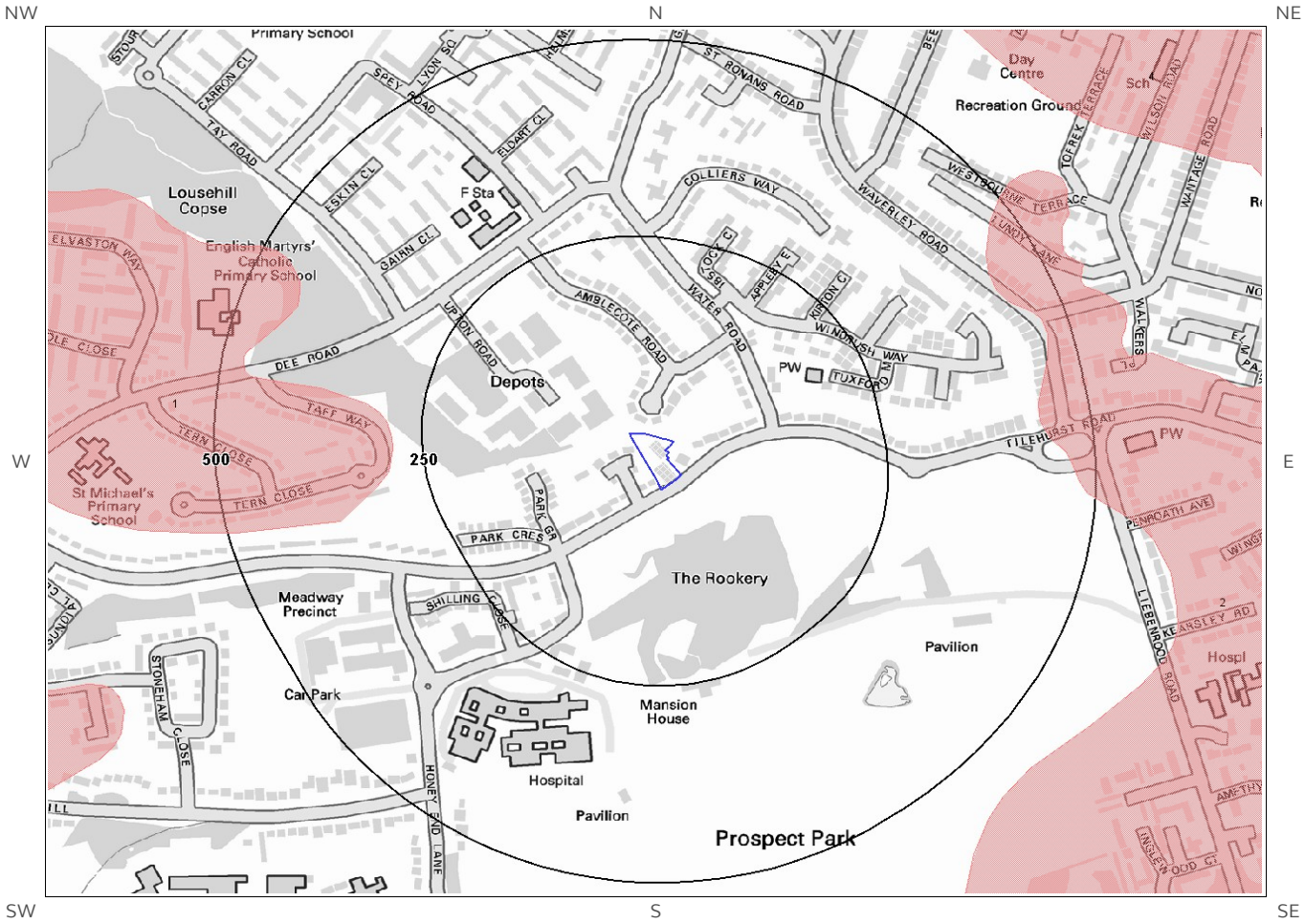
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LMBE-CLSISA	LAMBETH GROUP	CLAY, SILT AND SAND

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

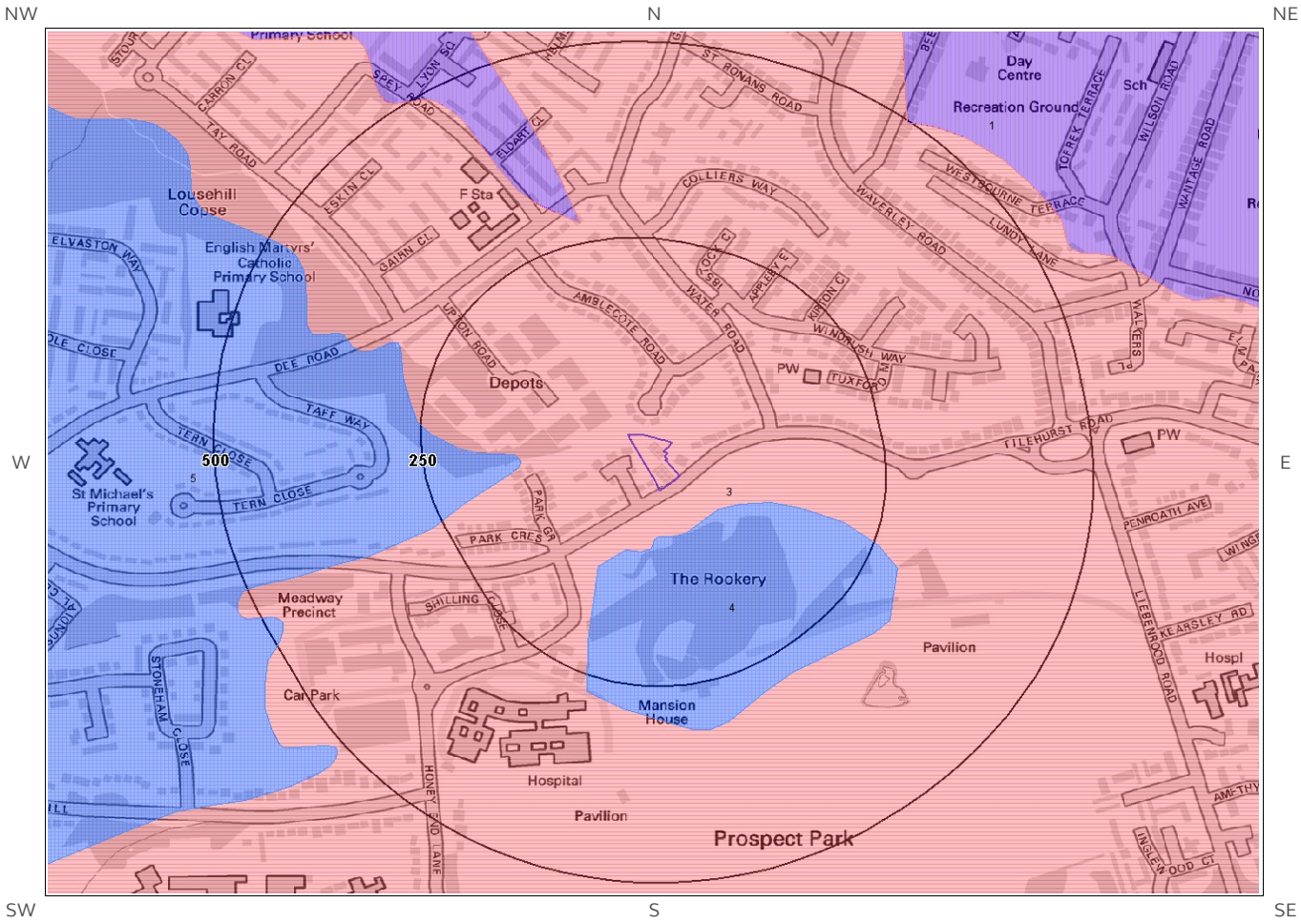
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licenses



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

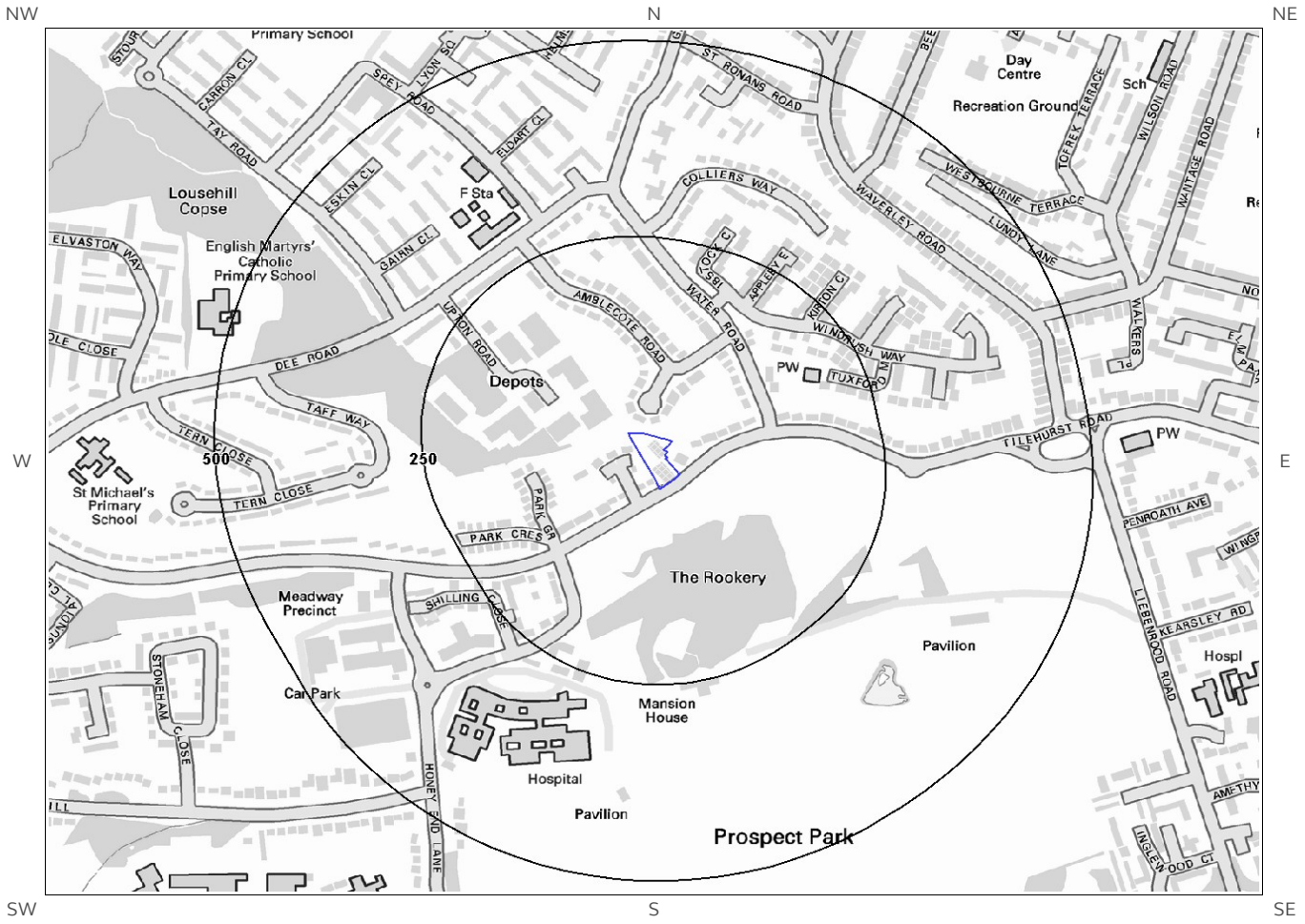
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



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Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

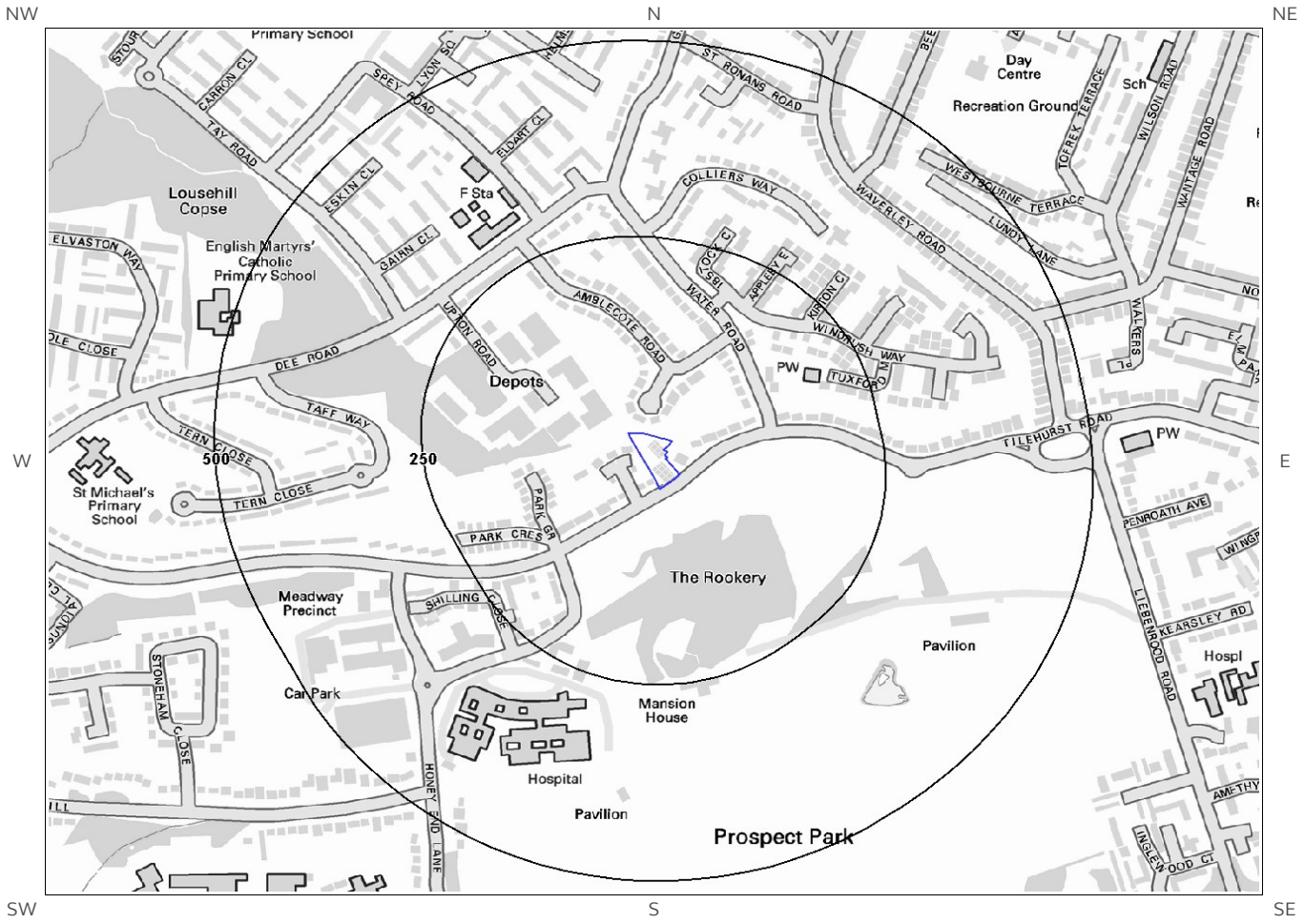
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



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Site Outline

250
500
Search Buffers (m)

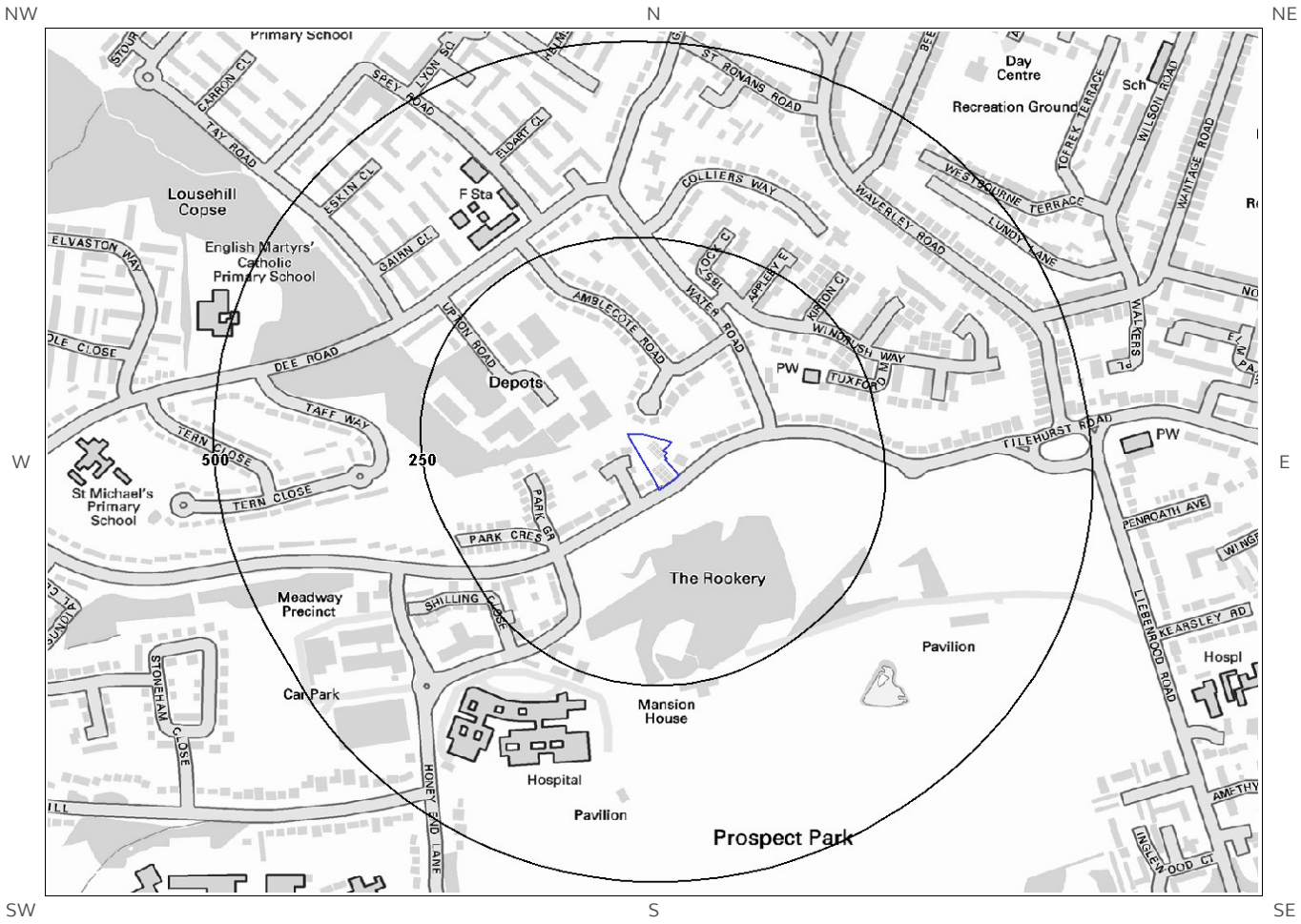
Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

6e. Hydrology – Detailed River Network and River Quality



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Site Outline

250 — 500 — Search Buffers (m)

Primary River
Secondary River
Tertiary River
Lake/Reservoir
Underground River (inferred)
General Quality Assessment: Biology
General Quality Assessment: Chemistry

Canal
Canal Tunnel
Culvert
Multiple Channel Culvert
Underground River (Potential Sewer)
Underground River (local knowledge)

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	286	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	434	NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
3	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	59	S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
5	135	W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	275	N	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1352	NE	469800 173900	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Battle Hospital, Oxford Road, Reading Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY	Annual Volume (m^3): 136875 Max Daily Volume (m^3): 400 Original Application No: WRA/5942 Original Start Date: 17/1/1992 Expiry Date: - Issue No: 100 Version Start Date: 7/1/1999 Version End Date:
Not shown	1377	NE	469500 174200	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (a) Data Type: Point Name: DRAYTON	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	1448	N	468700 174500	Status: Historical Licence No: 28/39/23/0176 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Scours Lane, Reading Town F.c, Reading Data Type: Point Name: READING TOWN FOOTBALL CLUB	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WR.A/6223 Original Start Date: 30/9/1994 Expiry Date: - Issue No: 100 Version Start Date: 30/9/1994 Version End Date:
Not shown	1448	N	468700 174500	Status: Historical Licence No: 28/39/23/0176 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Scours Lane, Reading Town F.c, Reading Data Type: Point Name: READING TOWN FOOTBALL CLUB	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WR.A/6223 Original Start Date: 30/9/1994 Expiry Date: - Issue No: 100 Version Start Date: 30/9/1994 Version End Date:
Not shown	1459	N	468900 174500	Status: Historical Licence No: 28/39/23/0131 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Scours Lane, Reading Data Type: Point Name: PRUDENTIAL IBIS CLUB	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WR.A/A03/1 Original Start Date: 14/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 1/5/1992 Version End Date:
Not shown	1459	N	468900 174500	Status: Historical Licence No: 28/39/23/0131 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Scours Lane, Reading Data Type: Point Name: PRUDENTIAL IBIS CLUB	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WR.A/A03/1 Original Start Date: 14/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 1/5/1992 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1542	SE	469600 171700	Status: Historical Licence No: 28/39/22/0266 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Thames Groundwater Point: Railtrack Property, Southcote, Reading Data Type: Point Name: NETWORK RAIL INFRASTR LTD	Annual Volume (m^3): 250035 Max Daily Volume (m^3): 909.22 Original Application No: - Original Start Date: 12/12/1966 Expiry Date: - Issue No: 101 Version Start Date: 3/2/2003 Version End Date:
Not shown	1547	SW	467300 172400	Status: Active Licence No: 28/39/22/0127 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Calcot Park, Reading Data Type: Point Name: CALCOT PARK GOLF CLUB LTD	Annual Volume (m^3): 8500 Max Daily Volume (m^3): 55 Original Application No: NPS/WR/005700 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 102 Version Start Date: 28/4/2011 Version End Date:
Not shown	1594	N	469100 174600	Status: Historical Licence No: 28/39/23/0137 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Scours Lane, Reading (a - R) Data Type: Point Name: READING BOROUGH COUNCIL	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WR.A/2453/4 Original Start Date: 17/11/1976 Expiry Date: - Issue No: 100 Version Start Date: 17/11/1976 Version End Date:
Not shown	1655	NE	469700 174400	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little Johm's Farm, Reading (b) Data Type: Point Name: DRAYTON	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	1655	NE	469700 174400	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (c) Data Type: Point Name: DRAYTON	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	1842	NE	470100 174300	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Little John's Farm, Reading (e) Data Type: Point Name: DRAYTON	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 26.82 Original Application No: WR.A/3088 Original Start Date: 9/1/1967 Expiry Date: - Issue No: 100 Version Start Date: 9/1/1967 Version End Date:
Not shown	1956	NE	470400 174100	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: Thames Groundwater Point: Cardiff Road, Reading Point A Data Type: Point Name: HILLIER GROUP OF COMPANIES	Annual Volume (m^3): 6682 Max Daily Volume (m^3): 27.28 Original Application No: WR.A/4547 Original Start Date: 22/1/1975 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1352	NE	469800 173900	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Battle Hospital, Oxford Road, Reading Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY	Annual Volume (m^3): 136875 Max Daily Volume (m^3): 400 Original Application No: WRA/5942 Original Start Date: 17/1/1992 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	1448	N	468700 174500	Status: Historical Licence No: 28/39/23/0176 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Scours Lane, Reading Town F.c, Reading Data Type: Point Name: READING TOWN FOOTBALL CLUB	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WR.A/6223 Original Start Date: 30/9/1994 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	1459	N	468900 174500	Status: Historical Licence No: 28/39/23/0131 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Scours Lane, Reading Data Type: Point Name: PRUDENTIAL IBIS CLUB	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WR.A/A03/1 Original Start Date: 14/1/1967 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
431	NE	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

6.9 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site? No

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?	No

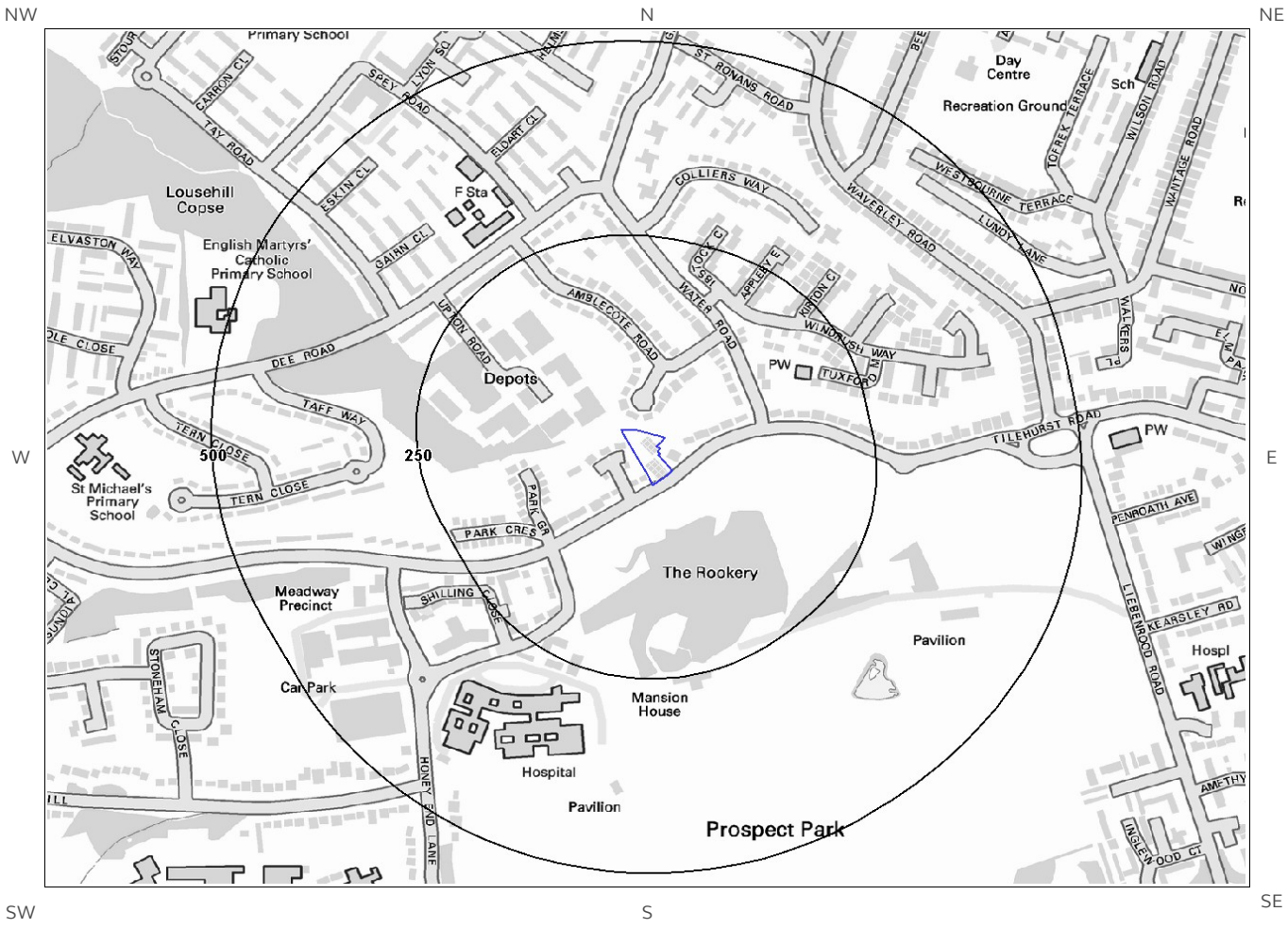
Database searched and no data found.

6.11 Surface Water Features

Are there any surface water features within 250m of the study site?	No

Database searched and no data found.

7a. Environment Agency Flood Map for Planning (from rivers and the sea)



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

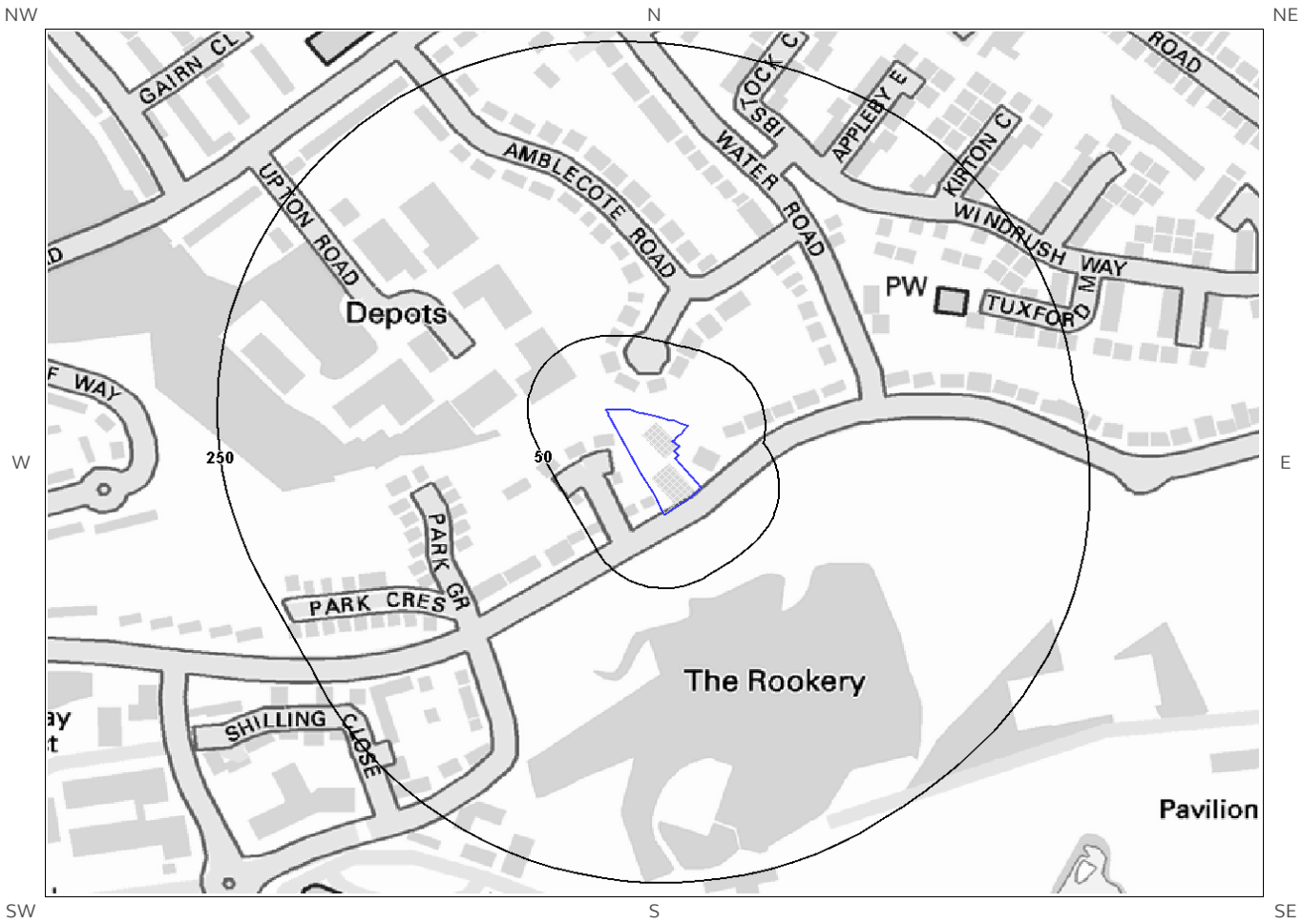
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency Zone 2 floodplain? No

Environment Agency Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency Zone 3 floodplain? No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

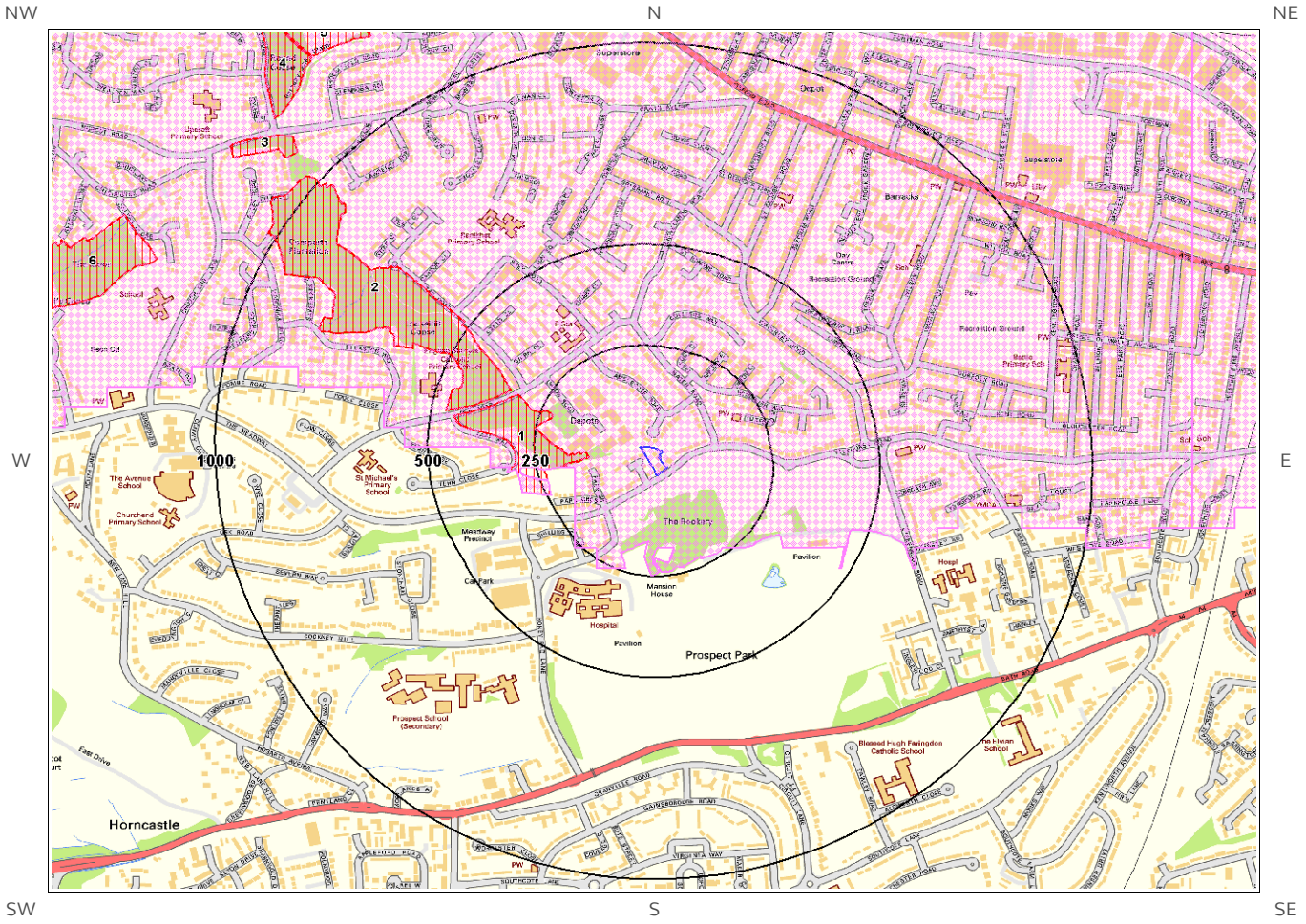
7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? Not Applicable

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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Site Outline

100
250
Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones

Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas

Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

2

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1522	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1732	NW	UNKNOWN	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

6

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
1	121	W	Lousehill Copse	Natural England
2	335	NW	Lousehill Copse	Natural England
3	1087	NW	Lousehill Copse	Natural England
4	1180	NW	Round Copse	Natural England
5	1197	NW	McIlroy Park	Natural England
6	1227	W	Blundells Copse	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

3

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
7	0	On Site	Existing	DEFRA
8	1235	E	Existing	DEFRA
Not shown	1602	S	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure GeoInsight, available from our website. The following information has been found:

9.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

What is the maximum Running Sand*[*] hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

* This indicates an automatically generated 50m buffer and site.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Chalk	Rare and localised small scale mining may have occurred.

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No
Guidance: No Guidance Required.

Contact Details

EmapSite
Telephone: 0118 9736883
sales@emapsite.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 08708 506 506
Web:**www.environment-agency.gov.uk**
Email:**enquiries@environment-agency.gov.uk**

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Reading Borough Council
Phone: 0118 937 3787
Web: http://beta.reading.gov.uk/
Address: Civic Offices, Bridge Street, Reading, RG1 2LU

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.
PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028].
This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

1 Definitions

I**n these terms and conditions unless the context otherwise requires:**

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with Groundsure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by Groundsure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by Groundsure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between Groundsure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to Groundsure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"Groundsure" means Groundsure Limited, a company registered in England and Wales under number 03421028.

"Groundsure Materials" means all materials prepared by Groundsure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from Groundsure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

"Order Website" means the online platform through which Orders may be placed by the Client and accepted by Groundsure.

"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.

"Residential" means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by Groundsure.

"Services" means any Report, Mapping and/or Support Services which Groundsure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested Groundsure to provide the Services.

"Third Party Content" means data, database information or other information which is provided to Groundsure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from Groundsure and on the website (www.Groundsure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 Groundsure agrees to provide the Services in accordance with the Contract.

2.2 Groundsure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of Groundsure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, Groundsure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and Groundsure will have no liability therefor. In addition you acknowledge and agree that Groundsure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 Groundsure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by Groundsure. Groundsure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by Groundsure. Groundsure's acceptance of an Order shall be binding only when made in writing and signed by Groundsure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to Groundsure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to Groundsure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as Groundsure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable Groundsure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the Groundsure Materials, or use the Groundsure Materials in a manner for which they were not intended. The Client may make the Groundsure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that Groundsure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1The Client acknowledges that the Services provided by Groundsure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by Groundsure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,

(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by Groundsure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1Groundsure shall charge and the Client shall pay fees at the rate and

frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by Groundsure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to Groundsure in full without deduction, counterclaim or set off within 30 days of the date of Groundsure's invoice or such other period as may be agreed in writing between Groundsure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of Groundsure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the Groundsure Materials.

6.2 All Intellectual Property in the Groundsure Materials are and shall remain owned by Groundsure or Groundsure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the Groundsure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to Groundsure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the Groundsure Materials in order to advise the Beneficiary in a professional capacity. However, Groundsure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify Groundsure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7.Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of Groundsure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by Groundsure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 Groundsure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the Groundsure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the Groundsure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of Groundsure's internet ordering service.

7.5 Groundsure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 Groundsure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of Groundsure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against Groundsure in relation to the Services or other matters arising pursuant to the Contract.

8 Groundsure's right to suspend or terminate

8.1 If Groundsure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, Groundsure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 Groundsure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to Groundsure within 30 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon Groundsure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

(a) supplied to the Client's specification(s) and in any event

(b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) Groundsure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in Groundsure's possession or control; and

(ii) the Client shall pay to Groundsure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay Groundsure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of Groundsure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to Groundsure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through Groundsure.

12.3 Groundsure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of Groundsure.

12.4 No failure on the part of Groundsure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 Groundsure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

(i) the Client or Beneficiary's failure to provide facilities, access or information;

(ii) fire, storm, flood, tempest or epidemic;

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

(vi) acts or regulations of any governmental or other agency;

(vii) suspension or delay of services at public registries by Third Party Data Providers;

(viii) changes in law; or

(ix) any other reason beyond Groundsure's reasonable control.

In the event that Groundsure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then Groundsure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at Groundsure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. **© Groundsure Limited June 2013**



Plate 1. Former petrol station shop building and forecourt area to the right of the frame.



Plate 2. The forecourt area of the PFS part of Site.



Plate 3. Former forecourt area showing the manhole chambers housing EX wells and former remedial infrastructure.



Plate 4: View inside a remediation well (EX well) manhole cover.



Plate 5: Access road through to the Garage part of the Site.



Plate 6. View northwest of the Garage part of the Site.



Plate 7. Disused car repair workshop building.



Plate 8. Earth bank on the southern boundary of the Garage part of the Site.



Plate 9. Southern part of the Garage part and residential property to the left of the frame.



Plate 10. View southeast of the Garage part of the Site and rear of the former petrol station shop building.



Plate 11. Surface oil staining within the former car repair workshop building.



Plate 12. View northeast showing existing monitoring well MW103 and surface oil staining in the right of the frame.



Plate 13. Surface oil staining at the location of a former above ground tank.



Plate 14. Approximate location of a former above ground tank.



Plate 15. Surface water sump in the northeast.



Plate 16. Corrugated cement sheet roof on former car repair workshop building.

BOREHOLE LOG

BOREHOLE No. **BH101**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	05/11/15	11.04mATBM	

Project: **FORMER BROOKLANDS GARAGE, READING**

Sheet: 1 of 1

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
							10.89		0.15	MADE GROUND: Concrete hardstanding	
							10.79		0.25	MADE GROUND: Firm light greyish brown slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded clinker and concrete.	
0.30	E	0							(0.50)	Firm light yellowish brown sandy CLAY.	
							10.29		0.75		
0.80	E	0								Light yellowish brown medium clayey SAND.	
1									(0.55)		
1.20	HS	0					9.74		1.30		
1.50	E	1								Orange medium SAND.	
1.50	HS										
									(1.00)		
2 2.00	HS	0									
							8.74		2.30		
2.50	E	0								Greyish brown medium SAND.	
									(0.70)		
3 3.00	HS	0					8.04		3.00		
										Borehole complete at 3.00m	
4											

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug pit from ground level to 1.2m bgl. Well installed, screened 1m - 3m.

All dimensions in metres	Contractor: Endeavour	Method: Dynamic Sample	Logged By:	Approved By:
Scale 1:31.25	Plant:	Hole Size: 100	JH/CB	PW

SLR Consulting Ltd, 8 Stow Court, Stow-cum-Quy, Cambridge, CB25 9AS, UK, Tel: 01223 813 805, Fax:

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930+A2

BOREHOLE LOG

BOREHOLE No. **BH102**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	05/11/15	9.48mATBM	

Project: **FORMER BROOKLANDS GARAGE, READING**

Sheet: 1 of 1

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
							9.38		0.10	MADE GROUND: Tarmacadam hardstanding	
0.20	E	0					9.08		(0.30) 0.40	MADE GROUND: Greyish brown clayey sandy GRAVEL of fine to coarse angular to subrounded brick, flint, concrete, occasional clinker.	
0.70	E	1					8.08		(1.00) 1.40	MADE GROUND: Firm greenish black becoming orange brown mottled firm sandy slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded flint, brick, occasional clinker.	
1.50	HS	1					7.28		(0.80) 2.20	Orangey brown fine to medium SAND.	
1.60	E										
2.00	HS	1					6.48		(0.80) 3.00	Greyish brown clayey fine to medium SAND.	
2.30	E										
2.50	E	1									
3.00	HS	0								Borehole complete at 3.00m	

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug pit from ground level to 1.2m bgl. Borehole backfilled with arisings.

All dimensions in metres Scale 1:31.25	Contractor: Endeavour Plant:	Method: Dynamic Sample Hole Size: 100	Logged By: JH/CB	Approved By: PW

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LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930+A2

BOREHOLE LOG

BOREHOLE No. **BH103**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	05/11/15	10.63mATBM	

Project: **FORMER BROOKLANDS GARAGE, READING**

Sheet: 1 of 1

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
							10.48		0.15	MADE GROUND: Concrete hardstanding	
0.30	E	0							(0.45)	MADE GROUND: Firm brown sandy slightly gravelly CLAY. Gravel is medium to coarse subrounded flint and occasional subangular clinker.	
0.50	HS	0					10.03		0.60		
1.00	HS	0							(0.80)	Orange brown clayey medium SAND.	
							9.23		1.40		
1.50	HS	0								Orange fine to medium SAND.	
1.60	E								(0.80)		
							8.43		2.20		
2.30	E	0					8.23		2.40	Orange mottled grey clayey fine to medium SAND.	
									(0.60)	Orange fine to medium SAND.	
2.90	HS	0					7.63		3.00		
										Borehole complete at 3.00m	

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug pit from ground level to 1.2m bgl. Well installed, screened 1m - 3m.

All dimensions in metres	Contractor: Endeavour	Method: Dynamic Sample	Logged By:	Approved By:
Scale 1:31.25	Plant:	Hole Size: 100	JH/CB	PW

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LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930+A2

BOREHOLE LOG

BOREHOLE No. **BH104**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	05/11/15	10.51mATBM	

Project: **FORMER BROOKLANDS GARAGE, READING**

Sheet: 1 of 1

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
							10.31		0.20	MADE GROUND: Concrete hardstanding	
0.30	E	1					10.06		(0.25) 0.45	MADE GROUND: Light brown sandy GRAVEL of fine to coarse subangular to subrounded concrete, flint, brick, clinker. Occasional concrete cobble.	
0.50	HS	0								MADE GROUND: Firm orange brown sandy slightly gravelly CLAY. Gravel is medium to coarse subangular flint, medium subangular brick and occasional clinker.	
									(0.85)		
1							9.21		1.30		
1.40	E	1								Yellowish brown medium SAND.	
1.80	HS	1									
2									(1.70)		
2.30	HS	1									
2.80	HS	0									
3							7.51		3.00		
										Borehole complete at 3.00m	
4											

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug pit from ground level to 1.2m bgl. Well installed, screened 1m - 3m.

All dimensions in metres	Contractor: Endeavour	Method: Dynamic Sample	Logged By:	Approved By:
Scale 1:31.25	Plant:	Hole Size: 100	JH/CB	PW

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BOREHOLE LOG

BOREHOLE No. **BH105**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	05/11/15	10.64mATBM	

Project: **FORMER BROOKLANDS GARAGE, READING**

Sheet: 1 of 1

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
							10.54		0.10	MADE GROUND: Reddish brown sandy GRAVEL of medium to coarse subangular to subrounded flint and concrete, occasional tarmacadam fragment.	
0.50	E	0								Light greyish brown medium SAND.	
1									(2.00)		
1.20	HS	0									
1.70	E	0									
2							8.54		2.10		
2.20	HS	1							(0.40)	Light yellowish brown clayey medium SAND.	
							8.14		2.50	Light greyish brown medium SAND.	
2.70	HS	1							(0.50)		
3							7.64		3.00		
										Borehole complete at 3.00m	
4											

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug pit from ground level to 1.2m bgl. Well installed, screened 1m - 3m.

All dimensions in metres	Contractor: Endeavour	Method: Dynamic Sample	Logged By:	Approved By:
Scale 1:31.25	Plant:	Hole Size: 100	JH/CB	PW

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LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930+A2

BOREHOLE LOG

BOREHOLE No. **BH201**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	11/11/15	9.94mATBM	

Project: **FORMER BROOKLANDS SERVICE STATION**

Sheet: 1 of 2

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
							9.84		0.10	MADE GROUND: Tarmacadam hardstanding	
0.30	E	0					9.74		0.20	MADE GROUND: Purplish grey sandy GRAVEL of angular fine to coarse limestone (sub-base).	
1 0.90	HS	1							(1.20)	MADE GROUND: Light greyish brown sandy GRAVEL of angular to subangular fine to coarse brick and concrete, rounded to subrounded flint and occasional brick and flint cobble. Occasional fragments of coarse gravel size subangular tarmacadam and wood.	
1.20-1.70	B				34		8.54		1.40		
1.50	E	1								MADE GROUND: Medium dense to very dense brown clayey sandy GRAVEL of angular to subrounded fine to coarse of brick, concrete, flint and occasional tile. Frequent brick cobbles. Occasional large cobbles of concrete.	
2 2.00-2.50	B	1			50						
2.00	D										
2.00	HS										
2.50	HS	3							(2.70)		
3 3.00-3.50	B	3			14						
3.00	D										
3.00	HS										
3.50	HS	3									
4 4.00-4.50	B				37		5.84		4.10		
4.00	D									Dense to very dense yellowish brown slightly clayey fine SAND. Sand becoming coarse below 8.0m. Hydrocarbon odour noted between 4.20-5.50m.	
4.50	E	597									
5 5.00	D	326			50/230						
5.00	HS										
5.50-6.00	B	329									
5.50	HS										
6 6.00-6.50	B	18									
6.00	D										
6.00	E										
6.50-7.00	B	14			52				(5.00)		
6.50	D										
6.50	HS										
7 7.00	HS	5									
7.50-8.00	B	1									
7.50	E										
8 8.00	HS	1			35						
8.50-9.00	B	1									
8.50	HS										
9 9.00	HS	3					0.84		9.10		
9.20	D									Stiff mottled grey orange sandy CLAY with pockets of coarse orange SAND.	
9.50	HS	1			25		0.44		9.50		
										Stiff grey slightly sandy CLAY.	
									(0.60)		

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug starter pit to 1.2m. Dual Casing String: 200mm casing to 10.60m, Bentonite seal 9.6m-10.6m prior to using 150mm casing to 13m depth. Borehole backfilled with bentonite. Well installed, screened 1m - 4.1m.

All dimensions in metres	Contractor: Endeavour Drilling	Method: Cable Percussion	Logged By:	Approved By:
Scale 1:62.5	Plant: Dando 2000	Hole Size: 200mm to 150mm	BJ	MR

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BOREHOLE LOG

BOREHOLE No. **BH201**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	11/11/15	9.94mATBM	

Project: **FORMER BROOKLANDS SERVICE STATION**

Sheet: 2 of 2

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
10.00	D	1					-0.16		10.10		
10.00	E									Very dense pale yellow fine grained SAND with nodules of grey sandy clay	
10.10-10.50	B	1					-0.56		10.50		
10.50-11.00	B									Very dense medium to coarse grained SAND with shell fragments.	
11 10.50	D	0			50/160						
10.50	E										
11.00	D								(1.70)		
11.00	HS	1									
11.50	D										
11.50	HS										
12 12.00	D	1					-2.26		12.20		
12.00	HS									CHALK (recovered as off white slightly gravelly slightly sandy SILT). Gravel is very weak to weak, subangular to subrounded chalk.	
12.20-13.00	B	1							(0.80)		
12.50	HS										
13 13.00	D	1			24		-3.06		13.00		
13.00	HS									Borehole complete at 13.00m	
14											
15											
16											
17											
18											
19											

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug starter pit to 1.2m. Dual Casing String: 200mm casing to 10.60m, Bentonite seal 9.6m-10.6m prior to using 150mm casing to 13m depth. Borehole backfilled with bentonite. Well installed, screened 1m - 4.1m.

All dimensions in metres	Contractor: Endeavour Drilling	Method: Cable Percussion	Logged By:	Approved By:
Scale 1:62.5	Plant: Dando 2000	Hole Size: 200mm to 150mm	BJ	MR

SLR Consulting Ltd, 8 Stow Court, Stow-cum-Quy, Cambridge, CB25 9AS, UK, Tel: 01223 813 805, Fax:

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930+A2

BOREHOLE LOG

BOREHOLE No. **BH202**

Client: **GABLES HOMES LTD**

Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	06/11/15	10.77mATBM	

Project: **FORMER BROOKLANDS SERVICE STATION**

Sheet: 1 of 2

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
0.15	HS	1					10.68		0.09	MADE GROUND: Concrete hardstanding	
0.25	D	0					10.56		0.21	MADE GROUND: Brown sandy GRAVEL comprising brick rubble and occasional clinker	
0.25	HS	0					10.34		0.43	MADE GROUND: Light brown mottled grey slightly gravelly fine to medium grained SAND with occasional bands of firm brown clay. Gravel is fine to coarse of red brick.	
0.50-1.00	B									Dense to very dense orangish brown mottled grey fine and medium grained SAND with bands of firm brown clay.	
0.50	HS										
1 1.00	D	0									
1.00	HS				50						
1.20-1.65	B										
1.50-2.00	B	0									
1.50	HS										
2 2.00	D	0			28						
2.00	HS										
2.50-3.00	B	0									
2.50	HS										
3 3.00	D	0			50/150						
3.00	HS										
3.50-4.00	B	0									
3.50	HS										
4 4.00	D	0			50/220						
4.00	HS										
4.50-5.00	B	0									
4.50	HS								(8.57)		
5 5.00	D	0									
5.00	HS										
5.50-6.00	B										
5.50	HS										
6 6.00	D										
6.00	HS										
6.50-7.00	B				30						
6.50	HS										
7 7.00	D	0									
7.00	HS										
7.50-8.00	B	1									
7.50	HS										
8 8.00	D	0			34						
8.00	HS										
8.50-9.00	B	0									
8.50	HS										
9 9.00	D	0					1.77		9.00		
9.00	HS									Medium dense brown clayey fine to medium grained SAND.	
9.50	HS	0			27				(0.95)		
							0.82		9.95		

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug starter pit to 1.2m. Dual Casing String: 200mm casing to 10.10m, Bentonite seal 9.1m-10.10m, prior to using 150mm casing to 17m depth. Borehole backfilled with bentonite to 10.1m. Well installed, screened 5m - 10.1m.

All dimensions in metres	Contractor: Endeavour Drilling	Method: Cable Percussion	Logged By:	Approved By:
Scale 1:62.5	Plant: Dando 2000	Hole Size: 200mm to 150mm	CB & BJ	MR

SLR Consulting Ltd, 8 Stow Court, Stow-cum-Quy, Cambridge, CB25 9AS, UK, Tel: 01223 813 805, Fax:

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930+A2

BOREHOLE LOG

BOREHOLE No. **BH202**

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Project No:	Date:	Ground Level:	Co-ordinates:
408.05913.00001	06/11/15	10.77mATBM	

Project: **FORMER BROOKLANDS SERVICE STATION**

Sheet: 2 of 2

SAMPLES & TESTS							STRATA				
Depth	Type No	HS(ppm)	HV(kPa)	PP(kPa)	SPT-N	Water	Reduced Level	Legend (Thick-ness)	Depth	DESCRIPTION	Instrument/ Backfill
9.95-10.00	B	0					0.67		10.10	Firm to stiff mottled grey orange CLAY with pockets of fine to medium grained SAND. *(continued)*	
10.00 HS 10.10 D					50		0.27		10.50	Stiff grey CLAY	
10.10-10.55	U100	0			33					Firm grey mottled brown green sandy CLAY with abundant shell fragments	
10.50 HS 11 10.60 D		0							(1.70)		
11.00-11.50	B										
11.00 HS 11.50 HS		0									
12 12.00 D		0					-1.43		12.20		
12.00 HS 12.20 D										Brown mottled grey sandy gravelly CLAY. Gravel is sub angular coarse of flint, shells and weak cream chalk.	
12.50 D 12.50 HS		0			33				(0.80)		
12.50-12.95	U100	0					-2.23		13.00		
13 13.00 HS										CHALK (recovered of off white slightly gravelly slightly sandy SILT). Gravel is very weak to weak chalk.	
13.50-14.00	B	1									
13.50 HS 14 14.00 D		1			28						
14.00 HS											
14.50-15.00	B	0									
14.50 HS 15 15.00 D		1							(4.00)		
15.00 HS											
15.50 HS		1			27						
16 16.00 D		1									
16.00 HS											
16.50-17.00	B	1									
16.50 HS 17 17.00 D		1			23		-6.23		17.00		
17.00 HS										Borehole complete at 17.00m	
18											
19											

Boring Progress and Water Observations				Casing		Chiselling			Water Added		General Remarks
Date	Time	Depth	Water Dpt	Depth	Dia. mm	From	To	Hours	From	To	Hand dug starter pit to 1.2m. Dual Casing String: 200mm casing to 10.10m, Bentonite seal 9.1m-10.10m, prior to using 150mm casing to 17m depth. Borehole backfilled with bentonite to 10.1m. Well installed, screened 5m - 10.1m.

All dimensions in metres	Contractor: Endeavour Drilling	Method: Cable Percussion	Logged By:	Approved By:
Scale 1:62.5	Plant: Dando 2000	Hole Size: 200mm to 150mm	CB & BJ	MR

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LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930+A2

Date	Borehole	EX1	EX2	EX3	EX4	EX5	EX6	EX7	EX8	EX10	EX11	EX12	EX13	EXB	MW2	MW4	MW5	MW7	MW8	MW102	MW103	MW201	MW202	BH101	BH103	BH104	BH105	BH201	BH202
	Well Screen Zone (m)	4.0-9.5	4.0-9.0	2.0-10.2	4.0-9.5	4.0-9.5	4.0-9.2	4.0-9.3	4.0-9.0	4.0-9.0	4.0-9.0	4.0-9.0	4.0-9.0	4.0-10.0	-	-	-	23.0-28.0	23.5-28.5	20.0-30.0	20.0-30.0	16.0-29.0	16.0-29.0						
	Borehole Elevation (mASD)	10.120	10.100	10.090	10.090	9.845	9.890	9.960	10.020	9.640	9.710	9.859	10.000	9.6	10.13	10.37	9.48	9.62	10.1	10.22	10.48	9.98	9.93	11.038	10.626	10.513	10.644	9.939	10.772
Sep '08	Depth to NAPL (m)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP	NP	NP	NP	NP					
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
	Groundwater depth (m)	7.85	7.80	7.76	7.76	7.56	7.60	7.63	7.69	7.34	7.44	7.53	7.63	7.32	dry	-	-	22.80	23.28	23.41	23.500	23.17	23.13						
	Groundwater Elevation (m)	2.270	2.300	2.330	2.330	2.285	2.290	2.330	2.330	2.300	2.270	2.329	2.370	2.314	-	-	-	-13.180	-13.180	-13.190	-13.020	-13.190	-13.200						
May '09	Depth to NAPL (m)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	-	NP	NP	NP						
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
	Groundwater depth (m)	7.90	7.90	7.80	7.80	7.60	7.62	7.67	7.74	7.37	7.47	7.58	7.66	7.35	dry	-	-	-	23.12	-	23.350	23.25	23.21						
	Groundwater Elevation (m)	2.220	2.200	2.290	2.290	2.245	2.270	2.290	2.280	2.270	2.240	2.279	2.340	2.284	-	-	-	-	-13.020	-	-12.870	-13.270	-13.280						
Dec '09	Depth to NAPL (m)	NP	NP	NP	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP						
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
	Groundwater depth (m)	8.03	7.99	7.97	7.97	7.74	7.78	7.83	dry	7.53	7.64	7.71	9.06	7.52	dry	-	-	22.92	23.44	23.57	23.740	23.33	23.24						
	Groundwater Elevation (m)	2.090	2.110	2.120	2.120	2.105	2.110	2.130	-	2.110	2.070	2.149	0.940	2.114	-	-	-	-13.075	-13.340	-13.350	-13.260	-13.350	-13.310						
Jan '10	Depth to NAPL (m)	NP	NP	NP	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	NP	NP	NP						
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
	Groundwater depth (m)	7.97	7.94	7.92	7.91	7.68	7.71	7.76	dry	7.47	7.59	7.70	7.80	7.45	-	-	-	21.9	22.42	-	22.300	22.89	22.26						
	Groundwater Elevation (m)	2.150	2.160	2.170	2.180	2.165	2.180	2.200	-	2.170	2.120	2.159	2.200	2.184	-	-	-	-12.055	-12.320	-	-11.820	-12.910	-12.330						
07-08/04/11	Depth to NAPL (m)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP						
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
	Groundwater depth (m)	8.094	8.049	8.026	8.021	7.792	7.837	7.887	7.964	7.579	7.689	7.782	7.896	7.583	dry	dry	dry	22.989	23.454	23.581	23.737	23.357	23.307						
	Groundwater Elevation (m)	2.026	2.051	2.064	2.069	2.053	2.053	2.073	2.056	2.061	2.021	2.077	2.104	2.051	-	-	-	-13.144	-13.354	-13.361	-13.257	-13.377	-13.377						
	Head Space*	20	75	20	10	70	30	<5	10	30	<5	15	10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5						
15/10/2015	Depth to NAPL (m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP						
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
	Groundwater depth (m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.177	23.660	23.779	23.950	23.545	23.531						
	Groundwater Elevation (m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-13.557	-13.560	-13.559	-13.470	-13.565	-13.601						
	Head Space*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1						
21/10/2015 - 29/10/2015	Depth to NAPL (m)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-						
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
	Groundwater depth (m)	8.053	8.022	7.986	7.985	7.771	7.806	7.853	7.921	7.558	7.664	7.765	7.867	7.555	-	-	-	-	-	-	-	-	-						
	Groundwater Elevation (m)	2.067	2.078	2.104	2.105	2.074	2.084	2.107	2.099	2.082	2.046	2.094	2.133	2.079	-	-	-	-	-	-	-	-	-						
	Head Space*	<1	<1	<1	<1	<1	10	25	<1	5	<1	<1	5	<1															
19/11/2015	Depth to NAPL (m)	-	NP	-	-	NP	-	-	-	-	-	NP	-	NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
	NAPL (mm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Groundwater depth (m)	-	8.068	-	-	7.798	-	-	-	-	-	7.804	-	7.568	-	-	-	-	-	-	-	-	-	DRY	DRY	DRY	DRY	DRY	8.783
	Groundwater Elevation (m)	-	2.032	-	-	2.047	-	-	-	-	-	2.055	-	2.066	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.989
	Head Space*	-	<1	-	-	<1	-	-	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1

Key

All depths are in metres below ground level.

NP	Not present.
NAPL	Non aqueous phase liquid
–	No data recorded
mASD	Metres above Site Datum
*	Soil gas vapour as parts per million Total Organic Volatiles, measured using either GMI Gas Surveyor calibrated to pentane or PID (10.6eV lamp) calibrated to isobutylene.
	Well installed in Made Ground
	Well installed in Lambeth Group
	Well installed in Chalk
-	Unknown Strata/Screen

Soil Gas Monitoring Summary Results

Borehole	Date	Barometric Pressure (mbars)	Groundwater Depth (mbegl)	Depth to Base of Well (mbegl)	CH_4 Peak (% v/v)	CH_4 Steady (%v/v)	CO_2 Peak (% v/v)	CO_2 Steady (% v/v)	O_2 Minimum (% v/v)	O_2 Steady (% v/v)	CO (ppm)	H_2S (ppm)	Flow Rate (l/hr)	Gas Pressure (mbars)
BH101	19/11/2015	1004	DRY	3.00	<0.1	<0.1	4.7	4.6	15.4	15.4	<1	<1	0.1	0.50
	02/12/2015	1013	DRY	3.00	<0.1	<0.1	0.9	0.9	18.9	18.9	2	1	<0.1	<0.1
BH103	19/11/2015	1004	DRY	3.00	<0.1	<0.1	1.9	1.8	19.0	19.0	<1	<1	<0.1	0.02
	02/12/2015	1012	DRY	3.00	<0.1	<0.1	4.1	3.6	16.4	16.4	4	<1	<0.1	<0.1
BH104	19/11/2015	1004	DRY	3.00	<0.1	<0.1	0.1	0.1	21.0	21.0	<1	<1	<0.1	0.06
	02/12/2015	1012	*	*	<0.1	<0.1	<0.1	<0.1	20.4	20.4	<1	<1	<0.1	<0.1
BH105	19/11/2015	1004	DRY	2.83	<0.1	<0.1	3.1	3.1	16.9	16.9	<1	<1	<0.1	0.02
	02/12/2015	1012	DRY	2.83	<0.1	<0.1	1.7	1.7	17.8	17.8	2	1	<0.1	<0.1
EX2	19/11/2015	1005	8.068	8.665	<0.1	<0.1	4.9	4.9	12.7	12.7	<1	<1	0.1	<0.1
	02/12/2015	1011	8.055	8.640	<0.1	<0.1	0.8	0.4	18.8	18.8	2	1	<0.1	<0.1
EX5	19/11/2015	1006	7.806	9.038	<0.1	<0.1	0.2	0.1	21.0	21.0	3	<1	<0.1	0.07
	02/12/2015	1011	7.820	9.000	<0.1	<0.1	2.8	2.8	14.7	14.7	2	<1	<0.1	<0.1
EX12	19/11/2015	1006	7.804	8.5	<0.1	<0.1	0.3	0.3	20.6	20.6	5	<1	<0.1	-0.05
	02/12/2015	1011	7.810	8.545	<0.1	<0.1	0.8	0.8	18.1	18.1	2	<1	<0.1	<0.1
EXB	19/11/2015	1007	7.568	9.32	<0.1	<0.1	6.4	6.4	9.9	9.9	<1	1	<0.1	<0.1
	02/12/2015	1012	7.595	9.325	<0.1	<0.1	3.5	**	13.9	**	2	<1	2.2	0.08
BH201	19/11/2015	1006	DRY	4.10	0.1	0.1	0.4	0.4	20.1	20.1	1	<1	0.1	0.03
	02/12/2015	1012	4.073	4.205	<0.1	<0.1	0.3	0.3	14.9	14.9	4	<1	<0.1	<0.1

Key

0 = less than instrument detection limit.

mbegl - metres below existing ground level

1.2	Maximum value where below screening level, other than for O2 where it highligths the minimum value.
27.8	Value exceeds screening value.
*	Unable to take reading
**	Unable to take stabilised reading

Borehole Number	GAC Residential *	BH101		BH102			BH103		BH104		BH105	BH201				BH202			
Sample Depth (mbgl)		0.3	1.5	0.2	0.7	2.5	0.3	2.3	0.3	1.4	0.5	0.4	0.9	4.5	6.0	0.15	0.25	6.0	10.3
Sample Date		05/11/2015	06/11/2015	05/11/15	05/11/15	06/11/2015	05/11/15	06/11/2015	05/11/15	05/11/15	05/11/15	05/11/15	05/11/15	10/11/15	10/11/15	05/11/15	05/11/15	06/11/2015	06/11/2015
Strata Type		LG	LG	MG	MG	LG	MG	LG	MG	LG	LG	MG	MG	LG	LG	MG	MG	LG	LG
MTBE	49	-	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	-	<0.005	-
Benzene	0.079	-	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	4.7	<0.005	<0.005	-	<0.005	-
Toluene	119	-	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	450	0.37	<0.005	-	<0.005	-
Ethylbenzene	65	-	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	130	0.38	<0.005	-	<0.005	-
m/p-Xylene	42	-	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	1000	4.1	<0.005	-	<0.005	-
o-Xylene		-	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	380	2	<0.005	-	<0.005	-
Aliphatics >C5-C6	30	-	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	4.5	<0.1	<0.1	-	<0.1	-
Aliphatics >C6-C8	73	-	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	640	1	<0.1	-	<0.1	-
Aliphatics >C8-C10	19	-	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	1900	34	<0.1	-	0.4	-
Aliphatics >C10-C12	93	-	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	86	<0.2	<0.2	-	<0.2	-
Aliphatics >C12-C16	740	-	<4	-	-	<4	<4	<4	<4	<4	<4	-	-	52	<4	<4	-	<4	-
Aliphatics >C16-C21	45000	-	<7	-	-	<7	<7	<7	27	<7	<7	-	-	48	<7	<7	-	<7	-
Aliphatics >C21-C35	45000	-	<7	-	-	<7	<7	<7	300	<7	<7	-	-	15	<7	<7	-	<7	-
Total Aliphatics	-	-	<19	-	-	<19	<19	<19	327	<19	<19	-	-	2746	35	<19	-	<19	-
Aromatics >EC5-EC7	65	-	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	4.7	<0.1	<0.1	-	<0.1	-
Aromatics >EC7-EC8	120	-	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	450	0.4	<0.1	-	<0.1	-
Aromatics >EC8-EC10	27	-	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	1500	6.4	<0.1	-	<0.1	-
Aromatics >EC10-EC12	69	-	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	210	<0.2	<0.2	-	<0.2	-
Aromatics >EC12-EC16	140	-	<4	-	-	<4	<4	<4	19	<4	<4	-	-	61	<4	<4	-	<4	-
Aromatics >EC16-EC21	250	-	<7	-	-	<7	<7	<7	620	<7	<7	-	-	37	<7	<7	-	<7	-
Aromatics >EC21-EC35	890	-	<7	-	-	<7	<7	<7	2100	<7	<7	-	-	19	<7	<7	-	<7	-
Total Aromatics	-	-	<19	-	-	<19	<19	<19	2739	<19	<19	-	-	2282	<19	<19	-	<19	-
Total Petroleum Hydrocarbons	-	-	<38	-	-	<38	<38	<38	3066	<38	<38	-	-	5028	<38	<38	-	<38	-
Naphthalene	1.5	-	-	<0.04	<0.04	-	<0.04	-	<0.40	-	-	<0.04	0.07	-	-	-	<0.04	-	-
Acenaphthylene	170	-	-	0.11	0.04	-	<0.03	-	<0.30	-	-	0.18	0.2	-	-	-	<0.03	-	-
Acenaphthene	210	-	-	0.06	<0.05	-	<0.05	-	<0.50	-	-	0.11	<0.05	-	-	-	<0.05	-	-
Fluorene	160	-	-	0.08	<0.04	-	<0.04	-	<0.40	-	-	0.12	0.06	-	-	-	<0.04	-	-
Phenanthrene	92	-	-	0.65	0.06	-	<0.03	-	3.9	-	-	1.4	0.8	-	-	-	<0.03	-	-
Anthracene	2,300	-	-	0.37	<0.04	-	<0.04	-	1.6	-	-	0.53	0.61	-	-	-	<0.04	-	-
Fluoranthene	260	-	-	2	0.17	-	<0.03	-	12	-	-	3.7	2.7	-	-	-	<0.03	-	-
Pyrene	560	-	-	2.9	0.23	-	<0.03	-	11	-	-	3.5	2.9	-	-	-	<0.03	-	-
Benzo(a)anthracene	3.1	-	-	1.2	0.12	-	<0.06	-	5.7	-	-	1.5	1.7	-	-	-	<0.06	-	-
Chrysene	6	-	-	1.4	0.15	-	<0.02	-	6	-	-	2	1.9	-	-	-	<0.02	-	-
Benzo(bk)fluoranthene	-	-	-	2.2	0.24	-	<0.07	-	9.4	-	-	3.1	3	-	-	-	<0.07	-	-
Benzo(a)pyrene	0.83	-	-	1.3	0.15	-	<0.04	-	6.2	-	-	1.9	1.9	-	-	-	<0.04	-	-
Indeno(123cd)pyrene	3.2	-	-	0.93	0.1	-	<0.04	-	3.1	-	-	1.2	1.2	-	-	-	<0.04	-	-
Dibenzo(ah)anthracene	0.76	-	-	0.25	<0.04	-	<0.04	-	0.68	-	-	0.34	0.25	-	-	-	<0.04	-	-
Benzo(ghi)perylene	44	-	-	0.83	0.09	-	<0.04	-	3.1	-	-	1.1	1.2	-	-	-	<0.04	-	-
PAH 16 Total	-	-	-	14.3	1.4	-	<0.6	-	62.7	-	-	20.7	18.5	-	-	-	<0.6	-	-
Benzo(b)fluoranthene	5.6	-	-	1.6	0.17	-	<0.05	-	6.8	-	-	2.2	2.2	-	-	-	<0.05	-	-
Benzo(k)fluoranthene	8.5	-	-	0.62	0.07	-	<0.02	-	2.6	-	-	0.87	0.84	-	-	-	<0.02	-	-
Arsenic	32	8.2	-	9	14	-	8.9	-	11	-	-	7.2	9.8	-	-	-	4.1	-	-
Cadmium	3	<0.1	-	0.1	<0.1	-	<0.1	-	0.2	-	-	<0.1	0.1	-	-	-	<0.1	-	-
Chromium	3000	60	-	25	66	-	86	-	77	-	-	47	57	-	-	-	97	-	-
Copper	2330	16	-	28	<1	-	<1	-	26	-	-	2	7	-	-	-	10	-	-
Lead	-	26	-	65	66	-	10	-	37	-	-	18	50	-	-	-	10	-	-
Mercury	1	<0.1	-	<0.1	0.1	-	<0.1	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	-
Nickel	130	23	-	13	16	-	13	-	16	-	-	9.9	13	-	-	-	19	-	-
Selenium	350	<1	-	<1	<1	-	<1	-	<1	-	-	<1	<1	-	-	-	<1	-	-
Zinc	3750	56	-	66	61	-	33	-	110	-	-	37	120	-	-	-	36	-	-
Hexavalent Chromium	4.3	<0.3	-	0.4	<0.3	-	<0.3	-	<0.3	-	-	0.6	<0.3	-	-	-	<0.3	-	-
Total Organic Carbon (SOM)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	0.02	0.54
pH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Screen	-	-	-	Fibre Bundle	NAD	-	NAD	-	NAD	-	-	NAD	NAD	-	-	-	NAD	-	-
Asbestos Type	-	-	-	Amosite	NAD	-	NAD	-	NAD	-	-	NAD	NAD	-	-	-	NAD	-	-
Asbestos Quantification (mass %)	-	-	-	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key

All results are in mg/kg - reported to 2 significant figures.

MTBE	Methyl tertiary butyl ether
SOM	Soil Organic Matter
-	Not analysed/no GAC/SSAC
888	Exceeds Residential GAC
888	Exceeds detection limit
NAD	No Asbestos Detected

MG	Made Ground.
LG	Lambeth Group
*	Residential with plant uptake, SOM 1%

Jones Environmental Laboratory

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4225

Attention :	Jeremy Head
Date :	19th November, 2015
Your reference :	408.05913.00001
Our reference :	Test Report 15/15879 Batch 1
Location :	Brooklands/Rading
Date samples received :	6th November, 2015
Status :	Final report
Issue :	1

Twelve samples were received for analysis on 6th November, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head
JE Job No.: 15/15879

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	6-8	9-10	11-13	14-15	16-18	19-21	22-24	25-27	28-30	LOD/LOR	Units	Method No.
Sample ID	BH105	BH104	BH104	BH103	BH102	BH102	BH201	BH201	BH202	BH202			
Depth	0.5	0.3	1.4	0.3	0.2	0.7	0.4	0.9	0.15	0.25			
COC No / misc													
Containers	V J T	V J T	V J	V J T	J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015			
Arsenic #M	-	11	-	8.9	NDP	14	7.2	9.8	-	4.1	<0.5	mg/kg	TM30/PM15
Cadmium #M	-	0.2	-	<0.1	NDP	<0.1	<0.1	0.1	-	<0.1	<0.1	mg/kg	TM30/PM15
Chromium #M	-	77	-	86	NDP	66	47	57	-	97	<0.5	mg/kg	TM30/PM15
Copper #M	-	26	-	<1	NDP	<1	2	7	-	10	<1	mg/kg	TM30/PM15
Lead #M	-	37	-	10	NDP	66	18	50	-	10	<5	mg/kg	TM30/PM15
Mercury #M	-	<0.1	-	<0.1	NDP	0.1	<0.1	<0.1	-	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #M	-	16	-	13	NDP	16	9.9	13	-	19	<0.7	mg/kg	TM30/PM15
Selenium #M	-	<1	-	<1	NDP	<1	<1	<1	-	<1	<1	mg/kg	TM30/PM15
Zinc #M	-	110	-	33	NDP	61	37	120	-	36	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	-	<0.40 AA	-	<0.04	<0.04	<0.04	<0.04	0.07	-	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.30 AA	-	<0.03	0.11	0.04	0.18	0.20	-	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	-	<0.50 AA	-	<0.05	0.06	<0.05	0.11	<0.05	-	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #M	-	<0.40 AA	-	<0.04	0.08	<0.04	0.12	0.06	-	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	-	3.9 AA	-	<0.03	0.65	0.06	1.4	0.80	-	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	-	1.6 AA	-	<0.04	0.37	<0.04	0.53	0.61	-	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	-	12 AA	-	<0.03	2.0	0.17	3.7	2.7	-	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	-	11 AA	-	<0.03	2.9	0.23	3.5	2.9	-	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	5.7 AA	-	<0.06	1.2	0.12	1.5	1.7	-	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #M	-	6.0 AA	-	<0.02	1.4	0.15	2.0	1.9	-	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	-	9.4 AA	-	<0.07	2.2	0.24	3.1	3.0	-	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	6.2 AA	-	<0.04	1.3	0.15	1.9	1.9	-	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	-	3.1 AA	-	<0.04	0.93	0.10	1.2	1.2	-	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	0.68 AA	-	<0.04	0.25	<0.04	0.34	0.25	-	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	3.1 AA	-	<0.04	0.83	0.09	1.1	1.2	-	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	62.7 AA	-	<0.6	14.3	1.4	20.7	18.5	-	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	6.8 AA	-	<0.05	1.6	0.17	2.2	2.2	-	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	2.6 AA	-	<0.02	0.62	0.07	0.87	0.84	-	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	81 AA	-	120	110	120	110	110	-	120	<0	%	TM4/PM8
MTBE #	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	-	<0.005	mg/kg	TM31/PM12
Benzene #	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	-	<0.005	mg/kg	TM31/PM12
Toluene #	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	-	<0.005	mg/kg	TM31/PM12
Ethylbenzene #	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	-	<0.005	mg/kg	TM31/PM12
m/p-Xylene #	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	-	<0.005	mg/kg	TM31/PM12
o-Xylene #	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	-	<0.005	mg/kg	TM31/PM12
Xylenes (sum of isomers) #	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	-	<0.01	mg/kg	TM31/PM12

Please see attached notes for all abbreviations and acronyms

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head
JE Job No.: 15/15879

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	6-8	9-10	11-13	14-15	16-18	19-21	22-24	25-27	28-30	LOD/LOR	Units	Method No.
Sample ID	BH105	BH104	BH104	BH103	BH102	BH102	BH201	BH201	BH202	BH202			
Depth	0.5	0.3	1.4	0.3	0.2	0.7	0.4	0.9	0.15	0.25			
COC No / misc													
Containers	V J T	V J T	V J	V J T	J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	-	-	-	-	<0.2	-	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	-	-	-	-	<4	-	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	27	<7	<7	-	-	-	-	<7	-	<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	300	<7	<7	-	-	-	-	<7	-	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	327	<19	<19	-	-	-	-	<19	-	<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	<0.2	-	-	-	-	<0.2	-	<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	19	<4	<4	-	-	-	-	<4	-	<4	mg/kg	TM5/PM16
>EC16-EC21	<7	620	<7	<7	-	-	-	-	<7	-	<7	mg/kg	TM5/PM16
>EC21-EC35	<7	2100	<7	<7	-	-	-	-	<7	-	<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	2739	<19	<19	-	-	-	-	<19	-	<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	3066	<38	<38	-	-	-	-	<38	-	<38	mg/kg	TM5/TM36/PM12/PM16
Natural Moisture Content	5.0	9.1	10.4	13.1	NDP	14.5	8.4	12.4	23.4	13.2	<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	-	<0.3	0.4	<0.3	0.6	<0.3	-	<0.3	<0.3	mg/kg	TM38/PM20
pH #M	-	8.6	-	8.1	11	7.9	11	11	-	9.0	<0.01	pH units	TM73/PM11
Sample Type	Sand	Clayey Sand	Sand	Clay	Loamy Sand	Clay	Clayey Sand	Sand	Sand	Sand		None	PM13/PM0
Sample Colour	Light Brown	Dark Brown	Light Brown	Light Brown	Medium Brown	Dark Brown	Dark Brown	Medium Brown	Medium Brown	Light Brown		None	PM13/PM0
Other Items	NA	stones	NA	stones	stones	stones	stones	stones	stones, brick	stones		None	PM13/PM0
Arsenic	-	-	-	-	9.0	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Cadmium	-	-	-	-	0.1	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	25	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	28	-	-	-	-	-	<1	mg/kg	TM30/PM62
Lead	-	-	-	-	65	-	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	<0.1	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	13	-	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	<1	-	-	-	-	-	<1	mg/kg	TM30/PM62
Zinc	-	-	-	-	66	-	-	-	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Any questionable sample will automatically be assumed to have breached the Waste Limit and further testing may be required.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
15/15879	1	BH104	0.3	7	11/11/2015	**Mass of Dry Sample**	55.3 (g)
					11/11/2015	**General Description (Bulk Analysis)**	Stones/Soil
					11/11/2015	**Asbestos Containing Material**	None
					11/11/2015	**Asbestos Containing Material (2)**	None
					11/11/2015	**Asbestos Screen**	NAD
					11/11/2015	**Asbestos Screen (2)**	NAD
					11/11/2015	**Asbestos Level**	NAD
					11/11/2015	**Waste Limit**	<0.1%
15/15879	1	BH103	0.3	12	11/11/2015	**Mass of Dry Sample**	54.4 (g)
					11/11/2015	**General Description (Bulk Analysis)**	Soil/Sand/Stone
					11/11/2015	**Asbestos Containing Material**	None
					11/11/2015	**Asbestos Containing Material (2)**	None
					11/11/2015	**Asbestos Screen**	NAD
					11/11/2015	**Asbestos Screen (2)**	NAD
					11/11/2015	**Asbestos Level**	NAD
					11/11/2015	**Waste Limit**	<0.1%
15/15879	1	BH102	0.2	14	11/11/2015	**Mass of Dry Sample**	53.4 (g)
					11/11/2015	**General Description (Bulk Analysis)**	Soil/Stone
					11/11/2015	**Asbestos Containing Material**	Fibre Bundles
					11/11/2015	**Asbestos Screen**	Amosite
					11/11/2015	**Asbestos Level**	Quantifiable
					11/11/2015	**Waste Limit**	<0.1%
15/15879	1	BH102	0.7	17	11/11/2015	**Mass of Dry Sample**	49.5 (g)
					11/11/2015	**General Description (Bulk Analysis)**	Soil/Stone
					11/11/2015	**Asbestos Containing Material**	None
					11/11/2015	**Asbestos Containing Material (2)**	None
					11/11/2015	**Asbestos Screen**	NAD
					11/11/2015	**Asbestos Screen (2)**	NAD
					11/11/2015	**Asbestos Level**	NAD
					11/11/2015	**Waste Limit**	<0.1%
15/15879	1	BH201	0.4	20	11/11/2015	**Mass of Dry Sample**	51.9 (g)
					11/11/2015	**General Description (Bulk Analysis)**	Soil-Silt/Clay/Brick/Stone
					11/11/2015	**Asbestos Containing Material**	None
					11/11/2015	**Asbestos Containing Material (2)**	None
					11/11/2015	**Asbestos Screen**	NAD

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
15/15879	1	BH201	0.4	20	11/11/2015	**Asbestos Screen (2)**	NAD
					11/11/2015	**Asbestos Level**	NAD
					11/11/2015	**Waste Limit**	<0.1%
15/15879	1	BH201	0.9	23	11/11/2015	**Mass of Dry Sample**	54.5 (g)
					11/11/2015	**General Description (Bulk Analysis)**	Soil-Silt/Clay/Brick/Stone
					11/11/2015	**Asbestos Containing Material**	None
					11/11/2015	**Asbestos Containing Material (2)**	None
					11/11/2015	**Asbestos Screen**	NAD
					11/11/2015	**Asbestos Screen (2)**	NAD
					11/11/2015	**Asbestos Level**	NAD
					11/11/2015	**Waste Limit**	<0.1%

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
15/15879	1	BH102	0.2	14-15	Asbestos detected in sample

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/15879

SOILS

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It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

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SURROGATES

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NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
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*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution

JE Job No: 15/15879

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM12/PM16	CWG GC-FID			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes

JE Job No: 15/15879

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No

Jones Environmental Laboratory

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Fax: +44 (0) 1244 833781

SLR Consulting Ltd
Treenwood House
Rowden Lane
Bradford on Avon
BA15 2UA

Attention :	Jeremy Head
Date :	1st December, 2015
Your reference :	408.05913.00001
Our reference :	Test Report 15/15879 Batch 1 Schedule C
Location :	Brooklands/Rading
Date samples received :	6th November, 2015
Status :	Final report
Issue :	1

Twelve samples were received for analysis on 6th November, 2015 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Any questionable sample will automatically be assumed to have breached the Waste Limit and further testing may be required.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
15/15879	1	BH102	0.2	14	01/12/2015	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					01/12/2015	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/15879						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/15879

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NDP	No Determination Possible
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SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
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ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
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JE Job No: 15/15879

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
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Jones Environmental Laboratory

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SLR Consulting Ltd
Treenwood House
Rowden Lane
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BA15 2UA

4225

Attention :	Jeremy Head
Date :	1st December, 2015
Your reference :	408.05913.00001
Our reference :	Test Report 15/15879 Batch 1 Schedule D
Location :	Brooklands/Rading
Date samples received :	6th November, 2015
Status :	Final report
Issue :	1

Twelve samples were received for analysis on 6th November, 2015 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
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Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands/Rading
Contact: Jeremy Head

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

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Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
15/15879	1	BH202	0.25	29	26/11/2015	**Mass of Dry Sample**	51.2 (g)
					30/11/2015	**General Description (Bulk Analysis)**	Soil-Sand/Clay/Brick/Stone
					30/11/2015	**Asbestos Containing Material**	None
					30/11/2015	**Asbestos Containing Material (2)**	None
					30/11/2015	**Asbestos Screen**	NAD
					30/11/2015	**Asbestos Screen (2)**	NAD
					30/11/2015	**Asbestos Level**	NAD
					30/11/2015	**Waste Limit**	<0.1%

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/15879

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JE Job No: 15/15879

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
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Jones Environmental Laboratory

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SLR Consulting Ltd
Treenwood House
Rowden Lane
Bradford on Avon
BA15 2UA

4225

Attention :	Jeremy Head
Date :	18th November, 2015
Your reference :	408.05913.00001
Our reference :	Test Report 15/15975 Batch 1
Location :	Brooklands
Date samples received :	7th November, 2015
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 7th November, 2015 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands
Contact: Jeremy Head
JE Job No.: 15/15975

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1	3-4	9-10	13-14	15-17	21-23					LOD/LOR	Units	Method No.
Sample ID	BH101	BH101	BH102	BH103	BH202	BH202							
Depth	0.3	1.5	2.5	2.3	6.0	10.3							
COC No / misc													
Containers	T	V J	V J	V J	V J T	V J T							
Sample Date	05/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	07/11/2015	07/11/2015	07/11/2015	07/11/2015	07/11/2015	07/11/2015							
Arsenic #M	8.2	-	-	-	-	-					<0.5	mg/kg	TM30/PM15
Cadmium #M	<0.1	-	-	-	-	-					<0.1	mg/kg	TM30/PM15
Chromium #M	60	-	-	-	-	-					<0.5	mg/kg	TM30/PM15
Copper #M	16	-	-	-	-	-					<1	mg/kg	TM30/PM15
Lead #M	26	-	-	-	-	-					<5	mg/kg	TM30/PM15
Mercury #M	<0.1	-	-	-	-	-					<0.1	mg/kg	TM30/PM15
Nickel #M	23	-	-	-	-	-					<0.7	mg/kg	TM30/PM15
Selenium #M	<1	-	-	-	-	-					<1	mg/kg	TM30/PM15
Zinc #M	56	-	-	-	-	-					<5	mg/kg	TM30/PM15
MTBE #	-	<0.005	<0.005	<0.005	<0.005	-					<0.005	mg/kg	TM31/PM12
Benzene #	-	<0.005	<0.005	<0.005	<0.005	-					<0.005	mg/kg	TM31/PM12
Toluene #	-	<0.005	<0.005	<0.005	<0.005	-					<0.005	mg/kg	TM31/PM12
Ethylbenzene #	-	<0.005	<0.005	<0.005	<0.005	-					<0.005	mg/kg	TM31/PM12
m/p-Xylene #	-	<0.005	<0.005	<0.005	<0.005	-					<0.005	mg/kg	TM31/PM12
o-Xylene #	-	<0.005	<0.005	<0.005	<0.005	-					<0.005	mg/kg	TM31/PM12
Xylenes (sum of isomers) #	-	<0.01	<0.01	<0.01	<0.01	-					<0.01	mg/kg	TM31/PM12
TPH CWG													
Aliphatics													
>C5-C6 #M	-	<0.1	<0.1	<0.1	<0.1	-					<0.1	mg/kg	TM36/PM12
>C6-C8 #M	-	<0.1	<0.1	<0.1	<0.1	-					<0.1	mg/kg	TM36/PM12
>C8-C10	-	<0.1	<0.1	<0.1	0.4	-					<0.1	mg/kg	TM36/PM12
>C10-C12 #M	-	<0.2	<0.2	<0.2	<0.2	-					<0.2	mg/kg	TM5/PM16
>C12-C16 #M	-	<4	<4	<4	<4	-					<4	mg/kg	TM5/PM16
>C16-C21 #M	-	<7	<7	<7	<7	-					<7	mg/kg	TM5/PM16
>C21-C35 #M	-	<7	<7	<7	<7	-					<7	mg/kg	TM5/PM16
Total aliphatics C5-35	-	<19	<19	<19	<19	-					<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	-	<0.1	<0.1	<0.1	<0.1	-					<0.1	mg/kg	TM36/PM12
>EC7-EC8	-	<0.1	<0.1	<0.1	<0.1	-					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	-	<0.1	<0.1	<0.1	<0.1	-					<0.1	mg/kg	TM36/PM12
>EC10-EC12	-	<0.2	<0.2	<0.2	<0.2	-					<0.2	mg/kg	TM5/PM16
>EC12-EC16	-	<4	<4	<4	<4	-					<4	mg/kg	TM5/PM16
>EC16-EC21	-	<7	<7	<7	<7	-					<7	mg/kg	TM5/PM16
>EC21-EC35	-	<7	<7	<7	<7	-					<7	mg/kg	TM5/PM16
Total aromatics C5-35	-	<19	<19	<19	<19	-					<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	<38	<38	<38	<38	-					<38	mg/kg	TM5/TM36/PM12/PM16
Natural Moisture Content	18.4	6.6	16.8	15.7	20.9	-					<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	-	-	-	-	-					<0.3	mg/kg	TM38/PM20
Total Organic Carbon #	-	-	-	-	0.02	0.54					<0.02	%	TM21/PM24

Please see attached notes for all abbreviations and acronyms

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands
Contact: Jeremy Head
JE Job No.: 15/15975

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1	3-4	9-10	13-14	15-17	21-23					LOD/LOR	Units	Method No.
Sample ID	BH101	BH101	BH102	BH103	BH202	BH202							
Depth	0.3	1.5	2.5	2.3	6.0	10.3							
COC No / misc													
Containers	T	V J	V J	V J	V J T	V J T							
Sample Date	05/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015	06/11/2015							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	07/11/2015	07/11/2015	07/11/2015	07/11/2015	07/11/2015	07/11/2015							
pH #M	8.1	-	-	-	-	-					<0.01	pH units	TM73/PM11
Sample Type	Clayey Sand	Sand	Clayey Sand	Sand	Sand	Clay						None	PM13/PM0
Sample Colour	Light Brown	Light Brown	Light Brown	Light Brown	Light Brown	Medium Grey						None	PM13/PM0
Other Items	none	none	none	none	water	water						None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/15975

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/15975

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM12/PM16	CWG GC-FID			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

JE Job No: 15/15975

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No

Jones Environmental Laboratory

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SLR Consulting Ltd
Treenwood House
Rowden Lane
Bradford on Avon
BA15 2UA

4225

Attention :	Jeremy Head
Date :	19th November, 2015
Your reference :	408.05193.00001
Our reference :	Test Report 15/16157 Batch 1
Location :	Brooklands Garage
Date samples received :	12th November, 2015
Status :	Final report
Issue :	1

Seven samples were received for analysis on 12th November, 2015 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05193.00001
Location: Brooklands Garage
Contact: Jeremy Head
JE Job No.: 15/16157

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	6-7	8-9									LOD/LOR	Units	Method No.
Sample ID	BH201	BH201											
Depth	4.5	6.0											
COC No / misc													
Containers	V J	V J											
Sample Date	10/11/2015	10/11/2015											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	12/11/2015	12/11/2015											
MTBE #	<0.005	<0.005									<0.005	mg/kg	TM31/PM12
Benzene #	4.7	<0.005									<0.005	mg/kg	TM31/PM12
Toluene #	450++	0.37									<0.005	mg/kg	TM31/PM12
Ethylbenzene #	130++	0.38									<0.005	mg/kg	TM31/PM12
m/p-Xylene #	1000++	4.1									<0.005	mg/kg	TM31/PM12
o-Xylene #	380++	2.0									<0.005	mg/kg	TM31/PM12
Xylenes (sum of isomers) #	1380.00	6.10									<0.01	mg/kg	TM31/PM12
TPH CWG													
Aliphatics													
>C5-C6 #M	4.5	<0.1									<0.1	mg/kg	TM36/PM12
>C6-C8 #M	640++	1.0									<0.1	mg/kg	TM36/PM12
>C8-C10	1900++	34++									<0.1	mg/kg	TM36/PM12
>C10-C12 #M	86	<0.2									<0.2	mg/kg	TM5/PM16
>C12-C16 #M	52	<4									<4	mg/kg	TM5/PM16
>C16-C21 #M	48	<7									<7	mg/kg	TM5/PM16
>C21-C35 #M	15	<7									<7	mg/kg	TM5/PM16
Total aliphatics C5-35	2746	35									<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	4.7	<0.1									<0.1	mg/kg	TM36/PM12
>EC7-EC8	450++	0.4									<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	1500++	6.4									<0.1	mg/kg	TM36/PM12
>EC10-EC12	210	<0.2									<0.2	mg/kg	TM5/PM16
>EC12-EC16	61	<4									<4	mg/kg	TM5/PM16
>EC16-EC21	37	<7									<7	mg/kg	TM5/PM16
>EC21-EC35	19	<7									<7	mg/kg	TM5/PM16
Total aromatics C5-35	2282	<19									<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	5028	<38									<38	mg/kg	TM5/TM36/PM12/PM16
Natural Moisture Content	27.3	26.0									<0.1	%	PM4/PM0
Total Organic Carbon #	-	<0.02									<0.02	%	TM21/PM24
Sample Type	Sand	Sand										None	PM13/PM0
Sample Colour	Light Brown	Light Brown										None	PM13/PM0
Other Items	stones	water										None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/16157

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If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

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WATERS

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As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/16157

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM12/PM16	CWG GC-FID			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

Borehole Number	SSAC Water Resources		EX1					EX2			EX3		EX4					EX5							EX6		EX7					EX8		EX10		EX11		
Sample Method			Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Well Screen Depth (m)			4.0-9.5					4.0-9.0			2.0-10.2		4.0-9.5					4.0-9.5							4.0-9.2		4.0-9.3					4.0-9.0		4.0-9.0		4.0-9.0		
Strata	Lambeth Group	Chalk	Lambeth Group					Lambeth Group			Lambeth Group		Lambeth Group					Lambeth Group							Lambeth Group		Lambeth Group					Lambeth Group		Lambeth Group		Lambeth Group		
Sample Date			Sept-08	18/05/09	Dec-09	Jan-10	07/04/11	Sept-08	07/04/11	21/10/15	Sep-08	08/04/11	Sep-08	18/05/09	Dec-09	Jan-10	08/04/11	Sep-08	18/05/09	Dec-09	Jan-10	07/04/11	29/10/15	19/11/15	Sep-08	07/04/11	Sep-08	18/05/09	Dec-09	Jan-10	08/04/11	Sep-08	08/04/11	Sep-08	07/04/11	Sep-08	07/04/11	29/10/15
MTBE	1.4	0.27	0.004	0.22	0.0026	0.045	<0.001	0.014	<0.001	<0.0001	<0.001	<0.001	0.009	<0.001	<0.001	<0.001	<0.001	0.34	0.11	0.031	0.063	0.009	<0.0001	<0.0001	0.032	<0.001	0.63	0.017	<0.001	<0.001	<0.001	0.009	<0.001	0.093	0.011	0.79	<0.001	<0.0001
Benzene	63	1.5	<0.001	0.38	<0.001	0.17	0.006	0.043	0.001	<0.0005	<0.001	<0.001	<0.001	0.001	<0.001	0.0012	<0.001	0.29	0.21	0.11	0.37	0.065	<0.0005	<0.0005	0.041	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.12	0.013	0.58	0.095	<0.0005
Toluene	-	250	<0.001	6.9	<0.001	0.7	0.009	2.2	0.007	<0.0005	<0.001	<0.002	0.0014	0.002	<0.001	0.016	<0.002	0.48	0.29	0.92	2.4	2.668	<0.0005	<0.0005	1.5	<0.002	<0.001	0.016	<0.001	0.002	<0.002	<0.001	<0.002	0.012	0.009	3.1	0.087	<0.0005
Ethyl benzene	-	-	<0.001	0.9	<0.001	0.66	0.003	0.18	0.369	<0.0005	<0.001	<0.002	0.001	0.007	<0.001	0.003	<0.002	0.02	0.91	0.34	1.2	0.978	0.012	<0.0005	0.0075	<0.002	<0.001	0.0044	<0.001	0.001	<0.002	<0.001	<0.002	0.057	0.002	3.1	0.49	<0.0005
m & p Xylene	-	-	<0.001	9.3	<0.001	1.65	0.04	4.5	1.539	<0.001	<0.001	<0.003	0.006	0.064	<0.001	0.032	<0.003	2.5	4.3	1.88	5	6.281	<0.001	<0.001	5.9	0.004	<0.001	0.04	<0.001	0.008	<0.003	<0.001	<0.003	0.45	0.056	6.2	0.802	<0.001
o Xylene	-	-	-	-	-	-	0.005	-	0.298	<0.0005	-	<0.002	-	-	-	-	<0.002	-	-	-	-	2.692	<0.0005	<0.0005	-	<0.002	-	-	-	-	<0.002	-	<0.002	-	0.013	-	0.325	0.0023
Aliphatics C5-C6	-	33	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.005	<0.005	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.005	<0.005	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.005	<0.0001	0.098	<0.0001	0.016	<0.005
Aliphatics >C6-C8	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.019	0.075	0.025	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.0045	<0.0001	<0.0001	0.084	0.141	<0.005	<0.005	0.044	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.005	<0.0001	0.103	0.0099	0.076	<0.005
Aliphatics >C8-C10	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.05	0.395	<0.005	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.0005	<0.0001	<0.0001	0.026	0.955	<0.005	<0.005	0.0016	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.005	<0.0001	0.06	0.011	0.138	<0.005
Aliphatics >C10-C12	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.018	<0.005	<0.005	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.017	<0.0001	<0.0001	<0.0001	<0.005	<0.005	<0.005	0.1	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.005	<0.0001	<0.005	0.0094	<0.005	<0.005
Aliphatics >C12-C16	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	0.022	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	0.0061	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	<0.0001	<0.01	0.012	<0.01	<0.01
Aliphatics >C16-C21	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	<0.0001	<0.01	<0.0001	<0.01	<0.01
Aliphatics >C21-C35	-	-	-	-	-	-	<0.01	-	<0.01	<0.01	-	<0.01	-	-	-	-	<0.01	-	-	-	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01
Total Aliphatics C5-C35	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	0.109	0.47	0.03	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	0.0281	<0.0001	<0.0001	0.11	1.17	<0.01	<0.01	0.1456	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	<0.0001	0.26	0.0423	0.23	<0.01
Aromatics C5-C7	-	-	-	-	-	-	<0.005	-	<0.005	<0.005	-	<0.005	-	-	-	-	<0.005	-	-	-	-	0.059	<0.005	<0.005	-	<0.005	-	-	-	-	<0.005	-	<0.005	-	0.017	-	0.065	<0.005
Aromatics >C7-C8	-	-	-	-	-	-	<0.005	-	0.005	<0.005	-	<0.005	-	-	-	-	<0.005	-	-	-	-	2.524	<0.005	<0.005	-	<0.005	-	-	-	-	<0.005	-	<0.005	-	0.006	-	0.059	<0.005
Aromatics >C8-EC10	-	-	<0.0001	11	<0.0001	3.2	0.008	4.8	0.557	<0.005	<0.0001	<0.005	0.014	0.061	<0.0001	0.023	<0.005	2.8	6.2	2.5	24	9.21	<0.005	<0.005	13	<0.005	<0.0001	0.041	<0.0001	0.024	<0.005	<0.0001	<0.005	0.06	0.088	12	1.126	<0.005
Aromatics >EC10-EC12	-	-	<0.0001	0.54	<0.0001	0.13	<0.005	0.46	0.192	0.17	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.11	0.65	0.66	0.96	0.416	<0.005	0.032	0.59	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.005	0.019	0.109	0.45	0.145	<0.005
Aromatics >EC12-EC16	-	-	<0.0001	0.08	<0.0001	0.1	<0.01	0.081	<0.01	0.03	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	0.067	0.16	0.087	0.15	<0.01	<0.01	<0.01	0.087	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	0.019	<0.01	0.054	<0.01	<0.01
Aromatics >EC16-EC21	-	0.43	<0.0001	<0.0001	<0.0001	0.02	<0.01	<0.0001	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	0.0083	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	<0.0001	<0.01	<0.0001	<0.01	<0.01
Aromatics >EC21-EC35	-	-	<0.0001	<0.00001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.01	<0.0001	<0.01	<0.0001	<0.01	<0.01
Total Aromatics C5-C35	-	-	<0.0001	11.62	<0.0001	3.45	<0.01	5.341	0.75	0.2	<0.0001	<0.01	0.014	0.061	<0.0001	0.023	<0.01	2.977	7.01	3.247	25.11	12.21	<0.01	0.03	13.6853	<0.01	<0.0001	0.041	<0.0001	0.024	<0.01	<0.0001	<0.01	0.098	0.22	12.504	1.4	<0.01
TPH (Ali' +Aro' C5-C35)	-	-	<0.01	19	<0.01	4.3	<0.01	7.7	1.22	0.23	<0.01	<0.01	0.015	<0.0005	<0.01	0.04	<0.01	3.1	7.5	4.3	28	13.38	<0.01	0.03	14	<0.01	<0.01	0.057	<0.01	0.026	<0.01	<0.01	<0.01	0.098	0.48	24	1.63	<0.01
Total Iron	-	-	-	-	-	-	0.72	-	3.8	-	-	0.59	-	-	-	-	0.65	-	-	-	-	16	-	-	-	0.57	-	-	-	-	0.84	-	1.2	-	4.4	-	2.6	-
Total Manganese	-	-	-	-	-	-	2.0	-	0.87	-	-	0.78	-	-	-	-	0.84	-	-	-	-	5.6	-	-	-	1.0	-	-	-	-	0.14	-	0.22	-	10	-	1.1	-
Sulphate	-	-	-	-	-	-	257	-	6.5	-	-	98	-	-	-	-	88	-	-	-	-	242	-	-	-	334	-	-	-	-	214	-	137	-	107	-	129	-
Nitrate as N	-	-	-	-	-	-	0.36	-	0.07	-	-	1.2	-	-	-	-	0.2	-	-	-	-	0.09	-	-	-	0.09	-	-	-	-	12	-	2.2	-	<0.05	-	0.07	-
Sulphide	-	-	-	-	-	-	<0.3	-	<0.3	-	-	<0.3	-	-	-	-	<0.3	-	-	-	-	<0.3	-	-	-	<0.3	-	-	-	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-
Dissolved Methane	-	-	-	-	-	-	0.005	-	0.37	-	-	<0.001	-	-	-	-	<0.001	-	-	-	-	0.092	-	-	-	<0.001	-	-	-	-	<0.001	-	<0.001	-	0.1	-	0.02	-
Dissolved Inorganic Carbon	-	-	-	-	-	-	62	-	53	-	-	51	-	-	-	-	58	-	-	-	-	79	-	-	-	72	-	-	-	-	38	-	56	-	87	-	93	-
Iron II	-	-	-	-	-	-	0.62	-	2.4	-	-	0.06	-	-	-	-	0.63	-	-	-	-	2.1	-	-	-	0.56	-	-	-	-	0.09	-	0.12	-	1.8	-	0.09	-
Iron III	-	-	-	-	-	-	0.1	-	1.4	-	-	0.53	-	-	-	-	<0.02	-	-	-	-	14	-	-	-	<0.02	-	-	-	-	0.75	-	1.1	-	2.5	-	2.5	-
Manganese II	-	-	-	-	-	-	0.41	-	0.46	-	-	0.75	-	-	-	-	0.65	-	-	-	-	0.6	-	-	-	0.5	-	-	-	-	<0.02	-	0.18	-	0.84	-	<0.10	-
Conductivity (µS/cm)	-	-	-	525	114	755	991	-	488	581	-	662	-	559	107	167	660	-	581	168	784	1083	814	658	-	1167	-	517	334	555	834	-	798	-	953	-	927	797
ORP (mV)	-	-	-	-201	-113	-144	-219	-	-211	-3	-	-102	-	-184	54	-80	-168	-	-218	-8.2	-112	-210	-103	-255	-	-112	-	-207	39	29	-49	-	-84	-	-187	-	-224	-170
Dissolved oxygen	-	-	-	0.82	0.24	0.44	<0.01	-	<0.01	1.38	-	<0.01	-	0.6	0.48	0.49	<0.01	-	0.86	0.84	0.44	<0.01	1.12	0.41	-	<0.01	-	1.1	0.99	1.8	<0.01	-	<0.01	-	<0.01	-	<0.01	0.37
pH	-	-	-	7.1	6.7	5.3	5.9	-	6.2	9.0	-	5.7	-	7.8	6.5	7.3	6.1	-	7.3	5.9	6.6	5.7	6.6	6.5	-	6.2	-	6.9	6.2	7.3	5.5	-	5.7	-	5.7	-	5.8	6.6

Key

All results are in mg/l - reported to 2 significant figures.

MTBE	Methyl tertiary butyl ether
-	Not analysed/no SSAC available
SSAC	Site Specific Assessment Criteria at 350m Compliance Point, Arcadis, March 2007; DQRA, Reference 942711201.
ORP	Oxidation Reduction Potential.
888	Exceeds SSAC
	Pre-remedation baseline data (Arcadis)
	Results recorded by SLR (all other results recorded by Arcadis)
	Lambeth Group
	Chalk
-	Unknown Strata/Screen

Borehole Number	SSAC Water Resources		EX12							EX13						EXB							BH202	MW6							MW7							
Sample Method			Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Bailer
Well Screen Depth (m)			4.0-9.0							4.0-9.0						4.0-10.0							5-10.1	24.0-29.0							23.0-28.0							
Strata	Lambeth Group	Chalk	Lambeth Group							Lambeth Group						Lambeth Group							LG	Chalk							Chalk							
Sample Date			Sep-08	18/05/09	Dec-09	Jan-10	08/04/11	29/10/15	19/11/15	Sep-08	18/05/09	Dec-09	Jan-10	08/04/11	Sep-08	18/05/09	Dec-09	Jan-10	07/04/11	29/10/15	19/11/15	19/11/15	26/01/05	Aug-05	17/10/05	17/11/05	12/12/05	26/01/05	Aug-05	17/10/05	17/11/05	12/12/05	Sep-08	15/10/15					
MTBE	1.4	0.27	0.79	0.033	<0.001	<0.001	<0.001	<0.0001	<0.0001	6.2	<0.001	<0.001	<0.001	<0.001	0.97	0.36	<0.001	0.051	<0.001	<0.0001	0.0009	<0.0001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.01	0.071	0.052	0.023	0.054	<0.001	<0.0001					
Benzene	63	1.5	0.27	0.13	0.065	<0.001	0.004	<0.0005	<0.0005	0.13	<0.001	<0.001	0.0085	<0.001	1.1	0.63	0.13	0.36	0.12	<0.0005	0.0011	<0.0005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.01	0.0015	0.0065	0.0029	0.0039	<0.001	<0.0005					
Toluene	-	250	2.8	3.2	0.25	0.013	0.316	0.0041	<0.0005	0.41	0.0047	<0.001	0.31	<0.002	3.1	7.9	1.6	1.9	0.682	0.017	0.0078	<0.0005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	0.016	0.016	0.025	<0.001	<0.0005					
Ethyl benzene	-	-	2.8	2.8	0.4	0.18	0.753	0.35	<0.0005	0.2	0.0088	<0.001	0.57	<0.002	4.1	2.3	0.067	1.2	1.543	0.46	0.33	<0.0005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005					
m & p Xylene	-	-	6.2	14.4	5.7	2.42	4.693	0.64	0.48	2.8	0.17	0.271	9.4	0.005	7.3	15.4	2.6	4.7	3.544	0.73	0.2	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.01	0.0011	0.063	0.0305	0.065	<0.001	<0.001					
o Xylene	-	-	-	-	-	-	0.862	0.082	0.16	-	-	-	-	<0.002	-	-	-	-	1.789	0.16	0.16	<0.0005	-	-	-	-	-	-	-	-	-	-	-	<0.0005					
Aliphatics C5-C6	-	33	<0.0001	<0.0001	<0.0001	<0.0001	0.012	<0.005	0.007	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.005	0.008	<0.005	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005					
Aliphatics >C6-C8	-	-	0.31	<0.0001	0.049	<0.0001	0.214	<0.005	0.21	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	0.44	0.093	<0.0001	0.11	0.204	<0.005	0.18	<0.005	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005					
Aliphatics >C8-C10	-	-	0.078	<0.0001	0.0094	<0.0001	1.911	0.56	0.46	<0.0001	<0.0001	0.008	<0.0001	<0.005	0.35	0.018	<0.0001	0.013	1.17	0.14	0.34	<0.005	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005					
Aliphatics >C10-C12	-	-	0.94	<0.0001	0.003	<0.0001	0.06	0.005	<0.005	<0.0001	<0.0001	0.003	<0.0001	<0.005	0.82	<0.0001	<0.0001	<0.0001	<0.005	<0.005	<0.005	<0.005	<0.01	<0.0001	<0.0001	0.0024	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005					
Aliphatics >C12-C16	-	-	0.39	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	3.5	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.0001	0.0057	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01					
Aliphatics >C16-C21	-	-	0.25	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	2.5	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.0001	0.0016	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01					
Aliphatics >C21-C35	-	-	-	-	-	-	<0.01	<0.01	<0.01	-	-	-	-	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	<0.01					
Total Aliphatics C5-C35	-	-	1.968	<0.0001	0.0614	<0.0001	2.2	0.57	0.68	<0.0001	<0.0001	0.011	<0.0001	<0.01	7.61	0.111	<0.0001	0.123	1.37	0.14	0.53	<0.01	<0.01	<0.0001	<0.0001	0.0097	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01					
Aromatics C5-C7	-	-	-	-	-	-	<0.005	<0.005	0.027	-	-	-	-	<0.005	-	-	-	-	0.107	<0.005	0.026	<0.005	-	-	-	-	-	-	-	-	-	-	-	<0.005					
Aromatics >C7-C8	-	-	-	-	-	-	0.338	<0.005	<0.005	-	-	-	-	<0.005	-	-	-	-	0.861	0.009	0.006	<0.005	-	-	-	-	-	-	-	-	-	-	-	<0.005					
Aromatics >EC8-EC10	-	-	9.2	20	13	5.1	8.13	0.6	0.67	3.1	0.16	0.43	13	<0.005	12	22	3.1	16	7.045	0.33	0.67	<0.005	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	0.059	0.026	0.1	<0.0001	<0.005					
Aromatics >EC10-EC12	-	-	1.3	1.5	1.6	0.89	0.647	1	0.65	0.13	<0.0001	0.16	0.74	<0.005	3.2	2.3	1.4	0.96	0.454	0.51	0.39	<0.005	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	0.001	<0.0001	0.0054	<0.0001	<0.005					
Aromatics >EC12-EC16	-	-	0.057	0.16	0.044	0.24	0.06	0.17	0.07	0.049	<0.0001	0.012	0.12	<0.01	0.48	0.21	0.15	0.15	0.04	0.15	0.09	<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	0.0017	<0.0001	0.0064	<0.0001	<0.01					
Aromatics >EC16-EC21	-	0.43	0.0062	<0.0001	<0.0001	0.015	<0.01	<0.01	<0.01	<0.0001	<0.0001	<0.0001	0.0005	<0.01	0.12	<0.0001	0.012	<0.0001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	0.0009	<0.0001	0.0043	<0.0001	<0.01					
Aromatics >EC21-EC35	-	-	0.011	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	0.041	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01					
Total Aromatics C5-C35	-	-	10.5742	21.66	14.644	6.245	9.18	1.77	1.42	3.279	0.16	0.602	13.8605	<0.01	15.841	24.51	4.662	17.11	8.51	1	1.18	<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	0.0726	0.0449	0.145	<0.0001	<0.01					
TPH (Ali' +Aro' C5-C35)	-	-	16	25	15	6.3	11.38	2.34	2.1	3.8	0.16	0.6	14	<0.01	28	33	6.4	19	9.88	1.14	1.71	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	0.085	0.045	0.145	<0.01	<0.01					
Total Iron	-	-	-	-	-	-	5.5	-	-	-	-	-	-	0.08	-	-	-	-	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Total Manganese	-	-	-	-	-	-	4.2	-	-	-	-	-	-	0.38	-	-	-	-	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Sulphate	-	-	-	-	-	-	317	-	-	-	-	-	-	313	-	-	-	-	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Nitrate as N	-	-	-	-	-	-	0.11	-	-	-	-	-	-	4.7	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Sulphide	-	-	-	-	-	-	<0.3	-	-	-	-	-	-	<0.3	-	-	-	-	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Dissolved Methane	-	-	-	-	-	-	0.006	-	-	-	-	-	-	<0.001	-	-	-	-	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Dissolved Inorganic Carbon	-	-	-	-	-	-	107	-	-	-	-	-	-	62	-	-	-	-	121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Iron II	-	-	-	-	-	-	2.1	-	-	-	-	-	-	<0.02	-	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Iron III	-	-	-	-	-	-	3.4	-	-	-	-	-	-	0.08	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Manganese II	-	-	-	-	-	-	0.55	-	-	-	-	-	-	0.36	-	-	-	-	0.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Conductivity (µS/cm)	-	-	-	673	558	1155	1411	721	594	-	541	-	1117	1085	-	722	236	1301	1120	775	708	336	-	-	-	-	-	-	-	-	-	-	-	-					
ORP (mV)	-	-	-	-234	-67	-91	-218	-146	-273	-	-143	-	-89	-100	-	-190	-176	-236	-268	-189	-235	215	-	-	-	-	-	-	-	-	-	-	-	-					
Dissolved oxygen	-	-	-	0.67	0.35	0.57	<0.01	0.33	0.44	-	2.4	-	0.48	<0.01	-	0.79	0.59	0.25	<0.01	0.35	0.60	4.41	-	-	-	-	-	-	-	-	-	-	-	-					
pH	-	-	-	7.3	6.6	6.6	5.7	6.7	6.6	-	6.9	-	6.7	5.3	-	7.2	6.2	6.8	5.8	6.8	6.5	6.4	-	-	-	-	-	-	-	-	-	-	-	-					

Key

All results are in mg/l - reported to 2 significant figures.

MTBE	Methyl tertiary butyl ether
-	Not analysed/no SSAC available
SSAC	Site Specific Assessment Criteria at 350m Compliance Point, Arcadis, March 2007; DQRA, Reference 942711201.
ORP	Oxidation Reduction Potential.
888	Exceeds SSAC
	Pre-remedation baseline data (Arcadis)
	Results recorded by SLR (all other results recorded by Arcadis)
	Lambeth Group
	Chalk
-	Unknown Strata/Screen

Borehole Number	SSAC Water Resources		MW8										MW101				MW102					MW103									MW201				MW202			
Sample Method			Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Bailer	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Bailer	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Well Screen Depth (m)			23.5-28.5										20.0-30.0				20.0-30.0					20.0-30.0									16.0-29.0				16.0-29.0			
Strata	Lambeth Group	Chalk	Chalk										Chalk				Chalk					Chalk									Chalk				Chalk			
Sample Date			26/01/05	Aug-05	17/10/05	17/11/05	12/12/05	Sep-08	06/05/09	Dec-09	Jan-10	15/10/15	Aug-05	17/10/05	17/11/05	12/12/05	Aug-05	17/10/05	17/11/05	12/12/05	Sep-08	Aug-05	17/10/05	17/11/05	12/12/05	Sep-08	06/05/09	Dec-09	Jan-10	15/10/15	Sep-08	06/05/09	Dec-09	Jan-10	Sep-08	06/05/09	Dec-09	Jan-10
MTBE	1.4	0.27	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	0.0016	0.0034	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0022	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzene	63	1.5	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	-	250	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethyl benzene	-	-	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
m & p Xylene	-	-	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
o Xylene	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
Aliphatics C5-C6	-	33	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aliphatics >C6-C8	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aliphatics >C8-C10	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aliphatics >C10-C12	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aliphatics >C12-C16	-	-	<0.01	<0.0001	<0.0001	<0.0001	0.0006	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aliphatics >C16-C21	-	-	<0.01	<0.0001	<0.0001	<0.0001	0.0014	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aliphatics >C21-C35	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-
Total Aliphatics C5-C35	-	-	<0.01	<0.0001	<0.0001	<0.0001	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aromatics C5-C7	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-
Aromatics >C7-C8	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-
Aromatics >EC8-EC10	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aromatics >EC10-EC12	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aromatics >EC12-EC16	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aromatics >EC16-EC21	-	0.43	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Aromatics >EC21-EC35	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Aromatics C5-C35	-	-	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
TPH (Ali' +Aro' C5-C35)	-	-	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate as N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Methane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron III	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity (µS/cm)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ORP (mV)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key

All results are in mg/l - reported to 2 significant figures.

MTBE	Methyl tertiary butyl ether
-	Not analysed/no SSAC available
SSAC	Site Specific Assessment Criteria at 350m Compliance Point, Arcadis, March 2007; DQRA, Reference 942711201.
ORP	Oxidation Reduction Potential.
888	Exceeds SSAC
	Pre-remedation baseline data (Arcadis)
	Results recorded by SLR (all other results recorded by Arcadis)
	Lambeth Group
	Chalk
-	Unknown Strata/Screen

Chemical	GACs Source	SOM	GACs Residential with plant uptake (mg/kg)	GACs Residential without plant uptake (mg/kg)	GACs Allotments (mg/kg)	GACs Commercial/ Industrial (mg/kg)
BTEX						
Benzene	SLR / SGV (2009)	1%	0.079	0.27	0.017	28
Toluene	SLR / SGV (2009)	1%	119	607	22	869
Ethyl Benzene	SLR / SGV (2009)	1%	65	167	16	518
m Xylene	SLR / SGV (2009)	1%	42	53	29	576
p Xylene	SLR / SGV (2009)	1%	42	53	29	576
o Xylene	SLR / SGV (2009)	1%	42	53	29	576
Petroleum Hydrocarbons (PHC)						
Aliphatics C5-C6	LQM/CIEH (2009)	1%	30	ND	740	3,400
Aliphatics >C6-C8	LQM/CIEH (2009)	1%	73	ND	2,300	8,300
Aliphatics >C8-C10	LQM/CIEH (2009)	1%	19	ND	320	2,100
Aliphatics >C10-C12	LQM/CIEH (2009)	1%	93	ND	2,200	10,000
Aliphatics >C12-C16	LQM/CIEH (2009)	1%	740	ND	11,000	61,000
Aliphatics EC >16-35	LQM/CIEH (2009)	1%	45,000	ND	260,000	1,600,000
Aliphatics EC35-44	LQM/CIEH (2009)	1%	45,000	ND	260,000	1,600,000
Aromatic EC5-7 (benzene)	LQM/CIEH (2009)	1%	65	ND	13	28,000
Aromatic EC7-8 (toluene)	LQM/CIEH (2009)	1%	120	ND	22	59,000
Aromatics >EC8-EC10	LQM/CIEH (2009)	1%	27	ND	8.6	3,700
Aromatics >EC10-EC12	LQM/CIEH (2009)	1%	69	ND	13	17,000
Aromatics >EC12-EC16	LQM/CIEH (2009)	1%	140	ND	23	36,000
Aromatics >EC16-EC21	LQM/CIEH (2009)	1%	250	ND	46	28,000
Aromatics >EC21-EC35	LQM/CIEH (2009)	1%	890	ND	370	28,000
Aromatics >EC35-EC44	LQM/CIEH (2009)	1%	890	ND	370	28,000
Aliphatic & Aromatics >EC44-EC70	LQM/CIEH (2009)	1%	1,200	ND	1,200	28,000
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	LQM/CIEH (2009)	1%	210	ND	34	85,000
Acenaphthylene	LQM/CIEH (2009)	1%	170	ND	28	84,000
Anthracene	LQM/CIEH (2009)	1%	2,300	ND	380	530,000
Benzo(a)anthracene	LQM/CIEH (2009)	1%	3.1	ND	2.5	90
Benzo(a)pyrene	LQM/CIEH (2009)	1%	0.83	ND	0.6	14
Benzo(b)fluoranthene	LQM/CIEH (2009)	1%	5.6	ND	3.5	100
Benzo(ghi)perylene	LQM/CIEH (2009)	1%	44	ND	70	650
Benzo(k)fluoranthene	LQM/CIEH (2009)	1%	8.5	ND	6.8	140
Chrysene	LQM/CIEH (2009)	1%	6	ND	2.6	140
Dibenzo(ah)anthracene	LQM/CIEH (2009)	1%	0.76	ND	0.76	13
Fluoranthene	LQM/CIEH (2009)	1%	260	ND	52	23,000
Fluorene	LQM/CIEH (2009)	1%	160	ND	27	64,000
Indeno(123-cd)pyrene	LQM/CIEH (2009)	1%	3.2	ND	1.8	60
Naphthalene	LQM/CIEH (2009)	1%	1.5	ND	4.1	200
Phenanthrene	LQM/CIEH (2009)	1%	92	ND	16	22,000
Pyrene	LQM/CIEH (2009)	1%	560	ND	110	54,000
Coal Tar (BAP as surrogate)	-	1%	ND	ND	ND	ND
HEAVY METALS						
Arsenic	SGV (2009)	1%	32	35	43	640
Cadmium	LQM/CIEH (2009)	1%	3	ND	0.53	348
Chromium (VI)	LQM/CIEH (2009)	1%	4.3	ND	2.1	35
Chromium (III)	LQM/CIEH (2009)	1%	3000	ND	34,600	30,400
Copper	LQM/CIEH (2009)	1%	2330	ND	524	71,700
Lead	C4SL	1%	-	-	-	-
Mercury - Inorganic	SGV (2009)	1%	170	240	80	3,600
Mercury Elemental	SGV (2009)	1%	*1.0*		*26*	*26*
Nickel	SGV (2009)	1%	130	130	230	1,800
Selenium	SGV (2009)	1%	350	600	120	13,000
Zinc	LQM/CIEH (2009)	1%	3,750	ND	618	665,000
Vanadium	LQM/CIEH (2009)	1%	75	ND	18	3,160
Beryllium	LQM/CIEH (2009)	1%	51	ND	55	420
Boron	LQM/CIEH (2009)	1%	291	ND	45	192,000

Chemical	Source	SOM	Residential with plant uptake (mg/kg)	Residential without plant uptake (mg/kg)	Allotments (mg/kg)	Commercial/ Industrial (mg/kg)
ORGANICS						
Phenol	LQM/CIEH (2009)	1%	210	ND	32	1,100,000
Chlorophenols	LQM/CIEH (2009)	1%	0.87	ND	0.13	3,500
Pentachlorophenol	LQM/CIEH (2009)	1%	0.55	ND	0.084	1,200
Vinyl Chloride (*or Chloroethane)*	LQM/CIEH (2009)	1%	0.00047	ND	0.00055	0.063
Carbon Tetrachloride (or Tetrachloromethane)	LQM/CIEH (2009)	1%	0.018	ND	0.16	3.0
1.2-Dichloroethane	LQM/CIEH (2009)	1%	0.0054	ND	0.0046	0.71
1.1.1-Trichloroethane	LQM/CIEH (2009)	1%	6.2	ND	48	700
Trichloroethene	LQM/CIEH (2009)	1%	0.11	ND	0.43	12
Tetrachloroethene	LQM/CIEH (2009)	1%	0.94	ND	1.6	130
1.1.1.2-Tetrachloroethane	LQM/CIEH (2009)	1%	0.9	ND	0.79	4.8
1.1.2.2-Tetrachloroethane	LQM/CIEH (2009)	1%	1.4	ND	0.41	290
Chlorobenzene	LQM/CIEH (2009)	1%	0.33	ND	5.9	59
1,2-Dichlorobenzene	LQM/CIEH (2009)	1%	16	ND	94	2,100
1,3-Dichlorobenzene	LQM/CIEH (2009)	1%	0.29	ND	0.25	32
1,4-Dichlorobenzene	LQM/CIEH (2009)	1%	30	ND	15	4,500
1,2,3-Trichlorobenzene	LQM/CIEH (2009)	1%	1.0	ND	4.7	110
1,2,4-Trichlorobenzene	LQM/CIEH (2009)	1%	1.8	ND	31	230
1,3,5-Trichlorobenzene	LQM/CIEH (2009)	1%	0.23	ND	4.7	24
1,2,3,4-Tetrachlorobenzene	LQM/CIEH (2009)	1%	12	ND	4.4	1,800
1,2,3,5-Tetrachlorobenzene	LQM/CIEH (2009)	1%	0.49	ND	0.38	52
1,2,4,5-Tetrachlorobenzene	LQM/CIEH (2009)	1%	0.3	ND	0.064	44
Pentachlorobenzene	LQM/CIEH (2009)	1%	5.2	ND	1.2	650
Hexachlorobenzene	LQM/CIEH (2009)	1%	0.59	ND	0.18	48
Trichloromethane (*or Chloroform*)	LQM/CIEH (2009)	1%	0.75	ND	0.36	110
2,4,6 Trinitrotoluene	LQM/CIEH (2009)	1%	1.6	ND	0.24	1,000
RDX	LQM/CIEH (2009)	1%	3.5	ND	0.52	6,400
HMX	LQM/CIEH (2009)	1%	5.7	ND	0.86	110,000
Aldrin	LQM/CIEH (2009)	1%	1.7	ND	1.3	54
Dieldrin	LQM/CIEH (2009)	1%	0.69	ND	0.13	90
Atrazine	LQM/CIEH (2009)	1%	0.24	ND	0.037	870
Dichlorvos	LQM/CIEH (2009)	1%	0.29	ND	0.044	842
Endosulfan	LQM/CIEH (2009)	1%	2.9	ND	0.47	2,310
Alpha-Hexachlorocyclohexanes (including Linc	LQM/CIEH (2009)	1%	19	ND	3.0	14,000
Beta-Hexachlorocyclohexanes (including Linda	LQM/CIEH (2009)	1%	1.7	ND	0.26	1,120
Gamma-Hexachlorocyclohexanes (including L	LQM/CIEH (2009)	1%	0.58	ND	0.089	532
Hexachloro-1,3-butadiene	LQM/CIEH (2009)	1%	0.21	ND	0.25	32
Carbon disulphide	LQM/CIEH (2009)	1%	0.1	ND	4.8	12

Chemical	Source	SOM	Residential with plant uptake (mg/kg)	Residential without plant uptake (mg/kg)	Allotments (mg/kg)	Commercial/ Industrial (mg/kg)
Total of 7 Congener PCBs	SLR	1%				
Dioxins (Sum of PCDDs, PCDFs and dioxin-lik	SGV (2009)	1%	8.0		8.0	240
Antimony	EIC/AGS/CL:AIRE	1%	ND	550	ND	7500
Barium	EIC/AGS/CL:AIRE	1%	ND	1300	ND	22000
Molybdenum	EIC/AGS/CL:AIRE	1%	ND	670	ND	17000
1,1,2 Trichloroethane	EIC/AGS/CL:AIRE	1%	0.6	0.88	0.28	94
1,1-Dichloroethane	EIC/AGS/CL:AIRE	1%	2.4	2.5	9.2	280
1,1-Dichloroethene	EIC/AGS/CL:AIRE	1%	0.23	0.23	2.8	26
1,2,4-Trimethylbenzene	EIC/AGS/CL:AIRE	1%	0.35	0.41	0.38	42
1,2-Dichloropropane	EIC/AGS/CL:AIRE	1%	0.024	0.024	0.62	3.3
2,4-Dimethylphenol	EIC/AGS/CL:AIRE	1%	19	210	3.1	16000
2,4-Dinitrotoluene	EIC/AGS/CL:AIRE	1%	1.5	170	0.22	3700
2,6-Dinitrotoluene	EIC/AGS/CL:AIRE	1%	0.78	78	0.12	1900
2-Chloronaphthalene	EIC/AGS/CL:AIRE	1%	3.7	3.8	40	390
Biphenyl	EIC/AGS/CL:AIRE	1%	66	220	14	18000
Bis (2-ethylhexyl) phthalate	EIC/AGS/CL:AIRE	1%	280	2700	47	85000
Bromobenzene	EIC/AGS/CL:AIRE	1%	0.87	0.91	3.2	97
Bromodichloromethane	EIC/AGS/CL:AIRE	1%	0.016	0.019	0.016	2.1
Bromoform	EIC/AGS/CL:AIRE	1%	2.8	5.2	0.95	760
Butyl benzyl phthalate	EIC/AGS/CL:AIRE	1%	1400	42000	220	940000
Chloroethane	EIC/AGS/CL:AIRE	1%	8.3	8.4	110	960
Chloromethane	EIC/AGS/CL:AIRE	1%	0.0083	0.0085	0.066	1
Cis 1,2 Dichloroethene	EIC/AGS/CL:AIRE	1%	0.11	0.12	0.26	14
Dichloromethane	EIC/AGS/CL:AIRE	1%	0.58	2.1	0.1	270
Diethyl Phthalate	EIC/AGS/CL:AIRE	1%	120	1800	19	150000
Di-n-butyl phthalate	EIC/AGS/CL:AIRE	1%	13	450	2	15000
Di-n-octyl phthalate	EIC/AGS/CL:AIRE	1%	2300	3400	940	89000
Hexachloroethane	EIC/AGS/CL:AIRE	1%	0.2	0.22	0.27	22
Isopropylbenzene	EIC/AGS/CL:AIRE	1%	11	12	32	1400
Methyl tert-butyl ether	EIC/AGS/CL:AIRE	1%	49	73	23	7900
Propylbenzene	EIC/AGS/CL:AIRE	1%	34	40	34	4100
Styrene	EIC/AGS/CL:AIRE	1%	8.1	35	1.6	3300
Total Cresols (2-, 3- and 4-methylphenol)	EIC/AGS/CL:AIRE	1%	80	3700	12	160000
Trans 1,2 Dichloroethene	EIC/AGS/CL:AIRE	1%	0.19	0.19	0.93	22
Tributyl tin oxide	EIC/AGS/CL:AIRE	1%	0.25	1.4	0.042	130

Notes:

1. Generic assessment criteria in mg/kg dry weight in soil
2. SGV - Soil Guideline Value reports, EA 2009. Refer to relevant “SGV” or “Tox” report for further details
3. Based on sandy loam soil as defined in CLEA report
4. Chromium is assumed to be all Chromium (VI)
5. No GAC is pH influenced
6. SLR – Version 4a ‘SLR in-house criteria’ produced using CLEA model (v1.04)
7. SOM – Soil Organic Matter Content
8. 500 – Health based criteria generated using the CLEA model v1.04 are considerably higher than these values; the values reported are theoretical soil saturation limits, particularly where vapour pathway is critical for volatile contaminants.
9. * – Health based criteria generated using the CLEA model v1.04 are considerably higher than these values. The values reported are based on Canadian 'management' limits for petroleum hydrocarbons in fine grained soils (CCME, 2008). The management limit for CCME fraction 1 (800mg/kg) is adotped for petrol range organics (PRO); the management limits for fraction 3 are adotped for DRO, i.e. 3,500 mg/kg for agricultural / residential land use and 5,000 mg/kg for commercial / industrial; and the management limit for fraction 4 (10,000 mg/kg) is adopted for EC>35. CCME management limits are based on free phase formation, exposure of workers in trenches, fire and explosive hazards, effects on buried infrastructure, aesthetic considerations and technological factors
10. # - SGV based on phenol concentration potentially corrosive to skin
11. *** S4ULs - Copyright Land Quality Management Ltd reproduced with permission; Publication Number S4UL3276. All rights reserved.

S4ULs	S4ULs***	S4ULs	S4ULs	S4ULs	S4ULs	S4ULs
Source	Residential with plant uptake (mg/kg)	Residential without plant uptake (mg/kg)	Allotments (mg/kg)	Commercial/ Industrial (mg/kg)	POS1	POS2
LQM/CIEH (2015) ref S4UL3276	0.087	0.38	0.017	27	72	90
LQM/CIEH (2015) ref S4UL3276	130	880	22	56000	56000	87000
LQM/CIEH (2015) ref S4UL3276	47	83	16	5700	24000	17000
LQM/CIEH (2015) ref S4UL3276	59	82	31	6200	41000	17000
LQM/CIEH (2015) ref S4UL3276	56	79	29	5900	41000	17000
LQM/CIEH (2015) ref S4UL3276	60	88	28	6600	41000	17000
LQM/CIEH (2015) ref S4UL3276	42	42	730	3200	570000	95000
LQM/CIEH (2015) ref S4UL3276	100	100	2300	7800	600000	150000
LQM/CIEH (2015) ref S4UL3276	27	27	320	2000	13000	14000
LQM/CIEH (2015) ref S4UL3276	130	130	2200	9700	13000	21000
LQM/CIEH (2015) ref S4UL3276	1100	1100	11000	59000	13000	25000
LQM/CIEH (2015) ref S4UL3276	65000	65000	260000	1600000	13000	450000
LQM/CIEH (2015) ref S4UL3276	65000	65000	260000	1600000	250000	450000
LQM/CIEH (2015) ref S4UL3276	70	370	13	26000	250000	76000
LQM/CIEH (2015) ref S4UL3276	130	860	22	56000	56000	87000
LQM/CIEH (2015) ref S4UL3276	34	47	8.6	3500	56000	7200
LQM/CIEH (2015) ref S4UL3276	74	250	13	16000	5000	9200
LQM/CIEH (2015) ref S4UL3276	140	1800	23	36000	5000	10000
LQM/CIEH (2015) ref S4UL3276	260	1900	46	28000	5100	7600
LQM/CIEH (2015) ref S4UL3276	1100	1900	370	28000	3800	7800
LQM/CIEH (2015) ref S4UL3276	1100	1900	370	28000	3800	7800
LQM/CIEH (2015) ref S4UL3276	1600	1900	1200	28000	3800	7800
LQM/CIEH (2015) ref S4UL3276	210	3000	34	84000	15000	29000
LQM/CIEH (2015) ref S4UL3276	170	2900	28	83000	15000	29000
LQM/CIEH (2015) ref S4UL3276	2400	31000	380	520000	74000	150000
LQM/CIEH (2015) ref S4UL3276	7.2	11	2.9	170	29	49
LQM/CIEH (2015) ref S4UL3276	2.2	3.2	0.97	35	5.7	11
LQM/CIEH (2015) ref S4UL3276	2.6	3.9	0.99	44	7.1	13
LQM/CIEH (2015) ref S4UL3276	320	360	290	3900	640	1400
LQM/CIEH (2015) ref S4UL3276	77	110	37	1200	190	370
LQM/CIEH (2015) ref S4UL3276	15	30	4.1	350	57	93
LQM/CIEH (2015) ref S4UL3276	0.24	0.31	0.14	3.5	0.57	1.1
LQM/CIEH (2015) ref S4UL3276	280	1500	52	23000	3100	6300
LQM/CIEH (2015) ref S4UL3276	170	2800	27	63000	9900	20000
LQM/CIEH (2015) ref S4UL3276	27	45	9.5	500	82	150
LQM/CIEH (2015) ref S4UL3276	2.3	2.3	4.1	190	4900	1200
LQM/CIEH (2015) ref S4UL3276	95	1300	15	22000	3100	6200
LQM/CIEH (2015) ref S4UL3276	620	3700	110	54000	7400	15000
LQM/CIEH (2015) ref S4UL3276	0.79	1.2	0.32	15	2.2	4.4
LQM/CIEH (2015) ref S4UL3276	37	40	43	640	79	170
LQM/CIEH (2015) ref S4UL3276	11	85	1.9	190	120	532
LQM/CIEH (2015) ref S4UL3276	6	6	1.8	33	7.7	220
LQM/CIEH (2015) ref S4UL3276	910	910	18000	8600	1500	33000
LQM/CIEH (2015) ref S4UL3276	2400	7100	520	68000	12000	44000
LQM/CIEH (2015) ref S4UL3276	-	-	-	-	-	-
LQM/CIEH (2015) ref S4UL3276	40	56	19	1100	120	240
LQM/CIEH (2015) ref S4UL3276	1.2	1.2	21	58	16	30
LQM/CIEH (2015) ref S4UL3276	180	180	230	980	230	3400
LQM/CIEH (2015) ref S4UL3276	250	430	88	12000	1100	1800
LQM/CIEH (2015) ref S4UL3276	3700	40000	620	730000	81000	170000
LQM/CIEH (2015) ref S4UL3276	410	1200	91	9000	2000	5000
LQM/CIEH (2015) ref S4UL3276	1.7	1.7	35	12	2.2	63
LQM/CIEH (2015) ref S4UL3276	290	11000	45	240000	21000	46000

Source	Residential with plant uptake (mg/kg)	Residential without plant uptake (mg/kg)	Allotments (mg/kg)	Commercial/ Industrial (mg/kg)	POS1	POS2
LQM/CIEH (2015) ref S4UL3276	280	750	66	760	760	760
LQM/CIEH (2015) ref S4UL3276	0.87	94	0.13	3500	620	1100
LQM/CIEH (2015) ref S4UL3276	0.22	27	0.03	400	60	110
LQM/CIEH (2015) ref S4UL3276	0.00064	0.00077	0.00055	0.059	3.5	4.8
LQM/CIEH (2015) ref S4UL3276	0.026	0.026	0.45	2.9	890	190
LQM/CIEH (2015) ref S4UL3276	0.0071	0.0092	0.0046	0.67	29	21
LQM/CIEH (2015) ref S4UL3276	8.8	9	48	660	140000	57000
LQM/CIEH (2015) ref S4UL3276	0.016	0.017	0.041	1.2	120	70
LQM/CIEH (2015) ref S4UL3276	0.18	0.18	0.65	19	1400	810
LQM/CIEH (2015) ref S4UL3276	1.2	1.5	0.79	110	1400	1500
LQM/CIEH (2015) ref S4UL3276	1.6	3.9	0.41	270	1400	1800
LQM/CIEH (2015) ref S4UL3276	0.46	0.46	5.9	56	11000	1300
LQM/CIEH (2015) ref S4UL3276	23	24	94	2000	90000	24000
LQM/CIEH (2015) ref S4UL3276	0.4	0.44	0.25	30	300	390
LQM/CIEH (2015) ref S4UL3276	61	61	15	4400	17000	36000
LQM/CIEH (2015) ref S4UL3276	1.5	1.5	4.7	102	1800	770
LQM/CIEH (2015) ref S4UL3276	2.6	2.6	55	220	15000	1700
LQM/CIEH (2015) ref S4UL3276	0.33	0.33	4.7	23	1700	380
LQM/CIEH (2015) ref S4UL3276	15	24	4.4	1700	830	1500
LQM/CIEH (2015) ref S4UL3276	0.66	0.75	0.38	49	78	110
LQM/CIEH (2015) ref S4UL3276	0.33	0.73	0.06	42	13	25
LQM/CIEH (2015) ref S4UL3276	5.8	19	1.2	640	100	190
LQM/CIEH (2015) ref S4UL3276	1.8	4.1	0.47	110	16	30
LQM/CIEH (2015) ref S4UL3276	0.91	1.2	0.42	99	2500	2600
LQM/CIEH (2015) ref S4UL3276	1.6	65	0.24	1000	130	260
LQM/CIEH (2015) ref S4UL3276	120	13000	17	210000	26000	49000
LQM/CIEH (2015) ref S4UL3276	5.7	6700	0.86	110000	13000	23000
LQM/CIEH (2015) ref S4UL3276	5.7	7.3	3.2	170	18	30
LQM/CIEH (2015) ref S4UL3276	0.97	7	0.17	170	18	30
LQM/CIEH (2015) ref S4UL3276	3.3	610	0.5	9300	1200	2300
LQM/CIEH (2015) ref S4UL3276	0.032	6.4	0.0049	140	16	26
LQM/CIEH (2015) ref S4UL3276	7.4	160	1.2	5600	1200	2400
LQM/CIEH (2015) ref S4UL3276	0.23	6.9	0.035	170	24	47
LQM/CIEH (2015) ref S4UL3276	0.085	3.7	0.013	65	8.1	15
LQM/CIEH (2015) ref S4UL3276	0.06	2.9	0.0092	67	8.2	14
LQM/CIEH (2015) ref S4UL3276	0.29	0.32	0.25	31	25	48
LQM/CIEH (2015) ref S4UL3276	0.14	0.14	4.8	11	11000	1300

Source	Residential with plant uptake (mg/kg)	Residential without plant uptake (mg/kg)	Allotments (mg/kg)	Commercial/ Industrial (mg/kg)	POS1	POS2
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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SLR Consulting Ltd
8 Stow Court
Stow-Cum-Quy
Cambridge
CB25 9AS

4225

Attention :	Jeremy Head
Date :	26th October, 2015
Your reference :	408.05913.00001
Our reference :	Test Report 15/14876 Batch 1
Location :	Brookland Garage
Date samples received :	17th October, 2015
Status :	Final report
Issue :	1

Three samples were received for analysis on 17th October, 2015 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brookland Garage
Contact: Jeremy Head
JE Job No.: 15/14876

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3	4-6	7-9									
Sample ID	MW7	MW8	MW103									
Depth												
COC No / misc												
Containers	V G	V G	V G									
Sample Date	15/10/2015	15/10/2015	15/10/2015									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1									
Date of Receipt	17/10/2015	17/10/2015	17/10/2015									
											LOD/LOR	Units	Method No.
Methyl Tertiary Butyl Ether #	<0.0001	<0.0001	<0.0001								<0.0001	mg/l	TM15/PM10
Benzene #	<0.0005	<0.0005	<0.0005								<0.0005	mg/l	TM15/PM10
Toluene #	<0.0005	<0.0005	<0.0005								<0.0005	mg/l	TM15/PM10
Ethylbenzene #	<0.0005	<0.0005	<0.0005								<0.0005	mg/l	TM15/PM10
p/m-Xylene #	<0.001	<0.001	<0.001								<0.001	mg/l	TM15/PM10
o-Xylene #	<0.0005	<0.0005	<0.0005								<0.0005	mg/l	TM15/PM10
Total Xylenes #	<0.0015	<0.0015	<0.0015								<0.0015	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	100	100	110								<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	110	110	120								<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM36/PM12
>C6-C8 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM36/PM12
>C8-C10 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM36/PM12
>C10-C12 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM5/PM30
>C12-C16 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/PM30
>C16-C21 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/PM30
>C21-C35 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/PM30
Total aliphatics C5-35 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM36/PM12
>EC7-EC8 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM36/PM12
>EC8-EC10 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM36/PM12
>EC10-EC12 #	<0.005	<0.005	<0.005								<0.005	mg/l	TM5/PM30
>EC12-EC16 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/PM30
>EC16-EC21 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/PM30
>EC21-EC35 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/PM30
Total aromatics C5-35 #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/PM30
Total aliphatics and aromatics(C5-35) #	<0.01	<0.01	<0.01								<0.01	mg/l	TM5/TM36/PM30

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brookland Garage
Contact: Jeremy Head

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/14876						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/14876

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/14876

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Jones Environmental Laboratory

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SLR Consulting Ltd
8 Stow Court
Stow-Cum-Quy
Cambridge
CB25 9AS

4225

Attention :	Jeremy Head
Date :	2nd November, 2015
Your reference :	408.05193.00001
Our reference :	Test Report 15/15183 Batch 1
Location :	Brooklands
Date samples received :	23rd October, 2015
Status :	Final report
Issue :	1

One sample were received for analysis on 23rd October, 2015 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05193.00001
Location: Brooklands
Contact: Jeremy Head
JE Job No.: 15/15183

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3										LOD/LOR	Units	Method No.
Sample ID	EX2												
Depth													
COC No / misc													
Containers	V G												
Sample Date	21/10/2015												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	23/10/2015												
Methyl Tertiary Butyl Ether #	<0.0001										<0.0001	mg/l	TM15/PM10
Benzene #	<0.0005										<0.0005	mg/l	TM15/PM10
Toluene #	<0.0005										<0.0005	mg/l	TM15/PM10
Ethylbenzene #	<0.0005										<0.0005	mg/l	TM15/PM10
p/m-Xylene #	<0.001										<0.001	mg/l	TM15/PM10
o-Xylene #	<0.0005										<0.0005	mg/l	TM15/PM10
Total Xylenes #	<0.0015										<0.0015	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	100										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	100										<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<0.005										<0.005	mg/l	TM36/PM12
>C6-C8 #	0.025										<0.005	mg/l	TM36/PM12
>C8-C10 #	<0.005										<0.005	mg/l	TM36/PM12
>C10-C12 #	<0.005										<0.005	mg/l	TM5/PM30
>C12-C16 #	<0.01										<0.01	mg/l	TM5/PM30
>C16-C21 #	<0.01										<0.01	mg/l	TM5/PM30
>C21-C35 #	<0.01										<0.01	mg/l	TM5/PM30
Total aliphatics C5-35 #	0.03										<0.01	mg/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<0.005										<0.005	mg/l	TM36/PM12
>EC7-EC8 #	<0.005										<0.005	mg/l	TM36/PM12
>EC8-EC10 #	<0.005										<0.005	mg/l	TM36/PM12
>EC10-EC12 #	0.17										<0.005	mg/l	TM5/PM30
>EC12-EC16 #	0.03										<0.01	mg/l	TM5/PM30
>EC16-EC21 #	<0.01										<0.01	mg/l	TM5/PM30
>EC21-EC35 #	<0.01										<0.01	mg/l	TM5/PM30
Total aromatics C5-35 #	0.20										<0.01	mg/l	TM5/PM30
Total aliphatics and aromatics(C5-35) #	0.23										<0.01	mg/l	TM5/TM36/PM30

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/15183

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

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If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/15183

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

SLR Consulting Ltd
Treenwood House
Rowden Lane
Bradford on Avon
BA15 2UA

4225

Attention :	Jeremy Head
Date :	6th November, 2015
Your reference :	408.05193.00001
Our reference :	Test Report 15/15494 Batch 1
Location :	Brooklands Garage
Date samples received :	30th October, 2015
Status :	Final report
Issue :	1

Four samples were received for analysis on 30th October, 2015 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05193.00001
Location: Brooklands Garage
Contact: Jeremy Head
JE Job No.: 15/15494

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3	4-6	7-9	10-12							LOD/LOR	Units	Method No.
Sample ID	EXB	EX5	EX11	EX12									
Depth	8.5	8.4	8.3	8.2									
COC No / misc													
Containers	V G	V G	V G	V G									
Sample Date	29/10/2015 13:30	29/10/2015 14:40	29/10/2015 14:00	29/10/2015 15:15									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1	1									
Date of Receipt	30/10/2015	30/10/2015	30/10/2015	30/10/2015									
Methyl Tertiary Butyl Ether #	<0.0001	<0.0001	<0.0001	<0.0001							<0.0001	mg/l	TM15/PM10
Benzene #	<0.0005	<0.0005	<0.0005	<0.0005							<0.0005	mg/l	TM15/PM10
Toluene #	0.017	<0.0005	<0.0005	0.0041							<0.0005	mg/l	TM15/PM10
Ethylbenzene #	0.46	0.012	<0.0005	0.35							<0.0005	mg/l	TM15/PM10
p/m-Xylene #	0.73	<0.001	<0.001	0.64							<0.001	mg/l	TM15/PM10
o-Xylene #	0.16	<0.0005	0.0023	0.082							<0.0005	mg/l	TM15/PM10
Total Xylenes #	0.8900	<0.0015	0.0023	0.7220							<0.0015	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	96	97	95	99							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	110	110	110	110							<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/l	TM36/PM12
>C6-C8 #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/l	TM36/PM12
>C8-C10 #	0.14	<0.005	<0.005	0.56							<0.005	mg/l	TM36/PM12
>C10-C12 #	<0.005	<0.005	<0.005	0.005							<0.005	mg/l	TM5/PM30
>C12-C16 #	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
>C16-C21 #	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
>C21-C35 #	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
Total aliphatics C5-35 #	0.14	<0.01	<0.01	0.57							<0.01	mg/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/l	TM36/PM12
>EC7-EC8 #	0.009	<0.005	<0.005	<0.005							<0.005	mg/l	TM36/PM12
>EC8-EC10 #	0.33	<0.005	<0.005	0.60							<0.005	mg/l	TM36/PM12
>EC10-EC12 #	0.51	<0.005	<0.005	1.0							<0.005	mg/l	TM5/PM30
>EC12-EC16 #	0.15	<0.01	<0.01	0.17							<0.01	mg/l	TM5/PM30
>EC16-EC21 #	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
>EC21-EC35 #	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
Total aromatics C5-35 #	1.00	<0.01	<0.01	1.77							<0.01	mg/l	TM5/PM30
Total aliphatics and aromatics(C5-35) #	1.14	<0.01	<0.01	2.34							<0.01	mg/l	TM5/TM36/PM30

Client Name: SLR Consulting Ltd
Reference: 408.05193.00001
Location: Brooklands Garage
Contact: Jeremy Head

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/15494						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/15494

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
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ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
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NAD	No Asbestos Detected.
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SS	Calibrated against a single substance
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W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/15494

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
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Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

SLR Consulting Ltd
Treenwood House
Rowden Lane
Bradford on Avon
BA15 2UA

Attention :	Jeremy Head
Date :	30th November, 2015
Your reference :	408.05913.00001
Our reference :	Test Report 15/16728 Batch 1
Location :	Brooklands Garage
Date samples received :	21st November, 2015
Status :	Final report
Issue :	1

Four samples were received for analysis on 21st November, 2015 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc
Project Manager

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands Garage
Contact: Jeremy Head
JE Job No.: 15/16728

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3	4-6	7-9	10-12							LOD/LOR	Units	Method No.
Sample ID	EX5	EX12	EXB	BH202									
Depth	8.00	8.00	8.00	9.00									
COC No / misc													
Containers	V G	V G	V G	V G									
Sample Date	19/11/2015	19/11/2015	19/11/2015	19/11/2015									
Sample Type	Liquid	Liquid	Liquid	Liquid									
Batch Number	1	1	1	1									
Date of Receipt	21/11/2015	21/11/2015	21/11/2015	21/11/2015									
Methyl Tertiary Butyl Ether	<0.0001	<0.0001	0.0009	<0.0001							<0.0001	mg/l	TM15/PM10
Benzene	<0.0005	<0.0005	0.0011	<0.0005							<0.0005	mg/l	TM15/PM10
Toluene	<0.0005	<0.0005	0.0078	<0.0005							<0.0005	mg/l	TM15/PM10
Ethylbenzene	<0.0005	<0.0005	0.33	<0.0005							<0.0005	mg/l	TM15/PM10
p/m-Xylene	<0.001	0.48	0.20	<0.001							<0.001	mg/l	TM15/PM10
o-Xylene	<0.0005	0.16	0.16	<0.0005							<0.0005	mg/l	TM15/PM10
Total Xylenes	<0.0015	0.6400	0.3600	<0.0015							<0.0015	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	99	100	100	100							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	99	100	100	100							<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6	<0.005	0.007	0.008	<0.005							<0.005	mg/l	TM36/PM12
>C6-C8	<0.005	0.21	0.18	<0.005							<0.005	mg/l	TM36/PM12
>C8-C10	<0.005	0.46	0.34	<0.005							<0.005	mg/l	TM36/PM12
>C10-C12	<0.005	<0.005	<0.005	<0.005							<0.005	mg/l	TM5/PM30
>C12-C16	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
>C16-C21	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
>C21-C35	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
Total aliphatics C5-35	<0.01	0.68	0.53	<0.01							<0.01	mg/l	TM5/TM36/PM30
Aromatics													
>C5-EC7	<0.005	0.027	0.026	<0.005							<0.005	mg/l	TM36/PM12
>EC7-EC8	<0.005	<0.005	0.006	<0.005							<0.005	mg/l	TM36/PM12
>EC8-EC10	<0.005	0.67	0.67	<0.005							<0.005	mg/l	TM36/PM12
>EC10-EC12	0.032	0.65	0.39	<0.005							<0.005	mg/l	TM5/PM30
>EC12-EC16	<0.01	0.07	0.09	<0.01							<0.01	mg/l	TM5/PM30
>EC16-EC21	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
>EC21-EC35	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM5/PM30
Total aromatics C5-35	0.03	1.42	1.18	<0.01							<0.01	mg/l	TM5/PM30
Total aliphatics and aromatics(C5-35)	0.03	2.10	1.71	<0.01							<0.01	mg/l	TM5/TM36/PM30

Client Name: SLR Consulting Ltd
Reference: 408.05913.00001
Location: Brooklands Garage
Contact: Jeremy Head

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/16728						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
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NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/16728

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DEVIATING SAMPLES

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DILUTIONS

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NOTE

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JE Job No: 15/16728

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				

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