

Appendices

Appendix A. Hillingdon Borough Council Planning Conditions



Miss Rebecca Gunn
Rapleys L L P
51 Great Marlborough St
City Of Westminster
London W1F 7JT

Application Ref: 45753/APP/2013/1980

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)

GRANT OF PLANNING PERMISSION

The Council of the London Borough of Hillingdon as the Local Planning Authority within the meaning of the above Act and associated Orders **GRANTS** permission for the following:-

Description of development:

Variation of condition 14 (contamination) of planning permission 45753/APP/2012/2029 (Erection of five storey building to provide 13,880sq.m of Class B1(a) Office floorspace, provision of car parking spaces at surface and basement level, associated landscaping and ancillary works).

Location of development: Hph 5 Millington Road Hayes

Date of application: 15 July 2013

Plan Numbers: See attached Schedule of plans

Permission is subject to the condition(s) listed on the attached schedule:-

Head of Planning & Enforcement

Date: 9 September 2013

- NOTES:
- (i) Please also see the informatives included in the Schedule of Conditions.
 - (ii) Should you wish to appeal against any of the conditions please read the attached sheet which explains the procedure.
 - (iii) This decision does not convey any approval or consent which may be required under any by-laws, building regulations or under any Act other than the Town and Country Planning Act 1990 (as amended).

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)

GRANT OF PLANNING PERMISSION

Application Ref: 45753/APP/2013/1980

SCHEDULE OF CONDITIONS

- 1 · The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

REASON

To comply with Section 91 of the Town and Country Planning Act 1990

- 2 · The development hereby permitted shall not be carried out except in complete accordance with the details shown on the submitted plans, numbers SK1020/61/1/1_SLP05, 110475-D-006 Rev. B ,110475-D-005 Rev. B, 110475-D210 Rev. A, 110475-D211, 110475-D212, 110475-D209 Rev. B, 110475-D200 Rev. F, 110475-D201 Rev. F, 110475-D202 Rev. E, 110475-D203 Rev. E, 110475-D204 Rev. E, 110475-D205 Rev. E, 110475-D206 Rev. B, HED.983.107 Rev. D, HED.983.108 Rev. D, HED.983.103 Rev. D, HED.983.104 Rev E, HED.983.105 Rev. E, HED.983.106 Rev. E and shall thereafter be retained/maintained for as long as the development remains in existence.

REASON

To ensure the development complies with the provisions of the Hillingdon Unitary Development Plan Saved Policies (September 2007) and the London Plan (July 2011).

SCHEDULE OF CONDITIONS

- 3 · The development hereby permitted shall not be occupied until the following has been completed in accordance with the specified supporting plans and/or documents:
- SKM Air Quality Assessment dated 16 August 2012
 - Design & Access Statement dated June 2012
 - SKM Transport Assessment HPH5 including appendices (Volumes I, II, III) dated August 2012
 - SKM Framework Travel Plan HPH5, dated August 2012
 - Reduction in energy use: BREEM Ecology Report HPH4 and HPH5 (final version dated August 2012)
 - Water Management: Flood Foul Water Strategy Rev. A received 13 November 2012
 - Delta Simmons Environmental Assessment Phase 1 dated March 2012
 - Delta Simmons Environmental Assessment Phase 2 dated October 2012
 - 3D Reid Design Bird Hazard Management Plan dated July 2012
 - 3D Reid Safety and Crime Prevention Note, dated November 2012
 - SKM Energy Statement HPH5 dated 2 July 2012
 - Foul Water Strategy Rev. A received 13 November 2012
 - Report of Flood Risk Assessment & Surface Water Drainage Strategy Rev. 1 received 13 November 2012
 - Drainage Plans Figure 1 (existing) Rev. P01
 - Drainage Plans Figure 2 (foul water strategy) Rev. P00
 - Drainage Plans Figure 3 (proposed storm water strategy) Rev. P01
 - Rapleys Planning Statement dated 18 Augusts 2012
 - Fire Evacuation Procedure note, dated November 2012
 - Fire Strategy - additional statement received 20 November 2012
 - Remediation Statement' produced by SKM Enviros, dated 30 April 2013

Thereafter the development shall be retained/maintained in accordance with these details for as long as the development remains in existence.

REASON

To ensure that the development complies with the objectives of Policies BE13, BE38 and OE1 of the Hillingdon Unitary Development Plan Saved Policies (September 2007) and London Plan (July 2011).

- 4 · No development shall take place until plans of the site showing the existing and proposed ground levels and the proposed finished floor levels of all proposed buildings have been submitted to and approved in writing by the Local Planning Authority. Such levels shall be shown in relation to a fixed and known datum point. Thereafter the development shall not be carried out other than in accordance with the approved details.

REASON

To ensure that the development relates satisfactorily to adjoining properties in accordance with policy BE13 of the Hillingdon Unitary Development Plan Saved Policies (September 2007).

SCHEDULE OF CONDITIONS

- 5 · No development shall take place until details of all materials and external surfaces have been submitted to and approved in writing by the Local Planning Authority. Thereafter the development shall be constructed in accordance with the approved details and be retained as such.

Details should include information relating to make, product/type, colour and photographs/images.

REASON

To ensure that the development presents a satisfactory appearance in accordance with Policy BE13 of the Hillingdon Unitary Development Plan Saved Policies (September 2007).

- 6 · No development shall take place until a landscape scheme has been submitted to and approved in writing by the Local Planning Authority. The scheme shall include: -

1. Full details of Soft Landscaping

1.a Planting plans (at not less than a scale of 1:100),

1.b Full written specification of planting and cultivation works to be undertaken,

1.c Full schedule of plants giving species, plant sizes, and proposed numbers/densities where appropriate

2. Details of Hard Landscaping

2.a Covered and secure refuse storage

2.b Covered and secure cycle storage

2.c Means of enclosure/boundary treatments

2.d Car Parking Layouts (including demonstration that 20% of all parking spaces are served by electrical charging points)

2.e Hard Surfacing Materials

2.f External Lighting

2.g Other structures

3. Details of Landscape Maintenance

3.a Landscape Maintenance Schedule for a minimum period of 5 years.

3.b Proposals for the replacement of any tree, shrub, or area of surfing/seeding within the landscaping scheme which dies or in the opinion of the Local Planning Authority becomes seriously damaged or diseased.

4. Schedule for Implementation

5. Other

5.a Existing and proposed functional services above and below ground

5.b Proposed finishing levels or contours

Thereafter the development shall be carried out and maintained in full accordance with the approved details.

REASON

To ensure that the proposed development will preserve and enhance the visual amenities of the locality and provide adequate facilities in compliance with policies BE13, BE38 and AM14 of the Hillingdon Unitary Development Plan Saved Policies (September 2007) and Policies 5.11 (living walls and roofs) and 5.17 (refuse storage) of the London Plan.

SCHEDULE OF CONDITIONS

- 7 · Trees, hedges and shrubs shown to be retained on the approved plan shall not be damaged, uprooted, felled, lopped or topped without the prior written consent of the Local Planning Authority. If any retained tree, hedge or shrub is removed or severely damaged during construction, or is found to be seriously diseased or dying another tree, hedge or shrub shall be planted at the same place or, if planting in the same place would leave the new tree, hedge or shrub susceptible to disease, then the planting should be in a position to be first agreed in writing with the Local Planning Authority and shall be of a size and species to be agreed in writing by the Local Planning Authority and shall be planted in the first planting season following the completion of the development or the occupation of the buildings, whichever is the earlier. Where damage is less severe, a schedule of remedial works necessary to ameliorate the effect of damage by tree surgery, feeding or groundwork shall be agreed in writing with the Local Planning Authority. New planting should comply with BS 3936 (1992) 'Nursery Stock, Part 1, Specification for Trees and Shrubs'.

Remedial work should be carried out to BS BS 3998:2010 'Tree work - Recommendations' and BS 4428 (1989) 'Code of Practice for General Landscape Operations (Excluding Hard Surfaces)'. The agreed work shall be completed in the first planting season following the completion of the development or the occupation of the buildings, whichever is the earlier.

REASON

To ensure that the trees and other vegetation continue to make a valuable contribution to the amenity of the area in accordance with policy BE38 of the Hillingdon Unitary Development Plan Saved Policies (September 2007) and to comply with Section 197 of the Town and Country Planning Act 1990.

- 8 · Prior to the commencement of development a scheme for the reduction in potable water use including the harvesting and reuse of rainwater as well as the recycling and reuse of grey shall be submitted to and approved in writing by Local Planning Authority. The scheme shall clearly set out how collected water will be reused in areas where potable water is not required, i.e. toilet flushing and irrigation of landscaped areas. The development must proceed in accordance with the approved scheme.

Reason

To ensure the development reduces the pressure on potable water in accordance with Policy 5.15 of the London Plan (July 2011).

SCHEDULE OF CONDITIONS

- 9 · No development approved by this permission shall be commenced until a scheme for the provision of sustainable water management has been submitted to, and approved in writing by the Local Planning Authority. The scheme shall clearly demonstrate how it follows the strategy set out in Hyde Park Hayes, Report on Flood Risk Assessment and Surface Water Drainage Strategy, produced by Halcrow, dated July 2012 Issue 2 Revision 1, and incorporates sustainable urban drainage in accordance with the hierarchy set out in Policy 5.15 of the London Plan.

REASON

To ensure that surface water run off is controlled to ensure the development does not increase the risk of flooding contrary to Policy OE8 of the Hillingdon Unitary Development Plan Saved Policies (September 2007), Policy 5.12 Flood Risk Management of the London Plan (July 2011) and Planning Policy Statement 25. To be handled as close to its source as possible in compliance with Policy 5.13 Sustainable Drainage of the London Plan (July 2011), and conserve water supplies in accordance with Policy 5.15 Water use and supplies of the London Plan (July 2011).

- 10 · Prior to development commencing, the applicant shall submit a construction logistic plan to the Local Planning Authority for its approval. The plan shall detail:

- (i) The phasing of development works.
- (ii) The hours during which development works will occur.
- (iii) Measures to prevent mud and dirt tracking onto adjoining roads (including wheel washing facilities).
- (iv) Traffic management and access arrangements (vehicular and pedestrian) and parking provisions for contractors during the development process (including measures to reduce the numbers of construction vehicles accessing the site during peak hours).
- (v) Measures to reduce the impact of the development on local air quality and dust through minimising emissions throughout the demolition and construction process.
- (vi) The storage of demolition/construction materials on site (including height of stored materials).
- (vii) height of storage areas for materials or equipment.
- (viii) details of cranes and other tall construction equipment (including the details of obstacle lighting) - such schemes shall comply with Advice Note 4 'Cranes and Other Construction Issues' (available at www.aoa.org.uk/publications/safeguarding.asp).
- (xx) control of activities likely to produce smoke and dust, etc.
 - details of temporary lighting - such details shall comply with Advice Note 2 'Lighting Near Aerodromes' (available at www.aoa.org.uk/publications/safeguarding.asp).
- (x) control and disposal of putrescible waste to prevent attraction of birds.

The approved details shall be implemented and maintained throughout the duration of the construction process.

REASON

To safeguard the amenity of surrounding areas in accordance with Policy OE1 of the Hillingdon Unitary Development Plan (Saved Policies 2007).

SCHEDULE OF CONDITIONS

- 11 · Prior to commencement of development, details of a Delivery and Servicing Plan shall be submitted to and approved in writing by the Local Planning Authority. This shall incorporate measures to minimise vehicle deliveries during am and pm peak hours. The approved strategy shall be implemented as soon as the development is brought into use and the strategy shall remain in place thereafter. Any changes to the strategy shall be agreed in writing by the Local Planning Authority.

REASON

To encourage out of hours/off peak servicing to help mitigate the site's contribution to local congestion levels in compliance with Policy AM2 of the Hillingdon Unitary Development Plan Saved Policies September 2007

- 12 · No development approved by this planning permission except that necessary to fulfil this condition (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), shall take place until a scheme that includes the following components to deal with the risks associated with contamination of the site shall each be submitted to and approved, in writing, by the Local Planning Authority:

1) A preliminary risk assessment which has identified:

- all previous uses
- potential contaminants associated with those uses
- a conceptual model of the site indicating sources, pathways and receptors
- potentially unacceptable risks arising from contamination at the site.

2) A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

3) The results of the site investigation and detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

4) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require the express written consent of the Local Planning Authority. The scheme shall be implemented as approved.

REASON:

The Phase 1 report submitted with the planning application for confirms there is some land and groundwater contamination. The gravels beneath the site are designated a Principal Aquifer and this important resource needs to be protected. National Planning Policy Framework (NPPF) paragraph 109 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should also ensure that adequate site investigation information, prepared by a competent person, is presented (NPPF, paragraph 121).

We would ask the applicant to wait for our comments on the Phase 2 report prior to undertaking any further work based on the site investigation.

SCHEDULE OF CONDITIONS

- 13 · If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until the developer has submitted a remediation strategy to the Local Planning Authority detailing how this unsuspected contamination shall be dealt with and obtained written approval from the local planning authority. The remediation strategy shall be implemented as approved.

REASON

To protect the quality of the water environment by ensuring any contamination identified during construction (e.g. for the substantial basement) is addressed following EA guidance. National Planning Policy Framework (NPPF) paragraph 109 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should ensure that adequate site investigation information, prepared by a competent person, is presented (NPPF, paragraph 121).

- 14 · A verification report demonstrating completion of works set out in the approved remediation report demonstrating completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved, in writing, by the local planning authority. This shall be produced in two parts:

- 1) No occupation of any part of the permitted development shall take place until a report detailing verification of soil contamination which represents a potential risk to human health and structures has been provided, and;
- 2) Within two years of the occupation of the permitted development, a verification report demonstrating completion of works set out in the approved remediation strategy shall be submitted to and approved, in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.

REASON

To ensure remedial work required by conditions 12 and 13 have been undertaken and demonstrated successfully. National Planning Policy Framework (NPPF) paragraph 109 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should ensure that adequate site investigation information, prepared by a competent person, is presented (NPPF, paragraph 121).

SCHEDULE OF CONDITIONS

- 15 · No infiltration of surface water drainage into the ground is permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approval details.

REASON

To protect the quality of the water environment by ensuring any infiltration drainage is appropriate to the physical and chemical conditions of the site. Please see advice at the bottom for more detail.

National Planning Policy Framework (NPPF) paragraph 109 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution.

- 16 · Piling or any other foundation designs using penetrative methods shall not be permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to groundwater. The development shall be carried out in accordance with the approved details.

REASON

To protect the water environment. The basement structures have the potential to disturb contamination through their construction and their lifetime - they may cause contaminant migration if the structures cause the groundwater flow regime to change.

INFORMATIVES:

- 1 · The decision to GRANT planning permission has been taken having regard to all relevant planning legislation, regulations, guidance, circulars and Council policies, including The Human Rights Act (1998) (HRA 1998) which makes it unlawful for the Council to act incompatibly with Convention rights, specifically Article 6 (right to a fair hearing); Article 8 (right to respect for private and family life); Article 1 of the First Protocol (protection of property) and Article 14 (prohibition of discrimination).
- 2 · The decision to GRANT planning permission has been taken having regard to the policies and proposals in the Hillingdon Unitary Development Plan Saved Policies (September 2007) set out below, including Supplementary Planning Guidance, and to all relevant material considerations, including the London Plan (July 2011) and national guidance.
- 3 · The development hereby approved may be subject to the Construction (Design and Management) Regulations 1994, which govern health and safety through all stages of a construction project. The regulations require clients (ie. those, including developers, who commission construction projects) to appoint a planning supervisor and principal contractor who are competent and adequately resourced to carry out their health and safety responsibilities. Further information is available from the Health and Safety Executive, Rose Court, 2 Southwark Bridge Road, London, SE1 9HS (telephone 020 7556 2100).

SCHEDULE OF CONDITIONS

- 4 . Nuisance from demolition and construction works is subject to control under The Control of Pollution Act 1974, the Clean Air Acts and other related legislation. In particular, you should ensure that the following are complied with:-

A. Demolition and construction works which are audible at the site boundary shall only be carried out between the hours of 08.00 and 18.00 hours Monday to Friday and between the hours of 08.00 hours and 13.00 hours on Saturday. No works shall be carried out on Sundays, Bank or Public Holidays.

B. All noise generated during such works shall be controlled in compliance with British Standard Code of Practice BS 5228:2009.

C. Dust emissions shall be controlled in compliance with the Mayor of London's Best Practice Guidance 'The Control of dust and emissions from construction and demolition.

D. No bonfires that create dark smoke or nuisance to local residents.

You are advised to consult the Council's Environmental Protection Unit (www.hillingdon.gov.uk/noise Tel. 01895 250155) or to seek prior approval under Section 61 of the Control of Pollution Act if you anticipate any difficulty in carrying out construction other than within the normal working hours set out in (A) above, and by means that would minimise disturbance to adjoining premises.

- 5 . You should contact Thames Water Utilities and the Council's Building Control Service regarding any proposed connection to a public sewer or any other possible impact that the development could have on local foul or surface water sewers, including building over a public sewer. Contact: - The Waste Water Business Manager, Thames Water Utilities plc, Kew Business Centre, Kew Bridge Road, Brentford, Middlesex, TW8 0EE. Building Control Service - 3N/01, Civic Centre, High Street, Uxbridge, UB8 1UW (tel. 01895 250804 / 805 / 808).

- 6 . The development requires the formation of a vehicular crossover, which will be constructed by the Council. This work is also subject to the issuing of a separate licence to obstruct or open up the public highway. For further information and advice contact: - Highways Maintenance Operations, 4W/07, Civic Centre, Uxbridge, UB8 1UW.

- 7 . A licence must be obtained from the Highway Authority before any works are carried out on any footway, carriageway, verge or other land forming part of the public highway. This includes the erection of temporary scaffolding, hoarding or other apparatus in connection with the development for which planning permission is hereby granted. For further information and advice contact: - Highways Maintenance Operations, 4W/07, Civic Centre, Uxbridge, UB8 1UW

- 8 . Compliance with Building Regulations 'Access to and use of buildings' and Disability Discrimination Act 1995 for commercial and residential development.

You are advised that the scheme is required to comply with either:-

SCHEDULE OF CONDITIONS

- The Building Regulations 2000 Approved Document Part M 'Access to and use of buildings', or with
- BS 8300:2001 Design of buildings and their approaches to meet the needs of disabled people - Code of practice. AMD 15617 2005, AMD 15982 2005.

These documents (which are for guidance) set minimum standards to allow residents, workers and visitors, regardless of disability, age or gender, to gain access to and within buildings, and to use their facilities and sanitary conveniences.

You may also be required make provisions to comply with the Disability Discrimination Act 1995. The Act gives disabled people various rights. Under the Act it is unlawful for employers and persons who provide services to members of the public to discriminate against disabled people by treating them less favourably for any reason related to their disability, or by failing to comply with a duty to provide reasonable adjustments. This duty can require the removal or modification of physical features of buildings provided it is reasonable.

The duty to make reasonable adjustments can be effected by the Building Regulation compliance. For compliance with the DDA please refer to the following guidance: -

- The Disability Discrimination Act 1995. Available to download from www.opsi.gov.uk
- Disability Rights Commission (DRC) Access statements. Achieving an inclusive environment by ensuring continuity throughout the planning, design and management of building and spaces, 2004. Available to download from www.drc-gb.org.
- Code of practice. Rights of access. Goods, facilities, services and premises. Disability discrimination act 1995, 2002. ISBN 0 11702 860 6. Available to download from www.drc-gb.org.
- Creating an inclusive environment, 2003 & 2004 - What it means to you. A guide for service providers, 2003. Available to download from www.drc-gb.org.

This is not a comprehensive list of Building Regulations legislation. For further information you should contact Building Control on 01895 250804/5/6.

- 9 . You are advised that care should be taken during the building works hereby approved to ensure no damage occurs to the verge or footpaths during construction. Vehicles delivering materials to this development shall not override or cause damage to the public footway. Any damage will require to be made good to the satisfaction of the Council and at the applicant's expense. For further information and advice contact - Highways Maintenance Operations, Central Depot - Block K, Harlington Road Depot, 128 Harlington Road, Hillingdon, Middlesex, UB3 3EU (Tel: 01895 277524).
- 10 . Given the nature of the proposed development it is possible that a crane may be required during its construction. The applicant's attention is drawn to the requirement within the British Standard Code of Practice for the safe use of Cranes, for crane operators to consult the aerodrome before erecting a crane in close proximity to an aerodrome. This is explained further in Advice Note 4, 'Cranes and Other Construction Issues' (available at www.aoa.org.uk/publications/safeguarding.asp)

SCHEDULE OF CONDITIONS

- 11 . Induction loops should be specified to comply with BS 7594 and BS EN 60118-4, and a term contract planned for their maintenance.

Care must be taken to ensure that overspill and/or other interference from induction loops in different/adjacent areas does not occur.

Flashing beacons/stroboscopic lights linked to the fire alarm should be carefully selected to ensure they remain within the technical thresholds not to adversely affect people with epilepsy.

- 12 . You will be expected to utilise light sensors within the building to ensure that lights are turned off when facilities and rooms are not in use.

- 13 . You are advised that the development hereby approved represents chargeable development under the Community Infrastructure Levy. The applicant will be liable to pay the Community Infrastructure Levy on commencement of this development. A separate liability notice will be issued by the Local Planning Authority, however you are advised that it is your responsibility to notify the Local Planning Authority of the anticipated commencement date and any changes in liability through submission of the appropriate forms.

Should you require further information please refer to the Council's Website (<http://www.hillingdon.gov.uk/index.jsp?articleid=24738>).

- 14 . The applicant is encouraged if the building uses mechanical ventilation to draw air from as high as possible to ensure the air is as clean as possible.

Part 1 Policies:

PT1.BE1	(2012) Built Environment
PT1.EM6	(2012) Flood Risk Management
PT1.EM8	(2012) Land, Water, Air and Noise

Part 2 Policies

END OF SCHEDULE

Address:

Residents Services
London Borough of Hillingdon
3 North Civic Centre, High Street, Uxbridge UB8 1UW
Tel: 01895 250230
www.hillingdon.gov.uk

GRANT OF PLANNING PERMISSION

Application Ref.No.: 45753/APP/2013/1980

SCHEDULE OF PLANS

Remediation Statement' produced by SKM Enviros, dated 30 April 2013 - received

Appendix B. Celtic Technologies, HPH5 Validation Report



Design and Construct Remediation

KIER CONSTRUCTION

**HYDE PARK HPH5
HAYES
MIDDLESEX**

**VALIDATION REPORT
(FINAL)**

R1588/14/4467

JANUARY 2014

Client:	Kier Construction
Report Number:	R1588/14/4467
Report Title:	Hayes HPH5 Validation Report
Report Status:	Final
Author(s):	A.Plint
(Signature & Date)	_____
Project Manager:	J. Owens
(Signature & Date)	_____
QA Approved:	
(Signature & Date)	_____

Celtic is the trading name for Celtic Technologies Ltd.

This report has been prepared for Kier Construction Ltd by Celtic with reasonable skill, care and diligence and taking account of the contract terms and conditions and manpower and resources devoted to it in agreement with the client. Celtic disclaims any responsibility to the client and others in respect of any matters outside the scope of the above.

The report is only valid when it is used in its entirety.

This report is confidential to the client and Celtic accepts no responsibility to third parties to whom the report, or any part thereof, is made known. Any such party using any information contained within the report does so at their own risk.

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APPENDICES

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1.0 INTRODUCTION

1.1 General

Celtic Technologies Ltd (Celtic) was commissioned by Kier Construction to carry out remedial excavation works on the site HPH5 within Hyde Park Business Park in Hyde Park, Middlesex. A site location plan referenced Drawing No. D001 is included in Appendix A of this report.

This report details the remedial excavation and validation works which have been undertaken on the Hayes HPH5 development. These works were undertaken between 18th November 2013 and 20th December 2013, and included the following elements as in line with the original agreed scope of work:

- Excavation and segregation of the inert hard core material for future use on the site and for concrete disposal off site;
- Excavation and segregation of non-hazardous and hazardous contaminated materials from within the future building footprint on the site, for disposal at appropriately licenced facilities;
- Excavation within the piling mat area to natural soils at 1.5 mbgl and disposal of the inert material removed;
- Installation of a piling mat in line with client specifications reusing site won inert materials.

In addition to the original scope of work, the following works were carried out:

- Emptying and removal of a below ground oil storage tank from within the piling mat area.

The original scope of works included the excavation of contaminated soils from the western edge of the site outside of the building footprint to allow for the installation of an aquacell. This area has not been excavated due to the presence of an active water main which has resulted in a delay in completing this remaining task.

1.2 Background

The site is located on Millington Road, Hayes, Middlesex within Hyde Park Business Park and prior to the works undertaken by the client, comprised a landscaped area to the north and west containing trees, benches, patio area and grasses and an area to the south where crush fill material was the ground cover.

The client plans to build a four storey office block on the site including a basement car park. To enable the construction the level of the site needed to be reduced and soils which contained significant metal contamination were identified on site in site investigation works completed by SKM Enviro.

The site is underlain by made ground below which is Lynch Hill Gravels which support groundwater below the site. Chlorinated hydrocarbons have previously been identified in the groundwater by others.

Site investigations completed by Celtic to refine the extent of the shallow hotspot of contaminated soils identified elevated concentrations of metals including lead, copper and zinc at eco-toxic levels. As part of the reduced level excavation, contaminated soils required removal during the construction project. Celtic was commissioned with reducing the level of the site to approximately 1.5 m below existing level to allow a piling mat to be installed to allow sheet piling to commence.

1.3 Works Undertaken

Following a review of previous site investigations and reports, Celtic undertook further site investigation, including advancing 20 trial pits and collection of soil samples to classify the soils to be excavated from the site for the proposed commercial development. This review of previous site investigations together with our own site investigation works enabled identification of the areas and depths of contaminated soils requiring remedial excavation.

The main contaminants of concern at the site were metals which occurred at eco toxic levels in the central and southern areas of the site, specifically lead, copper and zinc. Groundwater present in the underlying Lynch Hill Gravels below the site is known to have solvent contamination present and the removal of any sources of solvent impact associated within the contaminated groundwater does not fall within the scope of the remediation work carried out by Celtic.

Areas of contamination identified on site are shown on Site Layout (drawing C1588/VR2, Appendix A). Waste materials which were excavated were classified into one of the following categories and disposed of at an appropriate facility:

- Topsoil (uncontaminated)
- Inert material (soils or concrete)
- Non-hazardous soil
- Hazardous soil

2.0 REMEDIATION WORKS

2.1 Works Undertaken

TABLE 1: PROGRAMME OF WORKS UNDERTAKEN

	Hayes HPH5
Week 1: w/c 18/11/2013	Provision of method statements and risk assessments for all tasks carried out by Celtic during the remedial excavation Mobilise plant to site Further soil testing prior to excavation Excavate topsoil and inert material from the north eastern edge of the site for off-site disposal Concrete in the northern area of the site partially broken out
Week 2: w/c 25/11/2013	All concrete removed from northern area Inert material excavated to 1.5 m below ground level (bgl) along the north eastern length of the piling mat Piling mat installed along a section of the northeast and eastern edge of site Excavation and segregation of hazardous / non-hazardous soils along the south eastern leg of the piling mat and soil sampling for off-site disposal Installation of piling at along the south eastern edge of the site Vegetation and general waste removed from site
Week 3: w/c 02/12/2013	Excavation, segregation and sampling of soils in the central eastern area Excavation, segregation and sampling of soil in the southern area of the piling mat to 1.5 mbgl to the edge of the below ground fuel tank and installation of the piling mat in this area Excavation, segregation and sampling of soil in the western area of the piling mat to 1.5 mbgl Ambient asbestos monitoring Offsite disposal of clean and contaminated soils
Week 4: w/c 09/12/2013	Excavation and segregation of soils in the central western and southern areas for off-site disposal Excavation and segregation of soils in the western area of the piling mat to 1.5 mbgl continues to meet piling mat to in the northern area; north site gate closed Below ground fuel tank decontamination and removal Ambient asbestos monitoring Validation soil samples collected at the base of formation

Week 5: w/c 16/12/2013	Excavation and segregation of soils in the central southern areas for offsite disposal continues Excavation and segregation of soils in the south western area of the piling mat to 1.5 mbgl continues to meet piling mat to in the southern area; south site gate closed Validation sampling completion General waste removal (incl., scrap metal) All plant removed from site Site handover completed
------------------------------	--

2.2 Classification Sampling

Prior to disposal, all soils were stockpiled and resampled as required to confirm their classification and confirm the material was sent to the correct disposal destination.

Based on sampling from the investigation and through the works soils for off-site disposal were segregated and sent to the following locations:

- Inert soils were removed to the following location under a duty of care waste transfer note, for recycling: Henry Streeter, Sipson Lane, West Drayton.
- Concrete was removed to the following location under a duty of care waste transfer note, for crushing and recycling: Thames Materials, Thames House, 4 Sarum Complex, Salisbury Road, Uxbridge.
- Topsoil was removed to the following location under a duty of care waste transfer note, for reuse: Biogenie Soil Treatment Facility, Cormongers Lane, Redhill.
- Non-hazardous materials were removed to the following location under a duty of care waste transfer note, for disposal: Biffa Landfill, Cormongers Lane, Redhill.
- Hazardous materials were removed to the following location under a consignment note, for disposal: Augean, Stamford Road, Kings Cliffe, Peterborough.

The classification sampling frequency was approximately one sample per 180 m³. A total of 30 no. soil samples were collected during the works of inert, hazardous and non-hazardous soils to ensure accurate classification of the materials to be taken off site. . The excavation was completed to a depth of between 0.8 and 1.5 m below original ground level resulting in a total volume of 5483 m³ of soils which were stockpiled, sample and consigned for off-site removal.

TABLE 2: HAYES HPH5 CLASSIFICATION SAMPLES

Sample ID	Depth	Waste classification by analysis	Disposal route
SS1	0.15	Non-hazardous	Biogenie, Redhill
SS2	0.15	Non-hazardous	Biogenie, Redhill
SS3	0.15	Non-hazardous	Biogenie, Redhill

Sample ID	Depth	Waste classification by analysis	Disposal route
SP1	1.1	Inert	Henry Streeter
SP1	1.5	Inert	Henry Streeter
SP2	1.2	Inert	Henry Streeter
SP2	1.5	Inert	Henry Streeter
SP3	1.4	Inert	Henry Streeter
SP4	1.5	Inert	Henry Streeter
SP4	1.7	Inert	Henry Streeter
SP5	1.2-1.5	Inert	Henry Streeter
SP6	1.1	Inert	Henry Streeter
SP6	1.5	Inert	Henry Streeter
SP7	1.1	Inert	Henry Streeter
SP7	1.6	Inert	Henry Streeter
Topsoil	Composite	Non-contaminated	Biogenie, Redhill
SP8	Composite	Non-hazardous	Biffa, Redhill
SP9	Composite	Non-hazardous	Biffa, Redhill
SP10	Composite	Hazardous	Augean
SP11	Composite	Hazardous	Augean
SP12	Composite	Hazardous	Augean
SP13	Composite	Non-hazardous	Biffa, Redhill
SP14	Composite	Non-hazardous	Biffa, Redhill
SP15	Composite	Non-hazardous	Biffa, Redhill
SP16	Composite	Hazardous	Augean
SP17	1.7	Validation	Incorrect label – validation sample
SP18	Composite	Hazardous	Augean
SP19	Composite	Non-hazardous	Biffa, Redhill
SP20	Composite	Non-hazardous	Biffa, Redhill
SP21	Composite	Hazardous	Augean
SP22	Composite	Hazardous	Augean
SP23	Composite	Non-hazardous	Biffa, Redhill
SP23b	Composite	Non-hazardous	Biffa, Redhill
SP24	0.4	Non-hazardous	Biffa, Redhill
SP24	0.8	Non-hazardous	Biffa, Redhill
SP25	Composite	Non-hazardous	Biffa, Redhill
SP26	Composite	Non-hazardous	Biffa, Redhill
SP27	Composite	Non-hazardous	Biffa, Redhill
SP28	Composite	Non-hazardous	Biffa, Redhill
SP29	Composite	Non-hazardous	Biffa, Redhill
SP30	Composite	Non-hazardous	Biffa, Redhill
Gravel (Tank)	Composite	Non-hazardous	Biffa, Redhill

2.3 Disposal

2.3.1 Off Site Disposal / Reuse

The following tables summarise the excavated materials removed from site and the classification of the materials. Tickets from each load of soils removed from site have

been provided and a table with the details of each load is available in Appendix F, Waste Disposal Table.

TABLE 3: DESTINATION OF EXPORTED MATERIALS FROM SITE

Material for Off Site Disposal, Hayes HPH5			
Classification	Destination	Loads	Weight (tonnes)
Topsoil	Biogenie STF – reuse	31	570.06
Inert soils	Henry Streeter – recycle	246	4504.79
Inert concrete	Thames Materials & Ron Smith – recycle	38	-
Non-hazardous	Redhill – disposal	225	4247.22
Hazardous by Metals	Augean – treatment and disposal	79	1540.5
Liquid	Sharpes – disposal	1	20.0
Metal	ERM – recycle	1	-
Mixed waste	Skippy – disposal	1	9.02

2.3.2 Duty of Care

All loads were accompanied by appropriate paperwork conforming to the Hazardous Waste Regulations, 2011; a Waste Transfer Note for inert and non-Hazardous loads or a Section 62 Consignment Note for hazardous loads. All original site issued transfer and consignment notes will be held at the Celtic offices in Reading with a copies provided to the client in digital form.

The waste carriers including their registration numbers used for the different waste streams are as follows:

- B L Penwarden Haulage and Demolition Contractors Ltd: CB/AP3717YH
- Thames Materials Ltd: CB/MP3098MX
- P J Brown (Construction) Ltd: CB/WN5070RB
- G Webb Haulage Ltd: CB/EN5570VY
- S & J : CB/BN5317EU
- Clwyd : CB/CP3010RB
- Williams : EAN931386
- Holbrook : AEA734420
- ACS : CB/ME537KK

The measured or estimated weights of each load and the relevant ticket numbers of its transport and disposal are provided in the table in Appendix F, Waste Disposal Table.

3.0 VALIDATION WORKS

This report includes the validation of the remediation works completed, by soil sampling and analysis. The locations of validation soil samples collected are illustrated on the figure Validation Sample plan (drawing C1588/VR5) which is included in Appendix A.

3.1 Sampling Frequency

The validation sampling frequency was one sample per 150 m². 30 No. validation soil samples were collected throughout the site works and sent for analysis by Jones Forensics Laboratories and Chemtest.

3.2 Soil Analysis

All samples taken on site were collected following Celtic Method Statements. Samples were dispatched under chain of custody and submitted for a suite consisting of total organic carbon (TOC), Cyanide, pH, Sulphur, Sulphate, Metals, Mineral Oil, PAH's, Phenol and BTEX.

Jones Forensics Laboratories and Chemtest are UKAS/MCERTS accredited laboratories.

Data excerpts of the chemical analysis reports received from the Laboratory are presented in Appendix C, and summary tables for the relevant areas are provided below.

3.2.1 Validation Samples

During the excavations, validation samples from the southern site were submitted for chemical analysis, and the results compared to the validation criteria selected for the site.

A summary of the chemical analysis results from the base of the reduced level dig outside of the hotspot areas of odorous gravels is presented in Appendix C Laboratory Analysis Reports and the results are summarised in Table 4.

TABLE 4: HAYES HPH5 CLASSIFICATION SAMPLES

Analyte	Number of samples analysed	Minimum Concentration (mg/kg unless stated)	Maximum Concentration (mg/kg unless stated)
TOC	30	0.06 %	1.7%
pH	30	7.07 pH units	11.1 pH units
Sulphur	30	<0.01	0.03
Sulphate	6	0.19	329
Copper	30	5.6	480
Lead	30	<5.0	350
Zinc	30	24	960
PAH	30	<2 / <0.04	54
Mineral Oil	5	<30	196
Phenol	5	<0.01	<0.01
TPH	25	<10	210

Analyte	Number of samples analysed	Minimum Concentration (mg/kg unless stated)	Maximum Concentration (mg/kg unless stated)
BTEX	30	<0.1-5	16 (xylene)

Note: the initial results received for location V22 appears anomalous with regard to lead and PAH concentration's. This area was resampled as V22b and all of the results are within the above ranges. The anomalous analysis result from location V22 are not included in the above Table.

Localised areas of gravels encountered at the base of excavations in three locations (V7, V10 and SP17). These locations were sampled with the results summarised in Table 5 and the analysis reports are available in Appendix C Laboratory Analysis Reports.

TABLE 5: ASSESSMENT OF ODOROUS GRAVEL SAMPLE RESULTS

Analyte	V7	V10	SP17
TOC (%)	0.22	<0.10	0.13
pH (units)	8.3	7.5	7.07
Sulphur (mg/kg)	<0.01	<0.01	0.02
Sulphate (mg/kg)	-	-	108
Copper (mg/kg)	35	5.6	12
Lead (mg/kg)	42	<5.0	13
Zinc (mg/kg)	73	24	47
Mineral Oil (mg/kg)	-	-	196
PAH (mg/kg)	5.8	<2	1.0
Phenol (mg/kg)	-	-	<0.01
TPH (mg/kg)	<10	<10	-
BTEX (um/kg)	<1.0	<1.0	16

None of the odorous gravels at the base of excavation contained contaminants that exceeded the concentrations which would be acceptable to inert landfill sites. The base of the former diesel/fuel tank on site was sampled once all the accessible soil which was visually impacted was removed. The results of this sample are highlighted in Table 6.

TABLE 6: ASSESSMENT OF GRAVELS DIRECTLY BENEATH FORMER TANK

Analyte	V4
TOC (%)	1.3
pH (units)	7.2
Sulphur (mg/kg)	0.03
Sulphate (mg/kg)	-
Copper (mg/kg)	8.5
Lead (mg/kg)	8.1
Zinc (mg/kg)	960
Mineral Oil (mg/kg)	-
PAH (mg/kg)	<2
Phenol (mg/kg)	-
TPH (mg/kg)	3100
BTEX (um/kg)	<1.0

A localised area of gravels directly beneath the former diesel/fuel tank contained slightly elevated contaminant concentrations that would be classified as non-hazardous waste.

3.2.2 Residual Contaminant levels

The validation samples analysis results confirm the quantification of the residual soils on site at approximately 1.5 mbgl to be consistent with inert criteria with the exception of a localised area beneath the former fuel tank.

Soils from the validation location V22 were resampled on 07/01/14 once all soil excavation was completed as the initial sample was taken whilst soil was still stockpiled on site. These results were consistent with other validation sample results across the site and are named V22b.

Soils from the location around the fuel tank should be segregated during further excavation works and disposed of at an appropriately licenced facility. The speciated TPH results for soil sample V4 to confirm the diesel product typing will be provided under separate cover.

4.0 ASBESTOS MONITORING

During the excavation works ambient asbestos monitoring was undertaken by Riverside Environmental during the excavation of hazardous material.

Asbestos monitoring on all occasions showed ambient asbestos to be at a level which would be expected in all ambient air and therefore not a cause for concern with regard to elevated exposure to site users during the excavation.

5.0 CONCLUSIONS

The following conclusions can be made from the works completed on site:

- All materials were stockpiled and resampled to ensure the correct waste classification prior to disposal
- All contaminated soils with the exception of those located in the aquacell area to the west of the site were effectively removed
- Validation analysis results taken of soils remaining at the site were consistent with inert waste criteria. However, localised areas of odorous gravels remain at the site at groundwater level and below and whilst these are chemically inert the odour of the gravel will need to be checked by waste operators to confirm acceptance
- Below the location of the fuel tank which was discovered on the site are gravels which contain elevated residual petroleum hydrocarbon contamination present. These should be disposed of as non-hazardous waste during the bulk excavation.

APPENDICES

APPENDIX A DRAWINGS



Hayes HPH5

Celtic 
Design and Construct Remediation

CELTEC Technologies Ltd
1210 Parkview
Arlington Business Park
Theale
Berkshire
RG7 4TY

Tel. 01189 167430
Fax. 01189 302371

Client:
Kier Construction

Project:
HPH5 Hayes

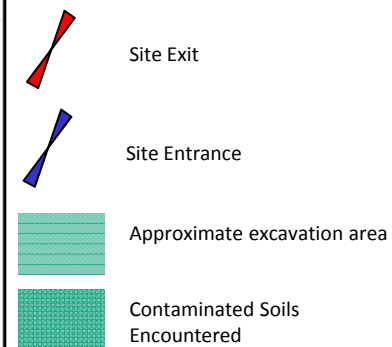
Job No.:
C1588

Title: Site Location

Scale:
NTS

Date Drawn:
January 2014

Drawing No.:
R1588/Validation Report 1



Celtic
Design and Construct Remediation

CELTIC Technologies Ltd
1210 Parkview
Arlington Business Park
Theale
Berkshire
RG7 4TY

Tel. 01189 167430
Fax. 01189 302371

Client: Kier Construction

Project: HPH5 Hayes

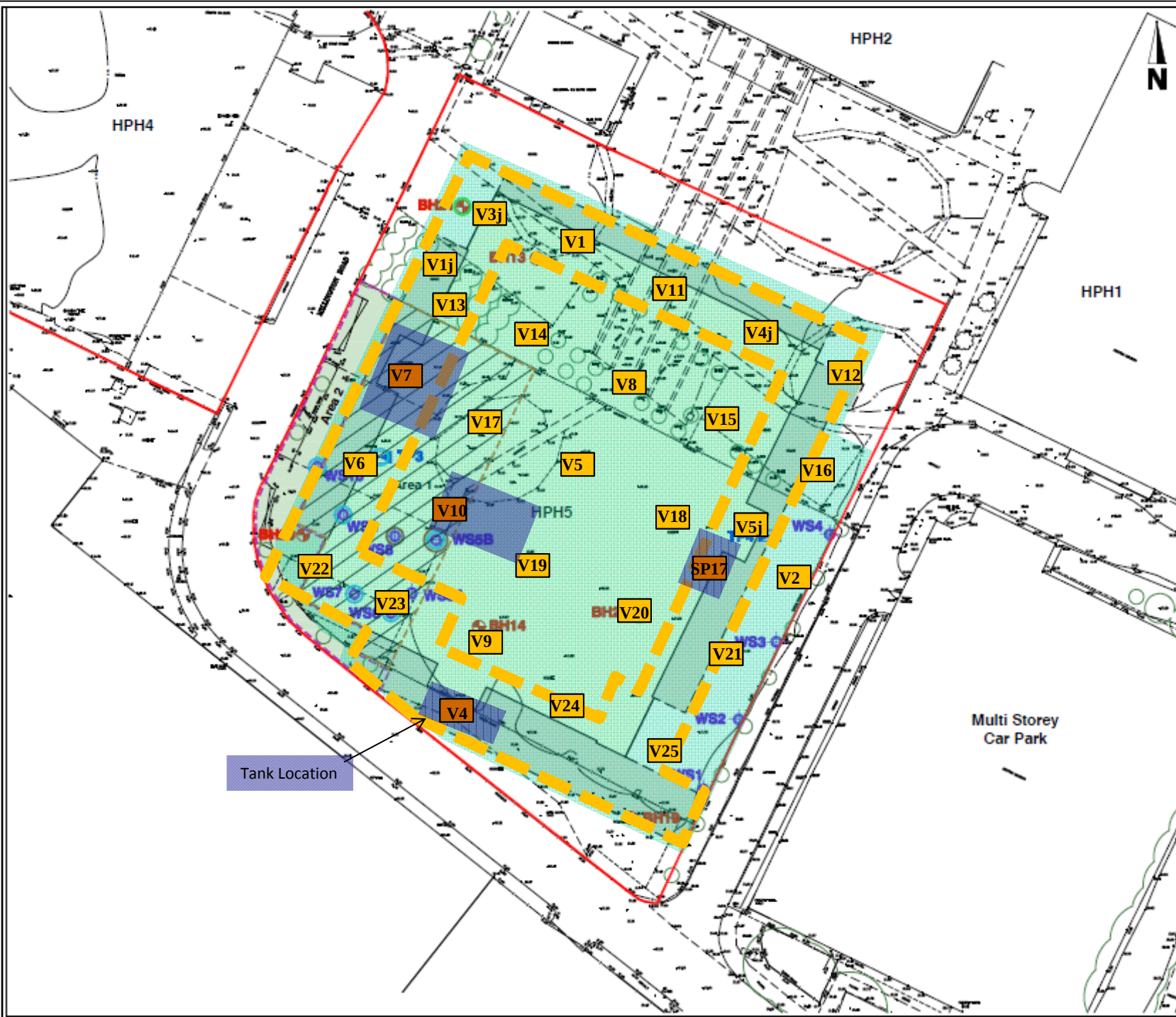
Job No.: C1588

Title: Site Layout

Scale: NTS

Date Drawn: January 2014

Drawing No.: R1588/Validation Report 2



Approximate Piling Mat
Excavation to 1.5m bgl



Approximate excavation area



Odorous gravels noted



Validation Sample Locations



Sample locations of
odorous gravels

Celtic

Design and Construct Remediation

CELTIC Technologies Ltd
1210 Parkview
Arlington Business Park
Theale
Berkshire
RG7 4TY

Tel. 01189 167430
Fax. 01189 302371

Client:
Kier Construction

Project:
HPH5 Hayes

Job No.:
C1588

Title: Validation Sampling Locations

Scale:
NTS

Date Drawn:
January 2014

Drawing No.:
R1588/Validation Report 3



T	01304 380772	F	01304 660176
Dean Sellars		Kirk Savage	
M	07971 272581	M	07912 011088

Unit 10, 21 Queen Street, Deal, Kent. CT14 6EY

JOB TITLE
HAYES SITE

SCALE 1:500
DWG. No. 1
REV. No. 0

CAD FILE NAME
CELTIC-HAYES2D.DWG
CAD PLOT DATE
20_12_2013
SHEET SIZE
A3

APPENDIX B PHOTOS



Photo 1: Hayes HPH5 was landscaped with an area of hard core fill



Photo 2: Topsoil and concrete were removed and segregated for off site reuse / recycling

Celtic 
Design and Construct Remediation

CELTIC Technologies Ltd
1210 Parkview
Arlington Business Park
Theale
Berkshire
RG7 4TY

Tel. 01189 167430
Fax. 01189 302371

Client:
Kier Construction

Project:
HPH5 Hayes

Job No.:
C1588

Title: Photo Log

Date: January 2014



Photo 3: Non-hazardous and inert materials were segregated



Photo 4: Hazardous soils were excavated and sent for off site disposal

Celtic 
Design and Construct Remediation

CELTIC Technologies Ltd
1210 Parkview
Arlington Business Park
Theale
Berkshire
RG7 4TY

Tel. 01189 167430
Fax. 01189 302371

Client:
Kier Construction

Project:
HPH5 Hayes

Job No.:
C1588

Title: Photo Log

Date: January 2014



Photo 5: A piling mat was installed using inert fill material from the site



Photo 6: Areas of odorous gravels were encountered (SP17 shown here)

Celtic 
Design and Construct Remediation

CELTIC Technologies Ltd
 1210 Parkview
 Arlington Business Park
 Theale
 Berkshire
 RG7 4TY

Tel. 01189 167430
 Fax. 01189 302371

Client:
 Kier Construction

Project:
 HPH5 Hayes

Job No.:
 C1588

Title: Photo Log

Date: January 2014



Photo 7: A large below ground oil storage tank was encountered on site and removed

Celtic 
Design and Construct Remediation

CELTIC Technologies Ltd
 1210 Parkview
 Arlington Business Park
 Theale
 Berkshire
 RG7 4TY

Tel. 01189 167430
 Fax. 01189 302371

Client:
 Kier Construction

Project:
 HPH5 Hayes

Job No.:
 C1588

Title: Photo Log

Date: January 2014

APPENDIX C LABORATORY CHEMICAL ANALYSIS REPORTS



Jones Environmental Laboratory

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Celtic Technologies
Columbus House
Greenmeadow Springs
Tongwynlais
Cardiff
CF15 7NE

Tel: +44 (0) 1244 833780

Fax: +44 (0) 1244 833781



Attention :	Amy Plint
Date :	16th December, 2013
Your reference :	C1588
Our reference :	Test Report 13/11250 Batch 1
Location :	Hayes HPH5
Date samples received :	3rd December, 2013
Status :	Final report
Issue :	1

Four samples were received for analysis on 3rd December, 2013. 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:

Phil Sommerton BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Celtic Technologies
Reference: C1588
Location: Hayes HPH5
Contact: Amy Plint
JE Job No.: 13/11250

Report : Solid

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

J E Sample No.	1-2	3	4	5							Please see attached notes for all abbreviations and acronyms		
Sample ID	SP - 17	SP - 18	SP - 19	SP - 20									
Depth	1.7												
COC No / misc													
Containers	J T	T	T	T									
Sample Date	02/12/2013	02/12/2013	02/12/2013	02/12/2013									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	03/12/2013	03/12/2013	03/12/2013	03/12/2013							LOD	Units	Method No.
Arsenic #	14.8	21.9	17.4	12.7							<0.5	mg/kg	TM30/PM15
Cadmium #	0.4	186.8	34.0	63.0							<0.1	mg/kg	TM30/PM15
Chromium #	106.9	191.2	72.6	82.5							<0.5	mg/kg	TM30/PM15
Copper #	12	1953	281	368							<1	mg/kg	TM30/PM15
Lead #	13	6281	838	480							<5	mg/kg	TM30/PM15
Mercury #	<0.1	0.8	0.5	0.5							<0.1	mg/kg	TM30/PM15
Nickel #	24.6	189.9	127.7	133.0							<0.7	mg/kg	TM30/PM15
Selenium #	<1	1	1	<1							<1	mg/kg	TM30/PM15
Sulphur	0.02	-	-	-							<0.01	%	TM30/PM15
Total Sulphate #	108	-	-	-							<50	mg/kg	TM50/PM15
Zinc #	47	1530	415	519							<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	-	-	-							<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	-	-	-							<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	-	-	-							<0.05	mg/kg	TM4/PM8
Fluorene #	0.04	-	-	-							<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.36	-	-	-							<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	-	-	-							<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.23	-	-	-							<0.03	mg/kg	TM4/PM8
Pyrene #	0.13	-	-	-							<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.06	-	-	-							<0.06	mg/kg	TM4/PM8
Chrysene #	0.08	-	-	-							<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.08	-	-	-							<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	-	-	-							<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	-	-	-							<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	-	-	-							<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	-	-	-							<0.04	mg/kg	TM4/PM8
PAH 16 Total	1.0	-	-	-							<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.06	-	-	-							<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.02	-	-	-							<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	96	-	-	-							<0	%	TM4/PM8
Mineral Oil	196	-	-	-							<30	mg/kg	TM5/PM16
MTBE #	<5	-	-	-							<5	ug/kg	TM31/PM12
Benzene #	<5	-	-	-							<5	ug/kg	TM31/PM12
Toluene #	<5	-	-	-							<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	-	-	-							<5	ug/kg	TM31/PM12
m/p-Xylene #	16	-	-	-							<5	ug/kg	TM31/PM12
o-Xylene #	15	-	-	-							<5	ug/kg	TM31/PM12
Phenol #	<0.01	-	-	-							<0.01	mg/kg	TM26/PM21

Note:

Opinions lie outside the scope of our UKAS accreditation.

If asbestos fibres are reported at trace levels there will not be enough fibres to quantify and will be less than 0.001%.

[Signature]

Gemma Newsome
Asbestos Team Leader

[illegible]

Contact: Amy Plint

[illegible]

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.: 13/11250

SOILS

Please note we are only MCERTS accredited 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 we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

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.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

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.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final 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

#	UKAS accredited.
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.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 13/11250

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air 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.				
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes		AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation			AR	Yes
TM21	TOC and TC by Combustion	PM24	Eltra preparation	Yes		AD	Yes
TM26	Phenols by HPLC	PM21	Methanol : NaOH extraction	Yes		AR	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analysis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific			AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analysis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes		AD	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes		AR	Yes

JE Job No: 13/11250

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM50	Total Sulphate by ICP-OES	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analysis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes		AD	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres	Yes		AR	
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes		AR	No
TM89	In-house method based on USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. ISO17025 accredited method for soils and waters and MCERTS on soils. Accreditation is matrix specific.	PM45	Cyanide & Thiocyanate prep for soils	Yes		AR	Yes



Jones Environmental Laboratory

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Celtic Technologies
Columbus House
Greenmeadow Springs
Tongwynlais
Cardiff
CF15 7NE

Tel: +44 (0) 1244 833780

Fax: +44 (0) 1244 833781



Attention :	Amy Plint
Date :	12th December, 2013
Your reference :	C1588
Our reference :	Test Report 13/11305 Batch 1
Location :	Hayes NPH5
Date samples received :	4th December, 2013
Status :	Final report
Issue :	1

Seven samples were received for analysis on 4th December, 2013. 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:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Jones Environmental Laboratory

Client Name: Celtic Technologies
Reference: C1588
Location: Hayes NPH5
Contact: Amy Plint
JE Job No.: 13/11305

Report : Solid

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

J E Sample No.	1	2	3	4	5	6	7				Please see attached notes for all abbreviations and acronyms		
Sample ID	SP-21	SP-22	SP-23	V-1	V-3	V-4	V-5						
Depth	0.6	0.6	0.3	1.5	1.5	1.0	1.0						
COC No / misc													
Containers	T	T	T	T	T	T	T						
Sample Date	03/12/2013	03/12/2013	03/12/2013	02/12/2013	02/12/2013	02/12/2013	02/12/2013						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	04/12/2013	04/12/2013	04/12/2013	04/12/2013	04/12/2013	04/12/2013	04/12/2013				LOD	Units	Method No.
Arsenic #	56.4	17.6	6.5	11.3	8.8	13.3	13.9				<0.5	mg/kg	TM30/PM15
Cadmium #	1210.0	104.0	2.9	0.3	2.4	<0.1	0.3				<0.1	mg/kg	TM30/PM15
Chromium #	490.0	91.5	17.3	92.4	129.4	38.0	51.3				<0.5	mg/kg	TM30/PM15
Copper #	2877	2787	63	9	20	20	13				<1	mg/kg	TM30/PM15
Lead #	2317	1035	51	8	14	15	12				<5	mg/kg	TM30/PM15
Mercury #	0.3	0.6	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM30/PM15
Nickel #	920.1	130.5	19.4	17.8	21.8	32.1	26.5				<0.7	mg/kg	TM30/PM15
Selenium #	3	1	<1	<1	<1	<1	<1				<1	mg/kg	TM30/PM15
Sulphur	-	-	-	<0.01	<0.01	0.01	<0.01				<0.01	%	TM30/PM15
Total Sulphate #	-	-	-	139	203	326	216				<50	mg/kg	TM50/PM15
Zinc #	3054	1189	65	33	44	68	47				<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	-	-	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	-	-	<0.03	<0.03	<0.03	<0.03				<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	-	-	<0.05	<0.05	<0.05	<0.05				<0.05	mg/kg	TM4/PM8
Fluorene #	-	-	-	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	-	-	<0.03	0.04	<0.03	<0.03				<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	-	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	-	-	<0.03	0.14	<0.03	<0.03				<0.03	mg/kg	TM4/PM8
Pyrene #	-	-	-	<0.03	0.12	<0.03	<0.03				<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	-	<0.06	0.11	<0.06	<0.06				<0.06	mg/kg	TM4/PM8
Chrysene #	-	-	-	<0.02	0.07	<0.02	<0.02				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	-	-	<0.07	0.11	<0.07	<0.07				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	-	-	<0.04	0.07	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	-	-	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	-	-	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	-	<0.04	<0.04	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	-	-	<0.6	0.7	<0.6	<0.6				<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	-	<0.05	0.08	<0.05	<0.05				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	-	-	<0.02	0.03	<0.02	<0.02				<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	-	-	109	105	109	99				<0	%	TM4/PM8
Mineral Oil	-	-	-	<30	<30	<30	<30				<30	mg/kg	TM5/PM16
MTBE #	-	-	-	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
Benzene #	-	-	-	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
Toluene #	-	-	-	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
Ethylbenzene #	-	-	-	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
m/p-Xylene #	-	-	-	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
o-Xylene #	-	-	-	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
Phenol #	-	-	-	<0.01	<0.01	<0.01	<0.01				<0.01	mg/kg	TM26/PM21

Client Name: Celtic Technologies
Reference: C1588
Location: Hayes NPH5
Contact: Amy Plint
JE Job No.: 13/11305

Report : Solid

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

[illegible]

Client Name: Celtic Technologies

Reference: C1588

Location: Hayes NPH5

Contact: Amy Plint

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.

If asbestos fibres are reported at trace levels there will not be enough fibres to quantify and will be less than 0.001%.

Signed on behalf of Jones Environmental Laboratory:

[Signature]

Gemma Newsome
Asbestos Team Leader

[illegible]

Contact: Amy Plint

[illegible]

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.: 13/11305

SOILS

Please note we are only MCERTS accredited 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 we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

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.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

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.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final 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

#	UKAS accredited.
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.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 13/11305

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air 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.				
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes		AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation			AR	Yes
TM21	TOC and TC by Combustion	PM24	Eltra preparation	Yes		AD	Yes
TM26	Phenols by HPLC	PM21	Methanol : NaOH extraction	Yes		AR	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analysis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific			AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analysis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes		AD	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes		AR	Yes

JE Job No: 13/11305

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM50	Total Sulphate by ICP-OES	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analysis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes		AD	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres	Yes		AR	
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes		AR	No
TM89	In-house method based on USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. ISO17025 accredited method for soils and waters and MCERTS on soils. Accreditation is matrix specific.	PM45	Cyanide & Thiocyanate prep for soils	Yes		AR	Yes

Celtic
Columbus House
Greenmeadow Springs, Tongwynlais
Cardiff
CF15 7NE

LABORATORY TEST REPORT



Results of analysis of 10 samples
received 19 December 2013

Report Date
10 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

					248042					
					AJ56127	AJ56128	AJ56129	AJ56130	AJ56131	AJ56132
					V1	V2	V3	V4	V5	V8
					1	1	1	1	1	1
					9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2010	pH			M	7.7	7.3	8.1	7.2	7.6	7.3
2175	Sulfur (total TRL report 447)		%	M	0.03	0.01	0.01	0.03	0.02	0.02
2625	Total Organic Carbon		%	M	0.39	0.20	0.23	1.3	0.30	0.47
2450	Arsenic	7440382	mg kg ⁻¹	M	14	13	8.4	14	11	10
	Cadmium	7440439	mg kg ⁻¹	M	<0.10	9.3	0.47	95	1.9	6.3
	Chromium	7440473	mg kg ⁻¹	M	20	90	17	17	23	22
	Copper	7440508	mg kg ⁻¹	M	11	11	7.8	8.5	16	39
	Mercury	7439976	mg kg ⁻¹	M	0.10	<0.10	<0.10	<0.10	<0.10	0.20
	Nickel	7440020	mg kg ⁻¹	M	21	26	22	19	23	22
	Lead	7439921	mg kg ⁻¹	M	15	7.6	7.5	8.1	15	49
	Selenium	7782492	mg kg ⁻¹	M	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	M	43	34	26	960	58	89
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	M	< 10 ¹	< 10 ¹	14 ¹	3100 ¹	< 10 ¹	< 10 ¹
2700	Naphthalene	91203	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Acenaphthylene	208968	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Acenaphthene	83329	mg kg ⁻¹	M	< 0.1	< 0.1	0.14	< 0.1	< 0.1	< 0.1
	Fluorene	86737	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Phenanthrene	85018	mg kg ⁻¹	M	< 0.1	< 0.1	0.15	< 0.1	< 0.1	< 0.1
	Anthracene	120127	mg kg ⁻¹	M	< 0.1	< 0.1	0.12	< 0.1	< 0.1	< 0.1
	Fluoranthene	206440	mg kg ⁻¹	M	< 0.1	0.26	0.18	< 0.1	< 0.1	< 0.1
	Pyrene	129000	mg kg ⁻¹	M	< 0.1	0.18	0.12	< 0.1	< 0.1	< 0.1
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	< 0.1	0.11	< 0.1	< 0.1	< 0.1	< 0.1
	Chrysene	218019	mg kg ⁻¹	M	< 0.1	0.11	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

All tests undertaken between 10/12/2013 and 10/01/2014

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 1

Report page 1 of 2

LIMS sample ID range AJ56127 to AJ61012

Celtic
Columbus House
Greenmeadow Springs, Tongwynlais
Cardiff
CF15 7NE

LABORATORY TEST REPORT



Results of analysis of 10 samples
received 19 December 2013

Report Date
10 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

248042

AJ61009

AJ61010

AJ61011

AJ61012

V6

V7

V9

V10

1

1

1

1

9/12/2013

9/12/2013

9/12/2013

9/12/2013

SOIL

SOIL

SOIL

SOIL

2010	pH			M	7.7	8.3	8.4	7.5
2175	Sulfur (total TRL report 447)		%	M	0.01	<0.01	0.02	<0.01
2625	Total Organic Carbon		%	M	0.14	0.22	0.21	<0.10
2450	Arsenic	7440382	mg kg ⁻¹	M	13	11	13	11
	Cadmium	7440439	mg kg ⁻¹	M	9.3	12	13	1.5
	Chromium	7440473	mg kg ⁻¹	M	36	25	31	16
	Copper	7440508	mg kg ⁻¹	M	21	35	40	5.6
	Mercury	7439976	mg kg ⁻¹	M	<0.10	<0.10	0.55	<0.10
	Nickel	7440020	mg kg ⁻¹	M	22	30	24	15
	Lead	7439921	mg kg ⁻¹	M	18	42	64	<5.0
	Selenium	7782492	mg kg ⁻¹	M	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	M	67	73	110	24
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	M	< 10 ^{1 2}	< 10 ^{1 2}	< 10 ^{1 2}	< 10 ^{1 2}
2700	Naphthalene	91203	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Acenaphthylene	208968	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Acenaphthene	83329	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Fluorene	86737	mg kg ⁻¹	M	< 0.1	0.17	< 0.1	< 0.1
	Phenanthrene	85018	mg kg ⁻¹	M	< 0.1	1.1	0.2	< 0.1
	Anthracene	120127	mg kg ⁻¹	M	< 0.1	0.89	0.18	< 0.1
	Fluoranthene	206440	mg kg ⁻¹	M	< 0.1	0.89	0.31	< 0.1
	Pyrene	129000	mg kg ⁻¹	M	< 0.1	0.75	0.27	< 0.1
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	< 0.1	0.4	0.2	< 0.1
	Chrysene	218019	mg kg ⁻¹	M	< 0.1	0.51	0.22	< 0.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	N	< 0.1	0.44	0.2	< 0.1

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 2

Report page 1 of 2

LIMS sample ID range AJ56127 to AJ61012

LABORATORY TEST REPORT

Results of analysis of 10 samples
received 19 December 2013

Report Date
10 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

					248042					
					AJ56127	AJ56128	AJ56129	AJ56130	AJ56131	AJ56132
					V1	V2	V3	V4	V5	V8
					1	1	1	1	1	1
					9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Total (of 16) PAHs		mg kg ⁻¹	M	< 2	< 2	< 2	< 2	< 2	< 2
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

LABORATORY TEST REPORT

Results of analysis of 10 samples
received 19 December 2013

Report Date
10 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

					248042			
					AJ61009	AJ61010	AJ61011	AJ61012
					V6	V7	V9	V10
					1	1	1	1
					9/12/2013	9/12/2013	9/12/2013	9/12/2013
					SOIL	SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	< 0.1	0.28	0.13	< 0.1
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	< 0.1	0.38	0.14	< 0.1
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Total (of 16) PAHs		mg kg ⁻¹	M	< 2	5.8	< 2	< 2
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

					247690					
					AJ61245	AJ61246	AJ61247	AJ61248	AJ61249	AJ61250
					V11	V12	V13	V14	V15	V16
					1	1	1	1	1	1
					18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL	GL	GL	GL
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2010	pH			M	9.9	8.3	11.1	8.0	8.3	7.6
2175	Sulfur (total TRL report 447)		%	M	0.096	<0.010	0.21	<0.010	<0.010	<0.010
2625	Total Organic Carbon		%	M	0.89	<0.10	0.84	0.16	0.71	0.23
2450	Arsenic	7440382	mg kg ⁻¹	M	13	9.4	7.9	9.5	11	10
	Cadmium	7440439	mg kg ⁻¹	M	8.9	1.1	9.5	5.5	5.0	0.95
	Chromium	7440473	mg kg ⁻¹	M	24	19	21	21	21	26
	Copper	7440508	mg kg ⁻¹	M	39	14	74	21	37	15
	Mercury	7439976	mg kg ⁻¹	M	0.60	0.14	0.24	0.15	0.30	<0.10
	Nickel	7440020	mg kg ⁻¹	M	20	18	21	19	18	21
	Lead	7439921	mg kg ⁻¹	M	140	28	140	32	110	22
	Selenium	7782492	mg kg ⁻¹	M	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	M	97	41	110	86	100	39
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	M	40 ¹	< 10 ¹	32 ¹	< 10 ¹	22 ¹	< 10 ¹
2700	Naphthalene	91203	mg kg ⁻¹	M	0.22	0.23	0.22	0.16	0.4	0.66
	Acenaphthylene	208968	mg kg ⁻¹	M	0.12	0.12	0.55	0.38	0.67	1.6
	Acenaphthene	83329	mg kg ⁻¹	M	0.22	0.18	0.22	< 0.1	0.16	0.37
	Fluorene	86737	mg kg ⁻¹	M	0.18	0.14	1.1	1.4	1.5	3.2
	Phenanthrene	85018	mg kg ⁻¹	M	1.7	0.89	5.3	7.4	8.1	17
	Anthracene	120127	mg kg ⁻¹	M	1	0.56	5.5	6.8	7.9	14
	Fluoranthene	206440	mg kg ⁻¹	M	2.2	0.47	2.5	2.1	2.7	4.1
	Pyrene	129000	mg kg ⁻¹	M	1.8	0.6	3.2	4.2	3.2	8.3
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	1.2	0.27	1.2	0.54	1.4	1.3
	Chrysene	218019	mg kg ⁻¹	M	1.2	0.2	1.3	0.92	1.9	1.2
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	N	1.3	< 0.1	1.7	0.27	1.5	0.54

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AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

247690

				AJ61251	AJ61252	AJ61253	AJ61254	AJ61255	AJ61256
				V17	V18	V19	V20	V21	V22
				1	1	1	1	1	1
				18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
				GL	GL	GL	GL	GL	GL
				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2010	pH		M	8.2	8.3	8.3	6.9	10.6	10.6
2175	Sulfur (total TRL report 447)		%	<0.010	<0.010	<0.010	<0.010	0.21	0.18
2625	Total Organic Carbon		%	0.36	0.18	<0.10	0.23	1.7	0.95
2450	Arsenic	7440382	mg kg ⁻¹	12	12	13	9.7	15	18
	Cadmium	7440439	mg kg ⁻¹	5.6	0.57	9.5	0.48	16	240
	Chromium	7440473	mg kg ⁻¹	24	31	26	27	44	83
	Copper	7440508	mg kg ⁻¹	32	22	35	16	170	480
	Mercury	7439976	mg kg ⁻¹	0.16	0.12	0.18	<0.10	0.56	1.8
	Nickel	7440020	mg kg ⁻¹	22	28	27	23	28	230
	Lead	7439921	mg kg ⁻¹	78	29	58	34	350	1400
	Selenium	7782492	mg kg ⁻¹	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	56	49	69	38	180	540
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	< 10 ¹	< 10 ¹	< 10 ¹	31 ¹	34 ¹	210 ¹
2700	Naphthalene	91203	mg kg ⁻¹	< 0.1	0.26	0.36	0.16	< 0.1	1.3
	Acenaphthylene	208968	mg kg ⁻¹	0.14	0.21	0.75	0.11	< 0.1	3.6
	Acenaphthene	83329	mg kg ⁻¹	0.1	0.12	< 0.1	0.19	< 0.1	1.4
	Fluorene	86737	mg kg ⁻¹	0.25	0.39	2	0.22	< 0.1	11
	Phenanthrene	85018	mg kg ⁻¹	1.5	1.8	9.9	0.86	0.9	63
	Anthracene	120127	mg kg ⁻¹	0.9	1.6	9.7	0.91	0.41	52
	Fluoranthene	206440	mg kg ⁻¹	0.65	0.3	1.8	0.24	1.2	24
	Pyrene	129000	mg kg ⁻¹	0.6	0.53	3.1	0.35	0.77	35
	Benzo[a]anthracene	56553	mg kg ⁻¹	0.24	< 0.1	0.34	< 0.1	0.47	5.1
	Chrysene	218019	mg kg ⁻¹	0.32	< 0.1	0.8	< 0.1	0.68	8.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	0.24	< 0.1	0.35	< 0.1	0.73	6.3

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 2

Report page 1 of 2

LIMS sample ID range AJ61245 to AJ61259

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

				247690		
				AJ61257	AJ61258	AJ61259
				V23	V24	V25
				1	1	1
				18/12/2013	18/12/2013	18/12/2013
				GL	GL	GL
				SOIL	SOIL	SOIL
2010	pH		M	8.0	8.2	8.1
2175	Sulfur (total TRL report 447)		%	<0.010	<0.010	<0.010
2625	Total Organic Carbon		%	0.54	0.15	0.14
2450	Arsenic	7440382	mg kg ⁻¹	15	11	13
	Cadmium	7440439	mg kg ⁻¹	58	2.4	7.4
	Chromium	7440473	mg kg ⁻¹	35	19	47
	Copper	7440508	mg kg ⁻¹	74	15	15
	Mercury	7439976	mg kg ⁻¹	0.31	0.10	0.10
	Nickel	7440020	mg kg ⁻¹	37	20	25
	Lead	7439921	mg kg ⁻¹	120	22	19
	Selenium	7782492	mg kg ⁻¹	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	110	40	41
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	24 ¹	< 10 ¹	< 10 ¹
2700	Naphthalene	91203	mg kg ⁻¹	0.31	< 0.1	0.29
	Acenaphthylene	208968	mg kg ⁻¹	0.49	< 0.1	0.4
	Acenaphthene	83329	mg kg ⁻¹	< 0.1	< 0.1	0.12
	Fluorene	86737	mg kg ⁻¹	1.9	< 0.1	0.98
	Phenanthrene	85018	mg kg ⁻¹	12	< 0.1	4.7
	Anthracene	120127	mg kg ⁻¹	7.4	< 0.1	4.9
	Fluoranthene	206440	mg kg ⁻¹	5	0.13	1
	Pyrene	129000	mg kg ⁻¹	9	0.18	1.9
	Benzo[a]anthracene	56553	mg kg ⁻¹	1.1	< 0.1	0.29
	Chrysene	218019	mg kg ⁻¹	1.3	< 0.1	0.43
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	1.3	< 0.1	0.22

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 3

Report page 1 of 2

LIMS sample ID range AJ61245 to AJ61259

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

					247690					
					AJ61245	AJ61246	AJ61247	AJ61248	AJ61249	AJ61250
					V11	V12	V13	V14	V15	V16
					1	1	1	1	1	1
					18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL	GL	GL	GL
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	0.92	< 0.1	0.63	0.15	1	0.33
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	1	< 0.1	1.1	0.25	1.1	0.56
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	0.25	< 0.1	0.3	< 0.1	0.25	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	0.97	< 0.1	0.94	0.14	1.1	0.27
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	0.85	< 0.1	1.3	0.13	1.4	0.57
	Total (of 16) PAHs		mg kg ⁻¹	M	15	3.7	27	25	34	54
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

					247690					
					AJ61251	AJ61252	AJ61253	AJ61254	AJ61255	AJ61256
					V17	V18	V19	V20	V21	V22
					1	1	1	1	1	1
					18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL	GL	GL	GL
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	0.12	< 0.1	0.24	< 0.1	0.4	4
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	0.16	< 0.1	0.24	< 0.1	0.44	6.3
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	< 0.1	< 0.1	0.11	< 0.1	0.17	0.96
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	0.14	< 0.1	0.42	< 0.1	0.46	3.8
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	0.15	< 0.1	0.38	< 0.1	0.4	4.7
	Total (of 16) PAHs		mg kg ⁻¹	M	5.5	5.2	30	3	7	230
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Hayes UB34A2

Report Date
14 January 2014

					247690		
					AJ61257	AJ61258	AJ61259
					V23	V24	V25
					1	1	1
					18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL
					SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	0.87	< 0.1	0.16
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	1.1	< 0.1	0.25
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	0.26	< 0.1	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	0.81	< 0.1	0.12
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	1	< 0.1	0.15
	Total (of 16) PAHs		mg kg ⁻¹	M	44	< 2	16
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

					247690					
					AJ61245	AJ61246	AJ61247	AJ61248	AJ61249	AJ61250
					V11	V12	V13	V14	V15	V16
					1	1	1	1	1	1
					18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL	GL	GL	GL
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2010	pH			M	9.9	8.3	11.1	8.0	8.3	7.6
2175	Sulfur (total TRL report 447)		%	M	0.096	<0.010	0.21	<0.010	<0.010	<0.010
2625	Total Organic Carbon		%	M	0.89	<0.10	0.84	0.16	0.71	0.23
2450	Arsenic	7440382	mg kg ⁻¹	M	13	9.4	7.9	9.5	11	10
	Cadmium	7440439	mg kg ⁻¹	M	8.9	1.1	9.5	5.5	5.0	0.95
	Chromium	7440473	mg kg ⁻¹	M	24	19	21	21	21	26
	Copper	7440508	mg kg ⁻¹	M	39	14	74	21	37	15
	Mercury	7439976	mg kg ⁻¹	M	0.60	0.14	0.24	0.15	0.30	<0.10
	Nickel	7440020	mg kg ⁻¹	M	20	18	21	19	18	21
	Lead	7439921	mg kg ⁻¹	M	140	28	140	32	110	22
	Selenium	7782492	mg kg ⁻¹	M	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	M	97	41	110	86	100	39
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	M	40 ¹	< 10 ¹	32 ¹	< 10 ¹	22 ¹	< 10 ¹
2700	Naphthalene	91203	mg kg ⁻¹	M	0.22	0.23	0.22	0.16	0.4	0.66
	Acenaphthylene	208968	mg kg ⁻¹	M	0.12	0.12	0.55	0.38	0.67	1.6
	Acenaphthene	83329	mg kg ⁻¹	M	0.22	0.18	0.22	< 0.1	0.16	0.37
	Fluorene	86737	mg kg ⁻¹	M	0.18	0.14	1.1	1.4	1.5	3.2
	Phenanthrene	85018	mg kg ⁻¹	M	1.7	0.89	5.3	7.4	8.1	17
	Anthracene	120127	mg kg ⁻¹	M	1	0.56	5.5	6.8	7.9	14
	Fluoranthene	206440	mg kg ⁻¹	M	2.2	0.47	2.5	2.1	2.7	4.1
	Pyrene	129000	mg kg ⁻¹	M	1.8	0.6	3.2	4.2	3.2	8.3
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	1.2	0.27	1.2	0.54	1.4	1.3
	Chrysene	218019	mg kg ⁻¹	M	1.2	0.2	1.3	0.92	1.9	1.2
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	N	1.3	< 0.1	1.7	0.27	1.5	0.54

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

247690

				AJ61251	AJ61252	AJ61253	AJ61254	AJ61255	AJ61256
				V17	V18	V19	V20	V21	V22
				1	1	1	1	1	1
				18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
				GL	GL	GL	GL	GL	GL
				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2010	pH		M	8.2	8.3	8.3	6.9	10.6	10.6
2175	Sulfur (total TRL report 447)		%	<0.010	<0.010	<0.010	<0.010	0.21	0.18
2625	Total Organic Carbon		%	0.36	0.18	<0.10	0.23	1.7	0.95
2450	Arsenic	7440382	mg kg ⁻¹	12	12	13	9.7	15	18
	Cadmium	7440439	mg kg ⁻¹	5.6	0.57	9.5	0.48	16	240
	Chromium	7440473	mg kg ⁻¹	24	31	26	27	44	83
	Copper	7440508	mg kg ⁻¹	32	22	35	16	170	480
	Mercury	7439976	mg kg ⁻¹	0.16	0.12	0.18	<0.10	0.56	1.8
	Nickel	7440020	mg kg ⁻¹	22	28	27	23	28	230
	Lead	7439921	mg kg ⁻¹	78	29	58	34	350	1400
	Selenium	7782492	mg kg ⁻¹	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	56	49	69	38	180	540
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	< 10 ¹	< 10 ¹	< 10 ¹	31 ¹	34 ¹	210 ¹
2700	Naphthalene	91203	mg kg ⁻¹	< 0.1	0.26	0.36	0.16	< 0.1	1.3
	Acenaphthylene	208968	mg kg ⁻¹	0.14	0.21	0.75	0.11	< 0.1	3.6
	Acenaphthene	83329	mg kg ⁻¹	0.1	0.12	< 0.1	0.19	< 0.1	1.4
	Fluorene	86737	mg kg ⁻¹	0.25	0.39	2	0.22	< 0.1	11
	Phenanthrene	85018	mg kg ⁻¹	1.5	1.8	9.9	0.86	0.9	63
	Anthracene	120127	mg kg ⁻¹	0.9	1.6	9.7	0.91	0.41	52
	Fluoranthene	206440	mg kg ⁻¹	0.65	0.3	1.8	0.24	1.2	24
	Pyrene	129000	mg kg ⁻¹	0.6	0.53	3.1	0.35	0.77	35
	Benzo[a]anthracene	56553	mg kg ⁻¹	0.24	< 0.1	0.34	< 0.1	0.47	5.1
	Chrysene	218019	mg kg ⁻¹	0.32	< 0.1	0.8	< 0.1	0.68	8.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	0.24	< 0.1	0.35	< 0.1	0.73	6.3

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 2

Report page 1 of 2

LIMS sample ID range AJ61245 to AJ61259

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

				247690		
				AJ61257	AJ61258	AJ61259
				V23	V24	V25
				1	1	1
				18/12/2013	18/12/2013	18/12/2013
				GL	GL	GL
				SOIL	SOIL	SOIL
2010	pH		M	8.0	8.2	8.1
2175	Sulfur (total TRL report 447)		%	<0.010	<0.010	<0.010
2625	Total Organic Carbon		%	0.54	0.15	0.14
2450	Arsenic	7440382	mg kg ⁻¹	15	11	13
	Cadmium	7440439	mg kg ⁻¹	58	2.4	7.4
	Chromium	7440473	mg kg ⁻¹	35	19	47
	Copper	7440508	mg kg ⁻¹	74	15	15
	Mercury	7439976	mg kg ⁻¹	0.31	0.10	0.10
	Nickel	7440020	mg kg ⁻¹	37	20	25
	Lead	7439921	mg kg ⁻¹	120	22	19
	Selenium	7782492	mg kg ⁻¹	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	110	40	41
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	24 ¹	< 10 ¹	< 10 ¹
2700	Naphthalene	91203	mg kg ⁻¹	0.31	< 0.1	0.29
	Acenaphthylene	208968	mg kg ⁻¹	0.49	< 0.1	0.4
	Acenaphthene	83329	mg kg ⁻¹	< 0.1	< 0.1	0.12
	Fluorene	86737	mg kg ⁻¹	1.9	< 0.1	0.98
	Phenanthrene	85018	mg kg ⁻¹	12	< 0.1	4.7
	Anthracene	120127	mg kg ⁻¹	7.4	< 0.1	4.9
	Fluoranthene	206440	mg kg ⁻¹	5	0.13	1
	Pyrene	129000	mg kg ⁻¹	9	0.18	1.9
	Benzo[a]anthracene	56553	mg kg ⁻¹	1.1	< 0.1	0.29
	Chrysene	218019	mg kg ⁻¹	1.3	< 0.1	0.43
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	1.3	< 0.1	0.22

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 3

Report page 1 of 2

LIMS sample ID range AJ61245 to AJ61259

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

					247690					
					AJ61245	AJ61246	AJ61247	AJ61248	AJ61249	AJ61250
					V11	V12	V13	V14	V15	V16
					1	1	1	1	1	1
					18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL	GL	GL	GL
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	0.92	< 0.1	0.63	0.15	1	0.33
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	1	< 0.1	1.1	0.25	1.1	0.56
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	0.25	< 0.1	0.3	< 0.1	0.25	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	0.97	< 0.1	0.94	0.14	1.1	0.27
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	0.85	< 0.1	1.3	0.13	1.4	0.57
	Total (of 16) PAHs		mg kg ⁻¹	M	15	3.7	27	25	34	54
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Report Date
14 January 2014

FAO J Hardy / J Owens

Hayes UB34A2

					247690					
					AJ61251	AJ61252	AJ61253	AJ61254	AJ61255	AJ61256
					V17	V18	V19	V20	V21	V22
					1	1	1	1	1	1
					18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL	GL	GL	GL
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	0.12	< 0.1	0.24	< 0.1	0.4	4
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	0.16	< 0.1	0.24	< 0.1	0.44	6.3
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	< 0.1	< 0.1	0.11	< 0.1	0.17	0.96
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	0.14	< 0.1	0.42	< 0.1	0.46	3.8
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	0.15	< 0.1	0.38	< 0.1	0.4	4.7
	Total (of 16) PAHs		mg kg ⁻¹	M	5.5	5.2	30	3	7	230
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 15 samples
received 20 December 2013

Hayes UB34A2

Report Date
14 January 2014

					247690		
					AJ61257	AJ61258	AJ61259
					V23	V24	V25
					1	1	1
					18/12/2013	18/12/2013	18/12/2013
					GL	GL	GL
					SOIL	SOIL	SOIL
2700	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	0.87	< 0.1	0.16
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	1.1	< 0.1	0.25
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	0.26	< 0.1	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	0.81	< 0.1	0.12
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	1	< 0.1	0.15
	Total (of 16) PAHs		mg kg ⁻¹	M	44	< 2	16
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

LABORATORY TEST REPORT

Results of analysis of 1 sample
received 10 January 2014

Report Date
14 January 2014

FAO J Hardy / A Plint

C1588 - Hayes HPH5

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

248422

AJ65491

V22b

9/1/2014

1.5m

SOIL

2010	pH			M	8.0
2300	Cyanide (total)	57125	mg kg ⁻¹	M	<0.50
2175	Sulfur (total TRL report 447)		%	M	0.03
2625	Total Organic Carbon		%	M	0.77
2120	Sulfate (2:1 water soluble) as SO ₄	14808798	g l ⁻¹	M	0.19
2450	Arsenic	7440382	mg kg ⁻¹	M	8.9
	Cadmium	7440439	mg kg ⁻¹	M	4.2
	Chromium	7440473	mg kg ⁻¹	M	24
	Copper	7440508	mg kg ⁻¹	M	23
	Mercury	7439976	mg kg ⁻¹	M	0.18
	Nickel	7440020	mg kg ⁻¹	M	11
	Lead	7439921	mg kg ⁻¹	M	41
	Selenium	7782492	mg kg ⁻¹	M	<0.20
	Zinc	7440666	mg kg ⁻¹	M	87
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	M	13 ¹
2700	Naphthalene	91203	mg kg ⁻¹	M	< 0.1
	Acenaphthylene	208968	mg kg ⁻¹	M	< 0.1
	Acenaphthene	83329	mg kg ⁻¹	M	< 0.1
	Fluorene	86737	mg kg ⁻¹	M	< 0.1
	Phenanthrene	85018	mg kg ⁻¹	M	0.21
	Anthracene	120127	mg kg ⁻¹	M	0.15
	Fluoranthene	206440	mg kg ⁻¹	M	0.44
	Pyrene	129000	mg kg ⁻¹	M	0.37
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	0.18

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

LABORATORY TEST REPORT

Results of analysis of 1 sample
received 10 January 2014

C1588 - Hayes HPH5

Report Date
14 January 2014

					248422
					AJ65491
					V22b
					9/1/2014
					1.5m
					SOIL
2700	Chrysene	218019	mg kg ⁻¹	M	0.24
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	N	0.39
	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	0.19
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	0.22
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	< 0.1
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	< 0.1
	Total (of 16) PAHs		mg kg ⁻¹	M	2.4
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹
2920	Phenols (total)		mg kg ⁻¹	M	<0.3

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

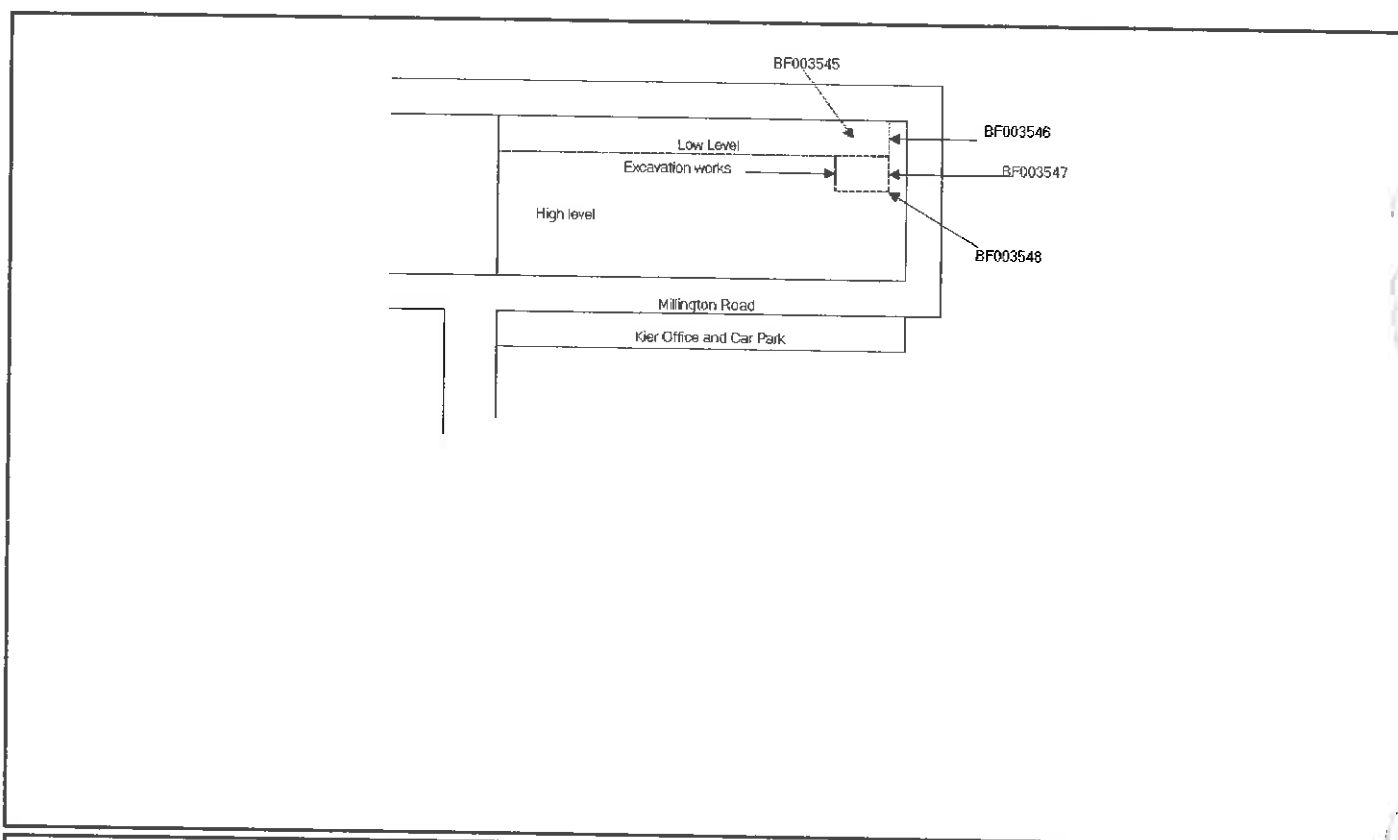
APPENDIX D ENVIRONMENTAL MONITORING RESULTS

¹ Where the flow rate drops at the final reading a mean of the two measurements should be used to calculate the volume sampled

This certificate is issued in accordance with our documented method for analysing airborne fibre concentrations which is accredited by UKAS and follows guidance in HSG 248.
Riverside Environmental Services Ltd, Unit 12, Whiffens Farm, Clement Street, Hextable, Kent, BR8 7PQ **Tel:** 0870 950 0161 **Fax:** 0870 950 0162 **email:** info@riversideenvironmental.co.uk

Job N°: J049254/BF01	Airborne Fibre Concentration Certificate N°: J049254/BF01
Opinions and interpretations expressed below are outside the scope of accreditation	
Reassurance air monitoring was conducted adjacent to excavation works into contaminated land.	
All results were satisfactory below the limit of quantification; <0.01f/ml.	

Sample Location Diagram



Date: 06 Dec 2013	Name of Analyst: Stephen Ward	Signature: 
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Riverside Environmental Services Ltd, Unit 12, Whiffens Farm, Clement Street, Hextable, Kent, BR8 7PQ Tel: 0870 950 0161 Fax: 0870 950 0162 info@riversideenvironmental.co.uk



Job N°: J049459		Type of Test: Reassurance		Certificate N°: J049459/FA01							
Client Details			Site Details								
Name: Biogenie Address: Cormongers Lane Redhill Surrey RH1 4ER Tel: 07985 836253 Fax: Email: nivernizzi@biogenie-env.com			Contact Name: Amy Plint Address: Celtic Technologies c/o Kier Millington Road Hayes Middlesex UB3 4AZ Tel: 07985 836223 Fax: N/A Email: N/A								
Calibration & Traceability Information											
Flow meter ID : 0596 0548			Stage micrometer ref : 0550								
Graticule Diameter: 100 (µm)			HSE/NPL test slide ref: 0551								
Block 5 resolved on HSE/NPL test slide?: YES			Barometer ID: 0534*								
Barometer ID: 0534*			A' pheric Pressure: 1000 (mb)								
Thermometer ID: 0534**			Temp: 0 (°C)								
Timer ID: 0534			Microscope ref:								
Sample N	Head Z	Pump Z	Location Description	Time	Run time (mins)	Flow rate (l/min)	Sample volume (litres)	Fibres counted	Fields counted	Limit of quantification (f/ml)	Reported fibre concentrations (f/ml)
FA001628	0552	0082	Adjacent contaminated soil excavation	on: 08:10 off: 08:40	30	on: 16.0 off: 16.0	480	2	200	0.010	< 0.01
FA001629	0553	0083	Adjacent contaminated soil excavation	on: 08:11 off: 08:41	30	on: 16.0 off: 16.0	480	1	200	0.010	< 0.01
FA001630	0554	0263	Adjacent contaminated soil excavation	on: 08:12 off: 08:42	30	on: 16.0 off: 16.0	480	1	200	0.010	< 0.01
FA001631	0555	1051	Adjacent contaminated soil excavation	on: 08:13 off: 08:43	30	on: 16.0 off: 16.0	480	1.5	200	0.010	< 0.01
FA001632	0556	N/A	Field Blank	on: N/A off: N/A	N/A	on: N/A off: N/A	N/A	N/A	N/A	Field Blank	
Date of Sampling: 10 Dec 2013			Date of Analysis: 10 Dec 2013		Date of Issue: 10 Dec 2013		Name of Analyst: Richard Adams				
Signature of Analyst:											

¹ Where the flow rate drops at the final reading a mean of the two measurements should be used to calculate the volume sampled.

This certificate is issued in accordance with our documented in house method for analysing airborne fibre concentrations which is accredited by UKAS and follows guidance in HSG 248.

Riverside Environmental Services Ltd, Unit 12, Whiffens Farm, Clement Street, Hextable, Kent, BR8 7PQ **Tel:** 0870 950 0161 **Fax:** 0870 950 0162 **email:** info@riversideenv.com



Job N°: J049459/FA01

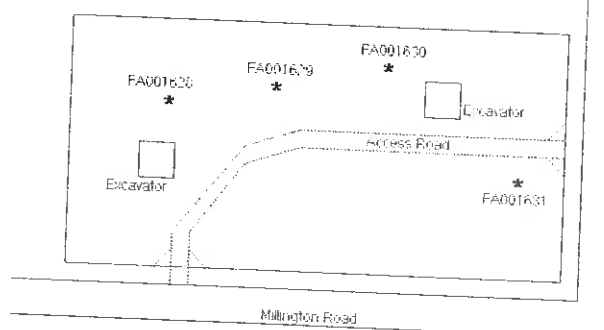
Airborne Fibre Concentration Certificate N°: J049459/FA01

Opinions and interpretations expressed below are outside the scope of accreditation

Reassurance air monitoring was carried out adjacent contaminated soil excavation works.

Reassurance air monitoring was satisfactory, below the limit of quantification 0.01f/ml.

Sample Location Diagram



Date: 10 Dec 2013

Name of Analyst: Richard Adams

Signature:

Riverside Environmental Services Ltd, Unit 12, Whiffens Farm, Clement Street, Hextable, Kent, BR8 7PQ Tel: 0870 950 0161 Fax: 0870 950 0162 info@riversideenvironmental.co.uk

APPENDIX E HAULIERS WASTE CARRIERS AND WASTE MANAGEMENT LICENCES



Environment
Agency

CERTIFICATE OF REGISTRATION UNDER
THE WASTE (ENGLAND AND WALES) REGULATIONS 2011

Regulation Authority	
Name:	Environment Agency
Address	National Customer Contact Centre 99 Parkway Avenue Sheffield S9 4WF
Tel:	03708 506 506
Fax:	0114 2626697

The Environment Agency certify that the following information is entered in the register which they maintain under regulation 28 of the Waste (England and Wales) Regulations 2011:-

Name(s) of registered carrier:	P.J. BROWN (CONSTRUCTION) LTD
Registered as an:	Upper Tier Carrier Dealer
Registration number:	CB/WN5070RB
Business name (if any):	
Address of principal place of business:	Burlands Farm Charlwood Road, Ifield, CRAWLEY, West Sussex, RH11 0JZ
Tel: 01293 54856	Fax: 01293 571164
Date of registration:	22/01/2013
Date of expiry of registration (unless revoked):	21/01/2016

Signature of authorised officer
of the regulation authority:

Date: 12/12/2012



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Environment
Agency

CERTIFICATE OF REGISTRATION UNDER
THE WASTE (ENGLAND AND WALES) REGULATIONS 2011

Regulation Authority

Name: Environment Agency
Address: National Customer Contact Centre
99 Parkway Avenue
Sheffield
S9 4WF
Tel: 03708 506 506 Fax: 0114 2626697

The Environment Agency certify that the following information is entered in the register which they maintain under regulation 28 of the Waste (England and Wales) Regulations 2011:-

Name(s) of registered carrier: B.L. PENWARDEN HAULAGE & DEMOLITION CONTRACTORS LTD
Registered as an: Upper Tier Carrier Dealer
Registration number: CB/AP3717YH
Business name (if any):
Address of principal place of business: THE CHALK PIT
COLLEGE ROAD,
EPSOM,
SURREY,
KT17 4JA
Tel: 01372 749 977 Fax: 01372 749 284
Date of registration: 18/02/2013
Date of expiry of registration (unless revoked): 17/02/2016

Signature of authorised officer
of the regulation authority:

Date: 06/02/2013



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