



FW MARHINGON GOM

Merton Street Depot, Merton Street, Banbury

Site Investigation – Interpretative Report

Draft

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1.0 INTRODUCTION

Celtic Technologies Limited (Celtic) has been commissioned by Grundon Waste Management Limited (Grundon) to undertake site investigation works at their Merton Street Depot, located off Merton Street, Banbury, Oxfordshire.

The brief for the works was to undertake an additional ground investigation to collect further analytic data to infill data gaps identified in existing information.

The site has a significant legacy of past industrial use, including a gasworks, steel fabrication facility, waste transfer depot and scrap yard.

It is understood that the site is to be redeveloped for residential end-use. However, the finalised development plan was not available at the time of report preparation and so the assessment considers a generalised residential scheme. This includes high-density apartment dwellings, low density dwellings with gardens, communal soft & hard landscaping areas and associated parking & access roads.

The site investigation works have been carried out with reference to CLR11 - ModelProcedures for the Management of Land Contamination¹ and BS10175²

This report should be read in conjunction with the following reports prepared previously for the site:

- Banbury Gasworks Site Investigation Report AEA Technology³;
- Site Investigation of the Former Banbury Gasworks Interpretative Report -Waterman Environmental⁴; and
- Merton Street Depot Quantitative Risk Assessment Report Celtic Technologies⁵.

2.0 SITE AREA

2.1 Site Location and Description

2.1.1 Site Location

The site is located off Merton Street, approximately 1 km south-east of Banbury town centre. The site post code is OX16 4RN and OS coordinates SP 465402. The site location is presented in Appendix A; Drawing A1 and layout as Appendix A; Drawing A2.

2.1.2 Site Description

The site covers an area of approximately 2.5 hectares and is elongated in a north-west to south-east orientation. The site generally falls in a south-westerly direction with ground levels being approximately 90.5 m AOD along the eastern boundary to 89.8 m AOD along the western boundary.

The site can be divided into three main zones based on the historical industrial use, which include a gasworks, scrap yard and an area of minimal industrial use. The location of the zones are shown in Appendix A; Drawing A2.

- Zone 1 (Historical Gasworks) The majority of Zone 1 comprises hard standing with many remnant building slabs and a disused railway line. The north-eastern section is densely vegetated with semi mature trees.
- Zone 2 (Historical Scrap Yard) The eastern section is currently used by Grundon as a storage area for a large number of refuse trucks and tankers. There are offices and workshops located at the northern and western parts.
- **Zone 3 (Generally Disused)** This area is located at the south east and is typically disused and comprises unimproved vegetation.

2.1.3 Adjacent Land Use

The site is surrounded by the following land uses:

- **North** Commercial properties, with residential properties beyond;
- **West** An active railway line, with commercial properties beyond;
- **South** Grassland, with commercial properties beyond; and
- **East** Residential properties and grassland.

2.2 Site History

Information relating to the site history has been obtained from the 1999 AEAT report and the 2002 Waterman report. A summary of the information is presented in Table 1, for further information direct reference should be made to the original reports.

Date	Historical Activity				
<u>1880s to 1970s</u>	The western and south-western areas of the site were originally developed as a				
	gasworks before 1886, with the gasworks expanding during the 1930s and 1940s.				
	Historical plans indicate that the gasworks had a rail link that crossed the central and western areas of the site.				
	Although it is unclear when the gasworks was decommissioned, it is likely to have been after 1955.				
	Historical maps indicate that prior to 1978 some of the gasworks structures had				
	been removed, although one gasholderand other buildings remained. It is likely that				
	demolition of above-ground structures was undertaken to ground level and that				
	below-ground structures remain in place.				
Post c. 1970s					
Identified site uses	Northern & eastern areas: storage of scrap metal and building materials.				
in 1999					
	Central area: operational factory & offices and hardstanding storage area, with evidence of fly tipping and burning.				
	Southern area: derelict land covered in vegetation.				
Identified site uses	Northern & eastern area: Grundon waste transfer facility.				
in 2002	Central area, southwest boundary: Friswell Blackbushe Steels Limited.				
	Southern area: derelict land covered in vegetation.				
Identified in 2011	Central area: commercial offices.				
	Remainder of the site: disused and vacant.				

Table 1 - Historical Site Activity

In addition to the published information there was also evidence of historical activity observed during the intrusive investigations undertaken by AEA Technology and Waterman Environmental, this includes:

- Remnants of below ground gasworks structures and foundations in the former gasworks area, including the gasworks house, tar and liquor wells, retort house, CWG plant & purifier and miscellaneous storage tanks;
- A below ground fuel storage tank located in the northern part of the site in the area of the former waste transfer facility; and
- Scrap metal and asbestos have been recorded in the made ground in the former scrap metal storage area.

2.3 Review of Library Information

Prior to undertaking the intrusive site investigation a Celtic Engineer visited Banbury library to find any further information relating to historical activities undertaken at the site (specifically the gasworks).

Two pieces of information were found that provided further details on the gasworks, which were present at the site:

- The Banbury Guardian Press (1933). The Centenary of the Banbury Gas Company, 1833 1933; and
- Geoffrey C. Hartland (1986). A History of the Gas Industry in the Banbury and Chipping Norton Areas of North Oxfordshire.

A summary of the main points within the documents is given below with the relevant excerpts presented as Appendix B1.

The main points taken from "A History of the Gas Industry in the Banbury and Chipping Norton Area of North Oxfordshire" are:

- The gasworks were erected between 1833 and 1834;
- Clay retorts were installed in 1845, with more being added in 1848;
- A 12,000 cubic feet gasholderwas installed in 1850. The holder is thought to have been 22 feet diameter and 25 feet in depth at the sides;
- A new purifier building was erected in 1936; and
- The site was bombed by German bombers on the 3rd October 1940, with 6 500lb bombs being dropped on the gasworks. Two of the three main holders and coal-gas purifiers were completely destroyed.

The document also contains a number of sketch plans of the layout of the gasworks, which are also presented as Appendix B1.

The main points taken from the Banbury Guardian press are:

- A single lift gasholder was demolished in 1910 and replaced by a three lift telescopic holder; and
- There was an extension to the retort house around 1912.

3.0 PREVIOUS INVESTIGATIONS/ ASSESSMENTS

3.1 Banbury Gasworks – Site Investigation (AEA Technology), January 1999

AEA Technology conducted a desk study and site investigation at the former Banbury Gasworks site during November 1998, as part of a due diligence exercise. The intrusive investigation involved the excavation of 65 trial pits and the installation of 12 monitoring wells.

The investigation encountered made ground over much of the site, which mainly comprised building rubble, metal debris and other associated waste. Several trial pits encountered visual and olfactory evidence of coal tar and PAH contamination at the northern end of the site (within the vicinity of the historical gasworks).

Soil and water samples were forwarded to a laboratory for analysis which recorded significant organic contamination and to a lesser degree metal contamination of the soils. This was mainly noted in the northern part of the site. The report concluded that the underlying alluvial and river terrace deposits were impacted to a depth of up to 3 m below ground level.

AEA undertook a risk assessment and determined that due to the hydraulic continuity between the river terrace deposits and nearby river (River Cherwell) there was a high potential for contaminant migration via groundwater. The risk to the public was considered to be low due to the restricted access to the site.

3.2 Site Investigation of the Former Banbury Gasworks (Waterman), March 2002

Waterman Environmental undertook an intrusive site investigation and environmental assessment for Banbury Gasworks and immediate surrounds in January 2002. The investigation comprised the mechanical excavation of 9 trial pits, 1 cable percussive borehole and 12 window sample boreholes.

The trial pits were focused around the former gasworks and encountered underground tar pits & vessels, gasholder and tar & liquor wells. Extensive staining of the made and natural ground was noted in these areas.

Chemical analysis was scheduled on eighteen soil, twenty five leachate and six groundwater samples (all obtained from the trial pits). Chemical analysis of the soils encountered elevated concentrations of arsenic, nickel, zinc, boron and a range of organic substances. The elevated concentrations were found in both the made ground and the natural alluvium.

The leaching tests indicated that the identified contaminants were not present in a significantly leachable form.

Groundwater analysis revealed elevated concentrations of inorganic contaminants including sulphate, nitrite and ammonia along with a range of organic contaminants including creosols and benzene compounds.

The risk assessment undertaken by Waterman Environmental concluded that the site presents a medium risk to human health, controlled water and the environment.

3.3 Merton Street Depot, Quantitative Risk Assessment Report, March 2011

Celtic Technologies undertook a human health and groundwater risk assessment in March 2011 to develop soil remedial / verification criteria and groundwater monitoring criteria for use during the future remediation works. The risk assessments were based on the information contained within the site investigation reports prepared by AEA Technology and Waterman Environmental.

An extensive amount of modelling was undertaken during the preparation of the Risk Assessment report and a set of potential soil and groundwater remedial targets were developed.

4.0 GROUND INVESTIGATION

4.1 Scope of Investigation

The scope of the Celtic site investigation works was to fill in existing data gaps and provide sufficient information to allow further developments of the remedial strategy for the site. The site investigation works entailed:

- Purging, resampling and testing existing groundwater wells (2 rounds of sampling);
- Advancement of 5 boreholes to 10 m below ground level (bgl) with the installation of groundwater monitoring standpipes;
- Purging and sampling of the newly installed groundwater wells (2 rounds of sampling)
- 3 Days of trial pitting targeting the following areas:
 - Sampling to confirm the contaminant profile in the northern gasworks area;
 - Further investigation of potential hotspots in the gasworks and wider site areas
 - Exploration of basements/ foundations to identify significant obstructions; and
 - Investigation in southern site area to identify a potential source of 'clean' material for re-use onsite; and
- Recovery of 48 soils samples and submission for chemical analysis.

4.2 Intrusive Investigation

4.2.1 Boreholes

Six boreholes were installed at the site between Monday 30th April and Friday 4th May, 2012. All boreholes were completed using percussive dynamic sampling and rotary coring. All recovered samples were logged by an Engineer from Celtic in accordance with BS:5930 / Eurocode 7.

The boreholes were sunk between depths of 1.2 m and 10.4 mbgl. Samples were collected at varying depths depending on the ground conditions encountered. On completion of the borehole, groundwater monitoring standpipes were installed. BH102 refused at a shallow depth and so a groundwater monitoring standpipe was not installed.

The borehole logs are presented as Appendix C1.

4.2.2 Trial Pits

Twenty trial pits were undertaken at the site between Monday 14th and Thursday 17th May, 2012. All of the trial pits were excavated using a wheeled 180° excavator, and the soils logged by an Engineer from Celtic, in accordance with BS:5930 / Eurocode 7. Soil samples were collected from varying depths within the trial pits based on the ground conditions encountered.

The trial pit logs are presented as Appendix C2 and photographic plates as Appendix C3.

4.3 Laboratory Testing

All soil and water samples were collected within specific laboratory supplied containers and couriered to a UKAS accredited laboratory for analysis (ALcontrol).

4.3.1 Soils

A total of 48 soil samples were collected from within the boreholes and trial pits and scheduled for the following analysis:

- Water Soluble Boron;
- Free and Total Cyanide;
- Ammoniacal Nitrogen as NH3;
- Polycyclic Aromatic Hydrocarbons (US EPA 16);
- Phenols;
- Soil Organic Matter;
- Toxic 9 Metals; and
- Total Petroleum Hydrocarbons.

In addition to the above, a further twenty samples were scheduled for asbestos identification. Where asbestos identification was positive the samples were scheduled for full asbestos quantification.

4.3.2 Groundwater

A total of twenty six water samples were collected from existing and newly installed boreholes (two sampling occasions) and scheduled for the following analysis:

- Boron Dissolved;
- Free Cyanide;
- Polycyclic Aromatic Hydrocarbons (US EPA 16);
- Phenols Monohydric;
- Total Ammonia;
- Total Cyanide;
- Toxic 9 Metals;
- Total Petroleum Hydrocarbons.

5.0 GROUND CONDITIONS

5.1 Geology

The geological conditions identified to be underlying the site are shown in Table 2.

Geological Unit	Description	Depth to Top (m)	Thickness (m)
Made-ground	Variable across the site. Generally comprising gravelly silts and clays with abundant brick, concrete, metal, cables and railway sleepers.	Ground level	0.5 to 5.5 m* Typically approximately 1.5 m
	along the eastern and southern boundaries. Reinforced concrete is present within much of the central part of		*5.5 m only in one location near historical gas holder
	the site.		
Alluvium – Silt	Typically greenish grey slightly organic SILT.	0.8 to 1.9 m	0.3 to 2.05 m Typically approximately 1.2 m
Alluvium – Sand and Gravel	Typically orange brown interbedded SANDS and GRAVELS.	1.6 to 3.05 m	1.8 to 2.6 m Typically approximately 2.0 m
Charmouth Mudstone Formation	Firm to stiff medium grey CLAY.	2.7 to 5.5 m* *5.5 m only in one location near historical gas holder	>4.5 m

 Table 2 - Summary of Geological Conditions

The intrusive investigation identified several areas along the eastern and southern boundaries of the site with up to 2.1 m of made ground associated with automobile waste. This comprised fabric, rubber seals, cables, glass, plastics and engine parts. The locations and depths where these materials were encountered are shown on the trial pit logs presented as Appendix C2.

During the investigation, corrugated asbestos cement sheets were noted on the surface of the ground at several locations across the site but mainly within the southern (disused) section and near TP111. The sheets were typically found in poor condition and had been broken into many small fragments. The approximate location of this material is shown on Appendix A; Drawing A2.

5.2 Groundwater Conditions

Groundwater levels were recorded within the existing and newly installed boreholes along with the trial pits. Full details of groundwater strikes and standing levels are presented on the borehole and drilling logs presented as Appendix C1 and Appendix C2.

Groundwater was generally encountered within the granular alluvial deposits between 1.2 and 2.9 mbgl, although it was typically encountered between 2.2 and 2.7 mbgl.

The groundwater level within the existing boreholes was noted as being between 0.7 and 1.1 m lower than in the previous investigations. From discussions with representatives from Grundon during the site investigation works it is understood that a flood alleviation system has been installed within the Banbury area since the completion of the previous ground investigations. It is possible that the installation of this system has resulted in the lowering of the groundwater levels within the area.

Several shallow perched groundwater strikes were encountered at several locations across the site, typically within the northern section (in the vicinity of the historical gasworks).

6.0 ANALYTICAL RESULTS

6.1 Soil

Copies of the analytical certificates and geochemical results for all samples analysed from the current investigation is presented in Appendix D1. A summary of the results are presented in Table 3.

Table 3 - Summary of Soil Laboratory Analysis (mg/k

Analyte	No. of	Max	Min	Mean
	Samples	Concentration	Concentration	Concentration
Soil Organic Matter (%)	48	69.7	0.281	6.00
Arsenic	48	223	10.1	53.49
Cadmium	48	11.8	0.02	1.71
Chromium	48	334	11.9	74.01
Copper	48	1,510	8.21	118.13
Lead	48	7,550	8.39	349.08
Mercury	48	5.01	0.14	0.53
Nickel	48	723	19.4	67.59
Selenium	48	20	1	3.94
Zinc	48	4,040	49.6	474.72
Boron	48	13.8	1	3.01
Total Cyanide	48	152	1	11.55
Free Cyanide	48	10	1	1.19
Ammoniacal Nitrogen	48	2,000	15	268.81
Phenols	48	2,680	0.035	56.45
TPH aliphatic >C5-C6	48	0.403	0.01	0.03
TPH aliphatic >C6-C8	48	24	0.01	0.59
TPH aliphatic >C8-C10	48	174	0.01	4.46
TPH aliphatic >C10-C12	48	331	0.01	9.52
TPH aliphatic >C12-C16	48	403	0.1	56.84
TPH aliphatic >C16-C21	48	593	0.1	95.94
TPH aliphatic >C21-C35	48	1,670	0.1	263.30
TPH aliphatic >C35-C44	48	493	0.1	57.39
TPH aromatic >C5-C7	48	177	0.01	3.82
TPH aromatic >C7-C8	48	242	0.01	4.91
TPH aromatic >C8-C10	48	386	0.01	9.28
TPH aromatic >C10-C12	48	221	0.01	6.35
TPH aromatic >C12-C16	48	3,200	0.1	161.43
TPH aromatic >C16-C21	48	1,400	1.59	184.57
TPH aromatic >C21-C35	48	2,410	0.1	341.31
TPH aromatic >C35-C44	48	1,300	0.1	101.90
Methyl tertiary butyl ether (MTBE)	48	0.1	0.005	0.01
Benzene	48	177	0.01	3.82
Toluene	48	242	0.002	4.90
Ethylbenzene	48	18.4	0.003	0.71
m, p – Xylene	48	190	0.006	4.17
o – Xylene	48	61.6	0.003	1.44
m, p, o - Xylene	48	252	0.009	5.61
Naphthalene	48	11,600	0.009	251.08
Acenaphthylene	48	1,760	0.012	39.00
Acenaphthene	48	213	0.008	7.51
Fluorene	48	1,080	0.01	26.39

Analyte	No. of	Max	Min	Mean
	Samples	Concentration	Concentration	Concentration
Phenanthrene	48	3,490	0.015	83.33
Anthracene	48	1,170	0.016	28.49
Fluoranthene	48	2,210	0.017	57.43
Pyrene	48	1,680	0.015	44.11
Benzo(a)anthracene	48	732	0.014	20.84
Chrysene	48	546	0.01	15.52
Benzo(b)fluoranthene	48	654	0.015	19.23
Benzo(k)fluoranthene	48	278	0.014	8.02
Benzo(a)pyrene	48	645	0.015	18.43
Indeno(1,2,3-cd)pyrene	48	283	0.018	8.21
Dibenzo(a,h)anthracene	48	76.9	0.023	2.32
Benzo(g,h,i)perylene	48	315	0.024	8.98
PAH, Total Detected USEPA 16	48	26,800	0.118	640.18

Note: - Where recorded concentrations were below detection limits the detection limit value has been used as the minimum value.

6.2 Groundwater

Copies of the analytical certificates and geochemical results for all groundwater samples collected from existing and newly installed boreholes are presented in Appendix D2.

A summary of the results from the current investigation are presented in Table 4.

Analyte	No. of	Max	Min	Mean
	Samples	Concentration	Concentration	Concentration
Mercury	26	0.0000235	0.00001	0.00001
Arsenic	26	0.2	0.000872	0.01773
Boron	26	3.33	0.118	0.70196
Cadmium	26	0.000157	0.0001	0.00010
Chromium	26	0.0158	0.00118	0.00727
Copper	26	0.0163	0.00085	0.00252
Lead	26	0.00464	0.00002	0.00043
Nickel	26	0.0245	0.00124	0.00769
Selenium	26	0.00543	0.00071	0.00237
Zinc	26	0.017	0.00159	0.00586
Ammoniacal Nitrogen	26	197	0.2	61.71
Total Cyanide	26	0.328	0.05	0.11
Free Cyanide	26	0.05	0.05	0.05
Phenols	26	36.4	0.016	2.12
TPH aliphatic >C5-C6	26	0.02	0.01	0.01
TPH aliphatic >C6-C8	26	0.134	0.01	0.02
TPH aliphatic >C8-C10	26	0.831	0.01	0.11
TPH aliphatic >C10-C12	26	3.55	0.01	0.49
TPH aliphatic >C12-C16	26	5.19	0.01	0.33
TPH aliphatic >C16-C21	26	4.78	0.01	0.29
TPH aliphatic >C21-C35	26	1.05	0.01	0.07
TPH aromatic >C5-C7	26	4.59	0.01	0.38
TPH aromatic >C7-C8	26	1.42	0.01	0.10
TPH aromatic >C8-C10	26	2.46	0.01	0.27
TPH aromatic >C10-C12	26	2.36	0.01	0.33

Table 4 - Summary of Groundwater Laboratory Analysis (mg/l)

Analyte	No. of	Max	Min	Mean
	Samples	Concentration	Concentration	Concentration
TPH aromatic >C12-C16	26	25.7	0.01	1.43
TPH aromatic >C16-C21	26	20.1	0.01	1.05
TPH aromatic >C21-C35	26	10.9	0.01	0.57
Methyl tertiary butyl ether (MTBE)	26	0.003	0.003	0.003
Benzene	26	4.59	0.007	0.37
Toluene	26	1.42	0.004	0.09
Ethylbenzene	26	0.697	0.005	0.07
m, p – Xylene	26	0.781	0.008	0.08
o – Xylene	26	0.432	0.003	0.05
m, p, o - Xylene	26	1.21	0.011	0.13
Naphthalene	26	2.68	0.0001	0.15
Acenaphthene	26	1.35	0.000015	0.08
Acenaphthylene	26	0.409	0.000011	0.02
Fluoranthene	26	0.563	0.000017	0.03
Anthracene	26	0.751	0.000015	0.04
Phenanthrene	26	1.74	0.000022	0.09
Fluorene	26	1.21	0.000014	0.06
Chrysene	26	0.236	0.000013	0.01
Pyrene	26	0.757	0.000015	0.04
Benzo(a)anthracene	26	0.236	0.000017	0.01
Benzo(b)fluoranthene	26	0.0493	0.000023	0.003
Benzo(k)fluoranthene	26	0.0825	0.000027	0.004
Benzo(a)pyrene	26	0.138	0.000009	0.01
Dibenzo(a,h)anthracene	26	0.0133	0.000016	0.001
Benzo(g,h,i)perylene	26	0.0342	0.000016	0.002
Indeno(1,2,3-cd)pyrene	26	0.0354	0.000014	0.002
PAH, Total Detected USEPA 16	26	10.3	0.000247	0.54

Note: - Where recorded concentrations were below detection limits the detection limit value has been used as the minimum value.

6.3 Asbestos

During the excavation of the trial pits, twenty near surface soil samples were obtained for asbestos identification analysis. Asbestos fibres (typically a mixture of Chrysotile, Amosite and Crocidolite) were found within 7 samples, which were subsequently scheduled for full asbestos quantification. A summary of the full asbestos quantification analysis is presented in Table 5, with full test certificates presented as Appendix D1.

Table 5 - Summary of Asbestos Quantification Analysis (%)

Location	Depth (m)	Asbestos Quantification
TP102	0.40	0.0047
TP103	0.30	0.0014
TP106	0.20	0.0126
TP112	0.20	0.0668
TP113	0.30	0.0255
TP114	0.20	0.0072
TP115	0.30	0.8382

7.0 HUMAN HEALTH AND GROUNDWATER RISK ASSESSMENT

Celtic Technologies undertook a human health and groundwater risk assessment for the site in March 2011. The risk assessment included a qualitative human health and groundwater risk assessment, consideration of generic assessment criteria (GACs), quantitative human health and groundwater risk modelling and presentation of potential health and groundwater protective risk based soil and groundwater targets. The following depth profiles were considered:

- Transition zone: this depth profile is expected to extend to a depth of 1.5 m below final finished site levels (FFL). The transition zone may comprise in-situ soils, verified imported soils / materials, along with site-won and treated materials soils reused under a Materials Management Plan (MMP).
- Deep soils: this depth profile is present below the transition zone (i.e. at depths greater than 1.5 m below FFL. The transition zone may comprise in-situ soils, verified imported soils / materials, along with site-won soils and treated materials reused under the MMP.

Boundary zones have also been considered to address the risks associated with potential lateral migration of VOC vapours to adjacent land. Soils and groundwater in these zones are considered to represent potential sources for VOC vapours that could migrate to off-site receptors. The selected health protective targets used in these areas should also be protective of these potential off-site receptors.

Refer to Appendix A; Drawing A4 for a diagrammatic representation of the zones.

The potential remedial targets derived from the risk assessments are presented in Tables 6 to 9.

A summary of the human health and groundwater risk assessments is presented in the following sections.

7.1 Qualitative and Quantitative Human Health Risk Assessment

The Qualitative Risk Assessment identified the following substances of concern:

- Total Petroleum Hydrocarbons;
- BTEX;
- MTBE;
- Polycyclic Aromatic Hydrocarbons;
- Phenols;
- Arsenic, Cadmium, Chromium, Copper, Lead, Inorganic Mercury, Vanadium and Zinc;
- Free and total Cyanide; and
- Residual Light Non-Aqueous Phase Liquids (LNAPL).

A detailed quantitative risk assessment was then undertaken on the substances of concern. The outputs from the modelling indicated the level of contaminants allowable to be protective of human health and therefore may be considered as human health

based remedial targets for soils and waters. However, the requirement to also be protective of controlled waters means that these outputs are not proposed remedial targets in themselves. Proposed remedial targets will be generated based on the modelling outputs of the human health and groundwater risk assessments, pragmatism and professional experience. These will then be submitted to the regulatory authorities for approval.

Model outputs for the identified depth dependant sources and boundary zones for soils and groundwater is summarised in the following tables.

Substance	Residential Indoor air Transition Zone	Residential Indoor air Deep Soils (>1.5mbgl)	Residential Outdoor air Transition Zone	Residential Outdoor air Deep Soils (>1.5mbgl)	Commercial Indoor air Boundary Zone	Commercial Outdoor air Boundary Zone
TPH Aliphatics C5-C6	55	124	9,170	22,900	9,210	>100,000
TPH Aliphatics C6-C8	130	300	22,400	55,900	22,500	>100,000
TPH Aliphatics C8-C10	36	79	5,870	14,700	5,840	>100,000
TPH Aliphatics C10-C12	170	390	29,100	72,700	28,900	>100,000
TPH Aliphatics C12-C16	1,480	3,280	>100,000	>100,000	>100,000	>100,000
TPH Aromatics C5-C7	310	715	54,200	>100,000	41,700	>100,000
TPH Aromatics C7-C8	720	1,700	>100,000	>100,000	94,800	>100,000
TPH Aromatics C8-C10	45	100	7,540	18,900	9,780	>100,000
TPH Aromatics C10-C12	250	555	41,100	>100,000	53,400	>100,000
TPH Aromatics C12-C16	2,780	6,110	>100,000	>100,000	>100,000	>100,000
TPH Aromatics C16-C21	53,400	>100,000	>100,000	>100,000	>100,000	>100,000
Benzene	0.3	0.7	55	137	40	1,400
Toluene	720	1,700	>100,000	>100,000	94,800	>100,000
Ethylbenzene	190	460	36,300	90,800	25,100	>100,000
Xylenes	60	146	11,400	28,600	8,650	>100,000
MTBE	85	198	>100,000	>100,000	11,100	>100,000
Phenols	990	1,060	97,000	>100,000	>100,000	>100,000
Acenaphthene	4,110	9,280	>100,000	>100,000	>100,000	>100,000
Acenaphthylene	3,950	8,650	>100,000	>100,000	>100,000	>100,000
Benzo-a-anthracene	12	16	5,830	14,600	2,290	>100,000
Fluorene	5,310	11,400	>100,000	>100,000	>100,000	>100,000
Naphthalene	2	4	3,520	8,800	270	>100,000

Table 6 - Summary of Human Health Model Outputs: Soils (mg/kg)

	Residenti	al on-site	Commerc	ial off-site
Substance	Indoor air Groundwater	Outdoor air Groundwater	Indoor air Boundary Zone Groundwater	Outdoor air Boundary Zone Groundwater
TPH Aliphatics C5-C6	4	>10,000	510	>10,000
TPH Aliphatics C6-C8	3	7,920	390	>10,000
TPH Aliphatics C8-C10	0.1	300	15	9,450
TPH Aliphatics C10-C12	0.09	190	9	6,090
TPH Aliphatics C12-C16	0.03	70	3	2,290
TPH Aromatics C5-C7	300	>10,000	>10,000	>10,000
TPH Aromatics C7-C8	330	>10,000	>10,000	>10,000
TPH Aromatics C8-C10	3	6,880	440	>10,000
TPH Aromatics C10-C12	9	>10,000	1,340	>10,000
TPH Aromatics C12-C16	30	>10,000	4,610	>10,000
TPH Aromatics C16-C21	90	>10,000	>10,000	>10,000
Benzene	0.3	650	27	>10,000
Toluene	339	>10,000	>10,000	>10,000
Ethylbenzene	40	>10,000	4,360	>10,000
Xylenes	15	>10,000	1,400	>10,000
MTBE	760	>10,000	>10,000	>10,000
Phenols	1,340	>10,000	>10,000	>10,000
Acenaphthene	480	>10,000	>10,000	>10,000
Acenaphthylene	560	>10,000	>10,000	>10,000
Benzo[a]anthracene	0.03	18	5	470
Fluorene	470	>10,000	>10,000	>10,000
Naphthalene	1	2,810	150	>10,000

Table 7 - Summary of Human Health Model Outputs: Groundwater (mg/l)

7.2 Qualitative and Quantitative Groundwater Risk Assessment

The Qualitative Risk Assessment identified the following substances of concern:

- Metals;
- BTEX Compounds;
- Other TPH Fractions;
- PAH Compounds;
- Phenols; and
- Cyanide and Ammonia.

The risk assessment considered the following potential receptors:

- Surface Water River Cherwell which is located more than 200 m beyond the site boundary.
- Groundwater River Terrace Gravels.

A detailed quantitative risk assessment was then undertaken to determine contaminant concentrations that would be allowable to be protective of the identified controlled water receptors. The outputs may therefore be considered as groundwater remedial targets for soils, leachates and waters. However, if groundwater remediation targets are

to be proposed the requirements to also be protective of human health means that the following outputs would not constitute proposed remedial targets in themselves.

The derived model outputs are summarised in Table 8 and 9.

	RTM I	Remedial Target Concentr	ations
Substance	Level 3 Soil	Level 3 Pore Water	Level 3 Groundwater
	(mg/kg)	(mg/l)	(mg/l)
Benzene	0.528	0.605	0.296
Toluene	110	49.3	24.1
m-Xylene	ES	ES	176
o-Xylene	ES	ES	106
p-Xylene	ES	ES	125
Naphthalene	70.9	10.7	5.24
Acenaphthalene	3.87	0.153	0.0748
Acenaphthene	ES	ES	2
Phenol	4.96	10.9	5.35
TPH Aliphatic C5-C6	ES	ES	22.9
TPH Aromatic C8-C10	473	29.4	14.4
TPH Aromatic C10-C12	109	4.33	2.12
Arsenic	1,240	0.297	0.145
Cadmium	0.807	0.00148	0.000724
Copper	741	0.166	0.0813
Chromium	853	0.119	0.0581
Lead	392	0.0428	0.0209
Inorganic Mercury	0.127	0.000296	0.000145
Nickel	670	0.119	0.0581
Selenium	2.97	0.0592	0.029
Zinc	8,700	0.744	0.364
Water Soluble Boron	120	11.8	5.79
Easily Lib. Cyanide	6,840	339	166
Total Cyanide	3.61 x 10 ¹⁷	2.4 x 10 ¹⁵	1.18 x 10 ¹⁵
Ammonia	24.6	30.1	14.7

Table 8 - Summary of Groundwater Model Outputs: 50 m to Compliance

ES – Target exceeds solubility

Table 9 - Summary of Groundwater Model Outputs: 200 m to Compliance

	RTM	Remedial Target Concentra	ations
Substance	Level 3 Soil (mg/kg)	Level 3 Pore Water (mg/l)	Level 3 Groundwater (mg/l)
Benzene	6.02	6.9	3.38
Acenaphthalene	45.5	1.8	0.881
Phenol	317	699	342
Arsenic	2,480	0.591	0.289
Cadmium	1.61	0.00294	0.00144
Copper	1,480	0.331	0.162
Chromium	1,700	0.237	0.116
Lead	782	0.0854	0.0418
Inorganic Mercury	0.253	0.000589	0.000288
Nickel	1330	0.237	0.116
Selenium	5.91	0.118	0.0576
Zinc	17,400	1.49	0.727

	RTM	Remedial Target Concentra	ations
Substance	Level 3 Soil	Level 3 Pore Water	Level 3 Groundwater
	(mg/kg)	(mg/l)	(mg/l)
Water Soluble Boron	239	23.5	11.5
Easily Lib. Cyanide	5,760,000	285,000	140,000
Total Cyanide	1.5 x 10 ²¹	1.02 x 10 ¹⁹	5 x 10 ¹⁸
Ammonia	249	306	150

ES – Target exceeds solubility

7.3 Comparison to Measured Conditions

Following completion of the site investigation and filling of identified data gaps, a more comprehensive comparison between current site conditions and potential remedial target concentrations can be made.

7.3.1 Human Health

The data output from the quantitative human health risk assessment for the residential indoor air transition zone have been compared to the data collected from the current investigation. The comparison has identified a number of locations within the immediate vicinity of the former gasworks located at the north of the site showing soil concentrations in excess of the model outputs.

In the absence of a development plan the most stringent model outputs have been used for the assessment.

Table 10 presents a summary of contaminants that exceeded the model output.

Contaminant	Residential Indoor Transition Model Output (mg/kg)	No. of failures	Max Concentration	Average Concentration of Failures
Phenol	990	1	2,680	-
Benzene	0.3	4	177	47.6
Naphthalene	2	15	11,600	802.9
Xylenes	60	1	252	-
Benzo(a)anthracene	12	9	732	104.6
TPH aliphatic >C8-C10	36	1	174	-
TPH aliphatic >C10-C12	170	1	331	-
TPH aromatic >C8-C10	45	2	386	219
TPH aromatic >C12-C16	2780	1	3,200	-

 Table 10 - Summary of Human Health Exceedences within Soils

The majority of the locations where contaminant concentrations exceed the model outputs highlighted in Table 10 are located at the north of the site within the immediate vicinity of the historical gasworks. All of the maximum values for phenol, BTEX compounds and PAHs were encountered at one exploratory location (TP119), again located within the central region of the former gasworks.

There were also several minor exceedences of PAH compounds noted at different areas of the site which include:

TP102:

- Naphthalene 10.2 mg/kg.
- Benzo(a)anthracene 16.9 mg/kg.

TP103:

• Benzo(a)anthracene – 14.0 mg/kg.

TP114:

• Benzo(a)anthracene – 13.9 mg/kg.

BH103:

- Benzo(a)anthracene 14.3 mg/kg.
- Naphthalene 4.57 mg/kg.

BH104:

• Naphthalene – 8.28 mg/kg.

Groundwater data collected as part of the current investigation have also been compared to the model outputs generated to be protective of residential indoor air. The comparison identified four locations within or immediately surrounding of the former gasworks with elevated concentrations of certain contaminants.

In the absence of a development plan the most stringent model outputs have been used for the assessment.

Table 11 and Table 12 presents a summary of contaminants that exceeded the model output from within the area of the former gasworks and immediately surrounding, respectively.

Table 11 - Summary of Human Health Exceedences of Groundwater within the area of the former Gasholder

Contaminant	Residential Indoor Transition Model Output (mg/kg)	No. of failures	No. of Boreholes failing	Max Concentration	Average Concentration of Failures
TPH aliphatic >C8-C10	0.1	4	2	0.0.831	0.653
TPH aliphatic >C10-C12	0.09	4	2	3.55	3.005
TPH aliphatic >C12-C16	0.03	4	2	5.19	2.047
Benzene	0.3	4	2	4.59	2.328
Naphthalene	1.0	2	1	2.68	1.95
Benzo(a)anthracene	0.03	2	1	0.236	0.144

Note: Number of failures takes into account two monitoring rounds

Contaminant	Residential Indoor Transition Model Output (mg/kg)	No. of failures	No. of Boreholes failing	Max Concentration	Average Concentration of Failures
TPH aliphatic >C10-C12	0.09	2	2	0.279	0.199
TPH aliphatic >C12-C16	0.03	2	1	0.041	0.037

Table 12 - Summary of Human Health Exceedences of Groundwater immediatelysurrounding the Gasholder

Note: Number of failures takes into account two monitoring rounds

The data presented in Table 11 and Table 12 indicates four locations where the dissolved phase groundwater concentrations may present a risk to human health. However, the impacted groundwater appears to generally be confined within the area of the former gasworks. Two boreholes immediately surrounding the gasworks have also encountered concentrations of two specific chains of petroleum hydrocarbons which are above the human health model output. As indicated in Table 12 the concentrations within these two locations are significantly below the concentrations within the gasholder and only marginally exceed the most stringent model output.

7.3.2 Groundwater

The data output from the quantitative groundwater risk assessment for a most stringent case (50 m to compliance point) have been compared to the data collected from the current site investigation. Even though the nearest compliance point is located over 200 m from the site boundary, in Celtic's experience it is unlikely that the regulators will approve risk assessments based on compliance points over 50 m.

Elevated concentrations of ammonia have been observed in the majority of groundwater samples across the entire site and so are considered more as a global issue rather than site wide. Leaving ammonia aside, the comparison has identified only two locations in the immediate vicinity of the former gasworks at the north of the site with groundwater concentrations of specific contaminants that exceed the more stringent model output. A summary of the exceedences is presented in Table 13.

Contaminant	Groundwater Output – 50m to Compliance point	No. of failures	Max Concentration	Average Concentration of Failures
Benzene	0.296	4	4.59	2.31
Phenols	5.35	2	36.4	26.3
Acenaphthalene	0.0748	1	0.409	N/A only 1 exceedence
TPH aromatic C10 – C12	2.12	2	2.36	2.31
Arsenic	0.145	1	0.2	N/A only 1 exceedence

Tuble 15 Summary of Groundwatch checcaemees at a 50 m compliance 20m
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The exceedences are very localised and are only in the area of the historical gasholder, which is the main contaminant source. Therefore, it is not considered that these local

exceedences would merit a site wide ground water treatment scheme. Provided that any potential ongoing sources of groundwater contamination that are present above the water table are removed as part of the redevelopment works.

8.0 PROPOSED OUTLINE REMEDIAL STRATEGY

The comparison of data collected from previous and current ground investigations to the risk assessment model outputs indicates there to be a potential risk to both human receptors and controlled waters. These will need to be addressed as part of a remediation strategy for the redevelopment of the site.

As discussed in the previous sections, the site has been divided into three zones depending on previous uses and contaminant concentrations identified within the soils and groundwater. The proposed remedial strategy also adopts a zoned approach in order to provide the most cost effective solution, which will be suitable for the proposed end-use.

The Environment Agency flood map has been reviewed for the site and indicates that the majority of the site currently lies within an area liable to "Flooding from rivers or sea without flood defences". A section of the northern part of the site is categorised as "Extent of extreme flood". Celtic understands that a flood alleviation system has been installed within the Banbury area which may result in a reduction of flood risk to the site. However, it is recommended that liaison is undertaken with the appropriate regulators to ensure that it does not cause potential issues during the planning applications.

A number of potential constraints to the proposed remediation works have been identified, which include:

- Current operational status of the site (Grundon Waste Management)
- Presence of identified and non-identified services
- Presence of existing buildings, cabins and skip storage at the site. Our remediation strategy assumes that these will be removed prior to the remediation phase.

The overall redevelopment strategy for the site is likely to include measures typically employed in brownfield redevelopment such as certified clean cover in gardens and landscaped areas as well as certified clean service corridors.

It is likely that properties constructed at the site will require vapour protection measures commensurate with the level of risk posed by the substances remaining in the soil after remediation.

8.1 Zone 1 – Former Gasworks

The area of the former Gasworks has been identified to contain the most extensive contamination and so is likely to require the most extensive amount of remediation throughout the site.

The estimated area requiring remediation in this area is approximately $4,000m^2$ and the remediation depth will be in the range of 1 to 5 m below existing ground level but is expected to be typically 2 to 3 m. These values should be used for indicative purposes only and are subject to change depending on the ground conditions encountered during the remediation phase.

A summary of the proposed remediation scheme for this is as follows:

- Removal of the semi mature tree's located along the northern boundary;
- Locating and emptying any existing underground tanks (including any connecting pipework);
- Excavation of soil to a depth of between 3.0 and 5.0 m below existing ground levels;
- Segregation and onsite biophysical treatment of the excavated soils to allow onsite re-use;
- Collection and removal of any Non Aqueous Phase Liquids (NAPL) identified for offsite disposal;
- Removal of underground structures; and
- Testing of all made-ground materials for the presence of asbestos.

Further details of rationale for the proposed remediation strategy within this area are discussed in the following paragraphs.

Due to the nature and depth of contamination identified within this zone, the most suitable remediation option for this area is considered to be the excavation of contaminated materials to a depth of between 3.0 and 5.0 m below existing ground levels. Excavated material will be segregated to remove any oversized and / or untreatable materials.

The treatable materials will be prepared for onsite biophysical remediation, which would enable an overall reduction in the organic contaminant concentrations within the soil to acceptable levels for the site. The treated materials will be verified against source dependant remedial targets and re-used at appropriate depths depending on their compliance with the depth dependant targets. A site Material Management Plan (MMP) will used to log the source, quantity, location, area and depth of re-use against the proposed redevelopment layout.

This process will optimise material re-use and so minimise the volume of material requiring off-site disposal.

It is possible that the contaminant concentrations in soils taken from certain areas (i.e. within tar pits) will be so significantly elevated that onsite treatment will not be suitable. Such soils should be managed through contingency measures such as offsite disposal or stabilisation. It is considered that only a minimal volume of material would fall into this category.

The biophysical remediation process will not reduce elevated inorganic contaminant concentrations (i.e. metals) within the soils. It is considered that this waste would be classified as hazardous and require disposal to a suitable offsite facility. However, the investigations undertaken to date indicates that a minimal volume of material is likely to fall into this category.

It is possible that underground storage tanks remain in place within this area, which may contain Non Aqueous Phase Liquids (NAPLs). These should be located during the initial phase of redevelopment and emptied with the contents being disposed of to a suitable

off-site facility. Once emptied, the tanks should be removed along with any residual contamination.

A large number of below ground structures have been identified during the previous and current site investigations. The remediation strategy proposed for this area will remove many of these structures. A watching brief should be maintained during the removal of any underground structures as it is possible that there may be NAPL perched within. It is likely that once removed the underground structures can be crushed and reused during the site development following testing and compliance with the specified reuse criteria. However, an offsite disposal contingency should be developed.

This remediation approach (removal, treatment and replacement of material), will also provide an improvement in the physical geotechnical properties of the soils, which will provide benefits during the redevelopment phase as no underground structures will remain.

Asbestos fibres have been identified within the made-ground in this area. Therefore, all made ground should be treated as potentially containing asbestos fibres. All made ground should be excavated and placed into stockpiles so that it can be tested. It is likely that following testing some of the material may be reused (at depth if asbestos fibres are identified). However, some material may need to be disposed offsite and the remediation strategy should include an allowance for this.

Due to the possible presence of asbestos fibres within the soils mitigation measures such as damping down during excavation and covering of the stockpiles should be undertaken during the course of the remediation and redevelopment works.

8.2 Zone 2 – Former Scrap Yard

The investigation undertaken within the area of the historical scrap yard indicates that contaminant concentrations within the underlying materials are typically below the risk assessment model outputs. Therefore, only a limited amount remediation is anticipated for this area.

The estimated area requiring excavation and turnover within this area is estimated to be around 8,000 to 9,000 m² and it is expected that the excavations will typically be between 1.0 to 2.0 m below existing ground level. These values should be used for indicative purposes only and are subject to change depending on the ground conditions encountered during the remediation phase. It should be noted that the majority of this material is unlikely to require on site remediation and can be directly used during redevelopment phase (depending on compliance with the specific remedial targets).

A summary of the proposed remediation scheme for this area is as follows:

- Removal of the reinforced concrete slab covering the majority of the area;
- Removal of identified asbestos cement sheets from the ground surface
- Excavation / turnover of all soils up to an anticipated depth of 2.0 m;
- Removal of remnant underground structures;

- Onsite biophysical treatment of any identified contamination;
- Removal of material associated with the former scrap yard identified along the eastern boundary of this area; and
- Testing of all made-ground materials for the presence of asbestos.

Further details of rationale for the proposed remediation strategy within this area are discussed in the following paragraphs.

A large number of remnant underground structures have been identified within this area and so it is possible that there are isolated pockets of contamination, including NAPL, associated with these. Therefore, a watching brief should be maintained during the removal of any underground structures and contingency measures put in place for the removal and treatment of any contaminants / contaminated material encountered.

It is likely that any contaminated materials identified will be similar in nature to the identified organic contamination in Zone 1 and materials from this zone would be included for treatment with these soils from Zone 1. As with Zone 1, any soils that are untreatable on site and not suitable for re-use would most likely be disposed of offsite as hazardous waste. However, the volume of material that will fall into this category is considered minimal.

Underground structures can be excavated and crushed onsite and reused during the redevelopment dependant on compliance with the relevant redevelopment remediation targets.

This remediation approach will also provide an improvement in the physical geotechnical properties of the soils, which will provide benefits during the redevelopment phase as no underground structures will remain.

As discussed in Section 6.3 asbestos fibres have been identified within the made-ground within this area. Therefore, all made-made ground should be treated as potentially containing asbestos fibres. It should be excavated and placed into controlled stockpiles so that it can be tested. It is likely that following testing some of the material may be reused (at depth if asbestos fibres are identified). However, some material may need to be disposed offsite and the remediation strategy to include an allowance for this.

Due to the possible presence of asbestos fibres within the soils mitigation measures such as damping down during excavation and covering of the stockpiles should be undertaken during the course of the remediation and redevelopment works.

In addition to the asbestos fibres identified within the near surface soils, asbestos cement sheets (broken) were identified near TP111. These should be removed before any redevelopment works commence and disposed offsite to a licensed facility.

Material along the eastern boundary of the site was found to contain a high proportion of automobile waste (cables, rubber, plastic, glass, engine parts, etc.). It is unlikely that this material will be suitable for reuse onsite during the redevelopment (even at depth) due to its unsuitability as geotechnical fill and so is likely to require offsite disposal.

8.3 Zone 3 – Generally disused

The investigation undertaken within Zone 3 indicated that it was generally disused and surfaced by unimproved vegetation. No above ground or underground structures were identified during the previous and current investigations undertaken within this area.

The estimated area requiring excavation and possible remediation (along the boundary of the current gasworks) is estimated to be between 700 and 800 m^2 .

A summary of the proposed remediation scheme for this area is as follows:

- Excavation and onsite biophysical treatment of area of organic contamination encountered along the boundary of the current gas works;
- Removal of identified asbestos cement sheets from the ground surface;
- Removal of material associated with the former scrap yard identified along the southern boundary of this area; and
- Testing of all made-ground materials for the presence of asbestos.

Further details of rationale for the proposed remediation strategy within this area are discussed in the following paragraphs.

Exploratory holes completed encountered an area of elevated concentrations of organic contaminants along the south eastern boundary of the current gasworks site (location of TP102). The contamination has similar properties (albeit at lower concentrations) to the material encountered in Zone 1 and so it is considered likely to be associated with the adjacent gasworks.

The most suitable remedial option would be to excavate this material for onsite bioremediation. The treated materials will be verified against remedial targets and re-used at appropriate depths dependant on their compliance with the depth dependant targets. A site Materials Management Plan (MMP) will log the source, quantity, location, area and depth of re-use against the proposed redevelopment layout.

Material along the southern boundary of the site was found to contain a high proportion of automobile waste (cables, rubber, plastic, glass, engine parts, etc.). It is unlikely that this material will be suitable for reuse onsite during the redevelopment (even at depth) and so is likely to require offsite disposal.

As with the other Zones, asbestos fibres have been identified within the made-ground within this area. Therefore, all made-made ground should be treated as potentially containing asbestos fibres. It should be excavated and placed into controlled stockpiles so that it can be tested. It is likely that following testing some of the material may be reused (at depth if asbestos fibres are identified). However, some material may need to be disposed offsite and the remediation strategy to include an allowance for this.

Due to the possible presence of asbestos fibres within the soils mitigation measures such as damping down during excavation and covering of the stockpiles should be undertaken during the course of the remediation and redevelopment works. In addition to the asbestos fibres identified within the near surface soils, asbestos cement sheets (broken) were identified at several areas at the surface. These should be removed before any redevelopment works commence and disposed offsite to a licensed facility.

8.4 Groundwater

The risk to groundwater has been proven to be minor and is not considered to be significant in the context of the site. The only exception to this is ammonia, where elevated concentrations have been seen at many locations across the site.

As risks to groundwater are generally minimal, it is not deemed necessary to implement a strict groundwater treatment system at the site. The proposed bioremediation technology will result in a reduction of ammonia concentrations within the soil as biological processes remove the ammoniacal nitrogen, particularly when combined with pH elevation at the end of treatment. Following a reduction in the source of ammonia within the shallow soils at the site, the potential risk presented by dissolved ammonia concentrations in groundwater will decrease over time and this betterment approach is considered appropriate in the context of the site.

Bioremediation will significantly reduce organic contaminant concentrations within the soil and mitigate risks to human health through this reduction and preferential placement of remediated materials at depth, however a potential risk remains with respect migration of volatile vapours from impacted groundwater into future dwellings.

Two boreholes installed within the area of the former gasworks and two immediately surrounded have identified exceedences of the groundwater model outputs to be protective of human health. The two boreholes surrounding the gasworks have only recorded marginal failures, within the highest concentrations being recorded near the former gasholder. This suggests that the impact to groundwater is isolated and unrepresentative of the wider context of the site.

The groundwater within the former gasworks is being continually impacted by the contamination present within the overlying materials and so it is likely that the removal and remediation of this material will result in a reduction of dissolved phase contaminants within the groundwater.

Vapour protection measures and provision of clean service corridors have been recommended as part of the future development and this would mitigate the risks to human health from volatile contaminants in groundwater based on the site investigation data. However, there is the potential for unidentified NAPL to be encountered around former below ground structures as previously discussed, and would be prudent to recover any encountered NAPL and shallow perched waters where encountered during soil remedial works. Any recovered perched water and free product (NAPL) will be treated on site and disposed of to foul sewer under an appropriate consent, with recovered free product disposed of off-site under relevant duty of care.

9.0 REFERENCES

- 1. Environment Agency/DEFRA Guidance Document (2004), Contaminated Land Report No.11 (CLR11), Model Procedures for the. Management of Contaminated Land.
- 2. British Standards Institute, Code of Practice for Investigation of Contaminated Land, BS 10175:2010.
- 3. AEA Technologies, Banbury Gasworks Site Investigation Report (1999).
- 4. Waterman Environmental, Site Investigation of the Former Gasworks Interpretative Report (2002).
- 5. Celtic Technologies, Merton Street Depot Quantitative Risk Assessment Report (2011).

APPENDICES

APPENDIX A FIGURES

Drawing A1	Site Location Plan
Drawing A2	Site Layout Plan
Drawing A3	Soil Remediation Area Plan
Drawing A4	Conceptual Model






9	
	Legend Site Boundary
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	Proposed Remediation Area A: Excavation of up to 5m depth and remediation of materials prior to re-use. Recovery of free product, where encountered.
	Proposed Remediation Area B: Excavation of up to 3m depth and remediation of materials prior to re-use.
	Proposed Remediation Area C: Turnover of area up to 2m depth and remove structures to confirm absence of contamination. Remediation of contaminated materials prior to re-use.
	Site investigation locations where asbestos fibres have been identified in made ground samples.
///	1. NOTE:
	Proposed Remediation Boundaries are approximate and for indicative use only. Precise boundaries will be defined during remediation works.
	2. During all excavation works required for the site free product and contaminated perched waters should be recovered and discharged to a foul sewer / disposed of off-site
	following treatment.
	0 ISSUED FOR COMMENT
	Celtic [®]
	Columbus House Centrix House enquiries@celtic=tech.co.uk Village Way Crow Lane East www.celtic=ltd.com Cardiff Newton Le Willows CF15 7NE WA12 9UY 029 2036 6636 01925 273222
2104	Grundon Waste Management Services
	Project Banbury Gasworks
	^{Title} Proposed Remedial Areas
$\langle \rangle$	
	Drawn by Checked Date Authorised Date
	GEF INH Original Scale Date Rev Paper 1.1250 26 /04 /12 0 A3
	Drawing Number
$\langle \rangle$	D1526/4293/A3



APPENDIX B Library Information

A DE ROUTE OF RUE FOR SOLVE IL A. BUE RUE IMMUNIA AUX DESIGN DESIGNAL VALIEURAL BAUERE ROUTE DESIGNAL VALIEURAL BAUERELICEZ DESIGNAL 12 5

lly Geoffrey U. Reckland 1986 THE CENTENARY OF THE BANBURY GAS COMPANY 1833-1933

THE SANDON CRANDING FORM



WATER ALL PLATE GRADES WATER TANK DELAST DESIGNED.

In \$1110 a single life holder was depended and replaced by a show life trianovier holdse in the estimate brink much, and have yours later a furtime estimates in the estori tonics was state by the constant of a further three built of eight solarity such.

After periodged constitutions it was desided to supply nonin path to the Addantory works of the Counties the Company and steel regime were had from the Butherry Company's works to that point and a conversing noon taken to King's Sutten-A Walke borning plant was buildlind at the works expelse of developing a pressure syster to the installed at the works expelse of developing a pressure syster to the installed at the works expelse of developing a pressure syster to the installed at the source expelse of developing a pressure syster to the installed at the source of developing being altitude at Addardiney and King's Sutten-

Page Trialitation

One of the select teaks to be don't with as the suffrank of Moril Var II was to sensity that all hinds out regulations note complied with.

Depint the war period conternitied deter per plant can approxied only dering anytime with one technology shift, from 0600 him to 1860 him, but in the robust hadre work had to continue as moreal tearty four bours daily. To monare that an input should be within dering the himor-out period beavy terpedite contains and the should be within and of the entert beam, and all nodes quenching down inside. A new was stationed at the entert beam, and all nodes quenching down inside. A new was stationed at the entert by the reserve boun of converses total one that the sufficiently to allow the action to be pull the beaves total of converses goes the yard, and agets is let his back in. This mathed was later improved upon with the fitting of a sliding door, but the constant termine through which the cost organic even addition was with perfected by the terpedite could of the the fitting of a sliding door, but the opening through out by due of the import addition of the value of the respected by the terpedite to be the cost of approximation of the fitting the perfected by the terpedite term is shell the fitter-state to be the way from 1800 here to advised out by the state is all the fitter-state to be the way from 1800 here to advise the phase and patroling the works. One new was on duty from 1800 here to advise the for all patroling the works. One new was on duty from 1800 here to advise the for all would go them, having both values thing the line of the termination for all parts and provide the slip parts and one when the date of the termination of the state of 0.000 here, fc

When provactions on the works included the placing of five backate containing word, anter and play, and attracp-pumps af etrategic positions throughout the works. Thirrop-pumps, firs backets and a muchor of britchs, slates, and sheel plates uses also placed on hop of the bolders. The backets on the bolder prove mentative solat day and ever intended to and any small below ranged in a sizratio. The may would be placed around the bole and a state or star) plate placed on top and seight down by one or has af the britchs.

The time where job 22 way to make a weekly chuck of fire Fighting nextpanet also and the task of sighting the holder every Friday to any that the clay in the bodiets was cost maint and that the stirring map via in working order.

A Resumpli periphis divergence was perchanned and the Company's index seas loaded up at the ani of such working day with all the measuremery equipment to deal with design to get mater it the overt of a cold during the might. Of concess all this workpoint had to be unloaded every Morning to eaching the lority to be under its during the day.

At this period went highting an the works was by ger, and in the event of an air raid warning at eight the supply would be instantly turned off at the main hap at the mome in the eight coor by the firstwatch and on duty at the time. The stokest would then have to cover that all house were individually succed off. Not water for the stokers machine was provided by a printitive kind of gas pryner and following as six weld earning one might this gapper was everifieded with the reading that while a white applied a match an amplemine coupletally wreated the gapper. The staker luckity encaped with avoiding some sortoon that a accepted hand.

The new purifies building process in 1936 was provided with shartple lights, samplied by a identry verifical par engine, but this system was not used during the war time partod. One precamines that was not userial out at the autheout of war, freever, was the sempofinging of the bolders and building but sheller of this would have prevented the damage which took place in October 1960 is debutable.

The rail accurred at IA25 hrs. on Thornkey 3rd Decoher, EronLantly, the order had just been able apin and span for a director's impaction, and cleaning and they're operation had construct the whole of the previous suck. The temperation had taken place at 1200 hrs so the day of the raid.

24

A notal of four twon 20016, bunds were drapped by a Dereier 213 bundler dating the reld: wir books fell on the an works and the remainder on the asis (2.6 8 lines and goods shada, should extensive damage and canadities. There were she manufildes on the relievy, six of which were fatal. Lackity ab one was but of the gas works, [9].

The first book to full explained to a field behind the AOC,000 cohis fast holder. The other five books all bit the works, souring direct bits on two of the three ents bolders which were densitated, and on the bollding bousing the cost-most partitions. A small brick-bally bound on the bollding bousing the cost-most to the bolders are totally blown every although the valves themselves were underegod. The resulting holder day boled by frequents of one of the bound which fall on the valuey and by debrie blacted emined by a bots. The bole is this bolders. There the bole is the resulting which were shall be been at the bound which fall on the valuey and by debrie blacted emined by a part of the bound twenty wis below in this bolder and they were all openting just of flows obset two fast long some of these boles were large enough to the start of the bound.

The total destruction of the ADO,00 and 100,000 mable fast helders by the bamble which barsk inside from destined the Generary of Si per cont of its affective gas shrage superity while: ACX of the pertribution plant was definitely pot out of soften and most of the remaining partriantion plant was definitely pot faside the bases burnt for ionaly for about two house, giving off pelsonase functs.

No flay and bis staff inmediately fork stops to enve as much of the plant as possible from further destruction or deraps by fire and enter. One and a quarter stiller pelices of water were released to a few second by the buryting of the task of the ADD,000 multic fort builder, flooding the works to a depth of streating balders were out off and other withit protocolists taken under the harding balders were out off and other withit protocolists taken under the mininger's directions. The refer to were to fail protocolists taken under the mininger's directions. The refer were in fail protocolists taken under the mininger's directions. The refer were in fail protocolists taken under the mininger's directions. The refer were to fail protocolists taken under the mininger's directions. The refer were to fail protocolists taken under the mininger's directions of the staff and other with the tool and rindow, though there out considerable damage these the staff as which was berning with standard was considerable damage from the staff would be used. The first base pretinged out i the reacting builder scale to the gas-tight and the makes from the ports to the term regulared. The effect in the tows of the damage to the gas explicits to the term regulared. The effect in the tows of the damage to the gas explicit and the term to the annexed with the destruction of the makes from the ports to the term of the manager's home and affices by the last beek of the the readition of the manager's home and affices by the last beek of the the damage to the gas

The manager's bound and offices sontained considerable demage from blast and firing delets from the works and valleny. All the windows and deers at the rate of the beliding york bloom is and the front sindows of the bound more also manbed. The managers's office, is which he are sucking at the line of the rail, was precisally turned tailed out and a heavy cult-top deck tes throws from one wide of the work to the other, being seating in the process. We and Her Day and the manbers of the office staff ware remarkably fortunate in menaging injury.

By working day and might in repairing and re-arranging parts of the plant, the supply of me was restored to the term in six days and the re-building of demand hubblings promoted with great spend. At a directors mouting hold on 25th Dramber 1940 the damage united by the air vald som associated and the cost of supers to buildings and plant see estimated at 116,348. It was from the beauty from the Board of Trade would not grant permits for the stand, meeted to federations the 500,00 unbit for builder. by April 1981 the 198,000 onbig fact siggle-left holder had been completely repaired but work as the 400,000 onbig fact builder was further contailed method to behave abortage. This holder was eventually sendy for service in bareshar 1981, the last filled with value and the bolder purpod with per.

The burder also out the miter supply and speck the mathe dawlenge system, which had never term me humbred per cost efficient at the best of times. Extension outlifications to this system were carried and following the tail but obsertional problems still move, due mainly in the partial blocking of the callent's under the failway by sublitub mashed through by pater from the ruptured baller hash. This callent emeries all the works water from the vertex lots the sider make. This callent emeries all the works water from the vertex lots the sider make and one often and all the works water from the vertex lots the outlat was all one often and actions the railway lines to manual that the outlat was clear.

In bursh 1941 the beliers used belintedly canonflaged. The purification plane had been folly restored and all exposed pipe such and anolliary equipment account the manhing and exceptions plant, their eight be valuerable to blant similar further wall occur, was protouted by said-hama. Due or two since saids too's plane is and acoust Babbury during 1946 and 1941 has no estimat damage was done and to further said took plane on the gammaths.

The staking modifies, which had been in service since 1953 see a name for concern as it was frequently breaking down. Darks shall mained highly hard to obtain and above such break-downs angured hund-oberging of the exterts had to be reverted to. This method of operating "through" rethers som, at contast entituity enterision tory and it was obvious that the problem of a new machine would have to be mentificated. The directors discussed the problem at some length and considered the cost of a new machine for high. A second-hand exciting was unchined to the track the time and mathine for high. A second-hand souther was unchined at the time and mathine for high. A second-hand souther was unchined at the time and mathine for high. A second-hand souther was unchined at the time and mathine for high. A second description of the souther was unchined at the time and mathine for high. A second description of the southers was unchined at the time and mathine for high.

Forther problems around day to familie in the stand valating plant and on a monous of contactions a parview tenk locatentics had to in hired from the G V E to supplement the works steam supply. A firement and also must with the longeofile and the total hire open can to be day. On subsequent scatting a very alderly becomplies of the sum type, but with all the petice removed, was used aveilable by the G V E. This engine but been specially converted for use as a stationary baller and was tought for the verse where it was perificulted on the siding at the coat of the boller brane. The specialize and daily minimumes of this "locatelizes" was saveled out by a gas company septembra.

There was a partod during 1943 and 1946 when both Derrars and Italian Frienners of der worr employed at the Hashary Gasacrks. They wave put to work on antroding cost and emptying and filling partitler bases. On the whole, they were reasonably well behaved, and there was priv the distaching incldent, when much Germany rationed to work in the partiture. Apperantly there had been some trouble will them in their map at hadrons or the provides slight and is partitured to save both they had been provides and the fee work in the partiture their ration both and they had been provides algored with for work in the partiture their subser boots, which they had been provides algored with for work in the partiture to save one the work alloted to them. This was pathogs but entitled as a partitud as more to the partiture was water enther anglement one the state and as a partitud agent delety forted normal from war. However, the outhoutlies at the Hedrone P O & Gasp had to be nother and parties are disputched with a larry to pick up the analy P D Ms. They save returned to hadrons and they partitude party on party were never amplicated at the gasworks gasted in Soliton and the partitular party were never amplified at the gasworks gasted in Soliton and the partitular party were parter amplified at the gasworks gasted in Soliton and the partitular party were parter amplified at the gasworks gasted in Soliton and the partitular party were parter amplified at the gasworks gasted in Soliton is and the partitular party were parter amplified at the gasworks gasted in Soliton is and the partitular party were parter amplified at the gasworks and the

1963 and this and of bootilities in Borean and about after D Day to June 1965, ang-time contrictions were would do the works. Black-mut repairtions mere lifted and the C W C Fight reasond the Hermorahilt system. The boldens were repaired, the ensembling pairt being replaced with bolthebits days.

IMT. TO.

The Arginsonians of the Oak Industry

Elimence and

BALLET ONLY MONTH

the lock size it totorit. Maphiate

there are an aurrivially official Gas Company plane of the bridge Streat works, and the only here may showing the output of all he one dates streat then compared with the C.S. 1/500 Flam (Fler's Distion) 1001, bourser, it will be noted that the Gas Verice, created behaves 1075 and 1024; as shown at the 1056 map. (Fig.) does not sumform to its solar pentities in the stat given Tard.

The gramming formed part of the buildings which its all an angle of 30 degrees to bridge Street, and which between 1057 and 1053 serie excepted by John marks Little Lengther by the did flay Easters. (2) This part of the promines such that hequired by the did flate Easters. (2) This part of the promines such the hequired by the did flate the building comparation and used as part of their such the and an challen. The pertise of the building comparation and used as part of their such the at the barries the 1939s by Resard. R.C. White, Fo for flates Stread pressions they being hear as the 210 Miles Derate and Henne Gorke. (5) These ballings, which understand a mark Schull is the shole of the first buildings, which understand an mark Schull is the server of the first buildings, which understand a mark Schull is the server of the first buildings. (5) These

Another of allowedious and meterations to planth and mulidings were borried and between 1235 and 1256, but the undered atom of the buildings the 242.2 any solid conform to the material of the buildings referred to se the these matter departed on the 1255 map. Untermines and shift trans of buount genue have, enforthemately, obscures much of the detail of the selected buildings, but enforthemately, obscures much of the detail of the selected buildings, but enforthemately obscures show and shift there of buildings, but enforthemately buildings the formation in brackness in the selection of the selection and the second shift and the selection of the building of the selection and the second second shift and the building of the selection of the selection of the forthers what might hold the building of former these a gamenties and on longer for forma.

There are no solving on in the further of relevant initially installed at fills which, nor is times my schall of where plant, spart from the genucline membed is 1955. If may well be that the curbuncting plant initially installal compliant one but of three or four iron returns, excelle of predicing sifficient gas for any, the in three bundled turners and consisting approx. If only in production during the daythes; member is hading strend in the builder for the prediction during the daythes; member is hading strend in the builder for the scient the sight.

It has been recertised in Fart One that the construction of the more real as extremely size proteens, and that the two Company had been hard proceed to provide sharph yes for their official company had been hard proceed hards this. Set the Company's reserve do not state to the number of reformed for tempts of bolog put into constantion at this date. It is consultonable that his times for or mero bols of four as firs rown to could have been installed by this they also be problems referred to constantion, any infar that offy about fail of the information plant and fully spountional of any other that.

The mant conter of hown valuate perchased from, and installed by James Guidance, of Hannary, he set theored of million, but assumed that by the stat of 1332 there were full retorts to star the contact which of gas would have been the temion of s,000,000 onbits fort. No. towards the second solution to be to be all a transmission of a toy on the rise is 1745, rever more made of the and by 18428 there was not body of the ast, is a second as training by 12 desires in deput, and to four is in the first in the second to be a sec

all the

You contribute and and and engened in 1052, one again, it is not hands her any cohorts such about. It can only be adalor area, that the arbortain plant of the partok resprined the arbitical hod, or bads, of true callers of T free is immuch by 14 m. by 12 in.; the bio original bods of clay retarbut and pathers a for that has bads of five pateris in the new section of the tetric reacts. It is even possible that one of the arbitical bods and the sector is any retarbut to be another the sector of the arbitical or the tetric and comparisons in the sector of the arbitical bods of the or is an entry of the sector of the sector of the arbitical continues of issues and the sector of the sector of the sector of the arbitical pathers is the sector of the sector of the arbitical containes of issues approximation to account to the sector of the sector of the arbitical for approximation of the sector of the sector of the sector of the and issue for approximation of the sector of th

Details of the antillary plant at Heldes Street are also uninoval by there may dell have been a shall be story limit. In the story limit, and it is also any later that when allow the story limit, and it is a shall be story been parameted. (5) 250 estimator was a monitor any detailed to draw any from the story is an available of any story in the start is the story of any story is an available of any story in the story is an available would be provided by an available would be provided by any sould be story in a story in the story of any story in the story of any story would be a been powered by any sould be an available would be any story of any sould be any story would be any been any sould be any story of any sould be any

"The original generate weiliding an origin to in Three. An ease of Feelinwhole and appress 100 foot in length. The polyion of the bulkdary thet was the retort inten may have been shound VD is 75 fort in tempth; summaring that there was existently only one and of statests. Typical Saket Domans for each works at the part of could be 25 to 30 fort in which, which allowing 12 fort by an far the which of the materia state and the space normally infi between sti, and the solid of the materia state and the space normally infi between sti, and the solid is with the use hypicating lists 10 to the fart theory working space.

to rather these Lold down is to dimensions of relative transmit, which that meaningles a proper survites made for the stater of the rates but then we reptired to be at inset, one balf nore that the longth of the relative. Nore any have been just alongly soon in the trigghest relative borns for an order threat bot, but an name obvious that the stirghest relation for an order threat bot, but an name obvious that the stirghest relative borns for an order threat bot, but an name obvious that the stirghest relation for an order threat bot, but an name obvious that the stirghest relation for an order threat bot, but an name obvious that the entry reson is the threat both in the years would have regulated the using no of for the original buildings. Bond would take been efficient the metric born with the what and encoded in the best report house as required. There are indimentions to the well allongstide the resont house as required. There are indimentions to the well allongstide the resolution and the three both of the resonant to the state back that allong the basis and the state of the resonant of a state three the basis of the state the basis and in the state of the resonant of a state of a state way have been and in the state of the resonant to react a small of a stare to be the resolution.

Course was and it laft the hydroniks bein from the extents, and a temperature of $150^{\circ} - 110^{\circ}$ B, and such had to be reduced as $50^{\circ} - 60^{\circ}$ T, and a certain antent of tes get and of, before the gene one allowed to enter the perification plant.

This speculies an office but is specified books as the conducate, of which there ware a matrix of types. The type of perimumar existently initialied at De bridge fibreal Gorks may have been the administeric, comprising a combilities better here at the dott three-lack pipes. (Fig. 4) These contains of the math other at their type by archipter. (Fig. 4) These contains on the inductionally been replaced, or edge to be inter years by a new set comprising induction that type by archipter. (Fig. 4) These contains and the induction of the replaced, or edge to be in the years by a new set comprising beauty fighter. Other more that appendix for the removal of the and administrative the vector and arrestion. A manner one is contrained for the induction the vector and arrestion. A manner one is contrained, for and induction the vector and arrestion. A manner one is contrained, for and induction the vector and arrestion. A manner one is contrained, for and induction the vector of there are which are fixed, for and it prove being the off from the fitter of the vector, it is not flowed, for any intervent to the bolige-last of the proves of the vector, the intervent being the off from the fitter of the vector, it is the fitter which is an prove being the bolige-last of the constances may have been bounded to appear in a bolight the bolige-last of the order bolighters. che sumpletti utribber ab bite socie sur lare sens qui le matti, sui comprison a quittine sytimationi distint anni della sensi trene tent in disentane sy sion font an asterit, sumine abteri senti dere mente biene of ment-trens griete un viteri gould be planted toyerte of units as browthe bienergi tritich the gas the poster. (Mattice)

On harders the employer the gas next entropy the gastflars, share the family day of the conformer sold and entropy the hydrogen personation. Purifier boxes yet not tempeter confedered vessels. Fitud with wouden steves or gridle or which dry lass as exists of two was placed, and through shidt the gas use parsed. The type of purifier boxes used at Satdge Streat; stokably the in puried, which have been of the secon-acated type. (Fig.6) the lade of the boxes which the solid the secon-acated type. (Fig.6) the lade of the boxes which solid the secon in a trough mining or the tops of the boxes. A Liftage centrals would have been provided, with dears atlants, for presenting the lates.

He alian buildings are above to find Yard, ether has him the group desand holder, on the 1957 may. On the C.S. 1/300 Plan of 1913 increver, thus are a surface of buildings arranged around the sharf, including a surghbridge and effice. Biers is also an university due to find by 15 feet to be markers after if the build buildings, writed any have been the new pool cases that was are been in 1057. The aller buildings above has the new pool cases that ers are been in 1057. The aller buildings above had be be used at 1.2, allow of the sharf, alongston the energy, approx, 50 feet by 15 feet, out a long around efficient receiving the langth of the rear of the pression in bridge given of which keeps and the constraint of the rear of the pression in bridge

All the buildings referred to are indirated as being open-sided, the and steagedon the oracle may have been the partfying and and the above. The end of the main building rearent tridge threat is clearly a later solid have builded the matter and at the extensions of 1952 - 53. This could have builted the matter and at the extensions of 1952 - 53. This could have builted the matter and at the extensions of 1952 - 53. This could have builted the matter and at the extensions. The station actor solid been supplies of passing partners about 1,500 online fact of gas per trains a clatter process any set have been installed until after the rise graboleer one created in 1950. Frequery on the district prior to this date same unified of the bright of the bolder half, and by adding or rescale weights on the supporting should.

The second second

The Ges Company function units on reference to a set either like to their extensions, but it means pointle) a that one sould have been installing and athrogueally unot by the Darfords is meaning how with their cost and mean buildness. As aroundy stated though, the initiations around the generation yers, as shown on the 0.2. (/300 100) Fins, any or may not have been denoted does of the plant referred to shower but there are no place on the size body which our confirm that, as the buildings uses in place to a denotion of the plant referred to shower buildings uses in place to the body which our confirm this, as the buildings uses iong since been denotioned. Perform the future developments planned for the area of the body, involving below many option then, any bring minething to light.

The subgroup gravitions installed by Bathree in 1833 appears to here being an extractly sunds affeir, but the statement is the Gas Company's monode that the internal framework and of wood deams hereity thicky, and the reference may have been to the dution-framework, the resonant shap claim that the unput of the builder was shap of wood, but actumpted by several of the state.

Pip.7. Alliaktrates a Agrinil combilder of the solid ser-balance type with "Rought-ires transmit columns and siriers. The follow at Milage Street small inve been shaller, but with the milds-froming pentially comprising three woodto science approx. It fast is laight with women's Beensting their work. The and 17,000 mills fast separity holder installed in the allower work is 1000 would have been of the sens timester as he all the sets done. The tax the break back of the sense timester as he will be been depend.

و الله

The bilder in thought to have non-shock 22 First in dimension by 25 .487. Feel in regard at the alarma. The brick body would have been approx. 26 feel damy. The comparising expect by of the bilder , see, 12,000 — multifeet: it is respirated that the possion state-francess who capins at 1843 with the contraint, shall avoid the provider graders. The new believe would have been encoded of the dimension plates at a start in better law or should have from the there is dimension plates at a start in botter. Into or should from encode.

Fig.5, shows a typical arrangements of a multing of shows relates, the mentation from of blanch world have been similar to the mass of alther iron by cley retarts. Thuse, the similarly of settings, were adopted during out yours as the cost arresterial and contorical. The the importance of the estimation been approximated another bourger, there arthings doubt have been a Million by a such higher degree and encourse quantitudes of noise would have been another been and the begins and encourses quantitudes of noise would have been any define were regard then to find another being instantly is its demonstraters.

The Spin of welling LiAustraled world be similar to Mass encloyed at hrize Houst 1: 1935, and work of the even hearth type. Letter soltings pare more complet with inegar furneties, and were based as remanimizive wellings. In the early days, cost was should as a feel and feel to the furnets through the firs date bakes the constructions. In inter press take any heart at a feel and feel direct from the retort. (5) for parent from the raterial of the construction plane into the hydraulic main state would have been perhane to inches in director, but in inter settings exploying they reterio, 16 to 15 inches in director, the percent from the hydraulic main state to hydraulic main yie a pipe moved as the four mains in the setter, the percent of hydraulic main yie a pipe moved as the four mains to the set of the box contains the hydraulic main yie a pipe moved as the four mains to the percent for the hydraulic main yie a pipe moved as the four mains to the the moved from the hydraulic main

The Loof Claimin emply and presente of gas on the district, antivers from the Schlee Etrost Forms, surpled with other problems including the polls the referred to marikar. Out led to the aginations by loading inhabitants of factory for the continue of a more op-to-date gaseorie - on a new alter parametric incommission of a more of the earliering favour of a part one erested in Grandwary butteen 1854 and 1856.

Per Calification

Placencit. 5.22. show westers and westers diventions of the building possibly areated in 1952 or 1955 as part of the Gas Company's entendors, and which diving the 1970 a was described by Headra, 5.0.301 to, in for Beginsors, Hack of the details of the continue building free boot hidder by southy extensions.

Finand23. As a whose of the skiller from Tharr, looking provide the densi. When hillsings on the unrel-aking and along the year of the Bridge down-1 providered (so been signified in the photograph), as shown on the D.P. 1/300 thill Fier, have long since some downlinked. The show of the constant wide of the wide shows the buildings is before line the new fiereast conter of the allorf.

PlateQi. The arms of conductor in the Eurographic Limits the mile of a building which you erected in the unsig 1000.s.,and obtain is the of the gas-0.3, 1/2500 1922 May. FinteQD. Is a view of the emetern slip of the gasverse building in the old Corporation Yard.

considered and a construction of the second second

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	Fig. 2.1. Fig. 2.1. Jonetic figure	The first for the first short below of the first is the first short below of the first is the first short below of a field of the first first below the first of and the first first of a first of and mark that first of a first of the first of the first of the first of first first first of the first of first first first of the first of first of the first of t
America Martin		





APPENDIX C

- C1 Borehole Logs
- C2 Trial Pit Logs
- C3 Trial Pit Photographs

Celt	ic^{2}	9			Borehole N	lumber:	BH1	01	
cen	I.C.				Date: 30 Apr 2012	Easting: 4	46405.	000	
Project No:	C1526				Engineer: Neil Hopkins	Northing:	240218	.300	
Site Location	n: Merto	on Stre	et	Depot, Banbury	Method: HD	Datum: 89.866m			
Client: Grun	don Wa	ste Ma	ana	gement	Hole Diameter:	Screen Position:			
WATER V	VELL	SAN	ЛРL	ING/TESTING	SUBSURFACE PROFILE		1	1	
Water Strike	Well Data	N Value Sample	Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD
			D	BH101 / 0.50m	MADE GROUND: CONCRETE. MADE GROUND: firm dark grey / black s clayey slightly sandy gravelly SILT with ex orange mottling. Gravel is fine to coarse s angular to sub rounded of red brick, ash a clinker. Moderate Hydrocarbon/ Solvent odour throughout. Fragment of concrete pipe encountered connected). End of Borehole	lightly ttensive ub ind (not	0.12		89.746
	Comme	nts: S B	Stee Sore	el pipe enountere chole terminated	ed within hand dug inspection pit at 1.20m and relocated (refer to BH101a)	(approxima	tely 8 di	ameter).	
Sheet 1 of 1							www	.celtic-ltd.c	om §

Co	ltic	X 2			Borehole	Number:	BH1	01A	
cc.	unc				Date: 30 Apr 2012	Easting: 44	46406.:	200	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing: 2	40217	.700	
Site Loca	ation: Mert	on S	treet	Depot, Banbury	Method: CP+RC	Datum: 89	.882m		
Client: G	rundon Wa	aste	Mana	agement	Hole Diameter:	Screen Pos	sition: 3	3.00 - 4.50	m
WATER	WELL	S	AMP	LING/TESTING	SUBSURFACE PROFILE		i		
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)
0-	-				MADE GROUND: CONCRETE.	/	0.12	XXXXX	89.762
₩02.0 □ 1				BH1014 / 1 10m	MADE GROUND: medium dense dark gr slightly silty sandy GRAVEL. Gravel is fin course sub angular to angular of ash, clin red brick. Occasional cobbles of ash.	rey / black ne to nker and	0.35 0.70 0.75 0.90		89.532 89.182 89.132 88.982
					MADE GROUND: stiff medium grey sligh friable SILT with extensive orange mottlin	ntly sandy ng.	1.50		88.382
2-			D	BH101A / 2.00m	MADE GROUND: loose black fine GRAV and clinker. Becoming moist/ wet below 0.7 m.	/EL of ash			
2.70m					MADE GROUND: stiff medium grey sligh friable SILT with extensive orange mottlin	ntly sandy ng.	2.30 2.50		87.582 87.382
3-	68				MADE GROUND: firm green grey slightly SILT.	y clayey	2.70		87.182
					MADE GROUND: soft to firm dark grey to slightly clayey gravelly SILT. Extensive hydrocarbon staining throughout.	black	3.60		86.282
4			D	BH101A / 3.90m	MADE GROUND: loose to medium dens grey slightly sandy GRAVEL. Gravel is n coarse sub angular to sub rounded.	e orange nedium to	3.90		85.982
-					MADE GROUND: black SILT.				
5					Dark grey black slightly sandy GRAVEL. fine to coarse sub rounded to rounded. E hydrocarbon staining throughout.	Gravel is Extensive			
-			D	BH101A / 5.60m	Firm to stiff medium grey brown gravelly with extensive orange mottling.	CLAY			
6					Firm to stiff medium grey CLAY. Becoming stiff to very stiff with rare bir fossils.	valve			
- - - - - -									
8									
-				BH1014 / 8 80m					
9-				0.00IN	Continued next sheet				
	Comme	ents:	Han	d dug inspectior	n pit excavated to 1.20m		-		
Sheet 1 of	2						www	.celtic-ltd.c	

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Col	tic	Š.			Borehole I	Number:	BH1	01A	
CCI	uic				Date: 30 Apr 2012	Easting: 44	46406.2	200	
Project No	o: C1526				Engineer: Neil Hopkins	Northing: 2	40217.	700	
Site Locat	ion: Merto	on St	reet	Depot, Banbury	Method: CP+RC	Datum: 89	.882m		
Client: Gr	undon Wa	aste N	Mana	agement	Hole Diameter:	Screen Pos	sition: 3	3.00 - 4.50	m
WATER	WELL	S/	AMPI	LING/TESTING	SUBSURFACE PROFILE		1		
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)
9- 10- 11- 12- 13- 14- 15- 16- 17-					Firm to stiff medium grey CLAY.		10.30		79.582
18-	Commo	nte:							
	Comme	1110.							
Sheet 2 of 2	2						www.	celtic-ltd.c	

Co	ltic	K ²			Borehole	Number:	BH1	02	
	in				Date: 1 May 2012	Easting: 4	46427.	800	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing: 2	240192	.400	
Site Loca	ation: Merte	on St	reet	Depot, Banbury	Method: CP+RC	Datum: 89.505m			
Client: G	irundon Wa	aste I	Mana	agement	Hole Diameter:	Diameter: Screen Position:			
WATER	WELL	S	AMPI	LING/TESTING	SUBSURFACE PROFILE			 	(
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD
0- ₩09:9408:0 1-			D	BH102 / 0.50m	MADE GROUND: loose orange gravelly Gravel is fine to coarse sub rounded to re	SAND. ounded.	- 1.30		88 205
-					MADE GROUND: CONCRETE.		1.65		87.855
2-					End of Borehole				
3 3 4 5 	Comme	ents:	Han	d dug inspectior	n pit excavated to 1.20m. Obstruction enco	ountered at 1	.30m. I	Rotary core	ed
			to 1	.65m but could r	not pass obstruction. Borehole teminated			-	
Sheet 1 of	1						www	.celtic-ltd.c	

Co	ltic	8			Borehole N	Number:	BH1	03	
	in				Date: 2 May 2012	Easting: 4	146455.	900	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing:	240151	.800	
Site Loca	ation: Merte	on St	reet	Depot, Banbury	Method: CP+RC	Datum: 9	0.011m		
Client: G	rundon Wa	aste N	/ ana	agement	Hole Diameter:	Screen Position: 1.30 - 4.30m			m
WATER	WELL	SA	AMPI	ING/TESTING	SUBSURFACE PROFILE			1	(
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD
0-					MADE GROUND: CONCRETE.		0.16	200000	89.851
			D	BH103 / 0.50m	MADE GROUND: dark grey / black sandy SILT. Gravel is fine to course sub angular angular of brick.	/ gravelly r to	0.35		89.661 89.311
- 1 1.35m	(m. m)		D	BH103 / 1.20m	MADE GROUND: medium dense orange slightly gravelly SAND.	brown	1.10	*****	88.911
-			D	PH102 / 1.00m	MADE GROUND: orange brown clayey sl sandy SILT with orange / red mottling.	lightly	1.60		88.411
0,2-			D	BH1037 1.90H	Firm grey / black organic SILT. Pockets o silt throughout. Moderate Hydrocarbon odour.	of black		1	
- - - 3 -			D	BH103 / 3.10m	Medium dense orange brown slightly grav slightly silty SAND. Gravel is medium to o sub rounded to rounded.	velly coarse	2.90	347-17	87.111
				BH103 / 3.70m	Dense orange brown sandy GRAVEL. Gra fine to coarse sub angular to rounded. Minor Hydrocarbon odour.	avel is			
4	1		D	BH103 / 4 60m	Medium dense grey brown slightly clayey GRAVEL. Gravel is fine to coarse sub and rounded. Minor Hydrocarbon odour.	sandy gular to	- 3.90 4.20		86.111 85.811
5			D	Dirico/ 4.00m	Firm to stiff medium grey CLAY.	,			
6					Becoming stiff to very stiff with rare biv fossils.	valve			
8-			D	BH103 / 7.50m					
9-					Continued next sheet				
	Comme	ents:	Han	d dug inspectior	n pit excavated to 1.30m				
Sheet 1 of	2						www	.celtic-ltd.c	iom 🖁

Col	tic	8			Borehole	Number:	BH1	03	
CC.	unc				Date: 2 May 2012	Easting: 44	46455.9	900	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing: 2	40151.	800	
Site Loca	ition: Merte	on St	reet	Depot, Banbury	Method: CP+RC	Datum: 90	.011m		
Client: G	rundon Wa	aste N	Mana	gement	Hole Diameter:	Screen Position: 1.30 - 4.30m			m
WATER	WELL	S	AMPL	ING/TESTING	SUBSURFACE PROFILE				
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)
9					Firm to stiff medium grey CLAY.		40.05		70.004
					End of Borehole		10.05		79.961
- - - - - - - - - - - - - - - - - - -									
12									
13									
14									
15									
- - 17 - - - - - - - - -									
- - - 18									
	Comme	ents:					<u> </u>		
Sheet 2 of	2						www.	celtic-ltd.c	om 🖁

Co	ltic	**			Borehole	Number:	BH1	04	
	in				Date: 2 May 2012	Easting: 4	46504.	900	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing: 2	240186	.400	
Site Loca	ation: Merte	on S	treet	Depot, Banbury	Method: CP+RC	Datum: 90). 75 4m		
Client: G	rundon Wa	aste	Mana	agement	Hole Diameter:	Screen Position: 1.80 - 4.80m			m
WATER	WELL	S	AMP	LING/TESTING	SUBSURFACE PROFILE		1	1	
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD
0			D	BH104 / 0.40m	MADE GROUND: medium to dark brown sandy GRAVEL. Gravel is fine to coarse angular to sub rounded of brick, tarmac, and metal.	silty sub concrete	0.30		90.454
- 1 -				PH104 / 1 20m	MADE GROUND: dense orange brown cl sandy GRAVEL.	ayey	0.80		89.954
2	H		D	Dinot7 1.50m	MADE GROUND: loose orange brown gra SAND. Gravel is fine to coarse sub angul rounded. Occasionally fine to medium gr brick.	avelly ar to ravel of			
			D	BH104 / 2.50m	Firm medium to dark grey slightly organic Decomposing organic odour	c SILT.	2.40		88.354
3-					Soft to firm dark grey slightly gravelly sar with extensive black mottling. Moderate Hydrocarbon odour.	ndy SILT	3.05		87.704 87.504
			D	BH104 / 3.50m	Loose dark grey / black slightly silty SAN Moderate Hydrocarbon odour.	D. /	3.70	4.2.2.5	87.054
4-			D	BH104 / 3.80m	Loose orange brown silty slightly gravelly Minor Hydrocarbon odour.	SAND.	3.95 4.15		86.804 86.604
-					Loose dark grey / black SAND and GRAN Moderate Hydrocarbon odour.	/EL.	4.30	19	86.454
5-	1				Loose medium brown slightly gravelly silt with pockets of black silt. Minor Hydrocarbon odour. Becoming gravelly.	y SAND	4.80 5.15		85.954 85.604
6-			D	BH104 / 6.10m	Medium orange brown slightly sandy slig organic SILT with occasional pockets of t Minor Hydrocarbon odour.	htly black silt.			
					Orange brown silty GRAVEL with extensi staining. Moderate Hydrocarbon odour.	ve black			
7-					Firm to stiff grey brown slightly gravelly C Minor Hydrocarbon odour.	CLAY.			
-					Firm to stiff medium grey CLAY.				
8									
			D	BH104 / 8.70m					
9-	Comme		Har		Continued next sheet				
	Comme	51115.	ndf	ia and moheorior	1 pil endavaleu 10 1.40111				
Sheet 1 of	2						www	.celtic-ltd.c	50 MO:
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Co	tic	×.			Borehole	Number:	BH1	04	
CC.	unc				Date: 2 May 2012	Easting: 44	46504.9	900	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing: 2	240186.	400	
Site Loca	ation: Merte	on St	reet l	Depot, Banbury	Method: CP+RC	Datum: 90	.754m		
Client: G	rundon Wa	aste N	Mana	gement	Hole Diameter:	Screen Position: 1.80 - 4.80m			m
WATER	WELL	S	AMPL	ING/TESTING	SUBSURFACE PROFILE				
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)
9					Firm to stiff medium grey CLAY.				
11-					End of Borehole		- 10.30		80.454
12									
13-									
15									
16									
18									
	Comme	ents:	• •						
Sheet 2 of	2						www.	celtic-ltd.c	H ¹⁰⁴ MO

Celtic	8°		Borehole	Number:	BH1	05	
centre			Date: 3 May 2012	Easting: 4	46498.	500	
Project No: C1526			Engineer: Neil Hopkins	Northing: 2	240232	.100	
Site Location: Mer	ton Street	Depot, Banbury	Method: CP+RC	Datum: 90).685m		
Client: Grundon W	aste Man	agement	Hole Diameter:	Screen Position: 2.60 - 4.90m			m
WATER WELL	SAMF	LING/TESTING	SUBSURFACE PROFILE		1	1	(
Water Strike Well Data	N Value Sample Tvne	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD
		BH105 / 0.50m BH105 / 1.30m BH105 / 2.20m BH105 / 2.70m BH105 / 4.60m	MADE GROUND: CONCRETE. MADE GROUND: black slightly sandy G Gravel is fine to medium angular to sub ash and clinker. Abundant fragments of brick. MADE GROUND: dark grey/ black slight slightly gravelly SILT. Occasional gravel cobbles of brick. Moderate Hydrocarbon odour. Light orange brown SILT with extensive of mottling. Soft to firm green grey organic SILT. Loose orange brown silty gravelly SAND mottling. Medium dense orange brown sandy GR/ frequent rounded cobbles. Firm to stiff medium grey CLAY.	RAVEL. angular metal and ly sandy and orange with grey	 0.13 0.50 0.80 1.95 2.50 4.00 4.40 4.85 		90.555 90.185 89.885 88.735 88.185 88.185 86.285 85.835
8			Continued next sheet				
Comm	ents: Ha	nd dug inspection	n pit excavated to 1.40m				
Sheet 1 of 2					www	.celtic-ltd.c	som [#]

200	1 5 8	58 C			Borobolo	Numbor		05	
Ce	ltic	1			Dorenoie	Number.	БПІ	05	
-	1000				Date: 3 May 2012	Easting: 44	16498.	500	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing: 2	40232	.100	
Site Loca	ation: Merte	on St	reet	Depot, Banbury	Method: CP+RC	Datum: 90	.685m		
Client: G	irundon Wa	aste I	Mana	igement	Hole Diameter:	Screen Position: 2.60 - 4.90m			
WATER	WELL	S	AMPL	ING/TESTING	SUBSURFACE PROFILE		1		
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD
9					Firm to stiff medium grey CLAY.		10.40		80 285
					End of Borehole		10.40		00.200
12									
13									
- 14 - - - - - - - - - - - - - - - - -									
15									
16									
17									
18-									
	Comme	ents:							
Sheet 2 of	2						www	.celtic-ltd.c	om ⁸¹

Co	ltic	8 7			Borehole	Numbe	r: BH1	106	
	in				Date: 4 May 2012	Easting:	446408.	600	
Project N	lo: C1526				Engineer: Neil Hopkins	Northing: 240251.600			
Site Loca	ation: Merte	on S [.]	treet	Depot, Banbury	Method: CP+RC	C Datum: 90.907m			
Client: G	Brundon Wa	aste	Mana	agement	Hole Diameter: Screen Position: 1.5				m
WATER WELL SAMPLING/TESTING					SUBSURFACE PROFILE			1	
Water Strike	Well Data	N Value	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD
0			D	BH106 / 0.50m	MADE GROUND: coarse multi-coloured landscaping GRAVEL.		0.05		90.857
∑ ¹ 1 -					MADE GROUND: loose grey black grave Gravel is fine to coarse angular to sub ro brick, glass, ash, clinker, ceramic, metal plastic.	elly SILT. ounded of and			
	a de la come		D	BH106 / 2.30m	MADE GROUND: dark grey / black sligh gravelly SILT. Frequent glass and metal	tly ·	2.30		88.607
			D	BH106 / 3.50m	MADE GROUND: firm green grey SILT.		3.40		07.507
4			D	BH106/4.20m	MADE GROUND: firm green grey SILT.		4.10		86.807
			D	BH106 / 4.70m	MADE GROUND: firm green grey SILT.		4.40		86.507
6 - - - -			D	BH106 / 5.70m	Firm to stiff medium grey CLAY.		5.50	002300	85.407
7		1			End of Borehole		7.40		83.507
8									
	Comme	ents:	Han	d dug inspection	n pit excavated to 1.30m		- I		
Sheet 1 of	[•] 1						www	v.celtic-ltd.c	com 🚆

Celtic [®] Date: 14 May 2012 Trial Pit Number: TP101									
Project	No: C	1526		Engineer: NH	Easti	ing: 4	446629.220		
Site Lo	ocation	Merto	n Street Depot,	Banbury Contractor: David Beecroft	North	ning:	240029.890		
Client:	Grund	lon Was	ste Managemen	t Plant: JCB 3CX	Datu	m: 8	9.939m		
WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFILE					
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)	
0 — - -		ES	TP101 / 0.30m	MADE GROUND: dark Brown slightly sandy slightly clayey SILT with abundant rootlets. Occasional gravel and cobbles of brick, concrete and asphalt	0	0.20		89.739	
-	0.0			MADE GROUND: medium brown slightly gravelly slightly clayey SILT with red/brown mottling.	0	0.45		89.489	
- - 1- - -	0.0			MADE GROUND: dark brown slightly sandy SILT. Abundant amount of metal, plastic, glass, fabric and foam (old motor car parts).					
	0.0	ES	TP101 / 1.50m			0.5			
- 2	0.0	ES	TP101 / 1.90m	Grey green slightly clayey slightly organic SILT with occasional fine to medium gravel.		.60		88.089	
	0.0			Light grey brown silty slightly gravelly SAND. Gravel is fine to coarse angular to subrounded.	2	2.15	1 3 A 4	87.789	
		ES	TP101 / 3.10m			30		86 630	
				End of Trial Pit					
	Comments: Surface of the ground vegetated. Debris of brick and concrete present at the surface.Evidence of broken corrugated asbestos cement sheets within immediate vicinity. Length: 2.50m								
Sheet 1	Sheet 1 of 1 Side Stability: Unstable below 2.15m www.celtic-ltd.com								

Celtic Date: 14 May 2012 Trial Pit Number: TP102									
Project	No: C1	1526		Engineer: NH	Easting:	Easting: 446585.010			
Site Lo	ocation:	Merto	n Street Depot,	Banbury Contractor: David Beecroft	Northing:	240052.420			
Client:	Grund	on Was	ste Managemen	t Plant: JCB 3CX	Datum: 8	39.498m			
WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFILE					
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)		
	0.0	ES ES	TP102 / 0.40m TP102 / 1.20m TP102 / 1.50m	MADE GROUND: medium brown gravelly silty SAND. Abundant brick, ash, clinker and concrete. MADE GROUND: medium brown slightly sandy GRAVEL. Gravel is medium to coarse subangular to angular. MADE GROUND: dark grey/ black slightly sandy Gravel of ash and clinker. Frequent gravel of brick. Greenish grey organic SILT with abundant black mottling. Medium brown silty slightly gravelly SAND with orange mottling. End of Trial Pit	0.90 1.10 1.40 1.85 2.10		88.598 88.398 88.098 87.648 87.398		
-									
Oba (d	Comments: Surface of ground sparsely vegetated. Minor Hydrocarbon sheen noted on inflow.Very hard digging between 0.0 and 0.9m.Evidence of broken corrugated asbestos cement sheets within immediate vicinity. Length: 2.50m								
Sheet 1	Sheet 1 of 1 Side Stability: Stable www.celtic-ltd.com								

Celtic [®] Date: 14 May 2012 Trial Pit Number: TP103								3		
Project	No: C	1526			Engineer: NH	E	asting:	446610.940		
Site Lo	cation	Merto	n Street Depot,	Banbury	Contractor: David Beecrof	t N	Northing: 240062.160			
Client:	Grund	lon Was	ste Managemen	t	Plant: JCB 3CX	D	atum: 8	39.569m		
WATER	SA	MPLING	G/TESTING		SUBSURFACE PROFILE					
Water Strike	P I D Results	Sample Type	Sample Ref		DESCRIPTION OF ST	RATA	Depth (m bgl)	Legend	Level (m AOD)	
		TP102 / 0.20m	MADE slightly Occasi	GROUND: dark brown slightly gravelly SILT with abundant onal gravel of red brick.	D: dark brown slightly sandy SILT with abundant rootlets. /el of red brick.			89.419		
	0.0	20	11 100 7 0.0011	MADE GRC clayey SILT brick, and p	GROUND: pale orange browr SILT. Frequent gravel and col and pieces of metal and plastic	n slightly bbles of red c bags.				
	0.0									
	0.0	ES	TP103 / 1.60m							
2	0.0	ES	TP103 / 2.20m	Orange	e brown silty slightly gravelly S	SAND.	- 2.10		87.469	
	0.0				End of Trial Pit		2.50	(A 8 K 9)	87.069	
3										
-										
Comments: Surface of ground vegetated. Steel pipe (approximately 10 inch) noted running across the pit at 1.8m in a East-West Direction.Evidence of broken corrugated asbestos cement sheets within immediate vicinity.Trial Pit terminated due to presence of pipe.										
Sheet 1	Sheet 1 of 1 Side Stability: Stable www.celtic-ltd.com									

Ce	ltic	100			Date: 14 May 2012	Trial Pit	Num	per: TP10	4
Project	t No: C1	1526			Engineer: NH	E	asting:	446643.570	
Site Lo	ocation:	Merto	n Street Depot,	Banbury	Contractor: David Beec	roft N	orthing:	240052.180	
Client:	Grund	lon Was	te Managemen	t	Plant: JCB 3CX	D	atum: 9	0.203m	
WATER	SA	MPLING	G/TESTING		SUBSURFACE PROFILE				
Water Strike	P I D Results	Sample Type	Sample Ref		DESCRIPTION OF	STRATA	Depth (m bgl)	Legend	Level (m AOD
0 	-	ES	TP104 / 0.20m	MADE abunda	GROUND: dark brown san ant roots and rootlets.	ndy SILT with	0.20	8888	90.003
-	0.0			MADE gravelly	GROUND: pale orange bro / SILT.	own sandy			
-	0.0	ES	TP104 / 0.60m	Medium mottling	n orange brown CLAY / SII g.	_T with grey	0.55		89.653
- 1	0.0							1-2-1	
-	-								1.1
-	-							7.1.T.A.T. 2.1.L.A.T.	
-	-			Soft ora	ange brown sandv SILT.		- 1.80		88.403
2	-	ES	TP104 / 2.00m						
-	-							X	
70&160m	-			Pale or	ange brown slightly silty S	AND.	2.60		87.603
∩i _	-				End of Trial Pit		2.80		87.403
3-									
-	-								
-	-								
- - 4 —	-								
-	-								
-									
	Com	ments:	Surface dense	ly vegetate	ed.			Width: 0	0.60m
						Lengt	n: 2.30r	n	
Sheet 1 of 1 Side Stability: Stable									
100		-							
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Ce.				Date: 14 May 2012 Trial Pi	t Num	per: TP10	5		
Project No: C1526 Engineer: NH Eastin						446586.620			
Site Lo	ocation	Merto	n Street Depot,	Banbury Contractor: David Beecroft	Northing:	240115.040			
Client:	Grund	lon Was	ste Managemen	t Plant: JCB 3CX	Datum: 9	90.450m			
WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFILE		I _			
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD		
- 0 - - - -	0.0	ES	TP105 / 0.30m	MADE GROUND: dark grey black slightly sandy SILT with abundant rootlets. Frequent fragments of glass, wire and brick. MADE GROUND: orange brown slightly silty gravelly SAND. Rare coarse gravel of black	0.07		90.380		
- - - 1 - - -	0.0	ES	TP105 / 1.00m	Clinker, ash and light grey chalk. MADE GROUND: medium grey slightly silty slightly gravelly CLAY with extensive orange mottling [possible re-worked natural material].	0.75		89.700		
-	0.0			Greenish grey slightly clayey SILT with extensive orange mottling.	1.60	\$\$\$\$\$	88.850		
2	0.0			Dark grey / black very organic SILT.	1.90	in second of the	88.550		
- - - - -		ES	TP105 / 2.20m	Greenish grey slightly organic SILT. Occasional coarse gravel size pockets of black silt.	2.10		88.350		
- 5 3 .0				Greenish grey slightly silty slightly gravelly SAND.	2.70		87.750		
4	Corr	iments:	Surface sparse debris.	End of Trial Pit	3.00	Width: 0	0.70m		
Obertid	of 4		Cido Otobilit	Len	gth: 2.40r		0077		
Sneet			Side Stability	/. Stable		www.ceitic-itc	I.COIII		

Ce	ltic	100		Date: 15 May 2012	Pit N	lum	per: TP10	6
Project	No: C1	1526		Engineer: NH	Eas	sting:	446547.220	
Site Lo	ocation:	Merto	n Street Depot,	Banbury Contractor: David Beecroft	No	rthing:	240155.420	
Client:	Grund	lon Was	ste Managemen	t Plant: JCB 3CX	Da	tum: 9	90.711m	
WATER	SA	MPLIN	G/TESTING	SUBSURFACE PROFILE			•	
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)
	0.0	ES	TP106 / 0.20m TP106 / 2.00m	MADE GROUND: dark brown sandy SILT with abundant rootlets. MADE GROUND: dark brown sandy SILT. Abundant cobbles and boulders of brick and reinforced concrete. Occasional fragments of plastic and fabric (old motor car parts). MADE GROUND: recovered as Gravel and Boulders of brick and concrete with abundant fragments of metal. Greenish grey slightly organic SILT. Occasional coarse gravel size pockets of black silt.		1.00		90.661 89.711 88.811
				End of Trial Pit		2.30		88.411
	Com	ments:	Surface sparse	ely vegetated.	ength:	: 2.30r	Width: 0).80m
Sheet 1	of 1		Side Stability	y: Unstable below 1.80m		,	www.celtic-ltc	l.com



Trial Pit Number: TP107

Project No: C1526

Engineer: NH

Easting: 446515.350

Northing: 240162.830

Site Location: Merton Street Depot, Banbury

Client: Grundon Waste Management

Plant: JCB 3CX

Contractor: David Beecroft

Datum: 90.632m

WATER	SA	MPLIN	G/TESTING	SUBSURFACE PROFILE				
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)	
0- - - - - - - - - - - - - - - - - - -	0.0	ES ES ES	TP107 / 0.30m TP107 / 0.50m TP107 / 1.30m	MADE GROUND: CONCRETE. MADE GROUND: orange brown sandy COBBLES. MADE GROUND: black fine to coarse GRAVEL of ash and clinker. Extensive Hydrocarbon staining and free product on surface of gravel. MADE GROUND: orange brown slightly sandy gravelly SILT. Becoming slightly gravelly below 0.50m. MADE GROUND: dark greenish grey SILT with abundant coarse gravel size pockets of black silt. Moderate Hydrocarbon odour. Cobble of brick encountered at 1.8m.	0.25 0.30 0.40		90.382 90.332 90.232 89.432	
2 2 - - - - - - - - - - - - - - -	0.0	ES	TP107 / 2.60m	Greenish grey slightly organic SILT with abundant gravel size pockets of coarse black silt. Becoming sandy below 3.0m.	- 1.80		88.832	
0022 		ES	TP107 / 3.20m TP107 / 3.50m	Black silty SAND. Moderate Hydrocarbon odour. Orange brown SILT with frequent gravel size pockets of black silt. Moderate Hydrocarbon odour. End of Trial Pit	- 3.20 - 3.30 - 3.60		87.432 87.332 87.032	
Sheet 1	Comments: Concrete at surface. Broken out using mechanical breaker. Trial pit terminated due to instability of sands. Length: 2.60m							
0.10001	.		Ciae Otability					



Contractor: David Beecroft

Trial Pit Number: TP108

Project No: C1526

Engineer: NH

Easting: 446529.430

Northing: 240179.950

Client: Grundon Waste Management

Site Location: Merton Street Depot, Banbury

Plant: JCB 3CX

Datum: 90.573m

WATER	ER SAMPLING/TESTING SUBSURFACE PROFILE						
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
0				MADE GROUND: CONCRETE.	- 0.25		90.323
۔ ۔	0.0			MADE GROUND: dark grey/ black slightly clayey gravelly SILT. Frequent cobbles of brick and occasional fragments of metal.	0.35		90.223
- 00000000				MADE GROUND: orange brown sandy COBBLES.	0.80		89.773
- 1 - -	0.0	ES	TP108 / 1.20m	MADE GROUND: dark greenish grey SILT with abundant coarse gravel size pockets of black silt. Moderate Hydrocarbon odour. Cobble of brick encountered at 1.8m.			
-	0.0			Greenish arey slightly organic SILT	1.60		88.973
	0.0	ES	TP108 / 1.80m			2.4 X X	
-					2.30		88.273
-		ES	TP108 / 2.50m	Greenish grey sandy slightly clayey organic SILT with extensive black mottling. Becoming very sandy below 2.7m.		***** ****** ****	
3				End of Trial Pit	2.95	*****	87.623
-							
- 4 -							
-							
	Com	ments:	Concrete at su Historical build half of trial pit, 2.1m.Trial pit t	rface. Broken out using mechanical breaker. ing foundation encountered in northern extended from Ground level to erminated at 2.9m due to historical venting extension of excavator arm	: 2.50n	Width: C).80m
Sheet 1	of 1		Side Stability	<i>r</i> : Stable		www.celtic-ltc	l.com

Ce	ltic	
The second second	ter linear	

Contractor: David Beecroft

Trial Pit Number: TP109

Project No: C1526

Engineer: NH

Easting: 446506.590

Northing: 240204.890

Client: Grundon Waste Management

Site Location: Merton Street Depot, Banbury

Plant: JCB 3CX

Datum: 90.699m

WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFILE				
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)	
	0.0	ES	TP109 / 0.70m	MADE GROUND: reinforced CONCRETE. MADE GROUND: medium brown rounded cobbles and boulders. MADE GROUND: greenish grey SILT with frequent orange mottling. Occasional fine to medium gravel. Brick encountered at 0.95m. Greenish grey slightly clayey slightly organic SILT. Orange silty sandy GRAVEL. End of Trial Pit	 0.30 0.60 0.95 2.80 3.50 		90.399 90.099 89.749 87.899 87.199	
	Com	ments:	Reinforced Co mechanical bro instability of sa	ncrete at surface. Broken out using eaker. Trial pit terminated at 3.5m due to nds.	ıth: 2.30r	Width: C).70m	
Sheet 1	of 1		Side Stability	/: Stable		www.celtic-ltc	d.com	



Trial Pit Number: TP110

Project No: C1526

Engineer: NH

Contractor: David Beecroft

Northing: 240188.380

Easting: 446488.880

Client: Grundon Waste Management

Site Location: Merton Street Depot, Banbury

Plant: JCB 3CX

Datum: 90.739m

WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFILE			
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)
0				MADE GROUND: reinforced CONCRETE.		1.0	
-	0.0	ES	TP110 / 0.35m	MADE GROUND: black sandy GRAVEL of ash and clinker. Hydrocarbon residue of surface of gravel. Moderate Hydrocarbon odour.	0.25		90.489
-		ES	TP110 / 0.65m	MADE GROUND: greenish grey slightly sandy slightly gravelly SILT with occasional orange mottling. Frequent coarse gravel size pockets of black silt. Occasional gravel of red brick. Minor	0.55		90.169
1	0.0			Hydrocarbon odour. MADE GROUND: orange brown slightly silty	1.00 1.10	XXXX	89.739 89.639
-	0.0			slightly gravelly SAND. Greenish grey slightly sandy slightly gravelly slightly organic SILT with occasional orange mottling. Frequent coarse gravel size pockets of black sitt		A 2 K A	
-		ES	TP110 / 1.80m			*****	
2				Greenish grey slightly clayey slightly organic SILT with black mottling. Becoming sandy below 2.50m.	- 2.05		88.689
				Orange brown silty slightly gravelly SAND.	- 2.80		87.939
-				End of Trial Pit	3.50	10 10 12 10 M	87.239
- - - - - - - - - - - - - -							
	Com	ments:	Reinforced Co mechanical bro instability of sa	ncrete at surface. Broken out using eaker. Trial pit terminated at 3.5m due to nds.	n: 2.60n	Width: C).80m
Sheet 1	of 1		Side Stability	/: Stable		www.celtic-ltc	l.com

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The second second	and the second street	

Trial Pit Number: TP111

Project No: C1526

Engineer: NH

Site Location: Merton Street Depot, Banbury Contractor: David Beecroft

Datum: 90.096m

Easting: 446494.680

Northing: 240135.910

Client:	Grundon Waste Management	

Plant: JCB 3CX

Onoric.										
WATER	SA	MPLING	3/TESTING	SUBSURFACE PROFILE						
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)			
0	0.0	ES	TP111 / 0.30m	MADE GROUND: medium brown silty sandy GRAVEL. Frequent fragments of asbestos cement on the surface. MADE GROUND: cobbles of concrete. MADE GROUND: black sandy GRAVEL of ash and clinker. MADE GROUND: medium brown sandy silty	0.05 0.15 0.20 0.35		90.046 89.946 89.896 89.746			
1 - - - - - - - - - - - - - -	0.0			MADE GROUND: greenish grey slightly gravelly SILT. Occasional gravel of red brick.						
2	0.0			Orange brown slightly silty gravelly SAND. Greenish grey slightly gravelly organic SILT with black mottling. Becoming sandy below 2.6m.	1.90 2.00		88.196 88.096			
				Medium brown silty gravelly SAND.	3.00		87.096			
4	-			End of Trial Pit	3.90	1. 0.48 1.1	00.190			
Shoot 1	Comments: Large amount of asbestos cement corrugated sheets within immediate vicinity.Historical building foundation encountered along the eastern edge of pit from ground level to 1.8m.Trial pit terminated at 3.5m due to instability of sands.									
OneerI			Side Stability	y. Onstable below 2.000		www.cente-ne	1.0011			

C	el	ti	
The second		-	

Trial Pit Number: TP112

Project No: C1526

Engineer: NH

Site Location: Merton Street Depot, Banbury Contractor: David Beecroft

Client: Grundon Waste Management

Plant: JCB 3CX

Northing: 240226.500

Easting: 446476.270

Datum: 90.708m

WATER	SAMPLING/TESTING			SUBSURFACE PROFILE					
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)		
0-				MADE GROUND: reinforced CONCRETE.		100			
-		ES	TP112 / 0.20m	MADE GROUND: dark grey / black silty gravely SAND. Occasional fragments of metal.	y 0.15 0.30	*****	90.558 90.408		
-	0.0	ES	TP112 / 0.40m	MADE GROUND: orange brown slightly gravell SAND.	у				
- - 1 - -	0.0	ES	TP112 / 1.30m	Medium grey slightly clayey slightly organic SIL with extensive orange mottling. Occasional coa gravel size pockets of black silt.	-T arse	*****	89.908		
2				Dark greenish grey slightly organic SILT.	2.00		88.708		
3.05m - 2.80m				Orange brown silty gravelly SAND with greenisl grey mottling.	h 2.70		88.008		
- - - - - - - - - - - - - - -				Orange brown slightly sandy silty GRAVEL. End of Trial Pit	3.20		87.508		
-									
	Com	ments:	Reinforced Co mechanical bro instability of sa	ncrete at surface. Broken out using eaker. Trial pit terminated at 3.5m due to nds.	Length: 2.60n	Width: 0).80m		
Sheet 1	of 1		Side Stability	/: Stable		www.celtic-ltc	l.com		

Celt	tic		Date: 16 May 2012	Pit Number: TP113
Project No	o: C1526		Engineer: NH	Easting: 446487.270
Site Loca	Site Location: Merton Street Depot, Ba		Banbury Contractor: David Beecroft	Northing: 240247.420
Client: G	rundon W	aste Managemer	nt Plant: JCB 3CX	Datum: 90.823m
WATER	SAMPLI	NG/TESTING	SUBSURFACE PROFI	LE
Water Strike	Sample	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl) Legend Level (m AOD)
	ES	TP113 / 0.30m	MADE GROUND: comprising dark brown silty sandy rubber, cables, fabric, glass, brick [old motor car parts]. Greenish grey slightly clayey organic SILT. Frequent coarse gravel size pockets of black silt. End of Trial Pit	
Sheet 1 of	Comment	s: Surface of the to attempt to id storage tank. I encountered c East-West dire Side Stabilit	e ground hard standing.Trial pit excavated dentify location of possible underground Large diameter pipe (approximately 12 inch) crossing the trial pit at 0.9m in an ection. Trial pit terminated on encountering y: Stable	Width: 3.00m Length: 3.20m www.celtic-ltd.com

Cel	ltic	8			Date: 16 May 2012	Trial Pit	Numt	per: TP11	4
Project	No: C1	526			Engineer: NH	E	asting:	446468.070	
Site Lo	Site Location: Merton Street Depot, Banbu		Banbury	Contractor: David Beecroft	N	Northing: 240270.590			
Client:	Grunde	on Was	ste Managemen	t	Plant: JCB 3CX	D	atum: 9	0.694m	
WATER	SAI	MPLING	G/TESTING		SUBSURFAC	E PROFILE	-	-	
Water Strike	P I D Results	Sample Type	Sample Ref		DESCRIPTION OF STRA	ΛTA	Depth (m bgl)	Legend	Level (m AOD)
0		ES	TP114 / 0.20m	MADE sandy r motor c	GROUND: comprising dark brow rubber, cables, fabric, glass, bric car parts]. End of Trial Pit	vn silty ck [old	0.50		90.194
	Com	ments:	Surface of the to attempt to ic	ground ha	End of Trial Pit			Width: 2	2.60m
Chart 4	of 1		storage tank. E standpipe enco prevent damag	Ouring exc ountered. ge to stand	avation historical borehole Trial pit terminated at 0.5m to dpipe.	Lengt	h: 2.10r		
Sheet 1			Side Stability	. Stable				www.ceitic-ito	i.com

Cel	tic	-		Date: 17 May 2012	Pit N	lumb	per: TP11	5
Project	No: C1	526		Engineer: NH	Eas	sting: 4	446435.800	
Site Location: Merton Street Depot, B			n Street Depot,	Sanbury Contractor: David Beecroft Northing: 240179.370			240179.370	
Client:	Grund	on Was	ste Managemen	t Plant: JCB 3CX	Dat	tum: 8	9.801m	
WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFIL	E			
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)
0-				MADE GROUND: dark brown sandy SILT. Abundant roots and rootlets.	/	0.01	88888	89.791
	0.0	ES	TP115 / 0.30m	MADE GROUND: silty COBBLES of red brick.				
-				MADE GROUND: CONCRETE.		1.10	CXXXQ	88.701 88.601
- - - - - - - - - - - - - - - - - - -	0.0	ES	TP115 / 1.30m	Medium orange brown slightly sandy slightly clayey SILT.		1.20		88.801
2				Orange slightly silty SAND.		2.10		87.701
3				End of Trial Pit		2.60		87.201
	Com	ments:	Surface of the terminated at 2	ground sparsely vegetated.Trial pit 2.6m due to instability.	enath	2 40n	Width: 1	I.20m
Sheet 1	of 1		Side Stability	r: Unstable below 2.1m	-9. igu i.	2. ron	www.celtic-lto	d.com

Cel	ltic	-		Date: 17 May 2012	it Num	per: TP11	6
Project	No: C1	1526		Engineer: NH	Easting:	446431.770	
Site Location: Merton Street Depot, Bar		n Street Depot,	Banbury Contractor: David Beecroft	Northing: 240206.960			
Client:	Grund	lon Was	ste Managemen	t Plant: JCB 3CX	Datum: 8	39.823m	
WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFILE			
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD
0				MADE GROUND: dark grey black sandy gravelly SILT. Abundant gravel of brick.	0.05	8888	89.773
	0.0	ES	TP116 / 0.30m	MADE GROUND: grey slightly clayey slightly gravelly sandy SILT with orange/black/white mottling. Occasional metal pipes.			
1- 1- 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.0	ES	TP116 / 1.40m	MADE GROUND: grey brown slightly gravelly silty	1.40		88.423
				SAND. Extensive coarse gravel size pockets of black silt. Moderate Hydrocarbon odour. MADE GROUND: CONCRETE. Dark brown slightly silty gravelly SAND with	1.65	*****	88.173 88.123
2	2.3	ES	TP116 / 2.00m	extensive black hydrocarbon staining. Strong hydrocarbon odour.			
- - 5 3600m - 5	0.5	ES	TP116 / 2.70m	Greenish grey slightly silty sandy GRAVEL. Moderate Hydrocarbon odour.	2.60		87.223 87.023
3 - - - - - - - - - - - - - - - - - -	Com	ments:	Surface of the	ground comprises debris of concrete, brick			
	COIII	ments:	and tiles.Trial p instability of gra	it terminated at 2.8m due to avel.	ngth: 2.30r	Width: 0 n	.80m
Sheet 1	of 1		Side Stability	r: Stable	,	www.celtic-ltd	.com



Trial Pit Number: TP117

Project No: C1526

Client: Grundon Waste Management

Engineer: NH

Site Location: Merton Street Depot, Banbury Contractor: David Beecroft

Plant: JCB 3CX

Northing: 240221.330

Easting: 446422.380

Datum: 89.809m

WATER	R SAMPLING/TESTING		G/TESTING	SUBSURFACE PROFILE				
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA	Depth (m bgl)	Legend	Level (m AOD)	
0-				MADE GROUND: hard-standing.	0.05	****	89.759	
_				MADE GROUND: COBBLES of brick.	0.20	00000	89.609	
		ES	TP117 / 0.35m	MADE GROUND: ASPHALT.	0.25	88888	89.559	
-	0.0	ES	TP117 / 0.50m	MADE GROUND: GRAVEL and COBBLES of brick, ash and clinker.	0.40	200000	89.309	
-				MADE GROUND: medium brown slightly silty slightly gravelly SAND.		3333		
	0.0			Greenish grey slightly sandy slightly organic SILT. Extensive coarse gravel size pockets of black silt. Becomes sandy below 1.9m.		xxxx a xx		
	0.0					***** ***** ***** *****		
Ę2	0.0					3.5.8.5		
5.1		ES	TP117 / 2.10m	Orange brown silty SAND and GRAVEL. Cobble size pockets of black silt. Moderate Hydrocarbon odour.	2.10		87.709	
2.50m	0.1	ES	TP117 / 2.60m					
3-				End of Trial Pit	3.00	24233	86.809	
-								
-								
-								
4-								
-								
-								
-								
	Comments: Surface of ground 3.0m due to instab			und hard standing. Trial pit terminated at stability.	: 2.30n	Width: C).80m	
Sheet 1	of 1		Side Stability	<i>r</i> : Stable	,	www.celtic-ltc	l.com	

Ce	ltic	8			Date: 17 May 2012	Trial Pit	Numb	per: TP11	8
Project	No: C1	1526			Engineer: NH	E	asting:	446403.390	
Site Location: Merton Street Depot, Banbury				Banbury	Contractor: David Beecroft	N	lorthing:	240229.060	
Client:	Grund	on Was	ste Managemen	nt	Plant: JCB 3CX	D	atum: 8	39.866m	
WATER SAMPLING/TESTING					SUBSURFAC	E PROFILE		1	
Water Strike	P I D Results	Sample Type	Sample Ref		DESCRIPTION OF STRA	ТА	Depth (m bgl)	Legend	Level (m AOD
-00				MADE SILT. A	GROUND: dark brown slightly gr Abundant rootlets.	ravelly	0.05		89.816
-	-			MADE and BC	GROUND: orange brown silty CO DULDERS.	OBBLES	0.30	*****	89.566
- - -	0.0	ES	TP118 / 0.70m	MADE sandy s gravel o	GROUND: orange grey slightly g SILT. Frequent pockets of black of brick.	ravelly ash and	0.60		89.266
× 88 0 - 1−	0.3			MADE coarse Hydroc	GROUND: greenish brown SILT. gravel size pockets of black silt. arbon odour.	. Extensive Moderate			
-	0.3						1.70		88.166
€ 2- 00 01 01 01	0.0	ES	TP118 / 2.20m	gravel s	sh brown sandy SILT. Frequent c size pockets of black silt.	coarse			
-					End of Trial Pit		2.50	XAX	87.366
3-									
-									
4	-								
-	-								
	Com	ments:	Surface of gro pipework throu 2.5m due to si	ound spars ughout tria gnificant w	ely vegetated. Large amount of I pit. Trial pit terminated at vater inflow from 0.8m.	Lengt	h: 3.00r	Width: 0	.90m
Sheet 1	of 1		Side Stability	y: Unstab	le below 1.7m			www.celtic-ltd	l.com

Cel	ltic	.0		Date: 17 May 2012	Pit N	lumt	per: TP11	9
Project	No: C	1526		Engineer: NH	Eas	sting:	446415.370	
Site Location: Merton Street Depot, E			n Street Depot,	anbury Contractor: David Beecroft Northing: 240210.9			240210.960	
Client:	Grund	lon Was	ste Managemen	t Plant: JCB 3CX	Da	tum: 8	9.876m	
WATER	SA	MPLING	G/TESTING	SUBSURFACE PROFILE				
Water Strike	P I D Results	Sample Type	Sample Ref	DESCRIPTION OF STRATA		Depth (m bgl)	Legend	Level (m AOD)
0		ES	TP119 / 0.20m	MADE GROUND: dark grey slightly gravelly sandy SILT. Gravel of tile, brick, concrete and ash.	_/	0.02		89.861
- - - 82 m - 82 V	17.2			MADE GROUND: dark grey black sandy SILT. Frequent whole bricks. Physical properties of the silt is viscous (Coal tar). Strong hydrocarbon odour.				
	17.2			MADE GROUND: dark greenish grey slightly		1.30		88.576
-	0.2	ES	TP119 / 1.50m	sandy slightly SILT with black mottling. Minor Hydrocarbon odour.		1.65	****	88.226
-								
2-	0.0							
-								
-								
-								
-								
-								
3-								
-								
-								
-								
-								
-								
4-								
-								
	Com	iments:	Unvegetated s pit at 0.5m.Lar Trial pit termin pass the pipes	oil surface.Coal tar oozing into the trial ge amount of pipes encountered at 1.65m. ated as it was not possible to safely Le	ngth:	2.10n	Width: C).75m
Sheet 1	of 1		Side Stability	r: Stable		,	www.celtic-ltc	l.com

Cel	ltic	-99			Date: 17 May 2012 Trial Pit Number: TP120				
Project	No: C1	526			Engineer: NH	Ea	asting: 4	146408.490	
Site Lo	Site Location: Merton Street Depot, Banbury			Banbury	Contractor: David Beecroft	No	Northing: 240236.120		
Client:	Grund	on Was	ste Managemen	t	Plant: JCB 3CX	Da	atum: 9	0.191m	
WATER	SA	MPLING	G/TESTING		SUBSURFA	CE PROFILE	-		
Water Strike	P I D Results	Sample Type	Sample Ref		DESCRIPTION OF STR	ATA	Depth (m bgl)	Legend	Level (m AOD)
0-				MADE	GROUND: medium brown sand	dy SILT.	0.10	2222	90.091
				MADE brick ar	GROUND: COBBLES and BOU nd concrete with fragments of n	ULDERS of netal.	1.50		88.691
2									
	Com	ments:	Surface of gro of metal debri 1.4m). Possible 1.5m due to co	und spars s. Large ir e presenc ontinual inf	ely vegetated with large amou nflow of oil at 1.4m (standing a ce of tank.Trial pit terminated a flow of oil.	int at it Length	n: 2.00m	Width: 0	.70m
Sheet 1	of 1		Side Stability	/: Stable			١	www.celtic-ltd	.com









Plate No.: 9 Title: TP105		
Plate No.: 10 Title: TP105 -	- Spoil	
Calt	Client: Grundon Waste Managen	nent
Centre	Project Name: Merton Street Dep	ot, Banbury
The second fraction of the second state	Project No.: C1526	Date: June 2012





Plate No.: 15 Title: TP108	Pate No: 15 Tite: TP18						
Plate No.: 16 Title: TP108 – Spoil							
	Client: Grundon Waste Managen	pent					
Coltic	Project Name: Merton Street Dep	ot, Banbury					
cente	Project No.: C1526	Date: June 2012					









Plate No.: 25 Title: TP113		
68	Client: Grundon Waste Managen	nent
Celtic	Project Name: Merton Street Dep	ot, Banbury
The second se	Project No.: C1526	Date: June 2012

Plate No.: 26	Title: TP114		
0 1	. 38	Client: Grundon Waste Managen	nent
Cel	tic	Project Name: Merton Street Depo	ot, Banbury
The second frames	10-million	Project No.: C1526	Date: June 2012












APPENDIX D

D1	Soil Analysis Results (including Asbestos)
D2	Groundwater Analysis Results



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 11 May 2012 H_CELTIC_REA 120503-97 C1526 Banbury 180758

We received 16 samples on Thursday May 03, 2012 and 10 of these samples were scheduled for analysis which was completed on Friday May 11, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:



Sonia McWhan Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG:	120503-97	Location:	Banbury	Order Number:	66083
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	180758
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5536166	BH101		0.50	30/04/2012
5536171	BH101a		1.20	30/04/2012
5536172	BH101a		2.00	30/04/2012
5536173	BH101a		3.90	30/04/2012
5536174	BH101a		5.60	01/05/2012
5536175	BH101a		8.80	01/05/2012
5536176	BH102		0.50	01/05/2012
5536177	BH103		0.50	02/05/2012
5536178	BH103		1.20	02/05/2012
5536179	BH103		1.90	02/05/2012
5536180	BH103		3.10	02/05/2012
5536182	BH103		3.70	02/05/2012
5536188	BH103		4.60	02/05/2012
5536189	BH103		7.50	02/05/2012
5536190	BH104		0.40	02/05/2012
5536191	BH104		1.30	02/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

SDG:	120503-9	7	Location:		Ba	anbi	ırv									Orde	er Ni	umb	er:		66083	
Job: Client Reference:	H_CELTI C1526	C_REA-12	Custome	r: :	Ce	eltic eil H	Tec opki	hno ins	logi	es					1	Rep Sup	ort N erse	lum ded	ber: Rej	oort:	180758	
SOLID																					1	
Results Legend		Lab Sample	No(s)		5536		5536		5536	0000		5536	5536		5536		5536	0000	מבתת	5536		
X Test					166	5	171		172	173	440	176	177		178		182	190	100	191		
No Determina Possible	tion																					
		Custom Sample Refe	er erence		BH101		BH101a		BH101a	סחוסומ		BH102	BH103		BH103		BH103			BH104		
		AGS Refer	ence																			
		Depth (r	n)		0.50		1.20		2.00	0.9U	8	0.50	0.50		1.20		3.70	0.40	0 4 0	1.30		
		Contain	er	250g Amber Jar (AL	60g VOC (ALE215) 400a Tub (ALE214)	250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214)	250g Amber Jar (AL	60g VOC (ALE215)	400g Tub (ALE213) 250g Amber Jar (AL	400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215)	60g VOC (ALE215) 400g Tub (ALE214) 250n Amber Jar (Al	250g Amber Jar (AL	60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar (AL	250g Amber Jar (AL 60g VOC (ALE215)	400g Tub (ALE213)	250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214)		
Ammonium Soil by Titration	n	All	NDPs: 0 Tests: 10		x		x) 	ĸ	x	×		x)	<	x		x		x		
Boron Water Soluble		All	NDPs: 0 Tests: 10	x		x		x		x	x	2	x	x		x	×		x			
Cyanide Comp/Free/Total/Thiocyan	ate	All	NDPs: 0 Tests: 10		x		x) 	K	x	x		x)	<mark>(</mark>	×		x		x		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 10	x		x		x		x	x	2	x	x		x	×	(X			
EPH CWG (Aromatic) GC	(S)	All	NDPs: 0 Tests: 10	x		x		x		x	x		x	x		x	×		X		-	
GRO by GC-FID (S)		All	NDPs: 0 Tests: 10		x	Contraction (1)	X		x) 	C 100 Control of the second	x	x	• • • • • • • • • • • • • • • • • • •	x		x)	K	×		
Metals by iCap-OES (Soil)		Arsenic	NDPs: 0 Tests: 10	x		x		x		x	x	2	x	x		x	×	((x		-	
		Cadmium	NDPs: 0 Tests: 10	x		x		x		x	x		x	x		x	×	((x			
		Chromium	NDPs: 0 Tests: 10	x		x		x		x	x	2	x	x		x	×	((x			
		Copper	NDPs: 0 Tests: 10	x		x		x		x	x	2	x	x		x	×	((x			
		Lead	NDPs: 0 Tests: 10	x		x		x		x	x	2	x	x		x	×	C	x			
		Mercury	NDPs: 0 Tests: 10	x		x		x		x	x		x	x		x	×		x			
		Nickel	NDPs: 0 Tests: 10	x		x		x		x	x		x	x		x	×	2	x			
		Selenium	NDPs: 0 Tests: 10	x		x		x		x	x		x	x		x	×	(x			
		Zinc	NDPs: 0 Tests: 10	X		x		x		x	x		x	X		x	×	(X			

🜗 ALcontrol I	aborato	ries	C	ERTI	FICA [.]	TE O	F Al	VALY	SIS					
SDG: Job: Client Reference:	120503-9 H_CELTIC C1526	7 C_REA-12	Location Custome Attention	: Ba r: Ce i: Ne	anbury eltic Tecl eil Hopki	hnologi ns	es				Order Report Supers	Numbe t Numb seded F	r: er: Report:	66083 180758
SOLID Results Legend		Lab Sample	e No(s)	5536166	5536171	5536172	5536173	5536176	5536177	5536178	5536182	5536190	5536191	
No Determina Possible	ation	Custor Sample Ref	ner Terence	вн101	BH101a	BH101a	BH101a	BH102	BH103	BH103	BH103	BH104	BH104	
		AGS Refe	rence											
		Depth (m)	0.50	1.20	2.00	3.90	0.50	0.50	1.20	3.70	0.40	1.30	
		Contair	ner	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	
PAH by GCMS		All	NDPs: 0 Tests: 10	x	x	x	x	x	x	x	x	x	x	
Phenols by HPLC (S)		All	NDPs: 0 Tests: 10	x	x	x	x	x	x	x	x	x	×	
Sample description		All	NDPs: 0 Tests: 10	x	x	x	x	x	x	x	x	x	x	
Total Organic Carbon		All	NDPs: 0 Tests: 10	x	x	x	x	x	x	x	x	x	x	
TPH CWG GC (S)		All	NDPs: 0 Tests: 10	x	x	x	x	x	x	x	x	x	x	

CERTIFICATE OF ANALYSIS

Validated

SDG: Job: Client Reference:	120503-97 H_CELTIC_REA-12 C1526	Location: Customer: Attention:	Banbury Celtic Technologies Neil Hopkins	Order Number: Report Number: Superseded Report:	66083 180758
-----------------------------------	---------------------------------------	--------------------------------------	--	---	-----------------

Sample Descriptions

Grain Sizes									
very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm	n - 2mm coa	rse 2mm - 10	0mm very co	arse >10mm
Lab Sample N	o(s) Cus	tomer Sample Ref.	Depth (m)	Col	our	Description	Grain size	Inclusions	Inclusions 2
5536166		BH101	0.50	Dark I	Brown	Sandy Silt Loam	0.1 - 2 mm	Stones	None
5536176		BH102	0.50	Light I	Brown	Sandy Loam	0.1 - 2 mm	Stones	None
5536177		BH103	0.50	Light I	Brown	Sand	0.1 - 2 mm	Stones	None
5536178		BH103	1.20	Dark I	Brown	Silty Clay Loam	0.063 - 0.1 mm	None	None
5536182		BH103	3.70	Light	Brown	Sand	0.1 - 2 mm	Stones	None
5536190		BH104	0.40	Dark I	Brown	Sandy Loam	0.1 - 2 mm	Stones	None
5536191		BH104	1.30	Dark I	Brown	Silty Clay	0.063 - 0.1 mm	Stones	None
5536171		BH101a	1.20	Dark I	Brown	Silt Loam	0.063 - 0.1 mm	Stones	None
5536172		BH101a	2.00	Dark I	Brown	Sandy Loam	0.1 - 2 mm	Stones	N/A
5536173		BH101a	3.90	Dark I	Brown	Silty Clay	0.063 - 0.1 mm	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 12 Job: H Client Reference: C	20503-97 _CELTIC_R 1526	EA-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins		Order Number: Report Number: Superseded Repo	66083 180758 rt:	
Results Legend		Customer Sample R	BH101		BH102	BH103	BH103	BH103	BH104
M mOCERTS accredited. S Deviating sample. aq Aqueous / sottled sample. diss.fit: Dissolved / filtered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the m results of individual compou samples aren't corrected for (F) Trigger breach confirmed	standard to lethod. The nds within the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 Soii/Solid 30/04/2012 03/05/2012 120503-97 5536166		0.50 Soli/Solid 01/05/2012 03/05/2012 120503-97 5536176	0.50 Soli/Solid 02/05/2012 03/05/2012 120503-97 5536177	1.20 Soil/Solid 02/05/2012 03/05/2012 120503-97 5536178	3.70 Soil/Solid 02/05/2012 03/05/2012 120503-97 5536182	0.40 Soli/Solid 02/05/2012 03/05/2012 120503-97 5536190
Component Ammoniacal Nitrogen as N	LOD/U	nits Method	<15		<15	<15	2000	582	<15
	mg/k		< 15		<10	~15	2000	0.005	<15 0.005
monohydric	<0.0 mg/k	35 TM062 (S) (g	0.096	М	<0.035 M	<0.035 M	0.261 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM) <0.3	5 % TM132	16.2	#	1.3 #	1.25 #	11.7 #	1.14 #	5.64 #
Cyanide, Total	<1 m	g/kg TM153	4.37	<u>и</u>	<1 M	1.41 M	6.01 M	2.38 M	1.2 M
Cyanide, Free	<1 m	g/kg TM153	<1	м	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.	6 TM181	36.7	м	146 M	70.5 M	24.7 M	92.5 M	30.4 M
Cadmium	<0.0)2 TM181	0.688	M	1.24 M	1.07 M	<0.02	1.45 M	4.7 M
Chromium	<0.	9 TM181	37.8	M	83.8	55.6	62.8	64.9	225 M
Copper	<1.	4 TM181	16.5		21	8.91	33.4	13.1	262 M
Lead	<pre></pre>	cg 7 TM181	109		102	18.2	54.1	23.8	1260 M
Mercury	<0.1	(g 14 TM181	<0.14		<0.14	<0.14	<0.14	<0.14	0.991
Nickel		2 TM181	27.6		60.3	41.7	34.3	62.1	83.7 M
Selenium	mg/k <1 m	g/kg TM181	<10		M <1	M <1	M <1	3.76	1.68
Zinc	<1.	9 TM181	147	#	# 161	# 90.4	# 111	141	# 1480
Boron, water soluble	mg/ł <1 m	g/kg TM222	1.54	<u>M</u>	M <1	M <1	M 1.99	<u>M</u>	4.15
				М	M	M	M	M	M
	_								

ALcontrol Labora	atories		CEF	RTI		F A	NALYSIS						Validated
SDG: 12050 Job: H_CE Client Reference: C1526	03-97 LTIC_REA	A-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologie il Hopkins	s			Order Numbe Report Numb Superseded	er: er: Report:	66083 180758		
									•				
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	BH104		BH101a		BH101a		BH101a				
S Deviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted text		Depth (m) Sample Type Date Sampled	1.30 Soil/Solid 02/05/2012		1.20 Soil/Solid 30/04/2012		2.00 Soil/Solid 30/04/2012		3.90 Soil/Solid 30/04/2012				
 ** % recovery of the surrogate standar check the efficiency of the method. results of individual compounds wit samples aren't corrected for the rec 	rd to The thin covery	Date Received SDG Ref Lab Sample No.(s)	03/05/2012 120503-97 5536191		03/05/2012 120503-97 5536171		03/05/2012 120503-97 5536172		03/05/2012 120503-97 5536173				
(F) Trigger breach confirmed		AGS Reference											
Ammoniacal Nitrogen as N	<15	TM024	44.2		339		152		607			-	
Phenols, Total Detected	mg/kg <0.035	5 TM062 (S)	<0.035		0.168		0.472		< 0.035			+	
monohydric Soil Organic Matter (SOM)	mg/kg <0.35 %	% TM132	0.983	M #	5.05	M #	0.95	M #	1.78	<u>м</u> #		+	
Cyanide, Total	<1 mg/k	kg TM153	<1	M	<1	M	<1	M	<1	M			
Cyanide, Free	<1 mg/k	kg TM153	<1	М	<1	м	<1	м	<1	м			
Arsenic	<0.6 mg/kg <0.02	TM181	0 112	М	0.343	м	84.6	м	10.1	м		_	
Chromium	<0.02 mg/kg <0.9	TM181	49.1	М	38.4	М	110	м	51.4	м		+	
Copper	mg/kg <1.4	TM181	21.5	М	10.9	М	11	М	24.6	M		+	
Lead	mg/kg <0.7	TM181	22.6	M	28.2	M	19.3	M	17.6	M		+	
Mercury	<pre>/// // // // // // // // // // // // //</pre>	TM181	<0.14	M	<0.14	M	<0.14	M	<0.14	M		+	
Nickel	<0.2 ma/ka	TM181	35.3	м	24.8	м	63.2	м	48.2	м			
Selenium	<1 mg/k	(g TM181	<1	#	1.59	#	1.43	#	<1	#			
Zinc	<1.9 mg/kg	TM181	101	М	62.4	м	147	м	94.2	м			
Boron, water soluble	<1 mg/ł	kg TM222	<1	М	2.74	м	2.22	м	1.87	м			
												+	
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CERTIFICATE OF ANALYSIS

Validated

120503-97 66083 SDG Location: Banbury Order Number: Job: H CELTIC REA-12 Customer: Celtic Technologies Report Number: 180758 **Client Reference:** C1526 Attention: Neil Hopkins Superseded Report: PAH by GCMS Customer Sample R BH103 BH104 BH101 BH102 BH103 BH103 ISO17025 accredited mCERTS accredited Deviating sample Depth (m) 0.50 0.50 0.50 1.20 3.70 0.40 Aqueous / settled sample diss filt Dissolved / filtered sa Sample Type Soil/Solid Soil/Solid Soil/Solid Soil/Solid Soil/Solid Soil/Solid Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Date Sampled 30/04/2012 01/05/2012 02/05/2012 02/05/2012 02/05/2012 02/05/2012 Sample Time ... Date Received 03/05/2012 03/05/2012 03/05/2012 03/05/2012 03/05/2012 03/05/2012 120503-97 SDG Ref 120503-97 120503-97 120503-97 120503-97 120503-97 5536166 5536176 5536177 5536178 5536182 5536190 Lab Sample No.(s) AGS Reference (F) Trigger breach confirmed LOD/Units Method Component 97 1 95.5 94 95 924 Naphthalene-d8 % TM218 99 % recovery** Acenaphthene-d10 % % TM218 94.6 99.2 95.6 96.1 96.2 93.6 recovery** % Phenanthrene-d10 % TM218 95.3 101 95 7 96.3 96 92.5 recovery** Chrysene-d12 % % TM218 102 96.7 90.8 97.5 92.7 94.4 recoverv* Perylene-d12 % recovery** % TM218 95.6 97.3 98.9 101 99.1 96 TM218 7760 <45 12.4 836 4570 8280 Naphthalene <9 µg/kg Μ Μ Μ Μ Μ Μ TM218 280 13700 22 1 1620 617 809 Acenaphthylene <12 Μ µg/kg Μ Μ Μ Μ Μ Acenaphthene TM218 2200 790 <8 332 84.3 137 <8 µg/kg Μ Μ Μ Μ Μ Μ Fluorene TM218 11000 744 1470 125 158 <10 <10 µg/kg Μ Μ Μ Μ Μ Μ Phenanthrene <15 TM218 53900 18500 73.9 12200 28.6 1450 Μ Μ Μ Μ Μ Μ ua/ka TM218 27200 5970 25.4 4680 1200 Anthracene <16 <16 µg/kg Μ Μ Μ Μ Μ Μ Fluoranthene <17 TM218 107000 31100 256 22900 <17 3880 Μ Μ Μ Μ Μ Μ ua/ka Pyrene TM218 82800 23000 261 17000 3950 <15 <15 µg/kg Μ Μ Μ Μ Μ Μ Benz(a)anthracene <14 TM218 60400 10200 153 14300 <14 2650 Μ Μ Μ Μ Μ µq/kq Μ TM218 40500 7160 111 9940 <10 2280 Chrysene <10 Μ Μ Μ µg/kg Μ Μ Μ Benzo(b)fluoranthene <15 TM218 55500 9650 183 12100 <15 7870 Μ Μ Μ Μ Μ ua/ka Μ 2360 Benzo(k)fluoranthene TM218 26100 3280 78 9 4430 <14 <14 µg/kg Μ Μ Μ Μ Μ Μ Benzo(a)pyrene <15 TM218 56800 8450 161 11000 <15 6730 Μ Μ Μ М Μ Μ µq/kq TM218 22400 3930 89.2 4470 <18 4590 Indeno(1,2,3-cd)pyrene <18 Μ Μ Μ Μ µg/kg M Μ Dibenzo(a,h)anthracene <23 TM218 6890 863 <23 1440 <23 1130 Μ µg/kg Μ Μ Μ Μ Μ TM218 22300 4520 106 4260 <24 5290 Benzo(g,h,i)perylene <24 µg/kg Μ Μ Μ Μ Μ Μ PAH, Total Detected <118 TM218 596000 128000 1530 123000 5430 52800 USEPA 16 µg/kg

CERTIFICATE OF ANALYSIS

SDG: 12050 Job: H_CE Client Beference: C1526)3-97 :LTIC_RE/	A-12	Location: Customer:	Ba Ce	inbury eltic Technologies				Order Numbe Report Numb	er: er: Reno	66083 180758	
	5		Attention.	INC	поркіта				ouperseucu	tepo		
PAH by GCMS Results Legend # ISO17025 accredited.		Customer Sample R	BH104		BH101a		BH101a		BH101a			
M mCERTS accredited. § Deviating sample.		Danth (m)	4.00		1.00				0.00			
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Sample Type	1.30 Soil/Solid		1.20 Soil/Solid		2.00 Soil/Solid		3.90 Soil/Solid			
tot.unfilt Total / unfiltered sample.		Date Sampled	02/05/2012		30/04/2012		30/04/2012		30/04/2012			
** % recovery of the surrogate standau	rd to	Date Received	03/05/2012		03/05/2012		03/05/2012		03/05/2012			
results of individual compounds wit	thin	SDG Ref	120503-97		120503-97		120503-97		120503-97			
samples aren't corrected for the rec (F) Trigger breach confirmed	covery	Lab Sample No.(s) AGS Reference	5550191		5550171		5550172		5550175			
Component	LOD/Uni	ts Method										
Naphthalene-d8 %	%	TM218	92		101	Т	93.4		94.4			
recovery** Acenaphthene-d10 %	%	TM218	93.3		99.1	+	98.8		95.7			
Phenanthrene-d10 %	%	TM218	90.8		100	╈	95.1		95.4			
Chrysene-d12 %	%	TM218	86.6		98.6	+	88.1		90.3			
Perylene-d12 % recovery**	%	TM218	88.2		99.6	╈	87.7		94.1			
Naphthalene	<9 µg/l	kg TM218	12	м	28400 M	1	126000	м	1420	м		
Acenaphthylene	<12 ua/ka	TM218	<12	м	1780 M	1	9230	м	250	м		
Acenaphthene	<8 µg/l	kg TM218	<8	М	3050 M	1	36000	м	1130	М		
Fluorene	<10 µg/kg	TM218	<10	М	1710 M	1	23300	м	610	м		
Phenanthrene	<15 µg/kg	TM218	<15	М	4930 M	1	51100	м	2130	М		
Anthracene	<16 µg/kg	TM218	<16	М	1350 M	1	14700	м	582	м		
Fluoranthene	<17 µg/kg	TM218	<17	М	3110 M	1	10700	м	436	М		
Pyrene	<15 µg/kg	TM218	<15	М	2290 M	1	11100	м	596	М		
Benz(a)anthracene	<14 µg/kg	TM218	<14	М	1100 M	1	4420	м	224	М		
Chrysene	<10 µg/kg	TM218	<10	М	755 M	1	3280	м	161	М		
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	М	907 M	1	1960	м	85	М		
Benzo(a)pyrapa	<14 µg/kg	TM218	<14	М	030	1	2000	м	114	М		
Indeno(1,2,3-cd)nyrene	μg/kg	TM218	<13	М	939 M	1	605	м	30	М		
Dibenzo(a h)anthracene	µg/kg	TM210	<23	М	107	1	221	м	<23	М		
Benzo(a,h,i)pervlene	μg/kg <24	TM218	<24	М	451	1	644	м	44.5	М		
PAH, Total Detected	µg/kg <118	TM218	<118	М	M 51600	1	296000	М	7850	М		
USEPA 16	µg/kg	_				+						
						+						
						+						
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CERTIFICATE OF ANALYSIS

			CERTI	FICATE OF A	NALISIS			
SDG: 12 Job: H Client Reference: C	20503-97 _CELTIC_R 1526	EA-12	Location: Ba Customer: Co Attention: No	anbury eltic Technologies eil Hopkins		Order Number: Report Number: Superseded Repo	66083 180758 rt:	
TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited		Customer Sample R	BH101	BH102	BH103	BH103	BH103	BH104
S Deviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type Date Sampled	0.50 Soil/Solid 30/04/2012	0.50 Soil/Solid 01/05/2012	0.50 Soil/Solid 02/05/2012	1.20 Soil/Solid 02/05/2012	3.70 Soil/Solid 02/05/2012	0.40 Soil/Solid 02/05/2012
 Subcontracted test. % recovery of the surrogate s check the efficiency of the me results of individual compoun samples aren't corrected for t 	tandard to ethod. The ids within he recovery	Sample Time Date Received SDG Ref Lab Sample No.(s)	03/05/2012 120503-97 5536166	03/05/2012 120503-97 5536176	03/05/2012 120503-97 5536177	03/05/2012 120503-97 5536178	03/05/2012 120503-97 5536182	03/05/2012 120503-97 5536190
(F) Trigger breach confirmed		AGS Reference						
GRO Surrogate %	LOD/L %	Inits Method 6 TM089	74	120	126	77	142	31
GRO >C5-C12	<4	4 TM089	2610	112	<44	122	3110	778
Methyl tertiary butyl ether	μ <u>g</u> /i <5 μ	g/kg TM089	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
Benzene	<1	0 TM089	56.4 M	<10 M			# <10 M	~10 M
Toluene	-2 μ	g/kg TM089	16.8 M	<2 M	<2 M	2.9 M	<2 M	<2 M
Ethylbenzene	<3 µ	g/kg TM089	13.2 M	<3 M	<3 M	<3 M	11.3 M	<3 M
m,p-Xylene	<6 µ	g/kg TM089	19.2 M	<6 M	<6 M	<6 M	15.8 M	<6 M
o-Xylene	<3 µ	g/kg TM089	22.8 M	3.42 M	<3 M	<3 M	17 M	<3 M
sum of detected mpo	<9 µ	g/kg TM089	42	<9	<9	<9	32.8	<9
sum of detected BTEX by GC	<2 ua/l	4 TM089	128	<24	<24	<24	44.1	<24
Aliphatics >C5-C6	<1 /	0 TM089	18	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<1 /	0 TM089	69.6	12.5	<10	21.8	40.7	452
Aliphatics >C8-C10	<1 /	0 TM089	241	19.4	<10	29	249	70.2
Aliphatics >C10-C12	<1 /	0 TM089	1190	33.1	<10	11.6	1560	116
Aliphatics >C12-C16	<1(ug/	00 TM173	25200	5520	7490	10500	4780	20500
Aliphatics >C16-C21	<1(ug/	00 TM173	34000	7040	5300	9030	3740	199000
Aliphatics >C21-C35	<1(µg/l	00 TM173	45500	21900	3290	10600	5240	1670000
Aliphatics >C35-C44	<1(µg/l	00 TM173 <g< td=""><td>6340</td><td><100</td><td><100</td><td><100</td><td><100</td><td>317000</td></g<>	6340	<100	<100	<100	<100	317000
Total Aliphatics >C12-C44	<1(µg/l	00 TM173 <g< td=""><td>111000</td><td>34400</td><td>16100</td><td>30100</td><td>13800</td><td>2210000</td></g<>	111000	34400	16100	30100	13800	2210000
Aromatics >EC5-EC7	1> /µg/	0 TM089 <g< td=""><td>56.4</td><td><10</td><td><10</td><td>11.6</td><td><10</td><td><10</td></g<>	56.4	<10	<10	11.6	<10	<10
Aromatics >EC7-EC8	<1 µg/l	0 TM089 <g< td=""><td>16.8</td><td><10</td><td><10</td><td><10</td><td><10</td><td><10</td></g<>	16.8	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<1 /µg	0 TM089 <g< td=""><td>217</td><td>21.7</td><td><10</td><td>29</td><td>211</td><td>51.5</td></g<>	217	21.7	<10	29	211	51.5
Aromatics >EC10-EC12	1> ا/µg	0 TM089 <g< td=""><td>796</td><td>21.7</td><td><10</td><td><10</td><td>1040</td><td>77.2</td></g<>	796	21.7	<10	<10	1040	77.2
Aromatics >EC12-EC16	<1(µg/l	00 TM173 <g< td=""><td>173000</td><td>10900</td><td>13000</td><td>42300</td><td>16200</td><td>24900</td></g<>	173000	10900	13000	42300	16200	24900
Aromatics >EC16-EC21	<1(µg/l	00 TM173 <g< td=""><td>857000</td><td>45300</td><td>11300</td><td>115000</td><td>6160</td><td>161000</td></g<>	857000	45300	11300	115000	6160	161000
Aromatics >EC21-EC35	<1(µg/l	00 TM173 kg	1730000	106000	21500	301000	10100	1240000
Aromatics >EC35-EC44	<1(µg/l	00 TM173 kg	406000	27000	7360	74700	3600	487000
Aromatics >EC40-EC44	<1(µg/l	00 TM173 kg	116000	9060	2580	23600	1480	188000
Total Aromatics >EC12-EC44	<1(µg/l	00 TM173 <g< td=""><td>3160000</td><td>189000</td><td>53100</td><td>532000</td><td>36000</td><td>1920000</td></g<>	3160000	189000	53100	532000	36000	1920000
Total Aliphatics >C5-35	<1(µg/l	00 TM173	106000	34500	16100	30200	15600	1890000
Total Aromatics >C5-35	<1(µa/	00 TM173	2760000	162000	45800	457000	33600	1430000
Total Aliphatics & Aromatics >C5-35	<1(µa/	00 TM173 <g< td=""><td>2870000</td><td>197000</td><td>61800</td><td>488000</td><td>49200</td><td>3320000</td></g<>	2870000	197000	61800	488000	49200	3320000
Total Aliphatics & Aromatics >C5-C44	<1(uo/l	00 TM173	3280000	224000	69200	562000	52800	4130000
	p g/l							

CERTIFICATE OF ANALYSIS

				UER		CATE U	A	NAL 1313					
SDG: Job: Client Reference:	120503-9 H_CELTI C1526	97 IC_RE/	A-12	Location: Customer: Attention:	Banb Celtio Neil I	oury c Technologie Hopkins	S			Order Numbe Report Numb Superseded I	r: er: Report:	66083 180758	
TPH CWG (S)													
Results Leger	nd		Customer Sample R	BH104		BH101a		BH101a		BH101a			
# ISO17025 accredited. M mCERTS accredited.													
 § Deviating sample. aq Aqueous / settled sample. 	le.		Depth (m)	1.30		1.20		2.00		3.90			
diss.filt Dissolved / filtered sam	ple.		Sample Type	Soil/Solid		Soil/Solid 30/04/2012		Soil/Solid 30/04/2012		Soil/Solid 30/04/2012			
* Subcontracted test.			Sample Time										
** % recovery of the surro check the efficiency of	gate standard to the method. The		Date Received	03/05/2012		03/05/2012		03/05/2012		03/05/2012			
results of individual con	npounds within	~	SDG Ref	5536191		5536171		5536172		5536173			
(F) Trigger breach confirm	ed	y	AGS Reference										
Component	L	_OD/Uni	its Method										
GRO Surrogate %		%	TM089	96		100		20		59			
recovery**		- 4 4	TM000	- 1 1	_	C140		04000	_	047			
GRU 203-012		<44 ug/kg	1 10009	<44		6440		24000		017			
Methyl tertiary butyl et	her	<5 µg/kg	ka TM089	<5		<5		<5		<5			
(MTBE)				-	#	-	#	-	#	-	#		
Benzene		<10	TM089	<10		23.8		<10		12.1			
		µg/kg			М		М		М		М		
Toluene	· · · ·	<2 µg/l	kg TM089	<2		7		39.9		6.05			
Ethylbonzona		<u></u>		-0	M	74 4	М	<i>E</i> 00	M	40	M		+
Etriyibenzene		<3 µg/l	ky TIVIU89	<3	м	71.4	м	598	м	46	м		
m.p-Xylene		<6 ua/	ka TM089	<6	141	109	IVI	955	111	38 7	141		1
		~ P9/1			м		М		м	00.1	м		
o-Xylene		<3 µg/l	kg TM089	<3		86.8		584		23			
					М		М		М		М		ļ
sum of detected mpo		<9 µg/l	kg TM089	<9		196		1540		61.7			
xylene by GC	hu	-0.4	TN4000	-0.1	-+	000		0400	_	400			+
	ру	<24	110089	<24		298		2180		126			
Alighatics $> C5 - C6$		μg/κg <10	TM089	<10	-	16.8		<10		<10			
Aliphatics > 00-00		ua/ka	110003			10.0		10		\$10			
Aliphatics >C6-C8		<10	TM089	<10		35		100		14.5			
		µg/kg											
Aliphatics >C8-C10		<10	TM089	<10		606		3400		104			
		µg/kg											
Aliphatics >C10-C12		<10	1 M089	<10		3050		10000		299			
Alighatics $>$ C12-C16		<100	TM173	10600		9800		274000		7940			
		ua/ka	111170	10000		0000		214000		7540			
Aliphatics >C16-C21		<100	TM173	10100		8620		513000		5640			
		µg/kg											
Aliphatics >C21-C35		<100	TM173	23200		17500		110000		16500			
Aliphatics > C2E C44		µg/kg	TM172	5020		<100		2050		1690			
Aliphatics >035-044		<100	11/173	5930		<100		2950		1680			
Total Aliphatics >C12-	C44	<100	TM173	49800	-	35900		900000		31800			
		µq/kq								01000			
Aromatics >EC5-EC7		<10	TM089	<10		23.8		<10		12.1			
		µg/kg											
Aromatics >EC7-EC8		<10	TM089	<10		<10		39.9		<10			
Aromatics >EC8 EC10		µg/kg	TM080	<10		673		4400		178			
		ua/ka	10003	-10		015		0077		170			
Aromatics >EC10-EC1	2	<10	TM089	<10		2030		6670		200			
		µg/kg											ļ
Aromatics >EC12-EC1	6	<100	TM173	23600		34500		495000		12000			
Aromotics > E010 E02	4	µg/kg	TN4470	0070		00700		750000	_	4050			+
Aromatics >EC16-EC2	.1	<100	11/17/3	9010		20700		/ 50000		4950			
Aromatics >FC21-FC3	5	μų/κα <100	TM173	31200	+	57900		355000		7930			
	-	µq/ka		0.200		0,000							
Aromatics >EC35-EC4	4	<100	TM173	13000		<100		62200		2170			
		µg/kg											ļ
Aromatics >EC40-EC4	4	<100	TM173	5430		<100		22500		<100			
Tatal Agains at		µg/kg	T1470	77500	_	440000		4000000		07000			
		<100	TM173	//500		113000		1660000		27000			
Total Aliphatics >C5-3	5	μy/κg <100	TM173	43900		39600		910000		30500			1
	-	µq/ka		10000		00000		0.0000		00000			
Total Aromatics >C5-3	5	<100	TM173	64600		116000		1610000		25300			
		µg/kg											ļ
Total Aliphatics &		<100	TM173	108000		155000		2520000		55800			
Aromatics >C5-35		µg/kg	TN1470	407000	-+	455000		2500000		50000			+
Aromatics >C5 C44		<100 uo/ka	111173	127000		100000		2590000		29000			
AIUIIIalles ~00-044		µу/кд	+ +										1

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CERTIFICATE OF ANALYSIS

Validated

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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SDG:

Job:

CERTIFICATE	OF ANALYSIS

120503-97 H_CELTIC_REA-12 66083 180758 Location: Banbury Order Number: Celtic Technologies Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins Superseded Report:

Test Completion Dates

				-						
Lab Sample No(s)	5536166	5536176	5536177	5536178	5536182	5536190	5536191	5536171	5536172	5536173
Customer Sample Ref.	BH101	BH102	BH103	BH103	BH103	BH104	BH104	BH101a	BH101a	BH101a
AGS Ref.										
Depth	0.50	0.50	0.50	1.20	3.70	0.40	1.30	1.20	2.00	3.90
Туре	SOLID									
Ammonium Soil by Titration	09-May-2012	10-May-2012	10-May-2012	11-May-2012	10-May-2012	10-May-2012	10-May-2012	10-May-2012	10-May-2012	10-May-2012
Boron Water Soluble	09-May-2012									
Cyanide Comp/Free/Total/Thiocyanate	09-May-2012	08-May-2012	08-May-2012	09-May-2012	09-May-2012	09-May-2012	09-May-2012	09-May-2012	08-May-2012	09-May-2012
EPH CWG (Aliphatic) GC (S)	10-May-2012									
EPH CWG (Aromatic) GC (S)	10-May-2012									
GRO by GC-FID (S)	09-May-2012	09-May-2012	11-May-2012	09-May-2012	11-May-2012	11-May-2012	09-May-2012	09-May-2012	09-May-2012	09-May-2012
Metals by iCap-OES (Soil)	09-May-2012									
PAH by GCMS	08-May-2012	08-May-2012	08-May-2012	08-May-2012	08-May-2012	11-May-2012	11-May-2012	08-May-2012	08-May-2012	08-May-2012
Phenols by HPLC (S)	10-May-2012	10-May-2012	10-May-2012	10-May-2012	10-May-2012	11-May-2012	10-May-2012	10-May-2012	10-May-2012	10-May-2012
Sample description	04-May-2012									
Total Organic Carbon	09-May-2012									
TPH CWG GC (S)	10-May-2012	10-May-2012	11-May-2012	10-May-2012	11-May-2012	11-May-2012	10-May-2012	10-May-2012	10-May-2012	10-May-2012

CERTIFICATE OF ANALYSIS

SDG:	120503-97	Location:	Banbury	Order Number:
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/CCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOVEREND	GC-FID
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOVEREND	GC-FID
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOVEREND	GC-FID
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOVEREND	GC-FID
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-MS
>06-C40	WET	HEXANEACETONE	SHAKER	GC-RD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FD
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-MS

SOLID MATRICES EXTRACTION SUMMARY

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCROPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOL by R	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	CC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type	Common Name				
Chrysolile	WhiteAsbestos				
Amoste	BrownAsbestos				
Orodolite	Blue Asbestos				
Fibrous Adindite	-				
Forous Anthophylite	-				
Fibrous Trendile	-				

66083 180758



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 16 May 2012 H_CELTIC_REA 120508-14 C1526 Banbury 181178

We received 16 samples on Saturday May 05, 2012 and 8 of these samples were scheduled for analysis which was completed on Wednesday May 16, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:



Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

SDG:	120508-14	Location:	Banbury	Order Number:	66804
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	181178
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5551099	BH104		2.50	02/05/2012
5551100	BH104		3.50	02/05/2012
5551101	BH104		3.80	02/05/2012
5551102	BH104		6.10	02/05/2012
5551104	BH104		8.70	03/05/2012
5551105	BH105		0.50	03/05/2012
5551106	BH105		1.30	03/05/2012
5551107	BH105		2.20	03/05/2012
5551108	BH105		2.70	03/05/2012
5551109	BH105		4.60	03/05/2012
5551110	BH106		0.50	04/05/2012
5551111	BH106		2.30	04/05/2012
5551112	BH106		3.50	04/05/2012
5551113	BH106		4.20	04/05/2012
5551114	BH106		4.70	04/05/2012
5551115	BH106		5.70	04/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laborato	ories	C	ERTI	FICA	TE C	F AN	ALY	SIS					Validated
SDG: 120508-1 Job: H_CELTI Client Reference: C1526	14 IC_REA-12	Location: Custome Attention	Ba r: Ce : Ne	nbury Itic Tec Il Hopk	hnolog ins	ies				Order N Report Supers	lumber: Number: eded Report:	66804 181178	
SOLID			л	л	л	л	л	ហ	σ	σı			
Results Legend	Lab Sample	No(s)	55110	55110	551107	55110	55111(55111	551112	551118			
X Test				01	`				-	0.			
No Determination Possible	Custome Sample Refe	r rence	BH104	BH105	BH105	BH105	BH106	BH106	BH106	BH106			
	AGS Refere	ence											
	Depth (m)		3.80	0.50	2.20	4.60	0.50	2.30	4.70	5.70			
	Containe	r	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
Boron Water Soluble	All	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 8	x	x	x	x	x	x	×	x			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 8	×	×	×	×	×	x	X	x			
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 8	x	x	×	x	×	x	x	x			
	Cadmium	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
	Chromium	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
	Copper	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
	Lead	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
	Mercury	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
	Nickel	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	×			
	Selenium	NDPs: 0 Tests: 8	x	x	x	x	x	×	x	×			
	Zinc	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	X			

AL control I	aborato	ries	С	ERT	FICA	TE C)F Al	VAL	YSIS					Validated
SDG: Job: Client Reference:	120508-14 H_CELTIC C1526	4 C_REA-12	Location Custome Attentior	: Ba er: C n: N	anbury eltic Tec eil Hopk	hnolog ins	ies				Order N Report Supers	lumber: Number: eded Report:	66804 181178	
SOLID Results Legend X Test		Lab Sample	No(s)	000	5551105	5551107	5551109	5551110	5551111	5551114	5551115			
No Determination Possible		Customer Sample Reference			BH 105	BH105	BH105	BH106	BH106	BH106	BH106			
		AGS Refere	ence											
		Depth (n	1)	0.00	0.50	2.20	4.60	0.50	2.30	4.70	5.70			
		Containe	ər	400g Tub (ALE213) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL			
PAH by GCMS		All	NDPs: 0 Tests: 8	x	×	x	x	x	x	x	×			
Phenols by HPLC (S)		All	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
Sample description		All	NDPs: 0 Tests: 8	x	×	x	x	<mark>x</mark>	x	x	×			
Total Organic Carbon		All	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	x			
TPH CWG GC (S)		All	NDPs: 0 Tests: 8	x	x	x	x	x	x	x	<mark>x</mark>			

CERTIFICATE OF ANALYSIS

Validated

SDG: Job: Client Reference:	120508-14 H_CELTIC_REA-12 C1526	Location: Customer: Attention:	Banbury Celtic Technologies Neil Hopkins	Order Number: Report Number: Superseded Report:	66804 181178	
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Sample Descriptions

Grain Sizes											
very fine <(0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm	n - 2mm	coars	e 2mm - 1	0mm very o	coarse >	10mm
Lab Sample No(s)	Custom	ier Sample Re	ef. Depth (m)	Co	lour	Descriptio	n	Grain size	Inclusions	Inclusions	2
5551101		BH104	3.80	Dark	Brown	Sand		0.1 - 2 mm	Stones	None	
5551105		BH105	0.50	Dark	Brown	Sandy Loa	m	0.1 - 2 mm	Stones	None	
5551107		BH105	2.20	Light	Brown	Silty Clay Lo	am	0.063 - 0.1 mm	None	None	
5551109		BH105	4.60	Light	Brown	Sand		0.1 - 2 mm	Stones	None	
5551110		BH106	0.50	Dark	Brown	Sandy Clay Loam	у	0.1 - 2 mm	Stones	None	
5551111		BH106	2.30	Dark	Brown	Sandy Silt Lo	oam	0.1 - 2 mm	Stones	None	
5551114		BH106	4.70	Dark	Brown	Silty Clay Lo	am	0.063 - 0.1 mm	None	None	
5551115		BH106	5.70	Dark	Brown	Silty Clay	/	0.063 - 0.1 mm	Stones	None	

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: Job: Client Reference:	120508-14 H_CELTIC_R C1526	EA-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins		Order Number: Report Number: Superseded Repo	66804 181178 rt:	
Results Legend # ISO17025 accredited.		Customer Sample R	BH104		BH105	BH105	BH105	BH106	BH106
M mCERTs accredited. § Deviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. * Subcontracted test. * % recovery of the surroga check the efficiency of the results of individual comp samples aren't corrects df (F) Trioger brack-confirmed	te standard to method. The ounds within or the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	3.80 Soli/Solid 02/05/2012 05/05/2012 120508-14 5551101		0.50 Soil/Solid 03/05/2012 05/05/2012 120508-14 5551105	2.20 Soil/Solid 03/05/2012 05/05/2012 120508-14 5551107	4.60 Soil/Solid 03/05/2012 05/05/2012 120508-14 5551109	0.50 Soil/Solid 04/05/2012 05/05/2012 120508-14 5551110	2.30 Soil/Solid 04/05/2012 05/05/2012 120508-14 5551111
Component	LOD/U	nits Method							
Ammoniacal Nitrogen as	N <1	5 TM024	180		80.3	85.5	122	61.2	105
Phenols, Total Detected	<0.0	35 TM062 (S)	<0.035	м	<0.035	<0.035	<0.035	<0.035	2.93
Soil Organic Matter (SOI	M) <0.3	5 % TM132	1.14	IVI 	29.7	1.42	1.09	7.93	4.33
Cyanide, Total	<1 m	g/kg TM153	<1	#	# 13.7	# <1	# <1	# 38.4	# 110
Cyanide, Free	<1 m	g/kg TM153	<1		<1 M	<1	<1 M	<1 M	<1 M
Arsenic	<0.	6 TM181	152		41.8	19.9	113 M	194 M	223
Cadmium	mg/k <0.0	02 TM181	1.02	IVI NA	2.11	0.353	0.73	5.82	2.33
Chromium	<u>mg/l</u> <0.	9 TM181	106	M	42.9	62.2	92 	M 162	75
Copper	mg/k <1.	4 TM181	<14	IVI	M	15 M	16.1 M	264	72.5
Lead	<u>mg/k</u> <0.	7 TM181	27.1	M	573	20.7	26.8	775	226 M
Mercury		kg 4 TM181	<0.14	M	1.11	<0.14	<0.14	1.49	<2.8
Nickel	<u>mg/l</u> <0.	2 TM181	69	M	M	30.8	87.3	115	73.2 M
Selenium	<u>mg/k</u> <1 mg	g/kg TM181	<10	IVI	1.62	<1 //	<10	<10	<20
Zinc	<1.	9 TM181	178	#	# 1830	# 89.2	217	# 3550	# 443
Boron, water soluble	mg/ł <1 m	g/kg TM222	2.46		6.02 M	1.63	<1 M	8.16	4.28 M
				IVI	IVI	IVI	IVI	IVI	IVI

ALcontrol	Laboratories
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CERTIFICATE OF ANALYSIS

diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled Sample Time	Soil/Solid 04/05/2012	Soil/Solid 04/05/2012	2		
** % recovery of the surrogate standar check the efficiency of the method.	rd to The	Date Received	05/05/2012	05/05/2012	:		
results of individual compounds wit samples aren't corrected for the rec	hin overv	SDG Ref Lab Sample No.(s)	120508-14 5551114	120508-14 5551115			
(F) Trigger breach confirmed		AGS Reference					
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	937	360	_		
Phenols, Total Detected monohydric	<0.03 mg/kg	5 TM062 (S)	4.68 M	1.9	м		
Soil Organic Matter (SOM)	<0.35	% TM132	2.48	1.67	#		
Cyanide, Total	<1 mg/	kg TM153	<1 M	<1	м		
Cyanide, Free	<1 mg/	kg TM153	<1 M	<1	м		
Arsenic	<0.6 mg/kg	TM181	18.3 N	11.7	м		
Cadmium	<0.02 mg/kg	TM181	0.397 N	0.387	м		
Chromium	<0.9 mg/kg	TM181	52 M	52.4	м		
Copper	<1.4 mg/kg	TM181	31.1 M	25.6	м		
Lead	<0.7 mg/kg	TM181	21.8 M	19.7	м		
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14	м		
Nickel	<0.2 mg/kg	TM181	46.8	47.2	м		
Selenium	<1 mg/	kg TM181	<1 #	<1 :	#		
Zinc	<1.9 mg/kg	TM181	109 N	91	м		
Boron, water soluble	<1 mg/	kg TM222	2.22 N	2.76	м	 	
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CERTIFICATE OF ANALYSIS

							A I	NAL 1 313						
SDG: Job: _Client Reference:	120508- H_CELT C1526	14 TC_RE	A-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins				Order Number: Report Number: Superseded Repo	ort:	66804 181178		
PAH by GCMS														
Results Legend			Customer Sample R	BH104		BH105		BH105		BH105		BH106		BH106
M mCERTS accredited.														
 § Deviating sample. aq Aqueous / settled sample. 			Depth (m)	3.80		0.50		2.20		4.60		0.50		2.30
diss.filt Dissolved / filtered sample tot.unfilt Total / unfiltered sample.	э.		Date Sample Type	02/05/2012		03/05/2012		03/05/2012		03/05/2012		Soii/Soiid 04/05/2012		04/05/2012
* Subcontracted test. ** % recovery of the surroga	te standard to		Sample Time											
check the efficiency of the	e method. The		Date Received SDG Ref	120508-14		120508-14		120508-14		120508-14		120508-14		120508-14
samples aren't corrected f	for the recove	ery	Lab Sample No.(s)	5551101		5551105		5551107		5551109		5551110		5551111
(F) Trigger breach confirmed			AGS Reference											
Nanhthalene-d8 %		LOD/Uni %	TM218	104		103	+	103		102	-	102		104
recoverv**		70	110210	104		100		100		102		102		104
Acenaphthene-d10 % recovery**		%	TM218	105		105		104		104		105		106
Phenanthrene-d10 % recovery**		%	TM218	105		103		103		103		104		105
Chrysene-d12 % recovery**		%	TM218	92.9		100		91.7		93		102		98.5
Perylene-d12 % recover	'Y**	%	TM218	89.6		104		90.7		92.9		108		111
Naphthalene		<9 µg/	kg TM218	<9	м	612 M	Л	<9	м	<9 M		932	м	4330 M
Acenaphthylene		<12 µa/ka	TM218	37.9	М	878 N	Λ	<12	м	<12 M		5040	М	15200 M
Acenaphthene		<8 µg/	kg TM218	21.2	м	353 M	Л	<8	м	<8 M		510	м	17500 M
Fluorene		<10	TM218	<10	м	797	л	<10	м	<10 M		2010	м	18200 M
Phenanthrene		<15 ug/kg	TM218	<15	м	5360	л	<15	м	<15 M		14900	м	42500 M
Anthracene		<16	TM218	<16	м	1420	<u>,</u>	<16	м	<16 M		4410	м	11500 M
Fluoranthene		<17	TM218	<17	M	8150	л л	<17	м	<17 M		18900	M	16700 M
Pyrene		<15 <15	TM218	<15	M	6930	л л	<15	м	<15 M		15400	M	17300 M
Benz(a)anthracene		<14	TM218	<14	M	3860	/ /	<14	м	<14		10300	M	7170
Chrysene		<u>µq/кд</u> <10	TM218	<10		3700	/	<10		<10		8390		5570
Benzo(b)fluoranthene		<u>µg/кд</u> <15	TM218	<15		5800	/ /	<15	M	<15 M		13600	IVI	7670
Benzo(k)fluoranthene		<u>µq/кд</u> <14	TM218	<14		2000	/	<14		<14		5480		2550
Benzo(a)pyrene		<u>µg/kg</u> <15	TM218	<15	M	4130	/ /	<15	м	<15 M		12000	M	6320 M
Indeno(1,2,3-cd)pyrene		<u>µq/кд</u> <18	TM218	<18		2580	/	<18		<18		8290		3350
Dibenzo(a,h)anthracene		µg/кg <23	TM218	<23		755	/ /	<23		<23		2670		1130
Benzo(a.h.i)pervlene		μ <u>μ</u> /κg <24	TM218	<24	IVI	2870		<24	IVI	<24	-	8670	IVI	3340
		µg/kg			Μ	N	Л		М	M			М	М
PAH, Total Detected		<118	TM218	<118		50200	Т	<118		<118		131000		180000
		μg/kg												

ALcontrol Labor	ratories		0501					Validated
SDG: 1205 Job: H_C Client Defenses: C157	508-14 ELTIC_RE	EA-12	Location: E Customer: (Banbury Celtic Technologies	NAL 1515	Order Number: Report Number:	66804 181178	
	20		Attention:			Superseded Repo	rt.	
Results Legend Results Legend ISO17025 accredited. M mCERTS accredited. Geviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. Subcontracted test. % frecovery of the surrogate stanc check the efficiency of the methor results of individual compounds s samples arent corrected for ther	lard to d. The within ecovery	Customer Sample R Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s)	8H106 4.70 Soil/Solid 04/05/2012 05/05/2012 120508-14 5551114	BH106 5.70 Soil/Solid 04/05/2012 05/05/2012 120508-14 5551115				
(F) Trigger breach confirmed	LOD/U	AGS Reference						
Naphthalene-d8 %	%	TM218	97.4	104				
Acenaphthene-d10 %	%	TM218	98.9	107				
recovery** Phenanthrene-d10 % recovery**	%	TM218	95.7	106				
Chrysene-d12 %	%	TM218	103	100				
Perylene-d12 % recovery**	%	TM218	83.9	104				
Naphthalene	<9 µg	/kg TM218	179000	10200				
Acenaphthylene	<12	2 TM218	6890	2250				
Acenaphthene	<8 µg	ykg TM218	50600	849 M M				
Fluorene	<1() TM218	25900	1710				
Phenanthrene	<15	5 TM218	59600	4610				
Anthracene	<16	5 TM218	17800	1330				
Fluoranthene	<17	7 TM218	10600	777 M				
Pyrene	<15 <15	5 TM218	14900	1070				
Benz(a)anthracene	<14	4 TM218	4920	344 M				
Chrysene	μη/κ <1() TM218	4290	294				
Benzo(b)fluoranthene	<15 <15	5 TM218	1970	143				
Benzo(k)fluoranthene	<14 <14	4 TM218	744	55.7				
Benzo(a)pyrene	µg/k <15	5 TM218	2430	194 M				
Indeno(1,2,3-cd)pyrene	μ <u>η</u> /κ <1ξ	3 TM218	616	56.5				
Dibenzo(a,h)anthracene	<pre>23</pre>	9 3 TM218	296	<23				
Benzo(g,h,i)perylene	<pre>24</pre>	4 TM218	720	64.6				
PAH, Total Detected	<11	8 TM218	382000	23900				
USEFA 10	μy/κ	<u>y</u>						
	-							

CERTIFICATE OF ANALYSIS

SDG: 1205	08-14		Location: B	anbury		Order Number:	66804	
Job: H_C Client Reference: C152	ELTIC_R 26	EA-12	Customer: C Attention: N	eltic Technologies eil Hopkins		Report Number: Superseded Repor	181178 rt:	
TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	BH104	BH105	BH105	BH105	BH106	BH106
S Deviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	3.80 Soil/Solid	0.50 Soil/Solid	2.20 Soil/Solid	4.60 Soil/Solid	0.50 Soil/Solid	2.30 Soil/Solid
tot.unfilt Total / unfiltered sample. * Subcontracted test. **	lard to	Date Sampled Sample Time	02/05/2012	03/05/2012	03/05/2012	03/05/2012	04/05/2012	04/05/2012
check the efficiency of the metho results of individual compounds	lard to d. The within	Date Received SDG Ref	05/05/2012 120508-14	05/05/2012 120508-14	05/05/2012 120508-14	05/05/2012 120508-14	05/05/2012 120508-14	05/05/2012 120508-14
samples aren't corrected for the r (F) Trigger breach confirmed	ecovery	Lab Sample No.(s) AGS Reference	5551101	5551105	5551107	5551109	5551110	5551111
Component GRO Surrogate %	LOD/U	nits Method TM089	162	37	107	110	54	41
recovery**	<	1 TM089	83.8	471	<14	<14	110	25500
Mothul tortion (but d other	µg/k	g g				~5		20000 ~F
(MTBE)	<2 hố	j/kg 110089	<5 #	<5 #	<0 # #	<5 #	<5 #	<5 #
Benzene	<10 µg/k	D TM089 g	<10 M	<10 N	<10 1 M	<10 M	61.2 M	307 M
Toluene	<2 µç	g/kg TM089	<2 M	5.2 N	<2 1 M	<2 M	6 M	19.4 M
Ethylbenzene	<3 µç	g/kg TM089	<3 M	<3 N	<3 1 M	<3 M	19.2 M	382 M
m,p-Xylene	<6 µį	g/kg TM089	<6 M	9.1 N	<6 1 M	<6 M	19.2 M	159 M
o-Xylene	<3 µç	g/kg TM089	<3 M	<3 N	<3 1 M	<3 M	10.8 M	171 M
sum of detected mpo	<9 µį	g/kg TM089	<9	9.1	<9	<9	30	330
sum of detected BTEX by	<24	4 TM089	<24	<24	<24	<24	116	1040
Aliphatics >C5-C6	<10 <10	9) TM089	<10	37.7	<10	<10	19.2	403
Aliphatics >C6-C8	μ <u>μ</u> γ/κ <1(9 D TM089	13.4	84.5	<10	<10	62.4	1280
Aliphatics >C8-C10	µg/k <10	<u>g</u> D TM089	17	65	<10	<10	79.2	3380
Aliphatics >C10-C12	µg/k <10	g D TM089	20.7	127	<10	<10	70.8	10300
Aliphatics >C12-C16	µg/k <10	g 0 TM173	6780	62900	12100	4660	56800	360000
Aliphatics >C16-C21	μ <u>g</u> /k <10	<u>g</u> 0 TM173	4970	345000	5660	<100	159000	593000
Aliphatics >C21-C35	μ <u>g</u> /k <10	g 0 TM173	<100	565000	2490	<100	472000	362000
Aliphatics >C35-C44	µg/k <10	g 0 TM173	<100	90900	<100	<100	113000	36000
Total Aliphatics >C12-C44	µg/k <10	<u>g</u> 0 TM173	11800	1060000	20300	4660	802000	1350000
Aromatics >EC5-EC7	µg/k	g TM089	<10	10.4	<10	<10	61.2	307
	µg/k	g TM000	-10	-10.4	-10	-10	-10	40.4
Aromatics >EC7-EC8	<10 µg/k	g 1M089	<10	<10	<10	<10	<10	19.4
Aromatics >EC8-EC10	<10 µg/k	D TM089 g	12.2	57.2	<10	<10	102	2970
Aromatics >EC10-EC12	<10 µg/k) TM089 g	13.4	84.5	<10	<10	46.8	6870
Aromatics >EC12-EC16	<10 µg/k	0 TM173 q	11900	44400	29400	11300	74100	78300
Aromatics >EC16-EC21	<10 ug/k	0 TM173	3150	147000	4710	2530	173000	106000
Aromatics >EC21-EC35	<10	0 TM173	<100	375000	11100	<100	534000	90000
Aromatics >EC35-EC44	<10	9 0 TM173	<100	89600	1270	<100	174000	20000
Aromatics >EC40-EC44	<10	0 TM173	<100	28300	<100	<100	56600	6470
Total Aromatics	μ <u>g</u> /κ <10	g 0 TM173	15100	657000	46500	13800	956000	295000
Total Aliphatics >C5-35	<u>µg/k</u> <10	g 0 TM173	11800	974000	20300	4670	689000	1330000
Total Aromatics >C5-35	μg/k <10	g 0 TM173	15100	567000	45200	13800	782000	285000
Total Aliphatics &	μ <u>g</u> /k <10	<u>g</u> 0 TM173	26900	1540000	65500	18500	1470000	1620000
Aromatics >C5-35	µg/k	g 0 TM173	26900	1720000	66700	18500	1760000	1670000
Aromatics >C5-C44	µg/k	g	20300	1720000	00100	10000	1700000	1070000

CERTIFICATE OF ANALYSIS

			CERT	FICATE OF /	ANAL 1 515			
SDG: 12050 Job: H_CE Client Reference: C1520)8-14 ELTIC_RI	EA-12	Location: B Customer: C Attention: N	anbury eltic Technologies eil Hopkins		Order Number: Report Number: Superseded Report	66804 181178 rt:	
TPH CWG (S)								
Results Legend		Customer Sample R	BH106	BH106				
# ISO17025 accredited. M mCERTS accredited.								
§ Deviating sample.		Depth (m)	4.70	5.70				
diss.filt Dissolved / filtered sample.		Sample Type	Soil/Solid	Soil/Solid				
* Subcontracted test.		Date Sampled Sample Time		04/05/2012				
** % recovery of the surrogate standa check the efficiency of the method	rd to The	Date Received	05/05/2012	05/05/2012				
results of individual compounds wi	thin	SDG Ref	120508-14	120508-14				
samples aren't corrected for the rec (F) Trigger breach confirmed	covery	AGS Reference	0001114	0001110				
Component	LOD/U	nits Method						
GRO Surrogate %	%	5 TM089	105	107				
recovery**								
GRO >C5-C12	<44	4 I M089	220000	26100				
Methyl tertiany butyl ether	μ <u>μ</u> γ/κ	.y 1/kg TM089	<50	<50				
(MTBE)	~5 µç	g/kg 110005	~50	~50	±			
Benzene	<1(D TM089	6280	6820				
	µg/k	g	М	N	1			
Toluene	<2 µg	g/kg TM089	2310	427				
			M	N	1			
Ethylbenzene	<3 µg	g/kg IM089	13000	2250	A			
m n-Xvlene	<6.00	1/kg TM089	13800	2300	1			
	10 με	grig Twooo	M	2000	1			
o-Xylene	<3 µç	g/kg TM089	7150	1150				
,		, ,	М	N	1			
sum of detected mpo	<9 µg	g/kg TM089	21000	3450				
xylene by GC	ļ							
sum of detected BTEX by	<24	4 TM089	42600	12900				
GC Aliphatian >CE C6	µg/k		<100	<100				
Aliphatics >05-00			100	<100				
Aliphatics >C6-C8	<1(D TM089	675	373				
P	µg/k	g						
Aliphatics >C8-C10	<1(0 TM089	26900	2380				
	µg/k	g						
Aliphatics >C10-C12	<10	D TM089	79000	5290				
Aliphatian >C12 C16	μ <u>q</u> /k	<u>q</u> 0 TM172	107000	24200				
Aliphatics >C12-C10		a 1101173	197000	24300				
Aliphatics >C16-C21	<10	0 TM173	292000	12300				
	µg/k	g						
Aliphatics >C21-C35	<10	0 TM173	95600	16100				
	µg/k	g						
Aliphatics >C35-C44	<10	0 IM173	4830	923				
Total Aliphatics >C12-C44	μ <u>q</u> /κ	. <u>q</u> 10 TM173	589000	53600				
	ua/k	a	000000	00000				
Aromatics >EC5-EC7	<10	0 TM089	6280	6820				
	µg/k	g						
Aromatics >EC7-EC8	<10	D TM089	2310	427				
1	µg/k	g Thioso	F 1000	7000				
Aromatics >EC8-EC10	<10	J 1M089	51900	7280				
Aromatics >FC10-FC12	μy/K <1(9 0 TM089	52700	3520				
	µa/k	g	52,00	0020				
Aromatics >EC12-EC16	<10	0 TM173	166000	48600				
	µg/k	g		ļ				
Aromatics >EC16-EC21	<10	0 TM173	188000	36200				
Arcreation > EQ24 EQ25	µg/k	<u>g</u>	110000	25200				
Aromatics >EC21-EC35	<10		110000	25200				
Aromatics >EC35-EC44	μ <u>μ</u> γ/κ <10	9 0 TM173	20300	6650				
	µg/k	g						
Aromatics >EC40-EC44	<10	0 TM173	6620	2040				
	µg/k	g						
Total Aromatics	<10	0 TM173	484000	117000				
>EC12-EC44	µg/k		601000	60900				
Total Aliphatics 205-35	<10 un/b	iu 11V1173	091000	00800				
Total Aromatics >C5-35	<10	0 TM173	577000	128000				
	μg/k	g						
Total Aliphatics &	<10	0 TM173	1270000	189000				
Aromatics >C5-35	µg/k	g	10000					
Total Aliphatics &	<10	IM173	1290000	196000				
numanus ~00-044	µy/K	<u>.</u>						

C

CERTIFICATE OF ANALYSIS

Validated

120508-14 66804 SDG: Location: Banbury Order Number: H_CELTIC_REA-12 Celtic Technologies 181178 Job: Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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CERTIFICATE	OF ANAL	SIS
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 SDG:
 120508-14
 Location:
 Banbury
 Order Number:
 66804

 Job:
 H_CELTIC_REA-12
 Customer:
 Celtic Technologies
 Report Number:
 181178

 Client Reference:
 C1526
 Attention:
 Neil Hopkins
 Superseded Report:

Test Completion Dates

Lab Sample No(s)	5551101	5551105	5551107	5551109	5551110	5551111	5551114	5551115
Customer Sample Ref.	BH104	BH105	BH105	BH105	BH106	BH106	BH106	BH106
AGS Ref.								
Depth	3.80	0.50	2.20	4.60	0.50	2.30	4.70	5.70
Туре	SOLID							
Ammonium Soil by Titration	10-May-2012	11-May-2012	11-May-2012	11-May-2012	10-May-2012	11-May-2012	11-May-2012	11-May-2012
Boron Water Soluble	15-May-2012	11-May-2012	11-May-2012	11-May-2012	11-May-2012	11-May-2012	11-May-2012	15-May-2012
Cyanide Comp/Free/Total/Thiocyanate	14-May-2012							
EPH CWG (Aliphatic) GC (S)	15-May-2012							
EPH CWG (Aromatic) GC (S)	15-May-2012							
GRO by GC-FID (S)	16-May-2012	16-May-2012	15-May-2012	15-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012
Metals by iCap-OES (Soil)	14-May-2012	11-May-2012	14-May-2012	14-May-2012	14-May-2012	14-May-2012	14-May-2012	11-May-2012
PAH by GCMS	14-May-2012	14-May-2012	14-May-2012	14-May-2012	14-May-2012	14-May-2012	15-May-2012	14-May-2012
Phenols by HPLC (S)	15-May-2012	15-May-2012	15-May-2012	15-May-2012	15-May-2012	14-May-2012	14-May-2012	14-May-2012
Sample description	09-May-2012							
Total Organic Carbon	14-May-2012							
TPH CWG GC (S)	16-May-2012	16-May-2012	15-May-2012	15-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012

07:25:36 16/05/2012

CERTIFICATE OF ANALYSIS

SDG:	120508-14	Location:	Banbury	Order Number:	66804
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	181178
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOWEREND	GC-FD
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOWEREND	GC-FD
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	ENDOWEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-MS
×06-C40	WET	HEXANEACETONE	SHAKER	GC-RD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FD
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-MS

SOLID MATRICES EXTRACTION SUMMARY

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
EPHCWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCROPP	DCM	LQUD/LQUD SHAKE	GCMS
TRIAZINE HERBS	DCM	LQUD/LQUD SHAKE	GCMS
PHENOLSMS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOL by R	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	CC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrystile

Amosite

Onichite

Fibrous Adindite

Fibrous Anthophylite

Fibra & Trendie

Common Name

WhiteAsheshes

BrownAsbestos

Blue Ashestos

-

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 13 June 2012 H_CELTIC_REA 120517-60 C1526 Banbury 184051

We received 23 samples on Wednesday May 16, 2012 and 14 of these samples were scheduled for analysis which was completed on Wednesday June 13, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.



<u>Sonia McWhan</u> Operations Manager





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CERTIFICATE OF ANALYSIS

Validated

SDG:	120517-60	Location:	Banbury	Order Number:	66137
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184051
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5596282	NO ID			
5596254	TP102		0.40	14/05/2012
5596255	TP102		1.20	14/05/2012
5596257	TP103		0.30	14/05/2012
5596258	TP103		1.60	14/05/2012
5596259	TP103		2.20	14/05/2012
5596260	TP104		0.20	14/05/2012
5596262	TP104		0.60	14/05/2012
5596263	TP104		2.00	14/05/2012
5596264	TP105		0.30	14/05/2012
5596265	TP105		1.00	14/05/2012
5596266	TP105		2.20	14/05/2012
5596268	TP106		0.20	15/05/2012
5596269	TP106		2.00	15/05/2012
5596270	TP107		0.30	15/05/2012
5596271	TP107		0.50	15/05/2012
5596273	TP107		1.30	15/05/2012
5596274	TP107		2.60	15/05/2012
5596276	TP107		3.20	15/05/2012
5596277	TP107		3.50	15/05/2012
5596279	TP108		1.20	15/05/2012
5596280	TP108		1.80	15/05/2012
5596281	TP108		2.50	15/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

SDG: Job: Client Reference:	120517-60 H_CELTIC_I C1526	REA-12	Location Custome Attentior	: er: 1:	E C N	Ba Ce Ne	nbury Itic Teo il Hopk	chr	nolog S	ies							Ord Rep Sup	er N ort I erse	umi Nun edeo	ber: nber d Re	: por	t:
SOLID				(7)	(7)	(N				G	(1		(7)		(7) (.п			(1)		(7)	(T
Results Legend		Lab Sample N	No(s)	559625	559625	559625	559625	559626		559626	559626		559626		559626	559627	2962		559627		559627	229690
X Test				4	с;	57	ö	ĕ		Ň	4	1	ő		- ö	3	ω		7		9	ë
No Determina	ation			Γ				T														
		Custome	r	Ę	ΤP	ΤÞ	Ę	I Ę		Ŧ	TP	;	ΤP		Ę	Ę	Ę		ΤΡ		ΤP	Ę
		Sample Refer	ence	102	102	103	103	104		104	105		106		106	107	107		107		108	801
		AGS Refere	nce																			
						_				_			_						6			
		Depth (m)	0.40	1.20	0.30	.60	0.20		0.60	0.30	8).20		2.00	50	.30		3.50		1.20	.80
	-			┝		40	40 25	40	25 25	60	25 40	25	40	25	100	25 40	40	25	60	40 25	60	40
		-		1kg	1kg	0g Tub	g VOC 0g Tub 0g Aml	Og Tub	0g Tub 0g Aml		g VOC 0g Tub	0g Am	g VOC 0a Tub	0g Ami		0g Ami 0g Tuit	g VOC 0g Tub	0g Am		0g Tub 0g Aml	g VOC	g VOC Og Tub Da Aml
		Containe	r	TUB	TUB	(ALE2	(ALE2 Oer Jar	(ALE)	er Jar	(ALE2	(ALE2	per Jar	(ALE2	per Jar	(ALE2	oer Jar	(ALE2		(ALE2	er Jar	(ALE2	(ALE2
Ammonium Coil by Titroti		11				214)	(AL	14)	(AL	(15)	214) (Al	βÂ	(15) (14)	Â,	:15)	14) (AL	(15) (14)	ĺ₽.	15)	(AL)	:15)	(AL
Ammonium Soli by Titratic	on A	11	NDPs: 0 Tests: 11	×	Y		Y		Y		Y		Y		<u>,</u>		×		2	×		×
Asbestos Identification (S	oil) A	II	NDPs: 0	^	^		^	-	^		^	·	^	-	`	-	^		• 	^		^
			Tests: 6	x		X		x			x		x			x						
Asbestos Quantification -	Full A	ll	NDPs: 0 Tests: 3																			
				x		X							x									
Boron Water Soluble	A	1	NDPs: 0 Tests: 11						X			v		Y		~		~				~
Cyanide	A	II	NDPs: 0	×	X		×		×	2		X		×		×		×		×		×
Comp/Free/Total/Thiocya	nate		Tests: 11	x	Х		x		X		x		x)	ĸ		x)	<mark><</mark>	x		x
EPH CWG (Aliphatic) GC	(S) A	ll	NDPs: 0	ſ												_						
				x	x		x		x	2	×	x		x		x		x		x		×
EPH CWG (Aromatic) GC	(S) A	ll	NDPs: 0 Tests: 11																			
GRO by GC-FID (S)	A	II	NDPs: 0	×	X		×		×	2	×	X		x		X		×	_	×		×
			Tests: 11	x	X		X	1		X	X		X		X		X		X		X	×
Metals by iCap-OES (Soil) A	rsenic	NDPs: 0	F										+								
			Tests: 11	x	x		x		x	2	×	x		x		X		x		x		x
	C	admium	NDPs: 0 Tests: 11																			
		hromium		X	X		×		x	2	×	X		x		X		x	_	x		×
			Tests: 11	x	X		X		x		<mark>x</mark>	X		X		X		x		x		x
	C	Copper	NDPs: 0																-			
			Tests: 11	x	x		x		x		x	x		x		x		x		x		x
	L	ead	NDPs: 0 Tests: 11																			
		lercuny	NDD	×	X		×		×		×	X		X		X		X		X		X
		iei cui y	NDPs: 0 Tests: 11	×	Y		X		Y	,	x	Y		x		Y		Y		X		x
	N	lickel	NDPs: 0	ſ			^		^			^		^		^		^	+	^		
			Tests: 11	x	X		X		X		x	x		X		X		x	+	X		x

ALCONTROL	aborato	ries	C	EF	۲S	ΊF	FIC.	AT	Е	OF	AN	AI	LYS	SIS	S											
SDG: Job: Client Reference:	120517-60 H_CELTIC C1526) C_REA-12	Location Custome Attention	: r: 1:	E C N	Bar Cel Nei	nbur <u>n</u> Itic T il Ho	y echr pkins	nolo S	gies							C R S	Orde Rep Sup	er N ort ers	Nur Nu ied	nb Imi ed	er: ber: Re	: por	t:	66 18	3137 34051
SOLID Results Legend X Test		Lab Sa	ample No(s)	5596254	5596255	5596257		5596260 5596258		5596262	101000	5506364	8979659		2059656	5596271		5596273			5596277		5596279		5596280	
No Determin Possible	ation	Շւ Sample	Customer Sample Reference			TP103		TP104 TP103		TP104		TD105	190141	-	19106	TP107		TP107		:	TP107		TP108		TP108	
		AGS	Reference																							
		De	epth (m)	0.40	1.20	0.30		0.20 1.60		0.60	0.00	0 2 0	0.20	2	2.00	0.50		1.30		0.00	3.50		1.20		1.80	
		Cc	ontainer	1kg TUB	1kg TUB	400g Tub (ALE214)	400g Tub (ALE214) 250g Amber Jar (AL	400g Tub (ALE214) 60g VOC (ALE215)	250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214)	250g Amber Jar (AL	250g Amber Jar (AL	400g Tub (ALE215)	250g Amber Jar (AL	400g Tub (ALE215)	400g Tub (ALE214)	250g Amber Jar (AL	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	2300 Alliver עמי (הב 60a VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	
Metals by iCap-OES (Soi	I)	Selenium	NDPs: 0 Tests: 11	x	x		x		x		x	x		x			x		x)	<		x		
		Zinc	NDPs: 0 Tests: 11	x	x		x		x		x	x		x			x		x		,	< <		x		
PAH by GCMS		All	NDPs: 0 Tests: 11	x	x		x		x		x	x		x			x		x)	< <		x		
Phenols by HPLC (S)		All	NDPs: 0 Tests: 11	x	x		x			x	x		x		x)	K		x		x		X		
Sample description		All	NDPs: 0 Tests: 11	x	x		x		x		x	x		x			x		x)	K		x		
Total Organic Carbon		All	NDPs: 2 Tests: 9	N	x		x		x		x	N		x			x		x)	<mark>(</mark>		×		
Total Organic Carbon (As	sb)	All	NDPs: 0 Tests: 2	x								x														
TPH CWG GC (S)		All	NDPs: 0 Tests: 11	x	x		x		x		X	x		x			x		x)	K	2	×		

CERTIFICATE OF ANALYSIS

Validated

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SDG: Job: Client Reference:	120517-60 H_CELTIC_REA-12 C1526	Location: Customer: Attention:	Banbury Celtic Technologies Neil Hopkins	Order Number: Report Number: Superseded Report:	66137 184051
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Sample Descriptions

Grain Sizes										
very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm	n - 2mm	coar	rse 2mm - 1	.0mm very co	arse >10m
Lab Sample No	(s) Custo	ner Sample R	ef. Depth (m)) C	olour	Descript	ion	Grain size	Inclusions	Inclusions 2
5596254		TP102	0.40	Darl	k Brown	Sand		0.1 - 2 mm	Glass & Stones	N/A
5596255		TP102	1.20	Darl	k Brown	Silty Sa	nd	0.063 - 0.1 mm	Stones	N/A
5596258		TP103	1.60	Darl	k Brown	Silty Cl	ay	0.063 - 0.1 mm	Stones	Vegetation
5596262		TP104	0.60	Ligh	t Brown	Clay		<0.063 mm	None	None
5596264		TP105	0.30	Ligh	t Brown	Sand		0.1 - 2 mm	Stones	None
5596268		TP106	0.20	Darl	k Brown	Loamy S	and	0.063 - 0.1 mm	Stones	N/A
5596269		TP106	2.00	(Grey	Clay		<0.063 mm	N/A	N/A
5596273		TP107	1.30	(Grey	Silty Cl	ay	0.063 - 0.1 mm	N/A	N/A
5596277		TP107	3.50	Ligh	t Brown	Silty Sa	nd	0.063 - 0.1 mm	N/A	Stones
5596279		TP108	1.20	Darl	k Brown	Clay	Clay <0.063 mm N/A		N/A	N/A
5596280		TP108	1.80	Darl	k Brown	Silty Cl	ay	0.063 - 0.1 mm	N/A	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 120 Job: H_C Client Reference: C15	517-60 CELTIC_RE 26	A-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins			Order Number: Report Number: Superseded Repo	66137 184051 rt:	
Results Legend # ISO17025 accredited.		Customer Sample R	TP102		TP102	TP103		TP104	TP105	TP106
M mCERTS accredited. § Deviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate stat	idard to	Depth (m) Sample Type Date Sampled Sample Time	0.40 Soil/Solid 14/05/2012		1.20 Soil/Solid 14/05/2012	1.60 Soil/Solid 14/05/2012		0.60 Soil/Solid 14/05/2012	0.30 Soil/Solid 14/05/2012	0.20 Soil/Solid 15/05/2012
check the efficiency of the meth results of individual compounds samples aren't corrected for the (F) Trigger breach confirmed	check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Trigger breach confirmed LOD/Units Method		120517-60 5596254		120517-60 5596255	120517-60 5596258		120517-60 5596262	120517-60 5596264	120517-60 5596268
Ammoniacal Nitrogen as N	<15	TM024	<15		68.5	<15		<15	<15	<15
Phenols, Total Detected	mg/kg <0.03	a 5 TM062 (S)	<0.035		0.119	<0.035		<0.035	<0.035	<0.035
Soil Organic Matter (SOM)		a % TM132		IVI	67.9 #	8.6	vi #	1.36 #	<0.35 #	M
Cyanide, Total	<1 mg	/kg TM153	1.22	м	152 M	5.4	# И			2.54 M
Cyanide, Free	<1 mg	/kg TM153	<1	М	<1 M	<1 N	м И	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181	25.3	М	29.4 M	47.5 N	и	21.7 M	20.1 M	41.9 M
Cadmium	<0.0 mg/k	2 TM181	6.58	М	1.06 M	5.85 N	и	0.49 M	0.586 M	11.8 M
Chromium	<0.9 mg/kg	TM181	189	М	41.4 M	71.1	и	57.1 M	11.9 M	344 M
Copper	<1.4 mg/kg	TM181	427	М	70.2 M	449	и	27.8 M	9.06 M	751 M
Lead	<0.7 mg/kg	TM181	1050	М	206 M	7550 M	и	43.9 M	8.39 M	1580 M
Mercury	<0.1 mg/kg	4 TM181 a	2.21	М	<0.14 M	5.01	и	<0.14 M	<0.14 M	1.42 M
Nickel	<0.2 mg/kg	TM181	161	М	35.2 M	68.2	и	38.2 M	19.4 M	723 M
Selenium	<1 mg	/kg TM181	<1	#	<1 #	<1	#	<1 #	<1 #	<10 #
Zinc	<1.9 mg/kg	TM181	813	М	632 M	1520 M	и	112 M	89.8 M	4040 M
Boron, water soluble	<1 mg	/kg TM222	5.98	М	13.8 M	4.48	и	<1 M	<1 M	1.33 M
Soil Organic Matter (SOM)	<0.1	% TM321	1.57	#						1.37 #

CERTIFICATE OF ANALYSIS

SDG: Job: I Client Reference: (120517-60 H_CELTIC_RE/ C1526	A-12	Location: Customer: Attention:	Banburg Celtic T Neil Ho	/ echnologies pkins			Order Number: Report Number: Superseded Rep	6 1 port:	6137 84051		
Poeulie Lesand		Cuptomer Commis -	TD		TD		70407	TDIAL		TD400	_	
Results Legend # ISO17025 accredited. M mCERTS accredited. § Deviating sample. ag Aqueous / settled sample.		Customer Sample R Depth (m)	TP106 2.00		TP107 1.30		TP107 3.50	TP108 1.20		TP108 1.80		
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate	e standard to	Sample Type Date Sampled Sample Time Date Received	Soil/Solid 15/05/2012 16/05/2012		Soil/Solid 15/05/2012 16/05/2012		Soil/Solid 15/05/2012 16/05/2012	Soil/Solid 15/05/2012 16/05/2012	S 15 16	oil/Solid /05/2012		
check the efficiency of the results of individual compo samples aren't corrected fo (F) Trigger breach confirmed	method. The bunds within or the recovery	SDG Ref Lab Sample No.(s) AGS Reference	120517-60 5596269		120517-60 5596273		120517-60 5596277	120517-60 5596279	12 5	:0517-60 596280		
Component Ammoniacal Nitrogen as	N <15	ts Method TM024	44.6		1740	+	596	56.3		229	+	
Phenols, Total Detected	<pre> mg/kg <0.035 mg/kg </pre>	5 TM062 (S)	<0.035	м	0.693	м	0.188 M	<0.035	<	0.035	м	
Soil Organic Matter (SON	A) <0.35	% TM132	3.03	#	1.06	#	<0.35	1.48	ŧ	3.71	#	
Cyanide, Total	<1 mg/	kg TM153	<1	M	34.6	м	14.4 M	<1 N	1	<1	M	
Cyanide, Free	<1 mg/	kg TM153	<1	м	<1	м	<1 M	<1 N	1	<1 N	и	
Arsenic	<0.6 mg/kg	TM181	13.8	м	13.4	м	71.8 M	14.3 N	1	20.1	и	
Cadmium	<0.02 mg/kg	TM181	0.372	м	0.308	м	2.03 M	0.348	1).438 N	и	
Chromium	<0.9 mg/kg	TM181	52	м	51.1	м	63.1 M	49.8 N	1	61.9 N	и	
Copper	<1.4 mg/kg	TM181	31.4	м	23.6	м	17.2 M	21 N	1	15.2 N	и	
Lead	<0.7 mg/kg	TM181	41.5	м	15	м	18.6 M	20.6 N	1	69.8 N	и	
Mercury	<0.14 mg/kg	TM181	0.999	м	<0.14	м	<0.14 M	<0.14	1	<0.14 N	и	
Nickel	<0.2 mg/kg	TM181	41.3	м	40.2	м	56.8 M	37.4 N	1	30.6 	и	
Selenium	<1 mg/	kg TM181	<1	#	<1	#	<10 #	<1	ŧ	<1	#	
Zinc	<1.9 mg/kg	TM181	151	м	95.8	м	122 M	91.9 M	1	96.1 N	и	
Boron, water soluble	<1 mg/	kg TM222	3.64	м	1.92	м	1.34 M	2.13 N	1	1.98 N	и	
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CERTIFICATE OF ANALYSIS

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SDG: Job: Client Reference:	120517-60 H_CELTIC_ C1526	_REA-	12	Location: Customer: Attention:	Ba Ce Ne	anbury eltic Technologies eil Hopkins			Order Number: Report Number: Superseded Repo	66137 184051 ort:	
PAH by GCMS											
Results Legend # ISO17025 accredited. M mCERTS accredited.		Cu	ustomer Sample R	TP102		TP102	TP103		TP104	TP105	TP106
S Deviating sample. aq Aqueous / settled sample.			Depth (m)	0.40		1.20	1.60		0.60	0.30	0.20
diss.filt Dissolved / filtered sample tot.unfilt Total / unfiltered sample.	э.		Date Sample Type	Soil/Solid 14/05/2012		Soil/Solid 14/05/2012	Soil/Solid 14/05/2012		Soil/Solid 14/05/2012	Soil/Solid 14/05/2012	Soil/Solid 15/05/2012
** % recovery of the surrogate check the efficiency of the	te standard to method. The		Sample Time Date Received	16/05/2012		16/05/2012	16/05/2012		16/05/2012	16/05/2012	16/05/2012
results of individual comp samples aren't corrected f	ounds within for the recovery		SDG Ref Lab Sample No.(s)	120517-60 5596254		120517-60 5596255	120517-60 5596258		120517-60 5596262	120517-60 5596264	120517-60 5596268
(F) Trigger breach confirmed			AGS Reference								
Naphthalene-d8 %		%	TM218	101		91.2	107		98.2	100	96
recovery** Acenaphthene-d10 %		%	TM218	102		93.2	106	_	97.3	101	95.3
Phenanthrene-d10 %		%	TM218	103		91.1	107	_	93.5	102	96.4
recovery** Chrysene-d12 %		%	TM218	91.9		86.1	107		88.3	85.8	96.1
Perylene-d12 % recover	y**	%	TM218	92.8		84.5	116	_	89.2	86.6	101
Naphthalene	<9	µg/kg	TM218	144		11300	834		<9	<9	458
Acenaphthylene		<12	TM218	156	IVI	5370	1040		<12 M	<12 M	162 M
Acenaphthene	µ 8>	<u>u/кg</u> µg/kg	TM218	18.8	IVI N4	2160 M	783	IVI NA	M <8	<8	252 M
Fluorene		<10	TM218	25.7	IVI N 4	6600 M	869		<10 M	<10 M	397
Phenanthrene	<u> </u>	<u>q/кд</u> <15 g/kg	TM218	432	M	22500 M	12700	M	<15 M	<15 M	6050 M
Anthracene	P	9/kg <16 g/kg	TM218	192	M	8990 M	4010	м	<16	<16 M	2360 M
Fluoranthene	P	<17 a/kg	TM218	1170	M	35900 M	28700	м	<17 M	<17 M	10200 M
Pyrene		<15 a/ka	TM218	1110	м	30300 M	23900	м	<15 M	<15 M	7660 M
Benz(a)anthracene	<u> </u>	<14 a/ka	TM218	668	м	16900 M	14000	м	<14 M	<14 M	3950 M
Chrysene		<10 a/ka	TM218	575	м	14900 M	10800	м	<10 M	<10 M	3260 M
Benzo(b)fluoranthene		<15 a/ka	TM218	1140	м	21200 M	18100	м	<15 M	<15 M	4240 M
Benzo(k)fluoranthene		<14 a/ka	TM218	373	М	7600 M	6370	м	<14 M	<14 M	1550 M
Benzo(a)pyrene	μ	<15 g/kg	TM218	774	М	17100 M	15000	м	<15 M	<15 M	3240 M
Indeno(1,2,3-cd)pyrene	μ	<18 g/kg	TM218	606	М	8470 M	8450	м	<18 M	<18 M	2040 M
Dibenzo(a,h)anthracene	μ	<23 g/kg	TM218	149	М	2670 M	2310	м	<23 M	<23 M	560 M
Benzo(g,h,i)perylene	μ	<24 g/kg	TM218	726	м	9420 M	9480	м	<24 M	<24 M	2510 M
PAH, Total Detected USEPA 16	- γ	:118 g/kg	TM218	8250		221000	157000		<118	<118	48900
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CERTIFICATE OF ANALYSIS

SDG: Job:	120517-60 H_CELTIC	0 C_REA	-12	Location: Customer:	Ba Ce	nbury Itic Technologies				Order Number Report Number	r: er:	66137 184051		
Client Reference:	C1526			Attention:	Ne	II Hopkins				Superseded R	lepo	rt:		
PAH DY GCINS Results Legend # ISO17025 accredited.	1	с	ustomer Sample R	TP106		TP107		TP107		TP108		TP108		
M mCER IS accredited. § Deviating sample. aq Aqueous / settled sample diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.). le.		Depth (m) Sample Type Date Sampled	2.00 Soil/Solid 15/05/2012		1.30 Soil/Solid 15/05/2012		3.50 Soil/Solid 15/05/2012		1.20 Soil/Solid 15/05/2012		1.80 Soil/Solid 15/05/2012		
* Subcontracted test. ** % recovery of the surrog: check the efficiency of th results of individual com	ate standard to e method. The pounds within		Sample Time Date Received SDG Ref	16/05/2012 120517-60		16/05/2012 120517-60		16/05/2012 120517-60		16/05/2012 120517-60		16/05/2012 120517-60		
samples aren't corrected (F) Trigger breach confirmed	for the recovery I	'	Lab Sample No.(s) AGS Reference	5596269		5596273		5596277		5596279		5596280		
Component	LC	OD/Units	Method	100		100	4	100	_			00.4	4	
Naphthalene-d8 % recovery**		%	TM218	108		102		102		95.2		96.4		
recovery**		70 0/	TM219	107		101	4	104		94.7		95.1	_	
recovery**		0/	TM210	107		00.1	4	08.9		92.5		92.1	_	
recovery**		70	T 10/2 10	104		90.1		90.0		91.4		91	4	
Perylene-d12 % recove	ry^^	%	TM218	102		90.4		107		96.9		96.9		
Naphthalene	<	<a hd\k<="" td=""><td>g 1M218</td><td>367</td><td>М</td><td>504 N</td><td>Л</td><td>294 N</td><td>м</td><td>107</td><td>м</td><td>87.8 </td><td>и</td><td></td>	g 1M218	367	М	504 N	Л	294 N	м	107	м	87.8 	и	
Acenaphthylene		<12 µg/kg	TM218	37.4	М	26.1	Л	36.3 N	м	17.3	м	<12 N	и	
Acenaphthene	<	<8 µg/k	g TM218	216	М	80.6	Л	16.5 N	м	72	м	<8 N	и	
Fluorene		<10 µg/kg	TM218	91.5	М	69.5 N	Л	25.8 N	м	51.4	м	<10	и	
Phenanthrene		<15 µg/kg	TM218	164	М	170 N	Л	69.5 N	м	80.4	м	<15 N	м	
Anthracene		<16 ug/kg	TM218	156	м	57.1 N	л	<16	м	26.5	м	<16	и	
Fluoranthene		<17 ug/kg	TM218	119	м	43.4 N	л	30.8	м	35.1	м	<17	и	
Pyrene		<15 ug/kg	TM218	139	м	29.7	Л	23.5	м	26.3	м	<15	м	
Benz(a)anthracene		<14	TM218	43.8	м	<14	Л	17.7	м	<14	м	<14	м	
Chrysene		<10	TM218	39.5	м	<10	л Л	<10	м	<10	м	<10	M	
Benzo(b)fluoranthene		<15	TM218	51.4	M	<15	л Л	<15	м	<15	м	<15		
Benzo(k)fluoranthene		<14	TM218	18.5	M	<14	л Л	<14		<14	м	<14		
Benzo(a)pyrene		<15	TM218	35.7	NA	<15		<15		<15	M	<15		
Indeno(1,2,3-cd)pyrene		<18 <18	TM218	24.7	 M	<18	л Л	<18		<18	M	<18		
Dibenzo(a,h)anthracene	9	<23	TM218	<23	м	<23	л Л	<23	м	<23	м	<23	M	
Benzo(g,h,i)perylene		<24	TM218	33.2	M	<24	л Л	<24	м	<24	м	<24	M	
PAH, Total Detected		<118	TM218	1540	IVI	980		514		416		<118	VI	
USEPA 10		<u>µ</u> д/к <u>д</u>					1		+				+	
							1		+				1	
							1		+		_		+	
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CERTIFICATE OF ANALYSIS

SDG: 120 Job: H_0 Client Reference: C11	0517-60 CELTIC_RE 526	EA-12	Location: Customer: Attention:	Banbury Celtic Technologies Neil Hopkins				Order Number: Report Number: Superseded Repo	66137 184051 ort:	
TPH CWG (S)				·						
Results Legend # ISO17025 accredited.		Customer Sample R	TP102	TP102		TP103		TP104	TP105	TP106
M mCERTS accredited. § Deviating sample.		Donth (m)	0.40	1.00		4.00		0.00	0.00	0.00
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Sample Type	0.40 Soil/Solid	1.20 Soil/Solid		1.60 Soil/Solid		0.60 Soil/Solid	0.30 Soil/Solid	0.20 Soil/Solid
tot.unfilt Total / unfiltered sample.		Date Sampled	14/05/2012	14/05/2012		14/05/2012		14/05/2012	14/05/2012	15/05/2012
** % recovery of the surrogate sta	ndard to	Date Received	16/05/2012	16/05/2012		16/05/2012		16/05/2012	16/05/2012	16/05/2012
results of individual compound	s within	SDG Ref	120517-60 5596254	120517-60 5596255		120517-60 5596258		120517-60 5596262	120517-60 5596264	120517-60 5596268
(F) Trigger breach confirmed	recovery	AGS Reference								
Component	LOD/U	nits Method								
GRO Surrogate %	%	TM089	83	42		45		95	126	45
GRO >C5-C12	<44 ua/k	4 TM089 a	<44	4030		<44		80.6	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg	j/kg TM089	<5	<5 #	#	<5	#	<5 #	<5 #	<5 #
Benzene	<10 µg/k) TM089 g	<10	77.9 M	м	<10	м	<10 M	<10 M	<10 M
Toluene	<2 µg	j/kg TM089	<2	35.6 M	м	<2	м	<2 M	<2 M	<2 M
Ethylbenzene	<3 µg	j/kg TM089	<3	33 M	м	<3	М	<3 M	<3 M	<3 M
m,p-Xylene	<6 µg	J/kg TM089	<6	51.5 M	м	<6	м	<6 M	<6 M	<6 M
o-Xylene	<3 µg	J/kg TM089	<3	43.6 M	м	3.93	м	<3 M	<3 M	<3 M
sum of detected mpo xylene by GC	<9 µg	J/kg TM089	<9	95.1		<9		<9	<9	<9
Sum of detected BTEX by GC	<24 µg/k	4 TM089 g	<24	242		<24		<24	<24	<24
Aliphatics >C5-C6	<10 µg/k) TM089 g	<10	67.3		<10		<10	<10	<10
Aliphatics >C6-C8	<1(µg/k) TM089 g	<10	202		<10		<10	<10	<10
Aliphatics >C8-C10	<10 µg/k) TM089 g	<10	615		<10		11.3	<10	<10
Aliphatics >C10-C12	<10 µg/k) TM089 g	<10	1500		<10		31.5	<10	<10
Aliphatics >C12-C16	<10 µg/k	0 TM173 g	6070	53100		15600		<100	15700	15500
Aliphatics >C16-C21	<10 µg/k	0 TM173 g	36300	135000		100000		<100	<100	91900
Aliphatics >C21-C35	<10 µg/k	0 TM173 g	342000	644000		536000		<100	<100	504000
Aliphatics >C35-C44	<10 µg/k	0 TM173 g	105000	155000		148000		<100	<100	149000
Total Aliphatics >C12-C44	<10 µg/k	0 TM173 g	489000	987000		800000		<100	15700	761000
Aromatics >EC5-EC7	<1(µg/k) TM089 g	<10	77.9		<10		<10	<10	<10
Aromatics >EC7-EC8	<10 µg/k) TM089 g	<10	35.6		<10		<10	<10	<10
Aromatics >EC8-EC10	<10 µg/k) TM089 g	<10	539		11.8		<10	<10	<10
Aromatics >EC10-EC12	<10 µg/k) TM089 g	<10	999		<10		21.4	<10	<10
Aromatics >EC12-EC16	<10 µg/k	0 TM173 g	3010	135000		14800		7310	14500	6510
Aromatics >EC16-EC21	<10 µg/k	0 TM173 g	18900	541000		138000		5590	2400	35200
Aromatics >EC21-EC35	<10 µg/k	0 TM173 g	159000	1040000		525000		12100	<100	238000
Aromatics >EC35-EC44	<10 µg/k	0 TM173 g	109000	177000		184000		1650	<100	142000
Aromatics >EC40-EC44	<10 µg/k	0 TM173 g	62900	54500		64100		<100	<100	77300
Total Aromatics >EC12-EC44	<10 µg/k	0 TM173 g	289000	1900000		862000		26600	16900	421000
Total Aliphatics >C5-35	<10 µg/k	0 TM173 g	384000	835000		652000		<100	15700	612000
Total Aromatics >C5-35	<10 µg/k	0 TM173 g	181000	1720000		678000		25000	16900	279000
Total Aliphatics & Aromatics >C5-35	<10 µg/k	0 TM173 g	565000	2560000		1330000		25000	32600	891000
Total Aliphatics & Aromatics >C5-C44	<10 µg/k	0 TM173 g	779000	2890000		1660000		26600	32600	1180000
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CERTIFICATE OF ANALYSIS

Validated

SDG: 1205 Job: H_CE	17-60 ELTIC_R	EA-12	Location: Customer:	Ba Ce	nbury Itic Technologies	6			Order Number: Report Number	r:	66137 184051		
Client Reference: C152	6		Attention:	Ne	ell Hopkins				Superseded Re	epo	rt:		
TPH CWG (S)													
Results Legend # ISO17025 accredited. M mCERTS accredited. Duvictions accordited.		Customer Sample R	TP106		TP107		TP107		TP108		TP108		
S Deviating sample. aq Aqueous / settled sample. diss.fit Dissolved / filtered sample. tot.unfitt Total / unfiltered sample.		Depth (m) Sample Type Date Sampled	2.00 Soil/Solid 15/05/2012		1.30 Soil/Solid 15/05/2012		3.50 Soil/Solid 15/05/2012		1.20 Soil/Solid 15/05/2012		1.80 Soil/Solid 15/05/2012		
* Subcontracted test. ** % recovery of the surrogate stand check the efficiency of the method	ard to . The	Sample Time Date Received	16/05/2012 120517-60		16/05/2012 120517-60		16/05/2012 120517-60		16/05/2012 120517-60		16/05/2012 120517-60		
results of individual compounds w samples aren't corrected for the re (F) Trigger breach confirmed	ithin covery	Lab Sample No.(s) AGS Reference	5596269		5596273		5596277		5596279		5596280		
Component	LOD/U	nits Method										_	
GRO Surrogate %	%	I M089	90		121		145		118		107		
GRO >C5-C12	<44 ug/k	4 TM089	2490		384		123		422		143		
Methyl tertiary butyl ether (MTBE)	<5 με	g/kg TM089	<5	#	<5	#	<5	#	<5	#	<5	#	
Benzene	<10 µg/k) TM089 g	<10	М	<10	М	<10	м	<10	м	<10	м	
Toluene	<2 µç	g/kg TM089	<2	М	<2	М	<2	м	<2	м	<2	м	
Ethylbenzene	<3 µç	g/kg TM089	<3	М	<3	М	<3	М	<3	м	<3	м	
m,p-Xylene	<6 µç	g/kg TM089	<6	М	<6	М	<6	М	<6	м	<6	м	
o-Xylene	<3 µ(g/kg TM089	<3	М	6.3	М	<3	м	<3	м	<3	м	
sum of detected mpo xylene by GC	<8 hố	g/kg TM089	<9		<9		<9		<9		<9		
GC	<24 µg/k	g TM089	<24		<24		<24		<24		<24		
Aliphatics > C5-C6	×π μg/k	g TM089	10.5		<10		<10		<10		13.1		
Aliphatics > C6-C8	×11 µg/k		44.5		13.9		<10		21		20.3		
Aliphatics >C8-C10	μ <u>μ</u> g/k	g TM089	1200		44.1		20		10.7		30		
Aliphatics > C10-C12	×π μg/k	g TM472	1200		105		40		160		20.3		
Aliphatics > C12-C16	<10 µg/k	0 IM173 g	127000		17900		18600		21500		15600		
Aliphatics >C16-C21	<10 µg/k	0 1M173 g	302000		12500		25000		41800		38300		
Aliphatics >C21-C35	<10 µg/k	0 IM173 g	281000		10700		16200		48400		40000		
Aliphatics >C35-C44	<10 µg/k	0 TM173 g	52800		<100		<100		7080		3800		
Total Aliphatics >C12-C44	<10 µg/k	0 TM173 g	763000		41100		59900		119000		97700		
Aromatics >EC5-EC7	<10 µg/k) TM089 g	<10		<10		<10		<10		<10		
Aromatics >EC7-EC8	<10 µg/k	0 TM089 g	<10		<10		<10		<10		<10		
Aromatics >EC8-EC10	<10 µg/k	D TM089 g	169		42.8		20		53.7		24.8		
Aromatics >EC10-EC12	<10 µg/k	D TM089 g	803		110		26.3		106		17.5		
Aromatics >EC12-EC16	<10 µg/k	0 TM173 <u>g</u>	3200000		286000		148000		811000		668000		
Aromatics >EC16-EC21	<10 µg/k	0 TM173 g	1400000		12500		16400		303000		242000		
Aromatics >EC21-EC35	<10 µg/k	0 TM173 <u>g</u>	785000		<100		2810		204000		187000		
Aromatics >EC35-EC44	<10 µg/k	0 TM173 <u>g</u>	104000		<100		<100		50200		43800		
Aromatics >EC40-EC44	<10 µg/k	0 TM173 g	26700		<100		<100		16300		14100		
Total Aromatics >EC12-EC44	<10 µg/k	0 TM173 g	5480000		299000		167000		1370000		1140000		
Total Aliphatics >C5-35	<10 µg/k	0 TM173 g	711000		41300		60000		112000		94000		
Total Aromatics >C5-35	<10 µg/k	0 TM173 g	5380000		299000		167000		1320000		1100000		
Total Aliphatics & Aromatics >C5-35	<10 µg/k	0 TM173 g	6090000		340000		227000		1430000		1190000		
Total Aliphatics & Aromatics >C5-C44	<10 µg/k	0 TM173	6250000		340000		227000		1490000		1240000		
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CERTIFICATE OF ANALYSIS

Validated

SDG:	120517-60	Location:	Banbury	Order Number:	66137
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184051
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Asbestos Identification - Soil

			7.0					••			
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receiverd SDG Original Sample Method Number	TP102 0.40 SOLID 14/05/2012 00:0000 120517-60 5596254 TM048	22/05/12	Martin Cotterell	loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP103 0.30 SOLID 14/05/2012 00:000 120517-60 5596257 TM048	22/05/12	Martin Cotterell	loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP104 0.20 SOLID 14/05/2012 00:000 120517-60 5596260 TM048	22/05/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP105 0.30 SOLID 14/05/2012 00:000 120517-60 5596264 TM048	22/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP106 0.20 SOLID 15/05/2012 00:000 120517-60 5596268 TM048	22/05/12	Martin Cotterell	loose fibres and ACM debris in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

Validated

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SDG: Job: Client Referen	120517-60 H_CELTIC_ Ice: C1526	REA-12	Loc Cus Atte	ation: Ba stomer: Ce ention: Ne	nbury Itic Technolog il Hopkins	gies		Order Num Report Nur Supersede	ber: nber: d Report:	66137 184051	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP107 0.50 SOLID 15/05/2012 00:00 120517-60 5596271 TM048	22/05/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP102 0.40 SOLID 14/05/2012 00:000 120517-60 5596254 TM 304	- (#)	-	0.0039 (#)	<0.001 (#)	0.0047 (#)
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP103 0.30 SOLID 14/05/2012 00:00:00 120517-60 5596257 TM 304	- (#)	some loose fibres found during gravimetric analysis but to small/rew to acurately wiegh	<0.001 (#)	0.0014 (#)	0.0014 (#)
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP106 0.20 SOLID 15/05/2012 00:000 120517-60 5596268 TM 304	- (#)	-	0.0112 (#)	0.0014 (#)	0.0126 (#)

ALcontrol I	Laboratories	CEF	RTIFICATE OF ANALYSIS			Validated
SDG:	120517-60	Location:	Banbury	Order Number:	66137	
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184051	
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:		

Notification of NDPs (No determination possible)

Date Received : 17/05/2012 11:41:55

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5596254	TP102	0.40	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos
5596268	TP106	0.20	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos

CERTIFICATE OF ANALYSIS

Validated

SDG:	120517-60	Location:	Banbury	Order Number:	66137
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184051
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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SDG:

Job:

CERTIFICATE	OF ANALYSIS
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120517-60 66137 Location: Banbury Order Number: H_CELTIC_REA-12 Celtic Technologies 184051 Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins Superseded Report:

Test Completion Dates

Lab Sample No(s)	5596254	5596255	5596257	5596258	5596260	5596262	5596264	5596268	5596269	5596271
Customer Sample Ref.	TP102	TP102	TP103	TP103	TP104	TP104	TP105	TP106	TP106	TP107
AGS Ref.										
Depth	0.40	1.20	0.30	1.60	0.20	0.60	0.30	0.20	2.00	0.50
Туре	SOLID									
Ammonium Soil by Titration	24-May-2012	22-May-2012		24-May-2012		24-May-2012	24-May-2012	24-May-2012	22-May-2012	
Asbestos Identification (Soil)	22-May-2012		22-May-2012		22-May-2012		22-May-2012	22-May-2012		22-May-2012
Asbestos Quantification - Full	13-Jun-2012		13-Jun-2012					13-Jun-2012		
Boron Water Soluble	25-May-2012	21-May-2012		25-May-2012		25-May-2012	25-May-2012	25-May-2012	22-May-2012	
Cyanide Comp/Free/Total/Thiocyanate	24-May-2012	22-May-2012		24-May-2012		24-May-2012	24-May-2012	25-May-2012	23-May-2012	
EPH CWG (Aliphatic) GC (S)	28-May-2012	22-May-2012		28-May-2012		28-May-2012	28-May-2012	28-May-2012	23-May-2012	
EPH CWG (Aromatic) GC (S)	28-May-2012	22-May-2012		28-May-2012		28-May-2012	28-May-2012	28-May-2012	23-May-2012	
GRO by GC-FID (S)	28-May-2012	23-May-2012		25-May-2012		27-May-2012	25-May-2012	25-May-2012	23-May-2012	
Metals by iCap-OES (Soil)	25-May-2012	22-May-2012		28-May-2012		25-May-2012	25-May-2012	28-May-2012	22-May-2012	
PAH by GCMS	25-May-2012	24-May-2012		25-May-2012		24-May-2012	25-May-2012	25-May-2012	23-May-2012	
Phenols by HPLC (S)	26-May-2012	24-May-2012		26-May-2012		26-May-2012	26-May-2012	26-May-2012	24-May-2012	
Sample description	23-May-2012	19-May-2012		23-May-2012		22-May-2012	23-May-2012	23-May-2012	19-May-2012	
Total Organic Carbon		23-May-2012		25-May-2012		25-May-2012	25-May-2012		23-May-2012	
Total Organic Carbon (Asb)	28-May-2012							28-May-2012		
TPH CWG GC (S)	28-May-2012	23-May-2012		28-May-2012		28-May-2012	28-May-2012	28-May-2012	23-May-2012	

Lab Sample No(s)	5596273	5596277	5596279	5596280
Customer Sample Ref.	TP107	TP107	TP108	TP108
AGS Ref.				
Depth	1.30	3.50	1.20	1.80
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	24-May-2012	22-May-2012	22-May-2012	22-May-2012
Boron Water Soluble	22-May-2012	22-May-2012	22-May-2012	22-May-2012
Cyanide Comp/Free/Total/Thiocyanate	22-May-2012	23-May-2012	22-May-2012	22-May-2012
EPH CWG (Aliphatic) GC (S)	23-May-2012	23-May-2012	23-May-2012	23-May-2012
EPH CWG (Aromatic) GC (S)	23-May-2012	23-May-2012	23-May-2012	23-May-2012
GRO by GC-FID (S)	23-May-2012	22-May-2012	22-May-2012	22-May-2012
Metals by iCap-OES (Soil)	23-May-2012	23-May-2012	23-May-2012	23-May-2012
PAH by GCMS	22-May-2012	23-May-2012	22-May-2012	22-May-2012
Phenols by HPLC (S)	24-May-2012	24-May-2012	24-May-2012	24-May-2012
Sample description	19-May-2012	19-May-2012	19-May-2012	19-May-2012
Total Organic Carbon	23-May-2012	23-May-2012	23-May-2012	23-May-2012
TPH CWG GC (S)	23-May-2012	23-May-2012	23-May-2012	23-May-2012

CERTIFICATE OF ANALYSIS

SDG:	120517-60	Location:	Banbury	Order Number:	66137
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184051
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	analysis	
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC	
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE SOXTHERM GRAVMETRIC			
ELEMENTAL SULPHUR	D&C	DOM	SOXTHERM	HPLC	
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS	
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS	
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS	
EPH (DRO)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID	
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID	
EPH (CLEANED UP)	D&C	HEXANEACETONE	BNDOWEREND	GC-FID	
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOWEREND	GC-FID	
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	BNDOWEREND	GC-MS	
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-M6	
×06-C40	WET	HEXANEACETONE	SHAKER	GC-FID	
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FID	
SEMIVOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-MS	

SOLID MATRICES EXTRACTION SUMMARY

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LQUD/LQUD SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCPOPP	DCM	LQUD/LQUD SHAKE	GCMS
TRIAZINE HERBS	DCM	LQUD/LQUD SHAKE	GCMS
PHENOLSMS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOL by R	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	CC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrystile

Amosite

Onichite

Fibrous Adindite

Fibrous Anthophylite

Fibra & Trendie

Common Name

WhiteAsheshes

BrownAsbestos

Blue Ashestos

-

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

SUMMARY



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date:	
Customer:	
Sample Delivery Group (SDG):	
Your Reference:	
Location:	
Report No:	

11 June 2012 H_CELTIC_REA 120517-117 C1526 Banbury 183773

This report has been revised and directly supersedes 183769 in its entirety.

We received 15 samples on Thursday May 17, 2012 and 10 of these samples were scheduled for analysis which was completed on Monday June 11, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.



Sonia McWhan Operations Manager





Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No.

CERTIFICATE OF ANALYSIS

Validated

SDG:	120517-117	Location:	Banbury	Order Number:	66236
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183773
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	183769

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5599044	TP101		0.30	14/05/2012
5599045	TP101		1.50	14/05/2012
5599047	TP101		1.90	14/05/2012
5599048	TP101		3.10	14/05/2012
5599049	TP102		0.40	14/05/2012
5599050	TP102		1.20	14/05/2012
5599054	TP102		1.50	14/05/2012
5599056	TP109		0.70	16/05/2012
5599057	TP109		1.60	16/05/2012
5599058	TP112		0.20	16/05/2012
5599059	TP112		0.40	16/05/2012
5599060	TP112		1.30	16/05/2012
5599062	TP113		0.30	16/05/2012
5599066	TP113		1.20	16/05/2012
5599068	TP114		0.20	16/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

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120517-1 H_CELTI C1526	C_REA-12	Location Custome	i: er: h:	Banb Celtio	ury CTec Honk	hnolog ins	ies				Orde Rep Sup	er Number: ort Number: erseded Report	00236 183773 183769		
01020		Auenuol			юрк						Jup		100708		
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ation															
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oil)	All	NDPs: 0	×			×	X	X		×	X	_			
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inate		Tests: 6	x			x	X	X		X	X	-			
(S)	All	NDPs: 0 Tests: 8										-			
			x	x	x	×	x	x	2	x	×	_			
(5)	All	NDPs: 0 Tests: 8	x	X	X	x	X	X		x	X				
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1)	Arsenic	NDPs: 0 Tests: 6	x			X	X	X		x	X				
	Cadmium	NDPs: 0 Tests: 6													
	Chromium	NDD-: 0	X			X	×	x		x	x	-			
	Shiohidh	Tests: 6	x			x	X	X		x	X				
	Copper	NDPs: 0 Tests: 6													
	Lead	NDD	X			×	×	x		×	x	_			
	Leau	NDPs: 0 Tests: 6	x			x	X	X		x	X	-			
	Mercury	NDPs: 0										-			
		rests: 6	x			×	x	x		×	x				
	Nickel	NDPs: 0													
	120517-1 H_CELTI C1526	120517-117 H_CELTIC_REA-12 ation Lab Sample ation Custome AGS Refere Depth (n Depth (n Containe on All on Containe on Containe on All on All on Containe (S) All (S) All (S) All (S) Copper (Copper Lead Nickel Nickel	120517-117 H_CELTIC_REA-12 Location Customer Sample No(s) ation Lab Sample No(s) AGS Reference AGS Reference AGS Reference Depth (m) D AI D AI D AI D AI D AI D AI D Tests: 6 OII) AI AI NDPs: 0 Tests: 6 Tests: 6 OII) AI NDPs: 0 Tests: 6 NDPs: 0 Full AI NDPs: 0 Tests: 6 NDPs: 0 Tests: 6 S(S) AI NDPs: 0 Inate AI NDPs: 0 Inate AI NDPs: 0 S(S) AI NDPs: 0 Inate AII NDPs: 0 Inate Cadmium NDPs: 0 Inate AII Tests: 6 Inate Copper NDPs: 0 Inate Inate NDPs: 0 Inate Cadmium NDPs	120517-117 H_CELTIC_REA-12 Location: Customer: Attention Location: Customer: Attention ation Lab Sample No(s) [9] AGS Reference [1] Depth (m) [1] NDPs:0 [1] On All NDPs:0 All NDPs:0 [2] Oil) All NDPs:0 [2] All NDPs:0 [2] [2] Full All NDPs:0 [2] (S) All NDPs:0 [2] (Copper NDPs:0 [2] <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>$\frac{1200017-117}{H_{C}CLTIC_REA-12} \\ Method is in the interval i$</td> <td></td> <td>120517-117 Location: Location: Bendur/ Cellic Technologies Neil Hopkins Setter technologies ation Lab Sample No(s) 60 90 90 90 90 90 90 90 90 90 90 90 90 90</td> <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td> <td>120517-177 C1528 Location: Statemic Bankur Customer Sample Reference Bankur Customer Sample Refere</td> <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td> <td>120517-177 (C1526 Location: Neil Hopkins Banbury Neil Hopkins Sembury Neil Hopkins</td> <td>120371171 C1526 Location: Neul Hopkins Banbury Methopkins Order Mumber: Superseded Report Superseded Report 1203 Lab Sample No(s) Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Lab Sample No(s) Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Lab Sample No(s) Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 March Mole: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1204 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1204 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1204 Image: Superseded Rep</td> <td>120371717 (1528) Location Attention Location Attention Location Attention Location (1527) Location (1527)</td> <td>12057177 C1020 Location: Calibrian Bainbury Calibrian Search Sample Rofe Search Sampl</td>	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \frac{1200017-117}{H_{C}CLTIC_REA-12} \\ Method is in the interval i$		120517-117 Location: Location: Bendur/ Cellic Technologies Neil Hopkins Setter technologies ation Lab Sample No(s) 60 90 90 90 90 90 90 90 90 90 90 90 90 90	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	120517-177 C1528 Location: Statemic Bankur Customer Sample Reference Bankur Customer Sample Refere	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	120517-177 (C1526 Location: Neil Hopkins Banbury Neil Hopkins Sembury Neil Hopkins	120371171 C1526 Location: Neul Hopkins Banbury Methopkins Order Mumber: Superseded Report Superseded Report 1203 Lab Sample No(s) Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Lab Sample No(s) Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Lab Sample No(s) Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 March Mole: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1203 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1204 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1204 Image: Superseded Report Image: Superseded Report Image: Superseded Report Image: Superseded Report 1204 Image: Superseded Rep	120371717 (1528) Location Attention Location Attention Location Attention Location (1527) Location (1527)	12057177 C1020 Location: Calibrian Bainbury Calibrian Search Sample Rofe Search Sampl

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			Tesis. 0	x				x		x		x		x		x				
PAH by GCMS		All	NDPs: 0 Tests: 6																	
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Sample description		All	NDPs: 0 Tests: 8	x	X		x	x		X		X		x		x				
Total Organic Carbon		All	NDPs: 1	F									+			Ν				
			Tests: 5	X				x		x		x		X						
Total Organic Carbon (As	b)	All	NDPs: 0	ſ																
			Tests. T													x				
TPH CWG GC (S)		All	NDPs: 0																	
			10315.0	x	x		x	x		x		x		x		x				

CERTIFICATE OF ANALYSIS

Validated

SDG:	120517-117	Location:	Banbury	Order Number:	66236
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183773
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	183769

Sample Descriptions

Grain Sizes									
very fine	<0.063mm	fine	0.063mm - 0.1mm r	medium 0.1mm	1 - 2mm	coarse	2mm - 10	Omm very co	arse >10mm
Lab Sample No	(s) Custon	ner Sample Ref.	Depth (m)	Colour	Descripti	on	Grain size	Inclusions	Inclusions 2
5599045		TP101	1.50	Dark Brown	Sandy Cla Loam	ау	<0.063 mm	N/A	N/A
5599049		TP102	0.40	Light Brown	Sand		0.1 - 2 mm	Stones	Crushed Brick
5599050		TP102	1.20	Black	Sand		0.1 - 2 mm	Stones	None
5599056		TP109	0.70	Light Brown	Silt Loar	n 0.	063 - 0.1 mm	N/A	N/A
5599057		TP109	1.60	Grey	Silty Cla	y 0.	063 - 0.1 mm	None	None
5599059		TP112	0.40	Light Brown	Sand		0.1 - 2 mm	Stones	None
5599066		TP113	1.20	Grey	Silty Cla	y 0.	063 - 0.1 mm	None	None
5599068		TP114	0.20	Dark Brown	Loamy Sa	ind 0.	063 - 0.1 mm	Fibres	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 1205	517-117		Location:	Ba	nbury				Order Number:		66236			
Job: H_C Client Reference: C152	ELTIC_RE 26	-A-12	Customer: Attention:	Ce Ne	Itic Technologie il Hopkins	es			Report Number Superseded Re	r: eport	183773 t: 183769			
										-				
Results Legend # ISO17025 accredited.		Customer Sample R	TP101		TP109		TP109		TP112		TP113		TP114	
M mCERTS accredited. § Deviating sample.		Depth (m)	1.50		0.70		1.60		0.40		1.20		0.20	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid 14/05/2012		Soil/Solid 16/05/2012		Soil/Solid 16/05/2012		Soil/Solid 16/05/2012		Soil/Solid 16/05/2012		Soil/Solid 16/05/2012	
* Subcontracted test. ** % recovery of the surrogate stand	lard to	Sample Time	17/05/2012				17/05/2012		17/05/2012				17/05/2012	
check the efficiency of the methor results of individual compounds	d. The within	SDG Ref	120517-117		120517-117		120517-117		120517-117		120517-117		120517-117	
samples aren't corrected for the r (F) Trigger breach confirmed	ecovery	Lab Sample No.(s) AGS Reference	5599045		5599056		5599057		2289028		5599000		2299000	
Component	LOD/Ur	nits Method	454		<15		22.2	_	<15	+	66.3	_	<15	
Ammoniacai Nitrogen as N	mg/k	<u>g</u>	404		<15				~15		00.5		<15	
Phenols, Total Detected monohydric	<0.03 mg/k	35 TM062 (S) g	<0.035	М	<0.035	М	<0.035	М	<0.035	м	<0.035	м	<0.035	М
Soil Organic Matter (SOM)	<0.35	5% TM132	2.71	#	0.896	#	1.24	#	<0.35	#	1.91	#		
Cyanide, Total	<1 mg	j/kg TM153	<1	М	<1	М	<1	м	<1	м	<1	м	<1	М
Cyanide, Free	<1 mg	j/kg TM153	<1	М	<1	М	<1	м	<1	м	<1	м	<1	М
Arsenic	<0.6 mg/k	6 TM181 g	18.8	М	17	М	11.9	м	22	м	13	м	16.3	М
Cadmium	<0.0	2 TM181 a	<0.02	м	0.406	м	0.344	м	0.595	м	0.345	м	3.26	м
Chromium	<0.9 mg/k	9 TM181 a	61.8	М	47.5	м	59.2	м	16.6	м	50.4	м	61.2	м
Copper	<1.4 mg/k	4 TM181	16.1	м	21	м	20.1	м	25.1	м	27.2	м	162	м
Lead	<0.7 mg/k	7 TM181 a	27.4	М	25	м	18.7	м	9.8	м	34.2	м	272	м
Mercury	<0.1 mg/k	4 TM181 q	<0.14	М	<0.14	м	<0.14	м	<0.14	м	<0.14	м	0.773	м
Nickel	<0.2 mg/k	2 TM181 a	29.3	М	35.1	М	40.5	м	21.7	м	41.6	м	40.8	М
Selenium	<1 mg	j/kg TM181	<1	#	<1	#	<1	#	<1	#	1.24	#	<1	#
Zinc	<1.9 ma/k	9 TM181 a	98.2	м	108	м	105	м	87.9	м	162	м	1190	м
Boron, water soluble	<1 mg	j/kg TM222	8.5	М	1.26	м	2.06	м	1.34	м	9.82	м	6.12	м
Soil Organic Matter (SOM)	<0.1	% TM321											1.15	#
		_												
								_		_				

ALcontrol Labor	atories		CEF	S.LI	FICATE OF A	NALYSIS				Validated
SDG: 1205 Job: H_C Client Reference: C152	517-117 ELTIC_RE 26	EA-12	Location: Customer: Attention:	Ba Ce Ne	anbury eltic Technologies eil Hopkins		Order Number: Report Number: Superseded Report	66236 183773 t: 183769		
PAH by GCMS										
Results Legend # ISO17025 accredited. M mCERTS accredited. § Deviating sample. aq Aqueous / settled sample. diss.fit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** * recovery of the surrogate stanc check the efficiency of the method **	lard to d. The	Customer Sample R Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref	TP101 1.50 Soil/Solid 14/05/2012 17/05/2012 120517-117		TP109 0.70 Soii/Solid 16/05/2012 17/05/2012 12/0517-117	TP109 1.60 Soil/Solid 16/05/2012 17/05/2012 120517-117	TP112 0.40 Soli/Solid 16/05/2012 17/05/2012 12/0517-117	TP113 1.20 Soil/Solid 16/05/2012 17/05/2012 120517-117		TP114 0.20 Soil/Solid 16/05/2012 17/05/2012 120517-117
samples aren't corrected for the n	ecovery	Lab Sample No.(s)	5599045		5599056	5599057	5599059	5599066		5599068
(F) Trigger breach confirmed		AGS Reference								
Naphthalene-d8 %	%	TM218	104		99.5	95.8	98.6	103		105
recovery** Acenaphthene-d10 %	%	TM218	104		97.7	96.6	101	105	_	103
Phenanthrene-d10 % recovery**	%	TM218	104		94	93.4	97.8	102		101
Chrysene-d12 % recovery**	%	TM218	102		93.8	85	87.6	93.4		105
Perylene-d12 % recovery**	%	TM218	106		97.5	82.8	83.2	94.7		111
Naphthalene	<9 µg	/kg TM218	42.5	М	<9 M	14.3 M	<9 M	97	М	326 N
Acenaphthylene	<12 µg/k	2 TM218 g	<12	М	<12 M	<12 M	<12 M	<12	М	358 N
Acenaphthene	<8 µg	J/kg TM218	<8	М	<8 M	<8 M	<8 M	45.4	м	616 N
Fluorene	<10 µg/k) TM218 g	<10	М	<10 M	<10 M	<10 M	193	м	678 N
Phenanthrene	<15 µg/k	5 TM218 g	28.3	М	<15 M	<15 M	<15 M	336	м	13200 N
Anthracene	<16 µg/k	6 TM218 g	<16	М	<16 M	<16 M	<16 M	70.3	м	4190 N
Fluoranthene	<17 µg/k	7 TM218 g	29.5	М	<17 M	<17 M	<17 M	62.5	м	29000 N
Pyrene	<15 µg/k	5 TM218 g	22.4	М	<15 M	<15 M	<15 M	71.5	м	25600 N
Benz(a)anthracene	<14 µg/k	F TM218	31.6	М	<14 M	<14 M	<14 M	21	м	13900 N
Chrysene	<10 µg/k) TM218 g	<10	М	<10 M	<10 M	<10 M	19.5	м	11400 N
Benzo(b)fluoranthene	<15 µg/k	5 TM218 g	<15	М	<15 M	<15 M	<15 M	25.8	м	17600 N
Benzo(k)fluoranthene	<14 µg/k	4 TM218 g	<14	М	<14 M	<14 M	<14 M	<14	м	6460 N
Benzo(a)pyrene	<15 µg/k	5 TM218 g	22.3	М	<15 M	<15 M	<15 M	<15	м	14400 N
Indeno(1,2,3-cd)pyrene	<18 µg/k	3 TM218 g	<18	М	<18 M	<18 M	<18 M	<18	м	7610 N
Dibenzo(a,h)anthracene	<23 µg/k	g IM218	<23	М	<23 M	<23 M	<23 M	<23	м	2070 N
Benzo(g,h,ı)perylene	<24 µg/k	IM218	<24	М	<24 M	<24 M	<24 M	<24	м	8510 N
USEPA 16	µg/k	g	177		~110	~110		942		130000

CERTIFICATE OF ANALYSIS

N.50								
SDG: 1205" Job: H_CE Client Reference: C152	17-117 ELTIC_REA 6	A-12	Location: E Customer: C	Banbury Celtic Technologies Jeil Honkins		Order Number: Report Number: Superseded Repo	66236 183773 rt: 183769	
	•					- apoilouda nopo		
IPH CWG (S) Results Legend		Customer Sample R	TP101	TP102	TP102	TP100	TP100	TD112
# ISO17025 accredited.	Ň	Sustomer Sample K	IPIUI	119102	119102	11/109	11109	19112
M mCERTS accredited. § Deviating sample.		Donth (m)	4.50	0.40	4.00	0.70	4.00	0.40
aq Aqueous / settled sample.		Sample Type	1.50 Soil/Solid	0.40 Soil/Solid	1.20 Soil/Solid	0.70 Soil/Solid	1.60 Soil/Solid	0.40 Soil/Solid
tot.unfilt Total / unfiltered sample.		Date Sampled	14/05/2012	14/05/2012	14/05/2012	16/05/2012	16/05/2012	16/05/2012
* Subcontracted test.	urd to	Sample Time						
check the efficiency of the method.	The	Date Received	17/05/2012	17/05/2012	17/05/2012	17/05/2012	17/05/2012	17/05/2012
results of individual compounds wi samples aren't corrected for the re-	ithin coverv	Lab Sample No.(s)	5599045	5599049	5599050	5599056	5599057	5599059
(F) Trigger breach confirmed	,	AGS Reference						
Component	LOD/Unit	s Method						
GRO Surrogate %	%	TM089	95	71	30	105	87	124
recovery**			§					
GRO >C5-C12	<44	TM089	<44	<44	4690	277	221	51
	µg/kg		§					
Methyl tertiary butyl ether	<5 µg/k	g TM089	<5	<5	<5	<5	<5	<5
(MTBE)			§ ‡	# #	#	#	#	#
Benzene	<10	TM089	<10	<10	99.1	<10	<10	<10
	µg/kg		§ N	1 M	M	M	M	M
loluene	<2 µg/k	.g I M089	<2	. <2	38.1	<2	<2	<2
	0 "	T1 1000	§ N	/ <u>M</u>	M	M	M	M
⊏tnyibenzene	<3 µg/k	.g IM089	<3	<3	48.3	<3	<3	<3
m n Xylenc	<6 ···~ //·		9 N	M //	M 76.0	IVI	IVI	IM -6
п,р-лушене	<o k<="" td="" µg=""><td></td><td><0</td><td><0 A</td><td>/0.2</td><td><0</td><td><0</td><td><0</td></o>		<0	<0 A	/0.2	<0	<0	<0
	<2 ··~//		-2 S N		M	ا¥ا در	<u>الاا</u>	ا¥ا در
о-лушене	<3 µg/k		< J & N	<-3 M	07.3 M	<3 M	<3 M	<j M</j
sum of detected mag	<0		~0 8 N	··· M	14A	ا¥ا ^0		ا¥ا 0~
xvlene by CC	~9 µg/k		۳. ۲	~3	144	~9	~9	~9
sum of detected BTEX by	-24	TM080	<24	-24	330	c24	<24	c24
GC	~24 ua/ka	11005	~24	~24	550	~24	~24	~24
Aliphatics >C5-C6	<10	TM089	<10	<10	90.2	11 1	16.8	<10
Alphalics > 00-00		11003	8		30.2	11.1	10.0	10
Aliphatics >C6-C8	<10	TM089	<10	<10	269	84.9	64 5	<10
		111000	510 8	10	200	04.0	04.0	10
Aliphatics >C8-C10	<10	TM089	<10	<10	582	36.9	28.4	12.8
	ua/ka		.0			00.0	_0	
Aliphatics >C10-C12	<10	TM089	<10	<10	1820	71.3	54.2	11.6
	ua/ka		ş					
Aliphatics >C12-C16	<100	TM173	<100	10600	205000	1860	24400	<100
	µg/kg							
Aliphatics >C16-C21	<100	TM173	5230	35200	305000	7140	44600	<100
	µg/kg							
Aliphatics >C21-C35	<100	TM173	15900	223000	1660000	67900	537000	<100
· ·	µg/kg							
Aliphatics >C35-C44	<100	TM173	5320	73600	301000	9440	58300	<100
	µg/kg							
Total Aliphatics >C12-C44	<100	TM173	26400	342000	2470000	86400	665000	<100
	µg/kg							
Aromatics >EC5-EC7	<10	TM089	<10	<10	99.1	<10	<10	<10
	µg/kg		§					
Aromatics >EC7-EC8	<10	TM089	<10	<10	38.1	<10	<10	<10
	µg/kg		Ś				10.1	
Aromatics >EC8-EC10	<10	I M089	<10	<10	579	24.6	19.4	<10
Aromatica > EQ40 EQ40	µg/kg	T14000	§	-10	4040	40	00.4	-10
Aromatics >EC10-EC12	<10	1 10089	<10	<10	1210	48	36.1	<10
Aromatica >EC12 EC12	µg/kg	TN4470	§	0000	20000	1520	12000	EC10
Aromatics >ECTZ-EC16	<100	11/173	<100	2320	389000	1530	12800	UIDC
Aromatics NEC16 EC21	µg/Kg	TM172	1910	17000	1230000	7020	20000	1500
		111173	4040	17000	1230000	1020	20900	1090
Aromatics >EC21_EC35	<100	TM173	35100	135000	2/10000	30000	19/000	<100
7 10110000 - LOZI-E000		111173	33100	133000	2410000	39900	194000	×100
Aromatics >EC35_EC44	<100	TM173	15600	110000	577000	14500	27100	<100
Alomatics > E055-E044		111175	10000	110000	577000	14300	21100	\$100
Aromatics >EC40_EC44	<100	TM173	6230	50800	185000	4720	5230	<100
, "Ondios - LOTO-LOTT		1111/3	0200	0000	100000	7120	0200	- 100
Total Aromatics	<100	TM173	55500	265000	4610000	63000	255000	7200
>EC12-EC44	ug/kg		00000	200000	.010000	50000	_00000	1200
Total Aliphatics >C5-35	<100	TM173	21100	268000	2170000	77100	606000	<100
	ug/kg		21100	200000		.,,,,,,,		100
Total Aromatics >C5-35	<100	TM173	39900	154000	4030000	48500	228000	7210
	ug/kg							
Total Aliphatics &	<100	TM173	61000	423000	6210000	126000	835000	7210
Aromatics >C5-35	ua/ka		0.000					
Total Aliphatics &	<100	TM173	81900	607000	7080000	150000	920000	7210
Aromatics >C5-C44	µa/ka						· · · · ·	-
	1							

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SDG: Job: Client Reference:	120517-11 H_CELTIC C1526	7 _REA-	12	Location: Customer: Attention:	Ba Ce Ne	Inbury eltic Technologies eil Hopkins		Order Number: Report Number: Superseded Repo	66236 183773 rt: 183769	
TPH CWG (S)										
Results Leger # ISO17025 accredited. M mCERTS accredited. § Deviating sample. aq Aqueous / settled samp diss.filt Dissolved / filtered samp tot.unfilt Total / unfiltered sample * Subcontracted test. ** % recovery of the surro check the efficiency of 1	le. ple. 3. gate standard to the method. The	Cu	Depth (m) Sample Type Date Sampled Sample Time Date Received	TP113 1.20 Soli/Solid 16/05/2012 17/05/2012 1205/2012		TP114 0.20 Soli/Solid 16/05/2012 17/05/2012 120517.117				
results of individual cor samples aren't correcte (F) Trigger breach confirme Component	npounds within d for the recovery ed	L D/Units	ab Sample No.(s) AGS Reference Method	5599066		5599068				
GRO Surrogate %		%	TM089	93		25				
GRO >C5-C12	μ	<44 Ig/kg	TM089	1370		<44				
Methyl tertiary butyl eth (MTBE)	ner <5	δµg/kg	TM089	<5	#	<5	¥			
Benzene	ц	<10 1g/kg	TM089	<10	М	<10 N	1			
Toluene	<2	2 µg/kg	TM089	<2	М	<2 N	1			
Ethylbenzene	<3	3 µg/kg	TM089	<3	М	<3 N	1			
m,p-Xylene	<6	δ µg/kg	TM089	<6	М	<6	1			
o-Xylene	<3	3 µg/kg	TM089	7.68	М	<3 N	1			
sum of detected mpo xylene by GC	<9) µg/kg	TM089	<9		<9				
sum of detected BTEX GC	by µ	<24 Ig/kg	TM089	<24		<24				
Aliphatics >C5-C6	μ	<10 ig/kg	TM089	<10		<10				
Aliphatics >C6-C8	μ	<10 ig/kg	TM089	30.7		<10				
Aliphatics >C8-C10	μ	<10 ig/kg	TM089	170		<10				
Aliphatics >C10-C12	μ	<10 Ig/kg	TM089	623		<10				
Aliphatics >C12-C16	ء µ	<100 ig/kg	TM173	65300		10400				
Aliphatics >C16-C21	ء µ	<100 Ig/kg	TM173	136000		60600				
Aliphatics >C21-C35	ء µ	<100 ig/kg	TM173	665000		968000				
Aliphatics >C35-C44	ء µ	<100 Ig/kg	TM173	202000		493000				
Total Aliphatics >C12-0	C44 < μ	<100 ig/kg	TM173	1070000		1530000				
Aromatics >EC5-EC7	μ	<10 ig/kg	TM089	<10		<10				
Aromatics >EC7-EC8	μ	<10 ig/kg	TM089	<10		<10				
Aromatics >EC8-EC10	μ	<10 ig/kg	TM089	125		<10				
Aromatics >EC10-EC1	2 µ	<10 ig/kg	TM089	416		<10				
Aromatics >EC12-EC1	6 <	<100 ig/kg	TM173	20600		17100				
Aromatics >EC16-EC2	1 <	<100 ig/kg	TM173	47900		258000				
Aromatics >EC21-EC3	5 <	<100 lg/kg	TM173	103000		1710000				
Aromatics >EC35-EC4	4 <	<100 ig/kg	TM173	33100		1300000				
Aromatics >EC40-EC4	4 <	<100 lg/kg	TM173	7490		530000				
Total Aromatics >EC12-EC44	- μ	<100 ig/kg	TM173	205000		3290000				
Total Aliphatics >C5-3	5 <	<100 ig/kg	TM173	867000		1040000				
Total Aromatics >C5-3	5 <	<100 lg/kg	TM173	172000		1990000				
Total Aliphatics & Aromatics >C5-35	μ	<100 ig/kg	TM173	1040000		3030000				
Total Aliphatics & Aromatics >C5-C44	μ	<100 ig/kg	TM173	1270000		4820000				

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SDG:	120517-117	Location:	Banbury	Order Number:	66236
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183773
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	183769

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP101 1.50 SOLID 14/05/2012 00:000 120517-117 5599045 TM048	23/05/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP102 0.40 SOLID 14/05/2012 00:000 120517-117 5599049 TM048	07/06/12	Kevin Bowron	Soil Containing ACM Debris & Loose Fibres	Detected (#)	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP109 0.70 SOLID 16/05/2012 00:000 120517-117 5599056 TM048	23/05/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP112 0.20 SOLID 16/05/2012 00:00 120517-117 5599058 TM048	23/05/12	Lauren Sargeant	Loose fibres and ACM debris in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP113 0.30 SOLID 16/05/2012 00:000 120517-117 5599062 TM048	23/05/12	Lauren Sargeant	Loose fibres and ACM debris in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

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SDG: Job: Client Referen	120517-117 H_CELTIC_ ce: C1526	, _REA-12	Loc Cus Atte	ation: E stomer: C ention: N	Banbury Celtic Technolog Ieil Hopkins	jies		Order Num Report Nur Supersede	ber: nber: d Report:	66236 183773 183769		
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre	
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receivered SDG Original Sample Method Number	TP114 0.20 SOLID 16/05/2012 00:00:00 120517-117 5599068 TM048	23/05/12	Lauren Sargeant	Loose fibres in so	il Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP112 0.20 SOLID 16/05/2012 00:000 120517-117 5599058 TM 304	None (#)	-	0.0643 (#)	0.0025 (#)	0.0668 (#)
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP113 0.30 SOLID 16/05/2012 00:00:00 120517-117 5599062 TM 304	Amosite (#)	None	0.0247 (#)	<0.001 (#)	0.0255 (#)
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP114 0.20 SOLID 16/05/2012 00:000 120517-117 5599068 TM 304	None (#)	-	0.0071 (#)	<0.001 (#)	0.0072 (#)

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SDG:	120517-117	Location:	Banbury	Order Number:	66236
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183773
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	183769

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aliphatics >C10-C12	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aliphatics >C5-C6	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aliphatics >C6-C8	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aliphatics >C8-C10	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aromatics >EC10-EC12	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aromatics >EC5-EC7	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aromatics >EC7-EC8	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Aromatics >EC8-EC10	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Benzene	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Ethylbenzene	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	GRO >C5-C12	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	GRO Surrogate % recovery**	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	m,p-Xylene	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	o-Xylene	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	sum of detected BTEX by GC	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	sum of detected mpo xylene by GC	Volatile container not received
5635233	TP101	1.50	SOLID	GRO by GC-FID (S)	Toluene	Volatile container not received

Note : Test results may be compromised

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		CEF	RTIFICATE OF ANALYSIS	S		
SDG:	120517-117	Location:	Banbury	Order Number:	66236	
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183773	
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	183769	

Notification of NDPs (No determination possible)

Date Received : 17/05/2012 16:21:31

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5599068	TP114	0.20	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos

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Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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SDG:	120517-117	Location:	Banbury	Order Number:	66236
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183773
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	183769

Test Completion Dates

Lab Sample No(s)	5599045	5599049	5599050	5599056	5599057	5599058	5599059	5599062	5599066	5599068
Customer Sample Ref.	TP101	TP102	TP102	TP109	TP109	TP112	TP112	TP113	TP113	TP114
AGS Ref.										
Depth	1.50	0.40	1.20	0.70	1.60	0.20	0.40	0.30	1.20	0.20
Туре	SOLID									
Ammonium Soil by Titration	24-May-2012			23-May-2012	24-May-2012		24-May-2012		24-May-2012	23-May-2012
Asbestos Identification (Soil)	23-May-2012	07-Jun-2012		23-May-2012		23-May-2012		23-May-2012		23-May-2012
Asbestos Quantification - Full						11-Jun-2012		11-Jun-2012		11-Jun-2012
Boron Water Soluble	25-May-2012			24-May-2012	22-May-2012		22-May-2012		22-May-2012	24-May-2012
Cyanide Comp/Free/Total/Thiocyanate	24-May-2012			24-May-2012	24-May-2012		24-May-2012		24-May-2012	24-May-2012
EPH CWG (Aliphatic) GC (S)	25-May-2012	08-Jun-2012	08-Jun-2012	23-May-2012	23-May-2012		23-May-2012		23-May-2012	24-May-2012
EPH CWG (Aromatic) GC (S)	25-May-2012	08-Jun-2012	08-Jun-2012	23-May-2012	23-May-2012		23-May-2012		23-May-2012	24-May-2012
GRO by GC-FID (S)	25-May-2012	08-Jun-2012	08-Jun-2012	24-May-2012	24-May-2012		25-May-2012		24-May-2012	24-May-2012
Metals by iCap-OES (Soil)	24-May-2012			23-May-2012	23-May-2012		23-May-2012		22-May-2012	23-May-2012
PAH by GCMS	24-May-2012			23-May-2012	23-May-2012		23-May-2012		23-May-2012	23-May-2012
Phenols by HPLC (S)	24-May-2012			24-May-2012	25-May-2012		25-May-2012		25-May-2012	24-May-2012
Sample description	21-May-2012	01-Jun-2012	31-May-2012	21-May-2012	21-May-2012		21-May-2012		21-May-2012	21-May-2012
Total Organic Carbon	24-May-2012			24-May-2012	24-May-2012		24-May-2012		24-May-2012	
Total Organic Carbon (Asb)										23-May-2012
TPH CWG GC (S)	25-May-2012	08-Jun-2012	08-Jun-2012	24-May-2012	24-May-2012		25-May-2012		24-May-2012	24-May-2012

CERTIFICATE OF ANALYSIS

SDG:	120517-117	Location:	Banbury	Order Number:	66236
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183773
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	183769

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	analysis
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	ENDOWEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-MS
×06-C40	WET	HEXANEACETONE	SHAKER	GC-FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FD
SEMIVOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-MS

SOLID MATRICES EXTRACTION SUMMARY

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FID
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCROPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LQUD/LQUD SHAKE	GCMS
PHENOLSMS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOLbyR	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	CC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type Common Name Onysolie WiteAsbestos Aroste BownAsbestos Ooxidate Bue Asbestos Fibrous Adinatie Fibrous Trendle



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date:	
Customer:	
Sample Delivery Group (SDG):	
Your Reference:	
Location:	
Report No:	

13 June 2012 H_CELTIC_REA 120518-110 C1526 Banbury 184070

This report has been revised and directly supersedes 182385 in its entirety.

We received 18 samples on Friday May 18, 2012 and 13 of these samples were scheduled for analysis which was completed on Wednesday June 13, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:



Operations Manager





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CERTIFICATE OF ANALYSIS

Validated

SDG:	120518-110	Location:	Banbury	Order Number:	66237
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184070
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	182385

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5606761	TP110		0.35	16/05/2012
5606762	TP110		0.65	16/05/2012
5606763	TP110		1.80	16/05/2012
5606764	TP111		0.30	16/05/2012
5606765	TP115		0.30	17/05/2012
5606767	TP115		1.30	17/05/2012
5606768	TP116		0.30	17/05/2012
5606769	TP116		1.40	17/05/2012
5606770	TP116		2.00	17/05/2012
5606771	TP116		2.70	17/05/2012
5606772	TP117		0.35	17/05/2012
5606773	TP117		0.50	17/05/2012
5606774	TP117		2.10	17/05/2012
5606775	TP117		2.60	17/05/2012
5606777	TP118		0.70	17/05/2012
5606778	TP118		2.20	17/05/2012
5606779	TP119		0.20	17/05/2012
5606780	TP119		1.50	17/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol	aborato	ries	CE	ERTI	FICA	TE C	DF AI	NAL	rsis							١	/alio
SDG: Job: Client Reference:	120518-1 H_CELTIC C1526	10 C_REA-12	Location: Customer Attention	r: Ce : Ne	anbury eltic Teo eil Hopk	chnolog tins	ies				Order I Report Supers	Numbe Numb eded F	er: er: Report:	662 184 182	237 4070 2385		
SOLID Results Legend		Lab Sample	No(s)	5606761	5606762	5606764	5606765	5606768	5606769	5606771	5606773	5606774	5606777	5606778	5606779	5606780	
No Determin Possible	ation	Customer Sample Reference AGS Reference		TP110	TP110	TP111	TP115	TP116	TP116	TP116	TP117	TP117	TP118	TP118	TP119	TP119	
		Depth (n	1)	0.35	0.65	0.30	0.30	0.30	1.40	2.70	0.50	2.10	0.70	2.20	0.20	1.50	
		Containe)r	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	
Ammonium Soil by Titrati	on	All	NDPs: 0 Tests: 13	res x	r - : : : x	x	rss <mark>x</mark>	ress x	x	r s s	r ± €	r ± ≤ x	r s s	r ⊴ e	ree x	r ⊴ ⊴ x	
Asbestos Identification (S	Soil)	All	NDPs: 0 Tests: 9	x	x	x	x	x	x	x			x		x		
Asbestos Quantification -	Full	All	NDPs: 0 Tests: 1				x										
Boron Water Soluble		All	NDPs: 0 Tests: 13	<mark>x</mark>	x	x	<mark>x</mark>	x	x	<mark>x</mark>	x	x	x	x	x	x	
Cyanide Comp/Free/Total/Thiocya	anate	All	NDPs: 0 Tests: 13	x	x	×	x	x	x	x	×	x	×	×	×	×	
EPH CWG (Aliphatic) GC	S (S)	All	NDPs: 0 Tests: 13	x	x	×	x	x	×	x	x	x	×	×	×	×	
EPH CWG (Aromatic) G	C (S)	All	NDPs: 0 Tests: 13	x	x	×	x	x	x	x	x	x	x	x	×	x	
GRO by GC-FID (S)	1	All	NDPs: 0 Tests: 13	x		x	x	x	x	x	×	x	x	×	×	×	
Metals by ICap-OES (Sol	1)	Arsenic	NDPs: 0 Tests: 13	x	x	x	x	x	x	x	×	x	x	x	×	x	
		Chromium	NDPs: 0 Tests: 13	x	×	×	×	x	x	×	×	x	×	×	×	×	
		Copper	Tests: 13	x	x	×	x	x	x	x	×	x	x	x	×	x	
		Lead	NDPs: 0	x	x	x	×	x	x	×	x	x	x	x	×	x	
		Mercury	Tests: 13	x	X	x	X	x	x	x	X	X	x	x	×	x	
		Nickel	Tests: 13	X	X	x	x	x	x	x	X	x	x	x	×	x	
			Tests: 13	x	X	X	X	X	X	X	X	x	X	X	X	x	

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SDG: Job: Client Reference:	120518-1 H_CELTI C1526	10 C_REA-12	Location Custome Attentior	 er: 1:	Ba Ce Ne	nbury Itic T il Hoj	y ech pkir	nolog	ies							Ord Rep Sup	Order Number: 66237 Report Number: 184070 Superseded Report: 182385											
SOLID Results Legend X Test) Legend Lab Sample No(s) Test No Determination		No(s)		5606761		5606762	5606764		5606765		5606768	6979095	1	5606771		5606773		5606774		5606777		5606778		5606779		5606780	
No Determin Possible	nation	Custom Sample Refe	er erence		TP110		TP110	TP111		TP115		TP116	1 11 16	1	TP116		TP117		TP117		TP118		TP118		TP119		TP119	
		AGS Refer	ence																									
		Depth (n	n)		0.35		0.65	0.30		0.30	0.00	0.30	1.40		2.70		0.50		2.10		0.70		2.20		0.20		1.50	
		Contain	er	250g Amber Jar (AL	60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215)	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (Al	250g Amber Jar (AL	60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar (AL	250g Amber Jar (AL	400g Tub (ALE215)	250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214)	250g Amber Jar (AL	60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar (Al	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215)	400g Tub (ALE214) 250a Amber Jar (AL	60g VOC (ALE215)	
Metals by iCap-OES (Soi	il)	Selenium	NDPs: 0 Tests: 13	x		x	2	x	x		x	×	(x		x		x	2	x	2	×		x		x		
		Zinc	NDPs: 0 Tests: 13	x		x	2	x	x		x	×	<pre>4</pre>	x		x		x	2	x	2	x		x		x		
PAH by GCMS		All	NDPs: 0 Tests: 13	x		x	2	x	x		x	×	<u>د</u>	x		x		x	2	x		x		x		x		
Phenols by HPLC (S)		All	NDPs: 0 Tests: 13		×	x		x	×	<mark>(</mark>	x		x		<mark>x</mark>	×	ſ	×		x		x		x		x		
Sample description		All	NDPs: 0 Tests: 13	x		x	2	x	x		<mark>x</mark>	×		x		x		<mark>x</mark>	2	×		×		x		x		
Total Organic Carbon		All	NDPs: 1 Tests: 12	x		x	2	×	N		x	×		x		x		x	2	x		x		<mark>x</mark>		x		
Total Organic Carbon (As	sb)	All	NDPs: 0 Tests: 1						x																			
TPH CWG GC (S)		Ali	NDPs: 0 Tests: 13	x		x	2	x	x		x	×		x		x		x	2	×		x		x		x		

Grain Sizes

CERTIFICATE OF ANALYSIS

Validated

SDG: 120518-110 Job: H_CELTIC_ Client Reference: C1526	Location:	Banbury	Order Number:	66237
	REA-12 Customer:	Celtic Technologies	Report Number:	184070
	Attention:	Neil Hopkins	Superseded Report:	182385

Sample Descriptions

very fine	<0.063mm	fine	0.06	3mm - 0.1mm	me	dium	0.1mn	n - 2mm	coar	rse	2mm - 1	Omm	very coar	rse	>10m																												
Lab Sample No(s	s) Customer Sample		Ref.	Depth (m)	T	Co	olour	Descripti	ion	G	rain size	Incl	usions	Inclusio	ons 2																												
5606761		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		TP110		0.35		В	lack	Sand		0.	1 - 2 mm	Sto	ones	N/A	
5606762		TP110		0.65		Dark Brown		Loamy Sand		0.063 - 0.1 mm		Stones		N/A																													
5606764		TP111		0.30		Light Brown		Loamy Sand		0.063 - 0.1 mm		Stones		N/A																													
5606765		TP115		0.30		Light Brown		Sand		0.1 - 2 mm		Stones		N/A																													
5606768		TP116		0.30		Dark	Brown	Loamy Sa	and	0.063 - 0.1 mm		Stones		N/A																													
5606769		TP116		1.40		Dark	Brown	Sandy Silt L	_oam	0.	1 - 2 mm	Sto	ones	N/A																													
5606771		TP116		2.70		Light Brown		Silty Sar	nd	0.	1 - 2 mm	Sto	ones	N/A																													
5606773		TP117		0.50		Dark	Brown	Clay Loam 0.063 - 0.1 mm		None		Non	е																														
5606774		TP117		2.10		Dark	Brown	Loamy Sa	and	0.	1 - 2 mm	Oil/Pe	troleum	Stone	es																												
5606777		TP118		0.70		Dark	Brown	Clay		<0	.063 mm	١	I/A	N/A																													
5606778		TP118		2.20		Dark	Brown	Silty Cla	ау	0.063 - 0.1 mm		Stones		Non	е																												
5606779		TP119		0.20		Black		Loamy Sand		0.063 - 0.1 mm		Oil/Petroleum		Stone	es																												
5606780	5606780			1.50		Dark	Brown	Silty Cla	ay	0.06	3 - 0.1 mm	Oil/Pe	troleum	Non	е																												

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

NP ALCONTON	aborator			CEF	RTI	FICATE OF	- A	NALYSIS				
SDG: Job:	120518-110 H_CELTIC_REA-12		2	Location: Customer:	Ba Ce	nbury Itic Technologie:	s		Orde Repo	er Number: ort Numbe	r:	66237 184070
Client Reference:	C1526			Attention: Neil Hopkins						Superseded Report:		
- Describe Lesse		0							_			
Kesuits Legend Kesuits Legend Kesuits Legend M mCERTS accredited. S Deviating sample. aq Aqueous / settled sample. diss.fitt Dissolved / filtered sample. tot.unfitt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed LODD		La D/Units	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	0.35 Soil/Solid 16/05/2012 18/05/2012 120518-110 5606761		0.65 Soil/Solid 16/05/2012 18/05/2012 120518-110 5606762		0.30 Soii/Solid 16/05/2012 18/05/2012 120518-110 5606764	1	0.30 Soli/Solid 17/05/2012 18/05/2012 120518-110 5606765		0.30 Soil/Solid 17/05/2012 18/05/2012 120518-110 5606768
Ammoniacal Nitrogen	as N n	<15 ng/kg	TM024	<15		22.4		<15		<15		<15
Phenols, Total Detecter monohydric	ed < n	0.035 ng/kg	TM062 (S)	<0.035	м	<0.035	м	<0.035 N	1	<0.035	м	<0.035
Soil Organic Matter (S	OM) <).35 %	TM132	41.7	#	9.22	#	0.643	¢			4.05
Cyanide, Total	<1	mg/kg	TM153	9.7	м	<1	м	<1 N	1	<1	м	<1
Cyanide, Free	<1	mg/kg	TM153	<1		<1		<1		<1		<1

Validated

TP116

1.40 Soil/Solid 17/05/2012

. 18/05/2012 120518-110 5606769

79.5

Phenols, Total Detected	<0.035	TM062 (S)	<0.035	<0.035	<0.035	<0.035	<0.035	0.209
monohydric Soil Organia Matter (SOM)	mg/kg	TM122	M	M	M	M	M	M
	<0.55 <i>/</i> 0	1101132	41.7	9.22	0.045		4.05	2.0
Cyanide, Total	<1 mg/kg	TM153	9.7	<1	<1	<1	<1	40.1
Cvanida Free	<1 ma/ka	TM153	M	M	M	M	M	M
Gyanide, Tiee	<1 mg/kg	1101133	M	M	M	M	M	M
Arsenic	<0.6	TM181	12.7	29.6	74.7	97.5	217	63.1
Cadmium	mg/kg <0.02	TM181	0.441	1 26	2 54	2 4 5	M 2 24	1 97
Cadmidin	mg/kg	TWITCT	0.441 M	1.20 M	2.34 M	2.43 M	2.24 M	1.37 M
Chromium	<0.9	TM181	19	33.8	91.1	80.2	70.9	118
Conner	mg/kg <1.4	TM181	59 3	108	M	40.8	M	<14
Соррсі	mg/kg	TWITCT	00.0 M	M	M	40.0 M	/ M	M
Lead	<0.7	TM181	19.4	96.7	30.2	331	98.8	27.1
Mercury	mg/kg <0.14	TM181	M <0.14	M 0 144	M <0.14	<0 14	M <0.14	<0 14
Morodry	mg/kg	Imitor	M	M	M	M	M	M
Nickel	<0.2	TM181	28.6	38.8	59.3	70	72.1	63.9
Selenium	mg/kg <1 ma/ka	TM181	N	<10	<10	<10	×10	<10
			#	#	#	#	#	#
Zinc	<1.9	TM181	49.6	187	143	303	156	143
Boron, water soluble	mg/kg <1 ma/ka	TM222	M	3.27	M <1	<1	M <1	M <1
			M	M	M	M		M
Soil Organic Matter (SOM)	<0.1 %	TM321				0.281		
						#		

CERTIFICATE OF ANALYSIS

SDG: 1 Job: H Client Reference: C	20518-110 I_CELTIC_R 01526	EA-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins		Order Number: Report Number: Superseded Repo	66237 184070 rt: 182385	
Results Legend		Customer Sample R	TP116		TP117	TP117	TP118	TP118	TP119
M mCERTS accredited. S Deviating sample. aq Aqueous / settided sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate check the efficiency of the n results of individual compoo samples aren't corrected for	standard to nethod. The unds within the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s)	2.70 Soii/Solid 17/05/2012 18/05/2012 120518-110 5606771		0.50 Soii/Solid 17/05/2012 18/05/2012 120518-110 5606773	2.10 Soii/Solid 17/05/2012 18/05/2012 120518-110 5606774	0.70 Soli/Solid 17/05/2012 18/05/2012 120518-110 5606777	2.20 Soil/Solid 17/05/2012 18/05/2012 120518-110 5606778	0.20 Soil/Solid 17/05/2012 18/05/2012 120518-110 5606779
Component	LOD/L	Inits Method							
Ammoniacal Nitrogen as	N <1	5 TM024	297		212	184	692	654	400
Phenols, Total Detected	mg/ <0.0	kg 035 TM062 (S)	0.239	м	0.062	<0.035	0.0931	0.333	2680 M
Soil Organic Matter (SOM	l) <0.3	5 % TM132	0.721	1VI #	1.26 #	0.767	2.45	1.45	25.2
Cyanide, Total	<1 m	g/kg TM153	<1	# M				* <1 M	85.9
Cyanide, Free	<1 m	g/kg TM153	<1	м	<1 M	<1 <1	<1 M	<1 M	<10
Arsenic	<0	.6 TM181	99.3	м	26.9	96 M	28.5 M	43.3 M	32.6
Cadmium	<0.1 mg/	02 TM181	<0.2	м	0.251 M	1.32 м	<0.02	0.211 M	9.26 M
Chromium	<0	.9 TM181	76.5	м	49.6	90.1	51.5 M	57.4 M	35.5 M
Copper	<1	.4 TM181	17.3	м	8.21 M	18.4 M	36.3	8.96	819 M
Lead	<0	.7 TM181	41.7	м	18.8 M	22 M	69.8 M	20.4 M	1530 M
Mercury	<0.	14 TM181	<0.14	м	<0.14	<0.14	<0.14	<0.14	3.17 M
Nickel	<0	.2 TM181	70.7	м	24.3	73.9	29.2 M	26.8	37 M
Selenium	<1 m	g/kg TM181	<10	#	<1 #	<10 #	<1 #	<1 #	<1 #
Zinc	<1	.9 TM181	174	#	74.3	169 M	# 80.1	73.3	2510 M
Boron, water soluble	<1 m	g/kg TM222	<1	м	1.41 M	1.03 M	6.36 M	3.81 M	5.03 M
				IVI				IVI	101

ALcontrol Labo	ratories	5	CER	TI	FICATE OF A	NALYSIS			Validated
SDG: 1209 Job: H_C Client Reference: C15	518-110 ELTIC_RI 26	EA-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins		Order Number: Report Number: Superseded Repo	66237 184070 ort: 182385	
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	TP119						
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	1.50 Soil/Solid						
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled Sample Time	17/05/2012						
** % recovery of the surrogate stan check the efficiency of the metho create of individual compounds	dard to d. The	Date Received SDG Ref	18/05/2012 120518-110						
samples aren't corrected for the (F) Trigger breach confirmed	recovery	Lab Sample No.(s)	5606780						
Component	LOD/U	nits Method							
Ammoniacal Nitrogen as N	<1	5 TM024	1190						
Phenols, Total Detected	<0.0	35 TM062 (S)	16	м					
Soil Organic Matter (SOM)	<0.3	5 % TM132	3.05	#					
Cyanide, Total	<1 m	g/kg TM153	<1	м					
Cyanide, Free	<1 m	g/kg TM153	<1	М					
Arsenic	<0. mg/k	6 TM181	22.7	М					
Cadmium	<0.0 mg/k	02 TM181	0.385	М					
Chromium	<0. mg/k	9 TM181	66.3	М					
Copper	<1. mg/k	4 TM181	18	М					
Lead	<0. mg/k	7 TM181	114	м					
Mercury	<0.1 mg/k	4 TM181	<0.14	М					
Nickel	<0. mg/k	2 TM181	35.1	М					
Selenium	<1 m	g/kg TM181	<1	#					
Zinc	<1. mg/k	9 TM181	167	М					
Boron, water soluble	<1 m(g/kg TM222	2.52	М					
		_							
		_							

ALcontrol Laboratories **CERTIFICATE OF ANALYSIS** 120518-110 66237 SDG Location: Banbury Order Number: Job: H CELTIC REA-12 Customer: Celtic Technologies Report Number: 184070 **Client Reference:** C1526 Attention: Neil Hopkins Superseded Report: 182385 PAH by GCMS Customer Sample R TP111 TP116 TP110 TP110 TP115 TP116 ISO17025 accredited mCERTS accredited Deviating sample Depth (m) 0.35 0.65 0.30 0.30 0.30 1.40 Aqueous / settled sample diss filt Dissolved / filtered sa Sample Typ Soil/Solid Soil/Solid Soil/Solid Soil/Solid Soil/Solid Soil/Solid Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Date Sampled 16/05/2012 16/05/2012 16/05/2012 17/05/2012 17/05/2012 17/05/2012 Sample Time ... Date Received 18/05/2012 18/05/2012 18/05/2012 18/05/2012 18/05/2012 18/05/2012 120518-110 120518-110 120518-110 120518-110 120518-110 120518-110 SDG Ref 5606761 5606762 5606764 5606765 5606768 5606769 Lab Sample No.(s) AGS Reference (F) Trigger breach confirmed LOD/Units Method Component 98.8 98.9 104 108 98.8 Naphthalene-d8 % TM218 98.7 % recovery** Acenaphthene-d10 % % TM218 98.1 97.2 99 104 106 98.4 recovery** % Phenanthrene-d10 % TM218 94.9 94.8 95 7 101 102 96.8 recovery** Chrysene-d12 % % TM218 92.1 94.3 96.7 101 107 98.9 recoverv* Perylene-d12 % recovery** % TM218 106 106 95.4 97 101 112 TM218 256 274 <9 37.1 640 4190 Naphthalene <9 µg/kg Μ Μ Μ Μ Μ Μ TM218 2230 18500 155 274 <12 98.2 Acenaphthylene <12 Μ µg/kg Μ Μ Μ Μ Μ Acenaphthene TM218 96.8 56.4 <8 <8 85.5 10200 <8 µg/kg Μ Μ Μ Μ Μ Μ Fluorene TM218 142 <10 36.4 254 51700 <10 141 µg/kg Μ Μ Μ Μ Μ Μ Phenanthrene <15 TM218 1760 1650 21 499 4850 104000 Μ Μ Μ Μ Μ Μ ua/ka TM218 549 591 124 2280 54400 Anthracene <16 <16 µg/kg Μ Μ Μ Μ Μ Μ Fluoranthene <17 TM218 3630 3310 39.8 776 26700 126000 Μ Μ Μ Μ Μ Μ ua/ka Pyrene TM218 3090 2560 35.5 599 23300 86100 <15 µg/kg Μ Μ Μ Μ Μ Μ Benz(a)anthracene <14 TM218 2470 1940 33.2 424 19400 55500 Μ Μ Μ Μ Μ µq/kq Μ TM218 2090 1540 13.9 338 14200 39500 Chrysene <10 Μ Μ Μ µg/kg Μ Μ Μ Benzo(b)fluoranthene <15 TM218 4270 2240 38.2 489 24700 43500 Μ Μ Μ Μ Μ ua/ka Μ 200 9200 Benzo(k)fluoranthene TM218 1440 859 179 18100 <14 Μ Μ µg/kg Μ Μ Μ Μ Benzo(a)pyrene <15 TM218 3750 1630 31.9 390 19100 39100 Μ Μ Μ М Μ Μ µq/kq TM218 2500 778 19.8 199 9530 14500 Indeno(1,2,3-cd)pyrene <18 Μ Μ Μ Μ µg/kg M Μ Dibenzo(a,h)anthracene <23 TM218 653 280 <23 62.2 3110 5080 Μ Μ µg/kg Μ Μ Μ Μ TM218 2880 794 <24 214 9670 13400 Benzo(g,h,i)perylene <24 µg/kg Μ Μ Μ Μ Μ Μ PAH, Total Detected <118 TM218 29700 18900 251 4490 169000 684000 USEPA 16 µg/kg

CERTIFICATE OF ANALYSIS 120518-110 66237 SDG Location: Banbury Order Number: Job: H CELTIC REA-12 Customer: Celtic Technologies Report Number: 184070 **Client Reference:** C1526 Attention: Neil Hopkins Superseded Report: 182385 PAH by GCMS Customer Sample R TP117 TP119 TP116 TP117 TP118 TP118 ISO17025 accredited mCERTS accredited Deviating sample Depth (m) 2.70 0.50 2.10 0.70 2.20 0.20 Aqueous / settled sample diss filt Dissolved / filtered sa Sample Typ Soil/Solid Soil/Solid Soil/Solid Soil/Solid Soil/Solid Soil/Solid Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Date Sampled 17/05/2012 17/05/2012 17/05/2012 17/05/2012 17/05/2012 17/05/2012 Sample Time ... Date Received 18/05/2012 18/05/2012 18/05/2012 18/05/2012 18/05/2012 18/05/2012 120518-110 120518-110 120518-110 120518-110 SDG Ref 120518-110 120518-110 5606771 5606773 5606774 5606777 5606778 5606779 Lab Sample No.(s) AGS Reference (F) Trigger breach confirmed LOD/Units Method Component 99.6 86.6 97 9 98.3 96 7 90 Naphthalene-d8 % TM218 % recovery** Acenaphthene-d10 % % TM218 98.1 87.8 103 97.9 98.5 126 recovery** % Phenanthrene-d10 % TM218 96.5 85 7 101 98 1 98.8 112 recovery** Chrysene-d12 % % TM218 97 74.4 97.1 98.4 94.4 120 recoverv* Perylene-d12 % recovery** % TM218 104 96.6 110 101 69.8 100 TM218 12600 12.3 197 5320 13300 11600000 Naphthalene <9 µg/kg Μ Μ Μ Μ Μ TM218 12600 6880 1760 1830 1760000 617 Acenaphthylene <12 µg/kg Μ Μ Μ Μ Μ Acenaphthene TM218 3760 409 6280 827 7090 213000 <8 µg/kg Μ Μ Μ Μ Μ Fluorene TM218 23100 237 7180 1760 3790 1080000 <10 µg/kg Μ Μ Μ Μ Μ Phenanthrene <15 TM218 37800 152 17000 4950 8590 3490000 Μ Μ Μ Μ Μ ua/ka TM218 18000 148 4990 1500 2180 1170000 Anthracene <16 µg/kg Μ Μ Μ Μ Μ Fluoranthene <17 TM218 36200 224 4490 3280 1470 2210000 Μ Μ Μ Μ Μ ua/ka Pyrene TM218 24600 215 5510 3410 1800 1680000 <15 µg/kg Μ Μ Μ Μ Μ Benz(a)anthracene <14 TM218 14600 97.3 2120 1180 559 732000 Μ Μ Μ µq/kq Μ Μ TM218 10300 82.9 1670 935 478 546000 Chrysene <10 Μ µg/kg Μ Μ Μ Μ Benzo(b)fluoranthene <15 TM218 11200 91.1 1210 804 235 654000 Μ Μ Μ Μ ua/ka Μ 253 Benzo(k)fluoranthene TM218 5500 35.5 539 873 278000 <14 µg/kg M Μ Μ Μ Μ Benzo(a)pyrene <15 TM218 10800 75 1330 723 230 645000 Μ Μ Μ М Μ µq/kq TM218 3710 38.4 452 245 74.8 283000 Indeno(1,2,3-cd)pyrene <18 Μ Μ Μ µg/kg M Μ Dibenzo(a,h)anthracene <23 TM218 1300 <23 167 97.4 33.2 76900 Μ µg/kg Μ Μ Μ Μ TM218 3600 39.6 473 229 80.7 315000 Benzo(g,h,i)perylene <24 µg/kg Μ Μ Μ Μ Μ PAH, Total Detected <118 TM218 230000 1920 60500 27300 41800 26800000 USEPA 16 µg/kg

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ALcontrol La	boratories	5	CEF	RTII	FICATE OF A	NALYSIS				Validated
SDG: 1 Job: H	20518-110 I_CELTIC_R	EA-12	Location: Customer:	Ba	nbury Itic Technologies		Order Number: Report Number: Supercoded Para	66237 184070		
	51520		Attention:	ine			Superseueu Repu	n. 162365		
Results Legend		Customer Sample R	TP119							
# ISO17025 accredited. M mCERTS accredited.		·								
§ Deviating sample. ag Aqueous / settled sample.		Depth (m)	1.50							
diss.filt Dissolved / filtered sample.		Sample Type	Soil/Solid 17/05/2012							
* Subcontracted test.		Sample Time								
check the efficiency of the r	nethod. The	Date Received	18/05/2012 120518-110							
results of individual compo samples aren't corrected fo	unds within r the recovery	Lab Sample No.(s)	5606780							
(F) Trigger breach confirmed		AGS Reference								
Naphthalene-d8 %	%	TM218	94.7	_						
recovery**		The for	01.0							
recovery**	%	5 11/12/18	94.8							
Phenanthrene-d10 % recovery**	%	5 TM218	97.2							
Chrysene-d12 %	%	5 TM218	89.6							
Perylene-d12 % recovery	** %	o TM218	92						+	
Naphthalene	<9 µ(g/kg TM218	27900						+	
Acenaphthylene	<12	2 TM218	1720	M					+	
Acenaphthene	μg/k <8 μα	g g/kg TM218	596	М					+	
Fluorene	<1	0 TM218	1390	М					+	
Phenanthrene	µg/k	<u>(g</u> 5 TM219	1500	М					_	
	μg/k		1090	М						
Anumacene	<10 µg/k	0 11V1218	292	М						
Fluoranthene	<1 µg/k	7 TM218	349	М						
Pyrene	<1: µg/k	5 TM218 .g	256	М						
Benz(a)anthracene	<14 ua/k	4 TM218	129	м						
Chrysene	<10 	0 TM218	91	м						
Benzo(b)fluoranthene	<1: ug/k	5 TM218	110	м						
Benzo(k)fluoranthene	<14	4 TM218	40.7	м						
Benzo(a)pyrene	<1:	5 TM218	91.6	м						
Indeno(1,2,3-cd)pyrene	<18	8 TM218	51.4	IVI M						
Dibenzo(a,h)anthracene	<2: <2:	3 TM218	<23							
Benzo(g,h,i)perylene	<u>µg/k</u> <24	4 TM218	59.7	M						
PAH, Total Detected	μ <u>g</u> /k <11	g 8 TM218	34600	М					+	
USEPA 16	µg/k	g							-+	
									+	
									+	
									+	

CERTIFICATE OF ANALYSIS

SDG: 1205 Job: H_C Client Reference: C152	518-110 ELTIC_RE	EA-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins				Order Number: Report Number: Superseded Repo	ort:	66237 184070 182385		
TPH CWG (S)													
Results Legend # ISO17025 accredited.		Customer Sample R	TP110		TP110		TP111		TP115		TP116		TP116
M mCERTS accredited. § Deviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type Date Sampled	0.35 Soil/Solid 16/05/2012		0.65 Soil/Solid 16/05/2012		0.30 Soil/Solid 16/05/2012		0.30 Soil/Solid 17/05/2012		0.30 Soil/Solid 17/05/2012		1.40 Soil/Solid 17/05/2012
** % recovery of the surrogate stand check the efficiency of the method results of individual compounds v samples aren't corrected for the n (F) Trigger breach confirmed	lard to d. The within ecovery	Date Received SDG Ref Lab Sample No.(s) AGS Reference	18/05/2012 120518-110 5606761		18/05/2012 120518-110 5606762		18/05/2012 120518-110 5606764		18/05/2012 120518-110 5606765		18/05/2012 120518-110 5606768		18/05/2012 120518-110 5606769
Component	LOD/U	nits Method											
GRO Surrogate %	%	TM089	34		43		107		95		79		54
GRO >C5-C12	<44	L TM089	271	_	160		<44		<44		<44		1890
Methyl tertiary butyl ether	μ <u>η</u> /κ <5 μg	/kg TM089	<5	#	<5	#	<5	#	<5		<5	#	<5 #
Benzene	<1() TM089	<10	# M	<10	π M	<10	# M	<10		<10	#	~10
Toluene	<2 µg/k	/kg TM089	4.72	м	2.4	м	3.3	м	<2 M		<2	M	6.15
Ethylbenzene	<3 µg	/kg TM089	<3	м	<3	м	<3	м	<3 M		<3	м	<3 M
m,p-Xylene	<6 µg	/kg TM089	<6	м	<6	м	<6	м	<6 M		<6	м	<6 M
o-Xylene	<3 µg	/kg TM089	<3	м	<3	м	<3	м	<3 M		<3	м	17.2 M
sum of detected mpo	<9 µg	/kg TM089	<9		<9		<9		<9		<9		17.2
sum of detected BTEX by	<24 UQ/k	TM089	<24		<24		<24		<24		<24		<24
Aliphatics >C5-C6	<1(9) TM089	<10		10.8		<10		<10		<10		11.1
Aliphatics >C6-C8	<1() TM089	28.3		37.2		<10		<10		<10		81.2
Aliphatics >C8-C10	<1() TM089	33		28.8		<10		<10		<10		306
Aliphatics >C10-C12	<1() TM089	95.6		32.4		<10		<10		<10		749
Aliphatics >C12-C16	<10	0 TM173	5830	_	7150		<100		3190		3960		20900
Aliphatics >C16-C21	<10	0 TM173	10000		26200		<100		11100		8090		83600
Aliphatics >C21-C35	<10 ug/k	0 TM173	185000		688000		<100		26300		53100		1340000
Aliphatics >C35-C44	<10 µa/k	0 TM173 a	61300		86400		<100		<100		4690		228000
Total Aliphatics >C12-C44	<10 µg/k	0 TM173 g	262000		808000		<100		40700		69900		1670000
Aromatics >EC5-EC7	<10 µg/k) TM089	<10		<10		<10		<10		<10		<10
Aromatics >EC7-EC8	<1(µg/k) TM089 g	<10		<10		<10		<10		<10		<10
Aromatics >EC8-EC10	<10 µg/k) TM089	27.1		22.8		<10		<10		<10		229
Aromatics >EC10-EC12	<10 µg/k) TM089 g	63.7		21.6		<10		<10		<10		499
Aromatics >EC12-EC16	<10 µg/k	0 TM173 g	4700		22500		2520		3260		12300		238000
Aromatics >EC16-EC21	<10 µg/k	0 TM173 g	10800		101000		4770		12400		132000		793000
Aromatics >EC21-EC35	<10 µg/k	0 TM173	64300		361000		14500		35000		511000		2080000
Aromatics >EC35-EC44	<10 µg/k	0 TM173 g	25300		73200		2080		7950		110000		364000
Aromatics >EC40-EC44	<10 µa/k	0 TM173	11600		28700		417		2940		53200		142000
Total Aromatics >EC12-EC44	<10 µa/k	0 TM173	105000		557000		23900		58600		766000		3480000
Total Aliphatics >C5-35	<10 µg/k	0 TM173	201000		722000		<100		40700		65200		1450000
Total Aromatics >C5-35	<10 µa/k	0 TM173 g	79900		484000		21800		50600		656000		3110000
Total Aliphatics & Aromatics >C5-35	<10 µa/k	0 TM173	281000		1210000		21800		91300		721000		4560000
Total Aliphatics & Aromatics >C5-C44	<10 µg/k	0 TM173	367000		1370000		23900		99300		836000		5150000

CERTIFICATE OF ANALYSIS

SDG: 12 Job: H_ Client Reference: C1	0518-110 _CELTIC_RI 526	EA-12	Location: E Customer: C Attention: N	Banbury Celtic Technologies Neil Hopkins		Order Number: Report Number: Superseded Repor	66237 184070 t: 182385	
TPH CWG (S)								
Results Legend # ISO17025 accredited.		Customer Sample R	TP116	TP117	TP117	TP118	TP118	TP119
Subvisting sample. Aqueous / settled sample. diss.fiit Dissolved / filtered sample. tot.unfiit Total / unfiltered sample. Subcontracted test.		Depth (m) Sample Type Date Sampled Sample Time	2.70 Soil/Solid 17/05/2012	0.50 Soil/Solid 17/05/2012	2.10 Soil/Solid 17/05/2012	0.70 Soil/Solid 17/05/2012	2.20 Soil/Solid 17/05/2012	0.20 Soil/Solid 17/05/2012
 ** % recovery of the surrogate st check the efficiency of the mel results of individual compoun samples aren't corrected for th (F) Trigger breach confirmed 	andard to thod. The ds within le recovery	Date Received SDG Ref Lab Sample No.(s) AGS Reference	18/05/2012 120518-110 5606771	18/05/2012 120518-110 5606773	18/05/2012 120518-110 5606774	18/05/2012 120518-110 5606777	18/05/2012 120518-110 5606778	18/05/2012 120518-110 5606779
Component GRO Surrogate %	LOD/U	nits Method	130	113	101	67	106	62
recovery** GRO >C5-C12	<44	1 TM089	6320	691	17900	19500	15200	1560000
Methyl tertiary butyl ether	μg/k <5 μg	g J/kg TM089	<5	<5	<5	<5	<5	<100
(MTBE) Benzene	<1() TM089	23.9	# # <10	# <10	# 50.5	# 12.8	# 177000
Toluene	μg/k <2 μg	g j/kg TM089	N 4.56	<u>И М</u>	M <2	M 2.66	M 7.68	M 242000
Ethvlbenzene	<3 µ0	/kg TM089	N 258	<u>И М</u>	M 317	M 22.6	M 101	M 18400
m,p-Xylene	<6 µ0	1/kg TM089	210	<u>И М</u>	M <6	M	M 229	M 190000
o-Xvlene	<3 µ0	1/kg TM089	203	<u>И М</u>	M	M	M	M
sum of detected mpo	<9.00	1/kg TM089	N	<u>л м</u> <9	120 M	400	383	252000
xylene by GC	<24	4 TM089	699	<24	442	476	504	689000
GC Aliphatics >C5-C6	μg/k <1(g TM089	12.5	<10	21.6	34.6	15.4	380
Aliphatics >C6-C8	μg/k	g TM089	98	21.1	568	231	105	24000
Aliphatics >C8 C10	μg/k		872	42.2	3020	2600	2100	174000
Aliphatics > C10 C12	μg/k	g TM000	2440	42.2	7110	2030	2100	221000
Aliphatics >C10-C12	<10 µg/k	g TM089	2440	351	7110	0808	0000	331000
Aliphatics >C12-C16	<10 µg/k	0 IM173 g	4510	21900	347000	158000	112000	403000
Aliphatics >C16-C21	<10 µg/k	0 TM173 g	4850	17600	476000	237000	140000	158000
Aliphatics >C21-C35	<10 µg/k	0 TM173 g	15900	25900	187000	114000	30400	386000
Aliphatics >C35-C44	<10 µg/k	0 TM173 g	<100	1640	5270	10200	<100	108000
Total Aliphatics >C12-C44	<10 µg/k	0 TM173 g	25300	67100	1020000	520000	283000	1060000
Aromatics >EC5-EC7	<1(µg/k) TM089 g	23.9	<10	<10	50.5	12.8	177000
Aromatics >EC7-EC8	<1(µg/k) TM089 g	<10	<10	<10	<10	<10	242000
Aromatics >EC8-EC10	<1(µg/k) TM089 g	1250	29.8	2460	2220	1890	386000
Aromatics >EC10-EC12	<1(ug/k) TM089 a	1620	234	4740	5720	4440	221000
Aromatics >EC12-EC16	<10 µg/k	0 TM173 a	109000	13000	234000	122000	107000	125000
Aromatics >EC16-EC21	<10 ug/k	0 TM173	277000	10300	370000	204000	123000	228000
Aromatics >EC21-EC35	<10	0 TM173	431000	15000	205000	197000	64900	241000
Aromatics >EC35-EC44	<10	0 TM173	89900	2950	26300	34900	9900	48100
Aromatics >EC40-EC44	<10	0 TM173	39800	689	8080	12100	2340	17100
Total Aromatics	<10	0 TM173	908000	41300	835000	558000	305000	642000
Total Aliphatics >C5-35	<10	9 0 TM173	28700	65900	1020000	522000	291000	1480000
Total Aromatics >C5-35	μy/κ <10	9 0 TM173	821000	38600	816000	531000	301000	1620000
Total Aliphatics &	μg/κ <10	9 0 TM173	849000	104000	1840000	1050000	592000	3100000
Total Aliphatics &	μg/κ <10	9 0 TM173	939000	109000	1870000	1100000	602000	3250000
Aromatics >C5-C44	µg/k	<u>9</u>						

ALcontrol Lat	ooratories		CFF	8.LI	FICATE OF ΔΝΔΙ	YSIS				Validated
SDG: 1 Job: H Client Reference: C	20518-110 I_CELTIC_RE	EA-12	Location: Customer: Attention:	Ba Ce Ne	nbury Itic Technologies il Hopkins		Order Number: Report Number: Superseded Report	66237 184070 t: 182385		
TPH CWG (S)	1520		Attention.	INC			ouperseuce repor	. 102303		
Results Legend		Customer Sample R	TP119							
# ISO17025 accredited. M mCERTS accredited. § Deviating sample. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	1.50 Soil/Solid							
tot.unfilt Total / unfiltered sample. Subcontracted test. % recovery of the surrogate check the efficiency of the m results of individuel common	standard to nethod. The	Date Sampled Sample Time Date Received SDG Ref	17/05/2012 18/05/2012 120518-110							
samples aren't corrected for	the recovery	Lab Sample No.(s)	5606780							
(F) Trigger breach confirmed		AGS Reference								
GRO Surrogate %	%	TM089	121						-	
recovery** GRO >C5-C12	<44	+ TM089	3580						_	
Methyl tertiary butyl ether	μg/k <5 μg	g J/kg TM089	<5						_	
(MTBE) Benzene	<10) TM089	18.9	#					_	
Toluene	μg/k <2 μg	g J/kg TM089	9.45	Μ					_	
Ethylbenzene	<3 µg	/kg TM089	10.8	Μ					_	
m,p-Xylene		- /kg TM089	50	М					\dashv	
o-Xylene	<3 µg	/kg TM089	41.9	Μ					_	
sum of detected mpo	<9 µa	/kg TM089	91.9	Μ					-	
xylene by GC sum of detected BTEX by	<24	+ TM089	131						_	
GC Aliphatics >C5-C6	μg/kg <10	g TM089	12.2						_	
Aliphatics >C6-C8	μg/kg <10	g) TM089	24.3							
Aliphatics >C8-C10	μg/k <10	g TM089	220						_	
Aliphatics >C10-C12	μg/k <10	g TM089	1830						_	
Aliphatics >C12-C16	μg/k <10	g 0 TM173	29300						_	
Aliphatics >C16-C21	µg/k <10	g TM173	40200						_	
Aliphatics >C21-C35	μg/k <10	g 0 TM173	117000						_	
Aliphatics >C35-C44	μg/k <10	g 0 TM173	19600						_	
Total Aliphatics >C12-C44	μ <u>g/k</u> 4 <10	g 0 TM173	206000						_	
Aromatics >EC5-EC7	μg/kg <10	g TM089	18.9						_	
Aromatics >EC7-EC8	μg/kg <10	g TM089	<10						_	
Aromatics >EC8-EC10	μg/kg <10	g TM089	248						_	
Aromatics >EC10-EC12	μg/k <10	g) TM089	1220						\dashv	
Aromatics >EC12-EC16	µg/k <10	g 0 TM173	25400						-	
Aromatics >EC16-EC21	µg/k <10	g 0 TM173	18500						-	
Aromatics >EC21-EC35	µg/k <10	g 0 TM173	59500						\dashv	
Aromatics >EC35-EC44	µg/k <10	g 0 TM173	15900						-	
Aromatics >EC40-EC44	µg/k <10	g 0 TM173	5370						+	
Total Aromatics	µg/k <10	g 0 TM173	119000						-	
>EC12-EC44 Total Aliphatics >C5-35	µg/k <10	g 0 TM173	189000						-	
Total Aromatics >C5-35	µg/k <10	g 0 TM173	105000						+	
Total Aliphatics &	µg/k <10	g 0 TM173	294000						-	
Aromatics >C5-35 Total Aliphatics &	µg/k <10	g 0 TM173	329000						-	
Aromatics >C5-C44	µg/k	g							\dashv	
									-	
							I		- 1	

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SDG:	120518-110	Location:	Banbury	Order Number:	66237
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184070
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	182385

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP110 0.35 SOLID 16/05/2012 00:00:00 120518-110 5606761 TM048	23/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP110 0.65 SOLID 16/05/2012 00:00 120518-110 5506762 TM048	23/05/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP111 0.30 SOLID 16/05/2012 00:000 120518-110 5606764 TM048	23/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP115 0.30 SOLID 17/05/2012 00:000 120518-110 5606765 TM048	23/05/12	Chris Swindells	loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP116 0.30 SOLID 17/05/2012 00:000 120518-110 5606768 TM048	23/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

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SDG: Job: Client Referer	120518-110 H_CELTIC_ Ice: C1526	REA-12	Loc Cus Atte	ation: Ba stomer: Ce ention: Ne	nbury Itic Technolog il Hopkins	jies		Order Num Report Nur Supersede	ber: nber: d Report:	66237 184070 182385	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP116 1.40 SOLID 17/05/2012 00:000 120518-110 S606769 TM048	23/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved Date Receieved SOG Original Sample Method Number	ТР116 2.70 SOLID 17/05/2012 00:00 120518-110 5606771 ТМ048	23/05/12	Chris Swindells		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP118 0.70 SOLID 17/05/2012 00:00 120518-110 5606777 TM048	23/05/12	Lauren Sargeant		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP119 0.20 SOLID 17/05/2012 00:00 120518-110 5606779 TM048	23/05/12	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

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120518-110 66237 SDG: Location: Banbury Order Number: H_CELTIC_REA-12 Celtic Technologies 184070 Job: Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins Superseded Report: 182385 Asbestos Quantification -Total - % Additional Asbestos Asbestos Quantification -Gravimetric - % Asbestos Quantification -Analysts Comments Components (Using TM048) PCOM Evaluation % Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number TP115 0.30 SOLID 17/05/2012 00:00:00 - (#) 0.8377 (#) <0.001 (#) 0.8382 (#) 120518-110 5606765 TM 304

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	and the factory of the control of the second s	CEF	RTIFICATE OF ANALYSIS			
SDG:	120518-110	Location:	Banbury	Order Number:	66237	
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184070	
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	182385	

Notification of NDPs (No determination possible)

Date Received : 18/05/2012 18:25:06

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5606765	TP115	0.30	Total Organic Carbon	Unsuitable for analysis due to potential Asbestos

C

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120518-110 66237 SDG: Location: Banbury Order Number: H_CELTIC_REA-12 Celtic Technologies 184070 Job: Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins Superseded Report: 182385

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

C

CERTIFICATE OF ANALYSIS

Validated

120518-110 66237 SDG: Location: Banbury Order Number: Celtic Technologies H_CELTIC_REA-12 184070 Job: Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins Superseded Report: 182385

Test Completion Dates

Lab Sample No(s)	5606761	5606762	5606764	5606765	5606768	5606769	5606771	5606773	5606774	5606777
Customer Sample Ref.	TP110	TP110	TP111	TP115	TP116	TP116	TP116	TP117	TP117	TP118
AGS Ref.										
Depth	0.35	0.65	0.30	0.30	0.30	1.40	2.70	0.50	2.10	0.70
Туре	SOLID									
Ammonium Soil by Titration	23-May-2012	24-May-2012	23-May-2012	24-May-2012	24-May-2012	24-May-2012	23-May-2012	24-May-2012	24-May-2012	23-May-2012
Asbestos Identification (Soil)	23-May-2012			23-May-2012						
Asbestos Quantification - Full				13-Jun-2012						
Boron Water Soluble	24-May-2012	22-May-2012	22-May-2012	24-May-2012						
Cyanide Comp/Free/Total/Thiocyanate	24-May-2012	25-May-2012								
EPH CWG (Aliphatic) GC (S)	25-May-2012	23-May-2012	23-May-2012	25-May-2012						
EPH CWG (Aromatic) GC (S)	25-May-2012	23-May-2012	23-May-2012	25-May-2012						
GRO by GC-FID (S)	25-May-2012	24-May-2012	25-May-2012							
Metals by iCap-OES (Soil)	23-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012	22-May-2012	23-May-2012	24-May-2012
PAH by GCMS	23-May-2012									
Phenols by HPLC (S)	24-May-2012	25-May-2012	24-May-2012	25-May-2012	25-May-2012	24-May-2012	25-May-2012	24-May-2012	23-May-2012	25-May-2012
Sample description	22-May-2012	21-May-2012	21-May-2012	22-May-2012						
Total Organic Carbon	24-May-2012	24-May-2012	24-May-2012		24-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012
Total Organic Carbon (Asb)				24-May-2012						
TPH CWG GC (S)	25-May-2012	24-May-2012	25-May-2012							

Lab Sample No(s)	5606778	5606779	5606780
Customer Sample Ref.	TP118	TP119	TP119
AGS Ref.			
Depth	2.20	0.20	1.50
Туре	SOLID	SOLID	SOLID
Ammonium Soil by Titration	24-May-2012	23-May-2012	24-May-2012
Asbestos Identification (Soil)		23-May-2012	
Boron Water Soluble	22-May-2012	24-May-2012	22-May-2012
Cyanide Comp/Free/Total/Thiocyanate	24-May-2012	25-May-2012	24-May-2012
EPH CWG (Aliphatic) GC (S)	23-May-2012	25-May-2012	23-May-2012
EPH CWG (Aromatic) GC (S)	23-May-2012	25-May-2012	23-May-2012
GRO by GC-FID (S)	24-May-2012	25-May-2012	24-May-2012
Metals by iCap-OES (Soil)	22-May-2012	24-May-2012	22-May-2012
PAH by GCMS	24-May-2012	23-May-2012	25-May-2012
Phenols by HPLC (S)	24-May-2012	25-May-2012	25-May-2012
Sample description	21-May-2012	22-May-2012	21-May-2012
Total Organic Carbon	24-May-2012	24-May-2012	24-May-2012
TPH CWG GC (S)	24-May-2012	25-May-2012	24-May-2012

CERTIFICATE OF ANALYSIS

SDG:	120518-110	Location:	Banbury	Order Number:	66237
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	184070
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	182385

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	analysis
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	BNDOWEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-M6
>06-C40	WET	HEXANEACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FD
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-MS

SOLID MATRICES EXTRACTION SUMMARY

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCROPP	DCM	LQUD/LQUD SHAKE	GCMS
TRIAZINE HERBS	DCM	LQUD/LQUD SHAKE	GCMS
PHENOLSMS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH byINFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOL by R	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	CC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

 Addression Type
 Common Name

 Chrysolie
 WiteAsbestos

 Amoste
 BownAddressios

 Coxidable
 Blue Asbestos

 Doxidable
 Blue Asbestos

 Fibrous Antrophytic

 Fibrous Trendile



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 03 May 2012 H_CELTIC_REA 120427-22 C1526 Banbury 180043

We received 5 samples on Friday April 27, 2012 and 5 of these samples were scheduled for analysis which was completed on Thursday May 03, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

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Sonia McWhan Operations Manager



Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No.

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CERTIFICATE OF ANALYSIS

Validated

SDG: 120427-22 Location: Banbury Order Number: H_CELTIC_REA-12 180043 Job: Customer: Celtic Technologies Report Number: **Client Reference:** C1526 Attention: Neil Hopkins Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5507566	MW04			25/04/2012
5507568	MW10			26/04/2012
5507570	MW11			26/04/2012
5507574	MW12			26/04/2012
5507567	MW39			26/04/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol I	aborato	ries	С	EF	۲۶	IF	IC	Α.	ΤE	0	F	AI	NA	Ľ	YS	SIS	5									L	Vali	dated	
SDG: Job: Client Reference:	120427-22 H_CELTIC C1526	2 C_REA-12	Location Custome Attention	i: er: 1:	B C N	anl elti leil	bur ic T Ho	y ecl pki	nnol ns	ogi	es								(;	Oro Rej Suj	der poi per	Nu t N sec	mber: umber: led Report:	1	80043	;			
LIQUID							(7)				(D			0	,			(1)				(1)							
Results Legend		Lab Sampl	e No(s)				507566				507568			010100				507574				507567							
No Determin Possible	ation	Custor Sample Re	ner ference				MW04				MW10							MW12				MW39							
		AGS Refe	rence																										
		Depth	(m)																										
		Contai	ner	1l green glass bottle	H2SO4 (ALE244)	NaOH (ALE245) HNO3 Filtered (ALE	Vial (ALE297)	1I green glass bottle	HNO3 Filtered (ALE H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	H2SO4 (ALE244)	HNO3 Filtered (ALE	NaOH (ALE297)	11 green glass bottle	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	1l green glass bottle	H2SO4 (ALE244)	HND3 Filtered (ALEZ40)	Vial (ALE297)							
Ammoniacal Nitrogen		All	NDPs: 0 Tests: 5	F	x				<mark>x</mark>			x	2			x				x									
Cyanide Comp/Free/Total/Thiocya	nate	All	NDPs: 0 Tests: 5			>	<mark>(</mark>			x				x			>	2			>	C							
Dissolved Metals by ICP-	MS	All	NDPs: 0 Tests: 5			x			x				x				x			2	x								
EPH CWG (Aliphatic) Aqu (W)	ueous GC	All	NDPs: 0 Tests: 5	x				x			2	ĸ			x				x										
EPH CWG (Aromatic) Aq (W)	ueous GC	All	NDPs: 0 Tests: 5	x				x			2	K			x				x										
GRO by GC-FID (W)		All	NDPs: 0 Tests: 5				x				x)	(x				x							
Mercury Dissolved		All	NDPs: 0 Tests: 5	x				x			2	ĸ			x				x										
PAH Spec MS - Aqueous	(W)	All	NDPs: 0 Tests: 5	x				x			2	ĸ			x				x										
Phenols by HPLC (W)		All	NDPs: 0 Tests: 5		x				x			x	2			x				x									
TPH CWG (W)		All	NDPs: 0 Tests: 5	x				x			2	ĸ			x				x										

CERTIFICATE OF ANALYSIS

SDG:	120427-22	Location:	Banbury	Order Number:	180043
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Results Legend		Customer Sample R	MW04	MW10	MW11	MW12	MW39	
# ISO17025 accredited. M mCERTS accredited.								
§ Deviating sample.		Depth (m)						
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
tot.unfilt Total / unfiltered sample.		Date Sampled	25/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012	
* Subcontracted test. ** % recovery of the surrogate standar	d to	Sample Time						
check the efficiency of the method.	The	Date Received	27/04/2012 120427-22	27/04/2012 120427-22	27/04/2012 120427-22	120427-22	27/04/2012 120427-22	
results of individual compounds wit samples aren't corrected for the rec	hin overv	Lab Sample No.(s)	5507566	5507568	5507570	5507574	5507567	
(F) Trigger breach confirmed		AGS Reference						
Component	LOD/Un	nits Method						
Ammoniacal Nitrogen as	<0.2 m	ng/l TM099	1.28	17	174	37.9	<0.2	
NH3			#	#	#	#	#	
Arsenic (diss.filt)	<0.12	2 IM152	2.36	2.92	4.86	1.62	1.15	
	µg/l		#	#	#	#	#	
Boron (diss.nit)	<9.4 µ	1g/1 11/1152	430 #	537 #	118 #	1770 #	829 #	
Codmium (diac filt)	-0.1.		#	#			#	
Caumum (diss.nit)	<0.1μ	19/1 11/11/52	~0.1 #	~0.1 #	<0.1 #	0.127	~0.1 #	
Chromium (diss filt)	<0.2	2 TM152	1 18	2 99	3 53	7 72	8.61	
	ua/l		#	2.00	#	#	u.u.u #	
Copper (diss filt)	<0.8	5 TM152	15	1 71	1 27	4 55	16.3	
	µq/l		#	#	#	#	#	
Lead (diss.filt)	<0.0	2 TM152	0.082	<0.02	0.04	0.036	1.23	
. ,	µg/l		#	#	#	#	#	
Nickel (diss.filt)	<0.1	5 TM152	8.27	5.48	4.91	20.2	18.1	
	µg/l		#	#	#	#	#	
Selenium (diss.filt)	<0.3	9 TM152	1.83	1.28	2.12	2.11	3.82	
	µg/l		#	#	#	#	#	
Zinc (diss.filt)	<0.4	1 TM152	3.07	1.94	2.31	3.51	8.19	
	µg/l		#	#	#	#	#	
Mercury (diss.filt)	<0.0	1 TM183	<0.01	<0.01	<0.01	<0.01	<0.01	
	µg/l		#	#	#	#	#	
Cyanide, Total	<0.0	5 IM227	<0.05	0.243	<0.05	0.077	<0.05	
Cyanida Eraa	mg/i	5 TM227	<i>#</i>	<i></i> 0 05	<i>+</i>	<i></i>	# <0.05	
Cyallide, Flee	<0.03	5 111/227	<0.05 #	<0.05 #	<0.05 #	~0.05 #	<0.05 #	
Phanols, Total Detected	-0.01	6 TM250	<i>#</i>	<i>#</i>	~0.016	<i>+</i> ∽0.016	<i>#</i>	
monohydric	-0.01 ma/l	10 11012.55	<0.010 #	~0.010 #	~0.010	~0.010	~0.010 #	
mononyunc	тцл		π	π	π	<u>π</u>	π	

CERTIFICATE OF ANALYSIS

 120427-22
 Location:
 Banbury
 Order Number:

 H_CELTIC_REA-12
 Customer:
 Celtic Technologies
 Report Number:
 180043

 C1526
 Attention:
 Neil Hopkins
 Superseded Report:
 180043

Validated

Client Reference: C1526

C

SDG:

Job:

PAH Spec MS - Aqueous	5 (W)							
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	MW04	MW10	MW11	MW12	MW39	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 25/04/2012	Water(GW/SW) 26/04/2012	Water(GW/SW) 26/04/2012	Water(GW/SW) 26/04/2012	Water(GW/SW) 26/04/2012	
* Subcontracted test. ** % recovery of the surrogate standar	d to	Sample Time		27/04/2012				
check the efficiency of the method. results of individual compounds wit	The hin	SDG Ref	120427-22	120427-22	120427-22	120427-22	120427-22	
samples aren't corrected for the rec (F) Trigger breach confirmed	overy	Lab Sample No.(s)	5507566	5507568	5507570	5507574	5507567	
Component	LOD/Unit	s Method						
Naphthalene (aq)	<0.1 µg	j/l TM178	<0.1 #	0.112 #	0.109 #	<0.1 #	<0.1 #	
Acenaphthene (aq)	<0.015 µg/l	5 TM178	<0.015 #	0.0774 #	0.174 #	<0.015 #	0.0163 #	
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011 #	0.813 #	3.3	0.0158 #	<0.011 #	
Fluoranthene (aq)	<0.017 µg/l	7 TM178	<0.017 #	0.0311 #	<0.017 #	<0.017 #	0.245 #	
Anthracene (aq)	<0.015 µg/l	5 TM178	<0.015 #	<0.015 #	<0.015 #	<0.015 #	0.0256 #	
Phenanthrene (aq)	<0.022 µg/l	TM178	<0.022	<0.022 #	<0.022	<0.022 #	0.0394 #	
Fluorene (aq)	<0.014 µg/l	TM178	<0.014 #	0.0229 #	0.062	<0.014 #	<0.014 #	
Chrysene (aq)	<0.013 µg/l	5 TM178	<0.013 #	0.0251 #	<0.013 #	<0.013 #	0.248 #	
Pyrene (aq)	<0.015 µg/l	5 TM178	0.0333 #	0.0316 #	<0.015 #	<0.015 #	0.284 #	
Benzo(a)anthracene (aq)	<0.017 µg/l	7 TM178	<0.017 #	<0.017 #	<0.017 #	<0.017 #	0.136 #	
Benzo(b)fluoranthene (aq)	<0.023 µg/l	5 TM178	<0.023	<0.023 #	<0.023	<0.023 #	0.223 #	
Benzo(k)fluoranthene (aq)	<0.027 µg/l	7 TM178	<0.027 #	<0.027 #	<0.027	<0.027 #	0.369 #	
Benzo(a)pyrene (aq)	0.009	9 TM178	0.0136 #	0.0136 #	<0.009 #	<0.009 #	0.238 #	
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	5 TM178	<0.016 #	<0.016 #	<0.016 #	<0.016 #	0.0507 #	
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	5 TM178	<0.016 #	<0.016 #	<0.016 #	<0.016 #	0.255 #	
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	<0.014 #	<0.014 #	0.155 #	
PAH, Total Detected USEPA 16 (aq)	<0.247 µg/l	I M178	<0.247	1.13	3.64	<0.247	2.29	
		_						
		_						

C

CERTIFICATE OF ANALYSIS

Validated

 SDG:
 120427-22
 Location:
 Banbury
 Order Number:

 Job:
 H_CELTIC_REA-12
 Customer:
 Celtic Technologies
 Report Number:
 180043

 Client Reference:
 C1526
 Attention:
 Neil Hopkins
 Superseded Report:

трн (CWG (W)										
# M &	Results Legend ISO17025 accredited. mCERTS accredited. Deviating sample.		Cust	tomer Sample R	MW04	MW10		MW11	MW12	MW39	
aq diss.filt tot.unfilt	Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test			Depth (m) Sample Type Date Sampled Sample Time	Water(GW/SW) 25/04/2012	Water(GW/SW 26/04/2012)	Water(GW/SW) 26/04/2012	Water(GW/SW) 26/04/2012	Water(GW/SW) 26/04/2012	
**	% recovery of the surrogate standar check the efficiency of the method.	rd to The		Date Received	27/04/2012	27/04/2012 120427 22		. 27/04/2012	27/04/2012	27/04/2012	
(F)	results of individual compounds wit samples aren't corrected for the rec Trigger breach confirmed	hin overy	La	SDG Ref b Sample No.(s) AGS Reference	5507566	5507568		5507570	5507574	5507567	
GRO	onent Surrogate %	LOD/U	nits	Method TM245	98	100		95	97	99	
recov	ery**		,								
GRU	>05-012	<50	µg/I	TM245	<50 #	<50	#	<50 #	<50	<50 # #	
Methy (MTB	l tertiary butyl ether	<3 µ	ıg/l	TM245	<3 #	<3	#	<3 #	<3	<3 # #	
Benze	ene	<7 µ	ıg/l	TM245	<7 #	<7	#	<7 #	<7	<7 # #	
Tolue	ne	<4 µ	ıg/l	TM245	<4 #	<4	#	<4 #	<4	<4 # #	
Ethylk	benzene	<5 µ	ıg/l	TM245	<5 #	<5	#	<5 #	<5	<5 # #	
m,p-X	ylene	<8 µ	ıg/l	TM245	<8 #	<8	#	<8 #	<8	<8 # #	
o-Xyle	ene	<3 µ	ıg/l	TM245	<3 #	<3	#	<3 #	<3	<3 # #	
Sum o	of detected Xylenes	<11	µg/l	TM245	<11	<11		<11	<11	<11	
Sum o	of detected BTEX	<28	µg/l	TM245	<28	<28		<28	<28	<28	
Alipha	tics >C5-C6	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Alipha	atics >C6-C8	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Alipha	atics >C8-C10	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Alipha	atics >C10-C12	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Alipha	atics >C12-C16 (aq)	<10	µg/l	TM174	<10	<10		<10	<10	<10	
Alipha	atics >C16-C21 (aq)	<10	µg/l	TM174	<10	<10		<10	<10	<10	
Alipha	atics >C21-C35 (aq)	<10	µg/l	TM174	86	<10		<10	<10	<10	
Total	Aliphatics >C12-C35	<10	µg/l	TM174	86	<10		<10	<10	<10	
Aroma	atics >EC5-EC7	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Aroma	atics >EC7-EC8	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Aroma	atics >EC8-EC10	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Aroma	atics >EC10-EC12	<10	µg/l	TM245	<10	<10		<10	<10	<10	
Aroma (ag)	atics >EC12-EC16	<10	µg/l	TM174	<10	<10		<10	<10	<10	
Aroma (aq)	atics >EC16-EC21	<10	µg/l	TM174	<10	<10		<10	<10	<10	
Aroma (ag)	atics >EC21-EC35	<10	µg/l	TM174	<10	<10		<10	<10	<10	
Total	Aromatics 2-EC35 (ag)	<10	µg/l	TM174	<10	<10		<10	<10	<10	
Total Aroma	Aliphatics &	<10	µg/l	TM174	89	<10		10	<10	<10	
7.0011	2.00 00 00 (aq)										

C

CERTIFICATE OF ANALYSIS

Validated

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

C

CERTIFICATE OF ANALYSIS

 SDG:
 120427-22
 Location:
 Banbury
 Order Number:

 Job:
 H_CELTIC_REA-12
 Customer:
 Celtic Technologies
 Report Number:
 180043

 Client Reference:
 C1526
 Attention:
 Neil Hopkins
 Superseded Report:

Test Completion Dates

Lab Sample No(s)	5507566	5507568	5507570	5507574	5507567
Customer Sample Ref.	MW04	MW10	MW11	MW12	MW39
AGS Ref.					
Depth					
Туре	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	01-May-2012	30-Apr-2012	30-Apr-2012	30-Apr-2012	30-Apr-2012
Cyanide Comp/Free/Total/Thiocyanate	01-May-2012	01-May-2012	01-May-2012	01-May-2012	01-May-2012
Dissolved Metals by ICP-MS	30-Apr-2012	30-Apr-2012	30-Apr-2012	30-Apr-2012	30-Apr-2012
EPH CWG (Aliphatic) Aqueous GC (W)	01-May-2012	01-May-2012	01-May-2012	02-May-2012	01-May-2012
EPH CWG (Aromatic) Aqueous GC (W)	01-May-2012	01-May-2012	01-May-2012	02-May-2012	01-May-2012
GRO by GC-FID (W)	28-Apr-2012	28-Apr-2012	28-Apr-2012	28-Apr-2012	28-Apr-2012
Mercury Dissolved	02-May-2012	02-May-2012	02-May-2012	02-May-2012	02-May-2012
PAH Spec MS - Aqueous (W)	03-May-2012	02-May-2012	03-May-2012	02-May-2012	02-May-2012
Phenols by HPLC (W)	02-May-2012	02-May-2012	01-May-2012	02-May-2012	02-May-2012
TPH CWG (W)	01-May-2012	01-May-2012	01-May-2012	02-May-2012	01-May-2012

CERTIFICATE OF ANALYSIS

SDG:	120427-22	Location:	Banbury	Order Number:
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVMETRIC
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	ENDOWEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-MS
>06-C40	WET	HEXANEACETONE	SHAKER	GC-FD
POLYAROMATIC HYDROCAFBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FID
SEMI VOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-MS

SOLID MATRICES EXTRACTION SUMMARY

180043

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LQUD/LQUD SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCPOPP	DCM	LQUD/LQUD SHAKE	GCMS
TRIAZINE HERBS	DCM	LQUD/LQUD SHAKE	GCMS
PHENOLSMS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOL by R	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	CC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrystile

Amosite

Onichite

Fibrous Adindite

Fibrous Anthophylite

Fibra & Trendie

Common Name

WhiteAsheshes

BrownAsbestos

Blue Ashestos

-

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 07 June 2012 H_CELTIC_REA 120528-36 C1526 Banbury 183482

We received 8 samples on Saturday May 26, 2012 and 8 of these samples were scheduled for analysis which was completed on Thursday June 07, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:



Sonia McWhan Operations Manager



Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

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CERTIFICATE OF ANALYSIS

Validated

SDG:	120528-36	Location:	Banbury	Order Number:	66230
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	183482
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5653959	BH101a			25/05/2012
5653956	BH103			24/05/2012
5653958	BH104			24/05/2012
5653957	BH105			24/05/2012
5653960	BH106			25/05/2012
5653955	MW01			24/05/2012
5653962	MW07			25/05/2012
5653961	MW28			25/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol I	aborato	ries	С	EF	RT	IFI		АТ	Ē	0	F		IA	L١	٢S	IS																Va	lidated
SDG: Job: Client Reference:	120528-36 H_CELTIC_ C1526	REA-12	Location Custome Attentior	n: er: n:	Ba Co No	anbu eltic eil H	iry Tec opki	hnol	logie	es									Or Re Su	dei po	r Nı rt N	um lun de	ber nbe d R	: er: epc	ort:		6623 1834	30 482					
LIQUID Results Legend		Lab Sample N	lo(s)				5653955			000000	5653962			5653961				5653959			0065000				5653958			108000	101000			5653960	
No Determin Possible	ation	Customer Sample Reference					MW01			NIN C	MW07			MW28				BH101a			BHTU3	2			BH104			COLHE	711405			BH106	
		AGS Refere	nce																														
		Depth (m)																											+ +		_	
		Containe	r	1l green glass bottle	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	11 green glass bottle	HNO3 Filtered	NaOH (ALE245)	1l green glass bottle Vial (ALE297)	H2SO4 (ALE244)	HNO3 Filtered	Vial (ALE297)	1l green glass bottle	HNU3 Filtered H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	H2SO4 (ALE244)	HNO3 Filtered	VIAL (ALE297)	11 green glass bottle	H2SO4 (ALE244)	NaOH (ALE245) HNO3 Filtered	Vial (ALE297)	H2SO4 (ALE244) 11 areen alass bottle	HNO3 Filtered	NaOH (ALE297)	1l green glass bottle	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	
Ammoniacal Nitrogen		All	NDPs: 0 Tests: 8		X)	Contraction 1 and the second secon			x				x			X				x			X				X			
Cyanide Comp/Free/Total/Thioc	yanate	All	NDPs: 0 Tests: 8			x				x)	K			x				×			×	1			X			×		
Dissolved Metals by ICP-MS		All	NDPs: 0 Tests: 8			x			x				x			×	<u> </u>			x				x			x			,	x		
EPH CWG (Aliphatic) Aqueous	GC (W)	All	NDPs: 0 Tests: 8	x				x			×				x)	<mark>(</mark>			x				x			x				
EPH CWG (Aromatic) Aqueous	GC (W)	All	NDPs: 0 Tests: 8	x				x			×	ſ			x)	< l			x				x			x				
GRO by GC-FID (W)		All	NDPs: 0 Tests: 8				x				x			x				x			>	<mark>(</mark>			x)	<mark>(</mark>			x	
Mercury Dissolved		All	NDPs: 0 Tests: 8	x				x			×	2			x)	(x				x			x				
PAH Spec MS - Aqueous (W)		All	NDPs: 0 Tests: 8	x				x			×				x)	<mark>(</mark>			x				x			x				
Phenols by HPLC (W)		All	NDPs: 0 Tests: 8		x)	< <			x				x			x				x			×	<u>د</u>			x			
TPH CWG (W)		All	NDPs: 0 Tests: 8	x				x			×	r i			x)	(x				x			x				

4

CERTIFICATE OF ANALYSIS

SDG: 120528-36 Location: Banbury Order Number: 66230 Job: H_CELTIC_REA-12 Customer: Celtic Technologies Report Number: 183482 Client Reference: C1526 Attention: Neil Hopkins Superseded Report:	
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Results Legend		Customer Sample Ref.	BH103	BH104	BH105	BH106	BH101a	MW01
# ISO17025 accredited.			Billio	Billot	Billio	Billio	Billola	
M mCERTS accredited. § Deviating sample.								
aq Aqueous / settled sample.		Depth (m)	Mater(C)M/(C)M)	Mata (C)M/CM0	Wata (OW/OW)	Matas(CM//CM)	Minter/CIM/(CIM)	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Date Sample Type	24/05/2012	24/05/2012	24/05/2012	25/05/2012	25/05/2012	24/05/2012
* Subcontracted test.		Sample Time						
** % recovery of the surrogate standard	d to	Date Received	26/05/2012	26/05/2012	26/05/2012	26/05/2012	26/05/2012	26/05/2012
results of individual compounds with	nin	SDG Ref	120528-36	120528-36	120528-36	120528-36	120528-36	120528-36
samples aren't corrected for the reco	overy	Lab Sample No.(s)	5653956	5653958	5653957	5653960	5653959	5653955
(F) Trigger breach commed		AGS Reference						
	100/011		40.7	00.4	40.0	00.0	400	4.50
Ammoniacal Nitrogen as NH3	<0.2 mg	/1 110099	40./	92.1	18.9	28.3	108 #	1.50
Areania (dias filt)	-0.10	-// TM150		7.00	F 60	100		1.00
Arsenic (diss.iiit)	<0.12 µç	J/I IIVII52	2.31	1.29	۵.02 #	102 #	20 #	1.02
Deres (dies filt)	<0.4	// TM150	#	# 560	# E0E	2010	210	255
Boron (diss.fiit)	<9.4 µg	/I IMI152	134 #	503 #	595 #	2010 #	319 #	200 #
Codmium (dias fili)	<0.1	// TM150	#	#	#	-0.1	#	+ -0.1
Caumium (uiss.iiit)	<0.1 µg	/1 11/11/02	~ 0.1	~ 0.1	<u.i #</u.i 	<u.i #</u.i 	~ 0.1 #	<0.1 #
Chromium (diac filt)	<0.22.14	TM150	£ 20	2.00	#	10.0	#	0.24
	≺υ.∠∠ μί	y/i iivii3z	0.20	2.55 #	4.34 #	12.2 #	4.40 #	5.24 #
Copper (diss filt)	<0.85 u	1/I TM152	1 2Q	π 1 33	1 /1	1 52	π د0.85	3
	<0.00 μί	y/i iivii02	1.25	1.55 #	1.41	1.52 #	~0.00 #	5 #
Load (diss filt)	<0.02.14	M TM152	0.465	0.07	π 0.185	0.20	π 0.366	0.007
	~υ.υz μί	gn 11011.0∠	0.705	0.01 #	0.100 #	0.23 #	0.000 #	0.031
Nickel (diss filt)	<0 15	1/I TM152	5 2/	6.62	10.3	11 3	1.28	<u>#</u>
THORE (UISS.III)	-0.10 µ(yn 1101102	J.J 4	0.02 #	10.5	11.0	1.20	4.J #
Selenium (diss filt)	<0.30	1/I TM152	# 0.71	2 95	2 74	5.43		4 64
	-0.09 h(yn 1101102	0.71	2.55	2.14	J. 4 J #	J.Z #	4.04
Zinc (diss filt)	<0.41	1/I TM152	5.84	3 78	<u> </u>	8.48	3 32	10.8
	~υ.41 μί	j/i 11vi13z	5.04 #	5.70 #	0.27	0.40 #	5.52 #	10.0
Mercury (diss filt)	<0.01	1/I TM192	# ∠0.01	# ∠0.01	# د۱ ۱۵	0 0235	# 0.0113	<i>∠</i> 0.01
	<0.01 μί	y/i 11vi103	~0.01 #	~0.01 #	~0.01	0.0233 #	0.0115 #	<0.01 #
Cyanida, Total	<0.05 m	TM227	0.276	π 0.21	<i>π</i> ∠0.05	0.065	0.00	~0.05
Cyanide, Totai	<0.05 m	y/i i ivizz <i>i</i>	0.270 #	0.21	~0.05 #	0.005 #	0.05 #	<0.0J #
Cvanide Free	<0.05 m	n/I TM227	π ∠0.05	π	π ∠0.05	π ∠0.05	π <0.05	π
Cyanide, Tiee	-0.00 m	g/1 11V1221	~0.05 #	~0.05 #	~0.05 #	~0.05 #	<0.00 #	<0.00 #
Phonols, Total Dotoctod	<0.016 m	a/l TM250	~0.016	<i></i> ∩_016	<i>π</i> ∠0.016	16.2	<i>π</i>	<i></i> ∩ 016
monohydrio	\0.01011	g/i 11vi235	<0.010 #	~0.010 #	~0.010 #	10.2 #	<0.010 #	~0.010 #
			π	π	π	π	π	π
		_						
		_						

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CERTIFICATE OF ANALYSIS

Results Legend		Customer Sample Ref.	MW07	MW28		
# ISO17025 accredited. M mCERTS accredited.						
§ Deviating sample.		Depth (m)				
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)		
tot.unfilt Total / unfiltered sample.		Date Sampled	25/05/2012	25/05/2012		
* Subcontracted test. ** % recovery of the surrogate standar	d to	Sample Time				
check the efficiency of the method. T	The	Date Received	26/05/2012	26/05/2012		
results of individual compounds with	hin	SDG Ret	5653962	5653961		
(F) Trigger breach confirmed	overy	AGS Reference				
Component	LOD/Un	its Method				
Ammoniacal Nitrogen as NH3	<0.2 m	n/l TM099	197	34.5		
	0.2		#	#		
Arsenic (diss filt)	<0.12.0	g/l TM152	8.67	21.7		
	ч. <u>–</u> р	g/	#	#		
Boron (diss filt)	<9411	r/l TM152	349	279		
	·0.1 P	g/1 111102	#	210 #		
Cadmium (diss filt)	<0.1.0	r/l TM152	<0.1	<0.1		
oddinium (diss.int)	-0.1 P	g/1 1101102	-0.1	-0.1		
Chromium (diss filt)	<0.22	a/l TM152		3.61		
	•0.22 p	g/1 111102	#	0.01 #		
Coppor (diss filt)	<0.85	a/l TM152	0.047	-0.85		
	-0.00 p	g/1 111102	0.047	-0.00 #		
Lead (diss filt)	<0 02	α/I TM152	# 0.05/	# A0.0		
	-υ.υz μ	9/1 110110Z	0.004	0.00 #		
Nickel (diss filt)	<u>د</u> 1 1	a/l TM150	н Л Л	<u>"</u>		
NICKEI (UISS.IIII)	~∪.15 µ	yn 110152	4.4 #	۷.0۷ μ		
Calanium (dias filt)	<0.00	~// TM450	#	#		
Selenium (alss.filt)	<0.39 h	g/i 1M152	2.35	2.97		
7:	.0.11	-//	#	#		
∠inc (diss.tiit)	<0.41 µ	g/i IM152	2.08	2.99		
			#	#		
Mercury (diss.filt)	<0.01 µ	g/l TM183	<0.01	<0.01		
			#	#		
Cyanide, Total	<0.05 m	ig/l TM227	0.067	<0.05		
			#	#		
Cyanide, Free	<0.05 m	ig/l TM227	<0.05	<0.05		
			#	#		
Phenols, Total Detected	<0.016 n	ng/l TM259	0.9	<0.016		
monohydric			#	#		
		_				
		_				

CERTIFICATE OF ANALYSIS

			ULINI					
SDG:	120528-36	120528-36		anbury		Order Number:	66230	
Job:	H_CELTIC_REA-1	2	Customer: Co	eltic Technologies		Report Number:	183482	
Client Reference:	C1526		Attention: No	eil Hopkins		Superseded Repo	ort:	
PAH Spec MS - Ad	queous (W)							
Results Lege	end	Customer Sample Ref.	BH103	BH104	BH105	BH106	BH101a	MW01

# 1	SO17025 accredited.				Billio	Billor	Birros	Binos	binitia	Million 1
6 E	nCERTS accredited. Deviating sample.									
aq A	Aqueous / settled sample.			Depth (m)						
diss.filt E	Dissolved / filtered sample.			Sample Type	Water(GW/SW)	Water(GW/SW) 24/05/2012	Water(GW/SW)	Water(GW/SW) 25/05/2012	Water(GW/SW) 25/05/2012	Water(GW/SW)
* 8	Subcontracted test.			Sample Time						
** 9	% recovery of the surrogate standar	d to		Date Received	26/05/2012	26/05/2012	26/05/2012	26/05/2012	26/05/2012	26/05/2012
r	results of individual compounds wit	hin		SDG Ref	120528-36	120528-36	120528-36	120528-36	120528-36	120528-36
(T) S	samples aren't corrected for the reco	overy		Lab Sample No.(s)	5653956	5653958	5653957	5653960	5653959	5653955
(F)	rigger breach commed	1.00/11		AGS Reference						
Compon	ent	LOD/U	nits	wiethod						
Naphthale	ene (aq)	<0.1 µ	Jg/I	TM178	<0.1	0.119	0.255	2680	2.28	<0.1
					#	#	#	#	#	#
Acenapht	hene (aq)	<0.015	µg/l	TM178	0.0995	0.22	0.0386	1350	376	<0.015
					#	#	#	#	#	#
Acenapht	hylene (aq)	<0.011	µg/l	TM178	0.098	0.371	0.0383	409	50.5	<0.011
					#	#	#	#	#	#
Fluoranth	ene (aq)	<0.017	µg/l	TM178	0.0424	0.0687	0.045	563	182	0.0264
					#	#	#	#	#	#
Anthracer	ne (aq)	<0.015	µg/l	TM178	0.0152	0.041	0.0201	751	230	<0.015
					#	#	#	#	#	#
Phenanth	rene (aq)	<0.022	µg/l	TM178	0.0227	<0.022	0.0549	1740	372	<0.022
					#	#	#	#	#	#
Fluorene	(aq)	<0.014	µg/l	TM178	0.0291	0.093	0.0399	1210	192	<0.014
					#	#	#	#	#	#
Chrysene	(aq)	<0.013	µg/l	TM178	0.0141	0.0287	0.016	236	47.8	0.0163
					#	#	#	#	#	#
Pyrene (a	lq)	<0.015	µg/l	TM178	0.0285	0.0625	0.0429	757	238	0.0287
					#	#	#	#	#	#
Benzo(a)a	anthracene (aq)	<0.017	µg/l	TM178	<0.017	0.018	<0.017	236	51.1	<0.017
					#	#	#	#	#	#
Benzo(b)f	fluoranthene (aq)	<0.023	µg/l	TM178	<0.023	0.095	<0.023	49.3	15	<0.023
					#	#	#	#	#	#
Benzo(k)f	luoranthene (aq)	<0.027	µg/l	TM178	<0.027	0.0701	<0.027	82.5	17.9	<0.027
					#	#	#	#	#	#
Benzo(a)	pyrene (aq)	<0.009	µg/l	TM178	0.0159	0.1	0.0128	138	30.1	0.0177
					#	#	#	#	#	#
Dibenzo(a	a,h)anthracene (aq)	<0.016	µg/l	TM178	<0.016	0.0295	<0.016	13.3	3.48	<0.016
					#	#	#	#	#	#
Benzo(g,ł	n,i)perylene (aq)	<0.016	µg/l	TM178	<0.016	0.0853	<0.016	34.2	8.87	<0.016
					#	#	#	#	#	#
Indeno(1,	2,3-cd)pyrene (aq)	<0.014	µg/l	TM178	<0.014	0.0749	<0.014	35.4	8.77	<0.014
					#	#	#	#	#	#
PAH, Tota	al Detected USEPA 16	<0.247	µg/l	TM178	0.365	1.48	0.563	10300	1830	<0.247
(aq)										

ALcontrol Labora	atories	5		CEF	RTII	FICATE OF	AI	NALYSIS				Validated
SDG: 120528 Job: H_CEL ⁻ Client Reference: C1526	-36 TIC_REA-	12		Location: Customer: Attention:	Bar Cel Nei	ibury tic Technologies I Hopkins			Order Number: Report Number: Superseded Repo	66230 183482		
PAH Spec MS - Aqueous	s (W)									-		
Results Legend ISO17025 accredited. M mCERTS accredited. § Deviating sample. an Accuracy (settind cample		Custo	omer Sample Ref. Depth (m)	MW07		MW28						
aq Aqueus / setue sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standar check the efficiency of the method.	rd to The		Sample Type Date Sampled Sample Time Date Received	Water(GW/SW) 25/05/2012 26/05/2012		Water(GW/SW) 25/05/2012 26/05/2012						
results of individual compounds wit samples aren't corrected for the rec (F) Trigger breach confirmed	hin overy	La	SDG Ref ab Sample No.(s) AGS Reference	5653962		5653961						
Component	LOD/U	nits	Method									
Naphthalene (aq)	<0.1 µ	ıg/l	TM178	<0.1	#	0.236	#					
Acenaphthene (aq)	<0.015	µg/l	TM178	<0.015	#	2.47	#					
Acenaphthylene (aq)	<0.011	µg/l	TM178	0.0367	#	1.09	#					
Fluoranthene (aq)	<0.017	µg/l	TM178	<0.017	#	2.61	#					
Anthracene (aq)	<0.015	µg/l	TM178	<0.015	#	1.2	#					
Phenanthrene (aq)	<0.022	µg/l	TM178	<0.022	#	1.17	#					
Fluorene (aq)	<0.014	µg/l	TM178	<0.014	#	0.692	#					
Chrysene (aq)	<0.013	µg/l	TM178	<0.013	#	1.27	#					
Pyrene (aq)	<0.015	µg/l	TM178	<0.015	#	4.6	#					
Benzo(a)anthracene (aq)	<0.017	µg/l	TM178	<0.017	#	1.19	#					
Benzo(b)fluoranthene (aq)	<0.023	µg/l	TM178	<0.023	#	0.343	#					
Benzo(k)fluoranthene (aq)	<0.027	µg/l	TM178	<0.027	#	0.504	#					
Benzo(a)pyrene (aq)	<0.009	µg/l	TM178	<0.009	# 	0.871	#					
Dibenzo(a,h)anthracene (aq)	<0.016	µg/l	TM178	<0.016	#	0.0954	#					
Benzo(g,h,i)perylene (aq)	<0.016	µg/l	TM178	<0.016	#	0.269	#				+	
Indeno(1,2,3-cd)pyrene (aq)	<0.014	µg/l	TM178	<0.014	#	0.254	#					
PAH, Total Detected USEPA 16	<0.247	µg/l	TM178	<0.247	#	18.9	#				\neg	
(aq)					_						\neg	
		-										
		+									+	
		+									+	
											+	
		+									+	
		+									+	
		+									+	
		+									+	
		+									+	
		+					\neg				+	
							-				+	
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CERTIFICATE OF ANALYSIS

SDG: 120320-30 Location: Balloury Order Number: 60230 Job: H_CELTIC_REA-12 Customer: Celtic Technologies Report Number: 183482 Client Reference: C1526 Attention: Neil Hopkins Superseded Report:	SDG: Job: Client Reference:	120528-36 H_CELTIC_REA-12 C1526	Location: Customer: Attention:	Banbury Celtic Technologies Neil Hopkins	Order Number: Report Number: Superseded Report:	66230 183482
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TPH (CWG (W)								
# M &	Results Legend ISO17025 accredited. mCERTS accredited. Deviating sample.		Customer Sample Ref.	BH103	BH104	BH105	BH106	BH101a	MW01
aq diss.filt tot.unfilt	Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 24/05/2012	Water(GW/SW) 24/05/2012	Water(GW/SW) 24/05/2012	Water(GW/SW) 25/05/2012	Water(GW/SW) 25/05/2012	Water(GW/SW) 24/05/2012
**	Subcontracted test. % recovery of the surrogate standar	rd to	Sample Time Date Received	26/05/2012	26/05/2012	26/05/2012		26/05/2012	26/05/2012
	check the efficiency of the method. results of individual compounds wit	The thin	SDG Ref	120528-36	120528-36	120528-36	120528-36	120528-36	120528-36
(F)	samples aren't corrected for the rec Trigger breach confirmed	overy	Lab Sample No.(s) AGS Reference	5653956	5653958	5653957	5653960	5653959	5653955
Comp	onent	LOD/U	nits Method						
GRO S	urrogate % recovery**	%	TM245	81	110	105	95	100	109
GRO >	C5-C12	<50 µ	g/l TM245	<50 #	<50 #	<50 #	15400 #	9910 #	<50 #
Methyl (MTBE	tertiary butyl ether)	<3 µį	g/l TM245	<3 #	3 #	<3 #	<3 #	<3 #	<3 #
Benzer	ne	<7 µ(g/l TM245	<7 #	<7 #	<7 #	4590 #	1800 #	<7 #
Toluen	e	<4 µ(g/l TM245	<4 #	<4 #	<4 #	1420 #	189 #	<4 #
Ethylbe	enzene	<5 µ(g/l TM245	<5 #	<5 #	<5 #	697 #	257 #	<5
m,p-Xy	lene	<8 hí	g/l TM245	<8 #	<8 #	<8 #	781 #	411 #	<8 #
o-Xyler	ne	<3 µ(g/l TM245	<3 #	<3 #	<3 #	432 #	310 #	<3 #
Sum of	detected Xylenes	<11 µ	g/l TM245	<11	<11	<11	1210	721	<11
Sum of	detected BTEX	<28 µ	g/l TM245	<28	<28	<28	7920	2970	<28
Aliphat	ics >C5-C6	<10 µ	g/l TM245	<10	<10	<10	20	19	<10
Aliphat	ics >C6-C8	<10 µ	g/l TM245	<10	<10	<10	134	61	<10
Aliphat	ics >C8-C10	<10 µ	g/l TM245	<10	<10	<10	831	749	<10
Aliphat	ics >C10-C12	<10 µ	g/l TM245	<10	<10	<10	3550	3370	<10
Aliphat	ics >C12-C16 (aq)	<10 µ	g/l TM174	<10	<10	<10	5190	2630	<10
Aliphat	ics >C16-C21 (aq)	<10 µ	g/l TM174	<10	<10	<10	4780	2110	<10
Aliphat	ics >C21-C35 (aq)	<10 µ	g/l TM174	<10	<10	<10	1050	462	<10
Total A	liphatics >C12-C35 (aq)	<10 µ	g/l TM174	<10	<10	<10	11000	5200	<10
Aromat	tics >EC5-EC7	<10 µ	g/l TM245	<10	<10	<10	4590	1800	<10
Aromat	tics >EC7-EC8	<10 µ	g/l TM245	<10	<10	<10	1420	189	<10
Aromat	tics >EC8-EC10	<10 µ	g/l TM245	<10	<10	<10	2460	1480	<10
Aromat	tics >EC10-EC12	<10 µ	g/l TM245	<10	<10	<10	2360	2250	<10
Aromat	tics >EC12-EC16 (aq)	<10 µ	g/l TM174	<10	55	<10	25700	5710	<10
Aromat	tics >EC16-EC21 (aq)	<10 µ	g/l TM174	<10	33	<10	20100	5250	<10
Aromat	tics >EC21-EC35 (aq)	<10 µ	g/l TM174	<10	46	<10	10900	2900	<10
Total A (ag)	romatics >EC12-EC35	<10 µ	g/l TM174	<10	134	<10	56800	13800	<10
Total A >C5-35	liphatics & Aromatics 5 (ag)	<10 µ	g/l TM174	<10	137	<10	83200	29000	<10

C

CERTIFICATE OF ANALYSIS

TPH (CWG (W)						_	 	
#	Results Legend ISO17025 accredited.		Cu	stomer Sample Ref.	MW07	MW28			
M § ag	mCERTS accredited. Deviating sample.			Depth (m)					
diss.filt tot.unfilt	Dissolved / filtered sample. Total / unfiltered sample.			Sample Type Date Sampled	Water(GW/SW) 25/05/2012	Water(GW/SW) 25/05/2012			
*	Subcontracted test. % recovery of the surrogate standar	d to		Sample Time Date Received	26/05/2012	26/05/2012			
	check the efficiency of the method. results of individual compounds wit	The hin overv		SDG Ref	120528-36 5653962	120528-36 5653961			
(F)	Trigger breach confirmed			AGS Reference					
GRO S	urrogate % recovery**	LOD/U %	nits	Method TM245	100	104			
	05 010	<50.		TMOAE	044	766			
GRU >	C0-C12	~50 F	ug/i	1101245	244 #	700	#		
Methyl (MTBE	tertiary butyl ether)	<3 µ	ıg/l	TM245	<3 #	<3	#		
Benzer	le	<7 µ	ıg/l	TM245	<7 #	107	#		
Toluen	9	<4 µ	ıg/l	TM245	# <4 #	11	#		
Ethylbe	nzene	<5 µ	ıg/l	TM245	<5	27	ш		
m,p-Xy	lene	<8 µ	ıg/l	TM245	# 14 #	18	#		
o-Xyler	le	<3 µ	ıg/l	TM245		24	#		
Sum of	detected Xylenes	<11 µ	µg/l	TM245	40	42			
Sum of	detected BTEX	<28 J	µg/l	TM245	40	187			
Aliphat	cs >C5-C6	<10 µ	ug/l	TM245	<10	<10			
Aliphat	cs >C6-C8	<10 µ	µg/l	TM245	13	15			
Aliphat	cs >C8-C10	<10 µ	ug/l	TM245	34	55			
Aliphat	cs >C10-C12	<10 µ	µg/l	TM245	77	279			
Aliphat	cs >C12-C16 (aq)	<10 µ	ug/l	TM174	<10	41			
Aliphat	cs >C16-C21 (aq)	<10 µ	ug/l	TM174	<10	58			
Aliphat	cs >C21-C35 (aq)	<10 µ	µg/l	TM174	<10	12			
Total A	liphatics >C12-C35 (aq)	<10 µ	µg/l	TM174	<10	111			
Aromat	ics >EC5-EC7	<10 µ	ug/l	TM245	<10	107			
Aromat	ics >EC7-EC8	<10 µ	µg/l	TM245	<10	11			
Aromat	ics >EC8-EC10	<10 µ	ug/l	TM245	63	106			
Aromat	ics >EC10-EC12	<10 µ	ug/l	TM245	51	186			
Aromat	ics >EC12-EC16 (aq)	<10 µ	µg/l	TM174	46	61			
Aromat	ics >EC16-EC21 (aq)	<10 µ	ug/l	TM174	<10	55			
Aromat	ics >EC21-EC35 (aq)	<10 µ	ug/l	TM174	<10	<10			
Total A (aq)	romatics >EC12-EC35	<10 µ	ug/l	TM174	46	116			
Total A >C5-35	liphatics & Aromatics (aq)	<10	ug/l	TM174	291	993			

C

CERTIFICATE OF ANALYSIS

Validated

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

C

CERTIFICATE OF ANALYSIS

 SDG:
 120528-36
 Location:
 Banbury
 Order Number:
 66230

 Job:
 H_CELTIC_REA-12
 Customer:
 Celtic Technologies
 Report Number:
 183482

 Client Reference:
 C1526
 Attention:
 Neil Hopkins
 Superseded Report:

Test Completion Dates

Lab Sample No(s)	5653956	5653958	5653957	5653960	5653959	5653955	5653962	5653961
Customer Sample Ref.	BH103	BH104	BH105	BH106	BH101a	MW01	MW07	MW28
AGS Ref.								
Depth								
Туре	LIQUID							
Ammoniacal Nitrogen	07-Jun-2012							
Cyanide Comp/Free/Total/Thiocyanate	30-May-2012							
Dissolved Metals by ICP-MS	30-May-2012							
EPH CWG (Aliphatic) Aqueous GC (W)	07-Jun-2012							
EPH CWG (Aromatic) Aqueous GC (W)	07-Jun-2012							
GRO by GC-FID (W)	07-Jun-2012							
Mercury Dissolved	30-May-2012							
PAH Spec MS - Aqueous (W)	06-Jun-2012							
Phenols by HPLC (W)	31-May-2012	06-Jun-2012						
TPH CWG (W)	07-Jun-2012							

CERTIFICATE OF ANALYSIS

SDG:	120528-36	Location:	Banbury
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies
Client Reference:	C1526	Attention:	Neil Hopkins

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate

If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9 NDP -No determination possible due to insufficient/unsuitable sample

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately

11. Results relate only to the items tested

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed

Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol ethylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 15 3-Methylphenol and 4-Methylphenol) Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol)

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be

ANAL YSI S	D&C OR WET	E XTRACTION SOLVE NT	E XTRACTION MET HOD	ANALYSIS
SOLVENT E XTRACTABLE MATTE R	D&C	DOM	SOXTHERM	GRA VIM ETRIC
CY OLOHE XANE EXT. MATTE R	D&C	CY OLOHEXA NE	SOXTHERM	GRA VIM ETRIC
ELEME NTAL SULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HE RB ICIDES	D&C	HE XANE: ACETONE	SOXTHERM	GC-MS
PES TICIDES	D&C	HE XANE: ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HE XANE: ACETONE	END OVER E ND	GC-FID
EPH (MIN CIL)	D&C	HE XANE: ACETONE	END OVER E ND	GC-FID
EPH (CLE ANED UP)	D&C	HE XANE: ACETONE	END OVER E ND	GC-FID
EPH CWG BY GC	D&C	HE XANE: ACETONE	END OVER E ND	GC-FID
PCB A ROCLOR 1254 / PCB CON	D&C	HE XANE: ACETONE	END OVER E ND	GC-MS
Polyaromatic Hy droca re ons (MS)	WET	HE XANE: ACETONE	MI CROWA VE TM 218.	GC-MS
>06-C40	WET	HE XANE: ACETONE	S HA KER	GC-FID
POLYAROMATIC HY DROCA REONS RAPID GC	WET	HE XANE: ACETONE	S HA KER	GC-FID
SEMI V CLATILE ORGANIC COMP OUNDS	WET	DOM : ACETONE	SONICATE	GC-MS

SOLID MATRICES EXTRACTION SUMMARY

Order Number:

Report Number: Superseded Report:

LIQUID MATRICES EXTRACTION SUMMARY

ANAL YSI S	EX TRACTION SOLVE NT	EX TRACTION M ETHOD	ANALY SIS
PAH MS	HEXA NE	STIRRED EX TRACTION (STIR-BAR)	GC MS
EPH	HEXA NE	STIRRED EX TRACTION (STIR-BAR)	GC FID
EPH CWG	HEXA NE	STIRRED EX TRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXA NE	STIRRED EX TRACTION (STIR-BAR)	gc fid
PCB 7 CONGE NE RS	HEXA NE	STIRRED EX TRACTION (STIR-BAR)	GC MS
PCB A ROCLOR 1254	HEXA NE	STIRRED EX TRACTION (STIR-BAR)	GC MS
SVOC	DCM	LIQUID'LIQUID SHAK E	GC MS
FREESULPHUR	DCM	SOLID P HASE EXTRACTION	HPLC
PES T OCP/OP P	DCM	LIQUID'LIQUID SHAK E	GC MS
TRIAZINE HERBS	DCM	LIQUID'LIQUID SHAK E	GC MS
PHENOLS MS	A CE TONE	SOLID P HASE EXTRACTION	GC MS
TPH by INFRARED (R)	TCE	STIRRED EX TRACTION (STIR-BAR)	IR
MINERAL OIL by IR	TCE	STIRRED EX TRACTION (STIR-BAR)	IR
GLY COLS	NONE	DIRECT I NJ ECT ION	gc fid

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

ults for identification of asbestos in soils are The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbe stos Type

Chrysofile

Amosite

Cro ri dolite

Fibrous Actinolite

Fib to us Anthop hyll ite

Fibrous Tremol ite

White Ashestos

Blue Ashe stos

BrownAs

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

66230 183482



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 25 May 2012 H_CELTIC_REA 120519-90 C1526 Banbury 182368

We received 5 samples on Saturday May 19, 2012 and 5 of these samples were scheduled for analysis which was completed on Friday May 25, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved Bv[.]

Sonia McWhan Operations Manager



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C

CERTIFICATE OF ANALYSIS

Validated

SDG: 120519-90 Location: Banbury Order Number: H_CELTIC_REA-12 182368 Job: Customer: Celtic Technologies Report Number: **Client Reference:** C1526 Attention: Neil Hopkins Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5610523	MW04			18/05/2012
5610524	MW10			18/05/2012
5610525	MW11			18/05/2012
5610526	MW12			18/05/2012
5610533	MW39			18/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol L	aborato	ries	C	FR'	TIF		•••	TE (OF	Δ			٧٩	213									Va	lidated
SDG: Job: Client Reference:	120519-90 H_CELTIC C1526	0 C_REA-12	Location Custome Attentior	: er: h:	Bar Cel Nei	tic T	y ech pkii	nnolog	gies	_							Or Re Su	der poi	'Nu rtN 'seo	ımber: umber: ded Report:	1823	368		
LIQUID Results Legend X Test		Lab Sample	e No(s)			5610523			5610524			CZCULOC	E010505			5610526			5610533					
No Determination Possible		Customer Sample Reference				MW04		MW10		MW1 1		N/\// 4	MW12		C I/WM	MW39		MW39						
		AGS Refe	rence																					
		Depth (m)																					
		Contair	ner	11 green glass bottle	HNO3 Filtered (ALE	Vial (ALE297) NaOH (ALE245)	11 green glass bottle	HNO3 Filtered (ALE H2SO4 (ALE 244)	Vial (ALE297)	11 green glass bottle	HNO3 Filtered (ALE H2SO4 (ALE 244)	NaOH (ALE297)	1l green glass bottle	HNU3 Filtered (ALE H2SO4 (ALE244)	NaOH (ALE245)	Vial (AI E207)	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)					
Ammoniacal Nitrogen		All	NDPs: 0 Tests: 5	,	C			x			<mark>x</mark>			x			x							
Cyanide Comp/Free/Total/Thiocya	nate	All	NDPs: 0 Tests: 5			x)	x			x			x)	<					
Dissolved Metals by ICP-I	MS	All	NDPs: 0 Tests: 5		x			x			x			×	1			x						
EPH CWG (Aliphatic) Aqu (W)	ieous GC	All	NDPs: 0 Tests: 5	x			x			x			x			x								
EPH CWG (Aromatic) Aqu (W)	Jeous GC	All	NDPs: 0 Tests: 5	x			x			x			x			x	ſ							
GRO by GC-FID (W)		All	NDPs: 0 Tests: 5			x			x)	<			x			x					
Mercury Dissolved		All	NDPs: 0 Tests: 5	x			x			x			x			x	í							
PAH Spec MS - Aqueous	(W)	All	NDPs: 0 Tests: 5	x			x			x			x			x								
Phenols by HPLC (W)		All	NDPs: 0 Tests: 5	,	<mark>(</mark>			x			x			x			x							
TPH CWG (W)		All	NDPs: 0 Tests: 5	x			x			x			x			x								

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CERTIFICATE OF ANALYSIS

SDG:	120519-90	Location:	Banbury	Order Number:	182368
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Results Legend	C	Customer Sample R	MW04	MW10	MW11	MW12	MW39	
# ISO17025 accredited. M mCERTS accredited.								
§ Deviating sample.		Depth (m)						
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
tot.unfilt Total / unfiltered sample.		Date Sampled	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012	
* Subcontracted test.	rd to	Sample Time						
check the efficiency of the method.	The	Date Received	19/05/2012	19/05/2012	19/05/2012	19/05/2012	19/05/2012	
results of individual compounds wit	hin	Lab Sample No (s)	5610523	5610524	5610525	5610526	5610533	
(F) Trigger breach confirmed		AGS Reference						
Component	LOD/Unit	s Method						
Ammoniacal Nitrogen as	<0.2 mg	g/I TM099	0.76	20.1	165	45.5	<0.2	
NH3			#	#	#	#	#	
Arsenic (diss.filt)	<0.12	TM152	1.22	2.65	2.59	2.15	0.872	
	µg/l		#	#	#	#	#	
Boron (diss.filt)	<9.4 µg	/I TM152	481	625	138	1320	732	
			#	#	#	#	#	
Cadmium (diss.filt)	<0.1 µg	/I TM152	<0.1	<0.1	<0.1	0.157	<0.1	
			#	#	#	#	#	
Chromium (diss.filt)	<0.22	TM152	6.17	3.62	11.6	9.36	13.5	
	µg/l		#	#	#	#	#	
Copper (diss.filt)	<0.85	TM152	2.79	1.84	2.37	5.52	4.9	
	µg/l		#	#	#	#	#	
Lead (diss.filt)	<0.02	TM152	0.882	<0.02	<0.02	<0.02	0.067	
	µg/l		#	#	#	#	#	
Nickel (diss.filt)	<0.15	TM152	7.98	5.35	4.3	24.5	12.6	
	µg/l		#	#	#	#	#	
Selenium (diss.filt)	<0.39	TM152	1.13	0.846	1.34	1.41	2.66	
	µg/l		#	#	#	#	#	
Zinc (diss.filt)	<0.41	TM152	2.86	7.34	2.7	7.12	2.89	
	µg/l		#	#	#	#	#	
Mercury (diss.filt)	<0.01	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	
	µg/l		#	#	#	#	#	
Cyanide, Total	<0.05	TM227	<0.05	0.301	<0.05	0.119	<0.05	
	mg/l		#	#	#	#	#	
Cyanide, Free	<0.05	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	
	mg/l		#	#	#	#	#	
Phenols, Total Detected	<0.016	TM259	<0.016	<0.016	<0.016	<0.016	<0.016	
monohydric	mg/l		#	#	#	#	#	
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CERTIFICATE OF ANALYSIS

Validated

120519-90 SDG: Location: Banbury Order Number: H_CELTIC_REA-12 Celtic Technologies 182368 Job: Customer: Report Number: **Client Reference:** C1526 Attention: Neil Hopkins . Superseded Report:

PAH Spec MS - Aqueous (W)

C

PAH Spec MS - Aqueous	5 (VV)						-	
Results Legend # ISO17025 accredited. M mCERTS accredited. S Deviating sample		Customer Sample R	MW04	MW10	MW11	MW12	MW39	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 18/05/2012	Water(GW/SW) 18/05/2012	Water(GW/SW) 18/05/2012	Water(GW/SW) 18/05/2012	Water(GW/SW) 18/05/2012	
** % recovery of the surrogate standar	rd to	Date Received	19/05/2012	19/05/2012	19/05/2012	19/05/2012	19/05/2012	
check the efficiency of the method. results of individual compounds wit	The hin	SDG Ref	120519-90	120519-90	120519-90	120519-90	120519-90	
samples aren't corrected for the rec	overy	Lab Sample No.(s)	5610523	5610524	5610525	5610526	5610533	
(F) Trigger breach commed		AGS Reference						
Naphthalene (aq)	<0.1 µ	g/I TM178	<0.1	0.139	0.263	0.129	<0.1	
Acenaphthene (aq)	<0.01 µg/l	5 TM178	<0.015 #	0.125 #	0.194 #	0.0163 #	<0.015 #	
Acenaphthylene (aq)	<0.01 µg/l	1 TM178	<0.011 #	0.746 #	2.22	0.0129 #	<0.011 #	
Fluoranthene (aq)	0.01 [×] µg/l	7 TM178	<0.017 #	0.0626 #	0.0564 #	0.0284 #	0.217 #	
Anthracene (aq)	0.01 <br µg/l	5 TM178	<0.015 #	<0.015 #	0.019 #	<0.015 #	0.023 #	
Phenanthrene (aq)	<0.02 µg/l	2 TM178	<0.022 #	0.045 #	0.0964 #	0.0475 #	0.0513 #	
Fluorene (aq)	0.01<> µg/l	4 TM178	<0.014 #	<0.014 #	0.0656	<0.014 #	<0.014 #	
Chrysene (aq)	<0.01	3 TM178	<0.013	0.039	0.0324	<0.013	0.147	
Pyrene (aq)	μg/i <0.01	5 TM178	0.0168	# 0.0731	# 0.0731	# 0.0357	# 0.22	
Benzo(a)anthracene (aq)	μ <u>q</u> /I <0.01	7 TM178	# <0.017 #	# 0.0241 #	# 0.0184 #	# <0.017 #	# 0.0989 #	
Benzo(b)fluoranthene (aq)	+μg/i <0.02	3 TM178	<0.023	0.0234	<0.023	<0.023	0.16	
Benzo(k)fluoranthene (aq)	<0.02	7 TM178	~0.027 #	~0.027 #	~0.027 #	~0.027 #	0.141 #	
Benzo(a)pyrene (aq)	<0.00	9 TM178	<0.009 #	0.0193 #	<0.009 #	<0.009	0.15 #	
Dibenzo(a,h)anthracene	<0.01 ug/l	6 TM178	<0.016 #	<0.016 #	<0.016 #	<0.016 #	0.042 #	
Benzo(g,h,i)perylene (aq)	<0.01 µg/l	6 TM178	<0.016 #	0.0162 #	<0.016 #	<0.016 #	0.211 #	
Indeno(1,2,3-cd)pyrene (aq)	<0.01 µg/l	4 TM178	<0.014 #	<0.014 #	<0.014 #	<0.014 #	0.143 #	
PAH, Total Detected USEPA 16 (aq)	<0.24 µg/l	7 TM178	<0.247	1.31	3.04	0.27	1.6	
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CERTIFICATE OF ANALYSIS

Validated

120519-90 SDG: Location: Banbury Order Number: Job: H_CELTIC_REA-12 Customer: Celtic Technologies 182368 Report Number: Client Reference: C1526 Attention: Neil Hopkins . Superseded Report:

C

TPH (CWG (W)				-	-					
# M	Results Legend ISO17025 accredited. mCERTS accredited. Deviating sample		Customer San	ple R	MW04	MW10		MW11	MW12	MW39	
aq diss.filt tot.unfilt	Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample.		Dep Sample Date Sa	th (m) Type npled	Water(GW/SW) 18/05/2012	Water(GW/SW) 18/05/2012		Water(GW/SW) 18/05/2012	Water(GW/SW) 18/05/2012	Water(GW/SW) 18/05/2012	
*	Subcontracted test. % recovery of the surrogate standar	d to	Sample	Time	19/05/2012	19/05/2012		19/05/2012	19/05/2012	19/05/2012	
	check the efficiency of the method. results of individual compounds wit	The hin	SD	G Ref	120519-90	120519-90		120519-90	120519-90	120519-90	
(F)	samples aren't corrected for the rec	overy	Lab Sample	No.(s)	5610523	5610524		5610525	5610526	5610533	
Compo	onent	LOD/U	nits Meth	od							
GRO	Surrogate %	%	TM2	45	109	102		118	106	109	
GRO	ery** >C5-C12	<50 µ	ug/I TM2	45	<50 #	<50	#	<50 #	<50	<50	
Methy (MTB	I tertiary butyl ether	<3 µ	ig/l TM2	45	<3 #	<3	#	<3 #	#	<3 #	
Benze	ene	<7 µ	ig/l TM2	45	<7 #	<7	#	<7 #	<7 #	<7 #	
Tolue	ne	<4 µ	ig/l TM2	45	<4 #	<4	#	<4 #	<4 #	<4 #	
Ethylk	enzene	<5 µ	ig/l TM2	45	<5 #	<5	#	<5 #	<5 #	<5 #	
m,p-X	ylene	<8 µ	ig/l TM2	45	<8 #	<8	#	<8 #	<8 #	<8 #	
o-Xyle	ene	<3 µ	ig/l TM2	45	<3 #	<3	#	<3 #	<3 #	<3 #	
Sum o	of detected Xylenes	<11 µ	ug/I TM2	45	<11	<11		<11	<11	<11	
Sum o	of detected BTEX	<28 µ	ug/I TM2	45	<28	<28		<28	<28	<28	
Alipha	tics >C5-C6	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Alipha	tics >C6-C8	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Alipha	tics >C8-C10	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Alipha	tics >C10-C12	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Alipha	tics >C12-C16 (aq)	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Alipha	tics >C16-C21 (aq)	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Alipha	tics >C21-C35 (aq)	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Total (aq)	Aliphatics >C12-C35	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Aroma	atics >EC5-EC7	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Aroma	atics >EC7-EC8	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Aroma	atics >EC8-EC10	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Aroma	atics >EC10-EC12	<10 µ	ug/I TM2	45	<10	<10		<10	<10	<10	
Aroma (aq)	atics >EC12-EC16	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Aroma (aq)	atics >EC16-EC21	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Aroma (aq)	atics >EC21-EC35	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Total >EC1	Aromatics 2-EC35 (aq)	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	
Total Aroma	Aliphatics & atics >C5-35 (aq)	<10 µ	ug/I TM1	74	<10	<10		<10	<10	<10	

C

CERTIFICATE OF ANALYSIS

Validated

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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CERTIFICATE OF ANALYSIS

120519-90 SDG: Location: Banbury Order Number: Celtic Technologies H_CELTIC_REA-12 182368 Job: Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins . Superseded Report:

Test Completion Dates

Lab Sample No(s)	5610523	5610524	5610525	5610526	5610533
Customer Sample Ref.	MW04	MW10	MW11	MW12	MW39
AGS Ref.					
Depth					
Туре	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	24-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012
Cyanide Comp/Free/Total/Thiocyanate	23-May-2012	23-May-2012	23-May-2012	23-May-2012	23-May-2012
Dissolved Metals by ICP-MS	24-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012
EPH CWG (Aliphatic) Aqueous GC (W)	25-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012
EPH CWG (Aromatic) Aqueous GC (W)	25-May-2012	24-May-2012	24-May-2012	24-May-2012	24-May-2012
GRO by GC-FID (W)	25-May-2012	25-May-2012	25-May-2012	25-May-2012	25-May-2012
Mercury Dissolved	22-May-2012	22-May-2012	22-May-2012	22-May-2012	22-May-2012
PAH Spec MS - Aqueous (W)	25-May-2012	25-May-2012	25-May-2012	25-May-2012	25-May-2012
Phenols by HPLC (W)	23-May-2012	23-May-2012	23-May-2012	23-May-2012	23-May-2012
TPH CWG (W)	25-May-2012	25-May-2012	25-May-2012	25-May-2012	25-May-2012

16:00:36 25/05/2012

CERTIFICATE OF ANALYSIS

SDG:	120519-90	Location:	Banbury	Order Number:
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID M	/ATRI	ICES EXTRA	CTION SU	MMARY								
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS								
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC								
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC								
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC								
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS								
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS								
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS								
EPH (DRO)	D&C	HEXANEACETONE	BNDOWEREND	GC-FID								
EPH (MIN OL)	D&C	HEXANEACETONE	BNDOWEREND	GC-FID								
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOVEREND	GC-FID								
EPH CWGBY GC	D&C	HEXANEACETONE	BNDOWEREND	GC-FID								
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	ENDOVEREND	GC-MS								
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GC-MS								
>06-C40	WET	HEXANEACETONE	SHAKER	GC-RD								
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FD								

LIQUID MATRICES EXTRACTION SUMMARY

DOM/ACETONE

SONCATE

GC-M6

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCROPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MINERALOLLby R	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	GC FD

Identification of Asbestos in Bulk Materials & Soils

SEMIVOLATILEORGANIC COMPOUNDS

WFT

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrystile

Amosite

Onichite

Fibrous Adindite

Fibrous Anthophylite

FibrasTrendie

Common Name

WhiteAsheshes

BrownAsbestos

Blue Ashestos

-

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

182368



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date:	
Customer:	
Sample Delivery Group (SDG):	
Your Reference:	
Location:	
Report No:	

21 May 2012 H_CELTIC_REA 120512-56 C1526 Banbury 181669

This report has been revised and directly supersedes 181636 in its entirety.

We received 5 samples on Saturday May 12, 2012 and 5 of these samples were scheduled for analysis which was completed on Monday May 21, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:



Sonia McWhan Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

SDG: 120512-56 Location: Banbury Order Number: H_CELTIC_REA-12 181669 Job: Customer: Celtic Technologies Report Number: **Client Reference:** C1526 Attention: Neil Hopkins Superseded Report: 181636

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5577377	BH101a			10/05/2012
5577376	BH103			10/05/2012
5577378	BH106			10/05/2012
5577375	MW7			10/05/2012
5577379	SW1			10/05/2012

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Lat	oorator	ies	C	ER [.]	ΓIF	IC	АТ	ΈC	DF	A	NA	LY	'SI:	s								\	/alidate	d
SDG: 1 Job: H Client Reference: C	20512-56 I_CELTIC :1526	_REA-12	Location Custome Attention	: er: 1:	Ban Celt Neil	bury ic Te Hop	/ ech okin	nolog s	gies							C F S	Orde Rep Sup	er Ni ort N erse	umber: Number: ded Report:	181669 181636)			
LIQUID Results Legend X Test		Lab Sample I	No(s)			5577379			5577375			5577377			5577376			5577378						
No Determinatio Possible	'n	Custome Sample Refe	r œnce			SW1			MW7			BH101a			BH103			внтор						
		AGS Refere	nce																					
		Depth (m)															+ + +						
		Containe	r	H2SO4 (ALE244) 1l green glass bottle	HNO3 Filtered (ALE	Vial (ALE297)	HZSU4 (ALE 244) 11 green glass bottle	HNO3 Filtered (ALE	Vial (ALE297)	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	H2SO4 (ALE244) 1I green glass bottle	HNO3 Filtered (ALE	Vial (ALE297) NaOH (ALE245)	11 green glass bottle	HNO3 Filtered (ALE	Vial (ALE297) NaOH (ALE245)						
Ammoniacal Nitrogen		All	NDPs: 0 Tests: 5	×			×			×	(×				×							
Cyanide Comp/Free/Total/Thiocyanate	;	All	NDPs: 0 Tests: 5			ĸ		×	<		2	×			x			x						
Dissolved Metals by ICP-MS		All	NDPs: 0 Tests: 5		x			x			x			x			x							
EPH CWG (Aliphatic) Aqueou (W)	is GC	All	NDPs: 0 Tests: 5	x			x			x			x			x			-					
EPH CWG (Aromatic) Aqueou (W)	us GC	All	NDPs: 0 Tests: 5	x			x			x			x			x								
GRO by GC-FID (W)		All	NDPs: 0 Tests: 5			x			x			x			x			×	< C					
Mercury Dissolved		All	NDPs: 0 Tests: 5	x			x			x			x			x								
PAH Spec MS - Aqueous (W))	All	NDPs: 0 Tests: 5	x			x			x			x			x								
Phenols by HPLC (W)		All	NDPs: 0 Tests: 5	×	r i		×			×	<u>(</u>		x	ſ			x							
TPH CWG (W)		All	NDPs: 0 Tests: 5	x			x			×			x			x								

C

CERTIFICATE OF ANALYSIS

Results Legend		Customer Sample R	BH103	BH106	BH101a	MW7	SW1	
# ISO17025 accredited.								
M mCERIS accredited. § Deviating sample.		Barth (m)						
aq Aqueous / settled sample.		Deptn (m) Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
tot.unfilt Total / unfiltered sample.		Date Sampled	10/05/2012	10/05/2012	10/05/2012	10/05/2012	10/05/2012	
* Subcontracted test. ** % recovery of the surrogate standar	d to	Sample Time						
check the efficiency of the method. 1	The	Date Received	12/05/2012 120512-56	12/05/2012 120512-56	12/05/2012 120512-56	12/05/2012 120512-56	12/05/2012 120512-56	
results of individual compounds with samples aren't corrected for the reco	nin overy	Lab Sample No.(s)	5577376	5577378	5577377	5577375	5577379	
(F) Trigger breach confirmed		AGS Reference						
Component	LOD/Uni	ts Method						
Ammoniacal Nitrogen as	<0.2 m	g/I I M099	50.8	17 "	168	148	16.7	
NH3 Areania (diaa filt)	<0.12	TM152	# 0.17	200		7.00	#	
Aisenic (diss.int)	-0.1Z	1101132	2.17	200 #	25.2	1.55	1.54 #	
Boron (diss filt)	<9.4 µg/1	n/I TM152	164	3330	407	538	349	
	·0.1 P	g/1 111102	#	#		#	#	
Cadmium (diss.filt)	<0.1 µc	a/I TM152	<0.1	<0.1	<0.1	<0.1	<0.1	
· · · ·		- -	#	#	#	#	#	
Chromium (diss.filt)	<0.22	TM152	1.51	4.96	3.59	6.94	7.33	
	µg/l		#	#	#	#	#	
Copper (diss.filt)	<0.85	TM152	1.12	0.917	<0.85	1.23	2.61	
	µg/l		#	#	#	#	#	
Lead (diss.filt)	<0.02	TM152	0.968	0.541	0.1	4.64	0.192	
Nickel (dise filt)	µg/l	TM450	#	#	1.04	#	#	
NICKEI (UISS.IIIL)	<0.15 uα/l	11/1152	4.0 <i>1</i> #	9.09 #	1.24	4.70	4.01	
Selenium (diss filt)	20 20	TM152	1 4	4 6	22	1 62	1 48	
	-0.09 Jun/l	1101132	·. ·	т. о #	£.£ #	1.02	1. 1 0 #	
Zinc (diss.filt)	<0.41	TM152	17	14.5	1.59	7.42	10.2	
- \	µq/l		#	#	#	#	#	
Mercury (diss.filt)	<0.01	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	
	µg/l		#	#	#	#	#	
Cyanide, Total	<0.05	TM227	0.328	0.072	0.051	0.058	<0.05	
	mg/l		#	#	#	#	#	
Cyanide, Free	<0.05	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	
	mg/l	T. 1050	#	#	#	#	#	
Phenois, I otal Detected	<0.016	5 TM259	<0.016	36.4	0.77	0.62	<0.016	
mononyaric	mg/i		#	#	#	#	#	

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N P			CERI	IFICATE OF A	NALYSIS			
SDG: 1 Job: H Client Reference: C	20512-56 I_CELTIC_RI C1526	EA-12	Location: E Customer: C Attention: N	Banbury Celtic Technologies Veil Hopkins		Order Number: Report Number: Superseded Repo	181669 rt: 181636	
							101000	
Results Legend	eous (vv)	Customer Sample R	BH103	BH106	BH101a	MW7	SW1	
# ISO17025 accredited. M mCERTS accredited.								
 § Deviating sample. ag Aqueous / settled sample. 		Depth (m)						
diss.filt Dissolved / filtered sample.		Sample Type	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	
* Subcontracted test.	- to a dead to	Sample Time						
check the efficiency of the n	standard to nethod. The	Date Received	12/05/2012 120512-56	12/05/2012 120512-56	12/05/2012 120512-56	12/05/2012 120512-56	12/05/2012 120512-56	
results of individual compound samples aren't corrected for	unds within r the recovery	Lab Sample No.(s)	5577376	5577378	5577377	5577375	5577379	
(F) Trigger breach confirmed	100/11	AGS Reference						
Nanhthalene (ag)	<0.1	nits Method	<0.1	1220	0.786	0.128	0.362	
	-0.1	µg/i iwii/o	-0.1	# #	#	#	#	
Acenaphthene (aq)	0.0> /µg/	15 TM178 I	0.376	99.6 # #	144 #	2.77 #	0.261 #	
Acenaphthylene (aq)	0.0> /وµ	11 TM178 I	1.49	58.9 # #	18.2 #	1.88 #	0.139 #	
Fluoranthene (aq)	0.0> /ور	17 TM178 1	0.168	5.94 # #	19.5 #	0.765 #	0.0837 #	
Anthracene (aq)	0.0> /پور	15 TM178 I	0.0277	13 # #	28.2	0.682 #	0.141 #	
Phenanthrene (aq)	0.0> /پور	22 TM178 1	0.085	57.4 # #	40.4 #	0.0256 #	0.612 #	
Fluorene (aq)	0.0> /پور	14 TM178 1	0.0359	64.2 # #	87.6 #	1.45 #	0.337 #	
Chrysene (aq)	0.0> /پور	13 TM178 1	0.0814	2.18 # #	6.73 #	0.3 #	0.0436 #	
Pyrene (aq)	0.0> /پور	15 TM178 1	0.143	7.14 # #	24.3	0.978 #	0.101 #	
Benzo(a)anthracene (aq)	0.0> /ور	17 TM178 1	0.0826	2.14 # #	6.44	0.287 #	0.0544 #	
Benzo(b)fluoranthene (aq) <0.0 μg/	23 TM178 1	0.0603	2.69 # #	2.65	0.0943 #	0.0688	
Benzo(k)fluoranthene (aq) <0.0 μg/	27 TM178 I	0.0828	1.82 # #	3.45 #	0.116 #	0.053 #	
Benzo(a)pyrene (aq)	0.0> /µg	09 TM178 I	0.0757	1.99 # #	4.85 #	0.16 #	0.044 #	
Dibenzo(a,h)anthracene (aq)	0.0> /дц	16 TM178 1	0.0165	1.13 # #	0.485	0.0327 #	0.0328	
Benzo(g,h,i)perylene (aq)	0.0> /وµ	16 TM178 1	0.049	1.91 # #	1.41 #	0.0826 #	0.0427 #	
Indeno(1,2,3-cd)pyrene (aq)	0.0> /وµ	14 TM178 1	0.046	2.05 # #	1.34 #	0.0674 #	0.0467 #	
PAH, Total Detected USEPA 16 (aq)	0.2< /µg	47 TM178 1	2.82	1540	390	9.81	2.42	

ALcontrol Labo	oratories		CERTI		NALYSIS			Validated
SDG: 120 Job: H_ Olivert Defense 01	0512-56 CELTIC_RE	EA-12	Location: Ba Customer: Ce	anbury eltic Technologies		Order Number: Report Number:	181669	
Client Reference: C1	526		Attention: No	eil Hopkins		Superseded Repoi	t: 181636	
Results Legend		Customer Sample R	BH103	BH106	BH101a	MW7	SW1	
M mCERTS accredited. § Deviating sample. aq Aqueous / settled sample. diss.filt Disolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * M converse of the supreset of the	andered to	Depth (m) Sample Type Date Sampled Sample Time	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	Water(GW/SW) 10/05/2012	
check the efficiency of the met results of individual compound samples aren't corrected for th (F) Trigger breach confirmed	hod. The ds within le recovery	Date Received SDG Ref Lab Sample No.(s) AGS Reference	12/05/2012 120512-56 5577376	12/05/2012 120512-56 5577378	12/05/2012 120512-56 5577377	12/05/2012 120512-56 5577375	12/05/2012 120512-56 5577379	
Component	LOD/Ur	nits Method	108	00	107	101	107	
recovery**	<50	Ini245	<50 <50	6520	9180	630	<50	_
Methyl tertiany butyl ether	<3 II	a/l TM245	<00 §#	#	#	#	-3	#
(MTBE)	~5 µ	9/1 TM243	<pre> <3 §# </pre>	1020	-5 #	150	-7	#
Benzene	<7 µi	g/I TM245	<br §#	1020 #	1820 #	150 #	</td <td>#</td>	#
loluene	<4 µ	g/I IM245	<4 §#	444 #	191 #	36 #	<4	#
Ethylbenzene	<5 µ	g/l TM245	<5 § #	280 #	403 #	5 #	<5	#
m,p-Xylene	<8 µ	g/I TM245	<8 § #	273 #	372 #	64 #	<8	#
o-Xylene	<3 µ	g/l TM245	<3 § #	155 #	289 #	45 #	<3	#
Sum of detected Xylenes	<11 µ	ıg/I TM245	<11 §	428	661	109	<11	
Sum of detected BTEX	<28 µ	ıg/I TM245	<28 §	2170	3080	300	<28	
Aliphatics >C5-C6	<10 µ	ıg/I TM245	<10 §	<10	16	<10	<10	
Aliphatics >C6-C8	<10 µ	ıg/I TM245	<10 §	130	85	18	<10	
Aliphatics >C8-C10	<10 µ	ıg/I TM245	<10 §	419	612	67	<10	
Aliphatics >C10-C12	<10 µ	ıg/I TM245	<10 8	2110	2990	118	<10	
Aliphatics >C12-C16 (aq)	<10 µ	ıg/I TM174	<10	80	286	<10	<10	
Aliphatics >C16-C21 (aq)	<10 µ	ıg/I TM174	<10	78	264	<10	<10	
Aliphatics >C21-C35 (aq)	<10 µ	ıg/I TM174	<10	<10	76	<10	<10	
Total Aliphatics >C12-C35 (ag)	<10 µ	ıg/l TM174	<10	158	626	<10	<10	
Aromatics >EC5-EC7	<10 µ	ıg/I TM245	<10 §	1020	1820	150	<10	
Aromatics >EC7-EC8	<10 µ	ıg/I TM245	<10 §	444	191	36	<10	
Aromatics >EC8-EC10	<10 µ	ıg/I TM245	<10 §	989	1470	159	<10	
Aromatics >EC10-EC12	<10 µ	ıg/I TM245	<10 §	1410	1990	78	<10	
Aromatics >EC12-EC16 (ag)	<10 µ	ıg/I TM174	10	2280	2990	187	<10	
Aromatics >EC16-EC21 (ag)	<10 µ	ıg/I TM174	<10	544	1080	49	<10	
Aromatics >EC21-EC35	<10 µ	ıg/I TM174	<10	184	460	<10	<10	
Total Aromatics	<10 µ	ıg/I TM174	10	3000	4540	236	<10	
Total Aliphatics &	<10 µ	ıg/l TM174	11	9680	14300	866	<10	
/ aomailes ~05-55 (dy)								

C

CERTIFICATE OF ANALYSIS

Validated

120512-56 SDG: Location: Banbury Order Number: H_CELTIC_REA-12 Celtic Technologies 181669 Job: Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins . Superseded Report: 181636

Notification of Deviating Samples

					•	
Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aliphatics >C10-C12	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aliphatics >C5-C6	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aliphatics >C6-C8	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aliphatics >C8-C10	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aromatics >EC10-EC12	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aromatics >EC5-EC7	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aromatics >EC7-EC8	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Aromatics >EC8-EC10	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Benzene	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Ethylbenzene	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	GRO >C5-C12	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	GRO Surrogate % recovery**	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	m,p-Xylene	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Methyl tertiary butyl ether (MTBE)	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	o-Xylene	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Sum of detected BTEX	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Sum of detected Xylenes	Container with Headspace provided for volatiles analysis
5584959	BH103		LIQUID	GRO by GC-FID (W)	Toluene	Container with Headspace provided for volatiles analysis

Note : Test results may be compromised

C

CERTIFICATE OF ANALYSIS

Validated

120512-56 SDG: Location: Banbury Order Number: H_CELTIC_REA-12 Celtic Technologies 181669 Job: Customer: Report Number: Client Reference: C1526 Attention: Neil Hopkins Superseded Report: 181636

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

Validated

SDG:	120512-56	Location:	Banbury	Order Number:	
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	181669
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	181636

Test Completion Dates

Lab Sample No(s)	5577376	5577378	5577377	5577375	5577379
Customer Sample Ref.	BH103	BH106	BH101a	MW7	SW1
AGS Ref.					
Depth					
Туре	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	17-May-2012	17-May-2012	17-May-2012	17-May-2012	17-May-2012
Cyanide Comp/Free/Total/Thiocyanate	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012
Dissolved Metals by ICP-MS	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012
EPH CWG (Aliphatic) Aqueous GC (W)	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012
EPH CWG (Aromatic) Aqueous GC (W)	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012
GRO by GC-FID (W)	15-May-2012	15-May-2012	15-May-2012	15-May-2012	15-May-2012
Mercury Dissolved	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012
PAH Spec MS - Aqueous (W)	18-May-2012	18-May-2012	18-May-2012	18-May-2012	18-May-2012
Phenols by HPLC (W)	18-May-2012	18-May-2012	18-May-2012	17-May-2012	18-May-2012
TPH CWG (W)	16-May-2012	16-May-2012	16-May-2012	16-May-2012	16-May-2012

09:39:21 21/05/2012

CERTIFICATE OF ANALYSIS

SDG:	120512-56	Location:	Banbury	Order Number:	
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	181669
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	181636

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	analysis
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOVEREND	GC-FID
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOVEREND	GC-FID
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOVEREND	GC-FID
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-MS
×06-C40	WET	HEXANEACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	CC-FD
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-M6

SOLID MATRICES EXTRACTION SUMMARY

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FID
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCROPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LQUD/LQUD SHAKE	GCMS
PHENOLSMS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOLbyR	TCE	STRRED EXTRACTION (STIR-BAR)	R
GLYCOLS	NONE	DRECTINIECTION	CC FD

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrystile

Amosite

Onichite

Fibrous Adindite

Fibrous Anthophylite

Fibra & Trendie

Common Name

WhiteAsheshes

BrownAsbestos

Blue Ashestos

-

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Celtic Technologies 1210 Park View Arlington Business Park Theale Reading Berkshire RG7 4TY

Attention: Neil Hopkins

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 16 May 2012 H_CELTIC_REA 120510-11 C1526 Banbury 181231

We received 4 samples on Thursday May 10, 2012 and 4 of these samples were scheduled for analysis which was completed on Wednesday May 16, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



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ALcontrol Lat	poratories	~	C P	TIF		•	┲╤╶	∩₣	٨		. `	۷¢	IC				Validated
SDG: 12 Job: H Client Reference: C	20510-11 LCELTIC_REA-12 1526	Location Custome Attentior	בוא ה: ה:	Bar Cel Nei	nbur tic 1 I Hc	y Feclopki	hnolo	gies	A	MA		13	13		Order Number: Report Number: Superseded Report:	181231	
LIQUID																	
Results Legend	Lab Samp	ole No(s)			55605			55605			55605			55605			
X Test					57			61			59			60			
No Determinatio	n		\vdash														
Possible	Custo Sample R	omer eference			MW1			MW28			BH104			BH105			
	AGS Ref	ference															
	Depth	n (m)															
	Conta	ainer	1l green glass bottle	HNO3 Filtered (ALE	Vial (ALE297) NaOH (ALE245)	1l green glass bottle	HNO3 Filtered (ALE H2SO4 (ALE244)	Vial (ALE297)	1l green glass bottle	HNO3 Filtered (ALE	Vial (ALE297)	1l green glass bottle	HNO3 Filtered (ALE H2SO4 (ALE244)	Vial (ALE297) NaOH (ALE245)			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 4		×			x))	<pre></pre>			x				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4			x			×		2	ĸ			X			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4		x			x			x			×				
EPH CWG (Aliphatic) Aqueou (W)	is GC All	NDPs: 0 Tests: 4	x			x			x			x					
EPH CWG (Aromatic) Aqueou (W)	us GC All	NDPs: 0 Tests: 4	x			x			x			x					
GRO by GC-FID (W)	All	NDPs: 0 Tests: 4			×			x			x			x			
Mercury Dissolved	All	NDPs: 0 Tests: 4	x			x			x			x					
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 4	x			x			x			x					
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4		x			x		>				x				
TPH CWG (W)	All	NDPs: 0 Tests: 4	x			x			x			x					

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CERTIFICATE OF ANALYSIS

Job: H_CELTIC_REA-12 Customer: Celtic Technologies Report Number: 181231 Client Reference: C1526 Attention: Neil Hopkins Superseded Report:	
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- Results Legend	Ci	ustomer Sample R	BH104	BH105	MW1	MW/28	
# ISO17025 accredited.		aotomor oumpro re	DITIO	DITIOS		INIVY20	
M mCERTS accredited.							
§ Deviating sample. ag Aqueous / settled sample.		Depth (m)					
diss.filt Dissolved / filtered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
tot.unfilt Total / unfiltered sample.		Date Sampled	09/05/2012	09/05/2012	09/05/2012	09/05/2012	
* Subcontracted test.	d to	Sample Time					
check the efficiency of the method.	The	Date Received	10/05/2012	10/05/2012	10/05/2012	10/05/2012	
results of individual compounds wit	nin .	SDG Ref	5560559	5560560	5560557	5560561	
samples aren't corrected for the reco (F) Trigger breach confirmed	overy I	Lab Sample No.(S)	000000	000000	000001	000001	
Component		AGS Reference					
	LOD/Units		00.4	44.0	-0.0	00.0	
Ammoniacal Nitrogen as	<0.2 mg/	1 110099	93.1	14.0	<0.2	03.8	
NH3			#	#	#	#	
Arsenic (diss.filt)	<0.12	TM152	6.95	2.81	2.53	19.4	
	µg/l		#	#	#	#	
Boron (diss.filt)	<9.4 µg/	I TM152	693	836	394	399	
· · ·			#	#	#	#	
Cadmium (diss filt)	<0.1 µa/	I TM152	<0.1	<0.1	<0.1	<0.1	
	0.1 µg/		#	#	#	#	
Chromium (diss filt)	<0.22	TM152	0.13	11 /	15.8	11.8	
Chronium (diss.nit)	<0.2Z	1111132	9.15 #	11.4	15.0	11.0 #	
2 ()) 2 ()	µg/i		#	#	#	#	
Copper (diss.filt)	<0.85	TM152	<0.85	<0.85	4.79	<0.85	
	µg/l		#	#	#	#	
Lead (diss.filt)	<0.02	TM152	0.287	0.233	0.376	0.109	
	µg/l		#	#	#	#	
Nickel (diss.filt)	<0.15	TM152	5.21	9.65	4.22	1.84	
· · · · · ·	ua/l		#	#	#	#	
Selenium (diss filt)	<0.30	TM152	2 1	1 06	<u>4</u> 11	1 ∩1	
	~0.39 ··~″	111132	<u>۲</u> .۱	1.00 "	ч.11 <i>4</i>	1.01 ш	
	µg/l		#	#	#	#	
∠inc (diss.filt)	<0.41	IM152	4.23	9.69	8.52	1.95	
	µg/l		#	#	#	#	
Mercury (diss.filt)	<0.01	TM183	<0.01	<0.01	<0.01	<0.01	
	µg/l		#	#	#	#	
Cvanide, Total	<0.05	TM227	0.241	<0.05	< 0.05	< 0.05	
- , ,	ma/l		#	#	#	#	
Cvanide Free	<0.05	TM227	<u>~</u> 0.05	<u>~0 05</u>	<0.05	<u>~</u> 0.05	
Cyanide, Tiee	<0.05	1 11/221	~0.0J #	~0.0J #	~0.0J #	~0.05 #	
	mg/i		#	#	#	#	
Phenols, Total Detected	<0.016	TM259	0.02	<0.016	<0.016	<0.016	
monohydric	mg/l		#	#	#	#	
		1 1					

CERTIFICATE OF ANALYSIS

SDG:	120510-11	Location:	Banbury	Order Number:
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number: 181231
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:
PAH Spec MS - Ac	queous (W)			

Results Legend		Customer Sample R	BH104	BH105	MVV1	MVV28	
M mCERTS accredited.							
§ Deviating sample.		Denth (m)					
aq Aqueous / settled sample.		Depth (m)	•	· .	·	·	
diss.filt Dissolved / filtered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
tot.unfilt Total / unfiltered sample.		Date Sampled	09/05/2012	09/05/2012	09/05/2012	09/05/2012	
* Subcontracted test.		Sample Time				•	
check the efficiency of the method	The	Date Received	10/05/2012	10/05/2012	10/05/2012	10/05/2012	
results of individual compounds with	thin	SDG Ref	120510-11	120510-11	120510-11	120510-11	
samples aren't corrected for the rec	overy	Lab Sample No.(s)	5560559	5560560	5560557	5560561	
(F) Trigger breach confirmed		AGS Reference					
Component	LOD/Un	its Method					
			4.07	0.005	0.450	4.50	
Naphthalene (aq)	<0.1 µ	g/i 11vi178	4.07	0.235	0.159	4.59	
			#	#	#	#	
Acenaphthene (ag)	< 0.01	5 TM178	0.148	0.0589	< 0.015	4.73	
			с с 		с.с.те 		
	µg/i		#	#	#	#	
Acenaphthylene (aq)	< 0.01	1 TM178	0.388	0.0255	0.0154	2.85	
	ua/I		#	#	#	#	
	μη/1		<i>^{<i>m</i>}</i>	"	<i>"</i>	<i>#</i>	
Fluoranthene (aq)	<0.01	/ IM1/8	0.131	0.061	0.0868	0.162	
	µq/l		#	#	#	#	
Anthracene (ag)	<0.01	5 TM178	0.0306	0.0203	0.0153	0.2	
Antinacene (aq)	~0.01	5 111176	0.0390	0.0203	0.0155	0.2	
	µg/l		#	#	#	#	
Phenanthrene (ag)	<0.02	2 TM178	0.0883	0 104	0.0778	0.53	
	U~//			ш		ш	
	µg/I		#	#	#	#	
Fluorene (aq)	< 0.01	4 TM178	0.0872	0.0444	0.0157	1.28	
	1/0/1		#	#	#	#	
		0 714/70	#	#	#	#	
Unrysene (aq)	<0.01	3 IM178	0.0879	0.0279	0.0545	0.038	
	µa/l		#	#	#	#	
Pyrene (ac)	<0.01	5 TM179	0 137	0.0614	0.0862	0.156	
i yiene (aq)	~0.01	0 11/11/0	0.137	0.0014	0.0002	0.100	
	µg/l		#	#	#	#	
Benzo(a)anthracene (ag)	<0.01	7 TM178	0.0653	0 0204	0.0431	<0.034	
	.0.01	, , , , , , , , , , , , , , , , , , , ,	0.0000 #	0.0201		.0.001	
	µg/i		#	#	#	#	
Benzo(b)fluoranthene (aq)	< 0.02	3 TM178	0.198	< 0.023	0.0487	< 0.046	
	ua/I		#	#	#	#	
	μη/1		<i>π</i>	π	π	<i>π</i>	
Benzo(k)fluoranthene (aq)	< 0.02	7 IM178	0.194	<0.027	0.0568	<0.054	
	ua/l		#	#	#	#	
Denze(e)nyrane (eg)	<0.00	0 TM470	0.32	0.0222	0.0517	<0.019	
Denzo(a)pyrene (aq)	~0.00	9 111170	0.22	0.0233	0.0517	<0.018	
	µg/l		#	#	#	#	
Dibenzo(a h)anthracene	<0.01	6 TM178	0.0507	<0.016	<0.016	<0.032	
Dibenzo(a,ri)arianacerie	-0.01	1111170	0.0001	40.010	40.010	-0.002	
(aq)	µg/I		#	#	#	#	
Benzo(q,h,i)pervlene (aq)	< 0.01	6 TM178	0.187	0.0165	0.0395	< 0.032	
	ua/I		#	#	#	#	
	μη/1		"	<i>^{<i>π</i>}</i>	"	<i>"</i>	
Indeno(1,2,3-cd)pyrene	<0.01	4 IM178	0.175	<0.014	0.0348	<0.028	
(ag)	ua/l		#	#	#	#	
DALL Total Datastad	<0.24	7 TM470	6.07	0.600	0.795	14.6	
PAH, TOTAL Delected	<0.24	/ 11/11/0	0.27	0.699	0.765	14.0	
USEPA 16 (aq)	µg/l						
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CERTIFICATE OF ANALYSIS

Validated

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TPH CWG (W)								
Results Legend # ISO17025 accredited. M mCERTS accredited. S Deviation sample		Custo	omer Sample R	BH104	BH105	MW1	MW28	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.			Depth (m) Sample Type Date Sampled	Water(GW/SW) 09/05/2012	Water(GW/SW) 09/05/2012	Water(GW/SW) 09/05/2012	Water(GW/SW) 09/05/2012	
* Subcontracted test. ** % recovery of the surrogate standar	rd to		Sample Time	10/05/2012	10/05/2012	10/05/2012	10/05/2012	
check the efficiency of the method. results of individual compounds wit	The hin		SDG Ref	120510-11	120510-11	120510-11	120510-11	
samples aren't corrected for the rec (F) Trigger breach confirmed	overy	Lab	Sample No.(s) AGS Reference	5560559	5560560	5560557	5560561	
Component	LOD/U	nits	Method					
GRO Surrogate %	%		TM245	102	102	109	107	
recovery** GRO >C5-C12	<50 µ	ug/l	TM245	111 #	<50	<50	212	
Methyl tertiary butyl ether (MTBE)	<3 µ	ıg/l	TM245	# <3 #		<3 #	# <3 #	
Benzene	<7 µ	ıg/l	TM245	66 #	<7 #	<7 #	69 #	
Toluene	<4 µ	ıg/l	TM245	<4 #	<4	<4 #	<4 #	
Ethylbenzene	<5 µ	ıg/l	TM245	<5 #	<5	<5 #	6 #	
m,p-Xylene	<8 µ	ig/l	TM245	<8 #	<8 #	<8 #	<8 #	
o-Xylene	<3 µ	ıg/l	TM245	<3 #	<3 #	<3 #	<3 #	
Sum of detected Xylenes	<11 µ	ug/l	TM245	<11	<11	<11	<11	
Sum of detected BTEX	<28 µ	ug/l	TM245	66	<28	<28	75	
Aliphatics >C5-C6	<10 µ	Jg/l	TM245	<10	<10	<10	<10	
Aliphatics >C6-C8	<10 µ	ug/l	TM245	<10	<10	<10	11	
Aliphatics >C8-C10	<10 µ	ug/l	TM245	<10	<10	<10	19	
Aliphatics >C10-C12	<10 µ	Jg/I	TM245	15	<10	<10	53	
Aliphatics >C12-C16 (aq)	<10 µ	ug/l	TM174	<10	<10	<10	33	
Aliphatics >C16-C21 (aq)	<10 µ	ug/l	TM174	<10	<10	<10	49	
Aliphatics >C21-C35 (aq)	<10 µ	ug/l	TM174	<10	<10	<10	11	
Total Aliphatics >C12-C35 (aq)	<10 µ	l/gu	TM174	<10	<10	<10	93	
Aromatics >EC5-EC7	<10 µ	ug/l	TM245	66	<10	<10	69	
Aromatics >EC7-EC8	<10 µ	ug/l	TM245	<10	<10	<10	<10	
Aromatics >EC10 EC12	<10 μ	ug/I	TM245	<10	<10	<10	21	
Aromatics >EC12 EC16	<10	ug/I	TM174	<10	<10	<10	02	
(aq) Aromatics >EC16-EC21	<10	ug/l	TM174	<10	<10	<10	37	
(aq) Aromatics >EC21-EC35	<10	ug/l	TM174	<10	<10	<10	<10	
(aq) Total Aromatics	<10 µ	ug/l	TM174	<10	<10	<10	129	
>EC12-EC35 (aq) Total Aliphatics &	<10 µ	ug/l	TM174	112	<10	<10	434	
Aromatics >C5-35 (aq)								
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CERTIFICATE OF ANALYSIS

Validated

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

SDG:	120510-11	Location:	Banbury	Order Number:	
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:	181231
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report:	

Test Completion Dates

Lab Sample No(s)	5560559	5560560	5560557	5560561
Customer Sample Ref.	BH104	BH105	MW1	MW28
AGS Ref.				
Depth				
Туре	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	16-May-2012	16-May-2012	16-May-2012	16-May-2012
Cyanide Comp/Free/Total/Thiocyanate	15-May-2012	15-May-2012	15-May-2012	11-May-2012
Dissolved Metals by ICP-MS	11-May-2012	11-May-2012	11-May-2012	11-May-2012
EPH CWG (Aliphatic) Aqueous GC (W)	14-May-2012	14-May-2012	14-May-2012	14-May-2012
EPH CWG (Aromatic) Aqueous GC (W)	14-May-2012	14-May-2012	14-May-2012	14-May-2012
GRO by GC-FID (W)	12-May-2012	12-May-2012	12-May-2012	12-May-2012
Mercury Dissolved	15-May-2012	15-May-2012	15-May-2012	15-May-2012
PAH Spec MS - Aqueous (W)	14-May-2012	14-May-2012	14-May-2012	14-May-2012
Phenols by HPLC (W)	14-May-2012	14-May-2012	14-May-2012	14-May-2012
TPH CWG (W)	14-May-2012	14-May-2012	14-May-2012	14-May-2012

CERTIFICATE OF ANALYSIS

SDG:	120510-11	Location:	Banbury	Order Number:
Job:	H_CELTIC_REA-12	Customer:	Celtic Technologies	Report Number:
Client Reference:	C1526	Attention:	Neil Hopkins	Superseded Report

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYOLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
PCBAROCLOR 1254/ PCBCON	D&C	HEXANEACETONE	ENDOWEREND	GC-M6
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-M6
>06-C40	WET	HEXANEACETONE	SHAKER	GC-FD
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-FID
SEM VOLATILEORGANIC	WET	DOM:#CETONE	SONICATE	GC-M6

SOLID MATRICES EXTRACTION SUMMARY

181231

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
BH	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
EPHCWG	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
MNERALOL	HEXANE	STRRED EXTRACTION (STIR-BAR)	GC FD
PCB7 CONGENERS	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
PCBAROCLOR 1254	HEXANE	STRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DCM	LQUD/LQUD SHAKE	GCMS
FREESULPHUR	DCM	SOLD PHASEEXTRACTION	HPLC
PESTOCPOPP	DCM	LQUD/LQUD SHAKE	GCMS
TRIAZINE HERBS	DCM	LQUD/LQUD SHAKE	GCMS
PHENOLSMS	ACETONE	SOLD PHASEEXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	STRRED EXTRACTION (STIR-BAR)	R
MNERALOL by R	TCE	STIRRED EXTRACTION (STIR-BAR)	
GLYCOLS	NONE	DRECTINIECTION	

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Croddalte	Blue Asbestos
Fibraus Adinalite	-
Florous Anthophylite	-
Fibrous Trendile	-

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