

Silver Trowel Developments Limited



16th September 2021
DAP/30803

Dear Sir

Re: Remedial Strategy And Verification Plan For the Proposed Redevelopment of the Burford Mill Farm Barns, Burford, Shropshire.

Introduction

It is proposed to redevelop a site at Burford Mill, Burford, Shropshire. The proposals include converting an existing barn into five residential units, with associated gardens, driveways, car parking and car ports, as shown on the appended 'Block Plan' drawing (ref. 389261).

Upon the instruction of the Client's Representative, Mr Mike Humphries, on behalf of the Client, Silver Trowel Developments Limited, GIP Limited have been instructed to compile a Remedial Strategy and Verification Plan for the development.

A Phase I desk study was undertaken by Brown 2 Green Geotechnical and Geo-Environmental Consultants in August 2015. GIP subsequently undertook a Phase 2 soils contamination ground investigation (Ref HO/27415 dated September 2018). The works comprised the sinking of six windowless sampler boreholes. A separate ground gas investigation was later commissioned and carried out by GIP Limited (Ref: ML/28568 dated 21st January 2020) which involved the sinking of six windowless sampler boreholes with gas monitoring standpipes. It is assumed that the client has Reliance on all of these reports which should be read in conjunction with this report.

Objectives

The specific objectives of the Remediation Strategy & Verification Plan are to specify both the remedial and verification works required to facilitate the proposed development. The remedial works will ensure that upon completion of the scheme the ground conditions will not pose a significant risk to future site occupiers. This Remediation Strategy is subject to the approval of the appropriate regulatory bodies, including the Local Authority and the National House Building Council (NHBC).

Scope

In order to achieve the outline objectives, the scope of this Remediation Strategy encompasses the following:

- ▶ A summary of the findings of the September 2018 and January 2020 reports.
- ▶ Recommendations for Remedial and Verification works.

The Site

Site Location

For a full description of the site reference should be made to the previous GIP reports. At the time of the original walkover the site comprised an irregular shaped parcel of land covering an area of 0.24 hectares. It was situated on the A456, approximately 2km east-north-east of Tenbury Wells town centre. The approximate centre of the site is denoted by National Grid Reference 357524, 268455.

Site Layout

The site was bound to the north by an old dismantled railway cutting, to the east by a small parcel of farmland, to the south by the A456 with farmland and more farm buildings on the opposite side of the road and to the west by a residential property located off the A456. The southern portion of the site contained an area of land that previously contained a farm building, which had apparently recently been demolished, and a dilapidated brick building with a collapsed roof running along the southern half of the western edge. There was a sign on the building warning about 'dangerous chemicals', however, it was not safe to enter the building to investigate this. An L-shaped, two storey, brick and timber barn was situated approximately in the centre of the site with an arm of the building stretching down to the southern boundary. A metal water tank was located in the yard in the corner of the barn and was elevated on two brick pillars. A number of oil drums and other chemical containers were stored beneath the water tanker. A concrete track ran along the eastern edge of the site between the barn and the site boundary. The northern portion of the site consisted of a concrete farm yard to the east and an area of rough ground to the west. A small, brick auxiliary farm building was located along the eastern half of the northern boundary.

Site History

A Geo-Environmental Desk Study (reference number: 1368/Rpt 1v2) and associated Groundsure Report (reference number: B2G-1972028) for the site was supplied by the Client to GIP Ltd. The report was produced by Brown 2 Green Geotechnical and Geo-Environmental Consultants in August 2015 and gives details of historical site usage, as well as comments upon the environmental setting of the site. The report should be read in conjunction with this report, however, the relevant sections are briefly summarised below:

The site contains the L-shaped barn that is to be converted as well as three smaller buildings surrounding it from the first available edition in 1885 until 1949. It is shown to be surrounded by 'Burford Mill' (a corn mill) to the west, a railway line within a cutting to the north, a small orchard to the east and fields to the south located across a road running immediately adjacent to the southern edge. Some of the smaller buildings are shown to have been demolished and replaced by new buildings by the 1967 edition. There are no significant changes within the site from then until the 2014 edition. The railway is labelled as 'dismantled' from the 1971 edition. The Desk Study report also indicates that online historical aerial imagery shows that a 'large pond/slurry lagoon' was developed to the north of the site between 1999 and 2005.

Environmental Setting

- ▶ **Bedrock Aquifer Designation** – The site is underlain by the Raglan Mudstone Formation which is designated as a Secondary A Aquifer, defined as 'permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers'.
- ▶ **Nearest Surface Water Feature** – The nearest surface water feature is an artificial pond located approximately 25m to the north-west, across the dismantled railway line that runs adjacent and parallel to the northern boundary.
- ▶ **Landfill Sites and Waste Disposal Facilities** – There are two historic landfill sites within 250m of the site, the nearest of which is located in the western part of the site, and was licenced to accept inert waste. The second nearest site is located 143m to the north-east, also accepting inert waste.

Ground Conditions

Recorded Ground Conditions

The available published geological information indicates the solid geology to consist of the Silurian Raglan Mudstone Formation (siltstone and mudstone). There are no faults within 500m of the site. There are no Superficial Deposits shown to overlie the solid geology, however, River Terrace Deposits are shown to be located 45m to the south-east with Alluvial deposits situated 70m to the south-west.

Strata Encountered

Made Ground: (2020 investigation) Made ground was proven in all positions to varying depths of 3.60m, 1.60m, 0.50m, 1.90m, >2.45m >1.65m. A mixture of granular and cohesive soils were recorded and included gravels of brick, mudstone, sandstone and occasional ash.

(2018 Investigation) – Made ground was encountered in all exploratory holes to depths of between 0.30m and 3.45m below existing ground level as both granular and cohesive soils. The soils contained man-made inclusions such as brick and concrete, with naturally derived inclusions such as quartz, quartzite, sandstone and mudstone. Organic odours were noted in WS1 from 1.50m to 2.00m. Made Ground soils was also encountered in WS5, located outside of the development boundary, to a depth of 5.00m below existing ground level with the base not proven due to the target depth being reached. The soil contained man-made inclusions such as brick, concrete, plastic, metal and polystyrene, with naturally derived inclusions such as quartz, quartzite, sandstone and siltstone. Organic odours were noted from 1.00m to 3.00m and 4.00m to 4.50m

Superficial Deposits: were encountered in one exploratory location to 0.40m as stiff slightly sandy slightly gravelly clay.

Raglan Mudstone Formation: (2020 Investigation) was noted in WS201 and WS202 as a very stiff clay onto mudstone, in WS205 as very stiff clay and in WS206 as mudstone.

(2018 Investigation) - was encountered beneath the Made Ground in WS1 and WS3 and beneath the Superficial Deposits in WS4 to depths of 1.00m and 2.45m below existing ground level, typically as very stiff friable clay. Rock like ground was encountered beneath the residual clay soils of the Raglan Mudstone Formation in WS3 and WS4 to depths of 2.45m and 1.45m below existing ground level respectively. It was recorded as extremely weak and very weak mudstone.

Groundwater: During the drilling process groundwater was only noted in WS201 at 3.00m. During the monitoring levels of up to 0.90m were recorded. In 2018, water was struck in WS1 at 1.00m and WS6 (between 2.00m and 3.00m). WS6 was noted as ‘damp’ between 3.00m and 3.45m.

Assessment of Contamination

The 2018 intrusive investigation included testing seven near surface soil samples for the determinants listed below:

- Arsenic
- Cadmium
- Chromium (hexavalent)
- Copper
- Lead
- Mercury
- Nickel
- Asbestos Fibres
- Cyanide
- Phenols
- pH
- Polycyclic Aromatic Hydrocarbons (speciated)
- Selenium
- Vanadium
- Zinc
- Petroleum Hydrocarbons (TPHCWG)

The CLEA (Contaminated Land Exposure Assessment) model combines information on the toxicity of soil contaminants with estimates of potential exposure by adults and children living, working and/or playing on land affected by contamination over long periods of time. It predicts the amount of contaminant to which they might be exposed based on a given soil contaminant concentration. By comparing predicted exposure with health criteria values on tolerable or acceptable contaminant intakes the model can be used to generate Critical Concentrations (Cc.)

Initially, generic C_c have been used as a screening process adopting, Soil Screening Values (SSVs) produced by Atkins Consultants and available from the ATRISK^{soil} web site. In this instance, values for ‘residential with plant uptake, 6% SOM’ are considered to be the most appropriate for the nature of the proposed end usage. Where “non-detects” were recorded in the sample data they have been replaced by the relevant method detection limit.

Discussion of Results

Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, selenium and vanadium), cyanide and phenols, Polyaromatic Hydrocarbons (PAHs), Petroleum Hydrocarbons

The analytical data has been reviewed and statistical outliers have been identified in WS1 0.85m for arsenic (60mg/kg) and lead (320mg/kg). This might be explained as a “hotspot”. Once the hotspot is removed from the assessment then the Null Hypothesis is rejected for all determinands tested.

Asbestos Containing Materials

An asbestos screen was undertaken on six samples of the Made Ground, all of which did not detect any asbestos containing materials

Remediation Strategy

The analytical data has demonstrated elevated levels of arsenic and lead in WS1 at 0.85m within Plot 1. It is therefore recommended that the Source-Pathway-Receptor linkage is broken by the application of a clean cover system in areas of gardens and landscaping on all plots across the site. In order to allow for double digging in rear gardens this should be of a minimum 600mm thickness or less if natural soils are encountered at a depth shallower than 600mm. This can be reduced to 300mm in areas of proposed front gardens and landscaping. The imported cover should be independently verified to check that it is suitably thick and inert.

Remediation Objectives

The testing carried out as part of the investigation showed there are concentrations of lead and arsenic present within the shallow made ground soils across the site, which pose a risk to Human Health. In order to break the Source – Pathway – Receptor pollutant linkage, it is recommended that a remedial scheme is adopted to protect Human Health. Such a remedial scheme would comprise the importation of clean cover or topsoil in all gardens and soft landscaped areas. Further comments upon this remedial option are discussed below.

Importation of Clean Cover or Topsoil

Remediation will be undertaken such that the site is suitable for the proposed end use which will comprise the conversion of former farm buildings to a residential end usage. The remediation will be achieved by the construction of a capping layer in gardens and any landscaped areas.

Capping Layers

As described above, elevated concentrations of lead and arsenic are present in the shallow made ground which poses an unacceptable risk to Human Health and remediation is required to allow the development of the site. The risk posed to Human health from contamination in the shallow soils can be negated by the placement of a Capping Layer. It is recommended that the depth / thickness of the capping layer is 600mm in rear gardens and 300mm in front gardens and any landscaped areas.

Reporting of Unexpected Ground Conditions / Contaminants

A watching brief should be kept by site staff and ground workers with regards to unexpected contamination during development works. Unexpected contamination may occur in the form of petroleum hydrocarbons (usually associated with dark grey / black discoloured soil and a hydrocarbon odour) and asbestos containing materials. Upon identification of any area of unexpected contamination, GIP should be notified (01902 459558) to determine a revised Remedial Strategy, if required.

Dust Suppression

As a matter of good practise, construction and site development personnel should follow the guidance stated in HSG 66 'Protection of Workers and the General Public during Redevelopment of Contaminated Land' during site operations. An adequate standard of Personal Protective Equipment (PPE) and the implementation of basic hygiene measures will be necessary. This includes the management of potential dust inhalation by construction workers during site works. Additional measures should also be adopted for working with asbestos which should include the wearing of appropriate masks, overalls and the wetting down of made ground soils during dry periods.

Verification

Capping Layers

The Capping Layer used shall be to the thickness / depth as detailed above and shall include a minimum of 150mm of topsoil. All subsoil and topsoil proposed for use shall be pre-validated prior to import and / or placement. The samples should be tested for metals, asbestos, cyanide, phenols, petroleum hydrocarbons, poly aromatic hydrocarbons and asbestos. The results of the testing should not exceed the criteria detailed in Table 1 below.

Table 1: Applicable Threshold Values for Imported Soils (Soil Screening Values, Soil Guideline Values - Residential with plant uptake End Use).

Contaminant	Threshold Level (mg/kg)
Copper	4790
Chromium VI	20.5
Vanadium	138
Zinc	20300
Arsenic	37
Cadmium	22.1
Lead	200
Mercury	180
Nickel	136
Selenium	375
Cyanide	34
Phenols	1200
Acenaphthene	2760
Anthracene	26200
Benzo(a)anthracene	8.54
Benzo(a)pyrene	2.05
Benzo(b)flouranthene	9.86
Benzo(ghi)perylene	103
Benzo(k)flouranthene	100
Chrysene	927
Dibenzo(ah)anthracene	0.589
Flouranthene	2980
Flourene	2610
Indeno(123-cd) pyrene	9.75
Naphthalene	12.2
Pyrene	2120

Contaminant	Threshold Level (mg/kg)
Aliphatic C5-C6	369
Aliphatic C6-C8	1240
Aliphatic C8-C10	204
Aliphatic C10-C12	1180
Aliphatic C12-C16	4130
Aliphatic C16-C35	210,100
Aromatic C5-C7	0.871
Aromatic C7-C8	780
Aromatic C8-C10	232
Aromatic C10-C12	468
Aromatic C12-C16	830
Aromatic C16-C21	1040
Aromatic C21-C35	1710
Benzene	0.871
Toluene	780
Ethylbenzene	453
m-xylene	328
o-xylene	336
p-xylene	312
MTBE	220
Asbestos Containing Materials	No asbestos fibres to be present

Imported soils should be from a licensed source and be accompanied with appropriate documentation to confirm the soils are not waste or have a waste exemption. Agreement on the source of the imported materials would ideally be made with the appropriate Statutory Authorities before importation. Topsoil and subsoil will be free of deleterious fragments such as concrete, brick, glass, wire, and metal or other potentially hazardous fragments which could cause injury. In addition, all imported materials must be free from invasive plant species (e.g. Japanese Knotweed).

Verification Methodology

All remediation works should be supervised by the Principal Contractor and monitored by a suitably qualified and experienced Geo-Environmental Engineer on a visiting basis. The verification works should be carried out in guidance with the methodologies and guidelines detailed below:

- The thickness of the capping layer should be verified through the excavation of hand dug trial pits. The thickness of the capping layer should be verified at a frequency of 1 test per rear garden.
- The pits should extend through the full thickness of the specified capping layer (600mm in rear gardens and 300mm on front gardens/soft landscaping) and be verified on site by the Geo-Environmental Engineer.

- Each hand pit should be photographed with a measured scale to be incorporated into the final verification reports.

- Samples of the imported clean cover material should be obtained and tested for the contaminants outlined above in Table 1.

- A verification report detailing the depth of clean cover encountered, results of laboratory testing and photographic evidence should be provided for each tested area of the site. This should be provided in a letter report style format.

- Copies of these reports should be submitted to the Local Authority for approval, with a copy also kept in the site office at all times for inspection as required.

Approval of this Remediation Strategy Report should be sought from the appropriate regulatory bodies prior to the adoption of any remedial strategies.

Re-Use of Excavated Materials

The Principal Contractors for the development should ensure that any excess spoil generated during development works are not earmarked for any form of re-use across the site unless chemically validated and that such soils will be removed from site for disposal to appropriate landfill. In order to control the movement of such soils, the Principal Contractors should adhere to the following measures:

- The loading of soils directly onto the haulage vehicles in order to avoid and potential cross contamination of underlying soils.

- Any stockpiled soils will be placed upon impermeable plastic sheeting to prevent any potential contamination of the underlying soils.

- The waste transfer tickets and information should be kept in the site office at all times and be available for inspection as required.

Ground Gases

Combined gas and groundwater monitoring installations have been included within all the boreholes of the 2020 investigation. Monitoring of the standpipes was undertaken on six occasions which included details of the barometric pressure, borehole water level and air temperature at the time of each visit.

Environmental Setting

The following has been extracted from the desk study undertaken by Brown 2 Green Geotechnical and Geo-Environmental Consultants in August 2015. 'The database indicates two historic landfill sites within 250m of the site. The nearest historic landfill site is Burford Mill Farm which is located in the western part of the site. It was licensed to accept Inert waste. No information is provided on the date waste was last received or details of the licence. The second site is located at 1 Burford Cottages and is located 143 m to the north east. The site was licensed to accept Inert waste. Both historic landfills have very limited information on them, and are both very small in size which may suggest they are small domestic (non-commercial) landfill sites.' Boreholes WS201 and WS206 were located within the historical landfill noted on site. Online historical aerial imagery shows that a 'pond/slurry lagoon' was developed to the north of the site between 1999 and 2005.

In-Situ Gas Concentrations

The gas concentrations recorded by this investigation can be summarised as follows:

Methane: was not recorded throughout this investigation

Carbon Dioxide: levels of between 0.0% and 13.2% were recorded

Oxygen: Levels of between 3.2% and 20.6% were recorded

Carbon Monoxide: was not recorded throughout this investigation

Hydrogen Sulphide: was not recorded throughout this investigation

Gas Flow Measurement: readings were less than 0.5 l/hr

Recommendations for Remediation

Elevated carbon dioxide levels, together with oxygen depletion have been recorded in the boreholes. No methane was recorded and the gas flow rate was below the equipment's detection limit of 0.5l/h.

In accordance with BS 8485:2015, the results from the gas readings fall within Characteristic Gas Situation 2 of Table 2. As such, on the basis of the monitoring undertaken to date gas protection measures will be needed with a point score of 3.5 required within residential buildings. Following discussion with the Client's representative it is understood that the proposed design detail of the remedial measures will be produced and forwarded to the Local Authority under separate cover. The gas measures must be installed correctly and verified independently by a suitably qualified person for the buildings to be approved by the Local Authority and Building Control. For example, failure to install a gas membrane correctly and get it independently inspected, tested and verified would result in the membrane scoring 0 instead of 2 points in the point score system.

If you have any queries, please do not hesitate to contact us.

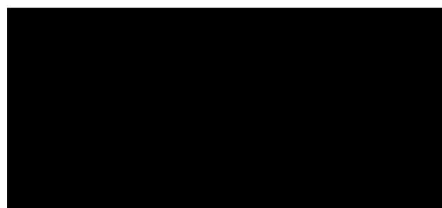
Yours faithfully,

For: GIP Limited



D.A. Peers BSc (Hons), FGS

SENIOR GEOENVIRONMENTAL ENGINEER



J. P. Hughes BSc, MSc, C Geol, FGS, C Sci

MANAGING DIRECTOR

APPENDIX A

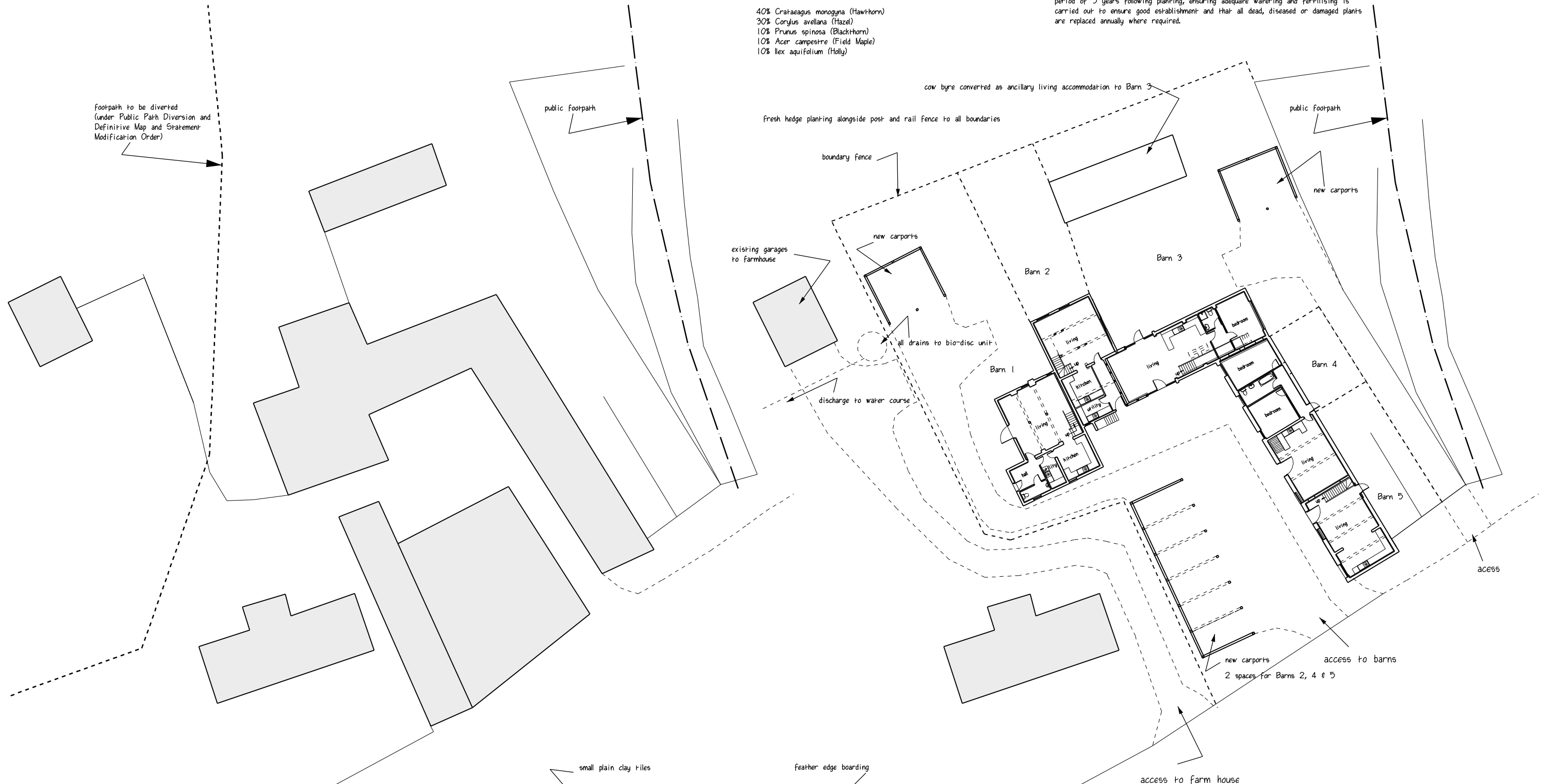


HEDGE PLANTING SPECIFICATION

Hedging plants are to be 60-80 cm high, 1+1, bareroot, healthy and vigorous transplants to be planted in a double staggered row, 450mm apart, 7 plants per linear metre. Species mix to be as follows:

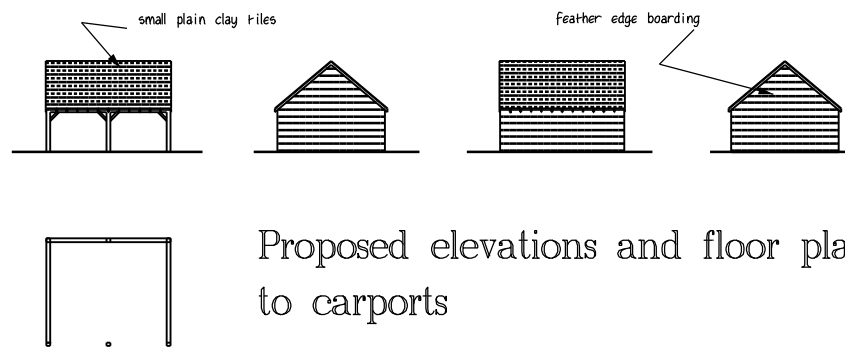
- 40% Crataegus monogyna (Hawthorn)
- 30% Corylus avellana (Hazel)
- 10% Prunus spinosa (Blackthorn)
- 10% Acer campestre (Field Maple)
- 10% Ilex aquifolium (Holly)

All transplants shall be protected with a 400mm high plastic spiral rabbit guard supported by a 750mm stake or cane. Stock proof fencing should be erected to protect hedging from grazing as required. The hedge is to be maintained for a period of 5 years following planting, ensuring adequate watering and fertilising is carried out to ensure good establishment and that all dead, diseased or damaged plants are replaced annually where required.

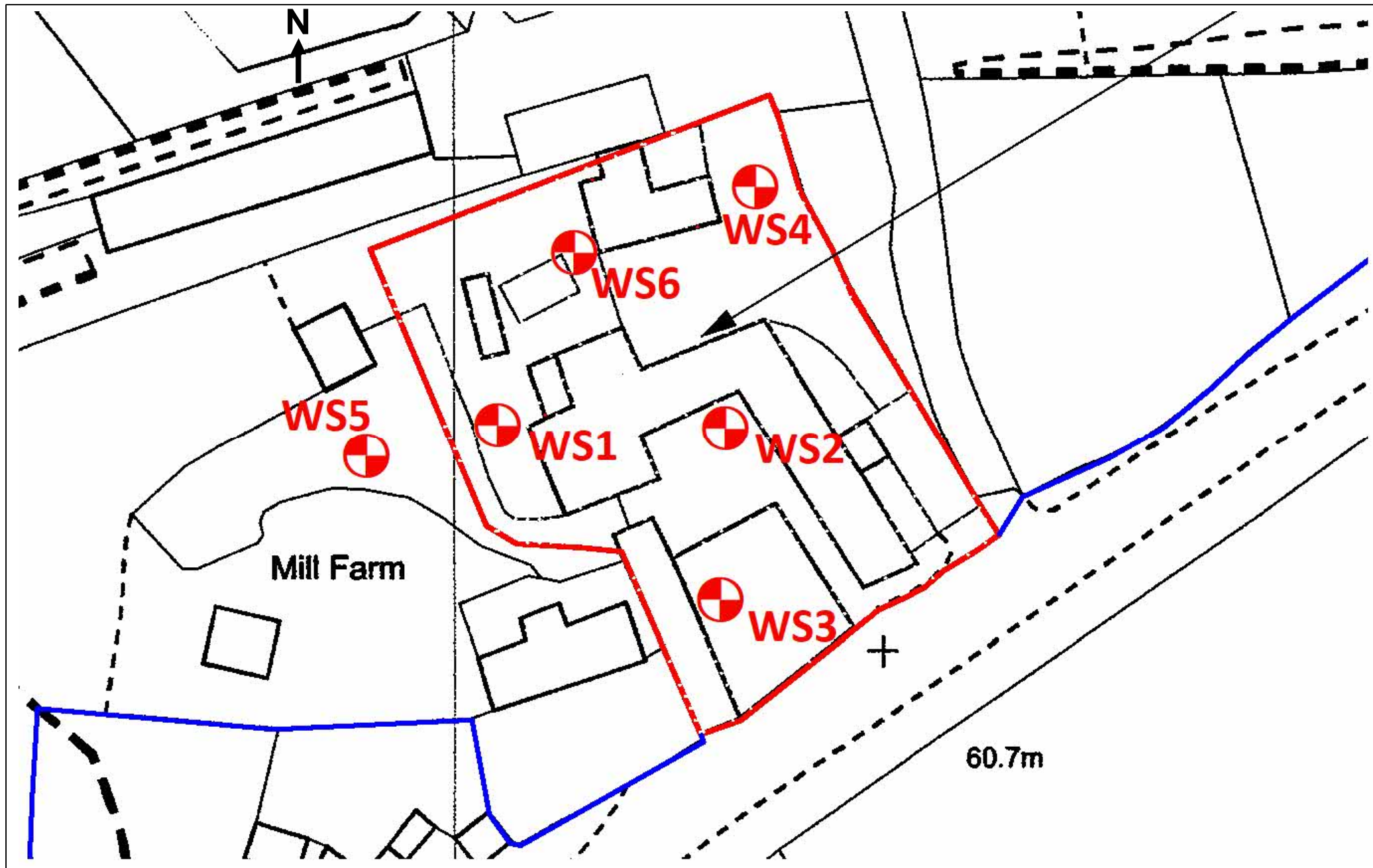


Existing Block Plan

Proposed Block Plan



 <p>Nigel J Teale MRICS, ABE Bramble Farm, Naunton, Upton-Upon-Severn, Worcestershire Tel: 01684 593984</p>	August 2015
	Scale 1:400 (A3)
Block Plans Barns at Mill Farm, Burford Mill, Shropshire.	Drawing No. 3692b1




All positions are approximate as shown

Site Location



Key:

 = Windowless Sampler Borehole



Devonshire House, Ettingshall Road,
Wolverhampton, WV2 2JT.
Tel: 01902 459558 Fax: 01902 459085
E-Mail: info@gipuk.com

Client: T R Morris & Sons

Title:
Burford Mill Barns, Tenbury Wells
Exploratory Hole Location Plan

Scale: Not to Scale

Date: September 2018

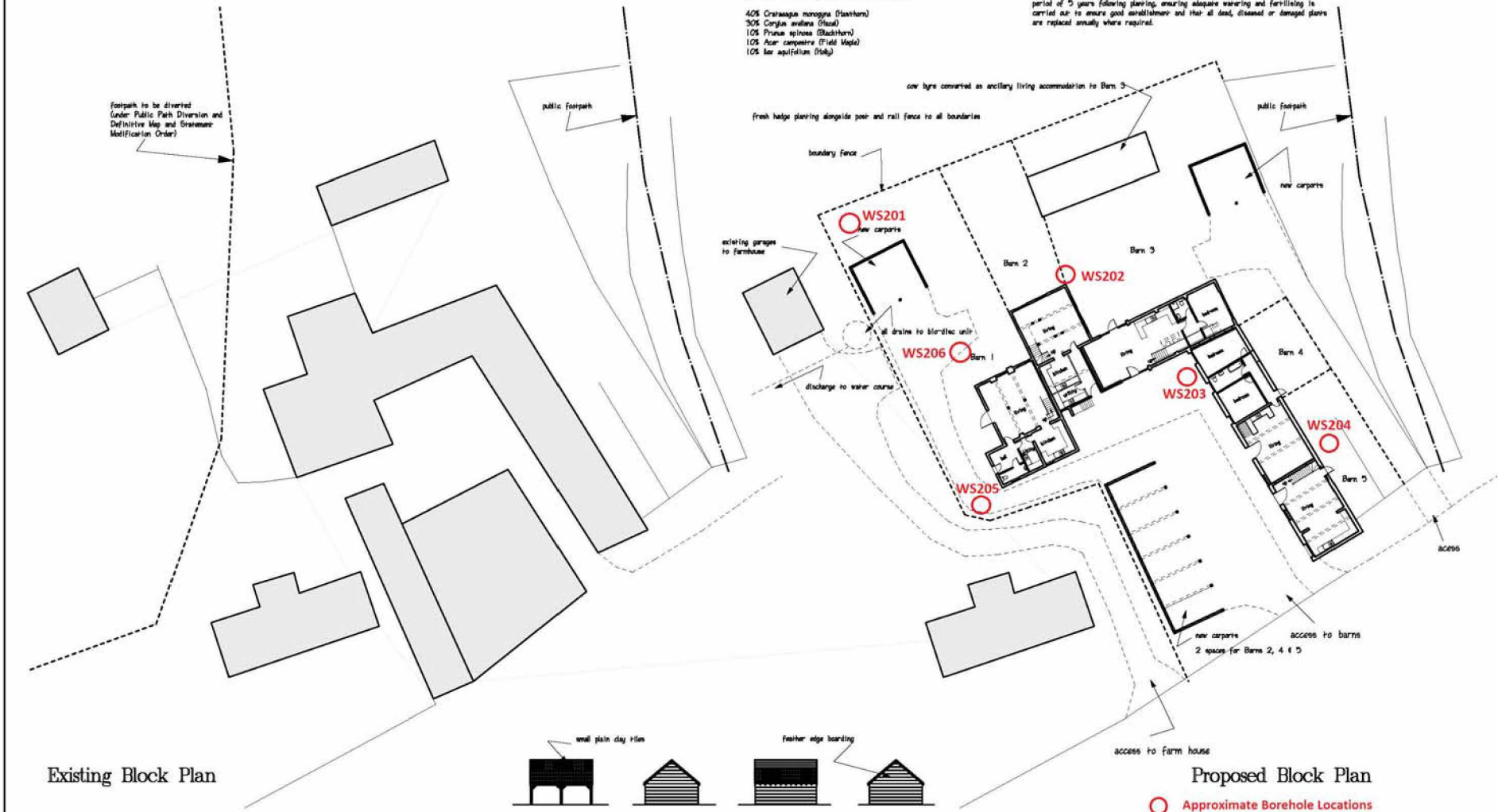
Contract: 27415

HEDGE PLANTING SPECIFICATION

Hedging plants are to be 60-80 cm high, 1+1, bareroot, healthy and vigorous transplants to be planted in a double staggered row, 450cm apart, 7 plants per linear metre. Species mix to be as follows:

- 40% Crataegus monogyna (Hawthorn)
- 30% Cornus austriaca (Hazel)
- 10% Prunus spinosa (Blackthorn)
- 10% Acer campestre (Field Maple)
- 10% Ilex aquifolium (Holly)

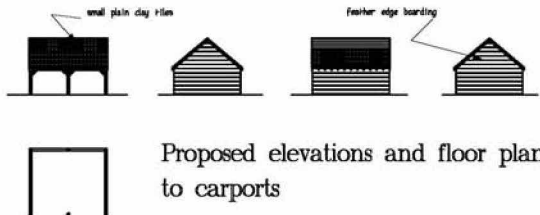
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Existing Block Plan

Proposed Block Plan

○ Approximate Borehole Locations



Proposed elevations and floor plan to carpports

 <p>Nigel J Teale ARCHITECT BRASSIE FARM, NEARTON, UPTON-UPON-AVERN, WILTSHIRE TEL 01294 200004</p>	August 2015
	Scale 1:400 (A3)
<p>Block Plans Barns at Mill Farm, Burford Mill, Shropshire.</p>	Drawing No. 3892bt

APPENDIX B



Statistical Calculations for Use with CLEA Model.

Project Number	27415
Project Name	Burdford Mills Barns, Tenbury Wells
Client	T R Morris & Sons
Engineer	
Notes	Using SSVs where no free phase hydrocarbons have been observed.



Devonshire House, Ettingshall Road,
Wolverhampton.
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Tel 01902 459558
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C_c Values Used Residential with plant uptake (6% SOM)

Enter Analytical Data in Columns. Formulae only calculate cells with values (i.e. blank cells not = 0) NOTE Data can only be entered in white cells	Hole ID	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg							
	WS1	0.85	60	2	1	120	320	1	100	3	54	830	1	2							
	WS2	0.20	6	1	1	58	31	1	22	3	41	97	1	1							
	WS3	0.30	7	1	1	16	18	1	21	3	32	70	1	1							
	WS4	0.10	12	1	1	51	47	1	39	3	48	190	1	1							
	WS6	0.60	5	1	1	23	29	1	35	3	38	110	1	1							
	WS6	2.00	4	1	1	22	24	1	46	3	36	150	1	1							
	WS5	0.20	7	1	1	51	46	1	43	3	58	140	1	1							
Hide Extra Rows																					
Show Extra Rows																					

Number of Samples (n)	7	7	7	7	7	7	7	7	7	7	7	7	7							
Is > C _c	No	No	No	No	No	No	No	No	No	No	No	No	No							
Maximum Value	60.00	2.00	1.00	120.00	320.00	1.00	100.00	3.00	58.00	830.00	1.00	2.00								
Level of Significance α	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Grubb Outlier Test	60.000	No Outliers	No Outliers	No Outliers	320.000	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers							
Level of Significance for Shapiro-Wilks Normality Test	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Shapiro-Wilks Normality Test	Non-normal	Non-normal	Same Value	Normal	Non-normal	Same Value	Non-normal	Same Value	Normal	Non-normal	Same Value	Non-normal	Non-normal	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev
US ₉₅ Calculation Method	Chebychev	Chebychev	Chebychev	T-Test	Chebychev	Chebychev	Chebychev	Chebychev	T-Test	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev
Override Recommended Method	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
US ₉₅	50.483	1.816	1.000	78.037	267.930	1.000	91.140	3.000	51.839	705.275	1.000	1.816								
C _c	37	22.1	20.5	4790	200	180	136	375	138	20300	34	1200								
C _c Source	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	-	-	-	-	-	-	-
H ₀ μ ≥ C _c	Accept	Reject	Same Value	Reject	Accept	Same Value	Reject	Same Value	Reject	Reject	Same Value	Reject								
H ₁ μ < C _c	False	True	Same Value	True	False	Same Value	True	Same Value	True	True	Same Value	True								
Level of evidence against H ₀	H0 Accepted	99%	Same Value	99%	H0 Accepted	Same Value	98%	Same Value	99%	99%	Same Value	99%								
Is C _c Exceeded?	Yes	No	No	No	Yes	No	No	No	No	No	No	No								

Null Hypothesis = H₀ μ ≥ C_c (True mean is greater than or equal to the critical value)
Alternative Hypothesis = H₁ μ < C_c (True mean is less than the critical value)

Project Number	27415
Project Name	Burdford Mills Barns, Tenbury Wells
Client	T R Morris & Sons
Engineer	
Notes	Using SSVs where no free phase hydrocarbons have been observed.



Devonshire House, Ettingshall Road,
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Fax 01902 459085
www.gipuk.com

C_c Values Used Residential with plant uptake (6% SOM)

Enter Analytical Data in Columns. Formulae only calculate cells with values (i.e. blank cells not = 0) NOTE Data can only be entered in white cells	Hole ID	Depth (m)	mg/kg Aliphatic C5-C6	mg/kg Aliphatic C6-C8	mg/kg Aliphatic C8-C10	mg/kg Aliphatic C10-C12	mg/kg Aliphatic C12-C16	mg/kg Aliphatic C16-C35	mg/kg Aromatic C5-C7	mg/kg Aromatic C7-C8	mg/kg Aromatic C8-C10	mg/kg Aromatic C10-C12	mg/kg Aromatic C12-C16	mg/kg Aromatic C16-C21	mg/kg Aromatic C21-C35	Benzene	Toluene	Ethylbenzen	m-Xylene	o-Xylene	p-Xylene	MTBE
	WS1	0.85	0.1	0.1	0.1	1	2	57	0.1	0.1	0.1	5	42	100	350	0.01	0.01	0.01	0.01	0.01	0.01	0.01
WS2	0.20	0.1	0.1	0.1	1	2	13	0.1	0.1	0.1	1	1	2	10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
WS3	0.30	0.1	0.1	0.1	1	2	6	0.1	0.1	0.1	1	1	4	22	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
WS4	0.10	0.1	0.1	0.1	1	2	6	0.1	0.1	0.1	1	1	5	22	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
WS6	0.60	0.1	0.1	0.1	1	2	5	0.1	0.1	0.1	1	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
WS5	0.20	0.1	0.1	0.1	1	10	150	0.1	0.1	0.1	10	10	78	140	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Hide Extra Rows																						
Show Extra Rows																						
Number of Samples (n)			6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Is >C _c			0.10	0.10	0.10	1.00	3.33	39.50	0.10	0.10	0.10	3.17	9.33	31.67	90.83	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Value			0.00	0.00	0.00	0.00	3.27	57.71	0.00	0.00	0.00	3.71	16.40	44.97	136.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Level of Significance α			0.10	0.10	0.10	1.00	10.00	150.00	0.10	0.10	0.10	10.00	42.00	100.00	350.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Level of Significance for Shapiro-Wilks Normality Test			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Grubb Outlier Test			No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers	No Outliers
Shapiro-Wilks Normality Test			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
US ₉₅ Calculation Method			Same Value	Same Value	Same Value	Same Value	Same Value	Non-normal	Same Value	Same Value	Same Value	Non-normal	Non-normal	Non-normal	Non-normal	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value
Override Recommended Method			Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev	Chebychev
US ₉₅			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
C _c			0.100	0.100	0.100	1.000	9.702	152.030	0.100	0.100	0.100	10.401	41.317	119.359	357.706	0.010	0.010	0.010	0.010	0.010	0.010	0.010
C _c Source			369	1240	204	1180	4130	210100	0.871	780	232	468	830	1040	1710	0.871	780	453	328	336	312	220
H ₀ μ ≥ C _c			ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017	ATRISK June 2017
H ₁ μ < C _c			Same Value	Same Value	Same Value	Same Value	Same Value	Reject	Same Value	Same Value	Same Value	Reject	Reject	Reject	Reject	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value
Level of evidence against H ₀			Same Value	Same Value	Same Value	Same Value	Same Value	True	Same Value	Same Value	Same Value	True	True	True	True	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value
Is C _c Exceeded?			Same Value	Same Value	Same Value	Same Value	Same Value	99%	Same Value	Same Value	Same Value	99%	99%	99%	99%	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value	Same Value
Null Hypothesis = H ₀ μ ≥ C _c (True mean is greater than or equal to the critical value)			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Alternative Hypothesis = H ₁ μ < C _c (True mean is less than the critical value)			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No



CONCEPT LIFE SCIENCES
DELIVERING SCIENCE

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Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 758266-1

Date of Report: 16-Aug-2018

Customer: Ground Investigation & Piling Ltd
Devonshire House
Ettingshall Road
Wolverhampton
WV2 2JT

Customer Contact: Ms Kim Owen

Customer Job Reference: 27415

Customer Purchase Order: 44567

Customer Site Reference: Burford Mill Barns

Date Job Received at Concept: 08-Aug-2018

Date Analysis Started: 09-Aug-2018

Date Analysis Completed: 16-Aug-2018

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept Life Sciences SOPs

All results have been reviewed in accordance with Section 25 of the Concept Life Sciences, Analytical Services Quality Manual



Report checked
and authorised by :
Aleksandra Pacula
Senior Customer Service
Advisor

Issued by :
Aleksandra Pacula
Senior Customer Service
Advisor

Concept Reference: 758266									
Project Site: Burford Mill Barns									
Customer Reference: 27415									
Soil					Analysed as Soil				
MCERTS Preparation									
Concept Reference		758266 002	758266 003	758266 004	758266 005	758266 007			
Customer Sample Reference		WS1	WS2	WS3	WS4	WS6			
Top Depth		0.85	0.20	0.30	0.10	0.60			
Date Sampled		Deviating	Deviating	Deviating	Deviating	Deviating			
Matrix Class		Topsoil	Sandy Soil	Sandy Soil	Sandy Soil	Sandy Soil			
Determinand	Method	Test Sample	LOD	Units					
Moisture @105C	T162	AR	0.1	%	26	7.4	14	10	6.4
Retained on 10mm sieve	T2	M40	0.1	%	12.9	10.0	37.4	18.2	9.4

Concept Reference: 758266									
Project Site: Burford Mill Barns									
Customer Reference: 27415									
Soil					Analysed as Soil				
MCERTS Preparation									
Concept Reference		758266 008							
Customer Sample Reference		WS6							
Top Depth		2.0							
Date Sampled		Deviating							
Matrix Class		Clay							
Determinand	Method	Test Sample	LOD	Units					
Moisture @105C	T162	AR	0.1	%	20				
Retained on 10mm sieve	T2	M40	0.1	%	<0.1				

Concept Reference: 758266									
Project Site: Burford Mill Barns									
Customer Reference: 27415									
Soil					Analysed as Soil				
GIP2									
Concept Reference		758266 002	758266 003	758266 004	758266 005	758266 007			
Customer Sample Reference		WS1	WS2	WS3	WS4	WS6			
Top Depth		0.85	0.20	0.30	0.10	0.60			
Date Sampled		Deviating	Deviating	Deviating	Deviating	Deviating			
Matrix Class		Topsoil	Sandy Soil	Sandy Soil	Sandy Soil	Sandy Soil			
Determinand	Method	Test Sample	LOD	Units					
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3	<3
Chromium	T6	M40	1	mg/kg	31	16	23	29	26
Mercury	T6	M40	1	mg/kg	<1	<1	<1	<1	<1
Arsenic	T6	M40	2	mg/kg	60	6	7	12	5
Cadmium	T6	M40	1	mg/kg	2	<1	<1	<1	<1
Chromium VI	T6	A40	1	mg/kg	<1	<1	<1	<1	<1
Nickel	T6	M40	1	mg/kg	100	22	21	39	35
Lead	T6	M40	1	mg/kg	320	31	18	47	29
Vanadium	T6	M40	1	mg/kg	54	41	32	48	38
Copper	T6	M40	1	mg/kg	120	58	16	51	23
Zinc	T6	M40	1	mg/kg	830	97	70	190	110
Organic Matter	T2	A40	0.1	%	43.0	3.7	4.9	7.8	2.6
pH	T7	A40			6.7	10.5	10.9	8.0	10.6
Cyanide(Total)	T546	AR	1	mg/kg	<1	<1	<1	<1	<1
Phenols(Mono)	T546	AR	1	mg/kg	2	<1	<1	<1	<1

Concept Reference: 758266					
Project Site: Burford Mill Barns					
Customer Reference: 27415					
Soil Analysed as Soil					
GIP2					
Concept Reference					758266 008
Customer Sample Reference					WS6
Top Depth					2.0
Date Sampled					Deviating
Matrix Class					Clay
Determinand	Method	Test Sample	LOD	Units	
Selenium	T6	M40	3	mg/kg	<3
Chromium	T6	M40	1	mg/kg	37
Mercury	T6	M40	1	mg/kg	<1
Arsenic	T6	M40	2	mg/kg	4
Cadmium	T6	M40	1	mg/kg	<1
Chromium VI	T6	A40	1	mg/kg	<1
Nickel	T6	M40	1	mg/kg	46
Lead	T6	M40	1	mg/kg	24
Vanadium	T6	M40	1	mg/kg	36
Copper	T6	M40	1	mg/kg	22
Zinc	T6	M40	1	mg/kg	150
Organic Matter	T2	A40	0.1	%	2.6
pH	T7	A40			7.5
Cyanide(Total)	T546	AR	1	mg/kg	<1
Phenols(Mono)	T546	AR	1	mg/kg	<1

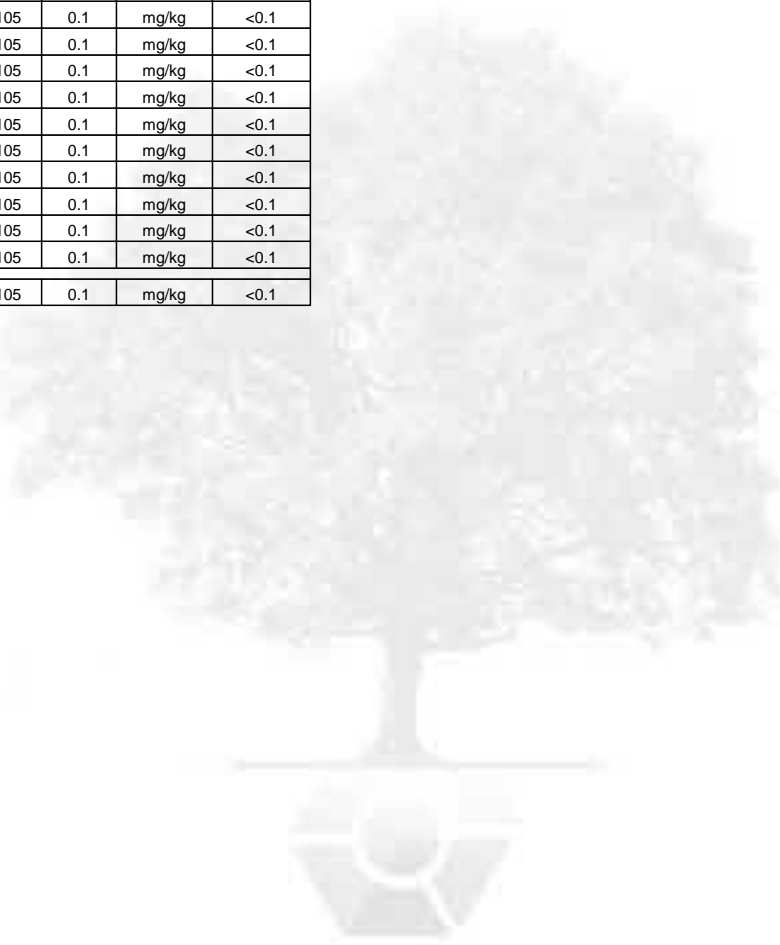
Concept Reference: 758266										
Project Site: Burford Mill Barns										
Customer Reference: 27415										
Soil Analysed as Soil										
PAH US EPA 16 (B and K split)										
Concept Reference					758266 002	758266 003	758266 004	758266 005	758266 007	
Customer Sample Reference					WS1	WS2	WS3	WS4	WS6	
Top Depth					0.85	0.20	0.30	0.10	0.60	
Date Sampled					Deviating	Deviating	Deviating	Deviating	Deviating	
Matrix Class					Topsoil	Sandy Soil	Sandy Soil	Sandy Soil	Sandy Soil	
Determinand	Method	Test Sample	LOD	Units						
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	0.5	<0.1	<0.1	0.3	<0.1	<0.1
Anthracene	T207	M105	0.1	mg/kg	0.8	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	2.4	<0.1	0.2	0.8	<0.1	<0.1
Pyrene	T207	M105	0.1	mg/kg	2.6	<0.1	0.3	0.7	<0.1	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	1.2	<0.1	0.2	0.5	<0.1	<0.1
Chrysene	T207	M105	0.1	mg/kg	1.5	<0.1	0.2	0.5	<0.1	<0.1
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	1.3	<0.1	0.2	0.6	<0.1	<0.1
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	1.0	<0.1	0.2	0.5	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	0.8	<0.1	0.2	0.4	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	0.6	<0.1	0.2	0.3	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	0.7	<0.1	0.2	0.3	<0.1	<0.1
PAH(total)	T207	M105	0.1	mg/kg	14	<0.1	1.9	5.0	<0.1	<0.1

Concept Reference: 758266
Project Site: Burford Mill Barns
Customer Reference: 27415

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

Concept Reference	758266 008
Customer Sample Reference	WS6
Top Depth	2.0
Date Sampled	Deviating
Matrix Class	Clay

Determinand	Method	Test Sample	LOD	Units	
Naphthalene	T207	M105	0.1	mg/kg	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1
Pyrene	T207	M105	0.1	mg/kg	<0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1
Chrysene	T207	M105	0.1	mg/kg	<0.1
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	<0.1
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1
PAH(total)	T207	M105	0.1	mg/kg	<0.1



Concept Reference: 758266 Project Site: Burford Mill Barns Customer Reference: 27415 Soil Analysed as Soil GIP TPHUKCWG										
Concept Reference					758266 002	758266 003	758266 004	758266 005	758266 007	
Customer Sample Reference					WS1	WS2	WS3	WS4	WS6	
Top Depth					0.85	0.20	0.30	0.10	0.60	
Date Sampled					Deviating	Deviating	Deviating	Deviating	Deviating	
Matrix Class					Topsoil	Sandy Soil	Sandy Soil	Sandy Soil	Sandy Soil	
Determinand	Method	Test Sample	LOD	Units						
Benzene	T209	M105	10	µg/kg	⁽¹³⁾ <10	⁽¹³⁾ <10	⁽¹³⁾ <10	⁽¹³⁾ <10	⁽¹³⁾ <10	
Toluene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	
EthylBenzene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	
M/P Xylene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	
O Xylene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	⁽¹³⁾ <2	⁽¹³⁾ <2	⁽¹³⁾ <2	⁽¹³⁾ <2	⁽¹³⁾ <2	
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	⁽¹³⁾ 8	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	⁽¹³⁾ 49	⁽¹³⁾ 12	⁽¹³⁾ 5	⁽¹³⁾ 5	⁽¹³⁾ <4	
TPH (C16-C35 aliphatic)	T206	M105	5	mg/kg	57	12	5	5	<5	
TPH (C35-C44 aliphatic)	T8	M105	1	mg/kg	⁽¹³⁾ 28	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	
TPH (Aliphatic) total	T85	M105		mg/kg	⁽¹³⁾ 85	⁽¹³⁾ 12	⁽¹³⁾ 5.1	⁽¹³⁾ 5.3	⁽¹³⁾ <4.0	
TPH (C5-C7 aromatic)	T209	M105	0.010	mg/kg	⁽¹⁰⁰⁾ <0.10	⁽¹⁰⁰⁾ <0.10	⁽¹⁰⁰⁾ <0.10	⁽¹⁰⁰⁾ <0.10	⁽¹⁰⁰⁾ <0.10	
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	⁽¹³⁾ 5	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	
TPH (C12-C16 aromatic)	T206	M105	1	mg/kg	⁽¹³⁾ 42	⁽¹³⁾ 1	⁽¹³⁾ <1	⁽¹³⁾ 1	⁽¹³⁾ <1	
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	⁽¹³⁾ 100	⁽¹³⁾ 2	⁽¹³⁾ 4	⁽¹³⁾ 5	⁽¹³⁾ <1	
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	⁽¹³⁾ 350	⁽¹³⁾ 10	⁽¹³⁾ 22	⁽¹³⁾ 22	⁽¹³⁾ <1	
TPH (C35-C44 aromatic)	T8	M105	1	mg/kg	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	⁽¹³⁾ <1	
TPH (Aromatic) total	T85	M105		mg/kg	⁽¹³⁾ 500	⁽¹³⁾ 13	⁽¹³⁾ 26	⁽¹³⁾ 28	⁽¹³⁾ N.D.	
TPH (Aliphatic+Aromatic) (sum)	T85	M105		mg/kg	⁽¹³⁾ 585	⁽¹³⁾ 25.4	⁽¹³⁾ 31.1	⁽¹³⁾ 33.3	⁽¹³⁾ <4.00	

Concept Reference: 758266 Project Site: Burford Mill Barns Customer Reference: 27415 Soil Analysed as Soil Miscellaneous										
Concept Reference					758266 001	758266 003	758266 004	758266 005	758266 006	
Customer Sample Reference					WS1	WS2	WS3	WS4	WS6	
Top Depth					0.10	0.20	0.30	0.10	0.20	
Date Sampled					Deviating	Deviating	Deviating	Deviating	Deviating	
Matrix Class						Sandy Soil	Sandy Soil	Sandy Soil		
Determinand	Method	Test Sample	LOD	Units						
Asbestos ID	T27	A40			N.D.	N.D.	N.D.	N.D.	N.D.	

Index to symbols used in 758266-1

Value	Description
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
AR	As Received
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
A40	Assisted dried < 40C
N.D.	Not Detected
13	Results have been blank corrected.
100	LOD determined by sample aliquot used for analysis

S	Analysis was subcontracted
M	Analysis is MCERTS accredited
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Asbestos was subcontracted to REC Asbestos.
The date of sampling has not been provided and therefore the time from sampling to analysis is unknown. It is possible therefore that the results provided may be compromised.

Method Index

Value	Description
T8	GC/FID
T206	GC/FID (MCERTS)
T27	PLM
T207	GC/MS (MCERTS)
T546	Colorimetry (CF)
T7	Probe
T2	Grav
T6	ICP/OES
T85	Calc
T162	Grav (1 Dec) (105 C)
T209	GC/MS (Head Space)(MCERTS)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Benzene	T209	M105	10	µg/kg	M	002-005,007
Toluene	T209	M105	10	µg/kg	M	002-005,007
EthylBenzene	T209	M105	10	µg/kg	M	002-005,007
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	M	002-005,007
M/P Xylene	T209	M105	10	µg/kg	M	002-005,007
O Xylene	T209	M105	10	µg/kg	M	002-005,007
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	N	002-005,007
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	N	002-005,007
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	N	002-005,007
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	N	002-005,007
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	M	002-005,007
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	M	002-005,007
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	M	002-005,007
TPH (C16-C35 aliphatic)	T206	M105	5	mg/kg	M	002-005,007
TPH (C35-C44 aliphatic)	T8	M105	1	mg/kg	N	002-005,007
TPH (Aliphatic) total	T85	M105		mg/kg	N	002-005,007
TPH (C5-C7 aromatic)	T209	M105	0.010	mg/kg	N	002-005,007
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	N	002-005,007
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	N	002-005,007
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	M	002-005,007
TPH (C12-C16 aromatic)	T206	M105	1	mg/kg	M	002-005,007
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	M	002-005,007
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	M	002-005,007
TPH (C35-C44 aromatic)	T8	M105	1	mg/kg	N	002-005,007
TPH (Aromatic) total	T85	M105		mg/kg	N	002-005,007
TPH (Aliphatic+Aromatic) (sum)	T85	M105		mg/kg	N	002-005,007
Moisture @105C	T162	AR	0.1	%	N	002-005,007-008
Retained on 10mm sieve	T2	M40	0.1	%	N	002-005,007-008
Arsenic	T6	M40	2	mg/kg	M	002-005,007-008
Cadmium	T6	M40	1	mg/kg	M	002-005,007-008
Chromium	T6	M40	1	mg/kg	M	002-005,007-008
Chromium VI	T6	A40	1	mg/kg	N	002-005,007-008
Copper	T6	M40	1	mg/kg	M	002-005,007-008
Lead	T6	M40	1	mg/kg	M	002-005,007-008
Mercury	T6	M40	1	mg/kg	M	002-005,007-008
Nickel	T6	M40	1	mg/kg	M	002-005,007-008
Selenium	T6	M40	3	mg/kg	M	002-005,007-008
Vanadium	T6	M40	1	mg/kg	M	002-005,007-008
Zinc	T6	M40	1	mg/kg	M	002-005,007-008
Cyanide(Total)	T546	AR	1	mg/kg	M	002-005,007-008

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Organic Matter	T2	A40	0.1	%	N	002-005,007-008
pH	T7	A40			M	002-005,007-008
Phenols(Mono)	T546	AR	1	mg/kg	M	002-005,007-008
Naphthalene	T207	M105	0.1	mg/kg	M	002-005,007-008
Acenaphthylene	T207	M105	0.1	mg/kg	U	002-005,007-008
Acenaphthene	T207	M105	0.1	mg/kg	M	002-005,007-008
Fluorene	T207	M105	0.1	mg/kg	M	002-005,007-008
Phenanthrene	T207	M105	0.1	mg/kg	M	002-005,007-008
Anthracene	T207	M105	0.1	mg/kg	U	002-005,007-008
Fluoranthene	T207	M105	0.1	mg/kg	M	002-005,007-008
Pyrene	T207	M105	0.1	mg/kg	M	002-005,007-008
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	002-005,007-008
Chrysene	T207	M105	0.1	mg/kg	M	002-005,007-008
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	M	002-005,007-008
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	M	002-005,007-008
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	002-005,007-008
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	002-005,007-008
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	002-005,007-008
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	002-005,007-008
PAH(total)	T207	M105	0.1	mg/kg	U	002-005,007-008
Asbestos ID	T27	A40			SU	001,003-006





CONCEPT LIFE SCIENCES
DELIVERING SCIENCE

Concept Life Sciences is a trading name of
Concept Life Sciences Analytical & Development
Services Limited registered in England and
Wales (No 2514788)

Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 759416-2

Date of Report: 31-Aug-2018

Customer: Ground Investigation & Piling Ltd
Devonshire House
Ettingshall Road
Wolverhampton
WV2 2JT

Customer Contact: Ms Kim Owen

Customer Job Reference: 27415

Customer Purchase Order: 44570

Customer Site Reference: Burford Mill Barns

Date Job Received at Concept: 13-Aug-2018

Date Analysis Started: 14-Aug-2018

Date Analysis Completed: 24-Aug-2018

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept Life Sciences SOPs

All results have been reviewed in accordance with Section 25 of the Concept Life Sciences, Analytical Services Quality Manual

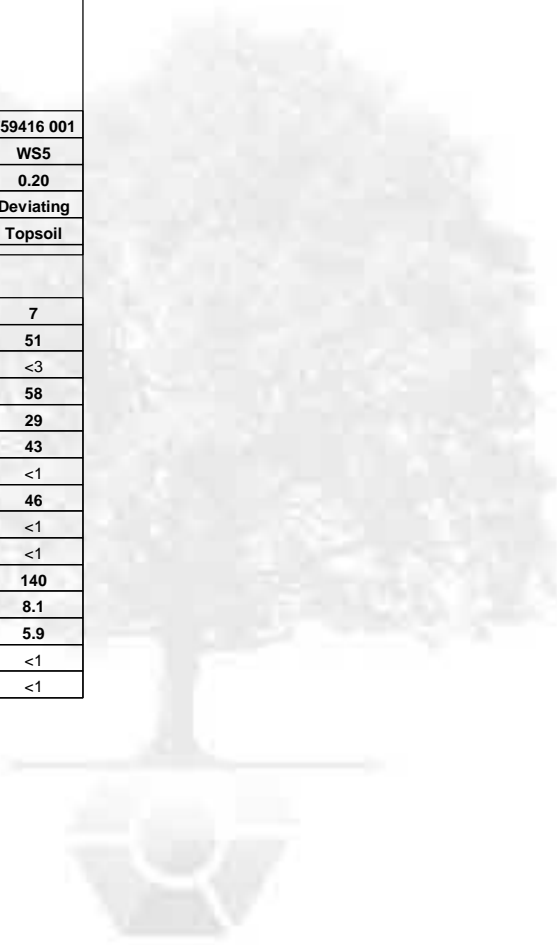


Report checked
and authorised by :
Zoe Gunter
Customer Service Advisor

Issued by :
Aleksandra Pacula
Senior Customer Service
Advisor

Concept Reference: 759416					
Project Site: Burford Mill Barns					
Customer Reference: 27415					
Soil Analysed as Soil					
MCERTS Preparation					
Concept Reference					759416 001
Customer Sample Reference					WS5
Top Depth					0.20
Date Sampled					Deviating
Matrix Class					Topsoil
Determinand	Method	Test Sample	LOD	Units	
Moisture @105C	T162	AR	0.1	%	7.4
Retained on 10mm sieve	T2	M40	0.1	%	<0.1

Concept Reference: 759416					
Project Site: Burford Mill Barns					
Customer Reference: 27415					
Soil Analysed as Soil					
GIP2					
Concept Reference					759416 001
Customer Sample Reference					WS5
Top Depth					0.20
Date Sampled					Deviating
Matrix Class					Topsoil
Determinand	Method	Test Sample	LOD	Units	
Arsenic	T6	M40	2	mg/kg	7
Copper	T6	M40	1	mg/kg	51
Selenium	T6	M40	3	mg/kg	<3
Vanadium	T6	M40	1	mg/kg	58
Chromium	T6	M40	1	mg/kg	29
Nickel	T6	M40	1	mg/kg	43
Chromium VI	T6	A40	1	mg/kg	<1
Lead	T6	M40	1	mg/kg	46
Cadmium	T6	M40	1	mg/kg	<1
Mercury	T6	M40	1	mg/kg	<1
Zinc	T6	M40	1	mg/kg	140
pH	T7	A40			8.1
Organic Matter	T2	A40	0.1	%	5.9
Cyanide(Total)	T546	AR	1	mg/kg	<1
Phenols(Mono)	T546	AR	1	mg/kg	<1

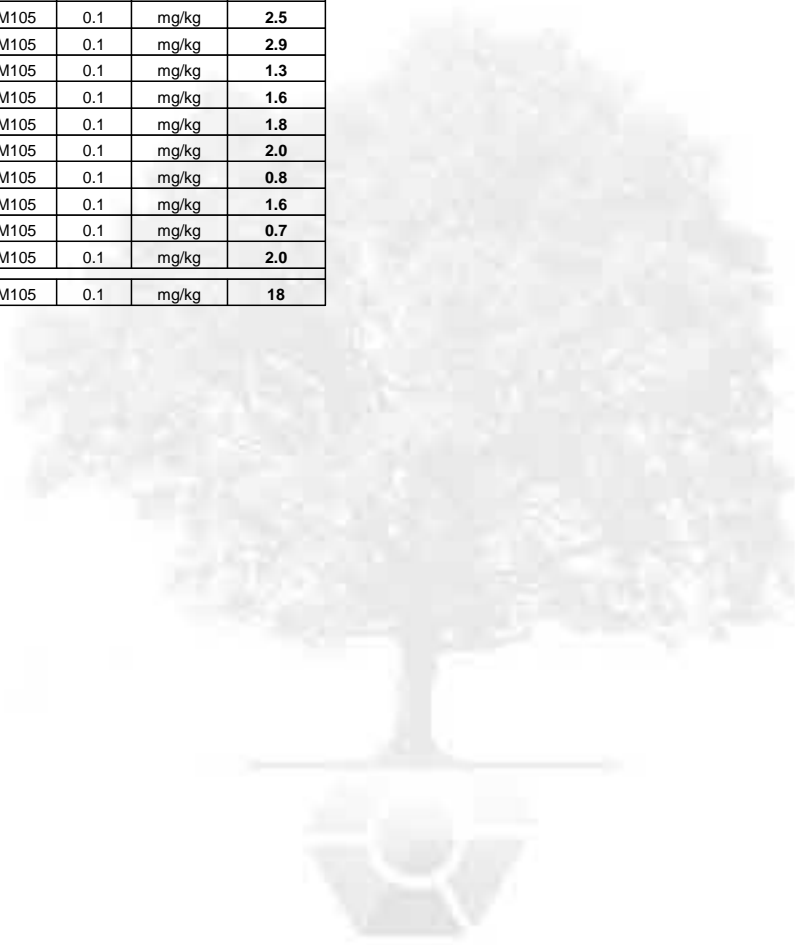


Concept Reference: 759416
Project Site: Burford Mill Barns
Customer Reference: 27415

Soil Analysed as Soil
PAH US EPA 16 (B and K split)

Concept Reference	759416 001
Customer Sample Reference	WS5
Top Depth	0.20
Date Sampled	Deviating
Matrix Class	Topsoil

Determinand	Method	Test Sample	LOD	Units	
Naphthalene	T207	M105	0.1	mg/kg	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	0.6
Anthracene	T207	M105	0.1	mg/kg	0.4
Fluoranthene	T207	M105	0.1	mg/kg	2.5
Pyrene	T207	M105	0.1	mg/kg	2.9
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	1.3
Chrysene	T207	M105	0.1	mg/kg	1.6
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	1.8
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	2.0
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	0.8
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	1.6
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	0.7
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	2.0
PAH(total)	T207	M105	0.1	mg/kg	18



Concept Reference: 759416					
Project Site: Burford Mill Barns					
Customer Reference: 27415					
Soil Analysed as Soil					
GIP TPHUKCWG					
Concept Reference					759416 001
Customer Sample Reference					WS5
Top Depth					0.20
Date Sampled					Deviating
Matrix Class					Topsoil
Determinand	Method	Test Sample	LOD	Units	
Benzene	T209	M105	10	µg/kg	⁽¹³⁾ <10
Toluene	T209	M105	10	µg/kg	<10
EthylBenzene	T209	M105	10	µg/kg	<10
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	<10
M/P Xylene	T209	M105	10	µg/kg	<10
O Xylene	T209	M105	10	µg/kg	<10
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	<0.100
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	<0.10
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	<0.10
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	^(9,13) <10
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	^(9,13) <10
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	^(9,13) <10
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	⁽¹³⁾ 140
TPH (C16-C35 aliphatic)	T206	M105	5	mg/kg	260
TPH (C35-C44 aliphatic)	T8	M105	1	mg/kg	⁽¹³⁾ 120
TPH (Aliphatic) total	T85	M105		mg/kg	⁽¹³⁾ 260
TPH (C5-C7 aromatic)	T209	M105	0.010	mg/kg	⁽¹⁰⁰⁾ <0.10
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	<0.10
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	<0.10
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	^(13,9) <10
TPH (C12-C16 aromatic)	T206	M105	1	mg/kg	^(9,13) <10
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	⁽¹³⁾ 78
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	⁽¹³⁾ 140
TPH (C35-C44 aromatic)	T8	M105	1	mg/kg	^(9,13) <10
TPH (Aromatic) total	T85	M105		mg/kg	⁽¹³⁾ 220
TPH (Aliphatic+Aromatic) (sum)	T85	M105		mg/kg	⁽¹³⁾ 478

Concept Reference: 759416					
Project Site: Burford Mill Barns					
Customer Reference: 27415					
Soil Analysed as Soil					
Miscellaneous					
Concept Reference					759416 001
Customer Sample Reference					WS5
Top Depth					0.20
Date Sampled					Deviating
Matrix Class					Topsoil
Determinand	Method	Test Sample	LOD	Units	
Asbestos ID	T27	A40			Chrysotile Fibres Detected

Index to symbols used in 759416-2

Value	Description
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
A40	Assisted dried < 40C
AR	As Received
9	LOD raised due to dilution of sample
13	Results have been blank corrected.

100	LOD determined by sample aliquot used for analysis
S	Analysis was subcontracted
M	Analysis is MCERTS accredited
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Asbestos was subcontracted to REC Asbestos.
The date of sampling has not been provided and therefore the time from sampling to analysis is unknown. It is possible therefore that the results provided may be compromised.

Method Index

Value	Description
T7	Probe
T85	Calc
T207	GC/MS (MCERTS)
T8	GC/FID
T27	PLM
T206	GC/FID (MCERTS)
T209	GC/MS (Head Space)(MCERTS)
T162	Grav (1 Dec) (105 C)
T2	Grav
T546	Colorimetry (CF)
T6	ICP/OES

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Benzene	T209	M105	10	µg/kg	M	001
Toluene	T209	M105	10	µg/kg	M	001
EthylBenzene	T209	M105	10	µg/kg	M	001
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	M	001
M/P Xylene	T209	M105	10	µg/kg	M	001
O Xylene	T209	M105	10	µg/kg	M	001
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	N	001
TPH (C6-C8 aliphatic)	T209	M105	0.10	mg/kg	N	001
TPH (C8-C10 aliphatic)	T209	M105	0.10	mg/kg	N	001
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	N	001
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	M	001
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	M	001
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	M	001
TPH (C16-C35 aliphatic)	T206	M105	5	mg/kg	M	001
TPH (C35-C44 aliphatic)	T8	M105	1	mg/kg	N	001
TPH (Aliphatic) total	T85	M105		mg/kg	N	001
TPH (C5-C7 aromatic)	T209	M105	0.010	mg/kg	N	001
TPH (C7-C8 aromatic)	T209	M105	0.10	mg/kg	N	001
TPH (C8-C10 aromatic)	T209	M105	0.10	mg/kg	N	001
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	M	001
TPH (C12-C16 aromatic)	T206	M105	1	mg/kg	M	001
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	M	001
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	M	001
TPH (C35-C44 aromatic)	T8	M105	1	mg/kg	N	001
TPH (Aromatic) total	T85	M105		mg/kg	N	001
TPH (Aliphatic+Aromatic) (sum)	T85	M105		mg/kg	N	001
Moisture @105C	T162	AR	0.1	%	N	001
Retained on 10mm sieve	T2	M40	0.1	%	N	001
Arsenic	T6	M40	2	mg/kg	M	001
Cadmium	T6	M40	1	mg/kg	M	001
Chromium	T6	M40	1	mg/kg	M	001
Chromium VI	T6	A40	1	mg/kg	N	001
Copper	T6	M40	1	mg/kg	M	001
Lead	T6	M40	1	mg/kg	M	001
Mercury	T6	M40	1	mg/kg	M	001
Nickel	T6	M40	1	mg/kg	M	001
Selenium	T6	M40	3	mg/kg	M	001
Vanadium	T6	M40	1	mg/kg	M	001
Zinc	T6	M40	1	mg/kg	M	001

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Cyanide(Total)	T546	AR	1	mg/kg	M	001
Organic Matter	T2	A40	0.1	%	N	001
pH	T7	A40			M	001
Phenols(Mono)	T546	AR	1	mg/kg	M	001
Naphthalene	T207	M105	0.1	mg/kg	M	001
Acenaphthylene	T207	M105	0.1	mg/kg	U	001
Acenaphthene	T207	M105	0.1	mg/kg	M	001
Fluorene	T207	M105	0.1	mg/kg	M	001
Phenanthrene	T207	M105	0.1	mg/kg	M	001
Anthracene	T207	M105	0.1	mg/kg	U	001
Fluoranthene	T207	M105	0.1	mg/kg	M	001
Pyrene	T207	M105	0.1	mg/kg	M	001
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	001
Chrysene	T207	M105	0.1	mg/kg	M	001
Benzo(b)fluoranthene	T207	M105	0.1	mg/kg	M	001
Benzo(k)fluoranthene	T207	M105	0.1	mg/kg	M	001
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	001
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	001
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	001
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	001
PAH(total)	T207	M105	0.1	mg/kg	U	001
Asbestos ID	T27	A40			SU	001



APPENDIX C





Devonshire House, Ettingshall Road,
Wolverhampton. WV2 2JT.
Tel. 01902 459558
www.gipuk.com
info@gipuk.com

STANDPIPE GAS & GROUNDWATER MONITORING RESULTS

CONTRACT No. 28568	SITE Burford Mill Barns, Burford	CLIENT : T R Morris & Son
REPORT DATE 02/12/2019		ENGINEER :

NOTES			
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Borehole ID No	Date/Time	CH ₄ (%) (by Volume)	LEL (%)	CO ₂ (%) (by Volume)	O ₂ (%) (by Volume)	H ₂ S (ppm)	CO (ppm)	Hexane (%) (by Volume)	Flow Rate (l/h)	Peak Flow (l/h)	Differential Pressure (mbar)	Atmospheric Pressue (mbar)	Groundwater (mbgl)	Base of Standpipe (mbgl)	Air Temperature (°C)	Monitoring Technician Initials
WS201	20-Aug-19	0.0	0.0	11.0	7.5	0	0	0.00	<0.5	<0.5	0.02	1013	1.50	3.00	19	AG
WS201	28-Aug-19	0.0	0.0	2.0	16.9	0	0	0.00	<0.5	<0.5	0.00	1001	dry	3.00	18	AG
WS201	17-Sep-19	0.0	0.0	11.7	9.0	0	0	0.00	<0.5	<0.5	0.00	1019	1.52	3.00	17	AG
WS201	15-Oct-19	0.0	0.0	13.2	8.2	0	0	0.00	<0.5	<0.5	0.00	979	dry	3.00	14	AG
WS201	05-Nov-19	0.0	0.0	7.1	3.4	0	0	0.02	<0.5	<0.5	0.00	988	1.2	3.00	9	AG
WS201	18-Nov-19	0.0	0.0	4.4	6.2	0	0	0.00	<0.5	<0.5	0.00	996	1.3	3.00	5	AG
WS202	20-Aug-19	0.0	0.0	3.6	16.0	0	0	0.00	<0.5	<0.5	0.00	1013	dry	2.00	19	AG
WS202	28-Aug-19	0.0	0.0	0.0	20.6	0	0	0.00	<0.5	<0.5	0.00	1001	dry	2.00	18	AG
WS202	17-Sep-19	0.0	0.0	2.9	18.0	0	0	0.00	<0.5	<0.5	0.00	1018	dry	2.00	17	AG
WS202	15-Oct-19	0.0	0.0	3.2	15.5	0	0	0.00	<0.5	<0.5	0.00	979	dry	2.00	14	AG
WS202	05-Nov-19	0.0	0.0	3.3	10.7	0	0	0.02	<0.5	<0.5	0.00	988	1.6	2.00	9	AG
WS202	18-Nov-19	0.0	0.0	2.1	12.6	0	0	0.01	<0.5	<0.5	0.00	996	trace	2.00	5	AG
WS203	20-Aug-19	0.0	0.0	1.3	19.5	0	0	0.00	<0.5	<0.5	0.01	1013	dry	2.00	19	AG
WS203	28-Aug-19	0.0	0.0	0.0	20.5	0	0	0.00	<0.5	<0.5	0.00	1002	dry	2.00	18	AG
WS203	17-Sep-19	0.0	0.0	1.3	19.0	0	0	0.00	<0.5	<0.5	0.00	1018	dry	2.00	17	AG
WS203	15-Oct-19	0.0	0.0	2.3	17.2	0	0	0.01	<0.5	<0.5	0.00	979	dry	2.00	14	AG
WS203	05-Nov-19	0.0	0.0	1.2	17.2	0	0	0.02	<0.5	<0.5	0.00	990	dry	2.00	9	AG
WS203	18-Nov-19	0.0	0.0	1.6	18.2	0	0	0.00	<0.5	<0.5	0.00	996	dry	2.00	5	AG
WS204	20-Aug-19	0.0	0.0	3.3	17.0	0	0	0.00	<0.5	<0.5	0.00	1013	dry	1.00	19	AG
WS204	28-Aug-19	0.0	0.0	3.3	17.1	0	0	0.00	<0.5	<0.5	0.00	1001	dry	1.00	18	AG
WS204	17-Sep-19	0.0	0.0	2.6	16.9	0	0	0.00	<0.5	<0.5	0.00	1019	dry	1.00	17	AG
WS204	15-Oct-19	0.0	0.0	3.2	14.4	0	0	0.01	<0.5	<0.5	0.00	979	dry	1.00	14	AG
WS204	05-Nov-19	0.0	0.0	2.3	14.7	0	0	0.02	<0.5	<0.5	0.00	988	dry	1.00	9	AG
WS204	18-Nov-19	0.0	0.0	1.9	16.0	0	0	0.00	<0.5	<0.5	0.00	996	dry	1.00	5	AG
WS205	20-Aug-19	0.0	0.0	1.2	15.0	0	0	0.00	<0.5	<0.5	-0.13	1013	dry	1.20	19	AG
WS205	28-Aug-19	0.0	0.0	0.1	20.5	0	0	0.00	<0.5	<0.5	0.00	1002	dry	1.20	18	AG
WS205	17-Sep-19	0.0	0.0	1.8	17.1	0	0	0.00	<0.5	<0.5	0.02	1019	dry	1.20	17	AG
WS205	15-Oct-19	0.0	0.0	2.6	15.2	0	0	0.00	<0.5	<0.5	0.00	979	dry	1.20	14	AG
WS205	05-Nov-19	0.0	0.0	2.0	12.2	0	0	0.02	<0.5	<0.5	0.00	989	0.9	1.20	9	AG
WS205	18-Nov-19	0.0	0.0	1.6	13.0	0	0	0.00	<0.5	<0.5	0.00	996	trace	1.20	5	AG

APPENDIX D



General Notes

1. The copyright of this report and other plans and documents prepared by Ground Investigation and Piling Limited are owned by them. No such report plan or document may be produced, published or adapted without their written consent. Copies of this report may, however, be made and distributed by the Client as an expedient in dealing with matters related to its commission.
2. This report is provided for sole use by the Client and is confidential to the Client and the Client's professional advisors. No responsibility whatsoever for the contents of the report will be accepted to any other person other than the Client.
3. Professional Indemnity Insurance covering any work, reports or opinion expressed by GIP Limited or any data created in its commission will not engage until all fees are paid.
4. The report and/or opinion will be prepared for the specific purpose stated in the document and in relation to the nature and extent of proposals made available to us at the time of your enquiry. The recommendations should not be used for other schemes on or adjacent to the site without further reference to Ground Investigation and Piling Limited.
5. Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by GIP Ltd for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested. We cannot be held liable for any incorrect information supplied to us.
6. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. GIP Ltd are unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.
7. We are confident that the conclusions drawn from the findings of this investigation and desk study are appropriate for the proposed development. However, we cannot guarantee that they would be accepted by regulatory authorities without question. It is recommended that the reports are submitted and approval gained from such bodies, prior to the undertaking of detailed design, construction work or other irreversible processes.
8. The report will be based on the ground conditions encountered in the exploratory holes together with results of field and laboratory testing in the context of the proposed development. Conditions between exploratory holes have been interpolated, however soils and rock conditions are highly variable and may differ from our interpolation. There may be conditions, appertaining to the site, which may not be revealed by the investigation, and which may not be taken into account in the report.
9. The intrusive environmental site investigation aspects of the Services are limited sampling of the site at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on-site. In addition, chemical analysis was carried out for a limited number of parameters as stipulated in the quotation or contract between the client and GIP Ltd [based on an understanding of the available operational and historical information] and it should not be inferred that other chemical species are not present.
10. Methods of construction and/or design other than those proposed by the designers or referred to in the report may require consideration during the evolution of the proposals and further assessment of the geotechnical data would be required to provide discussion and recommendation appropriate to these methods.
11. The accuracy of the results reported will depend upon the technique of measurement, investigation and test used and these values should not be regarded necessarily as characteristic of the strata as a whole. Where such measurements are critical, the technique of the investigation will need to be reviewed and supplementary investigation undertaken in accordance with the advice of the company where necessary.
12. Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes, or on possible presence of a feature based on either visual, verbal, written, cartographical, photographic or published evidence, this will be for guidance only and no liability can be accepted for its accuracy.
13. Ground conditions should be monitored during the construction of the works and the recommendations of the report re-evaluated on the light of these data by the supervising geotechnical engineers.

14. Any comments on groundwater conditions will be based on observations made at the time of the investigation, unless specifically stated otherwise. It should be noted, however, that the observations are subject to the method and speed of the boring, drilling or excavation and that groundwater levels will vary due to seasonal or other effects. This may have implications on other recommendations, including foundations and excavations.
15. Unless specifically stated, the investigation will not take into account possible effects of mineral extraction, solution features (e.g. in chalk or limestone) and geological faulting.
16. The economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to geotechnical considerations hence its evaluation will be outside the scope of the report.
17. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on-site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.