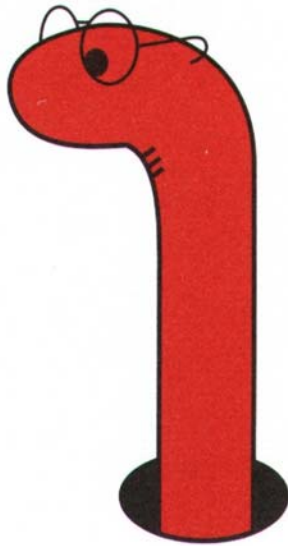


Electronic Report



WORMS EYE

**52 Bank Parade
Burnley
BB11 1TS
Phone
01282 414649 / 458410**

Our Ref: New Wellington Street/BB2 4PJ/2017
Date: 19 January 2018

Michael Harrison
Lea Hough Chartered Engineer
Blakewater House
Phoenix Business Park
Blakewater Road
Blackburn
BB1 5RW

Tel: 01254 260196
Email: michael.harrison@leahough.co.uk

HERON FOODS, NEW WELLINGTON STREET, BLACKBURN, BB2 4PJ

We enclose an Intrusive Report, which is in many ways an interim. Further tests are required as follows:

Landfill Gas

Currently gas levels are low but we are required to test for 3 months.

Asbestos Percentage

Asbestos has been found, further test are underway to check on the percentage in the soil. This will help to determine the risk from asbestos and to see if the soil would be classed as hazardous waste.

Concerning asbestos, if the landscaped margins were removed, this would ease the asbestos problem.

Leachate Tests

Further test are underway to check that soil contamination will not leach into the culvert. Your culvert survey will be useful to us.

Once the culvert has been accurately positioned we could carry out an extra borehole to check ground by it (likely to be deeper made ground).

Yours faithfully
on behalf of Worms Eye Ltd

David Lord
BSc (Hons)
FGS, MIEEnvSc, AIEMA

Our Ref: New Wellington Street/BB2 4PJ/2017
Date: 22 January 2018

Michael Harrison
Lea Hough Chartered Engineer
Blakewater House
Phoenix Business Park
Blakewater Road
Blackburn
BB1 5RW

Tel: 01254 260196
Email: michael.harrison@leahough.co.uk

HERON FOODS, NEW WELLINGTON STREET, BLACKBURN, BB2 4PJ
INTRUSIVE REPORT

INTRODUCTION

A commercial development is proposed. Following a Preliminary Risk Assessment (PRA 10/11/17) instructions were to carry out boreholes, tests and landfill gas testing to investigate potential geotechnical, contamination and landfill gas issues highlighted in the PRA.

SITE DESCRIPTION

The site is an approximately rectangular shape plot, about 60 by 50 metres located to the southwest of New Wellington Street in Blackburn and at OS Grid Reference 366978, 426315. The site comprised an unused plot with a hard surface, mainly concrete. Along the north boundary there was a bund, where household fly tipping was seen. Along the west and north of the site boundary was rubble that appeared to be fly tipped.

Suspected asbestos cement fragments were seen among the rubble on the north of the site.

The west boundary is a wall holding up Queen's Terrace (a highway). The wall retaining about 4 metres height in the southwest corner and 0.5 metres in the northwest corner.

Just beyond the northeast corner of the site was a small electrical sub-station off-site. To the south was a hard surfaced car/lorry park, with the canal at a higher level a further 60 metres to the southwest.

The area slopes down to the northeast.

PROPOSED DEVELOPMENT

It is proposed to build a food store about 20 x 30 metres towards the southwest of the site. To the northwest will be an associated carpark and small landscaped areas. The east of the site will be a new road, providing access to the adjacent site to the south.

PRELIMINARY RISK ASSESSMENT

Worms Eye carried out a PRA dated 10/11/17, the salient points were:

Contamination

The site was previously occupied by a church (west), houses (northeast) and engineering works (southeast/east). A filled stream valley, running southeast to northwest, is also suspected. Whilst the church and houses are not expected to be a source of contaminants it is likely that made ground (especially demolition rubble) will be present in those areas, especially if they had basements, and in the suspected filled valley

Whilst made ground and/or demolition rubble is expected across the site, and can contain raised levels of contaminants, the levels are not expected to exceed commercial thresholds.

The former engineering works on the east/southeast is a possible source of higher levels of contaminants which may exceed commercial thresholds. Although there have been several industrial sites in the surrounding area the closest to the site were a coal yard and cotton mill. These would not be different to, or at higher levels than, those expected on-site.

The proposed development will be a food store, with carpark and small landscaping areas. Potential pollutant linkages are considered to be:

- Direct contact with soil.
- Ingestion of soil.
- Inhalation and ingestion of dust.
- Sulphate attack on buried concrete.
- Inhalation of vapours.
- Contaminants entering drinking water pipes.

Contaminants are not expected to exceed commercial thresholds over a wide area. Some hot-spots may occur and only a low risk to end-users is anticipated.

PRA Re-Cap Continued

Controlled Waters

There is an underlying Secondary A aquifer beneath low permeability clay.

The River Darwen is 540 metres northeast.

There is a culverted water course running southeast – northwest under the site (see United Utility plan) which most probably discharges to the River Darwen. This culvert appears to take flood overflow from the canal.

Although the canal is 61 metres southwest, this is above the level of the site and therefore not a receptor.

The small landscaped areas will allow very limited opportunity for rainwater to pass through the surface soils and leach out contaminants that may migrate to the underlying aquifer. However, the almost fully hard surfaced development, and underlying clay, will impede the migration of water and only a low risk is expected to groundwater.

A low risk to controlled water is expected and no further action is considered necessary at this stage. This may need to be reviewed following the soil tests.

Landfill Gas/Ground Gas

There are no landfill sites within 250 metres.

There are several filled features within 250 metres of the site and likely made ground on-site. These are potential sources of ground gases, which could migrate to and present a risk to the development. Taking into account their size and age of filling only a low gas generation potential is thought likely.

Bearing in mind the size of the filled areas, distance from the site, and underlying geology, it is considered that there is likely to be a low risk to the development.

A gas testing programme is required.

Radon

Radon protection measures are not required.

PRA Re-Cap Continued

Coal Mining

A geological fault means the site is probably clear of any high risk zones. If the fault creeps onto the southwest corner, here the shallow seams are sufficiently deep not to pose a significant risk, and no further action is required.

Flooding

The EA maps indicate that the area is clear of flooding from rivers and no further action is required.

The maps suggest that the site could be subject to surface water flooding. These maps are fairly crude and it is beyond the scope of this report to provide a comprehensive flood risk assessment.

There is a culvert present under the site.

Foundations

It is expected that made ground will be present, with underlying clay. This can provide variable conditions for foundations and a range of options may need to be considered, including reinforced concrete raft to a piled foundation.

If foundations are to be on clay the shrinkage potential of the clay needs to be determined, to ensure foundations are below the potential effects of tree root shrinkage.

Industry Profile

The site was formerly occupied by a church, houses and engineers, made ground is also expected.

Industry	Possible Contaminants
Potential Contaminants	Metals: e.g. copper, zinc, chromium, nickel, lead, cadmium, arsenic, Inorganic compounds: cyanide, sulphates Phenols VOCs Mineral oils, fuel oils (TPHs) Acids Asbestos PCBs General hydrocarbons (PAHs)

PRA Re-Cap Continued

Pollutant Linkages

The potential pollutant linkages revealed by the PRA as requiring further investigation were:

Source	Receptors	Pathway	Potential/Likely Pollutant Linkage
Asbestos	Construction workers	Inhalation	Yes
	End-users	Inhalation	Yes
Inorganic contaminants	Construction workers	Short-term direct contact, inhalation of dust, ingestion	Yes
	End-users	Direct contact, ingestion, inhalation of dust	Yes
	Groundwater	Leaching towards	No
	River/stream	Leaching towards	No
Sulphate	Building fabric	Concrete directly in contact with soil	Yes
Hydrocarbons	Construction workers	Short-term direct contact, inhalation of dust, ingestion	Yes
	End-users	Direct contact, ingestion, inhalation of dust	Yes
	Service pipes	Seeping into drinking water pipes	Yes
	Groundwater	Migrating towards	Unlikely
	River/stream	Migrating/leaching towards	No
Hydrocarbon vapours	Construction workers	Short-term inhalation	Unlikely
	End-users	Inhalation of vapours indoors and outdoors	Unlikely
Landfill gas	End-users - in buildings	Seeping into buildings, explosion, asphyxiation	Yes
Radon	End-users - in buildings	Seeping into buildings	No

End of PRA Re-Cap

PRA UPDATE – HISTORICAL BOREHOLES

Various historical boreholes were drilled in the surrounding area (copyright NERC/BGS) and they showed the following:

Location	Depth To Rockhead (m)
200 – 300 m east and northeast	>22
150 metres south	>9
250 metres north and northwest	>10

Furthermore, the geological map shows no drift free areas within a kilometre of the site. All this suggesting rockhead is fairly deep.

The boreholes generally showed glacial clay improving in strength with depth, with gravel and cobble bands.

LEGAL/COPYRIGHT

Material included in this report from Ordnance Survey (Licence No. AL100031635), Landmark, Environment Agency, the Coal Authority and others (if any) may be copyright and the usual restrictions apply. This report can only be relied upon if the invoice has been paid promptly and in full. This report may be signed by an individual, but only on behalf of Worms Eye Limited.

GROUND INVESTIGATIONS

A series of eight boreholes and three dynamic probes were drilled around the site. Details are given on the location plan, borehole logs and dynamic probe logs enclosed with this report.

The ground levels shown on the borehole logs are interoperated from the client's topographic survey and are thought probably to Ordnance Datum.

The following table approximates to a section through the proposed building looking north:

	Southwest			Northeast
Findings	BH3	BH1/PrA	BH2/PrB	BH4
Made ground	0 – 1.9*	0 – 1.6	0 – 1.8	0 – 2.4
Clay (very soft)		1.6 – 3.0		
Clay (medium strength)		3.0 – 3.8	1.8 – 4.0	2. – 4.0+
Clay (high strength)		3.8 – 5.0+		
Probe (high strength)		3.8 – 5.5	3.0 – 10+	
Water	Dry	1.4	2.2	1.9

* Refusal

Boreholes 5, 6, 7 & 8 were drilled to one metre deep, primarily to collect samples for contamination testing.

CONTAMINATION TESTING

Eighteen samples (eight shallow and ten deeper) were tested for a range of contaminants indicated by the PRA. The results are included in table form with this report. Abbreviations and acronyms for chemical compounds are given after the appendix list.

CONTAMINATION COMPARISONS - INITIAL SCREENING

The maximum contamination values have been compared with commercial soil guideline values provided by CLEA. Where these are not available, values are based on the CLEA derived LQM/CIEH Generic Assessment Criteria. In accordance with guidance provided by the AGS, threshold values from other sources have been used for screening purposes. This information has been brought together on the Comparison Table included with this report.

Asbestos

Chrysotile loose fibres were found in BH3, BH5 and BH6 at 0.3 – 0.4 metres, with amosite loose fibres at 0.3 metres in BH3.

In eight tests of madeground three showed asbestos.

Detailed tests are underway to determine the percentage of asbestos.

Inorganics (metals etc.)

Levels of inorganic contaminants are low and below commercial thresholds.

Sulphate

Levels of water soluble sulphates are low and below the BRE action level for buried concrete.

Hydrocarbons

Levels of phenols, TPHs and PAHs are all below their respective commercial thresholds.

Drinking Water Pipes

Comparing test results against trigger levels for drinking water pipes shows levels of contaminants are below the threshold.

LANDFILL GAS TESTING

Boreholes 1, 2 and 3 were converted to gas monitoring points as follows:

	BH1 (m)	BH2 (m)	BH3 (m)
Plain pipe	0 - 1.0	0 - 1.0	0 - 1.0
Base of slotted pipe	3.6	3.8	1.8
Response zone	1 - 3.6 (2.6m)	1 - 3.8 (2.8m)	1 - 1.8 (0.8m)

To date six landfill gas tests have been carried out on two occasions. Worst-case values are:

Gas		Site Value	Limit of detection
Methane	%	0.0	0.1
Oxygen	%	14.8	0.1
Carbon dioxide	%	2.4	0.1
Flow rate	l/hr	0.0	0.1

Assessing Risks

The method recommended in CIRIA Report **C665 (2007)** "Assessing risks posed by hazardous ground gases to building, Table 8.7", is used to classify the site.

The gas screening values (GSV) are calculated from the worst-case values as follows:

	Site Value	Characteristic Situation 1		Characteristic Situation 2	
		Threshold	Pass /Fail	Threshold	Pass /Fail
Outflow (l/hr)	<0.1	-	-	70	P
Methane - Total (%)	<0.1	1	P	-	P
Methane GSV (l/hr)	<0.001	0.07	P	0.7	P
CO ₂ -Total (%)	2.4	5	P	-	P
CO ₂ GSV (l/hr)	<0.0024	0.07	P	0.7	P

Gas screening value = gas concentration (%) multiplied by outflow (l/hr)

These conditions currently classify the site Situation 1.

DISCUSSION

Contamination

Contamination tests show levels of contaminants (other than asbestos) to be below commercial thresholds. There are no risks from heavy metals, inorganic contaminants or hydrocarbons.

Loose asbestos fibres were seen in BHs 3, 5 and 6 at 0.3 – 0.4 metres. BHs 5 and 6 are located in a proposed landscape area and the asbestos fibres pose a risk to end-users. The three boreholes also cover a wide area of the site and fibres may be present elsewhere. With this in mind it would be sensible to carry out remediation to the whole landscape areas.

The loose asbestos fibres are also considered to pose a risk to construction workers.

Water Soluble Sulphate levels are low and sulphate resistant concrete is not required.

The tests results suggest, subject to Water Authority approval, the site is suitable for normal PE water pipes. However, bearing in mind the presence of asbestos fibres, these should be laid in trenches with clean imported, backfill material

Levels of volatile hydrocarbons are below the thresholds and there is no risk from hydrocarbon vapours.

Controlled Waters

Regarding leaching to the aquifer.

- The levels of contaminants are not very high.
- Made ground in exposed areas will be taken away or covered, removing or considerably reducing the opportunity for leaching.
- Clay underlying the site will be an aquitard.
- The development is mostly hard surfaced; this will minimise any water soaking into the ground and leaching out contaminants.

Bearing in mind all of the above factors, it is considered that risks to groundwater are very low.

Regarding surface water, the canal is above the level of the site and the nearest river over 500 metres away, these are not at risk. However, a culvert passes beneath the site and its condition is not known. The risk from this will depend on its construction and quality. A survey is recommended.

Contamination leachate tests are underway to further check risks.

Landfill Gas/Ground Gas

The tests currently show a low gas levels, corresponding to a characteristic Situation 1.

Ground Conditions

Up to mid Victorian times there was a stream (presumably in a valley) running southeast to northwest across the site. Borehole 4 was close to that route and this may be the cause of the slightly deeper made ground.

BH3 in the southwest corner refused at 1.9 metres still in made ground. It could have struck a foundation of the Methodist Church demolished circa 1950s.

The ground conditions are variable, mainly granular madeground 1.6 – 2.4 metres deep, overlying reasonable gravelly clay, proved to 4 - 5 metres deep. The exception to this was BH1 where very soft clay was seen below the madeground from 1.6 to 3.0 metres deep.

Dynamic probes went deeper and showed higher strength ground, proved to 10 metres deep.

Probe A refused at 5.5 metres in natural ground, but this is thought to be a boulder rather than rock.

Historical boreholes suggest that rock is more than 10 – 20 metres deep.

CONCEPTUAL MODEL

Contamination issues should be considered using the source-path-receptor concept assisted by the conceptual model diagram included at the end of the report.

Source	Receptors	Pathway	Complete Pollutant Linkage
Asbestos (BH3, BH5, BH6)	Construction workers	Inhalation	Yes *
	End-users	Inhalation	Yes
Inorganic contaminants (below threshold)	Construction workers	Short-term direct contact, inhalation of dust, ingestion	Yes
	End-users	Direct contact, ingestion, inhalation of dust	No
	Groundwater	Leaching towards	No
	Culvert	Leaching towards	Unlikely
Sulphate (low)	Building fabric	Concrete directly in contact with soil	No
Hydrocarbons (below threshold)	Construction workers	Short-term direct contact, inhalation of dust, ingestion	Yes
	End-users	Direct contact, ingestion, inhalation of dust	No
	Service pipes	Seeping into drinking water pipes	No
	Groundwater	Migrating towards	No
	Culvert	Migrating/leaching towards	Unlikely *
Hydrocarbon vapours (low)	Construction workers	Short-term inhalation	No
	End-users	Inhalation of vapours indoors and outdoors	No
Landfill gas	End-users - in buildings	Seeping into buildings, explosion, asphyxiation	Unlikely *
Radon	End-users - in buildings	Seeping into buildings	No

* await further tests

BREAKING PATHWAYS

Construction Workers

Normal precautions for an urban renewal type project are required. These would include the use of gloves and the provision of washing facilities to avoid ingestion of contaminants.

Landscaped Areas

Contamination by asbestos was found to be present in the four of the eight tests of made ground, further testing is underway. One method would be to remove the source by excavating the contaminated material and disposing off site. This would require:

- Excavate made ground to 0.6 metres in all landscaped areas.
- Backfill with imported material, tested to confirm its suitability for use on-site.

Another method is to use a cover layer. A traditional cover layer over the whole site may be uneconomical and unfeasible. However, the site is predominantly hard-surfaced and an alternative would be to extend the hardcover over the landscaped areas and construct raised beds for landscaping.

Service Pipes

To avoid risks to maintenance workers from asbestos, water pipes to be laid in trenches with a clean, imported backfill cover.

OPINION

Watercourse/Culvert

There is a culvert shown on the United Utilities plan which runs close to the northeast corner of the building. This needs to be accurately surveyed and its condition noted. It may need to be diverted.

Contaminated Soils

Test results show loose asbestos fibres in three locations these posing a risk to end-users from the small landscaped areas and construction workers.

Construction Workers

Appropriate health and safety precaution are required for construction workers and a detailed management plan to prevent risk to off-site properties and local residents from loose asbestos fibres.

Contamination tests show levels below thresholds appropriate for the development. It is considered these suggest no risk to end-users and no further action is required.

Sulphate resistant concrete is not required.

There are no risks from hydrocarbon vapours.

Subject to Water Authority approved the site is suitable for the use of normal PE water pipes, to be laid in trenches with clean, imported, backfill.

Controlled Waters

Risks to groundwater are considered very low and no further action is required.

There is a potential risk to the culvert. Leachate tests are underway and a survey of the culvert is recommended

Gas Testing

Testing is in the early stages and shows low gas levels.

Testing continues and the results will be forwarded in a supplementary report. This may show a change in the current situation, and may worsen as further tests are carried out.

Foundations

The site generally comprised 1.6 – 2.7 metres of mainly granular made ground and should be suitable for a reinforced concrete raft construction, on a rolled compacted formation and hardcore, using an allowable bearing capacity of 80kn/m².

However, in the northwest corner there is an area of very low strength clay under the made ground. Options here could be to excavate out the soft clay and replace with rolled and compacted hardcore.

Other possibilities may be to reduce the allowable bearing capacity to that area and incorporate 'Tensor' type geogrid within the hardcore layer.

Yours faithfully
on behalf of Worms Eye Ltd

David Lord
BSc (Hons)
FGS, MIEEnvSc, AIEMA

HERON FOODS, NEW WELLINGTON STREET, BLACKBURN, BB2 4PJ

List of Appendices – Intrusive Report

List of Acronyms

Existing Site Plan

Proposed Site Plan Showing Borehole Locations

Topographic Plan Showing Outline Proposals

United Utilities Sewer/Culvert Plan

Borehole Logs

Dynamic Probe Logs

Contamination Test Results - Soil

Contamination Comparison Table - Soil

Landfill Gas Tests

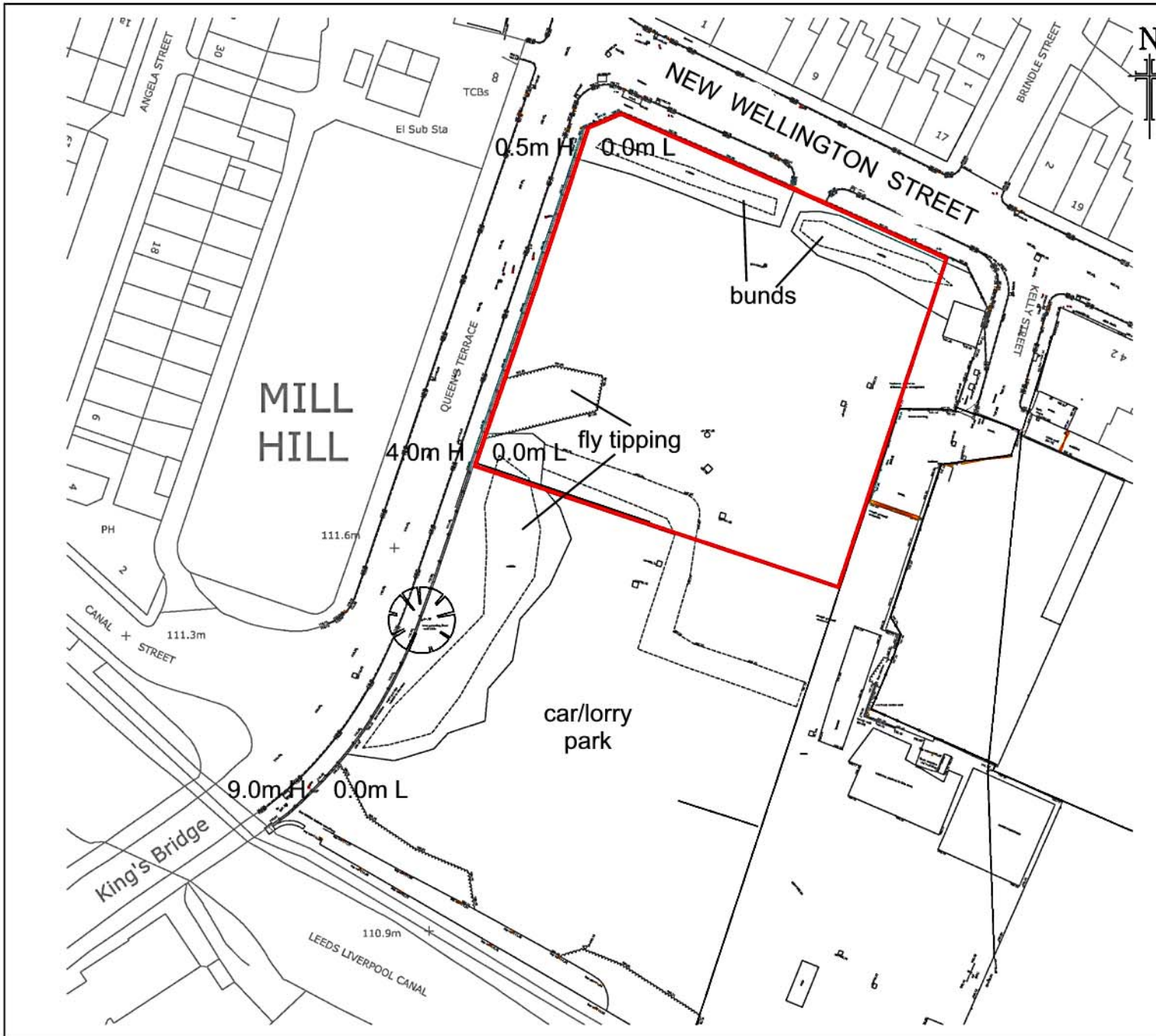
Conceptual Model

CONTAMINATION TEST UNITS

Conversion factor	Name	Symbol	Numerical Value	Alternative description	Commonly used for:
	per cent	%	1 in 100 (10 ²)		total sulphur, hazardous waste
% x10	parts per thousand	‰	1 in 1000 (10 ³)	g/l (grams per litre)	water soluble sulphate test
‰ x 1,000	parts per million	ppm	1 in 1,000,000 (10 ⁶)	mg/kg (milligrams per kilogram)	most soil tests
				mg/l (milligrams per litre)	water tests
ppm x 1,000	parts per billion	ppb	1 in 1,000,000,000 (10 ⁹)	µg/kg (micrograms per kilogram)	PAH soil tests
				µg/l (micrograms per litre)	water/leachate tests
ppb x 1,000	parts per trillion	ppt	1 in 1,000,000,000,000 (10 ¹²)	ng/kg (nanograms per kilogram)	PAH soil tests
				ng/l (nanograms per litre)	water/leachate tests

ABBREVIATIONS

<u>Chemical</u>	BAP	Benzo(a)pyrene	
	BTEX	Benzene, toluene, ethylbenzene, xylene	
	DAHA	Dibenzo(ah)anthracene	
	MTBE	Methyl tertiary-butyl ether (additive to petrol)	
	EPH	Extractable petroleum hydrocarbons (formerly diesel range organics – DRO)	
	NFD	No fibres detected (asbestos test)	
	PAH	Polycyclic aromatic hydrocarbons	
	PCB	Polychlorinated biphenyls	
	PCE	Perchloroethylene or tetrachloroethylene	
	PID	Photo ionisation detector (screen for VOC)	
	PRO/GRO	Petrol range organics/gasoline range organics	
	SVOC	Semi-volatile organic compounds	
	TCE	Trichloroethylene	
	TPH	Total petroleum hydrocarbons	
	VOC	Volatile organic compounds	
	<u>Other</u>	AGS	Association of Geotechnical Specialists
		BGS	British Geological Survey
		BRE	Building Research Establishment
		CBR	California Bearing Ratio
		CIEH	Chartered Institute of Environmental Health
CIRIA		Construction Industry Research and Information Association	
CLEA		Contaminated Land Exposure Assessment (Environment Agency/DEFRA)	
CLR 8		Contaminated Land Research Report 8 (Environment Agency/DEFRA)	
DWQ		Drinking water quality	
EA		Environment Agency	
EQS		Environmental quality standards (for rivers etc.)	
ICRCL		Inter-departmental Commission for the Reclamation of Contaminated Land	
LQM		Land Quality Management Ltd (Land and Environmental Consultancy).	
NHBC		National House Builders Council	
SGV	Soil Guideline Values		
SPT	Standard penetration test		
TPHWG	TPH Working Group		



NOTES

The copyright of this drawing is held by Lea Hough & Co Chartered Surveyors LLP.

Do not scale from this drawing. All dimensions are approximate and must be checked and verified by the contractor prior to works commencing on site.

REVISIONS			
REV	DESCRIPTION	DATE	AMENDED

LeaHough
 CHARTERED SURVEYORS
 Survey Valuation Design Planning Sales

Blakewater House
 Phoenix Business Park
 Blakewater Road
 Blackburn
 Lancashire
 BB1 5RW
 Tel: 01254 260196

8 Eaton Avenue
 Matrix Office Park
 Buckshaw Village
 Preston
 Lancashire
 PR7 7NA
 Tel: 01772 458866
 Email: info@leahough.co.uk
 Web: www.leahough.co.uk

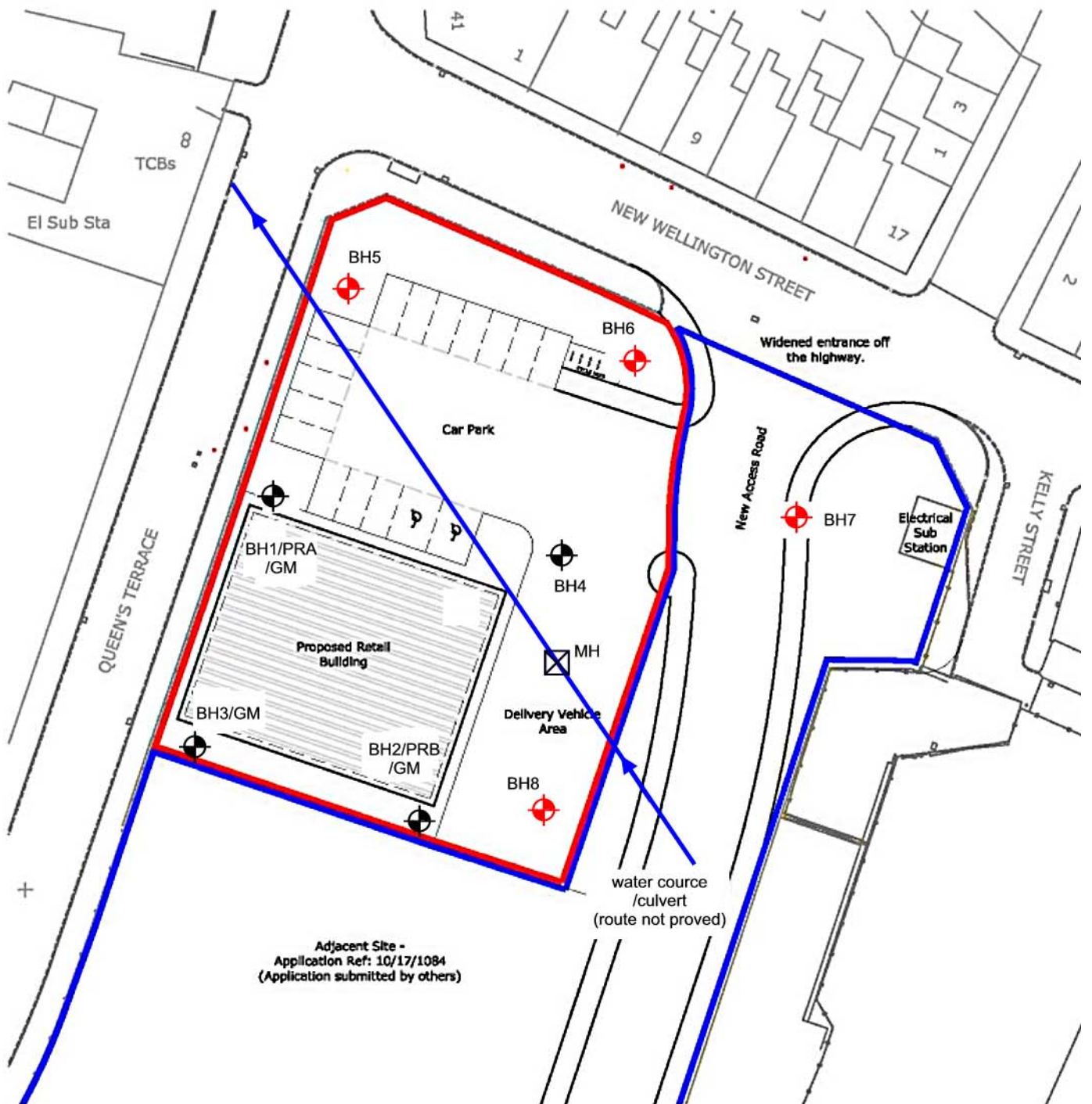
CLIENT:
 IGP Investment Ltd
 12 Portsdown Mews
 London
 NW11 7HD

PROJECT ADDRESS:
 Former Pioneer Mill Site,
 New Wellington St,
 Blackburn,
 BB2 4DY

PROJECT TITLE:
 Erection of Retail Unit

DRAWING TITLE:
 Proposed Site Plan

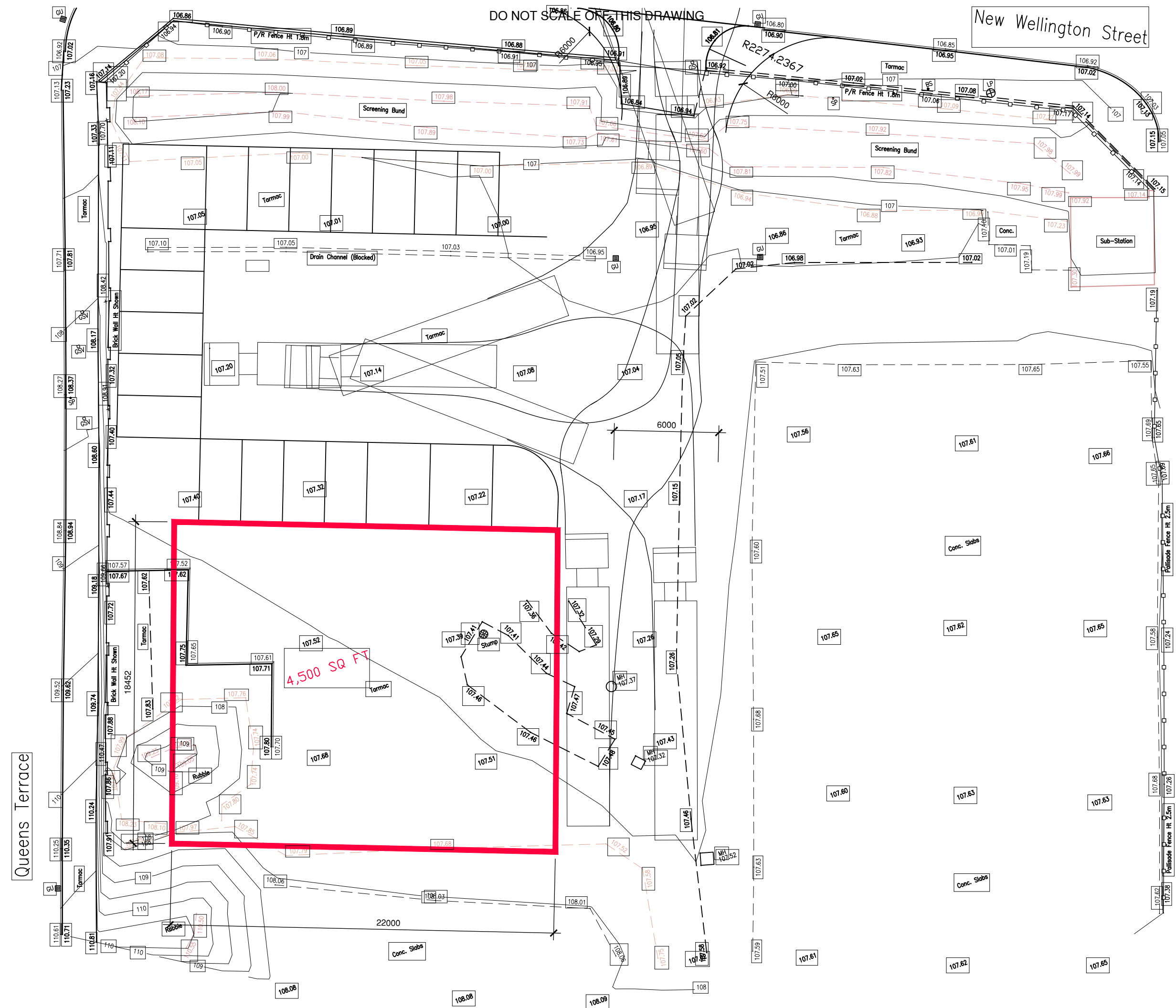
PAPER SIZE: A3	DRAWING NUMBER: BS.17-028.10	REV: -
SCALE: 1:500	DATE: September 2017	DRAWN BY: AF



New Wellington Street, Blackburn. BB2 4PJ

 Borehole
  1m Boreholes

PR = Dynamic Probe
 GM = Gas Monitor



Topographic plan



Project
**MILL HILL PROPOSAL
 Blackburn**

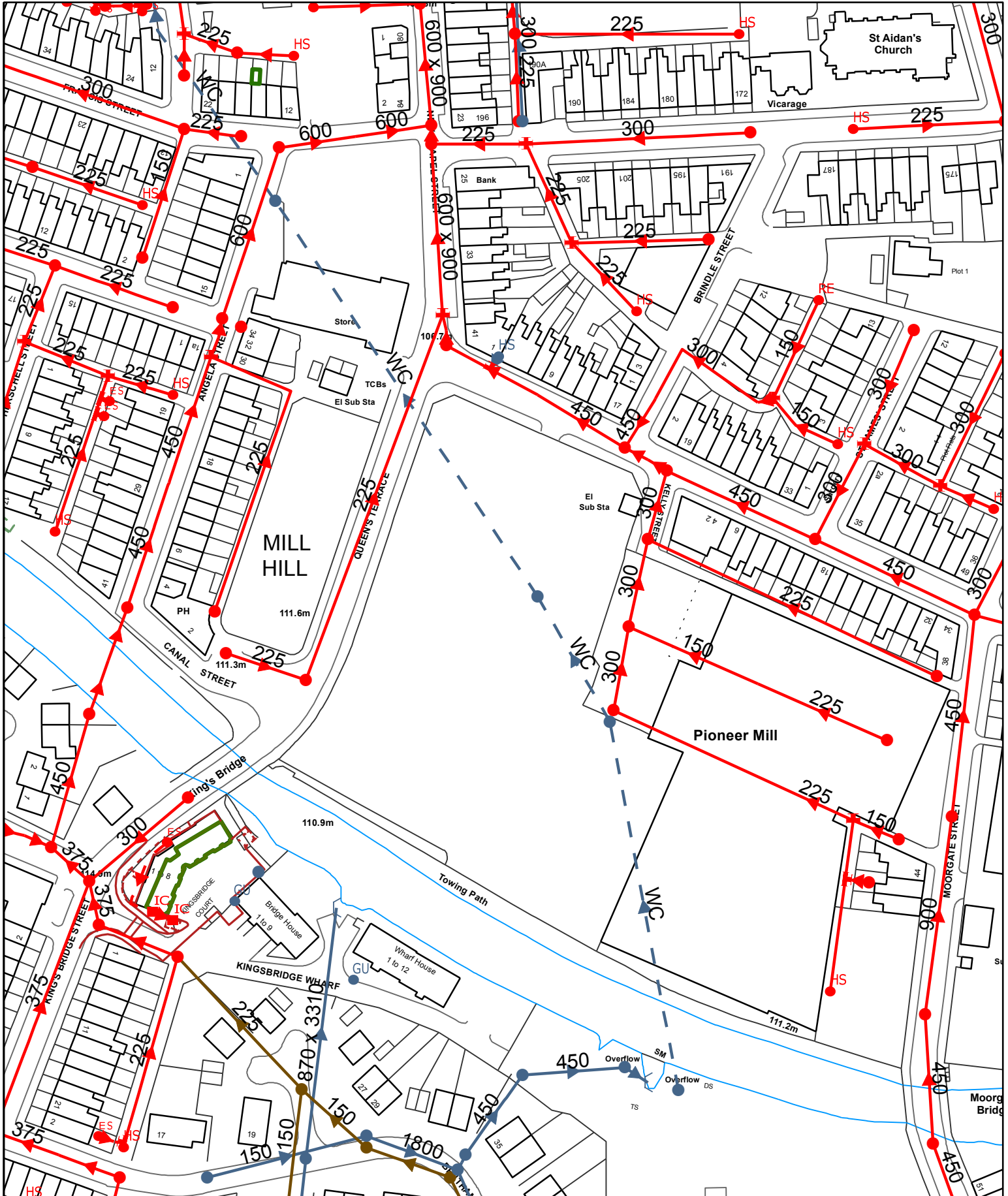
Title
PROPOSED SITE LAYOUT

Scale	1:200@A3	Date	03.10.16
Drawn	PS	Checked	

Drawing Number
MILL-A-2100

Heron Foods Limited
 Jackson Way
 Melton
 East Yorkshire
 HU14 3HJ
 t. 0845 603 7300
 f. 01482 632520

This drawing is the copyright of Heron Foods Limited. It cannot be reproduced without permission.



Date: 15/11/2017

Extract from Map of Public Sewers

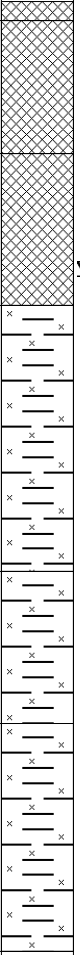


Printed By:
Property Searches

PLOT ADJ 7, TEWKESBURY STREET, BLACKBURN, BB2 4P

The position of this underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. The actual positions may be different from those shown on the plan and private pipes, sewers or drains may not be recorded. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown. Crown copyright and database rights [2016] Ordnance Survey 100022432.

United Utilities Water Limited 2014 The plan is based on the Ordnance Survey Map with the sanction of Controller of H.M. Stationery Office. Crown and Utilities copyrights are reserved. Unauthorised reproduction will infringe these copyrights.

WORMS EYE GEOTECHNICAL		Cannon House, 52 Bank Parade Burnley, Lancashire, BB11 1TS			Site New Wellington Street, Blackburn		Borehole Number 1		
Excavation Method Drive-in Window Sampler		Dimensions		Ground Level (TmOD) 107.40		Client Lea Hough		Job Number BB2 4PJ	
		Location Near mid-west boundary		Dates 13/12/2017- 14/12/2017		Engineer DL		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (TmOD)	Depth (m) (Thickness)	Description	Legend	Water	
1.00	PT		Water strike(1) at 1.45m. PEN = <20 KN/m2	107.30	(0.10) 0.10	Black tarmac and gravel (MADE GROUND)		▽ ₁	
						Grey slightly sandy ash, gravel and brick (MADE GROUND)			
					(0.70)				
				106.60	0.80	Ash, brick and clay (MADE GROUND)			
					(0.80)				
				105.80	1.60	Very soft light brown andy, silty (very low strength) CLAY			
	(1.40)								
				104.40	3.00	Brownish grey silty (high strength) CLAY with rare gravel			
					(0.80)				
				103.60	3.80	Grey silty (high strength) CLAY with rare gravel			
					(1.20)				
				102.40	5.00	Complete at 5.00m			

Remarks
Water at 1.45m.
See Probe A.
Bands of ash and brick in made ground.

Scale (approx)
1:40

Logged By
EL/SG

Figure No.
BB2 4PJ.1

WORMS EYE GEOTECHNICAL		Cannon House, 52 Bank Parade Burnley, Lancashire, BB11 1TS			Site New Wellington Street, Blackburn		Borehole Number 2			
Excavation Method Drive-in Window Sampler		Dimensions		Ground Level (TmOD) 107.50		Client Lea Hough		Job Number BB2 4PJ		
		Location Towards southeast corner		Dates 13/12/2017- 14/12/2017		Engineer DL		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (TmOD)	Depth (m) (Thickness)	Description	Legend	Water		
				107.45	(0.05) 0.05	Grey concrete				
					(1.25)	Brown slightly sandy silty clay with gravel and brick fragments (MADE GROUND)				
				106.20	1.30	Gravelly clay (MADE GROUND)				
					(0.50)					
				105.70	1.80	Brown (medium strength) silty CLAY				
			Water strike(1) at 2.20m.		(0.70)				▽1	
				105.00	2.50	Greyish brown (medium/high strength) gravelly CLAY				
					(1.50)					
				103.50	4.00	Complete at 4.00m				
Remarks Wet at 2.2m See Probe B Poor sample returns							Scale (approx) 1:40	Logged By EL/SG		
							Figure No. BB2 4PJ.2			

WORMS EYE GEOTECHNICAL

Cannon House, 52 Bank Parade
Burnley, Lancashire, BB11 1TS

Site
New Wellington Street, Blackburn

Borehole
Number
3

Excavation Method Drive-in Window Sampler	Dimensions	Ground Level (TmOD) 107.60	Client Lea Hough	Job Number BB2 4PJ
	Location Near southwest corner	Dates 13/12/2017- 14/12/2017	Engineer DL	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (TmOD)	Depth (m) (Thickness)	Description	Legend	Water
				107.50	(0.10)	Dark brown topsoil with leaves and roots (MADE GROUND)		
				107.20	(0.30)	Brown sand and gravel with roots and plastic (MADE GROUND)		
				106.90	(0.30)	Grey sand, gravel, brick and concrete (MADE GROUND)		
				106.60	(0.30)	Concrete and large brick piece (MADE GROUND)		
				106.50	1.00	Membrane		
				106.50	(0.10)	Concrete, gravel, brick and plastic fragment (MADE GROUND)		
					(0.80)			
				105.70	1.90	Refusal at 1.90m		

Remarks Borehole refused at 1.9m in made ground, Dry	Scale (approx)	Logged By
	1:40	EL/SG
	Figure No. BB2 4PJ.3	

WORMS EYE GEOTECHNICAL

Cannon House, 52 Bank Parade
Burnley, Lancashire, BB11 1TS

Site
New Wellington Street, Blackburn

Borehole
Number
4



Excavation Method Drive-in Window Sampler	Dimensions	Ground Level (TmOD) 107.20	Client Lea Hough	Job Number BB2 4PJ
	Location Middle east side	Dates 13/12/2017- 14/12/2017	Engineer DL	Sheet 1/1


Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (TmOD)	Depth (m) (Thickness)	Description	Legend	Water
				107.05	0.15	Black tarmac with gravel (MADE GROUND)		
				106.90	0.15	Grey slightly sandy, ash and gravel (MADE GROUND)		
				106.75	0.30	Reddish brown sand (MADE GROUND)		
					0.45	Light grey sand and gravel with rare brick (MADE GROUND)		
				106.35	0.85	Brownish grey clay gravelly matrix with concrete and brick (MADE GROUND)		
				106.20	1.00	Brownish grey silty clay with gravel (MADE GROUND)		
					0.60			
				105.60	1.60	Brown clayey sand with gravel (possible made ground)		
					0.40			
				105.20	2.00	Brown silty clay with gravel (and brick?) (possible made ground)		
					0.40			
				104.80	2.40	Grey silty slightly gravelly CLAY		
					0.60			
				104.20	3.00	Brown silty slightly gravelly CLAY		
					0.40			
				103.80	3.40	Stiff grey gravelly CLAY		
					0.60			
				103.20	4.00	Complete at 4.00m		




Water strike(1) at 1.90m.






∇1

Remarks Wet at 1.9m	Scale (approx)	1:40	Logged By	EL/SG
	Figure No.	BB2 4PJ.4		

WORMS EYE GEOTECHNICAL		Cannon House, 52 Bank Parade Burnley, Lancashire, BB11 1TS			Site New Wellington Street, Blackburn		Borehole Number 5		
Excavation Method Drive-in Window Sampler		Dimensions		Ground Level (TmOD) 107.10		Client Lea Hough		Job Number BB2 4PJ	
		Location Near northwest corner of plot		Dates 13/12/2017- 14/12/2017		Engineer DL		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (TmOD)	Depth (m) (Thickness)	Description	Legend	Water	
				106.95	0.15	Grey sand and gravel (MADE GROUND)			
					0.15	Compact black/brown silty ash, gravel and brick (MADE GROUND)			
					(0.85)				
				106.10	1.00	Complete at 1.00m			
Remarks Terminated at 1.0m, Dry							Scale (approx) 1:40	Logged By EL/SG	
							Figure No. BB2 4PJ.5		

WORMS EYE GEOTECHNICAL		Cannon House, 52 Bank Parade Burnley, Lancashire, BB11 1TS			Site New Wellington Street, Blackburn		Borehole Number 6		
Excavation Method Drive-in Window Sampler		Dimensions		Ground Level (mOD) 107.00		Client Lea Hough		Job Number BB2 4PJ	
		Location Near northeast corner of plot.		Dates 13/12/2017- 14/12/2017		Engineer DL		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
				106.95	(0.05) 0.05	Grey tarmac and gravel (MADE GROUND)			
					(0.95)	Compact dark greyish brown silt with gravel, brick, ash and rare slate (MADE GROUND)			
				106.00	1.00	Complete at 1.00m			
Remarks Terminated at 1.0m, Dry								Scale (approx) 1:40	Logged By EL/SG
								Figure No. BB2 4PJ.6	

WORMS EYE GEOTECHNICAL		Cannon House, 52 Bank Parade Burnley, Lancashire, BB11 1TS			Site New Wellington Street, Blackburn		Borehole Number 7		
Excavation Method Drive-in Window Sampler		Dimensions		Ground Level (mOD) 107.60		Client Lea Hough		Job Number BB2 4PJ	
		Location At new access Road (northeast)		Dates 13/12/2017- 14/12/2017		Engineer DL		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
				107.55	(0.05)	Black tarmac (MADE GROUND)			
				107.30	(0.25)	Light brown sand and gravel (MADE GROUND)			
					(0.70)	Compact dark grey/black ash, gravel, brick, clay and sand (MADE GROUND)			
				106.60	1.00	Complete at 1.00m			
Remarks Terminatedr at 1.0m, Dry							Scale (approx) 1:40	Logged By EL/SG	
							Figure No. BB2 4PJ.7		

WORMS EYE GEOTECHNICAL		Cannon House, 52 Bank Parade Burnley, Lancashire, BB11 1TS			Site New Wellington Street, Blackburn		Borehole Number 8		
Excavation Method Drive-in Window Sampler		Dimensions		Ground Level (mOD) 107.40		Client Lea Hough		Job Number BB2 4PJ	
		Location Near southeast corner of plot		Dates 13/12/2017- 14/12/2017		Engineer DL		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
				107.25	(0.15)	Black tarmac with gravel (MADE GROUND)			
				107.10	(0.15)	Grey slightly sandy ash, gravel and shale (MADE GROUND)			
				106.95	(0.15)	Reddish brown sand (MADE GROUND)			
				106.60	(0.35)	Grey sand and gravel (MADE GROUND)			
				106.40	(0.20)	Compact brownish grey clayey gravelly matrix with concrete and brick (MADE GROUND)			
					1.00	Complete at 1.00m			
Remarks Terminated at 1.0m, Dry							Scale (approx) 1:40	Logged By EL/SG	Figure No. BB2 4PJ.8

**WORMS EYE LTD
DYNAMIC PROBE LOG**

Site: New Wellington Street, Blackburn. BB2 4PJ Probe: PRA

Location: Near mid-west boundary, by BH1

Date: 14th December 2017

Method: 63.5KG Weight with 750mm drop.

JSH

<u>Depth (m)</u>	<u>Blows/100mm</u>	<u>Blows/300mm (N value)</u>	<u>Diagram</u>	<u>Strength</u>
0	16		0 5 10 15 20 25 30 35 40 *****	
	10	32	*****	
	6		*****	
	6		*****	
0.5	6	20	*****	
	8		*****	
	5		*****	(made ground)
	5	15	*****	
	5		*****	
1	6		*****	
	6	13	*****	
	1		*	
	0			
1.5	0	1	*	
	1		*	
	0	1	*	
	0			
2	1	2	*	very low
	1		*	
	1		*	
	1	3	*	
	1		*	
2.5	1	4	*	
	2		**	
	2		**	
	3	8	***	
3	3		***	low
	2		**	
	3	8	***	
	3		***	
	4		****	
3.5	4	11	****	
	3		***	
	4		****	
3.9	3	11	***	medium
	4		****	

Continued

Dynamic Probe Log Continued

Probe: PRA

Site: New Wellington Street, Blackburn. BB2 4PJ

Depth (m)	Blows/ 100mm	Blows/ 300mm (N value)	Diagram	Strength
3.9	-----		0 5 10 15 20 25 30 35 40	
4	4		****	
	5	15	*****	
	6		*****	
	7		*****	
	7	21	*****	high
4.5	7		*****	
	16		*****	
	10	35	*****	
	9		*****	
	9		*****	
5	10	41	*****	
	22		*****	
	14		*****	
	10	56	*****	very high
	32		*****	
5.5	50		*****	
			Effective refusal at 5.5m (unlikely to be rock)	

**WORMS EYE LTD
DYNAMIC PROBE LOG**

Site: New Wellington Street, Blackburn. BB2 4PJ Probe: PRB

Location: Towards southeast corner, by BH2

Date: 14th December 2017

Method: 63.5KG Weight with 750mm drop.

JSH

<u>Depth (m)</u>	<u>Blows/100mm</u>	<u>Blows/300mm (N value)</u>	<u>Diagram</u>	<u>Strength</u>
0	6	26	0 5 10 15 20 25 30 35 40 *****	(made ground)
	8		*****	
	12		*****	
	15		*****	
0.5	6	27	*****	
	6		*****	
	6	10	*****	
	2		**	
	2		**	
	2		**	
	2	6	**	
	2		**	
	2		**	
	2		**	
1.5	3	8	***	
	3		***	
	2	6	**	
	2		**	
	2		**	
	2		**	
2	1	5	*	
	2		**	
	2	6	**	
	2		**	
	2		**	
	2		**	
2.5	2	6	**	
	2		**	
	4	11	****	
	3		***	
	4		****	
	4		****	
	5	20	*****	
	4		****	
	11		*****	
	7		*****	
3.5	7	18	*****	
	7		****	
	4	31	*****	
	13		*****	
	9		*****	
	9		*****	

Continued

Dynamic Probe Log Continued

Probe: PRB

Site: New Wellington Street, Blackburn. BB2 4PJ

Depth (m)	Blows/ 100mm	Blows/ 300mm (N value)	Diagram										Strength
			0	5	10	15	20	25	30	35	40		
3.9	-----												
4	10		*****										
	7	25	*****										
	8		*****										
	7		*****										
	8	23	*****										
4.5	8		*****										
	9		*****										
	10	36	*****										
	17		*****										
	12		*****										
5	13	34	*****										
	9		*****										
	12		*****										
	12	35	*****										
	11		*****										
5.5	12		*****										
	11	36	*****										
	13		*****										
	15		*****										
6	14	44	*****										high
	15		*****										
	10		*****										
	10	30	*****										
	10		*****										
	10		*****										
6.5	10	31	*****										
	11		*****										
	10		*****										
	10	31	*****										
	11		*****										
7	11		*****										
	9	32	*****										
	12		*****										
	14		*****										
	12	40	*****										
7.5	14		*****										
	14		*****										
	12	41	*****										
	15		*****										
	17		*****										
8	17	49	*****										
8.1	15		*****										

Continued

Dynamic Probe Log Continued

Probe: PRB

Site: New Wellington Street, Blackburn. BB2 4PJ

<u>Depth</u> (m)	<u>Blows/</u> <u>100mm</u>	<u>Blows/</u> <u>300mm</u> (N value)	<u>Diagram</u>	<u>Strength</u>
			0 5 10 15 20 25 30 35 40	
8.1	----- 16		*****	
	16	52	*****	
	20		*****	
8.5	17		*****	
	16	52	*****	
	19		*****	
	16	49	*****	
9	16		*****	
	18	59	*****	high
	19		*****	
	22		*****	
	20	66	*****	
9.5	22		*****	
	24		*****	
	20	65	*****	
	22		*****	
	23		*****	
10	20	68	*****	
	22		*****	very high
	26		*****	
	28	93	*****	
	30		*****	
10.5	35		*****	
	50		*****	



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: 705216-1

Date of Report: 17-Jan-2018

Customer: Worms Eye Ltd
Cannon House
52
Bank Parade
Burnley
Lancashire
BB11 1TS

Customer Contact: Mr Stuart Hartley

Customer Job Reference:

Customer Purchase Order: 50719

Customer Site Reference: New Wellington st Blackburn

Date Job Received at Concept: 19-Dec-2017

Date Analysis Started: 21-Dec-2017

Date Analysis Completed: 17-Jan-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



1549

Report checked
and authorised by :
Aleksandra Pacula
Customer Service Advisor

Issued by :
Aleksandra Pacula
Customer Service Advisor

Concept Reference: 705216											
Project Site: New Wellington st Blackburn											
Customer Reference:											
Soil					Analysed as Soil						
Asbestos											
Concept Reference		705216 001		705216 004		705216 007		705216 010		705216 012	
Customer Sample Reference		BH1		BH2		BH3		BH4		BH5	
Bottom Depth		0.30		0.30		0.30		0.20		0.30	
Date Sampled		Deviating		Deviating		Deviating		Deviating		Deviating	
Determinand	Method	Test Sample	LOD	Units							
Asbestos	T27	AR			N.D.	N.D.	Amosite Loose Fibres Detected		N.D.	Chrysotile Loose Fibres Detected	
							Chrysotile Loose Fibres Detected				

Concept Reference: 705216											
Project Site: New Wellington st Blackburn											
Customer Reference:											
Soil					Analysed as Soil						
Asbestos											
Concept Reference		705216 013		705216 016		705216 017					
Customer Sample Reference		BH6		BH7		BH8					
Bottom Depth		0.40		0.40		0.20					
Date Sampled		Deviating		Deviating		Deviating					
Determinand	Method	Test Sample	LOD	Units							
Asbestos	T27	AR			Chrysotile Loose Fibres Detected	N.D.	N.D.				

Concept Reference: 705216											
Project Site: New Wellington st Blackburn											
Customer Reference:											
Soil					Analysed as Soil						
Worms Eye Suite											
Concept Reference		705216 001		705216 004		705216 007		705216 010		705216 012	
Customer Sample Reference		BH1		BH2		BH3		BH4		BH5	
Bottom Depth		0.30		0.30		0.30		0.20		0.30	
Date Sampled		Deviating		Deviating		Deviating		Deviating		Deviating	
Determinand	Method	Test Sample	LOD	Units							
Arsenic	T6	A40	1	mg/kg	19	6	10	5	130		
Cadmium	T6	A40	1	mg/kg	<1	<1	2	<1	2		
Chromium	T6	A40	1	mg/kg	18	19	31	13	240		
Chromium VI	T6	AR	1	mg/kg	<1	<1	<1	<1	<1		
Copper	T6	A40	1	mg/kg	67	24	93	18	470		
Cyanide(Total)	T4	AR	1	mg/kg	<1	<1	<1	<1	<1		
Cyanide(free)	T4	AR	1	mg/kg	<1	<1	<1	<1	<1		
Lead	T6	A40	1	mg/kg	200	18	460	25	950		
Mercury	T6	A40	1	mg/kg	<1	<1	<1	<1	2		
Nickel	T6	A40	1	mg/kg	30	26	20	16	98		
pH	T7	A40			10.2	8.3	8.4	8.9	8.1		
Phenols(Mono)	T4	AR	1	mg/kg	<1	<1	<1	<1	<1		
Selenium	T6	A40	3	mg/kg	<3	<3	<3	<3	<3		
Soil Organic Matter	T287	A40	0.1	%	9.2	1.1	5.8	14	26		
SO4(Total)	T6	A40	0.01	%	0.24	0.06	0.34	0.06	0.19		
SO4(2:1)	T6	AR	0.1	g/l	<0.1	<0.1	<0.1	<0.1	<0.1		
Sulphide	T4	AR	10	mg/kg	<10	<10	10	14	<10		
Sulphur(Free)	T2	AR	500	mg/kg	<500	<500	<500	6600	<500		
Thiocyanate	T4	A40	10	mg/kg	<10	<10	<10	<10	<10		
Total Organic Carbon	T21	A40	0.1	%	5.3	0.7	3.4	7.9	15		
Zinc	T6	A40	1	mg/kg	160	76	450	58	680		

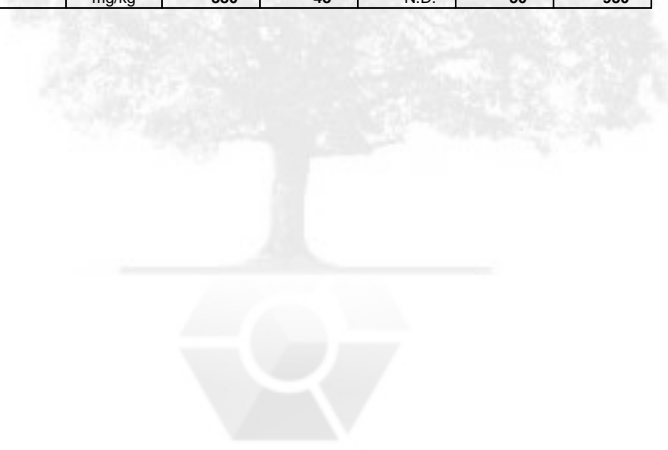
Concept Reference: 705216							
Project Site: New Wellington st Blackburn							
Customer Reference:							
Soil Analysed as Soil							
Worms Eye Suite							
Concept Reference				705216 013	705216 016	705216 017	
Customer Sample Reference				BH6	BH7	BH8	
Bottom Depth				0.40	0.40	0.20	
Date Sampled				Deviating	Deviating	Deviating	
Determinand	Method	Test Sample	LOD	Units			
Arsenic	T6	A40	1	mg/kg	64	31	3
Cadmium	T6	A40	1	mg/kg	1	<1	<1
Chromium	T6	A40	1	mg/kg	67	19	8
Chromium VI	T6	AR	1	mg/kg	<1	<1	<1
Copper	T6	A40	1	mg/kg	230	130	12
Cyanide(Total)	T4	AR	1	mg/kg	<1	<1	<1
Cyanide(free)	T4	AR	1	mg/kg	<1	<1	<1
Lead	T6	A40	1	mg/kg	350	180	12
Mercury	T6	A40	1	mg/kg	<1	<1	<1
Nickel	T6	A40	1	mg/kg	50	39	9
pH	T7	A40			8.2	8.1	8.6
Phenols(Mono)	T4	AR	1	mg/kg	<1	<1	<1
Selenium	T6	A40	3	mg/kg	<3	<3	<3
Soil Organic Matter	T287	A40	0.1	%	12	17	0.9
SO4(Total)	T6	A40	0.01	%	0.15	0.08	0.01
SO4(2:1)	T6	AR	0.1	g/l	<0.1	<0.1	<0.1
Sulphide	T4	AR	10	mg/kg	<10	<10	<10
Sulphur(Free)	T2	AR	500	mg/kg	<500	<500	<500
Thiocyanate	T4	A40	10	mg/kg	<10	<10	<10
Total Organic Carbon	T21	A40	0.1	%	7.1	10	0.5
Zinc	T6	A40	1	mg/kg	260	130	25

Concept Reference: 705216							
Project Site: New Wellington st Blackburn							
Customer Reference:							
Soil Analysed as Soil							
BTEX, MTBE							
Concept Reference				705216 011	705216 014		
Customer Sample Reference				BH4	BH6		
Bottom Depth				0.90	0.90		
Date Sampled				Deviating	Deviating		
Determinand	Method	Test Sample	LOD	Units			
Benzene	T54	AR	0.001	mg/kg	⁽¹³⁾ <0.001	^(13,110) <0.002	
EthylBenzene	T54	AR	0.001	mg/kg	<0.001	⁽¹¹⁰⁾ <0.002	
M/P Xylene	T54	AR	0.001	mg/kg	<0.001	⁽¹¹⁰⁾ <0.002	
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	<0.001	⁽¹¹⁰⁾ <0.002	
O Xylene	T54	AR	0.001	mg/kg	<0.001	⁽¹¹⁰⁾ <0.002	
Toluene	T54	AR	0.001	mg/kg	⁽¹³⁾ <0.001	^(110,13) <0.002	
Total BTEX & MTBE	T85	AR	0.001	mg/kg	<0.001	⁽¹¹⁰⁾ <0.002	

Concept Reference: 705216
 Project Site: New Wellington st Blackburn
 Customer Reference:

Soil
 Wormseye TPH (CWG) Analysed as Soil

Concept Reference					705216 001	705216 003	705216 004	705216 007	705216 010
Customer Sample Reference					BH1	BH1	BH2	BH3	BH4
Bottom Depth					0.30	2.00	0.30	0.30	0.20
Date Sampled					Deviating	Deviating	Deviating	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units					
Benzene	T54	AR	0.001	mg/kg	⁽¹³⁾ 0.003	⁽¹³⁾ <0.001	^(110,13) <0.002	^(13,110) <0.002	⁽¹³⁾ 0.008
Toluene	T54	AR	0.001	mg/kg	⁽¹³⁾ 0.014	⁽¹³⁾ <0.001	^(110,13) <0.002	^(13,110) <0.002	⁽¹³⁾ 0.010
EthylBenzene	T54	AR	0.001	mg/kg	0.019	<0.001	⁽¹¹⁰⁾ <0.002	⁽¹¹⁰⁾ <0.002	⁽¹¹⁰⁾ <0.002
M/P Xylene	T54	AR	0.001	mg/kg	0.026	<0.001	⁽¹¹⁰⁾ <0.002	⁽¹¹⁰⁾ <0.002	0.004
O Xylene	T54	AR	0.001	mg/kg	0.012	<0.001	⁽¹¹⁰⁾ <0.002	⁽¹¹⁰⁾ <0.002	⁽¹¹⁰⁾ <0.002
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	<0.001	<0.001	⁽¹¹⁰⁾ <0.002	⁽¹¹⁰⁾ <0.002	⁽¹¹⁰⁾ <0.002
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020
TPH (C6-C8 aliphatic)	T54	AR	0.000010	g/kg	<0.000010	<0.000010	⁽¹¹⁰⁾ <0.000020	⁽¹¹⁰⁾ <0.000020	⁽¹¹⁰⁾ <0.000020
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020
TPH (C10-C12 aliphatic)	T8	M105	1	mg/kg	^(100,13) <10	⁽¹³⁾ <1	⁽¹³⁾ <1	^(13,100) <10	^(13,100) <10
TPH (C12-C16 aliphatic)	T8	M105	1	mg/kg	^(13,100) <10	⁽¹³⁾ <1	⁽¹³⁾ <1	^(100,13) <10	^(100,13) <10
TPH (C16-C21 aliphatic)	T8	M105	1	mg/kg	^(100,13) <10	⁽¹³⁾ <1	⁽¹³⁾ <1	^(13,100) <10	^(100,13) <10
TPH (C21-C35 aliphatic)	T8	M105	1	mg/kg	^(100,13) <10	⁽¹³⁾ <1	⁽¹³⁾ <1	^(100,13) <10	⁽¹³⁾ 740
TPH (Aliphatic) total	T85	M105		mg/kg	^(13,100) <10	⁽¹³⁾ N.D.	⁽¹³⁾ N.D.	⁽¹³⁾ N.D.	⁽¹³⁾ 740
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	0.014	<0.010	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	0.12	<0.010	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020	⁽¹¹⁰⁾ <0.020
TPH (C10-C12 aromatic)	T8	M105	1	mg/kg	^(13,100) <10	⁽¹³⁾ <1	⁽¹³⁾ <1	^(13,100) <10	^(100,13) <10
TPH (C12-C16 aromatic)	T8	M105	1	mg/kg	⁽¹³⁾ 36	⁽¹³⁾ 4	⁽¹³⁾ <1	^(100,13) <10	⁽¹³⁾ 64
TPH (C16-C21 aromatic)	T8	M105	1	mg/kg	⁽¹³⁾ 140	⁽¹³⁾ 16	⁽¹³⁾ <1	^(100,13) <10	⁽¹³⁾ 150
TPH (C21-C35 aromatic)	T8	M105	1	mg/kg	⁽¹³⁾ 200	⁽¹³⁾ 28	⁽¹³⁾ <1	⁽¹³⁾ 50	^(13,100) <10
TPH (Aromatic) total	T85	M105		mg/kg	⁽¹³⁾ 380	⁽¹³⁾ 48	⁽¹³⁾ N.D.	⁽¹³⁾ 50	⁽¹³⁾ 210
TPH (Aliphatic+Aromatic) (sum)	T85	M105		mg/kg	⁽¹³⁾ 380	⁽¹³⁾ 48	⁽¹³⁾ N.D.	⁽¹³⁾ 50	⁽¹³⁾ 950



Concept Reference: 705216 Project Site: New Wellington st Blackburn Customer Reference:									
Soil Analysed as Soil Wormseye TPH (CWG)									
Concept Reference					705216 012	705216 013	705216 016	705216 017	705216 018
Customer Sample Reference					BH5	BH6	BH7	BH8	BH2
Bottom Depth					0.30	0.40	0.40	0.20	3.70
Date Sampled					Deviating	Deviating	Deviating	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units					
Benzene	T54	AR	0.001	mg/kg	⁽¹³⁾ 0.007	^(13,110) <0.002	⁽¹³⁾ <0.001	⁽¹³⁾ <0.001	⁽¹³⁾ <0.001
Toluene	T54	AR	0.001	mg/kg	⁽¹³⁾ 0.002	⁽¹³⁾ 0.002	⁽¹³⁾ <0.001	⁽¹³⁾ <0.001	⁽¹³⁾ <0.001
EthylBenzene	T54	AR	0.001	mg/kg	<0.001	⁽¹¹⁰⁾ <0.002	<0.001	<0.001	<0.001
M/P Xylene	T54	AR	0.001	mg/kg	0.002	⁽¹¹⁰⁾ <0.002	<0.001	<0.001	<0.001
O Xylene	T54	AR	0.001	mg/kg	0.001	⁽¹¹⁰⁾ <0.002	<0.001	<0.001	<0.001
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	<0.001	⁽¹¹⁰⁾ <0.002	<0.001	<0.001	<0.001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.000010	g/kg	<0.000010	⁽¹¹⁰⁾ <0.000020	<0.000010	<0.000010	<0.000010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020	<0.010	<0.010	<0.010
TPH (C10-C12 aliphatic)	T8	M105	1	mg/kg	^(100,13) <10	^(100,13) <10	⁽¹³⁾ <1	^(100,13) <10	⁽¹³⁾ <1
TPH (C12-C16 aliphatic)	T8	M105	1	mg/kg	^(13,100) <10	^(100,13) <10	⁽¹³⁾ <1	^(100,13) <10	⁽¹³⁾ <1
TPH (C16-C21 aliphatic)	T8	M105	1	mg/kg	^(13,100) <10	^(13,100) <10	⁽¹³⁾ <1	^(100,13) <10	⁽¹³⁾ <1
TPH (C21-C35 aliphatic)	T8	M105	1	mg/kg	^(100,13) <10	(13) 59	⁽¹³⁾ <1	^(13,100) <10	(13) 6
TPH (Aliphatic) total	T85	M105		mg/kg	^(100,13) <10	(13) 59	⁽¹³⁾ N.D.	^(13,100) <10	(13) 6.0
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020	<0.010	<0.010	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020	<0.010	<0.010	<0.010
TPH (C10-C12 aromatic)	T8	M105	1	mg/kg	^(13,100) <10	^(100,13) <10	⁽¹³⁾ <1	^(100,13) <10	⁽¹³⁾ <1
TPH (C12-C16 aromatic)	T8	M105	1	mg/kg	(13) 11	^(100,13) <10	⁽¹³⁾ <1	^(13,100) <10	⁽¹³⁾ <1
TPH (C16-C21 aromatic)	T8	M105	1	mg/kg	(13) 88	(13) 61	(13) 4	^(100,13) <10	⁽¹³⁾ <1
TPH (C21-C35 aromatic)	T8	M105	1	mg/kg	(13) 300	(13) 180	(13) 17	^(13,100) <10	(13) 6
TPH (Aromatic) total	T85	M105		mg/kg	(13) 400	(13) 240	(13) 21	^(13,100) <10	(13) 6.0
TPH (Aliphatic+Aromatic) (sum)	T85	M105		mg/kg	(13) 400	(13) 300	(13) 21	^(13,100) <10	(13) 12

Concept Reference: 705216 Project Site: New Wellington st Blackburn Customer Reference:									
Soil Analysed as Soil TPH C5-C10 (al/aromatic + sum)									
Concept Reference					705216 011	705216 014			
Customer Sample Reference					BH4	BH6			
Bottom Depth					0.90	0.90			
Date Sampled					Deviating	Deviating			
Determinand	Method	Test Sample	LOD	Units					
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020			
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020			
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020			
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020			
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020			
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020			
Total Petroleum Hydrocarbons (C5 - C10 aliphatic/aromatic)	T85	AR	0.010	mg/kg	<0.010	⁽¹¹⁰⁾ <0.020			

Concept Reference: 705216							
Project Site: New Wellington st Blackburn							
Customer Reference:							
Soil Analysed as Soil							
TPH C10-C16 (ali/aro + sum)							
					Concept Reference	705216 011	705216 014
					Customer Sample Reference	BH4	BH6
					Bottom Depth	0.90	0.90
					Date Sampled	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units			
TPH (C10-C12 aliphatic)	T8	M105	1	mg/kg	(13) <1	(13) <1	
TPH (C10-C12 aromatic)	T8	M105	1	mg/kg	(13) <1	(13) <1	
TPH (C12-C16 aliphatic)	T8	M105	1	mg/kg	(13) <1	(13) <1	
TPH (C12-C16 aromatic)	T8	M105	1	mg/kg	(13) <1	(13) <1	
Total Petroleum Hydrocarbons (C10-C16 aliphatic/aromatic)	T85	M105	1	mg/kg	(13) <1	(13) <1	

Concept Reference: 705216							
Project Site: New Wellington st Blackburn							
Customer Reference:							
Soil Analysed as Soil							
TPH C16-C40 (ali/aro + sum)							
					Concept Reference	705216 011	705216 014
					Customer Sample Reference	BH4	BH6
					Bottom Depth	0.90	0.90
					Date Sampled	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units			
TPH (C16-C21 aliphatic)	T8	M105	1	mg/kg	(13) <1	(13) <1	
TPH (C16-C21 aromatic)	T8	M105	1	mg/kg	(13) 8	(13) 2	
TPH (C21-C35 aliphatic)	T8	M105	1	mg/kg	(13) 2	(13) 5	
TPH (C21-C35 aromatic)	T8	M105	1	mg/kg	(13) 26	(13) 12	
TPH (C35-C40 aliphatic)	T8	M105	1	mg/kg	(13) <1	(13) <1	
TPH (C35-C40 aromatic)	T8	M105	1	mg/kg	(13) <1	(13) <1	
Total Petroleum Hydrocarbons (C16-C40 aliphatic/aromatic)	T85	M105	1	mg/kg	36	19	

Concept Reference: 705216						
Project Site: New Wellington st Blackburn						
Customer Reference:						
Soil Analysed as Soil						
PAH US EPA 16 (B and K split)						
			Concept Reference	705216 003	705216 018	
			Customer Sample Reference	BH1	BH2	
			Bottom Depth	2.00	3.70	
			Date Sampled	Deviating	Deviating	
Determinand	Method	Test Sample	LOD	Units		
Naphthalene	T149	AR	0.01	mg/kg	0.06	0.01
Acenaphthylene	T149	AR	0.01	mg/kg	0.01	<0.01
Acenaphthene	T149	AR	0.01	mg/kg	0.06	0.01
Fluorene	T149	AR	0.01	mg/kg	0.06	0.01
Phenanthrene	T149	AR	0.01	mg/kg	0.31	0.11
Anthracene	T149	AR	0.01	mg/kg	0.09	0.03
Fluoranthene	T149	AR	0.01	mg/kg	0.31	0.35
Pyrene	T149	AR	0.01	mg/kg	0.28	0.29
Benzo(a)Anthracene	T149	AR	0.01	mg/kg	0.14	0.14
Chrysene	T149	AR	0.01	mg/kg	0.14	0.13
Benzo(b)fluoranthene	T149	AR	0.01	mg/kg	0.13	0.11
Benzo(k)fluoranthene	T149	AR	0.01	mg/kg	0.08	0.08
Benzo(a)Pyrene	T149	AR	0.01	mg/kg	0.13	0.11
Indeno(123-cd)Pyrene	T149	AR	0.01	mg/kg	0.07	0.07
Dibenzo(ah)Anthracene	T149	AR	0.01	mg/kg	0.03	0.03
Benzo(ghi)Perylene	T149	AR	0.01	mg/kg	0.09	0.07
PAH(total)	T149	AR	0.01	mg/kg	2.0	1.6

Concept Reference: 705216										
Project Site: New Wellington st Blackburn										
Customer Reference:										
Soil					Analysed as Soil					
Total and Speciated USEPA16 PAH										
Concept Reference					705216 001	705216 004	705216 007	705216 010	705216 012	
Customer Sample Reference					BH1	BH2	BH3	BH4	BH5	
Bottom Depth					0.30	0.30	0.30	0.20	0.30	
Date Sampled					Deviating	Deviating	Deviating	Deviating	Deviating	
Determinand	Method	Test Sample	LOD	Units						
Acenaphthylene	T149	AR	0.01	mg/kg	⁽⁹⁾ <0.10	<0.01	⁽⁹⁾ <0.10	0.10	0.10	
Acenaphthene	T149	AR	0.01	mg/kg	4.3	<0.01	⁽⁹⁾ <0.10	0.40	0.28	
Anthracene	T149	AR	0.01	mg/kg	6.6	<0.01	0.13	0.97	0.78	
Benzo(a)Anthracene	T149	AR	0.01	mg/kg	7.0	0.01	0.29	1.8	2.2	
Benzo(a)Pyrene	T149	AR	0.01	mg/kg	6.0	<0.01	0.33	2.1	2.2	
Benzo(b/k)Fluoranthene	T149	AR	0.01	mg/kg	8.9	0.01	0.54	4.0	3.7	
Benzo(b)fluoranthene	T149	AR	0.01	mg/kg	4.8	0.01	0.28	2.3	2.1	
Benzo(ghi)Perylene	T149	AR	0.01	mg/kg	3.9	0.01	0.32	1.6	1.4	
Benzo(k)fluoranthene	T149	AR	0.01	mg/kg	4.0	<0.01	0.25	1.7	2.0	
Chrysene	T149	AR	0.01	mg/kg	6.6	0.01	0.32	2.6	2.0	
Dibenzo(ah)Anthracene	T149	AR	0.01	mg/kg	1.3	<0.01	0.10	0.68	0.49	
Fluoranthene	T149	AR	0.01	mg/kg	15	0.01	0.57	3.6	3.5	
Fluorene	T149	AR	0.01	mg/kg	4.3	<0.01	⁽⁹⁾ <0.10	0.28	0.27	
Indeno(123-cd)Pyrene	T149	AR	0.01	mg/kg	3.1	<0.01	0.23	1.3	1.2	
Naphthalene	T149	AR	0.01	mg/kg	3.9	0.01	⁽⁹⁾ <0.10	0.44	0.18	
Phenanthrene	T149	AR	0.01	mg/kg	21	0.02	0.42	1.5	2.2	
Pyrene	T149	AR	0.01	mg/kg	14	0.01	0.56	3.3	2.9	
PAH(total)	T149	AR	0.01	mg/kg	110	0.09	3.8	25	24	

Concept Reference: 705216									
Project Site: New Wellington st Blackburn									
Customer Reference:									
Soil					Analysed as Soil				
Total and Speciated USEPA16 PAH									
Concept Reference					705216 013	705216 016	705216 017		
Customer Sample Reference					BH6	BH7	BH8		
Bottom Depth					0.40	0.40	0.20		
Date Sampled					Deviating	Deviating	Deviating		
Determinand	Method	Test Sample	LOD	Units					
Acenaphthylene	T149	AR	0.01	mg/kg	⁽⁹⁾ <0.10	0.01	⁽⁹⁾ <0.10		
Acenaphthene	T149	AR	0.01	mg/kg	⁽⁹⁾ <0.10	0.06	⁽⁹⁾ <0.10		
Anthracene	T149	AR	0.01	mg/kg	0.10	0.12	⁽⁹⁾ <0.10		
Benzo(a)Anthracene	T149	AR	0.01	mg/kg	0.40	0.27	⁽⁹⁾ <0.10		
Benzo(a)Pyrene	T149	AR	0.01	mg/kg	0.38	0.23	⁽⁹⁾ <0.10		
Benzo(b/k)Fluoranthene	T149	AR	0.01	mg/kg	0.66	0.35	⁽⁹⁾ <0.10		
Benzo(b)fluoranthene	T149	AR	0.01	mg/kg	0.39	0.18	⁽⁹⁾ <0.10		
Benzo(ghi)Perylene	T149	AR	0.01	mg/kg	0.27	0.16	⁽⁹⁾ <0.10		
Benzo(k)fluoranthene	T149	AR	0.01	mg/kg	0.28	0.17	0.03		
Chrysene	T149	AR	0.01	mg/kg	0.40	0.26	⁽⁹⁾ <0.10		
Dibenzo(ah)Anthracene	T149	AR	0.01	mg/kg	⁽⁹⁾ <0.10	0.05	⁽⁹⁾ <0.10		
Fluoranthene	T149	AR	0.01	mg/kg	0.84	0.58	⁽⁹⁾ <0.10		
Fluorene	T149	AR	0.01	mg/kg	⁽⁹⁾ <0.10	0.05	⁽⁹⁾ <0.10		
Indeno(123-cd)Pyrene	T149	AR	0.01	mg/kg	0.22	0.12	⁽⁹⁾ <0.10		
Naphthalene	T149	AR	0.01	mg/kg	⁽⁹⁾ <0.10	0.05	⁽⁹⁾ <0.10		
Phenanthrene	T149	AR	0.01	mg/kg	0.32	0.48	⁽⁹⁾ <0.10		
Pyrene	T149	AR	0.01	mg/kg	0.73	0.53	⁽⁹⁾ <0.10		
PAH(total)	T149	AR	0.01	mg/kg	4.3	3.3	⁽⁹⁾ <0.10		

Concept Reference: 705216

Project Site: New Wellington st Blackburn

Customer Reference:

Soil Analysed as Soil

UU Pipe Selection Risk Assess Sum (UKWIR)

Concept Reference		705216 011	705216 014			
Customer Sample Reference		BH4	BH6			
Bottom Depth		0.90	0.90			
Date Sampled		Deviating	Deviating			
Determinand	Method	Test Sample	LOD	Units		
Cresols and Chlorinated Phenols (Total)	T85	AR	0.10	mg/kg	<0.10	<0.10
SVOC screen	T16	AR	0.1	mg/kg	<0.1	<0.1
Tertiary amyl methyl ether	T54	AR	0.005	mg/kg	<0.005	⁽¹¹⁰⁾ <0.010
Total SVOC (exc PAH & Specific Phenols)	T85	AR	0.1	mg/kg	⁽³⁶⁾ <0.5	⁽³⁶⁾ <0.5
VOC Screen (Extra Peaks)	T54	AR	0.10	mg/kg	<0.10	⁽¹¹⁰⁾ <0.20



Concept Reference: 705216
Project Site: New Wellington st Blackburn
Customer Reference:

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

					Concept Reference	705216 011	705216 014
					Customer Sample Reference	BH4	BH6
					Bottom Depth	0.90	0.90
					Date Sampled	Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units			
Phenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
Bis (2-chloroethyl) ether	T16	AR	0.1	mg/kg	<0.1	<0.1	
2-Chlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
1,3-Dichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	
1,4-Dichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	
1,2-Dichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	
Bis (2-chloroisopropyl) ether	T16	AR	0.1	mg/kg	<0.1	<0.1	
2-methyl phenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
3/4-Methylphenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
Hexachloroethane	T16	AR	0.1	mg/kg	<0.1	<0.1	
Nitrobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	
Isophorone	T16	AR	0.1	mg/kg	<0.1	<0.1	
2,4-Dimethylphenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
Bis (2-chloroethoxy) methane	T16	AR	0.1	mg/kg	<0.1	<0.1	
2,4-Dichlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
1,2,4-Trichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	
Naphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	
4-Chloroaniline	T16	AR	0.1	mg/kg	⁽³⁶⁾ <0.5	⁽³⁶⁾ <0.5	
Hexachlorobutadiene	T16	AR	0.1	mg/kg	<0.1	<0.1	
4-Chloro-3-methylphenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
2-Methylnaphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	
Hexachlorocyclopentadiene	T16	AR	0.1	mg/kg	<0.1	<0.1	
2,4,6-Trichlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
2,4,5-Trichlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
2-Chloronaphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	
2-Nitroaniline	T16	AR	0.1	mg/kg	<0.1	<0.1	
Dimethyl phthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	
2,6-Dinitrotoluene	T16	AR	0.1	mg/kg	<0.1	<0.1	
Acenaphthylene	T16	AR	0.1	mg/kg	<0.1	<0.1	
Acenaphthene	T16	AR	0.1	mg/kg	<0.1	<0.1	
3-Nitroaniline	T16	AR	0.1	mg/kg	⁽³⁶⁾ <0.5	⁽³⁶⁾ <0.5	
Dibenzofuran	T16	AR	0.1	mg/kg	<0.1	<0.1	
2,4-Dinitrotoluene	T16	AR	0.1	mg/kg	<0.1	<0.1	
2,4-Dinitrophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
2-Nitrophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
Diethyl phthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	
Fluorene	T16	AR	0.1	mg/kg	<0.1	<0.1	
4-Chlorophenyl phenylether	T16	AR	0.1	mg/kg	<0.1	<0.1	
4-Nitroaniline	T16	AR	0.1	mg/kg	⁽³⁶⁾ <0.5	⁽³⁶⁾ <0.5	
Azobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	
4-Bromophenyl phenylether	T16	AR	0.1	mg/kg	<0.1	<0.1	
Hexachlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	
Pentachlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
Phenanthrene	T16	AR	0.1	mg/kg	0.5	0.5	
Anthracene	T16	AR	0.1	mg/kg	0.1	<0.1	
Carbazole	T16	AR	0.1	mg/kg	<0.1	<0.1	
Di-n-butylphthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	
Fluoranthene	T16	AR	0.1	mg/kg	0.8	1.0	
Pyrene	T16	AR	0.1	mg/kg	0.7	0.9	
Butyl benzylphthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	0.4	0.4	
Chrysene	T16	AR	0.1	mg/kg	0.4	0.5	
4-Nitrophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	
Bis (2-ethylhexyl)phthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	
Di-n-octylphthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	
Benzo(b/k)Fluoranthene	T16	AR	0.1	mg/kg	0.5	0.7	
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	0.3	0.4	
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	0.2	0.2	
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	<0.1	<0.1	

Concept Reference: 705216

Project Site: New Wellington st Blackburn

Customer Reference:

Soil Analysed as Soil
Semi-Volatile Organic Compounds (USEPA 625)

Concept Reference		705216 011	705216 014			
Customer Sample Reference		BH4	BH6			
Bottom Depth		0.90	0.90			
Date Sampled		Deviating	Deviating			
Determinand	Method	Test Sample	LOD	Units		
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	0.2	0.2



Concept Reference: 705216

Project Site: New Wellington st Blackburn

Customer Reference:

Soil Analysed as Soil

United Utilities Total VOC Suite

Concept Reference					705216 011	705216 014
Customer Sample Reference					BH4	BH6
Bottom Depth					0.90	0.90
Date Sampled					Deviating	Deviating
Determinand	Method	Test Sample	LOD	Units		
1,1,1,2-Tetrachloroethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,1,1-Trichloroethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,1,2,2-Tetrachloroethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,1,2-Trichloroethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,1,2-Trichloroethylene	T54	AR	0.005	mg/kg	0.019	(110) <0.010
1,1-Dichloroethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,1-Dichloroethylene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,1-Dichloropropene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,2,3-Trichloropropane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,2,4-Trimethylbenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,2-dibromoethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,2-Dichlorobenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,2-Dichloroethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,2-Dichloropropane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,3,5-Trimethylbenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,3-Dichlorobenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,3-Dichloropropane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
1,4-Dichlorobenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
2,2-Dichloropropane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
2-Chlorotoluene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
4-Chlorotoluene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Bromobenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Bromochloromethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Bromodichloromethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Bromoform	T54	AR	0.005	mg/kg	(13) 0.005	(110,13) <0.010
Bromomethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Carbon tetrachloride	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Chlorobenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Chlorodibromomethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Chloroethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Chloroform	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Chloromethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Cis-1,2-Dichloroethylene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Cis-1,3-Dichloropropene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Dibromomethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Dichlorodifluoromethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Isopropyl benzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Methylene Chloride	T54	AR	0.010	mg/kg	(13) <0.010	(110,13) <0.020
n-Propylbenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Naphthalene	T54	AR	0.050	mg/kg	<0.050	(110) <0.10
p-Isopropyltoluene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
S-Butylbenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Styrene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
T-Butylbenzene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Tetrachloroethene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Trans-1,2-Dichloroethene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Trans-1,3-Dichloropropene	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Trichlorofluoromethane	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
Vinyl chloride	T54	AR	0.005	mg/kg	<0.005	(110) <0.010
VOC(Total)	T85	AR	0.005	mg/kg	<0.005	<0.005

Concept Reference: 705216									
Project Site: New Wellington st Blackburn									
Customer Reference:									
Soil					Analysed as Soil				
Miscellaneous									
Concept Reference		705216 001	705216 002	705216 003	705216 004	705216 005			
Customer Sample Reference		BH1	BH1	BH1	BH2	BH2			
Bottom Depth		0.30	1.00	2.00	0.30	1.20			
Date Sampled		Deviating	Deviating	Deviating	Deviating	Deviating			
Determinand	Method	Test Sample	LOD	Units					
SO4(2:1)	T6	AR	0.1	g/l	<0.1	<0.1	<0.1	<0.1	<0.1
PCB (Total Tri-Hepta)	T1	AR	0.00005	mg/kg	-	-	-	<0.00005	-

Concept Reference: 705216									
Project Site: New Wellington st Blackburn									
Customer Reference:									
Soil					Analysed as Soil				
Miscellaneous									
Concept Reference		705216 006	705216 007	705216 008	705216 009	705216 010			
Customer Sample Reference		BH2	BH3	BH3	BH3	BH4			
Bottom Depth		3.20	0.30	0.90	1.50	0.20			
Date Sampled		Deviating	Deviating	Deviating	Deviating	Deviating			
Determinand	Method	Test Sample	LOD	Units					
SO4(2:1)	T6	AR	0.1	g/l	<0.1	<0.1	<0.1	<0.1	<0.1

Concept Reference: 705216									
Project Site: New Wellington st Blackburn									
Customer Reference:									
Soil					Analysed as Soil				
Miscellaneous									
Concept Reference		705216 012	705216 013	705216 015	705216 016	705216 017			
Customer Sample Reference		BH5	BH6	BH7	BH7	BH8			
Bottom Depth		0.30	0.40	0.30	0.40	0.20			
Date Sampled		Deviating	Deviating	Deviating	Deviating	Deviating			
Determinand	Method	Test Sample	LOD	Units					
SO4(2:1)	T6	AR	0.1	g/l	<0.1	<0.1	-	<0.1	<0.1
PCB (Total Tri-Hepta)	T1	AR	0.00005	mg/kg	⁽⁹⁾ <0.00050	-	⁽⁹⁾ <0.00050	-	-

Index to symbols used in 705216-1

Value	Description
A40	Assisted dried < 40C
AR	As Received
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
N.D.	Not Detected
9	LOD raised due to dilution of sample
13	Results have been blank corrected.
110	LOD raised due to low internal standard recovery.
100	LOD determined by sample aliquot used for analysis
36	LOD Raised due to low Matrix spike recovery
S	Analysis was subcontracted
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

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 Asbestos was subcontracted to REC Asbestos.
--

Method Index

Value	Description
T16	GC/MS
T149	GC/MS (SIR)
T8	GC/FID
T54	GC/MS (Headspace)
T85	Calc
T4	Colorimetry
T287	Calc TOC/0.58
T1	GC/MS (HR)
T2	Grav
T6	ICP/OES
T21	OX/IR
T27	PLM
T7	Probe

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Asbestos	T27	AR			SU	001,004,007,010,012-013,016-017
Arsenic	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
Cadmium	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
Chromium	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
Chromium VI	T6	AR	1	mg/kg	N	001,004,007,010,012-013,016-017
Copper	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
Cyanide(Total)	T4	AR	1	mg/kg	U	001,004,007,010,012-013,016-017
Cyanide(free)	T4	AR	1	mg/kg	U	001,004,007,010,012-013,016-017
Lead	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
Mercury	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
Nickel	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
pH	T7	A40			U	001,004,007,010,012-013,016-017
Phenols(Mono)	T4	AR	1	mg/kg	U	001,004,007,010,012-013,016-017
Selenium	T6	A40	3	mg/kg	U	001,004,007,010,012-013,016-017
Soil Organic Matter	T287	A40	0.1	%	N	001,004,007,010,012-013,016-017
SO4(Total)	T6	A40	0.01	%	N	001,004,007,010,012-013,016-017
SO4(2:1)	T6	AR	0.1	g/l	N	001-010,012-013,016-017
Sulphide	T4	AR	10	mg/kg	N	001,004,007,010,012-013,016-017
Sulphur(Free)	T2	AR	500	mg/kg	N	001,004,007,010,012-013,016-017
Thiocyanate	T4	A40	10	mg/kg	N	001,004,007,010,012-013,016-017
Total Organic Carbon	T21	A40	0.1	%	N	001,004,007,010,012-013,016-017
Zinc	T6	A40	1	mg/kg	U	001,004,007,010,012-013,016-017
Total BTEX & MTBE	T85	AR	0.001	mg/kg	U	011,014
Benzene	T54	AR	0.001	mg/kg	U	001,003-004,007,010-014,016-018
Toluene	T54	AR	0.001	mg/kg	U	001,003-004,007,010-014,016-018
EthylBenzene	T54	AR	0.001	mg/kg	U	001,003-004,007,010-014,016-018
M/P Xylene	T54	AR	0.001	mg/kg	U	001,003-004,007,010-014,016-018
O Xylene	T54	AR	0.001	mg/kg	U	001,003-004,007,010-014,016-018
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	U	001,003-004,007,010-014,016-018
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C6-C8 aliphatic)	T54	AR	0.000010	g/kg	N	001,003-004,007,010-014,016-018
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C10-C12 aliphatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C12-C16 aliphatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C16-C21 aliphatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C21-C35 aliphatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (Aliphatic) total	T85	M105		mg/kg	N	001,003-004,007,010,012-013,016-018
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C10-C12 aromatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C12-C16 aromatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C16-C21 aromatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (C21-C35 aromatic)	T8	M105	1	mg/kg	N	001,003-004,007,010-014,016-018
TPH (Aromatic) total	T85	M105		mg/kg	N	001,003-004,007,010,012-013,016-018
TPH (Aliphatic+Aromatic) (sum)	T85	M105		mg/kg	N	001,003-004,007,010,012-013,016-018
Total Petroleum Hydrocarbons (C5 - C10 aliphatic/aromatic)	T85	AR	0.010	mg/kg	N	011,014
Total Petroleum Hydrocarbons (C10-C16 aliphatic/aromatic)	T85	M105	1	mg/kg	N	011,014

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
TPH (C35-C40 aliphatic)	T8	M105	1	mg/kg	N	011,014
TPH (C35-C40 aromatic)	T8	M105	1	mg/kg	N	011,014
Total Petroleum Hydrocarbons (C16-C40 aliphatic/aromatic)	T85	M105	1	mg/kg	N	011,014
Acenaphthylene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Acenaphthene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Anthracene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Benzo(a)Anthracene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Benzo(a)Pyrene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Benzo(b/k)Fluoranthene	T149	AR	0.01	mg/kg	U	001,004,007,010,012-013,016-017
Benzo(b)fluoranthene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Benzo(ghi)Perylene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Benzo(k)fluoranthene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Chrysene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Dibenzo(ah)Anthracene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Fluoranthene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Fluorene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Indeno(123-cd)Pyrene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Naphthalene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Phenanthrene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Pyrene	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
PAH(total)	T149	AR	0.01	mg/kg	U	001,003-004,007,010,012-013,016-018
Cresols and Chlorinated Phenols (Total)	T85	AR	0.10	mg/kg	N	011,014
SVOC screen	T16	AR	0.1	mg/kg	N	011,014
Tertiary amyl methyl ether	T54	AR	0.005	mg/kg	U	011,014
Total SVOC (exc PAH & Specific Phenols)	T85	AR	0.1	mg/kg	U	011,014
VOC Screen (Extra Peaks)	T54	AR	0.10	mg/kg	N	011,014
Phenol	T16	AR	0.1	mg/kg	U	011,014
Bis (2-chloroethyl) ether	T16	AR	0.1	mg/kg	U	011,014
2-Chlorophenol	T16	AR	0.1	mg/kg	U	011,014
1,3-Dichlorobenzene	T16	AR	0.1	mg/kg	U	011,014
1,4-Dichlorobenzene	T16	AR	0.1	mg/kg	U	011,014
1,2-Dichlorobenzene	T16	AR	0.1	mg/kg	U	011,014
Bis (2-chloroisopropyl) ether	T16	AR	0.1	mg/kg	U	011,014
2-methyl phenol	T16	AR	0.1	mg/kg	U	011,014
3/4-Methylphenol	T16	AR	0.1	mg/kg	U	011,014
Hexachloroethane	T16	AR	0.1	mg/kg	U	011,014
Nitrobenzene	T16	AR	0.1	mg/kg	U	011,014
Isophorone	T16	AR	0.1	mg/kg	U	011,014
2,4-Dimethylphenol	T16	AR	0.1	mg/kg	U	011,014
Bis (2-chloroethoxy) methane	T16	AR	0.1	mg/kg	U	011,014
2,4-Dichlorophenol	T16	AR	0.1	mg/kg	U	011,014
1,2,4-Trichlorobenzene	T16	AR	0.1	mg/kg	U	011,014
Naphthalene	T16	AR	0.1	mg/kg	U	011,014
4-Chloroaniline	T16	AR	0.1	mg/kg	U	011,014
Hexachlorobutadiene	T16	AR	0.1	mg/kg	U	011,014
4-Chloro-3-methylphenol	T16	AR	0.1	mg/kg	U	011,014
2-Methylnaphthalene	T16	AR	0.1	mg/kg	U	011,014
Hexachlorocyclopentadiene	T16	AR	0.1	mg/kg	U	011,014
2,4,6-Trichlorophenol	T16	AR	0.1	mg/kg	U	011,014
2,4,5-Trichlorophenol	T16	AR	0.1	mg/kg	U	011,014
2-Chloronaphthalene	T16	AR	0.1	mg/kg	U	011,014
2-Nitroaniline	T16	AR	0.1	mg/kg	U	011,014
Dimethyl phthalate	T16	AR	0.1	mg/kg	U	011,014
2,6-Dinitrotoluene	T16	AR	0.1	mg/kg	U	011,014
Acenaphthylene	T16	AR	0.1	mg/kg	U	011,014
Acenaphthene	T16	AR	0.1	mg/kg	U	011,014
3-Nitroaniline	T16	AR	0.1	mg/kg	U	011,014
Dibenzofuran	T16	AR	0.1	mg/kg	U	011,014
2,4-Dinitrophenol	T16	AR	0.1	mg/kg	N	011,014
2,4-Dinitrotoluene	T16	AR	0.1	mg/kg	U	011,014
2-Nitrophenol	T16	AR	0.1	mg/kg	U	011,014
Diethyl phthalate	T16	AR	0.1	mg/kg	U	011,014
Fluorene	T16	AR	0.1	mg/kg	U	011,014
4-Chlorophenyl phenylether	T16	AR	0.1	mg/kg	U	011,014
4-Nitroaniline	T16	AR	0.1	mg/kg	U	011,014
Azobenzene	T16	AR	0.1	mg/kg	U	011,014
4-Bromophenyl phenylether	T16	AR	0.1	mg/kg	U	011,014
Hexachlorobenzene	T16	AR	0.1	mg/kg	U	011,014
Pentachlorophenol	T16	AR	0.1	mg/kg	U	011,014
Phenanthrene	T16	AR	0.1	mg/kg	U	011,014

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Anthracene	T16	AR	0.1	mg/kg	U	011,014
Carbazole	T16	AR	0.1	mg/kg	U	011,014
Di-n-butylphthalate	T16	AR	0.1	mg/kg	U	011,014
Fluoranthene	T16	AR	0.1	mg/kg	U	011,014
Pyrene	T16	AR	0.1	mg/kg	U	011,014
Butyl benzylphthalate	T16	AR	0.1	mg/kg	U	011,014
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	U	011,014
4-Nitrophenol	T16	AR	0.1	mg/kg	N	011,014
Chrysene	T16	AR	0.1	mg/kg	U	011,014
Bis (2-ethylhexyl)phthalate	T16	AR	0.1	mg/kg	U	011,014
Di-n-octylphthalate	T16	AR	0.1	mg/kg	U	011,014
Benzo(b/k)Fluoranthene	T16	AR	0.1	mg/kg	U	011,014
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	U	011,014
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	U	011,014
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	U	011,014
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	U	011,014
1,1,1,2-Tetrachloroethane	T54	AR	0.005	mg/kg	U	011,014
1,1,1-Trichloroethane	T54	AR	0.005	mg/kg	U	011,014
1,1,2,2-Tetrachloroethane	T54	AR	0.005	mg/kg	U	011,014
1,1,2-Trichloroethane	T54	AR	0.005	mg/kg	U	011,014
1,1,2-Trichloroethylene	T54	AR	0.005	mg/kg	U	011,014
1,1-Dichloroethane	T54	AR	0.005	mg/kg	U	011,014
1,1-Dichloroethylene	T54	AR	0.005	mg/kg	U	011,014
1,1-Dichloropropene	T54	AR	0.005	mg/kg	U	011,014
1,2,3-Trichloropropane	T54	AR	0.005	mg/kg	U	011,014
1,2,4-Trimethylbenzene	T54	AR	0.005	mg/kg	U	011,014
1,2-dibromoethane	T54	AR	0.005	mg/kg	U	011,014
1,2-Dichlorobenzene	T54	AR	0.005	mg/kg	U	011,014
1,2-Dichloroethane	T54	AR	0.005	mg/kg	U	011,014
1,2-Dichloropropane	T54	AR	0.005	mg/kg	U	011,014
1,3,5-Trimethylbenzene	T54	AR	0.005	mg/kg	U	011,014
1,3-Dichlorobenzene	T54	AR	0.005	mg/kg	U	011,014
1,3-Dichloropropane	T54	AR	0.005	mg/kg	U	011,014
1,4-Dichlorobenzene	T54	AR	0.005	mg/kg	U	011,014
2,2-Dichloropropane	T54	AR	0.005	mg/kg	U	011,014
2-Chlorotoluene	T54	AR	0.005	mg/kg	U	011,014
4-Chlorotoluene	T54	AR	0.005	mg/kg	U	011,014
Bromobenzene	T54	AR	0.005	mg/kg	U	011,014
Bromochloromethane	T54	AR	0.005	mg/kg	U	011,014
Bromodichloromethane	T54	AR	0.005	mg/kg	U	011,014
Bromoform	T54	AR	0.005	mg/kg	U	011,014
Bromomethane	T54	AR	0.005	mg/kg	U	011,014
Carbon tetrachloride	T54	AR	0.005	mg/kg	U	011,014
Chlorobenzene	T54	AR	0.005	mg/kg	U	011,014
Chlorodibromomethane	T54	AR	0.005	mg/kg	U	011,014
Chloroethane	T54	AR	0.005	mg/kg	U	011,014
Chloroform	T54	AR	0.005	mg/kg	U	011,014
Chloromethane	T54	AR	0.005	mg/kg	U	011,014
Cis-1,2-Dichloroethylene	T54	AR	0.005	mg/kg	U	011,014
Cis-1,3-Dichloropropene	T54	AR	0.005	mg/kg	U	011,014
Dibromomethane	T54	AR	0.005	mg/kg	U	011,014
Dichlorodifluoromethane	T54	AR	0.005	mg/kg	U	011,014
Isopropyl benzene	T54	AR	0.005	mg/kg	U	011,014
Methylene Chloride	T54	AR	0.010	mg/kg	U	011,014
n-Propylbenzene	T54	AR	0.005	mg/kg	U	011,014
Naphthalene	T54	AR	0.050	mg/kg	U	011,014
p-Isopropyltoluene	T54	AR	0.005	mg/kg	U	011,014
S-Butylbenzene	T54	AR	0.005	mg/kg	U	011,014
Styrene	T54	AR	0.005	mg/kg	U	011,014
T-Butylbenzene	T54	AR	0.005	mg/kg	U	011,014
Tetrachloroethene	T54	AR	0.005	mg/kg	U	011,014
Trans-1,2-Dichloroethene	T54	AR	0.005	mg/kg	U	011,014
Trans-1,3-Dichloropropene	T54	AR	0.005	mg/kg	U	011,014
Trichlorofluoromethane	T54	AR	0.005	mg/kg	U	011,014
Vinyl chloride	T54	AR	0.005	mg/kg	U	011,014
VOC(Total)	T85	AR	0.005	mg/kg	U	011,014
PCB (Total Tri-Hepta)	T1	AR	0.00005	mg/kg	U	004,012,015

HERON FOODS, NEW WELLINGTON STREET, BLACKBURN, BB2 4PJ

Comparison of Contamination Test Results with Various Thresholds

COMMERCIAL

Hydrocarbons at 1% SOM

Contaminant	Max Value	Threshold	Pass/ Fail	SSAC	Pass/ Fail	Failed Samples
HEAVY METALS						
- Arsenic	130	640*	√			
- Cadmium	2	190*	√			
- Chromium III	240	8600*	√			
- Chromium VI	<1	33*	√			
- Copper	470	68000*	√			
- Lead	950	1100 - 6000▲	√			
- Inorganic Mercury	2	1100*	√			
- Methyl Mercury	2	320*	√			
- Nickel	98	980*	√			
- Selenium	<3	13000#	√			
- Zinc	680	73000*	√			
OTHER INORGANICS						
- Asbestos	YES		X			BH3 – 0.3m, BH5 – 0.3m, BH6 – 0.3m
- Cyanide (total)	<1	20 (D)	√			
- pH range	8.1 – 10.2		√			
- Sulphate (g/l)	<0.1	0.5 (B)	√			
- Sulphide	14	250 (E)	√			
- Thiocyanate	<10		√			
-TOC range (%)	0.5 – 15		√			
-SOM Range	0.9 - 26		√			

All units mg/kg (parts per million/ppm) unless shown otherwise

Metals & inorganic values derived using 6% SOM (soil organic mater)

Sources

- Soil Guideline Values ▲ - C4SL

* - LQM/CIEH "copyright" Land Quality Management Limited reproduced with permission, publication number S4UL3308. All rights reserved

(D) – Dutch (B) - BRE – Building Research Establishment (E) - EA Disposal Threshold 2002

® - CLEA 1.06 Software

SSAC – Site Specific Assessment Criteria (derived with CLEA 1.06 software)

HERON FOODS, NEW WELLINGTON STREET, BLACKBURN, BB2 4PJ

Comparison of Contamination Test Results with Various Thresholds

COMMERCIAL

Hydrocarbons at 1% SOM

Contaminant	Max Value	Threshold	Pass/Fail	SSAC	Pass/Fail	Failed Samples
PAHs						
- Acenaphthene	4.3	8400 (57 sol)*	√			
- Acenaphthylene	0.10	8300 (86.1 sol)*	√			
- Anthracene	6.6	520000*	√			
- Benz(a)anthracene	7.0	170*	√			
- Benzo(a)pyrene (BAP)*	6.0	35*	√			
- Benzo(b)fluoranthene	4.8	44*	√			
- Benzo(ghi)perylene	3.9	3900*	√			
- Benzo(k)fluoranthene	4.0	1200*	√			
- Chrysene	6.6	350*	√			
- Dibenz(ah)anthracene (DBA)	1.3	3.5*	√			
- Fluoranthene	15	23000*	√			
- Fluorene	4.3	63000 (30.9 sol)*	√			
- Indene (123-cd) pyrene	3.1	500*	√			
- Naphthalene	3.9	190 (76.4 sol)*	√			
- Phenanthrene	21	22000*	√			
- Pyrene	14	54000*	√			
OTHER COMPOUNDS						
Phenols	<1	760*	√			
PID (VOC screen) ppm	0.0		√			
MTBE	<0.002		√			

All units mg/kg (parts per million/ppm) unless shown otherwise

Hydrocarbon values derived using 1% SOM

BAP is a marker for genotoxic PAHs

Sources

- Soil Guideline Values ▲ - C4SL

* - LQM/CIEH "copyright" Land Quality Management Limited reproduced with permission, publication number S4UL3308. All rights reserved

(D) – Dutch (B) - BRE – Building Research Establishment (E) - EA Disposal Threshold 2002

© - CLEA 1.06 Software

SSAC – Site Specific Assessment Criteria (derived with CLEA 1.06 software)

HERON FOODS, NEW WELLINGTON STREET, BLACKBURN, BB2 4PJ

Comparison of Contamination Test Results with Various Thresholds

COMMERCIAL

Hydrocarbons at 1% SOM

Contaminant	Max Value	Threshold	Pass/Fail	SSAC	Pass/Fail	Failed Samples
BTEX COMPOUNDS						
- Benzene	0.008	27*	√			
- Toluene	0.014	56000*	√			
- Ethyl-benzene	0.019	5700*	√			
- Xylene - O	0.012	6600*	√			
- M/P	0.026	5900*	√			
TPHs						
<u>Aliphatics</u>						
C ₅ – C ₆	<0.02	3200 (304 sol)*	√			
C ₆ – C ₈	<0.02	7800 (144 sol)*	√			
C ₈ – C ₁₀	<0.02	2000 (78 sol)*	√			
C ₁₀ – C ₁₂	<10	9700 (48 sol)*	√			
C ₁₂ – C ₁₆	<10	59000 (24 sol)*	√			
C ₁₆ – C ₃₅	740	1600000*	√			
<u>Aromatics</u>						
C ₅ – C ₇	<0.02	26000 (1220 sol)*	√			
C ₇ – C ₈	0.014	56000 (869 vap)*	√			
C ₈ – C ₁₀	0.12	3500 (613 vap)*	√			
C ₁₀ – C ₁₂	<10	16000 (364 sol)*	√			
C ₁₂ – C ₁₆	64	36000 (169 sol)*	√			
C ₁₆ – C ₂₁	150	28000*	√			
C ₂₁ – C ₃₅	300	28000*	√			
TPH Sum	400	1,000 (H)	√			

All units mg/kg (parts per million/ppm) unless shown otherwise

Hydrocarbon values derived using 1% SOM

Vap – vapour saturation limit Soil – solubility saturation limit

Sources

- Soil Guideline Values ▲ - C4SL

* - LQM/CIEH "copyright" Land Quality Management Limited reproduced with permission, publication number S4UL3308. All rights reserved

(D) – Dutch (B) - BRE – Building Research Establishment (E) - EA Disposal Threshold 2002

(H) – Hazardous Waste

® - CLEA 1.06 Software

SSAC – Site Specific Assessment Criteria (derived with CLEA 1.06 software)

LANDFILL GAS TESTING RESULTS
HERON FOODS, NEW WELLINGTON STREET, BLACKBURN. BB2 4PJ

Date	Barometric Pressure (mb)	Temp. °C	Weather	BH	Methane CH ₄ (%)	Oxygen O ₂ (%)	Carbon Dioxide CO ₂ (%)		Outflow from BH (l/hr)	PID (ppm)	Depth to water (m)	Comments
							Peak	Steady State				
							0	0				
					1.0 *		5.0 *		70 ❖			Fresh air Threshold values
21.12.17	1022	10	Rain	BH1	0.0	11.7	1.0	1.0	0.0	-		
				BH2	0.0	21.3	0.0	0.0	0.0	-	1.3	
				BH3	0.0	14.8	2.4	2.4	0.0	-	1.0	
03.01.17	985	6	Rain	BH1	0.0	21.1	0.3	0.3	0.0	-	1.85	
				BH2	0.0	21.4	0.0	0.0	0.0	-	1.20	
				BH3	0.0	21.0	0.1	0.1	0.0	-	0.85	

Testing machines: Geotechnical Instruments Geotech 2000 (GA 12824/10)
 Outflow - 0 taken as < 0.1litres/hour flow of gas from borehole

- * NHBC green limit, CIRIA situation 1 limit
- ❖ CIRIA situation 2 limit

site is a former church, housing site and engineers

significantl contaminants: found - asbestos

low risk to end-users expected, based on commercial end-use

low risk to controlled water expected

low gas to date

radon protection not needed

coal seams sufficiently deep to not pose a significant risk

**Heron Foods, New Wellington Street
Blackburn, BB2 4PJ**

Conceptual Model based on Intrusive

Not to scale 13.11.2017

WORMS EYE

52 Bank Parade
Burnley, BB11 1TS

01282 414 649

