Preferredspaces
Interior design and fit out specialists

Construction Management Plan

Project: Weston Hall Nursery. REVA



Client Name:

IQ Student Accommodation
Suite 8a (8th Floor),
Manchester One, 53 Portland St, Manchester, M1 3LD

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Contents Amendment / Issue Records

Date	Revision	Details
17/04/18	A	

Introduction

This Construction Management Plan (CMP) has been developed to help minimise the impact of our works on the surrounding community, both for the works being carried out and the transport arrangements for the site. This CMP will address how any impacts associated with the proposed works would be mitigated and managed.

Site Contacts

Site Address:
Weston Hall
Sackville St
Manchester
M1 3BB

Person submitting CMP:
Preferred Spaces
Chester House
150-154 Cross Street
Sale
Cheshire
M33 7AQ

Stephen McGowan
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07415709971
smcgowan@preferredspaces.co.uk
*** H&S Emergency Contact ***

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M33 7AQ

Stephen McGowan
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07415709971
smcgowan@preferredspaces.co.uk

Public Engagement:

Preferred Spaces (PSL) will have a site manager with whom the client, building manager and the public can communicate with on a day to day basis. The site manager will always attend the initial site meeting with the PSL Projects Manager.

The site manager will attend all site meetings when required and will ensure that the public are informed of works taking place by way of signage and information boards that will be put up across the site. Further information on communication and public engagement can be found in our PSL Construction Phase Plan which is to be used in conjunction with the Construction Management Plan.

The site manger's contact details will be left with the building manager and will be given to the client at the pre-start meeting for ease of contact. The public will be able to contact our office and/or the building manager if any direct contact with the site manager is required. This number will be displayed on our notice board.

Site Description:

The project is located within Weston Halls, which is accessed from Sackville St and the corner of Charles St. The site comprises of Student Accommodation, The Pendulum Hotel and is directly opposite the multi storey car park. (Access from Sackville St is shown on Appendix C)

On Charles St itself, due to site access constraints and as shown in the traffic management section, PSL will be using the rear car park for storage of materials. The main route to site will be from Sackville St.

Site Compound:

The site compound will be on the rear car park (coach park) accessed off Sackville St. We will place the welfare, toilets, office and a container by the rear entrance to Weston Halls. Operatives and visitors will be asked to use one of the local car parks due to the lack of space. (Appendix B)

Plant will be stored within the working area over night. Plant will be locked and made secure before leaving site. Fencing and site security will be checked at the end of each working day and before works starts. The site foreman will be responsible for checking and maintaining the site security throughout the working day.

Duration of works:

Contract Period: 13 weeks
Site Working Hours: Monday to Friday 7.30am till 5.00pm

For the programme of works please see attached Programme in Appendix A.

Scope of works:

The proposed works are to be carried out at the existing student accommodation at Weston Halls, Manchester. The planned area is split between the existing student areas as well as the Pendulum hotel. These areas are to be completely refurbished to create the new nursery within the ground floor as per the plan. The improvement scheme aims to create an adaptable and multifunctional space which will transform the area into a high quality, distinctive and enjoyable space for the new nursery staff and children.

The external area is adjacent to Charles street and is accessible from the internal areas as well as from the road side. This area is to be adapted into a play area - the ground conditional has been tested for contamination (Ground Survey Appendix E).

The regeneration scheme will include new internal layouts including solid and glazed partitions, new mechanical and electrical installation, flooring, ceilings, decoration and furnishings. The external works are to include a new accessible ramp, lighting, fencing, soft play tarmac play area with play equipment and artificial grass.

The works will be completed as per the agreed programme of works.

The construction associated with the Regeneration of Weston Halls Nursey includes:

• Demolition and removal of all existing partitions, ceiling, flooring and M&E
Supply and install new solid and glazed partitions with moveable walls to manage the space, M&E, ceilings, flooring, and decoration as per the proposed plan
• Install all new sanitary ware and a new kitchen
• Low level sinks to be installed to each playroom
• Installation of new emergency exits in each classroom
• Bespoke joinery items to be installed through as per the design
• Excavate the existing external area as per the plan
• Supply and installation of new surface water drainage system generally comprising slot and channel drains
• Provide a new access ramp in compliance with DDA regulations
• Supply and installation of new external lighting including CCTV
• Supply and install new artificial grass and soft play ground on Rubber Shockpad
• Supply new Paladin fencing and gates to the external perimeter

Impacts to surrounding areas:

Noise generated by the demolition and construction process will be considered, and its impact on neighbouring properties mitigated. Suitable mitigation measures to be used include:

• Heras fencing to be used for cordoned off areas
• Standard construction hours
• The use of quieter alternative methods or mechanical plant, where reasonably practical.
• Locating plant, equipment, site offices, storage areas and worksites away from neighbouring properties where reasonably practical
• Machines and equipment in intermittent use will be shut down or throttled down to a minimum when not in use
• The use of netting on the site Heras fencing will be used where practical
• Maintaining and operating all vehicles, plant and equipment such that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum
• All temporary site lighting will be faced into the site, and not directed towards any neighbouring properties
• During works, the main air pollution emissions are the dust generated when building materials are broken up and the fumes from machinery. We will use a water suppressor during breaking out and cutting. Machinery exhaust emissions will be kept as low as is practical by using well maintained vehicles and machinery at all times.
• Demolition work/particularly noisy activities will be minimised during the hours of 7am – 11am and 3pm – 7pm

Traffic management:

Defined traffic management procedures are imperative for the efficient handling of materials and waste for the project, but also to ensure effective management of vehicles, passing traffic and pedestrians.

The traffic management plan will be controlled by a Site Manager and reviewed regularly. The material deliveries and waste away will be controlled from the rear car park accessed by Sackville St. Vehicles will turn off engines when delivering.

The Project Manager and Site manager will manage the traffic and co-ordination with suppliers regarding any deliveries. All suppliers and contractors will be given prior instruction for the route and procedure for deliveries. All materials will be delivered and offloaded into the site by PSL operatives.

The container to be used will have an internal noise suppressed generator, in which power will be taken away from the need to hard wire into the building. Site set up drawings showing the location of the containers can be founds attached in Appendix B. These also show how we intend to manage the routing of pedestrians and construction traffic during the works.

Traffic and Plant Movements:

There will be a maximum of 1no x 8 tonne excavator on site on any given day for removing muck away from site. The machine will be kept within the working area and will only operate inside the site hoarding, which will separate the external works from the pavement. The machine will be checked daily for all maintenance and usage checks with a spill kit available in the event of any oil spillage.
All drainage outlets will be covered during excavation to prevent any spoil entering the drain.

The compound area will be used to site a skip to allow loading of general waste and access for removal. There will be a separate area at the side of the access route/ramp for a muck away stock pile, making it easier for a grab lorry to reach it. All soil to be removed will be stored within the working area and will be coordinated to be removed as required

Deliveries of materials will be on a variety of vehicles. Each vehicle will be off-loaded by PSL operatives and supervised by the site manager. All materials for the internal works will be delivered via Sackville street and off-loaded by the site compound. All external materials will be off-loaded on Charles St which will be supervised by the site manager. Each delivery will be off-loaded within the time shown below. The wagon will call ahead of time to make aware the site team, once pulled up on Charles street the site manager and operatives will open the herris fencing to allow access and re-direct foot traffic temporarily while the wagon is loaded, all areas will be secured and clean once complete. The site manager will aid the wagon pulling out back into potential traffic (Appendix D)

There will be a maximum of 1 muck away lorries per day while removing waste. This will be done on an as-needed basis. Any over-spilled soil during the loading of waste will be cleared immediately by PSL operatives and the pavement washed.

There will be a maximum of 5 deliveries per day, but this will differ depending on the scheduled works.
- Muck away Lorry (Dwell time 30min per load)
- Delivery vehicles (Dwell time 20min to 1hour)

The site manager will review all deliveries and will maintain access to site.

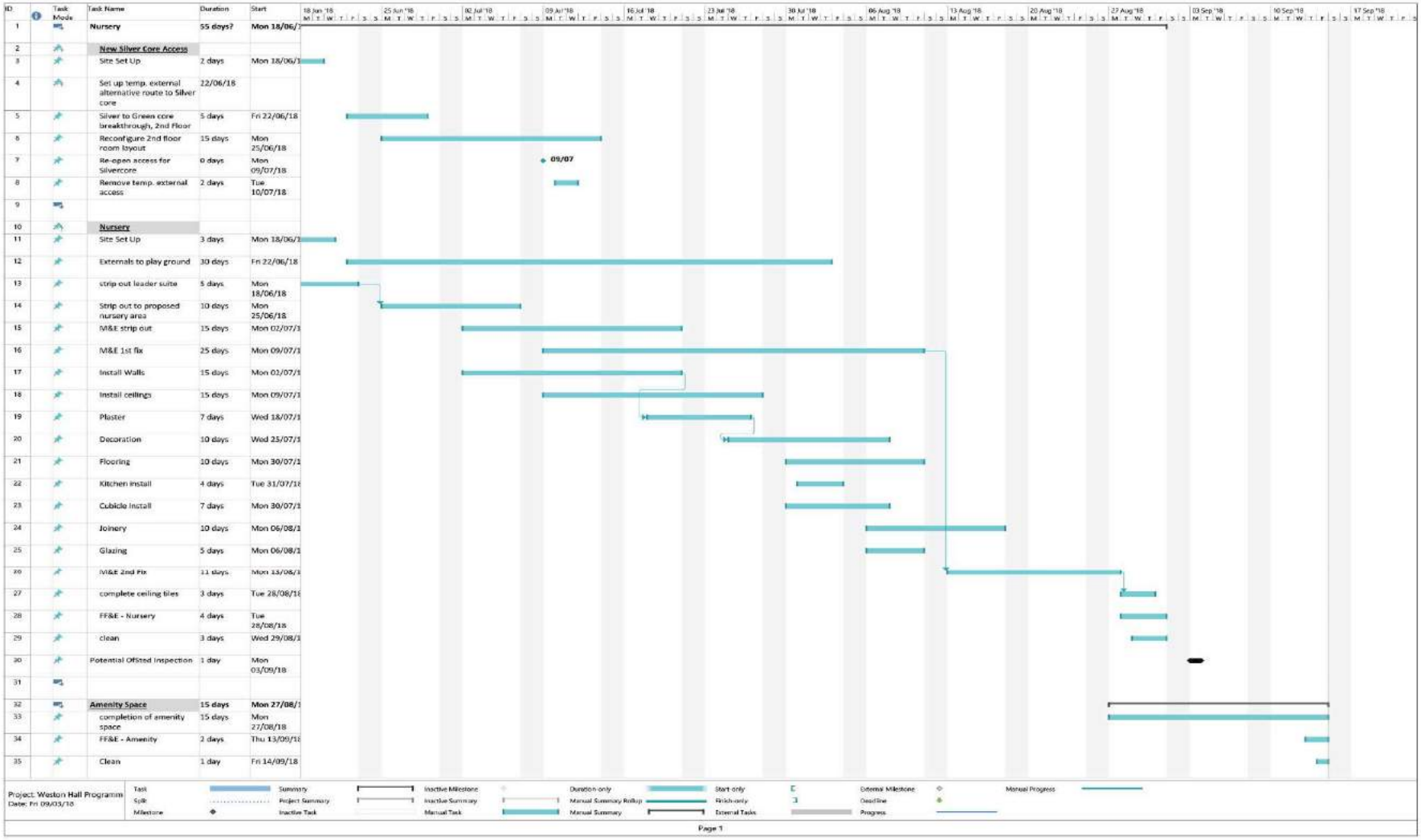
Waste Management:

All waste where possible will be separated for recycling. Building materials such as soil, brick, metal, wood, etc will be sent from site separately. All general waste will be loaded into the skip and separated where possible at our licenced waste carriers premises for recycling.

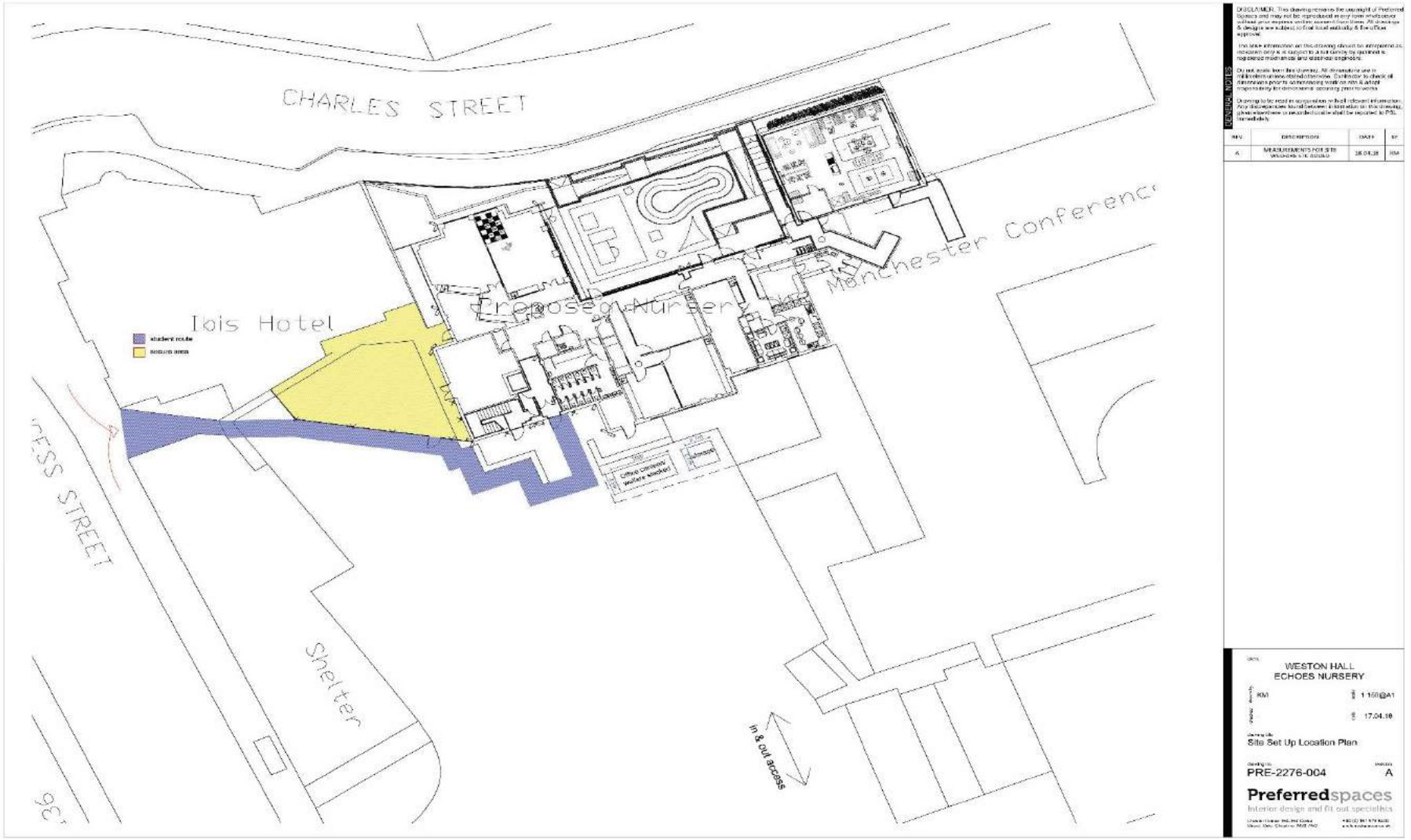
The Waste Policy is to be implemented and audited as follows:

- The reduction/minimisation of waste generated is the first priority for the business
- Sub-contractors and Suppliers are encouraged to operate recycling for unused materials and unwanted packaging
- Only waste disposal (skip) companies with their own Waste Transfer Station / MRF facility, and with the facilities to report on the quantities of waste being recycled, will be used.
- Segregation on site will be implemented where there is sufficient working room and where the facilities exist locally, in order to process the various waste streams segregated on site
- Correct documentation must be provided to support all waste transfer activity including EWC codes and licence information
- All Waste transfer notes will be kept for 2 years and all Consignment notes will be kept for 3 years

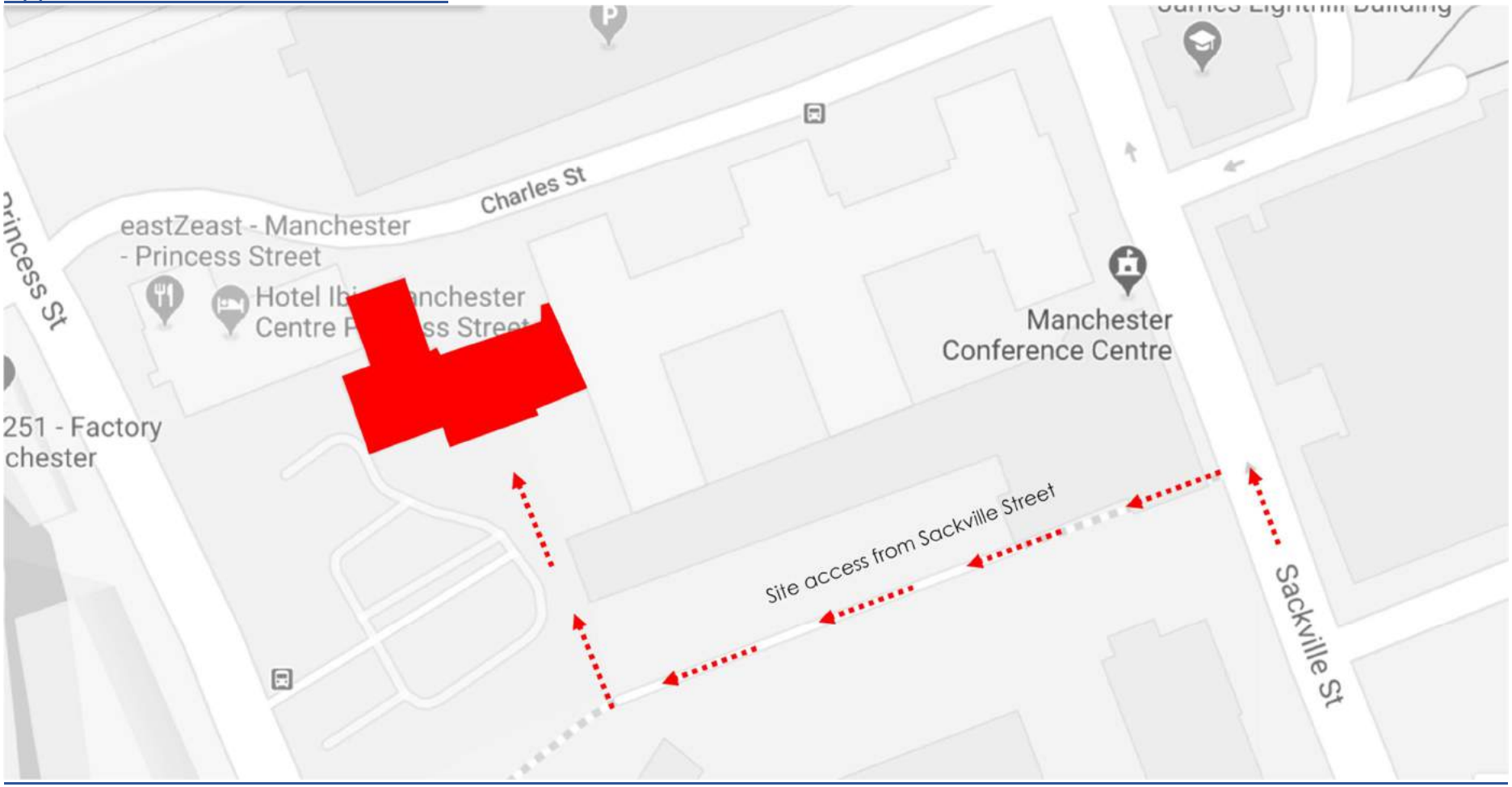
Appendix A – Programme:



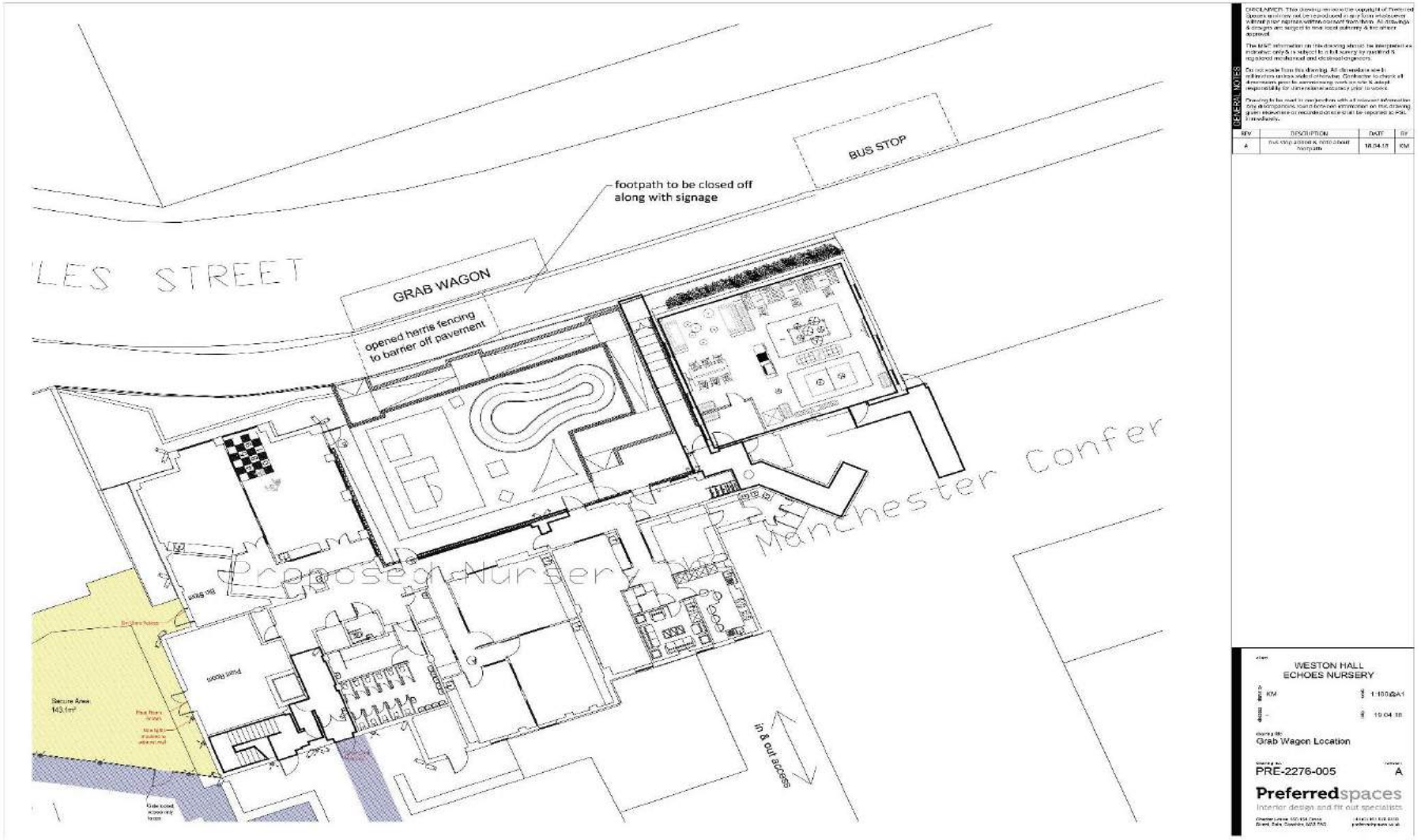
Appendix B Traffic/ Storage Plan:



Appendix C – Sackville St Site Access



Appendix D – Waste Removal From Charles St



Appendix E – Ground Survey:

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e-mail: mailbox@terraconsult.co.uk Website: www.terraconsult.co.uk

11 April 2018
TerraConsult reference: 3788

D H Welton Ltd
Corn House
Failsworth
Manchester M35 0UE

Attention: Martin McQuaid

Proposed Greenspace/Recreation Site, 36 Charles Street, Manchester, M1 3NJ

Dear Martin,

Factual Reporting of Soil Contamination and Underground Service Detection

Introduction

As requested by D H Welton Ltd. attached is an overview of site investigations carried out by TerraConsult Ltd relating to the greenspace/recreation area at the above site in Manchester. It is understood that the proposed development is for construction of a greenspace recreation facility on a portion of the site currently occupied by lawn and hedges.

The site comprises an area of grass lawn in an embayment on the northwestern side of the Weston Halls building on Charles St, Manchester. The site slopes gradually down towards the south and has concrete footpaths on all sides. The site is bounded by the Weston Halls building to the west, south and east, with the Charles Street footpath and an iron fence to the north.

Site Investigations

TerraConsult Ltd visited site on 28th March 2018 and carried out ground-penetrating radar (GPR) surveys as well as four hand-dug trial pits (HP) to determine the nature of the subsoils. Eight manhole covers were noted in the lawn area on site which were each observed to contain several underground pipe connections.

The trial pits were completed to depths of 0.26-0.55 m and established that the uppermost subsoil layers comprise up to 0.25 m thick TOPSOIL, overlying MADE GROUND which is composed of either fine to coarse gravel or clay with varying quantities of sand, gravel, cobbles and demolition waste (ash, brick, plastic textile and crushed concrete).

Pit locations and logs of the encountered soils are appended at the end of this letter.

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Soil Contamination

Three soil samples from HP1, HP2 and HP3 were submitted to DETS Ltd's laboratory in Kent on 3 April 2018. The chemical analyses in Table 1 were carried out.

Table 1: Summary of Laboratory Analyses

Determinand	Soil Suite 1 (HP1 sample)	Soil Suite 3 (HP2 & 3 sample)
Asbestos Screen	✓	✓
pH	✓	✓
Stone Content	-	✓
Metals		
As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn	✓	✓
Ba, Mo, Sb	-	-
Inorganics		
Chloride (2:1 extract on soil samples)	✓	✓
Nitrate (2:1 extract on soil samples)	-	✓
Sulphate (2:1 extract on soil samples and total content)	✓	✓
Organics		
Phenols - Total (monohydric)	✓	✓
Total Organic Carbon (TOC)	-	✓
TCN	-	✓
Moisture Content	✓	✓
PAH (Speciated USEPA 16)	✓	✓
T PAH (Oily Waste 8)	-	✓
TPH (C_8 to C_{36})	-	✓
TPH (C_8 to C_{36}) TPH CWG (RBCA) Speciation	-	✓
Mineral Oil and Diesel Range (C_{10} to C_{40})	-	✓
Benzene, Toluene, Ethyl Benzene, Xylenes (BTEX);	-	✓
Poly Chlorinated Biphenyls (PCBs)	-	✓

The testing showed that all contaminants in the tested samples were either:

- below Soil Guideline Values/Generic Assessment Criteria ((SGV/GAC) as prescribed by Contaimanted Land: Applications irn Real Enviroments (CL: AirE) guidance[1]), or
- below detection limits of the tests.

TerraConsult therefore considers that no further measures are required to address soil contamination as part of this development unless unexpected soil contamination in the highly variable Made Ground is discovered during construction. TerraConsult Ltd should be

[1] https://www.claire.co.uk/projects-and-initiatives/39-generic-assessment-criteria-gac/108-generic-assessment-criteria-gac

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contacted for further guidance if unexpected contamination is encountered on site during construction.

Underground Services Detection

A summary of detected anomalies within the subsoil profile is listed below in Table 2 and in Figure 1. A datum line of the building wall along the west side (closest to the A34/Princess Street) of the path/lawn area has been selected for the purpose of measuring detected GPR anomalies.

Table 2: Summary of detected features from GPR survey

Likely Feature	Distance from datum (metres from building wall along west side of site)	Depth (metres below ground level)	Certainty of detection
Concrete slab	2.0-2.2	0.4	High
Concrete slab	3.0-4.5	0.5	High
Deep pipe	5.0	0.5	Moderate
Cable duct	6.0	0.5	High
Pipe	7.0	0.5	High
Backfilled trench	8.5	0.5	Low
	9.0	0.5	Low
	9.5	0.5	Low
	10.0	0.5	Low
	10.5	0.5	Low
Cable	11.5	0.5	High
Backfilled trench	12.5	1.0	High
Pipe	12.5-13.5	0.7	Low
Cable	17.0	0.5	Low
Cable	19.0-19.5	0.5	Low
Cable	21.0	0.7	High
Large Pipe	24.0	0.5	High
Large Pipe	26.0	0.5	High
Backfilled trench	28.0	1.2-1.5	High
Backfilled trench	30.0	0.8	High

The depths, features and certainties are based on visual assessment of unprocessed GPR data only and should not be relied on without further ground-truthing (by trial excavation) if the indicated areas coincide with proposed excavations or pilings on site.

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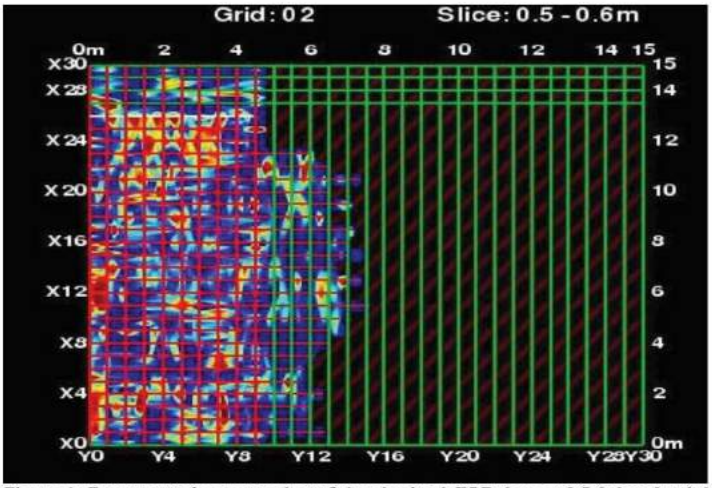


Figure 1: Representative screenshot of the obtained GPR data at 0.5-0.6 m depth blow ground level showing false-colour plots of detected ground anomalies. Note that north is towards the right of the plot.

Conclusions and Recommendations

- Soil contamination from obtained samples is either below detection limits or CL: AiRE allowable screening values.
- TerraConsult should be contacted for further guidance if unexpected contamination is encountered on site during construction.
- Further ground-truthing (by trial excavation) of the areas in line with the offsets indicated in Table 2 should be carried out if these coincide with proposed excavations.
- As outlined within the HSE publication "Successful Health and Safety Management – HSG65" this report should inform your development of safe systems of work and information as an input into the safety management system. The contents of this report may be used to supplement the contents of the Health and Safety File as required under the Construction Design and Management (CDM) Regulations 2015. All risk control measures should be in accordance with the guidelines laid down within the Management of Health and Safety at Work Regulations 1999.
- In accordance with the Construction Design and Management (CDM) Regulations 2015, TerraConsult has acted in the role of Principal Contractor and as Principal Designer for the works as described in this report. With issue of this report TerraConsult has discharged and completed all contractual and legal requirements for these positions and we have no further involvement with the project.

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Report prepared by:	Report reviewed and approved by:
David Gainsford Senior Geologist	Derek Daniels Site Investigations Manager

Appended:

Site Photographs
DETS Ltd Laboratory Analysis
TerraConsult Ltd Trial Pit Logs
TerraConsult Ltd CL:AiRE screening results

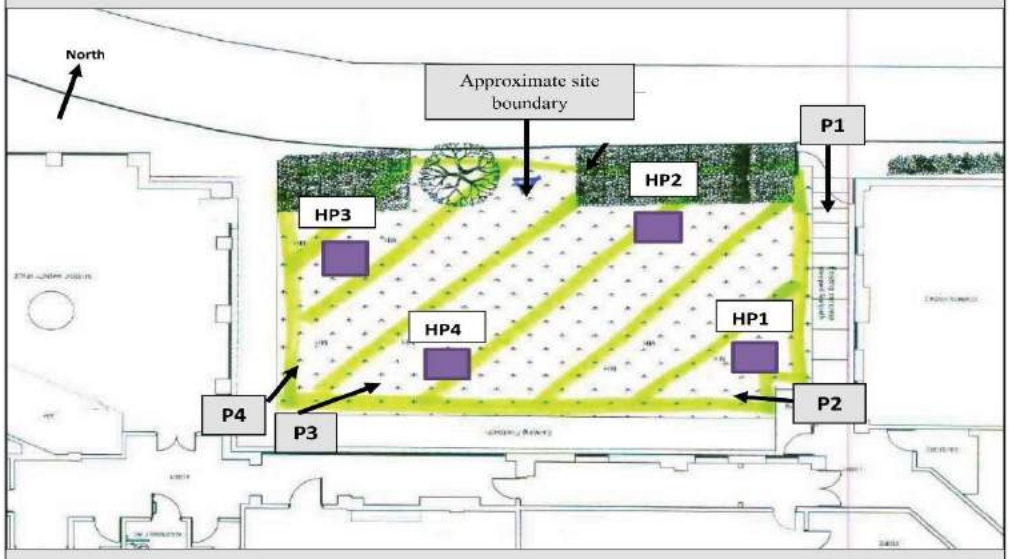


Diagram	Figure 3778/01
Description:	General Site Walkover Photographs and Pit Locations
Labels	Photograph and positions and directions
Comments:	Site Plan provided by the Client - Weston Halls/Pendulum Hotel – Existing Plans, Floor Plans (Drawing No.005)



Photograph	1
Description:	Looking south at the site entrance.



Photograph	2
Description:	Looking west across the site from the south eastern corner.
Comments:	



Photograph	3
Description:	Looking easterly from the south west corner.



Photograph	4
Description:	Looking northerly from the south western corner



Photograph	5
Description:	Hand pit HP1



Photograph	6
Description:	Arisings from HP1- Unable to hand dig beyond 0.25m bgl



Photograph	7
Description:	Hand pit HP2 – Unable to hand dig beyond 0.55m bgl



Photograph	8
Description:	Arisings from HP2



Photograph	9
Description:	Hand pit HP3 – Unable to hand dig beyond 0.30m bgl



Photograph	10
Description:	Arisings from HP3



Photograph	11
Description:	Hand pit HP4 – Unable to hand dig beyond 0.55m bgl



Photograph	12
Description:	Photograph showing locations of HP3 & HP4 in the western area of the site
Photograph	

DETS

UKAS TESTING
4480

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t: 01622 850410
russell.jarvis@qtsenvironmental.com

DETS Report No: 18-73041

Site Reference:	Weston Halls
Project / Job Ref:	3788
Order No:	PO-002705
Sample Receipt Date:	03/04/2018
Sample Scheduled Date:	03/04/2018
Report Issue Number:	1
Reporting Date:	09/04/2018

Authorised by:

Russell Jarvis
Associate Director of Client Services

Authorised by:

Dave Ashworth
Deputy Quality Manager

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

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Soil Analysis Certificate						
QTS Environmental Report No: 18-73041	Date Sampled	28/03/18	28/03/18	28/03/18		
TerraConsult Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Weston Halls	TP / BH No	HP1	HP2	HP3		
Project / Job Ref: 3788	Additional Refs	ES	ES	ES		
Order No: PO-002705	Depth (m)	0.15	0.40	0.30		
Reporting Date: 09/04/2018	QTSE Sample No	325517	325518	325519		

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected		
pH	pH Units	N/a	MCERTS	8.3	8.3	8.2		
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2		
Total Sulphate as SO_4	mg/kg	< 200	NONE		822	655		
Total Sulphate as SO_4	%	< 0.02	NONE		0.08	0.07		
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	10	22	52		
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.01	0.02	0.05		
Organic Matter	%	< 0.1	MCERTS		5.7	1.8		
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	2.1	3.3	1		
W/S Chloride (2:1)	mg/kg	< 1	MCERTS		16	23		
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS		8.2	11.7		
Arsenic (As)	mg/kg	< 2	MCERTS	11	21	11		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3	0.5	0.3		
Chromium (Cr)	mg/kg	< 2	MCERTS	17	19	14		
Copper (Cu)	mg/kg	< 4	MCERTS	31	134	39		
Lead (Pb)	mg/kg	< 3	MCERTS	73	361	121		
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS	14	32	12		
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3		
Zinc (Zn)	mg/kg	< 3	MCERTS	75	199	81		
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2		
DRO (C10 - C24)	mg/kg	< 6	MCERTS		265	33		
Oil (C25 - C40)	mg/kg	< 6	MCERTS		270	9		
Mineral Oil (C10 - C40)	mg/kg	< 10	MCERTS		< 10	< 10		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Speciated PAHs						
QTS Environmental Report No: 18-73041	Date Sampled	28/03/18	28/03/18	28/03/18		
TerraConsult Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Weston Halls	TP / BH No	HP1	HP2	HP3		
Project / Job Ref: 3788	Additional Refs	ES	ES	ES		
Order No: PO-002705	Depth (m)	0.15	0.40	0.30		
Reporting Date: 09/04/2018	QTSE Sample No	325517	325518	325519		

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	3.22	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	0.42	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	2.90	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	3.27	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	25.10	0.79		
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	4.87	0.18		
Fluoranthene	mg/kg	< 0.1	MCERTS	0.24	31.60	1.76		
Pyrene	mg/kg	< 0.1	MCERTS	0.22	29.50	1.52		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	9.52	0.53		
Chrysene	mg/kg	< 0.1	MCERTS	0.14	10.40	0.72		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.14	9.14	0.68		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	3.46	0.27		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	7.31	0.49		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	3.81	0.32		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.76	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	3.77	0.32		
Coronene	mg/kg	< 0.1	NONE	< 0.1	0.48	< 0.1		
Total Oily Waste PAHs	mg/kg	< 1	MCERTS	< 1	44.4	3		
Total Dutch 10 PAHs	mg/kg	< 1	MCERTS	< 1	103	5.4		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	149	7.6		
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	< 1.7	149	7.6		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

DETS Ltd
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Soil Analysis Certificate - TPH CWG Banded						
QTS Environmental Report No: 18-73041	Date Sampled	28/03/18	28/03/18			
TerraConsult Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Weston Halls	TP / BH No	HP2	HP3			
Project / Job Ref: 3788	Additional Refs	ES	ES			
Order No: PO-002705	Depth (m)	0.40	0.30			
Reporting Date: 09/04/2018	QTSE Sample No	325518	325519			

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10			
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21			
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	4	< 2			
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	26	< 2			
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	108	9			
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	397	10			
Aromatic (C5 - C35)	mg/kg	< 21	NONE	535	< 21			
Total >C5 - C35	mg/kg	< 42	NONE	535	< 42			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

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Soil Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 18-73041	Date Sampled	28/03/18	28/03/18			
TerraConsult Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Weston Halls	TP / BH No	HP2	HP3			
Project / Job Ref: 3788	Additional Refs	ES	ES			
Order No: PO-002705	Depth (m)	0.40	0.30			
Reporting Date: 09/04/2018	QTSE Sample No	325518	325519			

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2			
Toluene	ug/kg	< 5	MCERTS	< 5	< 5			
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2			
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2			
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2			
MTBE	ug/kg	< 5	MCERTS	< 5	< 5			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

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Soil Analysis Certificate - PCB (7 Congeners)						
QTS Environmental Report No: 18-73041	Date Sampled	28/03/18	28/03/18			
TerraConsult Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Weston Halls	TP / BH No	HP2	HP3			
Project / Job Ref: 3788	Additional Refs	ES	ES			
Order No: PO-002705	Depth (m)	0.40	0.30			
Reporting Date: 09/04/2018	QTSE Sample No	325518	325519			

Determinand	Unit	RL	Accreditation					
PCB Congener 28	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 52	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 101	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 138	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 153	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 180	mg/kg	0.008	NONE	< 0.008	< 0.008			
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

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Soil Analysis Certificate - Sample Descriptions
QTS Environmental Report No: 18-73041
TerraConsult Ltd
Site Reference: Weston Halls
Project / Job Ref: 3788
Order No: PO-002705
Reporting Date: 09/04/2018

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
325517	HP1	ES	0.15	21.9	Brown sandy clay
325518	HP2	ES	0.40	16.1	Brown sandy clay with stones
325519	HP3	ES	0.30	14.4	Brown sandy clay with brick and concrete

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample [#]
Unsuitable Sample [#]

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Soil Analysis Certificate - Methodology & Miscellaneous Information

QTS Environmental Report No: 18-73041
TerraConsult Ltd
Site Reference: Weston Halls
Project / Job Ref: 3788
Order No: PO-002705
Reporting Date: 09/04/2018

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

Borehole Log

TerraConsult

Borehole formation details: | **Location details:**

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:	Location details:
IP	0.00	0.25	28-03-18	28-03-18	GB	Hand digging tools			28-03-18	GB	Unable to excavate deeper with hand tools due to material density.	Grid:

Backfill / Install'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				0.25 0.26	Soft dark brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to subrounded fine to medium brick with rare concrete and porcelain. (TOPSOIL) Layer of light grey CONCRETE. (MADE GROUND) *0.25 m: Geotextile - Suspected buried 1 tonne builders bag (flexible intermediate bulk container)* Borehole ends at 0.25m (Unable to deepen)			0.15	ES	
	Ins'					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:

Depth related remarks:

From:	To:	Remarks:
0.25	0.25	Unable to excavate deeper with hand tools due to material density.

Chiselling details:

From:	to:	Duration:	Tool:

AGS Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels are in metres.

Log issue:

Scale: 1:50

Project: Weston Halls, Manchester

Project No: 3788

Client: D.H. Welton & Co. Limited

Exploratory position reference: **HP1**

Sheet 1 of 1

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
IP	0.00	0.55	28-03-18	28-03-18	GB	Hand digging tools			28-03-18	GB	Unable to excavate deeper with hand tools due to material density.

Location details:

Grid:

Backfill / Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				0.20	Soft dark brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to subrounded fine to medium brick with rare concrete and plastic. (TOPSOIL)			0.40	ES	
				(0.35)	Soft dark brown slightly gravelly sandy CLAY with a medium to high cobble content of subangular brick and concrete. Gravel is angular to subrounded fine to medium brick and concrete with occasional cobble size pockets of ash. (MADE GROUND)					
				0.55	Borehole ends at 0.55m (Unable to deepen)					
	Inst					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:

Depth related remarks:

From:	To:	Remarks:
0.55	0.55	Unable to excavate deeper with hand tools due to material density.

Chiselling details:

From:	to:	Duration:	Tool:

AGS Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels are in metres.

Log issue:

Scale: 1:50

Project: Weston Halls, Manchester

Project No: 3788

Client: D.H. Welton & Co. Limited

Exploratory position reference: **HP2**

Sheet 1 of 1

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
IP	0.00	0.30	28-03-18	28-03-18	GB	Hand digging tools			28-03-18	GB	Unable to excavate deeper with hand tools due to material density.

Location details:

Grid:

Backfill / Install'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				0.20 0.30	Soft dark brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to subrounded fine to medium brick with rare concrete and porcelain. (TOPSOIL)			0.30	ES	
					Light greyish brown slightly clayey sandy angular to subrounded fine to coarse GRAVEL of brick , concrete and occasional plastic and rare glass. (MADE GROUND)					
					Borehole ends at 0.30m (Unable to deepen)					
	Inst					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:

Depth related remarks:

From:	To:	Remarks:
0.30	0.30	Unable to excavate deeper with hand tools due to material density.

Chiselling details:

From:	to:	Duration:	Tool:

AGS Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels are in metres.

Log issue:

Scale: 1:50

Project: Weston Halls, Manchester

Project No: 3788

Client: D.H. Welton & Co. Limited

Exploratory position reference:

HP3

Sheet 1 of 1

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
IP	0.00	0.35	28-03-18	28-03-18	GB	Hand digging tools			28-03-18	GB	Unable to excavate deeper with hand tools due to material density.

Location details:

Grid:

Backfill / Install'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				0.20 0.35	Soft dark brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to subrounded fine to medium brick with rare concrete. (TOPSOIL) Light greyish brown slightly clayey sandy angular to subrounded fine to coarse GRAVEL of brick and concrete with rare plastic, tile and wire. (MADE GROUND) Borehole ends at 0.35m (Unable to deepen)					
	Ins'					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:

Depth related remarks:

From:	To:	Remarks:
0.35	0.35	Unable to excavate deeper with hand tools due to material density.

Chiselling details:

From:	to:	Duration:	Tool:

AGS Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels are in metres.

Log issue:

Scale: 1:50

Project: Weston Halls, Manchester

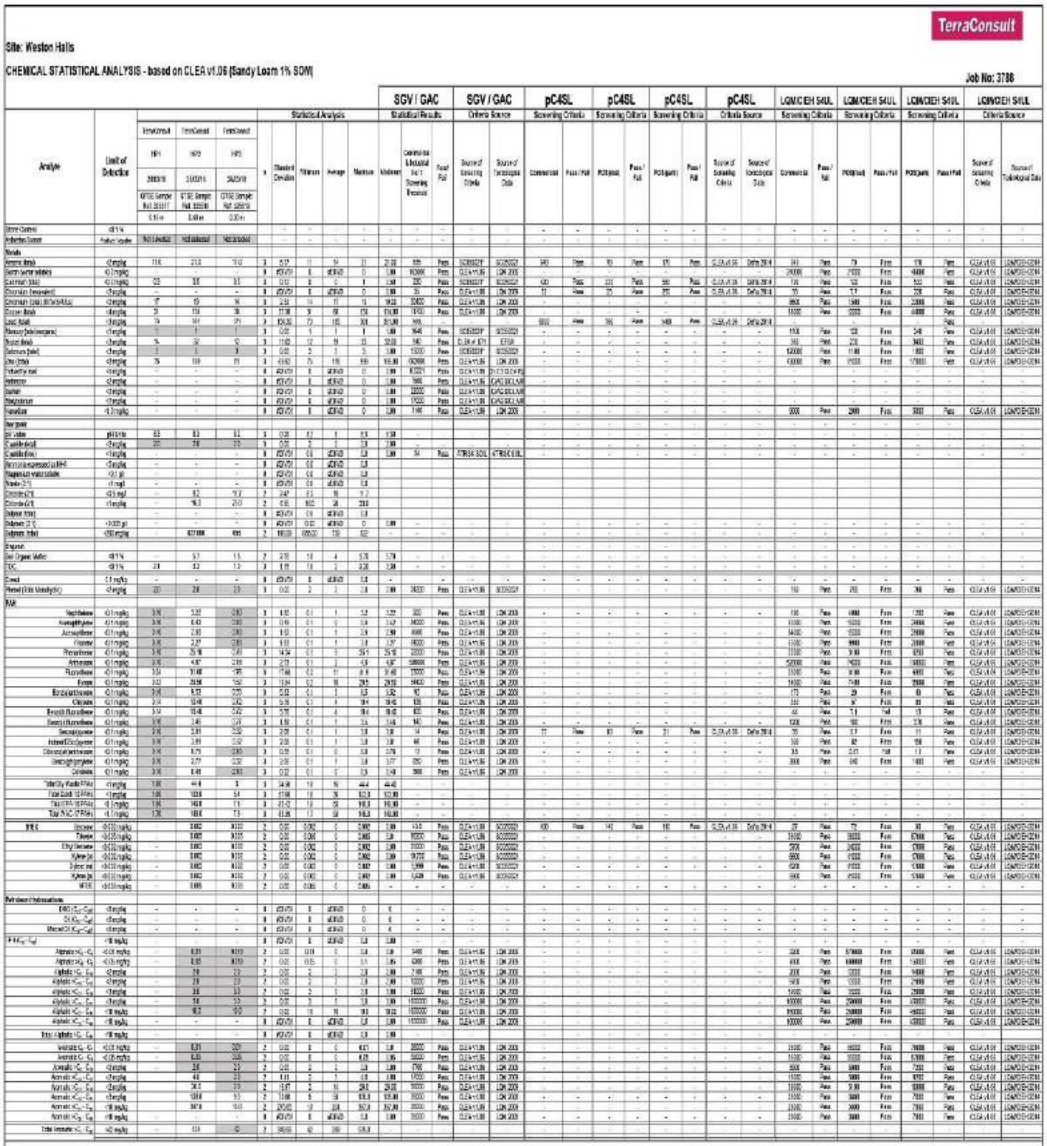
Project No: 3788

Client: D.H. Welton & Co. Limited

Exploratory position reference:

HP4

Sheet 1 of 1



TerraConsult

Site: Weston Halls

CHEMICAL STATISTICAL ANALYSIS - based on CLEA v1.06 (Sandy Loam 1% SOM)

Job No: 3786

Analyte	Limit of Detection	Statistical Analysis									SGV / GAC Statistical Results			SGV / GAC Criteria Source		pC4SL Screening Criteria		pC4SL Screening Criteria		pC4SL Screening Criteria		pC4SL Criteria Source		LQM/CIEH S4UL Screening Criteria		LQM/CIEH S4UL Screening Criteria		LQM/CIEH S4UL Screening Criteria		LQM/CIEH S4UL Criteria Source	
		Area/Consult HP1 28/03/18 GT3E Sample Ref: 28107 0.15m	Area/Consult HP2 31/03/18 GT3E Sample Ref: 28108 0.40m	Area/Consult HP3 04/04/18 GT3E Sample Ref: 28109 0.30m	n	Standard Deviation	Minimum	Average	Maximum	Median	Commercial Industrial Soil 1 Screening Threshold	Result Pass/Fail	Source of Screening Criteria	Source of Toxicological Data	Commercial	Pass / Fail	POS Limit	Pass / Fail	POS Limit	Pass / Fail	Source of Screening Criteria	Source of Toxicological Data	Commercial	Pass / Fail	POS Limit	Pass / Fail	POS Limit	Pass / Fail	Source of Screening Criteria	Source of Toxicological Data
Stone Content	<0.1 %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Screen	Asbestos Identified	Not Identified	Not Identified	Not Identified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																																
Arsenic (As)	<1 mg/kg	11.6	21.3	11.0	3	5.77	11	14	21	11.0	635	Pass	SC050021	SC050021	640	Pass	93	Pass	170	Pass	C4SL v1.06	Defra 2014	640	Pass	79	Pass	170	Pass	C4SL v1.06	LQM/CIEH v1.06
Barium (water soluble)	<0.1 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	-	13000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	24000	Pass	21000	Pass	46000	Pass	C4SL v1.06	LQM/CIEH v1.06
Beryllium (total)	<0.1 mg/kg	0.5	0.8	0.5	3	0.15	0.5	0.6	0.8	0.6	1300	Pass	SC050021	SC050021	120	Pass	120	Pass	350	Pass	C4SL v1.06	Defra 2014	130	Pass	120	Pass	500	Pass	C4SL v1.06	LQM/CIEH v1.06
Chromium (hexavalent)	<5 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	-	33	Pass	C4SL v1.06	LQM 2009	33	Pass	33	Pass	200	Pass	C4SL v1.06	Defra 2014	33	Pass	7.7	Pass	220	Pass	C4SL v1.06	LQM/CIEH v1.06
Chromium (total) (III Soluble)	<5 mg/kg	17	19	14	3	2.52	14	17	19	17.0	33000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	850	Pass	1500	Pass	22000	Pass	C4SL v1.06	LQM/CIEH v1.06
Cobalt (total)	<3 mg/kg	7.9	11.0	7.8	3	1.79	7.8	9.0	11.0	7.8	1300	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	11000	Pass	2200	Pass	34000	Pass	C4SL v1.06	LQM/CIEH v1.06
Lead (total)	<3 mg/kg	7.9	14.1	9.1	3	3.53	7.2	10.1	14.1	9.1	2330	Pass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (elemental)	<1 mg/kg	1	1	1	3	0.00	1	1	1	1.0	1400	Pass	SC050021	SC050021	-	-	-	-	-	-	-	-	1100	Pass	120	Pass	480	Pass	C4SL v1.06	LQM/CIEH v1.06
Nickel (total)	<3 mg/kg	15	19.0	11	3	4.163	11	15.0	19.0	15.0	10000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	63000	Pass	17000	Pass	170000	Pass	C4SL v1.06	LQM/CIEH v1.06
Phenol (by Kone)	<1 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	-	81000	Pass	C4SL v1.06	DEFRA CLEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	-	26000	Pass	C4SL v1.06	DEFRA SGV LAW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	-	9000	Pass	C4SL v1.06	DEFRA SGV LAW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (total)	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	-	170000	Pass	C4SL v1.06	DEFRA SGV LAW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Soluble	<0.1 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	-	1400	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	9000	Pass	2300	Pass	33000	Pass	C4SL v1.06	LQM/CIEH v1.06
Inorganics																																
pH Value	pH Units	8.3	8.2	8.2	3	0.06	8.2	8	8.3	8.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (total)	<3 mg/kg	2.0	2.0	2.0	3	0.00	2	2	2.0	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (free)	<1 mg/kg	-	-	-	0	#DIV/0!	0.0	#DIV/0!	0.0	0.00	34	Pass	ATRISK SOIL	ATRISK SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (water soluble as NO3)	<3 mg/kg	-	-	-	0	#DIV/0!	0.0	#DIV/0!	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium (water soluble)	<0.1 g/l	-	-	-	0	#DIV/0!	0.0	#DIV/0!	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (2:1)	<3 mg/l	-	-	-	0	#DIV/0!	0.0	#DIV/0!	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride (2:1)	<0.5 mg/l	-	8.2	10.7	2	2.47	8.5	19	10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride (Cl)	<3 mg/kg	-	16.3	20.0	2	5.05	16.5	26	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphur (total)	-	-	-	-	0	#DIV/0!	0.0	#DIV/0!	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphate (2:1)	<0.01 g/l	-	-	-	0	#DIV/0!	0.00	#DIV/0!	0	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphate (total)	<250 mg/kg	-	671.000	495	2	118.08	495.00	733	832	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic																																
Soil Organic Matter	<0.1 %	5.3	1.5	2	2.76	1.0	4	5.78	1.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOC	<0.1 %	2.8	0.3	1.0	3	1.11	1.0	2	3.28	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cresol	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol (Kone Monohydric)	<1mg/kg	2.0	2.0	2.0	3	0.00	2	2	2.0	2.00	34000	Pass	C4SL v1.06	SC050021	-	-	-	-	-	-	-	-	110	Pass	250	Pass	760	Pass	C4SL v1.06	LQM/CIEH v1.06
PAH																																
Naphthalene	<0.1 mg/kg	0.16	0.22	0.10	3	0.06	0.1	1	1.2	0.22	200	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	190	Pass	6000	Pass	1200	Pass	C4SL v1.06	LQM/CIEH v1.06
Acenaphthylene	<0.1 mg/kg	0.16	0.43	0.10	3	0.19	0.1	1	0.4	0.43	34000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	15000	Pass	29000	Pass	C4SL v1.06	LQM/CIEH v1.06
Acenaphthene	<0.1 mg/kg	0.16	2.80	0.10	3	0.93	0.1	1	2.9	2.80	6000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	84000	Pass	15000	Pass	29000	Pass	C4SL v1.06	LQM/CIEH v1.06
Fluorene	<0.1 mg/kg	0.16	2.27	0.10	3	0.83	0.1	1	2.3	2.27	34000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	9900	Pass	23000	Pass	C4SL v1.06	LQM/CIEH v1.06
Phenanthrene	<0.1 mg/kg	0.16	25.10	0.89	3	14.54	0.1	5	39.1	25.10	22000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	22000	Pass	9100	Pass	97000	Pass	C4SL v1.06	LQM/CIEH v1.06
Anthracene	<0.1 mg/kg	0.16	4.67	0.89	3	2.19	0.1	1	4.9	4.67	540000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	420000	Pass	74000	Pass	540000	Pass	C4SL v1.06	LQM/CIEH v1.06
Fluoranthene	<0.1 mg/kg	0.34	31.60	1.99	3	17.66	0.2	11	51.8	31.60	23000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	6100	Pass	49000	Pass	C4SL v1.06	LQM/CIEH v1.06
Pyrene	<0.1 mg/kg	0.42	28.90	1.90	3	16.84	0.2	10	49.5	28.90	54000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	36000	Pass	7400	Pass	120000	Pass	C4SL v1.06	LQM/CIEH v1.06
Benzo(a)anthracene	<0.1 mg/kg	0.16	9.72	0.55	3	5.62	0.1	3	15.3	9.72	182	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	170	Pass	29	Pass	83	Pass	C4SL v1.06	LQM/CIEH v1.06
Chrysene	<0.1 mg/kg	0.24	10.40	0.62	3	6.28	0.1	4	18.4	10.40	1035	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	350	Pass	57	Pass	169	Pass	C4SL v1.06	LQM/CIEH v1.06
Benzo(b)fluoranthene	<0.1 mg/kg	0.34	13.40	0.92	3	8.70	0.1	4	24.4	13.40	600	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	40	Pass	7.1	Fail	115	Pass	C4SL v1.06	LQM/CIEH v1.06
Benzo(k)fluoranthene	<0.1 mg/kg	0.16	3.46	0.31	3	1.93	0.1	1	5.6	3.46	140	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	1200	Pass	180	Pass	370	Pass	C4SL v1.06	LQM/CIEH v1.06
Benzo(a)pyrene	<0.1 mg/kg	0.16	5.81	0.52	3	3.29	0.1	1	9.0	5.81	14	Pass	C4SL v1.06	LQM 2009	77	Pass	8.5	Pass	21	Pass	C4SL v1.06	Defra 2014	75	Pass	7.7	Pass	11	Pass	C4SL v1.06	LQM/CIEH v1.06
Indeno(123cd)pyrene	<0.1 mg/kg	0.16	3.89	0.30	3	2.08	0.1	1	5.8	3.89	66	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	500	Pass	82	Pass	150	Pass	C4SL v1.06	LQM/CIEH v1.06
Dibenz(ah)anthracene	<0.1 mg/kg	0.16	0.73	0.06	3	0.35	0.1	0	0.8	0.73	13	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	3.5	Pass	0.71	Fail	1.1	Pass	C4SL v1.06	LQM/CIEH v1.06
Benzo(ghi)perylene	<0.1 mg/kg	0.16	3.77	0.32	3	2.00	0.1	1	5.0	3.77	3900	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	3800	Pass	640	Pass	1400	Pass	C4SL v1.06	LQM/CIEH v1.06
Coronene	<0.1 mg/kg	0.16	0.48	0.06	3	0.22	0.1	0	0.6	0.48	3900	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (By Kone PAHs)	<1 mg/kg	1.00	44.0	3	3	24.58	1.0	15	68.4	44.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (Lab 16 PAHs)	<1 mg/kg	1.00	102.0	5.4	3	57.06	1.0	36	162.0	102.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (USA 16 PAHs)	<1 mg/kg	1.00	160.0	7.5	3	91.12	1.0	52	260.0	160.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PAH (TPAH)	<1 mg/kg	1.00	160.0	7.5	3	91.26	1.0	52	260.0	160.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BTEX																																
Benzene	<0.020 mg/kg	-	0.002	0.020	2	0.00	0.002	0	0.002	0.00	4.9	Pass	C4SL v1.06	SC050021	100	Pass	140	Pass	180	Pass	C4SL v1.06	Defra 2014	27	Pass	77	Pass	95	Pass	C4SL v1.06	LQM/CIEH v1.06
Toluene	<0.020 mg/kg	-	0.002	0.020	2	0.00	0.002	0	0.002	0.00	130000	Pass	C4SL v1.06	SC050021	-	-	-	-	-	-	-	-	56000	Pass	56000	Pass	87000	Pass	C4SL v1.06	LQM/CIEH v1.06
Ethyl Benzene	<0.020 mg/kg	-	0.002	0.020	2	0.00	0.002	0	0.002	0.00	81000	Pass	C4SL v1.06	SC050021	-	-	-	-	-	-	-	-	5700	Pass	24000	Pass	57000	Pass	C4SL v1.06	LQM/CIEH v1.06
Xylene (o)	<0.020 mg/kg	-	0.002	0.020	2	0.00	0.002	0	0.002	0.00	56000	Pass	C4SL v1.06	SC050021	-	-	-	-	-	-	-	-	6900	Pass	47000	Pass	67000	Pass	C4SL v1.06	LQM/CIEH v1.06
Xylene (m)	<0.020 mg/kg	-	0.002	0.020	2	0.00	0.002	0	0.002	0.00	1.9E+05	Pass	C4SL v1.06	SC050021	-	-	-	-	-	-	-	-	4200	Pass	47000	Pass	67000	Pass	C4SL v1.06	LQM/CIEH v1.06
Xylene (p)	<0.020 mg/kg	-	0.002	0.020	2	0.00	0.002	0	0.002	0.00	1.9E+05	Pass	C4SL v1.06	SC050021	-	-	-	-	-	-	-	-	5400	Pass	47000	Pass	67000	Pass	C4SL v1.06	LQM/CIEH v1.06
MTBE	<0.020 mg/kg	-	0.005	0.020	2	0.00	0.005	0	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons																																
EPH (C_{10}-C_{40})	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil (C_{10}-C_{40})	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mineral Oil (C_{10}-C_{40})	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (C_5-C_{40})	<10 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0.0	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aliphatic (C_5-C_6)	<0.01 mg/kg	-	0.01	0.010	2	0.00	0.01	0	0.0	0.01	3400	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	2200	Pass	870000	Pass	65000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aliphatic (C_6-C_8)	<0.01 mg/kg	-	0.01	0.010	2	0.00	0.01	0	0.01	0.01	6300	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	4100	Pass	660000	Pass	145000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aliphatic (C_8-C_{10})	<3 mg/kg	-	2.0	2.0	2	0.00	2	2	2.0	2.00	7100	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	2100	Pass	13000	Pass	34000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aliphatic (C_{10}-C_{12})	<3 mg/kg	-	2.0	2.0	2	0.00	2	2	2.0	2.00	10000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	1400	Pass	13000	Pass	27000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aliphatic (C_{12}-C_{16})	<3 mg/kg	-	3.0	3.0	2	0.00	3	3	3.0	3.00	14000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	10000	Pass	13000	Pass	29000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aliphatic (C_{16}-C_{21})	<3 mg/kg	-	9.8	5.0	2	0.00	5	7	9.8	9.80	1100000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	100000	Pass	250000	Pass	470000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aliphatic (C_{21}-C_{35})	<3 mg/kg	-	16.2	9.0	2	0.00	9	13	16.2	16.20	1100000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	100000	Pass	250000	Pass	470000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aliphatic (C_{35}-C_{44})	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0.0	0.00	1100000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	100000	Pass	250000	Pass	470000	Pass	C4SL v1.06	LQM/CIEH v1.06
Total Aliphatic (C_5-C_{44})	<10 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0.0	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aromatic (C_5-C_7)	<0.01 mg/kg	-	0.01	0.01	2	0.00	0	0	0.01	0.01	29000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	65000	Pass	76000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aromatic (C_7-C_8)	<0.01 mg/kg	-	0.01	0.01	2	0.00	0	0	0.01	0.01	29000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	65000	Pass	76000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aromatic (C_8-C_{10})	<3 mg/kg	-	2.0	2.0	2	0.00	2	2	2.0	2.00	3700	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	2200	Pass	4800	Pass	7200	Pass	C4SL v1.06	LQM/CIEH v1.06
Aromatic (C_{10}-C_{12})	<3 mg/kg	-	4.0	2.0	2	1.41	2	3	4.0	4.00	17000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	5000	Pass	8700	Pass	C4SL v1.06	LQM/CIEH v1.06
Aromatic (C_{12}-C_{16})	<3 mg/kg	-	20.3	9.5	2	8.47	9	15	20.3	20.30	35000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	9.3E+04	Pass	18000	Pass	C4SL v1.06	LQM/CIEH v1.06
Aromatic (C_{16}-C_{21})	<3 mg/kg	-	18.8	9.5	2	7.08	9	14	18.8	18.80	35000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	5000	Pass	7900	Pass	C4SL v1.06	LQM/CIEH v1.06
Aromatic (C_{21}-C_{35})	<3 mg/kg	-	38.0	19.0	2	20.08	19	28	38.0	38.00	35000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	5000	Pass	7900	Pass	C4SL v1.06	LQM/CIEH v1.06
Aromatic (C_{35}-C_{44})	<3 mg/kg	-	-	-	0	#DIV/0!	0	#DIV/0!	0.0	0.00	35000	Pass	C4SL v1.06	LQM 2009	-	-	-	-	-	-	-	-	15000	Pass	5000	Pass	7900	Pass	C4SL v1.06	LQM/CIEH v1.06
Total Aromatic (C_5-C_{44})	<10 mg/kg	-	83.8	42	2	39.60	42	63	83.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Below Detection Limit

Exceeded GAC/SGV

Exceeded pC4SL / S4ULs

Assessment criteria for GPL (Aliphatic and Aromatic are not based on a chain length). Aliphatic criteria assumes DB-1 / HDPE classification for corrosion.

Notes

1. Generic Quantitative Assessment Criteria have been used where a site specific level based on the current CLEA 1.06 Model default values, sandy loam 1% SOM (Where no CLEA generic guideline value has been calculated, no assessment has been made). Exceedance provides information and raises considerations. This is to provide a reasonable prediction of the range of data and no final conclusions are obtained.
2. Results lower than detection limit are labelled <1mg/kg.
3. Where the final results are recorded as being lower than the detection limit, the result used for the assessment is the detection limit.
4. A "Possible Result" in the determination of a GAC based on current CLEA 1.06 Model, the Arsenic Soil Value for Commercial / Industrial land is 640 mg/kg.
5. Final values, where an SGV has been published, the value may have been rounded from the published SGV in the interests of the method which gives rise to uncertainty. CLEA v1.06 has therefore been used to derive GACs for this scenario. For organics, CLEA v1.06 has been used plus the default 2% assumes 1% SOM.
6. pC4SL based on adopted toxicology and exposure assumptions.
7. pC4SL for benzene assumes 3% SOM.