

THE HOODLANDS, HAMBROOK LANE, HAMBROOK, BS16 1RL

Ref: CGL-6824965 Your ref: POP005006 Grid ref: 363566 179476

### 21 Railway infrastructure and projects



### 21.1 Underground railways (London)

### **Records within 250m**

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

### 21.2 Underground railways (Non-London)

### **Records within 250m**

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.





0

0



THE HOODLANDS, HAMBROOK LANE, HAMBROOK, BS16 1RL

This data is sourced from publicly available information by Groundsure.

### 21.3 Railway tunnels

**Records within 250m** 

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

### **21.4 Historical railway and tunnel features**

### **Records within 250m**

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

### 21.5 Royal Mail tunnels

### Records within 250m

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

### **21.6 Historical railways**

### **Records within 250m**

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

### 21.7 Railways

### Records within 250m

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on **page 93** 





0

0

0

0

6



THE HOODLANDS, HAMBROOK LANE, HAMBROOK, BS16 1RL

Ref: CGL-6824965 Your ref: POP005006 Grid ref: 363566 179476

Location	Name	Туре
82m N	-	rail
86m N	-	rail
86m N	Not given	Multi Track
87m N	Not given	Multi Track
143m NW	Not given	Multi Track
187m NE	-	rail

*This data is sourced from Ordnance Survey and OpenStreetMap.* 

### 21.8 Crossrail 1

Records within 500m	0
The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the	west.

through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

### 21.9 Crossrail 2

Records within 500m			
---------------------	--	--	--

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

### 21.10 HS2

**Records within 500m** 

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.





0

0



THE HOODLANDS, HAMBROOK LANE, HAMBROOK, BS16 1RL Ref: CGL-6824965 Your ref: POP005006 Grid ref: 363566 179476

### Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <u>https://www.groundsure.com/sources-reference</u>.

### **Terms and conditions**

Groundsure's Terms and Conditions can be accessed at this link: <u>https://www.groundsure.com/terms-and-conditions-jan-2020/</u>.





### **APPENDIX D**

Risk Assessment Methodology



### **CGL Risk Assessment Methodology**

The following risk Assessment methodology is based on CIRIA C552 (2001) Contaminated Land Risk Assessment – A Guide to Good Practice<sup>1</sup>, in order to quantify potential risk via risk estimation and risk evaluation, which can be adopted at the Phase I stage. This will then determine an overall risk category which can be used to identify likely actions. This methodology uses qualitative descriptors and therefore is a qualitative approach and is undertaken for each potential pollution linkage (source-pathway-receptor) identified for the site in accordance with Contaminated Land Reports 6<sup>2</sup> and 11<sup>3</sup>.

The methodology requires the classification of:

- The magnitude of the consequence (severity) of a risk occurring, and
- The magnitude of the probability (likelihood) of a risk occurring.

The potential consequences of contamination risks occurring at this site are classified in accordance with Table 1 below, which is adapted from the CIRIA guidance<sup>1</sup>.

Table 1. Classifications of Consequence ratings

Classification	Definition of Consequence	Examples
Severe	Short-term (acute) risks to human health.	High concentration of cyanide on the surface of an informal recreation area
	Short-term (acute) risk of pollution of sensitive water resource or ecosystem.	Major spillage of contaminants from site into controlled waters
	Catastrophic damage to crops/buildings/property/infrastructure, including off-site soils.	Explosion causing building collapse
Medium	Long-term (chronic) risks to human health	Concentrations of a contaminant from site exceeding the generic or site specific assessment criteria
	Long-term (chronic) pollution of sensitive water resource	Leaching of contaminants from a site into a major or minor aquifer
	Significant change in an ecosystem/contamination of off-site soils	Death of a species within a designated nature reserve
Mild	Pollution of non-sensitive water resource	Pollution of a non-classified groundwater
	Significant damage to crops/ buildings/property/infrastructure	Damage to a building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
	Damage to an ecosystem or sensitive buildings/structures/services	
Minor	Easily preventable non-permanent health effects	Presence of contamination at concentrations which require the use of personal protective equipment during site work
	Harm, although not necessarily significant harm, which may result in financial loss or expenditure to resolve	Loss of plants in a landscaping scheme/discolouration of concrete
	Easily repairable effects of damage to buildings/structures/services	

<sup>&</sup>lt;sup>1</sup> CIRIA, (2001). Contaminated Land Risk Assessment. A Guide to Good Practice. CIRIA C552.

<sup>&</sup>lt;sup>2</sup> M.J. Carter Associates, (1995). *Prioritisation and Categorisation Procedure for Sites Which May Be Contaminated*. Contaminated Land Report 6. Department of the Environment. C

<sup>&</sup>lt;sup>3</sup> Environment Agency, (2004). Model Procedures for the Management of Land Contamination. Contaminated Land Report 11.



The potential probability of the risks being realised are classified in accordance with the ratings set out in Table 2 which are adapted from the CIRIA guidance<sup>1</sup>. It should be noted that where a pollutant linkage has not been identified the likelihood is considered to be zero.

ruble 2. Classifications of probability ratings	Table 2.	Classifications	of probability	ratings
---	----------	-----------------	----------------	---------

Classification	Definition
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor that an event has occurred
Likely	There is a pollution linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the short term.
Unlikely	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term

In accordance with C552 the risk classification for each pollution linkage are classified in accordance with the matrix for consequence and probability set out in Table 3. The definitions for the risk classifications are presented in Table 4.

### Table 3. Risk classification matrix

		Consequence					
		Severe	Medium	Mild	Minor		
	High likelihood	Very High	High	Moderate	Moderate / Low		
bility	Likely	High Moderate		Moderate / Low	Low		
Proba	Low likelihood	Moderate	Moderate / Low	Low	Very Low		
Unlikely		Moderate / Low	Low	Very Low	Very Low		

Table 4.	Risk	classification	definitions
----------	------	----------------	-------------

Classification	Definition
Very High	There is a high probability that severe harm could arise to a designated receptor from the identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from the identified hazard. Realisation of the risk is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
Moderate	It is possible that harm could arise to a designated receptor from the identified hazard. However, it is either relatively unlikely that such harm would be severe or if any harm were to occur it is more likely that the harm would be relatively mild. Urgent investigation (if not already undertaken) is normally required to clarify the potential risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from the identified hazard, but it is considered likely that this harm, if realised, would at worse normally be mild.
Very Low	There is a low possibility that harm could arise to a designated receptor from the identified hazard. In the event of such harm being realised it is not likely to be severe.

## **APPENDIX E**

Exploratory Hole Records

Project								Т	
Ноо	dlands	Harry	Stol	(e					
Job No		Da	ite		Ground Le	evel (m)	Co-Ordinates (m)		SA01
CGE/1	6484		0	7-07-20	49	9.00	E 363,614.0 N 179	,463.0	
Client								Shee	et
BoK	ok Hou	using U	JK Lto	d					1 of 1
SAMPL	ES & TE	STS	e				STRATA		
Depth (m)	Type No	Test Result <sup>(N/kPa/ppm</sup>	َ Wat	Reduced Level Legenc	Depth (m)   (Thick- ness)		DESCRIPTI	ION	
0.20	ES1			48.90	0.10 (0.30)	Grass over da diameter) an [TOPSOIL]	ark brown and brown sandy si d rootlets. Jark grov and dark brown sligh	It. Frequent roots (	up to 15mm
0.50	ES2				× 0.40 ×	is angular and plastic sheet. [MADE GROU	d subangular fine to coarse br Frequent rootlets. JND]	ick and ceramic frag	gments. Rare
0.00	54				- * -	Soft to firm b	ecoming stiff reddish brown l	ocally mottled light	yellowish brown
0.80	DI				1.20)	[MÉRCIA MU	DSTONE GROUP - ZONE IVb]		
1.80	D2				1.00 (1.40)	Stiff reddish [MERCIA MU	brown mottled light yellowish DSTONE GROUP - ZONE IVa]	brown sandy silty (	CLAY.
						(Pit terminat	ted at 3m)		
Plan						General R	emarks		
<ul> <li>4 2.4m</li> <li>▶</li> <li>0.7m</li> <li>↓</li> <li>Stable</li> </ul>						METHOD: Tri GROUNDWA CONTAMINA encountered BACKFILL: Or	al pit excavated using a JCB 30 TER: Groundwater was not er TION: Significant visual or olfa n completion, trial pit was bac	60. icountered during tl actory contamiantio kfilled with materia	ne excavation. n was not arisings.
Method/						Field Crew		Logged By	Checked By
Plant Used		JC	B 360	)		Ch	annel Plant Hire	SWO	DRAFT

Project										TRIAL PIT No		
Hoc	dlands	5, Harry	Sto	ke		<u> </u>				<b>TP01</b>		
		Dat	ie or			Ground Le	evel (m)	Co-Ordinates (m)	524.0			
Client	16484		0	/-0/-20		5.	5.00 E 363,554.0 N 179,521.0					
Bok	lok Ho	using U	K Lt	d			1 of 1					
SAMPL	ES & T	ESTS	L					STRATA				
Depth (m)	Type No	Test Result (N/kPa/ppm)	Wate	Reduced Level	Legend	Depth (m) (Thick- ness)		DESCRIPT	ION			
-				54.90		0.10	Grass over d diameter) ar [TOPSOIL]	ark brown and brown sandy s nd rootlets.	ilt. Frequent roo	ots (up to 15mm		
0.30	ES1			54.60	× · · × ·	0.40	Firm to stiff slightly grave Frequent roo	dark grey and dark brown loca elly clay. Gravel is angular and otlets.	Illy orangish bro subangular fine	own slightly sandy and medium brick.		
0.70	ES2				× × ××	(0.60)	Firm to stiff CLAY.	reddish brown locally mottled	orangish brow	n slightly sandy silty		
-				54.00	× ·× - 	1.00	Stiff locally f	irm reddish brown locally mot	tled nurnle and	grey slightly sandy		
1.20	D1					1 4 7 1	CLAY.	JDSTONE GROUP - ZONE IVa]		BICY SUBILITY SOLUTY		
						(1.30)						
-						+ +- +						
				52.70		2.30	0.115					
2.50	B1					(0.70)	Stiff to very CLAY. Grave stiff clay to e [MERCIA MU	stiff reddish brown mottled lig l is subangular and subrounde extremely weak mudstone. JDSTONE GROUP - ZONE IVa]	ht grey slightly d fine and medi	sandy slightly gravelly um lithorelicts of very		
-				52.00	<u> </u>	3.00	(Pit termina	ted at 3m)				
Plan							General F	Remarks				
0.7m ↓ Stability:	2 Stak	.4m		]			METHOD: Trial pit excavated using a JCB 360. GROUNDWATER: Groundwater was not encountered during the excavation. CONTAMINATION: Significant visual or olfactory contamiantion was not encountered. BACKFILL: On completion, trial pit was backfilled with material arisings.					
Method/							Field Crew		Logged By	Checked By		
Plant Used		JCE	363	L			Ch	annel Plant Hire	SWO	DRAFT		



Project										TRIAL PIT No	
Ноо	dlands	, Harry	Sto	ke						<b>TP02</b>	
Job No		Dat				Ground Le	evel (m)	Co-Ordinates (m)			
CGE/1	6484		0	7-07-20		52	52.00 E 363,596.0 N 179,505.0				
Client										Sheet	
ВОК	юк но	using U	K Lt	a						1 Of 1	
SAMPL	<u>ES &amp; T</u>	ESTS	er					STRATA			
Depth (m)	Type No	lest Result (N/kPa/ppm)	Wat	Reduced Level	Legend	Depth (m) (Thick- ness)		DESCRIPT	ION		
-				51.85		- 0.15	Grass over d diameter) au (TOPSOIL)	lark brown and brown sandy si nd rootlets.	lt. Frequent ro	ots (up to 15mm	
				51.55		(0.30) 0.45	Soft to firm is angular ar	dark grey and dark brown sligh nd subangular fine to coarse br	itly sandy sligh ick. Frequent r	tly gravelly clay. Gravel ootlets.	
					× × ···· × × ···· × × ····	× + ×	Firm to stiff	reddish brown locally mottled JDSTONE GROUP - ZONE IVb]	light yellowish	brown silty CLAY.	
1.00	D1				×× ××	, , , (1.15)					
					× × × ×						
				50.40	x x x x x x x x x x x x x x x x x x x	1.60			P 1 . P		
1.80	B1				 	- (0.40)	slightly grav	reddish brown locally mottled elly CLAY. Gravel is subangular if very stiff clay to extremely w	and subround eak mudstone	ed fine and medium	
-				50.00		2.00	Stiff reddish Gravel is sub	brown mottled light grey sligh bangular and subrounded fine	tly sandy slight and medium lit	tly gravelly CLAY. thorelicts of very stiff	
2.20	D2			49.70		- 2.30	Clay to extre [MERCIA MI (Pit termind	mely weak mudstone. JDSTONE GROUP - ZONE IVa] ited at 2.3m)			
- - -						-					
- - 						-					
						-					
-						-					
• • •						-					
						-					
- -						-					
-						-					
						-					
Plan	·	·	•	• I			General F	Remarks			
	2	.4m——		•			METHOD: TI GROUNDWA CONTAMINA	rial pit excavated using a JCB 3 ATER: Groundwater was not er ATION: Significant visual or olfa	60. Icountered dur Ictory contami	ing the excavation. antion was not	
∮ 0.7m							encountered BACKFILL: O REMARKS: T	d. n completion, trial pit was bac rial pit terminated at 2.3m due	kfilled with ma e to strength o	terial arisings. f underling strata.	
Stability:	Stak	ble									
Stability.	Jidi										
Method/ Plant Used		JCE	362	2			Field Crew Cł	nannel Plant Hire	Logged By SWO	Checked By DRAFT	

Project									Т	RIAL PIT No			
Ноо	dlands, I	Harry S	toke	е									
Job No		Date	•			Ground Le	Ground Level (m) Co-Ordinates (m)			IFUS			
CGE/1	6484		07	-07-20		5:	1.00	E 363,583.0 N 179	),468.0	<b>^+</b>			
BoKI	ok Hous	ing I IK	Itd						5166	1 of 1			
								<u>ΣΤΡΛΤΛ</u>		1011			
Depth (m)	Type No	Test Result /kPa/ppm)	Water	Reduced Level	Legend	Depth (m) (Thick-		ION					
				50.80		0.20	Grass over da diameter) an	ark brown and brown sandy si d rootlets.	lt. Frequent roots (u	up to 15mm			
0.40	ES1			50.00		(0.50)	Soft to firm c is angular an [MADE GROU	lark grey and dark brown sligh d subangular fine to coarse br JND]	itly sandy slightly gr ick. Frequent rootle	avelly clay. Grave ts.			
0.80	ES2			50.30	× · · · · · · · · · · · · · · · · · · ·	(0.25)	Firm to stiff r [MERCIA MU	eddish brown mottled light g DSTONE GROUP - ZONE IVb]	rey slightly sandy sil	ty CLAY.			
0.90	D1		-	50.05	× × · · · · · · · · · · · · · · · · · ·	 	45) Stiff to very stiff reddish brown and light grey slightly sandy silty CLAY. [MERCIA MUDSTONE GROUP - ZONE IVa]						
1.80	B1		-	49.60	× × ×	1.40	Stiff to very s CLAY. Gravel stiff clay to e [MERCIA MU	tiff reddish brown and light g is subangular and subrounder xtremely weak mudstone. DSTONE GROUP - ZONE IVa]	rey slightly sandy sli d fine and medium l	ghtly gravelly silt ithorelicts of very			
					× · · · · · · · · · · · · · · · · · · ·	(1.30)							
				48.30	× · · · · · · · · · · · · · · · · · · ·	2.70	(Pit termina)	red at 2.7m)					
 Plan		I				L	General R	emarks					
4 2.4m → 2.4							METHOD: Trial pit excavated using a JCB 360. GROUNDWATER: Groundwater was not encountered during the excavation. CONTAMINATION: Significant visual or olfactory contamiantion was not encountered. BACKFILL: On completion, trial pit was backfilled with material arisings. REMARKS: Trial pit terminated at 2.7m due to strength of underling strata.						
Acthod /							Field Crew		Logged By	Checked By			

Project									TRIAL PIT No			
Hoo	dlands	, Harry	Stol	ke					<b>TP04</b>			
	C 40 4	Dat	te		Ground	Level (m)	Co-Ordinates (m)					
Client	.6484		0	7-07-20		54.00	E 363,534.0 N 175	9,483.0	peet			
ВоК	lok Ho	using U	K Lt	d					1 of 1			
SAMPL	ES & T	ESTS	2				STRATA					
Depth (m)	Type No	Test Result (N/kPa/ppm)	Wate	Reduced Level	Depth (r end (Thick- ness)	n)	DESCRIPT	ION				
0.50	D1			53.70	(0.30) 0.3 	Grass over o diameter) a [TOPSOIL] Soft to firm [MERCIA M	dark brown and brown sandy s nd rootlets. becoming stiff reddish brown UDSTONE GROUP - ZONE IVb]	ilt. Frequent root mottled light grey	s (up to 15mm / sandy silty CLAY.			
				52.60 ×	× (1.10) × (1.10) × (1.10)	10						
_ 1.50 	D2					Stiff to very stiff reddish brown locally mottled light grey slightly sandy silty CLAY. [MERCIA MUDSTONE GROUP - ZONE IVa] 1.40 Locally light grey.						
· · · ·												
				51.00 ≏ 、	^ 3.0	00 (Pit termino	ated at 3m)					
Plan						General	Remarks					
0.7m Stability:	2 Stab	.4m	•	]		METHOD: Trial pit excavated using a JCB 360. GROUNDWATER: Groundwater was not encountered during the excavation CONTAMINATION: Significant visual or olfactory contamiantion was not encountered. BACKFILL: On completion, trial pit was backfilled with material arisings.						
Method/ Plant Used		JCE	3 364	1		Field Crew	hannel Plant Hire	Logged By SWO	Checked By DRAFT			



Ducient										
Project	dlands	Harry	Stal	<b>10</b>						RIAL PIT NO
Job No	ulanus,	Dat	e			Ground Level (m) Co-Ordinates (m)				TP05
CGE/1	6484		07	7-07-20		54	54.00 E 363,505.0 N 179,447			
Client								-	Shee	et
BoKl	ok Hou	sing Uł	< Lto	d						1 of 1
SAMPL	S & TE	STS	Ľ					STRATA		
Depth (m)	Type No (	Test Result N/kPa/ppm)	Wate	Reduced Level	egend	Depth (m) (Thick- ness)		DESCRIPT	ION	
0.05	ES1			53.90		0.10	Grass over da diameter) an [TOPSOIL]	irk brown and brown sandy si d rootlets.	ilt. Frequent roots (u	up to 15mm
						- 0.35 - -	Firm dark gre angular and s rootlets.	y and dark brown slightly san ubangular fine to coarse bricl ומאו	dy slightly gravelly o k and ceramic fragm	lay. Gravel is ents. Frequent
					<u> </u>	-	Firm to stiff r	eddish brown mottled light y	ellowish brown and	light grey slightly
1.00	D1					- - (1.35)	sandy CLAY. [MERCIA MU	DSTONE GROUP - ZONE IVb]		
						-				
				<u> </u>		1.70	Reddish brow	n and light grey slightly claye	y sandy subangular	and subrounded
1.90	B1			0- • • • • • • • • • • • • • • • • • • •		- - (0.80) -	fine to coarse [MERCIA MU	e mudstone GRAVEL. DSTONE GROUP - ZONE IVa]		
				51.50 <sup>°.</sup> 6	7-5°0:	2.50	(Pit terminat	ed at 2 5m)		
Plan				<u>   </u>			General R	emarks		
0.7m	2.4	4m					METHOD: Tri GROUNDWA CONTAMINA encountered BACKFILL: On REMARKS: Tr 25mm LV cab	al pit excavated using a JCB 3 TER: Groundwater was not er TION: Significant visual or olfa completion, trial pit was bac ial pit terminated at 2.5m dua le was identified in the sidew	60. Incountered during the actory contamiantio kfilled with material e to strength of und rall of the trial pit, ap	ne excavation. n was not arisings. erling strata. A oproximately
Stability:	Stable	e	_							
Method/							Field Crew		Logged By	Checked By
Plant Used		JCB	365				Ch	annel Plant Hire	SWO	DRAFT

Project										HOLE No		
Hoo	dlands,	, Harry S	Stok	ke						WC01		
lob No		Dat	е			Ground Level (m) Co-Ordinates (m)			VV SUT			
CGE/1	6484		08	3-07-20	כ	43	3.00 E 363,608.0 N 179,411.0					
Client									Shee	et		
BoKI	ok Hou	using Uk	< Lto	2 						1 of 1		
SAMPLE	ES & TE	STS	ter		1	Dausth (ma)		STRATA		men		
Depth (m)	Type No	Result (N/kPa/ppm)	Wat	Reduce Level	Legend	Depth (m) (Thick- ness)		N	Instru			
0.10	ES1			47.80		0.20	Dark grey sli subangular f ∖MADE GRO	ghtly gravelly silty fine to coa ine and medium concrete, br UND]	rse sand. Gravel is ar ick and ceramic fragi	ngular and ments.		
0.30	ES2			47.60		0.40	Firm dark gr	ey and black slightly sandy sli subangular fine and medium	ghtly gravelly clay. G	ravel is		
				47.40		0.60	fragments.					
).70	ES3					×	Light grey ar	id grey sandy angular to subr	ounded fine to coars	e concrete		
							MADE GRO	UND]				
1.00	SPT	N4				(0.90)	Firm dark gr clay. Gravel	ey and dark brown locally bla is angular and subangular fine	ck slightly sandy slight and medium concre	ntly gravelly   ete, brick		
						*	and ceramic fragments.	tragments. Rare decompose	d roots, plastics and p	glass		
				46.50		1.50	[MADE GRO	UND]		· · ·		
L.60	ES4					×	Firm becomi [MERCIA MU	ng stiff reddish brown silty C JDSTONE GROUP - ZONE IVb]	LAY.			
80	ח1					*	1 80 Reddisł	hrown and light vellowish h	owp			
	CDT	N 2 7				- -	1.00 Reddisi					
2.00	501	N37				(1.30)						
					× ×	7						
						- - -						
					×	*						
2.80	SPT	N54		45.20	× ×	2.80	(Window sa	mple terminated at 2.8m)				
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
oring Pro	ogress	and Wa	ter	Obser	vation	S	General F	lemarks				
Date C	Strike Jepth	Casing depth	Cor	mment r	Time <u>neasured</u>	Standing Depth	epth   IVIE I HOU: Dynamic sample (8/mm diameter) 0.0m to 1.0m, (77mm diameter) 1.0m to 2.0m and (67mm) 2.8m to 2.8m) GROUNDWATER: Groundwater was not encountered during the excavation. CONTAMINATION: Significant visual or olfactory contamiantion was not encountered. BACKFILL: On completion, borehole was backfilled 2.8m to 1.5m. A slotted standpipe (50mm) was installed from 1.5m to 0.5m, bentonite seal 0.5m to 0.2m, stopcock and cover 0.2m to 0.0m.					

Project						HOLE No	)		
Hoodlands, Harry	Stoke								
Job No Dat	e	Ground Le	evel (m)	Co-Ordinates (m)		WS02			
CGE/16484	08-07-20	52	1.00	E 363,567.0 N 179	,426.0				
Client	·					Sheet			
BoKlok Housing UI	K Ltd		1 of 1						
SAMPLES & TESTS				STRATA			l I		
Depth Type Test (m) No (N/kPa/ppm)	Reduced Level Legend	Depth (m) (Thick- ness)		DESCRIPTION	l		Instrum /Backfi		
0.20 ES1	50.90	0.10 (0.30)	Dark grey slig subangular fin [MADE GROU	htly gravelly silty fine to coars ne and medium concrete and [ND]	se sand. Gravel brick.	is angular and			
 _ 0.50		0.40	Firm dark gre Gravel is angu sandstone.	y and dark brown slightly clay Ilar and subangular fine and r	ey gravelly fine nedium concre	e to coarse sand. te and			
-		- (0.60) -	Firm to stiff re CLAY.	eddish brown mottled light bl	uish grey slight	ly sandy silty			
	50.00 × ×	1.00	[MERCIA MU	DSTONE GROUP - ZONE IVbj			665		
Boring Progress and Wa	ater Observations		General R	emarks					
Date Strike Casing depth depth	Comment Time measured	Standing Depth	METHOD: Dynamic sample (87mm diameter) 0.0m to 1.0m. GROUNDWATER: Groundwater was not encountered during the excavation. CONTAMINATION: Significant visual or olfactory contamiantion was not encountered. BACKFILL: On completion, borehole was backfilled with material arisings.						
Method/ Plant Used Dando Te	errier 2002		Field Crew We	sses Drilling Ltd	Logged By SWO	Checked By DRAF	y •T		

[	Project												
	Ноо	dlande		Stal	<u></u>							HOLE NO	
	Ioh No	ulanus	Dat		(C		Ground Le	evel (m)	Co-Ordinates (m)			WS03	
	CGE/1	6484	Dut	ິດາ	8-07-2	n	5		F 363 617 0 N 179	486.0			
	Client			0.	5 07 2	•		0.00	2 303,017.0 1173	, 100.0	Shee	t	
	BoK	lok Ho	using UI	< Lto	d							1 of 1	
[	<b>SAMPL</b>	- с & т	FSTS						STRΔΤΔ				ц
	Dopth		Test	ater	Poduco	4	Depth (m)		5110(1)(				kfill
	(m)	No	Result (N/kPa/ppm)	Š	Level	Legend	(Thick-	DESCRIPTION					nstri Bacl
	- - 0.30	D1				× × ×	× (0.65)	Grass over s [MERCIA MI 0.00 - 0.30 F	oft to firm reddish and orangis JDSTONE GROUP - ZONE IVb] requent rootlets.	h brown silty	CLAY.		
	-												
	-				49.3	5 <u>~×</u> ~ ××	<u>} 0.65</u>	Stiff reddish	brown mottled light vellowish	brown slightl	v sand	v siltv	
	-					× ···× ··	× -	CLAY.			,	,,	
	-	CDT	NAA			× ×	(0.65)						
	_ 1.00	561	1144				\$						
	48.70						1.30	Stiff to verv	stiff light vellowish grev mottle	ed light grev a	nd ligh	t orangish	
							} → (0.40)	brown silty	CLAY.		na ngn	e or angion	
	-				48.3		1.70						
	1.70	SPT	N60				-	(Window so	mple terminated at 1.7m)				
	-						-						
	-						-						
ļ	-						-						
	-						_						
	-						-						
	-						-						
020	-						-						
NU 2	-						-						
3	-						-						
Date	-						-						
ELE ELE	-						-						
22	-						-						
AGS	-						-						
3	_						-						
rary: (	-						-						
2	-						-						
G-D	-						-						
	-						-						
	-						-						
	-						-						
4 HO	Boring Pro	ogress	and Wa	ter	Obse	rvation	S	General F	Remarks				
1648	Date	Strike depth	Casing depth	Со	mment	Time measured	Standing Depth	METHOD: D	ynamic sample (87mm diamet n.	er) 0.0m to 1.	0m, (7	7mm diamet	er)
3								GROUNDWA	ATER: Groundwater was not er	countered du	iring th	e excavation	ı.
oject:								encountered				, vvas 110t	
л Г								BACKFILL: O	n completion, borehole was ba	ackfilled with	materia	ai arisings.	
אר אר													
]ن غ				1						1			
(eport	Method/ Plant Used	[	Dando Te	rrie	r 2002			Field Crew W	esses Drilling Ltd	Logged By SWO		Checked By DRAF	, T
τl								1	-	I			

Project										HOLE	No	
Нос	odlands	s, Harry	Stol	ke						wso	4	
Job No		Dat	e			Ground Le	evel (m)	Co-Ordinates (m)			-	
CGE/	16484		08	8-07-2	0	50	0.00	E 363,593.0 N 1/9	,434.0	Chaot		
		using III	< I + .	4						Sneet	1	
BOK		using Ui								1 01	1 	
SAMPL	ES & T	ESTS	er					STRATA			men ill	
Depth (m)	Type No	Result (N/kPa/ppm)	Wat	Reduce Level	d Legend	(Thick- ness)		DESCRIPTION	I		Instru /Backf	
-				49.9		0.10	lt. Frequent ro	ootlets.				
1.00	SPT	N27		<u>49.3</u> 48.9		(0.60) 0.70 (0.40) 1.10 (0.30)	itly sandy sligh arse brick. Fre light grey silty ed light grey ar	ntly gravelly cland equent rootlets. CLAY. nd light orangis	h			
-				48.6		1.40	[MERCIA MI	JDSTONE GROUP - ZONE IVa] stiff reddish brown mottled lig	ht vellowish h	rown and light		
- - -				48.00		- (0.60)	rown and light					
2.00	SPT	N55		48.00		2.00	(Window so		<u> </u>			
	Ogress	and W/		Ohsei	rvation		General	3emarks				
Date	Strike	Casing	Co	mment	Time	Standing	METHOD: D	ynamic sample (87mm diamet	er) 0.0m to 1.0	Om, (77mm dia	meter)	
	<u>ueptn</u>	ueptn			measured	Depti	<ul> <li>1.0m to 2.0m.</li> <li>GROUNDWATER: Groundwater was not encountered during the excavation. CONTAMINATION: Significant visual or olfactory contamiantion was not encountered.</li> <li>BACKFILL: On completion, a slotted standpipe (50mm) was installed from 2.0 to 1.0m, bentonite seal 1.0m to 0.2m, stopcock and cover 0.2m to 0.0m.</li> </ul>					
Method/ Plant Used	[	Dando Te	rrie	r 2002			Field Crew W	esses Drilling Ltd	Logged By SWO	Checker	d By AFT	

					•••					CGL			
Project										HOLE No			
Ноо	dlands	, Harry	Stol	<e< td=""><td></td><td><u> </u></td><td></td><td></td><td></td><td>WS05</td></e<>		<u> </u>				WS05			
	слол	Dat	e o	0 07 70	,	Ground Lo	evel (m) 2 00	E 262 EEO O N 170	450.0				
Client	0404		00	5-07-20	,	5	5.00	E 505,550.0 N 175	5,439.0 Shee	et			
BoK	ok Hou	using UI	K Lt	d						1 of 1			
SAMPL	ES & TE	STS	L					STRATA		ent			
Depth (m)	Type No	Test Result (N/kPa/ppm)	Wate	Reduce Level	Legend	Depth (m)   (Thick- ness)		DESCRIPTION	I	Instrum /Backfil			
-				52.90		0.10	Grass over d	ark brown and brown sandy si	lt. Frequent rootlets				
-				52.65		(0.25) 0.35	Soft to firm of Gravel is and	dark grey and dark brown sligh	itly sandy slightly gra	avelly clay.			
-					× -× -	1 7 	MADE GRO	UND] stiff reddich brown and light g	rev slightly sandy sli				
					× •	<u>}</u> ↓ (0.65)	gravelly silty	nd medium					
					× ×	*	[MERCIA MUDSTONE GROUP - ZONE IVa]						
1.00	SPT	N70		52.00	) <u>~~×·</u>	<u>* 1.00</u>	) (Window sample terminated at 1m)						
						-							
						-							
						-							
						-							
						-							
_						_							
						-							
						-							
						-							
						-							
-						-							
-						-							
						-							
-						-							
-						-							
						-							
						-							
-						-							
-						-							
						-							
						-							
						-							
						-							
Boring Pro	ogress	and Wa	ater	Obser	vation	S	General R	emarks					
Date	Strike depth	Casing depth	Со	mment	Time neasured	Standing Depth	METHOD: D	namic sample (87mm diamet	er) 0.0m to 1.0m.				
							CONTAMINATION: Significant visual or olfactory contamiantion was not						
							BACKFILL: O	i. n completion, borehole was ba	ackfilled with materi	al arisings.			
Method/							Field Crow			Checked By			
Method/ Plant Used Dando Terrier 2002							W	esses Drilling Ltd	SWO	DRAFT			

										CGL			
Project										HOLE No			
Ноо	dlands	, Harry S	Stok	e						W\$06			
	C 4 0 4	Dat	e oo	07.00		Ground Le	evel (m)	Co-Ordinates (m)					
CGE/1	6484		08	-07-20		4	9.00	E 363,595.0 N 179	9,429.0	.+			
BoK	ok Hoi	using UI	< Ltd	l					Shee	1 of 1			
SAMPL	ES & TI	ESTS	<u>ـ</u>					STRATA	I	ent			
Depth (m)	Type No	Test Result (N/kPa/ppm)	Wate	Reduced Level	Legend	Depth (m) (Thick- ness)	DESCRIPTION						
0.05	ES1			48.80		0.20	Dark grey sli subangular f (MADE GRO	ghtly gravelly silty fine to coars ine and medium concrete, brid UND]	se sand. Gravel is an ck and ceramic fragr	gular and nents.			
			_	48.50		(0.30) 0.50	Firm dark gr angular and fragments	ey and black slightly sandy slig subangular fine and medium c	htly gravelly clay. Gr concrete, brick and c	avel is eramic			
0.60	ES2 SPT	N19	_	48.20		(0.30) 0.80	Firm dark gr clay. Gravel and ceramic fragments.	UND] ey and dark brown locally blac is angular and subangular fine fragments. Rare decomposed	k slightly sandy sligh and medium concre roots, plastics and g	tly gravelly ete, brick glass			
						(1.20)	Firm becom CLAY. [MERCIA MU	JDSTONE GROUP - ZONE IVb]	nottled yellowish br	own silty			
2.00	SPT	N50	-	47.00	× ××	2.00	(Window so	mple terminated at 2m)					
Boring Pro	ogress	and Wa	ater	Obser	vation	S	General F	Remarks					
Date	Strike depth	Casing depth	Com	nment m	Time neasured	Standing Depth	<ul> <li>METHOD: Dynamic sample (87mm diameter) 0.0m to 1.0m, (77mm diameter) 1.0m to 2.0m.</li> <li>GROUNDWATER: Groundwater was not encountered during the excavation. CONTAMINATION: Significant visual or olfactory contamiantion was not encountered.</li> <li>BACKFILL: On completion, a slotted standpipe (50mm) was installed from 2.0m to 1.0m, bentonite seal 1.0m to 0.2m, stopcock and cover 0.2m to 0.0m.</li> </ul>						
I													

### **APPENDIX F**

Chemical Laboratory Results



Sam Oakley Card Geotechnics Ltd Palatine House Unit 2 Sigford Road Exeter EX2 8NL

t: 01392 439905

e: Samo@cgl-uk.com



i2 Analytical Ltd. 7 Woodshots Meadow, Croxley Green Business Park, Watford, Herts, WD18 8YS

t: 01923 225404 f: 01923 237404 e: reception@i2analytical.com

### Analytical Report Number : 20-18547

Project / Site name:	Hoodlands, Harry Stoke	Samples received on:	10/07/2020
Your job number:	CGE-16484	Sample instructed/ Analysis started on:	10/07/2020
Your order number:	POP005038	Analysis completed by:	20/07/2020
Report Issue Number:	1	Report issued on:	20/07/2020
Samples Analysed:	12 soil samples		

Dewradio Signed:

Joanna Wawrzeczko Technical Reviewer (Reporting Team)

### For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	<ul> <li>4 weeks from reporting</li> </ul>
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Iss No 20-18547-1 Hoodlands, Harry Stoke CGE-16484

This certificate should not be reproduced, except in full, without the express permission of the laboratory. The results included within the report relate only to the sample(s) submitted for testing.





Project / Site name: Hoodlands, Harry Stoke

Your Order No: POP005038

Lab Sample Number				1557/07	1557/00	1557/00	1557400	1557/01
Lab Sample Number				100/40/ CA1	100/400 TD01	100/409 TD01	1557490 TD02	155/491 TD02
Sample Reference				5A1 1	1	2	1	1F05
Sample Number				0.20	0.20	0.70	0.40	0.90
Deput (III)				0.20	0.30	0.70	0.40	0.00
Date Sampled				Nono Supplied	Nono Supplied	Nono Supplied	Nono Supplied	Nono Supplied
	1		-	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	18	15	16	12
Total mass of sample received	ka	0.001	NONE	1.7	1.6	1.9	1.5	1.5
Asbestos in Soil Screen / Identification Name	Туре	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-
	.,,,,,	,,,	100 17020		Hot detected		Hot detected	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.6	7.5	7.9	7.5	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	-
Notor Soluble SO4 16br outraction (2:1 Loophots	mg/kg	50	MCERTS	1300	//0	530	880	-
Water Soluble SO4 16nr extraction (2:1 Leachate	- //	0.00125	MOEDTO			0.0070		0.0050
	g/l	0.00125	MCERTS	-	-	0.0079	-	0.0058
Organic Matter	%	0.1	MCERTS	5.2	6.2	0.8	5.0	-
Total Phenols								
Total Phenols (monohydric)	ma/ka	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
· · · · · · · · · · · · · · · · · · ·								
Speciated PAHs								
Naphthalene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	ma/ka	0.05	MCERTS	1.3	0.31	< 0.05	0.60	-
Anthracene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluoranthene	ma/ka	0.05	MCERTS	2.2	0.52	< 0.05	13	-
Pyrene	mg/kg	0.05	MCERTS	1.8	0.32	< 0.05	1.5	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.0	0.32	< 0.05	0.82	_
Chrysene	mg/kg	0.05	MCERTS	1.2	0.32	< 0.05	0.02	_
Benzo(h)fluoranthene	mg/kg	0.05	MCEDTS	1.5	0.38	< 0.05	1.0	_
Benzo(k)fluoranthene	mg/kg	0.05	MCEDTS	0.58	0.30	< 0.05	0.46	
Benzo(a)nyrene	mg/kg	0.05	MCEDTS	1.2	0.13	< 0.05	0.40	
Indono(1,2,2,cd)pyrono	mg/kg	0.05	MCEDTC	0.57	0.55	< 0.05	0.01	
Dibenz(a h)anthracene	mg/kg	0.05	MCEDTS	< 0.05	< 0.05	< 0.05	< 0.05	
Bonzo(abi)pondono	mg/kg	0.05	MCEDITC	0.05	< 0.05	< 0.05	0.05	-
Coronono	mg/kg	0.05	NONE	< 0.01	< 0.05	< 0.05	< 0.05	
Corollelle	iiig/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	12.2	2.91	< 0.85	7.83	-
			-					
Heavy Metals / Metalloids	r							
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4.5	3.8	2.6	4.0	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	39	20	23	18	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	360	250	78	280	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3	1.1	1.5	1.4	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7	2.4	0.8	2.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.0	1.5	< 0.2	0.9	-
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	-
Chromium (III)	mg/kg	1	NONE	24	25	35	29	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	25	35	29	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	80	54	28	71	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	220	170	20	170	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	0.7	< 0.3	0.8	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	30	33	34	-
Selenium (aqua regia extractable)	mg/kq	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	29	30	37	34	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	320	310	210	310	-





Project / Site name: Hoodlands, Harry Stoke

Your Order No: POP005038

Lab Sample Number				1557487	1557488	1557489	1557490	1557491			
Sample Reference				SA1	TP01	TP01	TP03	TP03			
Sample Number				1	1	2	1	2			
Depth (m)	0.20	0.30	0.70	0.40	0.80						
Date Sampled	07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020						
Time Taken				None Supplied							
Analytical Parameter (Soil Analysis)											
Monoaromatics & Oxygenates			-								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-			
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-			
o-xylene µg/kg 1 MCERTS		< 1.0	< 1.0	< 1.0	< 1.0	-					
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-			

#### Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	12	< 10	< 10	10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	19	13	< 10	24	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	31	21	< 10	34	-





Project / Site name: Hoodlands, Harry Stoke

Your Order No: POP005038

Lab Sample Number		1557492	1557493	1557494	1557495	1557496		
Sample Reference				TP05	WS01	WS01	WS01	WS01
Sample Number				1	1	2	3	4
Depth (m)				0.10	0.10	0.30	0.70	1.60
Date Sampled				07/07/2020	07/07/2020	08/07/2020	08/07/2020	08/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	15	7.6	19	14
Total mass of sample received	kg	0.001	NONE	1.2	1.2	0.46	1.6	0.50
			-			Characterile I a see		
Asbestos in Soil Screen / Identification Name	Туре	N/A	ISO 17025	-	-	Fibres	-	-
Asbestos in Soil	Туре	N/A	ISO 17025	-	Not-detected	Detected	Not-detected	-
Concert Incorporation								
nH - Automated	nH Linite	N/A	MCEDIC	75	7 0	70	9.0	80
Total Cvanide		1 IN/A	MCEDTC	/.5	7.9	/.9 < 1	<del>9</del> .0 < 1	0.0 < 1
Total Sulphate as SO₄	ma/ka	50	MCERTS	950	470	2100	2300	380
Water Soluble SO4 16hr extraction (2:1 Leachate								
Equivalent)	g/l	0.00125	MCERTS	-	-	-	0.27	0.062
Organic Matter	%	0.1	MCERTS	6.5	0.3	8.4	3.5	< 0.1
Total Bhanala								
Total Phenois	ma //ra	1	MCEDIC	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenois (mononydric)	mg/kg		MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.89	< 0.05	0.94	2.2	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.22	0.48	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.6	< 0.05	0.90	3.3	< 0.05
Pyrene	mg/kg	0.05	MCERTS	1.5	< 0.05	0.83	2.6	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.90	< 0.05	0.60	1.8	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.1	< 0.05	0.70	1./	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.3	< 0.05	0.66	1.9	< 0.05
Benzo(k)fluorantnene	mg/kg	0.05	MCERTS	0.61	< 0.05	0.32	0.84	< 0.05
Indene (1, 2, 2, ed) myrene	mg/kg	0.05	MCEDIC	1.0	< 0.05	0.35	1.5	< 0.05
Dibenz(a h)anthracene	mg/kg	0.05	MCERTS	0.45	< 0.05	0.24	0.05	< 0.05
Benzo(abi)pervlene	mg/kg	0.05	MCERTS	0.48	< 0.05	0.26	0.60	< 0.05
Coronene	ma/ka	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
		0.00	Hone					
Total PAH		-	<b>I</b> 1					
Total WAC-17 PAHs	mg/kg	0.85	NONE	9.79	< 0.85	6.22	17.5	< 0.85
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	3.2	1.5	2.4	12	1.4
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	19	26	17	15
Barium (aqua regia extractable)	mg/kg	1	MCERTS	320	160	240	360	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.0	1.0	0.94	1.1	0.82
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7	0.7	1.0	1.2	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.9	< 0.2	0.4	0.8	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chronium (111)	mg/kg	1	NONE	25	32	8.1	23	28
Corpor (aqua regia extractable)	mg/kg	1	MCERTS	<u>25</u>	32	<u>8.6</u>	23	28
Lood (aqua regia extractable)	mg/kg	1	MCEDIC	51 1F0	23	110	140	2ð 12
Leau (ayua regia extractable) Mercury (agua regia extractable)	mg/kg	03	MCEDTC	0.6	<u> </u>	0.4	0.4	<u>12</u>
Nickel (aqua regia extractable)	ma/ka	1	MCERTS	24	34	46	24	27
Selenium (aqua regia extractable)	ma/ka	1	MCERTS	< 1 0	35	23	1.9	3.4
Vanadium (aqua regia extractable)	ma/ka	1	MCERTS	26	32	12	30	27
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	360	160	200	290	100





Project / Site name: Hoodlands, Harry Stoke

Your Order No: POP005038

Lab Sample Number				1557492	1557493	1557494	1557495	1557496
Sample Reference				TP05	WS01	WS01	WS01	WS01
Sample Number				1	1	2	3	4
Depth (m)	0.10	0.10	0.30	0.70	1.60			
Date Sampled	07/07/2020	07/07/2020	08/07/2020	08/07/2020	08/07/2020			
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg 1 MCERTS		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

#### Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	2.3	< 2.0	5.5	2.4	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	16	< 10	18	21	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	33	< 10	23	38	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	51	< 10	46	61	< 10





#### Project / Site name: Hoodlands, Harry Stoke

Your Order No: POP005038

I ah Sample Number		1557407	1557408					
Sample Reference				1337497 WS06	1337 <del>49</del> 6 WS06			
Sample Number				1	2			
Denth (m)				0.05	0.60			
Depth (iii)				0.05	0.00			
Time Taken				None Supplied	None Supplied			
	1	1		None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	5.2	19			
Total mass of sample received	ka	0.001	NONE	0.50	0.40			
						•		
Asbestos in Soil Screen / Identification Name	Туре	N/A	ISO 17025	-	-			
Asbestos in Soil	Туре	N/A	ISO 17025	-	-			
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.3	7.6			
Total Cyanide	mg/kg	1	MCERTS	< 1	-			
Total Sulphate as SO₄	mg/kg	50	MCERTS	1000	-			
Water Soluble SO4 16hr extraction (2:1 Leachate		0.00105			0.004			
Equivalent)	g/l	0.00125	MCERTS	-	0.064			
Organic Matter	%	0.1	MCERTS	2./	-	<u> </u>	Į	1
Total Phonois								
Total Phenois	ma/ka	1	MCEDTC	< 1.0	_		1	
	ng/kg	1	PICERTS	< 1.0	-			
Speciated PAHs								
Naphthalene	ma/ka	0.05	MCERTS	< 0.05	-			
Acenaphthylene	ma/ka	0.05	MCERTS	< 0.05	-			
Acenaphthene	ma/ka	0.05	MCERTS	< 0.05	-			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-			
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-			
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-			
Fluoranthene	mg/kg	0.05	MCERTS	0.65	-			
Pyrene	mg/kg	0.05	MCERTS	0.68	-			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.48	-			
Chrysene	mg/kg	0.05	MCERTS	0.49	-			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.0	-			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.39	-			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.69	-			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.59	-			
Diberiz(d,n)antrifacerie	mg/kg	0.05	MCEDITC	< 0.05	-			
Cerenene	mg/kg	0.05	MONE	0.72	-			
Corollelle	ng/kg	0.05	NONE	< 0.05	-			
Total PAH								
Total WAC-17 PAHs	ma/ka	0.85	NONE	5.69	_			
							•	
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	6.8	-			
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	-			
Barium (aqua regia extractable)	mg/kg	1	MCERTS	320	-			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4	-			
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	-			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	-			
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	-		}	
Chromium (III)	mg/kg	1	NONE	44	-			
Connor (aqua regia extractable)	mg/kg	1	MCERTS	44	-			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	2/0	-		l	
Leau (aqua regia extractable)	mg/kg	1	MCERTS	260	-		}	
Nickel (aqua regia extractable)	mg/kg	0.3	MCEDTO	< 0.3 28			1	
Selenium (aqua regia extractable)	mg/kg	1	MCEDTC	< 1 0				
Vanadium (aqua regia extractable)	ma/ka	1	MCFRTS	22	-		İ	
Zinc (aqua regia extractable)	mg/kq	1	MCERTS	1800	-			
		-				-		





Project / Site name: Hoodlands, Harry Stoke

Your Order No: POP005038

				1 5 5 7 4 6 7	1 5 5 7 10 0	1	
Lab Sample Number				1557497	1557498		
Sample Reference				WS06	WS06		
Sample Number	1	2					
Depth (m)	0.05	0.60					
Date Sampled				08/07/2020	08/07/2020		
Time Taken				None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Monoaromatics & Oxygenates							
Benzene	µg/kg	1	MCERTS	< 1.0	-		
Toluene	µg/kg	1	MCERTS	< 1.0	-		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-		
p & m-xylene	µg/kg 1 MCERTS		MCERTS	< 1.0	-		
o-xylene	µg/kg	1	MCERTS	< 1.0	-		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-		

#### Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	8.0	-		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	240	-		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	450	-		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	280	-		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	970	-		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	3.2	-		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	110	-		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	240	-		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	180	-		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	530	-		





#### Project / Site name: Hoodlands, Harry Stoke

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1557487	SA1	1	0.20	Brown loam and clay with gravel and vegetation.
1557488	TP01	1	0.30	Brown loam and clay with gravel and vegetation.
1557489	TP01	2	0.70	Brown loam and clay with gravel and vegetation.
1557490	TP03	1	0.40	Brown loam and clay with gravel and vegetation.
1557491	TP03	2	0.80	Brown loam and clay with gravel and vegetation.
1557492	TP05	1	0.10	Brown loam and clay with gravel and vegetation.
1557493	WS01	1	0.10	Brown clay with gravel.
1557494	WS01	2	0.30	Grey loam and clay with gravel and brick.
1557495	WS01	3	0.70	Grey loam and clay with gravel and brick.
1557496	WS01	4	1.60	Brown sandy clay.
1557497	WS06	1	0.05	Brown loam and clay with gravel.
1557498	WS06	2	0.60	Brown loam and clay with gravel.





Project / Site name: Hoodlands, Harry Stoke

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC- MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP- OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Iss No 20-18547-1 Hoodlands, Harry Stoke CGE-16484

This certificate should not be reproduced, except in full, without the express permission of the laboratory. The results included within the report relate only to the sample(s) submitted for testing.

## **APPENDIX G**

Geotechnical Laboratory Results

## **APPENDIX H**

Infiltration Test Results



## **APPENDIX I**

Monitoring Records



FORS

Material:	Intensive Lightweight Topsoil
Source:	Bourne Amenity Ltd
Date Tested:	11/02/2019
Tested Against:	BS3882:2015 Multipurpose Grade
Tested By:	Tim O'Hare Associates (TOHA/19/7901/SS)

Parameter	Unit	BS3882:2015 Multipurpose Range	Result	Compliance
Texture:				
Clay (<0.002mm)	% w/w	5 - 30%	13	Yes
Silt (0.002 - 0.63mm)	% w/w	0 - 65%	11	Yes
Sand (0.05 - 2.0mm)	% w/w	20 - 90%	76	Yes
Textual Class:		Sandy Loam		
Stones (2 - 20mm)	% w/w DW	0 - 30%	3	Yes
Stones (20-50mm)	% w/w DW	0 - 10%	0	Yes
Stones (>50mm)	% w/w DW	0%	0	Yes
Sand Fraction (USGA Sieve Sizes):				
Very Fine Sand (0.05 - 0.15mm)	% w/w	n/a	22	
Fine Sand (0.15 - 0.25mm)	% w/w	n/a	20	
Medium Sand (0.25 - 0.50mm)	% w/w	n/a	24	
Coarse Sand (0.50 - 1.0mm)	% w/w	n/a	7	
Very Coarse Sand (1.0 - 2.0mm)	% w/w	n/a	3	
Organic Matter (LOI)	% w/w	3.0 - 20.0	8.0	Yes
Ph		5.5 - 8.5	8.5	Yes
Exchangeable Sodium Percentage	%	< 15%	9.0	Yes
Phytotoxic Contaminants:				
Total Zinc	mg/kg	< 300	50	Yes
Total Copper	mg/kg	< 200	22	Yes
Total Nickel	mg/kg	< 180	10	Yes
Available Nutrients:				
Nitrogen	mg/l	>0.15	0.35	Yes
Phosphorus	mg/l	16 - 140	56	Yes
Potassium	mg/l	121 - 1500	1339	Yes
Magnesium	mg/l	51 - 600	118	Yes
Carbon:Nitrogen Ratio	:1	< 20:1	13	Yes
Additional Analysis:				
Electrical Conductivity (1:2.5 water extract)	μS/cm	1500	1519	No
Electrical Conductivity (1:2 CaSO4 extract)	μS/cm	3300	2755	Yes
Calculated Bulk Density 'as received'	kg/m³	n/a	840	
Bulk Density at Field Capacity	kg/m³	n/a	1450	
Moisture Content 'as received'	%	n/a	19	
Moisture Content at Field Capacity	%	n/a	53	
Calculated Bulk Density at Saturation	kg/m³	n/a	1550	
Total Porosity	%	n/a	52.8	
Saturated Hydraulic Conductivity	mm/hr	n/a	54.6	
Visible Contaminants:				
Plastics (>2.0mm)	% w/w	< 0.5	0.0	Yes
Sharps (>2.0mm)	% w/w	< 0.25	0.0	Yes

Bourne Amenity, The Wharf, Rye Road, Newenden, Kent TN18 5QG

01797 252299 • enquiries@bourneamenity.co.uk

www.bourneamenity.co.uk VAT No: 863 1196 22 • Registered in England No: 3453821



Weige Stull </th <th>Parameter</th> <th>Unit</th> <th>Guidelines</th> <th>Value</th> <th>Result</th> <th>Compliance</th>	Parameter	Unit	Guidelines	Value	Result	Compliance
Total Ansenic (A)         mg/kg         S4UL         <500	Heavy Metals and Hydrocarbons					
Total Barsenic (Ac)         mg/kg         SHUL         <37         9         Yes           Total Barsenic (Ac)         mg/kg         SHUL         <1.7	Total Antimony (Sb)	mg/kg	S4UL	<500	<1.0	Yes
Total Baylum (Bo)         mg/kg         54UL         <1300         39         Yes           Total Explum (Bo)         mg/kg         54UL         <1.7	Total Arsenic (As)	mg/kg	S4UL	<37	9	Yes
Total Beryllium (Gd)         mg/kg         SAUL         4.17         0.36         Yes           Total Chromium III (C)         mg/kg         SAUL         4.11         4.02         Yes           Total Chromium III (C)         mg/kg         SAUL         4.21         4.02         Yes           Total Caynide (Cn)         mg/kg         SP100 Defa Category 41         4.20         4.1         Yes           Total Mercury (Hg)         mg/kg         S4UL         4.12         0.8         Yes           Total Selenium (Se)         mg/kg         S4UL         4.12         0.8         Yes           Total Selenium (Se)         mg/kg         S4UL         4.10         2.00         Yes           Water Soluble Boron (B)         mg/kg         S4UL         4.20         0.05         Yes           Acenaphthysine         mg/kg         S4UL^A         4.20         0.05         Yes           Acenaphthene         mg/kg         S4UL^A         4.31         4.05         Yes           Acenaphthene         mg/kg         S4UL^A         4.31         4.05         Yes           Bernzo (Ja Anthracene         mg/kg         S4UL^A         4.33         4.05         Yes           Bernzo (Ja Jinom	Total Barium (Ba)	mg/kg	S4UL	<1300	39	Yes
Teal Cardinium (Cd)         mg/kg         SAUL         C11         C02         Yes           Total Cynindie (Ln)         mg/kg         SULL         -910         13         Yes           Total Cynindie (Ln)         mg/kg         Dutch Action Value (DAV)         -20         -21         Yes           Total Mercury (Hg)         mg/kg         SP1010 (Defn Category 4)         -200         24         Yes           Total Mercury (Hg)         mg/kg         S4UL         -550         1.0         Yes           Total Mercury (Hg)         mg/kg         S4UL         -220         1.0         Yes           Total Selenium (Se)         mg/kg         S4UL         -410         20         Yes           Water Soluble Boron (B)         mg/kg         S4UL         -420         4.0         Yes           Acenaphthylene         mg/kg         S4ULA         -420         4.0         Yes           Acenaphthene         mg/kg         S4ULA         -420         4.0         Yes           Acenaphthene         mg/kg         S4ULA         -230         4.0         Yes           Berox (Ja Nutracene         mg/kg         S4ULA         -231         4.0.5         Yes           Berox (Ja Nutracene<	Total Beryllium (Be)	mg/kg	S4UL	<1.7	0.36	Yes
Total Cynomum III (C)         mg/kg         S4UL         910         13         Yes           Total Lead (Cn)         mg/kg         Dutch Action Value (DAV)         <20	Total Cadmium (Cd)	mg/kg	S4UL	<11	<0.2	Yes
Total Lead (Pb)         mg/kg         Dutch Action Value (DAV)         220         <1         Yes           Total Lead (Pb)         mg/kg         SP1010 (Defra Category 4)         <200	Total Chromium III (Cr)	mg/kg	S4UL	<910	13	Yes
Total Lead (Pb)         mg/kg         SP1010 (Defra Category 4)         <200         24         Yes           Total (mono) Phenols         mg/kg         S4UL         <1.0	Total Cyanide (Cn)	mg/kg	Dutch Action Value (DAV)	<20	<1	Yes
Total Mercury (Hg)         mg/kg         S4UL         <1.2         0.8         Yes           Total selenium (So)         mg/kg         S4UL         <50	Total Lead (Pb)	mg/kg	SP1010 (Defra Category 4)	<200	24	Yes
Total (mono) Phenois         mg/kg         S4UL^A         <550         <1.0.         Yes           Total Schenium (Sc)         mg/kg         S4UL         <250	Total Mercury (Hg)	mg/kg	S4UL	<1.2	0.8	Yes
Total Selenium (Se)         mg/kg         S4UL $< 250$ $< 1.0$ Yes           Total Vanadium (V)         mg/kg         S4UL $< 410$ 20         Yes           Water Soluble Boron (B)         mg/kg         S4UL $< 220$ $4.9$ Yes           Water Soluble Sulphate (SO4)         g/l         BRE Special Digest 1:2005 (BRE) $< 1.2$ $0.27$ Yes           Acenaphthene         mg/kg         S4UL^A $< 420$ $< 4.0.55$ Yes           Acenaphthene         mg/kg         S4UL^A $< 5400$ $< 0.05$ Yes           Benzo (a) Anthracene         mg/kg         S4UL^A $< 321$ $< 0.05$ Yes           Benzo (b) Fluoranthene         mg/kg         S4UL^A $< 231$ $< 0.05$ Yes           Benzo (b) Fluoranthene         mg/kg         S4UL^A $< 234$ $< 0.05$ Yes           Benzo (a) Anthracene         mg/kg         S4UL^A $< 234$ $< 0.05$ Yes           Benzo (b) Fluoranthene         mg/kg         S4UL^A $< 242$ $< 0.05$ Yes           Fluorene         mg/kg         S4UL^A $< 420$	Total (mono) Phenols	mg/kg	S4UL^	<550	<1.0	Yes
Total Vanadium (V)         mg/kg         S4UL         <410         20         Yes           Water Soluble Boron (B)         mg/kg         S4UL         <20	Total Selenium (Se)	mg/kg	S4UL	<250	<1.0	Yes
Water Soluble Boron (B)         mg/kg         S4UL         <290         4.9         Yes           Water Soluble Sulphate (SO4)         g/l         BRE Special Digest 1:2005 (BRE)         <1.2	Total Vanadium (V)	mg/kg	S4UL	<410	20	Yes
Water Soluble Sulphate (SO4)         g/l         BRE Special Digest 1:2005 (BRE)         <1.2         0.27         Yes           Acenaphthene         mg/kg         S4UL^A         <420	Water Soluble Boron (B)	mg/kg	S4UL	<290	4.9	Yes
Description         Description         Description         Description           Acenaphthylene         mg/kg         S4ULA         <420	Water Soluble Sulphate (SO4)	g/l	BRE Special Digest 1:2005 (BRE)	<1.2	0.27	Yes
Acenaphthylene         mg/kg         S4ULA              Acenaphthylene         mg/kg         S4ULA         <510		8/ .			0127	
Acenaphthene         mg/kg         S4UL^         <510         <0.05         Yes           Anthracene         mg/kg         S4UL^         <5400	Acenaphthylene	mg/kg	S4UL^	<420	<0.05	Yes
Anthracene         mg/kg         S4UL^ $<$ \$300         < 0.05         Yes           Benzo (a) Anthracene         mg/kg         S4UL^         <11	Acenaphthene	mg/kg	S4UL^	<510	<0.05	Yes
Benzo (a) Anthracene         mg/kg         S4UL^         <11         <0.05         Yes           Benzo (a) Pyrene         mg/kg         S4UL^         <2.7	Anthracene	mg/kg	S4UL^	<5400	<0.05	Yes
Benzo (a) Pyrene         mg/kg         S4UL^         <2.7         <0.05         Yes           Benzo (b) Fluoranthene         mg/kg         S4UL^         <3.3	Benzo (a) Anthracene	mg/kg	S4UL^	<11	<0.05	Yes
Benzo (b) Fluoranthene         mg/kg         S4UL^         <13         <0.05         Yes           Benzo (b) Fluoranthene         mg/kg         S4UL^         <340	Benzo (a) Pyrene	mg/kg	S4UL^	<2.7	<0.05	Yes
Benzo (g,h,j) Perylene         mg/kg         S4UL^         <340         <0.05         Yes           Benzo (k) Fluoranthene         mg/kg         S4UL^         <33	Benzo (b) Fluoranthene	mg/kg	S4UL^	<3.3	<0.05	Yes
Benzo (k) Fluoranthene         mg/kg         S4UL^         <93         <0.05         Yes           Chrysene         mg/kg         S4UL^         <22	Benzo (g,h,i) Perylene	mg/kg	S4UL^	<340	<0.05	Yes
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Benzo (k) Fluoranthene	mg/kg	S4UL^	<93	<0.05	Yes
Dibenzo (a,h) Anthracene         mg/kg         S4ULA         <0.28         <0.05         Yes           Fluoranthene         mg/kg         S4ULA         <560	Chrysene	mg/kg	S4UL^	<22	<0.05	Yes
Fluoranthene         mg/kg         S4ULA         <560         <0.05         Yes           Fluorene         mg/kg         S4ULA         <400	Dibenzo (a,h) Anthracene	mg/kg	S4UL^	<0.28	<0.05	Yes
Fluorene         mg/kg         S4UL^         <400         <0.05         Yes           Indeno (1,2,3-cd) Pyrene         mg/kg         SAUL^         <36	Fluoranthene	mg/kg	S4UL^	<560	<0.05	Yes
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Fluorene	mg/kg	S4UL^	<400	<0.05	Yes
Naphthalene         mg/kg         S4UL^         <5.6         <0.05         Yes           Phenanthrene         mg/kg         S4UL^         <220	Indeno (1,2,3-cd) Pyrene	mg/kg	S4UL^	<36	<0.05	Yes
Phenanthrene         mg/kg         S4UL^A         <220         <0.05         Yes           Pyrene         mg/kg         S4UL^A         <1200	Naphthalene	mg/kg	S4UL^	<5.6	<0.05	Yes
Pyrene         mg/kg         S4UL^         <1200         <0.05         Yes           Aliphatic TPH (C5 - C6)         mg/kg         S4UL^         <78	Phenanthrene	mg/kg	S4UL^	<220	<0.05	Yes
Aliphatic TPH (C5 - C6)         mg/kg         S4UL^A         <78         <0.01         Yes           Aliphatic TPH (C6 - C8)         mg/kg         S4UL^A         <230	Pyrene	mg/kg	S4UL^	<1200	<0.05	Yes
Aliphatic TPH (C5 - C3)       Ing/kg       S40L*       C78       S001       Pes         Aliphatic TPH (C6 - C8)       mg/kg       S40L*       <230	Aliphatic TDH (CE CE)	ma/ka	SALILA	~70	<0.01	Vac
Aliphatic TPH (C8 - C8)Iffg/kgS40L*<2.50<0.01YesAliphatic TPH (C8 - C10)mg/kgS4UL^<65	Aliphatic TPH (CS - C6)	mg/kg	S4UL^	8</td <td>&lt;0.01</td> <td>Yes</td>	<0.01	Yes
Aliphatic TPH (C8 - C10)       mg/kg       S40L^{A}	Aliphatic TPH (C6 - C8)	mg/kg	S4ULA S4ULA	<230	<0.01	Yes
Aliphatic TPH (C10 - C12)       mg/kg       S40L^A       <300	Aliphatic TPH (C8 - C10)	mg/kg	S4ULA	<05	<0.01	Yes
Aliphatic TPH (C12 - C16)mg/kgS4UL^<2400<2.0FesAliphatic TPH (C16 - C21)mg/kgS4UL^<92000	Aliphatic TPH (C10 - C12)	mg/kg	S4UL^	<330	<1.0	Yes
Aliphatic IPH (L16 - C21)mg/kgS4UL^A $<92000$ $<8.0$ $Yes$ Aliphatic TPH (C21 - C35)mg/kgS4ULA $<92000$ $<8.4$ $Yes$ Aliphatic TPH (C35 - C44)mg/kgS4ULA $<92000$ $<8.4$ $Yes$ Aromatic TPH (C5 - C7)mg/kgS4ULA $<140$ $<0.01$ $Yes$ Aromatic TPH (C5 - C7)mg/kgS4ULA $<290$ $<0.01$ $Yes$ Aromatic TPH (C7 - C8)mg/kgS4ULA $<290$ $<0.01$ $Yes$ Aromatic TPH (C10 - C12)mg/kgS4ULA $<833$ $<0.01$ $Yes$ Aromatic TPH (C10 - C12)mg/kgS4ULA $<180$ $<1.0$ $Yes$ Aromatic TPH (C10 - C12)mg/kgS4ULA $<330$ $<2.0$ $Yes$ Aromatic TPH (C10 - C12)mg/kgS4ULA $<330$ $<2.0$ $Yes$ Aromatic TPH (C10 - C12)mg/kgS4ULA $<10$ $Yes$ Aromatic TPH (C10 - C21)mg/kgS4ULA $<10$ $Yes$ Aromatic TPH (C16 - C21)mg/kgS4ULA $<10$ $Yes$ Aromatic TPH (C16 - C21)mg/kgS4ULA $<1500$ $21$ $Yes$ Aromatic TPH (C35 - C44)mg/kgS4ULA $<1500$ $<8.4$ $Yes$ Benzenemg/kgS4ULA $<0.017$ $<0.001$ $Yes$ Toluenemg/kgS4ULA $<290$ $<0.001$ $Yes$ Ethylbenzenemg/kgS4ULA $<1100$ $<0.001$ $Yes$ O-xylenemg/kgS4ULA $<1400$ </td <td></td> <td>mg/kg</td> <td>S40L<sup>A</sup></td> <td>&lt;2400</td> <td>&lt;2.0</td> <td>Yes</td>		mg/kg	S40L <sup>A</sup>	<2400	<2.0	Yes
Aliphatic TPH (C21 - C35)       mg/kg       S40L^A       <8.0	Aliphatic TPH (C16 - C21)	mg/kg	S4UL^	<92000	<8.0	Yes
Aliphatic IPH (C35 - C44)       mg/kg       S40L^A       <92000	Aliphatic TPH (C21 - C35)	mg/kg	S4UL^	.02000	<8.0	Yes
Aromatic IPH (C5 - C7)       mg/kg       S40L^A       <140	Allphatic TPH (C35 - C44)	mg/kg	S4UL^	<92000	<8.4	Yes
Aromatic IPH (C7 - C8)       mg/kg       S4UL^       <290	Aromatic TPH (C5 - C7)	тg/кg	S4UL^	<140	<0.01	Yes
Aromatic IPH (C8 - C10)       mg/kg       S4UL^       <83	Aromatic IPH (C7 - C8)	mg/kg	S4UL^	<290	<0.01	Yes
Aromatic IPH (C10 - C12)       mg/kg       S4UL^       <180	Aromatic IPH (C8 - C10)	mg/kg	S4UL^	<83	<0.01	Yes
Aromatic TPH (C12 - C16)       mg/kg       S4UL^       <330       <2.0       Yes         Aromatic TPH (C16 - C21)       mg/kg       S4UL^       <540	Aromatic TPH (C10 - C12)	mg/kg	S4UL^	<180	<1.0	Yes
Aromatic TPH (C16 - C21)       mg/kg       S4UL^       <540       <10       Yes         Aromatic TPH (C21 - C35)       mg/kg       S4UL^       <1500	Aromatic TPH (C12 - C16)	mg/kg	S4UL^	<330	<2.0	Yes
Aromatic TPH (C21 - C35)       mg/kg       S4UL^       <1500       21       Yes         Aromatic TPH (C35 - C44)       mg/kg       S4UL^       <1500	Aromatic TPH (C16 - C21)	mg/kg	S4UL^	<540	<10	Yes
Aromatic TPH (C35 - C44)         mg/kg         S4UL^         <1500         <8.4         Yes           Benzene         mg/kg         S4UL^         <0.17	Aromatic TPH (C21 - C35)	mg/kg	S4UL^	<1500	21	Yes
Benzene         mg/kg         S4UL^         <0.17         <0.001         Yes           Toluene         mg/kg         S4UL^         <290	Aromatic TPH (C35 - C44)	mg/kg	S4UL^	<1500	<8.4	Yes
Toluene         mg/kg         S4UL^         <290         <0.001         Yes           Ethylbenzene         mg/kg         S4UL^         <110	Benzene	mg/kg	S4UL^	<0.17	< 0.001	Yes
Ethylbenzene         mg/kg         S4UL^         <110         <0.001         Yes           O-xylene         mg/kg         S4UL^         <140	Toluene	mg/kg	S4UL^	<290	< 0.001	Yes
O-xylene         mg/kg         S4UL^         <140         <0.001         Yes           M-xylene         mg/kg         S4ULA         <140	Ethylbenzene	mg/kg	S4UL^	<110	< 0.001	Yes
Maydene mg/rg CAULA 2140 Voc	O-xvlene	mg/kg	S4UL^	<140	<0.001	Yes
	M-xylene	mg/kg	S4UL^	<140	.0.001	Yes
P-xylene mg/kg \$4111^ <130 <0.001 Voc	P-xylene	mø/kø	\$4111^	<130	<0.001	Yes
MTBE mg/kg Sail Guideline Values <470 <0.001 Voc	MTBE	mø/kø	Sail Guideline Values	<470	<0.001	Ves
Asbestos mg/kg Control of Asbestos Regulations 2006 Absent Absent Ves	Asbestos	mg/kg	Control of Asbestos Regulations 2006	Absent	Absent	Yes

Bourne Amenity, The Wharf, Rye Road, Newenden, Kent TN18 5QG

01797 252299 • enquiries@bourneamenity.co.uk www.bourneamenity.co.uk



### **APPENDIX J**

Chemical Assessment Tables

#### Table J2. Data assessment summary - potential soil risks to human health Land Use Category: Residential with homegrown produce consumption SOM 1.00% TOPSOIL Stratum No. Samples US<sub>95</sub> > GAC Determinand GAC SSL Min Max No. Samples No. Samples US<sub>95</sub> (mg/kg) mg/kg mg/kg recorded recorded exceeding exceeding (See Note A) (mg/kg) (mg/kg) GAC SSL Arsenic 28 12 12 0 0 0 0 Beryllium 1.72 1 1 290 1.7 1.7 0 0 Boron 11 0.9 0.9 0 0 Cadmium Chromium (III) 886 25 25 0 0 Chromium (VI) 2.93 < 1.2 < 1.2 0 0 -4220 51 51 0 0 Copper Lead (note E) 200 150 150 0 0 Mercury 43.3 0.6 0.6 0 0 Nickel 182 24 24 0 0 -350 Selenium < 1 < 1 0 0 26 0 Vanadium 320 26 ٥ 4590 360 360 0 0 Zinc < 0.001 < 0.001 0 Benzene 0.09 0 -Toluene 129 < 0.001 < 0.001 0 0 < 0.001 < 0.001 0 0 Ethyl benzene 77 63.1 < 0.001 < 0.001 0 0 m-Xylene o-Xylene 64.3 < 0.001 < 0.001 0 0 -60.3 < 0.001 < 0.001 0 0 p-Xylene Total Phenols (note C) 257 < 1 < 1 0 0 Total Cyanide (note D) 34 < 1 < 1 0 0 \_ 39.6 < 0.001 < 0.001 0 0 Aliphatic EC5-6 Aliphatic EC6-8 84.9 < 0.001 < 0.001 0 0 Aliphatic EC8-10 18.7 < 0.001 < 0.001 0 0 Aliphatic EC10-12 93.2 50.2 < 1 < 1 0 0 795 22.2 < 2 < 2 0 0 Aliphatic EC12-16 Aliphatic EC16-35 128000 < 128 < 128 0 0 0 Aromatic EC5-7 0.0528 < 0.001 < 0.001 0 -Aromatic EC7-8 129 < 0.001 < 0.001 0 0 -Aromatic EC8-10 25.1 < 0.001 < 0.001 0 0 0 0 68 3 < 1 < 1 Aromatic EC10-12 Aromatic EC12-16 137 2.3 2.3 0 0 16 0 0 291 16 Aromatic EC16-21 -Aromatic EC21-35 1120 33 33 0 0 2.32 < 0.05 < 0.05 0 0 Naphthalene Acenaphthylene 169 -< 0.05 < 0.05 0 0 206 < 0.05 < 0.05 0 0 Acenaphthene Fluorene 165 < 0.05 < 0.05 0 0 Phenanthrene 95.8 0.89 0.89 0 0 Anthracene 2330 < 0.05 < 0.05 ٥ 0 -0 283 1.6 1.6 0 Fluoranthene 616 1.5 0 Pyrene 1.5 0 7.79 0.9 0 0 Benzo(a)Anthracene 0.9 Chrysene 14.9 -1.1 1.1 0 0 Benzo(b)fluoranthene 2.6 1.3 1.3 0 0 0.61 0.61 0 0 77.4 Benzo(k)fluoranthene -2.23 1 1 0 0 Benzo(a)Pyrene 0.45 0.45 0 0 Indeno(1,2,3,cd)pyrene 27.4 -Dibenzo(a,h)anthracene 0 254 < 0.05 < 0.05 0 0 Benzo(g,h,i)perylene 316 0.48 0.48 0 0 Asbestos in Soils (Number of samples in which Asbestos detected) 0 0 A. SSL (Soil Saturation Limit) presented for contaminants where GAC exceeds the calculated saturation limit using CLEA. Where the SSL is exceeded, there is the potential for free product. B. Concentrations for total xylenes should be compared against m-xylene for fresh spills and o-xylene for all other cases. C. GAC relates to phenol (C6H5OH) only.

D. Cyanide GAC based on acute exposure of 0-6 year old child (Atkins value).

E. Published C4SL.

E. Published C4SL

E. Published C4SL.



#### Table J3. Data assessment summary - potential soil risks to human health Residential with homegrown produce consumption 1.00% Land Use Category: SOM Stratum: [MADE GROUND] No. Samples Determinand GAC SSL Min Max No. Samples No. Samples US<sub>95</sub> (mg/kg) US<sub>95</sub> > GAC mg/kg mg/kg recorded recorded exceeding exceeding (mg/kg) (mg/kg) GAC SSL (See Note A 28 36.03 Arsenic < 1 39 0 EXCEED < 0.06 Beryllium 1 72 14 0 0 1.71 ОК -Boron 290 < 0.2 2.4 0 0 1.81 ОК Cadmium 11 < 0.2 1.5 0 0 1 02 OK < 1 44 0 0 32.30 OK Chromium (III) 886 Chromium (VI) 2 93 < 1.2 < 1.2 ٥ ٥ 0 60 OK 0 0 204.84 ОК 4220 < 1 270 Copper 200 < 1 260 ٥ 196 91 ОК Lead (note E) 2 < 0.3 0.8 0 0 0.85 ОК Mercury 43.3 Nickel 182 < 1 46 0 0 36.61 ОК 350 < 1 3.5 0 0 2.05 ОК Selenium 34 Vanadium 320 \_ < 1 0 0 41.74 ОК 1297.24 Zinc 4590 < 1 1800 0 0 ОК Benzene 0.09 -< 0.001 < 0.001 0 0 0.00 ОК 129 < 0.001 < 0.001 0 0 0.00 ОК Toluene Ethyl benzene 77 < 0.001 < 0.001 0 0 0.00 OK m-Xvlene 63.1 < 0.001 < 0.001 0 0 0.00 ОК o-Xylene 64.3 < 0.001 < 0.001 0 0 0.00 ОК < 0.001 ОК 60.3 < 0.001 0 0 0.00 p-Xylene Total Phenols (note C) 257 \_ < 1 < 1 0 0 0.50 ОК 34 < 1 < 1 0 0 0.50 OK Total Cyanide (note D) Aliphatic EC5-6 39.6 < 0.001 < 0.001 0 0 0.00 ОК -Aliphatic EC6-8 84.9 < 0.001 < 0.001 0 0 0.00 ОК Aliphatic EC8-10 18.7 -< 0.001 < 0.001 0 0 0.00 OK Aliphatic EC10-12 93.2 < 1 8 0 0 5.52 ОК Aliphatic EC12-16 795 < 2 240 0 0 161.13 ОК -128000 1010 ОК Aliphatic EC16-35 < 32 0 0 681.98 Aromatic EC5-7 0.0528 < 0.001 < 0.001 0 0 0.00 ОК Aromatic EC7-8 < 0.001 < 0.001 0 0 0.00 OK 129 Aromatic EC8-10 25.1 < 0.001 < 0.001 0 0 0.00 ОК -0 0 2.31 ОК Aromatic EC10-12 68.3 3.2 < 1 Aromatic EC12-16 137 < 2 110 0 0 74.36 ОК Aromatic EC16-21 291 < 10 240 0 0 164.73 ОК Aromatic EC21-35 1120 < 10 180 0 0 128.16 ОК -ОК < 0.05 < 0.05 0 0.03 Naphthalene 2.32 0 Acenaphthylene 169 < 0.05 < 0.05 0 0 0.03 ОК < 0.05 0 0 0.03 OK 206 < 0.05 Acenaphthene 165 < 0.05 < 0.05 0 0 0.03 ОК Fluorene 95.8 0 ОК < 0.05 2.2 0 1.87 Phenanthrene Anthracene 2330 < 0.05 0.48 0 0 0.36 ОК 3.3 0 0 2.86 ОК Fluoranthene 283 < 0.05 616 < 0.05 2.6 0 0 2.31 ОК Pyrene ОК Benzo(a)Anthracene 7.79 < 0.05 1.8 0 0 1.59 Chrysene 14.9 < 0.05 1.7 0 0 1.61 ОК 1.9 0 0 1.89 ОК 2.6 < 0.05 Benzo(b)fluoranthene -Benzo(k)fluoranthene 77.4 < 0.05 0.84 0 0 0.54 ОК 0 ОК Benzo(a)Pyrene 2.23 < 0.05 1.3 0 1.36 -27.4 < 0.05 0.63 0 0 0.73 ОК Indeno(1,2,3,cd)pyrene 0 0.03 ОК Dibenzo(a,h)anthracene 0.254 < 0.05 < 0.05 0 < 0.05 0.72 0 0 0.77 ОК Benzo(g,h,i)perylene 316 (Number of samples in which Asbestos detected) 0.00 Asbestos in Soils 0 0 A. SSL (Soil Saturation Limit) presented for contaminants where GAC exceeds the calculated saturation limit using CLEA. Where the SSL is exceeded, there is the potential for free product. B. Concentrations for total xylenes should be compared against m-xylene for fresh spills and o-xylene for all other cases.

C. GAC relates to phenol (C6H5OH) only.

D. Cyanide GAC based on acute exposure of 0-6 year old child (Atkins value).

E. Published C4SL

E. Published C4SL

E. Published C4SL.

#### Job Number: CGE/16484 Job Reference: Hoodlands, Harry Stoke



#### Table J4. Data assessment summary - potential soil risks to human health Land Use Category: Residential with homegrown produce consumption SOM 1.00% [MERCIA MUDSTONE GROUP - ZONE IVb] Stratum No. Samples US<sub>95</sub> > GAC Determinand GAC SSL Min Max No. Samples No. Samples US<sub>95</sub> (mg/kg) mg/kg mg/kg recorded recorded exceeding exceeding (See Note A) (mg/kg) (mg/kg) GAC SSL Arsenic 28 < 1 23 0 0 0 0 Beryllium 1.72 < 0.06 1.5 0.8 290 < 0.2 0 0 Boron 11 < 0.2 < 0.2 0 0 Cadmium Chromium (III) 886 < 1 35 0 0 Chromium (VI) 2.93 < 1.2 < 1.2 0 0 -4220 28 0 0 < 1 Copper Lead (note E) 200 < 1 20 0 0 Mercury 43.3 < 0.3 < 0.3 0 0 Nickel 182 < 1 33 0 0 -Selenium 350 < 1 3.4 0 0 37 Vanadium 320 < 1 ٥ Ω < 1 4590 210 0 0 Zinc < 0.001 < 0.001 0 Benzene 0.09 0 -Toluene 129 < 0.001 < 0.001 0 0 < 0.001 < 0.001 0 Ethyl benzene 77 0 63.1 < 0.001 < 0.001 0 0 m-Xylene o-Xylene 64.3 < 0.001 < 0.001 0 0 -60.3 < 0.001 < 0.001 0 0 p-Xylene Total Phenols (note C) 257 < 1 < 1 0 0 Total Cyanide (note D) 34 < 1 < 1 0 0 \_ 39.6 < 0.001 < 0.001 0 0 Aliphatic EC5-6 Aliphatic EC6-8 84.9 < 0.001 < 0.001 0 0 Aliphatic EC8-10 18.7 < 0.001 < 0.001 0 0 Aliphatic EC10-12 93.2 50.2 < 1 < 1 0 0 795 22.2 < 2 < 2 0 0 Aliphatic EC12-16 Aliphatic EC16-35 128000 < 64 < 64 0 0 0 Aromatic EC5-7 0.0528 < 0.001 < 0.001 0 Aromatic EC7-8 129 < 0.001 < 0.001 0 0 -Aromatic EC8-10 25.1 < 0.001 < 0.001 0 0 0 0 68 3 < 1 Aromatic EC10-12 < 1 Aromatic EC12-16 137 < 2 < 2 0 0 < 10 0 0 291 < 10 Aromatic EC16-21 Aromatic EC21-35 1120 < 10 < 10 0 0 2.32 < 0.05 < 0.05 0 0 Naphthalene Acenaphthylene 169 -< 0.05 < 0.05 0 0 206 < 0.05 < 0.05 0 0 Acenaphthene Fluorene 165 < 0.05 < 0.05 0 0 Phenanthrene 95.8 < 0.05 < 0.05 0 0 Anthracene 2330 < 0.05 < 0.05 ٥ 0 -283 < 0.05 < 0.05 0 0 Fluoranthene 616 0 Pyrene < 0.05 < 0.05 0 7.79 0 0 Benzo(a)Anthracene < 0.05 < 0.05 Chrysene 14.9 -< 0.05 < 0.05 0 0 Benzo(b)fluoranthene 2.6 < 0.05 < 0.05 0 0 0 0 77.4 < 0.05 < 0.05 Benzo(k)fluoranthene -2.23 < 0.05 < 0.05 0 0 Benzo(a)Pyrene < 0.05 < 0.05 0 0 Indeno(1,2,3,cd)pyrene 27.4 -Dibenzo(a,h)anthracene 0 254 < 0.05 < 0.05 0 0 Benzo(g,h,i)perylene 316 < 0.05 < 0.05 0 0 Asbestos in Soils (Number of samples in which Asbestos detected) 0 0 A. SSL (Soil Saturation Limit) presented for contaminants where GAC exceeds the calculated saturation limit using CLEA. Where the SSL is exceeded, there is the potential for free product. B. Concentrations for total xylenes should be compared against m-xylene for fresh spills and o-xylene for all other cases. C. GAC relates to phenol (C6H5OH) only.

D. Cyanide GAC based on acute exposure of 0-6 year old child (Atkins value).

E. Published C4SL.

E. Published C4SL

E. Published C4SL





### Table J5.1. Data assessment summary – potential soil risk to vegetation and plants – Topsoil

Determinant	Assessment Criteria (mg/kg)	Measured range (mg/kg)	Measured range > Assessment Criteria? (Y/N)
Copper <sup>1</sup>	135	51	N
Zinc <sup>1</sup>	200	360	Y
Nickel <sup>1</sup>	75	24	N
Boron (water soluble) <sup>2</sup>	5	1.7	N

Table J5.2. Data assessment summar	v – potential soil risk to veaetation and	plants – Made Ground

Determinant	Assessment Criteria (mg/kg)	Measured range (mg/kg)	Measured range > Assessment Criteria? (Y/N)
Copper <sup>1</sup>	135	270	Y
Zinc <sup>1</sup>	200	1800	Y
Nickel <sup>1</sup>	75	46	N
Boron (water soluble) <sup>2</sup>	5	2.4	N

Table J5.3. Data assessment summary – potential soil risk to vegetation and plants – Natural Soils

Determinant	Assessment Criteria (mg/kg)	Measured range (mg/kg)	Measured range > Assessment Criteria? (Y/N)
Copper <sup>1</sup>	135	28	Ν
Zinc <sup>1</sup>	200	210	Y
Nickel <sup>1</sup>	75	33	N
Boron (water soluble) <sup>2</sup>	5	0.8	Ν

<sup>&</sup>lt;sup>1</sup> BSI, (2015). Specification for topsoil and requirements for use. BS 3882:2015. Values taken for pH 6-7

<sup>&</sup>lt;sup>2</sup> Limit for phytotoxic effect. Nable, Banuelos and Paul, (1997). *Boron Toxicity*. Plant and Soil, Volume 193, pp 181-198 CGE/16484



#### Table J6. Standard Water Supply Pipe Assessment

Test Group <sup>1</sup>	Testing Required?	PE threshold (mg/kg)	Metal Pipes / Barrier Pipe	Laboratory Detection Limit (mg/kg)	Testing UKAS accredited Y/N	Maximum site concentration <sup>2</sup> (mg/kg)	Locations and depths where concentrations exceed proposed pipeline threshold.	
Total VOCs	Only where Veliminary Risk Assessment (PRA) has identified land potentially affected by contamination	0.5	Pass	-	-	-	-	
Total BTEX & MTBE		0.1	Pass	0.001	Y	<0.001	None	
Total SVOCs		2	Pass	-	-	-	-	
EC5–EC10 aliphatic and aromatic hydrocarbons		Risk As land p ntamina	2	Pass	0.001	Y	<0.003	None
EC10-EC16 aliphatic and aromatic hydrocarbons		10	Pass	2	Y	<3	None	
EC16-EC40 aliphatic and aromatic hydrocarbons		500	Pass	10	Y	1150	WS06 0.05m bgl	
Phenols		/her RA)	2	Pass	1	Y	<1	None
Creosols and chlorinated phenols		2	Pass	-	-	-	-	
Ethers		0.5	Pass	-	-	-	-	
Nitrobenzene		0.5	Pass	-	-	-	-	
Ketones		0.5	Pass	-	-	-	-	
Aldehydes		only ide	0.5	Pass	-	-	-	-
Amines		Fail	Pass	-	-	-	-	
Corrosive	Conductivity			-	-	-	-	
	Redox	Pass	Note <sup>3</sup>	-	-	-	-	
	рН			-	Y	7.5 to 9.0	-	

<sup>&</sup>lt;sup>1</sup> Tests Groups as per Appendix G of UKWIR Guidance.

<sup>&</sup>lt;sup>2</sup> State if liquid free product is present in soil or groundwater.

<sup>&</sup>lt;sup>3</sup> Threshold: For wrapped steel, corrosive if pH<7 and conductivity >400 µs/cm. For wrapped ductile iron corrosive if pH<5, Eh not neutral and conductivity >400 µs/cm. For copper, corrosive if pH<5 or>8 and Eh positive.