BOREHOLE & TRIAL PIT LOGS

Trial Pit TP131	
Ground Level – 0.15m	MADE GROUND: Concrete Floor Slab
0.15m – 1.00m	MADE GROUND: Mixed layered fill, mainly crushed brick
1.00m – 1.22m	MADE GROUND: Concrete slab
1.22m – 1.35m	MADE GROUND: Orange brown clayey sand and gravel fill (HOGGIN)
1.35m – 1.60m	MADE GROUND: Crushed brick
1.60m – 2.20m	MADE GROUND: Stiff brown reworked clay
2.20m – 2.75m	Firm or soft to firm grey brown alluvial CLAY with a little gravel of brick and ash
2.75m – 3.10m	Stiff brown CLAY (Reworked (?) London Clay)
>3.10m	Firm to stiff becoming stiff brown mottled grey fissured CLAY (LONDON CLAY)
3.30m	*End of Trial pit*

Notes

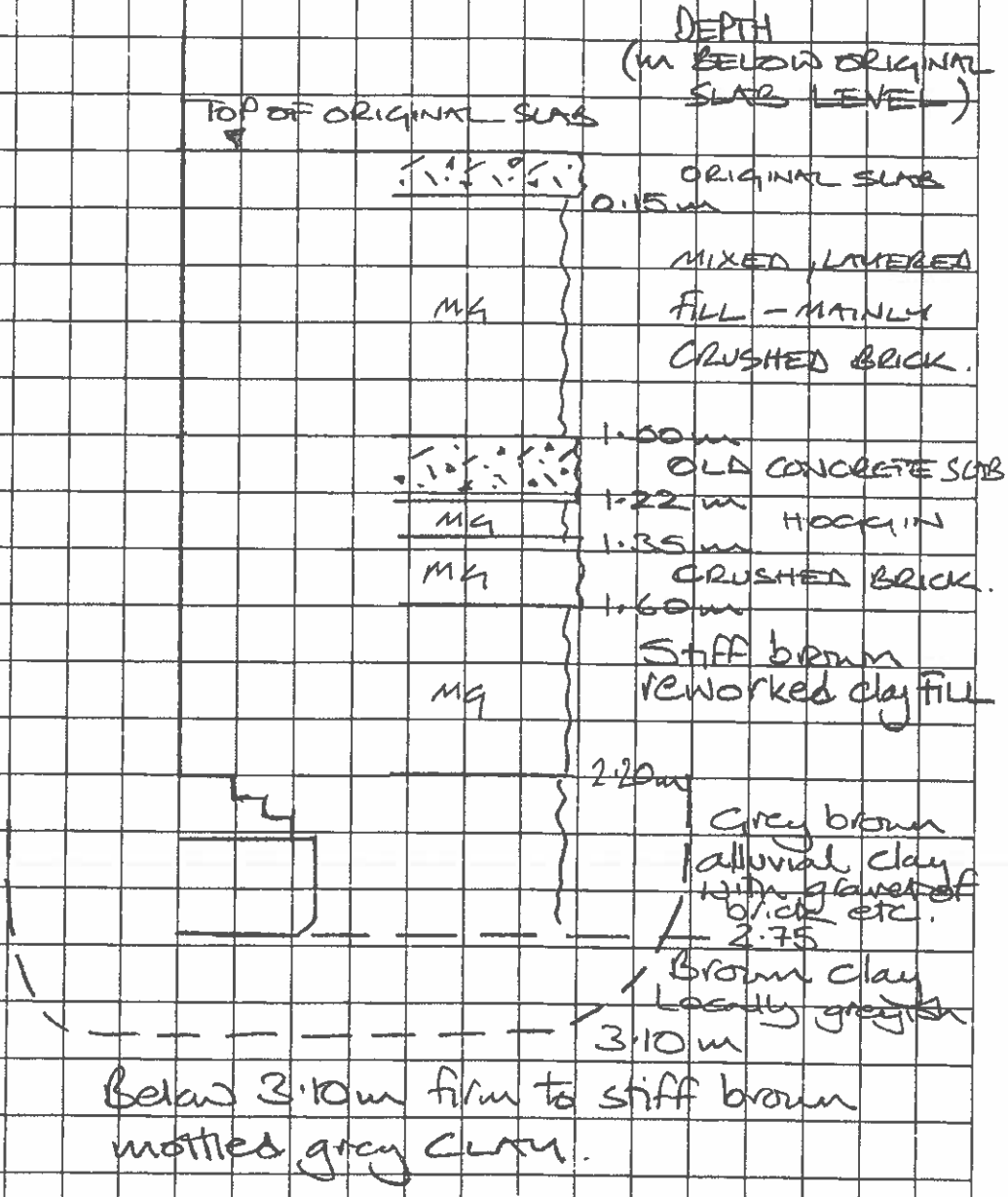
1. Trial Pit location is representative of the former workshop area
2. Refer also to attached photographs & sketch with details of existing foundations
3. 2No samples were submitted for laboratory WAC testing
4. No groundwater was encountered
5. The sides of the trial pit remained stable during excavation

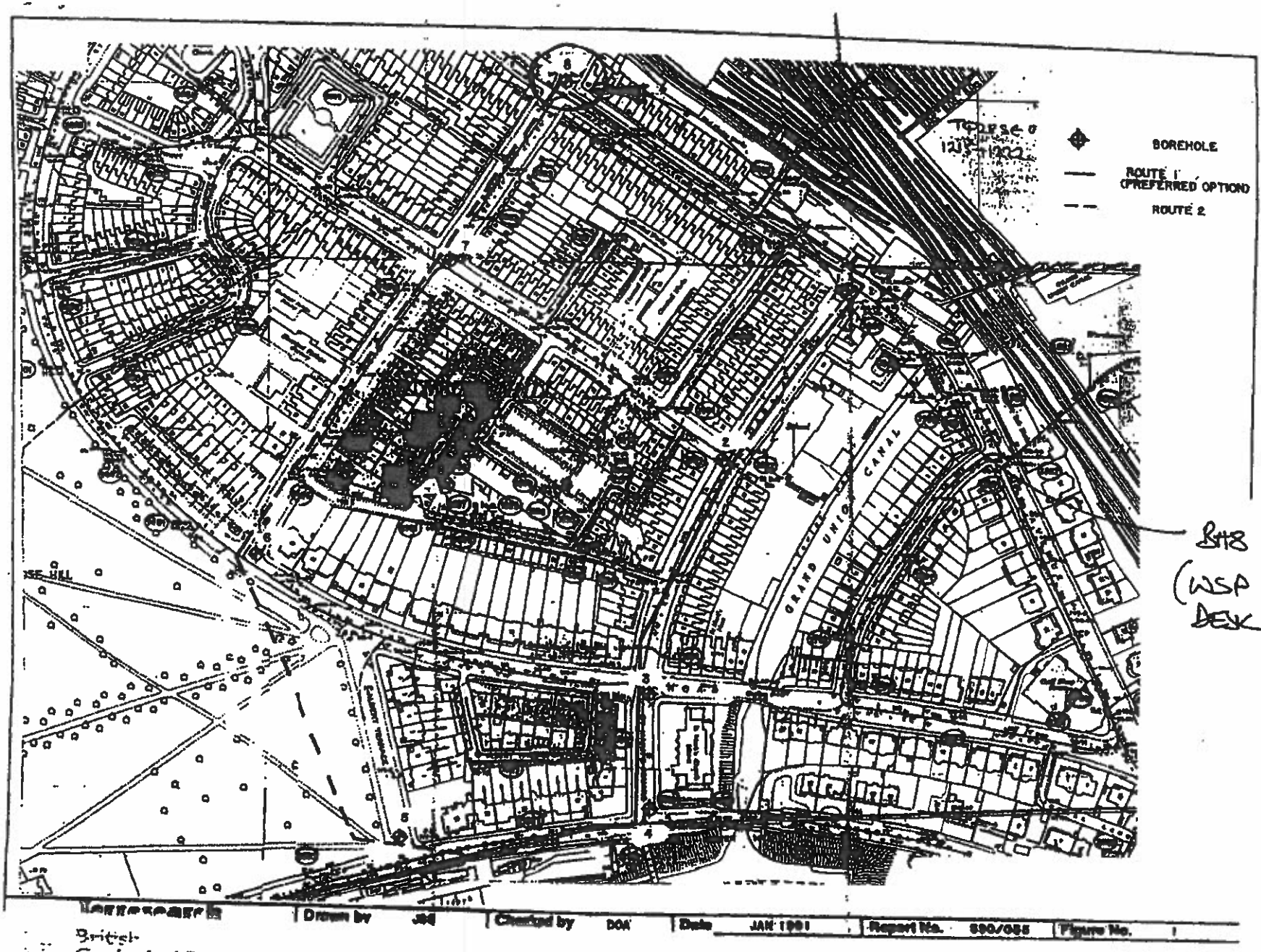
KNAPP HICKS & PARTNERS LTD
CONSULTING STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEERS

Kingston House, Long Barrow, Orbital Park,
Ashford, Kent, TN24 0GP
Tel: (01233) 502255 Fax: (01233) 502288

Project: DUMPTON PLACE.	Job Ref: 31270	Page No. 1
Designed by:	Date:	Checked by:	Date: MARCH 2013

TRIAL PIT
TP 131





BH8 (WSP DESK STUDY)

TQ28SE/1222

Contract: Gloucester Avenue

Client: London Borough of Camden

Borehole No. 8

Sheet No. 1 Of 2.
Depth 0 to 10 metres.

Equipment and Methods
Light Cable Percussion Boring
150mm Diameter

Orientation : Vertical

Ground Level : m.O.D.

Coordinates :

Job Number : S90/055

Location : 2816, 8410

Dates : 5/11/90
6/11/90

Daily Prog.	Water Levels	Remarks	In Situ Tests	Samples Taken	Depth (Thick)	Reduced Level	Description	Legend
				B	0.00		MADE GROUND (road surface over brown sandy clay with brick and chalk fragments)	
			S 3	J	(2.00)			
				B				
			S 5	J	2.00		MADE GROUND (soft dark grey clay with black organic matter and brick fragments)	
				B	(1.00)			
5/11				U	3.00		Firm brown silty CLAY with grey silty partings and occasional fine sandy pockets	
				J				
				J				
				U	(3.00)			
				J				
				J				
				U	6.00		Firm to stiff, brown slightly fissured, silty CLAY	
				J				
				J				
				U				
				J	(3.40)			
				J				
				U				
				J	9.40		Moderately weathered CLAYSTONE, weakly cemented	
					(5.57)			
					10.00		Stiff to very stiff, brown silty CLAY	
							Continued	

Operator
DA

Scale
10m/sheet

General Remarks:

Appendix
1

Sheet No.
22

TQ28 SE /1222

Contract: Gloucester Avenue

Client: London Borough of Camden

Borehole No. 8

Sheet No. 2 of 2.
Depth 10 to 20 metres.

Equipment and Methods
Light Cable Percussion Boring
150mm Diameter

Orientation : Vertical

Ground Level : m.O.D.

Coordinates :

Job Number : S90/055

Location :

Dates : 5/11/90
5/11/90

Daily Prog.	Water Levels	Remarks	In Situ Tests	Samples Taken	Depth (Thick)	Reduced Level	Description	Legend
				J	10.00		Stiff to very stiff, brown silty CLAY	
				U				
				J				
				J				
5/11				U				
				J	(5.57)			
				J				
				U				
				J				
				J				
				U				
6/11				J	15.00		End of Borehole	

Operator
DA

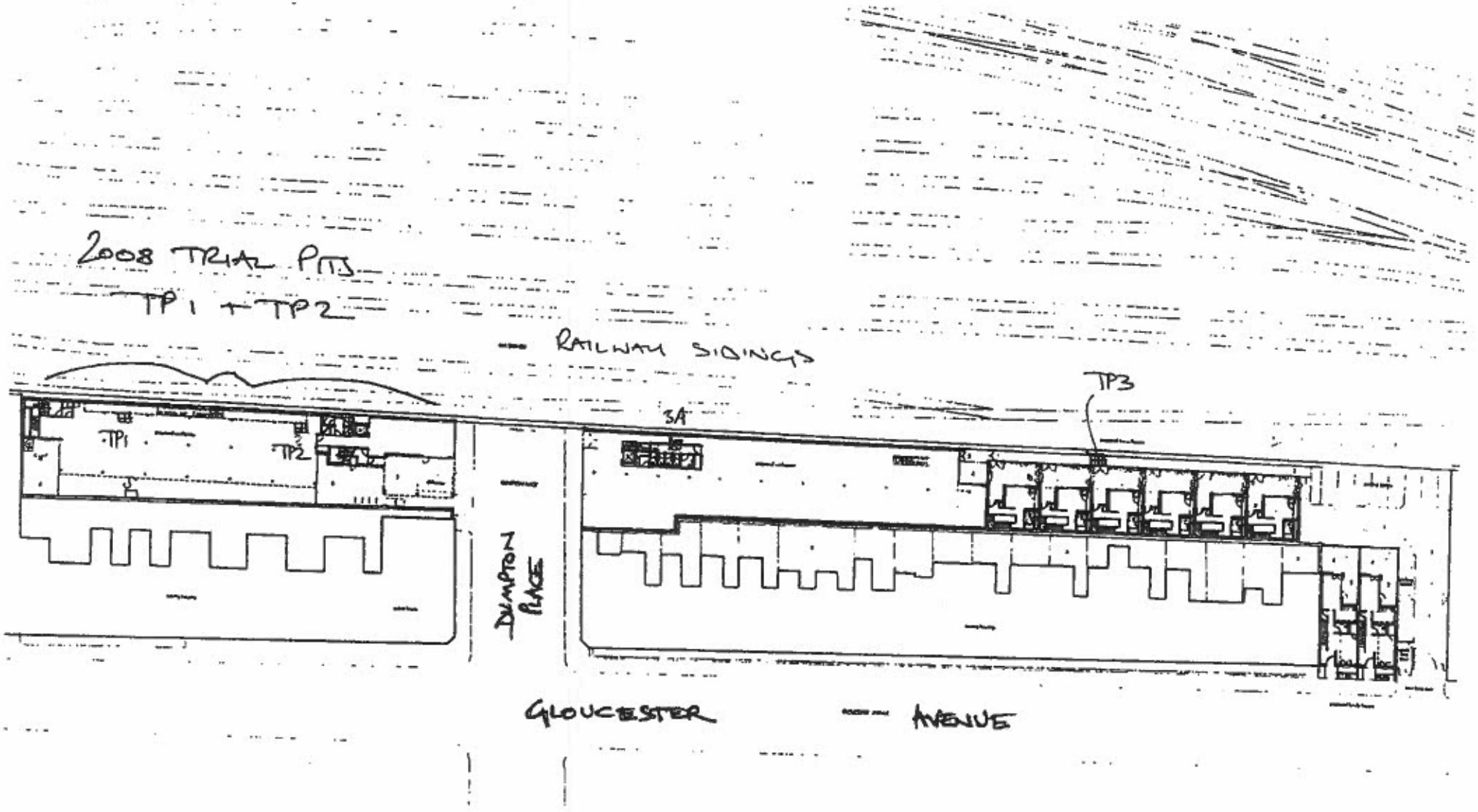
General Remarks:

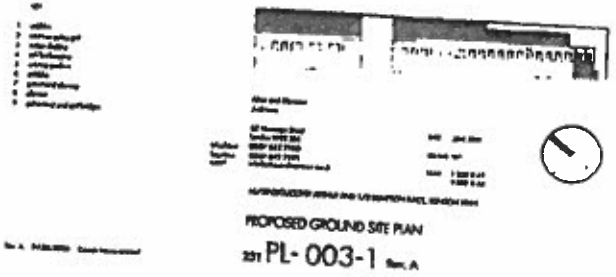
Appendix
1

Scale
10m/sheet

Sheet No.
23

[TQ28SE BJ 1222 .]


2008 TRIAL PITS
TP1 + TP2
RAILWAY SIDINGS
TP3
3A
TP1
TP2
DUMPTON PLACE
GLOUCESTER AVENUE

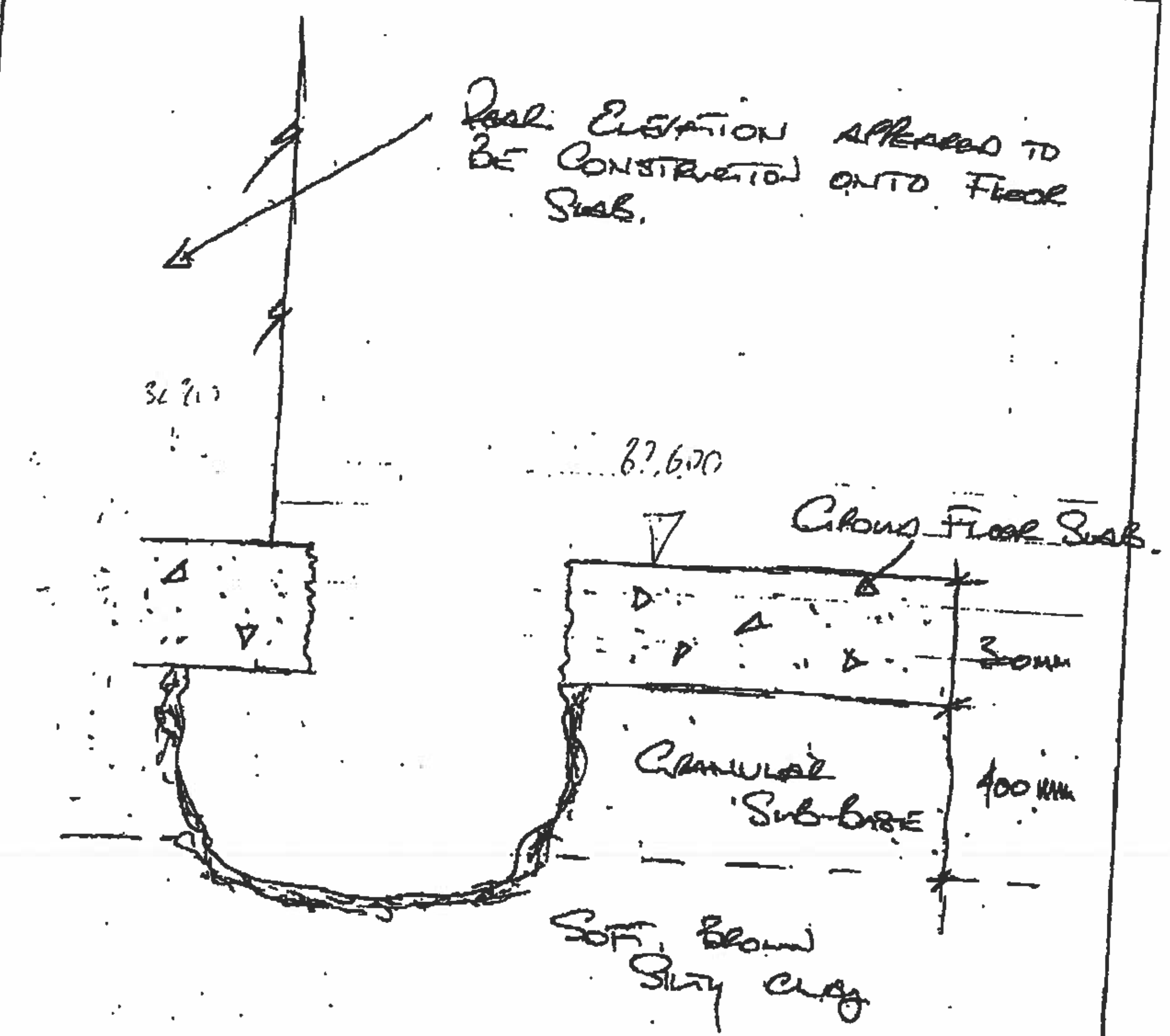

PROPOSED GROUND SITE PLAN
PL- 003-1

FROM COMPLIANCE DRILLING 01895904806 TO:02085871001 P.2

COMPLIANCE DRILLING SERVICES

76 Sedgewick Avenue
Hillingdon Middlesex UB10 9DG
Tel / Fax: 01895 904806 Mobile: 07808 295326

CLIENT KHP	PROJECT 'Volvo' Junction Place NW1.		LOCATION TP1
DATE 26.7.2008.	JOB REF	TECHNICIAN SS	SHEET No.



Weil block.

Compliance Drilling Services

Soil Sampling Data Sheet

Date: 26.07.2008

Job No: TBC.

Borehole No: 1.

Client: Kelf.

Site: Volvo Garage Dunton Place NW1

Location: Trial Pit 1

Samples and Tests D=Disturbed			Pocket (Dial) Penetrometer Readings (Kg/cm2)				Layer Depth	Drillers Description
No.	Depth (m)	Type	1	2	3	Mean		
	0.25					0.0	300	RC Slab.
1	0.5	D	Sub-base			0.0	400	Granular Sub-Base.
	0.75					0.0		
2	1.0	D	1.1	1.0	1.2	0.0		Soft, brown, Silty Clay
	1.25					0.0		
3	1.5	D	1.0	0.9	1.0	0.0		
	1.75					0.0		
4	2.0	D	2.1	2.0	2.0	0.0		
	2.25					0.0		Standing water to 1m from FFL on Completion.
	2.5					0.0		
	2.75					0.0		
	3.0					0.0		
	3.25					0.0		
	3.5					0.0		
	3.75					0.0		
	4.0					0.0		
	4.25					0.0		
	4.5					0.0		
	4.75					0.0		
	5.0					0.0		
	5.25					0.0		
	5.5					0.0		
	5.75					0.0		
	6.0					0.0		
	6.25					0.0		
	6.5					0.0		
	6.75					0.0		
	7.0					0.0		
	7.25					0.0		
	7.5					0.0		
	7.75					0.0		
	8.0					0.0		

Remarks:

Logged By: SS

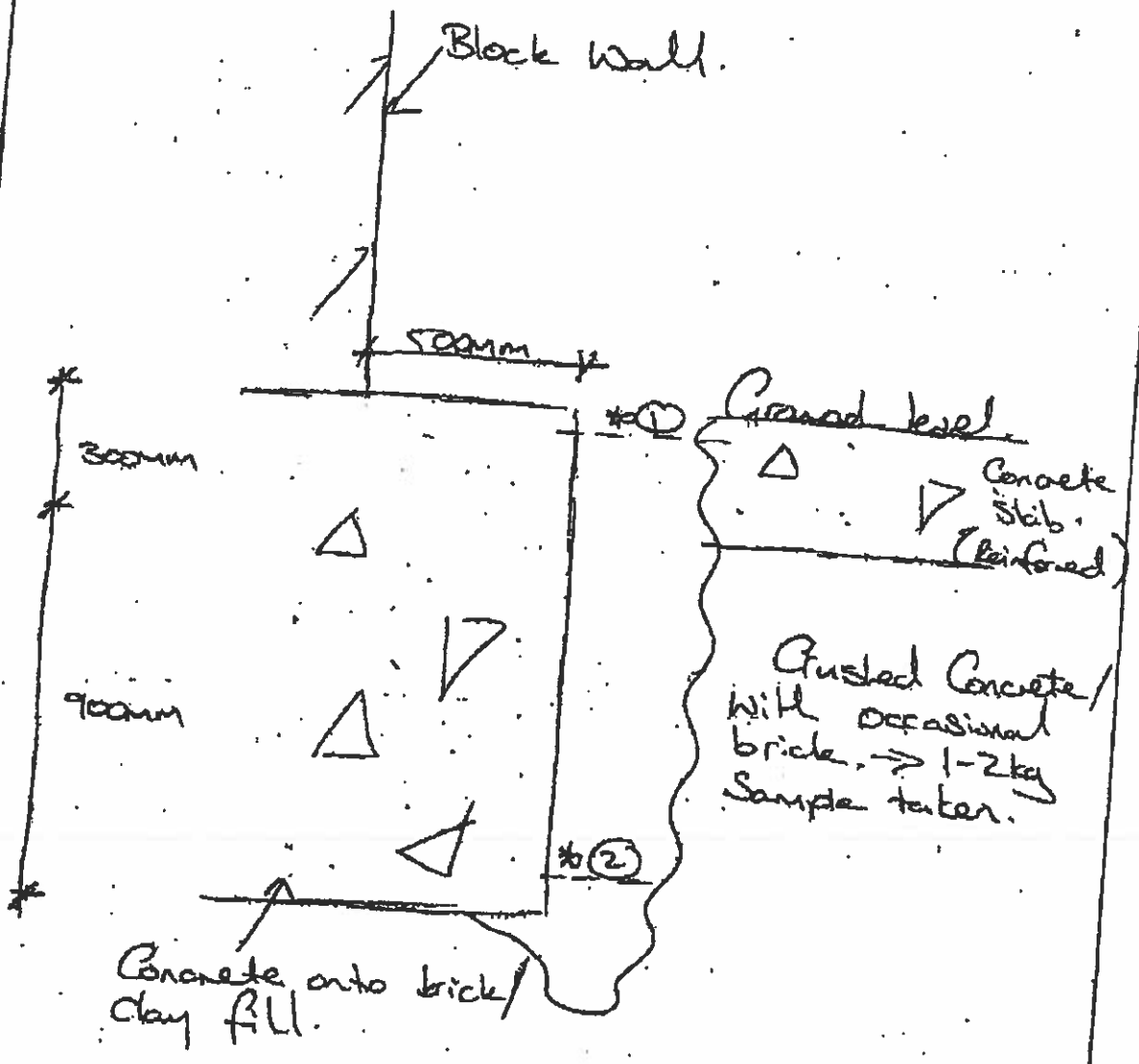
Hammer Type: Hand Auger

Weather Conditions: Internal

COMPLIANCE DRILLING SERVICES

76 Sedgewick Avenue
Hillingdon Middlesex UB10 9DG
Tel / Fax: 01895 904806 Mobile: 07808 295526

CLIENT LHP	PROJECT Volvo, Dumpton Place, NW1		LOCATION TP2
DATE 9/07/08	JOB REF	TECHNICIAN SS	SHEET No. 1



*1 - slab tied in by 25mm twist bars.

*2 - 100mm standing water in bottom of tp.

Compliance Drilling Services

Soil Sampling Data Sheet

Date: 19/07/08

Job No:

Borehole No: TP 2

Client: KHP.

Site: Volvo Dumpton Place. N3

Location:

Samples and Tests D=Disturbed			Pocket (Dial) Penetrometer Readings (Kg/cm2)				Layer	Drillers Description
No.	Depth (m)	Type	1	2	3	Mean	Depth	
	0.25					0.0	300mm	Concrete.
	0.5					0.0		
	0.75					0.0		
	1.0					0.0	900mm	Crushed Concrete, with occasional brick.
	1.25	D	0.5	0.5	0.5	0.0		
	1.5	D	0.5	0.6	0.5	0.0		Brick / clay fill.
	1.75		0.4	0.5	0.5	0.0		
	2.0	D	0.5	0.5	0.5	0.0		
	2.25					0.0		
	2.5					0.0		* Bulk Samples taken from crushed concrete/brick material
	2.75					0.0		* 100mm water in bottom of TP.
	3.0					0.0		
	3.25					0.0		* ~~Samples~~ Material starting to pull out of Auger.
	3.5					0.0		
	3.75					0.0		
	4.0					0.0		
	4.25					0.0		
	4.5					0.0		
	4.75					0.0		
	5.0					0.0		
	5.25					0.0		
	5.5					0.0		
	5.75					0.0		
	6.0					0.0		
	6.25					0.0		
	6.5					0.0		
	6.75					0.0		
	7.0					0.0		
	7.25					0.0		
	7.5					0.0		
	7.75					0.0		
	8.0					0.0		

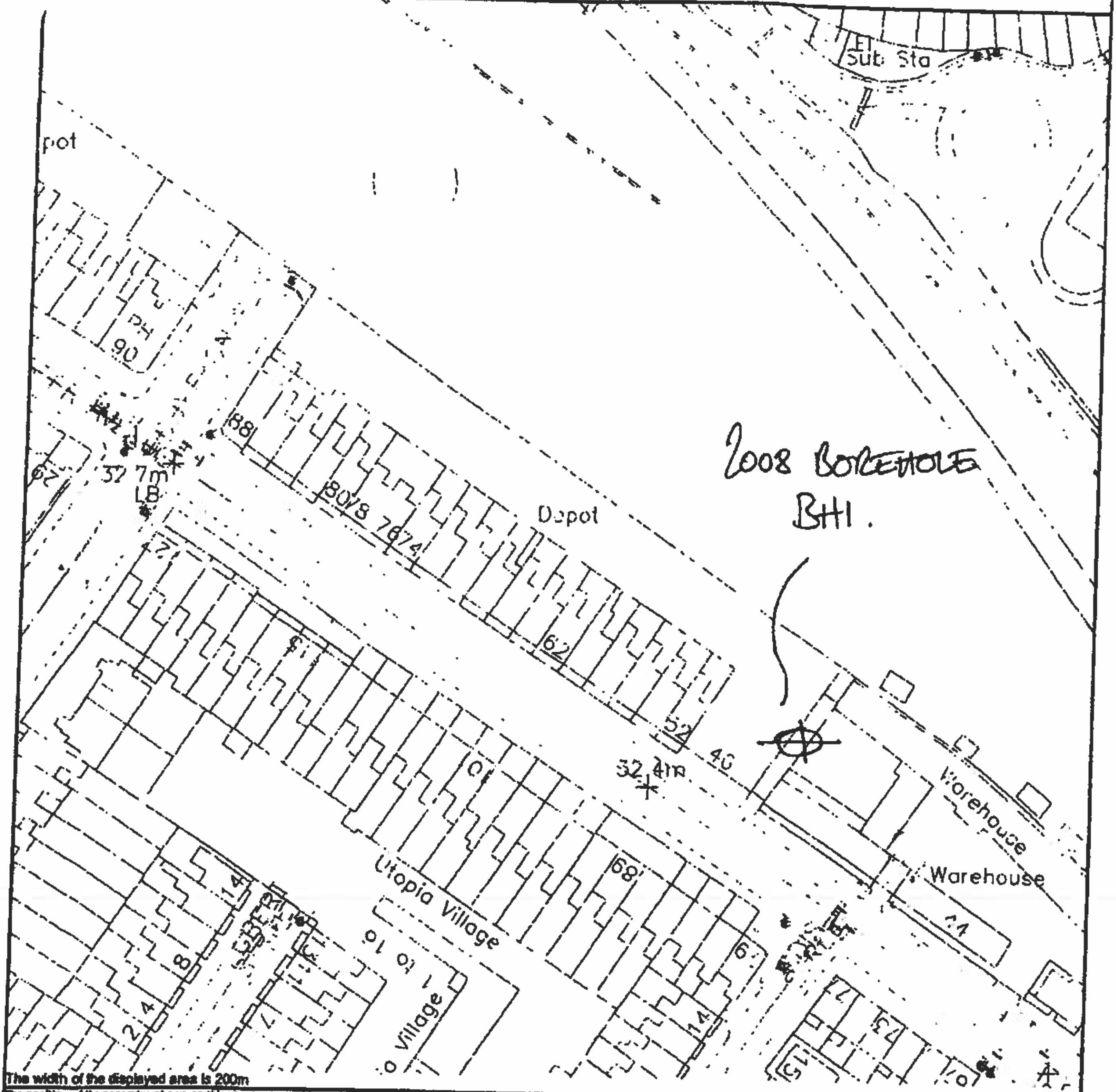
Remarks:

Logged By: SS

Hammer Type: Hand Auger.

Weather Conditions: Dry.

...sset Location Search Water Map - ALS/ALS Standard/2008 1283872



The width of the displayed area is 200m

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

bam ritchies

Borehole Record

BH1

Sheet 1 of 2

Project: Gloucester Avenue, Camden

Project No: 3456

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test Type	Sample Test Depth (m)	Casing (Water) Depth (m)	Remarks and Test Results	Installations
MADE GROUND: Reinforced CONCRETE.		0.10		B1	0.10-0.70			
MADE GROUND: Medium dense red brown sandy GRAVEL with concrete rubble and whole bricks. Gravel is fine to coarse subangular to subrounded flint, brick, and concrete.		0.70						
MADE GROUND: CONCRETE.		0.90		S D1	1.20 1.20-1.65	1.00	N=7 (1,1,2,2,2,1)	
MADE GROUND: Medium dense red brown sandy GRAVEL. Gravel is fine to coarse subangular to subrounded flint and brick. Becoming clayey at 2.00m.		2.50		S D2	2.00 2.00-2.45	1.50	N=13 (2,1,3,4,4,2)	
MADE GROUND: Soft to firm grey and red brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint and brick.		3.30		U1 D3	3.00-3.50 3.50		28 blows	
MADE GROUND: Soft black and greeny grey organic SILT/CLAY with occasional gravel. Gravel is fine rounded flint and brick fragments.		3.80		S D4	4.00 4.00-4.45	3.00	N=8 (1,1,2,1,2,3)	
Firm mottled black and greeny grey organic SILT/CLAY. (ALLUVIUM)		4.65		U2 D5	5.00-5.50 5.50		50 blows	
Firm brown CLAY. (Weathered LONDON CLAY)				S D6	6.00 6.00-6.45	3.00	N=14 (1,2,3,3,4,4)	
				U3 D7	7.50-8.00 8.00		55 blows	
				S D8	9.00 9.00-9.45	3.00	N=19 (2,2,3,5,5,6)	

Borehole continued on next sheet

Hole Diameter Detail

Diameter (mm)	Depth (m)	Casing Depth (m)

Chiselling Details

From (m)	To (m)	Time (hours)

Water Level Observations

Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client:

Project Manager: Knapp Hicks & Partners Ltd

Contractor: Ritchies

Dates: 06/10/2008-07/10/2008

Plant: Dando 100

Date Printed: 31/10/2008

Drilled By: AS

Logged By: JE

Checked By: JE

Remarks: Borehole completed at 20.00m. 50mm standpipe with gas tap installed: plain pipe from GL - 1.00m, slotted pipe from 1.00 - 4.50m. Backfill details as follows: GL - 1.00m bentonite, 1.00 - 4.50m filter sand, 4.50 - 20.00 bentonite.

bam ritchies

Borehole Record

BH1

Sheet 2 of 2

Project: Gloucester Avenue, Camden

Project No: 3456

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test Type	Sample Test Depth (m)	Casing (Water) Depth (m)	Remarks and Test Results	Installations
Firm brown CLAY. (Weathered LONDON CLAY)				D9	10.00			
				U4	10.50-10.95		82 blows	
				D10	11.00			
Stiff grey CLAY. (LONDON CLAY)		11.20						
				S	12.00	3.00	N=25 (2,5,6,8,5,8)	
				D11	12.00			
				D12	12.00-12.45			
				D13	13.00			
				U5	13.50-13.95		75 blows	
				D14	14.00			
Band of CLAYSTONE at 14.60 - 14.90m.				D23	14.60-14.90			
				S	15.00	3.00	N=25 (3,4,5,5,6,8)	
				D15	15.00			
				D16	15.00-15.45			
				D17	16.00			
				U6	16.50-16.95		75 blows	
				D18	17.00			
				S	18.00	3.00	N=27 (3,5,5,6,8,8)	
				D19	18.00			
				D20	18.00-18.45			
				D21	19.00			
				U7	19.50-19.95		75 blows	

Borehole Complete at 20.00 m

Hole Diameter Detail

Diameter (mm)	Depth (m)	Casing Depth (m)

Chiselling Details

From (m)	To (m)	Time (hours)

Water Level Observations

Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
	No Groundwater Encountered				

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client:

Project Manager: Knapp Hicks & Partners Ltd

Contractor: Ritchies

Dates: 06/10/2008-07/10/2008

Plant: Dando 100

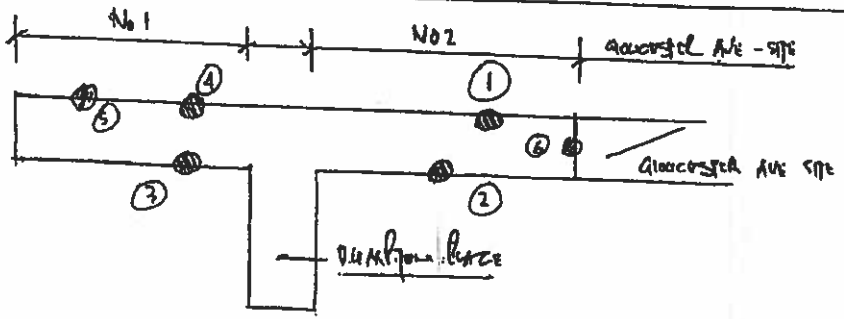
Date Printed: 31/10/2008

Drilled By: AS

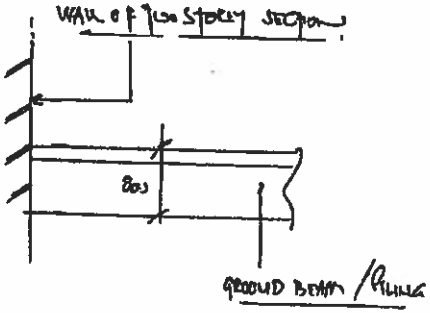
Logged By: JE

Checked By: JE

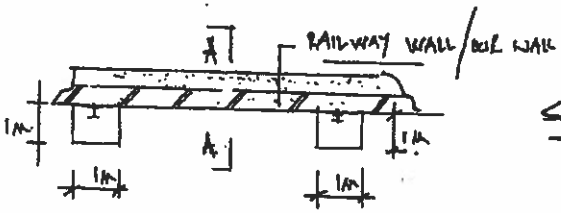
Remarks:

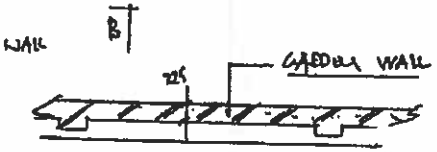


— Site Plan / Trial Holes 1 - 4

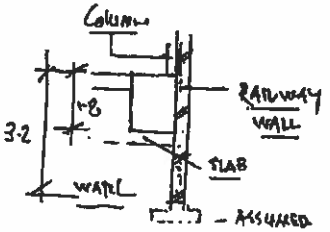


Trial Hole (3)



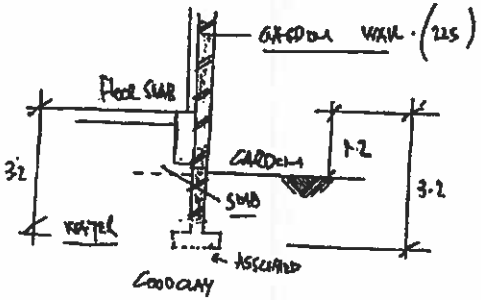


B.



Section A-A

Trial Hole (1)



Section B-B

Trial Hole (2)

Trial Hole (4)

Trail Hole (5)

2011 Trial Pits.

(6)

Shows Drain Pipe Above Top of Site > 32m from Gloucester Ave Site Level

Drainage Plans

Trial Holes (1) - (4)

KNAPP HICKS AND PARTNERS LTD.

A3

1 | 101

CHEMICAL TEST RESULTS

& WASTE ACCEPTANCE CRITERIA TESTS

Richard Moore
Knapp Hicks & Partners Ltd
Kingston House
The Boulevard
Orbital Park
Ashford
Kent
TN24 0GP

QTS Environmental Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 851105
russell.jarvis@qtsenvironmental.com

QTS Environmental Report No: 13-13633

Site Reference:	Dumpton Place
Project / Job Ref:	None Supplied
Order No:	None Supplied
Sample Receipt Date:	20/03/2013
Sample Scheduled Date:	21/03/2013
Report Issue Number:	1
Reporting Date:	27/03/2013

Authorised by:

Russell Jarvis
Director
On behalf of QTS Environmental Ltd

Authorised by:

Kevin Old
Director
On behalf of QTS Environmental Ltd

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 851105

4480

Soil Analysis Certificate							
QTS Environmental Report No: 13-13633	Date Sampled	20/03/13	20/03/13			
Knapp Hicks & Partners Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Dumpton Place	TP / BH No	1	2			
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied			
Order No: None Supplied	Depth (m)	0.15 - 2.50	2.75			
Reporting Date: 27/03/2013	QTSE Sample No	64525	64526			

Determinand	Unit	MDL	Accreditation					
Fibrous Material Screen	P/A	N/a	NONE	Negative	Negative			
pH	pH Units	N/a	MCERTS	9.1	8.1			
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2			
Total Sulphate as SO_4	mg/kg	< 200	NONE	2248	6121			
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	NONE	0.76	2.49			
Organic Matter	%	< 0.1	NONE	0.8	1.1			
Total Organic Carbon (TOC)	%	< 0.1	NONE	0.5	0.6			
Arsenic (As)	mg/kg	< 2	MCERTS	3	3			
Cadmium (Cd)	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5			
Chromium (Cr)	mg/kg	< 2	MCERTS	13	30			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	17	21			
Lead (Pb)	mg/kg	< 3	MCERTS	89	20			
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	10	27			
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3			
Vanadium (V)	mg/kg	< 2	NONE	24	60			
Zinc (Zn)	mg/kg	< 3	MCERTS	39	46			
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2			

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C
Analysis carried out on the dried sample is corrected for the stone content
Subcontracted analysis [S]

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 851105

4480

Soil Analysis Certificate - Speciated PAHs						
QTS Environmental Report No: 13-13633	Date Sampled	20/03/13	20/03/13			
Knapp Hicks & Partners Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Dumpton Place	TP / BH No	1	2			
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied			
Order No: None Supplied	Depth (m)	0.15 - 2.50	2.75			
Reporting Date: 27/03/2013	QTSE Sample No	64525	64526			

Determinand	Unit	MDL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	1.17	< 0.1			
Anthracene	mg/kg	< 0.1	MCERTS	0.18	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	3.60	< 0.1			
Pyrene	mg/kg	< 0.1	MCERTS	3.15	< 0.1			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	1.22	< 0.1			
Chrysene	mg/kg	< 0.1	MCERTS	1.42	< 0.1			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.48	< 0.1			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.65	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1.04	< 0.1			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.66	< 0.1			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.54	< 0.1			
Coronene	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Total Oily Waste PAHs	mg/kg	< 1	MCERTS	6.5	< 1			
Total Dutch 10 PAHs	mg/kg	< 1	MCERTS	10.5	< 1			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	15.1	< 1.6			
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	15.1	< 1.7			

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

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Soil Analysis Certificate - TPH CWG Banded						
QTS Environmental Report No: 13-13633	Date Sampled	20/03/13	20/03/13			
Knapp Hicks & Partners Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Dumpton Place	TP / BH No	1	2			
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied			
Order No: None Supplied	Depth (m)	0.15 - 2.50	2.75			
Reporting Date: 27/03/2013	QTSE Sample No	64525	64526			

Determinand	Unit	MDL	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	< 1	NONE	< 1	< 1			
Aliphatic >C10 - C12	mg/kg	< 1	NONE	< 1	< 1			
Aliphatic >C12 - C16	mg/kg	< 1	NONE	< 1	< 1			
Aliphatic >C16 - C21	mg/kg	< 1	NONE	< 1	< 1			
Aliphatic >C21 - C34	mg/kg	< 6	NONE	< 6	< 6			
Aliphatic (C5 - C34)	mg/kg	< 12	NONE	< 12	< 12			
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	< 1	NONE	< 1	< 1			
Aromatic >C10 - C12	mg/kg	< 1	NONE	< 1	< 1			
Aromatic >C12 - C16	mg/kg	< 1	NONE	< 1	< 1			
Aromatic >C16 - C21	mg/kg	< 1	NONE	< 1	< 1			
Aromatic >C21 - C35	mg/kg	< 6	NONE	32	< 6			
Aromatic (C5 - C35)	mg/kg	< 12	NONE	32	< 12			
Total >C5 - C35	mg/kg	< 24	NONE	32	< 24			

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Soil Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 13-13633	Date Sampled	20/03/13	20/03/13			
Knapp Hicks & Partners Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Dumpton Place	TP / BH No	1	2			
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied			
Order No: None Supplied	Depth (m)	0.15 - 2.50	2.75			
Reporting Date: 27/03/2013	QTSE Sample No	64525	64526			

Determinand	Unit	MDL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2			
Toluene	ug/kg	< 5	MCERTS	< 5	< 5			
Ethylbenzene	ug/kg	< 10	MCERTS	< 10	< 10			
p & m-xylene	ug/kg	< 10	MCERTS	< 10	< 10			
o-xylene	ug/kg	< 10	MCERTS	< 10	< 10			

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

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Waste Acceptance Criteria Analytical Certificate

QTS Environmental Report No: 13-13633	Date Sampled	20/03/13	
Knapp Hicks & Partners Ltd	Time Sampled	None Supplied	
Site Reference: Dumpton Place	TP / BH No	1	
Project / Job Ref: None Supplied	Additional Refs	None Supplied	
Order No: None Supplied	Depth (m)	0.15 - 2.50	
Reporting Date: 27/03/2013	QTSE Sample No	64525	

Determinand	Unit	MDL		Landfill Waste Acceptance Criteria Limits: Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
TOC	%	< 0.1	0.5	3%	5%	6%
Loss on Ignition	%	< 0.01	2.05	--	--	10%
BTEX	mg/kg	< 0.05	< 0.05	6	--	--
Sum of PCBs	mg/kg	< 0.7	< 0.7	1	--	--
Mineral Oil	mg/kg	< 6	< 6	500	--	--
Total PAH	mg/kg	< 1.7	15.1	100	--	--
pH	pH Units	N / a	9.1	--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	1.6	--	To be evaluated	To be evaluated

Eluate Analysis	2:1 mg/l	8:1 mg/l		Cumulative 10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic	< 0.01	< 0.01		< 0.2	0.5	2	25
Barium	0.22	0.05		0.5	20	100	300
Cadmium	< 0.0005	< 0.0005		< 0.02	0.04	1	5
Chromium	< 0.005	< 0.005		< 0.2	0.5	10	70
Copper	< 0.01	< 0.01		< 0.5	2	50	100
Mercury	< 0.005	< 0.005		< 0.01	0.01	0.2	2
Molybdenum	0.027	0.008		< 0.1	0.5	10	30
Nickel	< 0.007	< 0.007		< 0.2	0.4	10	40
Lead	< 0.005	< 0.005		< 0.2	0.5	10	50
Antimony	< 0.005	< 0.005		< 0.06	0.06	0.7	5
Selenium	< 0.005	< 0.005		< 0.1	0.1	0.5	7
Zinc	< 0.005	< 0.005		< 0.2	4	50	200
Chloride	28	< 10		< 120	800	15000	25000
Fluoride	0.5	< 0.5		1.9	10	150	500
Sulphate	772	185		1723	1000	20000	50000
TDS	854	330		2538	4000	60000	100000
Phenol Index	< 0.01	< 0.01		< 0.5	1	-	-
DOC	4.8	1.3		11.6	500	800	1000

Leach Test Information	
Sample Mass (kg)	0.20
Dry Matter (%)	86.7
Moisture (%)	13.4
Stage 1	
Volume Eluate L2 (litres)	0.33
Filtered Eluate VE1 (litres)	0.18

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and QTS Environmental cannot be held responsible for any discrepencies with current legislation

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Waste Acceptance Criteria Analytical Certificate

QTS Environmental Report No: 13-13633	Date Sampled	20/03/13	
Knapp Hicks & Partners Ltd	Time Sampled	None Supplied	
Site Reference: Dumpton Place	TP / BH No	2	
Project / Job Ref: None Supplied	Additional Refs	None Supplied	
Order No: None Supplied	Depth (m)	2.75	
Reporting Date: 27/03/2013	QTSE Sample No	64526	

Determinand	Unit	MDL		Landfill Waste Acceptance Criteria Limits: Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
TOC	%	< 0.1	0.6	3%	5%	6%
Loss on Ignition	%	< 0.01	4.70	--	--	10%
BTEX	mg/kg	< 0.05	< 0.05	6	--	--
Sum of PCBs	mg/kg	< 0.7	< 0.7	1	--	--
Mineral Oil	mg/kg	< 6	< 6	500	--	--
Total PAH	mg/kg	< 1.7	< 1.7	100	--	--
pH	pH Units	N / a	8.1	--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	1.2	--	To be evaluated	To be evaluated

Eluate Analysis	2:1 mg/l	8:1 mg/l		Cumulative 10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic	< 0.01	< 0.01		< 0.2	0.5	2	25
Barium	0.22	0.06		0.4	20	100	300
Cadmium	< 0.0005	< 0.0005		< 0.02	0.04	1	5
Chromium	0.007	< 0.005		< 0.2	0.5	10	70
Copper	< 0.01	< 0.01		< 0.5	2	50	100
Mercury	< 0.005	< 0.005		< 0.01	0.01	0.2	2
Molybdenum	0.006	0.004		< 0.1	0.5	10	30
Nickel	< 0.007	< 0.007		< 0.2	0.4	10	40
Lead	< 0.005	< 0.005		< 0.2	0.5	10	50
Antimony	< 0.005	< 0.005		< 0.06	0.06	0.7	5
Selenium	< 0.005	< 0.005		< 0.1	0.1	0.5	7
Zinc	< 0.005	< 0.005		< 0.2	4	50	200
Chloride	106	13		< 120	800	15000	25000
Fluoride	< 0.5	< 0.5		< 1	10	150	500
Sulphate	1123	251		1665	1000	20000	50000
TDS	1440	540		3053	4000	60000	100000
Phenol Index	< 0.01	< 0.01		< 0.5	1	-	-
DOC	3.7	1.3		7.4	500	800	1000
Leach Test Information							
Sample Mass (kg)	0.22						
Dry Matter (%)	79						
Moisture (%)	21						
Stage 1							
Volume Eluate L2 (litres)	0.31						
Filtered Eluate VE1 (litres)	0.10						

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Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 13-13633	
Knapp Hicks & Partners Ltd	
Site Reference: Dumpton Place	
Project / Job Ref: None Supplied	
Order No: None Supplied	
Reporting Date: 27/03/2013	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
64525	1	None Supplied	0.15 - 2.50	13.3	Brown loamy clay with rubble and stones
64526	2	None Supplied	2.75	21	Light brown clay

Insufficient sample [IS]
Unsuitable Sample [US]

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Soil Analysis Certificate - Methodology & Miscellaneous Information
QTS Environmental Report No: 13-13633
Knapp Hicks & Partners Ltd
Site Reference: Dumpton Place
Project / Job Ref: None Supplied
Order No: None Supplied
Reporting Date: 27/03/2013

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
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	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	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	AR	Asbestos Screening	Visual screening of samples for fibrous material	E024
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E021
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
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	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by turbidimeter	E020
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E023
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	D	Phosphorus	Determination of phosphorus by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	AR	Sulphide	Determination of sulphide by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia, potassium iodide/iodate followed by ICP-OES	E002
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	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E013
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E009
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
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	E009
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E010
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E009
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	VPH (C5 - C10)	Determination of hydrocarbons C5-C10 by headspace GC-MS	E001
Soil	AR	EPH TEXAS	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	TPH CWG	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	TPH LQM	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	EPH (with florisil cleanup)	Determination of acetone/hexane extractable hydrocarbons with florisil cleanup step by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001

Key

D Dried
AR As Received

ENVIRONMENTAL RISK ASSESSMENT GUIDANCE NOTES (FROM CIRIA C552:2001)

	Definition	Examples
Severe	Short term (acute) risk to human health likely to result in significant human harm. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. Short-term risk to a particular ecosystem or organism forming part of such ecosystem.	• High concentrations of cyanide on the surface of an informal recreation area. • Major spillage of contaminants into controlled water. • Explosion, causing building collapse.
Medium	Long-term (chronic) risk to human health likely to result in significant harm. Pollution of sensitive water resources. Significant change in a particular ecosystem or organism forming part of such ecosystem.	• Concentrations of contaminant in excess of generic, or site specific assessment criteria. • Leaching of contaminants to a major or minor aquifer. • Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant harm to crops, buildings, structures, services or the environment. Damage to sensitive buildings, structures, services or the environment.	• Pollution of non-classified groundwater. • Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant which may resulting financial loss, or expenditure to resolve. Non-permanent health effects to humans (easily prevented by means such as protective clothing etc). Easily reparable effects of damage to buildings, structures or services.	• The presence of contaminants at such concentrations that protective equipment is required during site works. • The loss of plants in a landscaping scheme. • Discoloration of concrete.

Classification of Consequence*

	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 of harm or pollution.
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 Likelyhood	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 event would take place, and it is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Classification of Probability*

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelyhood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

Risk Matrix – Comparison of Consequence and Probability*

* taken from CIRIA C552:2001 'Contaminated Land Risk Assessment – a guide to good practice'