WARD COLE
consulting engineers

Document:	Flood Risk Assessment and Drainage Strategy		
Project Name:	Mixed Use Retail and Residential Development, Morrisons, High Street, Yiewsley		
Client:	Harbourside Investments Ltd		
Project Reference:	10/4897		
Date of Issue:	December 2022	**Rev:**	A
Engineer:	D. Mutepfa	**Checking Engineer:**	W. E. Hansard

Ward Cole Limited, Fosse House, Roman Wharf, Lincoln, LN1 1SR
Tel: 01522 513032 Email: mail@wardcole.co.uk www.wardcole.co.uk

SCHEDULE OF REVISIONS

REVISION	ISSUE DATE	DESCRIPTION
A	04-01-2023	Attenuation tank and flow control chamber added upstream of proposed soakaway.

1 Introduction

1.1 Background

Ward Cole Consulting Engineers were commissioned to prepare a flood risk assessment and drainage strategy report for proposed redevelopment of the Morrisons site in Yiewsley, West Drayton. This report accompanies the planning application for the demolition of the existing buildings and the redevelopment of the site to provide a retail and residential mixed use scheme. The site will be developed to provide a replacement Morrisons foodstore, with residential accommodation provided above.

In terms of the Town and Country Planning (Development Management Procedure) (England) Order 2015, the Local Planning Authority must consult the Lead Local Flood Authority (LLFA) with regard to surface water drainage on all planning applications for major development. It is noted that the National Planning Policy Framework only requires site-specific FRAs for development sites in Flood Zone 1 that are 1 ha or more, or that are less than 1 ha but have critical drainage problems, neither of which is the case for this site.

1.2 Location

The project site is located on the High Street in Yiewsley in the London Borough of Hillingdon. It is bounded by High Street to the east, St Matthews Primary School to the northwest and St Stephen's Road to the west and south. Grand Union Canal flows parallel to and just beyond St Stephen's Road (*see Appendix A).*

The National Grid Reference of the approximate centre of the site is 506047, 180347.

1.3 Site Description & Current Usage

The proposed development site is irregular shaped, approximately 0.52 ha in extent. The existing Morrisons supermarket building occupies approximately 2630m^2 of the site area with the rest comprising car parking and a service yard with some trees and planting around the fringes. More than 98% of the site area is hardstanding or buildings, with green areas less than 80m^2. The building includes basement car parking.
The supermarket fronts onto High Street with the customer entrance on the north-east corner, whilst the car park and service yard are accessed from St Stephen's Road.

A topographical survey plan (*see Appendix B*) produced in February 2018 indicates that floor levels in the supermarket and basement car park are 31.20m and 28.12m AOD, respectively. Ground levels around the site are approximately 29.70 – 30.40m along north-east edge, 30.00m outside the south-east corner and 29.20 – 29.50m AOD along the northwest boundary.

The BGS website describes the geology of the area as the Langley Silt Member – Clay and Silt, underlain by the London Clay Formation – Clay, Silt and Sand. Site soils are described on the LandIS Soilscapes website as "freely draining, slightly acid loamy."

1.4 Site Proposals

It is proposed to demolish the existing building and construct in its place a multi-storey structure comprising:-

- Approximately 1640m^2 of Class A1 floor space on the ground floor;
- 158 housing units on upper floors;
- undercroft staff parking, accessed from St Stephen's Road;
- Service yard and parking area at ground level, both accessed from St Stephen's Road.

1.5 The Sequential Test

This risk-based test has the aim of steering new development to areas at the lowest probability of flooding (Flood Zone 1) in accordance with the National Planning Policy Framework (NPPF). According to the online Environment Agency flood map, the proposed development is situated within Flood Zone 1, having a less than 1 in 1000 chance of river or tidal flooding (<0.1%), or **low** probability. In terms of Table D3 in the NPPF, all land uses are considered to be appropriate within Flood Zone 1 areas, therefore the Sequential Test need not be applied.

2 Potential Sources of Flooding

2.1 Flood Zone

The proposed development is located within Flood Zone 1, land assessed as having a low annual probability of flooding from rivers or the sea.

2.2 Fluvial Flooding

Designated main rivers closest to the site are Fray's River approximately 340m to the west and the River Colne a little further west. These rivers are considered too remote to pose fluvial flood risk to the project site. Closer to the site is the Grand Union Canal and this too is not a source of flood risk as it is constrained within its banks. This can be seen in the EA flood map below.

.

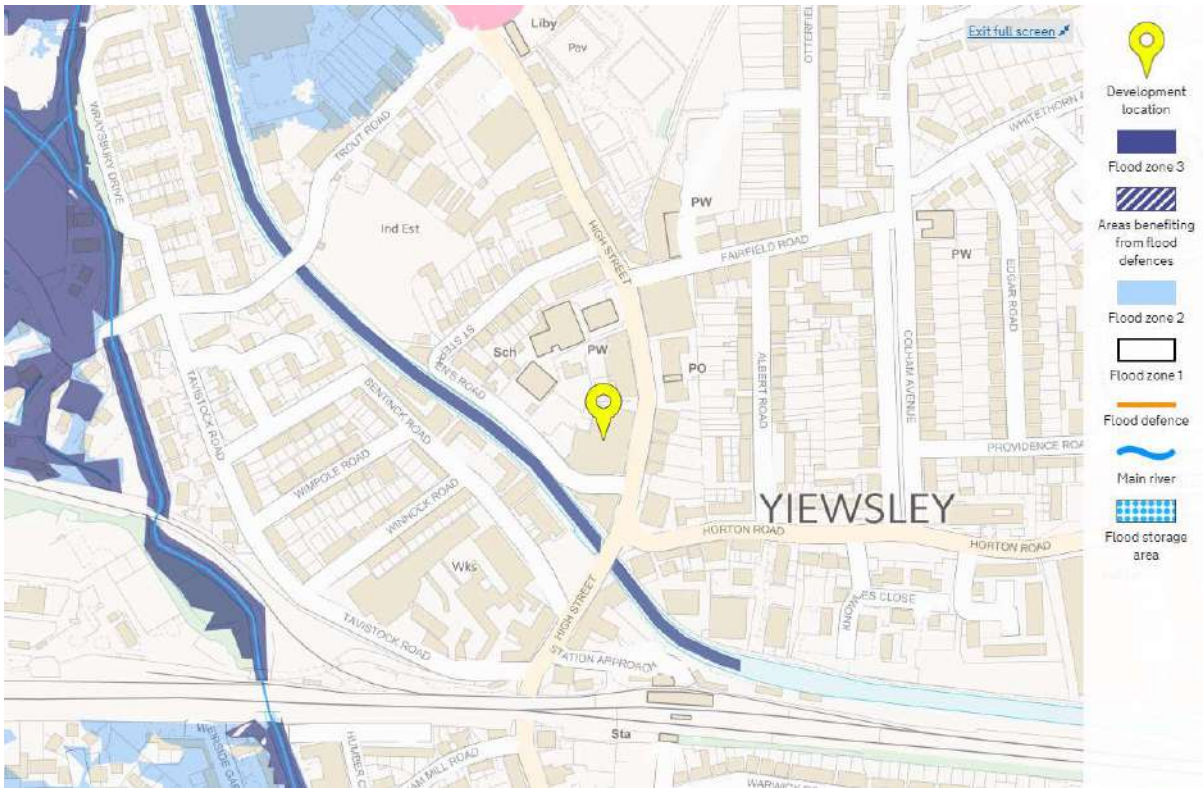


Fig. 1 : EA Flood Map – River and Tidal Flooding

2.3 Surface Water Flooding

Pluvial or surface water flooding arises out of the inability of surface water runoff to infiltrate into the ground during intense or prolonged rainfall. Urban development adds to the problem by replacing natural open spaces with hard paved impermeable surfaces. Surface water flooding is exacerbated when natural drainage channels or artificial drainage systems have insufficient capacity to absorb the additional runoff. The EA's online flood risk map indicates that the risk of flooding from surface water runoff on the site is very low (see Fig. 2 below).

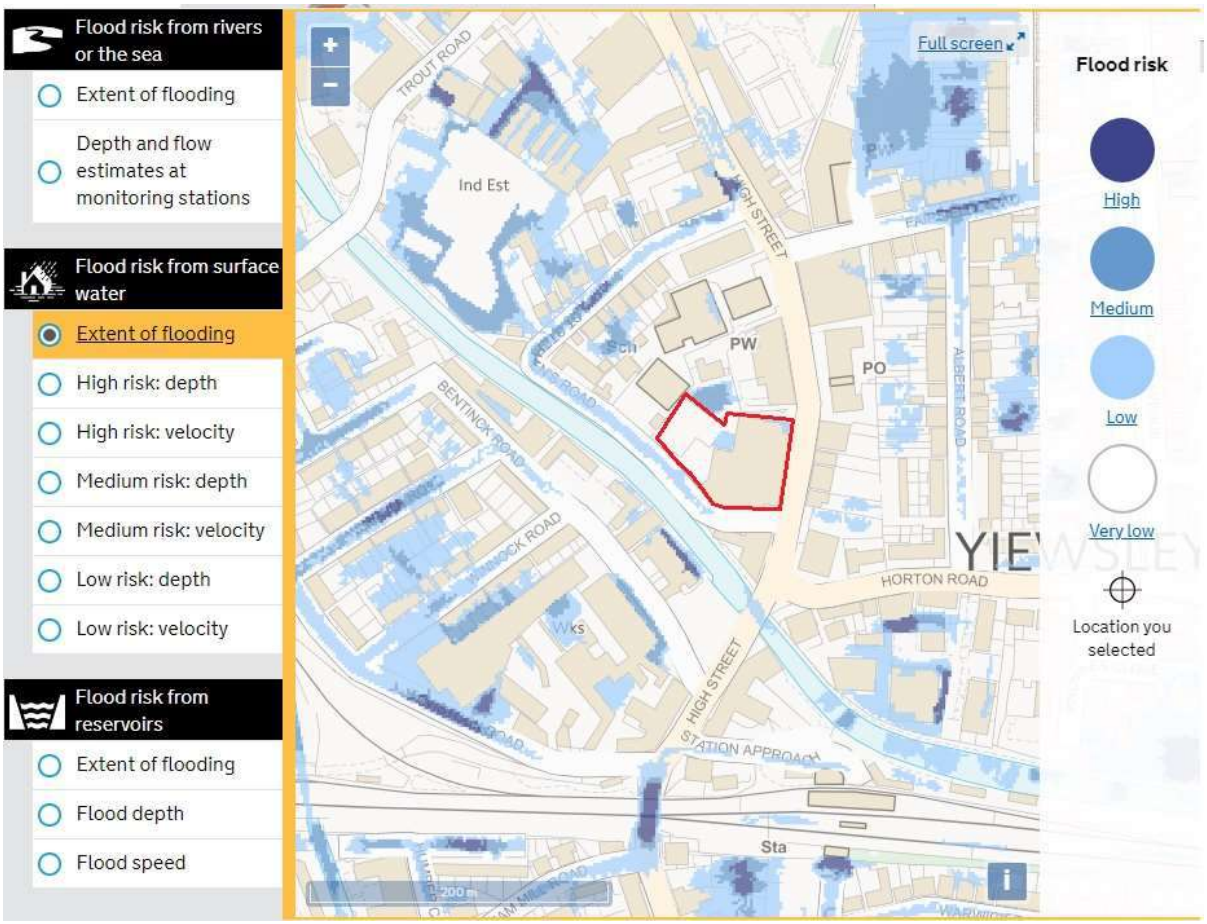


Fig. 2: EA Flood Map – Surface Water Flooding

2.3 Flooding due to Existing Sewers

Sewer flooding may result from blockage, structural failure, or overloading of sewers during intense or prolonged rainfall. High water levels in the receiving watercourses may result in outfall sewers being unable to discharge into rivers in times of flood, resulting in overflooding upstream of sewers, e.g. at manholes and gullies. Public foul sewers are present along High Street and St Stephen's Road. In the event of either of these sewers overflowing, flood flows would follow the road slope and not affect the proposed development due to the higher site levels.

2.4 Groundwater Flooding

Groundwater flooding occurs when water levels in the ground rise above the surface, e.g. from the underlying aquifer. This tends to occur after long periods of sustained rainfall, with the highest risk being usually in low-lying areas where the water table is likely to be at shallow depth.

According to the Hillingdon Surface Water Management Plan (January 2013), the project site is not in an area where there is an increased potential for groundwater to rise sufficiently to interact with the ground surface or be within 2m of the ground surface. However, it is considered that where necessary, appropriate engineering design will take into account the presence of any groundwater in accordance with standard practice.

2.5 Flooding from Artificial Sources

There is no reservoir close enough to the site to pose flood risk. The Grand Union Canal is not considered to be a flood risk as flood flows will largely be constrained within the waterway banks.

2.6 Historic Flooding

There is no record of historic flood events on or close to the project site.

3 Proposed Development

3.1 Proposed Development

The proposed development comprises approximately 1640m^2 of Class A1 floor space plus service yard and parking at ground floor level, 158 residential units on upper floors, landscaped amenity decks and basement staff car parking. The proposed development is indicated on planning drawings submitted separately with the planning application.

Ground floor levels will be set at least 150mm above adjacent finished site levels.

3.2 Flood Mitigation Measures

As the proposed development is in Flood Zone 1 with a low risk of flooding, specific flood mitigation measures for the development will not be required.

4 Pre-Planning Consultation

4.1 Environment Agency

Because of the proximity of Grand Union Canal to the site, a preliminary opinion on the development proposals was sought from the Environment Agency. The EA advised that it would likely not object to the proposed development.

4.2 Thames Water

Thames Water, the local Water Authority, advised that it would only consider runoff disposal into its surface water sewer network if it was not possible to dispose of it by means of infiltration into the ground or by restricted discharge into the Grand Union Canal. The water company confirmed that there is enough capacity in the public foul sewer system to accept the increased sewage flows from the proposed re-development.

4.3 Canal & River Trust

On being consulted, the Canal and River Trust offered detailed advice on the process of applying for its consent to connect and discharge runoff into the Canal.

The consultation responses may be seen in Appendix G.

5 Drainage Strategy

5.1 Existing Drainage

The available information indicates that the existing development is served by a 300mm diameter public foul sewer along St Stephen's Road. Foul flow calculations based on the existing gross floor area indicate that the site is currently discharging 0.101 l/s of foul wastewater (Dry Weather Flow), the peak flow being 0.606 l/s.

There are no public surface water sewers in the vicinity. Topographical and CCTV drainage surveys have indicated that runoff is currently disposed of through 2 soakaways on the site.

The CCTV drainage survey report and Thames Water sewer record map may be seen in Appendices C and D.

5.2 Proposed Foul Water Drainage Solution

Thames Water indicated that there is sufficient capacity in its foul sewer network to accommodate the additional flows from the proposed development comprising 160 residential units and the foodstore (*see Appendix G*). The proposed foul drainage will be designed and constructed in accordance with the Building Regulations and current standards. Existing foul connections from the site into the public foul sewer system will be used wherever possible.

5.3 Sustainable Drainage Systems

Sustainable urban drainage systems (SUDS) involve managing surface water runoff as close to its source as possible and mimicking pre-development drainage patterns. The London Borough Council of Hillingdon requires that any new development should utilise SUDS. It is noted that some SUDS options may not be feasible on a particular development site due to space or geological constraints. In this instance, the proposed building coverage on the site renders the use of features such as swales, basins and ponds unsuitable.

5.4 Proposed SUDS Solution

A ground investigation by RSK Group Limited in September - October 2018 established the following:-

- Groundwater occurs approximately 6m below ground level. No visual or olfactory evidence of contamination was found during sampling.
- Asbestos was not detected in the made ground, and other contaminants were found to not be significantly elevated.
- Soakaway testing in accordance with BRE Digest 365 in the vicinity of the proposed trench soakaway resulted in soil infiltration rates (m/s) of 1.22×10^{-3}, 9.91×10^{-4} and 9.05×10^{-4}.

Infiltration testing results may be seen in Appendix J.

The proposed SUDS scheme is in accordance with Policy SI 13B of the London Plan 2021 in that it incorporates green roofs and surface water runoff is disposed through infiltration into ground at or close to source. The proposed drainage strategy plan can be seen in Appendix E.

The system includes the following: -

- Green roofs approximately 1500m^2 in extent.

- A soakaway consisting of Polystorm-R cellular units (14m x 2m x 2.4m deep) will receive and dispose of surface water runoff through infiltration into the ground. It will incorporate Polystorm Access and Polystorm Inspect cells to enable internal access and maintenance. The soakaway will be located at least 5m from buildings in accordance with Building Regulation H3.25. Installation of a geo-cellular attenuation tank and flow control unit upstream of the soakaway reduces the soakaway size such that it will not encroach on the root protection areas of existing trees. This arrangement has been sized to cater for flows generated by the 1 in 100 year rainfall event including a 40% allowance for climate change (see Micro Drainage simulation results in Appendix F).

  Surface water in the service yard and flows from basement drainage will pass through an appropriately sized fuel interceptor that will be incorporated in the drainage system. This will prevent pollutants contaminating groundwater.

  Exceedance flood flows arising during abnormal storms beyond the 1% AEP event plus 40% climate change allowance will be routed to adjacent highways through the open and parking areas to the north and west.

SUDS Management and Maintenance Plan

The building owner will be responsible for maintenance of the drainage. Prefabricated drainage components will be managed and maintained in accordance with the manufacturer's / installer's guidance and specifications. This may include but is not limited to the following.

Green roofs

- Remove debris and litter to prevent clogging of drain outlets, 6 monthly.
- Replace dead plants as required annually (in autumn).
- Remove nuisance and invasive vegetation, 6 monthly.
- Remove fallen leaves and debris, mow grasses as required and remove clippings, 6 monthly.
- Any erosion channels should be stabilised with soil substrate similar to original material.
- Inspect all components including drainage and underside of roof annually and after severe storms.

Geo-cellular soakaway

- Inspect for sediment and debris in floor of catchpit – annually.
- Cleaning of gutters and any filters on downpipes – as required based on inspections where applicable.

- Trimming any roots that may be causing blockages – annually or as required.
- Reconstruct soakaway and if performance deteriorates or failure occurs – as required.
- Replacement of clogged geotextile (soakaway reconstruction required) – as required.
- Check soakaway to ensure emptying is occurring – annually.

Geo-cellular attenuation tank

Check inlets, outlet, and vents to ensure operation as designed, annually and after heavy storms.

Foul Drainage

Thames Water indicated that there is sufficient capacity in its foul sewer network to accommodate additional foul flows from the re-development (*see Appendix G*). The proposed foul drainage will be constructed in accordance with the Building Regulations and current standards. Existing foul connections from the site into the public foul sewer system will be re-used.

6 Conclusion

The proposed development lies within Flood Zone 1 where the risk of annual flooding from any source is considered to be low.

Foul water from the development will drain into the public foul sewer network in which sufficient capacity has been confirmed by Thames Water.

An intrusive ground investigation on the site found insignificant levels of contaminants and groundwater levels at approximately 6m below ground level. Soakaway testing in accordance with BRE Digest 365 established that soil percolation rates were satisfactory. Therefore surface water runoff on the site will be disposed of through infiltration into the ground. This means that there will be no runoff flows off-site.

The surface water drainage system will include green roofs and a geo-cellular soakaway. There will be no flooding in any part of the system during all rainfall events up to the 1 in 100 year storm plus a 40% allowance for climate change.

A fuel interceptor will be installed to remove pollutants from any surface water in the proposed service yard basement car park.

Exceedance flood flows generated during abnormal rainfall events will be routed to adjacent highways through open and parking areas to the north and west.

It is considered that flood risk on the site and adjacent land will be reduced as a result of the SUDS measures that will be implemented.

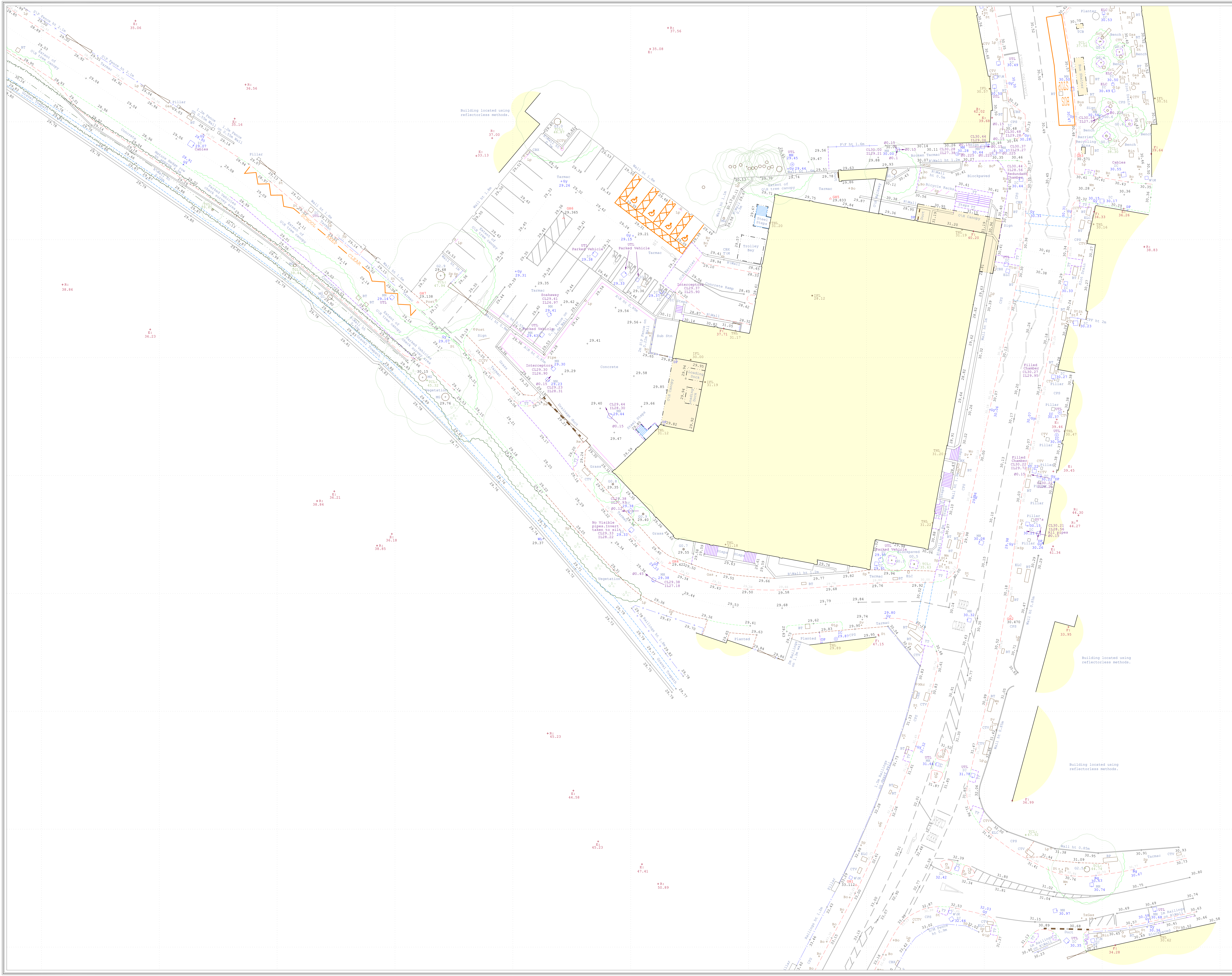
Appendix A

Site Location Plan


Iceland Foods
St Matthews C Of E Primary School
Nationwide
KFC
St Stephen's Rd
Grand Union Canal Walk
Bentinck Rd
High St
Albert Rd
Morrisons
Yiewsley Health Centre
Horton Rd
Otter Way
Winnock Rd
COMAG
Google
Imagery ©2018 Google, Map data ©2018 Google
United Kingdom
Terms
Send feedback
20 m

Appendix B

Topographical Survey Plan



N

Station Information:

Station	Easting (m)	Northing (m)	Level (m)
GH1	506058.2450	180250.5100	33.1120
GH2	506084.4635	180296.1606	30.4700
GH3	506096.0492	180374.6065	30.5710
GH4	506026.6352	180305.1676	29.4220
GH5	506053.8865	180366.9810	29.8330
GH6	506008.6040	180363.6658	29.3650
GH7	505983.8639	180349.3886	29.1380
GH8	505912.1897	180401.2709	29.0330

OS Note:

Some services may have been omitted due to parked vehicles. The Ordnance Survey tile is to be used as a guide only.

OS Buildings | *Surveyed Buildings*

This survey has been orientated to the Ordnance Survey (O.S) National Grid OSGB36(15) via Global Navigational Satellite Systems (GNSS) and the O.S. Active Network (OS Net).

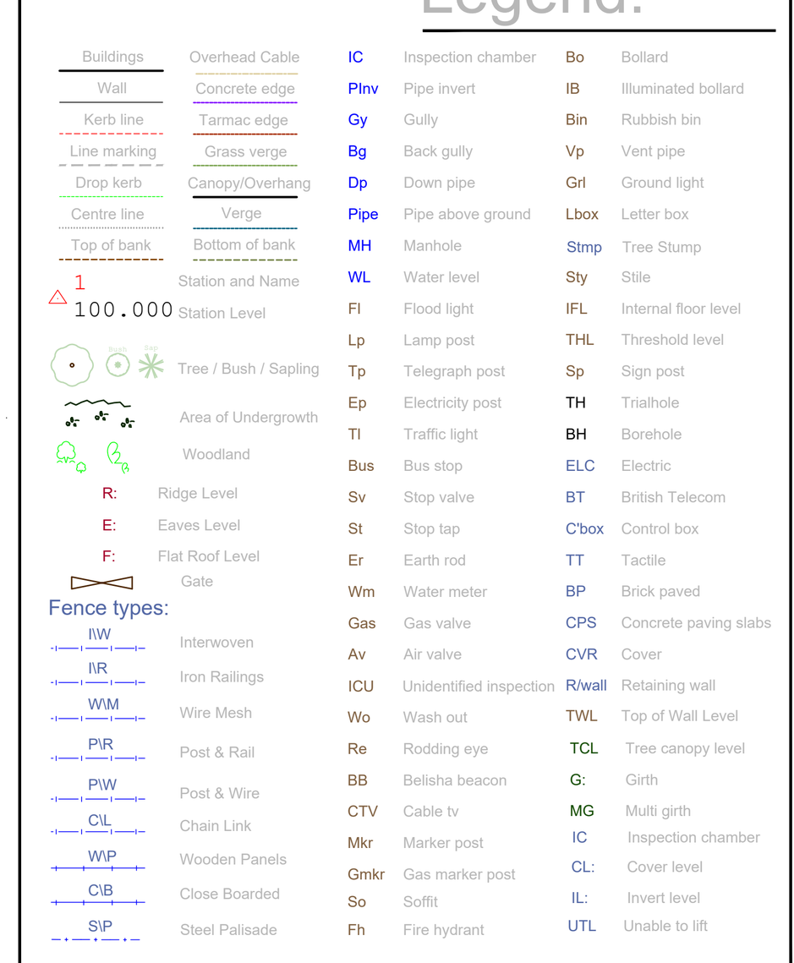
A true OSGB36 coordinate has been established near to the site centre via a transformation using the OSTN15GB & OSGM15GB transformation models.

The survey has been correlated to this point and a further one or more OSGB36 (15) points established to create a true O.S. bearing for angle orientation.

No scale factor has been applied to the survey therefore the coordinates shown are arbitrary & not true O.S. Coordinates which have a scale factor applied.

Please refer to Survey Station Table to enable establishment of the on-site grid and datum.

Legend:



Rev	*Date*	*Description*	*Drawn*	*Q. Ref*

greenhatch group

Topographical Surveys | Site Engineering | Utility / CCTV Surveys
Measured Building Surveys | 3D Laser Scanning | Revit & BIM Models

Rowan House
Duffield Road
Little Eaton
Derby
DE21 5DR
Tel (01332) 830044 Fax (01332) 830055
admin@greenhatch-group.co.uk
www.greenhatch-group.co.uk

St Albans: Unit B, The Courtyard, Alban Park, St Albans, Hertfordshire, AL4 0LA, t. (01727) 854481
Newcastle: 24 Riverside Studios, Amethyst Road, Newcastle Bus. Park, Newcastle-U-Tyne, NE4 7YL, t. (01912) 736391
London: 27, Cornwall Terrace Mews, Regents Park, London, NW1 5LL, t. (02072) 241806

CLIENT

Hester Architects

PROJECT

High Street, Yiewsley

TITLE

Topographical Survey

SCALE	*DATE*
A0@ 1: 200	**Feb 2018**
DRAWN	*QUALITY REF*
LP	**GH2494**

Level datum	See note
Grid orientation	See note
Job number	29475
Drawing No. 29475_T	*Rev.* 0

Comments

This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

Appendix C

CCTV Drainage Survey Report

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Table of Contents

Project Name	Project Number:	Date:
29.05.18 Morrisons, High Street, Yiewsley		**04/06/2018**

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Table of Contents

Project Name	Project Number:	Date:
29.05.18 Morrisons, High Street, Yiewsley		**04/06/2018**

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Project Information

Project Name:	Client's Ref:		Project Date:
29.05.18 Morrisons, High Street, Yiewsley			**04/06/2018**

Client

Company: Ward Cole
Street: Unit 16 Byron Business Centre, Duke Street
Town or City: Hucknall, Notts, NG15 7HP

Site

Company: Morrisons
Street: High Street
Town or City: Yiewsley, UB7 7QQ

Contractor

Company: Aqua-Jet Specialist Drainage Contractors Ltd
Contact: Rob Wilkinson
Street: Yard 21, Hilton Ind Est, Sutton Lane
Town or City: Hilton, Derbyshire, DE65 5FE
Phone: 01283 730333
Fax: 01283 730444
Email: aquajetltd@aol.com

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - MH3X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
1	**1**	**29/05/18**			**No Rain Or Snow**	**No**	**MH3X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH1 << MH3**	US MH:	**MH3**
Road:	**High Street**	Inspected Length:	**15.60 m**	US Depth:	
Location:		Total Length:	**15.60 m**	DS MH:	**MH1**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:142	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH1						
	0.00	MH	Start node type, manhole, reference number: MH1	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
	0.70	JN	Junction at 10 o'clock, diameter: 150mm	00:00:08		
	8.10	JDM	Joint displaced, medium	00:00:36		1
	11.60	JDM	Joint displaced, medium	00:00:48		1
	13.10	JN	Junction at 9 o'clock, diameter: 100mm	00:00:57		
	15.60	MHF	Finish node type, manhole, reference number: MH3	00:01:04		
MH3						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

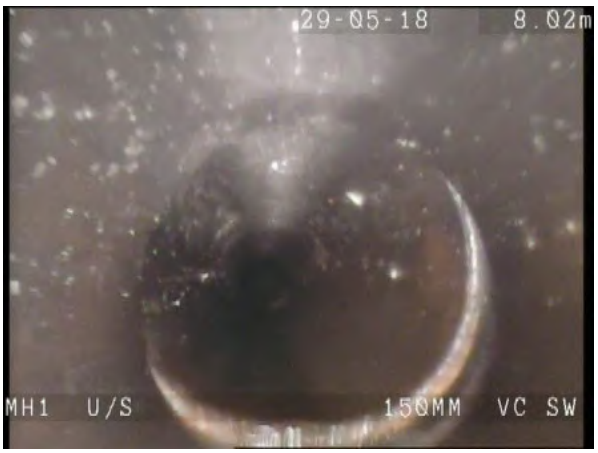
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	1.0	0.1	0.1	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - MH3X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
1	**MH1 << MH3**	**MH3X**		



MH3X_a3ddf67a-6157-40fe-801c-e0e08bedef87_20180604_105126_505.jpg, 00:00:36, 8.10m
Joint displaced, medium

MH3X_d36944c7-39db-467e-8472-70c44a59c664_20180604_105151_525.jpg, 00:00:48, 11.60m
Joint displaced, medium

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

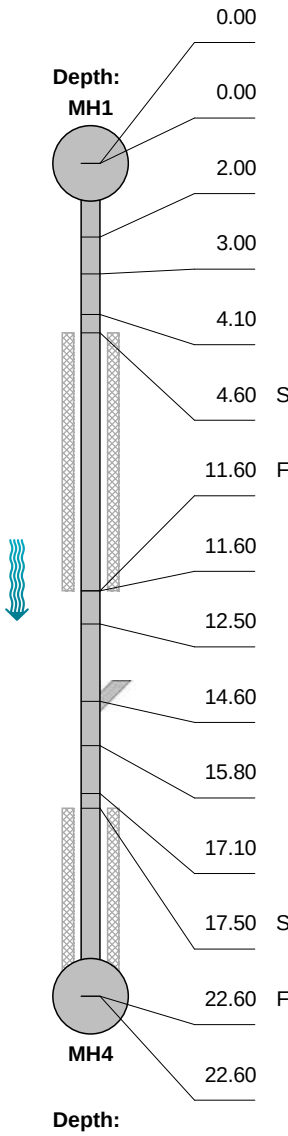
Section Inspection - 29/05/2018 - MH1X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
2	**2**	**29/05/18**			**No Rain Or Snow**	**No**	**MH1X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH1 >> MH4**	US MH:	**MH1**
Road:	**High Street**	Inspected Length:	**22.60 m**	US Depth:	
Location:		Total Length:	**22.60 m**	DS MH:	**MH4**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:



1:205 Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node type, manhole, reference number: MH1	00:00:00		
0.00		WL	Water level, 5% of the vertical dimension	00:00:01		
2.00		WL	Water level, 10% of the vertical dimension	00:00:11		
3.00		WL	Water level, 20% of the vertical dimension	00:00:14		
4.10		WL	Water level, 40% of the vertical dimension	00:00:18		
4.60	S01	CUW	Loss of vision, camera under water, start	00:00:20		
11.60	F01	CUW	Loss of vision, camera under water, finish	00:00:45		
11.60		WL	Water level, 30% of the vertical dimension	00:00:45		
12.50		WL	Water level, 10% of the vertical dimension	00:00:48		
14.60		JN	Junction at 9 o'clock, diameter: 150mm	00:00:56		
15.80		WL	Water level, 5% of the vertical dimension	00:01:02		
17.10		WL	Water level, 30% of the vertical dimension	00:01:07		
17.50	S02	CUW	Loss of vision, camera under water, start	00:01:09		
22.60	F02	CUW	Loss of vision, camera under water, finish	00:01:40		
22.60		SA	Survey abandoned: DUE TO WATER LEVEL / POSSIBLE MANHOLE	00:01:40		

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - MH1X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
2	**MH1 >> MH4**	**MH1X**		

MH1X_4239433d-b5af-4ddc-a80a-48b68d4cb309_20180604_105613_527.jpg, 00:00:18, 4.10m
Water level, 40% of the vertical dimension

MH1X_df6d95d8-c6d1-46e8-9f07-eb4d7e02ebd3_20180604_110121_139.jpg, 00:01:07, 17.10m
Water level, 30% of the vertical dimension

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - U/S MH2X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
3	**3**	**29/05/18**			**No Rain Or Snow**	**No**	**U/S MH2X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH2 << U/S MH2**	US MH:	**U/S MH2**
Road:	**High Street**	Inspected Length:	**3.70 m**	US Depth:	
Location:		Total Length:	**3.70 m**	DS MH:	**MH2**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH2						
	0.00	MH	Start node type, manhole, reference number: MH2	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
	0.50	LL	Line deviates left	00:00:07		
	2.00	LR	Line deviates right	00:00:13		
	3.30	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:45		2
	3.70	GYF	Finish node type, gully, reference number: U/S MH2: ACO CHANNEL GULLY	00:00:51		
U/S MH2						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	1.0	0.3	1.0	2.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - U/S MH2X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
3	**MH2 << U/S MH2**	**U/S MH2X**		

U_S
MH2X_11a977aa-52f8-4ecc-9658-b7c98e4b651a_20180604_110848_924.jpg, 00:00:45, 3.30m
Settled deposits, fine, 5% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - MH2X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
4	**4**	**29/05/18**			**No Rain Or Snow**	**No**	**MH2X**

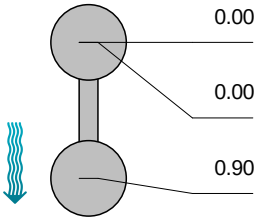
Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH2 >> INT1**	US MH:	**MH2**
Road:	**High Street**	Inspected Length:	**0.90 m**	US Depth:	
Location:		Total Length:	**0.90 m**	DS MH:	**INT1**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH2						
	0.00	MH	Start node type, manhole, reference number: MH2	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
	0.90	OCF	Finish node type, other special chamber, reference number: INT1: INTERCEPTOR	00:00:12		
INT1						
Depth:						



Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - INT1X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
5	**5**	**29/05/18**			**No Rain Or Snow**	**No**	**INT1X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**INT1 >> D/S INT1**	US MH:	**INT1**
Road:	**High Street**	Inspected Length:	**2.40 m**	US Depth:	
Location:		Total Length:	**2.40 m**	DS MH:	**D/S INT1**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
INT1						
	0.00	OC	Start node type, other special chamber, reference number: INT1: INTERCEPTOR	00:00:00		
	0.00	WL	Water level, 10% of the vertical dimension	00:00:00		
	0.90	LL	Line deviates left	00:00:14		
	2.40	SA	Survey abandoned: JOINS ANOTHER RUN BLIND	00:00:33		
D/S INT1						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

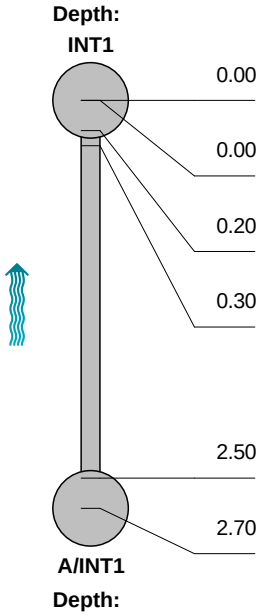
Section Inspection - 29/05/2018 - A/INT1X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
6	**6**	**29/05/18**			**No Rain Or Snow**	**No**	**A/INT1X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**INT1 << A/INT1**	US MH:	**A/INT1**
Road:	**High Street**	Inspected Length:	**2.70 m**	US Depth:	
Location:		Total Length:	**2.70 m**	DS MH:	**INT1**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Polyvinyl chloride**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:



1:50 Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node type, other special chamber, reference number: INT1: INTERCEPTOR	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02		
0.20	LR	Line deviates right	00:00:06		
0.30	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:08		2
2.50	DES	Settled deposits, fine, 40% cross-sectional area loss	00:00:23		4
2.70	SA	Survey abandoned: DUE TO DEBRIS / POSSIBLE LINE UP	00:00:27		

Structural Defects | Constructional Features
Service and Maintenance Defects | Miscellaneous Features
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	2	5.0	2.2	6.0	4.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - A/INT1X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
6	**INT1 << A/INT1**	**A/INT1X**		

A_INT1X_d93bc85b-68b5-4cbd-a036-2f44e01cce6d_20180604_112539_134.jpg, 00:00:08, 0.30m
Settled deposits, fine, 5% cross-sectional area loss

A_INT1X_e7e7eead-7a53-40b7-88a5-a5bca6dd5703_20180604_112635_734.jpg, 00:00:23, 2.50m
Settled deposits, fine, 40% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - GY1X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
7	**7**	**29/05/18**			**No Rain Or Snow**	**No**	**GY1X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**GY1 >> MH4**	US MH:	**GY1**
Road:	**High Street**	Inspected Length:	**12.10 m**	US Depth:	
Location:		Total Length:	**14.50 m**	DS MH:	**MH4**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:132 Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		GY	Start node type, gully, reference number: GY1	00:00:00		
0.00		WL	Water level, 5% of the vertical dimension	00:00:01		
0.10	S01	DES	Settled deposits, fine, 5% cross-sectional area loss, start: HANGING DEBRIS	00:00:06		
1.30		REM	General remark: RESTRICTED VIEW DUE TO DEBRIS	00:00:14		
9.70		WL	Water level, 10% of the vertical dimension	00:00:44		
12.00		CUW	Loss of vision, camera under water	00:00:53		
12.00	F01	DES	Settled deposits, fine, 5% cross-sectional area loss, finish: HANGING DEBRIS	00:00:53		2
12.10		CPF	Finish node type, catchpit, reference number: MH4	00:01:17		

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	1.0	0.1	1.0	2.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - GY1X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
7	**GY1 >> MH4**	**GY1X**		

GY1X_4ae48c69-bb7e-4f0a-8a19-bf8cd0d8e4c5_20180604_113150_073.jpg, 00:00:06, 0.10m
Settled deposits, fine, 5% cross-sectional area loss, start

GY1X_62b55fb9-55af-4203-8062-cc2fc1078ddd_20180604_113822_372.jpg, 00:01:17, 12.10m
Finish node type, catchpit, reference number: MH4

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - GY2X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
8	**8**	**29/05/18**			**No Rain Or Snow**	**No**	**GY2X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**GY2 >> MH7**	US MH:	**GY2**
Road:	**High Street**	Inspected Length:	**13.20 m**	US Depth:	
Location:		Total Length:	**13.20 m**	DS MH:	**MH7**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:120	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
GY2						
	0.00	GY	Start node type, gully, reference number: GY2	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
	0.20	HJ	Hole in drain or sewer at a joint from 11 o'clock to 3 o'clock	00:00:07		5
	0.80	JDM	Joint displaced, medium	00:00:12		1
	1.80	CC	Crack, circumferential from 12 o'clock to 12 o'clock	00:00:19		2
	4.70	JDM	Joint displaced, medium	00:00:34		1
	13.20	CPF	Finish node type, catchpit, reference number: MH7	00:01:19		
MH7						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
4	165.0	13.4	13.4	5.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - GY2X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
8	**GY2 >> MH7**	**GY2X**		

GY2X_dd061343-718e-4456-898a-1efea845b377_20180604_114119_072.jpg, 00:00:07, 0.20m
Hole in drain or sewer at a joint from 11 o'clock to 3 o'clock

GY2X_33c5c1ea-f169-4d8f-ada0-a495ecdef433_20180604_114148_482.jpg, 00:00:12, 0.80m
Joint displaced, medium

GY2X_d3e3e17c-9730-48b7-b2a5-2de544580fdd_20180604_114259_842.jpg, 00:00:19, 1.80m
Crack, circumferential from 12 o'clock to 12 o'clock

GY2X_a79ea17b-9a1f-4af5-83d4-555353067472_20180604_114230_449.jpg, 00:00:34, 4.70m
Joint displaced, medium

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - GY3X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
9	**9**	**29/05/18**			**No Rain Or Snow**	**No**	**GY3X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**GY3 >> MH6**	US MH:	**GY3**
Road:	**High Street**	Inspected Length:	**5.90 m**	US Depth:	
Location:		Total Length:	**5.90 m**	DS MH:	**MH6**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:54	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
GY3						
	0.00	GY	Start node type, gully, reference number: GY3	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	0.80	CC	Crack, circumferential from 12 o'clock to 12 o'clock	00:00:10		2
	1.30	CC	Crack, circumferential from 12 o'clock to 12 o'clock	00:00:13		2
	3.00	CC	Crack, circumferential from 7 o'clock to 5 o'clock	00:00:23		2
	5.00	CC	Crack, circumferential from 7 o'clock to 5 o'clock	00:00:31		2
	5.80	CL	Crack, longitudinal at 2 o'clock	00:00:37		2
	5.90	CPF	Finish node type, catchpit, reference number: MH6	00:00:41		
MH6						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
5	10.0	8.5	8.5	2.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - GY3X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
9	**GY3 >> MH6**	**GY3X**		

GY3X_dd9d2f66-7a16-4d3e-a03f-82c0c425fc5c_20180604_115332_276.jpg, 00:00:10, 0.80m
Crack, circumferential from 12 o'clock to 12 o'clock

GY3X_50057357-3fb3-43e8-84e6-5fc63ff7c92e_20180604_115348_849.jpg, 00:00:13, 1.30m
Crack, circumferential from 12 o'clock to 12 o'clock

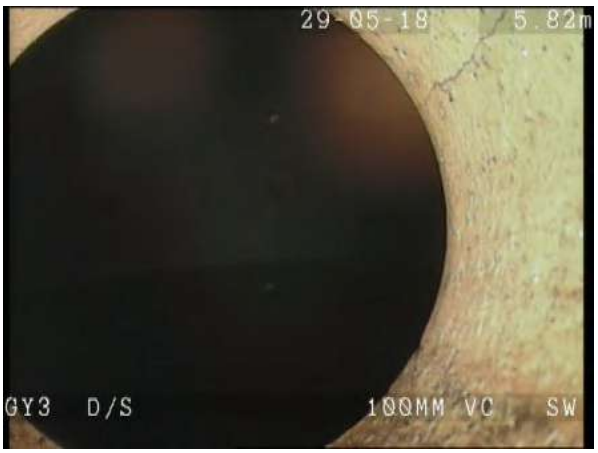
GY3X_f5782e97-a6ba-4fec-a11c-89e9b0a02103_20180604_115415_309.jpg, 00:00:23, 3.00m
Crack, circumferential from 7 o'clock to 5 o'clock

GY3X_b9039a48-1108-4694-bd18-1360eff10592_20180604_115439_085.jpg, 00:00:31, 5.00m
Crack, circumferential from 7 o'clock to 5 o'clock

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - GY3X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
9	**GY3 >> MH6**	**GY3X**		



GY3X_323402f6-742c-4e3a-aa89-da4814f1e971_20180604_115520_333.jpg, 00:00:37, 5.80m
Crack, longitudinal at 2 o'clock

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - MH4X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
10	**10**	**29/05/18**			**No Rain Or Snow**	**Yes**	**MH4X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH5 << MH4**	US MH:	**MH4**
Road:	**High Street**	Inspected Length:	**1.10 m**	US Depth:	
Location:		Total Length:	**3.00 m**	DS MH:	**MH5**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH5						
	0.00	MH	Start node type, manhole, reference number: MH5	00:00:00		
	0.00	WL	Water level, 10% of the vertical dimension	00:00:00		
	1.00	DES	Settled deposits, fine, 80% cross-sectional area loss	00:00:25		5
	1.10	SA	Survey abandoned: DUE TO DEBRIS	00:00:36		
	3.00		End of pipe			
MH4						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	3.3	10.0	5.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - MH4X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
10	**MH5 << MH4**	**MH4X**		

MH4X_43c76f17-273d-43f7-9a21-59457ef01918_20180604_115830_834.jpg, 00:00:25, 1.00m
Settled deposits, fine, 80% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - MH7X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
11	**11**	**29/05/18**			**No Rain Or Snow**	**No**	**MH7X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH6 << MH7**	US MH:	**MH7**
Road:	**High Street**	Inspected Length:	**6.10 m**	US Depth:	
Location:		Total Length:	**6.10 m**	DS MH:	**MH6**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:56	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH6						
	0.00	CP	Start node type, catchpit, reference number: MH6	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	6.10	CPF	Finish node type, catchpit, reference number: MH7	00:00:46		
MH7						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 29/05/2018 - MH8X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
12	**12**	**29/05/18**			**No Rain Or Snow**	**No**	**MH8X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH8 >> MH6**	US MH:	**MH8**
Road:	**High Street**	Inspected Length:	**1.80 m**	US Depth:	
Location:		Total Length:	**1.80 m**	DS MH:	**MH6**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH8						
	0.00	MH	Start node type, manhole, reference number: MH8	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	0.10	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:06		2
	1.80	CPF	Finish node type, catchpit, reference number: MH6	00:00:25		
MH6						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	1.0	0.6	1.0	2.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 29/05/2018 - MH8X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
12	**MH8 >> MH6**	**MH8X**		

MH8X_bee0a5bd-6969-44a3-b524-0a7d76b6459c_20180604_120848_871.jpg, 00:00:06, 0.10m
Settled deposits, fine, 5% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - A/MH10X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
13	**13**	**30/05/18**			**No Rain Or Snow**	**No**	**A/MH10X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH10 << A/MH10**	US MH:	**A/MH10**
Road:	**High Street**	Inspected Length:	**12.70 m**	US Depth:	
Location:		Total Length:	**12.70 m**	DS MH:	**MH10**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:115	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH10						
	0.00	MH	Start node type, manhole, reference number: MH10	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
	12.70	GYF	Finish node type, gully, reference number: A/MH10: GULLY	00:01:15		
A/MH10						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - B/MH10X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
14	**14**	**30/05/18**			**No Rain Or Snow**	**No**	**B/MH10X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH10 << B/MH10**	US MH:	**B/MH10**
Road:	**High Street**	Inspected Length:	**9.40 m**	US Depth:	
Location:		Total Length:	**9.40 m**	DS MH:	**MH10**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:86	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH10						
	0.00	MH	Start node type, manhole, reference number: MH10	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	9.30	DER	Settled deposits, coarse, 90% cross-sectional area loss: POSSIBLY COLLAPSE OR REDUNDANT	00:00:54		5
	9.40	SA	Survey abandoned: DUE TO DEBRIS	00:00:59		
B/MH10						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	1.1	10.0	5.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - B/MH10X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
14	**MH10 << B/MH10**	**B/MH10X**		

B_MH10X_4d6fb09f-78bf-47cb-b3e9-59aa1e942ddd_20180604_122311_591.jpg, 00:00:54, 9.30m
Settled deposits, coarse, 90% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - C/MH10X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
15	**15**	**30/05/18**			**No Rain Or Snow**	**No**	**C/MH10X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH10 << C/MH10**	US MH:	**C/MH10**
Road:	**High Street**	Inspected Length:	**4.20 m**	US Depth:	
Location:		Total Length:	**4.20 m**	DS MH:	**MH10**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH10						
	0.00	MH	Start node type, manhole, reference number: MH10	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	3.90	JDM	Joint displaced, medium	00:00:27		1
	4.20	LU	Line deviates up: 90 BEND	00:00:32		
C/MH10	4.20	SA	Survey abandoned: DUE TO BEND	00:00:32		
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

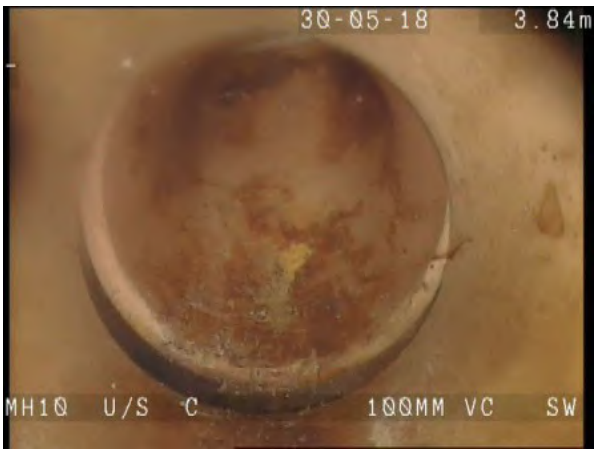
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	1.0	0.2	0.2	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - C/MH10X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
15	**MH10 << C/MH10**	**C/MH10X**		



C_MH10X_194d6610-d4d8-461b-be4e-2840784a06d6_20180604_122550_959.jpg, 00:00:27, 3.90m
Joint displaced, medium

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - D/MH10X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
16	**16**	**30/05/18**			**No Rain Or Snow**	**No**	**D/MH10X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH10 << D/MH10**	US MH:	**D/MH10**
Road:	**High Street**	Inspected Length:	**6.20 m**	US Depth:	
Location:		Total Length:	**6.20 m**	DS MH:	**MH10**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:57	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH10						
	0.00	MH	Start node type, manhole, reference number: MH10	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	6.20	GYF	Finish node type, gully, reference number: D/MH10	00:00:49		
D/MH10						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - MH10X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
17	**17**	**30/05/18**			**No Rain Or Snow**	**No**	**MH10X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH10 >> MH11**	US MH:	**MH10**
Road:	**High Street**	Inspected Length:	**11.90 m**	US Depth:	
Location:		Total Length:	**11.90 m**	DS MH:	**MH11**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:108	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH10						
	0.00	MH	Start node type, manhole, reference number: MH10	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
	11.90	MHF	Finish node type, manhole, reference number: MH11	00:00:58		
MH11						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - MH11X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
18	**18**	**30/05/18**			**No Rain Or Snow**	**No**	**MH11X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH11 >> MH13**	US MH:	**MH11**
Road:	**High Street**	Inspected Length:	**15.70 m**	US Depth:	
Location:		Total Length:	**15.70 m**	DS MH:	**MH13**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:143	Position [m]		Code	Observation	MPEG	Photo	Grade
Depth:							
MH11							
	0.00		MH	Start node type, manhole, reference number: MH11	00:00:00		
	0.00		WL	Water level, 5% of the vertical dimension	00:00:00		
	7.50		JN	Junction at 9 o'clock, diameter: 100mm	00:00:57		
	7.50		FLJ	Fracture, longitudinal at joint at 4 o'clock	00:00:57		3
	12.40	S01	DES	Settled deposits, fine, 5% cross-sectional area loss, start	00:01:23		
	12.50		WL	Water level, 10% of the vertical dimension	00:01:24		
	13.70		WL	Water level, 20% of the vertical dimension	00:01:32		
	14.70		CUD	Loss of vision, silt	00:01:58		
	15.40	F01	DES	Settled deposits, fine, 5% cross-sectional area loss, finish	00:02:02		2
	15.50		WL	Water level, 10% of the vertical dimension	00:02:04		
MH13							
	15.70		MHF	Finish node type, manhole, reference number: MH13	00:02:09		
Depth:							

Structural Defects | Constructional Features
Service and Maintenance Defects | Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	40.0	2.5	2.5	3.0	1	1.0	0.1	1.0	2.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - MH11X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
18	**MH11 >> MH13**	**MH11X**		

MH11X_45b8ff6e-664e-4988-89f3-78e69c1534ea_20180604_130155_767.jpg, 00:00:57, 7.50m
Fracture, longitudinal at joint at 4 o'clock

MH11X_c36e24ac-677f-42e1-8109-ac41a0b01cfb_20180604_130344_193.jpg, 00:01:23, 12.40m
Settled deposits, fine, 5% cross-sectional area loss, start

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - A/MH11X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
19	**19**	**30/05/18**			**No Rain Or Snow**	**No**	**A/MH11X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH11 << A/MH11**	US MH:	**A/MH11**
Road:	**High Street**	Inspected Length:	**13.50 m**	US Depth:	
Location:		Total Length:	**13.50 m**	DS MH:	**MH11**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:123	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH11						
	0.00	MH	Start node type, manhole, reference number: MH11	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	13.50	GYF	Finish node type, gully, reference number: A/MH11	00:01:20		
A/MH11						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - B/MH11X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
20	**20**	**30/05/18**			**No Rain Or Snow**	**No**	**B/MH11X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH11 << B/MH11**	US MH:	**B/MH11**
Road:	**High Street**	Inspected Length:	**8.80 m**	US Depth:	
Location:		Total Length:	**8.80 m**	DS MH:	**MH11**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:80	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH11						
	0.00	MH	Start node type, manhole, reference number: MH11	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	8.80	DER	Settled deposits, coarse, 50% cross-sectional area loss: POSSIBLY LINE UP	00:01:07		4
B/MH11	8.80	SA	Survey abandoned: DUE TO DEBRIS / POSSIBLY 90 BEND	00:01:07		
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	5.0	0.6	5.0	4.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - B/MH11X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
20	**MH11 << B/MH11**	**B/MH11X**		

B_MH11X_ece2156b-2a64-47e8-81b9-f28b627ce6dd_20180604_131600_646.jpg, 00:01:07, 8.80m
Settled deposits, coarse, 50% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - C/MH11X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
21	**21**	**30/05/18**			**No Rain Or Snow**	**No**	**C/MH11X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH11 << C/MH11**	US MH:	**C/MH11**
Road:	**High Street**	Inspected Length:	**3.40 m**	US Depth:	
Location:		Total Length:	**3.50 m**	DS MH:	**MH11**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH11						
	0.00	MH	Start node type, manhole, reference number: MH11	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	3.40	DER	Settled deposits, coarse, 95% cross-sectional area loss: POSSIBLY 90 BEND	00:00:29		5
	3.40	SA	Survey abandoned: DUE TO DEBRIS	00:00:29		
C/MH11						
	3.50		End of pipe			
Depth:						

Structural Defects | Constructional Features
Service and Maintenance Defects | Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	2.9	10.0	5.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - C/MH11X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
21	**MH11 << C/MH11**	**C/MH11X**		

C_MH11X_2567db29-1375-41da-92e6-dec86a3494df_20180604_131952_395.jpg, 00:00:29, 3.40m
Settled deposits, coarse, 95% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - D/MH11X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
22	**22**	**30/05/18**			**No Rain Or Snow**	**No**	**D/MH11X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH11 << D/MH11**	US MH:	**D/MH11**
Road:	**High Street**	Inspected Length:	**10.50 m**	US Depth:	
Location:		Total Length:	**12.00 m**	DS MH:	**MH11**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:109	Position [m]		Code	Observation	MPEG	Photo	Grade
Depth:							
MH11							
	0.00		MH	Start node type, manhole, reference number: MH11	00:00:00		
	0.00		WL	Water level, 5% of the vertical dimension	00:00:01		
	0.40	S01	DES	Settled deposits, fine, 10% cross-sectional area loss, start	00:00:10		
	3.50	F01	DES	Settled deposits, fine, 10% cross-sectional area loss, finish	00:00:27		3
	10.30		LL	Line deviates left	00:01:04		
	10.50		SA	Survey abandoned: DUE TO BEND	00:02:18		
	12.00			End of pipe			
D/MH11							
Depth:							

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

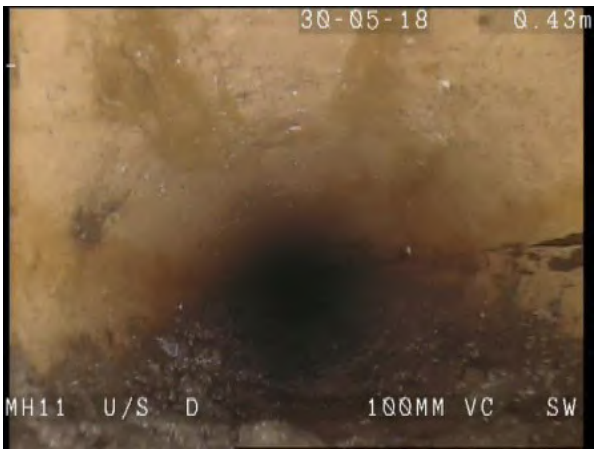
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	0.2	2.0	3.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - D/MH11X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
22	**MH11 << D/MH11**	**D/MH11X**		



D_MH11X_836448f8-7026-4146-97aa-9682418fdd29_20180604_132208_441.jpg, 00:00:10, 0.40m
Settled deposits, fine, 10% cross-sectional area loss, start

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - GY4X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
23	**23**	**30/05/18**			**No Rain Or Snow**	**No**	**GY4X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**GY4 >> D/S GY4**	US MH:	**GY4**
Road:	**High Street**	Inspected Length:	**6.50 m**	US Depth:	
Location:		Total Length:	**6.50 m**	DS MH:	**D/S GY4**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:59	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
GY4						
	0.00	GY	Start node type, gully, reference number: GY4	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	0.10	DES	Settled deposits, fine, 10% cross-sectional area loss	00:00:00		3
	0.60	JDM	Joint displaced, medium	00:00:18		1
	2.10	WL	Water level, 20% of the vertical dimension	00:00:28		
	2.40	CUW	Loss of vision, camera under water	00:00:37		
	4.50	WL	Water level, 10% of the vertical dimension	00:00:59		
	6.00	LL	Line deviates left	00:01:11		
	6.50	SA	Survey abandoned: JOINS CARRIER RUN BLIND	00:01:15		
D/S GY4						
Depth:						

Structural Defects | Constructional Features
Service and Maintenance Defects | Miscellaneous Features

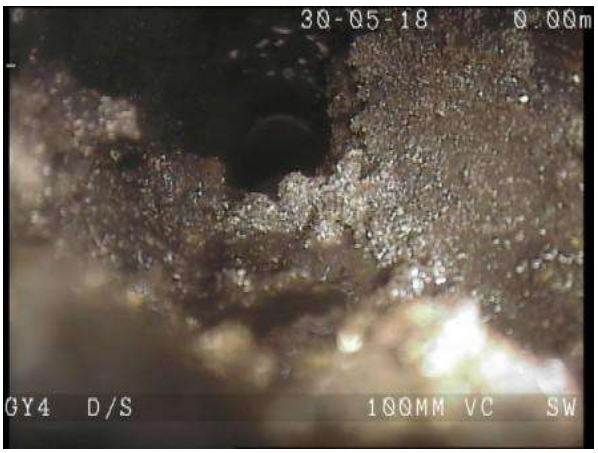
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	1.0	0.2	0.2	1.0	1	2.0	0.3	2.0	3.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - GY4X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
23	**GY4 >> D/S GY4**	**GY4X**		



GY4X_89492c26-b0de-426a-9dc6-f6b212b91f96_20180604_132822_598.jpg, 00:00:00, 0.10m
Settled deposits, fine, 10% cross-sectional area loss

GY4X_fb7ebc75-bacb-4bc7-9aa2-9c46b27d4ab2_20180604_132856_232.jpg, 00:00:18, 0.60m
Joint displaced, medium

GY4X_f2a9412c-e04b-47e4-a18a-4c80e63c3138_20180604_132918_034.jpg, 00:00:28, 2.10m
Water level, 20% of the vertical dimension

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - U/S MH12X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
24	**24**	**30/05/18**			**No Rain Or Snow**	**No**	**U/S MH12X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH12 << U/S MH12**	US MH:	**U/S MH12**
Road:	**High Street**	Inspected Length:	**19.20 m**	US Depth:	
Location:		Total Length:	**19.20 m**	DS MH:	**MH12**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:174	Position [m]		Code	Observation	MPEG	Photo	Grade
Depth:							
MH12							
	0.00		MH	Start node type, manhole, reference number: MH12	00:00:00		
	0.00		WL	Water level, 5% of the vertical dimension	00:00:00		
	5.60		JN	Junction at 9 o'clock, diameter: 100mm	00:00:41		
	10.10	S01	DES	Settled deposits, fine, 5% cross-sectional area loss, start	00:01:11		
	11.70		DES	Settled deposits, fine, 10% cross-sectional area loss	00:01:21		3
	16.30	F01	DES	Settled deposits, fine, 5% cross-sectional area loss, finish	00:01:51		2
	19.20		OCF	Finish node type, other special chamber, reference number: U/S MH12: ACO CHANNEL SUMP	00:02:07		
U/S MH12							
Depth:							

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	2	2.0	0.2	3.0	3.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - U/S MH12X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
24	**MH12 << U/S MH12**	**U/S MH12X**		

U_S
MH12X_427be56e-b667-4e80-a128-1737d92584ef_20180604_133524_873.jpg, 00:01:11, 10.10m
Settled deposits, fine, 5% cross-sectional area loss, start

U_S
MH12X_2bbc4dde-a064-4af7-8145-a1a1beeace39_20180604_133947_373.jpg, 00:01:21, 11.70m
Settled deposits, fine, 10% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - MH12X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
25	**25**	**30/05/18**			**No Rain Or Snow**	**No**	**MH12X**

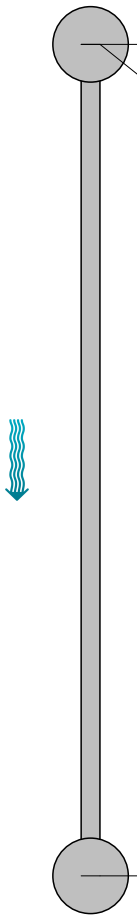
Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH12 >> MH13**	US MH:	**MH12**
Road:	**High Street**	Inspected Length:	**16.40 m**	US Depth:	
Location:		Total Length:	**16.40 m**	DS MH:	**MH13**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:149	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH12						
	0.00	MH	Start node type, manhole, reference number: MH12	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
	16.40	MHF	Finish node type, manhole, reference number: MH13	00:01:48		
MH13						
Depth:						



Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - MH13X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
26	**26**	**30/05/18**			**No Rain Or Snow**	**No**	**MH13X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH13 >> INT2**	US MH:	**MH13**
Road:	**High Street**	Inspected Length:	**29.90 m**	US Depth:	
Location:		Total Length:	**29.90 m**	DS MH:	**INT2**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:271 Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node type, manhole, reference number: MH13	00:00:00		
0.00		WL	Water level, 5% of the vertical dimension	00:00:01		
15.30		JN	Junction at 10 o'clock, diameter: 100mm	00:01:32		
15.40		LR	Line deviates right	00:01:34		
16.30		WL	Water level, 10% of the vertical dimension	00:01:42		
16.60	S01	DES	Settled deposits, fine, 5% cross-sectional area loss, start	00:01:44		
20.70		JN	Junction at 2 o'clock, diameter: 100mm	00:02:03		
22.80	F01	DES	Settled deposits, fine, 5% cross-sectional area loss, finish	00:02:15		2
24.30		WL	Water level, 20% of the vertical dimension	00:02:23		
26.10		DER	Settled deposits, coarse, 10% cross-sectional area loss	00:02:36		3
27.00	S02	DES	Settled deposits, fine, 5% cross-sectional area loss, start	00:02:42		
28.80		WL	Water level, 10% of the vertical dimension	00:02:53		
29.30		LR	Line deviates right	00:02:56		
29.50	F02	DES	Settled deposits, fine, 5% cross-sectional area loss, finish	00:02:56		2
29.90		OCF	Finish node type, other special chamber, reference number: INT2: INTERCEPTOR	00:02:58		

Structural Defects | Constructional Features
Service and Maintenance Defects | Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	3	2.0	0.1	4.0	3.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - MH13X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
26	**MH13 >> INT2**	**MH13X**		

MH13X_3a5ea860-e9c1-4aa8-bd1c-61770eea8ec1_20180604_140213_355.jpg, 00:01:44, 16.60m
Settled deposits, fine, 5% cross-sectional area loss, start

MH13X_7c3a29fa-817e-4c34-b5ab-992eafca8806_20180604_140331_807.jpg, 00:02:23, 24.30m
Water level, 20% of the vertical dimension

MH13X_5646dd2b-e2fd-4983-bc3b-baadbd282d9a_20180604_140400_848.jpg, 00:02:36, 26.10m
Settled deposits, coarse, 10% cross-sectional area loss

MH13X_1bfd6dfd-bb9d-4c16-adf4-dd01b0b5bb0a_20180604_140445_777.jpg, 00:02:42, 27.00m
Settled deposits, fine, 5% cross-sectional area loss, start

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - GY6X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
27	**27**	**30/05/18**			**No Rain Or Snow**	**No**	**GY6X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**GY6 >> D/S GY6**	US MH:	**GY6**
Road:	**High Street**	Inspected Length:	**4.50 m**	US Depth:	
Location:		Total Length:	**4.50 m**	DS MH:	**D/S GY6**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]		Code	Observation	MPEG	Photo	Grade
Depth:							
GY6							
	0.00		GY	Start node type, gully, reference number: GY6	00:00:00		
	0.00		WL	Water level, 5% of the vertical dimension	00:00:00		
	0.10	S01	DES	Settled deposits, fine, 20% cross-sectional area loss, start	00:00:05		
	2.50	F01	DES	Settled deposits, fine, 20% cross-sectional area loss, finish	00:00:26		3
	2.60		WL	Water level, 20% of the vertical dimension	00:00:26		
	4.10		LR	Line deviates right	00:00:46		
	4.50		SA	Survey abandoned: JOINS ANOTHER RUN BLIND	00:00:54		
D/S GY6							
Depth:							

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	0.4	2.0	3.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - GY6X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
27	**GY6 >> D/S GY6**	**GY6X**		

GY6X_4f11b5a9-0457-4edd-8c58-6809d6ef90ec_20180604_141001_233.jpg, 00:00:05, 0.10m
Settled deposits, fine, 20% cross-sectional area loss, start

GY6X_b725a713-67d4-4dc1-8d3a-32cf0ec695b7_20180604_141144_644.jpg, 00:00:26, 2.60m
Water level, 20% of the vertical dimension

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - U/S MH3X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
28	**28**	**30/05/18**			**No Rain Or Snow**	**No**	**U/S MH3X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH3 << U/S MH3**	US MH:	**U/S MH3**
Road:	**High Street**	Inspected Length:	**5.00 m**	US Depth:	
Location:		Total Length:	**5.00 m**	DS MH:	**MH3**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Surface water**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**150 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50 Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node type, manhole, reference number: MH3	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
1.20	LL	Line deviates left	00:00:16		
1.50	WL	Water level, 10% of the vertical dimension	00:00:19		
2.60	DES	Settled deposits, fine, 20% cross-sectional area loss	00:00:26		3
3.40	REM	General remark: RESTRICTED VIEW DUE TO DIRT ON LENSE	00:00:44		
5.00	LU	Line deviates up: 90 BEND	00:00:53		
5.00	SA	Survey abandoned: DUE TO BEND	00:00:53		

Structural Defects | Constructional Features
Service and Maintenance Defects | Miscellaneous Features

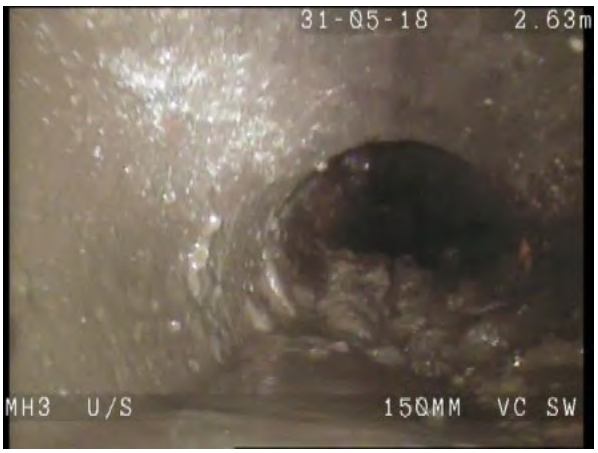
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	0.4	2.0	3.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - U/S MH3X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
28	**MH3 << U/S MH3**	**U/S MH3X**		



U_S
MH3X_f8612077-ef92-47e7-a340-44c9e82f0511_20180604_142336_384.jpg, 00:00:26, 2.60m
Settled deposits, fine, 20% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - A/MH14X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
29	**29**	**30/05/18**			**No Rain Or Snow**	**No**	**A/MH14X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH14 << A/MH14**	US MH:	**A/MH14**
Road:	**High Street**	Inspected Length:	**7.30 m**	US Depth:	
Location:		Total Length:	**7.30 m**	DS MH:	**MH14**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Foul**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:67 Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node type, manhole, reference number: MH14	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
0.10	DEG	Attached deposits, grease from 3 o'clock to 8 o'clock, 5% cross-sectional area loss	00:00:05		2
1.90	JDM	Joint displaced, medium	00:00:16		1
5.30	JDM	Joint displaced, medium	00:00:38		1
5.40	DEG	Attached deposits, grease from 3 o'clock to 6 o'clock, 5% cross-sectional area loss	00:00:38		2
7.20	OBZ	Other obstacles from 5 o'clock to 7 o'clock, 20% cross-sectional area loss: ON 90 BEND	00:00:52		5
7.30	LU	Line deviates up: 90 BEND	00:00:53		
7.30	SA	Survey abandoned: DUE TO BEND/OBSTRUCTION	00:01:04		

Structural Defects | Constructional Features
Service and Maintenance Defects | Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	1.0	0.3	0.3	1.0	3	10.0	1.6	12.0	5.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - A/MH14X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
29	**MH14 << A/MH14**	**A/MH14X**		

A_MH14X_04528b0a-7455-46eb-b22f-35010d4167e5_20180604_143517_428.jpg, 00:00:05, 0.10m
Attached deposits, grease from 3 o'clock to 8 o'clock, 5% cross-sectional area loss

A_MH14X_0ebe5ef9-0fe6-42d8-a01f-5de9df510e83_20180604_143440_621.jpg, 00:00:16, 1.90m
Joint displaced, medium

A_MH14X_f734058e-39ba-499b-9f6f-974fac535ce5_20180604_143727_323.jpg, 00:00:38, 5.30m
Joint displaced, medium

A_MH14X_9e96a233-ed1c-48e5-94ed-759369fd6198_20180604_143909_323.jpg, 00:00:52, 7.20m
Other obstacles from 5 o'clock to 7 o'clock, 20% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - B/MH14X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
30	**30**	**30/05/18**			**No Rain Or Snow**	**No**	**B/MH14X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH14 << B/MH14**	US MH:	**B/MH14**
Road:	**High Street**	Inspected Length:	**18.20 m**	US Depth:	
Location:		Total Length:	**18.20 m**	DS MH:	**MH14**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Foul**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:165	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth:						
MH14						
	0.00	MH	Start node type, manhole, reference number: MH14	00:00:00		
	0.00	WL	Water level, 5% of the vertical dimension	00:00:01		
	7.10	JN	Junction at 9 o'clock, diameter: 100mm	00:00:57		
	10.00	JDM	Joint displaced, medium	00:01:13		1
	13.50	MCCI	Material changes to cast iron	00:01:44		
	16.20	LL	Line deviates left	00:02:07		
	18.20	GYF	Finish node type, gully, reference number: B/MH14	00:02:46		
B/MH14						
Depth:						

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	1.0	0.1	0.1	1.0	0	0.0	0.0	0.0	1.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - B/MH14X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
30	**MH14 << B/MH14**	**B/MH14X**		

B_MH14X_f80fcc4a-b6ef-4fc9-a41e-e90103d837d1_20180604_145211_035.jpg, 00:01:13, 10.00m
Joint displaced, medium

B_MH14X_18d6d96b-3466-4bf2-97b0-6d6743690ace_20180604_150518_290.jpg, 00:01:44, 13.50m
Material changes to cast iron

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

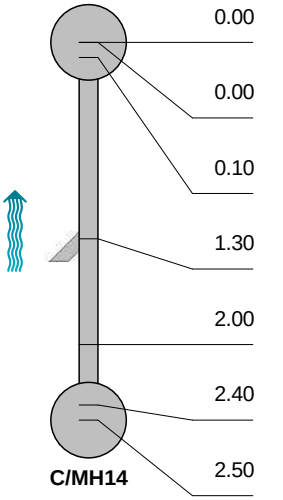
Section Inspection - 30/05/2018 - C/MH14X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
31	**31**	**30/05/18**			**No Rain Or Snow**	**No**	**C/MH14X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH14 << C/MH14**	US MH:	**C/MH14**
Road:	**High Street**	Inspected Length:	**2.50 m**	US Depth:	
Location:		Total Length:	**2.50 m**	DS MH:	**MH14**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Foul**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:



1:50 Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node type, manhole, reference number: MH14	00:00:00		
0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
0.10	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:07		2
1.30	JN	Junction at 2 o'clock, diameter: 100mm	00:00:19		
2.00	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:23		2
2.40	LU	Line deviates up: 90 BEND	00:00:28		
2.50	SA	Survey abandoned: DUE TO BEND	00:00:28		

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

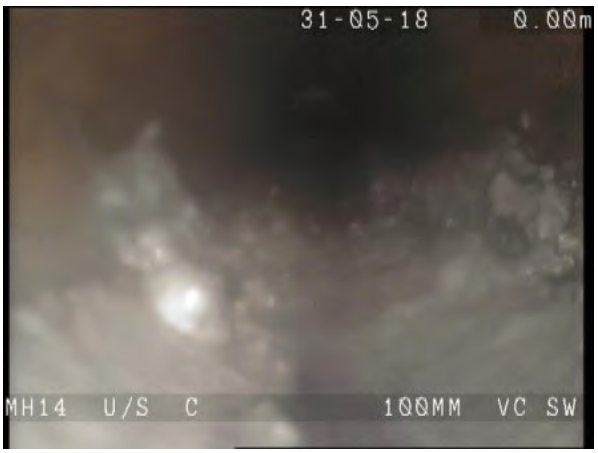
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	2	1.0	0.8	2.0	2.0

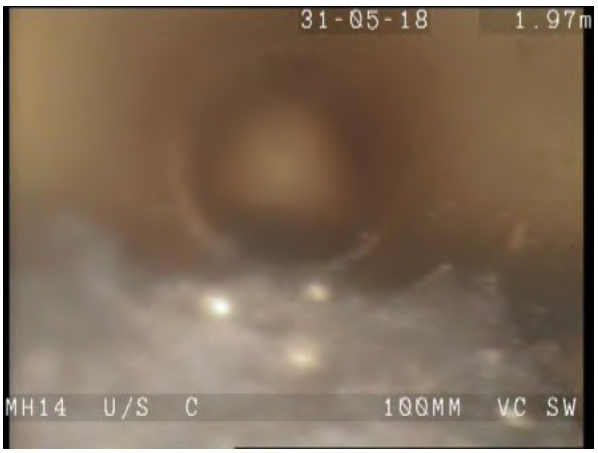
Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - C/MH14X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
31	**MH14 << C/MH14**	**C/MH14X**		



C_MH14X_680d6f3c-0fea-4b52-9ccd-474b44ce4e91_20180604_151707_649.jpg, 00:00:07, 0.10m
Settled deposits, fine, 5% cross-sectional area loss



C_MH14X_4ecbaa30-d2c2-4194-8ce2-954695fa2ab7_20180604_151814_784.jpg, 00:00:23, 2.00m
Settled deposits, fine, 5% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - D/MH14X

Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
32	**32**	**30/05/18**			**No Rain Or Snow**	**No**	**D/MH14X**
Operator:		Vehicle:		Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh		**FJ17 ZDS**		**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH14 << D/MH14**	US MH:	**D/MH14**
Road:	**High Street**	Inspected Length:	**2.90 m**	US Depth:	
Location:		Total Length:	**2.90 m**	DS MH:	**MH14**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Foul**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:

1:50	Position [m]		Code	Observation	MPEG	Photo	Grade
Depth:							
MH14							
	0.00		MH	Start node type, manhole, reference number: MH14	00:00:00		
	0.00		WL	Water level, 5% of the vertical dimension	00:00:00		
	0.80	S01	DES	Settled deposits, fine, 10% cross-sectional area loss, start	00:00:11		
	2.90	F01	DES	Settled deposits, fine, 10% cross-sectional area loss, finish	00:00:45		3
D/MH14	2.90		OBZ	Other obstacles from 4 o'clock to 8 o'clock, 40% cross-sectional area loss: ON 90 BEND	00:00:45		5
	2.90		LU	Line deviates up: 90 BEND	00:00:45		
	2.90		SA	Survey abandoned: DUE TO BEND/OBSTRUCTION	00:00:45		
Depth:							

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	2	10.0	4.1	12.0	5.0

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - D/MH14X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
32	**MH14 << D/MH14**	**D/MH14X**		

D_MH14X_b1db26ca-8089-47d0-a1ff-45bb5a26b379_20180604_152331_678.jpg, 00:00:11, 0.80m
Settled deposits, fine, 10% cross-sectional area loss, start

D_MH14X_a3025a4a-48bc-453f-b890-f5ff270501e4_20180604_154048_176.jpg, 00:00:45, 2.90m
Other obstacles from 4 o'clock to 8 o'clock, 40% cross-sectional area loss

Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Inspection - 30/05/2018 - MH14X

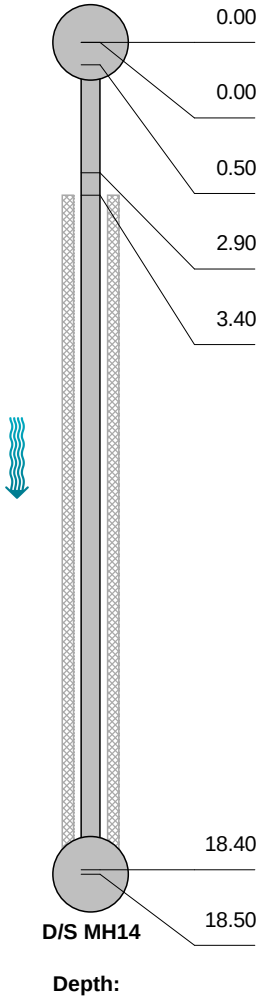
Section:	Inspection:	Date:	Time:	Client's Ref:	Weather:	Pre Cleaned:	PLR:
33	**33**	**30/05/18**			**No Rain Or Snow**	**No**	**MH14X**

Operator:	Vehicle:	Camera:	Preset Length:	Criticality Grade:	Alternative ID:
Cb/Dh	**FJ17 ZDS**	**Flexi**			

Town or Village:	**YIEWSLEY**	Insp Dir:	**MH14 >> D/S MH14**	US MH:	**MH14**
Road:	**High Street**	Inspected Length:	**18.50 m**	US Depth:	
Location:		Total Length:	**18.50 m**	DS MH:	**D/S MH14**
Surface Cover:		Pipe Length:	**0.00 m**	DS Depth:	

Use:	**Foul**	Pipe Shape:	**Circular**
Type of Pipe:	**Gravity drain/sewer**	Height / Width:	**100 mm**
Year Constructed:		Pipe Material:	**Vitrified clay pipe (i.e. all clayware)**
Inspection Purpose:		Lining Type:	**None**
Flow Control:	**No flow control**	Lining Material:	**None**

Comment:
Recommendation:



1:168 Position [m]		Code	Observation	MPEG	Photo	Grade
0.00		MH	Start node type, manhole, reference number: MH14	00:00:00		
0.00		WL	Water level, 5% of the vertical dimension	00:00:00		
0.50		CLJ	Crack, longitudinal at joint at 2 o'clock	00:00:09		2
2.90		WL	Water level, 20% of the vertical dimension	00:00:22		
3.40	S01	CUW	Loss of vision, camera under water, start	00:00:27		
18.40	F01	CUW	Loss of vision, camera under water, finish	00:01:40		
18.50		SA	Survey abandoned: DUE TO WATER LEVEL / UNKNOWN PIPE LENGTH	00:01:44		

Structural Defects	Constructional Features
Service and Maintenance Defects	Miscellaneous Features

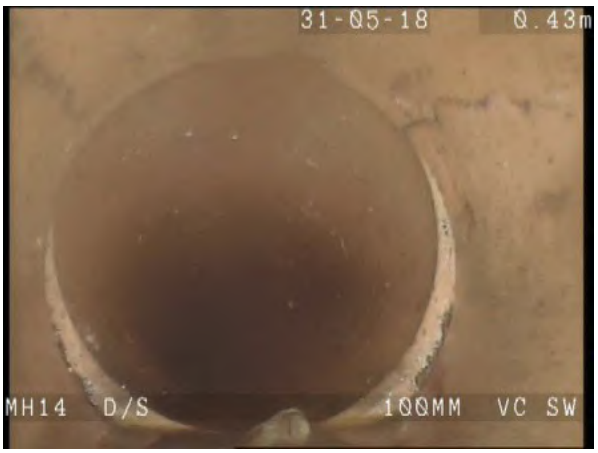
Note: In line with the WRc SRM, plastic pipes are not scored against structural defects.

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	10.0	0.5	0.5	2.0	0	0.0	0.0	0.0	1.0

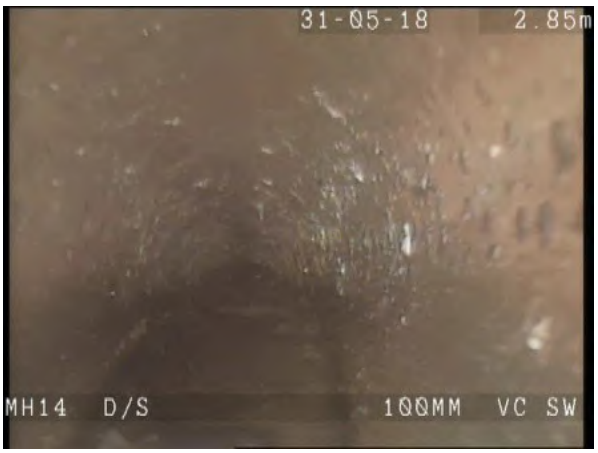
Aqua-Jet Specialist Drainage Contractors Ltd
Yard 21, Hilton Ind Est, Sutton Lane, Hilton, Derbyshire, DE65 5FE
Tel. 01283 730333
aquajetltd@aol.com

Section Pictures - 30/05/2018 - MH14X

Section Number:	Inspection Direction:	PLR:	Client's Ref:	Contractor's Ref:
33	**MH14 >> D/S MH14**	**MH14X**		



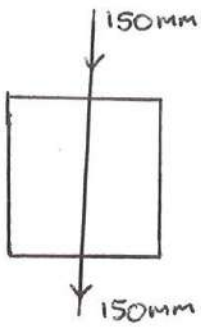
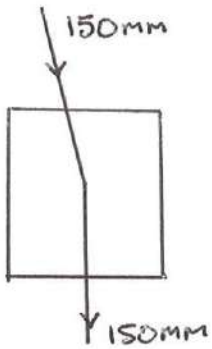
MH14X_168c0c70-77c0-4d60-9b76-dbb6a92cb306_20180604_154812_244.jpg, 00:00:09, 0.50m
Crack, longitudinal at joint at 2 o'clock

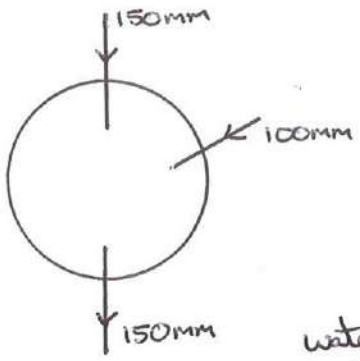
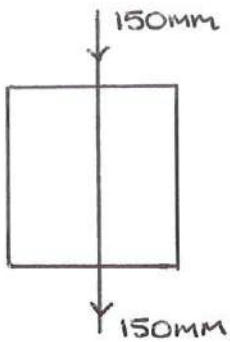


MH14X_cb3f99e3-0051-486d-941d-521f01aa8701_20180604_154912_875.jpg, 00:00:22, 2.90m
Water level, 20% of the vertical dimension

Aqua-Jet
Drainage Specialists

Manhole Information

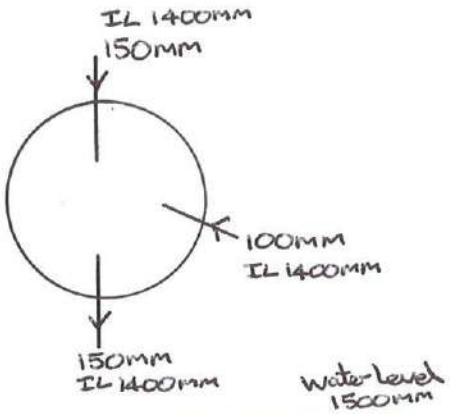
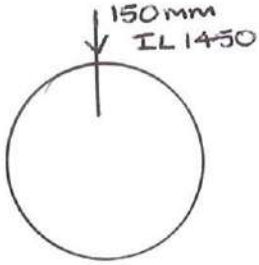
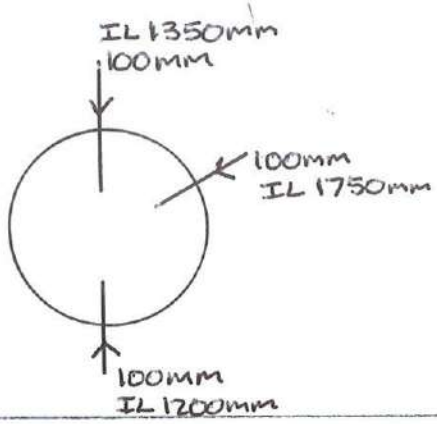
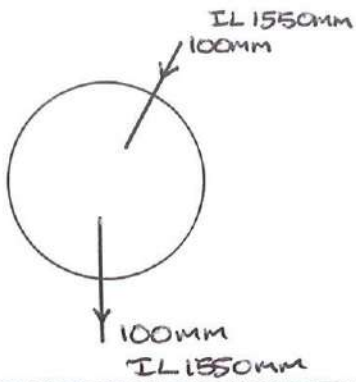
REFERENCE: MH1	DUTY: SW	REFERENCE: MH2	DUTY: SW
DIAGRAM: 		DIAGRAM: 	
DEPTH AT OUTLET: 1160mm		DEPTH AT OUTLET: 950mm	
MH SIZE 1000mm x 700mm		MH SIZE 800mm x 800mm	
MH MATERIAL Brick		MH MATERIAL Brick	
OBSERVATIONS/ COMMENTS:		OBSERVATIONS/ COMMENTS:	

REFERENCE: Int 1	DUTY: SW	REFERENCE: MH3	DUTY: SW
DIAGRAM: 		DIAGRAM: 	
DEPTH AT OUTLET: 1100mm (Total depth 2300mm)		DEPTH AT OUTLET: 1730mm	
MH SIZE 1100mm Ø		MH SIZE 900mm x 700mm	
MH MATERIAL		MH MATERIAL Brick	
OBSERVATIONS/ COMMENTS:		OBSERVATIONS/ COMMENTS:	

Tel 01283 730333 Fax 01283 730111 www.aquajetltd.co.uk aquajetltd@aol.com
Aqua Jet Specialist Drainage Contractors Ltd, Yard 21, Hilton Industrial Estate, Sutton Lane, Hilton, Derbyshire, DE65 5FE

Aqua-Jet
Drainage Specialists

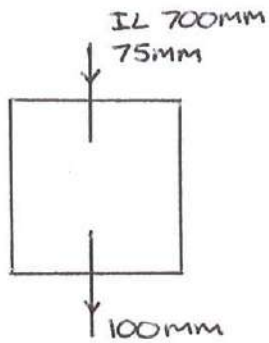
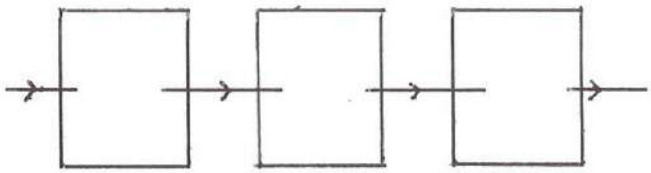
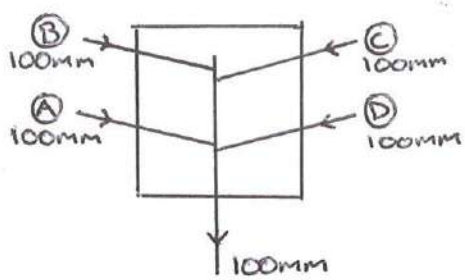
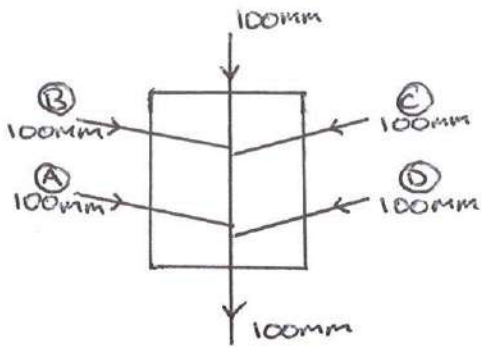
Manhole Information

REFERENCE: MH4	DUTY: SW	REFERENCE: MH5	DUTY: SW
DIAGRAM: 		DIAGRAM: 	
DEPTH AT OUTLET: Total depth 3000mm		DEPTH AT OUTLET: Total depth 2450mm	
MH SIZE 1250mm Ø		MH SIZE 1250mm Ø	
MH MATERIAL Concrete		MH MATERIAL Concrete	
OBSERVATIONS/ COMMENTS:		OBSERVATIONS/ COMMENTS: No outlet Possible Soakaway	
REFERENCE: MH6	DUTY: SW	REFERENCE: MH7	DUTY: SW
DIAGRAM: 		DIAGRAM: 	
DEPTH AT OUTLET: No outlet		DEPTH AT OUTLET: 1550mm	
MH SIZE 1250mm Ø		MH SIZE 1250mm Ø	
MH MATERIAL Concrete		MH MATERIAL Concrete	
OBSERVATIONS/ COMMENTS: Catchpit possible Soakaway		OBSERVATIONS/ COMMENTS: Catch pit	

Jetting • Vacuumation • Camera Inspection • Excavation & Repairs • Septic Tanks
Tel: 01283 730333 Fax: 01283 730111 www.aquajetltd.co.uk aquajetltd@aol.com
Aqua Jet Specialist Drainage Contractors Ltd, Yard 21, Hilton Industrial Estate, Sutton Lane, Hilton, Derbyshire, DE65 5FF

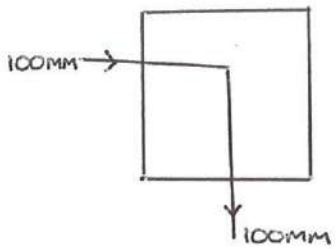
Aqua-Jet
Drainage Specialists

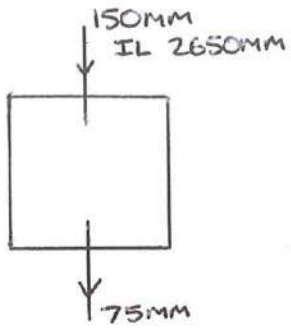
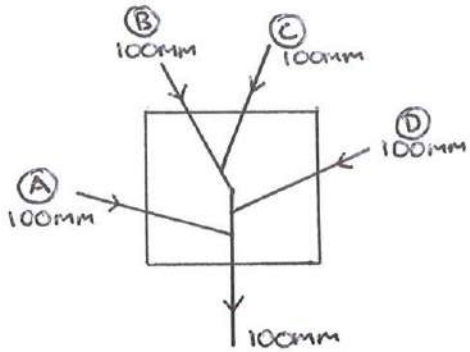
Manhole Information

REFERENCE: MH8	DUTY: SW	REFERENCE: Int 2	DUTY: SW
DIAGRAM: 		DIAGRAM:  Complete depth 3600mm	
DEPTH AT OUTLET: 1200mm		DEPTH AT OUTLET: 2550mm	
MH SIZE 700mm x 600mm		MH SIZE 750mm x 500mm	
MH MATERIAL Brick		MH MATERIAL PVC	
OBSERVATIONS/ COMMENTS: Catch pit		OBSERVATIONS/ COMMENTS: Interceptor	
REFERENCE: MH10	DUTY: SW	REFERENCE: MH11	DUTY: SW
DIAGRAM: 		DIAGRAM: 	
DEPTH AT OUTLET: 550mm		DEPTH AT OUTLET: 750mm	
MH SIZE 800mm x 650mm		MH SIZE 750mm x 700mm	
MH MATERIAL Concrete		MH MATERIAL Concrete	
OBSERVATIONS/ COMMENTS:		OBSERVATIONS/ COMMENTS:	

Aqua-Jet
Drainage Specialists

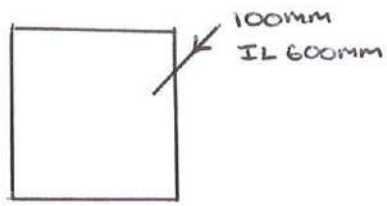
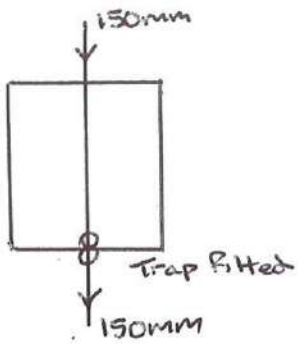
Manhole Information

REFERENCE: MH12	DUTY: SW	REFERENCE: MH13	DUTY: SW
DIAGRAM: 		DIAGRAM: UTR	
DEPTH AT OUTLET: 690mm		DEPTH AT OUTLET:	
MH SIZE 750mm x 750mm		MH SIZE	
MH MATERIAL Concrete		MH MATERIAL	
OBSERVATIONS/ COMMENTS:		OBSERVATIONS/ COMMENTS:	

REFERENCE: MH9	DUTY: SW	REFERENCE: MH 14	DUTY: FW
DIAGRAM: 		DIAGRAM: 	
DEPTH AT OUTLET: 750mm (Total depth 3700mm)		DEPTH AT OUTLET: 1550mm	
MH SIZE 1500mm x 1500mm		MH SIZE 1200mm x 800mm	
MH MATERIAL Brick		MH MATERIAL Brick	
OBSERVATIONS/ COMMENTS: Pump station		OBSERVATIONS/ COMMENTS:	

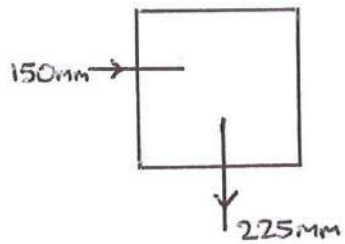
Aqua-Jet
Drainage Specialists

Manhole Information

REFERENCE: MH15	DUTY: FW	REFERENCE: MH16	DUTY: ?
DIAGRAM: Blocked unable to clear		DIAGRAM: 	
DEPTH AT OUTLET:		DEPTH AT OUTLET: 1750mm	
MH SIZE		MH SIZE 900mm x 500mm	
MH MATERIAL		MH MATERIAL Brick	
OBSERVATIONS/ COMMENTS:		OBSERVATIONS/ COMMENTS: Heavy silt unable to see outlet	
REFERENCE: MH17	DUTY:	REFERENCE: MH20	DUTY: FW
DIAGRAM: 		DIAGRAM: 	
DEPTH AT OUTLET: 1750mm		DEPTH AT OUTLET: 1250mm	
MH SIZE		MH SIZE 700mm x 550mm	
MH MATERIAL		MH MATERIAL Brick	
OBSERVATIONS/ COMMENTS: Possible Redundant chamber		OBSERVATIONS/ COMMENTS: Trap on outlet	

Aqua-Jet
Drainage Specialists

Manhole Information

REFERENCE: MH21	DUTY: SW	REFERENCE:	DUTY:
DIAGRAM: 		DIAGRAM:	
DEPTH AT OUTLET: 1150mm		DEPTH AT OUTLET:	
MH SIZE 700mm x 650mm		MH SIZE	
MH MATERIAL Brick		MH MATERIAL	
OBSERVATIONS/ COMMENTS: Catchpit, Heavy Silt		OBSERVATIONS/ COMMENTS:	
REFERENCE:	DUTY:	REFERENCE:	DUTY:
DIAGRAM:		DIAGRAM:	
DEPTH AT OUTLET:		DEPTH AT OUTLET:	
MH SIZE		MH SIZE	
MH MATERIAL		MH MATERIAL	
OBSERVATIONS/ COMMENTS:		OBSERVATIONS/ COMMENTS:	

Morrisons,
Hiom Street,
Yiewsley,
UB7 7QQ

Sketch 1 of 2

MH18 (Blocked)
MH20 (Blocked)
MH19
MH21 (Silt)
Unable to Raise
MH17
GY2
GY3
MH7
GY1
MH6 (Soakaway)
MH8
MH9 (Pump Station)
INT 2
ACO
GY6
GY5
ACO
Flow tested gully + ACO
MH16
MH5 (Soakaway)
MH4
MH13 Unable to Raise.
MH12
FG
Vent Pipe
INT 1
MH2
Stand tested
MH11
GY
MH1
MH3
under ground carpark
Taking Butchers Sinks Off shop floor
MH 14
MH10
GY
MH15 (Blocked)
Gas or Electric
No Visible pipes. Invert taken to silt
Under Vehicle UNABLE TO RAISE
Stop tap
Filled Chamber
Filled Chamber
All pipes

Surface water CCTV completed

Foul water CCTV completed

Not to Scale

MORRISONS,
HIGH STREET,
YIGWSLEY,
UB7 7QQ
SKETCH 2 OF 2

Foul
High/Ceiling
Level taking
Fridges From store

Foul High ceiling level unable to locate outfall

Foul
High level/Ceiling
taking Fridges
From Store

No Visible pipes. Invert taken to silt
CL29.33
IL28.22

Appendix D

Thames Water Sewer Record Map

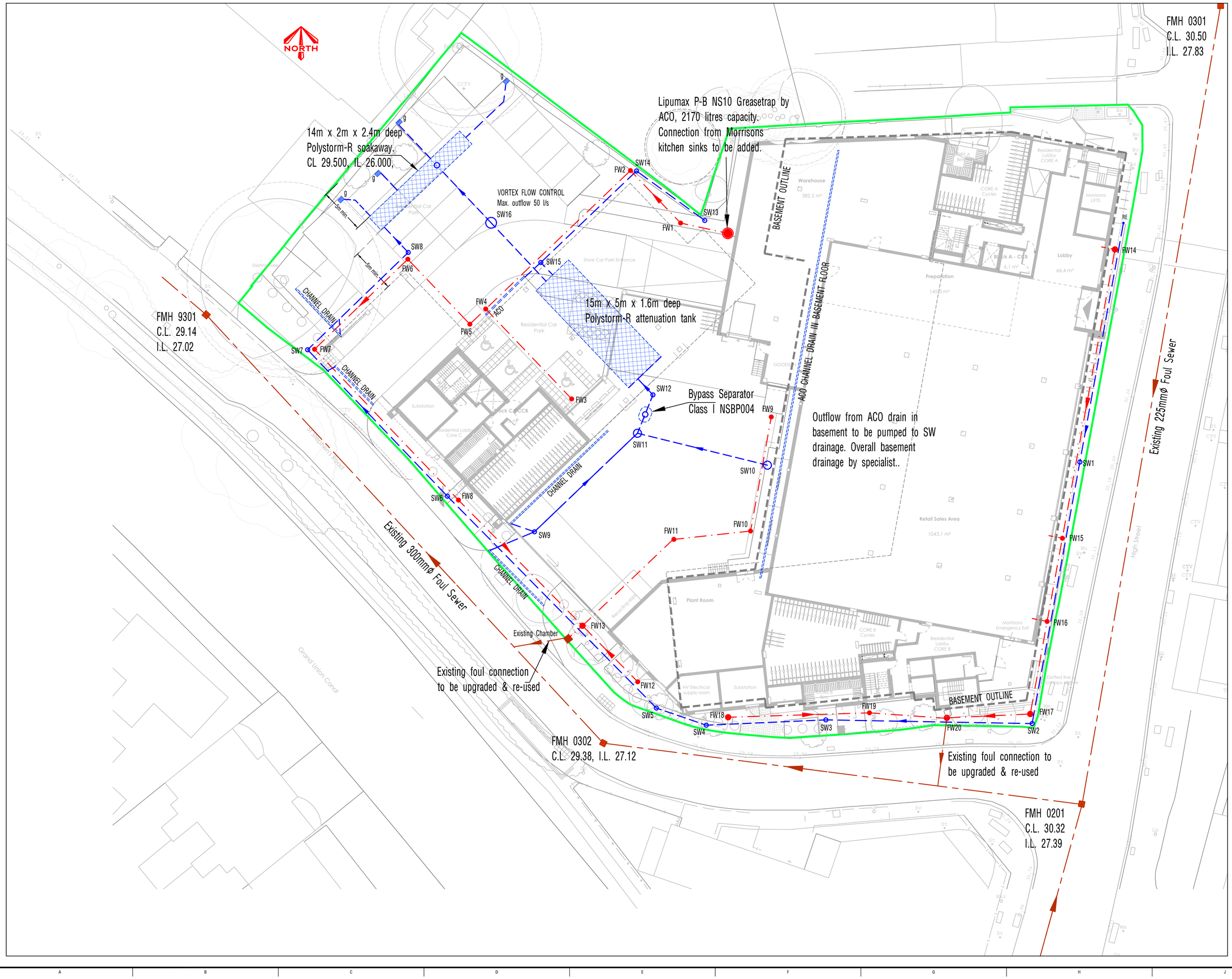
Asset Location Search Sewer Map - ALS/ALS Standard/2018_3729609

The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 506031,180348

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.

Appendix E

Proposed Drainage Strategy Plan



NOTES:

1. THE DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH PART H OF THE BUILDING REGULATIONS & THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY (7TH EDITION). MANHOLE TYPES ARE IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION GUIDANCE (SEWERAGE SECTOR GUIDANCE).
2. ALL UNDERGROUND SW & FW DRAINAGE TO BE 150mmØ MINIMUM LAID NO FLATTER THAN 1:150.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ASSOCIATED ARCHITECT'S AND ENGINEERS' DRAWINGS AND SPECIFICATIONS.
4. PREFABRICATED DRAINAGE COMPONENTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS & GUIDELINES.
5. CONNECTIONS TO THE PUBLIC FOUL SEWER TO BE SUBJECT TO APPROVAL BY THAMES WATER UNDER SECTION 106 OF THE WATER INDUSTRY ACT.

KEY

- PROPOSED SURFACE WATER DRAIN
- PROPOSED FOUL WATER DRAIN
- EXISTING FOUL DRAIN

rev.	date	Description	Drawn	Chk.
-	04.01.2023	Preliminary issue - Planning	DM	WEH

WARD COLE
consulting engineers
LINCOLN LONDON NOTTINGHAM
Fosse House
Roman Wharf
Lincoln
LN1 1SR
tel 01522 513032 fax 01522 513559
e-mail structures@wardcole-lincoln.co.uk

client:
Harbourside Investments Ltd

project:
Morrisons, High Street
Yiewsley

drawing title:
Drainage Strategy Plan

scale: 1:200 (A1)
status: Preliminary

job number: 10-4897
drawing number: SK500
revision: -

Appendix F

Preliminary MicroDrainage SW Drainage Simulation Results

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	2.457	0.029	84.7	0.005	4.00	0.0	0.600		o	150	Pipe/Conduit	
2.000	1.919	0.029	66.2	0.000	4.00	0.0	0.600		o	150	Pipe/Conduit	
1.001	15.000	0.001	15000.0	0.261	0.00	0.0		0.050	→[↓]		Cellular Storage	
1.002	7.970	0.050	159.4	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.003	7.875	0.050	157.5	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.004	14.000	0.001	14000.0	0.000	0.00	0.0		0.050	→[↓]		Cellular Storage	
1.005	2.000	-0.020	-100.0	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	4.04	27.700	0.005	0.0	0.0	0.0	1.09	19.3	0.7
2.000	50.00	4.03	27.700	0.000	0.0	0.0	0.0	1.24	21.9	0.0
1.001	50.00	6.21	27.201	0.266	0.0	0.0	0.0	0.12	903.9	36.0
1.002	50.00	6.31	27.200	0.266	0.0	0.0	0.0	1.24	87.8	36.0
1.003	50.00	6.42	27.150	0.266	0.0	0.0	0.0	1.25	88.4	36.0
1.004	50.00	8.53	26.000	0.266	0.0	0.0	0.0	0.11	514.3	36.0
1.005	50.00	8.89	29.000	0.266	0.0	0.0	0.0	0.09	1.6«	36.0

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o		SW12	29.800	27.700	1.950	Open Manhole	1200
2.000	o	150	SW15	29.800	27.700	1.950	Open Manhole	600
1.001	→[↓]		ATT	29.800	27.201	0.899	Open Manhole	3000
1.002	o	300	ATT	29.800	27.200	2.300	Open Manhole	3000
1.003	o	300	SW16	29.700	27.150	2.250	Open Manhole	1200
1.004	→[↓]		SKWY	29.500	26.000	1.000	Open Manhole	3000
1.005	o	150	DUMMY	29.500	29.000	0.350	Open Manhole	3000

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	2.457	84.7	ATT	29.800	27.671	1.979	Open Manhole	3000
2.000	1.919	66.2	ATT	29.800	27.671	1.979	Open Manhole	3000
1.001	15.000	15000.0	ATT	29.800	27.200	0.900	Open Manhole	3000
1.002	7.970	159.4	SW16	29.700	27.150	2.250	Open Manhole	1200
1.003	7.875	157.5	SKWY	29.500	27.100	2.100	Open Manhole	3000
1.004	14.000	14000.0	DUMMY	29.500	25.999	1.001	Open Manhole	3000
1.005	2.000	-100.0	DUMMY	29.500	29.020	0.330	Open Manhole	1200

Online Controls for Storm

Crown Vortex Valve® Manhole: SW16, DS/PN: 1.003, Volume (m³): 3.3

Design Head (m) 1.500 Vortex Valve® Type R1 SW Only Invert Level (m) 27.150
Design Flow (l/s) 50.0 Diameter (mm) 263

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.9	0.800	36.6	2.000	57.9	4.000	81.8	7.000	108.2
0.200	13.0	1.000	40.9	2.200	60.7	4.500	86.8	7.500	112.0
0.300	21.7	1.200	44.8	2.400	63.4	5.000	91.5	8.000	115.7
0.400	28.9	1.400	48.4	2.600	66.0	5.500	95.9	8.500	119.3
0.500	33.2	1.600	51.7	3.000	70.9	6.000	100.2	9.000	122.7
0.600	33.4	1.800	54.9	3.500	76.5	6.500	104.3	9.500	126.1

Storage Structures for Storm

Cellular Storage Pipe: 1.001

Manning's N 0.050 Infiltration Coefficient Side (m/hr) 0.00000
Invert Level (m) 27.201 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	75.0	75.0	1.600	75.0	139.0	1.700	0.0	139.0

Cellular Storage Pipe: 1.004

Manning's N 0.050 Infiltration Coefficient Side (m/hr) 3.25800
Invert Level (m) 26.000 Safety Factor 5.0
Infiltration Coefficient Base (m/hr) 3.25800 Porosity 0.95

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	28.0	28.0	2.400	28.0	104.8	2.500	0.0	104.8

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 1
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.226
FEH Rainfall Version	1999	E (1km)	0.304
Site Location	GB 505850 180400 TQ 05850 80400	F (1km)	2.571
C (1km)	-0.025	Cv (Summer)	0.750
D1 (1km)	0.318	Cv (Winter)	0.840
D2 (1km)	0.297		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	SW12	15 Winter	1	+0%	100/15 Summer				27.727	-0.123
2.000	SW15	60 Winter	1	+0%	30/15 Summer				27.778	-0.072
1.001	ATT	30 Winter	1	+0%					27.370	-1.531
1.002	ATT	30 Winter	1	+0%	30/15 Summer				27.370	-0.130
1.003	SW16	30 Winter	1	+0%	30/15 Summer				27.362	-0.088
1.004	SKWY	120 Winter	1	+0%					26.347	-2.153
1.005	DUMMY	120 Winter	1	+0%					26.347	-2.803

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	SW12	0.000	0.07			0.8	OK	
2.000	SW15	0.000	0.46			5.0	OK	
1.001	ATT	0.000	0.01		21	26.1	OK	
1.002	ATT	0.000	0.23			14.0	OK	
1.003	SW16	0.000	0.23			14.0	OK	
1.004	SKWY	0.000	0.01		38	10.8	OK	
1.005	DUMMY	0.000	0.00			0.0	OK	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 1
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.226
FEH Rainfall Version	1999	E (1km)	0.304
Site Location	GB 505850 180400 TQ 05850 80400	F (1km)	2.571
C (1km)	-0.025	Cv (Summer)	0.750
D1 (1km)	0.318	Cv (Winter)	0.840
D2 (1km)	0.297		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	SW12	30 Winter	30	+0%	100/15 Summer				27.817	-0.033
2.000	SW15	30 Winter	30	+0%	30/15 Summer				27.927	0.077
1.001	ATT	30 Winter	30	+0%					27.817	-1.084
1.002	ATT	30 Winter	30	+0%	30/15 Summer				27.816	0.316
1.003	SW16	15 Winter	30	+0%	30/15 Summer				27.785	0.335
1.004	SKWY	120 Winter	30	+0%					27.399	-1.101
1.005	DUMMY	120 Winter	30	+0%					27.399	-1.751

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	SW12	0.000	0.16			1.7	OK	
2.000	SW15	0.000	1.60			17.4	SURCHARGED	
1.001	ATT	0.000	0.04		26	83.5	OK	
1.002	ATT	0.000	0.55			34.0	SURCHARGED	
1.003	SW16	0.000	0.55			33.5	SURCHARGED	
1.004	SKWY	0.000	0.02		92	26.9	OK	
1.005	DUMMY	0.000	0.00			0.0	OK	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 1
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.226
FEH Rainfall Version	1999	E (1km)	0.304
Site Location	GB 505850 180400 TQ 05850 80400	F (1km)	2.571
C (1km)	-0.025	Cv (Summer)	0.750
D1 (1km)	0.318	Cv (Winter)	0.840
D2 (1km)	0.297		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	SW12	30 Winter	100	+40%	100/15 Summer				28.807	0.957
2.000	SW15	30 Winter	100	+40%	30/15 Summer				29.024	1.174
1.001	ATT	30 Winter	100	+40%					28.807	-0.094
1.002	ATT	30 Winter	100	+40%	30/15 Summer				28.803	1.303
1.003	SW16	30 Winter	100	+40%	30/15 Summer				28.742	1.292
1.004	SKWY	120 Winter	100	+40%					28.376	-0.124
1.005	DUMMY	120 Winter	100	+40%					28.374	-0.776

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	SW12	0.000	0.28			3.0	SURCHARGED	
2.000	SW15	0.000	3.18			34.5	SURCHARGED	
1.001	ATT	0.000	0.09		76	193.5	OK	
1.002	ATT	0.000	0.84			51.7	SURCHARGED	
1.003	SW16	0.000	0.84			51.6	SURCHARGED	
1.004	SKWY	0.000	0.03		157	34.1	OK	
1.005	DUMMY	0.000	0.00			0.0	OK	

Appendix G

Consultation Responses

creating a better place

Environment Agency

Mr Daniel Mutepfa
Ward Cole
Byron Business Centre (Unit 16) Duke Street
Hucknall
Nottingham
NG15 7HP

Our ref: NE/2018/128309/01-L01
Your ref: 180302/KS05

Date: 20 March 2018

Dear Mr. Mutepfa,

Mixed development comprising 1565m^2 supermarket/warehouse floor space (ground Floor), 160 housing units on 7 floors, ground floor and basement car parking
41-67 High Street, West Drayton, Hillingdon, UB7 7QQ

Preliminary opinion regarding development at the application site
Thank you for the above pre-application enquiry. The response below is a preliminary opinion of the constraints which should be considered for the proposed use at this site. I understand that you may only be focusing on one aspect of the development, however I have included all the environmental constraints and opportunities for the site within our remit. If you would like further advice, such as the review of a Flood Risk Assessment (FRA), we now charge for this service. Further information about this can be found on our website.

EA opinion
The proposal as submitted does not coincide with any constraints that fall within the remit of the Environment Agency. For example, the site is within Flood Zone 1 (low probability of flooding) and not within a Source Protection Zone (sensitive groundwater areas). If a planning application was submitted for this development as proposed, we would likely have no objections.

Note to applicant
Please note that the view expressed in this letter by the Environment Agency is a response to a pre application enquiry only and does not represent our final view in relation to any future planning application made in relation to this site.
We reserve the right to change our position in relation to any such application. You should seek your own expert advice in relation to technical matters relevant to any planning application before submission.
This opinion is based on the information submitted and current planning policy and guidance.

Cont/d..

If you have any questions please contact me on 0208 474 9008 or email me at HNLSustainablePlaces@environment-agency.gov.uk, quoting the reference at the beginning of this letter.

Invitation for further advice
We have provided this initial preliminary opinion in response to the pre application enquiry. If you would like any further detailed advice we would be happy to provide this subject to a charge.

Yours sincerely,

Mr. James Passmore
Sustainable Places Planning Advisor

Direct dial: 0208 474 9008
Direct e-mail: james.passmore1@environment-agency.gov.uk

End

Mr Daniel Mutepfa
Ward Cole Consulting Engineers
Fosse House, Roman Wharf
Lincoln
LN1 1SR

Your account number
DS6045471

Developer.services@thameswater.co.uk

0800 009 3921

Mon – Fri 9am-5pm,

20/03/2018

Pre Development Enquiry

Site Address: Morrison's, 43-67 High Street, Yiewsley, West Drayton, London, UB7 7QQ, OS grid ref. 506047, 180347.

Existing site: Commercial: 2540m^2. Foul water discharging by gravity into foul water sewer in St. Stephen's Road, Existing SW run off for 1 in 1: 69.5l/s 1 in 10: 142.4l/s, 1 in 30: 178.7l/s 1 in 100: 228.3l/s discharging into soakaway.

Proposed Development: Units Houses: 160, Commercial: 1565m^2. Foul water discharging by gravity into foul water sewer in St. Stephen's Road, Unknown surface water strategy.

Dear Mr Mutepfa,

I write in relation to the Pre-Development application submitted, we have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewer capacity within the existing Thames Water sewer network.

Foul Water

From the information you have provided, we can confirm that the existing foul sewer network does have sufficient capacity to accommodate the proposed foul water discharge from the proposed development.

Surface Water

Please note that discharging surface water to the public sewer network should only be considered after all other methods of disposal have been investigated and proven to not be viable. In accordance with the Building Act 2000 Clause H3.3, positive connection to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. The disposal hierarchy being: 1st Soakaways; 2nd Watercourses; 3rd Sewers.

Only when it can be proven that soakage into the ground or a connection into the adjacent watercourse is not possible would we consider a restricted discharge into the public surface water sewer network.

We would encourage techniques such as green roofs and/or permeable paving that restricts surface water discharge from your site.

Based upon policy 5.13 of the London Plan. Typically greenfield run off rates of 5l/s/ha should be aimed for using the drainage hierarchy. The hierarchy lists the preference for surface water disposal as follows; Store Rainwater for later use > Use infiltration techniques, such as porous surfaces in non-clay areas > Attenuate rainwater in ponds or open water features for gradual release > Discharge rainwater direct to a watercourse > Discharge rainwater direct to a surface water sewer/drain > Discharge rainwater to the combined sewer. Due to the proximity of the development site to the adjacent watercourse, Thames Water would not support a connection to the public sewer network for surface water disposal.

Where disposal of surface water is other than to a public sewer, then the applicant shall ensure that approval for the discharge has been obtained from the appropriate authorities.

Please note that the Local Planning authority may comment on surface water discharge under the planning process.

Please Note

All connection requests are subject to a full Section 106 (Water Industry Act 1991) application before the Company can confirm approval to the connection itself. Please also note that capacity in the public sewerage system cannot be reserved.

Foul and surface water must not be combined. This will only be permitted when a combined public sewerage system exists. When it is proposed to connect to a combined public sewer, the site drainage should be separate and combined at the final manhole nearest the boundary. Connections are not permitted for the removal of Ground Water. The discharge of non-domestic effluent is not permitted until a valid trade effluent consent has been issued by Thames Water. If anything other than domestic sewage is discharged into the public sewers without the above agreement an offence is committed and the applicant will be liable to the penalties contained in Section 109(1) (WIA 1991). Applicants should contact Trade Effluent prior to seeking a connection approval, to discuss trade effluent consent and conditions of discharge. A Trade Effluent reference number should be obtained and included in the relevant box of the attached application form. The address for Trade Effluent is - Thames Water Utilities Limited, Waste Water Quality, Crossness Sewage Treatment Works, Belvedere Road, Abbeywood, London. SE2 9AQ. Alternatively you can telephone them on 020 8507 4321.

Any approvals are subject to conditions that may be imposed through the planning process

Note on trunk sewers: Connecting directly to Trunk sewers can be complex and dangerous, which means we often refuse permission. In this case, you will need to find an alternative sewer or method of discharge. Please contact the Sewer Connections team through our Helpdesk on 0800 009 39 21 for further information.

If Thames Water permits a connection to the trunk sewer, we will insist on carrying out the connection ourselves under Section 107 of the Water Industry Act. We would advise for you to apply as soon as possible.

Connections are not permitted for the removal of Ground Water. The discharge of non-domestic effluent is not permitted until a valid trade effluent consent has been issued by Thames Water. If anything other than domestic sewage is discharged into the public sewers without the above agreement an offence is committed and the applicant will be liable to the penalties contained in Section 109(1) (WIA 1991).

Applicants should contact Trade Effluent prior to seeking a connection approval, to discuss trade effluent consent and conditions of discharge. A Trade Effluent reference number should be obtained and included in the relevant box of the attached application form. The address for Trade Effluent is - Thames Water Utilities Limited, Waste Water Quality, Crossness Sewage Treatment Works, Belvedere Road, Abbeywood, London. SE2 9AQ. Alternatively you can telephone them on 020 8507 4321.

The views expressed by Thames Water in this letter are in response to this pre development enquiry at this time and do not represent our final views on any future planning applications made in relation to this site.

Yours sincerely,

Artur Jaroma
Developer Services

Daniel Mutepfa

From: Osi Ivowi <Osi.Ivowi@canalrivertrust.org.uk>
Sent: 01 March 2018 14:20
To: Daniel Mutepfa
Cc: Nick Pogson; Enquiries TPWSouth
Subject: RE: Proposed Mixed Development, Morrisons High Street, Yiewsley, West Drayton
Attachments: Form 1.doc; Form 2 - Form version April 2017 - National.docx; Form 6 - Surface Water Discharge Application.doc

Good day Daniel,

Thank you for your enquiry regarding the discharge of surface water from the proposed site into the Grand Union Canal.

The Canal & River Trust undertakes a staged process to review the impact of all new or modified discharges to its network, in addition to any considerations that are made by the Environment Agency via the environmental permitting process and/or the Local Planning Authority via the normal planning process.

This initial correspondence constitutes Stage 1 of our process. We will need to ensure your application is formally recorded onto our system before we can progress for licenses to undertake operations that may affect the Canal & River Trust assets. We need you to be aware of our *"Code of Practice for Works Affecting the Canal &River Trust"* and link below will gain you access to the Code which is in 3 parts;

https://canalrivertrust.org.uk/business-and-trade/undertaking-works-on-our-property-and-our-code-of-practice

To commence Stage 2 of our process requires the applicant to complete and submit Forms 1 and 6 from the Code of Practice so that consistent information about the proposal is provided by all applicants. The relevant documents are attached. Section 3 of Part 2, the Detailed Information section of the Code of Practice provides details on the surface water discharge process including guidance on how to undertake the Outline Impact Assessment. Table 3 provides a list of the required information that should be submitted at the Outline and Detailed Impact Assessment stages and should be read in conjunction with Form 6 and used as a check list for submission. The initial submission of Forms 1 and 6 must be accompanied by a cheque for the relevant Administration Fee of ***£380.00 plus VAT (£456.00)*** in accordance with the above-mentioned code.

To commence Stage 3 of our process requires that, once the documentation is received, logged and checked for completeness, a further contribution of ***£2000.00+VAT (£2400.00)*** is submitted along with a Cost Undertaking (Form 2). This is a contribution towards the cost of a technical review by the Canal & River Trust of the impacts of the proposed discharge on the flood risk and water quality of the receiving Waterway.

Depending on the outcome of this technical review (which normally takes around 4 weeks), further work may be required (by the Applicant) to enable a more detailed consideration to be completed (Stage 4) or the proposal may be accepted in principle at that point. Further guidance can be found in the Code of Practice and your attention is brought to the fact that a commercial agreement will always be sought before any discharge to our network can take place, an estimation of this can be provided by our Utilities Surveyor. The Canal & River Trust is not a drainage authority and we have no obligation to accept discharges.

In addition to Forms 1 and 6, we will also need the following from you for invoicing purposes:

- Company name or individual responsible for receiving invoices.
- Address to which invoices should be sent.
- Company Registration Number (if applicable).
- Company VAT Registration Number (if applicable).
- Your Purchase Order Number included on the Cost Undertaking (if not please state in writing that you do not issue PO number).

The above information is required so that we can issue a WBS number (your unique identifier) for use in all future communication. All submissions, other than payments, by commercial organisations should be in electronic format; hard copy presentations are not permissible unless in exceptional circumstances and then only by prior agreement.

A Discharge Consent or Environmental Permit from the Environment Agency does not confer the right to discharge to the waterways that are owned or managed by the Canal & River Trust.

Regards

Osi Ivowi
Regional Manager (South)
Infrastructure Services Team
T*: 01908 302591* **M***: 07776 472644*
E*: osi.ivowi@canalrivertrust.org.uk*
Canal & River Trust, First Floor North, Station House,
500 Elder Gate, Milton Keynes MK9 1BB

Please do not encroach upon Canal & River Trust land or apparatus until you have written consent from Canal & River Trust to do so.

From: Nick Pogson
Sent: 01 March 2018 13:12
To: daniel@wardcole.co.uk
Cc: Osi Ivowi <Osi.Ivowi@canalrivertrust.org.uk>; Claire McLean <Claire.McLean@canalrivertrust.org.uk>; Jacquie Watt <Jacquie.Watt@canalrivertrust.org.uk>; Bernadette McNicholas <Bernadette.McNicholas@canalrivertrust.org.uk>
Subject: FW: Proposed Mixed Development, Morrisons High Street, Yiewsley, West Drayton

Daniel,

Thank you for your email.

CRT have a standard process for reviewing surface water discharges and I'll ask Osi (Works Engineer) to provide you the forms by cc to this email. Should the proposal be acceptable, the commercial contract would be handled by Jacquie Watt (Utilities Surveyor) also cc'd.

Please also let us know if you may require rights to discharge ground water discharge during the construction of the basement?

I've also cc'd Bernadette (Estates Surveyor) who is the relevant contact for any property agreements such as crane over sail, hoarding licences, bridge crossings, etc.

Any queries, please let me know.

Kind regards
Nick

Online Comment

30-10-18

Application Reference:	2370/APP/2018/2793
Site Location:	MORRISON SUPERMARKET 41-67 HIGH STREET YIEWSLEY
Officer:	Richard Phillips
Date Entered:	03-09-18
Date Transferred:	04-09-18
Consultee:	Flood and Water Management
Address of Consultee:	Planning Specialists Team
Reference:	CRS34353

Click to view comments and associated attachments/documents

Comments:

See preapplication comments regarding Blue Ribbon Network and layout and arrangement of the building and landscaping along a strategic water way which do not yet appear to have been addressed.

A Flood Risk Assessment has been submitted with the application produced by Ward and Cole dated July 2018.

The Groundwater assessments provided within the application are insufficient to assess the level of risk from a multi storey basement on the surrounding area. A full and detailed ground investigation is needed and the basement should be reduced in size so that it is not the full width of the site. It is known from other nearby developments that have occurred in the last few years that ground water is high and need to be managed.

It is noted that Blue Roofs are proposed however statement that an assumed 5l/s discharge rate would be appropriate is not acceptable as flow control devices have evolved significantly.

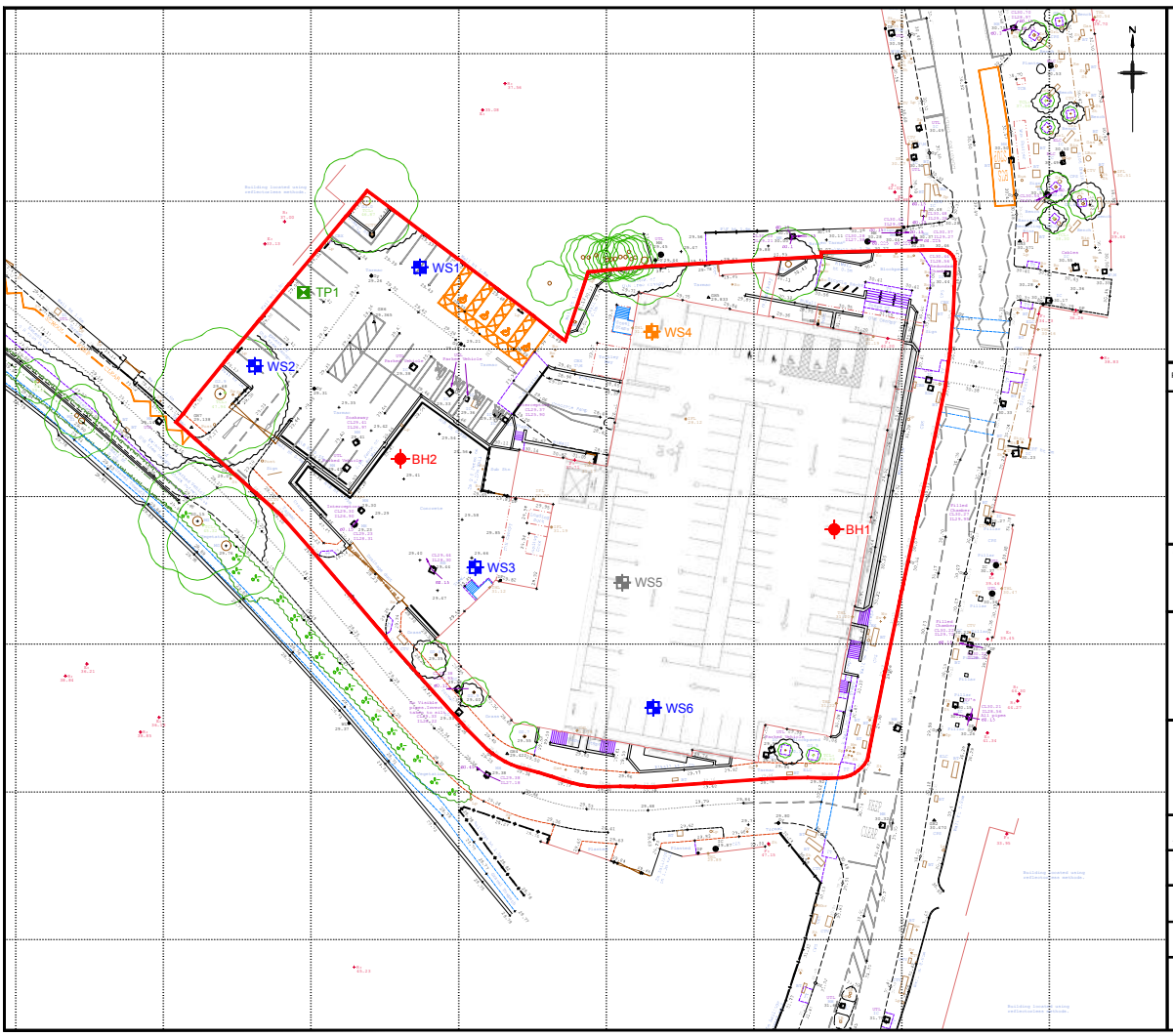
The assumed discharge of water to a soakaway may not be feasible due to the high levels of groundwater and this must be demonstrated is feasible or it can alter significantly what can be implemented on site.

it is noted and supported that the site should discharge firstly to the nearby Canal subject to their permissions and requirements.

There is no information on the water reuse or recycling to be implemented on the site.

Appendix H

Soakaway Test Results



LEGEND

- Site Boundary
- Deep Borehole Location with Monitoring Well
- Shallow Borehole Location with Soakage Test
- Shallow Borehole Location with Gas Monitoring Well
- Shallow Borehole Location Refusal
- Trial Pit Soakage Test Location

Rev.	Date	Amendment	Drawn	Chkd.	Appd.

RSK
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
United Kingdom
Tel: +44 (0) 1442 437500
Fax: +44 (0) 1442 437550
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client
HARBOURSIDE INVESTMENTS LTD

Project Title
MORRISONS, HIGH STREET, YIEWSLEY

Drawing Title
EXPLORATORY HOLE LOCATION PLAN

Drawn	Date	Checked	Date	Approved	Date
ASC	12.09.18	DA	12.09.18	DA	12.09.18

Scale	Orig Size	Dimensions
1:500	A3	m

Project No.	Drawing File
1920199 - R01 (00)	1920199 (R01-00) Fig 2.dwg

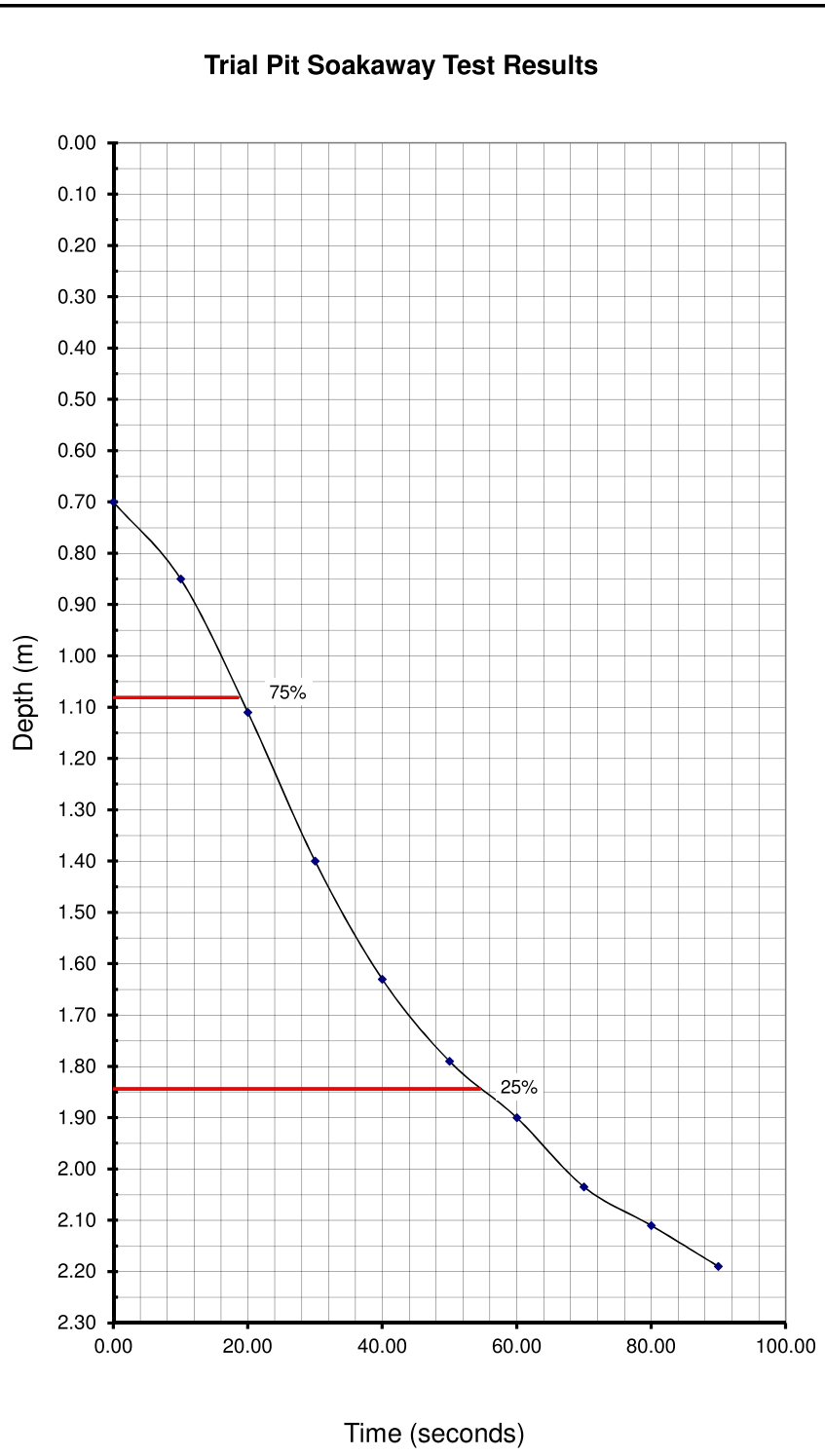
Drawing No.	Rev.
FIGURE 2	P1

Scale 1 : 500
0 5 10 15 20 25m

TRIAL PIT SOAKAWAY TEST TO BRE 365 (BACKFILLED PIT)

Location	TP1	**Test No**	Test 1
Client	Deacon and Jones	**Length of Trial Pit (m)**	1.20
Job Number	1920199	**Width of Trial Pit (m)**	0.35
Date	24-Sep-18	**Water level at start (mbgl)**	0.70
Operator	George Andrew	**Water level prior to testing (mbgl)**	2.23

Time (Secs)	Water level (mbgl)
0.00	0.70
10.00	0.85
20.00	1.11
30.00	1.40
40.00	1.63
50.00	1.79
60.00	1.90
70.00	2.04
80.00	2.11
90.00	2.19



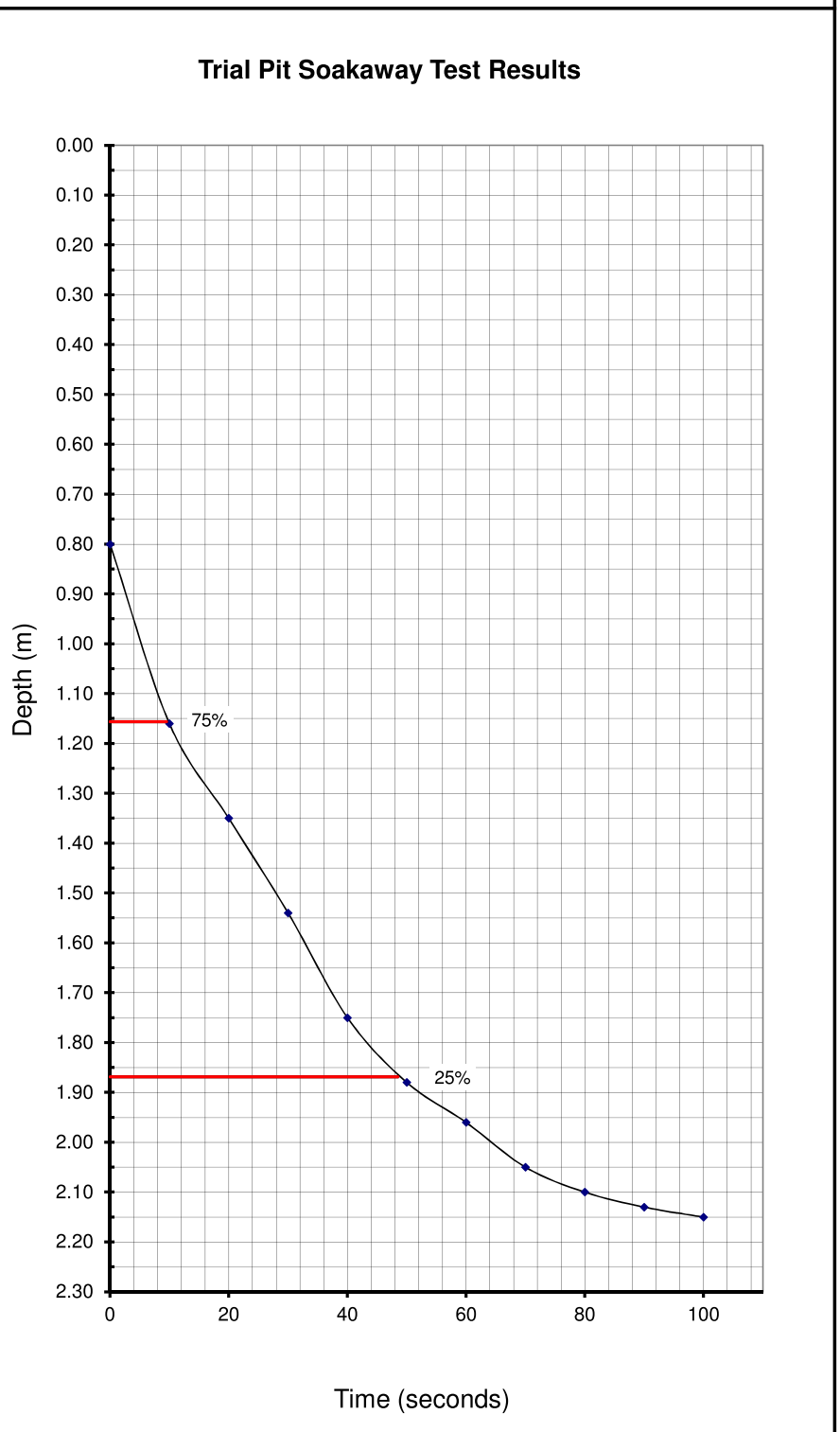
Results

Vp 75-25 (m3)	0.10
ap 50 (m2)	2.78
tp 75-25 (s)	36.00
Infiltration Rate (m/s)	9.91E-04

TRIAL PIT SOAKAWAY TEST TO BRE 365 (BACKFILLED PIT)

Location	TP1	**Test No**	Test 1
Client	Deacon and Jones	**Length of Trial Pit (m)**	1.20
Job Number	1920199	**Width of Trial Pit (m)**	0.35
Date	24-Sep-18	**Water level at start (mbgl)**	0.80
Operator	George Andrew	**Water level prior to testing (mbgl)**	2.23

Time (Secs)	Water level (mbgl)
0	0.80
10	1.16
20	1.35
30	1.54
40	1.75
50	1.88
60	1.96
70	2.05
80	2.10
90	2.13
100	2.15



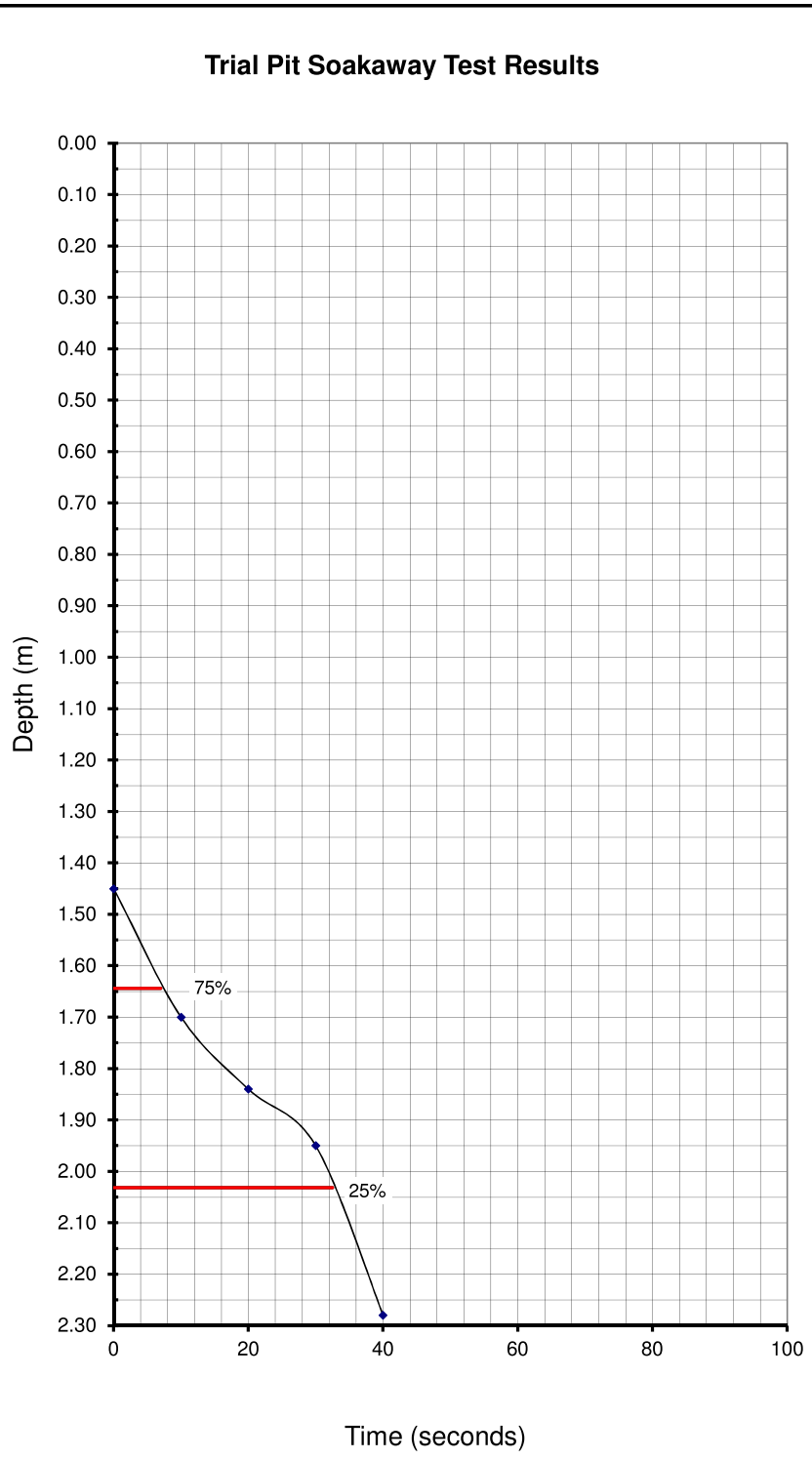
Results

Vp 75-25 (m3)	0.09
ap 50 (m2)	2.63
tp 75-25 (s)	39.00
Infiltration Rate (m/s)	9.05E-04

TRIAL PIT SOAKAWAY TEST TO BRE 365 (BACKFILLED PIT)

Location	TP1	**Test No**	Test 1
Client	Deacon and Jones	**Length of Trial Pit (m)**	1.20
Job Number	1920199	**Width of Trial Pit (m)**	0.35
Date	24-Sep-18	**Water level at start (mbgl)**	1.45
Operator	George Andrew	**Water level prior to testing (mbgl)**	2.23

Time (Secs)	Water level (mbgl)
0	1.45
10	1.70
20	1.84
30	1.95
40	2.28



Results

Vp 75-25 (m3)	0.05
ap 50 (m2)	1.62
tp 75-25 (s)	25.50
Infiltration Rate (m/s)	1.22E-03

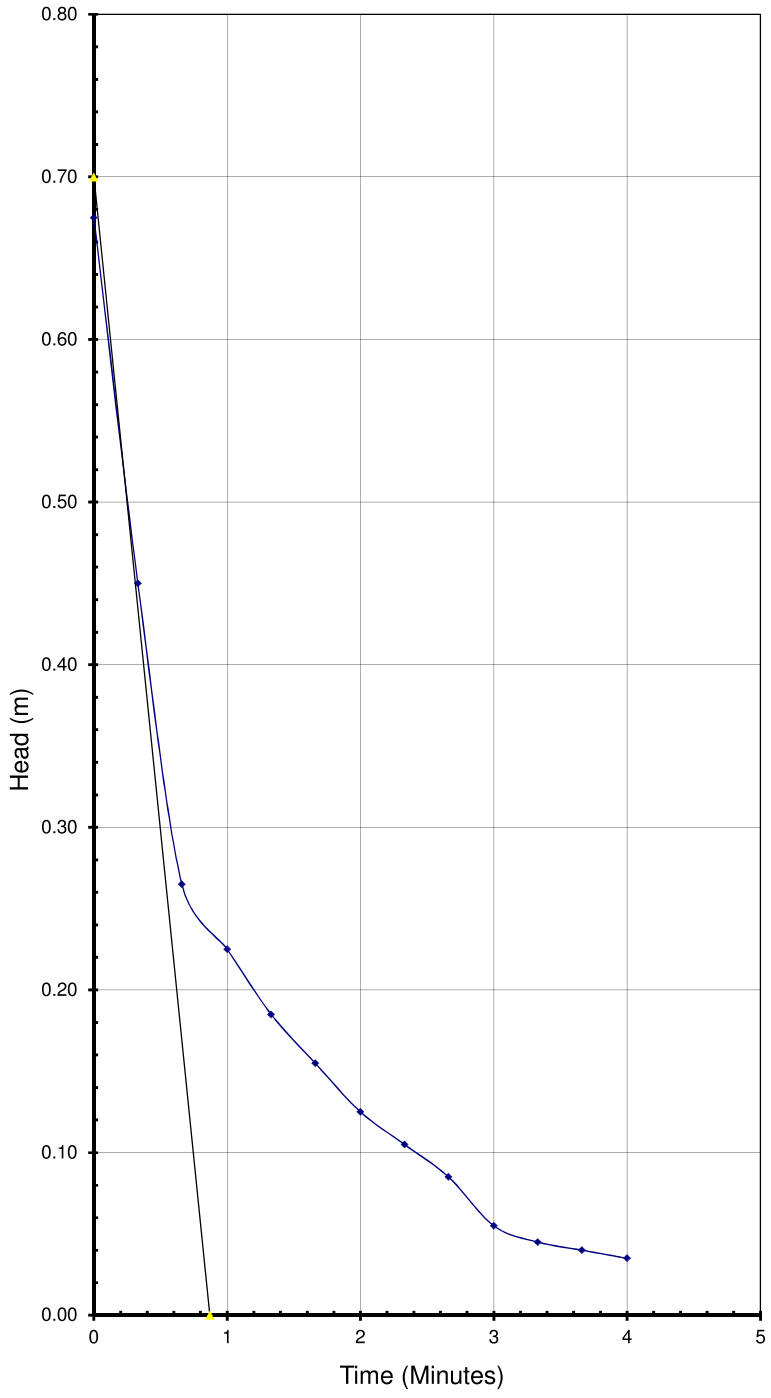
S Borehole Soakaway - Falling Head Test

Based on Roads in Hertfordshire A Design Guide

Location	Yiewsley	**Diameter of casing (m)**	0.033
Client	Deacon and Jones	**Diameter of test zone (m)**	0.1
Soakaway	WS4	**Casing depth (m)**	0.7
Date	02-Oct-18	**Depth to base of hole (m)**	1.45
Operator	George Andrew	**Job Number**	1920199

Time (Minutes)	Water level (mbgl)	Head (m)
0.00	0.40	0.68
0.33	0.49	0.45
0.66	0.81	0.27
1.00	0.85	0.23
1.33	0.89	0.19
1.66	0.92	0.16
2.00	0.95	0.13
2.33	0.97	0.11
2.66	0.99	0.09
3.00	1.02	0.05
3.33	1.03	0.04
3.66	1.04	0.04
4.00	1.04	0.03

Falling Head Test Results



Results

th (mins)	0.87
Hp (m)	0.70
Infiltration Rate (l/m^2/min)	2.92
Infiltration Rate (m/s)	4.87E-05

Comments:

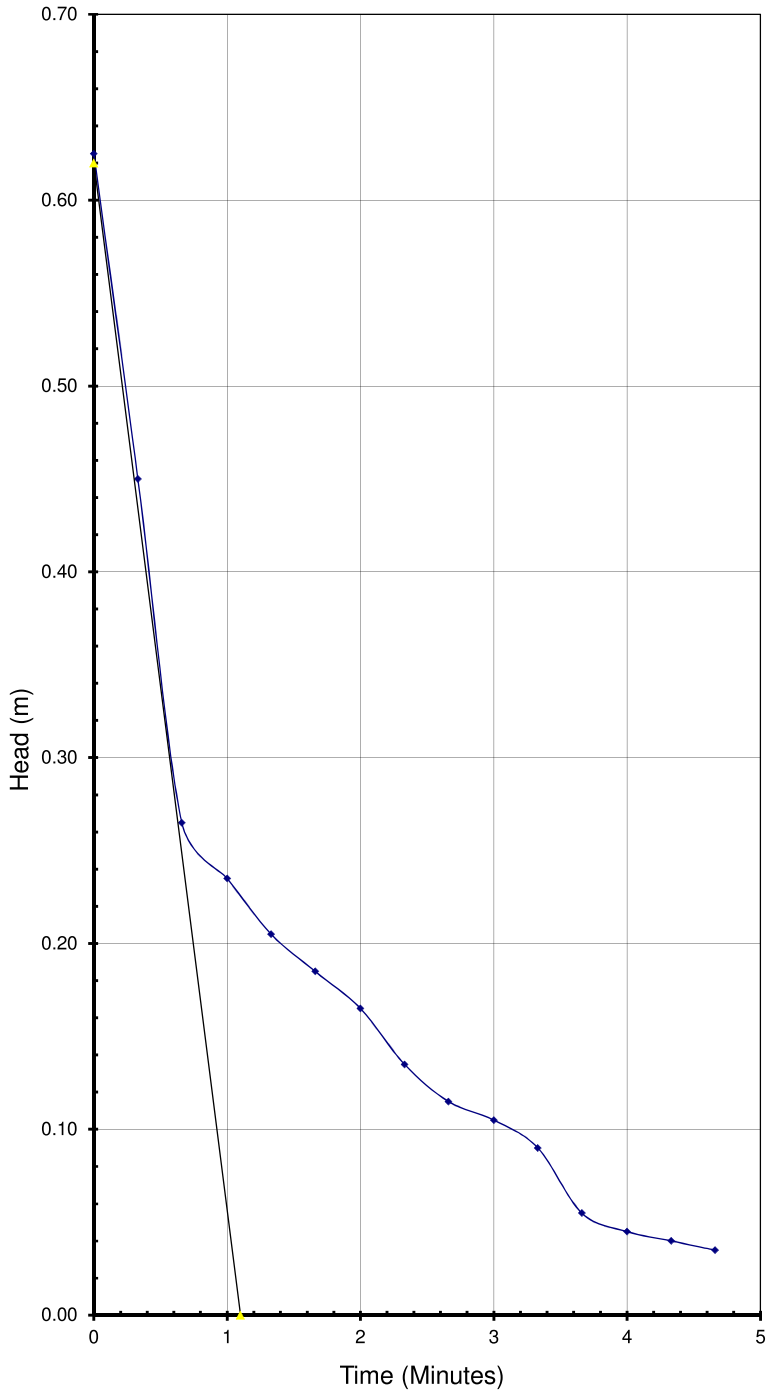
S Borehole Soakaway - Falling Head Test

Based on Roads in Hertfordshire A Design Guide

Location	Yiewsley	**Diameter of casing (m)**	0.033
Client	Deacon and Jones	**Diameter of test zone (m)**	0.1
Soakaway	WS4	**Casing depth (m)**	0.7
Date	02-Oct-18	**Depth to base of hole (m)**	1.45
Operator	George Andrew	**Job Number**	1920199

Time (Minutes)	Water level (mbgl)	Head (m)
0.00	0.45	0.63
0.33	0.56	0.45
0.66	0.81	0.27
1.00	0.84	0.24
1.33	0.87	0.21
1.66	0.89	0.19
2.00	0.91	0.17
2.33	0.94	0.14
2.66	0.96	0.12
3.00	0.97	0.11
3.33	0.99	0.09
3.66	1.02	0.05
4.00	1.03	0.04
4.33	1.04	0.04
4.66	1.04	0.03

Falling Head Test Results



Results

th (mins)	1.10
Hp (m)	0.62
Infiltration Rate (l/m^2/min)	2.05
Infiltration Rate (m/s)	3.41E-05

Comments:

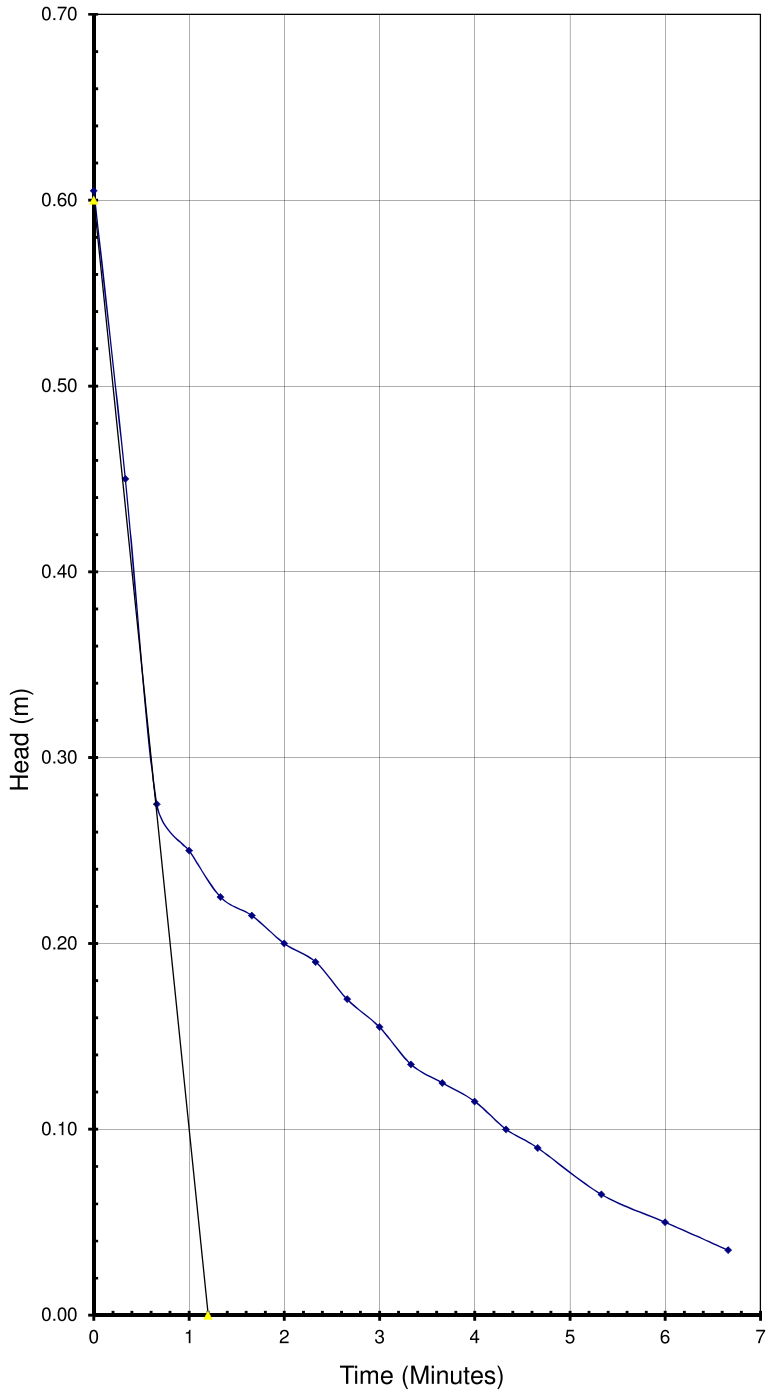
S Borehole Soakaway - Falling Head Test

Based on Roads in Hertfordshire A Design Guide

Location	Yiewsley	**Diameter of casing (m)**	0.033
Client	Deacon and Jones	**Diameter of test zone (m)**	0.1
Soakaway	WS4	**Casing depth (m)**	0.7
Date	02-Oct-18	**Depth to base of hole (m)**	1.45
Operator	George Andrew	**Job Number**	1920199

Time (Minutes)	Water level (mbgl)	Head (m)
0.00	0.47	0.61
0.33	0.75	0.45
0.66	0.80	0.28
1.00	0.83	0.25
1.33	0.85	0.23
1.66	0.86	0.22
2.00	0.88	0.20
2.33	0.89	0.19
2.66	0.91	0.17
3.00	0.92	0.16
3.33	0.94	0.14
3.66	0.95	0.13
4.00	0.96	0.12
4.33	0.98	0.10
4.66	0.99	0.09
5.33	1.01	0.06
6.00	1.03	0.05
6.66	1.04	0.03

Falling Head Test Results



Results

th (mins)	1.20
Hp (m)	0.60
Infiltration Rate (l/m^2/min)	1.82
Infiltration Rate (m/s)	3.03E-05

Comments: