Proposed Residential Development, Former Marchon Works, Whitehaven

Flood Risk & Drainage Assessment

784-B030491

August 2021

Prepared on Behalf of Tetra Tech Limited.

Registered in England number: 01959704

TETRA TECH

Document Control

Document:	Flood Risk & Drainage Assessment
Project:	Proposed Residential Development, Former Marchon Site, Whitehaven
Client:	Persimmon Homes Lancashire and NPL Ltd
Job Number:	784-B030491
File Origin:	\\leeds2\Data\Projects\B029000-B035000\B030491\60. Project Output\61. Work In Progress\Civil & Infrastructure\B030491 - Marchon, Whitehaven - FRDA Rev 1.docx

Revision:	First Issue	**Status:**	Preliminary
Date:	11/08/2021		
Prepared by: F Aguilar	**Checked by:** C Davidson	**Approved by:** C Davidson	
Description of revision:			

Revision:		**Status:**	**For Planning**
Date:			
Prepared by:	**Checked by:**	**Approved By:**	
Description of revision:			

Revision:		**Status:**	
Date:			
Prepared by:	**Checked by:**	**Approved By:**	
Description of revision:			

Tetra Tech Leeds, 3 Sovereign Square, Sovereign Street, Leeds, United Kingdom, LS1 4ER
Tetra Tech Limited. Registered in England number: 01959704
Registered Office: 3 Sovereign Square, Sovereign Street, Leeds, United Kingdom, LS1 4ER

Contents

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1.0 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

Tetra Tech Ltd have been appointed by Persimmon Homes Lancashire and NPL Ltd to prepare a Flood Risk and Drainage Assessment (FRDA) in support of a hybrid planning application for circa 540 units, commercial space and public open space.

Appendix A includes the proposed site layout.

1.2 PROPOSED DEVELOPMENT

The proposed development involves circa 540 residential units. The proposed hybrid application seeks detailed consent for 140 dwellings, and outline consent for circa 400 units and commercial space.

1.3 REQUIREMENT FOR A FLOOD RISK AND DRAINAGE ASSESSMENT

The application site is located in Flood Zone 1, (i.e. land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1% Annual Exceedance Probability (AEP)) in any one year). However, since the site has an area in excess of 1 ha, then in accordance with the National Planning Policy Framework (NPPF) and the Planning Practice Guide (Flood Risk & Coastal Change) (PPG), a Flood Risk Assessment is required to support the planning application.

The Parliamentary Written Statement[1] require applications for all major developments to be supported by a surface water strategy and where possible and reasonable, provide sustainable drainage systems (SuDS) in new developments, in order to protect people and property from flood risk and ensure that the flood risk to areas elsewhere is not increased.

1.4 SCOPE OF THE REPORT

The FRDA will be undertaken in accordance with the NPPF, Planning Practice Guidance (PPG) (Flood Risk and Coastal Change), Environment Agency guidance and Local Standards and Guidance for Surface Water Drainage in Cumbria. The FRDA will consider all potential sources of flood risk including Main Rivers, Ordinary Watercourses, overland flow routes, groundwater, sewers, reservoirs and canals. The FRDA will identify a surface water drainage strategy for the site such that flood risk to the site and adjoining areas is not exacerbated, as required by the NPPF, and there will be a particular focus on the provision of SuDS on the site.

[1] Department for Communities and Local Government (December 2014), *Sustainable drainage systems: Written statement - HCWS161*

The drainage assessment will also identify a foul drainage strategy. A review will be undertaken of the existing foul water drainage systems in the locality, to identify potential discharge points, and confirm the viability of any proposed connections to public sewerage infrastructure.

1.5 LIMITATIONS OF THIS REPORT

This report has been prepared by Tetra Tech Ltd on behalf of Persimmon Homes Lancashire and NPL Ltd in connection with the scope of the report as described above and takes into account the particular instructions and requirements set out in our fee proposal and the acceptance. It is not intended for and should not be relied on by any third party and no responsibility is undertaken to any third party.

Tetra Tech Ltd accepts no duty or responsibility (including in negligence) to any party other than Persimmon Homes Lancashire and NPL Ltd and disclaims all liability of any nature whatsoever to any such party in respect of this report.

2.0 SITE DESCRIPTION

2.1 EXISTING SITE

The site, as shown in Figure 1, is located within the eastern part of Whitehaven, on land previously occupied by the Marchon chemical works site. The site's postcode is CA28 9PE and the site's grid reference is NX 96539 16487.

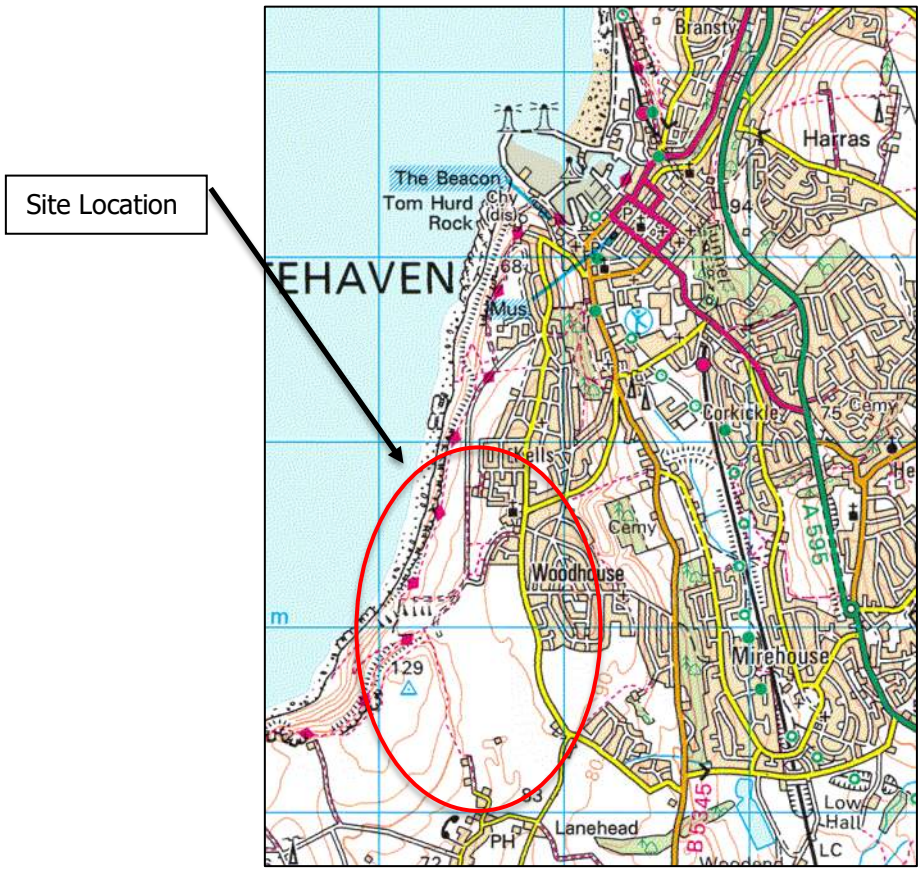

Figure 1 – Site Location[2]

The site covers an area of 28.34ha and comprises agricultural land on its northern part and some landscaping and abandoned roads on the former works site. It is currently defined as greenfield land (in terms of flood risk and planning policy). It is bounded to the north and east by residential developments, by the former works site to the south, and by landscaping and agricultural land to the west. Figure 2 shows the site boundary.

[2] © Crown copyright and database rights [2021] Ordnance Survey 0100031673

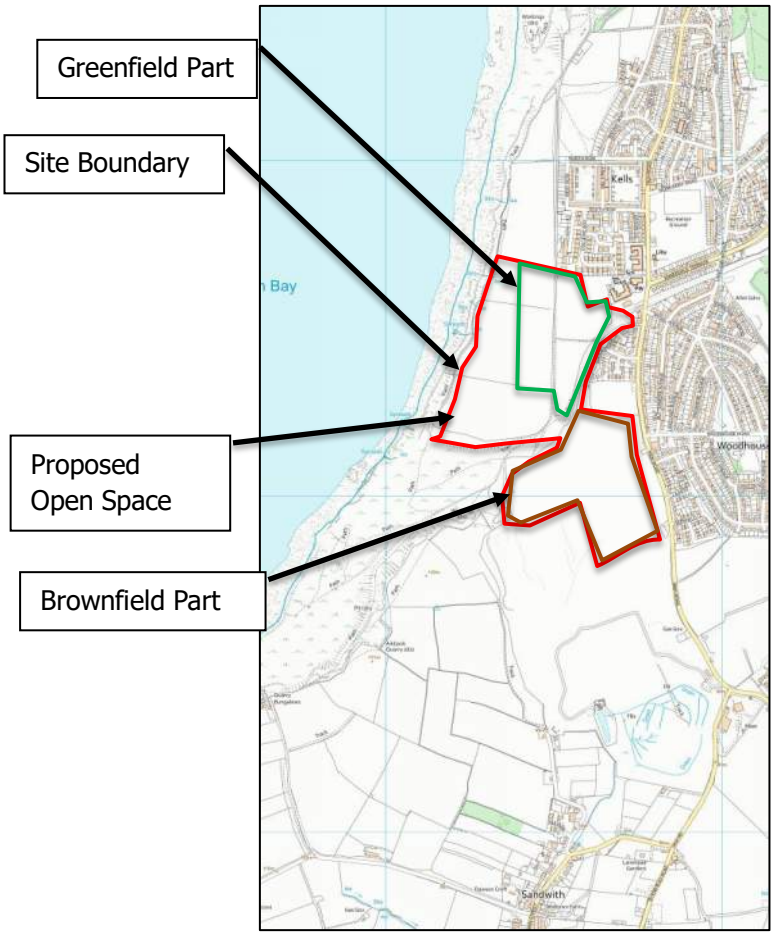

Figure 2 – Site Boundary Plan[3]

A review of the topographical survey indicates that the site generally falls from east to west. The highest level is approximately 97.3m AOD in the south eastern part of the site, and the lowest level is approximately 49.5m AOD in the most western part of the site.

The topographical survey can be found in Appendix B.

2.2 EXISTING DRAINAGE

2.2.1 Watercourses

There are no watercourses within or near the site.

[3] © Crown copyright and database rights [2021] Ordnance Survey 0100031673

2.2.2 Drains and Sewers

The United Utilities (UU) records show the presence of the following public sewers:

- 225mm foul sewers flowing north through the central part of the site.
- 375mm surface water sewer in Hartfield Close.
- 150mm foul water sewer in Hartfield Close.
- 150mm foul sewer flowing west through the site from the Waters Edge Close development site.
- Surface water sewer and attenuation tank flowing west through the northern part of the site serving the Waters Edge Close development site.

In addition to the UU sewers, there are two private surface water drains to the eastern part of the site, that discharges into the sea and served the former chemical works site. The existing drains and outfalls were built to serve the former factory. The northern pipe comprises a 600mm diameter steel pipe, with the southern pipe being a 450mm diameter pipe.

Previous surveys by others show that there is a 150mm diameter plastic pipe flowing through the 600mm steel pipe, discharging leachate from the old mine. It is anticipated this discharge will cease once the site is remediated and developed, however this is to be confirmed by the specialist consultant.

Existing Outfalls

Tetra Tech visited site to determine the existing condition of the existing outfalls. The northern outfall discharges into the sea via a submerged outfall. There is a shaft chamber in the rock that enables the pipe to drop to beach level. The second outfall is located at high level, with runoff presumably cascading down the cliff onto the beach.

The sewer records by UU are included in Appendix C. Appendix D includes the survey of the existing private drains by others. Appendix E includes relevant photographs from Tetra Tech's visit.

2.3 GROUND CONDITIONS

2.3.1 Geology

Borehole records available in the BGS website for a location in close proximity to the site indicate that the superficial deposits comprise clays, then underlain by sandstone.

It is anticipated that there is made ground within the former chemical works site. The made ground is likely to include contaminants which will be remediated prior to development.

2.3.2 Hydrogeology

The site is not situated within a groundwater Source Protection Zone (SPZ) or a drinking water safeguard zone (groundwater).

3.0 FLOOD RISK

3.1 FLUVIAL AND COASTAL FLOOD RISK

Fluvial flood risk is the risk arising from Main Rivers and Ordinary Watercourses. Coastal flood risk is the risk of flooding from the sea (tidal surges, waves, sea level raise). A floodplain is the area that would naturally be affected by flooding if a river rises above its banks. In England, floodplains of Main Rivers are divided into flood zones for planning purposes. These show the extent of the natural floodplain area at risk of inundation if there were no flood defences or certain other manmade structures and channel improvements. They are divided as follows:

- Flood Zone 3 shows the land having a 1 in 100 or greater annual probability of river flooding; or a 1 in 200 or greater annual probability of flooding from the sea.
- Flood Zone 2 shows the additional extent of an extreme flood from rivers. It is land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding.
- Flood Zone 1 is the area of land where flooding from rivers and the sea is very unlikely.

The Environment Agency's Flood Map for Planning indicates that the site is located entirely within Flood Zone 1 and therefore at very low risk of fluvial flooding from Main Rivers. This is shown in Figure 3 below. Whilst the site is near the sea, land within the site is raised to significant height above sea level with cliffs running along the shoreline, sea level rise would not impact on the site. There are no proposals to develop land adjacent the cliffs where coastal erosion could occur.

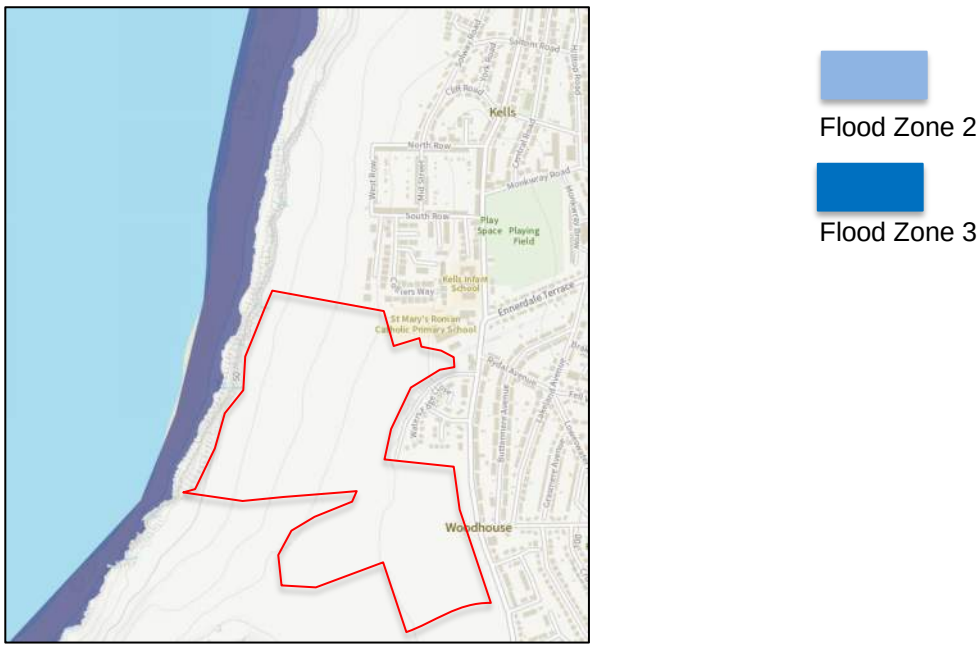

Figure 3 - Environment Agency Flood Map for Planning (June 2021)

3.2 SURFACE WATER AND OVERLAND FLOWS

Surface water flooding occurs where high rainfall events exceed the drainage capacity in an area (i.e. sewer system and/or watercourse), leading to flooding.

The Environment Agency's Flood Risk from Surface Water Map shown as Figure 4 indicates that the site is at very low risk of flooding from surface water. The map shows ponding within a few areas in the site, however these are likely associated with low lying areas that will be removed when the site is developed.

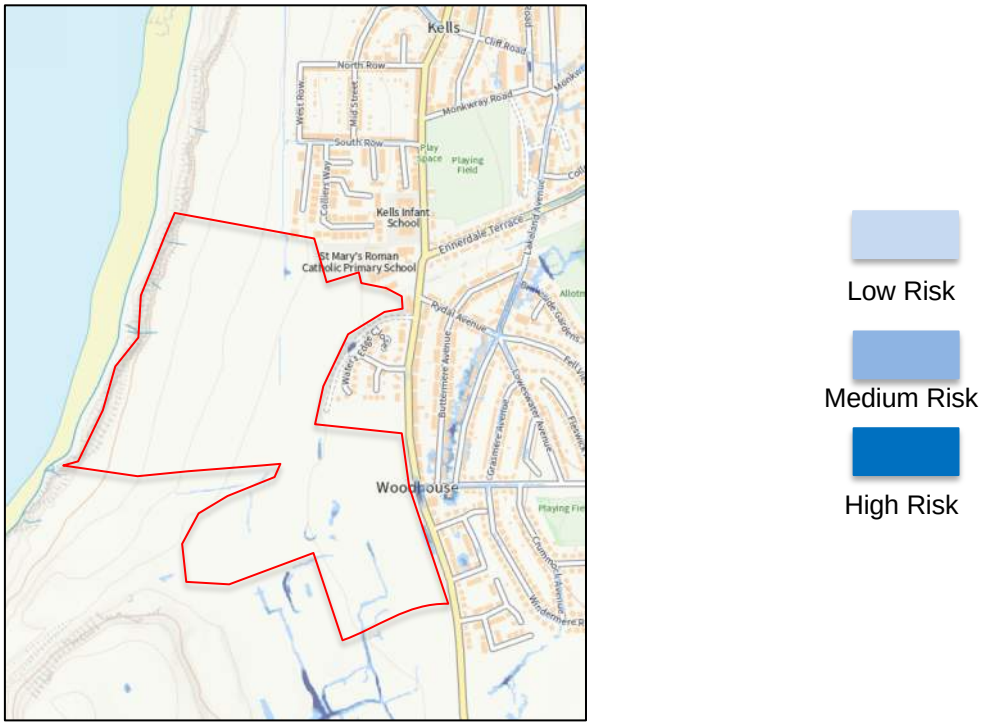

Figure 4 – Environment Agency Surface Water Flood Risk Map (June 2021)

3.3 GROUNDWATER FLOODING

Groundwater flooding occurs when water levels in the ground rise above the land surface. This type of flooding is most likely to occur in areas above an aquifer.

The Copeland Borough Council Strategic Flood Risk Assessment (SFRA) states that some areas in Whitehaven have experienced groundwater flooding, however these are not near the site. Due to the Clay based ground conditions nearer the surface, it is considered that the site is at low risk of flooding from groundwater.

3.4 SEWER FLOODING

Sewer flooding occurs when intense rainfall overloads the sewer system capacity and/or when sewers cannot discharge properly to watercourses due to high water levels. Sewer flooding can also be caused when problems such as blockages, collapses or equipment failure occur in the sewerage system.

There are a number of sewers within the site, however these are recent and have been designed in accordance with modern standards, and are subject to regular maintenance by UU. Therefore, it is considered that the risk of flooding from sewers to the site is very low.

3.5 RESERVOIR FLOODING

Although the probability of a catastrophic dam failure is considered to be extremely low, the consequence of such an event would be severe. The Environment Agency's Flood Risk from Reservoirs Map indicates that the site is not at risk of flooding as a result of reservoir failure.

3.6 SUMMARY OF FLOOD RISK

Overall, the flood risk to the site from all sources is low.

It will be essential to ensure that no increase in flood risk occurs downstream of the site or on adjacent areas as a result of this development. The proposed mitigation measures are discussed in more detail within Section 4.

4.0 DEVELOPMENT PROPOSALS

4.1 PROPOSED DEVELOPMENT

A hybrid planning application is being submitted to Copeland BC for the development of circa 540 dwellings within the site. The detailed part of the hybrid application covers 140 dwellings, with the remaining 400 dwellings and commercial space seeking outline approval.

Appendix A includes the proposed site layout.

4.2 DEVELOPMENT AND FLOOD RISK

4.2.1 Flood Risk to the Development

As assessed in Section 3, the site is considered to be at low risk of flooding from all sources.

4.2.2 Flood Risk Arising from the Development

As an existing greenfield site in flood risk terms, the proposed development will increase the impermeable area of the site. This will generate additional surface water runoff which, if uncontrolled, could increase the risk of surface water flooding elsewhere. It is therefore necessary to manage surface water runoff on site to avoid increasing the flood risk elsewhere.

4.3 SURFACE WATER MANAGEMENT

4.3.1 Drainage Hierarchy

In order to ensure that surface water runoff from the site does not increase the risk of flooding, the management of runoff should be considered via a sequential approach, in line with Building Regulations[4]. The following options for the disposal of runoff have been considered, in order of preference:

- Discharge to an adequate soakaway or some other adequate infiltration system (i.e. to ground);
- Discharge to a watercourse; and
- Discharge to a sewer (surface water before combined).

Discharge to Ground

Given the site's underlying geology and expected presence of contaminants within the ground, infiltration is not considered to be feasible.

[4] HM Government (2010), *The Building Regulations 2010, Approved Document H (Part H3)*

Discharge to Watercourse

This s not considered a practical alternative as there are no watercourses near the site.

Discharge to Sewer

There is an existing surface water sewer within the site that used to serve the former factory and now discharges to the sea. It is anticipated that a new connection to this drain will be feasible and it is proposed to discharge surface water runoff from this site using the existing outfall.

4.3.2 Pre and Post-Development Areas

The existing site is entirely greenfield in flood risk terms, therefore 100% permeable. The post-development areas have been calculated using the proposed site layout, found in Appendix A.

The pre and post-development areas are shown in Table 1 below.

Table 1 – Pre and Post-Development Areas (ha)

Status	Impermeable Area	Permeable Area
Pre-development	0	28.34
Post-development	10.89	17.45

4.3.3 Surface Water Discharge Rates

The site is greenfield in flood risk terms. Table 2 below shows the greenfield runoff rates for the site, that have been estimated using the UK SuDS online tool.

It is proposed to discharge surface water runoff from the proposed development site to the sea. It is not therefore necessary to restrict discharge rates. The anticipated discharge rates would only be restricted by the capacity of the existing pipes and these will be confirmed at the detailed design stage.

Table 2 – Greenfield Runoff Rates (l/s)

Qbar (l/s/ha)	1 in 1 year	1 in 30 year	1 in 100 year	1 in 100 year + 40% CC
7.8	193	377.1	461.4	N/A

Appendix F includes the greenfield runoff calculations.

4.3.4 Proposed Surface Water Drainage

As noted above, it is proposed to discharge surface water from the site to the sea via the existing outfalls. There are ongoing discussions with UU to determine the future adoption of the existing structures, however at this stage it is assumed that at least one of the existing outfalls can be retained. Given that a hybrid planning application is being submitted, covering different parts of the site, the strategies for each phase are explained below.

a) Greenfield Site

The detailed part of the application seeks permission for 139 dwellings and associated infrastructure at the northern part of the site. Levels in this part of the site fall to the west, however a gravity connection to the existing pipe is considered to be feasible. A main carrier drain will be provided in the proposed access road alongside the eastern edge of the proposed residential development. This pipe will then connect to the existing network at one of the existing manholes.

b) Brownfield Site

The site falls from south east to north west. A series of main carrier drains will be provided in order to convey flows towards the existing drain to be retained.

The proposed drainage systems for both parts of the site are to be designed in line with the requirements of Appendix C of the Sewerage Sector Guidance (SSG).

An assessment of the applicability of the different SuDS features is included in Section 5 below. Appendix G includes a preliminary drainage layout.

4.3.5 Required Attenuation

Given the nature of the contours within the site, it is anticipated that significant exceedance flows would not be able to be retained within external areas, and therefore in order to minimise any flooding of the site, in accordance with national and local policy, it is proposed that the new drainage network will be designed so that there is no flooding of surface water runoff on site up to and including the 1 in 30 year event in line with the SSG's requirements. Exceedance flows above this event can be routed towards the beach through the roads and access roads.

It is anticipated that some attenuation may be required given the impermeable area to be drained through the existing outfalls. The attenuation could be provided within oversized pipes and manholes, this is to be determined at the detailed design stage.

4.4 RESIDUAL FLOOD RISK AND EXCEEDANCE ROUTES

The primary residual risk would be associated with a failure of the surface water drainage system. The risk of flooding would also increase if the drainage system is not maintained on a regular, ongoing basis.

In addition, there remains a residual risk of a storm event that exceeds the capacity of the drainage system, as events beyond the 1 in 100 year storm event plus 40% allowance for climate change storm will not be catered for explicitly.

The existing fall will be maintained, with exceedance flow routes following the contours of the land to the west.

5.0 SUSTAINABLE DRAINAGE

5.1 REVIEW OF SUDS OPTIONS

In order to comply with the national guidelines and policies set by the NPPF and the Non-Statutory Technical Standards for Sustainable Drainage, as well as those of HCC, the design of the surface water drainage system should seek to maximise the use of SuDS techniques. This section reviews the suitability of the different SuDS features available for the proposed development site.

5.2 THE SUDS MANAGEMENT TRAIN

The main purpose of SuDS is to manage the surface water runoff generated by a development within the development site, attenuating additional flows generated by the introduction of impermeable areas whilst providing water quality treatment to the runoff and amenity and landscape benefits to the community. SuDS features can be categorised as follows:

- Source Control: manage runoff at its source
    - Water butts, green/brown roofs, permeable pavements, rainwater harvesting systems, bio-retention systems.
- Site Control: manage runoff generated by a wider area
    - Swales, ponds, infiltration devices, filter strip, French drains.
- Regional Control: manage runoff generated by several sites
    - Basins, ponds and wetlands

The following is an illustration of the SuDS principles and how they may be applied to a development via a SuDS Management Train.

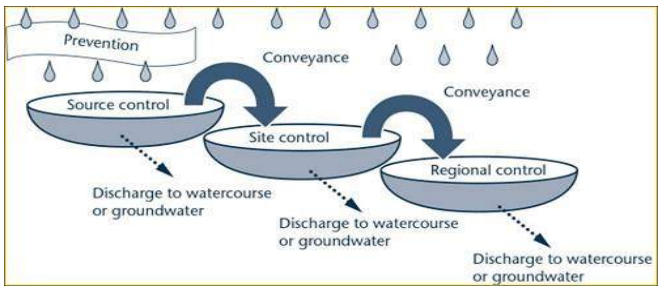

Figure 4 – SuDS Management Train

Table 3 below summarises the suitability of the different SuDS elements for the proposed development.

Table 3 – Review of SuDS elements for the proposed development

Type of SUDS	Description	Applicability to the Site
Source Control		
Water butts	Small storage tanks on each individual housing plot.	This would be appropriate on individual dwellings.
Rainwater harvesting	Recycling of water from roofs and impermeable areas.	This would be appropriate on the proposed commercial units.
Green roofs	Vegetated roofs that reduce runoff and remove pollutants.	Green roofs are unlikely to be appropriate for individual dwellings.
Pervious surfaces	Pavements that allow surface water to flow into underlying layers of the pavement and either infiltrate or drain to an on-site drainage network.	This may be appropriate within the proposed private drives.
Rain Gardens & Bioretention Systems	Shallow depressions with free draining soil and planted with vegetation that withstands occasional flooding.	This could be incorporated into landscaped areas.
Site & Regional Control		
Filter Drains	Linear drains or trenches filled with granular material that allow infiltration to the surrounding ground.	This is appropriate to serve the road alongside the western edge of the greenfield site.
Swales	Vegetated channels to convey store and treat runoff.	These could be provided within areas of public open space.
Detention basins & ponds	Shallow areas of open space that temporarily hold water and collect silt.	The existing contours limit the practicality of detention basins within this site.
Infiltration basins	Shallow depression that stores runoff before it infiltrates into the subsoil.	These are unlikely to be appropriate within this site.
Infiltration devices	Generally granular trenches or soakaways that store water and allow infiltration to the surrounding ground.	

Table 3 identifies that there are several SUDS components that could be used within the development site, subject to detailed design. Above ground attenuation is preferred to below ground attenuation, for

reasons including biodiversity, amenity benefits and maintainability. There is scope to incorporate above ground attenuation through the use of filter drains and infiltration swales to drain roads and parking areas.

All SuDS are to be designed in accordance with the The SuDS Manual and the relevant British Standards.

5.3 WATER QUALITY

In accordance with Table 26.2 of The SuDS Manual CIRIA C753, the pollution hazard level is considered to be 'Low' for the proposed land use. Therefore, the requirements for discharge to surface waters state that the 'Simple index approach' should be used. Step 1 of the simple index approach is to identify the pollution hazard indices for the proposed land use as set out in Table 4 below, which is an extract of Table 26.2.

Step 1 of the simple index approach is to identify the pollution hazard indices for the proposed land use. Table 26.2 of The SuDS Manual states the following:

Table 4 - Pollution Hazard Indices

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Individual property driveways, low traffic roads	Low	0.5	0.4	0.4
most roads	Medium	0.7	0.6	0.7

Table 26.4 of The SuDS Manual states the various mitigation indices for different SuDS elements. These are shown below in Table 5.

Table 5 – SuDS Mitigation Indices (Discharge to Surface Water)

SuDS Feature	TSS	Metals	Hydrocarbons
Filter drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8

Provided that the mitigation indices of the treatment techniques are greater than or equal to the hazard indices for the proposed development then there should be no reduction in the overall water quality within the receiving system. A combination of swales or a treatment device would provide sufficient treatment to the runoff before being discharged to the sea.

If multiple SuDS features are used in combination, the total SuDS mitigation index for each pollutant is a combination of the mitigation indices of each element. The first SuDS feature of the train will always

be more effective than the subsequent features, given that the concentration of pollutants in the runoff entering these is lower.

It should be noted that alternative SuDS options may also be considered during the detailed design stage which achieves or exceeds the water quality objective. Provided that the mitigation indices of the treatment techniques are greater than or equal to the hazard indices for the proposed development then there should be no reduction in the overall water quality within the receiving system.

5.4 DRAINAGE AND SUDS MAINTENANCE

SuDS require regular maintenance to keep them working effectively.

The proposed drainage system is to be offered to UU for adoption, and there are ongoing discussions with UU to determine their requirements to adopt the existing outfall structures. Table 6 below summarises the anticipated maintenance requirements.

Table 6 – Maintenance tasks and frequency required

SuDS Feature	Maintenance Task	Recommended Frequency
Oversized Pipes	• Remove debris from catchment surface	• Every 12 months
	• Remove sediment from pre-treatment structures	• Every 12 months
	• Inspect inlets and outlets	• Every 12 months
	• Survey inside of the pipes	• Every 5 years
Swale	• Inspect inlets and outlets for blockages. Clear if required	• Monthly
	• Remove litter and dead leaves	• Monthly (as required)
	• Manage vegetation and remove nuisance plants	• Monthly (as required)
	• Grass cutting and vegetation management. Minimum grass length 75mm, max grass length 200mm	• As required
	• Inspect inlets and outlets and swales for silt accumulation and establish a silt removal frequency.	• Every 6 months

6.0 FOUL DRAINAGE

6.1 EXISTING FOUL DRAINAGE

There is an existing 225mm diameter foul sewer flowing north through the central part of the site.

6.2 PROPOSED FOUL DRAINAGE

The development proposals include up to 540 units. In accordance with the Sewerage Sector Guidance, the expected peak foul flow from this number of units is 27 l/s. United Utilities is reviewing the existing capacity in the sewer to confirm if any upgrades would be required.

As a result of the existing contours, it is anticipated that the western half of the dwellings proposed in the northern part of the site would not be able to drain by gravity to the existing sewer. Therefore, a pumping station will be required to convey the flows to the UU foul sewer. A final review of levels in the brownfield part of the site will be required to determine whether a gravity discharge to the existing sewer would be practical.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

1. This FRDA has been produced in support of a hybrid planning application for the development of circa 540 dwellings in the former Marchon site in Whitehaven.
2. The FRDA has been undertaken in accordance with the NPPF (Chapter 14), PPG (Flood Risk and Coastal Change), Environment Agency guidance and Guidance for Surface Water Drainage in Cumbria.
3. This assessment has identified that the proposed development can be implemented in accordance with the relevant flood risk and drainage national and local planning policies.
4. The application site area covers 28.34 ha and falls within Flood Zone 1.
5. The site is at low risk of flooding from all sources.
6. Surface water runoff from the site is to be drained to the sea via two existing outfalls serving the former factory's drainage system.
7. Runoff rates are not required to be restricted, however they will be limited by the capacity of the existing outfalls.
8. The proposed drainage system will be offered to UU for adoption, including the existing outfalls.
9. It is proposed to drain foul flows to the existing UU public foul sewer.

7.2 RECOMMENDATIONS

1. Further liaison with UU is required to confirm the future maintenance of the existing outfalls.
2. Additional surveys of the existing drains are required to confirm the condition and any required improvements.
3. Final levels on the brownfield part of the site could be designed to enable a gravity connection to the existing foul public sewer.
4. All SUDS should be designed in accordance with The SUDS Manual (Ciria C753) and Defra's Non-technical standards for sustainable drainage systems.
5. A comprehensive inspection and maintenance schedule shall be provided and implemented to ensure that the drainage system is maintained in a good operational manner.

APPENDICES

APPENDIX A – PROPOSED SITE LAYOUT

DO NOT SCALE
DO NOT SCALE THIS DRAWING. USE FIGURED DIMENSIONS IN ALL CASES. CHECK ALL DIMENSIONS ON SITE. REPORT ANY DISCREPANCIES TO CONCEPT ARCHITECTURE BEFORE PROCEEDING.

BLOCK PLAN KEY

- PUBLIC OPEN SPACE - 12.0317 Ha= 29.7310 Acres
- BLOCK STRUCTURE
- COMMERCIAL AREA - 2.41 Acres
- PROPOSED GROSS SITE BOUNDARY - 70.5132 Acres
- NETT DEVELOPABLE AREA - 34.5241 Acres

PHASING PLAN KEY

Phase 1

Orange Line: 14.0715 Ha = 34.7714 Acre

Nett Area: 3.7814 Ha X 2.471 = 9.3441Acre - 139 units

Phase 2

Purple Line: 14.4642ha = 35.7419 Acre

Nett Area: 10.194ha X 2.471 = 25.18Acre - 377 units

Rev	Description	Drawn	Date	Checked	Date
-	---	---	--.--.--	---	--.--.--

status

FEASIBILITY

job / client

MARCHON

FOR PERSIMMON HOMES LANCASHIRE

drawing title

PROPOSED MASTERPLAN PLAN

project no.	drawing no.	revision	date
CPT-257	MP_01	-	08.03.21
scale	drawn by		sheet size
1/1000	KB		A0

320J
Mayoral Way
Team Valley Trading Estate
Gateshead
NE11 0RT

0191 - 4661611
info@cpt-group.co.uk

CONCEPT
ARCHITECTURE

APPENDIX B – TOPOGRAPHICAL SURVEY

APPENDIX C – PUBLIC SEWER RECORDS

United Utilities
Water for the North West

How to contact us:

United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

Francisco Aguilar

3 Sovereign Square
Sovereign Street, West Yorkshire
Leeds,
LS1 4ER

FAO:

Your Ref: B030491
Our Ref: UUPS-ORD-302870
Date: 01/07/2021

Dear Sirs

Location: 1 WATERS EDGE CLOSE, WHITEHAVEN, CA28 9PE

I acknowledge with thanks your request dated 30/06/2021 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. http://www.unitedutilities.com/work-near-asset.aspx .

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please contact us .

Yours Faithfully,

Karen McCormack
Property Searches Manager

United Utilities Water Limited
Registered In England & Wales No. 2366678
Registered Office Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP

Water for the North West

TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

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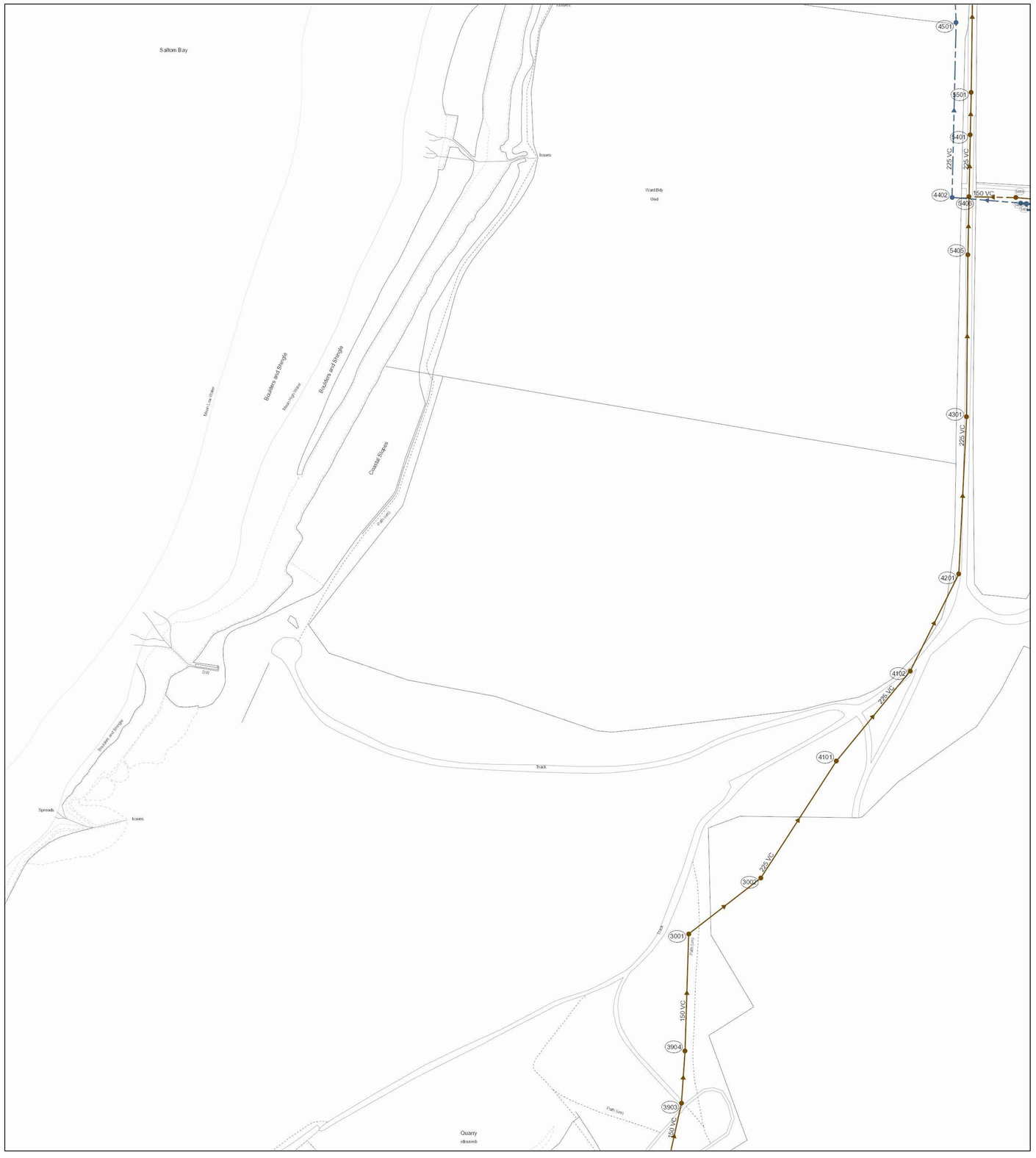

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
4102	83.41	FO	80.56	225			VC	60.37384	1 in 97
4102	83.41	FO	80.56	225			VC	60.37384	1 in 97
4101	83.41	FO	81.15	225			VC	64.66065	1 in 113
3001	83.92	FO	82.44	225			VC	50.60632	1 in 99
3904	86.43	FO	83.23	150			VC	65.03076	1 in 89
3903	89.29	FO	86.82	150			VC	29.06888	1 in 17
3002	83.82	FO	81.84	225			VC	77.38863	1 in 116
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
4301	81.81	FO	78.98	225			VC	90.06676	1 in 102
4301	81.81	FO	78.98	225			VC	90.06676	1 in 102
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5402	83.4	SW	78.97	2400			PE	44.07374	1 in 67
5402	83.4	SW	78.97	2400			PE	44.07374	1 in 67
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
4201	83.39	FO	79.89	225			VC	87.37727	1 in 99
4201	83.39	FO	79.89	225			VC	87.37727	1 in 99
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

LEGEND

Abandoned · Foul · Surface Water · Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:

red - combined · blue - surface water · brown - foul · purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9616SW
Scale: 1:1250 **Date:** 01/07/2021
Nodes: 51
Sheet: 1 of 6

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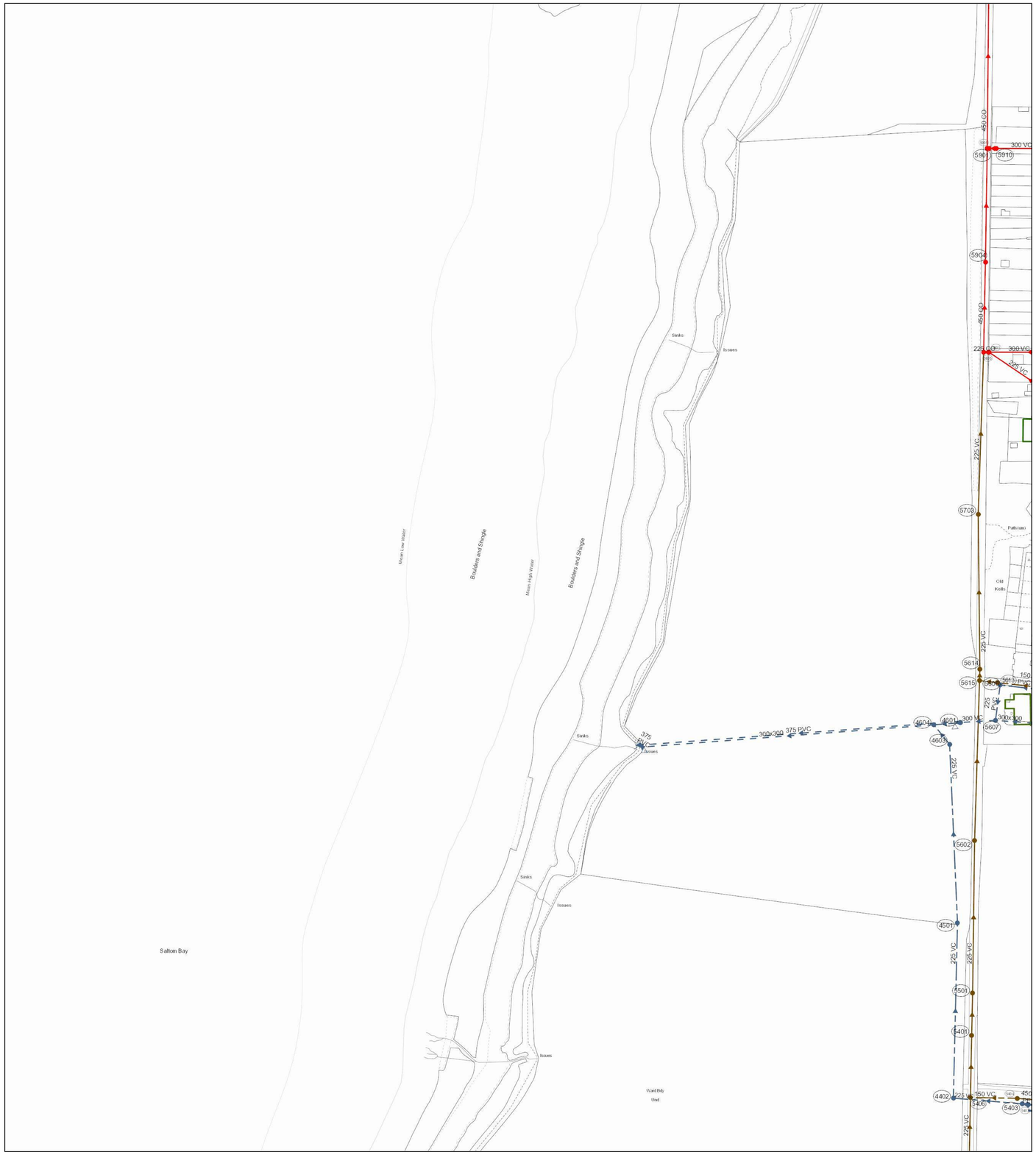
SEWER RECORDS

United Utilities
Water for the North West



Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
5703	72.62	FO	71.23	225			VC	90.04999	1 in 55
5703	72.62	FO	71.23	225			VC	90.04999	1 in 55
5805	71.22	CO	69.33	450			CO	50.01	1 in 86
5805	71.22	CO	69.33	450			CO	50.01	1 in 86
5602	76.3	FO	74.94	225			VC	88.83156	
5602	76.3	FO	74.94	225			VC	88.83156	
5801	72.43	CO	69.83	225			CO	3	1 in 12
5801	72.43	CO	69.83	225			CO	3	1 in 12
5602	76.3	FO		225			VC	6.259837	
5602	76.3	FO		225			VC	6.259837	
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
5612	78.75	FO	75.79	150			PVC	30.76686	1 in 18
5613	75.48	FO	74.07	150			PVC	10.05099	1 in 13
5613	75.48	FO	74.07	150			PVC	10.05099	1 in 13
5614	74.48	FO	73.2	225			VC	85.9584	1 in 44
5614	74.48	FO	73.2	225			VC	85.9584	1 in 44
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75
5804	77.39	CO	75.16	225			VC	50.04875	1 in 13
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5605	78.6	SW	76.09	225			PVC	27.61414	1 in 19
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
4601	73	SW		375			PVC	178.3312	
4601	73	SW		375			PVC	178.3312	
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5402	83.4	SW	78.97	2400			PE	44.07374	1 in 67
5402	83.4	SW	78.97	2400			PE	44.07374	1 in 67
4604	70.32	SW		300			UN	161.2382	
4604	70.32	SW		300			UN	161.2382	
4601	73	SW		300			VC	3.33146	
4601	73	SW		300			VC	3.33146	
4603	71.56	SW	70.14	225			VC	13.97109	1 in 41
4603	71.56	SW	70.14	225			VC	13.97109	1 in 41
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
5607	75.2	SW		300			VC	19.37739	
5607	75.2	SW		300			VC	19.37739	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5606	75.5	SW	74.6	225			PVC	19.73292	1 in 152
5606	75.5	SW	74.6	225			PVC	19.73292	1 in 152
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

LEGEND

Abandoned | Foul | Surface Water | Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:
red - combined blue - surface water
brown - foul purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
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OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9616NW
Scale: 1:1250 **Date:** 01/07/2021
Nodes: 85
Sheet: 2 of 6

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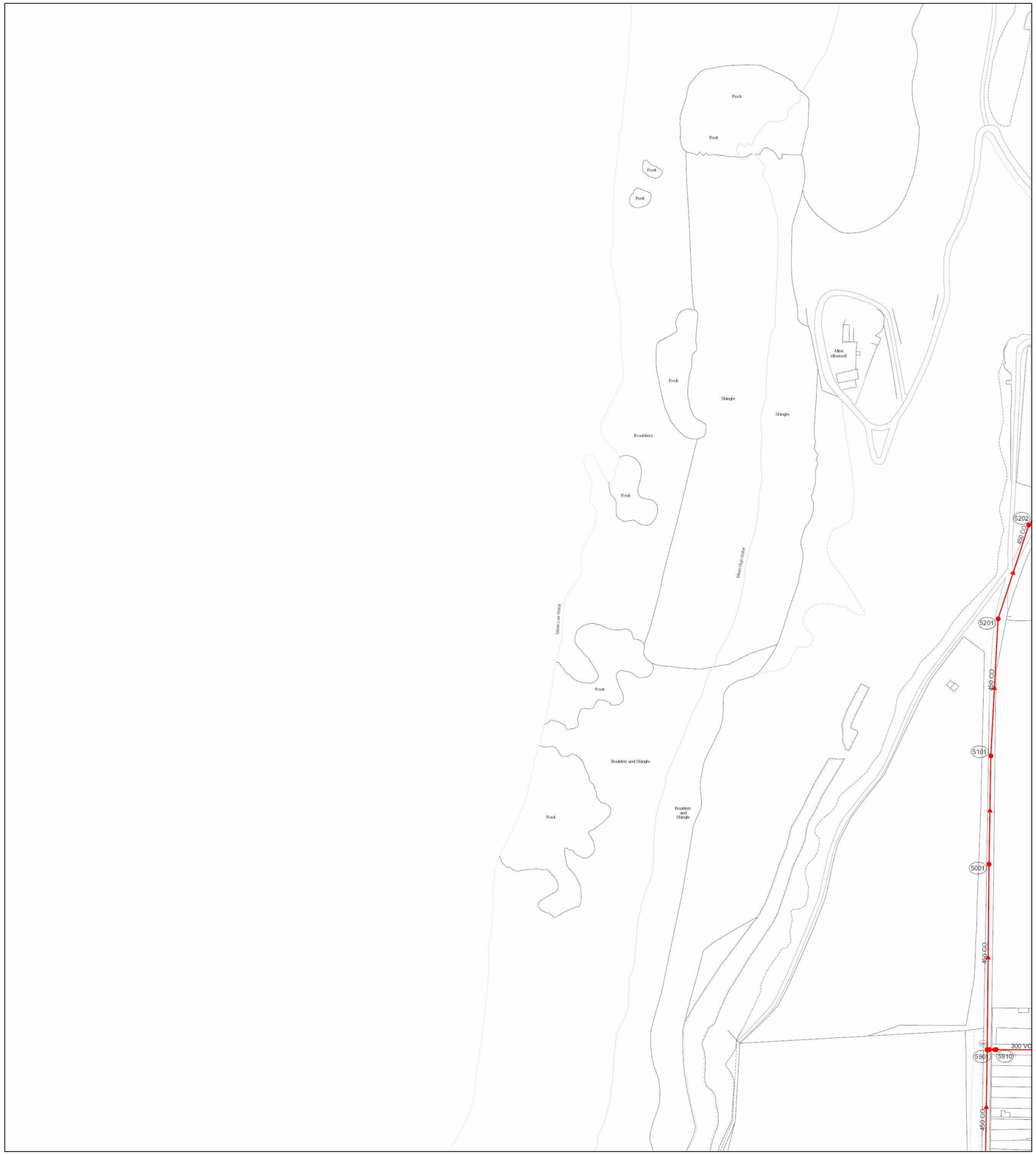
SEWER RECORDS

United Utilities
Water for the North West



Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
5201	66.37	CO	64.88	450			CO	54.70832	1 in 127
5201	66.37	CO	64.88	450			CO	54.70832	1 in 127
5202	65.92	CO	64.42	450			CO	92.20087	1 in 98
5202	65.92	CO	64.42	450			CO	92.20087	1 in 98
5001	68.27	CO	66.76	450			CO	60.00833	1 in 73
5001	68.27	CO	66.76	450			CO	60.00833	1 in 73
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
5101	67.39	CO	65.92	450			CO	76.10519	1 in 76
5101	67.39	CO	65.92	450			CO	76.10519	1 in 76
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

LEGEND

Abandoned | Foul | Surface Water | Combined

- Public Sewer
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- Section 104
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- Sludge Main
- Overflow
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- Highway Drain

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red - combined **blue - surface water**
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- Head of System
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- Air Valve
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- Gully
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RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

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CSU	Concrete Segment Unbolted
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GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

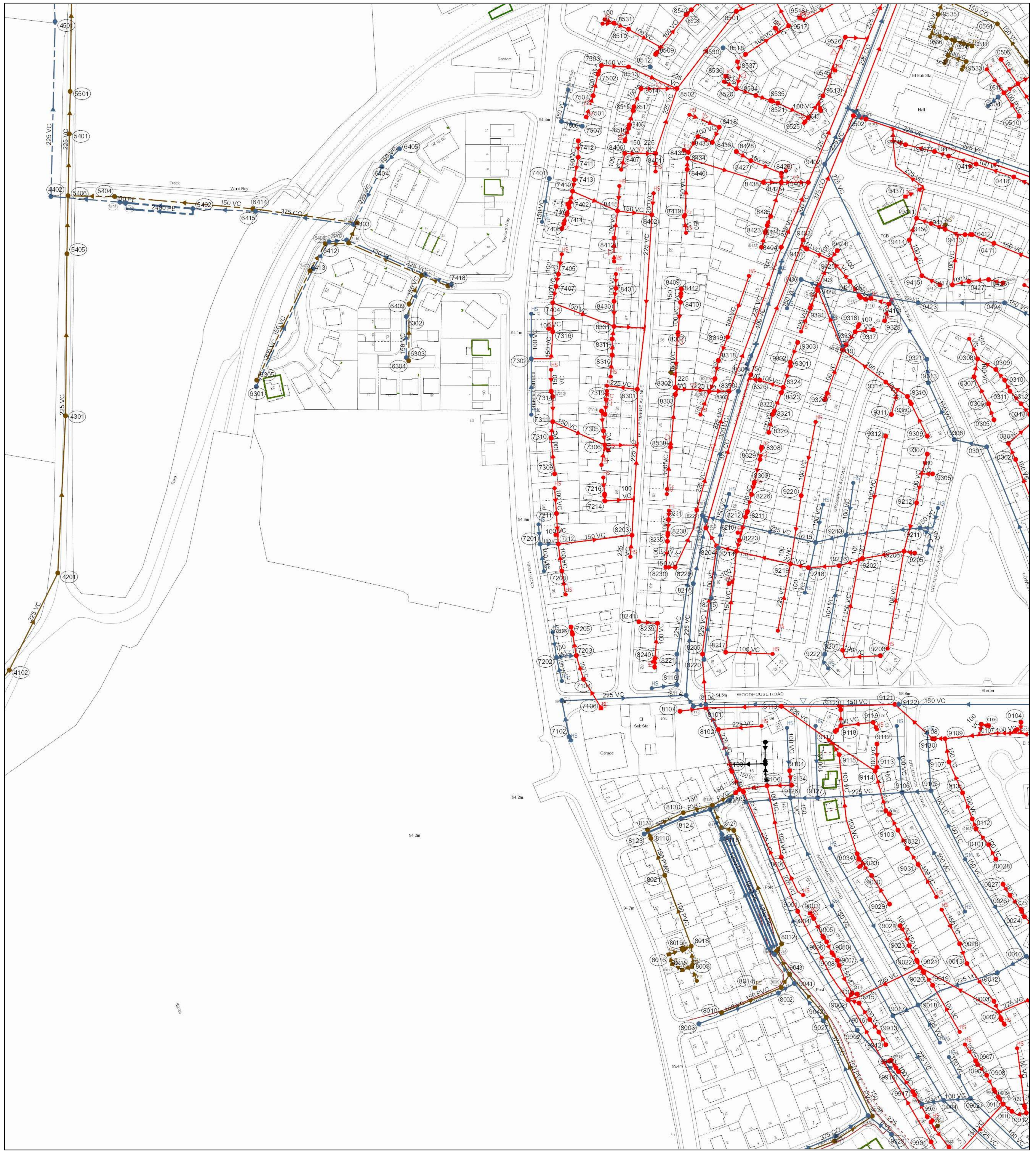
1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9617SW
Scale: 1:1250 **Date:** 01/07/2021
Nodes: 24
Sheet: 3 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West



Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
0501		FO	0	150			CO	56.36581	
0501		FO	0	150			CO	56.36581	
9532		FO		100			VC	8.994693	
9532		FO		100			VC	8.994693	
9913		CO	0	100			VC	8.602325	
0308	97.73	CO		150			VC	12.05388	
0101		CO	0	100			VC	11.40175	
9220		CO	0	100			VC	38.47077	
9912		CO	0	100			VC	8.062258	
9212	98.21	CO	96.81	100			VC	27.89265	
7103	93.71	SW	92.56	225			VC	69.06519	
8201	93.11	CO	90.84	225			VC	34.20526	1 in 92
9316		CO	0	150			VC	36.76955	
7203	93.41	CO	92.92	100			VC	12.16553	1 in 111
7309		CO	0	100			VC	20.09975	
9535		FO		150			VC	9.26631	
9535		FO		150			VC	9.26631	
9216	95.76	CO	93.92	225			VC	17.02939	1 in 25
9203		CO	0	100			VC	24.14809	
9919	96.28	CO	95.67	100			VC	13.89244	
8213	93.06	CO	91.49	225			VC	11.40175	1 in 0.12742237
0310	97.68	CO	96.8	100			VC	7.81025	1 in 60
8321	92.69	CO	91.81	100			VC	2.236068	1 in 112
0510		CO		100			PVC	15.43705	
0510		CO		100			PVC	15.43705	
9309		CO	0	100			VC	20.12461	
0002	98.65	CO	97.55	100			VC	4.123106	
7501		CO	0	100			VC	12.22438	
7501		CO	0	100			VC	12.22438	
8404	91.59	CO	89.08	225			VC	19.69772	1 in 76
8404	91.59	CO	89.08	225			VC	19.69772	1 in 76
9536		FO		100			VC	8.624202	
9536		FO		100			VC	8.624202	
9502	89.52	SW	88.47	225			VC	4.123106	1 in 52
9502	89.52	SW	88.47	225			VC	4.123106	1 in 52
8427		CO	0	100			VC	18.38478	
8427		CO	0	100			VC	18.38478	
8310	93.57	CO	92.68	100			VC	9	1 in 26
9050	96.62	CO	95.26	150			VC	5	1 in 42
8311	93.42	CO	92.31	100			VC	7.071068	1 in 28
9004	96.62	CO	0	100			VC	11.18034	
8442		CO		150			VC	4.821638	
8324	92.76	CO	0	100			VC	13.60147	
7311		CO	0	150			VC	31.7805	
9018	97.22	SW	0	225			VC	15.23155	
8101	94.22	CO	0	225			VC	30.06659	
8412		CO	0	100			VC	15.13275	
8412		CO	0	100			VC	15.13275	
0412		CO	0	150			VC	4	
0412		CO	0	150			VC	4	
8319	91.86	CO	90.82	100			VC	13.92839	
9534		FO		100			VC	4.995634	
9534		FO		100			VC	4.995634	
8514	93.45	CO	92.3	100			VC	10	1 in 24
8514	93.45	CO	92.3	100			VC	10	1 in 24
9118	97.32	CO	96.07	100			VC	9	1 in 23
8509		CO	0	100			VC	5	
8509		CO	0	100			VC	5	
9205	98.56	CO	0	100			VC	6.082763	
9415	94.83	CO	93.96	100			VC	21.18962	1 in 15
8116	94.1	SW	91.83	225			VC	17	
0012	99.41	SW	97.58	225			VC	47.94831	
8212	93.17	CO	91.81	100			VC	13.29715	1 in 332
8435	91.33	CO	90.53	100			VC	19.92486	1 in 36
8435	91.33	CO	90.53	100			VC	19.92486	1 in 36
8001	96.31	CO	94.65	100			VC	40.56027	
0911	97.46	CO	96.03	150			VC	6.403124	
9420	93.74	CO	93.04	100			VC	9.433981	1 in 15
9130	100.29	CO	98.71	150			VC	28.3196	1 in 20
9350	97.07	CO	96.13	100			VC	4.472136	1 in 4.71048657
9308		SW	0	150			VC	13.23668	
8401	93.02	CO	92.04	225			VC	37.94733	1 in 64
8401	93.02	CO	92.04	225			VC	37.94733	1 in 64
8226		CO	0	100			VC	9.937496	
8531		CO	0	100			VC	8.664957	
8531		CO	0	100			VC	8.664957	
0902	96.91	SW	0	100			VC	15.0333	
0914	97.63	CO	96.83	150			VC	4.123106	
9423	95.31	SW	94.04	225			VC	54.74486	1 in 0.59087817
9902		SW	0	225			VC	141.5027	
8318		CO	0	150			VC	10.19804	
9915		CO		100			VC	4.089435	
0025	100.52	CO	99.57	100			VC	4.472136	
9419	93.8	CO	93.13	100			VC	1.414214	1 in 24
9219		CO	0	225			VC	30.80584	1 in 19.7473363
9903	96.2	SW	94.65	225			VC	54.56189	
0504		SW		0			VC	7.256277	
0504		SW		0			VC	7.256277	
9107	100.58	CO	99.01	150			VC	13.15295	1 in 82
8216	93.42	SW	91.89	225			VC	18.43909	1 in 0
9211		SW	0	150			VC	20.09975	
9402	90.56	SW	89.32	225			VC	33.62387	
9402	90.56	SW	89.32	225			VC	33.62387	
9024		CO	0	100			VC	5.830952	
0312		CO	0	100			VC	9.219544	
9016	96.4	CO	95.27	100			VC	10.81665	1 in 77
7404		CO	0	150			VC	36.40055	
9109	100.47	CO	98.8	150			VC	6	1 in 86
0301	99.02	SW	97.95	150			VC	18.43909	
7405		CO	0	100			VC	6.867893	
9008	96.52	CO		150			VC	17.04509	
9117		CO	0	100			VC	4.24264	
8415	93.67	CO	92.8	150			VC	19.10497	
8415	93.67	CO	92.8	150			VC	19.10497	
8220	93.61	SW	92.7	100			VC	34.23449	
9102	98.97	CO	97.77	100			VC	11.40175	1 in 22
9119		CO	0	100			VC	18.11077	
8439		CO		150			VC	44.13652	
8439		CO		150			VC	44.13652	
8103	94.79	CO	92.43	225			VC	4.044891	
0901	97.52	CO	96.56	100			VC	7.81025	1 in 34
4102	83.41	FO	80.56	225			VC	60.37384	1 in 97
4102	83.41	FO	80.56	225			VC	60.37384	1 in 97
8513	93.56	CO	92.59	225			VC	29.54657	
8513	93.56	CO	92.59	225			VC	29.54657	
8322	92.75	CO	91.78	100			VC	10.77033	
9026	99.12	CO	97.9	150			VC	11.7047	1 in 65
7411		CO	0	100			VC	12.73215	
7411		CO	0	100			VC	12.73215	
0425	95.23	CO	94.11	100			VC	8.246211	
0010	100.23	SW	98.22	225			VC	18.35756	1 in 31
9307		CO	0	100			VC	11.40175	
8422	91.61	CO	90.98	100			VC	8.246211	1 in 43
8422	91.61	CO	90.98	100			VC	8.246211	1 in 43
8305	92.1	CO	90.1	225			CO	42.72002	1 in 85
0908	97.46	CO	96.32	100			VC	8.944272	
0302		CO	0	150			VC	9.848858	
9501	89.51	SW	88.36	225			VC	8.324555	
9501	89.51	SW	88.36	225			VC	8.324555	
8104	94.18	SW	92.35	225			VC	7.071068	1 in 7
8112	95.27	SW	0	225			VC	7.211102	
8323	92.76	CO	0	100			VC	3.162278	
7407		CO		100			VC	9.410928	
9402	90.56	SW	90.56	225			VC	33.01515	1 in 16
9402	90.56	SW	90.56	225			VC	33.01515	1 in 16
9424	92.29	CO	91.53	100			VC	6.403124	1 in 40
8430		CO	0	100			VC	14	
9106	99.37	SW	97.7	225			VC	47.09565	1 in 20
8317	91.92	CO	90.52	150			VC	3.162278	
0028		CO	0	100			VC	8.944272	
0404		SW	0	150			VC	48	1 in 38.7096771
8409		CO		150			VC	2.673673	
0426		CO	0	100			VC	11.04536	
7314	94.59	CO	0	100			VC	3.162278	
9020	97.57	CO	96.21	100			VC	3.605551	
7316		CO	0	100			VC	16	
0013	99.01	CO	97.69	150			VC	25.80698	
9429	92.61	CO	91.72	150			VC	1	1 in 50
9007	96.53	CO	95.14	150			VC	3.162278	1 in 158
0106	100.96	CO	100.46	100			VC	4.123106	
0313	97.79	CO	97.3	100			VC	7.81025	
8521	90.78	CO	90.19	100			VC	18.78829	1 in 31
8521	90.78	CO	90.19	100			VC	18.78829	1 in 31
0418	91.47	CO	90.4	100			VC	22.13594	1 in 37
0418	91.47	CO	90.4	100			VC	22.13594	1 in 37
8329		CO		100			VC	12.99573	
0112		CO		100			VC	15.43769	
8436		CO		100			VC	8.853806	
8436		CO		100			VC	8.853806	
8302	92.56	CO	90.49	150			VC	1.414214	
8350	92.84	SW	91.01	300			VC	27.85678	
9426	92.52	CO	91.65	150			VC	15.23155	1 in 59
7313		CO	0	100			VC	14	
0102	100.82	CO	99.6	100			VC	5.759168	
9403	91.62	CO	89.61	375			CO	74.46476	1 in 35
9403	91.62	CO	89.61	375			CO	74.46476	1 in 35
9416		CO	0	100			VC	11.18034	1 in 13.1533406
9428	92.59	CO	91.69	150			VC	2.236068	1 in 75
9918	96.36	CO	0	100			VC	2.236068	
8215		SW	0	100			VC	28.28427	
8221		SW	0	225			VC	78.30248	
8107		CO		100			VC	14.5086	
7102	93.61	SW	92.71	225			VC	20.39608	1 in 170
0411	93.6	CO	91.98	150			VC	13	
0411	93.6	CO	91.98	150			VC	13	
8337		CO		150			VC	4.603413	
0506		CO		100			VC	16.54161	
0506		CO		100			VC	16.54161	
9537		FO		100			VC	5.197922	
9537		FO		100			VC	5.197922	
9305		CO	0	100			VC	6	
9422	94.85	SW	93.22	225			VC	84.5281	1 in 0.91878371
9504	89.51	CO	87.44	375			CO	80.41145	
9504	89.51	CO	87.44	375			CO	80.41145	
8502	92.63	CO	91.44	225			VC	54.20332	1 in 34
8502	92.63	CO	91.44	225			VC	54.20332	1 in 34
9034	97.89	CO	96.78	100			VC	56.1464	
9533		FO		100			VC	10.62114	
9533		FO		100			VC	10.62114	
9308		SW	0	150			VC	37.81091	
9421	93.25	CO	92.37	100			VC	7.81025	1 in 15
8230		CO		150			VC	5.049843	
8214		SW	0	150			VC	15.13275	1 in 9.57768704
9526		CO		100			VC	12.23699	
9526		CO		100			VC	12.23699	
9302	92.72	CO	0	100			VC	2	
7304		CO	0	100			VC	11.04536	
9023	97.73	CO	96.44	150			VC	8.944272	1 in 41
9126	96.35	SW	94.47	225			VC	24.74444	1 in 17
0026	100.4	CO	99.73	100			VC	10	1 in 71
0309	97.74	CO	96.63	100			VC	11.6619	1 in 51
8424		CO	0	100			VC	5.385165	
8424		CO	0	100			VC	5.385165	
8431	93.53	CO	92.87	100			VC	7.071068	
8433		CO		100			VC	10.26576	
8433		CO		100			VC	10.26576	
7202		SW	0	150			VC	6.082763	
9127	97.11	SW	95.38	225			VC	15	1 in 18
8518	91.37	CO	90.62	100			VC	28.84441	1 in 35
8518	91.37	CO	90.62	100			VC	28.84441	1 in 35
9310	97.13	CO	95.93	100			VC	14.4222	1 in 0.15227753
8423	91.5	CO	90.77	100			VC	4.123106	
8423	91.5	CO	90.77	100			VC	4.123106	
9503	89.57	CO	88.17	225			VC	7.28011	1 in 243
9503	89.57	CO	88.17	225			VC	7.28011	1 in 243
7303	93.49	CO	92.6	100			VC	2.828427	
9005	96.61	CO	95.46	150			VC	3.605551	1 in 72
9001	96.46	CO	94.96	225			VC	72.8396	1 in 48
9318	94.45	CO	93.69	100			VC	4.472136	1 in 45
9017	96.83	SW	95.01	225			VC	54.70832	
0003		CO	0	150			VC	6.708204	
0511		CO		100			PVC	9.251398	
0511		CO		100			PVC	9.251398	
9319	94.35	CO	93.3	100			VC	3.605551	
9135		CO		150			VC	18.74739	
9317	94.91	CO	94.46	100			VC	10.04988	1 in 0.10709586
7502	94.45	CO	93.36	100			VC	5.385165	
7502	94.45	CO	93.36	100			VC	5.385165	
9101	98.99	CO	97.84	100			VC	2.828427	1 in 57
8303	92.58	CO	90.55	150			VC	3.162278	
8300		CO		100			VC	6.899638	
9401	90.82	CO	88.57	225			CO	60.53924	
9401	90.82	CO	88.57	225			CO	60.53924	
0306	98.6	CO	97.76	100			VC	17	1 in 47
0105	100.88	CO	100.01	100			VC	4.472136	
9301	92.69	CO	0	100			VC	12.64911	
9917	96.38	CO	0	100			VC	13.60147	
9218	94.66	CO	93.2	225			VC	10.19804	
9019	97.52	CO	96.4	100			VC	8.602325	1 in 45
9113	98.79	CO	97.06	100			VC	2.236068	1 in 7
7503		CO	0	150			VC	15.0333	
7503		CO	0	150			VC	15.0333	
9031	99.31	CO	98.6	100			VC	10.81665	
8210	93.17	SW	91.51	225			VC	11.40175	1 in 81
9331	92.62	CO	91.88	100			VC	5.385165	1 in 67
0305	98.71	CO	97.95	100			VC	9.486833	1 in 59
8113	95.22	CO	0	225			VC	42.0119	
7506		SW		150			VC	11.82134	
7506		SW		150			VC	11.82134	
9122	98.89	SW	97.5	150			VC	53	1 in 21
8211	93.17	CO	91.83	100			VC	3.162278	1 in 158
9006	96.63	CO	95.41	150			VC	6.708204	1 in 61
9015	96.45	CO	95.1	100			VC	6.324555	1 in 5
9333	94.35	CO	93.59	100			VC	8.602325	1 in 39
9916	96.42	CO		100			VC	2.4924	
7205	93.47	CO	92.8	100			VC	4.123106	1 in 137
9311		CO	0	100			VC	20.6213	1 in 19.4540564
9222		SW	0	100			VC	67.08204	
9032		CO		100			VC	11.32496	
4101	83.41	FO	81.15	225			VC	64.66065	1 in 113
7212		CO	0	150			VC	41.30375	
9314		CO	0	100			VC	30	1 in 25.4237299
8205	93.84	CO	92.08	225			VC	60.53098	1 in 66
8320	92.68	CO	92.07	100			VC	10.19804	1 in 39
7305	93.52	CO	92.32	100			VC	8.062258	
8222	93.23	SW	91.36	300			VC	71.8401	1 in 218
8102	93.96	CO	0	225			VC	13.89244	
0307	98.34	CO	97.37	100			VC	10.19804	1 in 11
9002	96.24	CO	93.81	225			VC	56.56844	1 in 44
9425	92.35	CO	91.34	150			VC	14.31782	1 in 23
7310		CO	0	100			VC	9.055386	
8304		CO	0	225			CO	11	
0427		CO	0	100			VC	9.219544	
9418	94.13	CO	93.34	100			VC	3.162278	1 in 16
9936		CO		100			VC	4.909518	
8428	91.64	CO	91.09	100			VC	9.433981	
8428	91.64	CO	91.09	100			VC	9.433981	
9032		CO	0	100			VC	10.14595	
0303		CO	0	150			VC	19.84943	
9215	94.89	SW	93.27	225			VC	53.36666	1 in 0.58254182
0024	100.59	CO	99.55	100			VC	9.899495	1 in 71
0027	100.44	CO	99.85	100			VC	7.211102	1 in 72
9014		CO		150			VC	4.273443	
7412	94.75	CO	94.07	100			VC	9	
7412	94.75	CO	94.07	100			VC	9	
0104	100.77	CO	100.19	100			VC	6	
8202		SW	0	150			CO	2.236068	
0502		FO	0	150			VC	26.40076	
0502		FO	0	150			VC	26.40076	
9108	100.34	CO	98.73	150			VC	1	1 in 50
9112	98.62	CO	97.84	100			VC	13	1 in 19
9105	99.92	SW	98.36	225			VC	16.03122	1 in 25
9213	95.74	SW	94.15	225			VC	17.46425	1 in 22
9021		CO	0	225			VC	43.95435	
9303		CO	0	100			VC	11.7047	
8204	93.12	CO	91.08	225			VC	11.6619	1 in 146
7201	94.4	SW	93.13	100			VC	10	
8418		CO		100			VC	9.382745	
8418		CO		100			VC	9.382745	
8114	94.13	SW	92.21	225			VC	62.1289	1 in 207
7104		CO	0	100			VC	13.60147	
9022	97.63	CO	96.21	150			VC	4.472136	
8426	90.96	CO	90.38	100			VC	5	1 in 11
8426	90.96	CO	90.38	100			VC	5	1 in 11
7302	94.34	CO	93.18	150			VC	26.0333	
8410		CO		100			VC	16.86691	
0912		CO	0	150			VC	8.704571	
8407	93.48	CO	92.51	150			VC	9	1 in 39
8407	93.48	CO	92.51	150			VC	9	1 in 39
7208		CO	0	100			VC	15.13275	
9201	96.88	CO	95.85	150			VC	50.80354	
8301	93.08	CO	90.52	225			VC	17.11724	
8440		CO		150			VC	6.116274	
8440		CO		150			VC	6.116274	
8510	94.18	CO	93.02	100			VC	20.59126	
8510	94.18	CO	93.02	100			VC	20.59126	
0311		CO	0	100			VC	6.708204	
9904	96.64	SW	0	225			VC	12.16553	
8338		CO		100			VC	5.202956	
9451	92.91	CO	91.6	150			VC	8.547535	1 in 66
9451	92.91	CO	91.6	150			VC	8.547535	1 in 66
9921	96.22	CO	95.58	100			VC	17.26284	
9114	98.79	CO	96.6	225			VC	63.25371	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
9407	90.23	CO	88.99	100			VC	16.49242	
9407	90.23	CO	88.99	100			VC	16.49242	
8217		CO	0	150			VC	56.32086	
9450	92.7	CO	91.45	150			VC	8.544003	
9450	92.7	CO	91.45	150			VC	8.544003	
6412	89.64	FO	87.6	150			VC	12.78556	1 in 28
6412	89.64	FO	87.6	150			VC	12.78556	1 in 28
9027	97.13	SW	93.69	375			CO	26.25768	1 in 101
8011	96.12	FO	94.18	150			PVC	5.035897	1 in 168
8240		CO		100			VC	19.56369	
7408	94.75	CO	94.05	100			VC	5.351081	
7408	94.75	CO	94.05	100			VC	5.351081	
6411	88.56	FO	85.55	150			VC	58.55294	1 in 24
6411	88.56	FO	85.55	150			VC	58.55294	1 in 24
8106	95.66	CO	93.45	150			VC	15.39134	1 in 15
8425	90.93	CO	89.24	150			VC	8	1 in 26
8425	90.93	CO	89.24	150			VC	8	1 in 26
8018		FO		100			PVC	42.04322	
8206	93.25	CO	90.87	375			CO	88.6363	1 in 177
9413	93.18	CO	91.75	150			VC	11.61577	1 in 83
9413	93.18	CO	91.75	150			VC	11.61577	1 in 83
8203	93.38	CO	91.45	225			VC	81.09158	1 in 94
9922	96.05	CO	0	100			VC	6.38187	
6304	92.82	FO	91.05	150			VC	31.59141	1 in 63
6404	88.23	SW	86.81	225			VC	35.8824	1 in 150
6404	88.23	SW	86.81	225			VC	35.8824	1 in 150
6405	88.6	SW	87.25	150			VC	13.75136	1 in 38
6405	88.6	SW	87.25	150			VC	13.75136	1 in 38
7306	93.47	CO	91.92	150			VC	18	
8438		CO		150			VC	10.08173	
8438		CO		150			VC	10.08173	
8520	91.51	CO	91.01	100			VC	11.45503	
8520	91.51	CO	91.01	100			VC	11.45503	
7419	92.71	FO	91.43	150			VC	15.71247	1 in 17
8508		CO		100			VC	4.109732	
8508		CO		100			VC	4.109732	
9043	96.65	FO	94.28	150			PVC	14.78528	1 in 148
8516		CO		100			VC	7.991531	
8516		CO		100			VC	7.991531	
8124	94.76	SW	92.78	600			CO	17.00444	1 in 340
0505		CO		100			VC	10.72434	
0505		CO		100			VC	10.72434	
8118	95.08	SW		0			CO	0.5772306	
9408	89.98	CO	89.15	100			VC	7.28011	
9408	89.98	CO	89.15	100			VC	7.28011	
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
8010	97.34	FO	94.58	150			PVC	35.90958	1 in 156
9925	96.6	FO	94.89	150			PVC	60.54016	1 in 151
8517		CO		100			VC	2.305661	
8517		CO		100			VC	2.305661	
6408	91.79	FO	90.08	150			VC	44.42315	1 in 15
6302	92.45	SW	91.08	150			VC	25.60049	1 in 45
0920		CO		100			VC	4.685552	
6303	92.77	SW	91.4	150			VC	22.86005	1 in 71
8012	96.03	FO	94.15	150			PVC	68.43937	1 in 132
8501	91.57	CO	89.82	225			VC	105.6519	1 in 47
8501	91.57	CO	89.82	225			VC	105.6519	1 in 47
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
6409	92.32	FO	90.55	150			VC	17.27117	1 in 37
0910		CO	0	150			VC	38.94868	
8009	96.82	FO	94.35	150			PVC	8.756509	1 in 125
7216		CO	0	100			VC	3.898988	
9029		CO	0	100			VC	18.86796	
7413		CO		100			VC	6.503232	
7413		CO		100			VC	6.503232	
9041	96.82	SW	93.43	450			CO	19.55866	1 in 65
0107		CO	0	100			VC	6.082763	
9543		CO		100			VC	4.410222	
9543		CO		100			VC	4.410222	
8540		CO		100			VC	11.44662	

LEGEND

Abandoned | Foul | Surface Water | Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:
red - combined, blue - surface water, brown - foul, purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO Foul
SW Surface Water
CO Combined
OV Overflow

SEWER SHAPE

CI Circular
TR Trapezoidal
EG Egg
AR Arch
OV Oval
BA Barrel
FT Flat Top
HO HorseShoe
RE Rectangular
UN Unspecified
SQ Square

SEWER MATERIAL

AC Asbestos Cement
BR Brick
PE Polyethylene
RP Reinforced Plastic Matrix
CO Concrete
CSB Concrete Segment Bolted
CSU Concrete Segment Unbolted
CC Concrete Box Culverted
PSC Plastic / Steel Composite
GRC Glass Reinforecd Plastic
DI Ductile Iron
PVC Polyvinyl Chloride
CI Cast Iron
SI Spun Iron
ST Steel
VC Vitrified Clay
PP Polypropylene
PF Pitch Fibre
MAC Masonry, Coursed
MAR Masonry, Random
U Unspecified

Address or Site Reference:

1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9616SE
Scale: 1:1250 **Date:** 01/07/2021
Nodes: 401
Sheet: 4 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
8128	93.6	FO	93.6	150			PVC	13.54145	1 in 16
6301	91.55	SW	90.3	300			VC	72.59887	1 in 70
8129	94.93	FO	92.75	150			PVC	14.68596	1 in 163
8019		FO		100			PVC	5.267683	
7409		CO	0	100			VC	3.016679	
7409		CO	0	100			VC	3.016679	
5402	83.4	SW	78.97	2400			PE	44.07374	1 in 67
5402	83.4	SW	78.97	2400			PE	44.07374	1 in 67
9431	92	CO	90.71	150			VC	3.605551	
9431	92	CO	90.71	150			VC	3.605551	
8515	93.28	CO	92.5	100			VC	10.8033	1 in 54
8515	93.28	CO	92.5	100			VC	10.8033	1 in 54
9513	89.91	CO	89.3	100			VC	24.35159	
9513	89.91	CO	89.3	100			VC	24.35159	
9202		CO		100			VC	2.236068	
6413	90.97	FO	88.9	150			VC	17.31798	1 in 13
9417	95.33	CO	94.17	100			VC	28.16026	
8003	97.54	SW	94.23	150			VC	47.30701	1 in 99
9517	90.56	CO	89.76	150			VC	19.23538	
9517	90.56	CO	89.76	150			VC	19.23538	
9206		CO	0	100			VC	23.34524	
8231		CO		100			VC	7.526254	
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
6415	85.2	SW	83.6	375			CO	34.7841	1 in 11
6415	85.2	SW	83.6	375			CO	34.7841	1 in 11
6410	89.14	FO	87.15	150			VC	12.2988	1 in 11
6410	89.14	FO	87.15	150			VC	12.2988	1 in 11
8004	96.2	SW	93.13	450			PE	4.915501	1 in 15
8326	92.78	CO	91.13	150			VC	6.082763	
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
9907	97.05	SW	94.29	375			CO	21.43478	1 in 268
8402	93.26	CO	91.84	225			VC	97.36134	1 in 78
8402	93.26	CO	91.84	225			VC	97.36134	1 in 78
8133	94.94	CO	93.1	225			VC	2.633412	1 in 8
9134	96.28	CO	93.78	150			VC	13.59582	1 in 41
7410		CO	0	150			VC	27.313	
7410		CO	0	150			VC	27.313	
8229		CO		225			VC	34.36416	
8105	95.3	SW	92.94	225			VC	58.65811	1 in 101
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57
8125	94.94	SW	92.73	600			CO	11.64635	1 in 233
8235		CO		100			VC	14.40156	
9033	97.86	CO	96.86	100			VC	3.162278	1 in 45
9326		CO		100			VC	25.67566	
8021		FO		150			PVC	21.93114	
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
6305	91.58	FO	89.92	150			VC	67.5574	1 in 66
9104	95.81	CO	93.95	150			VC	8.014688	1 in 47
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
8306	92.72	CO	90.35	375			CO	80.41511	1 in 115
7418	92.77	SW	91.43	150			VC	15.60049	1 in 17
9121	98.89	CO	97.21	150			VC	63.01666	
5407	90.88	SW	89.26	300			VC	17.51682	1 in 14
9123	97.19	CO	95.68	100			VC	2	
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
0909		CO	0	100			VC	4.74843	
8126	94.8	SW		0			CO	0.6266254	
4301	81.81	FO	78.98	225			VC	90.06676	1 in 102
4301	81.81	FO	78.98	225			VC	90.06676	1 in 102
6403	88.58	SW	85.81	375			CO	54.91792	1 in 25
6403	88.58	SW	85.81	375			CO	54.91792	1 in 25
9911	97.08	FO	95.07	150			PVC	25.26822	1 in 149
9411		CO	0	225			VC	51.05464	
9411		CO	0	225			VC	51.05464	
9929	96.46	SW	94.45	225			PVC	16.68802	1 in 70
8131	94.93	FO	93.03	150			PVC	22.01189	1 in 147
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
8241		CO		100			VC	10.46606	
8534		CO		100			VC	8.598037	
8534		CO		100			VC	8.598037	
9030		CO	0	100			VC	11.83307	
9414	93.5	CO	92.5	100			VC	12.64911	
9414	93.5	CO	92.5	100			VC	12.64911	
8505	91.46	CO	90.95	150			VC	19.41649	
7409		CO	0	100			VC	6.202866	
7409		CO	0	100			VC	6.202866	
0419	90.82	CO		100			VC	15.85093	
0419	90.82	CO		100			VC	15.85093	
9115		CO	0	100			VC	6.062258	
4201	83.39	FO	79.89	225			VC	87.37727	1 in 99
4201	83.39	FO	79.89	225			VC	87.37727	1 in 99
8238		CO		100			VC	4.506634	
7414		CO		100			VC	4.135752	
7414		CO		100			VC	4.135752	
8405	93.24	CO		100			VC	2.044366	
8405	93.24	CO		100			VC	2.044366	
8130	94.79	FO	92.88	150			PVC	16.64019	1 in 128
7214	93.34	CO	92.18	100			VC	16.03122	
9042	97.08	FO	94.49	150			PVC	31.4377	1 in 150
8108	94.94	CO	92.41	150			VC	10.88623	1 in 156
8110		FO		150			PVC	5.076295	
8331	93.37	CO	92	150			VC	17.02939	
9440		CO	89.77	100			VC	8.190701	
9440		CO	89.77	100			VC	8.190701	
6401	91.87	SW	90.43	225			VC	47.5904	1 in 17
9909	96.61	SW	94.17	375			CO	58.24958	1 in 121
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
8132	94.92	CO	92.66	150			PVC	2.833179	1 in 11
9312		CO	0	100			VC	69.2315	
8127	93.63	FO	93.63	150			PVC	6.983881	1 in 233
9901		CO	0	225			VC	51.10773	
6406	89.49	SW	87.97	300			VC	9.91241	1 in 22
6406	89.49	SW	87.97	300			VC	9.91241	1 in 22
9514	90.21	CO	89.56	100			VC	14.42235	1 in 55
9514	90.21	CO	89.56	100			VC	14.42235	1 in 55
8123	94.54	SW	92.85	600			CO	22.19487	1 in 317
8535		CO		100			VC	4.298528	
8535		CO		100			VC	4.298528	
7211		CO	0	100			VC	17.02943	
8002	96.89	SW	93.75	150			VC	10.44419	1 in 33

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

LEGEND

Abandoned | Foul | Surface Water | Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:

red - combined blue - surface water

brown - foul purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9616SE

Scale: 1:1250 **Date:** 01/07/2021

Nodes: 130

Sheet: 4 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

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Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
0501		FO	0	150			CO	56.36581	
0501		FO	0	150			CO	56.36581	
8003	89.1	CO	0	150			VC	11.6619	
8003	89.1	CO	0	150			VC	11.6619	
9532		FO		100			VC	8.994693	
9532		FO		100			VC	8.994693	
6805	86.57	CO	85.1	225			VC	26.01922	1 in 36
6708	85.14	FO	82.98	150			PVC	11.26524	1 in 15
8018	89.53	CO	88.92	100			VC	7.615773	1 in 69
8018	89.53	CO	88.92	100			VC	7.615773	1 in 69
7701		CO	0	150			VC	34.05877	
0003	76.12	CO	74.56	225			VC	22.4722	1 in 26
0003	76.12	CO	74.56	225			VC	22.4722	1 in 26
8613	90.66	SW	90	150			VC	44.01136	1 in 26
8606	91.57	CO	90.74	150			VC	57.93962	
8006	89.54	CO	88.9	100			VC	10.29563	1 in 51
8006	89.54	CO	88.9	100			VC	10.29563	1 in 51
7804	90.8	CO	89.56	225			VC	24.04163	1 in 62
0411	93.6	CO	91.98	150			VC	13	
0411	93.6	CO	91.98	150			VC	13	
9708		CO		100			VC	7.109992	
0506		CO		100			VC	16.54161	
0506		CO		100			VC	16.54161	
5611	80	FO	78.35	150			PVC	11.6741	1 in 11
9537		FO		100			VC	5.197922	
9537		FO		100			VC	5.197922	
5713	81.59	FO	79.45	150			PVC	31.42879	1 in 29
9422	94.85	SW	93.22	225			VC	84.5281	1 in 0.91878371
9504	89.51	CO	87.44	375			CO	80.41145	
9504	89.51	CO	87.44	375			CO	80.41145	
6004		CO	0	150			VC	7	
6004		CO	0	150			VC	7	
8502	92.63	CO	91.44	225			VC	54.20332	1 in 34
8502	92.63	CO	91.44	225			VC	54.20332	1 in 34
9535		FO		150			VC	9.26631	
9535		FO		150			VC	9.26631	
9533		FO		100			VC	10.62114	
9533		FO		100			VC	10.62114	
9003	82.89	CO	81.74	150			VC	32.01562	
9003	82.89	CO	81.74	150			VC	32.01562	
7007		CO	0	150			VC	64.41273	
7007		CO	0	150			VC	64.41273	
9621		CO		100			VC	2.552755	
9002	83.35	CO	82.61	150			VC	3.605551	
9002	83.35	CO	82.61	150			VC	3.605551	
6011	85.27	CO	84.64	100			VC	7.211102	
6011	85.27	CO	84.64	100			VC	7.211102	
8532		CO		100			VC	1.292037	
9526		CO		100			VC	12.23699	
9526		CO		100			VC	12.23699	
7905		CO		100			VC	4.907588	
7905		CO		100			VC	4.907588	
9610	86.95	SW	86.33	150			VC	28.80539	1 in 25
5708	82.05	SW	80.11	225			PVC	6.431042	1 in 8
5604	80	SW	77.26	225			PVC	14.94476	1 in 13
0510		CO		100			PVC	15.43705	
0510		CO		100			PVC	15.43705	
8424		CO	0	100			VC	5.385165	
8424		CO	0	100			VC	5.385165	
5701	77.76	CO	75.82	225			VC	86.57944	1 in 144
7501		CO	0	100			VC	12.22438	
7501		CO	0	100			VC	12.22438	
9703	90.4	CO	89.67	150			VC	7.615773	1 in 22
8404	91.59	CO	89.08	225			VC	19.69772	1 in 76
8404	91.59	CO	89.08	225			VC	19.69772	1 in 76
8433		CO		100			VC	10.26576	
8433		CO		100			VC	10.26576	
8518	91.37	CO	90.62	100			VC	28.84441	1 in 35
8518	91.37	CO	90.62	100			VC	28.84441	1 in 35
8423	91.5	CO	90.77	100			VC	4.123106	
8423	91.5	CO	90.77	100			VC	4.123106	
9536		FO		100			VC	8.624202	
9536		FO		100			VC	8.624202	
8009		CO	0	150			VC	17.88854	
8009		CO	0	150			VC	17.88854	
6701	83.66	SW	81.94	225			PVC	26.00326	1 in 14
5601	81.67	SW	77.4	1800			PVC	10.93648	1 in 273
9502	89.52	SW	88.47	225			VC	4.123106	1 in 52
9502	89.52	SW	88.47	225			VC	4.123106	1 in 52
9503	89.57	CO	88.17	225			VC	7.28011	1 in 243
9503	89.57	CO	88.17	225			VC	7.28011	1 in 243
8427		CO	0	100			VC	18.38478	
8427		CO	0	100			VC	18.38478	
0801	80.22	CO	79.02	300			VC	58.69412	1 in 20
9501	89.51	SW	89.51	225			VC	7.211102	
9501	89.51	SW	89.51	225			VC	7.211102	
7808		CO	0	100			VC	1.660234	
6709	85.61	FO	83.49	150			PVC	7.461255	1 in 15
5703	72.62	FO	71.23	225			VC	90.04999	1 in 55
5703	72.62	FO	71.23	225			VC	90.04999	1 in 55
5812	82.29	FO	80.32	150			PVC	32.60934	1 in 102
8904		CO	0	150			VC	13	
8904		CO	0	150			VC	13	
6704	85.69	SW	84.04	150			PVC	11.2851	1 in 14
5602	76.3	FO		225			VC	6.259837	
5602	76.3	FO		225			VC	6.259837	
8412		CO	0	100			VC	15.13275	
8412		CO	0	100			VC	15.13275	
0412		CO	0	150			VC	4	
0412		CO	0	150			VC	4	
0511		CO		100			PVC	9.251398	
0511		CO		100			PVC	9.251398	
8603	91.29	CO	90.48	150			VC	43.46384	1 in 54
9902		CO	0	150			VC	70.12099	
9902		CO	0	150			VC	70.12099	
8005	89.56	CO	88.66	100			VC	8.062258	
8005	89.56	CO	88.66	100			VC	8.062258	
9534		FO		100			VC	4.995634	
9534		FO		100			VC	4.995634	
5610	83.02	FO	80.55	150			PVC	17.07388	1 in 16
6809	82.69	FO	80.52	150			PVC	8.49905	1 in 42
8514	93.45	CO	92.3	100			VC	10	1 in 24
8514	93.45	CO	92.3	100			VC	10	1 in 24
8007	88.89	CO	88.22	100			VC	16.76305	
8007	88.89	CO	88.22	100			VC	16.76305	
8509		CO	0	100			VC	5	
8509		CO	0	100			VC	5	
7914		CO		150			VC	19.91275	
7914		CO		150			VC	19.91275	
9605		CO	0	150			VC	69.46222	
8608	93.48	SW	92.66	100			VC	14.86607	1 in 28
8013	88.91	CO	0	150			VC	9.433981	
8013	88.91	CO	0	150			VC	9.433981	
9415	94.83	CO	93.96	100			VC	21.18962	1 in 15
0005		CO	0	150			VC	4	
0005		CO	0	150			VC	4	
7803		CO	0	150			VC	21.09502	
8435	91.33	CO	90.53	100			VC	19.92486	1 in 36
8435	91.33	CO	90.53	100			VC	19.92486	1 in 36
7502	94.45	CO	93.36	100			VC	5.385165	
7502	94.45	CO	93.36	100			VC	5.385165	
9901	87.69	CO	86.53	150			VC	5.830952	
9901	87.69	CO	86.53	150			VC	5.830952	
9604	88.01	SW	86.51	225			CO	48.8467	
9401	90.82	CO	88.57	225			CO	60.53924	
9401	90.82	CO	88.57	225			CO	60.53924	
5805	71.22	CO	69.33	450			CO	50.01	1 in 86
5805	71.22	CO	69.33	450			CO	50.01	1 in 86
0704	84.47	CO	83.65	300			CO	6.082763	1 in 55
5711	81.91	FO	80	150			PVC	68.59077	1 in 149
8401	93.02	CO	92.04	225			VC	37.94733	1 in 64
8401	93.02	CO	92.04	225			VC	37.94733	1 in 64
9528		FO		100			VC	23.55476	
5710	80.96	SW	77.46	1800			PVC	14.85237	1 in 248
7806	89.8	CO	88.35	225			VC	60.00833	1 in 18
8607	92.35	SW	91.58	150			VC	65	1 in 42
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
8531		CO	0	100			VC	8.664957	
8531		CO	0	100			VC	8.664957	
7503		CO	0	150			VC	15.0333	
7503		CO	0	150			VC	15.0333	
5612	78.75	FO	75.79	150			PVC	30.76686	1 in 18
7703		CO		100			VC	13.13855	
7903	90.68	CO	89.23	300			VC	97.08244	1 in 123
7506		SW		150			VC	11.82134	
7506		SW		150			VC	11.82134	
8034	89.59	CO	88.8	100			VC	4.123106	
8034	89.59	CO	88.8	100			VC	4.123106	
0703	85.72	CO	83.97	375			CO	48.50773	1 in 173
5709	81.74	SW	77.71	1800			PVC	62.0335	1 in 248
6705	88.65	SW	87	150			PVC	39.4716	1 in 13
0504		SW		0			VC	7.256277	
0504		SW		0			VC	7.256277	
6707	84.4	FO	82.23	150			PVC	15.11732	1 in 16
8906		CO	0	150			VC	7.28011	
8906		CO	0	150			VC	7.28011	
9505	87.94	CO	86	375			CO	40.16217	1 in 134
8008	90.08	CO	0	150			VC	9.219544	
8008	90.08	CO	0	150			VC	9.219544	
5808	81.02	SW	78.32	1500			PVC	25.31829	1 in 253
5707	81.83	SW	77.74	1800			PVC	6.157139	1 in 205
9705	89.06	SW	88.31	150			VC	61.46544	1 in 18
6003		CO	0	150			VC	31.24552	
6003		CO	0	150			VC	31.24552	
9402	90.56	SW	89.32	225			VC	33.62387	
9402	90.56	SW	89.32	225			VC	33.62387	
9701	86.84	CO	86.05	150			VC	13.45362	1 in 16
7802		CO		100			VC	24.35899	
5712	80.93	FO	79.54	150			PVC	13.1562	1 in 146
6706	83.41	FO	81.28	150			PVC	26.75738	1 in 21
6803	86.84	CO	84.97	225			VC	22.02271	1 in 39
5702	77.28	CO	76.08	225			VC	45.27692	1 in 174
5906		CO		100			VC	6.171746	
5906		CO		100			VC	6.171746	
5903		CO	0	150			VC	51.0098	
5903		CO	0	150			VC	51.0098	
8415	93.67	CO	92.8	150			VC	19.10497	
8415	93.67	CO	92.8	150			VC	19.10497	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
0602		SW		225			CO	33.83785	
6710	88.62	FO	86.45	150			PVC	39.49193	1 in 13
5605	78.6	SW	76.09	225			PVC	27.61414	1 in 19
8439		CO		150			VC	44.13652	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
9425	92.35	CO	91.34	150			VC	14.31782	1 in 23
9013		CO	0	150			VC	6.082763	
9013		CO	0	150			VC	6.082763	
8604	93.75	CO	93.06	100			VC	5.830952	1 in 42
9702	88.71	CO	87.9	150			VC	31.01612	1 in 17
7601	93.84	SW	93.22	100			VC	50.69517	1 in 33
8513	93.56	CO	92.59	225			VC	29.54657	
8513	93.56	CO	92.59	225			VC	29.54657	
8610	90.84	SW	90.16	150			VC	94.15413	1 in 25
7411		CO	0	100			VC	12.73215	
7411		CO	0	100			VC	12.73215	
6010	85.27	CO	84.53	100			VC	7	
6010	85.27	CO	84.53	100			VC	7	
9012		CO	0	150			VC	16	
9012		CO	0	150			VC	16	
6801	83.35	CO	82.2	300			CO	67	
8422	91.61	CO	90.98	100			VC	8.246211	1 in 43
8422	91.61	CO	90.98	100			VC	8.246211	1 in 43
7704		CO		100			VC	8.367382	
8428	91.64	CO	91.09	100			VC	9.433981	
8428	91.64	CO	91.09	100			VC	9.433981	
9903		CO		100			VC	13.64863	
9903		CO		100			VC	13.64863	
9017		CO		150			VC	2.846258	
9017		CO		150			VC	2.846258	
8004		CO	0	100			VC	30.27206	
8004		CO	0	100			VC	30.27206	
8605	92.82	CO	91.96	150			VC	30.08322	1 in 25
7412	94.75	CO	94.07	100			VC	9	
7412	94.75	CO	94.07	100			VC	9	
8010	89.18	CO	0	150			VC	9.433981	
8010	89.18	CO	0	150			VC	9.433981	
8602	92.02	CO	91.34	150			VC	32.30977	1 in 38
9607	86.97	SW	85.42	225			VC	31.62278	
5802	76.86	CO	74.88	225			VC	1.414214	
5811	82.25	SW	77.9	1800			PVC	32.93781	1 in 253
0502		FO	0	150			VC	26.40076	
0502		FO	0	150			VC	26.40076	
6703	84.91	SW	83.26	150			PVC	11.58768	1 in 15
7901		CO	0	225			VC	109.0109	
7901		CO	0	225			VC	109.0109	
0906	78.4	CO	77.4	100			VC	14.4222	1 in 7
0906	78.4	CO	77.4	100			VC	14.4222	1 in 7
9710	90.1	CO	89.32	150			VC	32.31099	1 in 23
0901	76.04	CO	74.33	300			VC	58.5235	1 in 81
0901	76.04	CO	74.33	300			VC	58.5235	1 in 81
8611	92.82	CO	91.99	100			VC	1.414214	1 in 71
9716	85.96	CO	85.2	150			VC	2.828427	1 in 17
5609	82.77	SW	81.04	150			PVC	13.62136	1 in 7
7706		CO		100			VC	8.400987	
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
8418		CO		100			VC	9.382745	
8418		CO		100			VC	9.382745	
6802	85.56	CO	84.28	300			VC	10.04988	1 in 10
6601	89.43	SW	87.78	150			PVC	82.17184	1 in 12
8426	90.96	CO	90.38	100			VC	5	1 in 11
8426	90.96	CO	90.38	100			VC	5	1 in 11
7805	90.48	CO	89.17	225			VC	32.01562	1 in 39
5804	77.39	CO	75.16	225			VC	55.04875	1 in 13
7705		CO		100			VC	6.219202	
7002		CO	0	100			VC	14.60555	
7002		CO	0	100			VC	14.60555	
8407	93.48	CO	92.51	150			VC	9	1 in 39
8407	93.48	CO	92.51	150			VC	9	1 in 39
9611		CO	0	100			VC	8.896966	
6702	84.15	SW	82.42	225			PVC	7.663948	1 in 16
8521	90.78	CO	90.19	100			VC	18.78829	1 in 31
8521	90.78	CO	90.19	100			VC	18.78829	1 in 31
0418	91.47	CO	90.4	100			VC	22.13594	1 in 37
0418	91.47	CO	90.4	100			VC	22.13594	1 in 37
0803		CO		100			PF	11.1945	
9521	88.07	CO	0	375			CO	16.55295	
9529		FO		100			VC	4.128291	
8440		CO		150			VC	6.116274	
8440		CO		150			VC	6.116274	
5801	72.43	CO	69.83	225			CO	3	1 in 12
5801	72.43	CO	69.83	225			CO	3	1 in 12
6807	82.77	SW	81.12	150			PVC	12.06364	1 in 8
8510	94.18	CO	93.02	100			VC	20.59126	
8510	94.18	CO	93.02	100			VC	20.59126	
8527		CO		100			VC	8.18164	
0705	84	CO	82.9	300			VC	104.69	1 in 27
9715	85.96	CO	85.01	150			VC	13.0384	1 in 19
8436		CO		100			VC	8.853806	
8436		CO		100			VC	8.853806	
5613	75.48	FO	74.07	150			PVC	10.05099	1 in 13
5613	75.48	FO	74.07	150			PVC	10.05099	1 in 13
6012		CO	0	150			VC	47.88528	
6012		CO	0	150			VC	47.88528	
5614	74.48	FO	73.2	225			VC	85.9584	1 in 44
5614	74.48	FO	73.2	225			VC	85.9584	1 in 44
6002		CO		150			VC	19.22406	
6002		CO		150			VC	19.22406	
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75
8612	93.56	CO	92.91	100			VC	25.63201	1 in 28
9403	91.62	CO	89.61	375			CO	74.46476	1 in 35
9403	91.62	CO	89.61	375			CO	74.46476	1 in 35
6001		CO	0	225			VC	66.67095	
6001		CO	0	225			VC	66.67095	
9019		CO		150			VC	6.90265	
9019		CO		150			VC	6.90265	
9451	92.91	CO	91.6	150			VC	8.547535	1 in 66
9451	92.91	CO	91.6	150			VC	8.547535	1 in 66
8917		CO		100			PVC	1.866576	
8917		CO		100			PVC	1.866576	
9609	86.5	CO	84.72	375			CO	26.00943	1 in 35
8515	93.28	CO	92.5	100			VC	10.8033	1 in 54
8515	93.28	CO	92.5	100			VC	10.8033	1 in 54
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
5501		FO	0	225			VC	84.56757	
9407	90.23	CO	88.99	100			VC	16.49242	
9407	90.23	CO	88.99	100			VC	16.49242	
9513	89.91	CO	89.3	100			VC	24.35159	
9513	89.91	CO	89.3	100			VC	24.35159	
4603	71.56	SW	70.14	225			VC	13.97109	1 in 41
4603	71.56	SW	70.14	225			VC	13.97109	1 in 41
6413	90.97	FO	88.9	150			VC	17.31798	1 in 13
9450	92.7	CO	91.45	150			VC	8.544003	
9450	92.7	CO	91.45	150			VC	8.544003	
6412	89.64	FO	87.6	150			VC	12.78556	1 in 28
6412	89.64	FO	87.6	150			VC	12.78556	1 in 28
9417	95.33	CO	94.17	100			VC	28.16026	
9617		CO		100			VC	1.959187	
7408	94.75	CO	94.05	100			VC	5.351081	
7408	94.75	CO	94.05	100			VC	5.351081	
6411	88.56	FO	85.55	150			VC	58.55294	1 in 24
6411	88.56	FO	85.55	150			VC	58.55294	1 in 24
9517	90.56	CO	89.76	150			VC	19.23538	
9517	90.56	CO	89.76	150			VC	19.23538	
8616		CO		150			VC	18.76248	
8425	90.93	CO	89.24	150			VC	8	1 in 26
8425	90.93	CO	89.24	150			VC	8	1 in 26
7925		CO		100			VC	4.716987	
7925		CO		100			VC	4.716987	
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
6414	85.1	FO	83.16	150			VC	77.02306	1 in 20
6415	85.2	SW	83.6	375			CO	34.7841	1 in 11
6415	85.2	SW	83.6	375			CO	34.7841	1 in 11
6410	89.14	FO	87.15	150			VC	12.2988	1 in 11
6410	89.14	FO	87.15	150			VC	12.2988	1 in 11
4601	73	SW		300			VC	3.33146	
4601	73	SW		300			VC	3.33146	
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
4402	79.09	SW	77.8	225			VC	97.17252	1 in 32
9614	89.56	CO	88.79	150			VC	18.97367	
8402	93.26	CO	91.84	225			VC	97.36134	1 in 78
8402	93.26	CO	91.84	225			VC	97.36134	1 in 78
7410		CO	0	150			VC	27.313	
7410		CO	0	150			VC	27.313	
9413	93.18	CO	91.75	150			VC	11.61577	1 in 83
9413	93.18	CO	91.75	150			VC	11.61577	1 in 83
8901		CO	0	150			VC	88.39762	
8901		CO	0	150			VC	88.39762	
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57
5402	83.4	SW	78.97	2400			PE	37.45959	1 in 57
8601	93.12	CO	92.4	100			VC	12.28646	1 in 24
9612	88.21	CO	87.31	150			VC	15.26434	
6404	88.23	SW	86.81	225			VC	35.8824	1 in 150
6404	88.23	SW	86.81	225			VC	35.8824	1 in 150
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
5403	81.8	SW	78.3	225			VC	38.33761	1 in 167
6405	88.6	SW	87.25	150			VC	13.75136	1 in 38
6405	88.6	SW	87.25	150			VC	13.75136	1 in 38
9805		CO		100			VC	8.713881	
7902		CO	0	150			VC	65.17047	
8438		CO		150			VC	10.08173	
8438		CO		150			VC	10.08173	
8002	88.99	CO	87.51	225			VC	66.3056	1 in 66
8002	88.99	CO	87.51	225			VC	66.3056	1 in 66
8520	91.51	CO	91.01	100			VC	11.45503	
8520	91.51	CO	91.01	100			VC	11.45503	
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
5406	79.4	FO	78.09	225			VC	34.37752	1 in 40
8306	92.72	CO	90.35	375			CO	80.41511	1 in 115
9608	87.37	CO	85.66	375			CO	46.87589	1 in 50
0007		CO	0	225			VC	27.20086	
0007		CO	0	225			VC	27.20086	
8508		CO		100			VC	4.109732	
8508		CO		100			VC	4.109732	
6407	90.88	SW	89.26	300			VC	17.51682	1 in 14
5909		CO		100			VC	7.166876	
5909		CO		100			VC	7.166876	
8525	90.75	CO	89.98	100			VC	2.236068	1 in 28
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
5407	82	SW	78.31	450			PE	3.328226	1 in 333
8618		CO	92.4	100			VC	3.015562	1 in 29

LEGEND

Abandoned | Foul | Surface Water | Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:
red - combined blue - surface water
brown - foul purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO Foul
SW Surface Water
CO Combined
OV Overflow

SEWER SHAPE

CI Circular
TR Trapezoidal
EG Egg
AR Arch
OV Oval
BA Barrel
FT Flat Top
HO HorseShoe
RE Rectangular
UN Unspecified
SQ Square

SEWER MATERIAL

AC Asbestos Cement
BR Brick
PE Polyethylene
RP Reinforced Plastic Matrix
CO Concrete
CSB Concrete Segment Bolted
CSU Concrete Segment Unbolted
CC Concrete Box Culverted
PSC Plastic / Steel Composite
GRC Glass Reinforced Plastic
DI Ductile Iron
PVC Polyvinyl Chloride
CI Cast Iron
SI Spun Iron
ST Steel
VC Vitrified Clay
PP Polypropylene
PF Pitch Fibre
MAC Masonry, Coursed
MAR Masonry, Random
U Unspecified

Address or Site Reference:

1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9616NE
Scale: 1:1250 **Date:** 01/07/2021
Nodes: 401
Sheet: 5 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
8516		CO		100			VC	7.991531	
8516		CO		100			VC	7.991531	
6403	88.58	SW	85.81	375			CO	54.91792	1 in 25
6403	88.58	SW	85.81	375			CO	54.91792	1 in 25
0505		CO		100			VC	10.72434	
0505		CO		100			VC	10.72434	
9411		CO	0	225			VC	51.05464	
9411		CO	0	225			VC	51.05464	
4604	70.32	SW		300			UN	161.2382	
4604	70.32	SW		300			UN	161.2382	
9408	89.98	CO	89.15	100			VC	7.28011	
9408	89.98	CO	89.15	100			VC	7.28011	
5607	75.2	SW		300			VC	19.37739	
5607	75.2	SW		300			VC	19.37739	
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
5404	81.5	FO	79.3	150			VC	25.88457	1 in 17
8504	90.64	CO	89.86	150			VC	18.02776	
5606	75.5	SW	74.6	225			PVC	19.73292	1 in 152
5606	75.5	SW	74.6	225			PVC	19.73292	1 in 152
9803		CO		100			VC	8.6402	
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
4501	76.25	SW	74.74	225			VC	99.18073	1 in 22
7820		CO		100			VC	5.078386	
8517		CO		100			VC	2.305661	
8517		CO		100			VC	2.305661	
6408	91.79	FO	90.08	150			VC	44.42315	1 in 15
8534		CO		100			VC	8.598037	
8534		CO		100			VC	8.598037	
9603	88.94	CO	87.55	225			VC	31.63758	1 in 20
9414	93.5	CO	92.5	100			VC	12.64911	
9414	93.5	CO	92.5	100			VC	12.64911	
8505	91.46	CO	90.95	150			VC	19.41649	
9001	81.98	CO	0	150			VC	29.41088	
9001	81.98	CO	0	150			VC	29.41088	
7409		CO	0	100			VC	6.202866	
7409		CO	0	100			VC	6.202866	
0419	90.82	CO		100			VC	15.85093	
0419	90.82	CO		100			VC	15.85093	
8501	91.57	CO	89.82	225			VC	105.6519	1 in 47
8501	91.57	CO	89.82	225			VC	105.6519	1 in 47
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
5405	80.03	FO	78.09	225			VC	32.19582	1 in 37
7414		CO		100			VC	4.135752	
7414		CO		100			VC	4.135752	
8405	93.24	CO		100			VC	2.044366	
8405	93.24	CO		100			VC	2.044366	
9511	89.29	CO	88.6	150			VC	17.88854	
8016	88.98	CO	88.06	150			VC	5.09902	
8016	88.98	CO	88.06	150			VC	5.09902	
7413		CO		100			VC	6.503232	
7413		CO		100			VC	6.503232	
9543		CO		100			VC	4.410222	
9543		CO		100			VC	4.410222	
7001	90	CO	88.43	300			VC	89.05907	1 in 44
7001	90	CO	88.43	300			VC	89.05907	1 in 44
9804		CO		100			VC	8.193428	
9440		CO	89.77	100			VC	8.190701	
9440		CO	89.77	100			VC	8.190701	
7011	90.22	CO	88.95	150			VC	10.44031	
7011	90.22	CO	88.95	150			VC	10.44031	
7801		CO	0	225			VC	107.0364	
8540		CO		100			VC	11.44662	
8540		CO		100			VC	11.44662	
9602	87.49	CO	86.25	100			VC	8.544003	
6401	91.87	SW	90.43	225			VC	47.5904	1 in 17
8507		CO	0	100			VC	12.04159	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
5401	78.37	FO	77.21	225			VC	23.55125	
9713		CO		100			VC	24.97556	
9004	80.96	CO	80.16	225			VC	91.30354	1 in 16
8916		CO		100			PVC	4.587301	
8916		CO		100			PVC	4.587301	
7409		CO	0	100			VC	3.016679	
7409		CO	0	100			VC	3.016679	
8019	89.55	CO	0	100			VC	6.403124	
8019	89.55	CO	0	100			VC	6.403124	
6406	89.49	SW	87.97	300			VC	9.91241	1 in 22
6406	89.49	SW	87.97	300			VC	9.91241	1 in 22
9431	92	CO	90.71	150			VC	3.605551	
9431	92	CO	90.71	150			VC	3.605551	
9514	90.21	CO	89.56	100			VC	14.42235	1 in 55
9514	90.21	CO	89.56	100			VC	14.42235	1 in 55
9606	86.81	CO	85.91	150			VC	20.61553	
9516	88.84	CO	87.42	150			VC	2	
9027		CO		100			VC	17.55291	
8535		CO		100			VC	4.298528	
8535		CO		100			VC	4.298528	
8918		CO		100			PVC	29.38382	
8918		CO		100			PVC	29.38382	
0804		CO		100			PF	7.357718	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

LEGEND

Abandoned — Foul — Surface Water — Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:

red - combined blue **- surface water**

brown - foul **purple - overflow**

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9616NE

Scale: 1:1250 **Date:** 01/07/2021

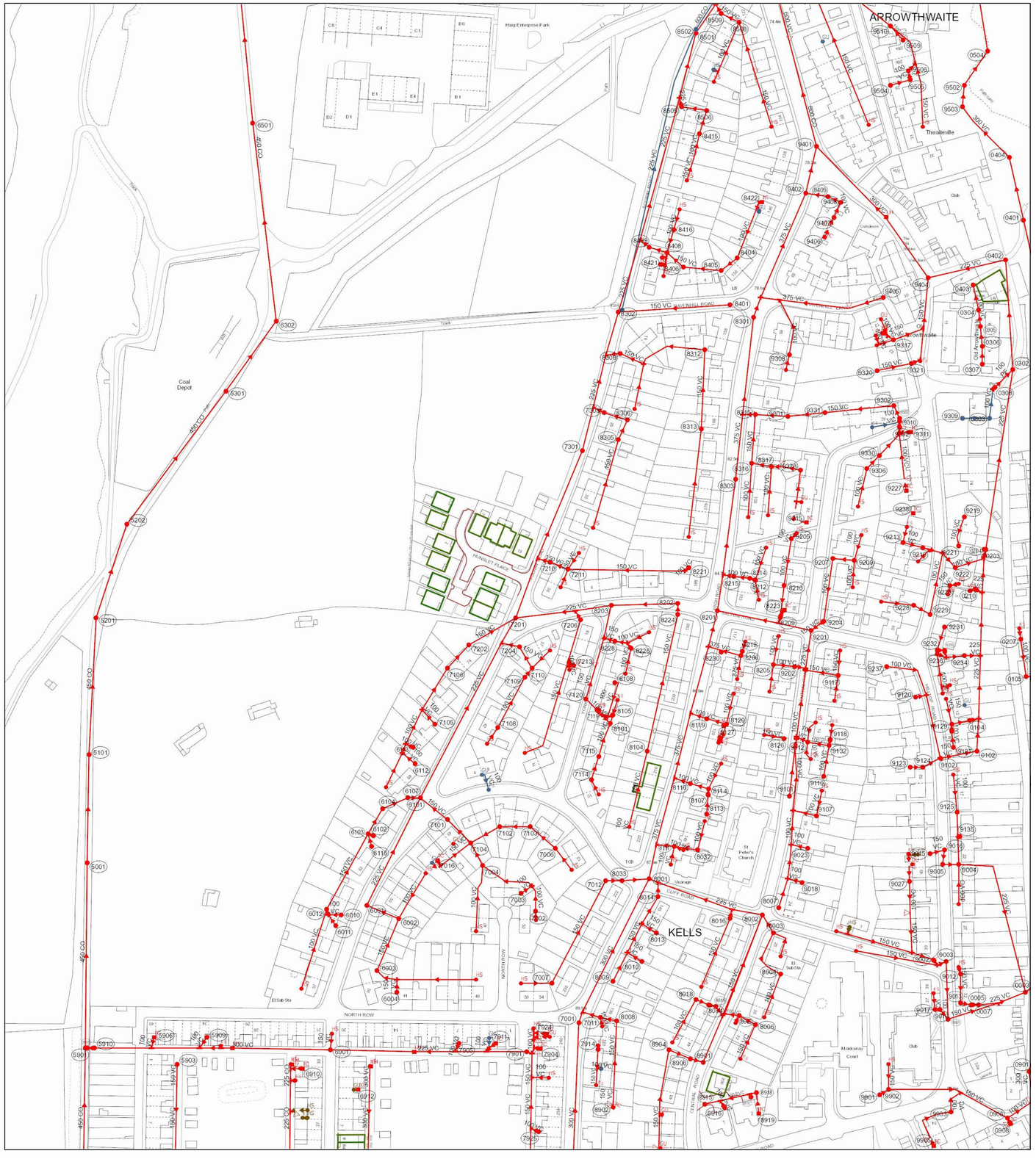
Nodes: 96

Sheet: 5 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West



Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
5201	66.37	CO	64.88	450			CO	54.70832	1 in 127
5201	66.37	CO	64.88	450			CO	54.70832	1 in 127
8003	89.1	CO	0	150			VC	11.6619	
8003	89.1	CO	0	150			VC	11.6619	
6102	84.37	CO	84.04	100			VC	3.162278	
8305	77.56	CO	76.6	150			VC	12.08305	1 in 35
7115		CO	0	100			VC	19.43058	
8301	78.32	CO	76.33	375			VC	11.7047	
9320		CO		150			VC	19.62661	
9101	88.45	CO	0	100			VC	27.16615	
7119	83.79	CO	83.33	100			VC	4.24264	
7102		CO	0	100			VC	18.35756	
8018	89.53	CO	88.92	100			VC	7.615773	1 in 69
8018	89.53	CO	88.92	100			VC	7.615773	1 in 69
9127	83.13	CO	82.29	100			VC	9.055386	
9234		CO	0	225			VC	9	
9233	84.28	CO	83.37	100			VC	4.123106	
0003	76.12	CO	74.56	225			CO	22.4722	1 in 26
0003	76.12	CO	74.56	225			VC	22.4722	1 in 26
9112	88.59	CO	86.93	100			VC	6.708204	
8006	89.54	CO	88.9	100			VC	10.29563	1 in 51
8006	89.54	CO	88.9	100			VC	10.29563	1 in 51
9409		CO		100			VC	12.47623	
9505		CO	0	150			VC	5.09902	
8033		CO	0	150			VC	15.0333	
8316	84.28	CO	83.16	150			VC	27.07397	1 in 13
6004		CO	0	150			VC	7	
6004		CO	0	150			VC	7	
8404	77.12	CO	76.16	150			VC	11.40175	1 in 50
9301	84.31	CO	82.86	150			VC	18.02776	1 in 10
9003	82.89	CO	81.74	150			VC	32.01562	
9003	82.89	CO	81.74	150			VC	32.01562	
9216	86.86	CO	83.74	100			VC	11.40175	
7103	88.78	CO	87.85	100			VC	17	
7007		CO	0	150			VC	64.41273	
7007		CO	0	150			VC	64.41273	
9202	88.58	CO	87.1	100			VC	6.082763	
9002	83.35	CO	82.61	150			VC	3.605551	
9002	83.35	CO	82.61	150			VC	3.605551	
6011	85.27	CO	84.64	100			VC	7.211102	
6011	85.27	CO	84.64	100			VC	7.211102	
9306	88.72	CO	87.39	100			VC	10.0214	
6103		CO	0	150			VC	16.12452	
9236		CO	0	100			VC	5.385165	
9023	88.63	CO	0	100			VC	9.219544	
7110		CO	0	150			VC	13.893044	
9124	84.91	CO	84.26	100			VC	10.97948	
9407		CO		100			VC	9.189657	
7905		CO		100			VC	4.907588	
7905		CO		100			VC	4.907588	
9232		CO	0	100			VC	4	
7012		CO	0	150			VC	9	
8221	83.57	CO	82.68	100			VC	2.828427	
7114		CO	0	100			VC	13.60147	
9404	79.21	CO	75.7	300			VC	96.06911	1 in 169
9102	83.69	CO	82.65	150			VC	10.19804	1 in 13
6302	65.15	CO	63.1	450			CO	110.7655	1 in 51
9509		CO	0	150			VC	10.63015	
8415		CO	0	100			VC	13.60147	
9209	89.66	CO	88.27	100			VC	12.04159	1 in 35
8009		CO	0	150			VC	17.88854	
8009		CO	0	150			VC	17.88854	
9207	89.13	CO	87.91	100			VC	35.35534	1 in 25
7006		CO	0	150			VC	18.43909	
0305	79.52	CO	78.65	100			VC	9.055386	1 in 50
9405		CO	0	375			VC	19.92486	
9408		CO		100			VC	7.870367	
9128		CO	0	100			VC	4	
8113		CO	0	100			VC	10.53137	
7120	83.34	CO	81.73	150			VC	17.72005	
8317	85.37	CO	84.11	150			VC	11.18034	1 in 12
8904		CO	0	150			VC	13	
8904		CO	0	150			VC	13	
9317		CO		150			VC	17.75463	
0307	79.47	CO	78.95	100			VC	10	1 in 71
0207		CO		100			CO	20.98955	
9401	78.08	CO	75.05	600			CO	99.90826	1 in 27
9503	72.78	CO	70.89	300			VC	12.04159	1 in 36
8501	72.82	CO	71.56	225			VC	54.63816	1 in 70
8108	83.79	CO	82.71	100			VC	21.92486	
9902		CO	0	150			VC	70.12099	
9902		CO	0	150			VC	70.12099	
8005	89.56	CO	88.66	100			VC	8.062258	
8005	89.56	CO	88.66	100			VC	8.062258	
9212	86.98	CO	85.84	100			VC	3.162278	1 in 24
8007	88.89	CO	88.22	100			VC	16.76305	
8007	88.89	CO	88.22	100			VC	16.76305	
7914		CO	0	150			VC	19.91275	
7914		CO	0	150			VC	19.91275	
7104		CO	0	150			VC	18.38478	
7211	79.01	CO	0	150			VC	10.77033	
8032	88.26	CO	87.5	100			VC	13.15295	
8013	88.91	CO	0	150			VC	9.433981	
8013	88.91	CO	0	150			VC	9.433981	
9328		CO	0	100			VC	10.28941	
0005		CO	0	150			VC	4	
0005		CO	0	150			VC	4	
0105		CO		100			VC	19.05029	
9123		CO	0	100			VC	7	
9231	84.38	CO	83.63	100			VC	13.60147	
8401		CO	0	150			VC	62.1289	
9901	87.69	CO	86.53	150			VC	5.830952	
9901	87.69	CO	86.53	150			VC	5.830952	
9219	83.87	CO	83.33	100			VC	16.80372	
8107		CO		100			VC	3.504298	
9309	81.97	SW	0	100			VC	15	
9321		CO		150			VC	5.327794	
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
6901	86.12	CO	84.98	300			VC	131.0091	1 in 9
7903	90.68	CO	89.23	300			VC	97.08244	1 in 123
8506		CO	0	100			VC	14.14214	
8034	89.59	CO	88.8	100			VC	4.123106	
8034	89.59	CO	88.8	100			VC	4.123106	
5001	68.27	CO	66.76	450			CO	60.00833	1 in 73
5001	68.27	CO	66.76	450			CO	60.00833	1 in 73
8312	77.62	CO	76.3	150			VC	38.14975	
8104		CO	0	150			VC	77.87811	
7101		CO	0	150			VC	19.20937	
9504	77.29	CO	76.6	100			VC	11.40175	
8906		CO	0	150			VC	7.28011	
8906		CO	0	150			VC	7.28011	
5301	64.98	CO	63.46	450			CO	48.01041	1 in 145
7106		CO	0	100			VC	31.76476	
8008	90.08	CO	0	150			VC	9.219544	
8008	90.08	CO	0	150			VC	9.219544	
0306	79.51	CO	78.78	100			VC	11.04536	1 in 100
6107		CO	0	150			VC	7	
6003		CO	0	150			VC	31.24552	
6003		CO	0	150			VC	31.24552	
8105	83.79	CO	83.45	100			VC	3.162278	
8306	77.11	CO	76.21	150			VC	13.60147	1 in 22
0401		CO	0	300			VC	35.90265	
7202		CO	0	150			VC	30.01666	
7105		CO	0	100			VC	10.63015	
8114	88.09	CO	87.06	100			VC	10.44031	1 in 28
8101		CO	0	100			VC	19.24736	
9117		CO	0	150			VC	18.37823	
8406		CO	0	150			VC	12.04159	
5202	65.92	CO	64.42	450			CO	92.20087	1 in 98
5202	65.92	CO	64.42	450			CO	92.20087	1 in 98
5906		CO		100			VC	6.171746	
5906		CO		100			VC	6.171746	
9018	88.73	CO	88.09	100			VC	8.246211	
8313	79.89	CO	79.19	150			VC	44.04543	1 in 16
5903		CO	0	150			VC	51.0098	
5903		CO	0	150			VC	51.0098	
9204	88.92	CO	86.37	100			VC	3.605551	1 in 16
0504	71.62	CO	69.91	300			VC	62.80127	1 in 103
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5910	72.2	CO	70.66	300			VC	4	
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
5905	69.65	CO	67.89	450			CO	103.0049	1 in 94
8303	82.86	CO	81.21	375			VC	90.55385	1 in 19
6501	62.64	CO	60.92	450			CO	93.43447	1 in 85
0404	73.72	CO	71.31	300			VC	38.29427	1 in 93
5101	67.39	CO	65.92	450			CO	76.10519	1 in 76
5101	67.39	CO	65.92	450			CO	76.10519	1 in 76
8508	73.05	CO	71.79	150			VC	11.18034	1 in 49
9013		CO	0	150			VC	6.082763	
9013		CO	0	150			VC	6.082763	
7004		CO	0	100			VC	14.24505	
6104		CO	0	150			VC	15.23155	
6010	85.27	CO	84.53	100			VC	7	
6010	85.27	CO	84.53	100			VC	7	
9012		CO	0	150			VC	16	
9012		CO	0	150			VC	16	
8226	54.04	CO	52.98	100			VC	3.605551	
9903		CO		100			VC	13.64863	
9903		CO		100			VC	13.64863	
9017		CO		150			VC	2.846258	
9017		CO		150			VC	2.846258	
9110	88.5	CO	87.41	100			VC	17.26268	1 in 91
8004		CO	0	100			VC	30.27206	
8004		CO	0	100			VC	30.27206	
9502	72.25	CO	70.53	300			VC	23.02173	1 in 37
9237	87.82	CO	87.43	100			VC	31.98331	
9132	88.43	CO	87.18	100			VC	12.16553	1 in 64
9015	84.16	CO	0	150			VC	8.246211	
8505	73.39	CO	0	225			VC	5.09902	
0308	80.41	CO	78.91	100			VC	7.071068	1 in 10
8010	89.18	CO	0	150			VC	9.433981	
8010	89.18	CO	0	150			VC	9.433981	
9510		CO	0	150			VC	64.81512	
8405	76.91	CO	75.85	150			VC	21.09502	
9016		CO	0	150			VC	8.062258	
8304	74.77	SW	73.36	225			VC	161.6537	
9205		CO	0	100			VC	26.30589	
7901		CO	0	225			VC	109.0109	
7901		CO	0	225			VC	109.0109	
0906	78.4	CO	77.4	100			VC	14.4222	1 in 7
0906	78.4	CO	77.4	100			VC	14.4222	1 in 7
9228	86.9	CO	0	100			VC	10.29563	
7003		CO	0	100			VC	7.211102	
0303	80.72	SW	79.86	100			VC	16.12452	
0901	76.04	CO	74.33	300			VC	58.5235	1 in 81
0901	76.04	CO	74.33	300			VC	58.5235	1 in 81
8224	84.57	CO	82.93	150			VC	6	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
9120	86.4	CO	85.13	100			VC	6.082763	
8202	84.35	CO	0	150			VC	37.01351	
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
5901	71.55	CO	69.84	225			VC	1	1 in 1
0304	79.62	CO	78.44	100			VC	14.31782	1 in 13
9107	88.32	CO	87.61	100			VC	13.34166	
0102	82.93	CO	81.03	225			VC	18.02776	
7109	81.72	CO	80.92	100			VC	6.403124	
0402	77.74	CO	0	225			VC	44.14748	
9213	88.1	CO	0	100			VC	11.40175	
7002		CO	0	100			VC	14.60555	
7002		CO	0	100			VC	14.60555	
7106		CO	0	150			VC	17.69181	
9331		CO		150			VC	20.83089	
6113	81.02	CO	80.83	100			VC	3.472136	
0302	78.98	CO	77.34	225			VC	61.13101	
8206	87.38	CO	0	375			VC	18.68154	
0203	81.9	CO	79.46	225			VC	1	
8205	88.47	CO	87.31	100			VC	12.04159	1 in 67
9402	76.35	CO	75.32	600			CO	26.68333	1 in 121
8509	72.87	CO	71.54	150			VC	5.830952	
6116	84.97	CO	84.58	100			VC	7.28011	
0204	81.44	CO	79.03	225			VC	101.1187	1 in 60
6012		CO	0	150			VC	47.88528	
6012		CO	0	150			VC	47.88528	
9118		CO		100			VC	3.459102	
6002		CO		150			VC	19.22406	
6002		CO		150			VC	19.22406	
8315	82.94	CO	81.07	150			VC	7	
8214	86.66	CO	85.66	100			VC	9.055386	1 in 16
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75
5904	70.46	CO	68.73	450			CO	63.00793	1 in 75
6112		CO	0	100			VC	9.219544	
8408	74.66	CO	73.52	150			VC	10.44031	1 in 104
9229		CO	0	100			VC	34.71311	
6001		CO	0	225			VC	66.67095	
6001		CO	0	225			VC	66.67095	
8502	72.72	SW	0	600			CO	73.78347	
9019		CO		150			VC	6.90265	
9019		CO		150			VC	6.90265	
8209	88.1	CO	86.61	100			VC	4.123106	
8215	85.93	CO	85	100			VC	6.082763	
8917		CO		100			PVC	1.866576	
8917		CO		100			PVC	1.866576	
8120	87.8	CO	86.32	100			VC	11.40175	1 in 95
8116	87.61	CO	86.65	100			VC	9.486833	
9001	81.98	CO	0	150			VC	29.41088	
9001	81.98	CO	0	150			VC	29.41088	
8111		CO	0	100			VC	10.04988	
8210	87.99	CO	86.8	100			VC	17.11724	1 in 132
8119	87.44	CO	86.16	100			VC	9.486833	
8409	74.37	CO	73.41	150			VC	6.403124	
9005	83.05	CO	81.25	225			VC	9	1 in 8
8203	81.94	CO	0	225			VC	53.46529	
7925		CO		100			VC	4.716987	
7925		CO		100			VC	4.716987	
0210	83.4	CO	81.9	225			VC	4.472136	
7303	76.5	CO	75.58	150			VC	6.708204	
9125	81.37	CO	80.22	100			VC	29.01724	1 in 484
8016	88.98	CO	88.06	150			VC	5.09902	
8016	88.98	CO	88.06	150			VC	5.09902	
8228	83.22	CO	81.81	150			VC	9.486833	
7206	81.41	CO	80.07	150			VC	5.830952	
9135		CO	0	0			VC	1.136208	
9201	88.63	CO	85.89	225			VC	53.1522	1 in 30
9308		CO	0	100			VC	32.63486	
8901		CO	0	150			VC	88.39762	
8901		CO	0	150			VC	88.39762	
7001	90	CO	88.43	300			VC	89.05907	1 in 44
7001	90	CO	88.43	300			VC	89.05907	1 in 44
6101	84.27	CO	82.1	225			VC	113.1863	1 in 20
7201	78.75	CO	76.5	225			VC	100.1141	1 in 92
7011	90.22	CO	88.95	150			VC	10.44031	
7011	90.22	CO	88.95	150			VC	10.44031	
8001	87.86	CO	86.37	375			VC	133.1795	
9302	85.63	CO	84.21	150			VC	38.47342	
7902		CO	0	150			VC	65.17047	
8002	88.99	CO	87.51	225			VC	66.3056	1 in 66
8002	88.99	CO	87.51	225			VC	66.3056	1 in 66
9222	83.78	CO	83	100			VC	16.76305	
0007		CO	0	225			VC	27.20086	
0007		CO	0	225			VC	27.20086	
9129	83.89	CO	82.33	150			VC	10.32587	
8201	85.57	CO	84	375			VC	73.68401	1 in 30
5909		CO		100			VC	7.166876	
5909		CO		100			VC	7.166876	
9004	80.96	CO	80.16	225			VC	91.30354	1 in 16
8916		CO		100			PVC	4.587301	
8916		CO		100			PVC	4.587301	
9506		CO	0	100			VC	5.656854	
0104		CO		150			VC	4.971193	
8302	74.82	CO	73.7	225			VC	123.7673	
9332		CO		100			VC	3.348244	
7204	80.3	CO	78.67	150			VC	10.19804	
8309	75.72	CO	74.7	150			VC	8.062258	
8019	89.55	CO	0	100			VC	6.403124	
8019	89.55	CO	0	100			VC	6.403124	
8014	88.47	CO	87.01	150			VC	8	
7210	78.59	CO	77.2	150			VC	7.28011	
9303		CO	0	100			VC	7.615773	
9027		CO		100			VC	17.55291	
7301	76.59	CO	75.39	225			VC	79.5715	1 in 47
8918		CO		100			PVC	29.38382	
8918		CO		100			PVC	29.38382	

LEGEND

Abandoned · Foul · Surface Water · Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:
red - combined · blue - surface water
brown - foul · purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforced Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

1 WATERS EDGE CLOSE,
WHITEHAVEN,
CA28 9PE

OS sheet Number: NX9617SE
Scale: 1:1250 **Date:** 01/07/2021
Nodes: 307
Sheet: 6 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

APPENDIX D – PREVIOUS DRAINAGE INVESTIGATIONS

Unblock Cumbria ltd.
Industrial, Commercial & Domestic Drain Specialist

Former Rhodia Site Sea Outfall Investigation

Week Commencing 11th December 2017

Purpose: To gather as much information as possible about the sea outfall and its associated underground physical assets upstream to the leachate plant sampling point.

The sea outfall was installed to discharge all the sites' effluent into the Irish Sea. In the late 1990's the outfall discharged up to 40 megalitres per day. After the site closed and the buildings were demolished the only effluent stream remaining is the settled leachate that is pumped to sea via the sea outfall.

The environment discharge permit for the leachate system dated 2007 (but believed to originate in the early 2000's) describes the leachate being discharged through a 600mm diameter drain from a sample point -designated S01 at grid reference NX9649 1583 and then to the sea outfall with a discharge point given at the low water mark grid reference NX9602 1627.

There are two separate sea outfall pipes; one that is currently used for the leachate outfall; this starts at MH566 upstream of S01 and leads down to the cliff edge and the consented discharge point below MH1. There is a second pipe that begins at MH9 on site and runs via MH17, MH15, 14, 13, 12 & 11 to the second sea outfall. We have inspected most of this and found it to be a serviceable condition. There's no access to the vertical section.

We started our investigation on the leachate discharge system at the two manholes upstream of S01 – these are marked on the drawing as S01A and MH566. Manhole 566 has a 225mm invert that rapidly opens to a 600mm drain that leads to S01A. At S01A the drain reduces to 150mm diameter. It flows to the sample point S01 in a 150mm diameter plastic pipe. After S01 the pipe reduces to 100mm diameter.

We next find the plastic pipe in manhole 10, grid reference NX9641 1598; here the pipe is sitting in the invert of a 600mm drain; we think this is the original drain as referenced in the discharge permit. Having the plastic pipe in the invert makes it impossible to obtain travelling CCTV footage so we have not managed to confirm the condition of the host drain along its length. What we have seen indicates that it is fair condition.

There is a manhole upstream of MH10, it's a 450mm lateral connection to MH10 and it is designated MH300 on the plan, it's grid reference is NX9644 1598. We have inspected from it down to MH10 and find the drain to be in good condition. MH300 could be a useful manhole as it would give access to the leachate sea outfall for any pumped water from the old anhydrite mine.

Going downstream from MH10 the next available manhole is MH7 at grid reference NX9635 1613. This is outside the site boundary. The plastic pipe is visible in the invert. From here the plastic pipe is next seen in the flume and dosing chamber -we have called this MH17C. This is a locked and welded compound with no access; it's grid reference is NX9634 1614. From here the host drain and the plastic pipe are found at MH4, MH3 & MH2 and it is believed to enter the sea outfall at MH1. MH1 is

another locked and welded structure. At MH4 the pipe is visible in the invert, as it is at MH3. We managed to push a camera from MH3 down to MH2; the host pipe appears intact and in fair condition. At MH2 there is a dropshaft down to MH1. The plastic pipe traverses the dropshaft and exits the manhole through a wall. The pipe is anchored through this wall. MH2 is a dog leg manhole with a large cast concrete lid. There's no access from above. There's also a diverter drain running from MH2 across to MH12; there's no flow down this pipe.

There is an unmarked 225mm drain flowing from a southerly direction through a manhole designated MH3A. This is a light duty cover with a constant 20% flow that discharges into MH3. This flows around the plastic pipe to MH2 and then into the dropshaft. Dye tests of the leachate drain indicated that leachate was not flowing through this unmarked drain.

As there is no access at MH1 we could not determine the internal condition of the vertical discharge.

Video footage of the Greenpeace activities on this outfall in 1991 shows a swan's neck outfall, with the top of the neck at the high-water mark. This swan's neck has been washed away in the intervening period, the horizontal section to the low water mark has been open to the elements for several years.

There is a second sea outfall pipe; this runs down the cliff from MH17, through the southern side of MH17C to MH15 which is a Y manhole. This connects across to MH5. The other leg of the Y is stopped off but it runs down to MH14 then to MH13, then to MH12 and finally it drops into a box section culvert called MH11 on the plan before discharging over the cliff. We have footage of this drain – it's a combination of 600 and 450mm diameter pipe and is in good condition. Access to the vertical section is poor and unsafe. There's no access at MH11 other than by dangling over the cliff.

Upstream of MH17 the drain flows from MH9 – an on-site manhole with grid reference NX9638 1597. Manhole 9 has a cast slab cover – very similar to MH2 in this respect and it would need heavy lifting gear to open. We did get the camera upstream to MH9 only to find a half wall blocking the pipe. Water is flowing over this weir wall.

When you look at the site drawing there's an octagonal base to the east of MH9. This used to be an effluent "treatment" unit and I believe it connected to MH9 via a 600mm drain. We could not find any access points for this drain.

Conclusions

We have not been able to confirm the condition of the vertical section or the low water horizontal section as there is currently no access to these parts of the pipe. Unlocking MH1 and undertaking a confined space entry will be required.

There is an existing route for discharges of pumped water. The leachate discharge system has been modified, compared to the consent, by the installation of a 110mm continuously welded plastic pipe from sample point S01 down to the sea discharge. We presume this was done to comply with the consent to discharge 017490484 "condition 2 – nature of the discharge. The discharge shall consist solely of trade effluent…." However, the cross connection from MH3A to MH3 implies that this condition is currently in breach. The 110mm diameter pipe is probably insufficient for the planned mine water discharge.

The plastic pipe is laid, so far as we can tell, as a loose fit in the existing pipe. As such, it may be possible to utilise the host pipe to carry the mine water to sea. The discharge pipe had a working capacity of 40 megalitres per day when in operation.

The condition of the pipe is generally fair along the lengths we have managed to inspect.

There is a second route from the site via MH 9, 17, 15,14,13,12,11 to the second sea outfall. There's one section of 450mm pipe, all the rest, apart from the final box section is 600mm. The report describes the condition of the drain which is generally acceptable; however, we could not investigate the vertical drop to the low water mark. Further investigation would need to be made to inspect MH9.

Ian Woodhouse

Director

Unblock Cumbria Ltd

West Cumbria Mining Former Rhodia Site Discharge Pipeline

Data

Lat WGS84	Long WGS84	Point Name	Grid Ref OSGB36	Height CL (m)	Depth IL (m)	Diameter	Comments
54. 31'47.22135	-3.36'11.24454	0001/MH17	NX9635 1612	135.22	128.62		
54.31'47.495375	-3.36'11'14871	0002/MH7	NX9635 1613	132.321	127.501		
54.31'47'74426	-3.36'11.60059	0003/MH17 C	NX9634 1614	130.257	Not Available		See Note 1
54.31'47.90225	-3.36'14.41532	0004/MH15	NX9635 1614	124.988	122.608		
54.31'48.18553	-3.36'14.84566	0005/MH5	NX9628 1615	123.777	120.507		
54.31'48.67863	-3.36'20.78765	0006/MH3A	NX9618 1617	107.49	106.97		
54.31'49.02763	-3.36'21.68920	0007/MH13	NX9619 1618	105.167	103.397		
54.31'48.87476	-3.36'22.72649	0008/MH3	NX9614 1618	103.036	101.116		
54.31'49.13679	-3.36'22.54640	0009/MH2	NX9615 1619	102.436	Not Available		Concrete slab
54.31'48.91533	-3.36'23.33640	0010/MH12	NX9613 1618	101.607	99.997		
54.31'50.16636	-3.36'24.01693	0011/MH1	NX9612 1622	95.73	94.63		See Note 2
54.31'49.39749	-3.36'27.06512	0012/MH11	NX9607 1620	85.034	Not Available		See Note 3
54.31'48.29819	-3.36'18.15023	0013/MH14	NX9623 1616	113.693	111.473		
54.31'48.59459	-3.36'17.81828	0014/MH4	NX9623 1617	113.93	112.03		
54.31'35.62159	-3.36'0332579	0015/MH566	NX9648 1576	138.625	136.805		
54.31'37.39589	-3.36'02.76644	0016/MHS01A	NX9649 1582	138.412	135.912		
54.31'37.71606	-3.36'02.91861	0017/MHS01	NX9649 1583	138.004	135.074		
54.31'42.75301	-3.36'06.07332	0018/MH300	NX9644 1598	138.26	136.26		
54.31'42.79022	-3.36'07.71437	0019/MH10	NX9641 1598	138.284	132.634		
54.31'45.22282	-3.36'09.35327	0020/MH9	NX9638 1597	137.365	Not Available		Concrete Slab

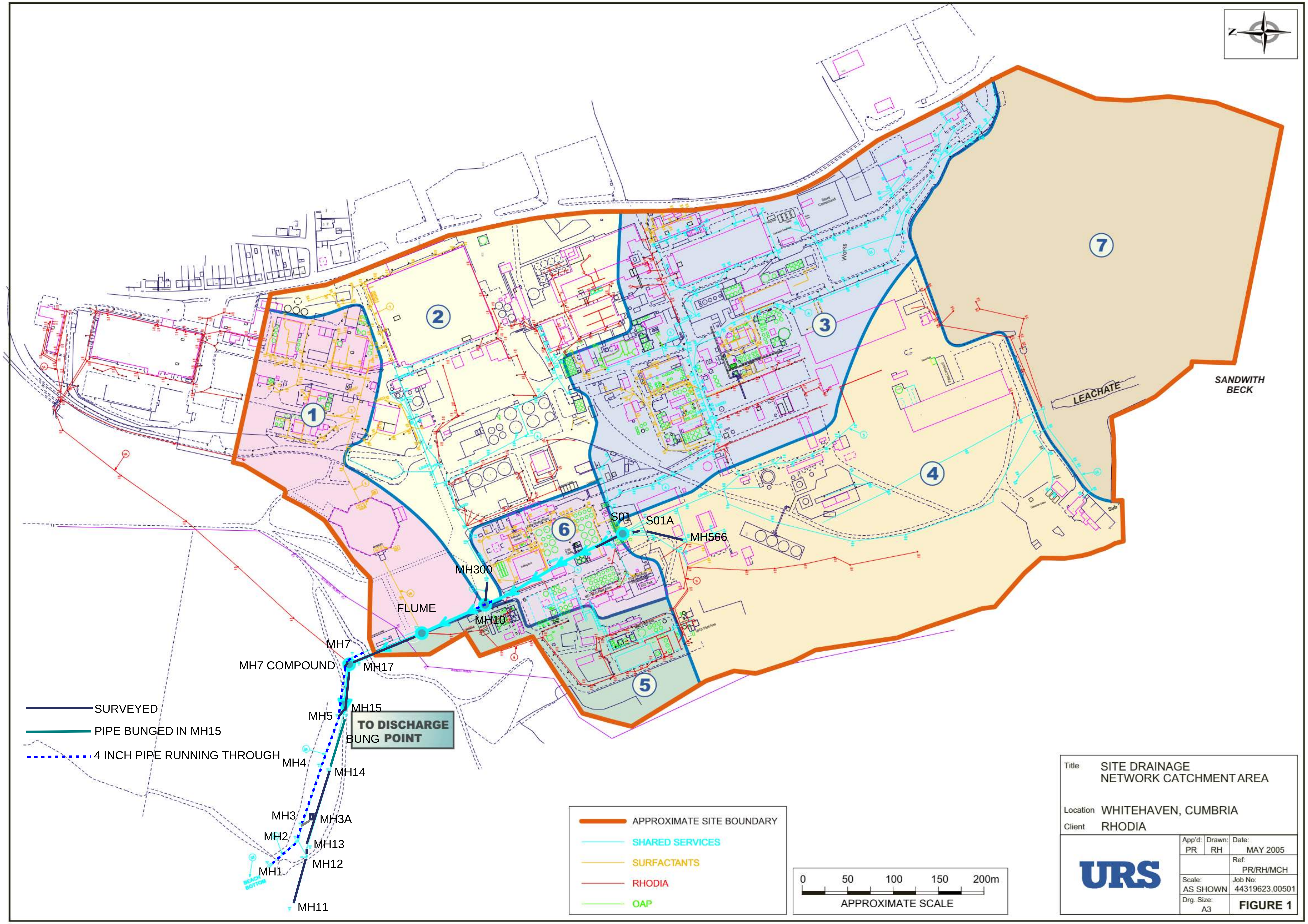
Note Heights are expressed in metres above Wgs84 ellipsoid surface. Invert levels are measured and deducted from cover levels

Note 1 MH17C is the unmarked compound that is locked and welded

Note 2 MH1 is the locked & welded vertical drop on the cliff edge. IL is measured to the top of the discharge pipe

Note 3 MH11 is the other sea discharge pipe. The cover level is the top of the flume - alongside the concrete structure

Manhole Photos From Upstream MH 566 to the Sea Outfall below MH1


1
2
3
4
5
6
7
SANDWITH BECK
LEACHATE
S01
S01A
MH566
MH300
FLUME
MH10
MH7
MH7 COMPOUND
MH17
MH15
MH5
TO DISCHARGE POINT
BUNG
MH4
MH14
MH3
MH3A
MH2
MH13
MH12
MH1
MH11
SURVEYED
PIPE BUNGED IN MH15
4 INCH PIPE RUNNING THROUGH
APPROXIMATE SITE BOUNDARY
SHARED SERVICES
SURFACTANTS
RHODIA
OAP
0 50 100 150 200m
APPROXIMATE SCALE
Title SITE DRAINAGE NETWORK CATCHMENT AREA
Location WHITEHAVEN, CUMBRIA
Client RHODIA
URS
App'd: PR
Drawn: RH
Date: MAY 2005
Ref: PR/RH/MCH
Scale: AS SHOWN
Job No: 44319623.00501
Drg. Size: A3
FIGURE 1

APPENDIX E– EXISTING OUTFALL PHOTOGRAPHS

Photo 1 – Northern Discharge Pipe – Shaft (I)

Photo 2 – Northern Discharge Pipe – Shaft (II)

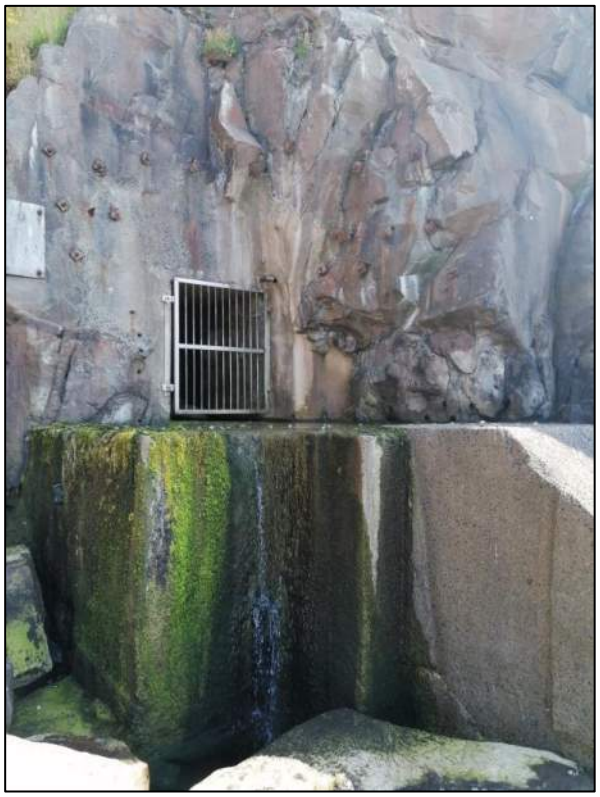


Photo 3 – Northern Discharge Pipe – Sea Outfall (I)

Photo 4 – Northern Discharge Pipe – Sea Outfall (II)

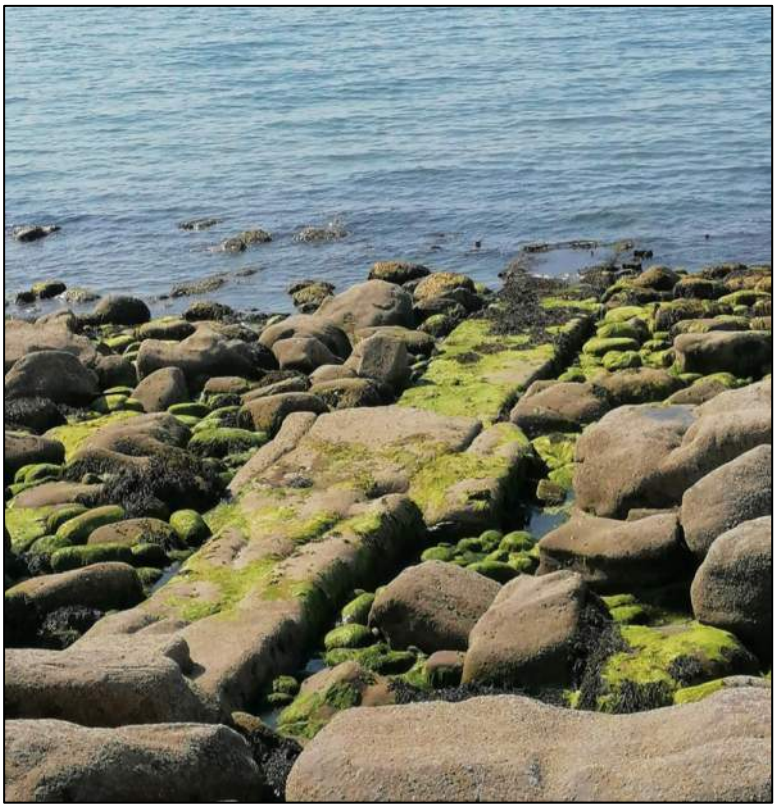


Photo 5 – Northern Discharge Pipe – Sea Outfall (III)

Photo 6 – Cliff Outfall (I)

Photo 7 – Cliff Outfall (II)

APPENDIX F – GREENFIELD RUNOFF CALCULATIONS

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Francisco Aguilar
Site name:	marchon
Site location:	

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be
the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	54.52880° N
Longitude:	3.59867° W
Reference:	3768447705
Date:	Jul 01 2021 11:08

Runoff estimation approach

IH124

Site characteristics

Total site area (ha): 28.34

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics

	Default	Edited
SAAR (mm):	1058	1058
Hydrological region:	10	10
Growth curve factor 1 year:	0.87	0.87
Growth curve factor 30 years:	1.7	1.7
Growth curve factor 100 years:	2.08	2.08
Growth curve factor 200 years:	2.37	2.37

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q_{BAR} (l/s):	221.84	221.84
1 in 1 year (l/s):	193	193
1 in 30 years (l/s):	377.13	377.13
1 in 100 year (l/s):	461.42	461.42
1 in 200 years (l/s):	525.76	525.76

APPENDIX G – PROPOSOED DRAINAGE LAYOUT

N

DROP SHAFT CHAMBER. PIPE DISCHARGES INTO THE SEA AT LOW LEVEL AT THE BEACH. CONDITION TBC.

150Ø THROUGH EXISTING 600Ø PIPE TO BE REMOVED

EX MH02
CL 51.80
IL TBC

600Ø

450Ø

EX MH03
CL 71.60
IL 69.6

EXISTING DISCHARGE PIPE SERVING AS LEACHATE OUTFALL TO BE REMOVED FOLLOWING SITE REMEDIATION

DISCHARGE RATES TO BE CONFIRMED

CONNECTION POINT TBC.

VERTICAL DROP OUTFALL. CONDITION TO BE CONFIRMED

SOUTHERN SURFACE WATER DISCHARGE PIPE

PROPOSED DRAINAGE SYSTEM TO DISCHARGE TO EXISTING SYSTEM DISCHARGING TO THE SEA

0 12.5 25 37.5 50 62.5 m
SCALE 1:1250

EXISTING OUTFALL DETAILS

MH5401
CL 78.29
IL TBC

N

MH5401
CL 78.29
IL 77.21

STORY HOMES ATTENUATION TANK. DETAILS TBC.

MH4401
CL 79.93
IL 78.09

2250

PROPOSED FOUL PUMPING STATION. LOCATION TBC.

GREENFIELD SITE DETAILED APPLICATION

MH4301
CL 81.71
IL 78.98

PUBLIC OPEN SPACE

EXCEEDANCE FLOWS TO BE ROUTED TO THE SEA

MH4201
CL 83.29
IL 79.89

2250

EXISTING DISCHARGE PIPE SERVING AS LEACHATE OUTFALL TO BE REMOVED FOLLOWING SITE REMEDIATION

SEE ABOVE FOR OUTFALL DETAILS

CONNECTION POINT TBC.

BROWNFIELD SITE OUTLINE

PROPOSED DRAINAGE SYSTEM TO DISCHARGE TO EXISTING SYSTEM DISCHARGING TO THE SEA

MH3001
CL 83.60
IL 82.44

LOCALISED DIVERSION OF EXISTING UU FOUL SEWER MAY BE REQUIRED.

DISCHARGE PIPES SERVING FORMER WORKS TO BE DIVERTED OR ABANDONED. TO BE CONFIRMED AT DETAILED DESIGN.

0 12.5 25 37.5 50 62.5 m
SCALE 1:1250

NOTES

1. ALL LEVELS IN METRES AOD.
2. SEWER RECORDS BY UNITED UTILIES.
3. WATERS EDGE CLOSE DRAINAGE RECORDS PROVIDED BY STORY HOMES.
4. DRAINAGE DETAILS FROM FORMER MARCHON SITE BASED ON REPORT BY UNBLOCK CUMBRIA DATED DECEMBER 2017.
5. MASTERPLAN BY CONCEPT ARCHITECTURE PROJECT NO. CPT-257 DRAWING NO. FEA-02 DATED 08.03.2021
6. TOPOGRAPHICAL SURVEY BY RJP SURVEYING CONSULTANTS LTD DRAWING PH376/T00 DATED JULY 2018

KEY

- EXISTING FOUL PUBLIC SEWER
- EXISTING SURFACE WATER SEWER
- EXISTING SURFACE WATER DRAINAGE
- PROPOSED FOUL DRAINAGE
- PROPOSED RISING MAIN
- PROPOSED SURFACE WATER DRAINAGE
- EXCEEDANCE OVERLAND FLOW ROUTE

THIS DRAWING IS FOR PRELIMINARY DESIGN PURPOSES ONLY AND SUBJECT TO FURTHER DETAILED DESIGN

PRELIMINARY ISSUE

Rev	Description	Date	Dm / Chk / App
P02	PRELIMINARY PLANNING ISSUE	10.08.2021	FA CD CD
P01	PRELIMINARY FIRST ISSUE	01.07.2021	FA

Document Control

Issuing Office

Tetra Tech Leeds

3 Sovereign Square, Sovereign Street,
Leeds, United Kingdom, LS1 4ER

Tel: +44 (0)11 3278 7111

www.tetratecheurope.com

Client

PERSIMMON HOMES

Project Name

PROPOSED RESIDENTIAL DEVELOPMENT, FORMER MARCHON SITE, WHITEHAVEN

Sheet Title

INDICATIVE DRAINAGE LAYOUT

TTE Project Number	Drawn By	Date	Checked By	Date	Approved By	Date	Scale @ A1	Suitability
B030491	FA	JULY 21	CD	AUG 21	CD	AUG 21	1:1250	S0

Client Project Number	Originator	Volume/System	Level/Location	Type/Code	Role	Number	Revision
B030491	TTE	00	XX	DR	CH	SK001	P02

TTE_MT_v1