

## **Appendix C**

## Drigg Percolation Test – 25/03/22

Tests carried out during dry, sunny weather.

### TP 1

Hole excavated 2000mm x 1500 x 300. No groundwater was encountered during excavation.

|              | Test 1      | Test 2      | Test 3      |
|--------------|-------------|-------------|-------------|
| Depth (mm)   | Time (mins) | Time (mins) | Time (mins) |
| 1100         | 0           |             |             |
| 950          | 120         |             |             |
|              |             |             |             |
| 950          | 390         |             |             |
| $t_{p75-25}$ | N/A         | N/A         | N/A         |

Test was abandoned after 6.5hours as no further movement in water level was visible.

## TP 2

Hole excavated 2000mm x 1500 x 300. No groundwater was encountered during excavation.

|              | Test 1      | Test 2      | Test 3      |
|--------------|-------------|-------------|-------------|
| Depth (mm)   | Time (mins) | Time (mins) | Time (mins) |
| 1000         | 0           | 0           | 0           |
| 250          | 2           | 2           | 2           |
|              |             |             |             |
| 250          | 120         | 240         |             |
| $t_{p75-25}$ | 2           | 2           | 2           |

Upon filling on all three occasions water level very quickly dropped to 250mm above the base of the excavation. This was very different to performance of other excavations and therefore further investigation warranted. Upon investigation, an existing clay pipe was discovered to have been severed in the pit. This has been assumed to have caused the rapid loss of water from the excavation rather than good infiltration characteristics of the ground itself.



### TP 3

Hole excavated 2000mm x 1500 x 300. No groundwater was encountered during excavation.

|              | Test 1      | Test 2      | Test 3      |
|--------------|-------------|-------------|-------------|
| Depth (mm)   | Time (mins) | Time (mins) | Time (mins) |
| 1000         | 0           |             |             |
| 900          | 180         |             |             |
|              |             |             |             |
| 900          | 360         |             |             |
| $t_{p75-25}$ | N/A         | N/A         | N/A         |

Test was abandoned after 6 hours as no further movement in water level was visible.



## TP 4

Hole excavated 2000mm x 1500 x 300. No groundwater was encountered during excavation.

|              | Test 1      | Test 2      | Test 3      |
|--------------|-------------|-------------|-------------|
| Depth (mm)   | Time (mins) | Time (mins) | Time (mins) |
| 1000         | 0           |             |             |
| 550          | 180         |             |             |
| 450          | 270         |             |             |
| 450          | 360         |             |             |
| $t_{p75-25}$ | N/A         | N/A         | N/A         |

Test was abandoned after 6 hours as no further movement in water level was visible.

## TP 5

Hole excavated 2000mm x 1500 x 300. No groundwater was encountered during excavation.

|              | Test 1      | Test 2      | Test 3      |
|--------------|-------------|-------------|-------------|
| Depth (mm)   | Time (mins) | Time (mins) | Time (mins) |
| 1000         | 0           |             |             |
| 600          | 60          |             |             |
|              |             |             |             |
| 600          | 360         |             |             |
| $t_{p75-25}$ | N/A         | N/A         | N/A         |

Test was abandoned after 6 hours as no further movement in water level was visible.

## Appendix D

**A L Daines & Partners LLP**

**28  
Castle Street,  
Carlisle,  
CA3 8TP**

**FAO:**

**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](mailto:propertysearches@uuplc.co.uk)**

**Your Ref: 16573 Drigg  
Our Ref: UUPS-ORD-382013  
Date: 31/03/2022**

**Dear Sirs**

**Location: Land to north station road Drigg**

I acknowledge with thanks your request dated 30/03/2022 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**



## 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)".

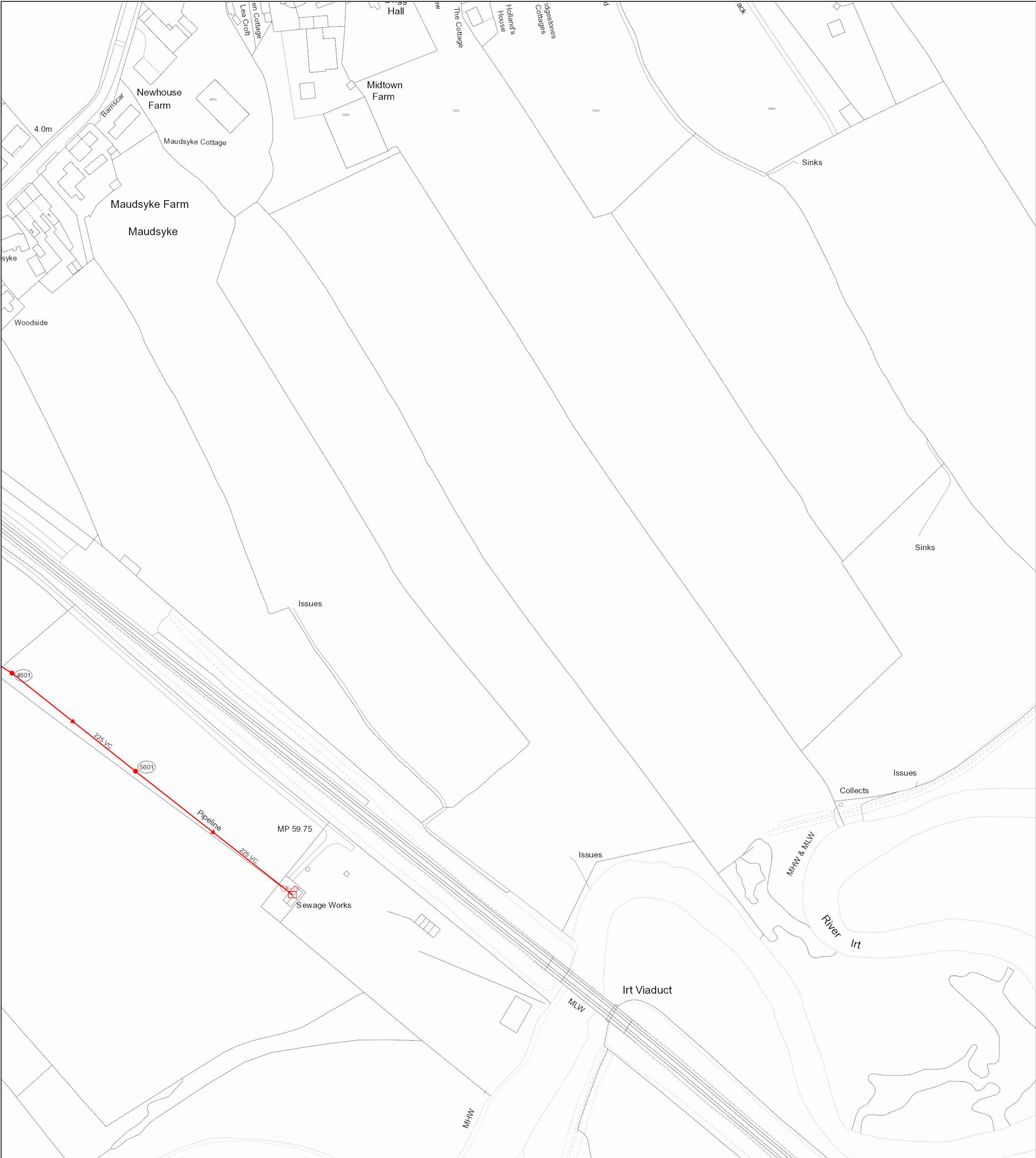
### TERMS AND CONDITIONS:

- 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.



This technical map illustrates a railway station and its surrounding infrastructure. A prominent red line with directional arrows traces a path through the station, likely representing a signal route or a specific track layout. The path begins near the top right, passing through a series of points labeled with codes such as 4901, 4002, 3805, 3802, 3803, 3804, 3805, 3806, 3807, 3801, 3802, 3701, and 4601. These points are connected by straight line segments, with some segments labeled with distances like 14.9m and 10.4m. The map also shows various railway tracks, including 'STATION ROAD', 'STOCK ROAD', and 'Track'. Buildings and other structures are labeled, including 'Victoria Hotel (PH)', 'Club', 'Storage Depot', 'Wray Head', 'Endpoint Hall', 'Maudsyke', 'Cross House', and 'Woodside'. Other labels include 'Pond', 'Drain', 'Path', 'SP', 'LB', 'SB', 'LC', 'VC', and 'MP 60.0'. The map is oriented with North at the top, and the overall layout is a detailed technical drawing of the railway infrastructure.





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.

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| Reho | Cover | Func | Invert | Size x | Size y | Shape | Matl | Length   | Grad     |
|------|-------|------|--------|--------|--------|-------|------|----------|----------|
| 3701 | 10.9  | CO   | 8.92   | 225    |        |       | VC   | 99.97261 | 1 in 285 |
| 5601 | 8.78  | CO   | 2.66   | 225    |        |       | VC   | 109.9251 |          |
| 4601 | 9.68  | CO   | 8.56   | 225    |        |       | VC   | 86.77837 | 1 in 15  |
| 4601 | 9.68  | CO   | 8.56   | 225    |        |       | VC   | 86.77837 | 1 in 15  |

| Reho | 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

SW

CO

OV

Foul

Surface Water

Combined

Overflow

#### SEWER SHAPE

CI

EG

OV

FT

RE

SQ

Circular

Egg

Oval

Flat Top

Rectangular

Square

TR

AR

BA

HO

UN

Trapezoidal

Arch

Barrel

HorseShoe

Unspecified

#### SEWER MATERIAL

AC

BR

PE

RP

CO

CSB

CSU

CC

PSC

GRC

DI

PVC

CI

SI

ST

VC

PP

PF

MAC

MAR

U

Asbestos Cement

Brick

Polyethylene

Reinforced Plastic Matrix

Concrete

Concrete Segment Bolted

Concrete Segment Unbolted

Concrete Box Culvert

Plastic / Steel Composite

Glass Reinforced Plastic

Ductile Iron

Polyvinyl Chloride

Cast Iron

Spun Iron

Steel

Vitrified Clay

Polypropylene

Pitch Fibre

Masonry, Coursed

Masonry, Random

Unspecified

Address or Site Reference:

Land to north station road Drigg,

OS sheet  
Number:

SD0698NE

Scale: 1:1250

Date: 31/03/2022

Nodes:  
Sheet:

4  
2 of 4

Printed by: Property Searches

SEWER  
RECORDS

Water for the North West









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Reho Cover Func Invert Size x Size y Shape Mat Length Grad

Reho Cover Func Invert Size x Size y Shape Mat Length Grad

LEGEND

|           |       |               |          |              |
|-----------|-------|---------------|----------|--------------|
| Abandoned | Foul  | Surface Water | Combined | Public Sewer |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |
| -----     | ----- | -----         | -----    | -----        |

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

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

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:

Land to north station road Drigg,

OS sheet SD0699SE  
Number:  
Scale: 1:1250 Date: 31/03/2022  
Nodes: 0  
Sheet: 4 of 4

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## **Appendix E**



|                                                         |                     |             |              |                                                                                     |
|---------------------------------------------------------|---------------------|-------------|--------------|-------------------------------------------------------------------------------------|
| Project:                                                | Date:<br>25/09/2024 |             |              |  |
|                                                         | Designed by:        | Checked by: | Approved By: |                                                                                     |
|                                                         | smars               |             |              |                                                                                     |
| Report Title:<br>UK and Ireland Rural Runoff Calculator | Company Address:    |             |              |                                                                                     |

ICP SUDS / IH 124

Details

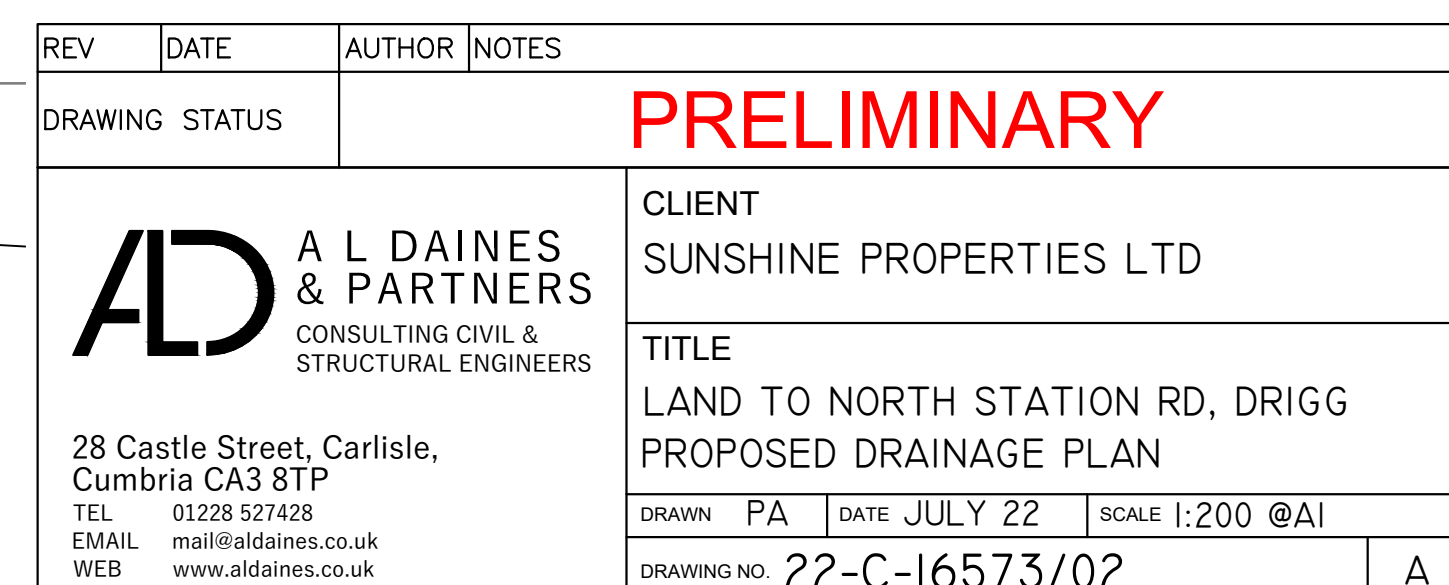
|                       |           |
|-----------------------|-----------|
| Method                | ICP SUDS  |
| Area (ha)             | 0.566     |
| SAAR (mm)             | 1085.0    |
| Soil                  | 0.49      |
| Region                | Region 10 |
| Urban                 | 0         |
| Return Period (years) | 0         |

Results

| Region    | QBAR Rural<br>(L/s) | QBAR Urban<br>(L/s) | Q 1 (years)<br>(L/s) | Q 30 (years)<br>(L/s) | Q 100 (years)<br>(L/s) |
|-----------|---------------------|---------------------|----------------------|-----------------------|------------------------|
| Region 10 | 5.0                 | 5.0                 | 4.3                  | 8.5                   | 10.4                   |

## **Appendix F**





## Appendix G

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Stormwater Controls<br>Storm Phase: Phase     | Company Address:    |             |              |





Pond (1)

Type : Pond

Dimensions

|                      |         |
|----------------------|---------|
| Exceedance Level (m) | 17.000  |
| Depth (m)            | 1.100   |
| Base Level (m)       | 15.900  |
| Freeboard (mm)       | 300     |
| Initial Depth (m)    | 0.000   |
| Porosity (%)         | 100     |
| Average Slope (1:X)  | 4.638   |
| Total Volume (m³)    | 154.709 |

| Depth (m) | Area (m²) | Volume (m³) |
|-----------|-----------|-------------|
| 0.000     | 110.00    | 0.000       |
| 1.000     | 350.00    | 218.738     |

Inlets

Inlet

|                    |                |
|--------------------|----------------|
| Inlet Type         | Point Inflow   |
| Incoming Item(s)   | 1.010          |
|                    | 1.008          |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |

Inlet (1)

|                    |                    |
|--------------------|--------------------|
| Inlet Type         | Lateral Inflow     |
| Incoming Item(s)   | P8 Garden          |
|                    | Catchment Area (5) |
| Bypass Destination | (None)             |
| Capacity Type      | No Restriction     |

Inlet (2)

|                    |                |
|--------------------|----------------|
| Inlet Type         | Lateral Inflow |
| Incoming Item(s)   | P9Garden       |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |

Inlet (3)

|                    |                |
|--------------------|----------------|
| Inlet Type         | Lateral Inflow |
| Incoming Item(s)   | P7Garden       |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |

Inlet (4)

|                    |                |
|--------------------|----------------|
| Inlet Type         | Lateral Inflow |
| Incoming Item(s)   | P6 Garden      |
|                    | Road 5         |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |



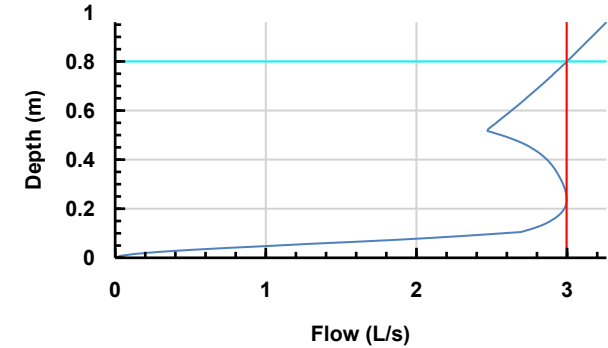
|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Stormwater Controls<br>Storm Phase: Phase     | Company Address:    |             |              |



Outlets

Outlet

|                     |                                        |
|---------------------|----------------------------------------|
| Outgoing Connection | 1.011                                  |
| Outlet Type         | Hydro-Brake®                           |
| Invert Level (m)    | 15.900                                 |
| Design Depth (m)    | 0.800                                  |
| Design Flow (L/s)   | 3.0                                    |
| Objective           | Minimise Upstream Storage Requirements |
| Application         | Surface Water Only                     |
| Sump Available      | <input checked="" type="checkbox"/>    |
| Unit Reference      | SHE-0085-3000-0800-3000                |



Advanced

|                               |             |
|-------------------------------|-------------|
| Side Infiltration Rate (m/hr) | 0.0036      |
| Safety Factor                 | 2.0         |
| Perimeter                     | Circular    |
| Length (m)                    | 28.023      |
| Friction Scheme               | Manning's n |
| n                             | 0.045       |



Tank1

Type : Tank

Dimensions

|                      |        |
|----------------------|--------|
| Exceedance Level (m) | 18.500 |
| Depth (m)            | 2.200  |
| Base Level (m)       | 16.300 |
| Freeboard (mm)       | 0      |
| Initial Depth (m)    | 0.000  |
| Porosity (%)         | 95     |
| Average Slope (1:X)  | 0.00   |
| Total Volume (m³)    | 86.200 |

| Depth (m) | Area (m²) | Volume (m³) |
|-----------|-----------|-------------|
| 0.000     | 60.00     | 0.000       |
| 1.500     | 60.00     | 85.500      |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Stormwater Controls<br>Storm Phase: Phase     | Company Address:    |             |              |



### Inlets

#### Inlet (1)

|                    |                |
|--------------------|----------------|
| Inlet Type         | Point Inflow   |
| Incoming Item(s)   | Pipe           |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |

#### Inlet (2)

|                    |                |
|--------------------|----------------|
| Inlet Type         | Point Inflow   |
| Incoming Item(s)   | Pipe (1)       |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |

#### Inlet (3)

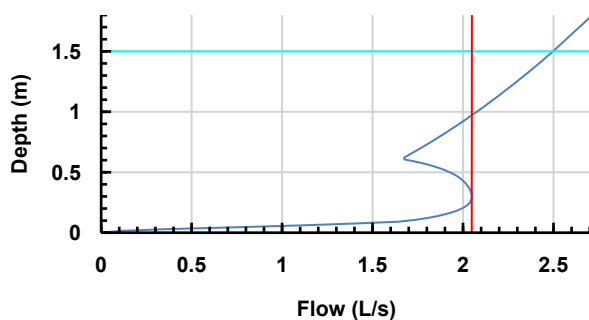
|                    |                    |
|--------------------|--------------------|
| Inlet Type         | Point Inflow       |
| Incoming Item(s)   | Catchment Area (4) |
| Bypass Destination | (None)             |
| Capacity Type      | No Restriction     |

### Outlets

#### Outlet

|                     |                                        |
|---------------------|----------------------------------------|
| Outgoing Connection | No Delay                               |
| Outlet Type         | Hydro-Brake®                           |
| Invert Level (m)    | 16.300                                 |
| Design Depth (m)    | 1.500                                  |
| Design Flow (L/s)   | 2.5                                    |
| Objective           | Minimise Upstream Storage Requirements |
| Application         | Surface Water Only                     |
| Sump Available      | <input checked="" type="checkbox"/>    |

|                |                         |
|----------------|-------------------------|
| Unit Reference | SHE-0068-2500-1500-2500 |
|----------------|-------------------------|



### Advanced

|            |          |
|------------|----------|
| Perimeter  | Circular |
| Length (m) | 13.616   |



Pond

Type : Pond

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Stormwater Controls<br>Storm Phase: Phase     | Company Address:    |             |              |



Dimensions

|                      |         |
|----------------------|---------|
| Exceedance Level (m) | 17.000  |
| Depth (m)            | 1.000   |
| Base Level (m)       | 16.000  |
| Freeboard (mm)       | 300     |
| Initial Depth (m)    | 0.000   |
| Porosity (%)         | 100     |
| Average Slope (1:X)  | 3.179   |
| Total Volume (m³)    | 110.415 |

| Depth (m) | Area (m²) | Volume (m³) |
|-----------|-----------|-------------|
| 0.000     | 111.00    | 0.000       |
| 1.100     | 280.00    | 208.008     |

Inlets

Inlet

|                    |                |
|--------------------|----------------|
| Inlet Type         | Point Inflow   |
| Incoming Item(s)   | P1             |
|                    | P2             |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |

Inlet (1)

|                    |                    |
|--------------------|--------------------|
| Inlet Type         | Lateral Inflow     |
|                    | Road 3             |
| Incoming Item(s)   | Catchment Area     |
|                    | Catchment Area (1) |
| Bypass Destination | (None)             |
| Capacity Type      | No Restriction     |

Inlet (2)

|                    |                    |
|--------------------|--------------------|
| Inlet Type         | Point Inflow       |
| Incoming Item(s)   | Catchment Area (2) |
|                    | Catchment Area (3) |
| Bypass Destination | (None)             |
| Capacity Type      | No Restriction     |

Inlet (3)

|                    |                |
|--------------------|----------------|
| Inlet Type         | Point Inflow   |
| Incoming Item(s)   | 1.005          |
| Bypass Destination | (None)         |
| Capacity Type      | No Restriction |



|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Stormwater Controls<br>Storm Phase: Phase     | Company Address:    |             |              |

I

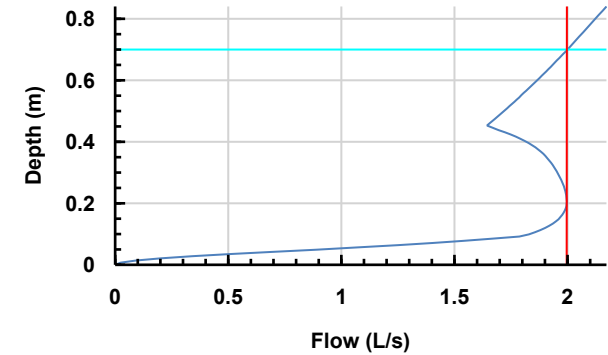
DRN

Outlets

Outlet

|                     |                                        |
|---------------------|----------------------------------------|
| Outgoing Connection | No Delay (1)                           |
| Outlet Type         | Hydro-Brake®                           |
| Invert Level (m)    | 16.000                                 |
| Design Depth (m)    | 0.700                                  |
| Design Flow (L/s)   | 2.0                                    |
| Objective           | Minimise Upstream Storage Requirements |
| Application         | Surface Water Only                     |
| Sump Available      | <input checked="" type="checkbox"/>    |

|                |                         |
|----------------|-------------------------|
| Unit Reference | SHE-0071-2000-0700-2000 |
|----------------|-------------------------|



Advanced

|                               |             |
|-------------------------------|-------------|
| Side Infiltration Rate (m/hr) | 0.0036      |
| Safety Factor                 | 2.0         |
| Perimeter                     | Circular    |
| Length (m)                    | 27.533      |
| Friction Scheme               | Manning's n |
| n                             | 0.045       |

|                                                                        |  |                     |             |              |
|------------------------------------------------------------------------|--|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  | Date:<br>25/09/2024 |             |              |
|                                                                        |  | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Inflow Summary<br>Storm Phase: Phase          |  | Company Address:    |             |              |



| Inflow Label       | Connected To    | Flow (L/s) | Runoff Method         | Area (ha)    | Percentage Impervious (%) | Urban Creep (%) | Adjusted Percentage Impervious (%) | Area Analysed (ha) |
|--------------------|-----------------|------------|-----------------------|--------------|---------------------------|-----------------|------------------------------------|--------------------|
| Catchment Area     | Pond            |            | Time of Concentration | 0.017        | 100                       | 0               | 100                                | 0.017              |
| Catchment Area (1) | Pond            |            | Time of Concentration | 0.009        | 100                       | 0               | 100                                | 0.009              |
| Catchment Area (2) | Pond            |            | Time of Concentration | 0.012        | 100                       | 0               | 100                                | 0.012              |
| Catchment Area (3) | Pond            |            | Time of Concentration | 0.010        | 100                       | 0               | 100                                | 0.010              |
| Catchment Area (4) | Tank1           |            | Time of Concentration | 0.015        | 100                       | 0               | 100                                | 0.015              |
| Catchment Area (5) | Pond (1)        |            | Time of Concentration | 0.068        | 100                       | 0               | 100                                | 0.068              |
| Catchment Area (6) | S01             |            | Time of Concentration | 0.036        | 100                       | 0               | 100                                | 0.036              |
| Catchment Area (7) | S03             |            | Time of Concentration | 0.009        | 100                       | 0               | 100                                | 0.009              |
| P1                 | Pond            |            | Time of Concentration | 0.012        | 100                       | 0               | 100                                | 0.012              |
| P2                 | Pond            |            | Time of Concentration | 0.012        | 100                       | 0               | 100                                | 0.012              |
| P3                 | Manhole (1)     |            | Time of Concentration | 0.011        | 100                       | 0               | 100                                | 0.011              |
| P4                 | S04             |            | Time of Concentration | 0.012        | 100                       | 0               | 100                                | 0.012              |
| P5                 | S05             |            | Time of Concentration | 0.012        | 100                       | 0               | 100                                | 0.012              |
| P6                 | S06             |            | Time of Concentration | 0.012        | 100                       | 0               | 100                                | 0.012              |
| P6 Garden          | Pond (1)        |            | Time of Concentration | 0.044        | 100                       | 0               | 100                                | 0.044              |
| P7                 | S07             |            | Time of Concentration | 0.013        | 100                       | 0               | 100                                | 0.013              |
| P7Garden           | Pond (1)        |            | Time of Concentration | 0.043        | 100                       | 0               | 100                                | 0.043              |
| P8                 | Manhole (10)    |            | Time of Concentration | 0.015        | 100                       | 0               | 100                                | 0.015              |
| P8 Garden          | Pond (1)        |            | Time of Concentration | 0.025        | 100                       | 0               | 100                                | 0.025              |
| P9                 | Manhole (12)    |            | Time of Concentration | 0.015        | 100                       | 0               | 100                                | 0.015              |
| P9Garden           | Pond (1)        |            | Time of Concentration | 0.031        | 100                       | 0               | 100                                | 0.031              |
| Road 1             | Simple Junction |            | Time of Concentration | 0.035        | 100                       | 0               | 100                                | 0.035              |
| Road 2             | Manhole         |            | Time of Concentration | 0.029        | 100                       | 0               | 100                                | 0.029              |
| Road 3             | Pond            |            | Time of Concentration | 0.038        | 100                       | 0               | 100                                | 0.038              |
| Road 5             | Pond (1)        |            | Time of Concentration | 0.032        | 100                       | 0               | 100                                | 0.032              |
| <b>TOTAL</b>       |                 | <b>0.0</b> |                       | <b>0.566</b> |                           |                 |                                    | <b>0.566</b>       |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Network Design Criteria<br>Storm Phase: Phase | Company Address:    |             |              |



Flow Options

|                           |                               |
|---------------------------|-------------------------------|
| Peak Flow Calculation     | (UK) Modified Rational Method |
| Min. Time of Entry (mins) | 5                             |
| Max. Travel Time (mins)   | 30                            |

FSR

Type: FSR

|                       |                   |
|-----------------------|-------------------|
| Return Period (years) | 30.0              |
| Region                | England And Wales |
| M5-60 (mm)            | 17.0              |
| Ratio R               | 0.300             |

Pipe Options

|                       |                          |
|-----------------------|--------------------------|
| Lock Slope Options    | None                     |
| Design Options        | Minimise Pipe Diameter   |
| Design Level          | Level Soffits            |
| Min. Cover Depth (m)  | 1.200                    |
| Min. Slope (1:X)      | 400.00                   |
| Max. Slope (1:X)      | 5.00                     |
| Min. Velocity (m/s)   | 1.0                      |
| Max. Velocity (m/s)   | 3.0                      |
| Use Flow Restriction  | <input type="checkbox"/> |
| Reduce Channel Depths | <input type="checkbox"/> |

Pipe Size Library

Default

|                     |    |
|---------------------|----|
| Add. Increment (mm) | 75 |
| Max. Diameter (mm)  | 0  |

| Diameter (mm) | Min. Slope (1:X) | Max. Slope (1:X) |
|---------------|------------------|------------------|
| 100           | 0.00             | 0.00             |
| 150           | 0.00             | 0.00             |



|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Network Design Criteria<br>Storm Phase: Phase | Company Address:    |             |              |



Manhole Options

Apply Offset

☐

Manhole Size Library

Default

Diameter / Width

| Connection (mm) | Diameter / Length (m) | Width (m) |
|-----------------|-----------------------|-----------|
| 0               | 1.200                 | 0.000     |
| 375             | 1.350                 | 0.000     |
| 500             | 1.500                 | 0.000     |
| 750             | 1.800                 | 0.000     |

Additional Sizing

|                       |       |
|-----------------------|-------|
| Connection (mm)       | 900   |
| Diameter / Length (m) | 0.900 |
| Width (m)             | 0.000 |

Depth

| Depth (m) | Diameter / Length (m) | Width (m) |
|-----------|-----------------------|-----------|
| 0.000     | 1.050                 | 0.000     |
| 1.500     | 1.200                 | 0.000     |

Access

| Depth (m) | Ladder Protrusion (mm) |
|-----------|------------------------|
| 0.000     | 130                    |
| 3.000     | 230                    |

Benching Requirements

|                     |     |
|---------------------|-----|
| Landing Width (mm)  | 500 |
| Benching Width (mm) | 225 |

|                                                                        |                     |             |              |                                                                                     |
|------------------------------------------------------------------------|---------------------|-------------|--------------|-------------------------------------------------------------------------------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |  |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |                                                                                     |
| Report Details:<br>Type: Outfall Details<br>Storm Phase: Phase         | Company Address:    |             |              |                                                                                     |

Outfalls

| Outfall      | Outfall Type   | Fixed Surcharged<br>Level (m) | Level Curve |
|--------------|----------------|-------------------------------|-------------|
| Manhole (15) | Free Discharge |                               |             |

|                                                                        |                                             |             |              |                                                                                     |
|------------------------------------------------------------------------|---------------------------------------------|-------------|--------------|-------------------------------------------------------------------------------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024                         |             |              |  |
|                                                                        | Designed by:<br>SM                          | Checked by: | Approved By: |                                                                                     |
|                                                                        | Report Title:<br>Rainfall Analysis Criteria |             |              |                                                                                     |
| Company Address:                                                       |                                             |             |              |                                                                                     |

|                                 |                          |
|---------------------------------|--------------------------|
| Runoff Type                     | Dynamic                  |
| Output Interval (mins)          | 5                        |
| Time Step                       | Default                  |
| Urban Creep                     | Apply Global Value       |
| Urban Creep Global Value (%)    | 0                        |
| Junction Flood Risk Margin (mm) | 300                      |
| Prefill Manhole Sumps           | <input type="checkbox"/> |
| Perform No Discharge Analysis   | <input type="checkbox"/> |



|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         | Company Address:    |             |              |



**FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow             | Storm Event                            | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|--------------------|----------------------------------------|------------------|-------------------|--------------------------|
| P6 Garden          | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.04             | 4.7               | 2.180                    |
| P6                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.3               | 0.588                    |
| P5                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.3               | 0.600                    |
| P4                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.3               | 0.582                    |
| P3                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.2               | 0.567                    |
| P2                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.3               | 0.597                    |
| P1                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.3               | 0.603                    |
| P7                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.4               | 0.648                    |
| P9                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.6               | 0.738                    |
| P8                 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.6               | 0.741                    |
| P7Garden           | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.04             | 4.6               | 2.144                    |
| P9Garden           | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.4               | 1.562                    |
| P8 Garden          | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 2.7               | 1.269                    |
| Road 1             | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.7               | 1.730                    |
| Road 2             | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.1               | 1.436                    |
| Road 3             | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.04             | 4.1               | 1.916                    |
| Road 5             | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.5               | 1.607                    |
| Catchment Area     | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.02             | 1.8               | 0.855                    |
| Catchment Area (1) | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.0               | 0.450                    |
| Catchment Area (2) | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.3               | 0.603                    |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
|                                                                        | Company Address:    |             |              |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         |                     |             |              |



|                    |                                        |      |     |       |
|--------------------|----------------------------------------|------|-----|-------|
| Catchment Area (3) | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01 | 1.1 | 0.498 |
| Catchment Area (4) | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.02 | 1.6 | 0.756 |
| Catchment Area (5) | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.07 | 7.4 | 3.410 |
| Catchment Area (6) | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.04 | 3.9 | 1.814 |
| Catchment Area (7) | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01 | 0.9 | 0.426 |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         | Company Address:    |             |              |



**FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow             | Storm Event                            | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|--------------------|----------------------------------------|------------------|-------------------|--------------------------|
| P6 Garden          | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.04             | 6.1               | 2.828                    |
| P6                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.6               | 0.759                    |
| P5                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.7               | 0.777                    |
| P4                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.6               | 0.753                    |
| P3                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.6               | 0.735                    |
| P2                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.7               | 0.771                    |
| P1                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.7               | 0.786                    |
| P7                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.8               | 0.837                    |
| P9                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 2.1               | 0.960                    |
| P8                 | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 2.1               | 0.963                    |
| P7Garden           | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.04             | 6.0               | 2.777                    |
| P9Garden           | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.03             | 4.4               | 2.024                    |
| P8 Garden          | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.6               | 1.643                    |
| Road 1             | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.03             | 4.8               | 2.240                    |
| Road 2             | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.03             | 4.0               | 1.853                    |
| Road 3             | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.04             | 5.4               | 2.480                    |
| Road 5             | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.03             | 4.5               | 2.075                    |
| Catchment Area     | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.02             | 2.4               | 1.101                    |
| Catchment Area (1) | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.3               | 0.585                    |
| Catchment Area (2) | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.7               | 0.783                    |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         | Company Address:    |             |              |



|                    |                                        |      |     |       |
|--------------------|----------------------------------------|------|-----|-------|
| Catchment Area (3) | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01 | 1.4 | 0.648 |
| Catchment Area (4) | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.02 | 2.1 | 0.978 |
| Catchment Area (5) | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.07 | 9.5 | 4.409 |
| Catchment Area (6) | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.04 | 5.1 | 2.348 |
| Catchment Area (7) | FSR: 2 years:<br>+0 %: 15 mins: Winter | 0.01 | 1.2 | 0.552 |



|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         | Company Address:    |             |              |



**FSR: 30 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow    | Storm Event                           | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|-----------|---------------------------------------|------------------|-------------------|--------------------------|
| P6 Garden | FSR: 30 years: +50 %: 15 mins: Winter | 0.04             | 17.2              | 7.975                    |
| P6        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 4.6               | 2.148                    |
| P5        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 4.7               | 2.196                    |
| P4        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 4.6               | 2.127                    |
| P3        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 4.5               | 2.070                    |
| P2        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 4.7               | 2.175                    |
| P1        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 4.8               | 2.208                    |
| P7        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 5.1               | 2.361                    |
| P9        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 5.8               | 2.703                    |
| P8        | FSR: 30 years: +50 %: 15 mins: Winter | 0.01             | 5.9               | 2.715                    |
| P7Garden  | FSR: 30 years: +50 %: 15 mins: Winter | 0.04             | 16.9              | 7.840                    |
| P9Garden  | FSR: 30 years: +50 %: 15 mins: Winter | 0.03             | 12.3              | 5.712                    |
| P8 Garden | FSR: 30 years: +50 %: 15 mins: Winter | 0.03             | 10.0              | 4.632                    |
| Road 1    | FSR: 30 years: +50 %: 15 mins: Winter | 0.03             | 13.6              | 6.309                    |
| Road 2    | FSR: 30 years: +50 %: 15 mins: Winter | 0.03             | 11.3              | 5.235                    |

|                                                                        |  |                     |             |                                                                                     |              |
|------------------------------------------------------------------------|--|---------------------|-------------|-------------------------------------------------------------------------------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  | Date:<br>25/09/2024 |             |  |              |
|                                                                        |  | Designed by:<br>SM  | Checked by: |                                                                                     | Approved By: |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         |  | Company Address:    |             |                                                                                     |              |

|                    |                                                |      |      |        |
|--------------------|------------------------------------------------|------|------|--------|
| Road 3             | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.04 | 15.1 | 6.990  |
| Road 5             | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.03 | 12.6 | 5.862  |
| Catchment Area     | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.02 | 6.7  | 3.117  |
| Catchment Area (1) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 3.6  | 1.647  |
| Catchment Area (2) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 4.7  | 2.205  |
| Catchment Area (3) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 3.9  | 1.821  |
| Catchment Area (4) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.02 | 5.9  | 2.757  |
| Catchment Area (5) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.07 | 26.8 | 12.445 |
| Catchment Area (6) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.04 | 14.3 | 6.630  |
| Catchment Area (7) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 3.4  | 1.557  |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         | Company Address:    |             |              |



**FSR: 100 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow    | Storm Event                            | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|-----------|----------------------------------------|------------------|-------------------|--------------------------|
| P6 Garden | FSR: 100 years: +50 %: 15 mins: Winter | 0.04             | 22.2              | 10.251                   |
| P6        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 6.0               | 2.764                    |
| P5        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 6.1               | 2.824                    |
| P4        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 5.9               | 2.731                    |
| P3        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 5.8               | 2.659                    |
| P2        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 6.0               | 2.794                    |
| P1        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 6.1               | 2.836                    |
| P7        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 6.6               | 3.034                    |
| P9        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 7.5               | 3.469                    |
| P8        | FSR: 100 years: +50 %: 15 mins: Winter | 0.01             | 7.5               | 3.493                    |
| P7Garden  | FSR: 100 years: +50 %: 15 mins: Winter | 0.04             | 21.8              | 10.079                   |
| P9Garden  | FSR: 100 years: +50 %: 15 mins: Winter | 0.03             | 15.9              | 7.340                    |
| P8 Garden | FSR: 100 years: +50 %: 15 mins: Winter | 0.03             | 12.9              | 5.953                    |
| Road 1    | FSR: 100 years: +50 %: 15 mins: Winter | 0.03             | 17.5              | 8.111                    |
| Road 2    | FSR: 100 years: +50 %: 15 mins: Winter | 0.03             | 14.6              | 6.728                    |

|                                                                        |  |                     |             |                                                                                     |              |
|------------------------------------------------------------------------|--|---------------------|-------------|-------------------------------------------------------------------------------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  | Date:<br>25/09/2024 |             |  |              |
|                                                                        |  | Designed by:<br>SM  | Checked by: |                                                                                     | Approved By: |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase         |  | Company Address:    |             |                                                                                     |              |

|                    |                                                 |      |      |        |
|--------------------|-------------------------------------------------|------|------|--------|
| Road 3             | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.04 | 19.4 | 8.984  |
| Road 5             | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.03 | 16.3 | 7.532  |
| Catchment Area     | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.02 | 8.7  | 4.009  |
| Catchment Area (1) | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 4.6  | 2.122  |
| Catchment Area (2) | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 6.1  | 2.830  |
| Catchment Area (3) | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 5.1  | 2.344  |
| Catchment Area (4) | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.02 | 7.7  | 3.547  |
| Catchment Area (5) | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.07 | 34.6 | 15.994 |
| Catchment Area (6) | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.04 | 18.4 | 8.519  |
| Catchment Area (7) | FSR: 100<br>years: +50 %:<br>15 mins:<br>Winter | 0.01 | 4.3  | 2.001  |



|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase       | Company Address:    |             |              |





**FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth**

| Junction            | Storm Event                             | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|---------------------|-----------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S01                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 19.70<br>0      | 18.50<br>0       | 18.534         | 0.034          | 3.9               | 0.039                     | 0.000                    | 3.8                | 1.814                       | OK         |
| S02                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 18.90<br>1      | 17.70<br>0       | 17.753         | 0.053          | 11.8              | 0.060                     | 0.000                    | 11.6               | 5.734                       | OK         |
| S03                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 19.30<br>0      | 18.10<br>0       | 18.122         | 0.022          | 0.9               | 0.025                     | 0.000                    | 0.9                | 0.426                       | OK         |
| S06                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 19.40<br>0      | 18.55<br>0       | 18.564         | 0.014          | 1.3               | 0.016                     | 0.000                    | 1.3                | 0.588                       | OK         |
| S07                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 18.85<br>0      | 18.10<br>0       | 18.119         | 0.019          | 1.4               | 0.022                     | 0.000                    | 1.4                | 0.647                       | OK         |
| S10                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 18.80<br>0      | 17.70<br>0       | 17.717         | 0.017          | 1.4               | 0.019                     | 0.000                    | 1.3                | 0.646                       | OK         |
| S05                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 19.30<br>0      | 18.55<br>0       | 18.565         | 0.015          | 1.3               | 0.017                     | 0.000                    | 1.3                | 0.599                       | OK         |
| S04                 | FSR: 1 years: +0 %:<br>15 mins: Winter  | 18.95<br>0      | 18.20<br>0       | 18.218         | 0.018          | 1.3               | 0.020                     | 0.000                    | 1.2                | 0.582                       | OK         |
| Simple Junction     | FSR: 1 years: +0 %:<br>15 mins: Winter  |                 | 17.90<br>0       | 17.959         | 0.059          | 10.9              |                           |                          | 10.6               | 5.155                       | OK         |
| Simple Junction (1) | FSR: 1 years: +0 %:<br>15 mins: Winter  |                 | 18.01<br>0       | 18.046         | 0.036          | 2.1               |                           |                          | 2.0                | 1.012                       | OK         |
| Manhole             | FSR: 1 years: +0 %:<br>15 mins: Winter  | 18.74<br>2      | 17.54<br>2       | 17.574         | 0.032          | 3.1               | 0.037                     | 0.000                    | 3.0                | 1.436                       | OK         |
| Manhole (1)         | FSR: 1 years: +0 %:<br>15 mins: Winter  | 18.50<br>0      | 17.65<br>0       | 17.670         | 0.020          | 1.2               | 0.023                     | 0.000                    | 1.2                | 0.566                       | OK         |
| Manhole (6)         | FSR: 1 years: +0 %:<br>15 mins: Winter  | 18.00<br>0      | 16.40<br>0       | 16.449         | 0.049          | 4.1               | 0.055                     | 0.000                    | 3.8                | 2.000                       | OK         |
| Manhole (7)         | FSR: 1 years: +0 %:<br>15 mins: Summer  | 17.25<br>0      | 16.10<br>0       | 16.100         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK         |
| Manhole (8)         | FSR: 1 years: +0 %:<br>15 mins: Summer  | 16.84<br>7      | 16.30<br>0       | 16.300         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK         |
| Manhole (9)         | FSR: 1 years: +0 %:<br>240 mins: Winter | 17.50<br>0      | 15.37<br>1       | 16.076         | 0.705          | 1.1               | 0.798                     | 0.000                    | 0.9                | 8.288                       | Surcharged |
| Manhole (10)        | FSR: 1 years: +0 %:<br>15 mins: Winter  | 17.65<br>0      | 16.90<br>0       | 16.916         | 0.016          | 1.6               | 0.018                     | 0.000                    | 1.6                | 0.741                       | OK         |
| Manhole (12)        | FSR: 1 years: +0 %:<br>15 mins: Winter  | 17.50<br>0      | 16.75<br>0       | 16.763         | 0.013          | 1.6               | 0.015                     | 0.000                    | 1.6                | 0.736                       | OK         |
| Manhole (13)        | FSR: 1 years: +0 %:<br>240 mins: Winter | 17.00<br>0      | 15.80<br>0       | 15.834         | 0.034          | 2.8               | 0.038                     | 0.000                    | 2.8                | 38.721                      | OK         |
| Manhole (14)        | FSR: 1 years: +0 %:<br>240 mins: Winter | 16.72<br>5      | 15.70<br>0       | 15.739         | 0.039          | 4.7               | 0.044                     | 0.000                    | 4.7                | 61.315                      | OK         |
| Manhole (15)        | FSR: 1 years: +0 %:<br>240 mins: Winter | 17.00<br>0      | 15.50<br>0       | 15.537         | 0.037          | 4.7               | 0.000                     | 0.000                    | 4.7                | 61.315                      | OK         |
| Simple Junction (2) | FSR: 1 years: +0 %:<br>15 mins: Winter  |                 | 17.35<br>3       | 17.387         | 0.034          | 4.2               |                           |                          | 4.1                | 2.001                       | OK         |
| Manhole (18)        | FSR: 1 years: +0 %:<br>15 mins: Winter  | 17.30<br>0      | 16.10<br>0       | 16.126         | 0.026          | 1.6               | 0.030                     | 0.000                    | 1.5                | 0.733                       | OK         |
| Manhole (17)        | FSR: 1 years: +0 %:<br>240 mins: Winter | 17.45<br>0      | 15.39<br>8       | 16.076         | 0.678          | 0.6               | 0.767                     | 0.000                    | 0.5                | 2.732                       | Surcharged |
| Manhole (16)        | FSR: 1 years: +0 %:<br>360 mins: Winter | 18.50<br>0      | 16.65<br>0       | 16.743         | 0.093          | 0.0               | 0.105                     | 0.000                    | 0.0                | 0.000                       | OK         |
| Simple Junction (6) | FSR: 1 years: +0 %:<br>15 mins: Summer  |                 | 16.30<br>0       | 16.300         | 0.000          | 0.0               |                           |                          | 0.0                | 0.000                       | OK         |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase       | Company Address:    |             |              |





**FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth**

| Junction            | Storm Event                             | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|---------------------|-----------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S01                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 19.70<br>0      | 18.50<br>0       | 18.539         | 0.039          | 5.1               | 0.044                     | 0.000                    | 5.0                | 2.348                       | OK         |
| S02                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 18.90<br>1      | 17.70<br>0       | 17.761         | 0.061          | 15.4              | 0.069                     | 0.000                    | 15.0               | 7.423                       | OK         |
| S03                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 19.30<br>0      | 18.10<br>0       | 18.126         | 0.026          | 1.2               | 0.029                     | 0.000                    | 1.1                | 0.552                       | OK         |
| S06                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 19.40<br>0      | 18.55<br>0       | 18.566         | 0.016          | 1.6               | 0.018                     | 0.000                    | 1.6                | 0.759                       | OK         |
| S07                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 18.85<br>0      | 18.10<br>0       | 18.122         | 0.022          | 1.8               | 0.025                     | 0.000                    | 1.8                | 0.836                       | OK         |
| S10                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 18.80<br>0      | 17.70<br>0       | 17.719         | 0.019          | 1.8               | 0.021                     | 0.000                    | 1.7                | 0.835                       | OK         |
| S05                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 19.30<br>0      | 18.55<br>0       | 18.567         | 0.017          | 1.7               | 0.019                     | 0.000                    | 1.7                | 0.776                       | OK         |
| S04                 | FSR: 2 years: +0 %:<br>15 mins: Winter  | 18.95<br>0      | 18.20<br>0       | 18.220         | 0.020          | 1.6               | 0.023                     | 0.000                    | 1.6                | 0.753                       | OK         |
| Simple Junction     | FSR: 2 years: +0 %:<br>15 mins: Winter  |                 | 17.90<br>0       | 17.969         | 0.069          | 14.1              |                           |                          | 13.8               | 6.673                       | OK         |
| Simple Junction (1) | FSR: 2 years: +0 %:<br>15 mins: Winter  |                 | 18.01<br>0       | 18.051         | 0.041          | 2.8               |                           |                          | 2.7                | 1.309                       | OK         |
| Manhole             | FSR: 2 years: +0 %:<br>15 mins: Winter  | 18.74<br>2      | 17.54<br>2       | 17.579         | 0.037          | 4.0               | 0.042                     | 0.000                    | 3.9                | 1.853                       | OK         |
| Manhole (1)         | FSR: 2 years: +0 %:<br>15 mins: Winter  | 18.50<br>0      | 17.65<br>0       | 17.673         | 0.023          | 1.6               | 0.026                     | 0.000                    | 1.5                | 0.734                       | OK         |
| Manhole (6)         | FSR: 2 years: +0 %:<br>15 mins: Winter  | 18.00<br>0      | 16.40<br>0       | 16.456         | 0.056          | 5.3               | 0.063                     | 0.000                    | 5.0                | 2.585                       | OK         |
| Manhole (7)         | FSR: 2 years: +0 %:<br>15 mins: Summer  | 17.25<br>0      | 16.10<br>0       | 16.100         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK         |
| Manhole (8)         | FSR: 2 years: +0 %:<br>15 mins: Summer  | 16.84<br>7      | 16.30<br>0       | 16.300         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK         |
| Manhole (9)         | FSR: 2 years: +0 %:<br>240 mins: Winter | 17.50<br>0      | 15.37<br>1       | 16.121         | 0.750          | 1.3               | 0.848                     | 0.000                    | 0.4                | 8.477                       | Surcharged |
| Manhole (10)        | FSR: 2 years: +0 %:<br>15 mins: Winter  | 17.65<br>0      | 16.90<br>0       | 16.918         | 0.018          | 2.1               | 0.020                     | 0.000                    | 2.1                | 0.963                       | OK         |
| Manhole (12)        | FSR: 2 years: +0 %:<br>15 mins: Winter  | 17.50<br>0      | 16.75<br>0       | 16.765         | 0.015          | 2.1               | 0.017                     | 0.000                    | 2.1                | 0.958                       | OK         |
| Manhole (13)        | FSR: 2 years: +0 %:<br>240 mins: Winter | 17.00<br>0      | 15.80<br>0       | 15.834         | 0.034          | 3.0               | 0.039                     | 0.000                    | 3.0                | 48.339                      | OK         |
| Manhole (14)        | FSR: 2 years: +0 %:<br>240 mins: Winter | 16.72<br>5      | 15.70<br>0       | 15.740         | 0.040          | 4.9               | 0.045                     | 0.000                    | 4.9                | 76.209                      | OK         |
| Manhole (15)        | FSR: 2 years: +0 %:<br>240 mins: Winter | 17.00<br>0      | 15.50<br>0       | 15.538         | 0.038          | 4.9               | 0.000                     | 0.000                    | 4.9                | 76.209                      | OK         |
| Simple Junction (2) | FSR: 2 years: +0 %:<br>15 mins: Winter  |                 | 17.35<br>3       | 17.392         | 0.039          | 5.5               |                           |                          | 5.3                | 2.586                       | OK         |
| Manhole (18)        | FSR: 2 years: +0 %:<br>15 mins: Winter  | 17.30<br>0      | 16.10<br>0       | 16.130         | 0.030          | 2.1               | 0.034                     | 0.000                    | 1.9                | 0.950                       | OK         |
| Manhole (17)        | FSR: 2 years: +0 %:<br>240 mins: Winter | 17.45<br>0      | 15.39<br>8       | 16.121         | 0.723          | 0.6               | 0.817                     | 0.000                    | 0.5                | 2.288                       | Surcharged |
| Manhole (16)        | FSR: 2 years: +0 %:<br>360 mins: Winter | 18.50<br>0      | 16.65<br>0       | 16.838         | 0.188          | 0.1               | 0.213                     | 0.000                    | 0.0                | 0.000                       | OK         |
| Simple Junction (6) | FSR: 2 years: +0 %:<br>15 mins: Summer  |                 | 16.30<br>0       | 16.300         | 0.000          | 0.0               |                           |                          | 0.0                | 0.000                       | OK         |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase       | Company Address:    |             |              |





**FSR: 30 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By: Max. Depth**

| Junction            | Storm Event                                        | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|---------------------|----------------------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S01                 | FSR: 30 years: +50<br>%: 15 mins: Winter           | 19.70<br>0      | 18.50<br>0       | 18.567         | 0.067          | 14.3              | 0.076                     | 0.000                    | 14.1               | 6.625                       | OK         |
| S02                 | FSR: 30 years: +50<br>%: 15 mins: Winter<br>Summer | 18.90<br>1      | 17.70<br>0       | 17.819         | 0.119          | 40.2              | 0.134                     | 0.000                    | 39.3               | 18.713                      | OK         |
| S03                 | FSR: 30 years: +50<br>%: 15 mins: Winter           | 19.30<br>0      | 18.10<br>0       | 18.143         | 0.043          | 3.4               | 0.048                     | 0.000                    | 3.3                | 1.557                       | OK         |
| S06                 | FSR: 30 years: +50<br>%: 15 mins: Winter           | 19.40<br>0      | 18.55<br>0       | 18.577         | 0.027          | 4.6               | 0.030                     | 0.000                    | 4.7                | 2.148                       | OK         |
| S07                 | FSR: 30 years: +50<br>%: 15 mins: Winter           | 18.85<br>0      | 18.10<br>0       | 18.137         | 0.037          | 5.1               | 0.042                     | 0.000                    | 5.0                | 2.361                       | OK         |
| S10                 | FSR: 30 years: +50<br>%: 15 mins: Winter           | 18.80<br>0      | 17.70<br>0       | 17.732         | 0.032          | 5.0               | 0.036                     | 0.000                    | 4.9                | 2.359                       | OK         |
| S05                 | FSR: 30 years: +50<br>%: 15 mins: Winter           | 19.30<br>0      | 18.55<br>0       | 18.577         | 0.027          | 4.7               | 0.031                     | 0.000                    | 4.7                | 2.195                       | OK         |
| S04                 | FSR: 30 years: +50<br>%: 15 mins: Winter           | 18.95<br>0      | 18.20<br>0       | 18.233         | 0.033          | 4.6               | 0.037                     | 0.000                    | 4.5                | 2.127                       | OK         |
| Simple Junction     | FSR: 30 years: +50<br>%: 15 mins: Winter           |                 | 17.90<br>0       | 18.120         | 0.220          | 36.1              |                           |                          | 34.3               | 18.843                      | Surcharged |
| Simple Junction (1) | FSR: 30 years: +50<br>%: 15 mins: Winter           |                 | 18.01<br>0       | 18.119         | 0.109          | 8.0               |                           |                          | 3.7                | 3.711                       | OK         |
| Manhole             | FSR: 30 years: +50<br>%: 15 mins: Winter           | 18.74<br>2      | 17.54<br>2       | 17.609         | 0.067          | 11.3              | 0.076                     | 0.000                    | 11.1               | 5.235                       | OK         |
| Manhole (1)         | FSR: 30 years: +50<br>%: 15 mins: Winter           | 18.50<br>0      | 17.65<br>0       | 17.689         | 0.039          | 4.5               | 0.044                     | 0.000                    | 4.4                | 2.070                       | OK         |
| Manhole (6)         | FSR: 30 years: +50<br>%: 360 mins: Winter          | 18.00<br>0      | 16.40<br>0       | 16.545         | 0.145          | 4.5               | 0.164                     | 0.000                    | 4.5                | 70.240                      | OK         |
| Manhole (7)         | FSR: 30 years: +50<br>%: 360 mins: Winter          | 17.25<br>0      | 16.10<br>0       | 16.534         | 0.434          | 0.8               | 0.491                     | 0.000                    | 0.1                | 2.105                       | Surcharged |
| Manhole (8)         | FSR: 30 years: +50<br>%: 360 mins: Winter          | 16.84<br>7      | 16.30<br>0       | 16.534         | 0.234          | 0.1               | 0.265                     | 0.000                    | 0.0                | 0.358                       | Surcharged |
| Manhole (9)         | FSR: 30 years: +50<br>%: 360 mins: Winter          | 17.50<br>0      | 15.37<br>1       | 16.534         | 1.163          | 2.3               | 1.315                     | 0.000                    | 0.8                | 10.970                      | Surcharged |
| Manhole (10)        | FSR: 30 years: +50<br>%: 15 mins: Winter           | 17.65<br>0      | 16.90<br>0       | 16.929         | 0.029          | 5.9               | 0.033                     | 0.000                    | 5.8                | 2.717                       | OK         |
| Manhole (12)        | FSR: 30 years: +50<br>%: 15 mins: Winter           | 17.50<br>0      | 16.75<br>0       | 16.775         | 0.025          | 5.8               | 0.028                     | 0.000                    | 5.8                | 2.701                       | OK         |
| Manhole (13)        | FSR: 30 years: +50<br>%: 360 mins: Winter          | 17.00<br>0      | 15.80<br>0       | 15.835         | 0.035          | 3.0               | 0.039                     | 0.000                    | 3.0                | 154.665                     | OK         |
| Manhole (14)        | FSR: 30 years: +50<br>%: 60 mins: Winter           | 16.72<br>5      | 15.70<br>0       | 15.740         | 0.040          | 5.0               | 0.046                     | 0.000                    | 5.0                | 143.448                     | OK         |
| Manhole (15)        | FSR: 30 years: +50<br>%: 60 mins: Winter           | 17.00<br>0      | 15.50<br>0       | 15.539         | 0.039          | 5.0               | 0.000                     | 0.000                    | 5.0                | 143.448                     | OK         |
| Simple Junction (2) | FSR: 30 years: +50<br>%: 15 mins: Winter           |                 | 17.35<br>3       | 17.424         | 0.071          | 15.5              |                           |                          | 15.2               | 7.303                       | OK         |
| Manhole (18)        | FSR: 30 years: +50<br>%: 360 mins: Winter          | 17.30<br>0      | 16.10<br>0       | 16.534         | 0.434          | 1.5               | 0.491                     | 0.000                    | 0.8                | 10.382                      | Surcharged |
| Manhole (17)        | FSR: 30 years: +50<br>%: 360 mins: Winter          | 17.45<br>0      | 15.39<br>8       | 16.534         | 1.136          | 1.0               | 1.285                     | 0.000                    | 0.3                | 1.121                       | Surcharged |
| Manhole (16)        | FSR: 30 years: +50<br>%: 180 mins: Winter          | 18.50<br>0      | 16.65<br>0       | 16.978         | 0.328          | 2.0               | 0.371                     | 0.000                    | 2.0                | 30.911                      | OK         |
| Simple Junction (6) | FSR: 30 years: +50<br>%: 360 mins: Winter          |                 | 16.30<br>0       | 16.534         | 0.234          | 0.1               |                           |                          | 0.0                | 0.273                       | Surcharged |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase       | Company Address:    |             |              |





**FSR: 100 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By: Max. Depth**

| Junction            | Storm Event                             | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|---------------------|-----------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S01                 | FSR: 100 years: +50 %: 15 mins: Winter  | 19.700          | 18.500           | 18.579         | 0.079          | 18.4              | 0.089                     | 0.000                    | 18.2               | 8.508                       | OK         |
| S02                 | FSR: 100 years: +50 %: 360 mins: Winter | 18.901          | 17.700           | 18.012         | 0.312          | 10.3              | 0.353                     | 0.000                    | 10.2               | 87.912                      | Surcharged |
| S03                 | FSR: 100 years: +50 %: 15 mins: Winter  | 19.300          | 18.100           | 18.274         | 0.174          | 4.3               | 0.196                     | 0.000                    | 1.4                | 2.009                       | Surcharged |
| S06                 | FSR: 100 years: +50 %: 15 mins: Winter  | 19.400          | 18.550           | 18.579         | 0.029          | 6.0               | 0.032                     | 0.000                    | 5.9                | 2.763                       | OK         |
| S07                 | FSR: 100 years: +50 %: 15 mins: Winter  | 18.850          | 18.100           | 18.142         | 0.042          | 6.6               | 0.048                     | 0.000                    | 6.5                | 3.033                       | OK         |
| S10                 | FSR: 100 years: +50 %: 360 mins: Winter | 18.800          | 17.700           | 18.011         | 0.311          | 1.2               | 0.351                     | 0.000                    | 1.1                | 9.912                       | Surcharged |
| S05                 | FSR: 100 years: +50 %: 15 mins: Winter  | 19.300          | 18.550           | 18.582         | 0.032          | 6.1               | 0.036                     | 0.000                    | 6.0                | 2.822                       | OK         |
| S04                 | FSR: 100 years: +50 %: 15 mins: Winter  | 18.950          | 18.200           | 18.237         | 0.037          | 5.9               | 0.042                     | 0.000                    | 5.8                | 2.728                       | OK         |
| Simple Junction     | FSR: 100 years: +50 %: 15 mins: Winter  |                 | 17.900           | 18.272         | 0.372          | 46.3              |                           |                          | 42.5               | 24.224                      | Surcharged |
| Simple Junction (1) | FSR: 100 years: +50 %: 15 mins: Winter  |                 | 18.010           | 18.277         | 0.267          | 7.2               |                           |                          | 4.5                | 4.788                       | Surcharged |
| Manhole             | FSR: 100 years: +50 %: 15 mins: Winter  | 18.742          | 17.542           | 17.621         | 0.079          | 14.6              | 0.089                     | 0.000                    | 14.3               | 6.727                       | OK         |
| Manhole (1)         | FSR: 100 years: +50 %: 15 mins: Winter  | 18.500          | 17.650           | 17.694         | 0.044          | 5.8               | 0.050                     | 0.000                    | 5.6                | 2.658                       | OK         |
| Manhole (6)         | FSR: 100 years: +50 %: 360 mins: Winter | 18.000          | 16.400           | 16.667         | 0.267          | 5.6               | 0.302                     | 0.000                    | 5.6                | 102.360                     | Surcharged |
| Manhole (7)         | FSR: 100 years: +50 %: 360 mins: Winter | 17.250          | 16.100           | 16.692         | 0.592          | 1.1               | 0.670                     | 0.000                    | 0.1                | 3.028                       | Surcharged |
| Manhole (8)         | FSR: 100 years: +50 %: 360 mins: Winter | 16.847          | 16.300           | 16.692         | 0.392          | 0.2               | 0.443                     | 0.000                    | 0.0                | 0.543                       | Flood Risk |
| Manhole (9)         | FSR: 100 years: +50 %: 360 mins: Winter | 17.500          | 15.371           | 16.692         | 1.321          | 2.6               | 1.494                     | 0.000                    | 1.1                | 12.810                      | Surcharged |
| Manhole (10)        | FSR: 100 years: +50 %: 15 mins: Winter  | 17.650          | 16.900           | 16.933         | 0.033          | 7.5               | 0.037                     | 0.000                    | 7.5                | 3.494                       | OK         |
| Manhole (12)        | FSR: 100 years: +50 %: 15 mins: Winter  | 17.500          | 16.750           | 16.778         | 0.028          | 7.5               | 0.032                     | 0.000                    | 7.5                | 3.466                       | OK         |
| Manhole (13)        | FSR: 100 years: +50 %: 240 mins: Winter | 17.000          | 15.800           | 15.835         | 0.035          | 3.0               | 0.039                     | 0.000                    | 3.0                | 179.331                     | OK         |
| Manhole (14)        | FSR: 100 years: +50 %: 30 mins: Winter  | 16.725          | 15.700           | 15.740         | 0.040          | 5.0               | 0.046                     | 0.000                    | 5.0                | 141.441                     | OK         |

|                                                                        |  |                     |             |              |
|------------------------------------------------------------------------|--|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  | Date:<br>25/09/2024 |             |              |
|                                                                        |  | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase       |  | Company Address:    |             |              |



|                     |                                               |            |            |        |       |      |       |       |      |         |            |
|---------------------|-----------------------------------------------|------------|------------|--------|-------|------|-------|-------|------|---------|------------|
| Manhole (15)        | FSR: 100 years:<br>+50 %: 30 mins:<br>Winter  | 17.00<br>0 | 15.50<br>0 | 15.539 | 0.039 | 5.0  | 0.000 | 0.000 | 5.0  | 141.441 | OK         |
| Simple Junction (2) | FSR: 100 years:<br>+50 %: 15 mins:<br>Winter  |            | 17.35<br>3 | 17.436 | 0.083 | 20.0 |       |       | 19.6 | 9.383   | OK         |
| Manhole (18)        | FSR: 100 years:<br>+50 %: 360 mins:<br>Winter | 17.30<br>0 | 16.10<br>0 | 16.692 | 0.592 | 1.7  | 0.670 | 0.000 | 0.8  | 13.545  | Surcharged |
| Manhole (17)        | FSR: 100 years:<br>+50 %: 360 mins:<br>Winter | 17.45<br>0 | 15.39<br>8 | 16.692 | 1.294 | 1.0  | 1.464 | 0.000 | 0.0  | 0.982   | Surcharged |
| Manhole (16)        | FSR: 100 years:<br>+50 %: 360 mins:<br>Winter | 18.50<br>0 | 16.65<br>0 | 16.979 | 0.329 | 2.1  | 0.372 | 0.000 | 2.1  | 71.794  | OK         |
| Simple Junction (6) | FSR: 100 years:<br>+50 %: 360 mins:<br>Winter |            | 16.30<br>0 | 16.692 | 0.392 | 0.1  |       |       | 0.0  | 0.458   | Surcharged |



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|----------------------------------------------------------------------------|--|---------------------|-------------|-------------------------------------------------------------------------------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation     |  | Date:<br>25/09/2024 |             |  |              |
|                                                                            |  | Designed by:<br>SM  | Checked by: |                                                                                     | Approved By: |
| Report Details:<br>Type: Stormwater Controls Summary<br>Storm Phase: Phase |  | Company Address:    |             |                                                                                     |              |



**FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth**

| Stormwater Control | Storm Event                          | Max. US Level (m) | Max. DS Level (m) | Max. US Depth (m) | Max. DS Depth (m) | Max. Inflow (L/s) | Max. Residant Volume (m³) | Max. Flooded Volume (m³) | Total Lost Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Percentage Available (%) | Status |
|--------------------|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|--------------------------|------------------------|--------------------|-----------------------------|--------------------------|--------|
| Pond (1)           | FSR: 1 years: +0 %: 240 mins: Winter | 16.076            | 16.076            | 0.176             | 0.176             | 7.2               | 22.212                    | 0.000                    | 0.294                  | 2.8                | 41.072                      | 85.642                   | OK     |
| Tank1              | FSR: 1 years: +0 %: 360 mins: Winter | 16.743            | 16.743            | 0.443             | 0.443             | 3.0               | 25.243                    | 0.000                    | 0.000                  | 0.0                | 0.108                       | 70.716                   | OK     |
| Pond               | FSR: 1 years: +0 %: 180 mins: Winter | 16.102            | 16.102            | 0.102             | 0.102             | 4.8               | 11.976                    | 0.000                    | 0.094                  | 1.8                | 20.280                      | 89.154                   | OK     |

|                                                                            |                     |             |              |                                                                                     |
|----------------------------------------------------------------------------|---------------------|-------------|--------------|-------------------------------------------------------------------------------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation     | Date:<br>25/09/2024 |             |              |  |
|                                                                            | Designed by:<br>SM  | Checked by: | Approved By: |                                                                                     |
| Report Details:<br>Type: Stormwater Controls Summary<br>Storm Phase: Phase | Company Address:    |             |              |                                                                                     |



**FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max.  
Avg. Depth**

| Stormwater Control | Storm Event                          | Max. US Level (m) | Max. DS Level (m) | Max. US Depth (m) | Max. DS Depth (m) | Max. Inflow (L/s) | Max. Residant Volume (m³) | Max. Flooded Volume (m³) | Total Lost Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Percentage Available (%) | Status |
|--------------------|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|--------------------------|------------------------|--------------------|-----------------------------|--------------------------|--------|
| Pond (1)           | FSR: 2 years: +0 %: 240 mins: Winter | 16.121            | 16.121            | 0.221             | 0.221             | 8.8               | 28.736                    | 0.000                    | 0.369                  | 3.0                | 50.608                      | 81.426                   | OK     |
| Tank1              | FSR: 2 years: +0 %: 360 mins: Winter | 16.838            | 16.838            | 0.538             | 0.538             | 3.6               | 30.675                    | 0.000                    | 0.000                  | 0.1                | 0.220                       | 64.414                   | OK     |
| Pond               | FSR: 2 years: +0 %: 180 mins: Winter | 16.129            | 16.129            | 0.129             | 0.129             | 5.9               | 15.388                    | 0.000                    | 0.117                  | 1.9                | 25.157                      | 86.063                   | OK     |

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|----------------------------------------------------------------------------|--|---------------------|-------------|-------------------------------------------------------------------------------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation     |  | Date:<br>25/09/2024 |             |  |              |
|                                                                            |  | Designed by:<br>SM  | Checked by: |                                                                                     | Approved By: |
| Report Details:<br>Type: Stormwater Controls Summary<br>Storm Phase: Phase |  | Company Address:    |             |                                                                                     |              |



**FSR: 30 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By: Max. Avg. Depth**

| Stormwater Control | Storm Event                            | Max. US Level (m) | Max. DS Level (m) | Max. US Depth (m) | Max. DS Depth (m) | Max. Inflow (L/s) | Max. Residant Volume (m³) | Max. Flooded Volume (m³) | Total Lost Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Percentage Available (%) | Status |
|--------------------|----------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|--------------------------|------------------------|--------------------|-----------------------------|--------------------------|--------|
| Pond (1)           | FSR: 30 years: +50 %: 360 mins: Winter | 16.534            | 16.534            | 0.634             | 0.634             | 18.3              | 110.107                   | 0.000                    | 2.401                  | 3.0                | 156.696                     | 28.830                   | OK     |
| Tank1              | FSR: 30 years: +50 %: 360 mins: Winter | 17.432            | 17.432            | 1.132             | 1.132             | 9.9               | 64.512                    | 0.000                    | 0.000                  | 2.0                | 47.021                      | 25.160                   | OK     |
| Pond               | FSR: 30 years: +50 %: 360 mins: Winter | 16.545            | 16.545            | 0.545             | 0.545             | 11.9              | 79.843                    | 0.000                    | 1.795                  | 2.0                | 131.731                     | 27.688                   | OK     |

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|----------------------------------------------------------------------------|--|---------------------|-------------|-------------------------------------------------------------------------------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation     |  | Date:<br>25/09/2024 |             |  |              |
|                                                                            |  | Designed by:<br>SM  | Checked by: |                                                                                     | Approved By: |
| Report Details:<br>Type: Stormwater Controls Summary<br>Storm Phase: Phase |  | Company Address:    |             |                                                                                     |              |



**FSR: 100 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By:**  
**Max. Avg. Depth**

| Stormwater Control | Storm Event                             | Max. US Level (m) | Max. DS Level (m) | Max. US Depth (m) | Max. DS Depth (m) | Max. Inflow (L/s) | Max. Residant Volume (m³) | Max. Flooded Volume (m³) | Total Lost Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Percentage Available (%) | Status |
|--------------------|-----------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|--------------------------|------------------------|--------------------|-----------------------------|--------------------------|--------|
| Pond (1)           | FSR: 100 years: +50 %: 360 mins: Winter | 16.692            | 16.692            | 0.792             | 0.792             | 23.6              | 152.410                   | 0.000                    | 3.845                  | 3.0                | 201.550                     | 1.486                    | OK     |
| Tank1              | FSR: 100 years: +50 %: 360 mins: Winter | 18.011            | 18.011            | 1.711             | 1.711             | 12.7              | 85.721                    | 0.000                    | 0.000                  | 2.1                | 72.189                      | 0.556                    | OK     |
| Pond               | FSR: 100 years: +50 %: 360 mins: Winter | 16.667            | 16.667            | 0.667             | 0.667             | 15.5              | 103.570                   | 0.000                    | 3.009                  | 2.0                | 154.557                     | 6.199                    | OK     |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     | Company Address:    |             |              |





**FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                          | Connection Type | From                | To                  | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status     |
|------------|--------------------------------------|-----------------|---------------------|---------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|------------|
| 1.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | S01                 | Simple Junction     | 19.700                   | 18.534                  | 0.047               | 1.814                 | 0.8                 | 0.11            | 3.8             | OK         |
| 1.001      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | Simple Junction     | S02                 | 19.100                   | 17.959                  | 0.056               | 5.155                 | 1.8                 | 0.26            | 10.6            | OK         |
| 2.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | S05                 | Simple Junction     | 19.300                   | 18.565                  | 0.037               | 0.599                 | 0.4                 | 0.02            | 1.3             | OK         |
| 5.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | S04                 | S02                 | 18.950                   | 18.218                  | 0.035               | 0.582                 | 0.4                 | 0.03            | 1.2             | OK         |
| 6.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | S07                 | S10                 | 18.850                   | 18.119                  | 0.018               | 0.647                 | 1.1                 | 0.03            | 1.4             | OK         |
| 3.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | S03                 | Simple Junction (1) | 19.300                   | 18.122                  | 0.029               | 0.426                 | 0.4                 | 0.05            | 0.9             | OK         |
| 3.001      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | Simple Junction (1) | Simple Junction     | 19.210                   | 18.046                  | 0.048               | 1.012                 | 0.4                 | 0.13            | 2.0             | OK         |
| 4.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | S06                 | Simple Junction (1) | 19.400                   | 18.564                  | 0.025               | 0.588                 | 0.6                 | 0.02            | 1.3             | OK         |
| 7.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | Manhole             | Simple Junction (2) | 18.742                   | 17.574                  | 0.033               | 1.436                 | 1.0                 | 0.09            | 3.0             | OK         |
| 7.001      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | Simple Junction (2) | Manhole (6)         | 18.552                   | 17.387                  | 0.034               | 2.001                 | 1.4                 | 0.11            | 4.1             | OK         |
| 8.000      | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | Manhole (1)         | Simple Junction (2) | 18.500                   | 17.670                  | 0.027               | 0.566                 | 0.5                 | 0.04            | 1.2             | OK         |
| 10.000     | FSR: 1 years: +0 %: 15 mins: Summer  | Pipe            | Manhole (8)         | Manhole (7)         | 16.847                   | 16.300                  | 0.000               | 0.000                 | 0.0                 | 0               | 0.0             | OK         |
| 1.010      | FSR: 1 years: +0 %: 30 mins: Summer  | Pipe            | Manhole (9)         | Pond (1)            | 17.500                   | 16.006                  | 0.225               | 1.473                 | 0.1                 | 0.08            | 2.2             | Surcharged |
| 14.000     | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | Manhole (12)        | Manhole (9)         | 17.500                   | 16.763                  | 0.150               | 0.736                 | 0.3                 | 0.02            | 1.6             | OK         |
| 1.009      | FSR: 1 years: +0 %: 30 mins: Summer  | Pipe            | Manhole (17)        | Manhole (9)         | 17.450                   | 16.006                  | 0.225               | 0.000                 | 0.0                 | 0.02            | 0.7             | Surcharged |
| 12.000     | FSR: 1 years: +0 %: 15 mins: Winter  | Pipe            | Manhole (10)        | Manhole (18)        | 17.650                   | 16.916                  | 0.021               | 0.741                 | 1.1                 | 0.02            | 1.6             | OK         |
| 1.004      | FSR: 1 years: +0 %: 15 mins: Summer  | Pipe            | Manhole (16)        | Manhole (6)         | 18.500                   | 16.650                  | 0.000               | 0.000                 | 0.0                 | 0               | 0.0             | OK         |
| 1.011      | FSR: 1 years: +0 %: 240 mins: Winter | Pipe            | Pond (1)            | Manhole (13)        | 17.000                   | 16.076                  | 0.038               | 38.725                | 0.6                 | 0.07            | 2.8             | OK         |
| 1.012      | FSR: 1 years: +0 %: 240 mins: Winter | Pipe            | Manhole (13)        | Manhole (14)        | 17.000                   | 15.834                  | 0.036               | 38.721                | 0.7                 | 0.05            | 2.8             | OK         |



|                                                                        |  |                     |             |              |
|------------------------------------------------------------------------|--|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  | Date:<br>25/09/2024 |             |              |
|                                                                        |  | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     |  | Company Address:    |             |              |



|                 |                                            |          |                           |                 |        |        |       |        |     |      |      |    |
|-----------------|--------------------------------------------|----------|---------------------------|-----------------|--------|--------|-------|--------|-----|------|------|----|
| 1.013           | FSR: 1 years:<br>+0 %: 240<br>mins: Winter | Pipe     | Manhole<br>(14)           | Manhole<br>(15) | 16.725 | 15.739 | 0.038 | 61.315 | 1.0 | 0.06 | 4.7  | OK |
| 1.006           | FSR: 1 years:<br>+0 %: 15<br>mins: Summer  | Pipe     | Simple<br>Junction<br>(6) | Manhole<br>(7)  | 17.650 | 16.300 | 0.000 | 0.000  | 0.0 | 0    | 0.0  | OK |
| Pipe            | FSR: 1 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | S10                       | Tank1           | 18.800 | 17.717 | 0.016 | 0.646  | 1.3 | 0.02 | 1.3  | OK |
| Pipe (1)        | FSR: 1 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | S02                       | Tank1           | 18.901 | 17.753 | 0.051 | 5.734  | 2.2 | 0.24 | 11.6 | OK |
| No Delay        | FSR: 1 years:<br>+0 %: 360<br>mins: Winter | No Delay | Tank1                     | Manhole<br>(16) |        | 16.743 | 0.002 | 0.108  | 0.0 |      | 0.0  |    |
| No Delay<br>(1) | FSR: 1 years:<br>+0 %: 180<br>mins: Winter | No Delay | Pond                      | Manhole<br>(14) |        | 16.102 | 0.015 | 20.284 | 0.0 |      | 1.8  |    |
| 1.007           | FSR: 1 years:<br>+0 %: 15<br>mins: Summer  | Pipe     | Manhole<br>(7)            | Manhole<br>(18) | 17.250 | 16.100 | 0.013 | 0.000  | 0.0 | 0    | 0.0  | OK |
| 1.008           | FSR: 1 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | Manhole<br>(18)           | Pond (1)        | 17.300 | 16.126 | 0.026 | 0.733  | 0.6 | 0.03 | 1.5  | OK |
| 1.005           | FSR: 1 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | Manhole<br>(6)            | Pond            | 18.000 | 16.449 | 0.048 | 2.000  | 0.6 | 0.1  | 3.8  | OK |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     | Company Address:    |             |              |





**FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                          | Connection Type | From                | To                  | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status     |
|------------|--------------------------------------|-----------------|---------------------|---------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|------------|
| 1.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | S01                 | Simple Junction     | 19.700                   | 18.539                  | 0.054               | 2.348                 | 0.9                 | 0.15            | 5.0             | OK         |
| 1.001      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | Simple Junction     | S02                 | 19.100                   | 17.969                  | 0.065               | 6.673                 | 1.9                 | 0.34            | 13.8            | OK         |
| 2.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | S05                 | Simple Junction     | 19.300                   | 18.567                  | 0.043               | 0.776                 | 0.4                 | 0.03            | 1.7             | OK         |
| 5.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | S04                 | S02                 | 18.950                   | 18.220                  | 0.041               | 0.753                 | 0.4                 | 0.04            | 1.6             | OK         |
| 6.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | S07                 | S10                 | 18.850                   | 18.122                  | 0.020               | 0.836                 | 1.2                 | 0.04            | 1.8             | OK         |
| 3.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | S03                 | Simple Junction (1) | 19.300                   | 18.126                  | 0.033               | 0.552                 | 0.4                 | 0.06            | 1.1             | OK         |
| 3.001      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | Simple Junction (1) | Simple Junction     | 19.210                   | 18.051                  | 0.055               | 1.309                 | 0.5                 | 0.17            | 2.7             | OK         |
| 4.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | S06                 | Simple Junction (1) | 19.400                   | 18.566                  | 0.029               | 0.759                 | 0.7                 | 0.02            | 1.6             | OK         |
| 7.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | Manhole             | Simple Junction (2) | 18.742                   | 17.579                  | 0.038               | 1.853                 | 1.1                 | 0.12            | 3.9             | OK         |
| 7.001      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | Simple Junction (2) | Manhole (6)         | 18.552                   | 17.392                  | 0.039               | 2.586                 | 1.5                 | 0.14            | 5.3             | OK         |
| 8.000      | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | Manhole (1)         | Simple Junction (2) | 18.500                   | 17.673                  | 0.031               | 0.734                 | 0.6                 | 0.05            | 1.5             | OK         |
| 10.000     | FSR: 2 years: +0 %: 15 mins: Summer  | Pipe            | Manhole (8)         | Manhole (7)         | 16.847                   | 16.300                  | 0.000               | 0.000                 | 0.0                 | 0               | 0.0             | OK         |
| 1.010      | FSR: 2 years: +0 %: 30 mins: Winter  | Pipe            | Manhole (9)         | Pond (1)            | 17.500                   | 16.053                  | 0.225               | 1.623                 | 0.2                 | 0.22            | 6.6             | Surcharged |
| 14.000     | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | Manhole (12)        | Manhole (9)         | 17.500                   | 16.765                  | 0.150               | 0.958                 | 0.3                 | 0.02            | 2.1             | OK         |
| 1.009      | FSR: 2 years: +0 %: 30 mins: Winter  | Pipe            | Manhole (17)        | Manhole (9)         | 17.450                   | 16.053                  | 0.225               | 0.000                 | 0.1                 | 0.07            | 2.8             | Surcharged |
| 12.000     | FSR: 2 years: +0 %: 15 mins: Winter  | Pipe            | Manhole (10)        | Manhole (18)        | 17.650                   | 16.918                  | 0.024               | 0.963                 | 1.1                 | 0.03            | 2.1             | OK         |
| 1.004      | FSR: 2 years: +0 %: 15 mins: Summer  | Pipe            | Manhole (16)        | Manhole (6)         | 18.500                   | 16.650                  | 0.000               | 0.000                 | 0.0                 | 0               | 0.0             | OK         |
| 1.011      | FSR: 2 years: +0 %: 240 mins: Winter | Pipe            | Pond (1)            | Manhole (13)        | 17.000                   | 16.121                  | 0.039               | 48.343                | 0.7                 | 0.07            | 3.0             | OK         |
| 1.012      | FSR: 2 years: +0 %: 240 mins: Winter | Pipe            | Manhole (13)        | Manhole (14)        | 17.000                   | 15.834                  | 0.037               | 48.339                | 0.7                 | 0.05            | 3.0             | OK         |

|                                                                        |  |                     |             |              |
|------------------------------------------------------------------------|--|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  | Date:<br>25/09/2024 |             |              |
|                                                                        |  | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     |  | Company Address:    |             |              |



|                 |                                            |          |                           |                 |        |        |       |        |     |      |      |    |
|-----------------|--------------------------------------------|----------|---------------------------|-----------------|--------|--------|-------|--------|-----|------|------|----|
| 1.013           | FSR: 2 years:<br>+0 %: 240<br>mins: Winter | Pipe     | Manhole<br>(14)           | Manhole<br>(15) | 16.725 | 15.740 | 0.039 | 76.209 | 1.1 | 0.06 | 4.9  | OK |
| 1.006           | FSR: 2 years:<br>+0 %: 15<br>mins: Summer  | Pipe     | Simple<br>Junction<br>(6) | Manhole<br>(7)  | 17.650 | 16.300 | 0.000 | 0.000  | 0.0 | 0    | 0.0  | OK |
| Pipe            | FSR: 2 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | S10                       | Tank1           | 18.800 | 17.719 | 0.019 | 0.835  | 1.4 | 0.03 | 1.7  | OK |
| Pipe (1)        | FSR: 2 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | S02                       | Tank1           | 18.901 | 17.761 | 0.059 | 7.423  | 2.3 | 0.31 | 15.0 | OK |
| No Delay        | FSR: 2 years:<br>+0 %: 360<br>mins: Winter | No Delay | Tank1                     | Manhole<br>(16) |        | 16.838 | 0.003 | 0.220  | 0.0 |      | 0.1  |    |
| No Delay<br>(1) | FSR: 2 years:<br>+0 %: 180<br>mins: Winter | No Delay | Pond                      | Manhole<br>(14) |        | 16.129 | 0.017 | 25.161 | 0.0 |      | 1.9  |    |
| 1.007           | FSR: 2 years:<br>+0 %: 15<br>mins: Summer  | Pipe     | Manhole<br>(7)            | Manhole<br>(18) | 17.250 | 16.100 | 0.015 | 0.000  | 0.0 | 0    | 0.0  | OK |
| 1.008           | FSR: 2 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | Manhole<br>(18)           | Pond (1)        | 17.300 | 16.130 | 0.029 | 0.950  | 0.6 | 0.04 | 1.9  | OK |
| 1.005           | FSR: 2 years:<br>+0 %: 15<br>mins: Winter  | Pipe     | Manhole<br>(6)            | Pond            | 18.000 | 16.456 | 0.055 | 2.585  | 0.7 | 0.13 | 5.0  | OK |

|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     | Company Address:    |             |              |





**FSR: 30 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                           | Connection Type | From                | To                  | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status     |
|------------|---------------------------------------|-----------------|---------------------|---------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|------------|
| 1.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | S01                 | Simple Junction     | 19.700                   | 18.567                  | 0.144               | 6.625                 | 0.8                 | 0.42            | 14.1            | OK         |
| 1.001      | FSR: 30 years: +50 %: 15 mins: Summer | Pipe            | Simple Junction     | S02                 | 19.100                   | 18.073                  | 0.146               | 16.822                | 2.0                 | 0.88            | 35.9            | Surcharged |
| 2.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | S05                 | Simple Junction     | 19.300                   | 18.577                  | 0.124               | 2.195                 | 0.4                 | 0.08            | 4.7             | OK         |
| 5.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | S04                 | S02                 | 18.950                   | 18.233                  | 0.074               | 2.127                 | 0.5                 | 0.11            | 4.5             | OK         |
| 6.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | S07                 | S10                 | 18.850                   | 18.137                  | 0.034               | 2.361                 | 1.6                 | 0.12            | 5.0             | OK         |
| 3.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | S03                 | Simple Junction (1) | 19.300                   | 18.143                  | 0.076               | 1.557                 | 0.4                 | 0.18            | 3.3             | OK         |
| 3.001      | FSR: 30 years: +50 %: 15 mins: Summer | Pipe            | Simple Junction (1) | Simple Junction     | 19.210                   | 18.086                  | 0.124               | 3.311                 | 0.5                 | 0.34            | 5.5             | OK         |
| 4.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | S06                 | Simple Junction (1) | 19.400                   | 18.577                  | 0.068               | 2.148                 | 0.6                 | 0.07            | 4.7             | OK         |
| 7.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | Manhole             | Simple Junction (2) | 18.742                   | 17.609                  | 0.069               | 5.235                 | 1.4                 | 0.34            | 11.1            | OK         |
| 7.001      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | Simple Junction (2) | Manhole (6)         | 18.552                   | 17.424                  | 0.068               | 7.303                 | 1.9                 | 0.4             | 15.2            | OK         |
| 8.000      | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | Manhole (1)         | Simple Junction (2) | 18.500                   | 17.689                  | 0.055               | 2.070                 | 0.7                 | 0.15            | 4.4             | OK         |
| 10.000     | FSR: 30 years: +50 %: 60 mins: Summer | Pipe            | Manhole (8)         | Manhole (7)         | 16.847                   | 16.345                  | 0.095               | 0.000                 | 0.0                 | 0               | 0.0             | OK         |
| 1.010      | FSR: 30 years: +50 %: 15 mins: Summer | Pipe            | Manhole (9)         | Pond (1)            | 17.500                   | 16.189                  | 0.225               | 1.059                 | 0.1                 | 0.19            | 5.5             | Surcharged |
| 14.000     | FSR: 30 years: +50 %: 15 mins: Winter | Pipe            | Manhole (12)        | Manhole (9)         | 17.500                   | 16.775                  | 0.150               | 2.701                 | 0.3                 | 0.07            | 5.8             | OK         |

|                                                                        |  |  |  |                     |             |              |                                                                                     |  |  |
|------------------------------------------------------------------------|--|--|--|---------------------|-------------|--------------|-------------------------------------------------------------------------------------|--|--|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  |  |  | Date:<br>25/09/2024 |             |              |  |  |  |
|                                                                        |  |  |  | Designed by:<br>SM  | Checked by: | Approved By: |                                                                                     |  |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     |  |  |  | Company Address:    |             |              |                                                                                     |  |  |

|                 |                                                 |          |                           |                 |        |        |       |         |     |      |      |                |
|-----------------|-------------------------------------------------|----------|---------------------------|-----------------|--------|--------|-------|---------|-----|------|------|----------------|
| 1.009           | FSR: 30<br>years: +50 %:<br>60 mins:<br>Summer  | Pipe     | Manhole<br>(17)           | Manhole<br>(9)  | 17.450 | 16.344 | 0.225 | 0.000   | 0.0 | 0.03 | 1.3  | Surch<br>arged |
| 12.000          | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter  | Pipe     | Manhole<br>(10)           | Manhole<br>(18) | 17.650 | 16.929 | 0.061 | 2.717   | 1.6 | 0.08 | 5.8  | OK             |
| 1.004           | FSR: 30<br>years: +50 %:<br>180 mins:<br>Winter | Pipe     | Manhole<br>(16)           | Manhole<br>(6)  | 18.500 | 16.978 | 0.028 | 30.911  | 0.9 | 0.07 | 2.0  | OK             |
| 1.011           | FSR: 30<br>years: +50 %:<br>15 mins:<br>Summer  | Pipe     | Pond (1)                  | Manhole<br>(13) | 17.000 | 16.189 | 0.039 | 41.662  | 0.7 | 0.07 | 3.0  | Surch<br>arged |
| 1.012           | FSR: 30<br>years: +50 %:<br>240 mins:<br>Summer | Pipe     | Manhole<br>(13)           | Manhole<br>(14) | 17.000 | 15.835 | 0.037 | 122.540 | 0.7 | 0.05 | 3.0  | OK             |
| 1.013           | FSR: 30<br>years: +50 %:<br>60 mins:<br>Winter  | Pipe     | Manhole<br>(14)           | Manhole<br>(15) | 16.725 | 15.740 | 0.039 | 143.448 | 1.1 | 0.06 | 5.0  | OK             |
| 1.006           | FSR: 30<br>years: +50 %:<br>60 mins:<br>Summer  | Pipe     | Simple<br>Junction<br>(6) | Manhole<br>(7)  | 17.650 | 16.345 | 0.145 | 0.000   | 0.0 | 0    | 0.0  | OK             |
| Pipe            | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter  | Pipe     | S10                       | Tank1           | 18.800 | 17.732 | 0.031 | 2.359   | 1.8 | 0.09 | 4.9  | OK             |
| Pipe (1)        | FSR: 30<br>years: +50 %:<br>15 mins:<br>Summer  | Pipe     | S02                       | Tank1           | 18.901 | 17.819 | 0.110 | 18.713  | 2.8 | 0.81 | 39.3 | OK             |
| No Delay        | FSR: 30<br>years: +50 %:<br>180 mins:<br>Winter | No Delay | Tank1                     | Manhole<br>(16) |        | 17.326 | 0.021 | 31.263  | 0.0 |      | 2.0  |                |
| No Delay<br>(1) | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter  | No Delay | Pond                      | Manhole<br>(14) |        | 16.209 | 0.016 | 27.081  | 0.0 |      | 2.0  |                |
| 1.007           | FSR: 30<br>years: +50 %:<br>60 mins:<br>Summer  | Pipe     | Manhole<br>(7)            | Manhole<br>(18) | 17.250 | 16.345 | 0.194 | 0.000   | 0.0 | 0.01 | 0.5  | OK             |
| 1.008           | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter  | Pipe     | Manhole<br>(18)           | Pond (1)        | 17.300 | 16.218 | 0.183 | 2.501   | 0.6 | 0.11 | 5.7  | OK             |
| 1.005           | FSR: 30<br>years: +50 %:<br>15 mins:<br>Winter  | Pipe     | Manhole<br>(6)            | Pond            | 18.000 | 16.500 | 0.097 | 7.302   | 0.9 | 0.37 | 14.4 | OK             |



|                                                                        |                     |             |              |
|------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation | Date:<br>25/09/2024 |             |              |
|                                                                        | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     | Company Address:    |             |              |





**FSR: 100 years: Increase Rainfall (%): +50: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                            | Connection Type | From                | To                  | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status     |
|------------|----------------------------------------|-----------------|---------------------|---------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|------------|
| 1.000      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | S01                 | Simple Junction     | 19.700                   | 18.579                  | 0.150               | 8.508                 | 1.0                 | 0.54            | 18.2            | OK         |
| 1.001      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | Simple Junction     | S02                 | 19.100                   | 18.272                  | 0.150               | 24.224                | 2.4                 | 1.05            | 42.5            | Surcharged |
| 2.000      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | S05                 | Simple Junction     | 19.300                   | 18.582                  | 0.150               | 2.822                 | 0.4                 | 0.11            | 6.0             | OK         |
| 5.000      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | S04                 | S02                 | 18.950                   | 18.237                  | 0.126               | 2.728                 | 0.4                 | 0.14            | 5.8             | OK         |
| 6.000      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | S07                 | S10                 | 18.850                   | 18.142                  | 0.039               | 3.033                 | 1.7                 | 0.15            | 6.5             | OK         |
| 3.000      | FSR: 100 years: +50 %: 30 mins: Winter | Pipe            | S03                 | Simple Junction (1) | 19.300                   | 18.166                  | 0.108               | 2.766                 | 0.5                 | 0.16            | 3.0             | OK         |
| 3.001      | FSR: 100 years: +50 %: 30 mins: Winter | Pipe            | Simple Junction (1) | Simple Junction     | 19.210                   | 18.160                  | 0.150               | 6.593                 | 0.5                 | 0.44            | 7.1             | Surcharged |
| 4.000      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | S06                 | Simple Junction (1) | 19.400                   | 18.579                  | 0.148               | 2.763                 | 0.7                 | 0.09            | 5.9             | OK         |
| 7.000      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | Manhole             | Simple Junction (2) | 18.742                   | 17.621                  | 0.081               | 6.727                 | 1.5                 | 0.44            | 14.3            | OK         |
| 7.001      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | Simple Junction (2) | Manhole (6)         | 18.552                   | 17.436                  | 0.080               | 9.383                 | 2.0                 | 0.52            | 19.6            | OK         |
| 8.000      | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | Manhole (1)         | Simple Junction (2) | 18.500                   | 17.694                  | 0.064               | 2.658                 | 0.8                 | 0.19            | 5.6             | OK         |
| 10.000     | FSR: 100 years: +50 %: 30 mins: Winter | Pipe            | Manhole (8)         | Manhole (7)         | 16.847                   | 16.400                  | 0.150               | 0.000                 | 0.0                 | 0.01            | 0.1             | OK         |
| 1.010      | FSR: 100 years: +50 %: 30 mins: Summer | Pipe            | Manhole (9)         | Pond (1)            | 17.500                   | 16.357                  | 0.225               | 1.561                 | 0.2                 | 0.28            | 8.3             | Surcharged |
| 14.000     | FSR: 100 years: +50 %: 15 mins: Winter | Pipe            | Manhole (12)        | Manhole (9)         | 17.500                   | 16.778                  | 0.150               | 3.466                 | 0.4                 | 0.09            | 7.5             | OK         |

|                                                                        |  |  |  |                     |             |              |                                                                                     |  |  |
|------------------------------------------------------------------------|--|--|--|---------------------|-------------|--------------|-------------------------------------------------------------------------------------|--|--|
| 16573 Land at Station Road, Drigg:<br>Surface water system calculation |  |  |  | Date:<br>25/09/2024 |             |              |  |  |  |
|                                                                        |  |  |  | Designed by:<br>SM  | Checked by: | Approved By: |                                                                                     |  |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase     |  |  |  | Company Address:    |             |              |                                                                                     |  |  |

|              |                                         |          |                     |              |        |        |       |         |     |      |      |            |
|--------------|-----------------------------------------|----------|---------------------|--------------|--------|--------|-------|---------|-----|------|------|------------|
| 1.009        | FSR: 100 years: +50 %: 30 mins: Summer  | Pipe     | Manhole (17)        | Manhole (9)  | 17.450 | 16.357 | 0.225 | 0.000   | 0.1 | 0.09 | 3.6  | Surcharged |
| 12.000       | FSR: 100 years: +50 %: 15 mins: Winter  | Pipe     | Manhole (10)        | Manhole (18) | 17.650 | 16.933 | 0.099 | 3.494   | 1.7 | 0.11 | 7.5  | OK         |
| 1.004        | FSR: 100 years: +50 %: 360 mins: Winter | Pipe     | Manhole (16)        | Manhole (6)  | 18.500 | 16.979 | 0.028 | 71.794  | 0.9 | 0.07 | 2.1  | OK         |
| 1.011        | FSR: 100 years: +50 %: 240 mins: Winter | Pipe     | Pond (1)            | Manhole (13) | 17.000 | 16.675 | 0.039 | 179.342 | 0.7 | 0.07 | 3.0  | Surcharged |
| 1.012        | FSR: 100 years: +50 %: 360 mins: Summer | Pipe     | Manhole (13)        | Manhole (14) | 17.000 | 15.835 | 0.037 | 178.929 | 0.7 | 0.05 | 3.0  | OK         |
| 1.013        | FSR: 100 years: +50 %: 30 mins: Winter  | Pipe     | Manhole (14)        | Manhole (15) | 16.725 | 15.740 | 0.039 | 141.441 | 1.1 | 0.06 | 5.0  | OK         |
| 1.006        | FSR: 100 years: +50 %: 60 mins: Summer  | Pipe     | Simple Junction (6) | Manhole (7)  | 17.650 | 16.456 | 0.225 | 0.000   | 0.0 | 0    | 0.1  | OK         |
| Pipe         | FSR: 100 years: +50 %: 15 mins: Winter  | Pipe     | S10                 | Tank1        | 18.800 | 17.736 | 0.036 | 3.032   | 2.0 | 0.12 | 6.3  | OK         |
| Pipe (1)     | FSR: 100 years: +50 %: 15 mins: Summer  | Pipe     | S02                 | Tank1        | 18.901 | 17.863 | 0.137 | 24.040  | 2.6 | 0.9  | 43.9 | Surcharged |
| No Delay     | FSR: 100 years: +50 %: 360 mins: Winter | No Delay | Tank1               | Manhole (16) |        | 18.011 | 0.022 | 72.147  | 0.0 |      | 2.1  |            |
| No Delay (1) | FSR: 100 years: +50 %: 15 mins: Summer  | No Delay | Pond                | Manhole (14) |        | 16.238 | 0.016 | 31.081  | 0.0 |      | 2.0  |            |
| 1.007        | FSR: 100 years: +50 %: 60 mins: Summer  | Pipe     | Manhole (7)         | Manhole (18) | 17.250 | 16.456 | 0.225 | 0.000   | 0.0 | 0.01 | 0.8  | Surcharged |
| 1.008        | FSR: 100 years: +50 %: 15 mins: Winter  | Pipe     | Manhole (18)        | Pond (1)     | 17.300 | 16.295 | 0.225 | 3.257   | 0.6 | 0.14 | 7.3  | OK         |
| 1.005        | FSR: 100 years: +50 %: 15 mins: Winter  | Pipe     | Manhole (6)         | Pond         | 18.000 | 16.516 | 0.112 | 9.383   | 0.9 | 0.47 | 18.6 | OK         |

## **Appendix H**

|                                                                                                 |                     |             |              |
|-------------------------------------------------------------------------------------------------|---------------------|-------------|--------------|
| 16573 Land at Station Road, Drigg:<br>Greenfield Run off Calculation                            | Date:<br>25/09/2024 |             |              |
|                                                                                                 | Designed by:<br>SM  | Checked by: | Approved By: |
| Report Details:<br>Type: Network Design Report<br>Foul Phase: Phase (1)<br>Flow Path: Flow Path | Company Address:    |             |              |



| Name              | Total Area (ha) | Total Dwellings | Proportional Depth (mm) | Proportional Velocity (m/s) | Proportional Velocity At 1/3 Flow (m/s) | Full Bore Velocity (m/s) | Capacity (L/s) | Flow (L/s) |
|-------------------|-----------------|-----------------|-------------------------|-----------------------------|-----------------------------------------|--------------------------|----------------|------------|
| Pipe              | 0.10            | 1.00            |                         |                             |                                         | 2.111                    | 16.578         | 0.046      |
| Branch: Pipe (1)  |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (1)          | 0.10            | 1.00            |                         |                             |                                         | 2.208                    | 17.340         | 0.046      |
| Branch: Pipe (12) |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (12)         | 0.10            | 1.00            |                         |                             |                                         | 1.460                    | 11.465         | 0.046      |
| Pipe (2)          | 0.30            | 3.00            | 8                       | 0.526                       |                                         | 1.700                    | 13.353         | 0.139      |
| Branch: Pipe (3)  |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (3)          | 0.10            | 1.00            |                         |                             |                                         | 0.744                    | 5.843          | 0.046      |
| Pipe (2) (1)      | 0.40            | 4.00            | 13                      | 0.307                       | 0.200                                   | 0.672                    | 5.279          | 0.185      |
| Branch: Pipe (4)  |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (4)          | 0.10            | 1.00            |                         |                             |                                         | 1.461                    | 11.472         | 0.046      |
| Pipe (5)          | 0.50            | 5.00            | 9                       | 0.661                       | 0.443                                   | 1.916                    | 15.046         | 0.231      |
| Branch: Pipe (10) |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (10)         | 0.10            | 1.00            |                         |                             |                                         | 0.744                    | 5.843          | 0.046      |
| Branch: Pipe (11) |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (11)         | 0.10            | 1.00            |                         |                             |                                         | 0.718                    | 5.642          | 0.046      |
| Pipe (10) (1)     | 0.20            | 2.00            | 8                       | 0.310                       |                                         | 0.955                    | 7.502          | 0.093      |
| Pipe (6)          | 0.70            | 7.00            | 17                      | 0.346                       | 0.245                                   | 0.630                    | 4.948          | 0.324      |
| Branch: Pipe (7)  |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (7)          | 0.10            | 1.00            |                         |                             |                                         | 2.824                    | 22.176         | 0.046      |
| Pipe (8)          | 0.10            | 1.00            |                         |                             |                                         | 0.777                    | 6.103          | 0.046      |
| Branch: Pipe (9)  |                 |                 |                         |                             |                                         |                          |                |            |
| Pipe (9)          | 0.10            | 1.00            |                         |                             |                                         | 4.144                    | 32.545         | 0.046      |
| Pipe (8) (1)      | 0.20            | 2.00            | 9                       | 0.256                       |                                         | 0.720                    | 5.657          | 0.093      |
| Pipe (13)         | 0.90            | 9.00            | 15                      | 0.545                       | 0.386                                   | 1.080                    | 8.483          | 0.416      |