



global environmental solutions

Wrexham Phase 2 – MRF

Site Surface Water Design
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1.0 FLOOD RISK ASSESSMENT

A flood risk assessment has been produced as a part of the Environmental Statement written by Stratus Environmental (Ref: WR7042/4/ES – Section 8) dated October 2011. A copy of this section of the Environmental Statement along with relevant Appendices has been included as Appendix A of this report.

2.0 DRAINAGE DESIGN

2.1 Surface water sewers - Design Philosophy

The surface water drainage has been designed in accordance with Sewers for Adoption – 7th Edition to the following requirements:-

1. The system is designed under pipe full conditions to accept a 1 in 1 year return period storm without surcharging above the pipe soffit.
2. The system is designed to not flood any part of the site during a 1 in 30 year return period design storm.
3. Some flooding has been allowed for a 1 in 100 year return period design storm, the volume of flooding will be restricted to external hardstanding and will not impact the proposed buildings or adjacent landscaped areas.

2.2 Surface water management plan

Current planning guidance (PPS25) recommends that regional planning bodies and local authorities promote the use of sustainable approaches to surface water drainage management.

Changes in the characteristics of the site and the resulting changes in runoff regime can be mitigated by the implementation of a Sustainable Drainage System (SuDS). SuDS aim to ensure that existing drainage paths and seasonal fluctuation of water levels within the receiving water environment are maintained. SuDS also manage flood risk and water quality issues downstream by ensuring that new development does not increase the peak flow rates discharged from the site or result in a reduction in water quality downstream.

2.2.1 Application of SuDS

Current 'industry best practice' guidance as outlined in the SuDS Manual¹ promotes a management train as a fundamental concept to designing a successful SuDS scheme. The SuDS management train philosophy is given in Figure 2-1.

¹ CIRIA C697 (2007). The SUDS Manual.

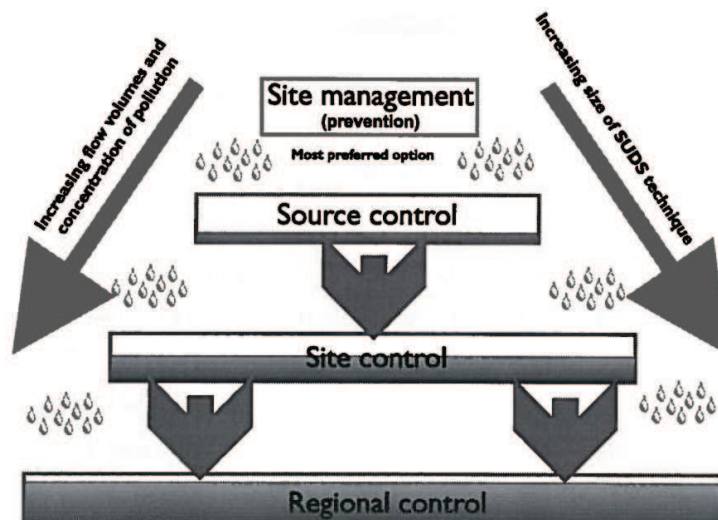


Figure 2-1
SuDS Management Train (after CIRIA Report C697)

The hierarchy of techniques used in development a SuDS management train are as follows:

- **Prevention** – the use of good site design and housekeeping measures on individual sites to prevent runoff and pollution (e.g. minimise areas of hard standing).
- **Source Control** – control of runoff at or very near its source.
- **Site Control** – management of water from several sub-catchments (including routing water from roofs and car parks to one/several large soakaways for the whole site).
- **Regional Control** – management of runoff from several sites, typically in a retention pond or wetland.

2.3 Proposed SUDS Design

The existing site is a Brownfield site with no existing impermeable surfaces. Surface water runoff would eventually drain to one of the surface water ditches to the north and west of the site. The proposed development includes an uplift in impermeable surface area on-site of approximately 1.39ha. The increase in impermeable surfaces onsite will generate an increase in the volume and rate of surface water runoff from the site. The proposed drainage system will aim to ensure that the peak rate and volume of runoff being discharged from the site will be less than or equal to that of the pre-development 'greenfield' rates for the events up to and including the critical storm event (incorporating an allowance for climate change). This approach is in accordance with paragraph F10 of PPS25. However, best practice guidelines advise that a minimum flow rate of 5l/s should be maintained in order to prevent pipe blockage.

It is proposed that:-

- surface water runoff from the roofs of the building and the surrounding hardstanding be drained to a pond, which will discharge into the existing drainage ditch to the north.
- The discharge from site is restricted to a maximum of Greenfield runoff rates as indicated in Table 2-1.

2.4 Surface water drainage calculations

2.4.1 Existing and Post Development Surface Runoff

Pre-development 'greenfield' runoff rates were calculated using loH124 methodology.

Post development (un-attenuated) discharge rates were calculated using the simulation function within the WinDES software suite which uses the modified rational method to predict discharge rates from the site.

It is proposed that the post development discharge rates be limited to not more than Greenfield runoff rate in line with best practice guidance (refer to Section 2.3).

The calculated pre-development and post-development rates are provided in Table 2-1.

Table 2-1
Predicted Pre and Post Development Runoff / Discharge Rates

Return Period (including 30% climate change)	Pre-development 'greenfield' runoff rate (l/s/ 50ha)	Catchment area (ha)	Pre-development 'greenfield' runoff rate (l/s)	Proposed Maximum discharge rate (l/s)	Maximum Actual Post-development discharge rate (l/s)
1:1 year	224.7	1.39	6.2	6.2	6.0
1:2 year	237.1	1.39	6.6	6.6	6.6
1:30 year	450.1	1.39	12.5	12.5	12.5
1:100 year	556.5	1.39	15.5	15.5	14.8

2.4.2 Storage Lagoon

The uplift in impermeable area was calculated to be 1.394Ha for the proposed layout including roofs and all areas of hardstanding. The lagoon has been modelled with the proposed drainage network using the simulation function within the WinDES software suite which uses the modified rational method to predict discharge rates from the site. The results of this model are included in Appendix B.

Discharge from the lagoon will be via a complex control consisting of two orifice plates, the first is at the base of the lagoon and is 65mm diameter with a second 61mm diameter orifice 0.6m above this.

2.4.3 Drainage areas

The drainage from the development covers a developed impermeable area of 13,940m², the split between building roof areas and hardstanding areas is 7,280m² and 6,660m² respectively.

2.4.4 Peak flow rates

Peak flow from the proposed development has been restricted to the Greenfield rate of runoff for a 1 in 1, 1 in 2, 1 in 30 and 1 in 100 year events (including 30% climate change) calculated as 6.2l/s, 6.6l/s, 12.5l/s and 15.5l/s respectively.

2.4.5 Climate Change

An allowance of 30% for climate change has been made during the design of the surface water drainage and attenuation measures proposed for this facility.

3.0 IMPACT OF FLOODING

Some flooding of the site may occur during short duration 1 in 100 year return period storms as shown in the results for 30 and 60 minute storms, the volumes shown will flood hardstanding areas only and will not affect the proposed buildings. The flooded volumes are summarised in Table 3-1 below:-

Table 3-1
Volume of Flood Water during 1:100 year storms plus Climate Change

PN	Volume (m ³)			
	Summer 30 min	Summer 60 min	Winter 30 min	Summer 60 min
1.001	4.729	1.286	5.100	-
1.002	10.708	4.177	10.759	-
2.000	10.469	4.065	10.927	-
2.001	1.304	-	0.158	-
3.000	2.417	0.375	3.458	-
3.001	0.527	-	-	-
4.000	13.400	6.580	16.771	0.351
4.001	6.930	0.302	3.472	-
4.001	0.154	-	-	-
Total	50.638	16.785	50.645	0.351

The maximum flood volume predicted by the Simulation module within WinDes is 50.65m³, this is for a 1:100 year event 30 minute storm with 30% allowance for climate change. The flood would be accommodated on the hardstanding with a maximum depth of water being 6cm, drawing 8B shows the extent of the flooded hardstanding.

The flood water would reach a maximum level of 28.84m which is below the building floor level of 28.95m.

4.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of FCC; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

Appendix A – Environmental Statement (Section 8)

8.0 HYDROGEOLOGY, HYDROLOGY AND FLOOD RISK

8.1 Introduction

- 8.1.1 This chapter describes the baseline conditions relating to the hydrological environment on and adjacent to the development site. It identifies key water resources and sensitivities and addresses the direct and indirect impacts of the development on the hydrological and hydrogeological environments. This section also assesses the potential for flood risk in accordance with Government guidance and the requirements of the Environment Agency. The need for any water resource mitigation measures is addressed and any post-mitigation residual impacts are identified.

Legislative Context

- 8.1.2 The EU Water Framework Directive (WFD) (2000) has been the cornerstone legislation in the EU and UK planning policy. The aim of the Directive is to generate a more integrated approach to water management ensuring that where possible links with ecology are increased. It also strives to ensure that water quality is improved and that any proposed developments will not have a detrimental impact upon water quality. The WFD was transposed into English & Welsh law via The Water Environment (Water Framework Directive) (England & Wales) Regulations 2003. The purpose of these regulations is to implement a strategic planning process to be established for managing, protecting and improving the quality of water resources within defined river basin catchment areas.
- 8.1.3 In addition to the above, The Water Resources Act 1991 (as amendment) sets out the responsibilities of the EA in relation to water pollution, resource management, flood defence, fisheries, and in some areas, navigation. The Act regulates activities that may affect the water environment. Discharge to controlled waters is only permitted with the consent of the EA. An aim of the Act is to ensure that the polluter pays the cost of the consequences of their discharges.
- 8.1.4 The Groundwater (England and Wales) Regulations 2009 control the disposal to the hydrogeological environment of potentially polluting substances which are divided into Hazardous Substances and Non-hazardous Pollutants. The former are the most damaging and toxic and must be prevented from directly or indirectly entering the groundwater environment. Hazardous Substances include mineral oils and hydrocarbons, pesticides, biocides, herbicides, solvents and some metals. Non-hazardous Pollutants are any pollutants other than Hazardous Substances. Non-hazardous Pollutants are potentially toxic but are less harmful than Hazardous Substances, but their direct discharge to groundwater is generally not permitted and any indirect discharge to groundwater must be controlled by

technical precautions in order to prevent pollution. Non-hazardous Pollutants include ammonia and nitrites, many metals and fluorides. The Environment Agency is the statutory body responsible for the regulation and protection of groundwater, and has assessed and produced a series of maps giving national coverage which classifies aquifer types based on drift and solid geology.

- 8.1.5 Welsh Planning Policy requires that protection and enhancement of the environment should be achieved and development proposals should consider these broad aims. It also requires that consideration of the risks of flooding and sea level rise risk is given for any new development and should consider the impacts of climate change. WPP also outlines the need to consider the prudent use of natural resources, which includes the use of Sustainable Drainage Systems (SUDS) in the management of surface water run-off.
- 8.1.6 The Flood Risk Assessment is undertaken in accordance with CIRIA 624. A Flood Risk Assessment (FRA) is required for development proposals of 1 hectare or greater in Flood Zone 1 and for all proposals for new development located in Flood Zones 2 and 3.
- 8.1.7 The FRA should identify and assess the risks of all forms of flooding to and from the development and demonstrate how these flood risks will be managed, taking climate change into account. The FRA should identify opportunities to reduce the probability and consequences of flooding. The FRA should include the design of surface water management systems including Sustainable Drainage Systems (SUDS) and address the requirement for safe access to and from the development in areas at risk of flooding.

Methodology and Assessment Criteria

- 8.1.8 In order to establish the environmental impact of the proposed development on the hydrological and hydrogeological regimes of the application site and its immediate environs, it was necessary to undertake the assessment in a number of stages. The initial stage comprised a desk study review of available information in order to determine (where possible) site conditions in terms of water features (both surface and ground), water quality and flooding risk.
- 8.1.9 Desk study information was gathered from a number of sources to inform various aspects of this assessment and included reference to the following:
- Topographical Survey;
 - EA Indicative River & Coastal Flood Maps;
 - EA Groundwater Vulnerability (1:625,000 scale) Map;
 - British Geological Survey (BGS) Map (Sheet no. 121 1991);
 - Welsh Government Technical Advice Note (TAN) 15;
 - SuDS Wales: Interim Code of Practice (2004)

- The SUDS Manual (CIRIA C697 2007);
- Various investigation reports (refer to Chapter 9).

- 8.1.10 In addition to the desk study review, a visual walkover inspection of the site and the area around the site has been undertaken.
- 8.1.11 The hydrological and hydrogeological regimes were considered in terms of existing condition, and the effects of the proposed development. An assessment of the application site location in terms of flood risk was also undertaken. Existing conditions local to the site (within the site boundary) were also considered in terms of hydrological management and the collection of surface water.
- 8.1.12 In terms of assessing the development site, two main phases of the proposal have been considered; these stages are construction phase and operational phase.
- 8.1.13 There are a number of potential impacts that have to be considered that could have a direct or indirect effect on hydrology, flood risk, water quality and hydrogeology. These impacts may be transitional, but also can be more permanent in nature. The primary concerns relate to potential impacts on controlled water receptors which are considered to be of high significance.
- 8.1.14 The assessment took account of the development proposals both in terms of the construction/development and operational phases and ranks the impacts in terms of significance (both adverse and beneficial). The significance criteria used is outlined in Table 8.1 below.

Table 8.1 – Significance Criteria for Hydrological/Hydrogeological Issues

Significance of Impact		Description
Negligible		No appreciable impact on humans, aquatic flora and fauna, surface or groundwater resources. Any minor effects are reversible
Minor	Adverse	Temporary and minor detrimental effect to local watercourses or groundwater. Moderate local flooding adjacent to the site. Moderate local scale reduction in surface or groundwater quality, reversible with time. Reversible detrimental effects on aquatic flora of fauna.
	Beneficial	Minor reduction in risk to humans, animals or plant growth. Minor localised improvement to the quality of surface or groundwater resources or minor reduction in flood risk

Significance of Impact		Description
Moderate	Adverse	Moderate detrimental effect to local watercourses or groundwater. Severe temporary flooding or change to flow characteristics of local aquifers or watercourses. Severe temporary reduction in the quality of surface or groundwater resources. Severe temporary impact on aquatic flora and fauna
	Beneficial	Moderate reduction in risk to humans, animals or plant growth. Moderate localised improvement to the quality of surface or groundwater resources or minor reduction in flood risk
Substantial	Adverse	Severe detrimental effect to local watercourses or groundwater. Permanent flooding or change to flow characteristics of local aquifers or watercourses. Permanent reduction in the quality of surface or groundwater resources. Permanent adverse impact on aquatic flora and fauna
	Beneficial	Major reduction in risk to humans, animals or plant growth. Significant localised/moderate to significant regionalised improvement to the quality of surface or groundwater resources. Moderate to significant localised/regionalised reduction in flood risk

8.1.15 The conceptual design has been based on the development proposals for a primarily hard surfaced area, with some soft landscaping in the eastern area of the development site. Surface water run-off is to be collected separately from foul water flows, which is proposed to be discharged directly to foul sewer which traverses longitudinally across the centre of the site.

8.1.16 An assessment of the proposed development has been undertaken in which to determine the total contributing area associated with the development. This information was then fed into Micro-drainage modelling software to establish the 1 in 100 year critical storm return period plus 30% for climate change associated with the proposed development in accordance with current legislation and guidance documents. The impact of this design proposal was then assessed against the baseline conditions.

Data Limitations

8.1.17 Geological and hydrogeological data beneath the site is limited to information which has been obtained from available 'desk' based sources, including existing maps and limited boreholes located within the site historically.

8.2 Baseline Conditions

- 8.2.1 The assessment of baseline conditions included a review of the pertinent information available, along with a site walkover, to inform the Geology and Land Quality section (Chapter 9) of this Environmental Statement (ES).
- 8.2.2 The development history of the Wrexham Industrial Estate dates back to the WWII era in which the site was developed for ammunitions manufacturing from 1939 to 1941. Although maps indicate that no buildings existed on the development site area a 1940 map suggests the presence of a spoil heap, which is likely to have been used a burning area (disposal of waste explosives or residues by burnings). Post WWII the Wrexham estate was home to a range of industries with a capacitor factory being of notable significance, with areas of the development site shown to have been used for associated widespread tipping. After the capacitor factory closed, the site has been remediated in 1987 primarily to remove PCBs. More recent investigations indicate slightly elevated concentrations of contaminants (mainly PCBs and some metals) locally exist within the area of the former spoil heap and sediments with the perimeter drainage ditch. This is discussed in more detail in Chapter 9 of this ES.
- 8.2.3 The site is located to the west of Bryn Road in the mid-eastern area of the Wrexham Industrial Estate. Primarily the site consists of gentle gradients between the elevations of c. 28 and 30m AOD, with the lowest point near the north-western corner of the site. The south western corner is occupied by a spoil heap. Semi-mature trees cover approximately 70% of the site whilst the remainder consists of tall grasses. A drainage ditch bounds the northern perimeter of the site, segregating the Phase 1 and 2 sites.
- 8.2.4 The site is currently anticipated to generate greenfield run-off only to shallow perched groundwater or to the perimeter drainage ditch.

Surrounding the Site

- 8.2.5 The immediately surrounding area makes up the Wrexham Industrial Estate, which covers an area of approximately 550ha.
- 8.2.6 Bryn Lane and CPL Petroleum (fuel oil distributor) is located immediately east of the development site beyond which industrial/warehouse units are located. To the immediate north and west of the development site are existing waste management facilities (including the WRG Phase 1 development). Open vegetated scrub land occupies the land to the south of the development site, beyond which are further industrial units and a few residential properties.

- 8.2.7 A rural setting exists beyond the extents of the Wrexham Industrial Estate. The nearest primary urban population is the town of Wrexham, located approximately 2km beyond the western extent of the estate.
- 8.2.8 The River Dee, a SSSI and SAC, is located approximately 3km east of the site. Its designations relate to its fluvial morphology and ecological habitats.
- 8.2.9 During the site walkover, it was observed that surface water run-off from Bryn Lane appears to discharge into the drainage ditch, which bounds the northern perimeter of the development site. This drainage ditch flows northeast across rural land, to the River Dee.

Flood Risk

- 8.2.10 The EA 'Indicative River & Coastal Flood Map', identifies that the proposed development site is not at risk of flooding from rivers or sea.
- 8.2.11 The walkover survey and assessment of likely overland flash flood routes confirmed that land to the north, west and east of the site is at a higher level than the site, which would pose a potential risk of overland flooding. The south boundary represents a surface water divide, in which the levels fall to the south.
- 8.2.12 Given that the eastern area of the development site will be allocated for ecological mitigation the flood risk from overland flow from Bryn lane and CPL Petroleum's depot will be unaffected and is unlikely to impact upon the main process areas, which in-turn will be raised above existing levels.
- 8.2.13 Similarly, the drainage systems associated with the Phase 1 In-vessel Composting facility to the west of the facility have been designed to accommodate storm capacity. Therefore the risk of overland flow from this area is low.
- 8.2.14 Overland flow from land to the north of the facility will drain to the perimeter drainage ditch. Risk of flooding from the ditch would be limited to potential occurrences of blockages in the drainage ditch along the extents of the site and immediately downstream. Due to the lower elevation beyond the industrial estate, blockages further downstream are unlikely to lead to flooding of the site.

Geology

- 8.2.15 A detailed description of the site geology is provided in Chapter 9 of this ES. However, in order to understand the context for the underlying hydrogeology, a geological summary is given here.

8.2.16 In summary, the site is underlain by drift deposits comprising Glacial Till (boulder clay) with occasional lenses of Glacio-lacustrine Deposits. Solid geology comprises the Erbistock Formations of the Upper Carboniferous Coal Measures.

8.2.17 There is no evidence of mining, quarry or landfill operations within the limits of the development site.

Hydrogeology

8.2.18 No details of groundwater conditions are given on the available borehole records obtained during the previous site investigation. Consequently information concerning hydrogeology is inferred from other available data.

8.2.19 Soils beneath the site comprise predominantly cohesive (clay) soils at depths of approximately 60 metres, with dispersed lenses of granular soils.

8.2.20 Cohesive soils are likely to be of low permeability, and will not readily transmit surface water or groundwater.

8.2.21 Individual lenses of granular soils, whilst possibly fully saturated, are likely to contain only limited volumes of groundwater, which whilst having good internal permeability, are unlikely to be in good hydraulic continuity with the site surface or with one another.

8.2.22 The superficial soils, therefore, are not anticipated to act as a significant source of groundwater, or to act as a pathway for rapid transmission or high rates of flow of surface waters into the groundwater, or for lateral and vertical migration of groundwater.

8.2.23 Coal Measures strata beneath the site are classified by the EA as a Moderately Permeable Aquifer. These are described as fractured or potentially fractured rocks that do not have high primary permeability. Although these formations will seldom produce large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers.

8.2.24 A spring is recorded approximately 2km southeast of the site at Pickhill Cottages, on the southern valley slopes of the River Clywedog.

8.2.25 Wells are located at properties at Lower Oak and Ridley Wood, approximately 1km southeast and 2km northeast of the site respectively. The well at Lower Oak is at an elevation of about 30m AOD whilst those at Ridley Wood are at 10m AOD.

8.2.26 Based on inspection of the BGS maps, the location of the spring to the southwest of the site is associated with the variation between the Till and River Terrace deposits associated the Clywedog valley. The wells identified in the region do not

appear to be associated with variation in the nature of drift deposits, nor with the presence of recorded faulting of the underlying solid strata.

- 8.2.27 The nearest ground water monitoring points are located approximately 1km south and 2km northwest of the site.

Hydrology

- 8.2.28 Review of the topographical survey and inspection of the site confirms the presence of a land drainage ditch along the western and northern perimeter and a slight depression in the north western corner of the site. Land on all sides of the development site are elevated above the level of the site, although there is no evidence of significant overland flow from these areas into the site.
- 8.2.29 It is therefore assumed that the majority of precipitation at the site percolates into the topsoil and fill layers with subsequent evapotranspiration, subsurface flow into the perimeter ditch and limited dispersal to the underlying Glacial Till drift deposits.
- 8.2.30 The Wrexham Industrial Estate and surrounding agricultural land consist of a high proportion of land drains and drainage ponds. Land drains to the south and west of the development site drain south to the River Clywedog, approximately 1km south of the site.
- 8.2.31 The perimeter land drain and those on land to the north and east of the site drain east to the River Dee.
- 8.2.32 The proposed development site presently consists of vegetated land mainly of semi-mature broadleaf tree species and zones of tall grassland. Therefore using current relative guidance the greenfield surface water run-off for the site based on the underlying geological properties and location within the UK for a typical rainfall intensity of a 1 in 100 year storm return period, provides a pre-development maximum discharge of 16.5l/s based on a site development area of 1.47ha (excludes ecological mitigation area).
- 8.2.33 Inspection of sewer records indicates that the site is crossed by a combined foul sewer. This sewer traverses the site longitudinally through the centre of the site.

8.3 Proposed Development

- 8.3.1 The proposed development will consist of a large (c. 132m x 58m) portal frame steel clad process building erected on the western half of the development site, with a smaller (35m by 20m) biofilter structure annexed to the northern elevation.

- 8.3.2 The building surround will be hard surfaced, occupied by ancillary equipment including firewater storage and pump house; transformer and circuit breaker units; and switchgear housing.
- 8.3.3 External land to the east and northeast of the facility will be remain as a soft landscape for ecological mitigation purposes, with the addition of an earth bund for screening purposes. A lagoon will also be constructed in this area to allow for balancing of collected surface waters prior to discharge to the perimeter drainage ditch.
- 8.3.4 To facilitate the proposed development, some earthworks will be required in order to create a level development plateau. Ground levels within the western area will be excavated down to c. 29m AOD (a maximum reduction of 4m), with the soil balance being used to raise levels within north western area (a maximum raise of 1m) and to form the screening earth bund.
- 8.3.5 The proposed development impermeable area is 1.47ha, representing an increase in catchment when compared with the pre-development baseline. With a suitably sized storage pond (c. 60 x 21m at ground level with '1 in 2.5' slopes) a maximum discharge rate for a 1 in 100 year storm return period which is equal to the greenfield rate (16.5 l/s) can be achieved. This development discharge rate includes a 30% climate change allowance. For further detail regarding the run off calculations, please refer to Microdrainage hydraulic analysis in Appendix 8.1.
- 8.3.6 It is assumed that the majority of rainwater will discharge via subsurface flow in the topsoil into the perimeter ditch or into the River Dee some 3 km east of the site. It is also anticipated that some overland flow will discharge into the drainage ditch, which subsequently discharges to the River Dee.
- 8.3.7 Receptors during both the construction and operational phase are considered to be the water courses and the habitats and biodiversity they may support downstream of the site. Other receptors include existing vegetation that surrounds the site and the hydrogeology of the site.

8.4 Potential Receptors

- 8.4.1 Potential receptors which may be influenced by the development have been identified from the baseline conditions survey.
- 8.4.2 Development of the site will result in a reduction of soft landscaped area receiving natural precipitation, a small proportion of which would recharge the underlying superficial soils and ultimately the underlying Moderately Permeable Aquifer.
- 8.4.3 With cognisance to the proposals, including re-profiling of the site, the development is not considered likely to impact the limited groundwater storage

capacity of the low permeability glacial soils underlying the site. The storage capacity of the Carboniferous Coal Measures Moderately Permeable Aquifer will not be influenced by the proposed development.

8.4.4 Taking into consideration the topographical setting of the site, it is anticipated that precipitation at the site which is not taken up by topsoil and subsequently lost to the atmosphere via evapotranspiration will eventually flow to the east / northeast and discharge into River Dee, which is also a designated as a SSSI and SAC. Consequently, surface waters to the east and northeast of the site have the potential to be impacted by the development.

8.4.5 Owing to the topographical setting of the site, with elevated areas of land immediately to the south and west, the site will not impact upon surface waters located in these general directions.

8.5 Impact of Proposal

8.5.1 Potential impacts of the proposal can be considered in two parts; the construction phase and the operational phase.

Construction Phase

8.5.2 The following aspects of the construction phase are inferred, and considered to represent the most likely construction phase scenario.

Hydrology

Discharge Rates

8.5.3 The potential for ponding and increased run-off flow rates during earthworks and whilst topsoil is stripped from the site has been considered. This could lead to **substantial** impacts with regard to flows into the drainage ditch and the possible re-mobilisation of any residual PCBs within the ditch sediments.

Water Quality

8.5.4 Additional sources of potential contamination during construction of the development are considered to be largely limited to the presence of contaminated soils on-site, vehicles and plant involved in the construction, and the importing onto site of construction materials i.e. concrete. A potential impact may also result from the general movement of material around site in terms of suspended solids generation.

- 8.5.5 The development will initially comprise a 'cut and fill' exercise, benching into the side of the gentle slopes, creating a level platform for the subsequent construction of the buildings, infrastructure and hard surfacing.
- 8.5.6 Particularly during the initial earthworks phase, but also during the subsequent construction phase, there is the potential for fine soil materials (silt/clay) to be conveyed in suspension to surface water courses as a result of rainfall or plant wash down. The presence of contaminated soils on site increases the risk to surface water courses either as a result of adsorption to soil materials or in solution.
- 8.5.7 An increase in suspended solid load on receiving waters is considered to be a **moderate adverse** impact due to potential for contaminants to enter the drainage ditch which in turn flows across agricultural land which likely to be used for drinking water for grazing livestock.
- 8.5.8 There is potential for run off to be contaminated by fuels and construction products i.e. concrete and cement, resulting from the presence of plant, vehicles and material used in construction and the presence of elevated PCBs and heavy metals in the site soils and ditch sediments. Each of these potential contaminants has the potential to cause long term adverse impacts on water quality and associated ecology.
- 8.5.9 When considered in the context of current site use and baseline conditions, the potential increased impacts associated with hydrocarbon and / or material spillages entering surface water courses during construction are considered to be **moderate adverse**, due to the hydrological networking of the land drainage systems across grazing areas and the subsequent connection to the River Dee.
- 8.5.10 The construction stage of the development will produce various forms of liquid waste, mainly consisting of human waste and domestic 'type' discharge from mess cabins etc. The likelihood of these liquid wastes interacting with off site surface water courses is **negligible** considering the quantities involved and the way each waste stream will be treated, e.g. toilets will be fully enclosed and waste contained in a septic tank for transport off site to a suitable treatment facility.

Hydrogeology

- 8.5.11 The risks of contamination of groundwater associated with the construction phase is considered **negligible** owing to the presence of a significant thickness of low permeability drift deposits mantling the underlying moderately permeable aquifer, thus inhibiting vertical migration of potential contaminants into both superficial and solid strata.

- 8.5.12 As discussed in section 8.2, the rate of recharge of the aquifers (comprising both superficial soils and underlying solid strata) are anticipated to be low to negligible owing to the presence of the low permeability Glacial Till deposits across the site. Whilst the development phase will ultimately result in some disturbance to the Glacial Till, the effect on the capacity of the underlying soils to act as an aquifer is considered **negligible**.

Operational Phase

Hydrology

Discharge Rates

- 8.5.13 The proposed development will generate a higher rate of surface water discharge from the site, than the current use. Due to the 1.47ha impermeable catchment area the development will inevitably result in an increase of surface water flows from the site compared to the 100% greenfield flow rate. The risk of flooding and overwhelming of the surrounding surface water network is considered moderately adverse if the development were to occur without construction of an appropriately designed drainage system.
- 8.5.14 The development will incorporate an integral drainage system which is suitably sized to ensure it can cope with the demands of the worst case predicted rainfall event (1 in 100 year plus 30% for climate change) the system will control the discharge at a rate that is appropriate to the receiving surface water network. The risk of flooding is therefore reduced to **negligible** to **minor adverse** due to the installation of a designed engineered drainage system.

Water Quality

- 8.5.15 There is the potential for the operational phase of the proposed development to impact upon water quality of the surrounding surface water features. This could be as a result of, potential hydrocarbon spills, and water coming into contact with the waste materials.
- 8.5.16 Due to the handling and processing of waste materials and traffic movements associated with deliveries and collections, there is the potential for the generation of fine material which left unchecked, can accumulate and form a suspended solid load during periods of rainfall and subsequent run off. Due to the layout of the proposed development, incorporating a lagoon within the site which will allow for settlement of suspended solids prior to discharge, it is considered that these impacts can be considered as **negligible** to **minor adverse**.
- 8.5.17 The presence of vehicles and plant over an extended period during the operational phase will increase the potential risk of hydrocarbon fuels interacting with

controlled waters. Without mitigation measures, should hydrocarbons or waste leachates from general operations, reach surface water receptors, they could potentially cause moderate to substantial adverse impacts on the water quality and the ecology that is supported within this environment. It is considered that the incorporation of a bunded 'containment area' within the proposed development, surrounding all proposed storage tanks, and the installation of petrol/oil interceptors at appropriate locations within the drainage system will reduce the potential impacts to **negligible/minor adverse**.

- 8.5.18 The proposed method of dealing with human wastes is by connection to the nearby combined foul sewer network will ensure that the potential for impacts on the controlled water environment will be **negligible**.

Hydrogeology

- 8.5.19 The presence of a significant thickness of low permeability drift deposits mantling the underlying moderately permeable aquifer will inhibit vertical migration of potential contaminants into both superficial and solid strata. Therefore the potential for adverse impact upon the quality of the underlying aquifer during the operational phase is considered to be **negligible**.

8.6 Proposed Mitigation

- 8.6.1 As the proposed development exceeds 1ha, it is appropriate to consider the flood risk associated with the proposed development. The EA's 'Indicative River & Coastal Flood Map' identifies that the subject site is not at risk of flooding from rivers or sea. It is therefore not proposed to perform an in depth FRA for the development. However it is accepted that the increase in surface water flows resulting from the development should be considered and managed in order to reduce the potential flood risk in other areas.
- 8.6.2 The following paragraphs provide information on the management of surface water on the site in order to control flow rates and reduce potential flood risk, in compliance with TAN15: Development & Flood Risk and CIRIA 624, during both the construction phase and operational phase.

Sustainable Urban Drainage Systems

- 8.6.3 Planning Policy and CIRIA 624 require the consideration of sustainable drainage techniques for new developments. It should be noted that the design of Sustainable Urban Drainage Systems are to be in accordance with SuDS Wales: Interim Code of Practice and CIRIA C697: The SUDS Manual. The use of SUDS techniques is designed to regulate the impact of development on receiving watercourses, to reduce the possibility of flooding downstream. This effectively mirrors the drainage flow characteristics of the catchment prior to development.

- 8.6.4 The use of soakaways and other suitable measures to mitigate the generation of surface water flows should be considered for new developments. A hierarchy of drainage methods for consideration has been developed, with the emphasis on provision of sustainable methods of drainage wherever possible.
- 8.6.5 Within the range of sustainable options to be considered, provision of soakaways and infiltration drainage systems should be considered first. This technique effectively mitigates offsite impacts, however it is dependent on ground conditions being suitable. The site geology details drift deposits of Glacial Till (Boulder Clay) approximately 60m thick underlain by Lower Coal Measures strata. Whilst in situ testing has not conclusively proven the case, these soil types are very unlikely to facilitate the use of infiltration techniques i.e. soakaways.
- 8.6.6 It is proposed that the new development surface water drainage system will incorporate an on-site surface water storage attenuation pond creating sufficient storage volume for flood waters to ensure that the maximum discharge from the site (including a 30% climate change allowance) is restricted to less than the current greenfield run-off of 16.5 l/s. The surface water storage attenuation pond will incorporate wetland vegetation such as reed beds. The restricted surface water flows from the site will discharge to the existing perimeter drainage ditch.
- 8.6.7 The drainage strategy will be fully investigated at the detailed design stage to establish feasibility and final design details.

Construction Phase Mitigation

- 8.6.8 The surface water runoff during the construction phase will be managed through a temporary drainage strategy, whilst the system for the operational phase will be installed early in the construction phase. This temporary drainage strategy will be based on the Construction Environmental Management Plan (CEMP) and the Considerate Constructors Scheme. Control works implemented during the groundworks phase will ensure that control of surface water run off can be managed to a rate not exceeding the pre-development base flow. These measures will include the use of the existing drainage ditch, bunds, and storage ponds which will both contain the flow rates and restrict off-site flow.
- 8.6.9 A Construction Code of Practice (CoCP) will be developed from documents such as CIRIA's 'Control of Water Pollution on Construction Sites' to incorporate the following specific mitigation measures for the protection of water features:
- management of construction works so as to comply with the necessary Standards and consent conditions as identified by the EA and Wrexham CBC;
 - all construction workers will be briefed on the importance of the water quality;

- the construction drainage network will incorporate measures (e.g. potentially an interceptor) to prevent the discharge of hydrocarbons to surface water systems;
- any areas where there is increased risk of hydrocarbon/chemical spillage and hazardous substance stores additional precautions will be taken. These will include bunding, impermeable bases, suitable drainage systems and sited away from any open drainage channels;
- any concrete works will be carefully controlled and where required any concrete tankers and plant will be washed out in controlled contained areas;
- all plant and machinery will be maintained in a good condition and any maintenance required will be undertaken within safe areas;
- wheel washers and dust suppression measures will be used to prevent the migration of pollutants if required;
- sanitary and domestic waters will be discharged to an above ground septic tank emptied periodically by an appropriate contractor or contained in separate self-contained systems to be emptied periodically throughout the project; and
- permanent surface water attenuation lagoon and discharge point into the ditch will be excavated at the start of the construction period (immediately after removal of surface vegetation). This will enable all surface water during the construction period to be directed through the lagoon in order to settle out suspended solids prior to discharge to the ditch.

Operational Phase Mitigation

- 8.6.10 To accord with a hierarchy of sustainable drainage options, the use of infiltration techniques should be considered as a first option. However, as discussed above, the underlying strata makes the use of infiltration techniques very unlikely. It has therefore been assumed that infiltration techniques cannot be utilised as a method of attenuating the peak discharge rate from site.
- 8.6.11 It is proposed that the new development's surface water drainage system will incorporate an on-site surface water storage attenuation pond creating sufficient storage volume for flood waters to ensure that the maximum discharge from the site (including 30% allowance for climate change) is less than the greenfield rate of 16.5l/s. Preliminary 'Microdrainage' hydraulic calculations (refer to Appendix 8.1) shows that a storage pond with ground level dimensions of c. 59m by 21m and '1 in 2.5' slopes provides sufficient storm water holding capacity to achieve a restricted discharge rate which is equal to the greenfield rate.
- 8.6.12 The drainage strategy will be fully investigated at the detailed design stage to establish feasibility and final design details.

- 8.6.13 Best practice operational management protocols will be adopted in terms of storage and handling of hydrocarbons and process chemicals. All storage of materials which have the potential to cause impact upon the environment will be within bunded storage tanks, within a 'contained' area of the site, drainage from site will pass through a petrol/oil interceptor prior to discharge into the on site pond. A regular maintenance and cleaning schedule will also be implemented to ensure that the build up of silt across the site and within the drainage system is minimised, and to remove any hydrocarbons which are retained by the interceptor. This will ensure that any residual fines or oil spills that get washed from the operational area into the drainage network are prevented from polluting controlled waters..
- 8.6.14 The potential for waste derived effluents to be generated will be minimised by the storage and processing of materials within buildings, thus reducing potential infiltration by rainwater, although an amount of detritus is to be expected in areas of hardstanding external to the building, which should be adequately dealt with by routine cleaning of surface water drainage channels and routine maintenance of the interceptor.
- 8.6.15 In addition to the above measures, control and operational measures will be implemented including:
- storage of oils and fuels, process materials, vehicles and plant undertaken in a secure contained manner;
 - programming of service and preventative maintenance on all vehicles and plant to avoid leaking or spillage of oil or fuel to ground;
 - use of spill kits to treat small areas of spillage, with removal and appropriate disposal;
 - holding and use of oil absorbent mats/bunds for dealing with accidental spillages to water;
 - preparation of written procedures for dealing with oil spillage;
 - regular inspections of tanks, stores etc. to confirm integrity.

Residual Impacts – Construction Phase

- 8.6.16 Following consideration of existing site conditions, the proposed construction works associated with the development, and the mitigation measures discussed above, the potential residual impacts of the proposed development are reported below.
- 8.6.17 Following the implementation of proposed control measures the potential for impact to surface water runoff/flooding is considered to be **negligible to minor adverse**.

- 8.6.18 The control of suspended solids and free phase hydrocarbons will be achieved via the early construction of the attenuation pond, implementation of a surface water management plan and drainage system, use of temporary drainage and installation of temporary interceptors where appropriate. During the cut and fill earthworks, there may be the need to install a peripheral surface water containment bund to prevent uncontrolled run off of surface water with elevated levels of suspended solids during the works. Therefore pre discharge controls will be in place during construction and it is considered that this mitigation will reduce the initial risks to being **negligible/minor adverse**.
- 8.6.19 Providing the mitigation measures are implemented, the potential residual impacts to surface water quality overall will be reduced to **negligible**, and as evident from the results of monitoring works carried out during the construction of the adjacent Phase 1 development site.
- 8.6.20 The near surface environment is considered remote from the underlying aquifer and as such risks to groundwater quality are considered **negligible**.

Residual Impacts – Operational Phase

- 8.6.21 The implementation of a modern drainage strategy including SUDS techniques, where appropriate, will control the rate of surface water discharge from the site, and reduce the risk of flooding downstream. It is therefore considered that the proposed development impact to surface water runoff will improve the current situation at the Phase 2 site.
- 8.6.22 The installation of the proposed formalised drainage network with integral petrol/oil interceptors will ensure that the proposed development will have a **negligible** impact to surface water quality.
- 8.6.23 Following the construction of the impermeable operational area, and the control of water infiltration, it is considered that impact to groundwater quality will be **negligible**.

8.7 Summary and Conclusion

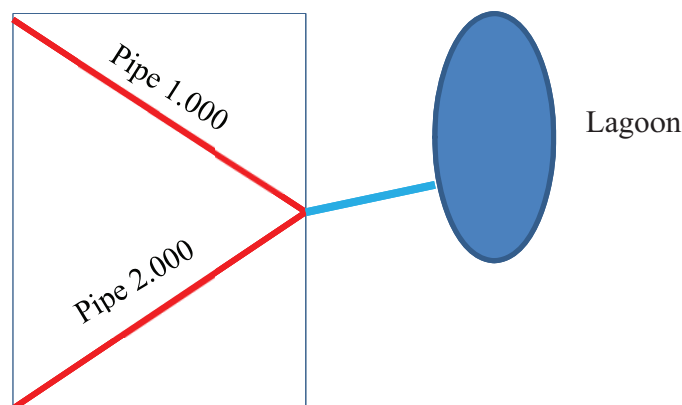
- 8.7.1 The site has been conceptualised as far as possible in the absence of intrusive investigation, using desk-based data including geological and hydrogeological plans, and a selection of available historical investigative reports.
- 8.6.24 A review of pathways available in terms of the relevant hydrological/hydrogeological conditions, has revealed that the most plausible linkage to receptors is in terms of surface water run-off to the perimeter drainage ditch. Following a review of the known ground conditions beneath the site, as detailed in Section 9 of this ES it is considered that direct connection between

surface development and the groundwater environment is not plausible due to the presence of low permeability drift deposits beneath the entire site.

Appendix 8.1 – Lagoon Sizing

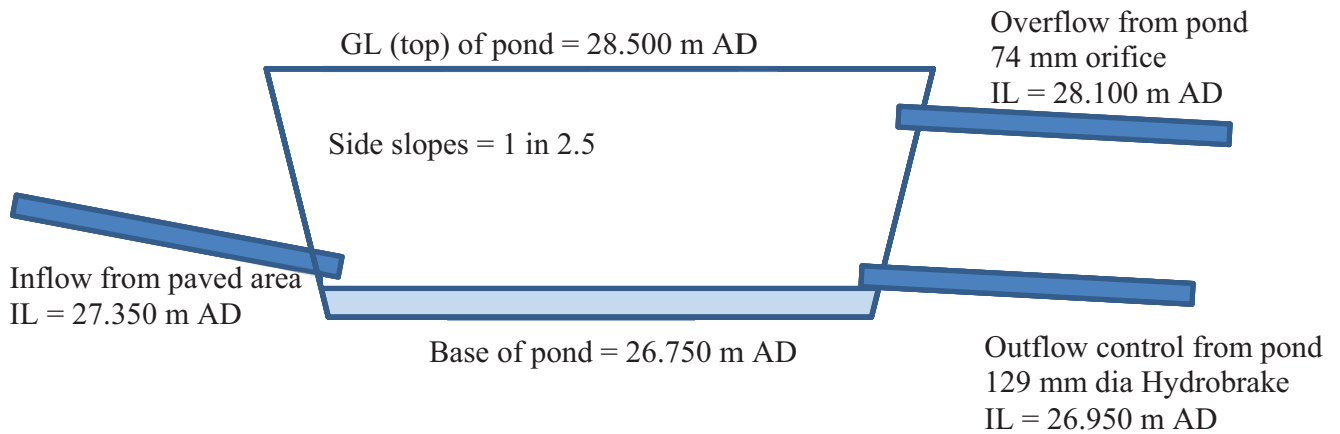
1456 – Wrexham Recycling Park, Phase 2 – Planning Application for WRG Lagoon Sizing Calculation Revision AB1

1. TerraConsult were instructed by Stratus Environmental Limited to carry out a lagoon sizing calculation to include in their planning application on behalf of WRG.
2. The attached Microdrainage[®] output sheets represent the summaries of the various analyses and this supporting text provides a brief discussion of the assumptions made in order to carry out the analyses.
3. The impermeable area to be drained is shown on TerraConsult Drawing No 1456/6/001 as being 14683 m² (1.47 ha) in area and is approximately 154 m long by 95m wide.
4. In order to compute a time/area diagram it has been assumed that the area will be drained by two main drains (this is preliminary and may well alter when detailed design is undertaken), namely pipe 1.000 and pipe 2.000 as shown below in red.



Both pipes are 375 mm diameter and 129 m long, and each is assumed to drain half the area (0.74 ha) and start off at an invert level of 28.250 m AD (0.700 m below ground/slab surface). They meet at a manhole on the edge of the area and combine into a 450 mm diameter pipe (5 m long) to flow into the lagoon. The outfall into the lagoon is at an invert level of 27.350 m AD.

5. The preliminary design of the lagoon on which the analysis is based is shown below.



6. The lagoon (pond) has to be of sufficient size to keep the peak discharge below the green field run-off for the 1 in 100 yr return period storm. QBAR (the mean annual maximum flood flow) has been determined using the ICP (interim code of practice) for SUDS method and then CIRIA Book 14 recommended methods have generated growth factors which convert QBAR to different return periods. The results presented show $Q_{100 \text{ yrs}} = 16.5 \text{ l/s}$. This has not included any increase for climate change.
7. The pond has been sized for a storm event with a return period of 100 years plus 30 % for climate change. Storm durations of between 15 minutes and 10080 minutes (7 days) have been analysed for both summer and winter seasons. The critical storm is seen to be a winter storm lasting 720 minutes (12 hours) which resulted in a total maximum outflow (from the outflow control and overflow combined) of 16.5 l/s which equals the 16.5 l/s (green field run-off).
8. The maximum depth achieved in the pond during the critical storm is seen to be 1.364 m which converts to a reduced level of 28.314 mAD (minimum freeboard = 0.186m). As the upstream invert level of both main drain pipes = 28.250 mAD the water level will reach the start point of the drainage system assumed for the preliminary design but will be some 0.636 m below ground/slab level. There is some scope for refinement of the drainage design but this analysis has demonstrated that the lagoon analysed can attenuate the outfall flows to the receptor ditch to equal green field run-off.

9. The pond model analysed has the following sizes (as seen on the results sheets):

Depth m	Reduced level m AD	Area required by design m ²	Possible dimensions Length x Breadth m	Area provided using 1 in 2.5 side slopes m ²
0.000	26.750	600	50 x 12 at base of pond	600
			Side slopes = 1 in 2.5	
1.750	28.500	960	58.8 x 20.8 at ground level	1223

10. The side slope of 1 in 2.5 has been assumed as a reasonable slope based on the available photographs. The slope used will require to be checked for stability.

Alan Binns 10th August 2011

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Date 9th August 2011 File NETWORK1 RESULTS ...	Designed By Alan Binns Checked By	
Micro Drainage	Network W.12.5	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	100	Add Flow / Climate Change (%)	30
M5-60 (mm)	18.000	Minimum Backdrop Height (m)	0.200
Ratio R	0.324	Maximum Backdrop Height (m)	1.500
Maximum Rainfall (mm/hr)	50	Min Design Depth for Optimisation (m)	1.000
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Inverts

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.738	4-8	0.742

Total Area Contributing (ha) = 1.480

Total Pipe Volume (m³) = 29.290

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	129.000	0.850	151.8	0.740	5.00	0.0	0.600	o	375
2.000	129.000	0.850	151.8	0.740	5.00	0.0	0.600	o	375
1.001	5.000	0.050	100.0	0.000	0.00	0.0	0.600	o	450

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ Area (ha)	Σ DWF (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	6.46	28.250	0.740	0.0	0.0	30.1	1.47	162.2	130.3
2.000	50.00	6.46	28.250	0.740	0.0	0.0	30.1	1.47	162.2	130.3
1.001	50.00	6.51	27.400	1.480	0.0	0.0	60.1	2.03	323.4	260.5

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.000	o	375	1	28.950	28.250	0.325	1350
2.000	o	375	2	28.950	28.250	0.325	1350
1.001	o	450	3	28.950	27.400	1.100	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.000	129.000	151.8	3	28.950	27.400	1.175	1350
2.000	129.000	151.8	3	28.950	27.400	1.175	1350
1.001	5.000	100.0	Lagoon	28.600	27.350	0.800	1200

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.001	Lagoon	28.600	27.350	0.000	1200	0

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ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.450
Area (ha)	1.480	Urban	0.000
SAAR (mm)	796	Region Number	Region 9

Results 1/s

QBAR Rural	7.6
QBAR Urban	7.6
Q100 years	16.5
Q1 year	6.6
Q30 years	13.3
Q100 years	16.5

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Summary of Results for 100 year Return Period (+30%)

Time	Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Overflow (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
15 min	Summer	27.469	0.519	7.7	0.0	7.7	335.8	O K
30 min	Summer	27.637	0.687	8.4	0.0	8.4	454.8	O K
60 min	Summer	27.811	0.861	9.3	0.0	9.3	584.2	O K
120 min	Summer	27.981	1.031	10.2	0.0	10.2	715.9	O K
180 min	Summer	28.069	1.119	10.6	0.0	10.6	786.1	O K
240 min	Summer	28.120	1.170	10.8	0.2	11.0	827.6	O K
360 min	Summer	28.167	1.217	11.1	1.5	12.6	866.9	O K
480 min	Summer	28.181	1.231	11.1	2.0	13.2	878.6	O K
600 min	Summer	28.186	1.236	11.1	2.2	13.4	882.8	O K
720 min	Summer	28.189	1.239	11.1	2.3	13.5	884.8	O K
960 min	Summer	28.188	1.238	11.1	2.3	13.4	883.9	O K
1440 min	Summer	28.171	1.221	11.1	1.6	12.7	869.9	O K
2160 min	Summer	28.127	1.177	10.9	0.3	11.2	834.0	O K
2880 min	Summer	28.071	1.121	10.6	0.0	10.6	788.2	O K
4320 min	Summer	27.959	1.009	10.1	0.0	10.1	698.2	O K
5760 min	Summer	27.855	0.905	9.5	0.0	9.5	617.7	O K
7200 min	Summer	27.761	0.811	9.1	0.0	9.1	546.6	O K
8640 min	Summer	27.678	0.728	8.6	0.0	8.6	484.3	O K
10080 min	Summer	27.600	0.650	8.2	0.0	8.2	428.4	O K

Storm Event	Rain (mm/hr)	Overflow Volume (m ³)	Time-Peak (mins)
15 min Summer	106.150	0.0	22
30 min Summer	72.349	0.0	37
60 min Summer	47.182	0.0	66
120 min Summer	29.753	0.0	126
180 min Summer	22.386	0.0	184
240 min Summer	18.160	0.2	244
360 min Summer	13.437	7.9	362
480 min Summer	10.853	19.0	468
600 min Summer	9.188	27.7	514
720 min Summer	8.014	32.9	572
960 min Summer	6.452	34.8	700
1440 min Summer	4.744	22.0	984
2160 min Summer	3.479	2.6	1428
2880 min Summer	2.788	0.0	1844
4320 min Summer	2.036	0.0	2644
5760 min Summer	1.627	0.0	3456
7200 min Summer	1.367	0.0	4248
8640 min Summer	1.187	0.0	5008
10080 min Summer	1.054	0.0	5752

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Shortest Storm (mins)	15
Ratio R	0.324	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time / Area Diagram

Total Area (ha) 1.722

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.955	4-8	0.767

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Model Details

Storage is Online Cover Level (m) 28.500

Tank or Pond Structure

Invert Level (m) 26.950

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	600.0	2.800	1184.8	5.600	1966.6	8.400	2945.5
0.400	671.5	3.200	1284.4	6.000	2094.4	8.800	3101.4
0.800	747.0	3.600	1388.1	6.400	2226.2	9.200	3261.3
1.200	826.5	4.000	1495.7	6.800	2362.0	9.600	3425.3
1.600	910.0	4.400	1607.4	7.200	2501.8	10.000	3593.3
2.000	997.6	4.800	1723.1	7.600	2645.7		
2.400	1089.2	5.200	1842.8	8.000	2793.6		

Hydro-Brake® Outflow Control

Design Head (m) 1.000 Diameter (mm) 129
Design Flow (l/s) 10.0 Invert Level (m) 26.950
Hydro-Brake® Type Md5 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.2	1.200	11.0	3.000	17.3	7.000	26.5
0.200	7.1	1.400	11.9	3.500	18.7	7.500	27.4
0.300	7.5	1.600	12.7	4.000	20.0	8.000	28.3
0.400	7.4	1.800	13.4	4.500	21.2	8.500	29.2
0.500	7.6	2.000	14.2	5.000	22.4	9.000	30.0
0.600	8.0	2.200	14.9	5.500	23.5	9.500	30.9
0.800	9.0	2.400	15.5	6.000	24.5		
1.000	10.0	2.600	16.1	6.500	25.5		

Orifice Overflow Control

Diameter (m) 0.074 Discharge Coefficient 0.600 Invert Level (m) 28.100

Appendix 8.2 – Indicative EA Flood Map

Appendix 8.2 – Indicative EA Flood Map



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Date 29/10/2012 12:54 File	Designed by imroberts Checked by																																													
Micro Drainage	Source Control W.12.6																																													
IH 124 Mean Annual Flood Input <table><tr><td>Return Period (years)</td><td>100</td><td>Soil</td><td>0.450</td></tr><tr><td>Area (ha)</td><td>50.000</td><td>Urban</td><td>0.000</td></tr><tr><td>SAAR (mm)</td><td>796</td><td>Region Number</td><td>Region 9</td></tr></table> <table><tr><th>Results</th><th>l/s</th></tr><tr><td>QBAR Rural</td><td>255.3</td></tr><tr><td>QBAR Urban</td><td>255.3</td></tr><tr><td>Q100 years</td><td>556.5</td></tr><tr><td>Q1 year</td><td>224.7</td></tr><tr><td>Q2 years</td><td>237.1</td></tr><tr><td>Q5 years</td><td>308.9</td></tr><tr><td>Q10 years</td><td>362.5</td></tr><tr><td>Q20 years</td><td>416.4</td></tr><tr><td>Q25 years</td><td>435.0</td></tr><tr><td>Q30 years</td><td>450.1</td></tr><tr><td>Q50 years</td><td>494.3</td></tr><tr><td>Q100 years</td><td>556.5</td></tr><tr><td>Q200 years</td><td>630.6</td></tr><tr><td>Q250 years</td><td>656.1</td></tr><tr><td>Q1000 years</td><td>814.4</td></tr></table>			Return Period (years)	100	Soil	0.450	Area (ha)	50.000	Urban	0.000	SAAR (mm)	796	Region Number	Region 9	Results	l/s	QBAR Rural	255.3	QBAR Urban	255.3	Q100 years	556.5	Q1 year	224.7	Q2 years	237.1	Q5 years	308.9	Q10 years	362.5	Q20 years	416.4	Q25 years	435.0	Q30 years	450.1	Q50 years	494.3	Q100 years	556.5	Q200 years	630.6	Q250 years	656.1	Q1000 years	814.4
Return Period (years)	100	Soil	0.450																																											
Area (ha)	50.000	Urban	0.000																																											
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Micro Drainage		Network W.12.6	

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	16.600	0.074	224.3	0.077	1.00	0.0	0.600	o	225
1.001	39.400	0.117	336.8	0.117	0.00	0.0	0.600	o	375
1.002	40.200	0.118	340.7	0.185	0.00	0.0	0.600	o	375
1.003	34.700	0.102	340.2	0.035	0.00	0.0	0.600	o	375
1.004	26.500	0.082	323.2	0.000	0.00	0.0	0.600	o	375
1.005	33.000	0.099	333.3	0.035	0.00	0.0	0.600	o	375
2.000	40.000	0.182	220.0	0.118	1.00	0.0	0.600	o	225
2.001	40.000	0.182	220.0	0.109	0.00	0.0	0.600	o	300
2.002	40.000	0.182	220.0	0.052	0.00	0.0	0.600	o	300
2.003	23.400	0.106	220.0	0.000	0.00	0.0	0.600	o	300
1.006	10.800	0.042	257.1	0.000	0.00	0.0	0.600	o	600
3.000	17.100	0.076	225.0	0.037	1.00	0.0	0.600	o	150
3.001	41.100	0.123	334.1	0.051	0.00	0.0	0.600	o	225
3.002	34.700	0.098	354.1	0.062	0.00	0.0	0.600	o	300
3.003	55.000	0.201	273.6	0.060	0.00	0.0	0.600	o	300
3.004	42.800	0.113	378.8	0.000	0.00	0.0	0.600	o	300
3.005	3.100	0.100	31.0	0.000	0.00	0.0	0.600	o	300
3.006	16.500	0.058	284.5	0.000	0.00	0.0	0.600	o	375

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	28.015	0.077	0.0	0.87	34.5
1.001	27.941	0.194	0.0	0.98	108.4
1.002	27.824	0.379	0.0	0.98	107.8
1.003	27.706	0.414	0.0	0.98	107.9
1.004	27.604	0.414	0.0	1.00	110.7
1.005	27.522	0.449	0.0	0.99	109.0
2.000	28.075	0.118	0.0	0.88	34.9
2.001	27.893	0.227	0.0	1.06	74.6
2.002	27.711	0.279	0.0	1.06	74.6
2.003	27.530	0.279	0.0	1.06	74.6
1.006	27.423	0.728	0.0	1.51	428.1
3.000	28.150	0.037	0.0	0.67	11.8
3.001	28.074	0.088	0.0	0.71	28.2
3.002	27.951	0.150	0.0	0.83	58.7
3.003	27.853	0.210	0.0	0.95	66.8
3.004	27.652	0.210	0.0	0.80	56.7
3.005	27.539	0.210	0.0	2.83	200.3
3.006	27.439	0.210	0.0	1.07	118.1

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Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
4.000	40.000	0.114	350.0	0.148	1.00	0.0	0.600	o	300
4.001	40.000	0.114	350.0	0.122	0.00	0.0	0.600	o	375
4.002	40.000	0.114	350.0	0.186	0.00	0.0	0.600	o	375
4.003	3.100	0.100	31.0	0.000	0.00	0.0	0.600	o	375
4.004	19.300	0.056	345.0	0.000	0.00	0.0	0.600	o	375
1.007	8.000	0.031	260.0	0.000	0.00	0.0	0.600	o	600
1.008	10.000	0.100	100.0	0.000	0.00	0.0	0.600	o	150

Network Results Table

PN	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Vel (m/s)	Cap (l/s)
4.000	27.880	0.148	0.0	0.83	59.0
4.001	27.766	0.270	0.0	0.96	106.3
4.002	27.651	0.456	0.0	0.96	106.3
4.003	27.537	0.456	0.0	3.26	360.6
4.004	27.437	0.456	0.0	0.97	107.1
1.007	27.381	1.394	0.0	1.51	425.7
1.008	26.950	1.394	0.0	1.00	17.8

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
4.000	o	300	18	28.780	27.880	0.600	Open Manhole	1050
4.001	o	375	19	28.780	27.766	0.639	Open Manhole	1350
4.002	o	375	20	28.780	27.651	0.754	Open Manhole	1350
4.003	o	375	22	28.780	27.537	0.868	Open Manhole	1350
4.004	o	375	21	28.780	27.437	0.968	Open Manhole	1350
1.007	o	600	22	28.780	27.381	0.799	Open Manhole	1500
1.008	o	150	25	28.500	26.950	1.400	Open Manhole	1325

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
4.000	40.000	350.0	19	28.780	27.766	0.714	Open Manhole	1350
4.001	40.000	350.0	20	28.780	27.651	0.754	Open Manhole	1350
4.002	40.000	350.0	22	28.780	27.537	0.868	Open Manhole	1350
4.003	3.100	31.0	21	28.780	27.437	0.968	Open Manhole	1350
4.004	19.300	345.0	22	28.780	27.381	1.024	Open Manhole	1500
1.007	8.000	260.0	25	28.500	27.350	0.550	Open Manhole	1325
1.008	10.000	100.0		28.500	26.850	1.500	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.008		28.500	26.850	26.850	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	30.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	1440
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	12

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

Synthetic Rainfall Details

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Micro Drainage		Network W.12.6																				
<u>Simulation Criteria for Storm</u> <table><tr><td>Rainfall Model</td><td>FSR</td><td>Profile Type</td><td>Summer</td></tr><tr><td>Return Period (years)</td><td>100</td><td>Cv (Summer)</td><td>0.750</td></tr><tr><td>Region</td><td>England and Wales</td><td>Cv (Winter)</td><td>0.840</td></tr><tr><td>M5-60 (mm)</td><td>18.000</td><td>Storm Duration (mins)</td><td>720</td></tr><tr><td>Ratio R</td><td>0.327</td><td></td><td></td></tr></table>			Rainfall Model	FSR	Profile Type	Summer	Return Period (years)	100	Cv (Summer)	0.750	Region	England and Wales	Cv (Winter)	0.840	M5-60 (mm)	18.000	Storm Duration (mins)	720	Ratio R	0.327		
Rainfall Model	FSR	Profile Type	Summer																			
Return Period (years)	100	Cv (Summer)	0.750																			
Region	England and Wales	Cv (Winter)	0.840																			
M5-60 (mm)	18.000	Storm Duration (mins)	720																			
Ratio R	0.327																					
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Micro Drainage	Network W.12.6	
<u>Online Controls for Storm</u>		
<u>Complex Manhole: 25, DS/PN: 1.008, Volume (m³): 4.0</u>		
<u>Orifice</u>		
Diameter (m) 0.065 Discharge Coefficient 0.600 Invert Level (m) 26.950		
<u>Orifice</u>		
Diameter (m) 0.061 Discharge Coefficient 0.600 Invert Level (m) 27.550		
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<u>Storage Structures for Storm</u>							
<u>Tank or Pond Manhole: 25, DS/PN: 1.008</u>							
Invert Level (m) 26.950							
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	734.0	0.700	950.0	1.400	1116.0	2.100	1116.0
0.100	764.0	0.800	982.0	1.500	1116.0	2.200	1116.0
0.200	794.0	0.900	1015.0	1.600	1116.0	2.300	1116.0
0.300	824.0	1.000	1048.0	1.700	1116.0	2.400	1116.0
0.400	855.0	1.100	1082.0	1.800	1116.0	2.500	1116.0
0.500	886.0	1.200	1116.0	1.900	1116.0		
0.600	918.0	1.300	1116.0	2.000	1116.0		
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Summary Wizard of 30 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow (l/s)	
1.000	1	19	28.134	-0.106	0.000	0.54	0.0	16.5	OK
1.001	2	23	28.093	-0.223	0.000	0.31	0.0	30.6	OK
1.002	3	27	28.032	-0.167	0.000	0.58	0.0	56.6	OK
1.003	4	38	27.922	-0.159	0.000	0.62	0.0	60.0	OK
1.004	5	48	27.849	-0.130	0.000	0.58	0.0	56.4	OK
1.005	6	52	27.805	-0.092	0.000	0.59	0.0	57.8	OK
2.000	7	15	28.224	-0.076	0.000	0.71	0.0	23.6	OK
2.001	8	23	28.054	-0.139	0.000	0.55	0.0	38.3	OK
2.002	9	37	27.890	-0.121	0.000	0.65	0.0	44.9	OK
2.003	10	55	27.799	-0.031	0.000	0.59	0.0	38.8	OK
1.006	11	60	27.763	-0.260	0.000	0.33	0.0	90.6	OK
3.000	12	15	28.246	-0.054	0.000	0.72	0.0	7.9	OK
3.001	13	19	28.193	-0.106	0.000	0.53	0.0	14.2	OK
3.002	14	23	28.089	-0.162	0.000	0.42	0.0	22.9	OK
3.003	15	28	28.002	-0.151	0.000	0.48	0.0	30.1	OK
3.004	16	50	27.823	-0.129	0.000	0.53	0.0	28.2	OK
3.005	17	59	27.774	-0.065	0.000	0.37	0.0	28.9	OK
3.006	17	60	27.766	-0.048	0.000	0.30	0.0	29.2	OK
4.000	18	23	28.045	-0.135	0.000	0.53	0.0	29.3	OK
4.001	19	35	27.953	-0.188	0.000	0.45	0.0	43.8	OK
4.002	20	38	27.891	-0.136	0.000	0.71	0.0	68.6	OK
4.003	22	56	27.793	-0.119	0.000	0.50	0.0	62.1	OK
4.004	21	59	27.783	-0.029	0.000	0.68	0.0	60.8	OK
1.007	22	63	27.750	-0.231	0.000	0.69	0.0	173.3	OK
1.008	25	144	27.144	0.044	0.000	0.22	0.0	3.5	SURCHARGED

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<u>Summary Wizard of 60 minute 1 year Summer I+30% for Storm</u>								
Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF								
Analysis Timestep Fine Inertia Status OFF								
DTS Status ON								
Profile(s) Summer and Winter								
Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080								
Return Period(s) (years) 1, 2, 30, 100								
Climate Change (%) 30, 30, 30, 30								
	US/MH	Water	Flooded	Pipe				
PN	Name Rank	Level (m)	Surch'd Depth (m)	Volume Flow / (m³)	Cap. O'flow (l/s)	Flow (l/s)	Status	
1.000	1 26	28.113	-0.127	0.000	0.35	0.0	10.8	OK
1.001	2 32	28.076	-0.240	0.000	0.25	0.0	24.2	OK
1.002	3 34	28.006	-0.193	0.000	0.47	0.0	46.5	OK
1.003	4 42	27.900	-0.181	0.000	0.52	0.0	50.1	OK
1.004	5 51	27.821	-0.158	0.000	0.50	0.0	48.7	OK
1.005	6 60	27.773	-0.124	0.000	0.52	0.0	51.1	OK
2.000	7 24	28.188	-0.112	0.000	0.50	0.0	16.5	OK
2.001	8 33	28.031	-0.162	0.000	0.42	0.0	29.4	OK
2.002	9 48	27.864	-0.147	0.000	0.51	0.0	35.6	OK
2.003	10 61	27.769	-0.061	0.000	0.49	0.0	32.3	OK
1.006	11 65	27.735	-0.288	0.000	0.29	0.0	81.1	OK
3.000	12 24	28.223	-0.077	0.000	0.48	0.0	5.2	OK
3.001	13 26	28.177	-0.122	0.000	0.42	0.0	11.2	OK
3.002	14 32	28.073	-0.178	0.000	0.34	0.0	18.6	OK
3.003	15 38	27.987	-0.166	0.000	0.40	0.0	25.4	OK
3.004	16 55	27.802	-0.150	0.000	0.46	0.0	24.3	OK
3.005	17 64	27.743	-0.096	0.000	0.31	0.0	24.4	OK
3.006	17 65	27.737	-0.077	0.000	0.26	0.0	24.8	OK
4.000	18 32	28.008	-0.172	0.000	0.38	0.0	20.7	OK
4.001	19 42	27.928	-0.212	0.000	0.36	0.0	34.5	OK
4.002	20 49	27.859	-0.168	0.000	0.57	0.0	55.6	OK
4.003	22 62	27.763	-0.149	0.000	0.43	0.0	52.7	OK
4.004	21 64	27.754	-0.058	0.000	0.59	0.0	52.3	OK
1.007	22 66	27.723	-0.257	0.000	0.62	0.0	155.4	OK
1.008	25 142	27.197	0.097	0.000	0.26	0.0	4.1	SURCHARGED
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Summary Wizard of 120 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)300.0DVD Status OFF

Analysis TimestepFineInertia Status OFF

DTS StatusON

Profile(s)Summer and Winter

Duration(s) (mins)30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)1, 2, 30, 100

Climate Change (%)30, 30, 30, 30

PN	US/MH	Name	Rank	Water		Flooded		Pipe		Status
				Level	Surch'd	Volume	Flow / O'flow	Flow		
				(m)	Depth (m)	(m³)	Cap. (1/s)	(1/s)		
1.000	1	40	28.091	-0.149	0.000	0.23	0.0	7.0	OK	
1.001	2	41	28.051	-0.265	0.000	0.18	0.0	17.4	OK	
1.002	3	46	27.977	-0.222	0.000	0.34	0.0	33.3	OK	
1.003	4	53	27.867	-0.214	0.000	0.37	0.0	35.6	OK	
1.004	5	66	27.778	-0.201	0.000	0.37	0.0	36.1	OK	
1.005	6	71	27.721	-0.176	0.000	0.40	0.0	38.8	OK	
2.000	7	36	28.163	-0.137	0.000	0.32	0.0	10.8	OK	
2.001	8	42	28.005	-0.188	0.000	0.30	0.0	20.5	OK	
2.002	9	57	27.837	-0.175	0.000	0.36	0.0	24.8	OK	
2.003	10	73	27.706	-0.124	0.000	0.36	0.0	23.7	OK	
1.006	11	74	27.682	-0.341	0.000	0.23	0.0	62.2	OK	
3.000	12	36	28.207	-0.093	0.000	0.31	0.0	3.4	OK	
3.001	13	36	28.158	-0.141	0.000	0.29	0.0	7.9	OK	
3.002	14	41	28.053	-0.198	0.000	0.25	0.0	13.3	OK	
3.003	15	46	27.965	-0.188	0.000	0.29	0.0	18.1	OK	
3.004	16	65	27.775	-0.177	0.000	0.35	0.0	18.4	OK	
3.005	17	73	27.686	-0.153	0.000	0.23	0.0	18.2	OK	
3.006	17	74	27.681	-0.133	0.000	0.19	0.0	18.0	OK	
4.000	18	46	27.980	-0.200	0.000	0.25	0.0	13.5	OK	
4.001	19	48	27.897	-0.244	0.000	0.25	0.0	24.1	OK	
4.002	20	57	27.822	-0.204	0.000	0.41	0.0	39.9	OK	
4.003	22	73	27.698	-0.214	0.000	0.31	0.0	38.6	OK	
4.004	21	73	27.692	-0.120	0.000	0.43	0.0	38.8	OK	
1.007	22	76	27.671	-0.310	0.000	0.48	0.0	118.6	OK	
1.008	25	137	27.255	0.155	0.000	0.29	0.0	4.6 SURCHARGED		

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Summary Wizard of 180 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m ³)	Flow / Cap. (l/s)	O'flow (l/s)	Flow	
1.000	1	47	28.082	-0.158	0.000	0.19	0.0	5.8	OK
1.001	2	48	28.037	-0.279	0.000	0.14	0.0	14.2	OK
1.002	3	52	27.960	-0.239	0.000	0.28	0.0	27.4	OK
1.003	4	62	27.849	-0.232	0.000	0.31	0.0	30.0	OK
1.004	5	70	27.758	-0.221	0.000	0.31	0.0	29.6	OK
1.005	6	75	27.698	-0.199	0.000	0.33	0.0	31.8	OK
2.000	7	43	28.154	-0.146	0.000	0.27	0.0	8.9	OK
2.001	8	51	27.993	-0.200	0.000	0.24	0.0	16.7	OK
2.002	9	61	27.823	-0.188	0.000	0.29	0.0	20.3	OK
2.003	10	76	27.678	-0.152	0.000	0.30	0.0	20.1	OK
1.006	11	79	27.655	-0.368	0.000	0.19	0.0	51.2	OK
3.000	12	43	28.201	-0.099	0.000	0.25	0.0	2.8	OK
3.001	13	43	28.149	-0.150	0.000	0.24	0.0	6.4	OK
3.002	14	48	28.043	-0.208	0.000	0.20	0.0	10.8	OK
3.003	15	52	27.953	-0.200	0.000	0.24	0.0	15.2	OK
3.004	16	70	27.761	-0.191	0.000	0.28	0.0	15.1	OK
3.005	17	79	27.655	-0.185	0.000	0.19	0.0	15.0	OK
3.006	17	79	27.650	-0.164	0.000	0.16	0.0	15.0	OK
4.000	18	51	27.971	-0.209	0.000	0.20	0.0	11.1	OK
4.001	19	55	27.882	-0.258	0.000	0.20	0.0	19.6	OK
4.002	20	65	27.803	-0.223	0.000	0.34	0.0	33.1	OK
4.003	22	79	27.671	-0.242	0.000	0.27	0.0	32.9	OK
4.004	21	79	27.661	-0.151	0.000	0.37	0.0	32.8	OK
1.007	22	80	27.642	-0.339	0.000	0.39	0.0	98.5	OK
1.008	25	131	27.289	0.189	0.000	0.31	0.0	4.9	SURCHARGED

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Summary Wizard of 240 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF

Analysis Timestep Fine Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

PN	US/MH	Name	Rank	Water		Flooded		Pipe		Status
				Level	Surch'd	Volume	Flow / O'flow	Flow		
				(m)	Depth (m)	(m³)	Cap.	(l/s)	(l/s)	
1.000	1	54	28.074	-0.166	0.000	0.16	0.0	4.8		OK
1.001	2	55	28.029	-0.287	0.000	0.12	0.0	12.0		OK
1.002	3	58	27.948	-0.251	0.000	0.24	0.0	23.2		OK
1.003	4	66	27.837	-0.244	0.000	0.26	0.0	25.1		OK
1.004	5	74	27.742	-0.237	0.000	0.26	0.0	25.3		OK
1.005	6	79	27.679	-0.218	0.000	0.28	0.0	27.3		OK
2.000	7	51	28.147	-0.153	0.000	0.22	0.0	7.4		OK
2.001	8	57	27.985	-0.208	0.000	0.20	0.0	14.1		OK
2.002	9	66	27.813	-0.198	0.000	0.25	0.0	17.3		OK
2.003	10	82	27.660	-0.170	0.000	0.26	0.0	16.9		OK
1.006	11	84	27.633	-0.390	0.000	0.16	0.0	44.0		OK
3.000	12	51	28.196	-0.104	0.000	0.21	0.0	2.3		OK
3.001	13	51	28.143	-0.156	0.000	0.20	0.0	5.4		OK
3.002	14	55	28.035	-0.216	0.000	0.17	0.0	9.2		OK
3.003	15	58	27.945	-0.208	0.000	0.20	0.0	12.8		OK
3.004	16	74	27.753	-0.199	0.000	0.24	0.0	12.8		OK
3.005	17	84	27.633	-0.206	0.000	0.16	0.0	12.8		OK
3.006	17	85	27.627	-0.187	0.000	0.13	0.0	12.8		OK
4.000	18	58	27.962	-0.218	0.000	0.17	0.0	9.2		OK
4.001	19	64	27.871	-0.270	0.000	0.17	0.0	16.7		OK
4.002	20	71	27.790	-0.237	0.000	0.29	0.0	27.9		OK
4.003	22	82	27.658	-0.254	0.000	0.22	0.0	27.7		OK
4.004	21	83	27.639	-0.173	0.000	0.31	0.0	27.8		OK
1.007	22	85	27.620	-0.361	0.000	0.34	0.0	84.6		OK
1.008	25	126	27.313	0.213	0.000	0.32	0.0	5.1	SURCHARGED	

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Summary Wizard of 360 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status
			Level (m)		Volume (m³)			Flow (l/s)	
1.000	1	61	28.067	-0.173	0.000	0.12	0.0	3.7	OK
1.001	2	62	28.018	-0.298	0.000	0.09	0.0	9.3	OK
1.002	3	65	27.932	-0.267	0.000	0.18	0.0	18.0	OK
1.003	4	71	27.821	-0.260	0.000	0.20	0.0	19.6	OK
1.004	5	81	27.723	-0.256	0.000	0.20	0.0	19.5	OK
1.005	6	87	27.655	-0.242	0.000	0.22	0.0	21.0	OK
2.000	7	60	28.137	-0.163	0.000	0.17	0.0	5.6	OK
2.001	8	63	27.972	-0.221	0.000	0.16	0.0	10.8	OK
2.002	9	75	27.800	-0.211	0.000	0.19	0.0	13.3	OK
2.003	10	89	27.637	-0.193	0.000	0.20	0.0	13.3	OK
1.006	11	91	27.604	-0.419	0.000	0.12	0.0	33.9	OK
3.000	12	60	28.190	-0.110	0.000	0.16	0.0	1.8	OK
3.001	13	60	28.133	-0.166	0.000	0.16	0.0	4.2	OK
3.002	14	62	28.023	-0.228	0.000	0.13	0.0	7.1	OK
3.003	15	65	27.932	-0.221	0.000	0.16	0.0	10.0	OK
3.004	16	78	27.740	-0.212	0.000	0.19	0.0	9.9	OK
3.005	17	89	27.610	-0.229	0.000	0.13	0.0	9.9	OK
3.006	17	91	27.596	-0.218	0.000	0.10	0.0	9.8	OK
4.000	18	64	27.951	-0.229	0.000	0.13	0.0	7.1	OK
4.001	19	70	27.856	-0.284	0.000	0.13	0.0	12.9	OK
4.002	20	76	27.772	-0.255	0.000	0.22	0.0	21.7	OK
4.003	22	87	27.643	-0.270	0.000	0.18	0.0	21.7	OK
4.004	21	90	27.610	-0.202	0.000	0.24	0.0	21.6	OK
1.007	22	92	27.590	-0.391	0.000	0.26	0.0	65.2	OK
1.008	25	119	27.341	0.241	0.000	0.33	0.0	5.3 SURCHARGED	



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Summary Wizard of 1440 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow (l/s)	
1.000	1	93	28.046	-0.194	0.000	0.05	0.0	1.5	OK
1.001	2	93	27.987	-0.329	0.000	0.04	0.0	3.7	OK
1.002	3	94	27.890	-0.309	0.000	0.07	0.0	7.2	OK
1.003	4	97	27.777	-0.304	0.000	0.08	0.0	7.8	OK
1.004	5	106	27.675	-0.304	0.000	0.08	0.0	7.8	OK
1.005	6	111	27.599	-0.298	0.000	0.09	0.0	8.5	OK
2.000	7	93	28.113	-0.187	0.000	0.07	0.0	2.2	OK
2.001	8	93	27.941	-0.252	0.000	0.06	0.0	4.3	OK
2.002	9	98	27.766	-0.246	0.000	0.08	0.0	5.3	OK
2.003	10	112	27.587	-0.243	0.000	0.08	0.0	5.3	OK
1.006	11	115	27.528	-0.495	0.000	0.05	0.0	13.8	OK
3.000	12	93	28.174	-0.126	0.000	0.06	0.0	0.7	OK
3.001	13	93	28.110	-0.189	0.000	0.06	0.0	1.7	OK
3.002	14	93	27.995	-0.256	0.000	0.05	0.0	2.8	OK
3.003	15	94	27.902	-0.251	0.000	0.06	0.0	4.0	OK
3.004	16	102	27.706	-0.246	0.000	0.08	0.0	4.0	OK
3.005	17	112	27.582	-0.257	0.000	0.05	0.0	4.0	OK
3.006	17	115	27.519	-0.295	0.000	0.04	0.0	4.0	OK
4.000	18	93	27.923	-0.257	0.000	0.05	0.0	2.8	OK
4.001	19	97	27.821	-0.320	0.000	0.05	0.0	5.1	OK
4.002	20	101	27.727	-0.300	0.000	0.09	0.0	8.6	OK
4.003	22	110	27.602	-0.311	0.000	0.07	0.0	8.6	OK
4.004	21	114	27.535	-0.277	0.000	0.10	0.0	8.6	OK
1.007	22	115	27.510	-0.471	0.000	0.11	0.0	26.3	OK
1.008	25	102	27.398	0.298	0.000	0.36	0.0	5.7	SURCHARGED

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Summary Wizard of 2160 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status

OFF

Analysis Timestep

Fine

Inertia Status

OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

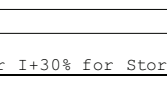
1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded		Pipe		Status	
			Level Depth (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)		
1.000	1	101	28.043	-0.197	0.000	0.04	0.0	1.1	OK
1.001	2	101	27.983	-0.333	0.000	0.03	0.0	2.9	OK
1.002	3	101	27.882	-0.317	0.000	0.06	0.0	5.6	OK
1.003	4	103	27.767	-0.314	0.000	0.06	0.0	6.1	OK
1.004	5	110	27.665	-0.314	0.000	0.06	0.0	6.1	OK
1.005	6	116	27.587	-0.310	0.000	0.07	0.0	6.6	OK
2.000	7	101	28.108	-0.192	0.000	0.05	0.0	1.7	OK
2.001	8	101	27.935	-0.258	0.000	0.05	0.0	3.4	OK
2.002	9	104	27.758	-0.253	0.000	0.06	0.0	4.1	OK
2.003	10	116	27.578	-0.252	0.000	0.06	0.0	4.1	OK
1.006	11	118	27.514	-0.509	0.000	0.04	0.0	10.8	OK
3.000	12	101	28.171	-0.129	0.000	0.05	0.0	0.5	OK
3.001	13	101	28.106	-0.193	0.000	0.05	0.0	1.3	OK
3.002	14	101	27.990	-0.261	0.000	0.04	0.0	2.2	OK
3.003	15	101	27.895	-0.258	0.000	0.05	0.0	3.1	OK
3.004	16	107	27.699	-0.253	0.000	0.06	0.0	3.1	OK
3.005	17	116	27.577	-0.262	0.000	0.04	0.0	3.1	OK
3.006	17	119	27.506	-0.308	0.000	0.03	0.0	3.1	OK
4.000	18	101	27.918	-0.262	0.000	0.04	0.0	2.2	OK
4.001	19	102	27.814	-0.326	0.000	0.04	0.0	4.0	OK
4.002	20	106	27.716	-0.310	0.000	0.07	0.0	6.7	OK
4.003	22	115	27.593	-0.319	0.000	0.05	0.0	6.7	OK
4.004	21	118	27.522	-0.290	0.000	0.08	0.0	6.7	OK
1.007	22	119	27.496	-0.485	0.000	0.08	0.0	20.6	OK
1.008	25	103	27.396	0.296	0.000	0.36	0.0	5.7	SURCHARGED

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Summary Wizard of 5760 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow (l/s)	
1.000	1	127	28.036	-0.204	0.000	0.02	0.0	0.6	OK
1.001	2	127	27.968	-0.348	0.000	0.02	0.0	1.5	OK
1.002	3	127	27.866	-0.333	0.000	0.03	0.0	2.9	OK
1.003	4	127	27.750	-0.331	0.000	0.03	0.0	3.2	OK
1.004	5	127	27.648	-0.331	0.000	0.03	0.0	3.2	OK
1.005	6	129	27.568	-0.329	0.000	0.04	0.0	3.5	OK
2.000	7	127	28.100	-0.200	0.000	0.03	0.0	0.9	OK
2.001	8	127	27.925	-0.268	0.000	0.03	0.0	1.8	OK
2.002	9	127	27.746	-0.266	0.000	0.03	0.0	2.2	OK
2.003	10	129	27.565	-0.265	0.000	0.03	0.0	2.2	OK
1.006	11	129	27.486	-0.537	0.000	0.02	0.0	5.6	OK
3.000	12	127	28.166	-0.134	0.000	0.03	0.0	0.3	OK
3.001	13	127	28.098	-0.201	0.000	0.03	0.0	0.7	OK
3.002	14	127	27.981	-0.270	0.000	0.02	0.0	1.2	OK
3.003	15	127	27.885	-0.268	0.000	0.03	0.0	1.6	OK
3.004	16	127	27.686	-0.266	0.000	0.03	0.0	1.6	OK
3.005	17	128	27.568	-0.271	0.000	0.02	0.0	1.6	OK
3.006	17	129	27.480	-0.334	0.000	0.02	0.0	1.6	OK
4.000	18	127	27.910	-0.270	0.000	0.02	0.0	1.1	OK
4.001	19	127	27.803	-0.337	0.000	0.02	0.0	2.1	OK
4.002	20	127	27.698	-0.329	0.000	0.04	0.0	3.5	OK
4.003	22	128	27.579	-0.333	0.000	0.03	0.0	3.5	OK
4.004	21	129	27.494	-0.319	0.000	0.04	0.0	3.5	OK
1.007	22	129	27.461	-0.520	0.000	0.04	0.0	10.8	OK
1.008	25	120	27.338	0.238	0.000	0.33	0.0	5.3	SURCHARGED

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Summary Wizard of 7200 minute 1 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status

OFF

Analysis Timestep

Fine

Inertia Status

OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

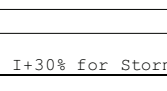
1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH	Name	Rank	Water	Flooded	Pipe			Status
				Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	
1.000	1	132	28.033	-0.207	0.000	0.02	0.0	0.5	OK
1.001	2	132	27.964	-0.352	0.000	0.01	0.0	1.3	OK
1.002	3	132	27.864	-0.335	0.000	0.03	0.0	2.5	OK
1.003	4	132	27.748	-0.333	0.000	0.03	0.0	2.8	OK
1.004	5	132	27.646	-0.333	0.000	0.03	0.0	2.8	OK
1.005	6	133	27.565	-0.332	0.000	0.03	0.0	3.0	OK
2.000	7	132	28.098	-0.202	0.000	0.02	0.0	0.8	OK
2.001	8	132	27.924	-0.270	0.000	0.02	0.0	1.5	OK
2.002	9	132	27.744	-0.267	0.000	0.03	0.0	1.9	OK
2.003	10	133	27.563	-0.267	0.000	0.03	0.0	1.9	OK
1.006	11	133	27.482	-0.541	0.000	0.02	0.0	4.9	OK
3.000	12	132	28.165	-0.135	0.000	0.02	0.0	0.2	OK
3.001	13	132	28.097	-0.202	0.000	0.02	0.0	0.6	OK
3.002	14	132	27.977	-0.274	0.000	0.02	0.0	1.0	OK
3.003	15	132	27.883	-0.270	0.000	0.02	0.0	1.4	OK
3.004	16	132	27.684	-0.268	0.000	0.03	0.0	1.4	OK
3.005	17	132	27.564	-0.275	0.000	0.02	0.0	1.4	OK
3.006	17	132	27.478	-0.336	0.000	0.01	0.0	1.4	OK
4.000	18	132	27.906	-0.274	0.000	0.02	0.0	1.0	OK
4.001	19	132	27.799	-0.342	0.000	0.02	0.0	1.8	OK
4.002	20	132	27.695	-0.332	0.000	0.03	0.0	3.0	OK
4.003	22	132	27.577	-0.336	0.000	0.02	0.0	3.0	OK
4.004	21	133	27.489	-0.323	0.000	0.03	0.0	3.0	OK
1.007	22	133	27.455	-0.526	0.000	0.04	0.0	9.3	OK
1.008	25	127	27.312	0.212	0.000	0.32	0.0	5.1	SURCHARGED

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Summary Wizard of 120 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep		Fine Inertia Status	OFF
DTS Status		ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow	
1.000	1	29	28.103	-0.137	0.000	0.29	0.0	8.8	OK
1.001	2	33	28.067	-0.249	0.000	0.22	0.0	21.8	OK
1.002	3	37	27.998	-0.201	0.000	0.43	0.0	41.8	OK
1.003	4	44	27.890	-0.191	0.000	0.46	0.0	44.5	OK
1.004	5	54	27.810	-0.169	0.000	0.47	0.0	44.9	OK
1.005	6	64	27.758	-0.139	0.000	0.50	0.0	48.3	OK
2.000	7	28	28.175	-0.125	0.000	0.41	0.0	13.5	OK
2.001	8	35	28.020	-0.173	0.000	0.37	0.0	25.7	OK
2.002	9	50	27.854	-0.157	0.000	0.45	0.0	31.1	OK
2.003	10	65	27.753	-0.077	0.000	0.45	0.0	29.5	OK
1.006	11	67	27.723	-0.300	0.000	0.28	0.0	77.6	OK
3.000	12	28	28.214	-0.086	0.000	0.39	0.0	4.2	OK
3.001	13	28	28.169	-0.130	0.000	0.37	0.0	9.9	OK
3.002	14	33	28.067	-0.184	0.000	0.31	0.0	16.6	OK
3.003	15	39	27.980	-0.173	0.000	0.36	0.0	22.5	OK
3.004	16	58	27.792	-0.160	0.000	0.43	0.0	22.8	OK
3.005	17	67	27.731	-0.108	0.000	0.29	0.0	22.6	OK
3.006	17	67	27.725	-0.089	0.000	0.23	0.0	22.4	OK
4.000	18	38	27.994	-0.186	0.000	0.31	0.0	16.9	OK
4.001	19	43	27.918	-0.223	0.000	0.31	0.0	30.2	OK
4.002	20	51	27.847	-0.179	0.000	0.52	0.0	50.0	OK
4.003	22	65	27.746	-0.166	0.000	0.39	0.0	48.0	OK
4.004	21	65	27.739	-0.073	0.000	0.54	0.0	48.5	OK
1.007	22	68	27.712	-0.269	0.000	0.59	0.0	148.0	OK
1.008	25	122	27.330	0.230	0.000	0.33	0.0	5.2 SURCHARGED	

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Summary Wizard of 180 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status OFF

Analysis Timestep

Fine

Inertia Status OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720,
960, 1440, 2160, 2880, 4320, 5760, 7200,
8640, 10080

Return Period(s) (years)

1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status
			Level (m)		Volume (m³)			Flow (l/s)	
1.000	1	39	28.091	-0.149	0.000	0.23	0.0	7.2	OK
1.001	2	40	28.052	-0.264	0.000	0.18	0.0	17.5	OK
1.002	3	45	27.977	-0.222	0.000	0.35	0.0	33.9	OK
1.003	4	54	27.867	-0.214	0.000	0.38	0.0	37.2	OK
1.004	5	64	27.782	-0.197	0.000	0.38	0.0	36.7	OK
1.005	6	69	27.727	-0.170	0.000	0.40	0.0	39.3	OK
2.000	7	35	28.164	-0.136	0.000	0.33	0.0	11.0	OK
2.001	8	41	28.006	-0.188	0.000	0.30	0.0	20.6	OK
2.002	9	56	27.837	-0.174	0.000	0.36	0.0	25.2	OK
2.003	10	71	27.714	-0.115	0.000	0.37	0.0	24.7	OK
1.006	11	72	27.687	-0.336	0.000	0.23	0.0	63.3	OK
3.000	12	35	28.208	-0.092	0.000	0.31	0.0	3.5	OK
3.001	13	35	28.158	-0.141	0.000	0.30	0.0	8.0	OK
3.002	14	40	28.053	-0.198	0.000	0.25	0.0	13.5	OK
3.003	15	47	27.965	-0.188	0.000	0.30	0.0	18.8	OK
3.004	16	64	27.775	-0.177	0.000	0.35	0.0	18.5	OK
3.005	17	72	27.691	-0.148	0.000	0.24	0.0	18.6	OK
3.006	17	72	27.686	-0.128	0.000	0.19	0.0	18.6	OK
4.000	18	45	27.982	-0.198	0.000	0.25	0.0	13.8	OK
4.001	19	47	27.898	-0.243	0.000	0.25	0.0	24.3	OK
4.002	20	56	27.823	-0.204	0.000	0.42	0.0	41.0	OK
4.003	22	72	27.706	-0.206	0.000	0.32	0.0	40.2	OK
4.004	21	72	27.699	-0.113	0.000	0.45	0.0	40.0	OK
1.007	22	73	27.676	-0.305	0.000	0.49	0.0	121.3	OK
1.008	25	112	27.368	0.268	0.000	0.35	0.0	5.5 SURCHARGED	

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Summary Wizard of 480 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter	
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080	
Return Period(s) (years)	1, 2, 30, 100	
Climate Change (%)	30, 30, 30, 30	

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m ³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	62	28.066	-0.174	0.000	0.12	0.0	3.7	OK
1.001	2	63	28.018	-0.298	0.000	0.09	0.0	9.3	OK
1.002	3	66	27.932	-0.267	0.000	0.18	0.0	18.1	OK
1.003	4	72	27.820	-0.261	0.000	0.20	0.0	19.8	OK
1.004	5	80	27.723	-0.256	0.000	0.21	0.0	19.8	OK
1.005	6	86	27.656	-0.241	0.000	0.22	0.0	21.4	OK
2.000	7	61	28.137	-0.163	0.000	0.17	0.0	5.6	OK
2.001	8	64	27.972	-0.221	0.000	0.16	0.0	10.8	OK
2.002	9	76	27.800	-0.211	0.000	0.19	0.0	13.3	OK
2.003	10	88	27.637	-0.192	0.000	0.20	0.0	13.3	OK
1.006	11	90	27.605	-0.418	0.000	0.13	0.0	34.7	OK
3.000	12	61	28.190	-0.110	0.000	0.16	0.0	1.8	OK
3.001	13	61	28.133	-0.166	0.000	0.16	0.0	4.2	OK
3.002	14	63	28.023	-0.228	0.000	0.13	0.0	7.2	OK
3.003	15	66	27.932	-0.221	0.000	0.16	0.0	10.0	OK
3.004	16	79	27.740	-0.212	0.000	0.19	0.0	10.0	OK
3.005	17	90	27.610	-0.229	0.000	0.13	0.0	10.0	OK
3.006	17	90	27.596	-0.218	0.000	0.10	0.0	10.0	OK
4.000	18	65	27.951	-0.229	0.000	0.13	0.0	7.1	OK
4.001	19	71	27.856	-0.284	0.000	0.13	0.0	12.9	OK
4.002	20	77	27.771	-0.255	0.000	0.23	0.0	21.8	OK
4.003	22	88	27.642	-0.270	0.000	0.18	0.0	21.8	OK
4.004	21	89	27.611	-0.202	0.000	0.24	0.0	21.8	OK
1.007	22	91	27.591	-0.390	0.000	0.27	0.0	66.3	OK
1.008	25	88	27.444	0.344	0.000	0.38	0.0	6.0	SURCHARGED

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Summary Wizard of 600 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

US/MH		Water		Flooded		Pipe		Status
PN	Name Rank	Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)	Flow	
1.000	1	66 28.063	-0.177	0.000	0.10	0.0	3.2	OK
1.001	2	67 28.012	-0.304	0.000	0.08	0.0	7.9	OK
1.002	3	70 27.923	-0.276	0.000	0.16	0.0	15.5	OK
1.003	4	77 27.811	-0.270	0.000	0.18	0.0	17.0	OK
1.004	5	86 27.713	-0.266	0.000	0.18	0.0	17.0	OK
1.005	6	91 27.643	-0.254	0.000	0.19	0.0	18.4	OK
2.000	7	65 28.132	-0.168	0.000	0.15	0.0	4.8	OK
2.001	8	69 27.966	-0.227	0.000	0.13	0.0	9.3	OK
2.002	9	79 27.792	-0.219	0.000	0.16	0.0	11.4	OK
2.003	10	93 27.626	-0.204	0.000	0.17	0.0	11.4	OK
1.006	11	95 27.589	-0.434	0.000	0.11	0.0	29.8	OK
3.000	12	65 28.187	-0.113	0.000	0.14	0.0	1.5	OK
3.001	13	65 28.129	-0.170	0.000	0.13	0.0	3.6	OK
3.002	14	67 28.018	-0.233	0.000	0.11	0.0	6.1	OK
3.003	15	70 27.926	-0.227	0.000	0.14	0.0	8.6	OK
3.004	16	84 27.732	-0.220	0.000	0.16	0.0	8.6	OK
3.005	17	94 27.605	-0.234	0.000	0.11	0.0	8.6	OK
3.006	17	96 27.579	-0.235	0.000	0.09	0.0	8.6	OK
4.000	18	69 27.946	-0.234	0.000	0.11	0.0	6.1	OK
4.001	19	75 27.850	-0.291	0.000	0.11	0.0	11.1	OK
4.002	20	81 27.763	-0.264	0.000	0.19	0.0	18.7	OK
4.003	22	92 27.634	-0.278	0.000	0.15	0.0	18.7	OK
4.004	21	95 27.595	-0.217	0.000	0.21	0.0	18.7	OK
1.007	22	96 27.575	-0.406	0.000	0.23	0.0	57.1	OK
1.008	25	85 27.455	0.355	0.000	0.38	0.0	6.1	SURCHARGED

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Summary Wizard of 720 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m ³)		(l/s)	Flow (l/s)	
1.000	1	71	28.060	-0.180	0.000	0.09	0.0	2.8	OK
1.001	2	72	28.006	-0.310	0.000	0.07	0.0	7.0	OK
1.002	3	74	27.917	-0.282	0.000	0.14	0.0	13.7	OK
1.003	4	81	27.804	-0.277	0.000	0.15	0.0	15.0	OK
1.004	5	88	27.705	-0.274	0.000	0.16	0.0	15.0	OK
1.005	6	94	27.635	-0.262	0.000	0.17	0.0	16.2	OK
2.000	7	70	28.128	-0.172	0.000	0.13	0.0	4.3	OK
2.001	8	73	27.961	-0.232	0.000	0.12	0.0	8.2	OK
2.002	9	82	27.787	-0.224	0.000	0.15	0.0	10.1	OK
2.003	10	95	27.618	-0.212	0.000	0.15	0.0	10.1	OK
1.006	11	98	27.577	-0.446	0.000	0.10	0.0	26.3	OK
3.000	12	70	28.185	-0.115	0.000	0.12	0.0	1.3	OK
3.001	13	70	28.125	-0.174	0.000	0.12	0.0	3.2	OK
3.002	14	72	28.014	-0.237	0.000	0.10	0.0	5.4	OK
3.003	15	74	27.922	-0.231	0.000	0.12	0.0	7.6	OK
3.004	16	86	27.727	-0.225	0.000	0.14	0.0	7.6	OK
3.005	17	96	27.601	-0.238	0.000	0.10	0.0	7.6	OK
3.006	17	98	27.568	-0.246	0.000	0.08	0.0	7.6	OK
4.000	18	73	27.942	-0.238	0.000	0.10	0.0	5.3	OK
4.001	19	78	27.845	-0.296	0.000	0.10	0.0	9.8	OK
4.002	20	84	27.755	-0.272	0.000	0.17	0.0	16.5	OK
4.003	22	95	27.628	-0.285	0.000	0.13	0.0	16.5	OK
4.004	21	97	27.584	-0.228	0.000	0.18	0.0	16.5	OK
1.007	22	98	27.563	-0.418	0.000	0.20	0.0	50.4	OK
1.008	25	83	27.464	0.364	0.000	0.39	0.0	6.1	SURCHARGED

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Summary Wizard of 960 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	78	28.055	-0.185	0.000	0.07	0.0	2.3	OK
1.001	2	79	27.999	-0.317	0.000	0.06	0.0	5.7	OK
1.002	3	80	27.908	-0.291	0.000	0.11	0.0	11.2	OK
1.003	4	88	27.794	-0.287	0.000	0.13	0.0	12.3	OK
1.004	5	94	27.694	-0.285	0.000	0.13	0.0	12.3	OK
1.005	6	101	27.621	-0.276	0.000	0.14	0.0	13.3	OK
2.000	7	77	28.124	-0.176	0.000	0.11	0.0	3.5	OK
2.001	8	79	27.956	-0.238	0.000	0.10	0.0	6.7	OK
2.002	9	88	27.780	-0.232	0.000	0.12	0.0	8.3	OK
2.003	10	102	27.605	-0.224	0.000	0.12	0.0	8.3	OK
1.006	11	104	27.559	-0.464	0.000	0.08	0.0	21.6	OK
3.000	12	77	28.182	-0.118	0.000	0.10	0.0	1.1	OK
3.001	13	77	28.121	-0.178	0.000	0.10	0.0	2.6	OK
3.002	14	78	28.008	-0.243	0.000	0.08	0.0	4.4	OK
3.003	15	80	27.916	-0.237	0.000	0.10	0.0	6.2	OK
3.004	16	92	27.720	-0.232	0.000	0.12	0.0	6.2	OK
3.005	17	103	27.595	-0.244	0.000	0.08	0.0	6.2	OK
3.006	17	105	27.550	-0.264	0.000	0.06	0.0	6.2	OK
4.000	18	80	27.936	-0.244	0.000	0.08	0.0	4.4	OK
4.001	19	84	27.838	-0.303	0.000	0.08	0.0	8.0	OK
4.002	20	91	27.744	-0.282	0.000	0.14	0.0	13.5	OK
4.003	22	101	27.619	-0.293	0.000	0.11	0.0	13.5	OK
4.004	21	104	27.566	-0.246	0.000	0.15	0.0	13.5	OK
1.007	22	105	27.544	-0.437	0.000	0.17	0.0	41.3	OK
1.008	25	81	27.474	0.374	0.000	0.39	0.0	6.2	SURCHARGED

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4 The Roundal

Wrexham Phase 2

Roddinglaw Road

Edinburgh EH12 9DB



Date Dec 12

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Network W.12.6

Summary Wizard of 2880 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)300.0DVD Status OFF

Analysis TimestepFineInertia Status OFF

DTS StatusON

Profile(s)Summer and Winter

Duration(s) (mins)30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)1, 2, 30, 100

Climate Change (%)30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Pipe			Status	
			Level Depth (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)		Flow (l/s)
1.000	1	103	28.042	-0.198	0.000	0.04	0.0	1.1	OK
1.001	2	103	27.982	-0.334	0.000	0.03	0.0	2.8	OK
1.002	3	103	27.881	-0.318	0.000	0.06	0.0	5.4	OK
1.003	4	105	27.766	-0.315	0.000	0.06	0.0	6.0	OK
1.004	5	112	27.664	-0.315	0.000	0.06	0.0	6.0	OK
1.005	6	117	27.586	-0.311	0.000	0.07	0.0	6.5	OK
2.000	7	103	28.108	-0.192	0.000	0.05	0.0	1.7	OK
2.001	8	103	27.935	-0.258	0.000	0.05	0.0	3.3	OK
2.002	9	105	27.758	-0.254	0.000	0.06	0.0	4.0	OK
2.003	10	117	27.577	-0.252	0.000	0.06	0.0	4.0	OK
1.006	11	119	27.512	-0.511	0.000	0.04	0.0	10.5	OK
3.000	12	103	28.171	-0.129	0.000	0.05	0.0	0.5	OK
3.001	13	103	28.105	-0.194	0.000	0.05	0.0	1.3	OK
3.002	14	103	27.989	-0.262	0.000	0.04	0.0	2.2	OK
3.003	15	103	27.895	-0.258	0.000	0.05	0.0	3.0	OK
3.004	16	108	27.698	-0.254	0.000	0.06	0.0	3.0	OK
3.005	17	117	27.577	-0.262	0.000	0.04	0.0	3.0	OK
3.006	17	120	27.504	-0.310	0.000	0.03	0.0	3.0	OK
4.000	18	103	27.918	-0.262	0.000	0.04	0.0	2.1	OK
4.001	19	104	27.814	-0.327	0.000	0.04	0.0	3.9	OK
4.002	20	107	27.715	-0.312	0.000	0.07	0.0	6.6	OK
4.003	22	116	27.592	-0.320	0.000	0.05	0.0	6.6	OK
4.004	21	119	27.521	-0.291	0.000	0.07	0.0	6.6	OK
1.007	22	120	27.494	-0.487	0.000	0.08	0.0	20.0	OK
1.008	25	82	27.469	0.369	0.000	0.39	0.0	6.2	SURCHARGED

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Roddinglaw Road
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Wrexham Phase 2

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Summary Wizard of 4320 minute 2 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status OFF

Analysis Timestep

Fine

Inertia Status OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status	
			Level (m)	Surch'd Depth (m)			Volume (m³)		Flow (l/s)
1.000	1	113	28.040	-0.200	0.000	0.03	0.0	0.8	OK
1.001	2	113	27.979	-0.337	0.000	0.02	0.0	2.1	OK
1.002	3	113	27.873	-0.326	0.000	0.04	0.0	4.1	OK
1.003	4	114	27.758	-0.323	0.000	0.05	0.0	4.5	OK
1.004	5	118	27.656	-0.323	0.000	0.05	0.0	4.5	OK
1.005	6	121	27.576	-0.321	0.000	0.05	0.0	4.9	OK
2.000	7	113	28.103	-0.197	0.000	0.04	0.0	1.3	OK
2.001	8	113	27.930	-0.264	0.000	0.04	0.0	2.5	OK
2.002	9	114	27.751	-0.260	0.000	0.04	0.0	3.0	OK
2.003	10	121	27.571	-0.259	0.000	0.05	0.0	3.0	OK
1.006	11	123	27.497	-0.526	0.000	0.03	0.0	7.9	OK
3.000	12	113	28.168	-0.132	0.000	0.04	0.0	0.4	OK
3.001	13	113	28.101	-0.198	0.000	0.04	0.0	1.0	OK
3.002	14	113	27.985	-0.266	0.000	0.03	0.0	1.6	OK
3.003	15	113	27.890	-0.263	0.000	0.04	0.0	2.3	OK
3.004	16	116	27.692	-0.260	0.000	0.04	0.0	2.3	OK
3.005	17	121	27.573	-0.267	0.000	0.03	0.0	2.3	OK
3.006	17	123	27.491	-0.323	0.000	0.02	0.0	2.3	OK
4.000	18	113	27.914	-0.266	0.000	0.03	0.0	1.6	OK
4.001	19	113	27.808	-0.332	0.000	0.03	0.0	2.9	OK
4.002	20	116	27.706	-0.321	0.000	0.05	0.0	5.0	OK
4.003	22	121	27.585	-0.327	0.000	0.04	0.0	5.0	OK
4.004	21	123	27.507	-0.305	0.000	0.06	0.0	5.0	OK
1.007	22	123	27.476	-0.505	0.000	0.06	0.0	15.1	OK
1.008	25	90	27.439	0.339	0.000	0.38	0.0	6.0	SURCHARGED

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Margin for Flood Risk Warning (mm) 300.0      DVD Status OFF
      Analysis Timestep      Fine Inertia Status OFF
      DTS Status      ON
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PN	US/MH		Water		Flooded	Pipe		Status	
	Name	Rank	Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)		Flow (l/s)
1.000	1	12	28.229	-0.011	0.000	0.52	0.0	15.9	OK
1.001	2	12	28.200	-0.116	0.000	0.41	0.0	40.1	OK
1.002	3	12	28.170	-0.029	0.000	0.76	0.0	74.5	OK
1.003	4	12	28.107	0.026	0.000	0.80	0.0	77.4	SURCHARGED
1.004	5	18	28.047	0.068	0.000	0.77	0.0	74.0	SURCHARGED
1.005	6	20	27.998	0.101	0.000	0.82	0.0	79.4	SURCHARGED
2.000	7	12	28.267	-0.033	0.000	0.75	0.0	24.9	OK
2.001	8	12	28.171	-0.022	0.000	0.66	0.0	45.5	OK
2.002	9	12	28.098	0.087	0.000	0.77	0.0	53.5	SURCHARGED
2.003	10	20	27.995	0.166	0.000	0.78	0.0	51.8	SURCHARGED
1.006	11	29	27.929	-0.094	0.000	0.47	0.0	130.3	OK
3.000	12	13	28.255	-0.045	0.000	0.73	0.0	8.0	OK
3.001	13	12	28.214	-0.085	0.000	0.71	0.0	19.0	OK
3.002	14	12	28.128	-0.123	0.000	0.59	0.0	32.1	OK
3.003	15	16	28.078	-0.075	0.000	0.69	0.0	43.4	OK
3.004	16	20	28.001	0.049	0.000	0.74	0.0	39.0	SURCHARGED
3.005	17	29	27.941	0.101	0.000	0.51	0.0	40.4	SURCHARGED
3.006	17	29	27.930	0.116	0.000	0.42	0.0	40.7	SURCHARGED
4.000	18	12	28.154	-0.026	0.000	0.56	0.0	30.5	OK
4.001	19	12	28.115	-0.026	0.000	0.54	0.0	52.5	OK
4.002	20	17	28.076	0.049	0.000	0.90	0.0	87.0	SURCHARGED
4.003	22	24	27.980	0.068	0.000	0.68	0.0	83.7	SURCHARGED
4.004	21	27	27.960	0.148	0.000	0.93	0.0	82.8	SURCHARGED
1.007	22	30	27.910	-0.071	0.000	1.00	0.0	249.5	OK
1.008	25	61	27.630	0.530	0.000	0.55	0.0	8.7	SURCHARGED

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Margin for Flood Risk Warning (mm) 300.0      DVD Status OFF
      Analysis Timestep      Fine Inertia Status OFF
            DTS Status      ON
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PN	US/MH	Rank	Water		Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe	Status
			Level (m)	Surch'd Depth (m)				Flow (l/s)	
1.000	1	18	28.136	-0.104	0.000	0.44	0.0	13.4	OK
1.001	2	18	28.108	-0.208	0.000	0.34	0.0	33.4	OK
1.002	3	24	28.052	-0.147	0.000	0.66	0.0	64.3	OK
1.003	4	28	27.982	-0.099	0.000	0.70	0.0	67.5	OK
1.004	5	33	27.934	-0.045	0.000	0.69	0.0	66.6	OK
1.005	6	34	27.890	-0.007	0.000	0.73	0.0	71.0	OK
2.000	7	18	28.204	-0.096	0.000	0.62	0.0	20.6	OK
2.001	8	22	28.056	-0.138	0.000	0.57	0.0	39.3	OK
2.002	9	31	27.959	-0.052	0.000	0.66	0.0	45.6	OK
2.003	10	34	27.886	0.057	0.000	0.68	0.0	45.0	SURCHARGED
1.006	11	41	27.837	-0.186	0.000	0.42	0.0	114.9	OK
3.000	12	18	28.233	-0.067	0.000	0.59	0.0	6.5	OK
3.001	13	16	28.196	-0.103	0.000	0.57	0.0	15.2	OK
3.002	14	16	28.098	-0.153	0.000	0.47	0.0	25.6	OK
3.003	15	23	28.016	-0.137	0.000	0.56	0.0	35.6	OK
3.004	16	33	27.898	-0.054	0.000	0.64	0.0	34.0	OK
3.005	17	40	27.849	0.010	0.000	0.43	0.0	34.4	SURCHARGED
3.006	17	41	27.840	0.026	0.000	0.36	0.0	34.3	SURCHARGED
4.000	18	26	28.034	-0.146	0.000	0.47	0.0	25.6	OK
4.001	19	30	27.980	-0.160	0.000	0.47	0.0	45.4	OK
4.002	20	32	27.939	-0.087	0.000	0.77	0.0	74.2	OK
4.003	22	35	27.877	-0.035	0.000	0.58	0.0	72.3	OK
4.004	21	39	27.863	0.051	0.000	0.81	0.0	72.3	SURCHARGED
1.007	22	42	27.821	-0.160	0.000	0.88	0.0	220.3	OK
1.008	25	53	27.684	0.584	0.000	0.62	0.0	9.9	SURCHARGED

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Micro Drainage		Network W.12.6	

Summary Wizard of 240 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status		ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	22	28.118	-0.122	0.000	0.36	0.0	10.9	OK
1.001	2	26	28.086	-0.230	0.000	0.28	0.0	27.5	OK
1.002	3	29	28.022	-0.177	0.000	0.55	0.0	53.7	OK
1.003	4	37	27.933	-0.148	0.000	0.59	0.0	57.6	OK
1.004	5	42	27.869	-0.110	0.000	0.59	0.0	56.6	OK
1.005	6	46	27.830	-0.067	0.000	0.63	0.0	61.3	OK
2.000	7	22	28.188	-0.112	0.000	0.51	0.0	16.8	OK
2.001	8	29	28.037	-0.157	0.000	0.46	0.0	32.2	OK
2.002	9	39	27.885	-0.126	0.000	0.56	0.0	39.2	OK
2.003	10	46	27.828	-0.002	0.000	0.57	0.0	37.9	OK
1.006	11	53	27.785	-0.238	0.000	0.36	0.0	99.0	OK
3.000	12	22	28.223	-0.077	0.000	0.48	0.0	5.3	OK
3.001	13	22	28.182	-0.117	0.000	0.47	0.0	12.5	OK
3.002	14	26	28.082	-0.169	0.000	0.39	0.0	21.3	OK
3.003	15	30	27.998	-0.155	0.000	0.47	0.0	29.5	OK
3.004	16	46	27.838	-0.114	0.000	0.55	0.0	29.0	OK
3.005	17	51	27.795	-0.044	0.000	0.37	0.0	29.1	OK
3.006	17	52	27.787	-0.027	0.000	0.30	0.0	29.0	OK
4.000	18	30	28.010	-0.170	0.000	0.38	0.0	21.0	OK
4.001	19	37	27.946	-0.194	0.000	0.39	0.0	37.9	OK
4.002	20	39	27.888	-0.138	0.000	0.65	0.0	63.2	OK
4.003	22	46	27.819	-0.093	0.000	0.50	0.0	61.5	OK
4.004	21	47	27.808	-0.004	0.000	0.68	0.0	61.1	OK
1.007	22	55	27.771	-0.210	0.000	0.76	0.0	189.2	OK
1.008	25	49	27.715	0.615	0.000	0.66	0.0	10.4	SURCHARGED

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Wrexham Phase 2

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Summary Wizard of 360 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status OFF

Analysis Timestep

Fine

Inertia Status OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'ed Depth (m)	Flooded	Flow / Cap. (l/s)	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow	
1.000	1	33	28.098	-0.142	0.000	0.26	0.0	8.1	OK
1.001	2	37	28.061	-0.255	0.000	0.21	0.0	20.5	OK
1.002	3	42	27.990	-0.209	0.000	0.41	0.0	40.1	OK
1.003	4	46	27.885	-0.196	0.000	0.45	0.0	43.7	OK
1.004	5	55	27.808	-0.171	0.000	0.45	0.0	43.4	OK
1.005	6	63	27.759	-0.138	0.000	0.48	0.0	46.7	OK
2.000	7	31	28.170	-0.130	0.000	0.38	0.0	12.5	OK
2.001	8	38	28.015	-0.179	0.000	0.35	0.0	24.0	OK
2.002	9	53	27.848	-0.164	0.000	0.43	0.0	29.5	OK
2.003	10	63	27.758	-0.072	0.000	0.44	0.0	29.1	OK
1.006	11	62	27.755	-0.268	0.000	0.27	0.0	75.3	OK
3.000	12	31	28.212	-0.088	0.000	0.36	0.0	3.9	OK
3.001	13	31	28.165	-0.134	0.000	0.35	0.0	9.3	OK
3.002	14	36	28.062	-0.189	0.000	0.29	0.0	15.9	OK
3.003	15	43	27.975	-0.178	0.000	0.35	0.0	22.2	OK
3.004	16	59	27.791	-0.161	0.000	0.42	0.0	22.0	OK
3.005	17	62	27.756	-0.083	0.000	0.28	0.0	21.8	OK
3.006	17	62	27.755	-0.059	0.000	0.23	0.0	22.0	OK
4.000	18	42	27.989	-0.191	0.000	0.29	0.0	15.6	OK
4.001	19	45	27.910	-0.230	0.000	0.30	0.0	28.5	OK
4.002	20	54	27.839	-0.188	0.000	0.50	0.0	48.2	OK
4.003	22	63	27.757	-0.155	0.000	0.39	0.0	47.7	OK
4.004	21	62	27.761	-0.051	0.000	0.53	0.0	47.5	OK
1.007	22	59	27.754	-0.227	0.000	0.58	0.0	143.7	OK
1.008	25	44	27.753	0.653	0.000	0.69	0.0	11.0	SURCHARGED

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Micro Drainage		Network W.12.6	

Summary Wizard of 720 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd	Flooded	Flow /	O'flow	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)	Cap.	(l/s)	Flow	
1.000	1	53	28.075	-0.165	0.000	0.16	0.0	4.9	OK
1.001	2	54	28.030	-0.286	0.000	0.13	0.0	12.4	OK
1.002	3	57	27.950	-0.249	0.000	0.25	0.0	24.2	OK
1.003	4	65	27.839	-0.242	0.000	0.27	0.0	26.4	OK
1.004	5	61	27.792	-0.187	0.000	0.27	0.0	26.4	OK
1.005	6	57	27.789	-0.108	0.000	0.29	0.0	28.6	OK
2.000	7	50	28.147	-0.153	0.000	0.23	0.0	7.5	OK
2.001	8	56	27.986	-0.208	0.000	0.21	0.0	14.5	OK
2.002	9	65	27.814	-0.197	0.000	0.26	0.0	17.8	OK
2.003	10	57	27.789	-0.040	0.000	0.27	0.0	17.8	OK
1.006	11	52	27.787	-0.236	0.000	0.17	0.0	46.4	OK
3.000	12	50	28.197	-0.103	0.000	0.22	0.0	2.4	OK
3.001	13	50	28.143	-0.156	0.000	0.21	0.0	5.6	OK
3.002	14	54	28.036	-0.215	0.000	0.18	0.0	9.6	OK
3.003	15	57	27.946	-0.207	0.000	0.21	0.0	13.4	OK
3.004	16	60	27.790	-0.162	0.000	0.25	0.0	13.4	OK
3.005	17	53	27.787	-0.052	0.000	0.17	0.0	13.4	OK
3.006	17	53	27.787	-0.027	0.000	0.14	0.0	13.4	OK
4.000	18	57	27.963	-0.217	0.000	0.17	0.0	9.4	OK
4.001	19	63	27.872	-0.268	0.000	0.18	0.0	17.2	OK
4.002	20	70	27.792	-0.235	0.000	0.30	0.0	29.1	OK
4.003	22	57	27.789	-0.124	0.000	0.23	0.0	29.1	OK
4.004	21	46	27.812	0.000	0.000	0.33	0.0	29.1	OK
1.007	22	51	27.786	-0.195	0.000	0.36	0.0	88.8	OK
1.008	25	38	27.785	0.685	0.000	0.72	0.0	11.4 SURCHARGED	

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Summary Wizard of 1440 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine Inertia	Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter	
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080	
Return Period(s) (years)	1, 2, 30, 100	
Climate Change (%)	30, 30, 30, 30	

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow	
1.000	1	69	28.062	-0.178	0.000	0.10	0.0	2.9	OK
1.001	2	70	28.009	-0.307	0.000	0.08	0.0	7.4	OK
1.002	3	73	27.919	-0.280	0.000	0.15	0.0	14.5	OK
1.003	4	79	27.809	-0.272	0.000	0.16	0.0	15.8	OK
1.004	5	58	27.805	-0.174	0.000	0.16	0.0	15.8	OK
1.005	6	54	27.803	-0.094	0.000	0.18	0.0	17.1	OK
2.000	7	68	28.130	-0.170	0.000	0.14	0.0	4.5	OK
2.001	8	72	27.963	-0.230	0.000	0.13	0.0	8.7	OK
2.002	9	73	27.806	-0.206	0.000	0.15	0.0	10.7	OK
2.003	10	53	27.803	-0.027	0.000	0.16	0.0	10.6	OK
1.006	11	48	27.800	-0.223	0.000	0.10	0.0	27.4	OK
3.000	12	68	28.186	-0.114	0.000	0.13	0.0	1.4	OK
3.001	13	68	28.127	-0.172	0.000	0.13	0.0	3.4	OK
3.002	14	70	28.016	-0.235	0.000	0.11	0.0	5.7	OK
3.003	15	73	27.924	-0.229	0.000	0.13	0.0	8.0	OK
3.004	16	54	27.803	-0.149	0.000	0.15	0.0	8.0	OK
3.005	17	49	27.801	-0.038	0.000	0.10	0.0	8.0	OK
3.006	17	48	27.800	-0.014	0.000	0.08	0.0	8.0	OK
4.000	18	72	27.944	-0.236	0.000	0.10	0.0	5.7	OK
4.001	19	77	27.847	-0.294	0.000	0.11	0.0	10.3	OK
4.002	20	64	27.805	-0.222	0.000	0.18	0.0	17.4	OK
4.003	22	50	27.802	-0.110	0.000	0.14	0.0	17.4	OK
4.004	21	51	27.802	-0.011	0.000	0.19	0.0	17.4	OK
1.007	22	48	27.799	-0.182	0.000	0.21	0.0	52.4	OK
1.008	25	34	27.798	0.698	0.000	0.73	0.0	11.6	SURCHARGED

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Summary Wizard of 2160 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720,
 960, 1440, 2160, 2880, 4320, 5760, 7200,
 8640, 10080
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status
			Level (m)		Volume (m³)			Flow	
1.000	1	81	28.055	-0.185	0.000	0.07	0.0	2.2	OK
1.001	2	82	27.999	-0.317	0.000	0.06	0.0	5.6	OK
1.002	3	82	27.907	-0.292	0.000	0.11	0.0	11.0	OK
1.003	4	86	27.795	-0.286	0.000	0.12	0.0	12.0	OK
1.004	5	62	27.788	-0.191	0.000	0.12	0.0	12.0	OK
1.005	6	58	27.785	-0.112	0.000	0.13	0.0	13.0	OK
2.000	7	80	28.123	-0.177	0.000	0.10	0.0	3.4	OK
2.001	8	82	27.955	-0.238	0.000	0.10	0.0	6.6	OK
2.002	9	81	27.789	-0.222	0.000	0.12	0.0	8.1	OK
2.003	10	58	27.785	-0.044	0.000	0.12	0.0	8.1	OK
1.006	11	54	27.783	-0.240	0.000	0.08	0.0	20.7	OK
3.000	12	80	28.181	-0.119	0.000	0.10	0.0	1.1	OK
3.001	13	80	28.120	-0.179	0.000	0.10	0.0	2.6	OK
3.002	14	81	28.008	-0.243	0.000	0.08	0.0	4.4	OK
3.003	15	82	27.915	-0.238	0.000	0.10	0.0	6.1	OK
3.004	16	62	27.786	-0.166	0.000	0.12	0.0	6.1	OK
3.005	17	54	27.783	-0.056	0.000	0.08	0.0	6.1	OK
3.006	17	54	27.783	-0.031	0.000	0.06	0.0	6.1	OK
4.000	18	82	27.936	-0.244	0.000	0.08	0.0	4.3	OK
4.001	19	86	27.837	-0.304	0.000	0.08	0.0	7.8	OK
4.002	20	72	27.788	-0.238	0.000	0.14	0.0	13.2	OK
4.003	22	58	27.786	-0.126	0.000	0.11	0.0	13.2	OK
4.004	21	58	27.785	-0.027	0.000	0.15	0.0	13.2	OK
1.007	22	52	27.782	-0.199	0.000	0.16	0.0	39.5	OK
1.008	25	39	27.781	0.681	0.000	0.72	0.0	11.4	SURCHARGED

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Summary Wizard of 5760 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep		Fine Inertia Status	OFF
DTS Status		ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd	Flooded	Flow /	O'flow	Pipe	Status
			Level (m)	Depth (m)	Volume (m ³)	Cap.	(l/s)	Flow (l/s)	
1.000	1	105	28.042	-0.198	0.000	0.04	0.0	1.1	OK
1.001	2	105	27.982	-0.334	0.000	0.03	0.0	2.7	OK
1.002	3	105	27.880	-0.319	0.000	0.05	0.0	5.3	OK
1.003	4	108	27.765	-0.316	0.000	0.06	0.0	5.8	OK
1.004	5	105	27.681	-0.298	0.000	0.06	0.0	5.8	OK
1.005	6	83	27.673	-0.224	0.000	0.06	0.0	6.3	OK
2.000	7	105	28.107	-0.193	0.000	0.05	0.0	1.7	OK
2.001	8	105	27.934	-0.259	0.000	0.05	0.0	3.2	OK
2.002	9	108	27.757	-0.254	0.000	0.06	0.0	3.9	OK
2.003	10	81	27.673	-0.156	0.000	0.06	0.0	3.9	OK
1.006	11	77	27.671	-0.352	0.000	0.04	0.0	10.2	OK
3.000	12	105	28.171	-0.129	0.000	0.05	0.0	0.5	OK
3.001	13	105	28.105	-0.194	0.000	0.05	0.0	1.2	OK
3.002	14	105	27.989	-0.262	0.000	0.04	0.0	2.1	OK
3.003	15	105	27.894	-0.259	0.000	0.05	0.0	3.0	OK
3.004	16	110	27.697	-0.255	0.000	0.06	0.0	3.0	OK
3.005	17	77	27.672	-0.167	0.000	0.04	0.0	3.0	OK
3.006	17	77	27.671	-0.143	0.000	0.03	0.0	2.9	OK
4.000	18	105	27.917	-0.263	0.000	0.04	0.0	2.1	OK
4.001	19	106	27.813	-0.327	0.000	0.04	0.0	3.8	OK
4.002	20	109	27.714	-0.312	0.000	0.07	0.0	6.4	OK
4.003	22	78	27.673	-0.239	0.000	0.05	0.0	6.4	OK
4.004	21	77	27.672	-0.140	0.000	0.07	0.0	6.4	OK
1.007	22	77	27.670	-0.310	0.000	0.08	0.0	19.4	OK
1.008	25	58	27.669	0.569	0.000	0.61	0.0	9.6	SURCHARGED

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Summary Wizard of 7200 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

		Water		Flooded		Pipe			
US/MH		Level	Surch'd	Volume	Flow /	O'flow	Flow		
PN	Name Rank	(m)	Depth (m)	(m³)	Cap.	(l/s)	(l/s)	Status	
1.000	1 111	28.040	-0.200	0.000	0.03	0.0	0.9	OK	
1.001	2 111	27.980	-0.336	0.000	0.02	0.0	2.3	OK	
1.002	3 111	27.875	-0.324	0.000	0.05	0.0	4.5	OK	
1.003	4 112	27.760	-0.321	0.000	0.05	0.0	4.9	OK	
1.004	5 114	27.661	-0.318	0.000	0.05	0.0	4.9	OK	
1.005	6 93	27.639	-0.258	0.000	0.05	0.0	5.3	OK	
2.000	7 111	28.105	-0.195	0.000	0.04	0.0	1.4	OK	
2.001	8 111	27.931	-0.262	0.000	0.04	0.0	2.7	OK	
2.002	9 112	27.753	-0.258	0.000	0.05	0.0	3.3	OK	
2.003	10 87	27.639	-0.190	0.000	0.05	0.0	3.3	OK	
1.006	11 83	27.637	-0.386	0.000	0.03	0.0	8.6	OK	
3.000	12 111	28.169	-0.131	0.000	0.04	0.0	0.4	OK	
3.001	13 111	28.102	-0.197	0.000	0.04	0.0	1.0	OK	
3.002	14 111	27.986	-0.265	0.000	0.03	0.0	1.8	OK	
3.003	15 111	27.891	-0.262	0.000	0.04	0.0	2.5	OK	
3.004	16 115	27.694	-0.258	0.000	0.05	0.0	2.5	OK	
3.005	17 83	27.638	-0.201	0.000	0.03	0.0	2.5	OK	
3.006	17 83	27.637	-0.177	0.000	0.03	0.0	2.5	OK	
4.000	18 111	27.915	-0.265	0.000	0.03	0.0	1.8	OK	
4.001	19 111	27.810	-0.331	0.000	0.03	0.0	3.2	OK	
4.002	20 114	27.708	-0.318	0.000	0.06	0.0	5.4	OK	
4.003	22 90	27.639	-0.273	0.000	0.04	0.0	5.4	OK	
4.004	21 84	27.638	-0.174	0.000	0.06	0.0	5.4	OK	
1.007	22 83	27.637	-0.344	0.000	0.07	0.0	16.6	OK	
1.008	25 60	27.636	0.536	0.000	0.56	0.0	8.9	SURCHARGED	

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Summary Wizard of 8640 minute 30 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH		Water		Flooded		Pipe		Status
			Level	Surch'd	Volume	Flow /	O'flow	Flow	
	Name	Rank	(m)	Depth (m)	(m³)	Cap.	(l/s)	(l/s)	
1.000	1	117	28.039	-0.201	0.000	0.03	0.0	0.8	OK
1.001	2	117	27.977	-0.339	0.000	0.02	0.0	2.0	OK
1.002	3	117	27.872	-0.327	0.000	0.04	0.0	3.9	OK
1.003	4	117	27.756	-0.325	0.000	0.04	0.0	4.3	OK
1.004	5	121	27.654	-0.325	0.000	0.04	0.0	4.3	OK
1.005	6	104	27.612	-0.285	0.000	0.05	0.0	4.7	OK
2.000	7	117	28.103	-0.197	0.000	0.04	0.0	1.2	OK
2.001	8	117	27.929	-0.264	0.000	0.03	0.0	2.4	OK
2.002	9	117	27.751	-0.261	0.000	0.04	0.0	2.9	OK
2.003	10	99	27.611	-0.219	0.000	0.04	0.0	2.9	OK
1.006	11	89	27.609	-0.414	0.000	0.03	0.0	7.5	OK
3.000	12	117	28.168	-0.132	0.000	0.03	0.0	0.4	OK
3.001	13	117	28.101	-0.198	0.000	0.03	0.0	0.9	OK
3.002	14	117	27.984	-0.267	0.000	0.03	0.0	1.6	OK
3.003	15	117	27.889	-0.264	0.000	0.03	0.0	2.2	OK
3.004	16	119	27.691	-0.261	0.000	0.04	0.0	2.2	OK
3.005	17	91	27.609	-0.230	0.000	0.03	0.0	2.2	OK
3.006	17	89	27.609	-0.205	0.000	0.02	0.0	2.2	OK
4.000	18	117	27.913	-0.267	0.000	0.03	0.0	1.5	OK
4.001	19	117	27.808	-0.333	0.000	0.03	0.0	2.8	OK
4.002	20	119	27.704	-0.322	0.000	0.05	0.0	4.7	OK
4.003	22	106	27.610	-0.302	0.000	0.04	0.0	4.7	OK
4.004	21	91	27.610	-0.202	0.000	0.05	0.0	4.7	OK
1.007	22	88	27.608	-0.373	0.000	0.06	0.0	14.4	OK
1.008	25	63	27.607	0.507	0.000	0.50	0.0	8.0	SURCHARGED

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Summary Wizard of 240 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow (l/s)	
1.000	1	14	28.157	-0.083	0.000	0.46	0.0	14.1	OK
1.001	2	13	28.130	-0.186	0.000	0.36	0.0	35.5	OK
1.002	3	17	28.088	-0.111	0.000	0.69	0.0	67.8	OK
1.003	4	20	28.031	-0.050	0.000	0.74	0.0	71.5	OK
1.004	5	26	27.973	-0.006	0.000	0.74	0.0	71.3	OK
1.005	6	31	27.926	0.029	0.000	0.79	0.0	77.0	SURCHARGED
2.000	7	16	28.209	-0.091	0.000	0.66	0.0	21.9	OK
2.001	8	19	28.079	-0.114	0.000	0.60	0.0	41.6	OK
2.002	9	20	28.015	0.004	0.000	0.71	0.0	49.1	SURCHARGED
2.003	10	31	27.922	0.092	0.000	0.73	0.0	48.6	SURCHARGED
1.006	11	31	27.903	-0.120	0.000	0.46	0.0	125.6	OK
3.000	12	16	28.236	-0.064	0.000	0.63	0.0	6.9	OK
3.001	13	15	28.201	-0.098	0.000	0.61	0.0	16.3	OK
3.002	14	15	28.104	-0.147	0.000	0.52	0.0	27.8	OK
3.003	15	22	28.023	-0.130	0.000	0.61	0.0	38.6	OK
3.004	16	30	27.933	-0.019	0.000	0.71	0.0	37.4	OK
3.005	17	31	27.904	0.065	0.000	0.47	0.0	37.4	SURCHARGED
3.006	17	31	27.903	0.089	0.000	0.39	0.0	37.3	SURCHARGED
4.000	18	19	28.065	-0.115	0.000	0.49	0.0	27.1	OK
4.001	19	20	28.028	-0.112	0.000	0.49	0.0	47.6	OK
4.002	20	22	27.991	-0.036	0.000	0.82	0.0	79.2	OK
4.003	22	31	27.911	-0.001	0.000	0.63	0.0	77.9	OK
4.004	21	31	27.905	0.092	0.000	0.87	0.0	78.2	SURCHARGED
1.007	22	31	27.902	-0.079	0.000	0.97	0.0	241.1	OK
1.008	25	19	27.900	0.800	0.000	0.81	0.0	12.8	SURCHARGED

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Summary Wizard of 360 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF

Analysis Timestep Fine Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

PN	US/MH Name	Rank	Water	Level	Surch'd	Flooded	Volume	Flow /	O'flow	Pipe	Flow	Status
			(m)	(m)	(m³)	Cap.	(l/s)	(l/s)	(l/s)			
1.000	1	25	28.115	-0.125	0.000	0.34	0.0	10.6	OK			
1.001	2	29	28.083	-0.233	0.000	0.27	0.0	26.6	OK			
1.002	3	31	28.018	-0.181	0.000	0.53	0.0	52.0	OK			
1.003	4	34	27.953	-0.128	0.000	0.58	0.0	56.4	OK			
1.004	5	30	27.949	-0.030	0.000	0.58	0.0	55.8	OK			
1.005	6	29	27.946	0.049	0.000	0.61	0.0	59.7	SURCHARGED			
2.000	7	26	28.186	-0.114	0.000	0.49	0.0	16.2	OK			
2.001	8	32	28.034	-0.159	0.000	0.45	0.0	31.1	OK			
2.002	9	32	27.950	-0.061	0.000	0.55	0.0	38.0	OK			
2.003	10	29	27.946	0.116	0.000	0.57	0.0	37.5	SURCHARGED			
1.006	11	28	27.943	-0.080	0.000	0.35	0.0	96.7	OK			
3.000	12	26	28.222	-0.078	0.000	0.46	0.0	5.1	OK			
3.001	13	25	28.180	-0.119	0.000	0.45	0.0	12.1	OK			
3.002	14	29	28.079	-0.172	0.000	0.38	0.0	20.6	OK			
3.003	15	31	27.995	-0.158	0.000	0.46	0.0	28.8	OK			
3.004	16	29	27.946	-0.006	0.000	0.54	0.0	28.4	OK			
3.005	17	28	27.943	0.104	0.000	0.36	0.0	28.2	SURCHARGED			
3.006	17	28	27.943	0.129	0.000	0.30	0.0	28.4	SURCHARGED			
4.000	18	33	28.008	-0.172	0.000	0.37	0.0	20.3	OK			
4.001	19	36	27.951	-0.189	0.000	0.38	0.0	36.8	OK			
4.002	20	31	27.949	-0.077	0.000	0.64	0.0	61.7	OK			
4.003	22	29	27.945	0.033	0.000	0.49	0.0	61.0	SURCHARGED			
4.004	21	29	27.954	0.142	0.000	0.68	0.0	60.7	SURCHARGED			
1.007	22	28	27.941	-0.039	0.000	0.74	0.0	185.2	OK			
1.008	25	17	27.940	0.840	0.000	0.84	0.0	13.3	SURCHARGED			

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4 The Roundal

Wrexham Phase 2

Roddinglaw Road

Edinburgh EH12 9DB

Date Dec 12

Designed by IMR

File 121206 402_00197...

Checked by

Micro Drainage

Network W.12.6

Micro Drainage

Summary Wizard of 480 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0

DVD Status OFF

Analysis Timestep Fine

Inertia Status OFF

DTS Status ON

Profile(s)

Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

US/MH		Water		Flooded		Pipe		Status
PN	Name Rank	Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1 30 28.101	-0.139	0.000	0.28	0.0	8.5	OK	
1.001	2 34 28.064	-0.252	0.000	0.22	0.0	21.5	OK	
1.002	3 39 27.995	-0.204	0.000	0.43	0.0	42.0	OK	
1.003	4 32 27.972	-0.109	0.000	0.47	0.0	45.8	OK	
1.004	5 27 27.969	-0.010	0.000	0.47	0.0	45.7	OK	
1.005	6 26 27.966	0.069	0.000	0.51	0.0	49.4	SURCHARGED	
2.000	7 30 28.173	-0.127	0.000	0.39	0.0	13.1	OK	
2.001	8 36 28.018	-0.175	0.000	0.36	0.0	25.1	OK	
2.002	9 29 27.969	-0.042	0.000	0.45	0.0	30.9	OK	
2.003	10 26 27.966	0.136	0.000	0.46	0.0	30.7	SURCHARGED	
1.006	11 25 27.963	-0.060	0.000	0.29	0.0	79.9	OK	
3.000	12 30 28.213	-0.087	0.000	0.37	0.0	4.1	OK	
3.001	13 29 28.168	-0.131	0.000	0.36	0.0	9.7	OK	
3.002	14 34 28.065	-0.186	0.000	0.31	0.0	16.6	OK	
3.003	15 41 27.978	-0.175	0.000	0.37	0.0	23.3	OK	
3.004	16 26 27.966	0.014	0.000	0.44	0.0	23.2	SURCHARGED	
3.005	17 25 27.963	0.124	0.000	0.29	0.0	23.0	SURCHARGED	
3.006	17 25 27.963	0.149	0.000	0.24	0.0	22.9	SURCHARGED	
4.000	18 41 27.992	-0.188	0.000	0.30	0.0	16.4	OK	
4.001	19 32 27.971	-0.170	0.000	0.31	0.0	29.9	OK	
4.002	20 27 27.969	-0.058	0.000	0.52	0.0	50.5	OK	
4.003	22 26 27.965	0.053	0.000	0.41	0.0	50.3	SURCHARGED	
4.004	21 25 27.964	0.152	0.000	0.56	0.0	50.2	SURCHARGED	
1.007	22 25 27.962	-0.019	0.000	0.61	0.0	152.5	OK	
1.008	25 14 27.960	0.860	0.000	0.85	0.0	13.5	SURCHARGED	

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4 The Roundal Roddinglaw Road Edinburgh EH12 9DB		Wrexham Phase 2																																																																																																																																																																																																																																																						
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<table><tr><th colspan="2">US/MH</th><th colspan="2">Water</th><th colspan="2">Flooded</th><th colspan="2">Pipe</th><th></th></tr><tr><th>PN</th><th>Name Rank</th><th>Level (m)</th><th>Surch'ed Depth (m)</th><th>Volume (m³)</th><th>Flow / Cap.</th><th>O'flow (l/s)</th><th>Pipe Flow (l/s)</th><th>Status</th></tr><tr><td>1.000</td><td>1 38 28.092</td><td>-0.148</td><td>0.000</td><td>0.23</td><td>0.0</td><td>7.2</td><td>OK</td><td></td></tr><tr><td>1.001</td><td>2 39 28.053</td><td>-0.263</td><td>0.000</td><td>0.18</td><td>0.0</td><td>18.2</td><td>OK</td><td></td></tr><tr><td>1.002</td><td>3 44 27.985</td><td>-0.214</td><td>0.000</td><td>0.36</td><td>0.0</td><td>35.5</td><td>OK</td><td></td></tr><tr><td>1.003</td><td>4 29 27.982</td><td>-0.099</td><td>0.000</td><td>0.40</td><td>0.0</td><td>38.8</td><td>OK</td><td></td></tr><tr><td>1.004</td><td>5 25 27.979</td><td>0.000</td><td>0.000</td><td>0.40</td><td>0.0</td><td>38.8</td><td>OK</td><td></td></tr><tr><td>1.005</td><td>6 25 27.975</td><td>0.078</td><td>0.000</td><td>0.43</td><td>0.0</td><td>42.0</td><td>SURCHARGED</td><td></td></tr><tr><td>2.000</td><td>7 34 28.164</td><td>-0.136</td><td>0.000</td><td>0.33</td><td>0.0</td><td>11.1</td><td>OK</td><td></td></tr><tr><td>2.001</td><td>8 40 28.007</td><td>-0.187</td><td>0.000</td><td>0.31</td><td>0.0</td><td>21.3</td><td>OK</td><td></td></tr><tr><td>2.002</td><td>9 27 27.979</td><td>-0.033</td><td>0.000</td><td>0.38</td><td>0.0</td><td>26.1</td><td>OK</td><td></td></tr><tr><td>2.003</td><td>10 25 27.975</td><td>0.145</td><td>0.000</td><td>0.39</td><td>0.0</td><td>26.1</td><td>SURCHARGED</td><td></td></tr><tr><td>1.006</td><td>11 24 27.972</td><td>-0.051</td><td>0.000</td><td>0.25</td><td>0.0</td><td>68.1</td><td>OK</td><td></td></tr><tr><td>3.000</td><td>12 34 28.208</td><td>-0.092</td><td>0.000</td><td>0.32</td><td>0.0</td><td>3.5</td><td>OK</td><td></td></tr><tr><td>3.001</td><td>13 34 28.159</td><td>-0.140</td><td>0.000</td><td>0.31</td><td>0.0</td><td>8.2</td><td>OK</td><td></td></tr><tr><td>3.002</td><td>14 39 28.055</td><td>-0.196</td><td>0.000</td><td>0.26</td><td>0.0</td><td>14.1</td><td>OK</td><td></td></tr><tr><td>3.003</td><td>15 40 27.979</td><td>-0.174</td><td>0.000</td><td>0.31</td><td>0.0</td><td>19.7</td><td>OK</td><td></td></tr><tr><td>3.004</td><td>16 25 27.976</td><td>0.024</td><td>0.000</td><td>0.37</td><td>0.0</td><td>19.7</td><td>SURCHARGED</td><td></td></tr><tr><td>3.005</td><td>17 24 27.973</td><td>0.134</td><td>0.000</td><td>0.25</td><td>0.0</td><td>19.6</td><td>SURCHARGED</td><td></td></tr><tr><td>3.006</td><td>17 24 27.972</td><td>0.158</td><td>0.000</td><td>0.20</td><td>0.0</td><td>19.6</td><td>SURCHARGED</td><td></td></tr><tr><td>4.000</td><td>18 44 27.982</td><td>-0.198</td><td>0.000</td><td>0.25</td><td>0.0</td><td>13.9</td><td>OK</td><td></td></tr><tr><td>4.001</td><td>19 31 27.980</td><td>-0.161</td><td>0.000</td><td>0.26</td><td>0.0</td><td>25.3</td><td>OK</td><td></td></tr><tr><td>4.002</td><td>20 26 27.978</td><td>-0.049</td><td>0.000</td><td>0.44</td><td>0.0</td><td>42.7</td><td>OK</td><td></td></tr><tr><td>4.003</td><td>22 25 27.974</td><td>0.062</td><td>0.000</td><td>0.34</td><td>0.0</td><td>42.7</td><td>SURCHARGED</td><td></td></tr><tr><td>4.004</td><td>21 24 27.974</td><td>0.161</td><td>0.000</td><td>0.48</td><td>0.0</td><td>42.7</td><td>SURCHARGED</td><td></td></tr><tr><td>1.007</td><td>22 24 27.971</td><td>-0.010</td><td>0.000</td><td>0.52</td><td>0.0</td><td>130.2</td><td>OK</td><td></td></tr><tr><td>1.008</td><td>25 13 27.967</td><td>0.867</td><td>0.000</td><td>0.86</td><td>0.0</td><td>13.6</td><td>SURCHARGED</td><td></td></tr></table>						US/MH		Water		Flooded		Pipe			PN	Name Rank	Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status	1.000	1 38 28.092	-0.148	0.000	0.23	0.0	7.2	OK		1.001	2 39 28.053	-0.263	0.000	0.18	0.0	18.2	OK		1.002	3 44 27.985	-0.214	0.000	0.36	0.0	35.5	OK		1.003	4 29 27.982	-0.099	0.000	0.40	0.0	38.8	OK		1.004	5 25 27.979	0.000	0.000	0.40	0.0	38.8	OK		1.005	6 25 27.975	0.078	0.000	0.43	0.0	42.0	SURCHARGED		2.000	7 34 28.164	-0.136	0.000	0.33	0.0	11.1	OK		2.001	8 40 28.007	-0.187	0.000	0.31	0.0	21.3	OK		2.002	9 27 27.979	-0.033	0.000	0.38	0.0	26.1	OK		2.003	10 25 27.975	0.145	0.000	0.39	0.0	26.1	SURCHARGED		1.006	11 24 27.972	-0.051	0.000	0.25	0.0	68.1	OK		3.000	12 34 28.208	-0.092	0.000	0.32	0.0	3.5	OK		3.001	13 34 28.159	-0.140	0.000	0.31	0.0	8.2	OK		3.002	14 39 28.055	-0.196	0.000	0.26	0.0	14.1	OK		3.003	15 40 27.979	-0.174	0.000	0.31	0.0	19.7	OK		3.004	16 25 27.976	0.024	0.000	0.37	0.0	19.7	SURCHARGED		3.005	17 24 27.973	0.134	0.000	0.25	0.0	19.6	SURCHARGED		3.006	17 24 27.972	0.158	0.000	0.20	0.0	19.6	SURCHARGED		4.000	18 44 27.982	-0.198	0.000	0.25	0.0	13.9	OK		4.001	19 31 27.980	-0.161	0.000	0.26	0.0	25.3	OK		4.002	20 26 27.978	-0.049	0.000	0.44	0.0	42.7	OK		4.003	22 25 27.974	0.062	0.000	0.34	0.0	42.7	SURCHARGED		4.004	21 24 27.974	0.161	0.000	0.48	0.0	42.7	SURCHARGED		1.007	22 24 27.971	-0.010	0.000	0.52	0.0	130.2	OK		1.008	25 13 27.967	0.867	0.000	0.86	0.0	13.6	SURCHARGED	
US/MH		Water		Flooded		Pipe																																																																																																																																																																																																																																																		
PN	Name Rank	Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status																																																																																																																																																																																																																																																
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4 The Roundal Roddinglaw Road Edinburgh EH12 9DB		Wrexham Phase 2	
Date Dec 12		Designed by IMR	
File 121206 402_00197...		Checked by	
Micro Drainage		Network W.12.6	

Summary Wizard of 1440 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter	
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080	
Return Period(s) (years)	1, 2, 30, 100	
Climate Change (%)	30, 30, 30, 30	

PN	US/MH Name	Rank	Water	Surch'ded Depth (m)	Flooded	Flow / O'flow Cap.	Pipe	Flow (l/s)	Status
			Level (m)		Volume (m³)		Flow		
1.000	1	60	28.067	-0.173	0.000	0.12	0.0	3.7	OK
1.001	2	61	28.018	-0.298	0.000	0.10	0.0	9.4	OK
1.002	3	36	27.998	-0.201	0.000	0.19	0.0	18.3	OK
1.003	4	24	27.994	-0.087	0.000	0.21	0.0	19.9	OK
1.004	5	22	27.990	0.011	0.000	0.20	0.0	19.6	SURCHARGED
1.005	6	22	27.987	0.090	0.000	0.21	0.0	20.8	SURCHARGED
2.000	7	59	28.137	-0.163	0.000	0.17	0.0	5.7	OK
2.001	8	48	27.995	-0.198	0.000	0.16	0.0	11.0	OK
2.002	9	23	27.991	-0.020	0.000	0.19	0.0	13.5	OK
2.003	10	22	27.987	0.157	0.000	0.20	0.0	13.0	SURCHARGED
1.006	11	21	27.984	-0.039	0.000	0.12	0.0	32.8	OK
3.000	12	59	28.190	-0.110	0.000	0.16	0.0	1.8	OK
3.001	13	59	28.134	-0.165	0.000	0.16	0.0	4.3	OK
3.002	14	61	28.024	-0.227	0.000	0.13	0.0	7.2	OK
3.003	15	34	27.992	-0.161	0.000	0.16	0.0	10.1	OK
3.004	16	22	27.988	0.036	0.000	0.19	0.0	10.0	SURCHARGED
3.005	17	21	27.985	0.146	0.000	0.12	0.0	9.6	SURCHARGED
3.006	17	21	27.984	0.170	0.000	0.10	0.0	9.5	SURCHARGED
4.000	18	36	27.996	-0.184	0.000	0.13	0.0	7.2	OK
4.001	19	24	27.993	-0.148	0.000	0.13	0.0	13.0	OK
4.002	20	23	27.990	-0.036	0.000	0.22	0.0	21.7	OK
4.003	22	21	27.986	0.074	0.000	0.17	0.0	21.4	SURCHARGED
4.004	21	21	27.986	0.173	0.000	0.24	0.0	21.2	SURCHARGED
1.007	22	18	27.983	0.002	0.000	0.25	0.0	62.4	SURCHARGED
1.008	25	10	27.981	0.881	0.000	0.87	0.0	13.7	SURCHARGED

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Summary Wizard of 2880 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep		Fine Inertia Status OFF
DTS Status		ON

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow	
1.000	1	79	28.055	-0.185	0.000	0.07	0.0	2.3	OK
1.001	2	80	27.999	-0.317	0.000	0.06	0.0	5.7	OK
1.002	3	62	27.940	-0.259	0.000	0.11	0.0	11.1	OK
1.003	4	36	27.937	-0.144	0.000	0.13	0.0	12.1	OK
1.004	5	32	27.934	-0.045	0.000	0.12	0.0	12.0	OK
1.005	6	30	27.932	0.035	0.000	0.13	0.0	12.8	SURCHARGED
2.000	7	78	28.123	-0.177	0.000	0.10	0.0	3.5	OK
2.001	8	80	27.955	-0.238	0.000	0.10	0.0	6.7	OK
2.002	9	35	27.935	-0.076	0.000	0.12	0.0	8.2	OK
2.003	10	30	27.931	0.102	0.000	0.12	0.0	7.9	SURCHARGED
1.006	11	30	27.928	-0.095	0.000	0.07	0.0	20.1	OK
3.000	12	78	28.181	-0.119	0.000	0.10	0.0	1.1	OK
3.001	13	78	28.121	-0.178	0.000	0.10	0.0	2.6	OK
3.002	14	79	28.008	-0.243	0.000	0.08	0.0	4.4	OK
3.003	15	64	27.935	-0.218	0.000	0.10	0.0	6.2	OK
3.004	16	31	27.932	-0.020	0.000	0.12	0.0	6.1	OK
3.005	17	30	27.929	0.090	0.000	0.07	0.0	5.8	SURCHARGED
3.006	17	30	27.929	0.115	0.000	0.06	0.0	5.8	SURCHARGED
4.000	18	76	27.941	-0.239	0.000	0.08	0.0	4.3	OK
4.001	19	39	27.936	-0.204	0.000	0.08	0.0	7.9	OK
4.002	20	34	27.934	-0.092	0.000	0.14	0.0	13.3	OK
4.003	22	30	27.931	0.019	0.000	0.10	0.0	13.0	SURCHARGED
4.004	21	30	27.931	0.119	0.000	0.14	0.0	12.9	SURCHARGED
1.007	22	29	27.927	-0.053	0.000	0.15	0.0	38.2	OK
1.008	25	18	27.926	0.826	0.000	0.83	0.0	13.1	SURCHARGED

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Summary Wizard of 4320 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH	Water Level	Surch'd Depth	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	90 28.048	-0.192	0.000	0.05	0.0	1.7	OK
1.001	2	91 27.990	-0.326	0.000	0.04	0.0	4.2	OK
1.002	3	92 27.896	-0.303	0.000	0.08	0.0	8.1	OK
1.003	4	52 27.871	-0.210	0.000	0.09	0.0	8.9	OK
1.004	5	43 27.868	-0.111	0.000	0.09	0.0	8.8	OK
1.005	6	41 27.866	-0.031	0.000	0.10	0.0	9.4	OK
2.000	7	90 28.116	-0.184	0.000	0.08	0.0	2.5	OK
2.001	8	91 27.945	-0.248	0.000	0.07	0.0	4.9	OK
2.002	9	46 27.869	-0.142	0.000	0.09	0.0	6.0	OK
2.003	10	41 27.866	0.036	0.000	0.09	0.0	5.9	SURCHARGED
1.006	11	37 27.863	-0.160	0.000	0.05	0.0	14.9	OK
3.000	12	90 28.176	-0.124	0.000	0.07	0.0	0.8	OK
3.001	13	90 28.113	-0.186	0.000	0.07	0.0	1.9	OK
3.002	14	91 27.998	-0.253	0.000	0.06	0.0	3.2	OK
3.003	15	91 27.905	-0.248	0.000	0.07	0.0	4.5	OK
3.004	16	41 27.866	-0.086	0.000	0.08	0.0	4.5	OK
3.005	17	37 27.864	0.025	0.000	0.06	0.0	4.4	SURCHARGED
3.006	17	37 27.863	0.049	0.000	0.05	0.0	4.4	SURCHARGED
4.000	18	91 27.926	-0.254	0.000	0.06	0.0	3.2	OK
4.001	19	65 27.870	-0.271	0.000	0.06	0.0	5.8	OK
4.002	20	47 27.868	-0.158	0.000	0.10	0.0	9.8	OK
4.003	22	41 27.865	-0.047	0.000	0.08	0.0	9.6	OK
4.004	21	38 27.864	0.052	0.000	0.11	0.0	9.6	SURCHARGED
1.007	22	37 27.862	-0.119	0.000	0.11	0.0	28.5	OK
1.008	25	27 27.861	0.761	0.000	0.78	0.0	12.4	SURCHARGED

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Summary Wizard of 5760 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF

Analysis Timestep Fine Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720,
960, 1440, 2160, 2880, 4320, 5760, 7200,
8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow (l/s)	
1.000	1	97	28.045	-0.195	0.000	0.04	0.0	1.3	OK
1.001	2	97	27.986	-0.330	0.000	0.03	0.0	3.3	OK
1.002	3	98	27.887	-0.312	0.000	0.07	0.0	6.5	OK
1.003	4	78	27.810	-0.271	0.000	0.07	0.0	7.1	OK
1.004	5	57	27.806	-0.173	0.000	0.07	0.0	7.1	OK
1.005	6	53	27.804	-0.093	0.000	0.08	0.0	7.6	OK
2.000	7	97	28.111	-0.189	0.000	0.06	0.0	2.0	OK
2.001	8	97	27.939	-0.254	0.000	0.06	0.0	3.9	OK
2.002	9	72	27.807	-0.204	0.000	0.07	0.0	4.8	OK
2.003	10	51	27.804	-0.026	0.000	0.07	0.0	4.8	OK
1.006	11	47	27.801	-0.222	0.000	0.04	0.0	12.1	OK
3.000	12	97	28.173	-0.127	0.000	0.06	0.0	0.6	OK
3.001	13	97	28.108	-0.191	0.000	0.06	0.0	1.5	OK
3.002	14	97	27.993	-0.258	0.000	0.05	0.0	2.6	OK
3.003	15	98	27.899	-0.254	0.000	0.06	0.0	3.6	OK
3.004	16	53	27.804	-0.148	0.000	0.07	0.0	3.6	OK
3.005	17	48	27.802	-0.037	0.000	0.04	0.0	3.5	OK
3.006	17	47	27.801	-0.013	0.000	0.04	0.0	3.5	OK
4.000	18	97	27.921	-0.259	0.000	0.05	0.0	2.5	OK
4.001	19	96	27.823	-0.318	0.000	0.05	0.0	4.6	OK
4.002	20	63	27.806	-0.220	0.000	0.08	0.0	7.8	OK
4.003	22	49	27.803	-0.109	0.000	0.06	0.0	7.8	OK
4.004	21	50	27.803	-0.010	0.000	0.09	0.0	7.7	OK
1.007	22	47	27.800	-0.180	0.000	0.09	0.0	23.0	OK
1.008	25	33	27.799	0.699	0.000	0.73	0.0	11.6	SURCHARGED

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Summary Wizard of 7200 minute 100 year Summer I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DIS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status
			Level (m)		Volume (m³)			Flow (l/s)	
1.000	1	102	28.042	-0.198	0.000	0.04	0.0	1.1	OK
1.001	2	102	27.983	-0.333	0.000	0.03	0.0	2.8	OK
1.002	3	102	27.881	-0.318	0.000	0.06	0.0	5.5	OK
1.003	4	99	27.774	-0.307	0.000	0.06	0.0	6.0	OK
1.004	5	72	27.756	-0.223	0.000	0.06	0.0	6.0	OK
1.005	6	65	27.756	-0.141	0.000	0.07	0.0	6.4	OK
2.000	7	102	28.108	-0.192	0.000	0.05	0.0	1.7	OK
2.001	8	102	27.935	-0.258	0.000	0.05	0.0	3.3	OK
2.002	9	97	27.766	-0.245	0.000	0.06	0.0	4.0	OK
2.003	10	64	27.754	-0.075	0.000	0.06	0.0	4.0	OK
1.006	11	63	27.754	-0.269	0.000	0.04	0.0	10.2	OK
3.000	12	102	28.171	-0.129	0.000	0.05	0.0	0.5	OK
3.001	13	102	28.105	-0.194	0.000	0.05	0.0	1.3	OK
3.002	14	102	27.989	-0.262	0.000	0.04	0.0	2.2	OK
3.003	15	102	27.895	-0.258	0.000	0.05	0.0	3.0	OK
3.004	16	73	27.754	-0.198	0.000	0.06	0.0	3.0	OK
3.005	17	63	27.753	-0.086	0.000	0.04	0.0	3.0	OK
3.006	17	63	27.755	-0.059	0.000	0.03	0.0	3.0	OK
4.000	18	102	27.918	-0.262	0.000	0.04	0.0	2.1	OK
4.001	19	103	27.814	-0.327	0.000	0.04	0.0	3.9	OK
4.002	20	83	27.756	-0.270	0.000	0.07	0.0	6.6	OK
4.003	22	64	27.753	-0.159	0.000	0.05	0.0	6.6	OK
4.004	21	63	27.754	-0.058	0.000	0.07	0.0	6.5	OK
1.007	22	62	27.753	-0.228	0.000	0.08	0.0	19.6	OK
1.008	25	45	27.750	0.650	0.000	0.69	0.0	10.9	SURCHARGED

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Summary Wizard of 30 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	21	28.122	-0.118	0.000	0.42	0.0	12.9	OK
1.001	2	25	28.088	-0.228	0.000	0.29	0.0	28.3	OK
1.002	3	28	28.025	-0.174	0.000	0.55	0.0	54.1	OK
1.003	4	39	27.919	-0.162	0.000	0.60	0.0	58.0	OK
1.004	5	45	27.851	-0.128	0.000	0.57	0.0	55.2	OK
1.005	6	48	27.809	-0.088	0.000	0.60	0.0	57.9	OK
2.000	7	20	28.202	-0.098	0.000	0.59	0.0	19.5	OK
2.001	8	28	28.044	-0.149	0.000	0.50	0.0	34.5	OK
2.002	9	41	27.880	-0.131	0.000	0.60	0.0	41.5	OK
2.003	10	52	27.803	-0.026	0.000	0.56	0.0	37.1	OK
1.006	11	59	27.767	-0.256	0.000	0.33	0.0	91.6	OK
3.000	12	20	28.232	-0.068	0.000	0.57	0.0	6.3	OK
3.001	13	21	28.186	-0.113	0.000	0.49	0.0	13.1	OK
3.002	14	25	28.084	-0.167	0.000	0.40	0.0	21.6	OK
3.003	15	29	27.999	-0.154	0.000	0.47	0.0	29.5	OK
3.004	16	47	27.825	-0.127	0.000	0.53	0.0	27.9	OK
3.005	17	58	27.777	-0.062	0.000	0.36	0.0	28.8	OK
3.006	17	59	27.770	-0.044	0.000	0.30	0.0	28.8	OK
4.000	18	28	28.023	-0.157	0.000	0.45	0.0	24.5	OK
4.001	19	38	27.945	-0.196	0.000	0.41	0.0	39.9	OK
4.002	20	41	27.880	-0.147	0.000	0.68	0.0	65.6	OK
4.003	22	54	27.797	-0.116	0.000	0.49	0.0	60.6	OK
4.004	21	57	27.787	-0.025	0.000	0.67	0.0	60.1	OK
1.007	22	61	27.754	-0.227	0.000	0.70	0.0	175.8	OK
1.008	25	143	27.167	0.067	0.000	0.24	0.0	3.8	SURCHARGED

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Summary Wizard of 60 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status

OFF

Analysis Timestep

Fine

Inertia Status

OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status	
			Level (m)	Surch'ed Depth (m)			Volume (m³)		Flow (l/s)
1.000	1	31	28.100	-0.140	0.000	0.28	0.0	8.5	OK
1.001	2	36	28.062	-0.254	0.000	0.21	0.0	20.7	OK
1.002	3	41	27.991	-0.208	0.000	0.41	0.0	40.0	OK
1.003	4	48	27.883	-0.198	0.000	0.45	0.0	43.6	OK
1.004	5	59	27.803	-0.176	0.000	0.44	0.0	42.8	OK
1.005	6	66	27.752	-0.145	0.000	0.47	0.0	45.9	OK
2.000	7	29	28.173	-0.127	0.000	0.40	0.0	13.1	OK
2.001	8	37	28.016	-0.177	0.000	0.35	0.0	24.5	OK
2.002	9	51	27.849	-0.163	0.000	0.43	0.0	29.9	OK
2.003	10	66	27.744	-0.085	0.000	0.43	0.0	28.6	OK
1.006	11	69	27.714	-0.309	0.000	0.27	0.0	73.5	OK
3.000	12	29	28.213	-0.087	0.000	0.38	0.0	4.1	OK
3.001	13	30	28.166	-0.133	0.000	0.35	0.0	9.4	OK
3.002	14	35	28.062	-0.189	0.000	0.29	0.0	15.9	OK
3.003	15	42	27.976	-0.177	0.000	0.35	0.0	22.1	OK
3.004	16	61	27.787	-0.165	0.000	0.41	0.0	21.7	OK
3.005	17	68	27.722	-0.117	0.000	0.27	0.0	21.7	OK
3.006	17	68	27.716	-0.098	0.000	0.23	0.0	21.8	OK
4.000	18	40	27.992	-0.188	0.000	0.30	0.0	16.4	OK
4.001	19	44	27.911	-0.230	0.000	0.30	0.0	28.9	OK
4.002	20	53	27.840	-0.187	0.000	0.50	0.0	48.1	OK
4.003	22	67	27.738	-0.174	0.000	0.38	0.0	46.8	OK
4.004	21	68	27.730	-0.082	0.000	0.52	0.0	46.5	OK
1.007	22	70	27.703	-0.278	0.000	0.56	0.0	140.7	OK
1.008	25	140	27.226	0.126	0.000	0.28	0.0	4.3	SURCHARGED

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Summary Wizard of 120 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level Depth (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	49	28.080	-0.160	0.000	0.18	0.0	5.5	OK
1.001	2	50	28.036	-0.280	0.000	0.14	0.0	13.8	OK
1.002	3	54	27.958	-0.241	0.000	0.27	0.0	26.8	OK
1.003	4	63	27.847	-0.234	0.000	0.30	0.0	29.2	OK
1.004	5	71	27.756	-0.223	0.000	0.30	0.0	29.3	OK
1.005	6	76	27.696	-0.201	0.000	0.33	0.0	31.6	OK
2.000	7	45	28.152	-0.148	0.000	0.26	0.0	8.5	OK
2.001	8	53	27.991	-0.202	0.000	0.23	0.0	16.2	OK
2.002	9	63	27.821	-0.191	0.000	0.29	0.0	19.8	OK
2.003	10	78	27.676	-0.153	0.000	0.30	0.0	19.5	OK
1.006	11	80	27.653	-0.370	0.000	0.19	0.0	51.1	OK
3.000	12	45	28.200	-0.100	0.000	0.24	0.0	2.7	OK
3.001	13	45	28.148	-0.151	0.000	0.23	0.0	6.3	OK
3.002	14	50	28.041	-0.210	0.000	0.20	0.0	10.7	OK
3.003	15	54	27.952	-0.201	0.000	0.23	0.0	14.8	OK
3.004	16	71	27.760	-0.192	0.000	0.28	0.0	14.9	OK
3.005	17	80	27.653	-0.186	0.000	0.19	0.0	14.8	OK
3.006	17	80	27.649	-0.165	0.000	0.15	0.0	14.7	OK
4.000	18	54	27.969	-0.211	0.000	0.19	0.0	10.6	OK
4.001	19	57	27.880	-0.260	0.000	0.20	0.0	19.2	OK
4.002	20	67	27.801	-0.225	0.000	0.33	0.0	32.2	OK
4.003	22	80	27.669	-0.244	0.000	0.26	0.0	32.0	OK
4.004	21	80	27.659	-0.153	0.000	0.36	0.0	32.0	OK
1.007	22	81	27.641	-0.340	0.000	0.39	0.0	97.8	OK
1.008	25	129	27.291	0.191	0.000	0.31	0.0	4.9	SURCHARGED

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4 The Roundal

Wrexham Phase 2

Roddinglaw Road

Edinburgh EH12 9DB



Date Dec 12

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Summary Wizard of 180 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF

Analysis Timestep Fine Inertia Status OFF

DIS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Flow (l/s)	Status
			Level (m)		Volume (m³)			Flow (l/s)		
1.000	1	57	28.071	-0.169	0.000	0.14	0.0	4.3	OK	
1.001	2	58	28.024	-0.292	0.000	0.11	0.0	10.8	OK	
1.002	3	61	27.941	-0.258	0.000	0.21	0.0	21.1	OK	
1.003	4	69	27.829	-0.252	0.000	0.24	0.0	23.0	OK	
1.004	5	79	27.734	-0.245	0.000	0.24	0.0	22.9	OK	
1.005	6	85	27.670	-0.227	0.000	0.25	0.0	24.8	OK	
2.000	7	55	28.143	-0.157	0.000	0.20	0.0	6.6	OK	
2.001	8	60	27.979	-0.214	0.000	0.18	0.0	12.6	OK	
2.002	9	71	27.807	-0.204	0.000	0.22	0.0	15.5	OK	
2.003	10	85	27.650	-0.179	0.000	0.23	0.0	15.5	OK	
1.006	11	88	27.621	-0.402	0.000	0.15	0.0	40.1	OK	
3.000	12	55	28.194	-0.106	0.000	0.19	0.0	2.1	OK	
3.001	13	55	28.139	-0.160	0.000	0.18	0.0	4.9	OK	
3.002	14	58	28.029	-0.222	0.000	0.15	0.0	8.3	OK	
3.003	15	61	27.940	-0.213	0.000	0.18	0.0	11.7	OK	
3.004	16	77	27.747	-0.205	0.000	0.22	0.0	11.6	OK	
3.005	17	88	27.622	-0.217	0.000	0.15	0.0	11.6	OK	
3.006	17	88	27.615	-0.199	0.000	0.12	0.0	11.6	OK	
4.000	18	61	27.957	-0.223	0.000	0.15	0.0	8.3	OK	
4.001	19	68	27.864	-0.277	0.000	0.16	0.0	15.0	OK	
4.002	20	75	27.781	-0.245	0.000	0.26	0.0	25.4	OK	
4.003	22	85	27.652	-0.261	0.000	0.20	0.0	25.4	OK	
4.004	21	88	27.628	-0.184	0.000	0.28	0.0	25.3	OK	
1.007	22	89	27.608	-0.373	0.000	0.31	0.0	77.0	OK	
1.008	25	121	27.330	0.230	0.000	0.33	0.0	5.2	SURCHARGED	

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Summary Wizard of 240 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter	
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080	
Return Period(s) (years)	1, 2, 30, 100	
Climate Change (%)	30, 30, 30, 30	

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m ³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	64	28.066	-0.174	0.000	0.12	0.0	3.6	OK
1.001	2	65	28.017	-0.299	0.000	0.09	0.0	9.0	OK
1.002	3	68	27.931	-0.268	0.000	0.18	0.0	17.6	OK
1.003	4	73	27.819	-0.262	0.000	0.20	0.0	19.2	OK
1.004	5	82	27.721	-0.258	0.000	0.20	0.0	19.2	OK
1.005	6	88	27.653	-0.244	0.000	0.21	0.0	20.8	OK
2.000	7	63	28.136	-0.164	0.000	0.17	0.0	5.5	OK
2.001	8	66	27.971	-0.222	0.000	0.15	0.0	10.5	OK
2.002	9	77	27.799	-0.213	0.000	0.19	0.0	12.9	OK
2.003	10	90	27.634	-0.195	0.000	0.19	0.0	12.9	OK
1.006	11	92	27.601	-0.422	0.000	0.12	0.0	33.6	OK
3.000	12	63	28.189	-0.111	0.000	0.16	0.0	1.7	OK
3.001	13	63	28.132	-0.167	0.000	0.15	0.0	4.1	OK
3.002	14	65	28.022	-0.229	0.000	0.13	0.0	7.0	OK
3.003	15	68	27.931	-0.222	0.000	0.15	0.0	9.7	OK
3.004	16	81	27.738	-0.214	0.000	0.18	0.0	9.7	OK
3.005	17	92	27.609	-0.231	0.000	0.12	0.0	9.7	OK
3.006	17	93	27.592	-0.222	0.000	0.10	0.0	9.7	OK
4.000	18	67	27.950	-0.230	0.000	0.13	0.0	6.9	OK
4.001	19	72	27.855	-0.286	0.000	0.13	0.0	12.5	OK
4.002	20	78	27.770	-0.257	0.000	0.22	0.0	21.1	OK
4.003	22	89	27.641	-0.271	0.000	0.17	0.0	21.1	OK
4.004	21	92	27.607	-0.205	0.000	0.24	0.0	21.1	OK
1.007	22	93	27.587	-0.394	0.000	0.26	0.0	64.4	OK
1.008	25	115	27.358	0.258	0.000	0.34	0.0	5.4	SURCHARGED

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Summary Wizard of 360 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	72	28.060	-0.180	0.000	0.09	0.0	2.7	OK
1.001	2	73	28.006	-0.310	0.000	0.07	0.0	6.9	OK
1.002	3	75	27.916	-0.283	0.000	0.14	0.0	13.5	OK
1.003	4	82	27.803	-0.278	0.000	0.15	0.0	14.7	OK
1.004	5	89	27.704	-0.275	0.000	0.15	0.0	14.7	OK
1.005	6	95	27.634	-0.263	0.000	0.16	0.0	15.9	OK
2.000	7	72	28.128	-0.172	0.000	0.13	0.0	4.2	OK
2.001	8	74	27.961	-0.232	0.000	0.12	0.0	8.1	OK
2.002	9	83	27.787	-0.225	0.000	0.14	0.0	9.9	OK
2.003	10	96	27.617	-0.213	0.000	0.15	0.0	9.9	OK
1.006	11	100	27.576	-0.447	0.000	0.09	0.0	25.8	OK
3.000	12	72	28.184	-0.116	0.000	0.12	0.0	1.3	OK
3.001	13	72	28.125	-0.174	0.000	0.12	0.0	3.1	OK
3.002	14	73	28.014	-0.237	0.000	0.10	0.0	5.3	OK
3.003	15	75	27.921	-0.232	0.000	0.12	0.0	7.5	OK
3.004	16	87	27.727	-0.225	0.000	0.14	0.0	7.5	OK
3.005	17	97	27.601	-0.238	0.000	0.09	0.0	7.5	OK
3.006	17	100	27.567	-0.247	0.000	0.08	0.0	7.5	OK
4.000	18	74	27.942	-0.238	0.000	0.10	0.0	5.3	OK
4.001	19	79	27.845	-0.296	0.000	0.10	0.0	9.6	OK
4.002	20	85	27.754	-0.272	0.000	0.17	0.0	16.2	OK
4.003	22	96	27.627	-0.285	0.000	0.13	0.0	16.2	OK
4.004	21	99	27.582	-0.230	0.000	0.18	0.0	16.2	OK
1.007	22	100	27.562	-0.419	0.000	0.20	0.0	49.5	OK
1.008	25	105	27.392	0.292	0.000	0.36	0.0	5.6	SURCHARGED

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Summary Wizard of 480 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep		Fine Inertia Status	OFF
DTS Status		ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m ³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	80	28.055	-0.185	0.000	0.07	0.0	2.3	OK
1.001	2	81	27.999	-0.317	0.000	0.06	0.0	5.7	OK
1.002	3	81	27.908	-0.291	0.000	0.11	0.0	11.1	OK
1.003	4	89	27.794	-0.287	0.000	0.13	0.0	12.2	OK
1.004	5	95	27.693	-0.286	0.000	0.13	0.0	12.2	OK
1.005	6	102	27.620	-0.277	0.000	0.14	0.0	13.2	OK
2.000	7	79	28.123	-0.177	0.000	0.10	0.0	3.5	OK
2.001	8	81	27.955	-0.238	0.000	0.10	0.0	6.7	OK
2.002	9	89	27.780	-0.232	0.000	0.12	0.0	8.2	OK
2.003	10	103	27.605	-0.225	0.000	0.12	0.0	8.2	OK
1.006	11	105	27.559	-0.464	0.000	0.08	0.0	21.4	OK
3.000	12	79	28.181	-0.119	0.000	0.10	0.0	1.1	OK
3.001	13	79	28.121	-0.178	0.000	0.10	0.0	2.6	OK
3.002	14	80	28.008	-0.243	0.000	0.08	0.0	4.4	OK
3.003	15	81	27.915	-0.238	0.000	0.10	0.0	6.2	OK
3.004	16	94	27.720	-0.232	0.000	0.12	0.0	6.2	OK
3.005	17	104	27.594	-0.245	0.000	0.08	0.0	6.2	OK
3.006	17	106	27.549	-0.265	0.000	0.06	0.0	6.2	OK
4.000	18	81	27.936	-0.244	0.000	0.08	0.0	4.3	OK
4.001	19	85	27.837	-0.304	0.000	0.08	0.0	7.9	OK
4.002	20	92	27.744	-0.283	0.000	0.14	0.0	13.4	OK
4.003	22	102	27.619	-0.293	0.000	0.11	0.0	13.4	OK
4.004	21	105	27.565	-0.247	0.000	0.15	0.0	13.4	OK
1.007	22	106	27.543	-0.438	0.000	0.16	0.0	40.9	OK
1.008	25	98	27.410	0.310	0.000	0.36	0.0	5.8	SURCHARGED

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Summary Wizard of 600 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status

OFF

Analysis Timestep

Fine

Inertia Status

OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

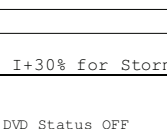
1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded		Pipe		Status	
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)		Flow
1.000	1	84	28.052	-0.188	0.000	0.06	0.0	1.9	OK
1.001	2	85	27.994	-0.322	0.000	0.05	0.0	4.9	OK
1.002	3	86	27.902	-0.297	0.000	0.10	0.0	9.6	OK
1.003	4	91	27.788	-0.293	0.000	0.11	0.0	10.5	OK
1.004	5	98	27.687	-0.292	0.000	0.11	0.0	10.5	OK
1.005	6	105	27.612	-0.285	0.000	0.12	0.0	11.4	OK
2.000	7	84	28.120	-0.180	0.000	0.09	0.0	3.0	OK
2.001	8	85	27.951	-0.243	0.000	0.08	0.0	5.7	OK
2.002	9	91	27.775	-0.236	0.000	0.10	0.0	7.1	OK
2.003	10	106	27.598	-0.232	0.000	0.11	0.0	7.1	OK
1.006	11	108	27.547	-0.476	0.000	0.07	0.0	18.4	OK
3.000	12	84	28.179	-0.121	0.000	0.09	0.0	0.9	OK
3.001	13	84	28.117	-0.182	0.000	0.08	0.0	2.2	OK
3.002	14	85	28.003	-0.248	0.000	0.07	0.0	3.8	OK
3.003	15	85	27.911	-0.242	0.000	0.08	0.0	5.3	OK
3.004	16	97	27.715	-0.237	0.000	0.10	0.0	5.3	OK
3.005	17	106	27.590	-0.250	0.000	0.07	0.0	5.3	OK
3.006	17	109	27.537	-0.277	0.000	0.06	0.0	5.3	OK
4.000	18	85	27.931	-0.249	0.000	0.07	0.0	3.7	OK
4.001	19	88	27.831	-0.310	0.000	0.07	0.0	6.8	OK
4.002	20	95	27.737	-0.289	0.000	0.12	0.0	11.5	OK
4.003	22	104	27.614	-0.298	0.000	0.09	0.0	11.5	OK
4.004	21	107	27.554	-0.258	0.000	0.13	0.0	11.5	OK
1.007	22	110	27.530	-0.451	0.000	0.14	0.0	35.2	OK
1.008	25	95	27.420	0.320	0.000	0.37	0.0	5.8	SURCHARGED

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Micro Drainage		Network W.12.6	

Summary Wizard of 720 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep		Fine Inertia Status	OFF
DTS Status		ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m ³)		(l/s)	Flow (l/s)	
1.000	1	88	28.049	-0.191	0.000	0.06	0.0	1.7	OK
1.001	2	89	27.991	-0.325	0.000	0.04	0.0	4.3	OK
1.002	3	90	27.898	-0.301	0.000	0.09	0.0	8.5	OK
1.003	4	95	27.783	-0.298	0.000	0.10	0.0	9.3	OK
1.004	5	103	27.682	-0.297	0.000	0.10	0.0	9.3	OK
1.005	6	108	27.606	-0.291	0.000	0.10	0.0	10.0	OK
2.000	7	88	28.117	-0.183	0.000	0.08	0.0	2.6	OK
2.001	8	89	27.946	-0.247	0.000	0.07	0.0	5.1	OK
2.002	9	95	27.772	-0.240	0.000	0.09	0.0	6.2	OK
2.003	10	109	27.593	-0.236	0.000	0.09	0.0	6.2	OK
1.006	11	112	27.539	-0.484	0.000	0.06	0.0	16.3	OK
3.000	12	88	28.177	-0.123	0.000	0.08	0.0	0.8	OK
3.001	13	88	28.114	-0.185	0.000	0.07	0.0	2.0	OK
3.002	14	89	27.999	-0.252	0.000	0.06	0.0	3.4	OK
3.003	15	89	27.907	-0.246	0.000	0.07	0.0	4.7	OK
3.004	16	100	27.712	-0.240	0.000	0.09	0.0	4.7	OK
3.005	17	109	27.586	-0.253	0.000	0.06	0.0	4.7	OK
3.006	17	114	27.529	-0.285	0.000	0.05	0.0	4.7	OK
4.000	18	89	27.927	-0.253	0.000	0.06	0.0	3.3	OK
4.001	19	92	27.826	-0.314	0.000	0.06	0.0	6.0	OK
4.002	20	98	27.732	-0.294	0.000	0.11	0.0	10.2	OK
4.003	22	108	27.609	-0.303	0.000	0.08	0.0	10.2	OK
4.004	21	111	27.546	-0.267	0.000	0.11	0.0	10.2	OK
1.007	22	114	27.521	-0.460	0.000	0.12	0.0	31.2	OK
1.008	25	94	27.428	0.328	0.000	0.37	0.0	5.9	SURCHARGED

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Wrexham Phase 2

Roddinglaw Road

Edinburgh EH12 9DB



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Network W.12.6

Summary Wizard of 960 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF

Analysis Timestep Fine Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap. (l/s)	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow	
1.000	1	94	28.046	-0.194	0.000	0.05	0.0	1.4	OK
1.001	2	94	27.987	-0.329	0.000	0.04	0.0	3.6	OK
1.002	3	95	27.889	-0.310	0.000	0.07	0.0	7.0	OK
1.003	4	98	27.776	-0.305	0.000	0.08	0.0	7.6	OK
1.004	5	107	27.674	-0.305	0.000	0.08	0.0	7.6	OK
1.005	6	112	27.598	-0.299	0.000	0.09	0.0	8.3	OK
2.000	7	94	28.112	-0.188	0.000	0.07	0.0	2.2	OK
2.001	8	94	27.941	-0.253	0.000	0.06	0.0	4.2	OK
2.002	9	99	27.765	-0.246	0.000	0.07	0.0	5.1	OK
2.003	10	113	27.586	-0.244	0.000	0.08	0.0	5.1	OK
1.006	11	116	27.526	-0.497	0.000	0.05	0.0	13.4	OK
3.000	12	94	28.174	-0.126	0.000	0.06	0.0	0.7	OK
3.001	13	94	28.110	-0.189	0.000	0.06	0.0	1.6	OK
3.002	14	94	27.994	-0.257	0.000	0.05	0.0	2.8	OK
3.003	15	95	27.901	-0.252	0.000	0.06	0.0	3.9	OK
3.004	16	103	27.705	-0.247	0.000	0.07	0.0	3.9	OK
3.005	17	113	27.581	-0.258	0.000	0.05	0.0	3.9	OK
3.006	17	116	27.518	-0.296	0.000	0.04	0.0	3.9	OK
4.000	18	94	27.923	-0.257	0.000	0.05	0.0	2.7	OK
4.001	19	98	27.820	-0.321	0.000	0.05	0.0	5.0	OK
4.002	20	102	27.726	-0.301	0.000	0.09	0.0	8.4	OK
4.003	22	111	27.601	-0.311	0.000	0.07	0.0	8.4	OK
4.004	21	115	27.534	-0.278	0.000	0.09	0.0	8.4	OK
1.007	22	116	27.509	-0.472	0.000	0.10	0.0	25.7	OK
1.008	25	91	27.438	0.338	0.000	0.38	0.0	5.9	SURCHARGED

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Summary Wizard of 5760 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m ³)		(l/s)	Flow (l/s)	
1.000	1	137	28.030	-0.210	0.000	0.01	0.0	0.4	OK
1.001	2	137	27.961	-0.355	0.000	0.01	0.0	1.1	OK
1.002	3	137	27.862	-0.337	0.000	0.02	0.0	2.1	OK
1.003	4	137	27.745	-0.336	0.000	0.02	0.0	2.3	OK
1.004	5	137	27.643	-0.336	0.000	0.02	0.0	2.3	OK
1.005	6	137	27.562	-0.335	0.000	0.03	0.0	2.5	OK
2.000	7	137	28.096	-0.204	0.000	0.02	0.0	0.7	OK
2.001	8	137	27.919	-0.274	0.000	0.02	0.0	1.3	OK
2.002	9	137	27.742	-0.269	0.000	0.02	0.0	1.6	OK
2.003	10	137	27.561	-0.269	0.000	0.02	0.0	1.6	OK
1.006	11	137	27.474	-0.549	0.000	0.01	0.0	4.1	OK
3.000	12	137	28.163	-0.137	0.000	0.02	0.0	0.2	OK
3.001	13	137	28.094	-0.205	0.000	0.02	0.0	0.5	OK
3.002	14	137	27.973	-0.278	0.000	0.02	0.0	0.8	OK
3.003	15	137	27.879	-0.274	0.000	0.02	0.0	1.2	OK
3.004	16	137	27.682	-0.270	0.000	0.02	0.0	1.2	OK
3.005	17	137	27.560	-0.279	0.000	0.01	0.0	1.2	OK
3.006	17	137	27.473	-0.341	0.000	0.01	0.0	1.2	OK
4.000	18	137	27.901	-0.279	0.000	0.02	0.0	0.8	OK
4.001	19	137	27.793	-0.347	0.000	0.02	0.0	1.5	OK
4.002	20	137	27.692	-0.335	0.000	0.03	0.0	2.6	OK
4.003	22	137	27.574	-0.338	0.000	0.02	0.0	2.6	OK
4.004	21	137	27.485	-0.328	0.000	0.03	0.0	2.6	OK
1.007	22	137	27.450	-0.531	0.000	0.03	0.0	7.8	OK
1.008	25	123	27.328	0.228	0.000	0.33	0.0	5.2	SURCHARGED

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Wrexham Phase 2

Roddinglaw Road

Edinburgh EH12 9DB



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Summary Wizard of 7200 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF

Analysis Timestep Fine Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status
			Level (m)	Surch'ed Depth (m)			Volume (m³)	
1.000	1	141	28.028	-0.212	0.000	0.01	0.4	OK
1.001	2	141	27.958	-0.358	0.000	0.01	0.0	OK
1.002	3	141	27.857	-0.342	0.000	0.02	0.0	OK
1.003	4	141	27.743	-0.338	0.000	0.02	0.0	OK
1.004	5	141	27.641	-0.338	0.000	0.02	0.0	OK
1.005	6	141	27.560	-0.337	0.000	0.02	0.0	OK
2.000	7	141	28.093	-0.207	0.000	0.02	0.0	OK
2.001	8	141	27.916	-0.278	0.000	0.02	0.0	OK
2.002	9	141	27.739	-0.272	0.000	0.02	0.0	OK
2.003	10	141	27.558	-0.271	0.000	0.02	0.0	OK
1.006	11	141	27.469	-0.554	0.000	0.01	0.0	OK
3.000	12	141	28.162	-0.138	0.000	0.02	0.0	OK
3.001	13	141	28.091	-0.208	0.000	0.02	0.0	OK
3.002	14	141	27.970	-0.281	0.000	0.01	0.0	OK
3.003	15	141	27.876	-0.277	0.000	0.02	0.0	OK
3.004	16	141	27.679	-0.273	0.000	0.02	0.0	OK
3.005	17	141	27.557	-0.282	0.000	0.01	0.0	OK
3.006	17	141	27.468	-0.346	0.000	0.01	0.0	OK
4.000	18	141	27.898	-0.282	0.000	0.01	0.0	OK
4.001	19	141	27.790	-0.351	0.000	0.01	0.0	OK
4.002	20	141	27.690	-0.337	0.000	0.02	0.0	OK
4.003	22	141	27.569	-0.343	0.000	0.02	0.0	OK
4.004	21	141	27.481	-0.331	0.000	0.02	0.0	OK
1.007	22	141	27.446	-0.535	0.000	0.03	0.0	OK
1.008	25	130	27.290	0.190	0.000	0.31	0.0	SURCHARGED

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Summary Wizard of 8640 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	143	28.026	-0.214	0.000	0.01	0.0	0.3	OK
1.001	2	143	27.956	-0.360	0.000	0.01	0.0	0.8	OK
1.002	3	143	27.853	-0.346	0.000	0.02	0.0	1.6	OK
1.003	4	143	27.738	-0.343	0.000	0.02	0.0	1.8	OK
1.004	5	143	27.636	-0.343	0.000	0.02	0.0	1.8	OK
1.005	6	143	27.557	-0.340	0.000	0.02	0.0	1.9	OK
2.000	7	143	28.091	-0.209	0.000	0.02	0.0	0.5	OK
2.001	8	143	27.913	-0.280	0.000	0.01	0.0	1.0	OK
2.002	9	143	27.736	-0.276	0.000	0.02	0.0	1.2	OK
2.003	10	143	27.555	-0.275	0.000	0.02	0.0	1.2	OK
1.006	11	143	27.465	-0.558	0.000	0.01	0.0	3.1	OK
3.000	12	143	28.160	-0.140	0.000	0.01	0.0	0.2	OK
3.001	13	143	28.089	-0.210	0.000	0.01	0.0	0.4	OK
3.002	14	143	27.968	-0.283	0.000	0.01	0.0	0.6	OK
3.003	15	143	27.873	-0.280	0.000	0.01	0.0	0.9	OK
3.004	16	143	27.676	-0.276	0.000	0.02	0.0	0.9	OK
3.005	17	143	27.555	-0.284	0.000	0.01	0.0	0.9	OK
3.006	17	143	27.465	-0.349	0.000	0.01	0.0	0.9	OK
4.000	18	143	27.896	-0.284	0.000	0.01	0.0	0.6	OK
4.001	19	143	27.787	-0.354	0.000	0.01	0.0	1.2	OK
4.002	20	143	27.687	-0.339	0.000	0.02	0.0	1.9	OK
4.003	22	143	27.565	-0.347	0.000	0.02	0.0	1.9	OK
4.004	21	143	27.479	-0.333	0.000	0.02	0.0	1.9	OK
1.007	22	143	27.443	-0.538	0.000	0.02	0.0	5.9	OK
1.008	25	136	27.255	0.155	0.000	0.29	0.0	4.6	SURCHARGED

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Summary Wizard of 10080 minute 1 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status
			Level (m)		Volume (m³)			Flow (l/s)	
1.000	1	144	28.025	-0.215	0.000	0.01	0.0	0.3	OK
1.001	2	144	27.954	-0.362	0.000	0.01	0.0	0.7	OK
1.002	3	144	27.850	-0.349	0.000	0.01	0.0	1.5	OK
1.003	4	144	27.735	-0.346	0.000	0.02	0.0	1.6	OK
1.004	5	144	27.633	-0.346	0.000	0.02	0.0	1.6	OK
1.005	6	144	27.553	-0.344	0.000	0.02	0.0	1.7	OK
2.000	7	144	28.090	-0.210	0.000	0.01	0.0	0.5	OK
2.001	8	144	27.911	-0.282	0.000	0.01	0.0	0.9	OK
2.002	9	144	27.733	-0.278	0.000	0.02	0.0	1.1	OK
2.003	10	144	27.552	-0.277	0.000	0.02	0.0	1.1	OK
1.006	11	144	27.461	-0.562	0.000	0.01	0.0	2.8	OK
3.000	12	144	28.159	-0.141	0.000	0.01	0.0	0.1	OK
3.001	13	144	28.087	-0.212	0.000	0.01	0.0	0.3	OK
3.002	14	144	27.966	-0.285	0.000	0.01	0.0	0.6	OK
3.003	15	144	27.871	-0.282	0.000	0.01	0.0	0.8	OK
3.004	16	144	27.674	-0.278	0.000	0.02	0.0	0.8	OK
3.005	17	144	27.554	-0.286	0.000	0.01	0.0	0.8	OK
3.006	17	144	27.463	-0.351	0.000	0.01	0.0	0.8	OK
4.000	18	144	27.895	-0.285	0.000	0.01	0.0	0.6	OK
4.001	19	144	27.785	-0.356	0.000	0.01	0.0	1.0	OK
4.002	20	144	27.684	-0.343	0.000	0.02	0.0	1.7	OK
4.003	22	144	27.562	-0.350	0.000	0.01	0.0	1.7	OK
4.004	21	144	27.477	-0.335	0.000	0.02	0.0	1.7	OK
1.007	22	144	27.441	-0.540	0.000	0.02	0.0	5.3	OK
1.008	25	139	27.226	0.126	0.000	0.28	0.0	4.4	SURCHARGED

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Summary Wizard of 30 minute 2 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep		Fine Inertia Status	OFF
DTS Status		ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	15	28.144	-0.096	0.000	0.54	0.0	16.6	OK
1.001	2	15	28.116	-0.200	0.000	0.37	0.0	36.4	OK
1.002	3	22	28.060	-0.139	0.000	0.71	0.0	69.6	OK
1.003	4	30	27.980	-0.101	0.000	0.75	0.0	72.3	OK
1.004	5	34	27.932	-0.047	0.000	0.70	0.0	67.8	OK
1.005	6	35	27.888	-0.009	0.000	0.74	0.0	71.7	OK
2.000	7	14	28.225	-0.075	0.000	0.76	0.0	25.2	OK
2.001	8	20	28.070	-0.124	0.000	0.64	0.0	44.5	OK
2.002	9	33	27.950	-0.062	0.000	0.75	0.0	51.7	OK
2.003	10	36	27.880	0.050	0.000	0.70	0.0	46.1	SURCHARGED
1.006	11	43	27.833	-0.190	0.000	0.42	0.0	114.5	OK
3.000	12	14	28.247	-0.053	0.000	0.74	0.0	8.1	OK
3.001	13	14	28.205	-0.094	0.000	0.63	0.0	16.9	OK
3.002	14	14	28.106	-0.145	0.000	0.52	0.0	28.0	OK
3.003	15	21	28.024	-0.129	0.000	0.60	0.0	38.0	OK
3.004	16	34	27.896	-0.056	0.000	0.66	0.0	34.7	OK
3.005	17	41	27.846	0.006	0.000	0.47	0.0	36.9	SURCHARGED
3.006	17	42	27.836	0.022	0.000	0.39	0.0	37.1	SURCHARGED
4.000	18	21	28.046	-0.134	0.000	0.57	0.0	31.5	OK
4.001	19	29	27.982	-0.159	0.000	0.53	0.0	51.1	OK
4.002	20	35	27.932	-0.094	0.000	0.86	0.0	83.4	OK
4.003	22	38	27.872	-0.041	0.000	0.62	0.0	76.8	OK
4.004	21	41	27.858	0.046	0.000	0.84	0.0	75.3	SURCHARGED
1.007	22	43	27.817	-0.164	0.000	0.88	0.0	218.5	OK
1.008	25	138	27.227	0.127	0.000	0.28	0.0	4.4	SURCHARGED

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Summary Wizard of 60 minute 2 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status

OFF

Analysis Timestep

Fine

Inertia Status

OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Pipe			Status	
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)		Flow (l/s)
1.000	1	23	28.116	-0.124	0.000	0.35	0.0	10.9	OK
1.001	2	30	28.082	-0.234	0.000	0.27	0.0	26.3	OK
1.002	3	32	28.017	-0.182	0.000	0.52	0.0	51.0	OK
1.003	4	40	27.918	-0.163	0.000	0.57	0.0	54.8	OK
1.004	5	47	27.850	-0.129	0.000	0.55	0.0	53.5	OK
1.005	6	49	27.809	-0.088	0.000	0.59	0.0	57.3	OK
2.000	7	23	28.188	-0.112	0.000	0.50	0.0	16.7	OK
2.001	8	30	28.035	-0.159	0.000	0.45	0.0	31.3	OK
2.002	9	45	27.870	-0.141	0.000	0.55	0.0	38.1	OK
2.003	10	50	27.806	-0.024	0.000	0.55	0.0	36.2	OK
1.006	11	58	27.767	-0.256	0.000	0.33	0.0	92.3	OK
3.000	12	23	28.223	-0.077	0.000	0.48	0.0	5.2	OK
3.001	13	24	28.180	-0.119	0.000	0.45	0.0	12.0	OK
3.002	14	30	28.079	-0.172	0.000	0.38	0.0	20.3	OK
3.003	15	32	27.994	-0.159	0.000	0.45	0.0	28.2	OK
3.004	16	49	27.824	-0.128	0.000	0.52	0.0	27.4	OK
3.005	17	57	27.777	-0.062	0.000	0.35	0.0	27.6	OK
3.006	17	58	27.770	-0.044	0.000	0.29	0.0	27.7	OK
4.000	18	31	28.008	-0.172	0.000	0.38	0.0	20.9	OK
4.001	19	40	27.936	-0.205	0.000	0.38	0.0	36.9	OK
4.002	20	46	27.870	-0.156	0.000	0.63	0.0	61.0	OK
4.003	22	53	27.798	-0.114	0.000	0.48	0.0	59.0	OK
4.004	21	56	27.788	-0.024	0.000	0.66	0.0	58.8	OK
1.007	22	60	27.754	-0.227	0.000	0.71	0.0	176.6	OK
1.008	25	128	27.298	0.198	0.000	0.31	0.0	5.0	SURCHARGED

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Summary Wizard of 120 minute 2 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter	
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080	
Return Period(s) (years)	1, 2, 30, 100	
Climate Change (%)	30, 30, 30, 30	

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m ³)	Flow / Cap.	O'flow (1/s)	Flow (1/s)	
1.000	1	41	28.090	-0.150	0.000	0.22	0.0	6.9	OK
1.001	2	42	28.050	-0.266	0.000	0.18	0.0	17.3	OK
1.002	3	47	27.976	-0.223	0.000	0.34	0.0	33.7	OK
1.003	4	55	27.867	-0.214	0.000	0.38	0.0	36.5	OK
1.004	5	65	27.781	-0.198	0.000	0.38	0.0	36.7	OK
1.005	6	70	27.727	-0.170	0.000	0.41	0.0	39.6	OK
2.000	7	37	28.162	-0.138	0.000	0.32	0.0	10.6	OK
2.001	8	43	28.004	-0.189	0.000	0.29	0.0	20.3	OK
2.002	9	58	27.836	-0.176	0.000	0.36	0.0	24.9	OK
2.003	10	70	27.715	-0.115	0.000	0.37	0.0	24.4	OK
1.006	11	71	27.689	-0.334	0.000	0.23	0.0	63.9	OK
3.000	12	37	28.206	-0.094	0.000	0.30	0.0	3.3	OK
3.001	13	37	28.157	-0.142	0.000	0.29	0.0	7.9	OK
3.002	14	42	28.052	-0.199	0.000	0.25	0.0	13.4	OK
3.003	15	48	27.964	-0.189	0.000	0.29	0.0	18.5	OK
3.004	16	66	27.775	-0.177	0.000	0.35	0.0	18.6	OK
3.005	17	71	27.693	-0.146	0.000	0.23	0.0	18.5	OK
3.006	17	71	27.687	-0.127	0.000	0.19	0.0	18.5	OK
4.000	18	47	27.980	-0.200	0.000	0.24	0.0	13.3	OK
4.001	19	49	27.896	-0.245	0.000	0.25	0.0	24.1	OK
4.002	20	58	27.821	-0.205	0.000	0.42	0.0	40.4	OK
4.003	22	71	27.707	-0.205	0.000	0.32	0.0	39.9	OK
4.004	21	71	27.700	-0.112	0.000	0.45	0.0	40.0	OK
1.007	22	72	27.677	-0.304	0.000	0.49	0.0	122.1	OK
1.008	25	110	27.374	0.274	0.000	0.35	0.0	5.5 SURCHARGED	

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Summary Wizard of 180 minute 2 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	50	28.078	-0.162	0.000	0.17	0.0	5.3	OK
1.001	2	51	28.034	-0.282	0.000	0.14	0.0	13.4	OK
1.002	3	55	27.955	-0.244	0.000	0.27	0.0	26.1	OK
1.003	4	64	27.844	-0.237	0.000	0.29	0.0	28.5	OK
1.004	5	73	27.754	-0.225	0.000	0.29	0.0	28.4	OK
1.005	6	77	27.693	-0.204	0.000	0.32	0.0	30.8	OK
2.000	7	47	28.151	-0.149	0.000	0.25	0.0	8.2	OK
2.001	8	54	27.990	-0.204	0.000	0.23	0.0	15.7	OK
2.002	9	64	27.819	-0.193	0.000	0.28	0.0	19.2	OK
2.003	10	80	27.673	-0.156	0.000	0.29	0.0	19.2	OK
1.006	11	81	27.649	-0.374	0.000	0.18	0.0	49.7	OK
3.000	12	47	28.199	-0.101	0.000	0.23	0.0	2.6	OK
3.001	13	47	28.146	-0.153	0.000	0.23	0.0	6.1	OK
3.002	14	51	28.040	-0.211	0.000	0.19	0.0	10.3	OK
3.003	15	55	27.950	-0.203	0.000	0.23	0.0	14.5	OK
3.004	16	72	27.758	-0.194	0.000	0.27	0.0	14.4	OK
3.005	17	81	27.649	-0.190	0.000	0.18	0.0	14.4	OK
3.006	17	82	27.645	-0.169	0.000	0.15	0.0	14.4	OK
4.000	18	55	27.967	-0.213	0.000	0.19	0.0	10.3	OK
4.001	19	59	27.878	-0.263	0.000	0.19	0.0	18.6	OK
4.002	20	69	27.798	-0.228	0.000	0.32	0.0	31.4	OK
4.003	22	81	27.666	-0.246	0.000	0.25	0.0	31.3	OK
4.004	21	81	27.656	-0.156	0.000	0.35	0.0	31.3	OK
1.007	22	82	27.637	-0.344	0.000	0.38	0.0	95.3	OK
1.008	25	96	27.418	0.318	0.000	0.37	0.0	5.8 SURCHARGED	

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Summary Wizard of 5760 minute 2 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m ³)		(l/s)	Flow (l/s)	
1.000	1	134	28.032	-0.208	0.000	0.02	0.0	0.5	OK
1.001	2	134	27.964	-0.352	0.000	0.01	0.0	1.2	OK
1.002	3	134	27.864	-0.335	0.000	0.02	0.0	2.4	OK
1.003	4	134	27.747	-0.334	0.000	0.03	0.0	2.7	OK
1.004	5	134	27.645	-0.334	0.000	0.03	0.0	2.7	OK
1.005	6	134	27.564	-0.333	0.000	0.03	0.0	2.9	OK
2.000	7	134	28.098	-0.202	0.000	0.02	0.0	0.8	OK
2.001	8	134	27.923	-0.270	0.000	0.02	0.0	1.5	OK
2.002	9	134	27.743	-0.268	0.000	0.03	0.0	1.8	OK
2.003	10	134	27.562	-0.267	0.000	0.03	0.0	1.8	OK
1.006	11	134	27.480	-0.543	0.000	0.02	0.0	4.7	OK
3.000	12	134	28.165	-0.135	0.000	0.02	0.0	0.2	OK
3.001	13	134	28.096	-0.203	0.000	0.02	0.0	0.6	OK
3.002	14	134	27.976	-0.275	0.000	0.02	0.0	1.0	OK
3.003	15	134	27.883	-0.270	0.000	0.02	0.0	1.4	OK
3.004	16	134	27.684	-0.268	0.000	0.03	0.0	1.4	OK
3.005	17	134	27.563	-0.276	0.000	0.02	0.0	1.4	OK
3.006	17	134	27.477	-0.337	0.000	0.01	0.0	1.4	OK
4.000	18	134	27.905	-0.275	0.000	0.02	0.0	1.0	OK
4.001	19	134	27.798	-0.343	0.000	0.02	0.0	1.7	OK
4.002	20	134	27.694	-0.332	0.000	0.03	0.0	2.9	OK
4.003	22	134	27.576	-0.336	0.000	0.02	0.0	2.9	OK
4.004	21	134	27.488	-0.324	0.000	0.03	0.0	2.9	OK
1.007	22	134	27.454	-0.527	0.000	0.04	0.0	9.0	OK
1.008	25	101	27.403	0.303	0.000	0.36	0.0	5.7	SURCHARGED

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Summary Wizard of 7200 minute 2 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm) 300.0

DVD Status OFF

Analysis Timestep Fine

Inertia Status OFF

DTS Status ON

Profile(s)

Summer and Winter

Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 2, 30, 100

Climate Change (%) 30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'ed Depth (m)	Flooded	Flow / O'flow Cap. (l/s)	Pipe	Status	
			Level (m)		Volume (m³)		Flow (l/s)		
1.000	1	138	28.030	-0.210	0.000	0.01	0.0	0.4	OK
1.001	2	138	27.960	-0.356	0.000	0.01	0.0	1.1	OK
1.002	3	138	27.862	-0.337	0.000	0.02	0.0	2.1	OK
1.003	4	138	27.745	-0.336	0.000	0.02	0.0	2.3	OK
1.004	5	138	27.643	-0.336	0.000	0.02	0.0	2.3	OK
1.005	6	138	27.562	-0.335	0.000	0.03	0.0	2.5	OK
2.000	7	138	28.096	-0.204	0.000	0.02	0.0	0.7	OK
2.001	8	138	27.919	-0.274	0.000	0.02	0.0	1.3	OK
2.002	9	138	27.742	-0.270	0.000	0.02	0.0	1.5	OK
2.003	10	138	27.560	-0.269	0.000	0.02	0.0	1.5	OK
1.006	11	138	27.474	-0.549	0.000	0.01	0.0	4.0	OK
3.000	12	138	28.163	-0.137	0.000	0.02	0.0	0.2	OK
3.001	13	138	28.093	-0.206	0.000	0.02	0.0	0.5	OK
3.002	14	138	27.973	-0.278	0.000	0.02	0.0	0.8	OK
3.003	15	138	27.879	-0.274	0.000	0.02	0.0	1.2	OK
3.004	16	138	27.682	-0.270	0.000	0.02	0.0	1.2	OK
3.005	17	138	27.560	-0.279	0.000	0.01	0.0	1.2	OK
3.006	17	138	27.472	-0.342	0.000	0.01	0.0	1.2	OK
4.000	18	138	27.901	-0.279	0.000	0.01	0.0	0.8	OK
4.001	19	138	27.793	-0.348	0.000	0.02	0.0	1.5	OK
4.002	20	138	27.692	-0.335	0.000	0.03	0.0	2.5	OK
4.003	22	138	27.573	-0.339	0.000	0.02	0.0	2.5	OK
4.004	21	138	27.484	-0.328	0.000	0.03	0.0	2.5	OK
1.007	22	138	27.450	-0.531	0.000	0.03	0.0	7.7	OK
1.008	25	116	27.357	0.257	0.000	0.34	0.0	5.4	SURCHARGED

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Margin for Flood Risk Warning (mm) 300.0      DVD Status OFF
      Analysis Timestep      Fine Inertia Status OFF
      DTS Status      ON
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PN	US/MH		Water		Surch'd Depth (m)	Flooded	Pipe		Status
	Name	Rank	Level (m)	Volume (m³)		Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	17	28.136	-0.104	0.000	0.42	0.0	13.0	OK
1.001	2	17	28.110	-0.206	0.000	0.33	0.0	32.8	OK
1.002	3	23	28.059	-0.140	0.000	0.64	0.0	63.2	OK
1.003	4	27	27.991	-0.090	0.000	0.70	0.0	67.7	OK
1.004	5	31	27.940	-0.039	0.000	0.69	0.0	67.0	OK
1.005	6	32	27.897	0.000	0.000	0.74	0.0	72.4	OK
2.000	7	21	28.201	-0.099	0.000	0.61	0.0	20.0	OK
2.001	8	25	28.053	-0.140	0.000	0.56	0.0	38.6	OK
2.002	9	28	27.974	-0.038	0.000	0.66	0.0	45.8	OK
2.003	10	32	27.892	0.063	0.000	0.69	0.0	45.6	SURCHARGED
1.006	11	40	27.842	-0.181	0.000	0.43	0.0	118.1	OK
3.000	12	21	28.231	-0.069	0.000	0.57	0.0	6.3	OK
3.001	13	18	28.194	-0.105	0.000	0.56	0.0	14.9	OK
3.002	14	19	28.096	-0.155	0.000	0.47	0.0	25.5	OK
3.003	15	25	28.014	-0.139	0.000	0.56	0.0	35.5	OK
3.004	16	32	27.903	-0.049	0.000	0.65	0.0	34.7	OK
3.005	17	39	27.855	0.016	0.000	0.44	0.0	34.6	SURCHARGED
3.006	17	39	27.845	0.031	0.000	0.36	0.0	34.5	SURCHARGED
4.000	18	25	28.039	-0.141	0.000	0.46	0.0	25.0	OK
4.001	19	25	27.992	-0.149	0.000	0.46	0.0	44.7	OK
4.002	20	30	27.953	-0.074	0.000	0.77	0.0	74.0	OK
4.003	22	33	27.884	-0.028	0.000	0.59	0.0	73.4	OK
4.004	21	37	27.869	0.057	0.000	0.82	0.0	73.5	SURCHARGED
1.007	22	41	27.826	-0.155	0.000	0.91	0.0	226.0	OK
1.008	25	52	27.696	0.596	0.000	0.64	0.0	10.1	SURCHARGED

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Margin for Flood Risk Warning (mm) 300.0      DVD Status OFF
      Analysis Timestep   Fine Inertia Status OFF
            DTS Status      ON

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PN	US/MH	Rank	Water	Surch'd	Flooded	Flow /	O'flow	Pipe	Status
			Level		Volume			Flow	
	Name		(m)	Depth (m)	(m³)	Cap.	(l/s)	Flow (l/s)	
1.000	1	27	28.111	-0.129	0.000	0.33	0.0	10.0	OK
1.001	2	31	28.078	-0.238	0.000	0.26	0.0	25.1	OK
1.002	3	33	28.012	-0.187	0.000	0.50	0.0	48.9	OK
1.003	4	41	27.917	-0.164	0.000	0.55	0.0	53.2	OK
1.004	5	46	27.850	-0.129	0.000	0.55	0.0	53.0	OK
1.005	6	47	27.810	-0.087	0.000	0.59	0.0	57.2	OK
2.000	7	27	28.182	-0.118	0.000	0.46	0.0	15.3	OK
2.001	8	34	28.029	-0.164	0.000	0.42	0.0	29.4	OK
2.002	9	47	27.868	-0.143	0.000	0.52	0.0	36.0	OK
2.003	10	48	27.808	-0.022	0.000	0.54	0.0	35.6	OK
1.006	11	57	27.769	-0.254	0.000	0.34	0.0	92.5	OK
3.000	12	27	28.219	-0.081	0.000	0.44	0.0	4.8	OK
3.001	13	27	28.176	-0.123	0.000	0.43	0.0	11.4	OK
3.002	14	31	28.075	-0.176	0.000	0.36	0.0	19.4	OK
3.003	15	36	27.990	-0.163	0.000	0.43	0.0	27.1	OK
3.004	16	48	27.824	-0.128	0.000	0.51	0.0	26.9	OK
3.005	17	56	27.778	-0.061	0.000	0.34	0.0	26.9	OK
3.006	17	57	27.771	-0.043	0.000	0.28	0.0	26.9	OK
4.000	18	34	28.002	-0.178	0.000	0.35	0.0	19.2	OK
4.001	19	41	27.933	-0.207	0.000	0.36	0.0	34.8	OK
4.002	20	45	27.871	-0.155	0.000	0.60	0.0	58.3	OK
4.003	22	51	27.800	-0.112	0.000	0.47	0.0	57.9	OK
4.004	21	55	27.790	-0.022	0.000	0.65	0.0	57.9	OK
1.007	22	58	27.757	-0.224	0.000	0.71	0.0	177.1	OK
1.008	25	43	27.756	0.656	0.000	0.70	0.0	11.0	SURCHARGED

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Summary Wizard of 480 minute 30 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow	
1.000	1	52	28.075	-0.165	0.000	0.16	0.0	4.9	OK
1.001	2	53	28.030	-0.286	0.000	0.13	0.0	12.4	OK
1.002	3	56	27.950	-0.249	0.000	0.25	0.0	24.2	OK
1.003	4	56	27.865	-0.216	0.000	0.27	0.0	26.4	OK
1.004	5	44	27.863	-0.116	0.000	0.27	0.0	26.4	OK
1.005	6	42	27.860	-0.037	0.000	0.29	0.0	28.7	OK
2.000	7	49	28.147	-0.153	0.000	0.23	0.0	7.5	OK
2.001	8	55	27.986	-0.207	0.000	0.21	0.0	14.5	OK
2.002	9	49	27.863	-0.148	0.000	0.26	0.0	17.8	OK
2.003	10	42	27.860	0.030	0.000	0.27	0.0	17.8	SURCHARGED
1.006	11	38	27.857	-0.166	0.000	0.17	0.0	46.4	OK
3.000	12	49	28.197	-0.103	0.000	0.22	0.0	2.4	OK
3.001	13	49	28.143	-0.156	0.000	0.21	0.0	5.6	OK
3.002	14	53	28.036	-0.215	0.000	0.18	0.0	9.6	OK
3.003	15	56	27.946	-0.207	0.000	0.21	0.0	13.4	OK
3.004	16	42	27.860	-0.092	0.000	0.25	0.0	13.4	OK
3.005	17	38	27.858	0.019	0.000	0.17	0.0	13.4	SURCHARGED
3.006	17	38	27.857	0.043	0.000	0.14	0.0	13.4	SURCHARGED
4.000	18	56	27.963	-0.217	0.000	0.17	0.0	9.5	OK
4.001	19	62	27.873	-0.268	0.000	0.18	0.0	17.2	OK
4.002	20	48	27.862	-0.164	0.000	0.30	0.0	29.1	OK
4.003	22	42	27.859	-0.053	0.000	0.24	0.0	29.1	OK
4.004	21	40	27.858	0.046	0.000	0.33	0.0	29.1	SURCHARGED
1.007	22	38	27.856	-0.125	0.000	0.36	0.0	88.9	OK
1.008	25	28	27.855	0.755	0.000	0.78	0.0	12.3	SURCHARGED

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Wrexham Phase 2



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Summary Wizard of 600 minute 30 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status

OFF

Analysis Timestep

Fine

Inertia Status

OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

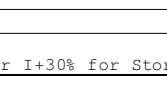
1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded		Pipe		Status	
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)		Flow (l/s)
1.000	1	58	28.070	-0.170	0.000	0.14	0.0	4.2	OK
1.001	2	59	28.022	-0.294	0.000	0.11	0.0	10.5	OK
1.002	3	63	27.940	-0.259	0.000	0.21	0.0	20.6	OK
1.003	4	51	27.875	-0.206	0.000	0.23	0.0	22.5	OK
1.004	5	41	27.872	-0.107	0.000	0.23	0.0	22.5	OK
1.005	6	40	27.869	-0.028	0.000	0.25	0.0	24.4	OK
2.000	7	56	28.142	-0.158	0.000	0.19	0.0	6.4	OK
2.001	8	61	27.978	-0.215	0.000	0.18	0.0	12.3	OK
2.002	9	44	27.873	-0.139	0.000	0.22	0.0	15.1	OK
2.003	10	40	27.869	0.039	0.000	0.23	0.0	15.1	SURCHARGED
1.006	11	36	27.866	-0.157	0.000	0.14	0.0	39.5	OK
3.000	12	56	28.193	-0.107	0.000	0.18	0.0	2.0	OK
3.001	13	56	28.138	-0.161	0.000	0.18	0.0	4.8	OK
3.002	14	59	28.028	-0.223	0.000	0.15	0.0	8.1	OK
3.003	15	62	27.938	-0.215	0.000	0.18	0.0	11.4	OK
3.004	16	40	27.870	-0.082	0.000	0.22	0.0	11.4	OK
3.005	17	36	27.867	0.028	0.000	0.14	0.0	11.4	SURCHARGED
3.006	17	36	27.866	0.052	0.000	0.12	0.0	11.4	SURCHARGED
4.000	18	62	27.956	-0.224	0.000	0.15	0.0	8.0	OK
4.001	19	61	27.874	-0.267	0.000	0.15	0.0	14.6	OK
4.002	20	44	27.872	-0.155	0.000	0.26	0.0	24.7	OK
4.003	22	39	27.868	-0.044	0.000	0.20	0.0	24.7	OK
4.004	21	35	27.875	0.063	0.000	0.28	0.0	24.7	SURCHARGED
1.007	22	36	27.865	-0.116	0.000	0.30	0.0	75.6	OK
1.008	25	25	27.864	0.764	0.000	0.79	0.0	12.4	SURCHARGED

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Micro Drainage		Network W.12.6	

Summary Wizard of 1440 minute 30 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow	
1.000	1	82	28.054	-0.186	0.000	0.07	0.0	2.2	OK
1.001	2	83	27.998	-0.318	0.000	0.06	0.0	5.5	OK
1.002	3	83	27.906	-0.293	0.000	0.11	0.0	10.8	OK
1.003	4	49	27.881	-0.200	0.000	0.12	0.0	11.8	OK
1.004	5	38	27.878	-0.101	0.000	0.12	0.0	11.8	OK
1.005	6	38	27.876	-0.021	0.000	0.13	0.0	12.6	OK
2.000	7	81	28.123	-0.177	0.000	0.10	0.0	3.4	OK
2.001	8	83	27.954	-0.239	0.000	0.09	0.0	6.5	OK
2.002	9	42	27.879	-0.132	0.000	0.11	0.0	7.9	OK
2.003	10	37	27.875	0.046	0.000	0.12	0.0	7.9	SURCHARGED
1.006	11	34	27.873	-0.150	0.000	0.07	0.0	20.1	OK
3.000	12	81	28.181	-0.119	0.000	0.10	0.0	1.1	OK
3.001	13	81	28.120	-0.179	0.000	0.09	0.0	2.5	OK
3.002	14	82	28.007	-0.244	0.000	0.08	0.0	4.3	OK
3.003	15	83	27.915	-0.238	0.000	0.09	0.0	6.0	OK
3.004	16	38	27.876	-0.076	0.000	0.11	0.0	6.0	OK
3.005	17	34	27.873	0.034	0.000	0.07	0.0	5.9	SURCHARGED
3.006	17	34	27.873	0.059	0.000	0.06	0.0	5.9	SURCHARGED
4.000	18	83	27.935	-0.245	0.000	0.08	0.0	4.2	OK
4.001	19	58	27.880	-0.261	0.000	0.08	0.0	7.7	OK
4.002	20	42	27.878	-0.148	0.000	0.13	0.0	13.0	OK
4.003	22	36	27.875	-0.037	0.000	0.10	0.0	12.9	OK
4.004	21	34	27.876	0.064	0.000	0.14	0.0	12.9	SURCHARGED
1.007	22	34	27.872	-0.109	0.000	0.15	0.0	38.4	OK
1.008	25	23	27.871	0.771	0.000	0.79	0.0	12.5	SURCHARGED

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Summary Wizard of 2160 minute 30 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status OFF

Analysis Timestep

Fine

Inertia Status OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status	
			Level (m)	Surch'd Depth (m)			Volume (m³)		Flow (l/s)
1.000	1	92	28.048	-0.192	0.000	0.05	0.0	1.6	OK
1.001	2	92	27.990	-0.326	0.000	0.04	0.0	4.1	OK
1.002	3	93	27.895	-0.304	0.000	0.08	0.0	8.0	OK
1.003	4	60	27.850	-0.231	0.000	0.09	0.0	8.8	OK
1.004	5	49	27.848	-0.131	0.000	0.09	0.0	8.7	OK
1.005	6	43	27.845	-0.052	0.000	0.10	0.0	9.4	OK
2.000	7	92	28.116	-0.184	0.000	0.08	0.0	2.5	OK
2.001	8	92	27.945	-0.249	0.000	0.07	0.0	4.8	OK
2.002	9	52	27.848	-0.163	0.000	0.09	0.0	5.9	OK
2.003	10	43	27.845	0.016	0.000	0.09	0.0	5.9	SURCHARGED
1.006	11	39	27.842	-0.181	0.000	0.05	0.0	14.9	OK
3.000	12	92	28.176	-0.124	0.000	0.07	0.0	0.8	OK
3.001	13	92	28.113	-0.186	0.000	0.07	0.0	1.9	OK
3.002	14	92	27.998	-0.253	0.000	0.06	0.0	3.2	OK
3.003	15	93	27.905	-0.248	0.000	0.07	0.0	4.4	OK
3.004	16	44	27.846	-0.106	0.000	0.08	0.0	4.4	OK
3.005	17	42	27.843	0.004	0.000	0.06	0.0	4.4	SURCHARGED
3.006	17	40	27.842	0.028	0.000	0.05	0.0	4.3	SURCHARGED
4.000	18	92	27.926	-0.254	0.000	0.06	0.0	3.1	OK
4.001	19	74	27.851	-0.289	0.000	0.06	0.0	5.7	OK
4.002	20	50	27.848	-0.179	0.000	0.10	0.0	9.6	OK
4.003	22	43	27.845	-0.068	0.000	0.08	0.0	9.6	OK
4.004	21	43	27.844	0.032	0.000	0.11	0.0	9.6	SURCHARGED
1.007	22	39	27.842	-0.139	0.000	0.11	0.0	28.5	OK
1.008	25	29	27.840	0.740	0.000	0.77	0.0	12.1	SURCHARGED

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Summary Wizard of 8640 minute 30 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)300.0DVD Status OFF

Analysis TimestepFineInertia Status OFF

DTS StatusON

Profile(s)Summer and Winter

Duration(s) (mins)30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)1, 2, 30, 100

Climate Change (%)30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Pipe			Status	
			Level Depth (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)		Flow (l/s)
1.000	1	129	28.035	-0.205	0.000	0.02	0.0	0.6	OK
1.001	2	129	27.967	-0.349	0.000	0.01	0.0	1.5	OK
1.002	3	129	27.866	-0.333	0.000	0.03	0.0	2.8	OK
1.003	4	129	27.750	-0.331	0.000	0.03	0.0	3.1	OK
1.004	5	129	27.648	-0.331	0.000	0.03	0.0	3.1	OK
1.005	6	110	27.601	-0.296	0.000	0.03	0.0	3.4	OK
2.000	7	129	28.099	-0.201	0.000	0.03	0.0	0.9	OK
2.001	8	129	27.925	-0.268	0.000	0.02	0.0	1.7	OK
2.002	9	129	27.745	-0.266	0.000	0.03	0.0	2.1	OK
2.003	10	105	27.598	-0.232	0.000	0.03	0.0	2.1	OK
1.006	11	93	27.596	-0.427	0.000	0.02	0.0	5.4	OK
3.000	12	129	28.166	-0.134	0.000	0.03	0.0	0.3	OK
3.001	13	129	28.098	-0.201	0.000	0.02	0.0	0.7	OK
3.002	14	129	27.981	-0.270	0.000	0.02	0.0	1.1	OK
3.003	15	129	27.885	-0.268	0.000	0.02	0.0	1.6	OK
3.004	16	129	27.686	-0.266	0.000	0.03	0.0	1.6	OK
3.005	17	100	27.596	-0.243	0.000	0.02	0.0	1.6	OK
3.006	17	92	27.596	-0.218	0.000	0.02	0.0	1.6	OK
4.000	18	129	27.909	-0.271	0.000	0.02	0.0	1.1	OK
4.001	19	129	27.803	-0.338	0.000	0.02	0.0	2.0	OK
4.002	20	129	27.697	-0.330	0.000	0.04	0.0	3.4	OK
4.003	22	113	27.597	-0.315	0.000	0.03	0.0	3.4	OK
4.004	21	94	27.596	-0.216	0.000	0.04	0.0	3.4	OK
1.007	22	90	27.595	-0.386	0.000	0.04	0.0	10.4	OK
1.008	25	64	27.594	0.494	0.000	0.48	0.0	7.5	SURCHARGED

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Summary Wizard of 2880 minute 100 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status		ON

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow	
1.000	1	91	28.048	-0.192	0.000	0.05	0.0	1.6	OK
1.001	2	75	28.006	-0.310	0.000	0.04	0.0	4.1	OK
1.002	3	38	27.996	-0.203	0.000	0.08	0.0	8.0	OK
1.003	4	25	27.993	-0.088	0.000	0.09	0.0	8.8	OK
1.004	5	23	27.989	0.010	0.000	0.09	0.0	8.6	SURCHARGED
1.005	6	23	27.986	0.089	0.000	0.09	0.0	9.1	SURCHARGED
2.000	7	91	28.116	-0.184	0.000	0.08	0.0	2.5	OK
2.001	8	50	27.994	-0.199	0.000	0.07	0.0	4.8	OK
2.002	9	24	27.990	-0.021	0.000	0.09	0.0	5.9	OK
2.003	10	23	27.986	0.157	0.000	0.09	0.0	5.8	SURCHARGED
1.006	11	22	27.983	-0.040	0.000	0.05	0.0	14.6	OK
3.000	12	91	28.176	-0.124	0.000	0.07	0.0	0.8	OK
3.001	13	91	28.113	-0.186	0.000	0.07	0.0	1.9	OK
3.002	14	84	28.004	-0.247	0.000	0.06	0.0	3.2	OK
3.003	15	35	27.990	-0.163	0.000	0.07	0.0	4.5	OK
3.004	16	23	27.987	0.035	0.000	0.08	0.0	4.4	SURCHARGED
3.005	17	22	27.984	0.145	0.000	0.05	0.0	4.2	SURCHARGED
3.006	17	22	27.983	0.169	0.000	0.04	0.0	4.2	SURCHARGED
4.000	18	37	27.994	-0.186	0.000	0.06	0.0	3.1	OK
4.001	19	26	27.992	-0.149	0.000	0.06	0.0	5.7	OK
4.002	20	24	27.989	-0.037	0.000	0.10	0.0	9.6	OK
4.003	22	22	27.986	0.074	0.000	0.08	0.0	9.3	SURCHARGED
4.004	21	22	27.985	0.173	0.000	0.10	0.0	9.3	SURCHARGED
1.007	22	19	27.982	0.001	0.000	0.11	0.0	27.8	SURCHARGED
1.008	25	11	27.981	0.881	0.000	0.87	0.0	13.7	SURCHARGED

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Summary Wizard of 8640 minute 100 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)	300.0	DVD Status OFF
Analysis Timestep	Fine	Inertia Status OFF
DTS Status	ON	

Profile(s)	Summer and Winter
Duration(s) (mins)	30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	30, 30, 30, 30

PN	US/MH Name	Rank	Water	Surch'd Depth (m)	Flooded	Flow / Cap.	O'flow	Pipe	Status
			Level (m)		Volume (m³)		(l/s)	Flow (l/s)	
1.000	1	121	28.038	-0.202	0.000	0.02	0.0	0.7	OK
1.001	2	121	27.973	-0.343	0.000	0.02	0.0	1.8	OK
1.002	3	121	27.869	-0.330	0.000	0.03	0.0	3.4	OK
1.003	4	121	27.753	-0.328	0.000	0.04	0.0	3.7	OK
1.004	5	96	27.692	-0.287	0.000	0.04	0.0	3.7	OK
1.005	6	78	27.688	-0.209	0.000	0.04	0.0	4.0	OK
2.000	7	121	28.101	-0.199	0.000	0.03	0.0	1.1	OK
2.001	8	121	27.927	-0.266	0.000	0.03	0.0	2.0	OK
2.002	9	121	27.748	-0.263	0.000	0.04	0.0	2.5	OK
2.003	10	74	27.688	-0.142	0.000	0.04	0.0	2.5	OK
1.006	11	73	27.686	-0.337	0.000	0.02	0.0	6.5	OK
3.000	12	121	28.167	-0.133	0.000	0.03	0.0	0.3	OK
3.001	13	121	28.099	-0.200	0.000	0.03	0.0	0.8	OK
3.002	14	121	27.983	-0.268	0.000	0.03	0.0	1.4	OK
3.003	15	121	27.887	-0.266	0.000	0.03	0.0	1.9	OK
3.004	16	106	27.701	-0.251	0.000	0.04	0.0	1.9	OK
3.005	17	74	27.686	-0.153	0.000	0.02	0.0	1.9	OK
3.006	17	73	27.686	-0.128	0.000	0.02	0.0	1.9	OK
4.000	18	121	27.911	-0.269	0.000	0.02	0.0	1.3	OK
4.001	19	121	27.805	-0.335	0.000	0.03	0.0	2.4	OK
4.002	20	110	27.712	-0.314	0.000	0.04	0.0	4.1	OK
4.003	22	74	27.687	-0.225	0.000	0.03	0.0	4.1	OK
4.004	21	74	27.687	-0.125	0.000	0.05	0.0	4.2	OK
1.007	22	71	27.685	-0.296	0.000	0.05	0.0	12.3	OK
1.008	25	54	27.684	0.584	0.000	0.62	0.0	9.9	SURCHARGED

SLR Consulting Limited

Page 152

4 The Roundal
Roddinglaw Road
Edinburgh EH12 9DB

Wrexham Phase 2

Designed by IMR
Checked by

Micro Drainage

Network W.12.6

Micro Drainage.

Summary Wizard of 10080 minute 100 year Winter I+30% for Storm

Margin for Flood Risk Warning (mm)

300.0

DVD Status OFF

Analysis Timestep

Fine

Inertia Status OFF

DTS Status

ON

Profile(s)

Summer and Winter

Duration(s) (mins)

30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years)

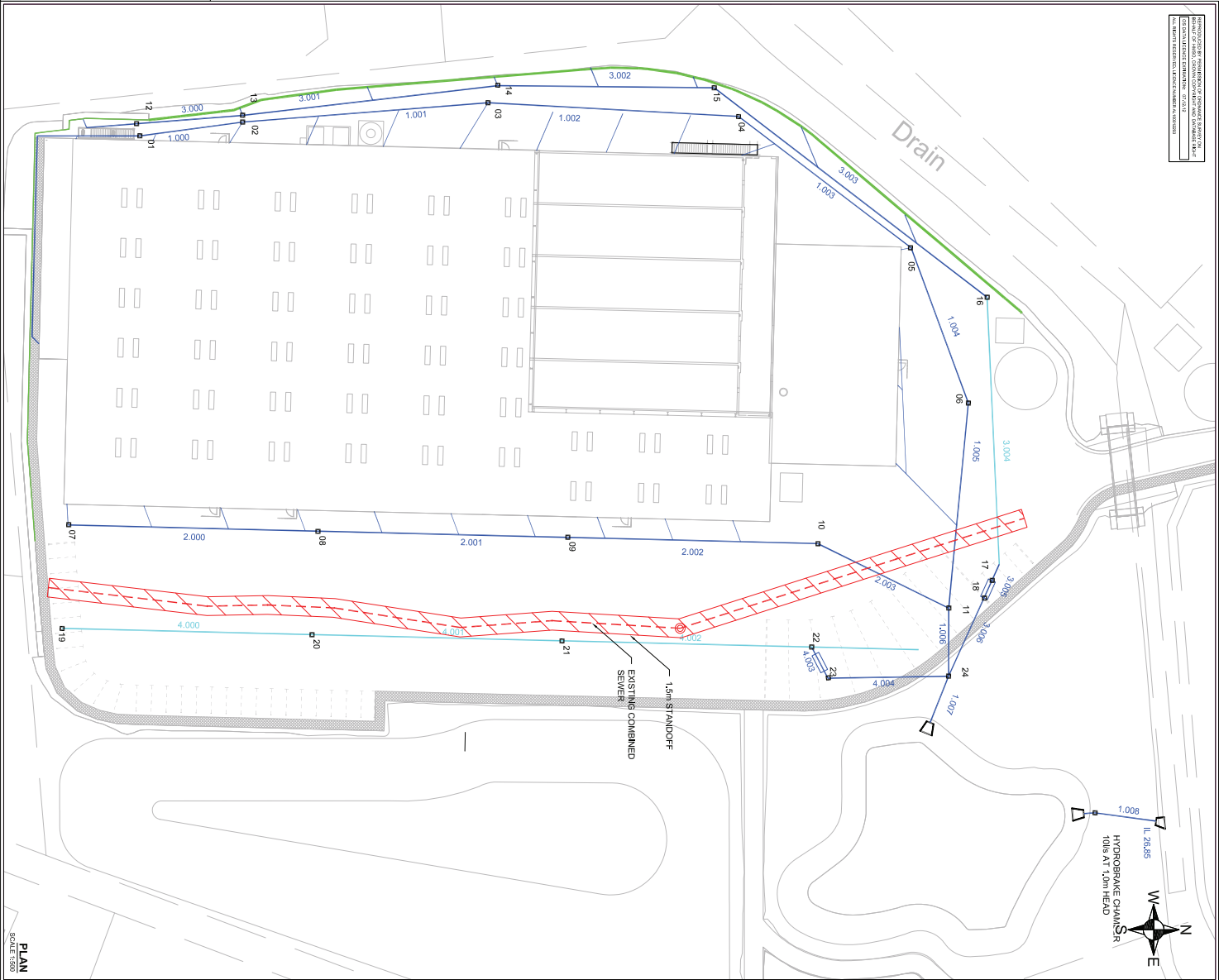
1, 2, 30, 100

Climate Change (%)

30, 30, 30, 30

PN	US/MH Name	Rank	Water	Flooded	Flow / Cap.	O'flow (l/s)	Pipe	Status	
			Level (m)	Surch'd Depth (m)			Volume (m³)		Flow (l/s)
1.000	1	125	28.036	-0.204	0.000	0.02	0.0	0.6	OK
1.001	2	125	27.969	-0.347	0.000	0.02	0.0	1.6	OK
1.002	3	125	27.867	-0.332	0.000	0.03	0.0	3.0	OK
1.003	4	125	27.751	-0.330	0.000	0.03	0.0	3.3	OK
1.004	5	111	27.664	-0.315	0.000	0.03	0.0	3.3	OK
1.005	6	89	27.648	-0.249	0.000	0.04	0.0	3.6	OK
2.000	7	125	28.100	-0.200	0.000	0.03	0.0	0.9	OK
2.001	8	125	27.925	-0.268	0.000	0.03	0.0	1.8	OK
2.002	9	125	27.746	-0.265	0.000	0.03	0.0	2.2	OK
2.003	10	86	27.648	-0.182	0.000	0.03	0.0	2.2	OK
1.006	11	82	27.646	-0.377	0.000	0.02	0.0	5.8	OK
3.000	12	125	28.166	-0.134	0.000	0.03	0.0	0.3	OK
3.001	13	125	28.098	-0.201	0.000	0.03	0.0	0.7	OK
3.002	14	125	27.981	-0.270	0.000	0.02	0.0	1.2	OK
3.003	15	125	27.885	-0.268	0.000	0.03	0.0	1.7	OK
3.004	16	124	27.688	-0.264	0.000	0.03	0.0	1.7	OK
3.005	17	82	27.646	-0.193	0.000	0.02	0.0	1.7	OK
3.006	17	81	27.646	-0.168	0.000	0.02	0.0	1.7	OK
4.000	18	125	27.910	-0.270	0.000	0.02	0.0	1.2	OK
4.001	19	125	27.804	-0.337	0.000	0.02	0.0	2.2	OK
4.002	20	124	27.700	-0.327	0.000	0.04	0.0	3.7	OK
4.003	22	86	27.647	-0.265	0.000	0.03	0.0	3.7	OK
4.004	21	82	27.647	-0.165	0.000	0.04	0.0	3.6	OK
1.007	22	79	27.645	-0.336	0.000	0.04	0.0	11.0	OK
1.008	25	59	27.644	0.544	0.000	0.58	0.0	9.1	SURCHARGED

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MH	CL	Depth	MH Dia	PN	Pipe Out	Feet In	Drop
(m)	(m)	(mm)	(mm)	IL	Dia	IL	In Pond
1	28.90	0.865	1050	1.000	30.015	2.25	1.000
2	28.90	0.865	1050	1.000	30.015	2.25	1.000
3	28.90	0.865	1050	1.000	30.015	2.25	1.000
4	28.79	1.094	1350	1.003	37.624	3.75	1.002
5	28.78	1.176	1350	1.004	37.604	3.75	1.003
6	28.78	1.256	1350	1.005	37.522	3.75	1.004
7	28.90	0.925	1050	2.000	38.075	2.25	2.000
8	28.90	1.090	1050	2.002	37.893	3.00	2.001
9	28.90	1.180	1050	2.001	37.711	3.00	2.000
10	28.78	1.357	1350	1.008	37.423	6.00	1.005
11	28.78	1.357	1350	1.008	37.423	6.00	1.005
12	28.90	0.750	1050	3.000	38.150	2.25	3.000
13	28.90	0.826	1050	3.001	38.074	2.25	3.000
14	28.90	0.949	1050	3.002	37.951	3.00	3.001
15	28.90	1.047	1050	3.003	37.853	3.00	3.002
16	28.78	1.126	1050	3.004	37.652	3.00	3.003
17	28.78	1.210	1050	3.005	37.439	3.00	3.004
18	28.78	1.341	1050	3.006	37.439	3.00	3.005
19	28.78	0.900	1050	4.000	37.680	3.00	4.000
20	28.78	1.014	1350	4.001	37.766	3.75	4.001
21	28.78	1.129	1350	4.002	37.651	3.75	4.002
22	28.78	1.243	1350	4.003	37.537	3.75	4.003
23	28.78	1.349	1350	4.004	37.437	3.75	4.004
24	28.78	1.399	1500	1.007	37.387	6.00	1.007
Pond	28.50	1.150		1.008	26.95	150	1.007

MANHOLE SCHEDULE

PN	Length	Fall	Slope	Dia
(m)	(m)	(1 in x)	(mm)	(mm)
1.000	16.6	0.074	224	225
1.001	39.4	0.117	337	375
1.002	44.2	0.116	341	375
1.003	44.4	0.110	341	375
1.004	26.5	0.082	323	375
1.005	33.0	0.089	333	375
2.000	40.0	0.182	220	225
2.001	40.0	0.182	220	300
2.002	40.0	0.181	221	300
2.003	23.4	0.107	219	300
3.000	17.1	0.076	225	150
3.001	41.1	0.123	334	225
3.002	34.7	0.088	354	300
3.003	55.0	0.201	274	300
3.004	42.8	0.113	379	300
3.005	3.1	0.100	31	Separator NSBD8
4.000	40.0	0.114	351	300
4.001	40.0	0.115	348	375
4.002	40.0	0.114	351	375
4.003	3.1	0.100	31	Separator NSBD10
4.004	19.3	0.056	345	375
1.007	8.0	0.031	256	600
1.008	10.0	0.100	100	150

PIPE SCHEDULE

- NOTES
- MINIMUM COVER TO ALL LIVE PIPEWORK TO BE 600mm TO THE CROWN OF THE PIPE.
 - PIPE TO HAVE 150mm GEN 1 CONCRETE SURROUND UNDER ANY ROAD TO THE CROWN OF THE PIPE IS LESS THAN 1.2m AS DESCRIBED BELOW.
 - Low concrete bedding 25 mm thick over full width of trench and allow to set.
 - Lay pipe on bedding on bedding surface of concrete board to give a minimum 150 mm clearance under the pipe. Anchor the pipeline or fill with water, if necessary, to prevent flotation.
 - Firm vertical construction joints in surround at face of flexible pipe joints using 18 mm thick compressible board pre-cut to profile of pipe. Fill joint between board and socket with resilient material of proprietary of concrete.
 - After initial testing, phase and compact more than 150 mm above crown
 - MANHOLE ACCESS COVERS TO BE CLASS B125 IN AREAS WITH NO VEHICULAR ACCESS AND CLASS D400 IN ROADS AND PARKS/STANDING AREAS.
 - ALL HEADWALLS TO HAVE KEYCLAMP FENCING AROUND WALLS

LEGEND

- PROPOSED DRAINAGE
- PROPOSED ACO SLOTT DRAIN
- PROPOSED ACO KERB DRAIN (H&Z)
- PROPOSED MANHOLE

Revision	By	Check By	Date	Comments
T3	IMR	DP	30.10.12	PIPE DIAMETERS AMENDED
T2	JD	DP	18.09.12	DATE DRAINAGE AMENDED
T1	IMR	DP	JUN 12	OFFICE DRAINAGE ADDED
T0	IMR	DP	APR 12	

SLR

THE INNOVATIVE ROAD
BUILDING COMPANY
11, 12 & 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Site: WIREXHAM

Project: WIREXHAM PHASE 2 DESIGN

Drawing Title: PROPOSED DRAINAGE LAYOUT

Scale: 1:500 @ A2

Drawing Number: 008

Revision: T3



1. MINIMUM COVER TO ALL JUV PIPEWORK TO BE 600mm TO THE CROWN OF THE PIPE.
2. PIPE TO HAVE 150mm GBN 1 CONCRETE SURROUND UNDER ANY ROADS / PAVED FACING WHERE COVER TO THE CROWN OF THE PIPE IS LESS THAN 1.2m TO BE DESIGNED BELOW.
- a. Lay concrete bedding, 25 mm thick over full width of trench and allow to set.
- b. Lay pipes on bedding on minimum thickness of compressible board to give a minimum 150 mm clearance under the pipe. Anchor the pipeline or fill with water if necessary, to prevent flotation.
- c. Form vertical construction joints in surround at face of flexible pipe laid using 18 mm thick compressible board pre-cut to profile of pipe. Fill with concrete with consistent material to prevent voids of concrete.
- d. After initial bedding phase, and compact more concrete for full width of trench to encase pipe to 150 mm above crown
4. MANHOLE ACCESS COVERS TO BE CLASS B/25 IN AREAS WITH NO VERTICAL ACCESS AND CLASS B/25 OR C/30 IN ROAD AND PAVED DRIVING AREAS.
5. ALL HEADWALLS TO HAVE KEYCLAMP FENCING

PN	Length (m)	Fall (m)	Slope (1 in x)	Dma (mm)
1.000	18.6	0.19	2.24	2.25
1.002	18.6	0.18	2.47	2.25
1.002	40.2	0.14	3.18	3.41
1.003	34.7	0.102	3.40	3.75
1.004	26.5	0.062	3.23	3.75
1.005	33.0	0.089	3.53	3.75
1.006	33.0	0.089	3.53	3.75
2.001	40.0	0.182	2.20	3.00
2.002	40.0	0.181	2.21	3.00
2.003	23.4	0.107	2.19	3.00
1.006	10.9	0.042	2.57	6.00
1.007	10.9	0.042	2.57	6.00
3.001	44.1	0.173	3.33	2.25
3.002	34.7	0.088	3.54	3.00
3.003	55.0	0.201	2.74	3.00
3.004	42.8	0.113	3.19	3.00
3.005	16.5	0.038	2.94	3.00
4.000	40.0	0.114	3.51	3.00
4.001	40.0	0.115	3.48	3.75
4.002	40.0	0.114	3.51	3.75
4.003	15.3	0.031	2.58	6.00
1.008	10.0	0.030	1.00	150

PIPE SCHEDULE

PN	Length (m)	Fall (m)	Slope (1 in x)	Dma (mm)
1.000	18.6	0.19	2.24	2.25
1.002	18.6	0.18	2.47	2.25
1.002	40.2	0.14	3.18	3.41
1.003	34.7	0.102	3.40	3.75
1.004	26.5	0.062	3.23	3.75
1.005	33.0	0.089	3.53	3.75
1.006	33.0	0.089	3.53	3.75
2.001	40.0	0.182	2.20	3.00
2.002	40.0	0.181	2.21	3.00
2.003	23.4	0.107	2.19	3.00
1.006	10.9	0.042	2.57	6.00
1.007	10.9	0.042	2.57	6.00
3.001	41.1	0.173	3.33	2.25
3.002	34.7	0.088	3.54	3.00
3.003	55.0	0.201	2.74	3.00
3.004	42.8	0.113	3.19	3.00
3.005	16.5	0.038	2.94	3.00
4.000	40.0	0.114	3.51	3.00
4.001	40.0	0.115	3.48	3.75
4.002	40.0	0.114	3.51	3.75
4.003	15.3	0.031	2.58	6.00
1.008	10.0	0.030	1.00	150

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Site WICKHAM		Project WICKHAM PHASE 2 DESIGN	
Order Title FLOODED HARDSTANDING DURING 1-100yr 30min STORM EVENT		Scale 1:500 @ A2	
Drawing Number 008B		Date DECEMBER 2012	
TENDER		Revision 10	



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