Appendix A – Wainui East Stormwater Management Plan (Woods, September 2016)

STORMWATER MANAGEMENT PLAN

WAINUI EAST FUTURE URBAN AREA

FULTON & HOGAN LIMITED
WAINUI EAST
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EXECUTIVE SUMMARY

The Wainui East Future Urban area is a rural environment located to the west of Silverdale and Orewa, directly adjacent to SH1 and is generally bound by Wainui Road, Cemetery Road. Pine Valley Road and State Highway 1. The environment is generally described as rural residential lifestyle blocks with predominantly moderate sloping ground.

A Stormwater Management Plan (SMP) for the Wainui East FUZ has been developed based on the Proposed Auckland Unitary Plan (PAUP). The overarching objectives for the SMP are:

- To incorporate a water sensitive design approach that manages the impact of land use change from rural to urban, promotes at source stormwater management and is in line with the mediated SMAF hydrology mitigation requirements.
- Retention of the existing stream network, and protection and enhancement of riparian margins.
- Identify flood risk areas, provide for development outside the 1% AEP floodplain without creating adverse flooding effects at properties upstream or downstream of the development in comparison with the pre development condition. This includes an assessment of post development effects on downstream assets such as the Wainui Road Bridge crossing over Waterloo Creek.
- Provide stormwater quality treatment for high use roads and carparks and avoidance of high contaminant yielding roof and cladding materials.
- Minimize adverse effects on water quality, stream health and ecological values of the receiving environment through the implementation of stormwater management devices; this includes tributaries of the Orewa River and Weiti Stream.

Flood modelling has been undertaken as part of an effects assessment. It was determined that SMAF 1 requirements proposed in the Stormwater Management Plan would mitigate the effects of the 2 year ARI event. Flood maps have been prepared to detail the flood extents for the various ED, MPD and Argent Lane SHA scenarios in the 10 and 100 year ARI storm events.

The flooding effects observed within the Wainui East Future Urban Area are as shown in the flood maps confined to areas upstream of the Wainui Road bridge crossing above Waterloo Creek. These effects are summarised as follows:

- There is no inundation / overtopping of the Wainui Bridge crossing over Waterloo Creek in the 10 year ARI (existing rainfall) ED or Argent Lane SHA scenarios.
- The time of inundation for the ED scenario in the 100 year ARI event (existing rainfall) is 1hr and 37 minutes and 2 hours under the future rainfall scenario.
- Time of inundation increased by 7 minutes for the Argent Lane SHA in the 100 year ARI event (existing rainfall) and 12 minutes with future rainfall. The MPD scenario increases the inundation time by an additional 5 and 8 minutes respectively.
    - The increase in inundation time of 7 and 12 minutes for the Argent Lane SHA in the 100 year ARI events is considered minor when put into perspective with the total time of inundation under the existing land use (ED) scenarios (1 hour and 37 minutes & 2 hours).
- The Wainui Road Bridge overtops in the 100 year event (existing and future rainfall) for all modelled scenarios ED, MPD and Argent Lane SHA.
- The Wainui Road Bridge is deficient when the effects of climate change are taken into consideration.
- Overtopping of the bridge in the Argent Lane SHA scenario for the 10 year future rainfall scenario will result in a flood depth of 120mm over the carriageway. This is considered trafficable for passenger vehicles, as stated in Austroads “Safety Provisions for Floodways Document” (where Depth x Velocity < 0.3).
- There are two vehicle crossings at 295 Wainui Road and 315 Wainui Road that provide access into existing residential properties.
    - Crossing 1 (295 Wainui Road) is deficient in terms of stormwater conveyance of pre-existing flows, however the crossing and the surrounding residential lots are owned by the applicant.
    - The Argent Lane SHA scenario would result in crossing 2 (315 Wainui Road) overtopping during the 20 year ARI event (existing rainfall), however the overtopping depth is 66mm which is considered trafficable under Austroads “Safety Provisions for Floodways Document” (where Depth x Velocity < 0.3).
    - The overtopping of crossing 2 in the 10 year ARI event (future rainfall) Argent Lane SHA scenario results in an overtopping depth of 38mm which is considered trafficable for passenger vehicles under Austroads “Safety Provisions for Floodways Document” (where Depth x Velocity < 0.3).

It is important to note that the flood effects from the existing rainfall Argent Lane SHA scenario are considered less than minor, as there is no notable increase in flood extents as shown in the prepared flood maps. The effects on the Wainui Road Bridge crossing over Waterloo Creek is limited to a small increase in flood depth.

Given the full effects of climate change are not expected to have an impact until 2090, it is feasible to pass flows forward for the Argent Lane SHA area until future options around the Wainui Road Bridge Crossing over Waterloo Creek is considered.

Overall the increase in flood extents do not affect habitable floor levels as shown in the prepared flood maps. No notable flood effects have been observed downstream of the Wainui Road bridge. Similarly, there are no notable effects at the Weiti Culvert or other areas upstream of the Argent Lane SHA.

The stormwater management plan has been assessed against the Network Discharge Consent (NDC) requirements, the PAUP structure plan requirements and follows a water sensitive design approach.

In summary, the assessments undertaken demonstrate that the proposed land use and rezoning of the Wainui East Future Urban Zone satisfies the Proposed Auckland Unitary Plan (PAUP) with respect to stormwater.

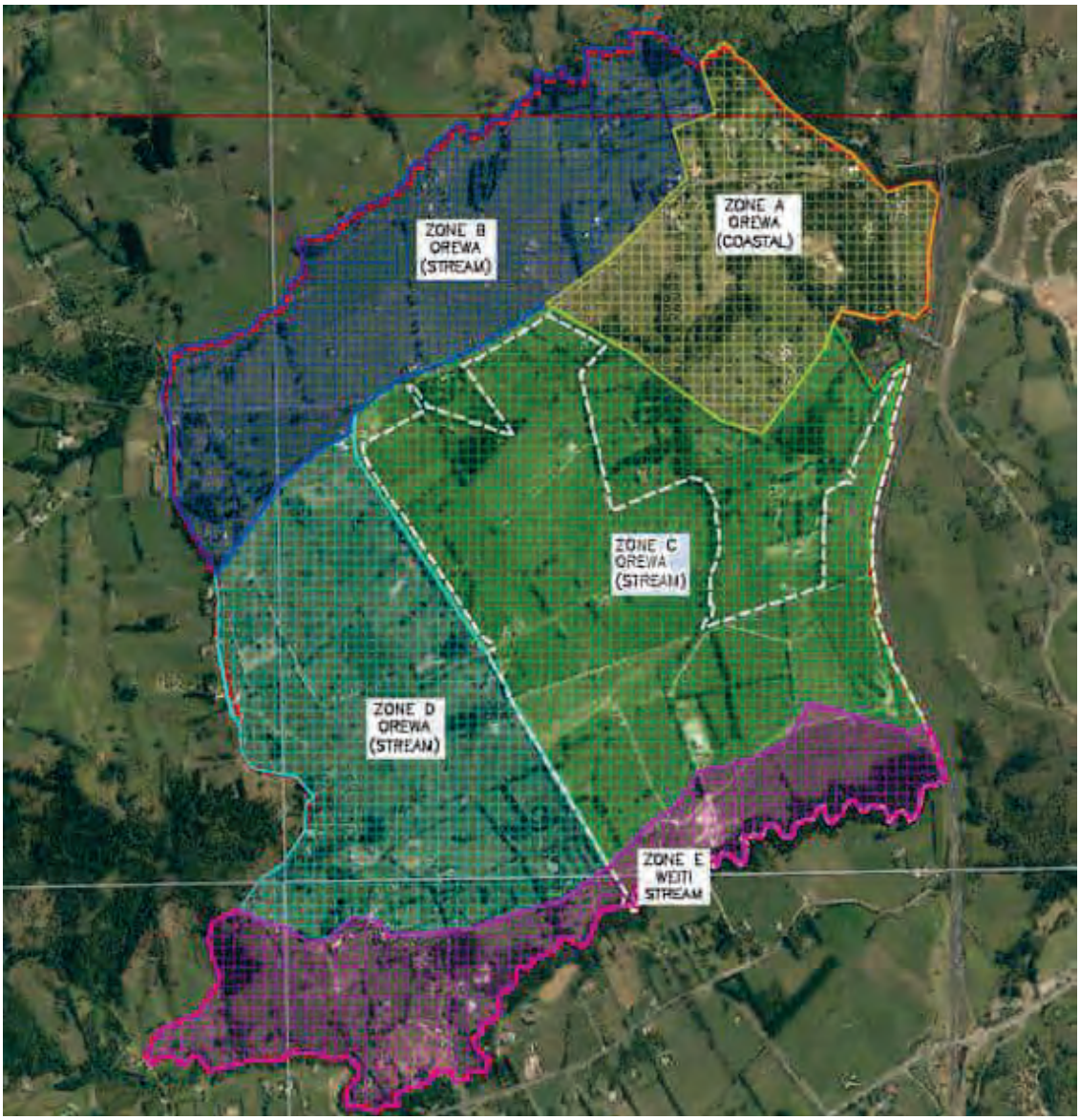

Figure 1: Stormwater Management Zones

1 BACKGROUND INFORMATION

1.1 INTRODUCTION

This report outlines the stormwater management plan for the entire Wainui Rural Urban Boundary ("RUB"), which the Argent Lane SHA is part of. This report has been prepared in accordance with structure planning requirements as set out in Appendix 1.1 of the PAUP and takes into consideration the mediated rules regarding stormwater (Topic 049).

The Argent Lane SHA sits to the east of the northern motorway and has an undulating topography with streams running along the southern boundary and through the centre of the precinct. There are clusters of exotic and native vegetation throughout the precinct, some of which exists as a riparian margin along the edge of the streams.

All of the defined precinct areas are located with the RUB and are zoned Future Urban within the PAUP. The total site area for the Argent Lane SHA development equates to approximately 190ha.

1.2 BACKGROUND & LOCATION

The Argent Lane SHA area is a rural environment located to the west of Silverdale and Orewa, directly adjacent to SH1 and is bound by Wainui Road, Cemetery Road, Pine Valley Road and State Highway 1.

The area is located approximately 4km from Orewa and Waitemata Harbour and 20km from Helensville, at the southern end of the Kaipara Harbour. The site is directly adjacent to State Highway 1 by the Wainui Road interchange and is approximately 39km from the Central Business District. A Concept Plan for the Wainui East Village is provided in Appendix A – Wainui East 1 Concept Masterplan.

The environment is generally described as rural residential lifestyle blocks. The site sees moderate sloping ground of grades ranging from 1 in 6, or greater, to 1 in 10 that fall to the west from the ridgelines of Cemetery Road into a central gully.

There are existing ridgelines and knolls on the site with the most significant being 40 metres above sea level and visible from Argent Lane and a section of Wainui Road.

Waterloo Creek passes through the site from north to south and connects to the Orewa River which is located to the north of the site and drains to the Orewa Estuary and eventually to Whangaparoa Bay to the east.

The development area is in close proximity to the existing urban environments of the Hibiscus Bays Coast including Silverdale and Orewa. The site has been identified for future urban

development and is a natural extension of the Millwater development area to the east given its proximity to existing urban centres and the limited rural and agricultural value.

The land is considered to have a reasonably low level of intrinsic value. There are mature shelterbelts along the southern boundary and a scattering of native and exotic trees and vegetation within the SHA area. The predominant use is either farming based activities or lifestyle blocks.

The surrounding environment can be split into two areas. The area of land to the north, south and west consists of rural and rural residential land. The land to the east consists of developed land (Millwater, Orewa and Silverdale).

The land to the north, south and west of the site is made up of predominantly agricultural land or rural lifestyle blocks with some vegetated bush areas. The land is undulating in nature and rising gradually from State Highway 1 to the upper ridges beyond Cemetery Road.

Directly to the west of Wainui East is the Mt Pleasant Farm and a large area of protected native bush. This area of bush is visible from Pine Valley Road, Wainui Road and Cemetery Road and also from within the application area.

Beyond this area are large rural productive farms and further beyond this are the Mt Pleasant foothills, an area of land identified as an Outstanding Natural Landscape (ONL).

The land to the east of the site, across State Highway 1 is developed land that forms part of the Millwater residential development. The land consists mainly of medium to low density housing with dwelling types ranging from single storey standalone to two storey terraces. Further to the east of Millwater is the Silverdale Town Centre. Directly to the southwest of Wainui East is a vacant section of land that will accommodate the Highgate Business Park.

2 OBJECTIVES & DESIGN REQUIREMENTS

2.1 PURPOSE & OBJECTIVES

The overall purpose of this SMP is to provide guidance to the applicant and inform Auckland Council on how stormwater will be managed for the land located within the Wainui East Future Urban Area.

The overarching objectives for the Wainui East SMP are to:

- To incorporate a water sensitive design approach that manages the impact of land use change from rural to urban, promotes at source stormwater management and is in line with the mediated SMAF hydrology mitigation requirements.
- Retention of stream network, and protection and enhancement of riparian margins.

- Identify flood risk areas, provide for development outside the 1% AEP floodplain without creating adverse flooding effects on properties upstream or downstream of the development in comparison to the pre development situation. This includes an assessment of post development effects on downstream assets such as the Wainui Road Bridge crossing over Waterloo Creek.
- Provide stormwater quality treatment for high use roads and carparks and avoidance of high contaminant yielding roof and cladding materials.
- Minimize the adverse effects on water quality, stream health and ecological values of the receiving environment through the implementation of stormwater management devices; this includes tributaries of the Orewa River and Weiti Stream.

2.2 TECHNICAL GUIDANCE

The development approach for management of stormwater for the Wainui East Village Precinct is to adopt and align with the Proposed Auckland Unitary Plan stormwater provisions i.e. the objectives and policies identified in chapter C 5.5.13 and chapter C 5.5.15.

2.2.1 Guidance Documents

A summary of the technical guidance documents used in preparation of the SMP is outlined in Table 1 – Guidance Summary

Table 1 – Guidance Summary

Guidance Document	What it says	Relevant for Wainui SMP
Auckland Council – Recommended amendments to Chapter J 7.x Stormwater Management Area Flow – Rules - Closing remarks 7 – September 2015	Mediated SMAF rules	Yes – Use mediated SMAF rules
Auckland Unitary Plan Independent Hearings Panel – Expert conference joint statement - Topic 049	Covers matters regarding Stormwater - DEQRs	Yes – To be considered
Design Guideline Manual for Stormwater Treatment Devices – Technical Publication 10 (2003). Auckland Regional Council. Chapter 5.	Benchmark document for technical guidance on the design criteria for stormwater management devices	Yes - Provides technical guidance on design of stormwater devices

Guidelines for Stormwater Runoff Modelling in the Auckland Region – Technical Publication 108 (1999). Auckland Regional Council.	Guideline document for hydrology in Auckland Region	Yes - Provides guidance on rainfall depths and hydrological assessment method
Auckland Unitary Plan stormwater management provisions: technical basis of contaminant and volume management requirements– Technical Report 2013/035 (2013). Auckland Council.	Auckland Council document that outlines the key aspects of the Stormwater Management approach in the PAUP	Yes
Auckland Code of Practice: For Land Development and Subdivision (Chapter 4 - Stormwater) - November (2015). Auckland Council.	Provides minimum standards for the design and construction of stormwater systems for land development and subdivision	Yes - to be followed
Auckland Council Stormwater Flood Modelling Specifications (2011). Auckland Council.	Technical specification document for stormwater flood modelling	Yes - Provides guidance for build of stormwater flood models
Water Sensitive Design for Stormwater – Guidance Document 2015/004 (March 2015). Auckland Council.	Guidance document for the application of Water Sensitive Design (WSD)	Yes - outlines the WSD approach for the site. WSD works alongside the urban design solution.
NZS4404 – Land development and Subdivision infrastructure.	Provides detail on stormwater management including WSD, flood risk management, freeboard allowance etc.	Yes - Guidance to be followed

2.3 DESIGN CRITERIA

The design stormwater management design criteria for the Wainui Village Precinct is provided in Table 2 – Design Criteria.

Table 2 – Design Criteria

Item	Criteria	
Rainfall Depths (Climate Change)	2 Year ARI (50% AEP)	9% Increase on rainfall depth (95.9mm)
	5 Year ARI (20% AEP)	11.3% Increase on rainfall depth (139.1mm)
	10 Year ARI (10% AEP)	13.2% Increase on rainfall depth (164.1mm)
	20 Year ARI (5% AEP)	15.1% Increase on rainfall depth (196mm)
	50 Year ARI (2% AEP)	16.8% Increase on rainfall depth (234mm)
	100 Year ARI (1% AEP)	16.8% Increase on rainfall depth (262.8mm)
Upstream Development	Allow for Maximum Probable Development (MPD)[1]	

Detention (SMAF)	New impervious areas	Detention (temporary storage) and a drain down period of 24 hours for the difference between the pre-development and post development runoff volumes from the 95th percentile, 24 hour rainfall event minus the 5mm retention volume or any greater retention volume that is achieved. (2)
Retention (SMAF)	New impervious areas	Provide retention (volume reduction) of at least 5mm runoff depth for the impervious area for which hydrology mitigation is required. (2)
Quality	Buildings	No high contaminant yielding roofing or cladding e.g. Zn or Cu
	High use roads and carparks (3)	Treatment to achieve effluent quality for metals and sediments (4)
Flood Attenuation	Residential floor levels	0.5m freeboard to 1% AEP event flood levels. 0.3m freeboard to 1% AEP event overland flow paths where catchment > 4000m^2.
	Offsite properties: (downstream catchments) (4)	No Increase to inundation of buildings up to the 1% AEP event. Increases in peak levels have to be minor or less than minor.
Conveyance	Primary Network	10% AEP event (include allowance for climate change)
	Secondary Network	1% AEP event (include allowance for climate change)

Notes:

(1) Maximum Probable Development – An impervious coverage of 65% has been applied to all catchments with an underlying Future Urban Zone for MPD. This coverage is based on the Zoning Plan for the Argent Lane SHA.

(2) As per the recommended amendments to chapter J 7.X stormwater management area flow – rules (mediated SMAF provisions) and consultation with the HPO, the retention and detention criteria have been further defined as follows:

a. In a stormwater device that allows for infiltration to ground, the retention requirement is deemed to have been met if sufficient storage volume is provided for runoff from the 5mm event, regardless of the soil's infiltration capacity.

b. The full retention volume (i.e. runoff from 5mm of rainfall) can be taken up by detention as follows:

i. Provide detention (temporary storage) and a drain down period of 24 hours for the difference between the pre-development and post development runoff volumes from the 95th percentile (SMAF 1), 24 hour rainfall event minus any retention volume that is achieved, over the impervious area for which hydrology mitigation is required.

c. The full detention volume (i.e. runoff from 24mm of rainfall) can contribute towards the flood attenuation volume.

(3) High use roads and carparks are defined in the PAUP as roads with vehicle movements greater than 5000 vehicles per day. Quality treatment is required for carparks greater than 1000m^2.

(4) The stormwater quality concentration criteria introduced in the PAUP, which was notified on 30 September 2013, have been mediated as per Auckland Councils closing remarks during the Unitary Plan hearings dated 7th September 2015.

According to Auckland Council's Code of Practice for stormwater, compliance with these criteria is to be demonstrated by reference to two new Auckland Council publications yet to be published. These are a design manual for stormwater treatment devices (GD01) and a performance estimator for treatment trains (PETT).

Neither of these documents had been published at the time of writing of this report. Advice from Auckland Council's report TR2013/0351 is that a stormwater treatment device is deemed to have met the effluent contaminant concentration criteria if it is designed to TP108 standards.

(5) Offsite Properties – The intent of the PAUP with respect to offsite properties is to ensure that the effect of the development is minor or less than minor.

[1] Auckland Council, Technical Report 2013/035 *"Auckland Unitary Plan stormwater management provisions: Technical basis of contaminant and volume management requirements"*.

3 EXISTING CATCHMENT (PRE DEVELOPMENT)

3.1 LOCATION

The Wainui East Future Urban Area sits to the east of the northern motorway and has an undulating topography with a stream running along the southern boundary and through the centre of the precinct. There are clusters of exotic and native vegetation throughout the precinct, some of which exists as a riparian margin along the edge of the streams.

Approximately 86% of the FUZ discharges to the Orewa River with the remaining 14% discharging to Weiti Stream. The Orewa River drains to the Orewa Estuary and eventually to Whangaparoa Bay to the east while the Weiti Stream ultimately discharges to Karepiro Bay. Figure 2 shows the site location in relation to these discharge points.

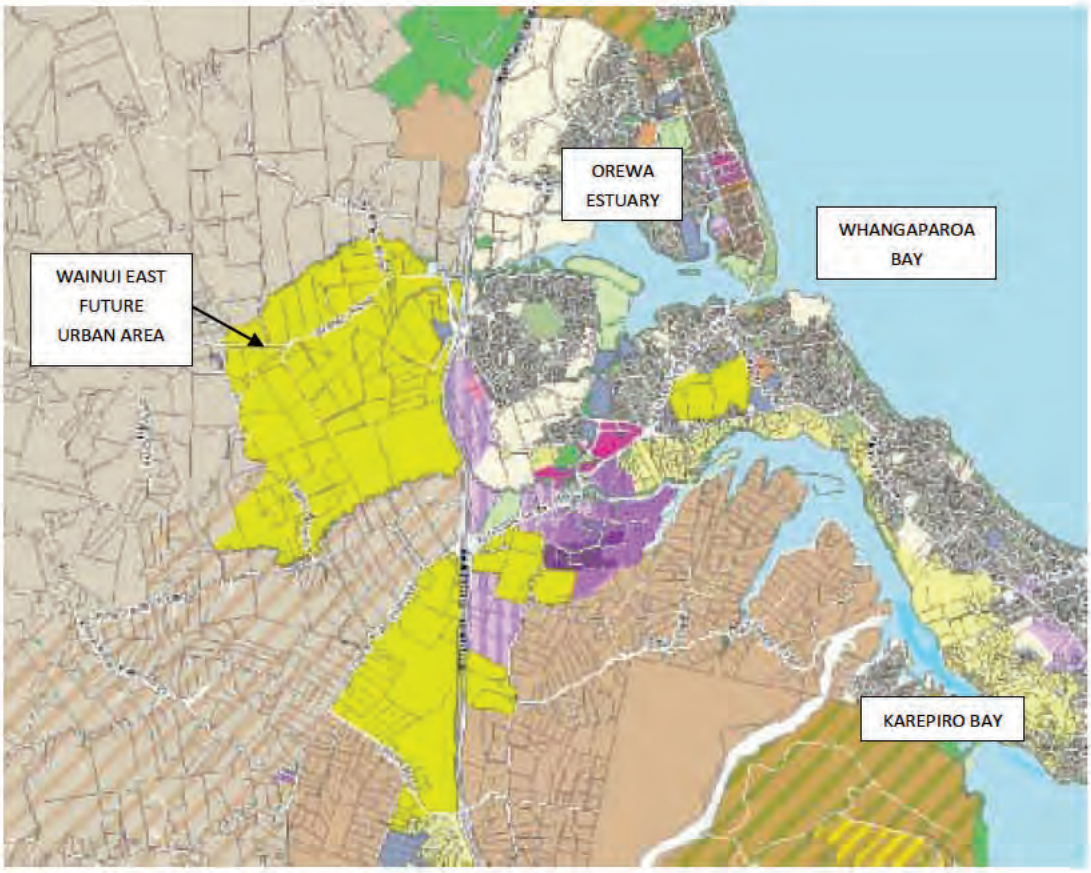

Figure 2: Site Location & Discharge Points

3.2 LANDUSE AND LANDCOVER

The existing ground cover is predominantly pasture with several isolated bush areas and tree shelter belts. The main gully system is generally covered by trees and/or bush. There are also a number of existing farm dwellings and structures located across the site. The existing land uses are predominantly pastoral and rural residential/lifestyle blocks.

3.3 TOPOGRAPHY

The Argent Lane SHA has East-West orientated ridgelines that are located along the Wainui Road alignment and immediately north of the Weiti River. A low level ridge runs centrally through the site. There is also a single isolated high-point in the northern half of the site. These ridges rise up to between RL35m and RL55m.

Surrounding these ridgelines and isolated high points, the local topography is typically gently sloping to flat, with numerous areas of swampy ground. Farm drains and minor streams generally fall towards a central gully system (Waterloo Creek) that runs in a northerly direction ultimately discharging to the Orewa River.

Contour plans of the existing site are shown in Figure 3 – Existing Contours.

3.4 WATERCOURSES & ECOLOGY

The Argent Lane SHA area consists of 5 “main” streams. Four streams ultimately discharge to the Orewa Estuary which is located to the northern side. The fifth stream is the Weiti Stream which is located on the southern side.

The watercourses within the Argent Lane SHA have been inspected and categorised in agreement with Auckland Council. The stream classifications are shown on Figure 4 – Argent Lane SHA Stream Classification.

Figure 3: Existing Contours

Figure 4: Argent Lane SHA Stream Classification

3.5 INFRASTRUCTURE

There is no existing public stormwater network within the Argent Lane SHA. A full topographical survey of the streams and infrastructure within the Argent Lane SHA has been undertaken. Additional infrastructure outside of the Argent Lane SHA has been surveyed for the stormwater flood model.

3.6 GROUND CONDITIONS & GEOLOGY

A geotechnical investigation undertaken by Tonkin & Taylor identified that the area is likely to be underlain by the Northland Allochthon materials, which typically consists of mudstone and siltstone. An analysis of the geological maps indicates that the site is likely to be underlain by limestone rich deposits that comprise the following:

- Mahurangi Limestone
- Mangakahia Complex
- Tauranga Group Alluvium

Geotechnical investigations have also found areas of swampy ground, or with exhibiting evidence of near surface ground water.

For the purposes of calculating stormwater runoff using the SCS methodology outlined in TP108, the soils have been classified as Hydrologic Group C. This classification is consistent with Auckland Council's soil type GIS layer.

3.7 FLOOD HAZARD

A Rapid Flood Hazard Assessment has been undertaken for the 1% AEP event in this area by Auckland Council. This assessment is a means of efficiently estimating worst-case flood extents on a catchment wide basis to help identify major overland flow paths and areas of potential flooding.

The Rapid Flood Hazard Assessment is undertaken with the underlying assumption of the primary network (pipe network & culverts) being completely blocked. Figure 5 shows the flood plain modelled by Auckland Council as shown on the Auckland Council GIS.

Flood modelling has been carried out as part of the assessment of effects of the development on the upstream and downstream sites. The flood modelling and effects are discussed further in Section 6 – Flood Effects of this report.

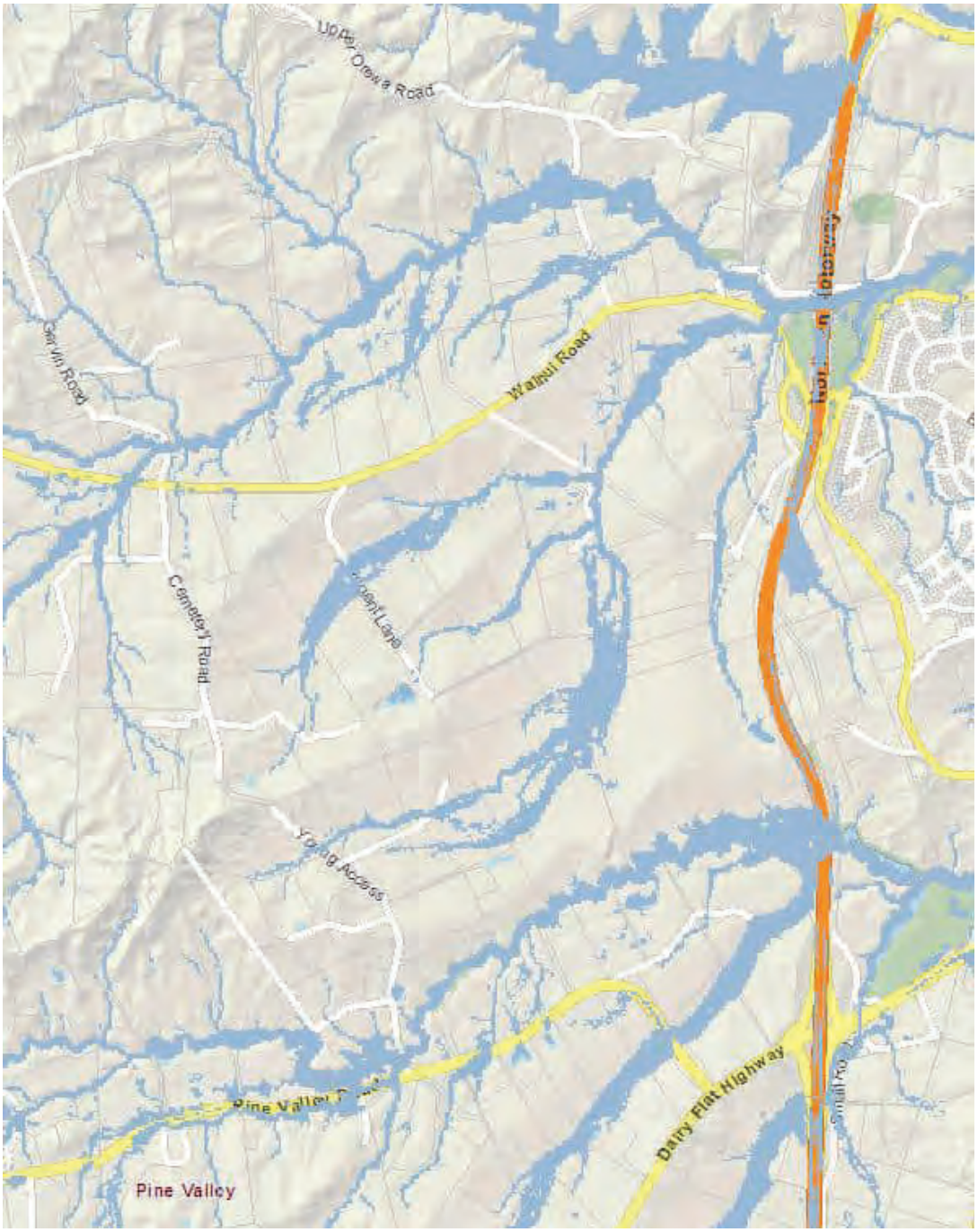

Figure 5: Auckland Council Rapid Flood Results

4 PROPOSED DEVELOPMENT

FHL have developed a vision for the future development of the land that will result in the creation of a village community located within the rural urban boundary that will support and complement the projected growth of the Orewa and Silverdale area.

The PAUP establishes that a quality built environment is one which maximises opportunities for the wellbeing of communities and social and economic exchange by providing safe and lively streets and public spaces, fronted by visually rich and engaging buildings.

A robust design process is required to achieve a quality built environment, which results in a development that contributes to an Auckland that is a sustainable, attractive and desirable city in which to live, work and play.

The Argent Lane SHA has the capacity to accommodate approximately 2,800 new dwellings, providing a mix of housing typologies (subject to initial infrastructure constraints of up to 2,000 dwellings). The new settlement will include parks, open space, restored and enhanced stream corridors, a local centre and shops to support the day to day needs of the local community.

The proposed zones respond to the natural landform and will create areas of local distinctiveness that support place based neighbourhood character and identity. Neighbourhoods will be demarcated by key movement corridors, contours and existing natural features including streams.

A Structure Plan for the Argent Lane SHA is shown in Figure 6 and a concept masterplan which illustrates what the Structure Plan could deliver for the Precinct is shown in Appendix A – Wainui East 1 Concept Masterplan.

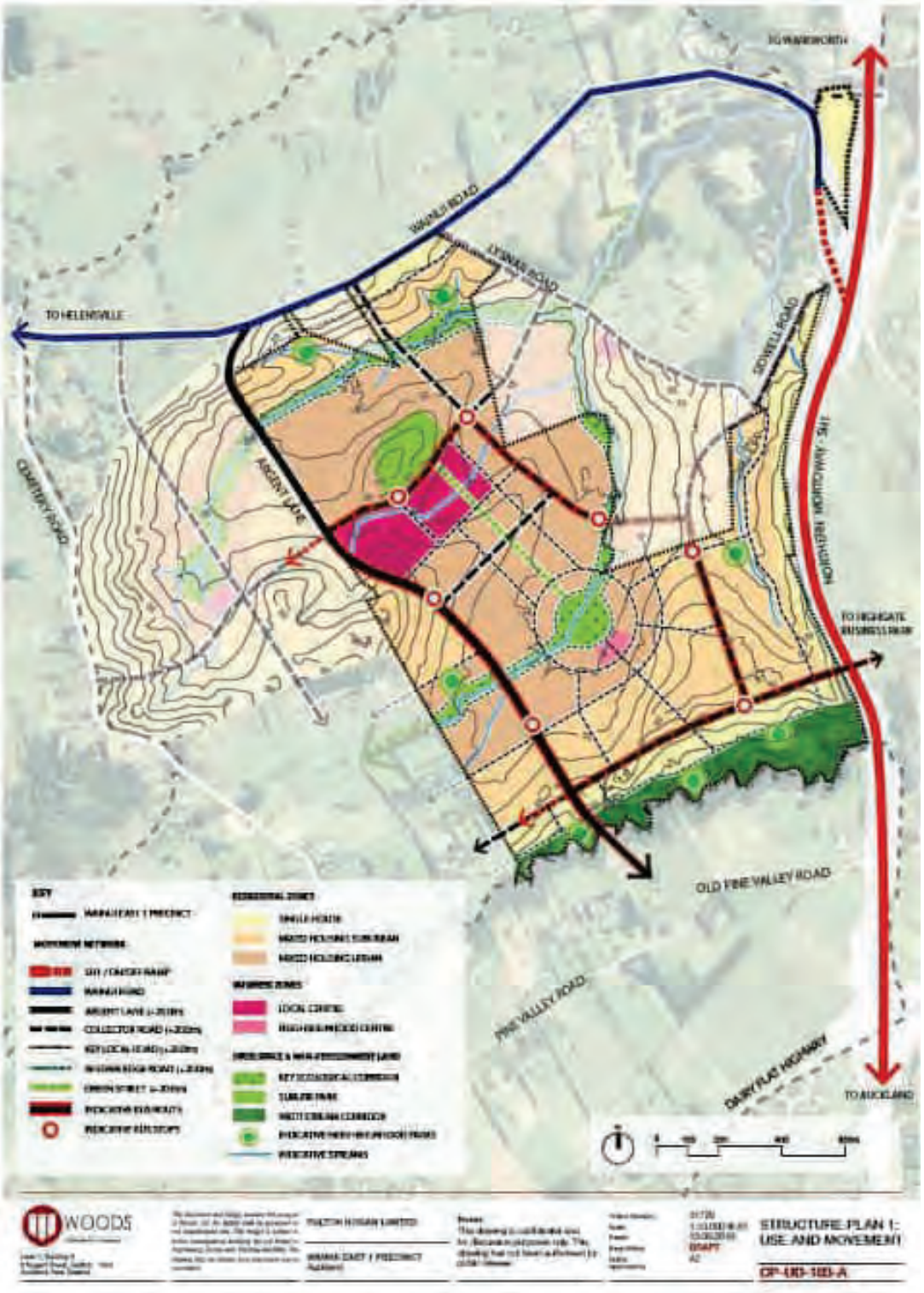

Figure 6: Argent Lane SHA Structure Plan

4.1 PROPOSED LANDUSE & IMPERVIOUS COVERAGES

The proposed land use change will increase impervious area and consequently stormwater runoff. The percentage of impervious area within the Argent Lane SHA is expected to increase from 5% to an approximately 65% (weighted average).

The existing impervious coverage of 5% was derived from an assessment of aerial photography and the impervious surfaces layer on Auckland Council GIS.

The weighted impervious coverage for the Argent Lane SHA has been determined based on the prepared zoning plan. The land zoning together with the corresponding percentages of maximum impervious coverage for each zone is summarized in Table 3 – Land use maximum impervious coverages.

A zoning plan is shown in Figure 7 – Zoning Plan.

Table 3 – Land use – Maximum Impervious Coverages

ZONE	Type	Impervious Coverage (%)
SINGLE HOUSE ZONE	DETACHED	60%
MIXED HOUSING SUBURBAN	> 300m² DETACHED	60%
	< 300m² ATTACHED / DETACHED	70%
MIXED HOUSING URBAN	> 300m² DETACHED	60%
	< 300m² ATTACHED / DETACHED	70%
MIXED HOUSING URBAN SUB PRECINCT	> 300m² DETACHED	60%
	< 300m² DETACHED	70%
	< 300m² ATTACHED	75%
NEIGHBOURHOOD CENTRE		100%
LOCAL CENTRE		100%
PARKS, STREAMS		40%
WEITI COVENANT AREA		40%
ROADS		73%
AVERAGE IMPERVIOUS COVERAGE		***65%**

**Average impervious coverage of 65% was calculated based on the land areas as per the zoning plan.*

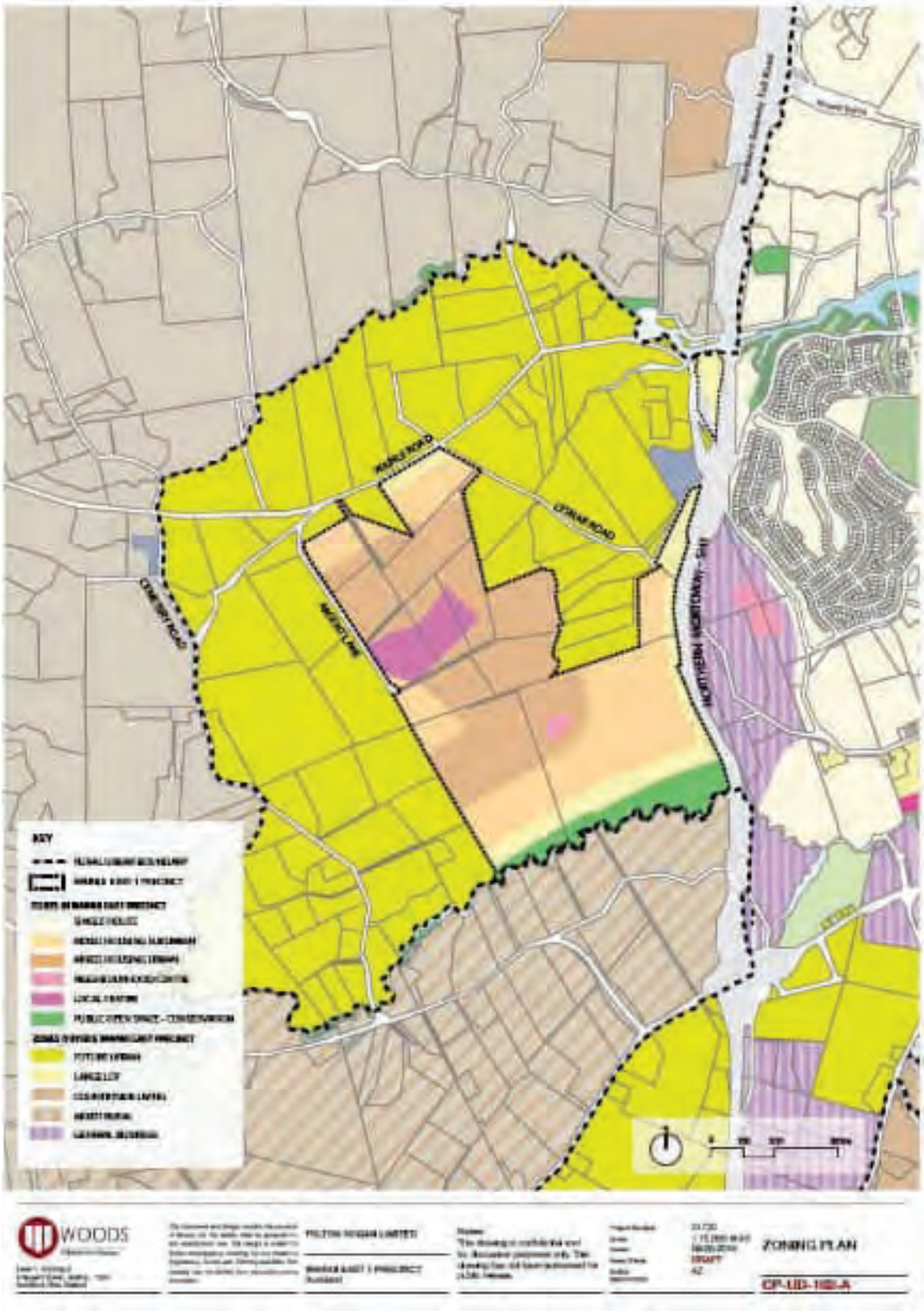

Figure 7: Argent Lane SHA Zoning Plan

5 STORMWATER CONSIDERATIONS

5.1 STORMWATER MANAGEMENT

The Argent Lane SHA is located within a "Stormwater Management Area – Flow 1" (SMAF 1) overlay, which guides the overall stormwater management. SMAF 1 areas contain catchments that typically discharge into stream environments that have relatively low levels of existing impervious area.

Whilst the stormwater management is guided by SMAF 1 hydrology mitigation requirements, it also considers the principles of Water Sensitive Design as discussed in Auckland Councils Guideline Document 04 (GD04) and as recommended in the PAUP.

5.1.1 Stormwater Management Area Flow Requirements (SMAF1)

The mediated stormwater hydrology mitigation requirements for SMAF 1 areas are as follow:

- **Detention** (temporary storage) and a drain down period of 24 hours for the difference between the pre-development and post development runoff volumes from the 95th percentile, 24-hour rainfall event minus the 5mm retention volume or any greater retention volume that is achieved.
- **Retention** (volume reduction) of at least 5mm runoff depth for the impervious area for which hydrology mitigation is required. Stormwater retention is provided to reduce the total volume being discharged to the environment by managing the runoff via infiltration, evapotranspiration or by incorporating rainwater reuse/harvesting.

The hydrology mitigation requirements for SMAF 1 areas as noted above are required except where:

- A suitably qualified person has confirmed that soil infiltration rates are less than 2mm/hr or there is no area on the site of sufficient size to accommodate all required infiltration that is free of geotechnical limitations (including slope, setback from infrastructure, buildings structures or boundaries and water table depth); and
- Rainwater reuse is not available because:
    a) The quality of the stormwater runoff is not suitable for on-site reuse (i.e. for non-potable water supply, garden/crop irrigation or toilet flushing); or

b) There are no activities occurring on the site that can re-use the full 5mm retention volume of water.

5.1.2 Design Effluent Quality Requirements (DEQR)

The PAUP which was notified on 30 September 2013 outline's the key stormwater contaminants generated that require treatment before discharging into the receiving environment.

At the time of writing, Auckland Council are developing updated stormwater treatment guidelines. The Auckland Unitary Plan stormwater management provisions (TR2013/035) notes that DEQRs can be met through the use of stormwater retention and detention devices.

TR2013/035 further notes that the device design guidelines within the former Auckland Regional Council's Technical Publication 10 (TP10) provide the required treatment level to satisfy the DEQR's under the PAUP.

5.1.2.1 Compliance with DEQRs

The PAUP states that demonstrating compliance with DEQRs is equivalent to demonstrating compliance with 'best practice', and that there is no requirement to prove that the water quality from a particular site meets the DEQR concentrations.

It is important to note that during the 049 – Expert Conference Joint Statement 2015-06-10 (DEQR), experts agreed to remove Table 3 – Stormwater quality management requirements (Chapter 4.14 PAUP).

It was agreed that high use roads and carparks should be treated for sediment and metals and that runoff from high contaminant yielding building materials should be treated for metals. All experts agreed that a method approach is preferred with the treatment provided by TP10 devices as the de facto compliance standard.

It is expected that devices designed in accordance with TP10 provide the required treatment level to satisfy the DEQR's. Table 4 shows a summary of the applicable BMPs in TP10 that comply with the notified PAUP DEQRs.

Table 4 – TP10 BMPs Compliant with DEQRs (as per notified PAUP)

Treatment Device	DEQRs			
	TSS	Total Cu	Total Zn	[1]Temperature
Swale	x	x	x	x
Filter Strip	x	x	x	x
Wetland	x	x	x	x
Enhanced Swale[2]	x	x	x	x
Bio retention	x	x	x	x
Permeable Paving	x	x	x	x

[1] Provided the wetland is highly vegetated and well shaded.

[2] Applicable to raingardens and tree pits.

6 FLOOD EFFECTS

A 1D/2D stormwater flood model was built in XPStorm2016.1 for the ED, MPD and Argent Lane SHA scenarios. The flood modelling was undertaken to inform the Stormwater Management Plan with regards to the flood effects as a result of development and was done in consultation with the DPO.

This section will discuss the results from the modelling undertaken. Details regarding the model build parameters and assumptions are detailed in the Wainui East Model Build Report which is attached as Appendix B of this report.

6.1 FLOOD RISK MANAGEMENT

The PAUP defines the flood protection design criteria for new developments as:

- Buildings are to be located outside the 1% AEP floodplain,
- Buildings located outside the 1% AEP overland flow paths with floor levels set at a freeboard to flood levels.

The PAUP is however unclear in terms of design criteria for assessing potential effects on flood risk. The PAUP rules (section 4.14 1.22.1a and 1b) state:

- *"discharge must not result in, or increase the flooding of other properties in events up to the 10 per cent AEP or the inundation of buildings in events up to the 1 per cent AEP"*

and

- *"the discharge must occur with the minimum of nuisance and damage in particular avoids more than minor adverse effects on any other property"*

Failing to meet the above would result in the activity status being classed as restricted discretionary.

6.2 MODELLED SCENARIOS

Through consultation with the DPO, it was decided that the design events considered would be the 2, 10 and 100 year ARI events (for both existing and future rainfall scenarios). These events would be modelled for the proposed ED, MPD and Argent Lane SHA scenarios. The modelling undertaken is based on unmitigated scenarios and therefore does not consider stormwater mitigation devices such as raingardens or rain tanks.

A total of 36 scenarios were modelled, however the main scenarios have been summarized in Table 5 – Modelled Scenarios

Table 5 - Modelled Scenarios

Scenario	Landuse	Landform	Hydraulic Structure	Rainfall
2	ED	Existing	Existing	Existing 10 year
3	ED	Existing	Existing	Existing 100 year
5	ED	Existing	Existing	Future 10 year
6	ED	Existing	Existing	Future 100 year
14	Argent Lane SHA	Future	Existing & Future [1]	Existing 10 year
15	Argent Lane SHA	Future	Existing & Future [1]	Existing 100 year
17	Argent Lane SHA	Future	Existing & Future [1]	Future 5 year
18	Argent Lane SHA	Future	Existing & Future [1]	Future 10 year
19	Argent Lane SHA	Future	Existing & Future [1]	Future 100 year
27	MPD	Future	Future - Argent Lane Culverts Open	Future 10 year
28	MPD	Future	Future - Argent Lane Culverts Open	Future 100 year
30	MPD	Future	Future - Argent Lane Culverts Open	Existing 10 year
31	MPD	Future	Future - Argent Lane Culverts Open	Existing 100 year
32	Argent Lane SHA	Existing	Existing & Future [1]	Existing 20 year
33	Argent Lane SHA	Future	Existing & Future [1]	Future 20 year
34	ED	Existing	Existing	Existing 50 year
35	ED	Future	Existing	Future 50 year
36	ED	Existing	Existing	Existing 20 year

**Existing rainfall refers to current year, Future rainfall expected year 2100*

It is important to note that the provision to meet the SMAF 1 hydrology mitigation requirements for retention & detention for new impervious areas is equivalent to volume required for mitigation of the 2 year ARI event.

As the SMAF 1 hydrology mitigation requirements mitigate the effects of the 2 year ARI event there would be no increase in flood effects for this event, the results therefore focus on the events outlined in Table 5.

6.3 FLOOD RISK

A set of flood maps have been prepared for the 10 and 100 year ARI events (future and existing) for the ED, MPD and Argent Lane SHA scenarios. These flood maps can be found in Appendix C - Flood Maps.

Within the Wainui East Future Urban Area, flooding issues appear to be confined upstream of the Wainui Road Bridge crossing above Waterloo Creek.

Results have been tabulated for the following locations.

- Link 178 – A downstream Link for the Orewa River
- Kowhai Bridge
- Wainui Bridge
- Link 8 – Confluence point for upstream of the Argent Lane SHA
- Weiti Culvert – Upstream levels for Weiti Culvert (modelled as NZTA_Culv)
- Node 195 – A downstream link for the Weiti Stream

Figure 8 shows the location of these areas in context with the XP Storm modelled Links and Nodes. Results for the 10 year ARI event (existing & future rainfall scenarios) are summarised for the ED, MPD and Argent Lane SHA scenarios in Tables 6 - 9.

6.3.1 Safety Criteria

The key safety criteria for vehicles crossing a floodway is the product of water velocity and depth of flow. The Austroads 'Safety Provisions for Floodways Over Roads' document was used to determine whether the depth and velocity at which flows overtop roadways, bridges or crossings meet the safety criteria set out in the document. The safety criteria can be seen in Figure 9.

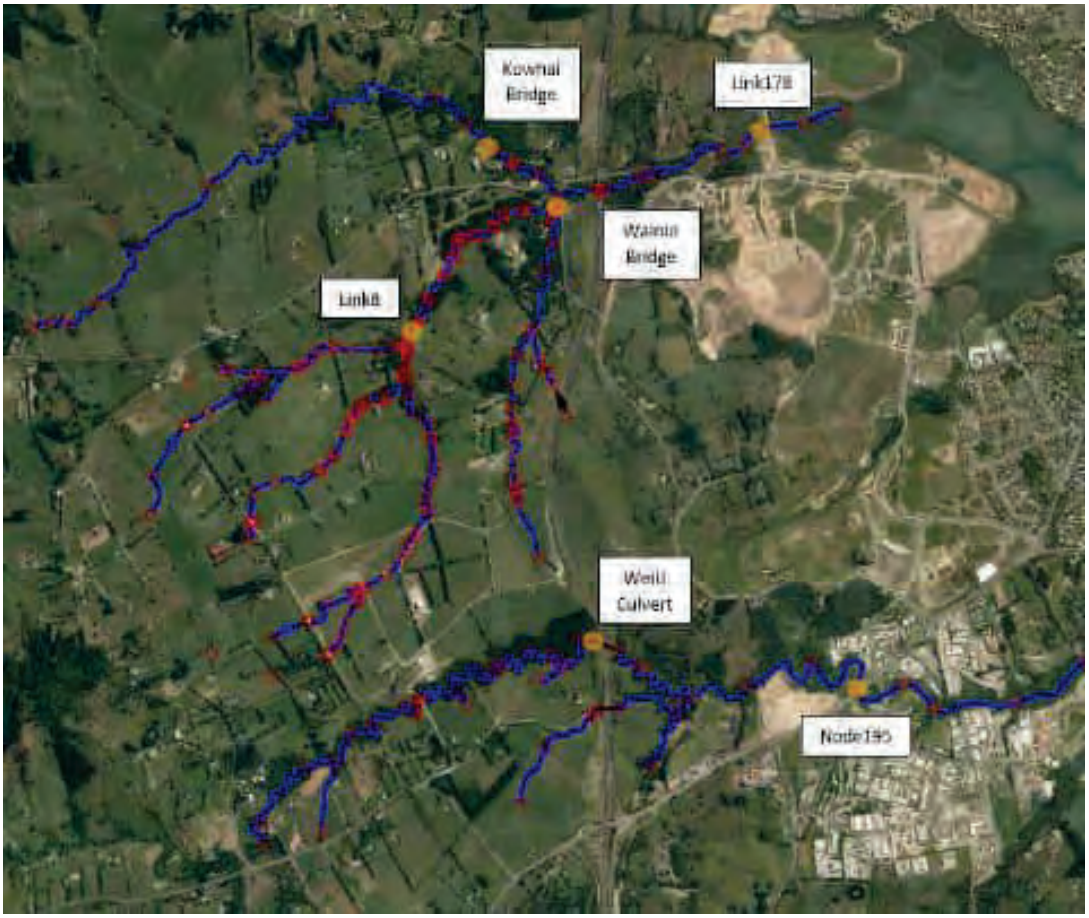

Figure 8: Result Locations

Table 3.2: The proposed draft interim criteria for stationary vehicle stability

Class of vehicle	Length (m)	Kerb weight (kg)	Ground clearance (m)	Limiting still water depth with zero velocity	Limiting high velocity flow depth (3 m/sec)	limiting velocity (m/sec) at low depth	Equation of stability
Small passenger	< 4.3	< 1250	< 0.12	0.3	0.1	3.0	DxV < 0.3
Large passenger	> 4.3	> 1250	> 0.12	0.4	0.15	3	DxV < 0.45
Large 4WD	> 4.6	> 2000	> 0.22	0.6	0.2	3	DxV < 0.6

Dalrymple et al. (2011)

Figure 9: Austroads Floodway's Safety Criteria

Table 6: Summary 10 year ARI event (Existing Rainfall)

Location	Event	ED (S2)		MPD (S30)		Argent Lane SHA (S14)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	10yr Existing	90.40	1.73	101.48	1.95	95.41	1.71
Kowhai Bridge	10yr Existing	64.53	4.27	65.90	4.36	64.53	4.27
Wainui Bridge	10yr Existing	24.03	5.06	35.10	5.54	28.55	5.28
Link 8	10yr Existing	24.03	5.17	36.30	5.68	28.92	5.41
Weiti Culvert (NZTA_Culv)	10yr Existing	43.37	9.21	44.81	9.30	43.48	9.21
Link189	10yr Existing	72.02	4.12	79.26	4.29	72.24	4.12

Table 7: Summary 10 year ARI event (Future Rainfall)

Location	Event	ED (S5)		MPD (S27)		Argent Lane SHA (S18)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	10yr Future	111.50	2.06	125.04	2.23	116.52	2.10
Kowhai Bridge	10yr Future	79.05	4.53	80.38	4.63	79.05	4.57
Wainui Bridge	10yr Future	30.20	5.40	43.83	5.75	35.41	5.56
Link 8	10yr Future	29.99	5.52	42.56	5.93	34.57	5.70
Weiti Culvert (NZTA_Culv)	10yr Future	52.20	9.77	53.78	9.86	52.33	9.78
Link189	10yr Future	88.67	4.45	96.01	4.59	89.06	4.45

Table 8: Summary 100 year ARI event (Existing Rainfall)

Location	Event	ED (S3)		MPD (S31)		Argent Lane SHA (S15)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	100yr Existing	179.51	2.26	190.74	2.51	184.50	2.22
Kowhai Bridge	100yr Existing	122.23	5.19	122.39	5.26	122.33	5.21
Wainui Bridge	100yr Existing	50.74	5.96	60.76	6.16	55.16	6.04
Link 8	100yr Existing	45.51	6.19	61.94	6.48	50.10	6.29
Weiti Culvert (NZTA_Culv)	100yr Existing	73.50	11.72	74.35	11.86	73.57	11.73
Link189	100yr Existing	134.08	5.18	143.07	5.33	135.34	5.18

Table 9: Summary 100 year ARI event (Future Rainfall)

Location	Event	ED (S6)		MPD (S28)		Argent Lane SHA (S19)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	100yr Future	226.13	2.57	235.94	2.79	230.86	2.61
Kowhai Bridge	100yr Future	150.84	5.59	151.00	5.64	150.92	5.62
Wainui Bridge	100yr Future	59.96	6.17	71.10	6.37	64.84	6.25
Link 8	100yr Future	57.55	6.48	79.51	6.80	63.52	6.61
Weiti Culvert (NZTA_Culv)	100yr Future	86.26	13.02	87.15	13.12	86.33	13.03
Link189	100yr Future	159.91	5.56	167.68	5.69	159.99	5.57

The tables above highlight an effect on the Wainui Road Bridge crossing above Waterloo Creek. This is discussed further in Section 6.3.1 along with Weiti Culvert in Section 6.3.2.

The effect on the Wainui road crossings is discussed further in section 6.3.3.

6.3.2 Wainui Road Bridge (Waterloo Creek Crossing)

The Wainui Road bridge has a low chord elevation of 4.79m RL (underside of bridge) with the high chord elevation (road level) surveyed at an elevation of 5.44m RL.

The flood modelling predicts the following:

- Stormwater flows will exceed the low chord elevation for the ED scenario in the 10 year ARI event (existing rainfall) (5.01m RL),
- The MPD scenario will result in 100mm overtopping of the bridge for the same rainfall event (5.54m RL).
- The Argent Lane SHA scenario results in an increase in flood level to 5.28m RL in the 10 yea ARI event (existing rainfall). While this is a higher flood level than in the ED scenario, it does not result in the bridge overtopping.
- In the 10 year ARI event (future rainfall) ED scenario, the flood level reaches an elevation of 5.40m RL. This is 40mm below the bridge deck level.
    - The bridge will overtop by 310mm in the MPD scenario and by 120mm in the Argent Lane SHA scenario.
    - The overtopping depth in the Argent Lane SHA scenario of 120mm is considered trafficable for passenger vehicles under Austroads "Safety Provisions for Floodways Over Roads" document (DxV=0.072<0.3 therefore OK).

- The XP Storm model predicts that the Bridge will not overtop in the 20 year ARI event (existing rainfall) under the ED scenario, whilst overtopping would occur in the Argent Lane SHA (existing rainfall) scenario.
- The Bridge is predicted to overtop in the ED scenario during the 50 year ARI event (existing rainfall).
- The XP Storm model predicts that the Wainui Road Bridge will overtop in the 100 year ARI event for all scenarios (ED, MPD and Argent Lane SHA) for both existing and future rainfall.
- The 5 year ARI event was simulated for the Argent Lane SHA scenario to determine whether the 5 year flows are passable. The model doesn't predict overtopping of the bridge in the future rainfall 5 year ARI event.

The flood results including the time of inundation for the Wainui Road Bridge has been summarised in Table 10 – Wainui Bridge Flood Results.

Table 10: Wainui Bridge Flood Results

Scenario	Landuse	Rainfall	U/S Level	Stream Flow [m^3/s]	Bridge Flow [m^3/s]	Flow Total [m^3/s]	Inundation Time	Inundation/ Overtopping
2	ED	Existing 10 year	5.06	24.03	0.00	24.03		No
3	ED	Existing 100 year	5.96	39.16	11.58	50.74	**1hr 37mins**	Yes
5	ED	Future 10 year	5.40	30.20	0.00	30.20		No
6	ED	Future 100 year	6.17	40.64	19.33	59.96	**2hrs**	Yes
14	Argent Lane SHA	Existing 10 year	5.28	28.55	0.00	28.55		No
15	Argent Lane SHA	Existing 100 year	6.04	40.94	14.22	55.16	**1hr 44mins**	Yes
17	Argent Lane SHA	Future 5 year	5.22	27.37	0.00	27.37		No
18	Argent Lane SHA	Future 10 year	5.56	34.08	1.33	35.41	**46mins**	Yes
19	Argent Lane SHA	Future 100 year	6.25	42.25	22.58	64.84	**2hrs 12mins**	Yes
27	MPD	Future 10 year	5.75	38.46	5.37	43.83	**1hr 4mins**	Yes
28	MPD	Future 100 year	6.37	43.41	27.70	71.10	**2hrs 10mins**	Yes
30	MPD	Existing 10 year	5.54	34.22	0.89	35.10	**34mins**	Yes
31	MPD	Existing 100 year	6.16	41.94	18.82	60.76	**1hr 49mins**	Yes
32	Argent Lane SHA	Existing 20 year	5.59	34.67	1.77	36.44	**50mins**	Yes
33	Argent Lane SHA	Future 20 year	5.59	39.34	8.15	47.48	**1hr 28mins**	Yes
34	ED	Existing 50 year	5.76	37.00	5.49	42.49	**1hr 11mins**	Yes
35	ED	Future 50 year	6.01	39.34	13.36	52.69	**1hr 44mins**	Yes
36	ED	Existing 20 year	5.43	30.8144	0	30.81		No

The results from the table above highlight the following:

- There is no inundation / overtopping of the bridge in the 10 year ARI (existing rainfall) ED or Argent Lane SHA scenarios.

- The time of inundation for the ED scenario in the 100 year ARI event (existing rainfall) is 1hr and 37 minutes and 2 hours under the future rainfall scenario.
- Time of inundation increased by 7 minutes for the Argent Lane SHA in the 100 year ARI event (existing rainfall) and 12 minutes with future rainfall. The MPD scenario increases the inundation time by an additional 5 and 8 minutes respectively.
    - The increase in inundation time of 7 and 12 minutes for the Argent Lane SHA in the 100 year ARI events is considered minor when put into perspective with the total time of inundation under the existing land use (ED) scenarios (1 hour and 37 minutes & 2 hours).
- The Wainui Road Bridge overtops in the 100 year event (existing and future rainfall) for all modelled scenarios ED, MPD and Argent Lane SHA.
- The Wainui Road Bridge is deficient when the effects of climate change are taken into consideration.
- Overtopping of the bridge in the Argent Lane SHA scenario for the 10 year future rainfall scenario will result in a flood depth of 120mm over the carriageway. This is considered trafficable for passenger vehicles, as stated in Austroads "Safety Provisions for Floodways Over Roads" document (DxV=0.072<0.3 therefore OK).

Overall the Wainui Road Bridge acts as a bottleneck for the upstream catchment, as the bridge sees a decrease in effective cross sectional area. This acts as a throttle for flows, resulting in an increase in flood levels and flood extents upstream.

It is expected that if flows were able to pass freely at the Wainui Road Bridge, there would be a decrease in the upstream flood levels and corresponding flood extents.

6.3.3 Weiti Culvert

The southern portion of the Wainui East Future Urban Area discharges to the Weiti Stream. The flows from the stream pass through a 4.50m diameter culvert under the Motorway and discharges ultimately into Karepiro Bay.

The culvert sit wells below the motorway. The stream topography upstream of the culvert is well incised. The headwater level at this culvert is 9.69m RL, with the motorway at approximately 16.5m RL.

In larger storm events, the flood elevation at this culvert remains well below the motorway and its surrounding banks (13.12m RL in the 100 year MPD + CC scenario) with no notable downstream effects as shown in the prepared flood maps (Appendix C).

6.3.4 Wainui Road Crossings

The stream tributary adjacent to Wainui Road has two crossings that enable access to the adjacent lot owners. The crossings have been surveyed and included in the flood model.

The location of these crossings with reference to the XP Storm modelled links and nodes is shown in Figure 10 – Wainui Road Crossings.

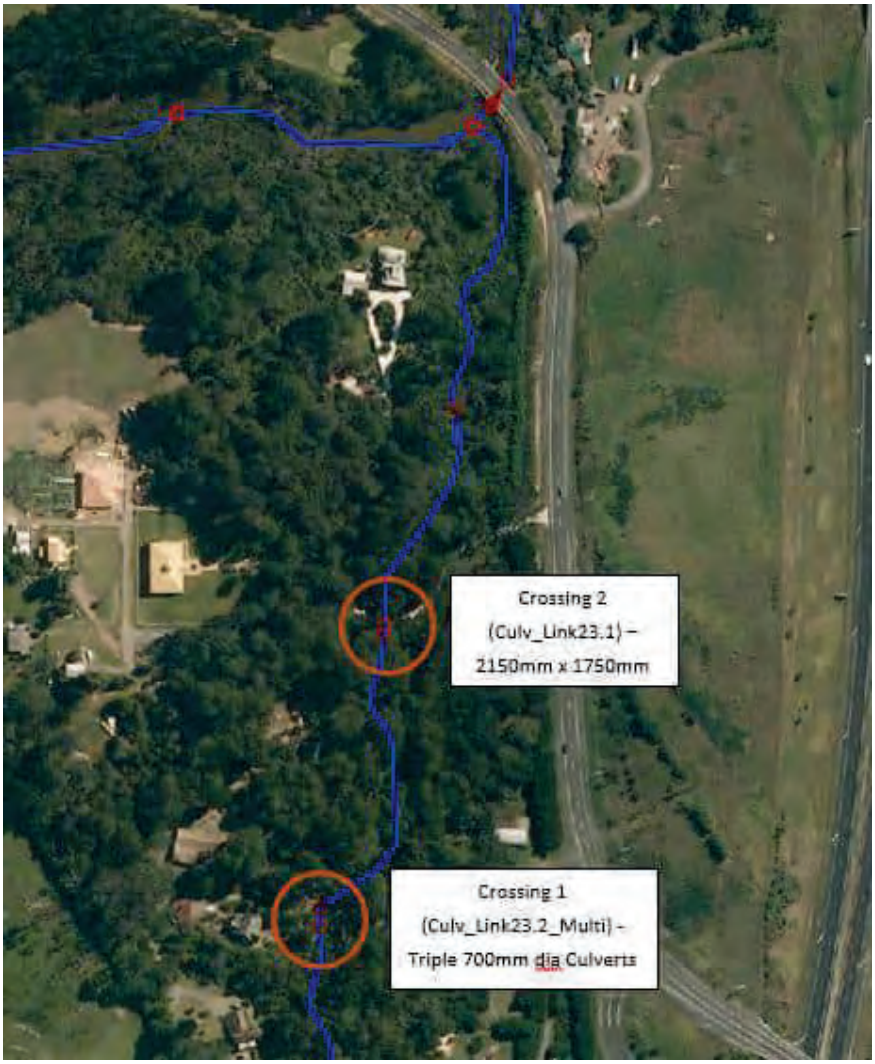

Figure 10: Wainui Road Crossings

Crossing 1 consists of triple 700mm diameter culverts whilst crossing 2 has been modelled as an ellipse culvert with a 2150mm width and a 1750mm height. The culvert at crossing 2 was modelled as an ellipse as the top of the culvert is deformed due to the existing vehicle crossing. Photos of the culverts at crossings 1 & 2 are shown in Figures 11 & 12.

Figure 11: Wainui Road Crossing 1

Figure 12: Wainui Road Crossing 2

The flood model predicts that crossing 1 is deficient, it is important to note that land for crossing 1 is owned by the applicant therefore the effects on this culvert are not discussed in detail.

The flood model results for the Wainui Road Crossing 2 are presented in Table 11.

Table 11: Wainui Road Crossing 2

Scenario	Landuse	Rainfall	Crossing 2 (Culv_Link23.1) Overtopping
2	ED	Existing 10 year	No
3	ED	Existing 100 year	Yes
5	ED	Future 10 year	No
6	ED	Future 100 year	Yes
14	Argent Lane SHA	Existing 10 year	No
15	Argent Lane SHA	Existing 100 year	Yes
17	Argent Lane SHA	Future 5 year	No
18	Argent Lane SHA	Future 10 year	Yes
19	Argent Lane SHA	Future 100 year	Yes
27	MPD	Future 10 year	Yes
28	MPD	Future 100 year	Yes
30	MPD	Existing 10 year	No
31	MPD	Existing 100 year	Yes
32	Argent Lane SHA	Existing 20 year	Yes
33	Argent Lane SHA	Future 20 year	Yes
34	ED	Existing 50 year	Yes
35	ED	Future 50 year	Yes
36	ED	Existing 20 year	No

The flood results from Table 11 are summarised as follows:

- The crossing in the existing ED scenario will overtop in 50 and 100 year ARI events (existing rainfall) and 20, 50 and 100 year ARI events under future rainfall conditions.
- The culvert overtops in the Argent Lane SHA scenario with existing rainfall for the 20 year ARI event.
    - The overtopping depth under this scenario is 66mm which is considered trafficable for passenger vehicles under Austroads 'Safety Provisions for Floodways Over Roads' document (DxV < 0.3).
- The Argent Lane SHA scenario under future rainfall conditions would result in overtopping of 38mm during the 10 year ARI event.
    - The overtopping depth under this scenario is 38mm which is considered trafficable for passenger vehicles under Austroads 'Safety Provisions for Floodways Over Roads' document (DxV < 0.3).

Overall the increase in the upstream flood extents in this area can be considered less than minor. The existing culvert acts as a restriction and it is expected that an upgrade or additional culvert would enable flows to pass forward without causing overtopping.

As this area is zoned future urban it is expected that this culvert would be upgraded prior to the effects of climate change taking place.

6.4 FLOOD RISK MITIGATION

Overall the increase in flood extents do not affect habitable floor levels for the 10, 50 or 100 year ARI events (10%, 2% or 1% AEP). Flood effects for the 10 and 100 year ARI events shown in the flood maps (Appendix C) are confined to areas upstream of the Wainui Road Bridge crossing above Waterloo Creek. These effects are a result of the bridge acting as a bottleneck for the upstream flows.

It is expected that if flows were able to pass freely at the Wainui Road Bridge, the effects of development with regards to increases in upstream flood levels and corresponding flood extents would not be notable.

No notable flood effects are observed downstream of the Wainui Road bridge as shown in the prepared flood maps. Similarly, there are no notable effects at the Weiti Culvert or other areas upstream of the Argent Lane SHA.

The stormwater management approach outlined in section 7 of this report details the general approach for the catchment. The recommended approach is to pass flows forward, however options for flood attenuation through the use of offline wetlands or dry basins are available.

It is important to note that the flood effects from the existing rainfall Argent Lane SHA scenario are considered less than minor, as there is no notable increase in flood extents as shown in the flood maps provided in Appendix C. The effects on the Wainui Road Bridge crossing over Waterloo Creek are limited to a small increase in flood depth.

Given the full effects of climate change are not expected to have an impact until 2090, it is recommended to pass flows forward until a complete solution around the Wainui Road Bridge Crossing over Waterloo Creek is provided. Options detailing the Wainui Road Bridge crossing over Waterloo Creek are discussed further in section 7.5 of this report.

7 STORMWATER MANAGEMENT APPROACH

The approach for stormwater management is to focus on options which treat and detain stormwater runoff on site.

7.1 STORMWATER MANAGEMENT ZONES

The stormwater management plan has been developed to meet the objectives and design criteria set out in Section 5 of this report. The overall approach is based on the five different stormwater management zones (refer Figure 13), these zones have been identified based on the following:

- If the zone is within the Rural Urban Boundary,
- If the zone is located within the SMAF 1 overlay,
- If the discharging environment is coastal, and
- If flood attenuation is required.

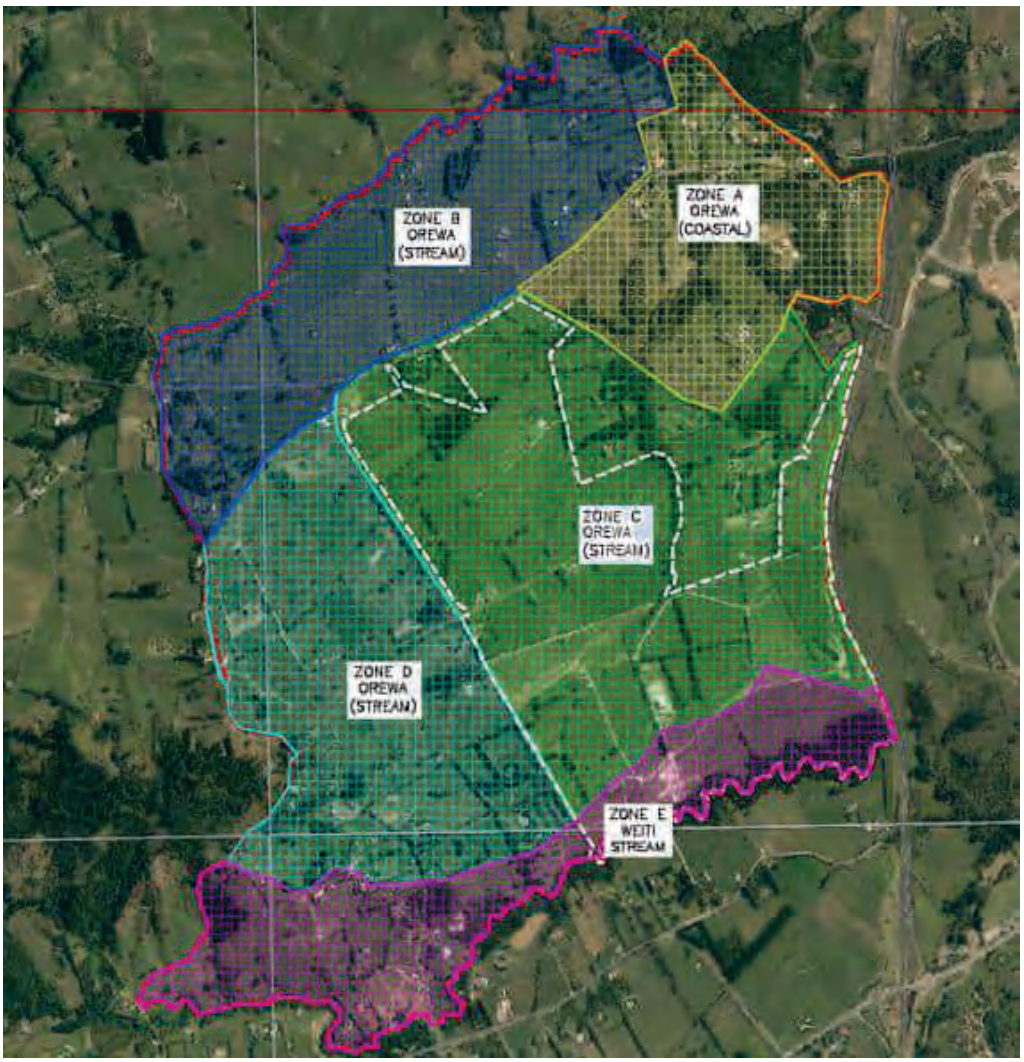

Figure 13: Stormwater Management Zones

All stormwater management zones are located within the SMAF 1 overlay. The general approach for each of the zones are as follows:

Stormwater Management Zone A

Stormwater Zone A discharges to a portion of Waterloo Creek or Orewa River which has a coastal influence. This coastal influence has been determined based on the downstream level of 2m RL.

The general approach for stormwater management for this zone is water re-use and retention at source. Detention is not recommended for areas within this zone which discharge to coastal influenced sections of Waterloo Creek or Orewa River. Detention is however recommended for

the area within this zone discharging to Sidwell Stream that runs adjacent to the northern motorway and where the stream level is above 2m RL.

Due to the zones proximity to the coastal environment and the Wainui Rd Bridge crossing above Waterloo Creek. It is recommended that flows are passed forward as the peak runoff from this stormwater management zone is expected to pass prior to the peaks of the upstream catchments, therefore flood attenuation is not recommended for this zone.

Stormwater Management Zone B

Stormwater Zone B discharges to the Orewa River. The general approach for this zone is to meet the SMAF hydrology mitigation requirements (retention, detention) at source.

It is recommended that stormwater flows for this zone are passed forward.

Stormwater Management Zone C

Stormwater Zone C discharges into various tributary streams that ultimately discharge to the Orewa River. The general approach for this zone is to meet the SMAF hydrology mitigation requirements (retention, detention) at source.

It is recommended that stormwater flows for this zone are passed forward. Flood attenuation however remains an option due to development exacerbating the existing effects on Wainui Road Bridge crossing above Waterloo Creek.

Stormwater Management Zone D

The general approach for this zone is to meet the SMAF hydrology mitigation requirements (retention, detention) at source.

Stormwater Zone D currently discharges into Zone C via culverts under Argent Lane. Future development in this area will allow MPD flows to discharge into the downstream network. If flows from this Zone are passed forward the effects on the Wainui Road Bridge above Waterloo Creek will be significantly exacerbated.

Given this zone is the most upstream catchment, the option of exploring flood attenuation for this zone is more likely than zones downstream that are closer to the outlet. The recommendation for this zone remains to pass flows forward.

Stormwater Management Zone E

Stormwater Zone E discharges to the Weiti Stream. The general approach for this zone is to meet the SMAF hydrology mitigation requirements (retention, detention) at source.

It is recommended that stormwater flows are passed forward as the flooding effects are not pronounced; flood attenuation is therefore not recommended.

7.1.1 Best Practicable Options (Stormwater Management Toolbox)

A stormwater device toolbox has been prepared that summarizes the Best Practicable Options (BPO) for the proposed stormwater devices for each stormwater management zone. This toolbox (Table 8 – Stormwater Management Toolbox) has been prepared to assist in selecting appropriate stormwater management devices for each zone.

A multi criteria analysis was undertaken to determine the suitability and application of potential stormwater management devices, a copy of this assessment can be found in Appendix D – Multi Criteria Analysis.

Each measure in the toolbox has been reviewed against the proposed development typology and layout within the Argent Lane SHA to determine the best practicable option. Consideration was given to:

- Permanent/intermittent streams to be protected,
- Existing drainage characteristics and topography,
- Soil characteristics,
- Ability to meet objectives and best practice guidance, and
- Construction and maintenance.

***Table 12:** Stormwater Device Toolbox*

Stormwater Device		Typical Applications		Retention	Detention	Treatment	Flood Attenuation	Sizing Criteria
		Private Areas	Public Areas					
Raintank	Retention	Roof areas	N/A	Yes	No	N/A	No	Vs = 5 mm/m² IMP for Ret
	Detention	Roof Areas	N/A	No	Yes	N/A	No	Vs = 19mm/m² IMP for Det
	Retention & Detention	Roof areas	N/A	Yes	Yes	N/A	No	Vs = 24mm/m² IMP Det/Ret
Bioretention (Raingarden)	Retention & Detention	Roofs, Carparks, Driveways	Roads, Parking bays, Footpaths	Yes	Yes	Yes	No	2.2m width As = 12.1% m2 IMP for tapered walls with rectangular base Vs = 24 mm/m2 IMP for Det/Ret
								2.4m width As =11.28% m2 IMP for tapered walls with rectangular base Vs = 24 mm/m2 IMP for Det/Ret
								2.5m width As =11% m2 IMP for tapered walls with rectangular base Vs = 24 mm/m2 IMP for Det/Ret
								2.7m width As = 10.8% m2 IMP for tapered walls with rectangular base Vs = 24 mm/m2 IMP for Det/Ret
								2.2m - 2.7m width As = 3.90% m² IMP for vertical walls Vs = 24 mm/m² IMP for Det/Ret
	Retention only	Roofs, Carparks, Driveways	Roads, Parking bays, Footpaths	Yes	No	Yes	No	2.4m width As = 3.84% m² IMP for tapered walls with rectangular base Vs = 5 mm/m² IMP for Ret
								2.4m width As = 2.16% m² IMP for vertical walls Vs = 5 mm/m² IMP for Ret
Filterstrip (160mm loam)	Treatment & Retention	Driveways	Open space areas	Yes	No	Yes	No	As = 50% m² IMP (1% Slope) Vs = 5 mm/m² IMP for Ret
Swale (Planted and Standard)	Treatment (Water Quality Flow)	Carparks	Roads, Parking bays, Footpaths	No	No	Yes	No	As = 3.32% m² IMP for 50 mm grass
								As = 3.38% m² IMP for 150 mm grass/ planted
	Retention & Detention	Carparks, Driveways	Roads, Parking bays, Footpaths	Yes	Yes	Yes	No	As = 20.3% m² IMP for Ret/Det Vs = 24mm/m² IMP Det/Ret
Dry Basin	Flood Storage	Not used	Flood attenuation	No	No	No	Yes	Vs =8.95 mm/m² IMP for Q_{10} Vs =14.19 mm/m² IMP for Q_{50} Vs = 15.74 mm/m² IMP for Q_{100}
	Detention	Not used	Detention	No	Yes	No	No	Vs = 24 mm/m² IMP for Det
Permeable Paving	Retention & Detention	Carparks, Driveways	Parking bays, Footpaths, Cycleways	Yes	Yes	Yes	Yes	Treat as "grass"
Offline Wetlands	Treatment	Not used	Stream enhancement & treatment - steep catchments >5%	No	No	Yes	No	Vs = 15.3 mm/m² IMP for WQV
	Treatment & Flood Attenuation	Not used	Stream enhancement & treatment - steep catchments >5%, and flood attenuation	No	Yes	Yes	Yes	Vs = 27.95 mm/m² IMP for Q_{10} Vs = 33.19 mm/m² IMP for Q_{50} Vs = 34.75 mm/m² IMP for Q_{100}
Proprietary	Stormfilters	Use if no other practical solution	Use if no other practical solution	No	No	Yes	No	Refer manufactures criteria
	Cellular Storage	Roof detention, carparks, driveways	Roads, parking bays, footpaths	Yes	Yes	Yes	No	

Notes:

1. Vs - Storage volume required for impervious area. E.g. Vs = 5mm/m2 IMP means storage volume of 0.5 m3 is required per 100 m2 of impervious area.
2. As - Storage surface required for impervious area. E.g. As = 11.28% m2 IMP means storage surface area of 11.28 m2 is required per 100 m2 of impervious catchment area. Area requirements are conceptual. Actual size to be based on Vs requirements.
3. Water quality treatment requirements are based on avoidance of high contaminant yielding roof and cladding materials.
    a. Water quality requirements are achieved through retention/detention provisions.
4. Bioretention - Area of raingarden with tapered walls and rectangular base is constrained by the required minimum infiltration area of 3.27 m^2 based on an infiltration rate of 2mm/hr and evapotranspiration of 3mm/day.
5. The use of devices such as raingardens, swales and permeable paving are limited in application for slopes > 5%.
6. Sizing of devices needs to be refined in detailed design depending on in-situ ground conditions
7. Wetlands can be used for both water quality treatment and detention (95th percentile event) and flood attenuation for the 10, 50 and 100 year ARI events.
8. Flood attenuation for peak flow is required for the 10, 50 and 100 year ARI events
9. Sizing of devices will be refined and be checked for local ground stability during detailed design stage.
10. Indicative sizing detailed above is in addition to the 95th Percentile detention volume depth of 24mm.
11. Sizing criteria for SW management plan based on pre development CN of 74, Rainfall depths as follows: 95^{th} percentile event – 37mm, $P_{2/24(CC)}$ – 95.9mm, $P_{10/24(CC)}$ – 164.1mm, $P_{50/24(CC)}$ – 234mm, $P_{100/24(CC)}$ – 262.8mm.

7.2 SMAF 1 – HYDROLOGY MITIGATION REQUIREMENTS

The entire Future Urban Area is located within a SMAF 1 overlay. The mediated SMAF 1 hydrology mitigation requirements as discussed in Section 5 are applicable for the area. The options and indicative sizing for stormwater devices to meet these requirements are discussed in the sections below.

7.2.1 Retention

The strategy for meeting the SMAF 1 retention requirement is to be met through the use of the following BPO devices:

- **Rain tanks** - provided for all standalone residential units (small, medium, large standalone units) and terraced (semi attached) housing only. Rain tanks will allow re-use for non-potable use e.g. toilet flushing, laundries and gardens. Overflow connection to piped network to be provided. Indicative sizing for tanks is shown on Table 10.
    - Underground storage tanks or trenches with seepage to ground and overflow to piped network could also be adopted, however this would require site specific design.
- **Stormwater treatment devices** such as bio retention (rain gardens), swales and filter strips. These devices are to allow for the retention volume which will facilitate infiltration to ground.
- **Permeable pavement** – Use of permeable pavers, porous concrete or asphalt could be used for hardstand areas such as driveways (private) and carpark areas, footpaths and parking bays (public). Permeable paving is sized based on an equivalent impervious area (m^2).

It is important to note that retention through the use of "infiltration" e.g. bio-retention/ permeable paving etc. is dependent on local ground stability which is to be checked for each device at detailed design stage.

7.2.2 Detention

Detention will be provided for the difference between the pre-development and post development runoff volumes from the 95th percentile, 24 hour storm event (24mm). It is to be noted that this is inclusive of the 5mm retention component.

It is important to note that where there is an option for communal devices such as wetlands or dry basins, the detention component can be provided within these. Detention can also be provided through the use of the following BPO devices:

- Rainwater tanks,
- Permeable pavements, and
- Bio retention (e.g. rain gardens).

The requirement for detention (95th percentile) is a SMAF1 requirement and therefore only applicable to the catchment areas discharging to a stream environment.

7.2.3 Stormwater Quality

Stormwater quality is to be managed through the following BPOs:

- A requirement to avoid high contaminant yielding roof and cladding materials for all new buildings, as included in PAUP provisions.
- At source treatment for stormwater runoff from carparks and high use roads. Runoff from these areas will be directed to rain gardens, swales, filter strips for treatment.

High use roads are defined by the PAUP as motorways, state highways, primary arterial or secondary arterial roads or roads that carry more than 5000 Vehicles Per Day (VPD).

7.2.4 Indicative Sizing

7.2.4.1 Raintanks

Indicative rain tank sizing that considers the design criteria for retention and detention are shown on Table 10.

Table 13 - Stormwater Device Toolbox

Roof Area [m^2]	Reuse[1] Volume [L]	Detention[2] Volume [L]	Total[3] Volume [L]
100	500	1900	2400
150	750	2850	3600
200	1000	3800	4800
250	1250	4750	6000
300	1500	5700	8400

[1]Reuse volume is required in areas where SMAF1 rules apply, volume based on mediated PAUP of 5mm/m^2 of roof area.

[2]Detention volume is not required in all areas, only applicable for areas discharging to a non-tidal stream environment, the volume shown is additional to the reuse volume, indicative sizing based on detention volume of 19mm/m² roof draining within 24 hours.

[3]Total volume for areas in which both detention and retention are required, based on 24mm/m².

7.2.4.2 Bio-retention Devices (Raingarden)

Bio- retention devices such as rain gardens have been designed for retention & detention, and retention only. The applicability is dependent on the stormwater management zone. Raingardens are to be incorporated into the roads, indicative road typologies proposed for the Argent Lane SHA can be found in Appendix E – Proposed Road Typologies. Indicative sizing of rain gardens for each of these road typologies has been undertaken.

Figure 14 and 15 show indicative cross sections for rain gardens.

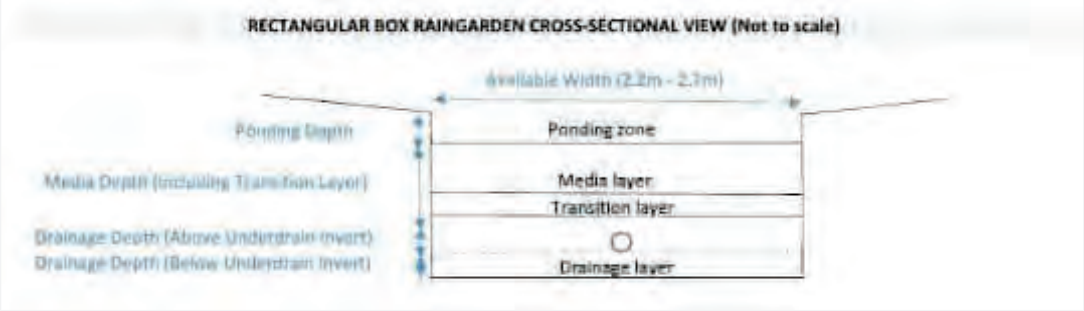

Figure 14: Rectangular Box Raingarden Indicative Cross Section

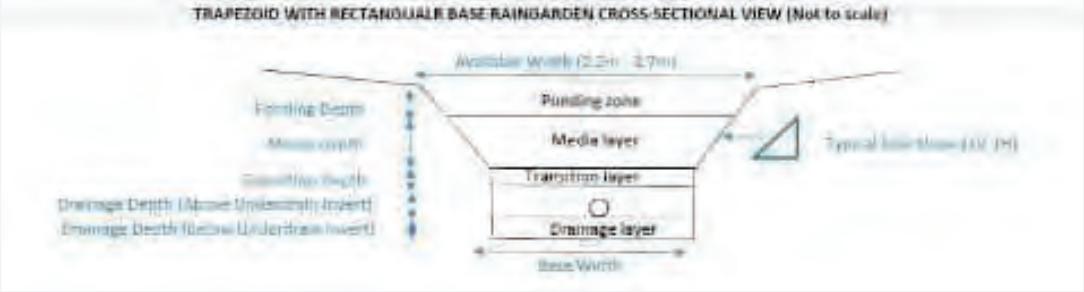

Figure 15: Trapezoidal Raingarden Indicative Cross Section

The indicative raingarden sizing for each of the proposed road typologies have been summarized in Table 13.

Table 14 - Raingarden Sizing

Raingarden	Road Typology	Sizing Dimensions
Retention & Detention (Trapezoidal with rectangular base)	Local Road (Urban Area)	2.2m wide, 5.5m long, 1.2m deep
	Local Road (Suburban Area), Green street, Reserve Edge Road 2	2.4m wide, 4.7m long, 1.2m deep
	Wainui Road Interim, Argent Lane Interim, Collector Road (Town Centre Edge)	2.5m wide, 4.4m long, 1.2m deep
	Collector Road	2.7m wide, 4.0m long, 1.2m deep
Retention & Detention (Rectangular)	For all types of road typology	As=3.9 m2, 1.5m deep
Retention only (Trapezoid with rectangular base)	Local Road (Suburban Area), Green Street, Reserve Edge Road 2	2.4m wide, 1.6m long, 0.8m deep
Retention only (Rectangular)	Local Road (Suburban Area), Green Street, Reserve Edge Road 3	2.4m wide, 0.9m long, 0.8m deep

1. *Raingarden sizing based on 100m^2 of impervious area.*
2. *Where impermeable driveways discharge onto public roads, raingarden to be increased in size proportional to driveway area.*
3. *A void ratio of 0.3 has been assumed for bioretention media, a void ratio of 0.35 for the drainage and transition layers.*
4. *The raingardens have been sized based on an infiltration rate of 2mm/hr.*
5. *An evapotranspiration rate of 3mm/day has been adopted.*

7.2.4.3 Swales

Indicative swale sizing has been undertaken and summarised in Table 14. While the sizing is based on the road reserve typology, the indicative sizing can be adopted to suit other road typologies. Indicative cross sections for swales can be seen in Figures 16 and 17.

Table 15: Swale Sizing

Swale	Road Typology
100m Long Road Section	**Reserve Edge Road**
50mm grass swale (WQF) - planted or grassed with topsoil, check dams and underdrain	1% channel slope, 1/3 side slope, 0.046m flow depth, 1.95m base width, 2.23m wide at water level, 15.8m long
150mm grass swale (WQF) - planted or grassed with topsoil, check dams and underdrain	1% channel slope, 1/3 side slope, 0.045m flow depth, 1.98m base width, 2.25m wide at water level, 15.9m long
50mm grass swale (WQV) - planted or grassed with topsoil, check dams and underdrain	1% channel slope, 1/3 side slope, 0.058m flow depth, 1.89m base width, 2.24m wide at water level, 23m long
150mm grass swale (WQV) - planted or grassed with topsoil, check dams and underdrain	1% channel slope, 1/3 side slope, 0.06m flow depth, 1.96m base width, 2.32m wide at water level, 21.5m long
50mm grass swale (10 Year ARI) - planted or grassed with topsoil, check dams and underdrain	1% channel slope, 1/3 side slope, 0.11m flow depth, 1.89m base width, 2.55m wide at water level, 23m long
150mm grass swale (10 Year ARI) - planted or grassed with topsoil, check dams and underdrain	1% channel slope, 1/3 side slope, 0.12m flow depth, 1.96m base width, 2.68m wide at water level, 21.5m long

1. *WQF - swales have been sized for the Water Quality Flow of 10mm/hr as per TR035.*
2. *WQV – swales have been sized to treat the Water Quality Volume, which is equivalent to 1/3 of the 2 year rainfall depth ($P_{2/24(CC)}$ – 95.9mm).*
3. *Sizing criteria for SW management plan based on pre development CN of 74,*
4. *Conveyance has been calculated based on the 10 year rainfall depths as follows: $P_{10/24(CC)}$ – 164.1mm.*

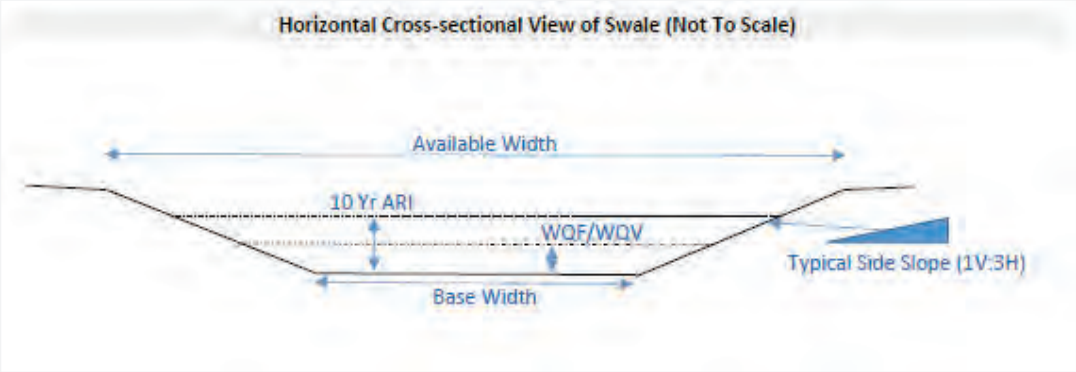

Figure 16: Indicative Horizontal Cross-section of Swale

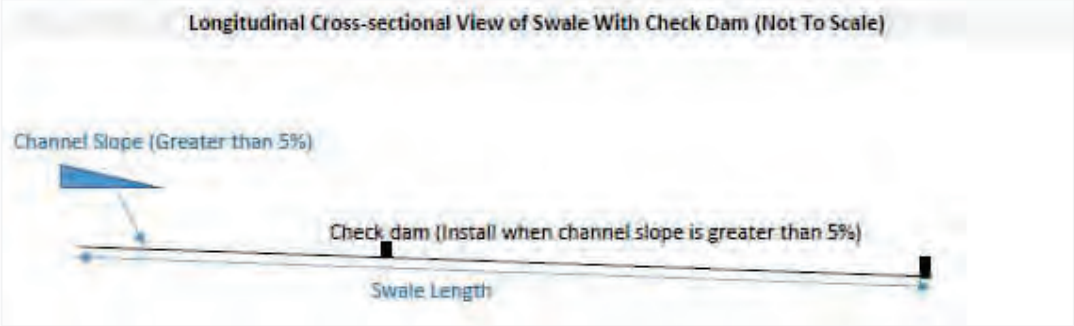

Figure 17: Indicative Longitudinal Cross Section of Swale

7.3 STORMWATER NETWORK

7.3.1 Primary Network

The primary stormwater network will be capable of conveying the 10 year ARI peak flow + allowance for climate change.

The primary network within the development will consider the following elements:

- Swales (planted or standard), and
- Pipelines with cesspits for collection.

7.3.2 Secondary Network (Overland Flow Paths)

The secondary network consists of overland flows, i.e. flows that exceed the primary network capacity.

Overland flow paths are to be contained within the road reserves and green spaces so as not to create nuisance to the built environment. As per the Auckland Council Code of Practice, a 500mm

(minimum) freeboard above the top water levels within the OLFP during the 1% AEP rainfall event will be provided to habitable floor levels.

Overland flow path alignments are dependent on the overall built environment. It is envisaged that the overland flow paths will adhere to the following design criteria:

- Overland flows to follow either the road reserves or dedicated green corridors,
- Overland flow depth to not exceed 200mm within the road corridor (measured at the invert of the kerb), and
- Overland flows to be within the depth and flow velocity parameters outlined in Auckland Council's Stormwater Code of Practice.

7.4 STORMWATER ATTENUATION

Stormwater attenuation remains an available option for areas located within Stormwater Management Zones C & D. Whilst attenuation is an option, it is not the recommended approach.

The provision to meet the SMAF 1 hydrology mitigation requirements for retention & detention for new impervious areas is equivalent to matching the 2 year ARI pre development peaks, therefore there would be no increase in flood effects for the 2 year ARI event.

Where flood attenuation for the 10, 50 & 100 year ARI events (including allowance for climate change) may need to be provided, attenuation devices are to be designed to discharge at a controlled rate in order to maintain pre development peak flows for these 24-hour storm events.

7.4.1 Wetlands / Dry Basins

Stormwater wetlands and dry basins can be used for either detention or stormwater attenuation. These devices, if implemented, are to be constructed as "offline" devices alongside stream or green corridors that run through the development.

If wetlands are implemented they are expected to provide the following:

- Offline stormwater treatment,
- Ecological Habitat,
- Stormwater treatment,
- Detention (95th percentile) - can be met either onsite or within these communal devices, and

- Attenuation – 10, 50 & 100 year ARI events (including allowance for climate change).

The design of wetlands is to be undertaken using TP10 and will consist of a forebay and bathymetric design.

Indicative sizing of wetlands/dry basins are as follows:

- Wetlands
  - Treatment and flood attenuation - 10 year = 27.95mm/m^2 of impervious surface.
  - Treatment and flood attenuation - 50 year = 27.95mm/m^2 of impervious surface.
  - Treatment and flood attenuation - 100 year = 34.75mm/m^2 of impervious surface.
- Dry Basins
  - Flood attenuation - 10 year = 8.95mm/m^2 of impervious surface.
  - Flood attenuation - 50 year = 14.19mm/m^2 of impervious surface.
  - Flood attenuation - 100 year = 15.74mm/m^2 of impervious surface.

It is important to note that the indicative sizing detailed above is in addition to the 95th Percentile detention volume depth of 24mm.

7.5 WAINUI ROAD BRIDGE (WATERLOO CROSSING) OPTIONS

The flood effects as detailed in Section 6 of this report highlight the flooding issues that are resultant of the existing Wainui Road Bridge crossing over Waterloo Creek that acts as a bottleneck for the upstream areas.

It is expected that if flows were able to pass freely at the Wainui Road Bridge, the effects of development with regards to increases in upstream flood levels and corresponding flood extents would not be notable.

Available options that could be considered consist of:

- **Culverts**: Option to include culverts alongside the bridge to assist in the passing of stormwater runoff. This option would assist in reducing the flood depths and flood extents upstream of the bridge.
- **Stream widening**: Widen the stream channel under the existing bridge structure. The existing bridge has keystone walls that narrow the effective cross sectional area for flows

to be conveyed. This option would assist in reducing the flood depths and flood extents upstream of the bridge. A photo of the existing key stone wall is shown in Figure 18 – Wainui Bridge Keystone Wall.

- **Raising Bridge Road Level:** This option would involve raising the existing road level to above the 100-year flood levels. This would enable the road to remain trafficable in the 100 year ARI event. It is important to note that solely raising the road level of the bridge would result in an increase in flood depth due to flows being embanked to a greater elevation. Consequently, this option would result in an increase in flood effects. It is recommended that this option be undertaken in conjunction with additional culverts or stream widening
- **Bridge Upgrade**: A full upgrade of the bridge, where the bridge is to be sized to ensure future flows can be passed forward with no restriction. This option would likely reduce the existing flood depths and flood extents upstream of the bridge.

Figure 18: Wainui Bridge Keystone Wall

8 INFORMATION REQUIREMENTS

8.1 NETWORK DISCHARGE CONSENT AREA

The Network Discharge Consent (NDC) for the Wainui East NDC covers an area of 302.3623ha as shown in the Land Ownership Plan Network Discharge Consent Areas attached in Appendix A.

The NDC catchment includes areas partly located within Stormwater Management Zones A, C, D and E, there are no areas within the NDC catchment located within Stormwater Management Zone B.

8.2 CONSIDERATION OF PAUP REQUIREMENTS FOR STRUCTURE PLANS

The following Structure Plan Requirements for Future Urban zoned greenfield land is outlined in Appendix 1.1 of the PAUP:

2. *Structure Planning must consider*
   e. *any relevant management plans including: Local board plans, area plans, stormwater catchment, planning analysis and associated network discharge consents.*

There is no integrated catchment management plan or Network Discharge Consent available for the Wainui catchment.

3. *The structure plan must identify, investigate and address the following matters:*
   b. *natural environment*

      iii. *the measures to manage natural hazards and contamination, including avoidance, adaption, or remediation.*

   c. *urban structure*
      incorporation of water sensitive design and green infrastructure within developments to reduce impacts on the environment while enhancing urban amenity

   d. *infrastructure*
      i. *the location and function of stormwater management facilities based on principles of water sensitive urban design, including the retention of natural water systems and the primary use of on-site flow and quality controls (and related impervious area limits) to manage stormwater from proposed sites and roads. The use of hard engineering solutions is a secondary management approach.*

Natural hazards to the development includes consideration being given to inundation from the coast given the proximity to the Hauraki Gulf. This has been included as a boundary condition in the Flood Modelling carried out for the catchment.

Water sensitive urban design elements such as bioretention and swales are proposed within road corridors and in public open spaces.

The stormwater management options presented in this SMP are inclusive of natural water systems and at source volume and quality controls. Hard engineering solutions have been recommended as a secondary management approach where conveyance cannot be achieved in water sensitive devices such as swales within the development.

4. *Supporting documents*
    a. *The following documents are required to provide details on specialist subjects and support the structure plan:*
        ii. *stormwater network plan, including updates to catchment or zone management plans and variations to existing or new network discharge consents, where relevant.*

The design requirements for the stormwater network is as follows:

- Primary conveyance – 10 year storm event, and
- Secondary conveyance – 100 year storm event.

A stormwater network plan hasn't been developed at this stage and it is anticipated that this will be finalised at the Qualifying Design stage once the road network has been determined.

8.3 CONSIDERATION OF WATER SENSITIVE DESIGN PRINCIPLES

The four guiding principles of the water sensitive design approach, as outlined in the Auckland Council Guideline Document 2015/004, are as follows:

- Promote inter-disciplinary planning and design,
- Protect and enhance the values and functions of natural ecosystems,
- Address stormwater effects as close to source as possible,
- Mimic natural systems and processes for stormwater management.

The development of the SMP has been undertaken in consultation with an interdisciplinary team of ecologists, urban designers, planners and engineers along with feedback from the Auckland Council technical staff and DPO. This approach considers the needs of the various specialists, such as urban design layouts and traffic engineering design, to ensure that the developed urban form can provide a liveable space to support a well-functioning community.

Consideration has been given to building a cohesive masterplan that retains and enhances the existing streams in the catchment through riparian planting. The revegetation of riparian margins is a natural system that will assist in the management of stream bank erosion risk. Additionally, other areas of high ecological value will be retained in the masterplan.

Given that the SHA is in a SMAF area, the volume and quality requirements will be met as close to source as possible. The stormwater management concept distributes devices aimed to reduce runoff volume through retention/detention and improve runoff quality throughout the development.

The masterplan includes enhancing planting along the riparian margin and mimicking natural systems through the inclusion of swales and raingardens to facilitate treatment of contaminants through the natural physical, biological and chemical processes that occur at the interface of soil, water and plant systems.

8.4 CONSIDERATION OF NETWORK DISCHARGE CONSENTS REQUIREMENTS

There is no integrated catchment management plan (ICMP) or network discharge consent (NDC) currently available for the catchment. In the absence of both the ICMP and NDC, the stormwater networks and discharges for the proposed development have been considered in terms of requirements for an NDC as set out in Table 15. These requirements have been extracted from Chapter H (4.14, 1.5, table 1) of the PAUP.

Table 16– Network Discharge Consent Requirements

	NDC Requirement	Relevance to proposed development
A	The issues arising from stormwater and wastewater discharges, diversions and associated activities facing the catchment or district, including:	
i	Description of the drainage networks and their current and predicted future performance under likely growth scenarios.	A new stormwater network will be provided to cater for the proposed development. The stormwater network will contain elements as described in section 7.3 of this report.

ii	Assessment of the receiving environment and the actual and potential effects, including cumulative effects, of diversions and discharges from the network.	An ecological assessment of the environment has been undertaken by Opus Consultants. The streams have been inspected and classified in agreement with the DPO. A plan of the stream classification is provided section 3 of this report. Flood modelling has been undertaken for the effects assessment. The flood modelling highlighted flood effects being confined to the Wainui Road Bridge crossing over Waterloo Creek. Overall there is very little increase in the flood extents, with development not affecting habitable floor levels. The flood effects are detailed in section 6 of this report. The requirements of the stormwater management approach are summarised in Section 7 of this report. Cumulative water quality effects in the receiving environment would be assessed as part of the ICMP noting that the area has been already zoned 'Future Urban' by Auckland Council and that the best practicable option will be applied for runoff treatment as described in section 7.
iii	Assessment of potential urban growth, land use intensification and redevelopment and the consequence of this for the network and discharges.	Proposed network to be designed in full for the maximum probable development of the site. Where runoff from upstream developments discharging to the streams would have to avoid downstream effects.
iv	Management responsibilities for stormwater and wastewater networks and associated discharges.	Stormwater network, including stormwater treatment devices would be vested to Auckland Council or Auckland Transport as recommended in the Stormwater Code of Practice.

v	Significant non-network land use and discharge activities that may have a material effect on environmental and stormwater management outcomes.	N/A
B	A description of the objectives sought for the stormwater and wastewater discharges and diversions including:	
i	Social, ecological, economic, amenity and cultural objectives including the strategic importance of the activity and stormwater network.	These objectives are defined and discussed in section 2 of this report.
ii	The results of any consultation.	Consultation will be carried out as required in the consenting process for works. Consultation with DPO has been undertaken and is reflected in the SMP.
iii	Identified milestones required to achieve those objectives.	Milestones will require stormwater infrastructure is to be in place prior to contributing catchments being developed.
C	The proposed approach to managing diversions and discharges including:	
i	Identification of the BPO for preventing or minimising the adverse effects of stormwater discharges from both existing and, when relevant, future discharges.	The best practicable option for preventing or minimising the adverse effects of stormwater from the proposed development site is outlined in section 7 of this report.
ii	Priorities for further investigation into minimising the effects if the discharges and development of management responses and associated milestones.	N/A – to be informed by ICMP, this requirement is not directly relevant for new developments as the best practicable option for the management of stormwater will be applied.
iii	Procedures for monitoring and reporting progress against objectives and milestones	Stormwater infrastructure to be in place before development of contributing catchments.

iv	A regionally prioritised programme for implementing improvement projects and works.	N/A – to be informed by ICMP, this requirement is not directly relevant for new developments as the best practicable option for the management of stormwater will be applied.
v	Operation and maintenance programmes and processes.	To be developed during detailed design stage as part of the process to vest to Auckland Council and Auckland Transport. To be based on TP10 requirements.
vi	Other programmes to assist in achieving outcomes including education initiatives and community bases programmes.	N/A – Such programmes are the responsibility of council, however by transferring stream corridors from private to public ownership as proposed increases opportunities for educational initiatives and community based programmes.
vii	Consistency with other land use process outcomes such as structure plans, and publicly available and current Auckland Council stormwater management plans / analysis.	The proposed stormwater management plan is directly linked to the structure plan being developed for this area.
viii	A process for reviewing the management approached based on an increased understanding of environmental responses, public health issues, community aspirations and network priorities.	N/A – This is a catchment / region wide Council process.
D	Public Road Networks (where not included in wider stormwater network discharge consents)	
i	Description of the drainage networks and their current and predicted future performance under likely growth.	This is as per outlined in A(i) above.
ii	Assessment of the receiving environment and the actual and potential effects, including cumulative effects, of diversions and discharges from the network.	This is as per outlined in A(ii) above.

iii	Consideration of alternative options where potential adverse effects are significant.	Refer section 7 of this report.
iv	Social, ecological, economic, amenity and cultural objectives including the strategic importance of the activity and stormwater network.	This is as per outlined in B(i) above.
v	The results of any consultation.	This is as per outlined in B(ii) above.
vi	Consistency with other landuse process outcomes such as structure plans, and publicly available and current Auckland Council stormwater management plans / analysis.	This is as per outlined in C(vii) above.
vii	Identification of the BPO for preventing or minim ising the adverse effects of stormwater discharges from both existing and, where relevant, future discharges.	This is as per outlined in C(i) above.
vii	Operation and maintenance programmes and processes.	This is as per outlined in C(v) above.
ix	Monitoring	This is as per outlined in C(iii) above.

9 CONCLUSION

A Stormwater Management Plan (SMP) for the Wainui East Future Urban Area has been developed based on the Proposed Auckland Unitary Plan (PAUP). The stormwater management plan has been assessed against the Network Discharge Consent (NDC) requirements, the PAUP structure plan requirements and follows a water sensitive design approach.

The overarching objectives for the SMP are:

- To incorporate a water sensitive design approach that manages the impact of land use change from rural to urban, promotes at source stormwater management and is in line with the mediated SMAF hydrology mitigation requirements.
- Retention of the existing stream network, and protection and enhancement of riparian margins.
- Identify flood risk areas, provide for development outside the 1% AEP floodplain without creating adverse flooding effects at properties upstream or downstream of the development in comparison with the pre development condition. This includes an assessment of post development effects on downstream assets such as the Wainui Road Bridge crossing over Waterloo Creek.
- Provide stormwater quality treatment for high use roads and carparks and avoidance of high contaminant yielding roof and cladding materials through existing PAUP provisions.
- Minimize adverse effects on water quality, stream health and ecological values of the receiving environment through the implementation of stormwater management devices; this includes tributaries of the Orewa River and Weiti Stream.

The design criteria for the Wainui East Future Urban Area is summarized as follows:

- **SMAF Hydrology Mitigation Requirements**
    - **Detention** (temporary storage) and a drain down period of 24 hours for the difference between the pre-development and post development runoff volumes from the 95th percentile, 24-hour rainfall event minus the 5mm retention volume or any greater retention volume that is achieved.
    - **Retention** (volume reduction) of at least 5mm runoff depth for the impervious area for which hydrology mitigation is required. Stormwater retention is provided to reduce the total volume being discharged to the environment by

managing the runoff via infiltration, evapotranspiration or by incorporating rainwater reuse/harvesting.

- **Quality treatment**
  - Meet TP10/PAUP requirements for runoff from high use roads and carparks.
  - Avoid high contaminant yielding building materials.
- **Flood Attenuation**
  - No development within 1% AEP floodplain
  - It is recommended that stormwater flows to be "passed forward", however options to provide flood attenuation are available exacerbated effects on the Wainui Road Bridge crossing over Waterloo Creek.

Flood modelling was undertaken as part of an effects assessment. It was determined that meeting the SMAF 1 hydrology requirements would mitigate the effects of the 2 year ARI event.

Flood maps have been prepared to detail the flood extents for the various ED, MPD and Argent Lane SHA scenarios in the 10 and 100 year ARI storm events.

Flood effects observed within the Wainui East Future Urban area appear to be localised to upstream of the Wainui Road bridge crossing above Waterloo Creek. These are summarised as follows:

- There is no inundation / overtopping of the Wainui Bridge crossing over Waterloo Creek in the 10 year ARI (existing rainfall) ED or Argent Lane SHA scenarios.
- The time of inundation for the ED scenario in the 100 year ARI event (existing rainfall) is 1hr and 37 minutes and 2 hours under the future rainfall scenario.
- Time of inundation increased by 7 minutes for the Argent Lane SHA in the 100 year ARI event (existing rainfall) and 12 minutes with future rainfall. The MPD scenario increases the inundation time by an additional 5 and 8 minutes respectively.
  - The increase in inundation time of 7 and 12 minutes for the Argent Lane SHA in the 100 year ARI events is considered minor when put into perspective with the total time of inundation under the existing land use (ED) scenarios (1 hour and 37 minutes & 2 hours).
- The Wainui Road Bridge overtops in the 100 year event (existing and future rainfall) for all modelled scenarios ED, MPD and Argent Lane SHA.
- The Wainui Road Bridge is deficient when the effects of climate change are taken into consideration.
- Overtopping of the bridge in the Argent Lane SHA scenario for the 10 year future rainfall scenario will result in a flood depth of 120mm over the carriageway. This is considered

trafficable for passenger vehicles, as stated in Austroads "Safety Provisions for Floodways Document" (where DxV < 0.3).

- There are two vehicle crossings at Wainui Road that provides access into existing residential properties.
    - Crossing 1 is deficient however the crossing and the surrounding residential lots are owned by the applicant.
    - The Argent Lane SHA scenario would result in crossing 2 overtopping during the 20 year ARI event (existing rainfall), however the overtopping depth is 66mm which is considered trafficable under Austroads "Safety Provisions for Floodways Document" (where DxV < 0.3).
    - The overtopping of crossing 2 in the 10 year ARI event (future rainfall) Argent Lane SHA scenario results in an overtopping depth of 38mm which is considered trafficable for passenger vehicles under Austroads "Safety Provisions for Floodways Document" (where DxV < 0.3).

The flood effects from the existing rainfall Argent Lane SHA scenario are considered less than minor with the effects limited to a small increase in flood depth on the Wainui Road Bridge crossing over Waterloo Creek.

It is considered acceptable to pass flows forward for the Argent Lane SHA area until future options around the Wainui Road Bridge Crossing over Waterloo Creek have been considered. This comes about from the fact that the full effects of climate change are not expected to have an impact until 2090.

The modelling shows the increase in flood extents do not affect habitable floor levels on existing dwellings. There are no adverse flood effects observed downstream of the Wainui Road bridge, at the Weiti Culvert or other areas upstream of the Argent Lane SHA as shown in the prepared flood maps.

In summary, the assessments undertaken demonstrate that the proposed land use and rezoning of the Wainui East Future Urban Zone satisfies the Proposed Auckland Unitary Plan (PAUP) with respect to stormwater.

APPENDIX A

WAINUI EAST 1 CONCEPT MASTERPLAN & LAND OWNERSHIP PLAN NDC AREAS

WOODS
ILLUSTRATIVE MASTERPLAN

APPENDIX B

WAINUI EAST FLOOD MODEL BUILD REPORT

FLOOD MODEL BUILD REPORT

WAINUI EAST

FULTON & HOGAN LIMITED
WAINUI EAST
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1 INTRODUCTION

1.1 INTRODUCTION

This report has been prepared as a technical report to detail the flood model build for the Wainui East Future Urban Zone.

The Argent Lane SHA is a proposed residential development on 190ha of predominantly rural land bounded by Wainui Road to the north, the Northern Motorway to the east and Weiti Stream to the south (Figure 1 – Site Location).

This report details the model build parameters adopted for the scenarios that have been modelled using XP-STORM 2016.1. The modelled scenarios are:

- Existing Development (ED)
- Maximum Probable Development (MPD)
- Post Development (Argent Lane SHA)

Figure 1: Site Location

2 CATCHMENT DESCRIPTION

2.1 LOCATION AND TOPOGRAPHY

The Argent Lane SHA sits to the east of the Northern Motorway and has an undulating topography with a stream running along the southern boundary and another stream running through the centre of the precinct. There are clusters of exotic and native vegetation throughout the precinct, some of which exists as a riparian margin along the edge of the streams.

The site has two discharge locations, the Orewa Estuary and Weiti Stream.

The delineated catchment extents total approximately 3336 ha. Inflows from neighbouring developments such as the Highgate Business Park have also been taken into consideration and have been included within the model.

2.2 GEOLOGY AND SOILS

Geotechnical investigations undertaken by Tonkin and Taylor indicate that the site is underlain by Northland Allochthon materials. This formation typically compromises of mudstones, siltstones and limestones.

Site investigations confirmed the presence of Northland allochthon soils over the rock being typically 1-2m with thicker alluvial deposits in valleys and lower lying areas of the site.

The northern extremity of the site is typically underlain by East Coast Bays Formation (ECBF) soils which weather to silts and clays.

A copy of the geotechnical report for the site can be found in Appendix A – Wainui East Geotechnical Report.

2.3 LAND USE

The land use for a majority of the catchment is rural residential, however there is residential settlements and commercial land use at the lower catchments (Millwater Development and Silverdale Township). An aerial photograph of the delineated catchment is shown in Figure 2.

There is more information provided in Section 3.3 regarding the representation of existing and future land uses.

Figure 2: Existing Landuse

3 MODEL BUILD

3.1 MODELLING SOFTWARE

The software used for modelling the Wainui East Flood Model is shown in Table 1.

Table 1: Modelling Software

Software Type	XP Storm by XP Solutions	
	ED Scenario	MPD & Argent Lane SHA Scenarios
Software Version	2016	
Service Pack	2016.1	
Model used for Runoff	SCS Hydrology	
Number of modelled nodes	186	187
Number of modelled links	180	181

3.2 TOPOGRAPHICAL DATA

This section refers to the topographical data and assumptions used to represent the modelled scenarios in the catchment:

1. Existing Development (ED)
2. Maximum Probable Development (MPD)
3. Post Development (Argent Lane SHA)

The scenarios are discussed under each topographical information sub-section discussed in the following sub-sections.

3.2.1 Topography

The Auckland Council 2013 LiDAR data has been used for the flood model. The LiDAR data has been overlain with survey data of the watercourses which is discussed further in section 3.2.2 below.

The same data set was used to represent the topography for both ED scenarios. The MPD and Argent Lane SHA scenario includes the “future” topography proposed for the Argent Lane SHA.

This “future” topography is based on the 12D earthworks design surface. Figure 3 shows the underlying zoning for Wainui 1 Precinct area in relation to the modelled catchment.

Figure 3: Wainui 1 Precinct & Modelled Sub-catchments

3.2.2 2D Grid

The model was processed using a multiple domain grid interface in which the ground model was processed with a 3m grid around the streams and known flood areas and a 6m grid outside of this.

3.2.3 Watercourses

A full topographical survey of the Argent Lane SHA was undertaken by Woods in 2016, a cross section survey was undertaken for watercourses downstream of the Argent Lane SHA discharging to the Orewa River was undertaken, this was supplemented by Hydrographic survey for the areas within the Orewa Estuary where traditional survey methods could not be used.

For areas located in the upper reaches of catchments and the Weiti Stream, LiDAR data was used to derive cross sections. A highlighting the survey methodology along with a copy of the survey plans can be found in Appendix B; this provides a summary of the survey information used for the model build, information outside the extents shown in the survey plans is based on LiDAR.

A copy of the XP Storm model links and nodes are provided in Appendix D, these plans can be used in conjunction with the XP Storm model outputs provided for the assessment scenarios in Appendix K for reference in regards to the location of watercourses.

3.2.4 Asset Data

Asset data was collected during the topographical survey of the Argent Lane SHA, some key assets outside of the Argent Lane SHA were also collected and can be seen in the survey plans found in Appendix B. These assets are further discussed in the sections below.

It is important to note that there is no existing public stormwater network within the Argent Lane SHA.

A copy of the XP Storm model links and nodes are provided in Appendix D, these plans can be used in conjunction with the XP Storm model outputs provided for the assessment scenarios in Appendix K for reference in regards to the location of culverts and bridges.

3.2.4.1 Culverts

The surveyed culvert data is summarised in Table 2 – Surveyed Culvert Data Summary, culvert locations can be found on the survey plan in Appendix B.

Table 2: Culvert Data Summary

Culvert Name (XP Storm)	Type	Diameter Size [m]	Length [m]	Upstream IL [m RL]	Downstream IL [m RL]	Survey
CUL_NZTA	Circular	4.5	98.3	5.19	4.74	Yes
Culv_EX1500d	Circular	1.5	15.0	25.06	24.98	Yes
Culv_Ex1800	Circular	1.8	7.8	13.98	13.73	Yes
Culv_LK101.1	Circular	1.5	20.0	22.85	22.77	Yes
Culv_LK113	Circular	0.6	5.2	17.39	17.24	Yes
Culv_LK125	Circular	0.4	8.1	25.1	24.86	Yes
Culv_LK126	Circular	0.9	12.6	23.88	23.78	Yes
Culv_LK136	Circular	0.9	12.4	21.83	21.75	Yes
Culv_Lk143	Circular	0.6	29.7	36.54	34.8	Yes
Culv_Lk171	Circular	2.55	92.6	7.99	6.76	Yes
Culv_Lk172	Rectangular	3.7 x 2.350	13.4	9.62	9.34	Yes
Culv_Lk25.1.2	Circular	1.85	10.5	4.66	4.45	Yes
Culv_LK46	Circular	1.2	12.5	19.98	19.84	Yes
Culv_Lk48.2	Circular	0.6	2.4	15.19	15.08	Yes
Culv_LK58.1	Circular	1.85	7.9	11.17	10.83	Yes
Culv_Lk92.1	Circular	1.2	15.4	14.45	14.27	Yes
CulvLK42.1	Circular	1.05	5.7	20.92	20.83	Yes
CulvLK77.1	Circular	0.45	23.5	14.81	14.78	Yes
CulvLK87.1	Circular	0.6	5.0	20.45	20.22	Yes
Highgate.1	Circular	1.6	168.1	19.08	15.63	Yes
Culv_Link23.2_Multi	Circular	0.7	7.44	9.74	9.54	Yes
	Circular	0.7	7.44	8.88	8.88	Yes
	Circular	0.7	7.44	8.92	8.83	Yes
Link23.1	Ellipse	1.75x2.15	5.45	6.17	6.16	Yes

3.2.4.2 Bridges

Surveyed bridges in XP Storm have been modelled as a “bridge link”. Survey of bridges was undertaken based on location and level of risk. Bridges modelled as a “bridge link” include high cord and low cord elevations which represent the underside of the bridge and top of deck. A summary of the Bridges included along with modelled parameters is outlined in Table 3 – Modelled Bridges. A plan of the surveyed bridges can be found in Appendix B.

It is important to note that side rails have not been considered in the modelling of bridge structures.

Table 3: Modelled Bridges

Name	Modelled	US Node IL (m RL)	DS Node IL (m RL)	Bridge length (m)	Max WSEL	High chord elevation	Low chord elevation	Skew angle	Reach length (m)	Survey
Bridge_Kowhai	Bridge Link	2.64	2.62	16.33	12	9.28	7.95	N/A	9.22	Yes
Bridge_Lysnar	Bridge Link	4.46	4.32	23.634	13	7.31	6.65	N/A	3.5	Yes
Bridge_Wainui	Bridge Link	-0.34	-0.47	18.5	10	5.44	4.79	28	14.25	Yes
Bridge_Weiti	Bridge Link	11.6	9.83	56.85	21	18.35	16.83	41	15	Yes
Bridge_MWAY	Natural	Bridges modelled as natural channels, site observed, bridge deck levels well clear of potential flood risk								No
Link 178 (Orewa Bridge)	Natural									No
Link 189 (Silverdale Bridges)	Natural									No

3.2.4.3 Highgate Stormwater Pond

User inflows from the neighbouring Highgate Stormwater pond was included in the model, The Highgate development included the construction of a stormwater pond that discharges flows via a culvert into a watercourse within the Argent Lane SHA. The culvert is located under the Northern Motorway and has been surveyed as a 1600mm diameter circular culvert.

The stormwater pond has been modelled based on the information outlined in the Highgate Stormwater Pond Design report (Highgate catchment One - Stormwater Design Report, December 2014) along with updated design information provided by the project engineers who undertook the design at Woods. The report states that rainfall depths with allowance for climate change have been applied to a TP108 rain profile. The Highgate report modelled the 2, 10, 100 and 1000 year ARI events. The XP Storm model inputs the time series data as a user inflow hydrograph for the applicable ARI event for the ED, MPD and Argent Lane SHA scenarios.

The XP Storm model inputs this information as a user inflow hydrograph. The HEC-HMS model was re-simulated for the 5, 20 and 50 year ARI event as these events were not considered as part of the Highgate design. The 20 year and 50 year ARI events were inputted with the appropriate existing and future rainfall profiles.

Figure 4 shows the location of the stormwater pond. A copy of the time series data used in the model can be found in Appendix C.

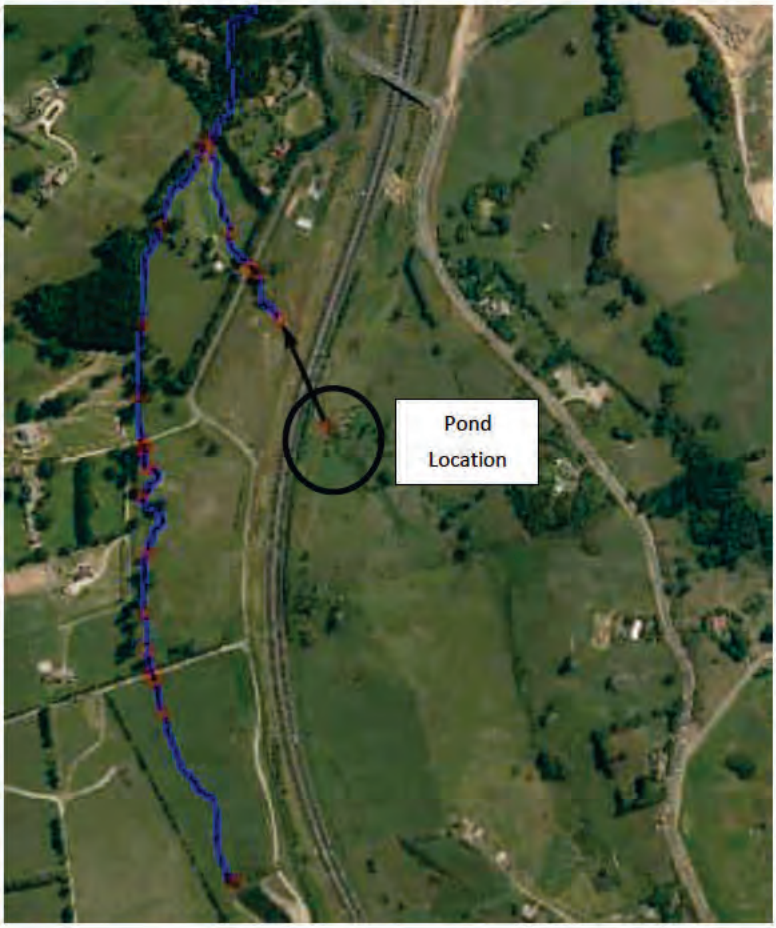

Figure 4: Highgate Pond Location

3.2.4.4 Argent Lane Dam

A private dam is noted to be located at the end of Argent Lane. This located upstream of the Argent Lane SHA. The dam is located between two ridges with a limited catchment draining to it. It is understood that this dam has been constructed for amenity and irrigation purposes. Site investigation of this dam shows no outlet structure, the dam embanks water which flows east into the downstream culvert. The dam is represented topographically from the LiDAR information in all scenarios. Figure 5 shows the location of the Argent Lane dam.

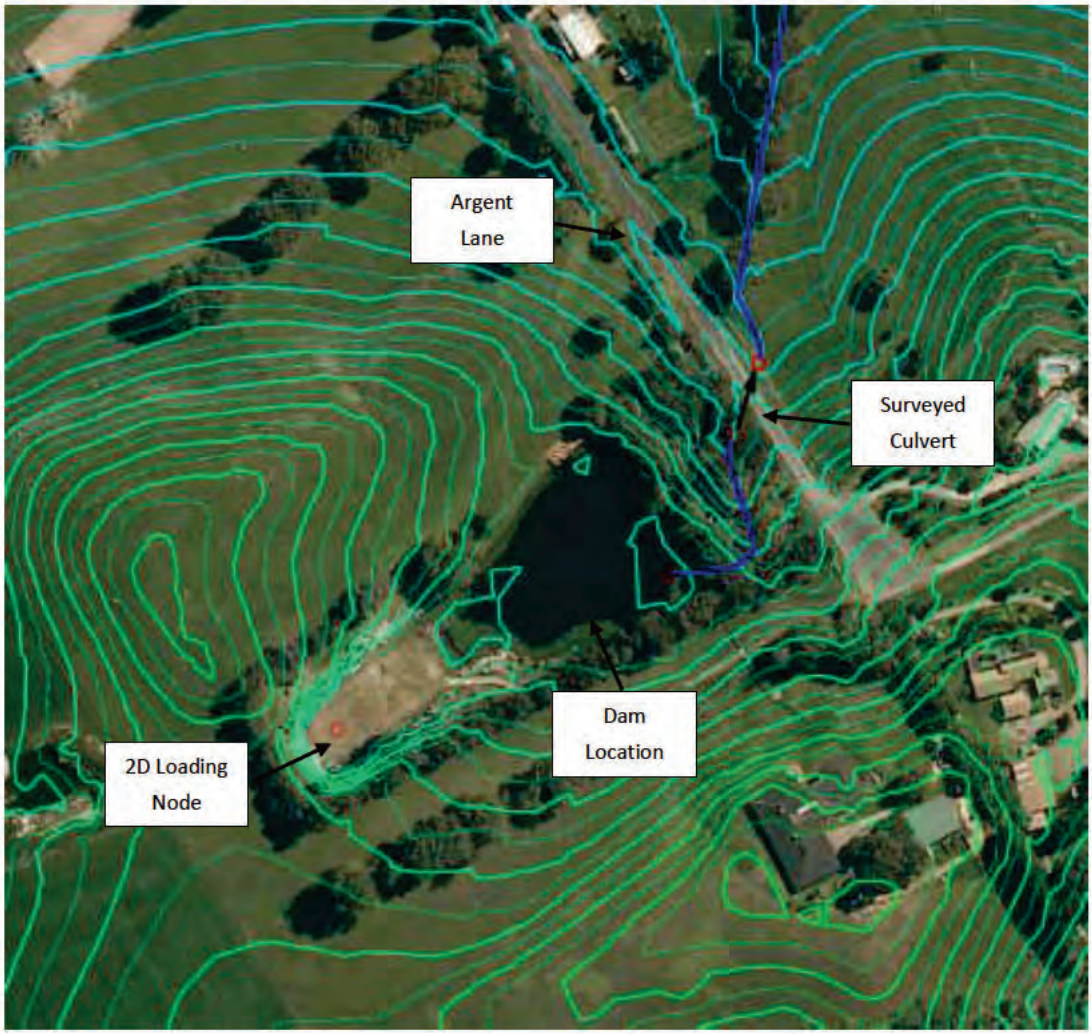

Figure 5: Argent Lane Dam

3.3 HYDROLOGICAL MODEL

3.3.1 Method used

The stormwater models are based on the Soil Conservation Services (SCS) Unit Hydrograph method was used to transform rainfall into runoff.

A normalized 24-hour temporal rainfall and profile has been adopted as specified in the former Auckland Regional Councils Technical Publication 108 (TP108) for this model. The normalised profile adopted is based on a 2.1°c allowance for future climate change, a profile for this is shown in Table 4 below.

Table 4: TP108 Normalised 24 hour Temporal Rainfall Profile

Time [hrs:min]	Time Interval [min]	TP-108 Normalised Rainfall Intensity [I/I24]	
		Existing Condition	Future Climate Change*
0:00 –	360	0.34	0.33
6:00 –	180	0.74	0.73
9:00 –	60	0.96	0.95
10:00 –	60	1.4	1.40
11:00 –	30	2.2	2.20
11:30 –	10	3.8	3.82
11:40 –	10	4.8	4.86
11:50 –	10	8.7	8.86
12:00 –	10	16.2	16.65
12:10 –	10	5.9	5.95
12:20 –	10	4.2	4.24
12:30 –	30	2.9	2.92
13:00 –	60	1.7	1.70
14:00 –	60	1.2	1.19
15:00 –	180	0.75	0.75
18:00 – 24:00	360	0.4	0.39

**Assuming 2.1°c increase in temperature as per Auckland Council Code of Practice.*

3.3.2 Hydrological model extents and Sub-Catchment Delineation

The hydrological models are linked by having sub-catchments draining directly to loading nodes.

The exception to the above is the Highgate catchment in which a time series inflow is connected to a loading node, this user time series inflow is based on the outflows from the Highgate stormwater pond.

Sub-catchments have been delineated by taking into consideration overland flow paths from preliminary rain on grid stormwater models, topography and obstructions such as roads.

The sub-catchment areas for the ED and MPD scenarios are shown in Figure 1 and the Argent Lane SHA scenario is shown in Figure 2 of Appendix D – Catchment Plans. Note that the catchment delineation shown in Figures 1 and 2 are the same as even with the re-contouring of the landform for the Argent Lane SHA, the catchment loadings are the same.

A summary of the hydrological sub-catchments is shown in Table 5.

Table 5: Hydrological Sub-Catchments

Hydrological Model Components	ED & MPD	Post Development (Argent Lane SHA)
Number of sub-catchments	79	79
Range of sub-catchment size [ha]	2ha – 714ha	2ha – 714ha

3.3.3 Impervious Coverages

3.3.3.1 Existing Coverage

The existing catchment comprises mainly of rural residential, with the exception of the residential development and Millwater and some commercial and residential at Silverdale, both are located downstream of the SHA, runoff from the Highgate development which is upstream of the SHA is limited through an attenuating stormwater pond.

An impervious percentage of 5% has been adopted for the existing catchment, 65% for the Millwater development area and varying coverage of between 15% – 55 % for the Weiti sub-catchments based on aerial photography.

A copy of this impervious coverage assessment can be found in Appendix E – Modelling Inputs.

3.3.3.2 Proposed Coverage

The impervious coverages applied for the MPD is 65% coverage for areas within the RUB zoned future urban. The impervious coverage applied for catchments outside the RUB varies depending on the underlying zoning.

The 65% coverage for areas zoned future is based on the zoning plan of the Argent Lane SHA, a copy of the zoning plan and a breakdown of the impervious coverages can be found in Appendix E – Argent Lane SHA Zoning Plan. A summary of the applicable underlying zones and MPD impervious coverages are summarised in Table 6, further details on coverages applied to the modelled sub catchments can be found in Appendix F – Modelling Inputs.

Table 6: MPD Impervious Coverage Summary

Zone Type	IMP %
Millwater (Single House)	65
Single House	60
Large Lot	10
Future Urban	65*
Mixed Rural	10
Rural Production	10
Countryside Living	10
Heavy Industry	80
Light Industry	80
General Business	80
Town Centre	100
Public Open Space (Conservation/ Community/ Information Recreation)	Lesser of 10% or 5000 m2

**Future urban coverage based on Argent Lane SHA zoning plan*

3.3.4 Hydrological Soil Group and Curve Number

The curve number has been determined using the SCS Hydrology Method as set out in TP108. The soil group has been determined based on a geotechnical assessment undertaken by Tonkin & Taylor.

The catchment has been modelled as hydrological soil group C catchment, this has been interpreted based on the geotechnical assessments undertaken for the Argent Lane SHA.

For the ED model, a Curve Number (CN) of 74 was adopted for pervious surfaces due to the land cover being predominantly pasture for grazing and in 'good' hydrological condition. A CN of 74 (urban lawns) was adopted for the pervious coverage in the MPD and post-development scenarios. The impervious areas within the model (all scenarios) have a CN of 98.

A hydrological calibration was undertaken to confirm the validate appropriate curve number, this is discussed further in Section 5 of this report.

3.3.5 Initial Abstraction

Initial abstraction accounts for losses that occur before runoff begins as a result of depression storage, interception by vegetation, evaporation and infiltration. The stormwater modelling has been undertaken using the initial abstraction depths of 5mm for pervious surfaces and 1mm

(1mm is due to a limitation in XP Storm that doesn't allow 0 values) for impervious, as stated in TP108.

3.3.6 Channelization Factors

A channelization factor of 0.6 was used for impervious sub-catchments areas, and 1.0 for pervious ones.

3.3.7 Areal Reduction Factors

There are no areal reduction factors applied in the model.

3.3.8 Time of Concentrations

The time of concentration was determined based on TP108 methodology, where the longest flow path for each sub-catchment was determined from LiDAR and an overland flowpath assessment. Catchment length and slope were calculated based on identified longest flow path. The time for concentration for each sub-catchment was calculated based on catchment length, slope, curve number and channelization factor. A channelization factor of 0.6 was used for impervious sub-catchments, and 1.0 for pervious ones.

3.3.9 TP108 Validation

A TP108 assessment of peak flows for all sub catchments was carried out to review the outputs from the hydrological model. A comparison of the XP Storm modelled peak flows and the TP108 peak flows are provided in Appendix F – TP108 Runoff Validation. The TP108 validation assessment shows that the sum of the peak flows from the TP108 graphical method is 601.236m3/s whilst the sum of peak flows from XP Storm is 606.492m3/s. This results in an overall variance of 0.87%.

Overall the assessment shows that the hydrological model is in line with the TP108 methodology and the variances lie within acceptable tolerances. Note that this process should not be considered a model validation, which is discussed in Section 5.

3.4 HYDRAULIC MODEL

A 1D/2D hydraulic model was developed using XP Solutions software. The XP Storm Flood software dynamically couples the 1D and 2D elements so that flows can pass from one another.

It is important to note that there is no existing public stormwater network within the Argent Lane SHA, the Hydraulic model therefore comprises open channels, culverts (surveyed) and bridges.

3.4.1 Manning's Roughness Coefficients

The Manning's coefficients ("n" values) adopted based on engineering judgement from site visits of the Argent Lane SHA area and are as follows (DEFRA, 2004):

- 0.06 for main stream channels [Based on unit roughness for light brush & trees].
- +0.01-0.02 added to above stream channel values for irregular sections, with pools, meander and riffles, etc.
- 0.08 for overbank, floodway, floodplain and vegetated areas.
- 0.014 for concrete pipes.
- 0.017 for corrugated metal

3.4.2 Culvert losses

Culverts have been modelled with the following losses:

- Entrance loss – 0.50
- Exit loss - 1.0

3.4.3 Modelled Bridges

A summary of the hydraulic parameters of the modelled bridges is covered in section 3.2.4.2 of this report.

3.5 BOUNDARY CONDITIONS

3.5.1 Rainfall

The 24 hour rainfall depths for the 2, 10 and 100 year ARI design storms were obtained from TP108's rainfall design isohyets graphs, based on the centroid of the catchment. To incorporate climate change to 2090, the rainfall depth was then increased by respective percentages based on Chapter 4 of Auckland Council Code of Practice for Land Development and Subdivision. The rainfall data is summarised in Table 7 – Rainfall Data.

Table 7: Rainfall Data (24 hour)

Event	TP108 Rainfall Depth (mm)	Percentage Increase in 24 hour design rainfall depth due to climate change	Rainfall Depth + Allowance for Climate Change (mm)
2 Year ARI (50% AEP)	88mm	9.0%	95.9mm
5 Year ARI (20% AEP)	125mm	11.3%	139.1mm
10 Year ARI (10% AEP)	145mm	13.2%	164.1mm
20 Year ARI (5% AEP)	170mm	15.1%	196mm
50 Year ARI (2% AEP)	200mm	16.8%	234mm
100 Year ARI (1% AEP)	225mm	16.8%	262.8mm

(Based on MfE report on climate change, 2008 considering 2.1^{o} C increase in temperature by 2090) and in Accordance with Auckland Council Stormwater Code of Practice.

3.5.2 Downstream Boundary Conditions

The site has two ultimate discharge points, the Orewa River and the Weiti Stream. In agreement with Auckland Council it was determined that an appropriate boundary condition would be the application of Mean High Water Springs (MHWS) (1.258m RL) + an allowance for sea level rise (0.50m).

The source of the MHWS was by way of the LINZ secondary port tables, the Weiti outlet is the second closest port table to Millwater, Tiritiri Matangi is the next closest and provides a good check.

Tiritiri Matangi Island is a secondary port and has a MHWS of 1.258m RL, Weiti River Entrance is a secondary port and has a MHWS of 1.258m RL also.

The tide charts are in “Chart Datum” so these have been converted to “Auckland Vertical Datum 1946” using the Primary Auckland port datum offsets. A copy of the LINZ secondary port tables can be found in Appendix G – LINZ secondary port tables

The boundary conditions applied for the Orewa and Weiti outlets for the modelled scenarios are summarised as follows:

- Existing Rainfall – 1.258m RL
- Future Rainfall – 1.758m RL

4 MODELLING LIMITATIONS & ASSUMPTIONS

The flood modelling undertaken represents the flood risk within the modelled extent and are subject to assumptions and limitations outlined below:

- The design storms are in accordance with the former Auckland Regional Councils (ARC) Technical Publication 108 (TP108). The TP108 model has a reported 90% confidence of flow results being within ± 25% of the system being modelled (ARC, 1999).
- The runoff flows calculated by the hydrological model are loaded in the hydraulic model at specified nodes inside the two dimensional model extents (structured mesh). Inside the two dimensional model extents, water can flow in all directions from the loading node. The extents of the flow paths may vary according to the location of the loading node, the elevation of the two dimensional grid cells (from LiDAR data) and other model assumptions. The location of the loading determines the origin of the overland flow path.
- No sedimentation or blockage has been allowed for in any watercourses or culverts. i.e. it is assumed that all culverts and watercourses are capable of performing at full capacity.
- The potential for change in asset condition over time is not represented.
- This model has been prepared to provide guidance on flood levels and depths within the modelled catchment area for the modelled scenario. The modelling process relies on a range of assumptions and simplifications and is subject to errors and inaccuracies. The compounding effects of the uncertainties in the TP108 rainfall model (ARC, 1999), the uncertainties in the contour model and the uncertainties in hydraulic parameters such as roughness could result in the water level varying from the mapped levels.
- The stormwater model for this catchment has been prepared using LiDAR topographical data supplied by Auckland Council. The LiDAR data is rural spec stated to have an accuracy of about ± 0.50m with a 68% confidence interval. This relates to the spheroid height; additional error is introduced when the geodic height model is

applied. As a result of the water level variability the lateral extent of flood extent may vary significantly from that shown on the plans. This can have a compounding effect with other uncertainties such as the TP108 rainfall model and other causes for uncertainty.

5 MODEL VALIDATION & CALIBRATION

The Auckland Council Stormwater Modelling Specifications recommends flood models to be validated to at least three storm events based on available flow/level monitoring data and against available historical flood incidents information.

There is no long term flow gauge data at any locations directly downstream of the Argent Lane SHA. There is however a flow gauge located on Orewa River at Kowhai Ave, however this is upstream of the confluence point at which a majority of the Future Urban land and the Argent Lane SHA discharge to.

Due to the location of the flow gauge there is currently no reliable way to calibrate or validate the stormwater flood model (with respect to the Argent Lane SHA) at present. However, the flow gauge information can be used to validate the hydrological model with regards to the suitability of the curve numbers being applied.

A hydrological calibration of Kowhai Avenue Bridge Flow Gauge was undertaken, the calibration highlighted uncertainty relating to the catchment rainfall runoff response. It was agreed with the DPO and Auckland Council that a CN of 74 would be used until the rating curve is looked into to improve the hydrological calibration.

A copy of the model calibration assessment along with Auckland Council's remarks can be found in Appendix I – Hydrological Calibration.

6 MODEL SCENARIOS & SIMULATIONS

Through consultation with the DPO, it was decided that the design events considered would be the 2, 10 and 100 year ARI events. These events would be modelled for the proposed ED, MPD and Argent Lane SHA scenarios. The modelling undertaken is based on unmitigated scenarios and therefore does not consider stormwater mitigation devices such as raingardens or rain tanks.

It is however important to note that the Wainui East Future Urban Zone is within the SMAF 1 overlay and therefore will need to meet the SMAF 1 hydrology mitigation requirements for retention & detention for new impervious areas. The volume required for offset mitigation of 2 year ARI event is equivalent to the retention & detention depth (24mm/m^2 impervious), therefore there would be no increase in flood effects for the 2 year ARI event. Table 8 shows the simulation matrix for the unmitigated ED, MPD and Argent Lane SHA scenarios. There are 36 scenarios modelled in total.

Table 8: Simulation Matrix

Scenario	Landuse	Landform	Hydraulic Structure	Rainfall
ED & MPD Scenarios				
1	ED	Existing	Existing	Existing 2 year
2	ED	Existing	Existing	Existing 10 year
3	ED	Existing	Existing	Existing 100 year
4	ED	Existing	Existing	Future 2 year
5	ED	Existing	Existing	Future 10 year
6	ED	Existing	Existing	Future 100 year
7	MPD	Existing	Existing	Existing 2 year
8	MPD	Existing	Existing	Existing 10 year
9	MPD	Existing	Existing	Existing 100 year
10	MPD	Existing	Existing	Future 2 year
11	MPD	Existing	Existing	Future 10 year
12	MPD	Existing	Existing	Future 100 year
MPD & Post Development Scenarios				
13	Argent Lane SHA	Future	Existing & Future [1]	Existing 2 year
14	Argent Lane SHA	Future	Existing & Future [1]	Existing 10 year
15	Argent Lane SHA	Future	Existing & Future [1]	Existing 100 year
16	Argent Lane SHA	Future	Existing & Future [1]	Future 2 year
17	Argent Lane SHA	Future	Existing & Future [1]	Future 5 year
18	Argent Lane SHA	Future	Existing & Future [1]	Future 10 year
19	Argent Lane SHA	Future	Existing & Future [1]	Future 100 year
20	MPD	Future	Existing & Future [1]	Existing 2 year
21	MPD	Future	Existing & Future [1]	Existing 10 year
22	MPD	Future	Existing & Future [1]	Existing 100 year
23	MPD	Future	Existing & Future [1]	Future 2 year
24	MPD	Future	Existing & Future [1]	Future 10 year
25	MPD	Future	Existing & Future [1]	Future 100 year
26	MPD	Future	Future - Argent Lane Culverts Open	Future 2 year
27	MPD	Future	Future - Argent Lane Culverts Open	Future 10 year
28	MPD	Future	Future - Argent Lane Culverts Open	Future 100 year
29	MPD	Future	Future - Argent Lane Culverts Open	Existing 2 year

30	MPD	Future	Future - Argent Lane Culverts Open	Existing 10 year
31	MPD	Future	Future - Argent Lane Culverts Open	Existing 100 year
Additional Scenarios				
32	Argent Lane SHA	Existing	Existing & Future [1]	Existing 20 year
33	Argent Lane SHA	Future	Existing & Future [1]	Future 20 year
34	ED	Existing	Existing	Existing 50 year
35	ED	Future	Existing	Future 50 year
36	ED	Existing	Existing	Existing 20 year

(1) Existing hydraulic structures outside of Argent Lane SHA have been kept whilst areas within the Argent Lane SHA has been modelled with future structures (i.e. culverts removed).

(2) Future Rainfall expected year 2100

7 FLOOD MODEL RESULTS

Results from the XP Storm model have been extracted and mapped for the 10 and 100 year ARI Events. Results for the 2 year ARI event have not been mapped as this event will be mitigated through the implementation of the SMAF 1 hydrology mitigation requirements for retention and detention.

A total of four sets of flood maps have been prepared, the scenarios modelled in each set are summarised in Table 9 – Flood Map Scenarios, a copy of the flood maps can be found in Appendix J – Flood Maps. A complete set of the XP Storm Model Outputs for each of the modelled scenarios shown in Table 9 can be found in Appendix K – XP Storm Model Outputs, plans outlining the modelled catchment, link and node locations to supplement the XP Storm outputs can be found in Appendix D – Catchment & XP Storm Model Plans.

Table 9: Flood Map Scenarios

Set 1	**10yr Existing Rainfall**
Scenario 2	ED
Scenario 30	MPD
Scenario 14	Post Development – Argent Lane SHA
Set 2	**10yr Future Rainfall**
Scenario 5	ED
Scenario 27	MPD
Scenario 18	Post Development – Argent Lane SHA
Set 3	**100yr Existing Rainfall**
Scenario 3	ED
Scenario 31	MPD
Scenario 15	Post Development – Argent Lane SHA

Set 4	100yr Future Rainfall
Scenario 6	ED
Scenario 28	MPD
Scenario 19	Post Development – Argent Lane SHA

7.1 FLOODING ISSUES

Within the Wainui East Future Urban Zone, flooding issues appear to be confined upstream of the Wainui Road Bridge crossing above Waterloo Creek. Results have been tabulated for the following locations.

- Link 178 – A downstream Link for the Orewa River
- Kowhai Bridge
- Wainui Bridge
- Link 8 – Confluence point for upstream of the Argent Lane SHA
- Weiti Culvert – Upstream levels for Weiti Culvert (modelled as NZTA_Culv)
- Node 195 – A downstream link for the Weiti Stream

Figure 6 shows the location of these areas in context with the XP Storm modelled Links and Nodes. Results for the 10 year ARI event (existing and future rainfall scenarios) are summarised for the ED, MPD and Argent Lane SHA scenarios in Tables 10 - 13.

A set of flood maps have been prepared for the 10 and 100 year ARI events (future and existing) for the ED, MPD and Argent Lane SHA scenarios. These flood maps show the flood extents for the scenarios modelled and can be found in Appendix J - Flood Maps.

7.1.1 Safety Criteria

The key safety criteria for vehicles crossing a floodway is the product of water velocity and depth of flow. The Austroads 'Safety Provisions for Floodways Over Roads' document was used to determine whether the depth and velocity at which flows overtop roadways, bridges or crossings meet the safety criteria set out in the document. The safety criteria can be seen in Figure 7.

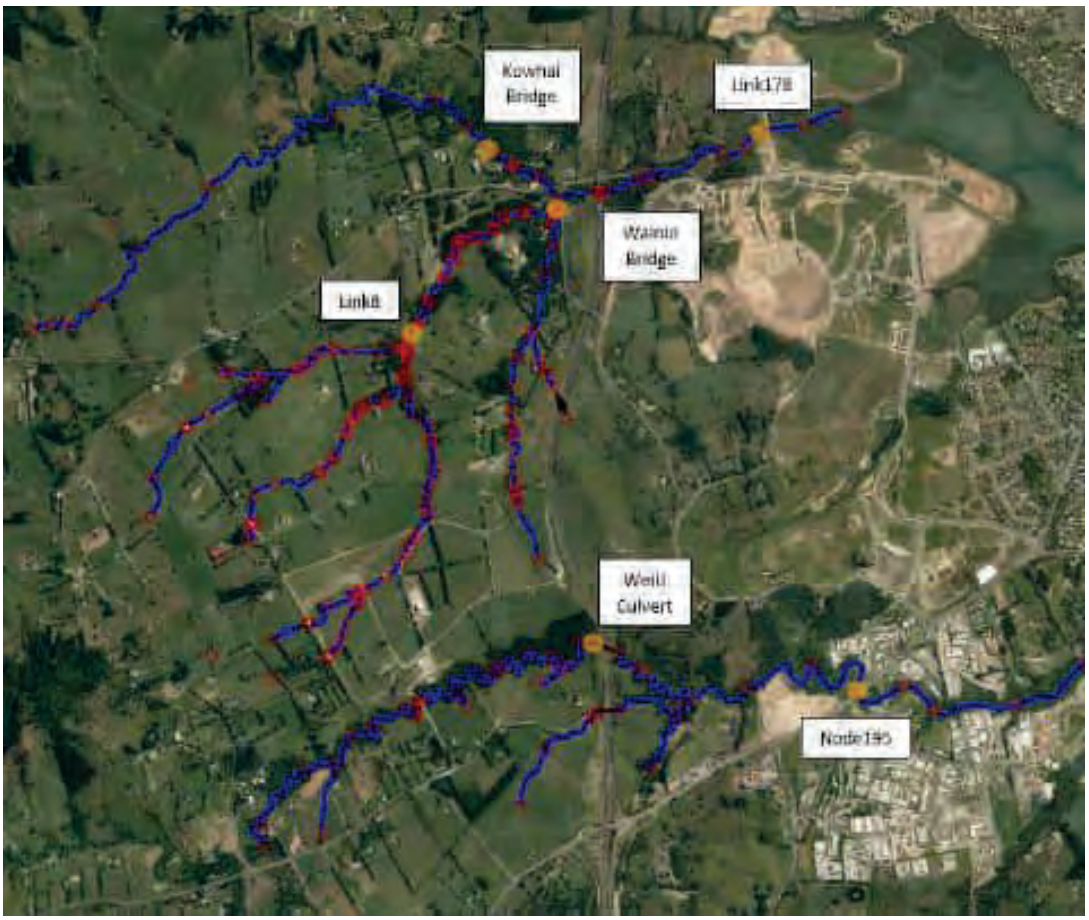

Figure 6: Result Locations

Table 3.2: The proposed draft interim criteria for stationary vehicle stability

Class of vehicle	Length (m)	Kerb weight (kg)	Ground clearance (m)	Limiting still water depth with zero velocity	Limiting high velocity flow depth (3 m/sec)	limiting velocity (m/sec) at low depth	Equation of stability
Small passenger	< 4.3	< 1250	< 0.12	0.3	0.1	3.0	DxV < 0.3
Large passenger	> 4.3	> 1250	> 0.12	0.4	0.15	3	DxV < 0.45
Large 4WD	> 4.6	> 2000	> 0.22	0.6	0.2	3	DxV < 0.6

Source: Shand et al. (2011)

Figure 7: Austroads Floodway's Safety Criteria

Table 10: Summary 10 year ARI event (Existing Rainfall)

Location	Event	ED (S2)		MPD (S30)		Argent Lane SHA (S14)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	10yr Existing	90.40	1.73	101.48	1.95	95.41	1.71
Kowhai Bridge	10yr Existing	64.53	4.27	65.90	4.36	64.53	4.27
Wainui Bridge	10yr Existing	24.03	5.06	35.10	5.54	28.55	5.28
Link 8	10yr Existing	24.03	5.17	36.30	5.68	28.92	5.41
Weiti Culvert (NZTA_Culv)	10yr Existing	43.37	9.21	44.81	9.30	43.48	9.21
Link189	10yr Existing	72.02	4.12	79.26	4.29	72.24	4.12

Table 11: Summary 10 year ARI event (Future Rainfall)

Location	Event	ED (S5)		MPD (S27)		Argent Lane SHA (S18)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	10yr Future	111.50	2.06	125.04	2.23	116.52	2.10
Kowhai Bridge	10yr Future	79.05	4.53	80.38	4.63	79.05	4.57
Wainui Bridge	10yr Future	30.20	5.40	43.83	5.75	35.41	5.56
Link 8	10yr Future	29.99	5.52	42.56	5.93	34.57	5.70
Weiti Culvert (NZTA_Culv)	10yr Future	52.20	9.77	53.78	9.86	52.33	9.78
Link189	10yr Future	88.67	4.45	96.01	4.59	89.06	4.45

Table 12: Summary 100 year ARI event (Existing Rainfall)

Location	Event	ED (S3)		MPD (S31)		Argent Lane SHA (S15)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	100yr Existing	179.51	2.26	190.74	2.51	184.50	2.22
Kowhai Bridge	100yr Existing	122.23	5.19	122.39	5.26	122.33	5.21
Wainui Bridge	100yr Existing	50.74	5.96	60.76	6.16	55.16	6.04
Link 8	100yr Existing	45.51	6.19	61.94	6.48	50.10	6.29
Weiti Culvert (NZTA_Culv)	100yr Existing	73.50	11.72	74.35	11.86	73.57	11.73
Link189	100yr Existing	134.08	5.18	143.07	5.33	135.34	5.18

Table 13: Summary 100 year ARI event (Future Rainfall)

Location	Event	ED (S6)		MPD (S28)		Argent Lane SHA (S19)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	100yr Future	226.13	2.57	235.94	2.79	230.86	2.61
Kowhai Bridge	100yr Future	150.84	5.59	151.00	5.64	150.92	5.62
Wainui Bridge	100yr Future	59.96	6.17	71.10	6.37	64.84	6.25
Link 8	100yr Future	57.55	6.48	79.51	6.80	63.52	6.61
Weiti Culvert (NZTA_Culv)	100yr Future	86.26	13.02	87.15	13.12	86.33	13.03
Link189	100yr Future	159.91	5.56	167.68	5.69	159.99	5.57

The tables above highlight an effect on the Wainui Road Bridge crossing above Waterloo Creek, this is discussed further in section 7.1.1 along with Weiti Culvert in section 7.1.2.

The effect on the Wainui road crossings is discussed further in section 7.1.3.

7.1.2 Wainui Road Bridge (Waterloo Creek Crossing)

The Wainui Road bridge has a low chord elevation of 4.79m RL (underside of bridge) with the high chord elevation (road level) surveyed at an elevation of 5.44m RL.

The flood modelling predicts the following:

- Stormwater flows will exceed the low chord elevation for the ED scenario in the 10 year ARI event (existing rainfall) (5.01m RL),
- The MPD scenario will result in 100mm overtopping of the bridge in the 10 year ARI event (existing rainfall) (5.54m RL).
- The Argent Lane SHA scenario results in an increase in flood level to 5.28m RL in the 10 yea ARI event (existing rainfall). While this is a higher flood level than in the ED scenario, it does not result in the bridge overtopping.
- In the 10 year ARI event (future rainfall) ED scenario, the flood level reaches an elevation of 5.40m RL. This is 40mm below the bridge deck level.
    - The bridge will overtop by 310mm in the MPD scenario and by 120mm in the Argent Lane SHA scenario.
    - The overtopping depth in the Argent Lane SHA scenario of 120mm is considered trafficable for passenger vehicles under Austroads "Safety Provisions for Floodways Over Roads" document (DxV=0.072<0.3 therefore OK).

- The XP Storm model predicts that the Bridge will not overtop in the 20 year ARI event (existing rainfall) under the ED scenario, whilst overtopping would occur in the Argent Lane SHA (existing rainfall) scenario.
- The Bridge is predicted to overtop in the ED scenario during the 50 year ARI event (existing rainfall).
- The XP Storm model predicts that the Wainui Road Bridge will overtop in the 100 year ARI event for all scenarios (ED, MPD and Argent Lane SHA) for both existing and future rainfall.
- The 5 year ARI event was simulated for the Argent Lane SHA scenario to determine whether the 5 year flows are passable. The model doesn't predict overtopping of the bridge in the future rainfall 5 year ARI event.

The flood results including the time of inundation for the Wainui Road Bridge has been summarised in Table 15 – Wainui Bridge Flood Results.

Table 14: Wainui Bridge Flood Results

Scenario	Landuse	Rainfall	U/S Level	Stream Flow [m^3/s]	Bridge Flow [m^3/s]	Flow Total [m^3/s]	Inundation Time	Inundation/ Overtopping
2	ED	Existing 10 year	5.06	24.03	0.00	24.03		No
3	ED	Existing 100 year	5.96	39.16	11.58	50.74	**1hr 37mins**	Yes
5	ED	Future 10 year	5.40	30.20	0.00	30.20		No
6	ED	Future 100 year	6.17	40.64	19.33	59.96	**2hrs**	Yes
14	Argent Lane SHA	Existing 10 year	5.28	28.55	0.00	28.55		No
15	Argent Lane SHA	Existing 100 year	6.04	40.94	14.22	55.16	**1hr 44mins**	Yes
17	Argent Lane SHA	Future 5 year	5.22	27.37	0.00	27.37		No
18	Argent Lane SHA	Future 10 year	5.56	34.08	1.33	35.41	**46mins**	Yes
19	Argent Lane SHA	Future 100 year	6.25	42.25	22.58	64.84	**2hrs 12mins**	Yes
27	MPD	Future 10 year	5.75	38.46	5.37	43.83	**1hr 4mins**	Yes
28	MPD	Future 100 year	6.37	43.41	27.70	71.10	**2hrs 10mins**	Yes
30	MPD	Existing 10 year	5.54	34.22	0.89	35.10	**34mins**	Yes
31	MPD	Existing 100 year	6.16	41.94	18.82	60.76	**1hr 49mins**	Yes
32	Argent Lane SHA	Existing 20 year	5.59	34.67	1.77	36.44	**50mins**	Yes
33	Argent Lane SHA	Future 20 year	5.59	39.34	8.15	47.48	**1hr 28mins**	Yes
34	ED	Existing 50 year	5.76	37.00	5.49	42.49	**1hr 11mins**	Yes
35	ED	Future 50 year	6.01	39.34	13.36	52.69	**1hr 44mins**	Yes
36	ED	Existing 20 year	5.43	30.8144	0	30.81		No

The results from Table 14 highlight the following:

- There is no inundation / overtopping of the bridge in the 10 year ARI (existing rainfall) ED or Argent Lane SHA scenarios.

- The time of inundation for the ED scenario in the 100 year ARI event (existing rainfall) is 1hr and 37 minutes and 2 hours under the future rainfall scenario.
- Time of inundation increased by 7 minutes for the Argent Lane SHA in the 100 year ARI event (existing rainfall) and 12 minutes with future rainfall. The MPD scenario increases the inundation time by an additional 5 and 8 minutes respectively.
    - The increase in inundation time of 7 and 12 minutes for the Argent Lane SHA in the 100 year ARI events is considered minor when put into perspective with the total time of inundation under the existing land use (ED) scenarios (1 hour and 37 minutes & 2 hours).
- The Wainui Road Bridge overtops in the 100 year event (existing and future rainfall) for all modelled scenarios ED, MPD and Argent Lane SHA.
- The Wainui Road Bridge is deficient when the effects of climate change are taken into consideration.
- Overtopping of the bridge in the Argent Lane SHA scenario for the 10 year future rainfall scenario will result in an flood depth of 120mm over the carriageway is considered trafficable for passenger vehicles under Austroads "Safety Provisions for Floodways Over Roads" document (DxV=0.072 < 0.3 therefore OK).

Overall the Wainui Road Bridge acts as a bottleneck for the upstream catchment, as the bridge sees a decrease in effective cross sectional area. This acts as a throttle for flows, resulting in an increase in flood levels and flood extents upstream.

It is expected that if flows were able to pass freely at the Wainui Road Bridge, there would be a decrease in the upstream flood levels and corresponding flood extents.

7.1.3 Weiti Culvert

The southern portion of the Wainui East Future Urban Area discharges to the Weiti Stream. The flows from the stream pass through a 4.50m diameter culvert under the Motorway and discharges ultimately into Karepiro Bay.

The culvert sit wells below the motorway. The stream topography upstream of the culvert is well incised. The headwater level at this culvert is 9.69m RL, with the motorway at approximately 16.5m RL.

In larger storm events, the flood elevation at this culvert remains well below the motorway and its surrounding banks (13.12m RL in the 100 year MPD + CC scenario) with no notable downstream effects as shown in the prepared flood maps (Appendix J).

7.1.4 Wainui Road Crossings

The stream tributary adjacent to Wainui Road has two crossings that enable access to the adjacent lot owners. The crossings have been surveyed and included in the flood model. The location of these crossings with reference to the XP Storm modelled links and nodes is shown in Figure 8 – Wainui Road Crossings.

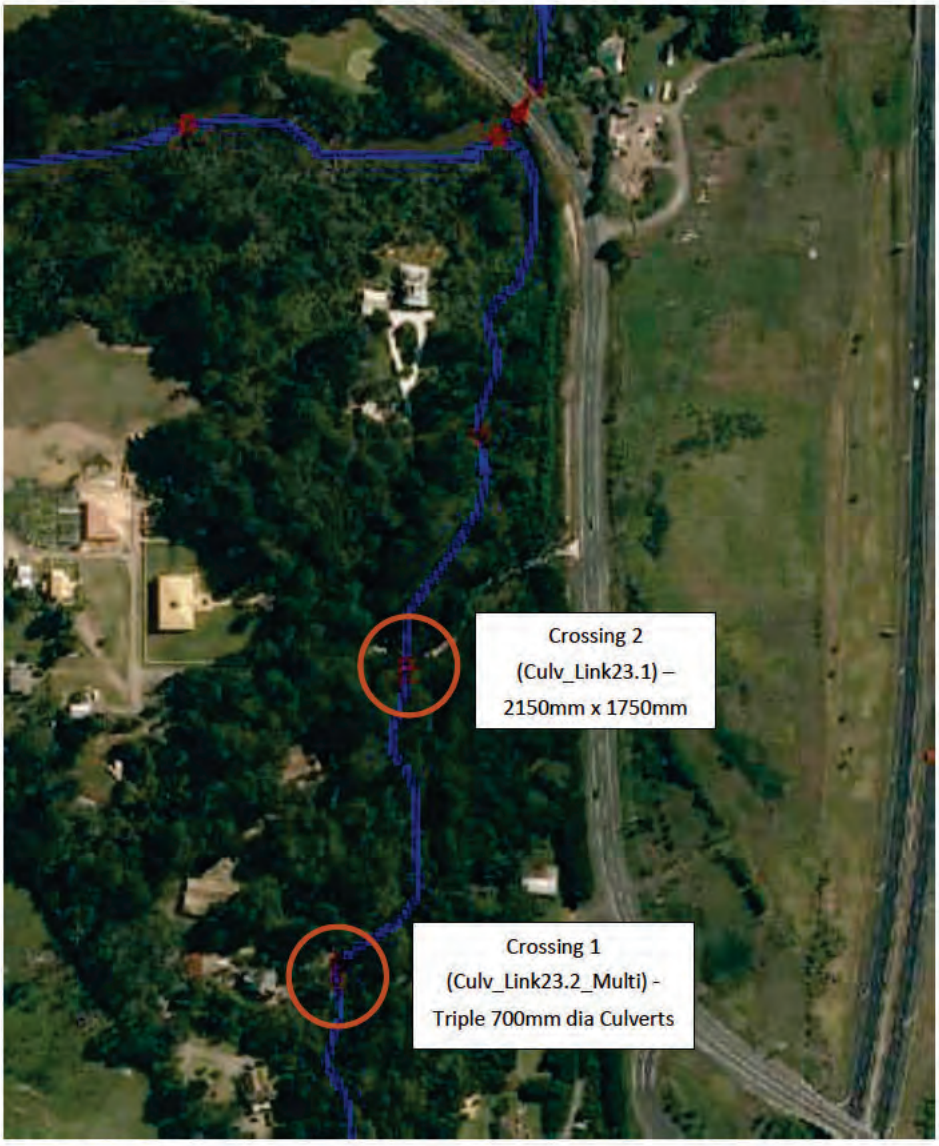

Figure 8: Wainui Road Crossings

Crossing 1 consists of triple 700mm diameter culverts whilst crossing 2 has been modelled as an ellipse culvert with a 2150mm width and a 1750mm height. The culvert at crossing 2 was

modelled as an ellipse as the top of the culvert is deformed due to the existing vehicle crossing. Photos of the culverts at crossings 1 & 2 are shown in Figures 9 & 10.

Figure 9: Wainui Road Crossing 1

Figure 10: Wainui Road Crossing 2

The flood model predicts that crossing 1 is deficient, it is important to note that land for crossing 1 is owned by the applicant therefore the effects on this culvert are not discussed in detail.

The flood model results for the Wainui Road Crossing 2 are presented in Table 15.

Table 15: Wainui Road Crossing 2

Scenario	Landuse	Rainfall	Crossing 2 (Culv_Link23.1) Overtopping
2	ED	Existing 10 year	No
3	ED	Existing 100 year	Yes
5	ED	Future 10 year	No
6	ED	Future 100 year	Yes
14	Argent Lane SHA	Existing 10 year	No
15	Argent Lane SHA	Existing 100 year	Yes
17	Argent Lane SHA	Future 5 year	No
18	Argent Lane SHA	Future 10 year	Yes
19	Argent Lane SHA	Future 100 year	Yes
27	MPD	Future 10 year	Yes
28	MPD	Future 100 year	Yes
30	MPD	Existing 10 year	No
31	MPD	Existing 100 year	Yes
32	Argent Lane SHA	Existing 20 year	Yes
33	Argent Lane SHA	Future 20 year	Yes
34	ED	Existing 50 year	Yes
35	ED	Future 50 year	Yes
36	ED	Existing 20 year	No

The flood results from Table 15 are summarised as follows:

- The crossing in the existing ED scenario will overtop in 50 and 100 year ARI events (existing rainfall) and 20, 50 and 100 year ARI events under future rainfall conditions.
- The culvert overtops in the Argent Lane SHA scenario with existing rainfall for the 20 year ARI event.
    - The overtopping depth under this scenario is 66mm which is considered trafficable for passenger vehicles under Austroads 'Safety Provisions for Floodways Over Roads' document (DxV < 0.3).
- The Argent Lane SHA scenario under future rainfall conditions would result in overtopping of 38mm during the 10 year ARI event.

- The overtopping depth under this scenario is 38mm which is considered trafficable for passenger vehicles under Austroads (DxV < 0.3).

Overall the increase in the upstream flood extents in this area can be considered less than minor. The existing culvert acts as a restriction and it is expected that an upgrade or additional culvert would enable flows to pass forward without causing overtopping.

As this area is zoned future urban it is expected that this culvert would be upgraded prior to the effects of climate change taking place.

8 CONCLUSION

This report provides the methodology and outcomes of the Wainui East Future Urban Zone model build.

The flood modelling has been undertaken as part of an effects assessment and is based on unmitigated scenarios. It was determined that SMAF 1 requirements proposed in the Stormwater Management Plan would mitigate the effects of the 2 year ARI event. Flood maps have been prepared to detail the flood extents for the various ED, MPD and Argent Lane SHA scenarios in the 10 and 100 year ARI storm events.

The flooding effects observed within the Wainui East Future Urban Zone appear to be confined to upstream of the Wainui Road bridge crossing above Waterloo Creek. There are no notable flood effects observed downstream of the Wainui Road bridge as shown in the prepared flood maps.

These effects are summarised as follows:

- There is no inundation / overtopping of the Wainui Bridge crossing over Waterloo Creek in the 10 year ARI (existing rainfall) ED or Argent Lane SHA scenarios.
- The time of inundation for the ED scenario in the 100 year ARI event (existing rainfall) is 1hr and 37 minutes and 2 hours under the future rainfall scenario.
- Time of inundation increased by 7 minutes for the Argent Lane SHA in the 100 year ARI event (existing rainfall) and 12 minutes with future rainfall. The MPD scenario increases the inundation time by an additional 5 and 8 minutes respectively.
    - The increase in inundation time of 7 and 12 minutes for the Argent Lane SHA in the 100 year ARI events is considered minor when put into perspective with the total time of inundation under the existing land use (ED) scenarios (1 hour and 37 minutes & 2 hours).
- The Wainui Road Bridge overtops in the 100 year event (existing and future rainfall) for all modelled scenarios ED, MPD and Argent Lane SHA.
- The Wainui Road Bridge is deficient when the effects of climate change are taken into consideration.
- Overtopping of the bridge in the Argent Lane SHA scenario for the 10 year future rainfall scenario will result in an flood depth of 120mm over the carriageway. This is considered trafficable for passenger vehicles, as stated in Austroads “Safety Provisions for Floodways Document” (where DxV < 0.3).

- There are two vehicle crossings at Wainui Road that provides access into existing residential properties.
    - Crossing 1 is deficient however the crossing and the surrounding residential lots are owned by the applicant.
    - The Argent Lane SHA scenario would result in crossing 2 overtopping during the 20 year ARI event (existing rainfall), however the overtopping depth is 66mm which is considered trafficable under Austroads “Safety Provisions for Floodways Document” (where DxV < 0.3).
    - The overtopping of crossing 2 in the 10 year ARI event (future rainfall) Argent Lane SHA scenario results in an overtopping depth of 38mm which is considered trafficable for passenger vehicles under Austroads “Safety Provisions for Floodways Document” (where DxV < 0.3).

The flood effects from the existing rainfall Argent Lane SHA scenario are considered less than minor with the effects limited to a small increase in flood depth on the Wainui Road Bridge crossing over Waterloo Creek.

The flood modelling shows the increase in flood extents do not affect habitable floor levels on existing dwellings. There are no adverse flood effects observed downstream of the Wainui Road bridge, at the Weiti Culvert or other areas upstream of the Argent Lane SHA as shown in the prepared flood maps.

9 LIST OF REFERENCES

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APPENDIX A

GEOTECHNICAL REPORT

Tonkin+Taylor

Job No: 30868
27 July 2016

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Attention: Mr Jamie Whyte

Dear Jamie

Argent Lane Special Housing Area
Geotechnical Overview

1 Introduction

Tonkin & Taylor (T&T) has been engaged by Fulton Hogan Land Development Ltd to prepare a preliminary geotechnical report to accompany the application for a proposed urban development (residential and business) within the area known as Wainui East, in Silverdale, in the Proposed Auckland Unitary Plan. The area of interest for this geotechnical appraisal comprises the Argent Lane Special Housing Area (ALSHA – see attached plans in Appendix A).

This ALSHA area is bounded by SH1 (northern motorway) in the east, Wainui Road to the north, Argent Lane to the west and a tributary to the Weiti River to the south. We have undertaken a preliminary geotechnical assessment of the proposed subdivision in accordance with the following scope of work:

- Engineering geological and geomorphological mapping by an engineering geologist,
- Preliminary geotechnical site investigations across part of the overall site,
- Assessment of geotechnical suitability for development of the site,
- Provide a preliminary geotechnical report to accompany the application.

This preliminary assessment has been undertaken to identify the geology, subsurface conditions and types of geotechnical works which are likely to be required to achieve acceptable slope stability for a successful urban subdivision development. Detailed investigations, analyses and design of the finalised geotechnical works will be covered in separate Geotechnical Investigation Reports.

In a regional context, and with appropriate earthworking provisions, this land area appears to be well suited to a comprehensive development.

2 Site Description

The subject site comprises a number of separate land titles, predominantly covered in pasture, with a number of separate stands of trees and bush.

East-west orientated ridgelines are located along the Wainui Road alignment and immediately north of the Weiti River, as well as a low level ridge running centrally through the site. There is also a single isolated high-point within the northern half of the site. These ridges rise up to between 35m and 55m

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above sea level, but generally have shallow flanks. There are some localised steeper areas of ridge flank that indicate shallow soil creep.

Surrounding these ridgelines and isolated high points, the local topography is typically gently sloping to flat, with numerous areas of swampy ground, or with areas exhibiting evidence of near surface ground water. Farm drains and minor streams cross the site, generally falling towards a central gully system (Waterloo Creek) that runs in a northerly direction, ultimately discharging into the upper reaches of the Orewa Estuary system. There are also several small ponds across the site.

As noted above, ground cover is predominantly in pasture with several isolated bush areas and tree shelter belts. The main gully system is generally covered by trees and/or bush. There are also a number of existing farm dwellings and structures located across the site.

There is limited evidence of historic earthworks having been undertaken across the site, predominantly to form farm tracks or a private airstrip that is located in the centre of the site. In addition, clearing of farm drains appears to have resulted in a number of stockpiles in isolated locations across the site.

There is a large bridge constructed across the Weiti River tributary which we understand was built to accommodate a previously proposed quarry, the proposal for which was later abandoned.

3 Geology

3.1 Geological Conditions

Published geological maps and information[1] indicate the studied area to be underlain by the Northland Allochthon materials. This formation typically comprises brecciated MUDSTONE and SILTSTONE. The materials are pervasively sheared and softened with many slickensided surfaces. The Northland Allochthon is generally encountered at a depth of between 3 and 4m. The geological maps indicate that the subject site is expected to be underlain by more limestone rich deposits and comprise the following:

Mahurangi Limestone – Blue-grey to white, micritic, coccolith foraminiferal, muddy limestone, locally with glauconitic sandstone beds. An outcrop of Mahurangi limestone was observed within the walls of a historic lime pit east of Cemetery Road, as shown on Figure 1.

Figure 1-Highly sheared Mahurangi Limestone outcrop in disused farm lime quarry. East of Cemetery Road.

Mangakahia Complex – Closely fractured to sheared. Light or dark coloured, siliceous and locally calcareous mudstone, with micaceous sandstone, siltstone, green and

[1] New Zealand Geological Survey, *Geological Map of New Zealand 1:50,000 – Sheets Q10 & R10 Helensville and Whangaparaoa*, 1989

brown shale, and some muddy limestone. Commonly occurs as a melange of mixed lithologies, with a sheared matrix. Many small serpentinite bodies within melange units.

Tauranga Group Alluvium – Alluvium/colluvium fan deposits across the lower lying areas of the site. These deposits are likely to include loose/soft sands and silts but may include organic rich deposits such as peat.

3.2 Geological Hazards

Groundwater levels are expected to be near surface across the lower lying parts of the site. Within the ridges, groundwater would typically be expected to be encountered between 2 and 4m depth, generally above the soil/rock interface.

Geotechnical issues arising from the geology include:

- Pervasively sheared and shattered rockmass;
- Low strength and expansive soils within the superficial deposits;
- Stability problems on a range of slopes steeper than 7-8º, especially where the relatively less weathered rockmass is at shallow depth;
- Potential for deep seated instability along slopes dipping at more than 15º;
- Drainage problems in areas dominated by low permeability soils/ high ground water table.
- Settlement of compressible alluvial sediments;
- Potential for liquefaction in the alluvial sediments;
- Karstic features/sinkholes/tomo's within the limestone rock.

3.3 Geomorphology

The majority of the site comprises rolling topography with large areas of predominantly flat land and swamps along the main streams and tributaries. Several of the ridgelines display gentle to moderate slopes along which active soil creep and shallow landslip features were observed (particularly along the ridge adjacent to Cemetery Road).

Instability is considered to be mainly a function of the shallow creep along the soil/rock interface, in combination with the presence of groundwater. Due to the relatively gentle nature of the site, the presence of creep is limited to the steeper areas, particularly along ridge flanks.

Thick deposits of alluvium are expected to be encountered within the low lying areas above the weathered rock mass.

The main geomorphic features are summarised on the geomorphological plan in Appendix A.

4 Preliminary Site Investigations

4.1 General

The preliminary geotechnical site investigations have comprised a total of nine machine drilled boreholes, 38 Cone Penetration Tests (CPTs), 11 hand auger boreholes, 11 falling head percolation tests and laboratory testing of selected soil samples. Investigation locations are shown on the site plan in Appendix A. The following sections summarise the work carried out as part of the preliminary site investigation.

4.1.1 Machine drilled boreholes (BH)

Nine machine drilled boreholes (BH1 to BH9) were carried out between 24 July and 16 September 2015 to depths of between 6.35 m and 16.95 m below ground level (bgl). Standard Penetration Tests (SPT's) were carried out at approximately 1.5m intervals. A total of 47 samples were taken for laboratory testing, the results of which are provided in Appendix C. The borehole drilling, *in situ* testing and sample collection was carried out by DCN Drilling Ltd under the supervision of an Engineering Geologist from T+T.

All recovered core was logged by an Engineering Geologist from T+T and copies of the borehole logs are attached in Appendix B.

Groundwater was encountered in all boreholes at depths of between 0.0 m bgl to 7.17 m bgl. Two standpipe piezometers were installed in each of boreholes BH1 to BH8 to monitor shallow and deep groundwater levels and a single piezometer installed in BH9.

4.1.2 Cone Penetration Tests (CPTs)

Thirty-eight Cone Penetrometer Tests (CPT1 to CPT38) were undertaken using a CPT rig from DCN drilling and advanced to refusal.

The CPT logs are attached in Appendix B.

4.1.3 Percolation Testing

Investigations have included an initial suite of 4 falling head percolation tests, undertaken on 11 March 2016. A further 7 tests were undertaken between 18 May and 23 May 2016. The tests comprised drilling a 100mm diameter hand auger to a minimum depth of 1.5m (or until refusal), followed by the falling head percolation test.

The hand auger logs are included in Appendix B, while the percolation test results are included in Appendix D. Percolation rates ranged from 0.48mm/hr through to 4.32mm/hr.

5 Geological Model

The geological profile of the site is generally consistent with the published information set out in Section 3. The results of the recent geotechnical investigation conducted on this site indicate that the majority of the low level ridgelines are underlain by the Mangakahia Complex (part of the Northland Allochthon). In the central gully system (Waterloo Creek) around BH9 a moderate thickness (of up to 12m depth) Tauranga Group Alluvium was found to overly the Mangakahia Complex. Within the gully to the east (adjacent to the Northern Motorway), alluvium of up to 5m depth was recorded.

The area to the north of the east-west orientated ridgeline on the northern side of the Weiti Stream (BH1 and BH2) was found to be underlain by the Motatau complex (part of the Northland Allochthon), which was in turn underlain by the Mangakahia Complex. The Motatau Complex and Mangakahia are collectively referred to below as the Northland Allochthon mudstones.

In the northern part of the site, in the area to the east of Sidwell Road (BH6 and BH7) the site was found to be underlain by the East Coast Bays Formation (ECBF) with a moderate thickness of Tauranga Group Alluvium overlying the ECBF in the gully around BH6. The hand augers drilled immediately to the south of Wainui Road (HA5 and HA6) also indicate the presence of ECBF soils on this ridgeline.

The results of the investigations indicate that the interface between the Northland Allochthon and ECBF materials lies south of the end of Sidwell Road.

6 Laboratory Testing

Laboratory testing has been carried out to determine the typical parameters for the subsurface materials and to provide information for earthworks construction. Samples were obtained from the machine boreholes during the site investigation for subsequent laboratory testing. The results of the laboratory testing are presented in Appendix C and was as follows:

- 47 moisture content tests
- 4 Atterberg limit tests (on samples from BH6, BH7 and BH9)
- 4 Consolidation tests (on samples from BH6, BH7 and BH9)

7 Development Considerations

7.1 General

A preliminary review of expected slope stability and geological conditions for the development has been undertaken. A number of risk elements, as noted above, are present. Works to remediate these risks are likely to be required to ensure a successful, stable residential development.

7.2 Shear Keys

Shear keys have been used in previous developments within the Northland Allochthon to improve the stability of natural cut and filled slopes. The presence of softened pervasively sheared Northland Allochthon suggests that deeper instability might occur. The potential for instability is more likely along the ridge flanks when cut or surcharged. Shear keys are mainly expected to be necessary along the northern, southern and western slopes, although this will be subject to detailed assessment as scheme plans are developed in more detail. Shear keys need to be locked into good rockmass. Further site investigation and detailed slope stability analyses are required to identify the location and extent of ground improvement measures.

7.3 Undercutting of residual soils and replacement

This option may be applied to increase stability and geotechnical properties of the existing ground where deeper seated instability is not expected to be present. This would consist of undercutting all the weathered soils down to moderately weathered rock mass, benching if required, placement of drainage and placement of reworked materials as engineered fill. The need or otherwise of this option would be dependent on final development forms.

7.4 Gully Filling

As part of the development, earthworks are likely to be undertaken within gully areas to raise the existing topography to a design ground level. This would likely require compaction of materials and subsoil drainage. Materials derived from the cutting of the ridges would likely be used as reworked engineered fill.

7.5 Subsoil Drainage

During the walk-over survey we observed numerous areas of swampy ground and ponding. Sub-soil drainage is expected to be necessary to control water flows in these areas, particularly within the gully systems. The use of sub-soil drainage will also increase the stability of the slopes. Storm water control measures will be required to prevent instability.

7.6 Settlement of Alluvial Soils

Dependent on the depth and extent of the alluvial soils, there is risk of settlement, particularly in areas subject to filling as part of the development. Further site investigations will be required to

better determine the nature and extent of these alluvial soils, as well as settlement analyses to assess the potential magnitude and rate of settlement.

Settlement magnitudes and rates would need to be regularly monitored during and following completion of bulk earthworks operations, and prior to release of the subject areas for further development, to ensure that further settlements are unlikely to detrimentally affect the building developments or services.

If detailed analyses show that long term settlements may present a risk of damage to buildings or services then there are a number of methods of accelerating the settlement prior to development. These include installation of wick drains and/or preloading and surcharging the fill areas. Further commentary on potential "settlement acceleration" options would be provided following completion of detailed analyses.

7.7 Bulk Earthworks

Bulk earthworks across the site is expected to be more favourable than recent developments in the Hibiscus Coast area, particularly those to the east of the motorway, due to the generally gentler slope gradients. Cuts from the ridge lines and surficial soil areas are typically suitable for use as engineered fill, although some conditioning is likely to be required to meet normal earthworks compaction requirements.

7.8 Re-use of limestone derived materials as fill

We recognise that much of the cut material will likely comprise weathered limestone. The limestone materials will deteriorate following excavation. Specific laboratory testing will be required to assess the potential for re-use of the limestone and any conditioning that may be required.

7.9 Infiltration Potentials

The testing suggests that soakage into either the limestone or alluvium is relatively limited and that water is likely to pond above the interface between the soil and the underlying limestone. Soakage into the underlying ECBF soils, present on the northern boundary of the site (HA5 and HA6 in section 4.1.3) appears more favourable but would require additional delineation of this area to better confirm soakage potential as earthworks plans are developed.

Based on the soil types encountered and our experience with similar soils in the Auckland area, the soils of the weathered ECBF are considered to lie within Soil Category 5 (Silty clay loam-moderate to slow drainage) as defined in TP58[2]. In hydrological soil group terminology, these soils are likely to fall within Group C (as defined in TP108[3]).

The soils of the alluvium and sheared limestone are considered to lie within Soil Category 6 (slowly draining non-swelling clay and silty clay-slowly draining). In hydrological soil group terminology, these soils may also fall within Group C, although based on anecdotal evidence the lower lying gully areas may fall into Group D.

While there may be some capacity for soakage within the ECBF soils, and limited capacity within the Northland Allochthon and Alluvial soils, this would need to be subject to additional delineation of areas as well as a comprehensive assessment of potential impacts on slope stability of the finished

[2] The New Zealand Manual of Alternative Wastewater Treatment and Disposal Systems, Volume II Part A – *On-site Wastewater Disposal from Households and Institutions*, ARC Environment Technical Publication No 58, Second Edition, November 1994.

[3] Guidelines for stormwater runoff modelling in the Auckland Region, ARC Technical Publication No. 108, April 1999.

development form. This assessment may result in requiring any rain garden / detention tank features to be lined to mitigate against slope stability implications.

8 Conclusions

According to our findings, and based on the preliminary investigations, we consider the site to be suitable for comprehensive development. The gentle gradients across the majority of the site make it generally more favourable for development than sites recently developed to the east of the motorway.

Development will require earthworks and drainage to provide adequate stability. This is achievable given appropriate design, competent contractors and regular inspection and supervisions of the works.

The following main earthworks may be required:

- In the northern, southern and western areas, shear keys will likely be required to stabilise the shallow landslippage and soil creep observed;
- Stabilising local shallow instability may require stripping and replacement of superficial deposits;
- All fill will need to be appropriately engineered;
- Subsoil drainage will be required to control underground water and prevent future instability of the site;
- Assessment and monitoring of rates and magnitudes of settlement beneath filled areas will be required prior to release of site for future development;
- Infiltration of stormwater flows to ground may be possible across the site, but the appropriateness of this would need to be subject to detailed analysis and assessment once final landforms have been developed.

Further site investigations will be required in order to confirm the underlying geological conditions with particular respect to the proposed development contours. Detailed analysis and design will then be undertaken to determine accurate locations and extents of the various ground improvement works required, in conjunction with development of the final landform.

Based on the information available, and on our experience on neighbouring and nearby sites, we conclude that the subject site can be satisfactorily engineered to achieve a successful urban development.

9 Applicability

This report has been prepared for the exclusive use of our client Fulton Hogan Land Development Ltd, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:

Andrew Linton

Senior Geotechnical Engineer

Authorised for Tonkin & Taylor Ltd by:

Robert Hillier

Project Director

AJL
p:\30868\workingmaterial\aj\ 150716 argent lane sha prelim report.docx

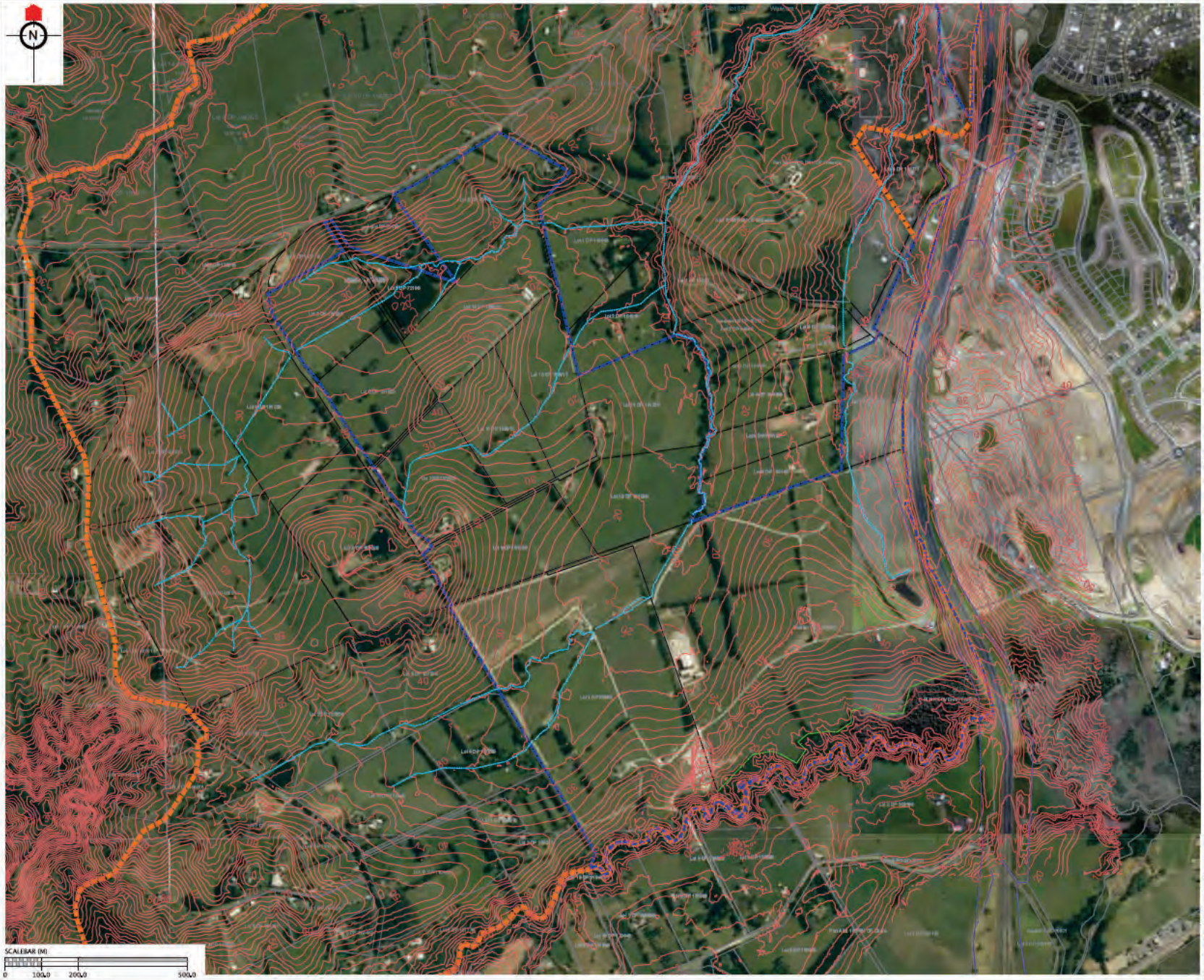
Appendix A: Drawings

WOODS DRAWINGS

- 31720-00-EW-100 Existing Contour Plan
- 32720-00-EW-101 Indicative Contour Plan
- 31723-00-EW-110 Indicative Earthworks Extents Plan

TONKIN + TAYLOR DRAWINGS

- SHA - Figure 1: Geomorphological Plan
- SHA – Figure 2: Site Investigation Plan



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	JAW	27-06-16

LEGEND:

- QUALIFYING DEVELOPMENT STAGE 1
- SHA BOUNDARY
- RURAL URBAN BOUNDARY
- MOTORWAY DESIGNATION
- MINOR CONTOUR (2m)
- MAJOR CONTOUR (10m)

CLIENT:

Fulton Hogan

WOODS
Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

EXISTING CONTOUR PLAN

AUCKLAND COUNCIL

DESIGNED: JAW	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JAW
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JUNE 2016	
DWG. NO. 31720-00-EW-100	REV. 1

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REVISION DETAILS	NAME	DATE
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LEGEND:

- QUALIFYING DEVELOPMENT STAGE 1
- SHA BOUNDARY
- RURAL URBAN BOUNDARY
- MOTORWAY DESIGNATION
- MINOR CONTOUR (1m)
- MAJOR CONTOUR (5m)

CLIENT:

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Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

INDICATIVE PROPOSED CONTOUR PLAN

AUCKLAND COUNCIL

DESIGNED: JAW	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JAW
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JUNE 2016	
DWG. NO. 31720-00-EW-101	REV. 1

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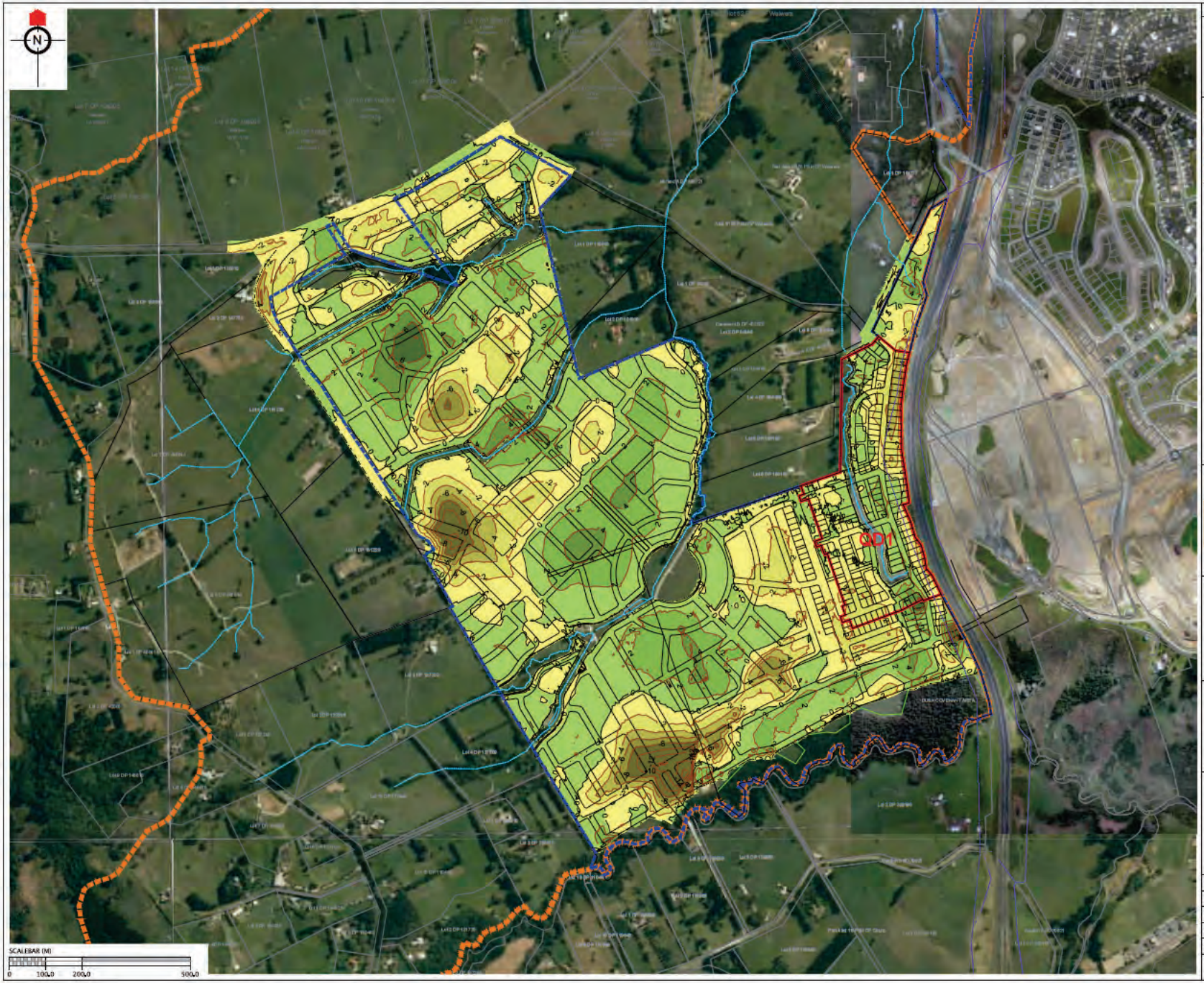

REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	JAW	27-06-16

LEGEND:

- QUALIFYING DEVELOPMENT STAGE 1
- SHA BOUNDARY
- RURAL URBAN BOUNDARY
- MOTORWAY DESIGNATION
- AREAS OF CUT
- AREAS OF FILL

CLIENT:

Fulton Hogan

WOODS
Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

INDICATIVE EARTHWORKS EXTENTS PLAN

AUCKLAND COUNCIL

DESIGNED: JAW	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JAW
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JUNE 2016	
DWG. NO. 31720-00-EW-110	REV. 1

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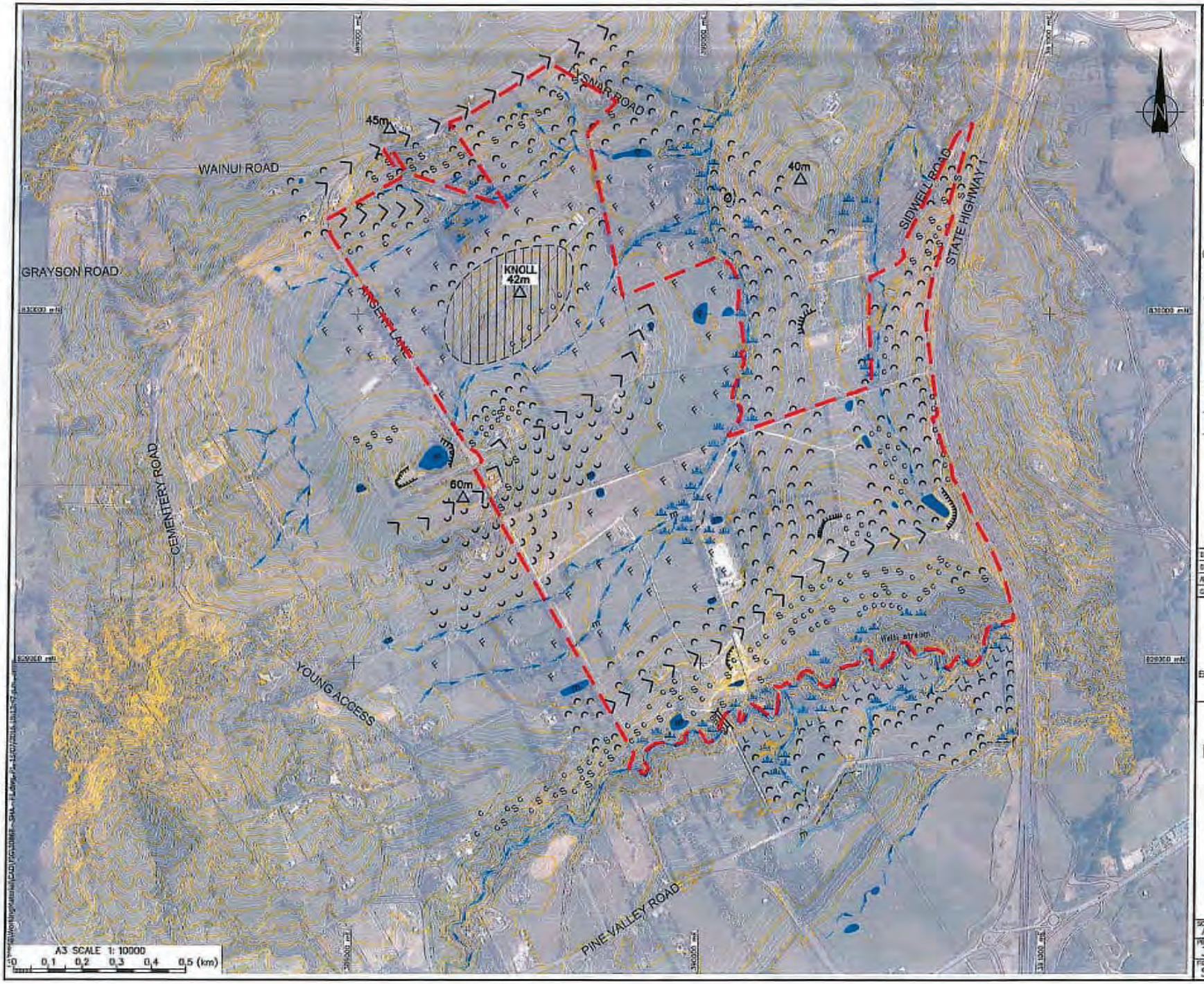

NOTES :

1. All dimensions are in millimetres unless noted otherwise.
2. Aerial photo and property boundary taken form Auckland Council GIS website. Imagery dated 2011.
3. Coordinate Datum: NZGD2000, Mt Eden Circuit Circuit Coordinates.

LEGEND

- LiDAR Contour (1m Interval)
- LiDAR Contour (5m Interval)
- Existing Property Boundary
- Argent Lane SHA Boundary

GEOMORPHOLOGICAL

- Hummocky / Rolling
- Stream
- Wet/Swampy Ground
- Pond
- Scarp
- Ridge Line
- Landslide Headscarp
- Inferred Landslide Headscarp
- L Lowland/Gentle Slope
- F Flat
- C Creep
- S Steep

DRAWN	AJL	Jul. 16
DRAFTING CHECKED		
APPROVED		
CADFILE	\\30868 – SHA – F1.dwg	

Tonkin & Taylor
Environmental and Engineering Consultants
105 Carlton Gore Road, Newmarket, Auckland
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ARGENT LANE SPECIAL HOUSING AREA

Geomorphological Plan

SCALES (AT A3 SIZE)
AS SHOWN

PROJECT No.
30868.000

FIG. No.
SHA – Figure 1

REV.
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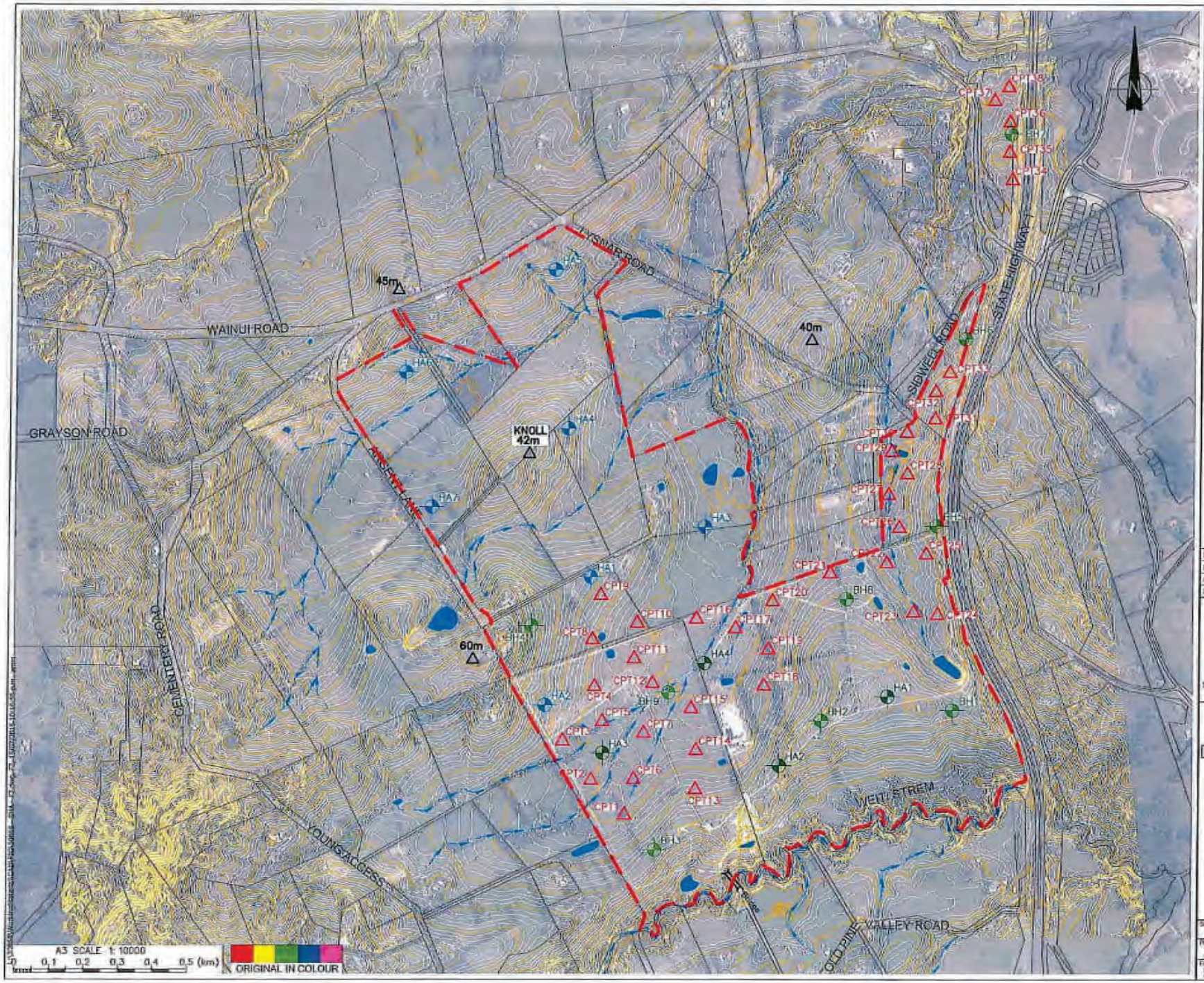

NOTES :

1. All dimensions are in millimetres unless noted otherwise.
2. Aerial photo and property boundary taken form Auckland Council GIS website. Imagery dated 2011.
3. Coordinate Datum: NZGD2000, Mt Eden Circuit Circuit Coordinates.

LEGEND

- LIDAR Contour (1m Interval)
- LIDAR Contour (5m Interval)
- Existing Property Boundary
- Enabling Works Boundary
- Stream
- Pond
- 60m Elevation Level

GEOTECHNICAL INVESTIGATIONS

- BH6 Machine Borehole, July–September 2015
- CPT33 CPT July 2015
- HA1 Hand Auger / Infiltration Test, March 2016
- HA2 Hand Auger / Infiltration Test, May 2016

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APPROVED		
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Site Investigation Location Plan

SCALES (AT A3 SIZE)	1: 10000
PROJECT No.	30868
FIG. No.	SHA – Figure 2
REV.	0

Appendix B Investigation logs

- Borehole logs (BH1 to BH9)
- Cone Penetration Test results (CPT1 to CPT38)
- Hand Augers HA1 to HA4 (March 2016)
- Hand Augers HA1 to HA7 (May 2016)

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH1**

SHEET 1 OF 2

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 21/7/15
FINISH DATE: 21/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30668
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ: -90.00°

R.L. GROUND: 37.69m
R.L. COLLAR: 37.69m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	Rl. (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Defect Type / Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	SOIL: Classification, colour, consistency / density, inclusions, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation																	
	0m: Organic SILT with minor clay; dark brown. Soft, wet, low plasticity. [TOPSOIL]																	
	0.24m: CLAY with some silt and trace topsoil; orange brown, with dark brown mottles and light grey mottles. Stiff, moist, high plasticity. [RS MANGAKAHIA COMPLEX]			DB	100								0m to 3.5m: Open Hole (OH) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
	0.85m: Silty CLAY; light brownish grey with dark brown staining and dark orange specks. Stiff, moist, high plasticity. With minor MnO nodules and trace limonite staining.			DB	100	WC 11 47.0%		0.5										
				DB	100	SV 107kPa 20/13		37.0										
				DB	100	WC 11 45.3%		1.0										
	1.45m: SILT with minor clay and trace mollusc fragments; light grey and light brownish grey. Hard, moist, low plasticity. [CW MANGAKAHIA COMPLEX]			SPT	100	SV 145kPa 90/13		36.5					1.4m: Orange brown lineation inclined at 10° within the core (up to 10mm thick)					
				SPT	100	WC 11 43.8%		1.5										
				SPT	100	SPT 1,3/50 45° 7 11 (18*10)		36.0										
				DB	91			2.0										
	2.19m: Highly weathered, light grey and grey, SILTSTONE; extremely weak (SILT with minor clay). Evidence of soft sediment deformation. Unit is highly sheared. Seems into a SILT with minor clay under minimal pressure.							35.5					2.18m to 2.5m: Bedding is typically inclined at 15°					
	2.5m to 2.62m: Core loss (core washed away)					WC 11 18.9%		2.1										
	2.62m: Highly weathered, light brownish grey, SILTSTONE; extremely weak (SILT with minor clay). Unit is highly sheared and polished surfaces are rare. Crumbles into fine to medium gravel-sized chips with minimal pressure.			83%	79			35.0				0	2.68m: Siltstone contact is inclined at 10°					
				SPT	100	SPT 3,4/50 15 15 10 (*47)		3.0										
	3.66m: Moderately weathered, grey, SILTSTONE; very weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized chips under minimal pressure.			SPT	100			34.5										
	3.86m: Highly weathered, grey, SILTSTONE; extremely weak (sandy SILT with some gravel). Unit is highly sheared and polished surfaces are common. Easily crumbles into medium to coarse sand to fine gravel-sized chips under minimal pressure. [CRUSH ZONE]			75%	100			3.5				0						
								34.0										
	4.14m: Highly weathered, brownish grey with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing surfaces (seen as dark brown fractures within the core).							4.0					4.14m: Sharp siltstone contact, inclined at 10°. This contact may possibly be an interaction is between the Matakohe and Mangakahia Complexes of the Northern Allochthon? 4.14m to 4.5m: Shear surfaces range from <5 to 45° 4.48m: J 35-45°, UN, R, R, CH					
				SPT	110	SPT 4,3/50 12 8 11/50mm 50/5 14 14 45mm 74*30		33.5										
				SPT	100			4.5										
				SPT	100			33.0										
				100%	97			5.0				11						

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

NORTHERN ALLOCHTHON

T+T_DATATEMPLATE.GPJ tmh

Log Scale 1:25

GINGEAL.LOG 30668.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH1**

SHEET 2 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 37.69m	DRILLED BY: DCN Drilling Ltd
JOB No: 30668		R.L. COLLAR: 37.69m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	4.14m: Slightly weathered, brownish grey, with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing surfaces (seen as dark brown fractures within the core)			100%	97	SPTC 4.5m to 7.17m 25 for 100mm 150 for 100mm 7.17-7.61	32.5	5.0				19	6.53m to 6.5m: Shear surfaces within the core orientation frequency 5.82m to 6m: Core highly disturbed due to drilling (discing) 6m to 6.29m: SPTC core stone has been placed within Core Box 3 6.32m: Suspected calcite nodule (7mm diameter) 6.8m to 7.17m: Shear surfaces become common and are inclined between +5 to 70° (typically 35 to 45°) 6.81m: J 35°, UN, R, N, CO (slit with minor clay up to 4mm thick) 6.84m: Vein 55-70°, UN, CO (calcite, up to 4mm thick) 7.17m: Calcite nodule (8mm diameter)					
				SPTC			31.5	6.0										
				100%	100		31.0	6.5				0						
							30.5	7.0										
				SPTC		SPTC 2.5m to 7.61m 25 for 100mm 150 for 100mm 7.17-7.61	30.0	7.5										
	End of Borehole at 7.7m bgl (Target Depth Reached) **Notes:** 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 503, with a Calibration Factor of 1.530. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) SPTC refers to a Solid Core Standard Penetration Test. 4) Water levels in the installed piezometers were 0.43m (Shallow) and 0.18m (Deep) on 26/7/15, 0.31m (Shallow) and 0.88m (Deep) on 25/9/15 and 1.01m (Shallow) and 1.11m (Deep) on 29/10/15.							8.0										
							29.5	8.5										
							29.0	9.0										
							28.5	9.5										
							28.0	10.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see Installation sheet for further details).

Log Scale 1:25

GENERAL LOG 30668.GPJ 26-Nov-2015

TnT DATATEMPLATE.GDT 4/11/15

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH2**

SHEET 1 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 28/7/15
FINISH DATE: 28/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30866
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (M Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.26m
R.L. COLLAR: 42.26m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation																	
FILL	0m: Organic SILT with minor clay; dark brown. Firm, wet, low plasticity. [TOPSOIL]			CB	100	SV 43.0kPa 44/13	42.5	0.5					0m to 3m: Open flight (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no reliable core loss will identified through this section of core.						
	0.69m: SILT with minor clay and minor fine to medium gravel and organics; brown and brownish grey with black and dark orange mottles. Firm, moist, low plasticity. With minor MnO nodules and limonite staining. Organics are fibrous (rootlets). Gravel is subangular basalt, up to 6mm. [FILL]																	
NORTHERN ALLOCHTHON	0.71m: SILT with minor clay and trace organics; brown and brownish grey with light grey streaks and dark orange specks. Stiff, moist, high plasticity. With trace limonite staining. Organics are fibrous (rootlets). [Residual MOTATAU COMPLEX]			OB	100	SV 65.0kPa 17/17	41.8	1.0					0.71m to 1.81m: Unit has been stained brown due to leaching from the fill above						
						DCP 28.5%												
				OB	80	SV 145kPa 11/9	41.0	1.5										
						SPT 1.81m 3 3 7 N=12	40.5											
	1.81m to 1.95m: Core loss (dropped out of SPT sheet).			SPT	60													
	1.95m: SILT with some clay and minor fine gravel and medium to coarse sand; light grey and light brownish grey with orange brown specks. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 6mm.					DCP 10.6%	40.0	2.0										
	2.27m: SILT with minor fine to coarse gravel, minor fine to coarse sand and trace clay; light grey with orange brown specks. Hard, moist, low plasticity. Gravel is angular siltstone, up to 20mm. [Completely Weathered MOTATAU COMPLEX]			OB	50	SV 200kPa 93/12	39.5	2.5										
						DCP 11.8%	39.0	3.0										
	3.15m: Highly weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized siltstone clasts under minimal pressure.			SPT	100	SPT 3.0m 28 50/100 for 150mm Refusal	38.4	3.5										
	3.24m to 3.61m: Core loss (core washed away)																	
	3.61m: Highly weathered, grey, SILTSTONE; weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.			TCP	100		38.0	4.0				0	3.78m: J 70°, PL, Polished, N, CN 3.83m: J 25-50°, UN, SM, N, CV (clayey s/f) 3.9m: J 60°, UN, Polished, N, CV (clayey s/f) 4.05m: J 75°, UN, Polished, VN, CN						
	4.6m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With once bands of slightly weathered siltstone (up to 85mm thick).			SPT	100	SPT 4.5m 75 for 150mm 31/75 Refusal	37.5	4.5				0	4.83m: J 65°, UN, Polished, N, CN						
				NQ2	100													
				NQ2	100			5.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT with

Log Scale 1:25

GENERAL LOG 30866.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH2**

SHEET 2 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 20/7/15
FINISH DATE: 20/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30868
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (NZ Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.26m
R.L. COLLAR: 42.26m
DATUM: Auckland 1946
SURVEY: Trimble

BEDLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Class fraction, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect No.	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCETHON	4.4m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With trace bands of slightly weathered siltstone (up to 85mm thick).												5.27m: J 35°, UN, R, N, CH					
	5.5m: Highly weathered, grey, SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized clasts under minimal pressure. (CRUSH ZONE)				100			5.5				II	5.55m: J 10°, UN, Polished, R, CH					
	5.87m: Moderately weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure.			SPTC		SPTC 5cm 21 (50) for 45mm (1-1-10)	36.0	6.0					6.03m: J 55°, UN, VR, clay infill					
	6.77m: Highly weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. (CRUSH ZONE)			HQ3	100		35.5	6.5					7.1m: J 75°, UN, R, N, CV (clayey silt)					
	6.93m: Slightly weathered, grey, SILTSTONE; weak. Evidence of shearing and polished surfaces are rare. Unit stays intact under pressure.						35.0	7.0					7.24m: Fg 85°, UN, SL, CG (sandy silt with some gravel), indeterminate offset					
	7.33m: Highly weathered, grey, SILTSTONE; extremely weak (silty GRAVEL with some sand). Unit is highly sheared and polished surfaces are common. Recovered as a coarse sand to fine to medium gravel, and crumbles easily with minimal pressure. (CRUSH ZONE)			SPTC		SPTC 15cm 33 for 115mm (9-16)	34.5	7.5					7.68m: J 50°, PL, Polished, VR, CH					
	8.22m to 8.35m: moderately weathered, SILTSTONE; extremely weak (silty GRAVEL with some sand)			HQ3	100		34.0	8.0				0	8m: Fg 75°, UN, SL, CG (clay up to 30mm thick), indeterminate offset					
	8.35m to 8.8m: moderately weathered, SILTSTONE; very weak			SPTC		SPTC 8.8cm 50/ 33 for 45mm (9-16)	33.5	8.5					8.54m: Fg 80-85°, UN, SL, CG (clay, up to 10mm thick), indeterminate offset					
	End of Borehole at 9.14m bgl (Target Depth Reached)						33.0	9.0					8.78m: J 85°, PL, Polished, T, CH 8.8m: Due to the barrel becoming stuck the HQ3 run was abandoned as the rods were required to be pulled for the core to be recovered. An early SPTC was undertaken					
	Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 388, with a Calibration Factor of 1.370. 2) Some core recovery measurements were difficult due to the fractured nature of the core. 3) SPTC refers to a Solid Cone Standard Penetrator Test.						32.5	9.5										
							31.0	11.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE_LOGIT.mdb

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH2**

SHEET 3 OF 3

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (M.Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.26m

R.L. COLLAR: 42.26m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd

LOGGED BY: MTJH

CHECKED:

START DATE: 20/7/15

FINISH DATE: 20/7/15

CONTRACTOR: DCN Drilling Ltd

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD %	Description: Type, Orientation, Opening, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
	4) Water levels in the installed piezometers were 1.43m (Shallow S) and 1.30m (Deep D) on 24/7/15, 1.63m (Shallow) and 1.72m (Deep) on 25/8/15 and 2.3m (Shallow) and 2.37m (Deep) on 29/10/15.						32.0 31.5 31.0 30.5 30.0 29.5 29.0 28.5 28.0 27.5 27.0	10.5 11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0									

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Log Scale 1:25

GINBHAL LOG 30868.GPJ 26-Nov-2015

T+T DATATEMPLATE.GDT.mdb

Appendix B Investigation logs

- Borehole logs (BH1 to BH9)
- Cone Penetration Test results (CPT1 to CPT38)
- Core Photos

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH1**

SHEET 1 OF 2

PROJECT:	CO-ORDINATES: (M Eden 2000)	R.L. GROUND: 37.69m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30668		R.L. COLLAR: 37.68m	LOGGED BY: MTJT
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Size
TS	0m: Organic SILT with minor clay; dark brown; Soft, wet, low plasticity [TOPSOIL]												0m to 3.5m: Open Hand (OH) drilling method was used, which results in the compression of the recovered core. Therefore, no natural defect core loss was identified through this section of core.					
NORTHERN ALLOCHTHON	0.34m: CLAY with some silt and trace topsoil; orange brown, with dark brown streaks and light grey mottles; Stiff, moist, high plasticity. [XS MANGAKAHIA COMPLEX]					WC 11 47.6%		0.5										
	0.53m: Silty CLAY; light brownish grey with dark brown streaks and dark orange specks; Stiff, moist, high plasticity. With minor MnO nodules and trace fossils/ shells.					SV 4.5kPa 50/50		1.0										
						WC 12 61.1%												
	1.45m: SILT with minor clay and trace medium to coarse sand; light grey and light brownish grey; Hard, moist, low plasticity. [CW MANGAKAHIA COMPLEX]					SV Lather 50/50		1.5					1.4m: Orange brown fracture inclined at 10° within the core (up to 10mm thick)					
						WC 13 49.8%												
						SPT 1,5,7 N=12		2.0										
	2.19m: Highly weathered, light grey and grey, SILTSTONE; extremely weak (SILT with minor clay). Evidence of soft sediment deformation. Unit is highly sheared. Seems like a SILT with minor clay under minimal pressure.												2.19m to 2.5m: Bedding is typically inclined at 15°					
	2.5m to 2.43m: Core lost (core washed away)					WC 14 [illegible]		2.5										
	2.43m: Highly weathered, light brownish grey, SILTSTONE; extremely weak (SILT with minor clay). Unit is highly sheared and polished surfaces are seen. Crumbles into fine to medium gravel sized clasts with minimal pressure.											0	2.46m: Siltstone contact is inclined at 10°					
	2.65m: Moderately weathered, grey, SILTSTONE; very weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel sized clasts under minimal pressure.					SPT 2,2,2,3 N=7		3.0										
	3.56m: Highly weathered, grey, SILTSTONE; extremely weak (sandy SILT with some gravel). Unit is highly sheared and polished surfaces are common. Easily crumbles into medium to coarse sand to fine gravel sized clasts under minimal pressure. [CRUSH ZONE]											0						
	4.14m: Slightly weathered, brownish grey, with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing in form (seen as dark brown lineations within the core).					SPT 4,5,5,12 N=10		4.0					4.14m: Sharp siltstone contact, inclined at 10°. This contact may possibly be an unconformity between the Matiu and Mangakahia Complexes of the Northern Allochthon? 4.14m to 6.5m: Shear surfaces range from <5 to 45° 4.48m: J 35-45°, UN, R, N, Cl					
								4.5										
								5.0				40						

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details)

T+T DATATEMPLATE.GDT 9/11/15

Log Scale 1:25

GEOTECHNICAL LOG 30668.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH1**

SHEET 2 OF 2

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 21/7/15
FINISH DATE: 21/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30666
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (M.Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ: -90.00°

R.L. GROUND: 37.69m
R.L. COLLAR: 37.69m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Dipping, Shape, Roughness, Roughness, Aperture, Weathering, infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	4.14m: Slightly weathered, brownish grey, with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing surfaces (seen as dark brown fractures within the core).			HQ3	97	SPTC 4.0m 23 for 125mm 4/50 for 100mm 50/50+	33.5	4.0				10	6.5m to 6.5m: Shear surfaces within the core increase in frequency 5.82m to 6m: Core highly disturbed due to drilling (slacking) 6m to 6.28m: SPTC core shoe has been placed within Core Box 3					
				SPTC			31.5	6.0					6.32m: Suspected calcite nodule (7mm diameter)					
				HQ3	100		31.0	6.5				0	6.5m to 7.17m: Shear surfaces become common and are inclined between <5 to 70° (typically 35 to 45°) 6.61m: J 35°, UN, Pl, N, CC (slt wk) minor clay, up to 4mm thick 6.64m: Vein 55-70°, UN, CC (calcite, up to 4mm thick)					
						SPTC 7.0m 23 for 125mm 4/50 for 100mm 50/50+	30.5	7.0					7.17m: Calcite nodule (8mm diameter)					
	End of Borehole at 7.7m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed at the end of the core barrel, using Shear Vane number 509, with a Calibration Factor of 1.370. 2) Some core recovery measurements were difficult due to the shovel nature of the core. 3) SPTC refers to a Solid Cone Standard Penetration Test. 4) Water levels in the installed piezometers were 0.43m (Shallow) and 0.18m (Deep) on 28/7/15, 0.31m (Shallow) and 0.38m (Deep) on 25/8/15 and 1.01m (Shallow) and 1.11m (Deep) on 29/10/15.						29.5	8.0										
							29.0	8.5										
							28.5	9.0										
							28.0	9.5										
							27.5	10.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT.mtb

Log Scale 1:25

GENERAL LOG 30666.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH2**

SHEET 1 OF 3

PROJECT:	
JOB No: 30858	
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	
CO-ORDINATES: (M Eden 2000)	
DIRECTION: 0.00°	
ANGLE FROM HORIZ: -90.00°	
R.L. GROUND: 42.28m	
R.L. COLLAR: 42.28m	
DATUM: Auckland 1946	
SURVEY: Trimble	
DRILLED BY: DCN Drilling Ltd.	
LOGGED BY: MTJH	
CHECKED:	
START DATE: 20/7/15	
FINISH DATE: 20/7/15	
CONTRACTOR: DCN Drilling Ltd.	

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	Defect Log	Fracturing Spacing (mm)	RQD %	ROCK DEFECTS Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	0.1m: Organic SILT with minor clay; dark brown. Firm, wet, low plasticity. [TOPSOIL]																	
FILL	0.45m: SILT with minor clay and trace fine to medium gravel and organics; brown and brownish grey with black and dark orange mottles. Firm, moist, low plasticity. With minor MnO nodules and limonite staining. Organics are fibrous (rootlets). Gravel is sub angular basalt, up to 6mm. [FILL]					SV 6.45m: 40kPa	42.0	0.5					0m to 2m: Open Hamer (OH) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core.					
NORTHERN ALLOCHTHON	0.71m: SILT with minor clay and trace organics; brown and brownish grey with light grey mottles and dark orange specks. Stiff, moist, high plasticity. With trace limonite staining. Organics are fibrous (rootlets). [Residual MOTATAU COMPLEX]					SV 4.97m: 110kPa	41.5	1.0					0.71m to 1.81m: Unit has been stained brown due to leaching from the fill above.					
						SV 5.45m: 110kPa	41.0	1.5										
	1.81m to 1.95m: Core loss (dropped out of SPT spoon).					SPT 1.95m: 30 5 7 7 N=12	40.5	2.0										
	1.95m: SILT with some clay and minor fine gravel and medium to coarse sand; light grey and light brownish grey with orange brown specks. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 4mm.					VC 5: 0.4%	40.0	2.5										
	2.27m: SILT with some fine to coarse gravel, minor fine to coarse sand and trace clay; light grey with orange brown specks. Hard, moist, low plasticity. Gravel is angular siltstone, up to 20mm. [Completely Weathered MOTATAU COMPLEX]					SV 2.90m: 60kPa	39.7	3.0										
						VC 10: 0.8%	39.5	3.5										
	3.15m: Highly weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel sized siltstone clasts under minimal pressure.					SPT 3m 20 4/30 for 90mm N=50	39.0	3.5										
	3.34m to 3.64m: Core lost (core washed away)																	
	3.64m: Slightly weathered, grey, SILTSTONE; weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.						38.5	4.0					3.76m: J 70°, PL, Polished, N, CN 3.83m: J 25-50°, UN, SM, N, CV (clayey silt) 3.9m: J 60°, UN, Polished, N, CV (clayey silt) 4.65m: J 75°, UN, Polished, VN, CN					
	4.4m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With trace bands of slightly weathered siltstone (up to 85mm thick).					SPT 4.5m: 30 for 75mm N=50 Refusal	37.8	4.5					4.92m: J 65°, UN, Polished, N, CN					

COMMENTS: 1) No FW casing used during drilling. 2) Water loss was unable to be measured as no FW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATASTEALTE GDT.mdb

Log Scale 1:25

GENERAL LOG 30858.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: BH2

SHEET 2 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 20/7/15
FINISH DATE: 20/7/15
CONTRACTOR: DCN Drilling Ltd

PROJECT:
JOB No: 30868
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (M Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ: -90.00°

R.L. GROUND: 42.26m
R.L. COLLAR: 42.26m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT: NORTHERN ALLOCHTHON

DESCRIPTION OF CORE

SOIL: Classification, colour, consistency / density, moisture, plasticity

ROCK: Weathering, colour, fabric, name, strength, cementation

Rock Weathering | Rock Strength | Sampling Method | Core Recovery (%) | Testing | RL (m) | Depth (m) | Graphic Log

ROCK DEFECTS

Defect Log | Fracture Spacing (cm) | RQD % | Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, infill

Water Loss (%) | Water Level | Casing | Installation | Core Box

4.4m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With rare bands of slightly weathered siltstone (up to 85mm thick).

5.3m: Highly weathered, grey, SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized clasts under minimal pressure. (CRUSH ZONE)

5.87m: Moderately weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure.

6.77m: Highly weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. (CRUSH ZONE)

6.93m: Slightly weathered, grey, SILTSTONE; weak. Evidence of shearing and polished surfaces are rare. Unit slags intact under pressure.

7.33m: Highly weathered, grey, SILTSTONE; extremely weak (silty GRAVEL with some sand). Unit is highly sheared and polished surfaces are common. Recovered as a coarse sand to fine to medium gravel, and crumbles easily with minimal pressure. (CRUSH ZONE)

8.21m to 8.29m: ...moderately weathered, SILTSTONE; extremely weak (silty GRAVEL with some sand)

8.70m to 8.84m: ...moderately weathered, SILTSTONE; very weak

End of Borehole at 9.14m bgl (Target Depth Reached)

Note:
1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 508, with a Calibration Factor of 1.570.
2) Some core recovery measurements were difficult due to the shaped nature of the core.
3) SPTC refers to a Solid Core Standard Penetration Test.

5.27m: J 30°, UN, R, N, CN

5.58m: J 10°, UN, Polished, N, CN

5.93m: J 35°, UN, VN, sl Wavy

7.1m: J 75°, UN, R, N, CV (clayey silt)

7.24m Fg 85°, UN, SL, CG (sandy silt with some gravel), indeterminate offset

7.48m: J 80°, PL, Polished, VN, CV

8m: Fg 75°, UN, SL, CG (clay up to 30mm thick), indeterminate offset

8.54m Fg 80-85°, UN, SL, CG (clay, up to 10mm thick), indeterminate offset

8.78m: J 80°, PL, Polished, T, CN

8.84m: Due to the barrel becoming stuck the HQ3 run was abandoned as the rods were required to be pulled for the core to be recovered. An early SPTC was undertaken

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATAFILE PLATE.GDT mlh

Log Scale 1:33

GENERAL LOG 30868.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH2**

SHEET 3 OF 3

PROJECT:	CO-ORDINATES: (M: Eden 2000)	R.L. GROUND: 42.29m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 42.28m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 20/7/15
			FINISH DATE: 20/7/15
			CONTRACTOR: DCN Drilling Ltd

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m) Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
	4) Water levels at the installed piezometers were 1.43m (Shallow S) and 1.3m (Deep D) on 24/7/15, 1.62m (Shallow) and 1.325m (Deep) on 25/9/15 and 2.3m (Shallow) and 2.33m (Deep) on 29/10/15.						10.0 10.5 11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

T+T DATA\TEMPLATE.GPJ *.mdb

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH3**

SHEET 1 OF 2

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 16/7/15
FINISH DATE: 17/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30868
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.60m
R.L. COLLAR: 34.60m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	Defect Lab	Fracture Spacing (cm)	RQD %	ROCK DEFECTS Description	Water Loss (%)	Water Level	Drilling	Installation	Core Box
TS	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, notes, strength, remarks/bed												Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill					
NORTHERN ALLOCHTHON	fine Organic clayey SILT; dark brown, Soft, wet, high plasticity. [TOPSOIL] 0.1m to 0.18m: ...firm, moist 0.18m: Silty CLAY with trace fine gravel and coarse sand, grey/ish brown. Stiff, moist, high plasticity. Gravel and sand are MuG nodules. [Residual MANGAKAHIA COMPLEX] 0.41m: SILT with minor clay and fine to coarse gravel and trace organics, light brown/ish grey and light grey. Very stiff, moist, high plasticity. Evidence of shearing. Organics are fibrous (roots/silt). Gravel is angular siltstone, up to 22mm. [Completely Weathered MANGAKAHIA COMPLEX] 0.5m to 0.74m: ...gravelly SILT with minor clay. Hard. 0.74m: Highly weathered, light grey and light brownish grey, SILTSTONE; very weak. Wk-mod laminite shining. Unit is sheared and polished surfaces are common. Crumbles into fine to medium gravel-sized clasts under minimal pressure. 1.14m: Highly weathered, light brown/ish grey and light grey, SILTSTONE; extremely weak (silty GRAVEL). Unit is highly sheared and polished surfaces are common. Recovered as a fine to coarse gravel, and crumbles easily with minimal pressure. [CRUSH ZONE] 1.35m: Moderately weathered, light brown/ish grey, SILTSTONE; extremely weak (gravelly SILT). Unit is highly fractured, with evidence of shearing and polished surfaces are rare. Crumbles into coarse sand to fine to medium gravel-sized clasts under minimal pressure. 1.7m: Slightly weathered, grey SILTSTONE; weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under pressure. 1.75m to 1.85m: Core loss (dropped out of SPT spoon) 1.85m: Core description is the same as 1.7m 2.1m to 2.28m: ...recovered as a medium to coarse gravel (sub angular-sub/rounded, up to 40mm). Polished surfaces are common 2.28m: Highly weathered, light greenish grey, SILTSTONE; extremely weak (GRAVEL with trace silt). Unit is highly sheared and polished surfaces are common. Recovered as a fine to coarse sand to fine to medium gravel and crumbles easily with minimal pressure. [CRUSH ZONE] 2.43m to 3m: Core loss (core washed away) 3m: Slightly weathered, light greenish grey SILTSTONE; weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under pressure. 3.45m: Highly weathered, light greenish grey, SILTSTONE; extremely weak (gravelly SILT with trace clay). Evidence of shearing surfaces (veins or dark fractures within the core). Unit is highly fractured and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE] 3.74m: Moderately weathered, light greenish grey, SILTSTONE; extremely weak (sandy SILT with trace clay and gravel). Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts with												0m to 2.5m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core 0.18m to 0.42m: Unit has been stained brown due to leaching from the topsoil above 0.74m to 1.14m: Bedding is typically inclined at 0° 2.28m: J 30°, Un, Polished, T, CH 3.45m to 3.74m: Zone of Jointy Joints are J 45-60°, Un, Polished, T-N, CH 3.72m: J 45°, Un, Polished, T, CV (silty clay) 4.69m: J 35°, St, Polished, T, CH 4.35m: J 40-50°, Un, Polished, Vil, CH 4.5m: J 20°, Un, Polished, Vil, CV (clayey silt)					

COMMENTS: 1) HW casing installed to 4.5m. 100% water loss. 2) Water loss was less than 5% for the majority of drilling after HW was inserted. Three HQ3 runs had 3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH3**

SHEET 2 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 34.80m
JOB No: 30888		R.L. COLLAR: 34.80m
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 16/7/15
FINISH DATE: 17/7/15
CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, orientation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Grout Bag
NORTHERN ACCUMULATION	Intrusive pressure. 4.14m to 4.21m: Core loss (core washed away) 4.33m: Core description is the same as 3.74m 4.92m: Highly weathered, light greenish grey, SILTSTONE; extremely weak (sandy SILT with trace clay and gravel). Unit is highly fractured and sheared, with polished surface features. Recovered as a coarse sand to fine to coarse gravel and cobbles easily with minimal pressure. [CRUSH ZONE] 5.55m to 5.72m: Core loss (core washed away) 5.72m: Slightly weathered, greenish grey, SILTSTONE; weak. Evidence of shearing (seen as dark grey fractures within the core) and polished surfaces are common. Crushed into coarse sand to fine to medium gravel-sized clasts with pressure.			SPT	(10)		5.5 29.3 6.0 28.8 SPT 1/4 4/5 5/5 9/5 N=19				6	4.92m to 5.55m: Rubbing may be represented within Core Box 2 due to the highly fractured nature of the core 5.72m to 6.35m: Shear surfaces are inclined between 25 to 35° 6.35m: 235-40°, UN, R, N, CH					
	End of Borehole at 6.35m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed at the end of the core barrel, using Shear Vane number 502, with a Calibration Factor of 1.370. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) Water levels in the installed piezometers were 0.24m (Shallow S) and 0.32m (Deep D) on 24/7/15, 0.26m (Shallow) and 0.53m (Deep) on 23/10/15 and 0.93m (Shallow) and 1.005m (Deep) on 29/10/15.						7.5 27.3 8.0 26.8 8.5 26.3 9.0 25.8 9.5 25.3 10.0										

COMMENTS: 1) HW casing installed to 4.6m. 2) Water loss was less than 5% for the majority of drilling after HW was inserted. Three HQ3 runs had 100% water loss. 3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.GDT.mtjh

Log Scale 1:25

GENERAL LOG 30888.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH4**

SHEET 1 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 42.91m	DRILLED BY: DCN Drilling Ltd
JOB No: 30868		R.L. COLLAR: 42.91m	LOGGED BY: MTJI
LOCATION: 101 Argent Lane, Wairui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 17/7/15
			FINISH DATE: 17/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, bdrk, name, strength, consolidation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TOPSOIL	0m: Organic SILT with trace clay; dark brown. Very soft, wet, low plasticity. [TOPSOIL]																	
NORTHERN ALLOCHTHON	0.09m: Silty CLAY with trace organics; brown with orange brown streaks. Firm, moist, high plasticity. (Organics are fibrous pumice). [Residual MANGAKAHIA COMPLEX]			CB	100	SV 0.35m (90°)												
	0.17m: Clayey SILT with trace fine sand; orange brown with light grey mottles. Stiff, moist, high plasticity.					WC 3 (47.3%)	42.7	0.5										
	0.46m to 0.73m: ...with trace fine to coarse sand; light grey with orange brown streaks and dark orange and black specks. With trace MnO nodules and limonite staining.			CB	100	WC 4 (51.1%)												
	0.73m to 0.98m: ...with some clay.						42.0	1.0										
	0.98m: SILT with some medium to coarse sand and fine to medium gravel and minor clay; grey with orange brown streaks and black specks. Very stiff, moist, high plasticity. With trace MnO nodules. Gravel and sand are angular mudstone siltstone, up to 12mm. [Completely Weathered MANGAKAHIA COMPLEX]			CB	100	WC 5 (42.0%)												
						SV 1.45m (UTP)	41.3	1.5					1.5m: CB run recovered 0.7m of core loss from the two previous runs					
	1.25m: Highly weathered, light grey with orange brown specks. SILTSTONE: extremely weak (SILT with minor clay and gravel). Unit is sheared. Crumbles into coarse sand to fine to medium gravel sized clasts within a silt with minor clay matrix under minimal pressure.			SPT	60	WC 6 (36.1%)												
						SPT 4,5,8 N=13 (47° V)	41.0	2.0										
	1.7m: Slightly weathered, grey, SILTSTONE; weak. Unit is sheared and polished surfaces are rare. Crumbles into medium to coarse sand to fine to coarse gravel-sized clasts with pressure.			CB	83							0						
	1.86m to 2.15m: Core loss (0.09m: dropped out of SPT spoon and 0.20m: washed away while drilling)					WC 7 (32.8%)	40.3	2.5										
	2.15m: Core description is the same as 1.7m																	
	2.5m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with pressure.			CB(2)	100							0	2.6m: J 80°, UN, Polished, VN, CN (clayey silt)					
													2.82m: J 55°, UN, Polished, VN, CN					
	3.02m: Highly weathered, grey, SILTSTONE; extremely weak (sandy GRAVEL with minor silt). Unit is highly sheared and polished surfaces are very common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts easily with minimal pressure. [CRUSH ZONE]			SPT	0	SPT 50/150 50 for 150 (N=50)	39.7	3.0										
	3.29m to 3.45m: Core loss (dropped out of SPT spoon)																	
	3.45m: Core description is the same as 2.82m			HQ3(1)	100							0	3.45m to 4.5m: Three short HQ3 runs due to hole collapsing and rods becoming core bound. Rods were pulled and then reinserted at 4.5m					
	3.5m to 3.62m: Core loss (core barrelling caused the core to be washed away)																	
	3.62m: Core description is the same as 2.82m																	
	3.62m to 3.79m: ...recovered as a fine to coarse gravel (sub-angular to angular clasts, up to 40mm).			HQ3(2)	100							0	3.85m: J 20°, UN, Polished, T, CN 3.86m: J 10°, PL, Polished, T, CN					
	4.02m: Moderately weathered, grey with dark grey streaks, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel within a silt with minor clay matrix under minimal pressure.																	
				SPT	0	SPT 4,5,6 N=11 (UTP) (N=50 for 140mm)	38.4	4.5										
	4.32m to 4.67m: Core loss (dropped out of SPT spoon)																	
	4.67m: Core description is the same as 4.02m			HQ3(3)	0							0						

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Log Scale 1:25

T+T DATA\TEMPLATE.GDT tmpl

GENERAL.LOG 30868.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH4**

SHEET 2 OF 2

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 17/7/15
FINISH DATE: 17/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30868
LOCATION: 101 Argent Lane, Wainui (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ: -90.00°

R.L. GROUND: 42.91m
R.L. COLLAR: 42.91m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation																	
	4.82m: Moderately weathered, grey with dark grey stones, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel within a silt with minor clay clasts under minimal pressure.			TCP	91		37.5	5.5				0	4.87m to 5.02m: Recovered as a gravel due to fracturing of the core by the SPT undertaken at 4.5m 5.02m: J 70°, PL, Polished, I, CN 5.04m: J 90°, US, Polished, N, CV (clayey silt)					
	5.03m: Highly weathered, grey, SILTSTONE; extremely weak (clayey SILT with some fine gravel and coarse sand). Unit is highly sheared and polished or faces are common. Crumbles into a coarse sand to fine gravel-sized clasts under minimal pressure. (CRUSH ZONE)			DPT	89	SPT 5,5,6 N=11 (Sheet Tested)	37.0	5.9										
	5.94m: Core description is the same as 5.53m.																	
	End of Borehole at 6.37m bgl (Target Depth Reached)						36.5	6.5										
	Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 301, with a Calibration Factor of 1.370. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) Water levels in the installed piezometers were 0m (Shallow Sl) and 0.21m (Deep D) on 25/7/15, 0.11m (Shallow) and 0.10m (Deep) on 25/8/15 and 0.74m (Shallow) and 0.83m (Deep) on 29/9/15.						36.0	7.0										
							35.5	7.5										
							35.0	8.0										
							34.5	8.5										
							34.0	9.0										
							33.5	9.5										
							33.0	10.0										

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT.mdb

Log Scale 1:25

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH5**

SHEET 1 OF 4

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 22/7/15
FINISH DATE: 22/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (M Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.04m

R.L. COLLAR: 34.04m

DATUM: Auckland 1946

SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Blot
FILL	Organic SILT with minor clay; dark brown. Soft, wet, low plasticity. (TOPSOIL) 0.02m to 0.08m: ...with some clay. Firm, moist, high plasticity 0.08m SILT with minor clay, fine to medium sand and fine to medium gravel and trace topsoil; light brownish grey with light grey and brown streaks. Stiff, moist, high plasticity. Gravel is angular siltstone, up to 8mm. (FILL) 0.24m to 0.28m: ...with minor topsoil 0.8m: Clayey SILT with some topsoil and trace fine to coarse sand and fine gravel; light brownish grey and brown. Stiff, moist, high plasticity. Gravel is angular siltstone, up to 6mm 0.53m: ...wood fragment (12mm diameter) 0.59m to 0.65m: ...with minor fine to medium gravel. Gravel is angular siltstone, up to 20mm 0.65m: Silty CLAY with minor topsoil and trace gravel; orange brown with dark brown streaks and light grey mottles. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 7mm 0.73m to 0.84m: ...clayey SILT with some topsoil and organics. Organics are fibrous (wood fragments). Contains trace silt-sized micaceous material (observed as 'sparkles' within the core) 1m: CLAY with some silt, minor fine sand and trace fine to medium gravel; light grey with orange brown and brownish grey streaks. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 10mm 1.39m to 2.45m: ...with minor silt and fine to medium gravel; brownish grey with orange brown streaks and light grey mottles. Gravel is angular siltstone, up to 9mm	CW	III	DT	100	WC 18 31.9%	33.9	0.5					0m to 6m: Open Barrel (OB) drilling method was used, which results in the compaction of the recovered core. Therefore, no reliable core loss was identified through this section of core 1.8m: 60mm diameter Push Tube completed 2m: SPT self penetrated 150mm					
TS	2.45m: Organic clayey SILT; dark brown. Stiff, moist, high plasticity. (BURIED TOPSOIL) 2.58m: ...wood fragment (25mm x 10mm)	CW	III	DT	100		33.5	1.0										
NORTHERN ALLOCHTHON	2.58m: CLAY with minor silt; orange brown with brown streaks and light grey mottles. Very stiff, moist, high plasticity. (Residual MANGAKAHIA COMPLEX) 3.48m: Silty CLAY; grey with orange brown streaks and black mottles. Very stiff, moist, high plasticity. (Completely Weathered MANGAKAHIA COMPLEX) 4.36m to 4.48m: ...clayey SILT 4.48m: SILT with minor clay; grey. Very stiff, moist, high plasticity. Evidence of shearing. 4.27m to 4.4m: ...with trace clay. Low plasticity 4.38m to 4.4m: ...with trace organics. Organics are fibrous (rootlets) 4.4m: SILT with minor clay; orange brown with grey speckled and black mottles. Hard, moist, low plasticity. Evidence of shearing. With minor MnO nodules 4.65m: Highly weathered, greenish grey with brownish grey streaks. SILTSTONE: extremely weak	CW	III	DT	100	WC 19 37.6%	31.0	3.0											
		HW	III	DT	100	WC 20 32.8%	30.5	3.5										
		CW	III	DT	100	WC 21 30.1%	29.5	4.5										
		HW	III	DT	100	WC 22 40.8%	29.3	4.7										

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT auto

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH5**

SHEET 2 OF 4

PROJECT:

JOB No: 30888

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.04m

R.L. COLLAR: 34.04m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 22/7/15

FINISH DATE: 22/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
WAITEMATA ALLOCHTHON	(SILT with some clay and trace gravel). Evidence of soft sediment deformation. Unit is sheared and polished surfaces are rare. Crumbles into a silt with trace fine gravel-sized siltstone clasts under minimal pressure. 4.95m to 5.3m: Core loss (core washed away) 5.3m: Core description is the same as 4.65m 5.52m: Moderately weathered, grey and greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts with pressure. 6.25m: Moderately weathered, greenish grey with light grey streaks, SILTSTONE; extremely weak. (SILT with minor clay, gravel and sand). Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to coarse gravel-sized clasts within a silt with minor clay matrix. 6.45m to 6.64m: Core loss (core washed away) 6.64m: Core description is the same as 6.25m 6.93m: Moderately weathered, grey, silty fine SANDSTONE; extremely weak (SAND with some silt). Evidence of soft sediment deformation. 7.04m to 7.1m: ...evidence of shearing surfaces (seen as dark grey fractures within the core) 7.1m: Moderately weathered, greenish grey with grey mottles, SILTSTONE; extremely weak (SILT with minor clay and gravel). Evidence of soft sediment deformation. Unit is sheared and polished surfaces are rare. Crumbles into coarse sand to fine gravel-sized clasts in a silt with minor clay matrix under minimal pressure. 7.1m to 7.15m: ...evidence of shearing surfaces (seen as brownish grey fractures within the core) 7.29m to 7.33m: ...suspected calcite nodules? Sub-angular, white and up to 20mm in diameter 7.33m: Moderately weathered, light grey and light greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts with minimal pressure. 7.95m to 8.23m: Core loss (core washed away) 8.23m: Core description is the same as 7.33m 8.43m: Highly weathered, grey, SILTSTONE; extremely weak (silty GRAVEL, with some sand and some clay). Evidence for soft sediment deformation. Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts with minimal pressure. With some very weak siltstone beds (up to 10mm thick). 8.94m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with pressure. 9.45m to 9.63m: Core loss (core washed away) 9.67m: Core description is the same as 9.04m					WC 21 55.0%	34.0 33.5 33.0 32.5 32.0 31.5 31.0 30.5 30.0 29.5 29.0 28.5 28.0	0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0					5.3m to 5.52m: Bedding is typically subhoriz at <5° 6.93m to 7.1m: Unit is bound by fast sharp contacts, with the units upper contact inclined at 0° and the lower contact on a suspected fault (inclined at 65°). 7.1m: F 65°, PL, SL, CN, iron/manganese stain 7.25m: J 45°, PL, VN, silt infill 7.44m: J 55°, PL, VN, silt infill 8.54m: J 20°, UN, T, CN, silt infill 8.74m: J 65°, UN, T, CV (clayey silt), silt infill 8.93m: J 45°, UN, T, CV (clayey silt), silt infill 9.56m: J 55°, PL, Polished, VN, CV (clayey silt)					

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see Installation sheet for further details).

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH5**

SHEET 3 OF 4

PROJECT:	CO-ORDINATES: (M Eden 2000)	R.L. GROUND: 34.04m	DRILLED BY: DCN Drilling Ltd
JOB No: 30868		R.L. COLLAR: 34.04m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 22/7/15
			FINISH DATE: 22/7/15
			CONTRACTOR: DCN Drilling Ltd

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCATION	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation																	
	8.94m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with pressure.			HQ3	75	SPT 11.5m 15 11 11 4-23	34					0	10.01m: J 45°, UN, T, CN, stained 10.08m: J 55°, UN, Polished, T, CV (clayey silt) 10.27m: J 40°, PL, Polished, VN, CV (clayey silt) 10.37m: J 60°, PL, R, N, CG (clayey silt, up to 2mm thick)					
	10.35m to 10.95m: ...dark greenish grey with brownish grey streaks			NMLC	100		33	1.0										
	10.95m to 11.34m: ...evidence of shearing on faces (seen as laminations within the core)												10.95m to 11.34m: Shear surfaces are inclined between 75 to 90° 10.98m: J 60°, PL, Polished, T, CV 11.14m: J 55°, UN, SM, VN, CV (clayey silt)					
	11.57m: Highly weathered, greenish grey, SILTSTONE; extremely weak (SILT with minor clay and gravel). Evidence of soft sediment deformation. Unit is highly sheared. Evidence of shearing surfaces are common (seen as laminations within the core). [FAULT ZONE]				100			2.0					11.57m: F 80°, UN, Indeterminate offset					
	11.94m to 11.97m: ...moderately weathered, light grey, SILTSTONE; very weak.					SPT 13cm 31 (23) 50 for 145mm Refusal							11.64m: J 65°, UN, Polished, H, CG (clayey silt, up to 2mm) 11.81m: F 55°, PL, Indeterminate offset 11.85m: F 60°, UN, Indeterminate offset					
	11.97m to 12.6m: ...moderately weathered, grey, SILTSTONE; extremely weak (clayey SILT with minor gravel).			SPT	100													
	12.3m to 12.6m: Core loss (core washed away)																	
	12.6m: Core description is the same as 11.57m																	
	12.63m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with mineral pressure.			HQ3	75								12.68m: Fg 55°, UN, CG (clay, up to 1mm), Indeterminate offset 12.85m: J 40°, PL, Polished, VN, CV 12.91m to 13.38m: Shear surfaces are inclined between 75 to 90°					
	12.91m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared. Evidence of shearing surfaces are common (seen as laminations within the core). [FAULT ZONE]							3.0										
	13.38m: Moderately weathered, greenish grey with grey mottles, SILTSTONE; extremely weak (clayey SILT with minor sand and gravel). Evidence of soft sediment deformation. Unit is sheared. Crumbles into medium to coarse sand to fine gravel-sized clasts within a clayey silt matrix under minimal pressure.			SPTC		SPTC 13.5m 0/0 for 0mm 21 (>50) for 37mm							13.35m: F 60°, PL, SL, VN, Indeterminate offset					
	13.85m to 14.08m: Core loss (core washed away)							4.0										
	14.08m: Moderately weathered, light grey, SILTSTONE; extremely weak (silt with minor clay). Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts within a clayey silt matrix under minimal pressure.			HQ3	87								14.12m: J 40°, UN, R, VN, CN 14.31m: J 35°, PL, Polished, T, CN					
	14.38m: Highly weathered, grey, SILTSTONE; extremely weak (sandy GRAVEL with minor silt). Unit is highly sheared and polished surfaces are common. Crumbles easily into medium to coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE]							4.5					14.46m: J 55°, PL, R, VN, CV (clayey silt)					

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH5**

SHEET 4 OF 4

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 22/7/15
FINISH DATE: 22/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30868
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.04m
R.L. COLLAR: 34.04m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	Rl. (m) / Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistance, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Run
NORTHERN ALLOCHTHON	**14.01m to 14.84m:** ...Intra of moderately strong fine sandy SILTSTONE (does not propagate through the width of the core) **14.21m:** Highly weathered, grey, SILTSTONE; extremely weak (sandy GRAVEL with minor silt) Unit is highly sheared and polished surfaces are common. Crumbles easily into medium to coarse sand to fine gravel-sized clasts with minimal pressure. [CRUSH ZONE] **15.66m:** Moderately weathered, greenish grey, SILTSTONE; extremely weak (clayey SILT with minor gravel) Evidence of soft sediment deformation. Unit is sheared and polished surfaces are rare. Crumbles into coarse sand to fine gravel-sized clasts within a clayey silt matrix with minimal pressure. **16.15m:** Highly weathered, grey, SILTSTONE; extremely weak (sandy GRAVEL with minor silt) Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts with minimal pressure. [CRUSH ZONE]			SPTC SPTC		SPTC SPTC	15 14.5 14.0 13.5						98.53m: J 50°, U/S, R, N, CG (2.1mm minor clay, up to 2mm)					
	End of Borehole at 16.95m bgl (Target Depth Reached) **Notes:** 1) Shear vane readings were completed in the end of the core board, using Shear Vane number 588, with a Calibration Factor of 1.570. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) SPTC refers to a Solid Cone Standard Penetration Test. 4) Water levels in the installed piezometers were 4.08m (Shallow: S) and 0.02m (Deep: D) on 28/7/15, 4.245m (Shallow) and 2.975m (Deep) on 25/9/15 and 4.475m (Shallow) and 3.38m (Deep) on 29/10/15.						17.0 16.5 16.0 15.5 15.0 14.5 14.0 13.5 13.0 12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0									

COMMENTS: 1) HW casing installed to 4.6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT — 6

Log Scale 1:33

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH6**

SHEET 1 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 22.78m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30858		R.L. COLLAR: 22.78m	LOGGED BY: MTJH
LOCATION: 21A Sidwell Road, Wainui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 23/7/15
			FINISH DATE: 23/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, bands, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	R.L. (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	0m: Organic SILT, dark brown. Very soft, wet, low plasticity. [TOPSOIL]			DB	100		22.5	0					0m to 7.5m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no reliable core loss was identified through this section of core					
FILL	0.07m: Organic SILT with trace clay and fine to medium gravel; dark brown with orange brown and light grey streaks. Very stiff, moist, low plasticity. Gravel is sub-angular basalt, up to 15mm. [TOPSOIL-FILL]																	
	0.56m to 0.59m: ...with trace charcoal fragments (up to 10mm)																	
	0.59m SILT with minor clay and trace fine gravel, fine sand and organics; brown with light grey streaks and orange brown mottles. Very stiff, moist, high plasticity. Organics are fibrous (rootlets). Gravel is sub-angular basalt, up to 5mm.			DB	100	SV 0.45m: 100kPa UTP	22.0	0.5										
TAURANGA GROUP	1m: Organic clayey SILT; brown and light grey with orange brown streaks. Firm, moist, high plasticity. Organics are fibrous (decomposing wood fragments). (TAURANGA GROUP)			DB	100	SV 1.45m: 55kPa WC 35: 64.1% CONS 1.50m	21.5	1.0					1.5m: 60mm diameter Push Tube contained					
	1.5m to 1.95m: Core loss (dropped out of Push Tube)			PTUB	87		21.0	1.5										
	1.92m to 2.28m: Core description is the same as 1m			SPT	72	ALT 1.8m SPT 1.8m: 0/7 1 1 2 N=3	20.5	2.0					1.88m: SPT self-penetrated 150mm					
	2.28m to 2.4m: Core loss (dropped out of SPT shoe)																	
	2.4m: Clayey SILT with minor organics; light grey with orange brown streaks and black mottles. Stiff, moist, high plasticity. Organics are fibrous (decomposing wood fragments).			DB	100		20.0	2.5										
	2.57m to 2.66m: ...organic clayey SILT; brown and light grey with orange brown streaks												2.77m to 2.8m: Bedding is inclined at 5 to 15°					
	2.66m to 2.77m: ...SILT with minor clay. Low plasticity					SV 0.55m: 70kPa												
	2.77m to 2.9m: ...CLAY with minor silt. Very stiff. With bands of organic clayey SILT (up to 200mm thick)					WC 36: 58.1%							3m: SPT self-penetrated 75mm					
	2.89m: ...wood fragment (25mm diameter)			SPT	72	SPT 3m: 1/7 2 3 N=5	19.5	3.0										
	2.9m: SILT with trace clay and organics; brown with light grey/orange brown streaks. Firm, moist, low plasticity. Organics are fibrous (wood fragments and rootlets)												3.45m to 3.88m: Bedding is inclined at ~0 to 5° (typically 5°)					
	3.32m to 3.45m: Core loss (dropped out of SPT shoe)																	
	3.45m: CLAY with some silt and trace organics; light grey with orange brown streaks. Stiff, moist, high plasticity. Organics are fibrous (rootlets).			DB	100		18.5	4.0										
	4.39m to 4.88m: ...light grey with orange brown specks					SV 0.45m: 60kPa												
	4.39m to 4.43m: ...silt, trace organics (wood fragments and rootlets)					WC 37: 51.6%							4.8m: SPT self-penetrated 75mm					
				SPT	75	SPT 4.8m: 1/7 2 2 N=4	17.8	5.0										

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T:\T DATA\TEMPLATE\DBT with

Log Scale 1:35

GENERAL LOG 30858.GPJ 30-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH6**

SHEET 2 OF 3

PROJECT:

JOB No: 30868

LOCATION: 21A Sidwell Road, Wainui (Refer to Site Plan)

CO-ORDINATES: (M.Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 22.78m

R.L. COLLAR: 22.78m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 23/7/15

FINISH DATE: 23/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Stratigraphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
EAST COAST BAYS FORMATION	5.05m: Clayey SILT; light grey with orange brown mottles. Stiff, moist, high plasticity. 5.43m to 5.5m: ...with trace organics. Organics are fibrous (rootlets) 5.47m to 5.5m: ...SILT with trace clay. Firm, low plasticity. 5.5m: SILT with some fine sand; light grey with orange brown streaks and dark orange mottles. Soft, moist, low plasticity. With trace limonite staining. [Residual EAST COAST BAYS FORMATION] 5.77m: SILT with minor clay; grey. Stiff, moist, high plasticity. [Completely Weathered EAST COAST BAYS FORMATION] 5.77m to 5.89m: ...grey with dark orange specks. With trace limonite staining. 6.49m to 6.7m: ...with some clay. 6.7m: Interbedded clayey SILT and finesandy SILT, grey. Clayey SILT is very stiff, moist, highly plastic and in beds 1 - 80mm thick. Fine sandy SILT has trace clay and is very stiff, moist, low plasticity and in beds 20-40mm thick. Clayey SILT dominates the unit (60%). 7.3m: Clayey SILT; grey. Very stiff, moist, high plasticity. With occasional beds of SILT with minor clay and trace fine sand (from 7-15mm thick and typically spaced 35-40mm, but ranges 7-71mm). 7.8m: Highly weathered, grey, laminated SILTSTONE; extremely weak SILT with minor clay and fine sand. 8.06m: Highly weathered, grey, silty fine SANDSTONE; poorly cemented, extremely weak (silty fine SAND). 8.28m: Slightly weathered, grey, silty fine to coarse SANDSTONE; moderately cemented, weak. Beds within this unit increase with depth. 8.28m to 8.34m: ...very weak. 8.72m: ...soft sediment deformation (clay clast, 60x15mm) 8.94m to 8.92m: ...laminated SILTSTONE. 9.34m: Slightly weathered, grey, laminated SILTSTONE; weak. 9.81m: ...soft sediment deformation (clay clast, 52x15mm)																	

8.05m to 8.5m: Bedding is inclined at <5 to 10°

8.5m to 8.62m: Unit has been washed due to leaching from the siltstone above

8.62m to 8.78m: Wood fragments observed on core are not from within this unit, they have been smeared on the core during recovery of the CB run

8.84m: Black carbonaceous material inclined at <5 to 10°

8m: SPT ref penetrated 300mm

7.3m to 7.8m: Bedding is inclined at 5°

8.28m to 8.34m: Bedding is inclined at <5 to 5°

8.44m: Drilling induced defect

8.49m to 8.55m: Zone of Bedding Joints. Joints are 0 <5°, PL, SM, T, CN

8.5m: Short HQ3 run due to the drill bit needing to be changed. All rods were removed from the hole

8.77m: B 5°, PL, Polished, T, CN

8.82m: B <5°, PL, SM, VN, CV (silt with minor clay)

8.84m: B <5°, PL, SM, VN, CV (silt with minor clay)

8.86m to 8.92m: Bedding is inclined at <5°

8.92m to 8.94m: Bedding is inclined at <5 to 5°

9.28m: J 45°, UN, SM, N, CV (silt)

9.46m: B <5°, PL, SM, VN, CN

9.69m to 9.72m: Core is highly disturbed due to drilling (slicing)

9.78m: B 5°, UN, SM, VN, CN

9.84m: Drilling induced defect

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.CDT mill

Log Scale 1:55

GENERAL.GDG 30868.GPJ 30-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH6**

SHEET 3 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 22.78m	DRILLED BY: DCN Drilling Ltd
JOB No: 30869		R.L. COLLAR: 22.78m	LOGGED BY: MTJH
LOCATION: 21A Sidwell Road, Wainui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 23/7/15
			FINISH DATE: 23/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Rec
EAST COAST BAYS FORMATION	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering: colour, fabric, name, strength, cementation																	
	9.0m to 10.04m...fine SANDSTONE, moderately cemented																	
	10.33m: bioturbated SILTSTONE and silty fine to medium SANDSTONE; grey. SILTSTONE is slightly weathered, laminated, weak and in beds 15-60mm thick. SANDSTONE is slightly weathered, moderately cemented, weak and in beds 10-31mm thick. Siltstone dominates the unit (55%)			TCR	98	SPTC (8.5m) 50 for 40mm 50/40	10.5					94						
	10.22m to 10.36m...zone of soft sediment deformation																	
	10.72m: Core loss (core washed away)																	
	10.80m: Core description is the same as 10.22m						11.0	12.0					10.64m: B <5°, PL, R, T, CN					
	11.03m to 11.06m...silty fine SANDSTONE; poorly cemented, extremely weak (silty fine SAND)												10.84m: F 35°, UN, T, stain/infill with indeterminate offset 10.84m: F 55°, UN, T, stain/infill with indeterminate offset 11.08m: J 80°, UN, R, N, CN					
	11.06m: Slightly weathered, grey, laminated SILTSTONE; weak.			TCR	94							78	11.25m: B <5°, PL, SM, T, CV (silty sand)					
	11.36m to 11.37m...zone of soft sediment deformation						11.5											
	11.37m to 11.56m...silty fine to medium SANDSTONE. Bed common with depth												11.67m: B <5°, UN, SM, N, CV (sand)					
	11.81m to 11.83m...extremely weak (SILT with minor clay)					SPTC (12m) 50 for 35mm 50/35	12.0											
	11.88m to 12m...fine SANDSTONE												11.84m to 12m: Core is highly disturbed due to hunting (HW sock removal from the catcher)					
	End of Borehole at 12.00m bgl (Target Depth Reached)						12.5											
	Notes: 1) Shear vane readings were completed at the end of the core barrel, using Shear Vane number: 569, with a Calibration Factor of 1.370. 2) SPTC refers to a Solid Core Standard Penetration Test. 3) Water levels in the installed piezometers were: 4.14m (Shallow: S) and 5.05m (Deep: D) on 29/7/15, 4.14m (Shallow) and 4.963m (Deep) on 21/9/15 and 4.7m (Shallow) and 5.61m (Deep) on 29/10/15						13.0											

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH7**

SHEET 1 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 24/7/15
FINISH DATE: 24/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30869
LOCATION: 330 Walnui Road, Walnui (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 16.46m
R.L. COLLAR: 16.46m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	Defect Log	Fracture Spacing (cm)	RQD %	ROCK DEFECTS Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
FILL	0m: Organic SILT with rock clay; dark brown with orange brown and black mottles. Firm, moist, low plasticity. Unit composition is mainly topsoil, but with lenses of clay with some silt (up to 32x26mm). [TOPSOIL FILL]												6m to 6m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no reliable core loss was identified through this section of core					
EAST COAST BAYS FORMATION	0.13m: Organic SILT with some clay; brown with orange brown specks. Firm, moist, low plasticity. [BURIED TOPSOIL]																	
	0.13m to 0.14m: highly organic band of decomposing organics, dark brown and black.																	
	0.25m: CLAY with minor silt; orange brown with light grey mottles. Stiff, moist, high plasticity. [Residual EAST COAST BAYS FORMATION]																	
	0.35m to 0.52m: ...with some silt and minor topsoil; orange brown and brown with light grey mottle.																	
	0.52m to 0.58m: ...orange brown, with light grey and dark orange specks. With trace limonite staining.																	
	0.58m to 0.74m: ...with trace silt.																	
	0.87m to 0.95m: ...with trace silt; orange brown and light grey.																	
	0.95m to 1.84m: ...orange brown and light grey.																	
	1.84m: Silty CLAY with trace fine sand; orange brown with light grey streaks and pink specks. Stiff, moist, high plasticity.												3m: 60mm diameter Push Tube completed					
	3.6m: Silty CLAY; orange brown with light grey streaks. Stiff, moist, high plasticity.												3.45m: SPT self-penetrated 75mm					
	4.12m to 4.25m: ...with some silt; orange brown.																	
	4.25m: SILT with minor clay and trace fine sand; grey with orange brown mottle. Stiff, moist, low plasticity. [Completely Weathered EAST COAST BAYS FORMATION]												4.5m: SPT self-penetrated 200mm					
	4.7m to 5.12m: ...with more clay; grey. High plasticity.																	

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH7**

SHEET 2 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 24/7/15
FINISH DATE: 24/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30866
LOCATION: 330 Wainui Road, Wainui (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 16.46m
R.L. COLLAR: 16.46m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT: EAST COAST BAYS FORMATION

DESCRIPTION OF CORE

SOIL: Classification, colour, consistency / density, moisture, plasticity

ROCK: Weathering, colour, fabric, name, strength, cementation

5.05m to 5.12m: ...grey with light grey specks. Light grey specks are extremely weak, coarse sand-sized siltstone clasts (clayey silt)

5.12m: SILT with some fine sand and trace clay; grey. Stiff, moist, low plasticity

5.46m to 5.48m: ...with minor fine to coarse sand and trace fine gravel. Gravel is sub angular weathered siltstone, up to 4mm

5.56m to 5.65m: ...clayey SILT. High plasticity. With soft sediment deformation

5.65m: Fine sandy SILT; grey. Stiff, moist, low plasticity

5.91m: Highly weathered, grey, SILTSTONE; extremely weak (clayey SILT).

6.45m: Highly weathered, grey, fine to medium SANDSTONE; poorly cemented, extremely weak (SAND with some silt).

6.81m to 6.95m: ...silty fine to medium SANDSTONE. Bed contacts with depth

7.11m to 7.24m: ...silty fine to medium SANDSTONE. Bed contacts with depth

7.24m: Highly weathered, grey with greenish grey mottles, laminated SILTSTONE; very weak.

7.59m: Highly weathered, grey, fine SANDSTONE; moderately cemented, very weak.

7.8m: Highly weathered, grey, laminated SILTSTONE; very weak.

7.93m to 8.14m: ...interbedded SILTSTONE and silty fine SANDSTONE; grey. SILTSTONE is highly weathered, laminated, very weak and in beds up to 30mm thick. Silty fine SANDSTONE is highly weathered, moderately cemented, very weak and in beds up to 22mm

8.25m to 8.34m: ...silty fine SANDSTONE; extremely weak (silty fine SAND)

8.69m to 8.82m: ...zone of soft sediment deformation

8.93m: Interbedded fine SANDSTONE and SILTSTONE; grey. SANDSTONE is moderately weathered, moderately cemented, very weak and in beds 9-15mm thick. SILTSTONE is moderately weathered, laminated, very weak and in beds 3-16mm thick. Sandstone clasts are the silt (55%).
8.93m to 9.12m: ...fine SANDSTONE
9.12m to 9.21m: ...laminated SILTSTONE

Rock Weathering | Rock Strength | Sampling Method | Core Recovery (%) | Testing | RL (m) | Depth (m) | Graphic Log

ROCK DEFECTS: Defect Log | Fracture Spacing (mm) | RQD % | Description (Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill)

Water Loss (%) | Water Level | Casing | Installation | Core Box

3m: 68mm diameter Push Tube completed

6.45m: Extended HW casing an extra 2m due to the hole squeezing

7.59m: B +5°, PL, R, T, CV (sand)

7.8m to 8.93m: Bedding is inclined at <5°

8.93m: B +5°, UN, SM, T, CV (sandy silt)

8.93m to 10.05m: Bedding is inclined at <5°

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT mills

Log Scale 1:25

GENERAL LOG 30866.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH7**

SHEET 3 OF 3

PROJECT:	CO-ORDINATES: (M Eden 2000)	R.L. GROUND: 16.46m	DRILLED BY: DCN Drilling Ltd
JOB No: 30868		R.L. COLLAR: 16.46m	LOGGED BY: MTJH
LOCATION: 330 Wainui Road, Wainui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 24/7/15
			FINISH DATE: 24/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
EAST COAST BAYS FORMATION	10.05m to 10.33m: Core loss (suspect an extremely weak sandstone unit has been washed away) 10.33m: Moderately weathered, grey, fine SANDSTONE; grossly cemented, extremely weak (SAND). 10.43m to 10.48m: fine sandy SILTSTONE; very weak 10.46m to 10.48m: zone of soft sediment deformation (load and pillow structures, up to 12x6mm) 10.48m: Slightly weathered, grey, laminated SILTSTONE; weak. 10.68m to 10.84m: silty fine to medium SANDSTONE; moderately cemented. Bed contacts with depth 11.03m to 11.15m: silty fine to medium SANDSTONE; moderately cemented, very weak. Bed contacts with depth 11.26m to 11.29m: zone of soft sediment deformation 11.32m to 11.34m: medium SANDSTONE; moderately cemented 13.47m: Unweathered, grey, laminated SILTSTONE; weak. 13.73m to 13.86m: fine SANDSTONE; moderately cemented, very weak 13.96m: soft sediment deformation (load cast structure) End of Borehole at 13.50m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed at the end of the core barrel, using Shear Vane number 367, with a Calibration Factor of 1.51. 2) SPTC refers to a Split Core Standard Penetration Test. 3) Water levels in the installed piezometers were 3.99m (Shallow: S) and 7.17m (Deep: D) on 30/7/15, 4.18m (Shallow) and 7.155m (Deep) on 2/8/15 and 4.01m (Shallow) and 7.345m (Deep) on 29/10/15.					SPTC (13.5m): 25 for 50mm (50 for 125mm) (N=50) SPTC (12m): 25 for 50mm (50 for 125mm) (N=50) SPTC (13.5m): 25 for 50mm (50 for 125mm) (N=50)	16 15 14 13	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0 10.5 11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0		100 39 73	0.03m: Black carbonaceous material inclined at <5° 10.04m: B <5°, UN, R, VN, CV (black carbonaceous material) 10.46m to 10.47m: Bedding is inclined at <5° 10.72m: Black carbonaceous material inclined at <5° 10.8m: B <5°, PL, R, VN, CV (sand) 10.92m: B <5°, UN, SM, VN, CV (silt with minor clay) 11.01m to 11.15m: Core is highly disturbed due to drilling (Slicing) 11.25m: B 5°, PL, R, T, CN 12.2m: B <5°, PL, R, VN, CV (sand) 12.47m to 13.56m: Bedding is inclined from <5 to 15° (typically <5°) 12.61m: Drilling induced defect (associated with spin marks and the loss of 0.04m of core) 12.73m to 12.86m: Core is highly disturbed due to drilling (Slicing) 12.87m: J 85-90°, UN, R, N, CV (sand) 13.07m: J 75-85°, UN, SM, VN, CV (silty sand) 13.25m: S below contact inclined at 5° 13.32m: J 45°, PL, SM, R, CO (clayey silt, up to 4mm thick) 13.4m: B <5°, PL, R, T, CV (sand) 13.45m: Black carbonaceous material inclined at 15°	100%				

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Log Scale 1:25

GENERAL LOG 2010.GPJ 26 Nov 2015

T+T DATATEMPLATE.GDT 26/11/15

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH8**

SHEET 1 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 30.67m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30966		R.L. COLLAR: 30.67m	LOGGED BY: MTJ/I
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Loss	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation																	
TS	5m: Organic SILT with minor clay; dark brown. Soft, moist, high plasticity. [TOPSOIL]												0m to 2.1m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, considerable core loss was identified through this section of core. 0.34m to 0.43m: Unit is stained brown due to leaching from the topsoil above					
NORTHERN ALLOCHTHON	0.34m: Clayey SILT; brown, with dark orange streaks. Stiff, moist, high plasticity. [B3 MANGAKAHIA COMPLEX]			OB	100													
	0.43m: Silty CLAY; orange-brown, with brown streaks. Stiff, moist, high plasticity.																	
	0.5m: CLAY with minor silt; light grey, with orange brown streaks and black mottle. Stiff, moist, high plasticity. With minor MnO nodules.			OB	100													
	0.95m: CLAY with minor silt; grey, with orange brown and black mottles. Very stiff, moist, high plasticity. [CW MANGAKAHIA COMPLEX]			OB	100	MC 16 23.4%		1.0										
	1.42m: Highly weathered, grey, SILTSTONE; extremely weak (gravelly SAND with minor silt). Unit is highly sheared and no polished surfaces were observed. Crumbles easily into coarse sand to fine gravel sized clasts under minimal pressure.			OB	100	MC 17 23.1% SPT 4.5m 30 7 (13) N=20		1.5										
	1.8m to 2.44m: Core loss (core washed away)			OB	70	SV 1.8bar UTP		2.0										
	2.44m: Core description is the same as 1.42m			OB	100			2.5				0						
	2.57m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel sized clasts with minimal pressure.			HQ3	100	SPT 3m 110mm 30 50 N=80		3.0				0	2.61m: J 30°, UN, Polished, T, CN 3m: J 35°, UN, R (with some polished surfaces), N, GN					
				SPT	100			3.5										
				HQ3	100			4.0				0						
				SPT	100	SPT 4.5m 25 7 (32) N=39		4.5					4.5m: HQ3 run recovered 0.7m of core loss from the previous run					
	4.77m to 4.8m: SILTSTONE; moderately strong. No evidence of shearing observed			HQ3	100			5.0				0	4.77m: J 40°, UN, Polished, T, CN 4.78m: Vein 45-75°, UN, CC (calcite, <5mm thick)					

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATA\PLATE.CDT with

Log Scale 1:25

GENERAL LOG 30966.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH8**

SHEET 2 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 30.67m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 30.67m	LOGGED BY: MT,SY
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Bursting / Mottles	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, orientation												Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Wall Coating, Infill					
NORTHERN ALLOCTHON	4.8m: Moderately weathered, grey, SILTSTONE; extremely weak (gravelly SILT with some sand and some clay). Unit is highly sheared and polished surfaces are very common. Crumbles easily into coarse sand to fine gravel-sized clasts within a SILT with trace clay matrix with minimal pressure. [CRUSH ZONE] 5.2m: Unweathered, grey, SILTSTONE; moderately strong. Evidence of shearing (seen as joints within the unit). 5.53m: Highly weathered, grey, with generally grey streaks, SILTSTONE; extremely weak (silty sandy GRAVEL). Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts with minimal pressure. With four moderately strong siltstone units (from 9-20mm thick, and typically spaced 1.0[over spac]				100 100 100	SPTC SPTC SPTC	25.0 24.0 23.0	5.0 6.0 7.0				0	4.8m: Siltstone contact is inclined at 15° 4.82m: J 10°, UN, Polished, VN, CV (silt) 4.77m: J 40°, UN, Polished, T, CN 5.03m: J 30°, UN, Polished, T, CN 5.11m: B ×5°, PL, Polished, VN, CV (clayey silt) 5.28m: Vein 70-80°, UN, CC (calcite, up to 1mm thick) 5.29m: J 75-80°, UN, T, CN, slightly intact 5.34m: J <5°, PL, Polished, MN, CV (clayey silt) 5.37m to 5.51m: Core is highly disturbed due to drilling (ten attempts required to recover dropped core) 6m: Two attempts required to recover dropped core 6.67m: J 60°, UN, R (with minor polished surfaces), T, CN 6.85m: F 55°, PL, T, inconsistent offset 6.93m: J 35°, UN, Polished, T, CN					
	7.17m to 7.21m: moderately weathered, SILTSTONE; very weak					SPTC SPTC	23.5 23.0	7.0 7.5					7.17m: J 30°, PL, VN, still intact, cross cuts joint at 7.18m 7.18m: J 25°, PL, VN, still intact, cross cuts joint at 7.17m 7.20m: Calcite nodule (32x20mm) 7.21m to 7.5m: Core is highly disturbed due to handling (difficult removal from the catcher)					
	End of Borehole at 7.74m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 369, with a Calibration Factor of 1.133. 2) Some core property measurements were difficult due to the sheared nature of the core. 3) SPTC refers to a Solid Cone Standard Penetration Test. 4) Water levels in the installed piezometers were 8.43m (Shallow S) and 2.14m (Deep D) on 24/7/15, 8.23m (Shallow) and 1.56m (Deep) on 25/8/15 and 8.52m (Shallow) and 1.48m (Deep) on 29/10/15.						8.0 8.5 9.0 9.5 10.0											

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.GDT 6/11/15

Log Scale 1:25

GENERAL LOG 30868.GPJ 30-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH9**

SHEET 1 OF 3

PROJECT:	CO-ORDINATES: (M.Edon 2000)	R.L. GROUND: 19.85m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868	DIRECTION: 0.00°	R.L. COLLAR: 19.60m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	ANGLE FROM HORIZ: -90.00°	DATUM: Auckland 1946	CHECKED:
		SURVEY: Trimble	START DATE: 24/8/15
			FINISH DATE: 24/8/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TOPSOIL	0m: Organic SILT with trace clay; dark brown. Soft, moist, low plasticity. [TOPSOIL] 0m to 0.03m: ...wet 0.3m to 0.34m: ...with minor gravel; dark brown with light brownish grey mottles. Gravel is mostly completely weathered to highly weathered siltstone, up to 4mm.				100		19.5	0.5					0m to 1.5m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, possible core loss was not as easily identified through this section of core. 0.32m to 0.36m: Core has been stained brown due to leaching from the topsoil unit above.					
TAURANGA GROUP	0.34m to 0.3m: ...with trace organics; dark brown, with black specks. Organics are fibrous (decomposing wood fragments). 0.32m: CLAY with trace silt; light brownish grey with brown and orange brown mottles. Very stiff, moist, high plasticity. [TAURANGA GROUP] 0.5m to 0.73m: Core has been washed away 0.73m: CLAY with trace silt; light brownish grey, with orange brown mottles. Very stiff, moist, high plasticity. 0.97m to 1.16m: ...CLAY with minor silt; light grey, with orange brown mottles. 1m to 1.3m: Core loss (core washed away) 1.2m: CLAY with minor silt; light grey, with orange brown mottles. Very stiff, moist, high plasticity. 1.46m to 1.63m: ...with trace organics; light grey, with orange brown streaks and brown specks. Organics are fibrous (wood fragments) 1.46m to 2.23m: ...with trace silt and organics; light grey, with orange brown streaks and brown specks. Organics are fibrous (wood fragments) 1.74m to 1.95m: Core loss (core dropped out of Push Tube) 1.95m: CLAY with trace silt and organics; light grey, with orange brown streaks and brown specks. Very stiff, moist, high plasticity. Organics are fibrous (wood fragments). 2.4m to 2.73m: Core loss (core washed away) 2.73m: Clayey SILT with minor organics; light greenish grey, with black mottles. Firm, moist, high plasticity. Organics are fibrous (decomposing wood fragments and rootlets). Unit is mainly composed of reworked Northern Allochthon sediments.				84 88 89 51 51 49 100		18.5 18.0 17.5 17.0	1.0 1.5 2.0 2.5					1.8m: 60mm diameter Push Tube completed 2.4m to 3m: Multiple attempts to recover the core after dropping out of the open barrel. Drilling changed to HCD. This led to 0.33m of core loss through this run. 3m: 60mm diameter Push Tube completed					
	3.45m to 4.3m: ...with trace coarse sand and fine gravel. Sand and gravel are completely weathered to highly weathered siltstone, up to 3mm, which occur into a clayey silt under minimal pressure. 3.8m to 4.03m: Core loss (core washed away) 4.03m: Clayey SILT with minor organics and trace fine gravel and coarse sand; light greenish grey, with black mottles. Firm to stiff, moist, high plasticity. Organics are fibrous (decomposing wood fragments and rootlets). Sand and gravel are completely weathered to highly weathered siltstone, up to 3mm, which occur into a clayey silt under minimal pressure. Unit is mainly composed of reworked Northern Allochthon sediments. 4.7m: Organic clayey SILT with minor coarse sand and fine gravel; light greenish grey, with dark brown streaks. Firm to stiff, moist, high plasticity. Organics are fibrous fossil fragments. Sand and gravel are				100 76 100		16.0 15.5 15.0	3.5 4.0 4.5 5.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) One Standpipe Piezometer was installed down the borehole (see installation sheet for further details).

T+T DATA\SIMPLATE\DOT sml

Log Scale 1:25

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH9**

SHEET 2 OF 3

PROJECT:	CO-ORDINATES: (NZ Eden 2000)	R.L. GROUND: 19.85m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30888		R.L. COLLAR: 19.80m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 24/8/15
			FINISH DATE: 24/8/15
			CONTRACTOR: DCN Drilling Ltd.

LITHOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	Defect Log	Fracturing (per 1m)	RQD %	ROCK DEFECTS Description (Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill)	Water Loss (%)	Water Level	Casing	Installation	Core Box
TAURANGA GROUP	Completely weathered to highly weathered siltstone, up to 4mm, which smear into a clayey silt under minimal pressure. Unit is composed mainly of deweathered Northern Allochthon sediments.																	
	4.45m to 5.15m: Core loss (core washed away)																	
	5.15m: Organic clayey SILT with minor coarse sand and fine gravel; light greenish grey, with dark brown streaks. Firm, moist, high plasticity. Organics are fibrous (wood fragments). Sand and gravel are completely weathered to highly weathered siltstone, up to 4mm, which smear into a clayey silt under minimal pressure. Unit is composed mainly of deweathered Northern Allochthon sediments.				81													
	5.27m: Organic SILT with minor clay; brown, with dark brown mottles. Firm, moist, low plasticity. Organics are fibrous (decomposing wood fragments and rootlets).				100													
	5.58m: Highly weathered, greenish grey, SILTSTONE; extremely weak; clayey SILT with some gravel and sand). Unit is highly sheared and polished surfaces are common. Crumbles into a clayey silt with medium to coarse sand and fine to medium gravel-sized clasts with minimal pressure. [MANGAKAHIA COMPLEX]				100													
	6.49m to 6.58m: ...very weak. Crumbles into a medium to coarse sand and fine to medium gravel-sized clasts within a clayey silt matrix with minimal pressure.																	
	6.58m: Highly weathered, greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.																	
	7.53m: Highly weathered, greenish grey, extremely weak (sandy silty GRAVEL with some clay). Unit is highly sheared and polished surfaces are rare. Crumbles into medium to coarse sand to fine gravel-sized clasts within a clayey silt matrix with minimal pressure. [CRUSH ZONE]				100													
	7.7m: Highly weathered, greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.																	
	7.97m: Slightly weathered, greenish grey, SILTSTONE; weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure. 8.12m to 8.56m: ...evidence of soft sediment deformation				94													
	8.98m: Highly weathered, grey, extremely weak (clay GRAVEL with some medium to coarse sand). Unit is highly sheared and polished surfaces are rare. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts within a clayey silt matrix with minimal pressure. [CRUSH ZONE]				100													
	9.35m to 9.43m: Core loss (core washed away)																	
	9.43m: Core description is the same as 8.98m																	
	9.47m: Slightly weathered, grey, SILTSTONE; weak. Evidence of soft sediment deformation. Unit is sheared. Crumbles into fine to coarse gravel-sized clasts with a blow of a geological hammer.				94													

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) One Standpipe Piezometer was installed down the borehole (see installation sheet for further details).

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH9**

SHEET 3 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 24/8/15
FINISH DATE: 24/8/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30668
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 19.85m
R.L. COLLAR: 19.80m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Drilled Log	Fracture spacing (mm)	RQD %	Description	Water Level (%)	Water Level	Casing	Piezometer installation	Core Box
	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation																	
				100	96	SPT C 18.5m 14 for 75mm 100 for 80mm		10.5					8.37m: J 15°, UN, Polished, VN, CN 10.05m: J 85-90°, UN Polished, VN, CN 10.23m: J 45°, UN, Polished, VN, CN 10.34m: J 5°, UN, SM, N, CV (clayey silt) 10.43m: J 40-45°, UN, Polished, VN, CN 10.47m: J 15-20°, UN, SM, VN, CH					
	End of Borehole at 10.65m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed at the end of the core barrel. 2) SPTC refers to a Solid Cone Standard Penetration Test. 3) The water level in the borehole prior to the installation of the piezometer was 1.4m on 24/8/15 (no HW casing, only the open hole to 10.65m). 4) The Water level in the installed piezometer was 0.585m on 6/9/15 and 1.325m on 20/9/15.							11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0										

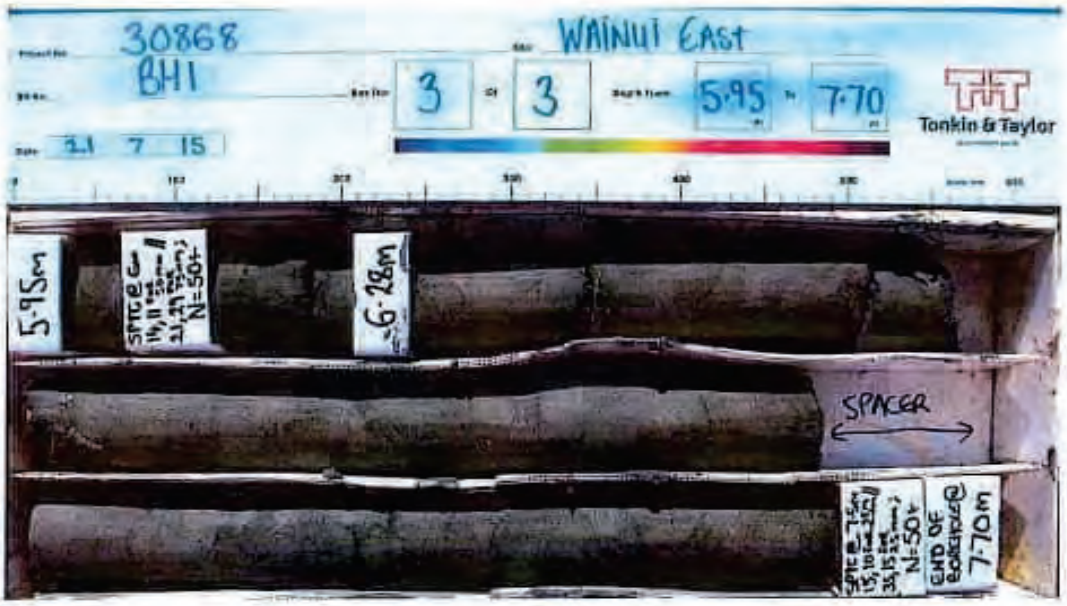
COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) One Stampipe Piezometer was installed down the borehole (see installation sheet for further details).

Core Photos Wainui East - BH1

BH1_Box1 - 0 to 2.5m.jpg

BH1_Box2 - 2.5 to 5.95m.jpg

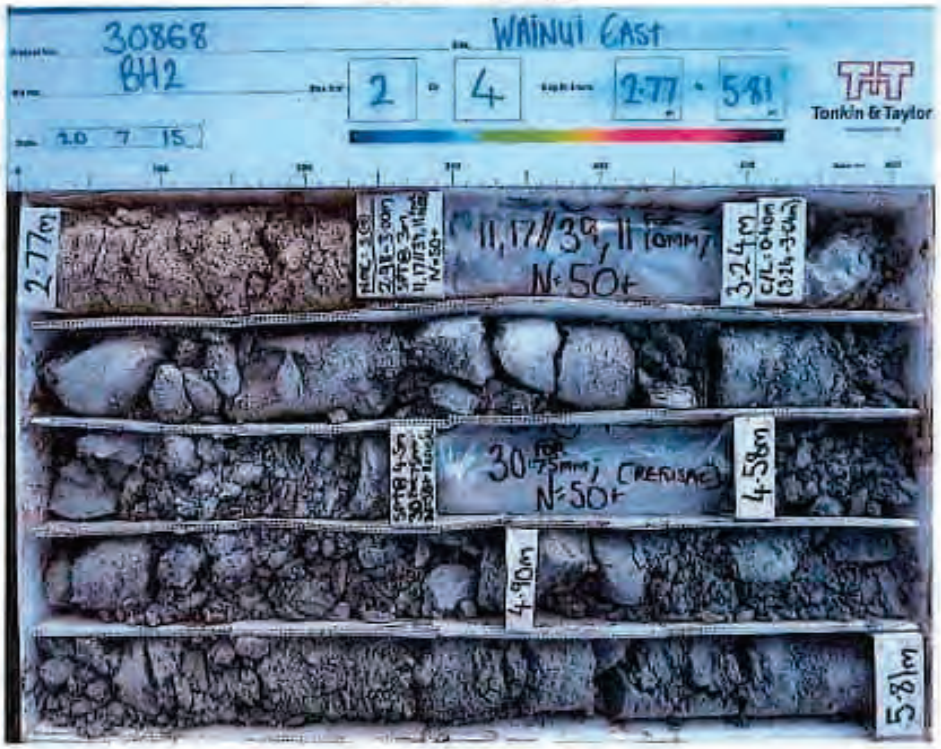
Core Photos Wainui East - BH1



BH1_Box3 - 5.95 to 7.7m.jpg

Core Photos Wainui East - BH2

BH2_Box1 - 0 to 2.77m.jpg



BH2_Box2 - 2.77 to 5.81m.jpg

Core Photos Wainui East - BH2

BH2_Box3 - 5.81 to 8.48m.jpg

BH2_Box4 - 8.48 to 9.14m.jpg

Core Photos Wainui East - BH3

BH3_Box1 - 0 to 3.45m.jpg

BH3_Box2 - 3.45 to 6.35m.jpg

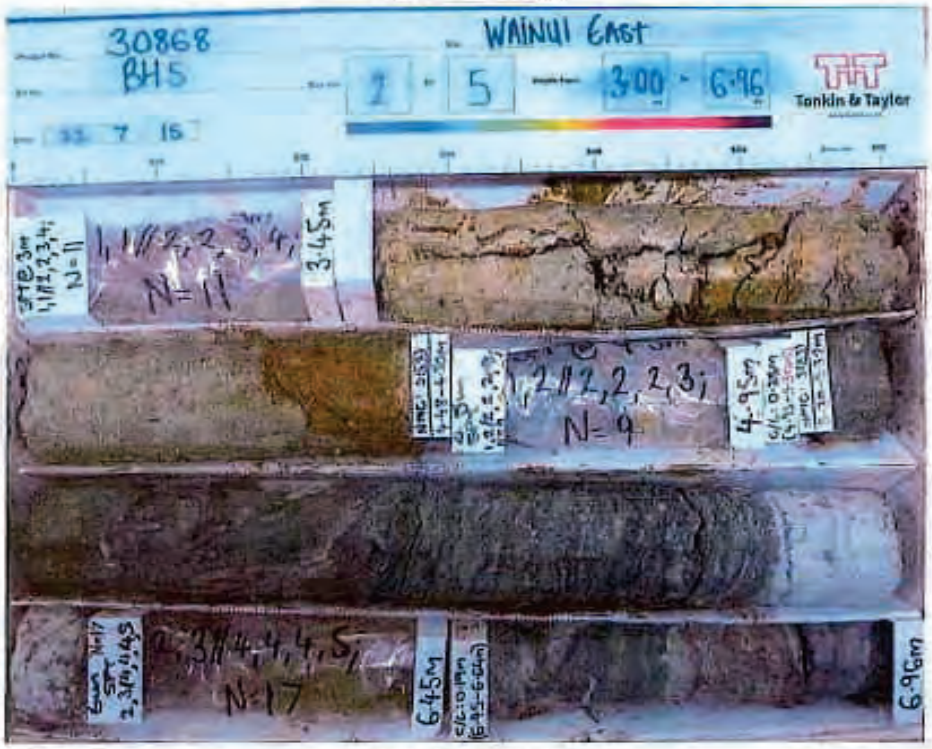
Core Photos Wainui East - BH4

BH4_Box1 - 0 to 2.76m.jpg

BH4_Box2 - 2.76 to 6.37m.jpg

Core Photos Wainui East - BH5

BH5_Box1 - 0 to 3m.jpg



BH5_Box2 - 3 to 6.96m.jpg

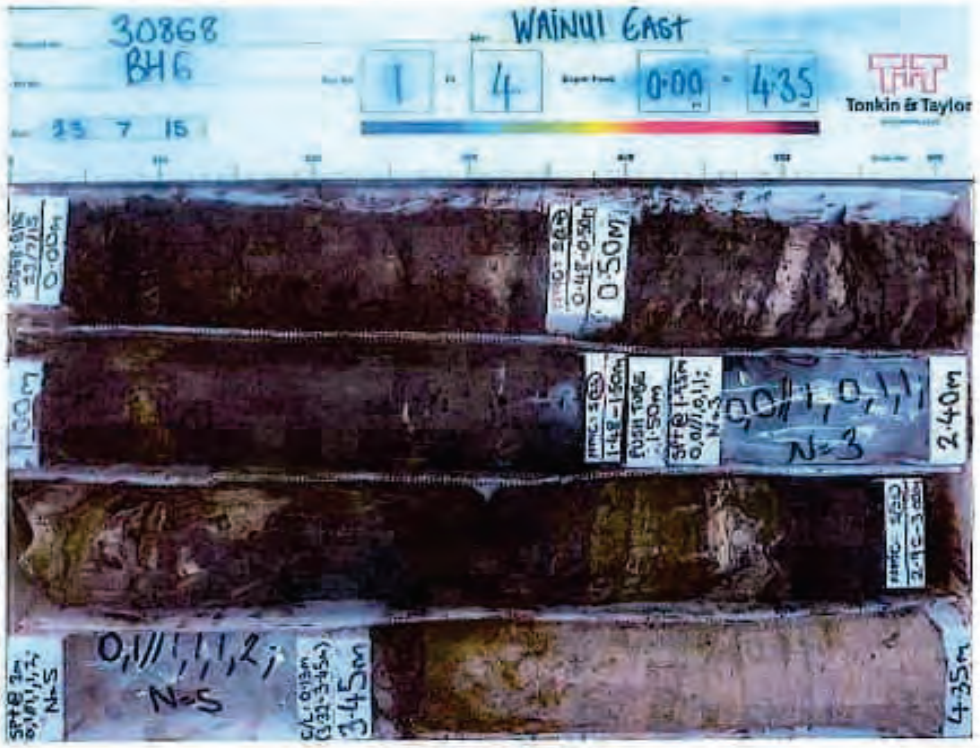
Core Photos Wainui East - BH5

BH5_Box3 - 6.96 to 10.95m.jpg

BH5_Box4 - 10.95 to 14.7m.jpg

BH5_Box4 - 14.7 to 16.95m.jpg

Core Photos Wainui East - BH6



BH6_Box1 - 0 to 4.35m.jpg

BH6_Box2 - 4.35 to 7.16m.jpg

Core Photos Wainui East - BH6

BH6_Box3 - 7.16 to 10.61m.jpg

BH6_Box4 - 10.61 to 12.09m.jpg

Core Photos Wainui East - BH7

BH7_Box1 - 0 to 3.45m.jpg

BH7_Box2 - 3.45 to 6.79m.jpg

Core Photos Wainui East - BH7

BH7_Box3 - 6.79 to 9.63m.jpg

BH7_Box4 - 9.63 to 13.02m.jpg

BH7_Box5 - 13.02 to 13.58m.jpg

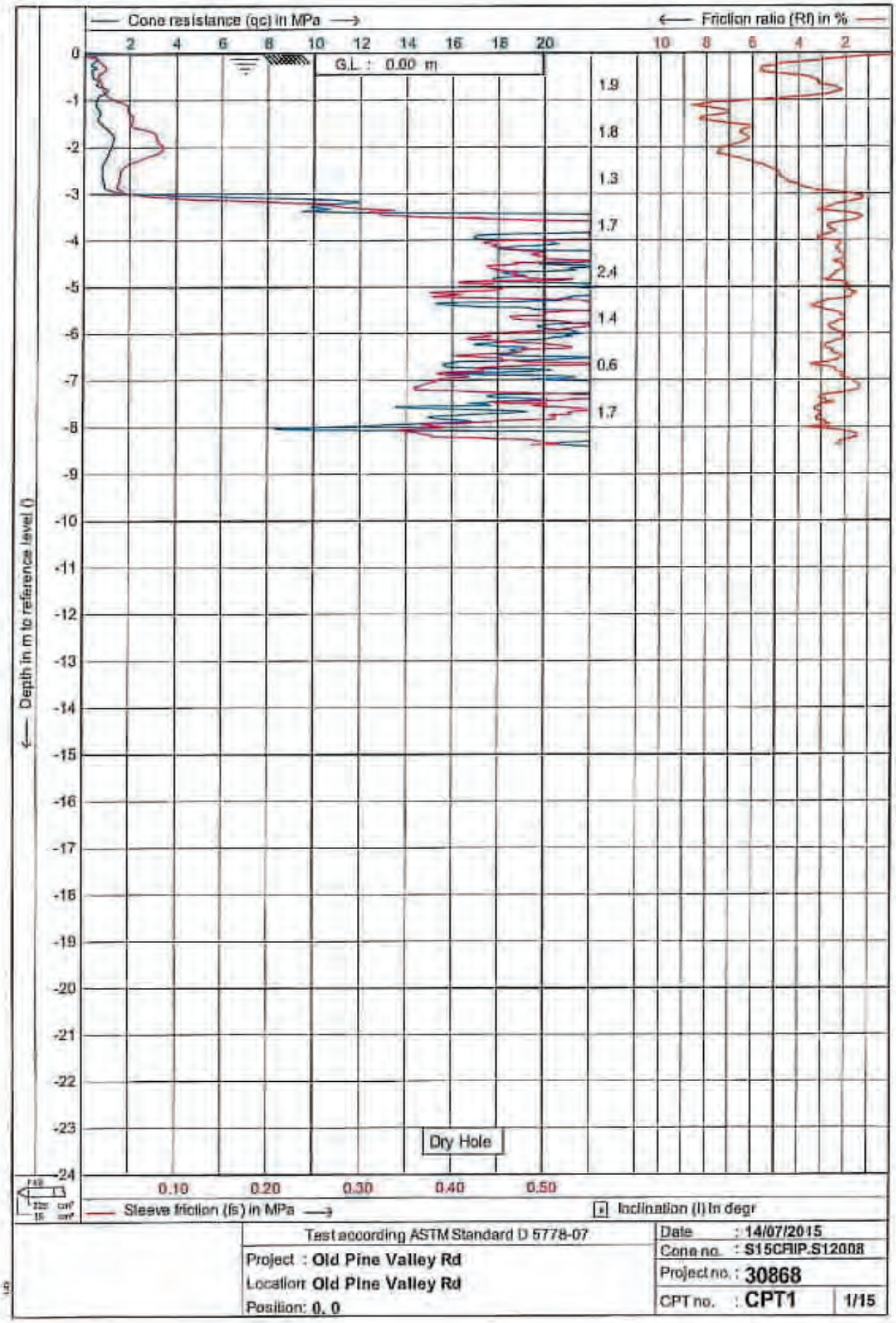
Core Photos Wainui East - BH8

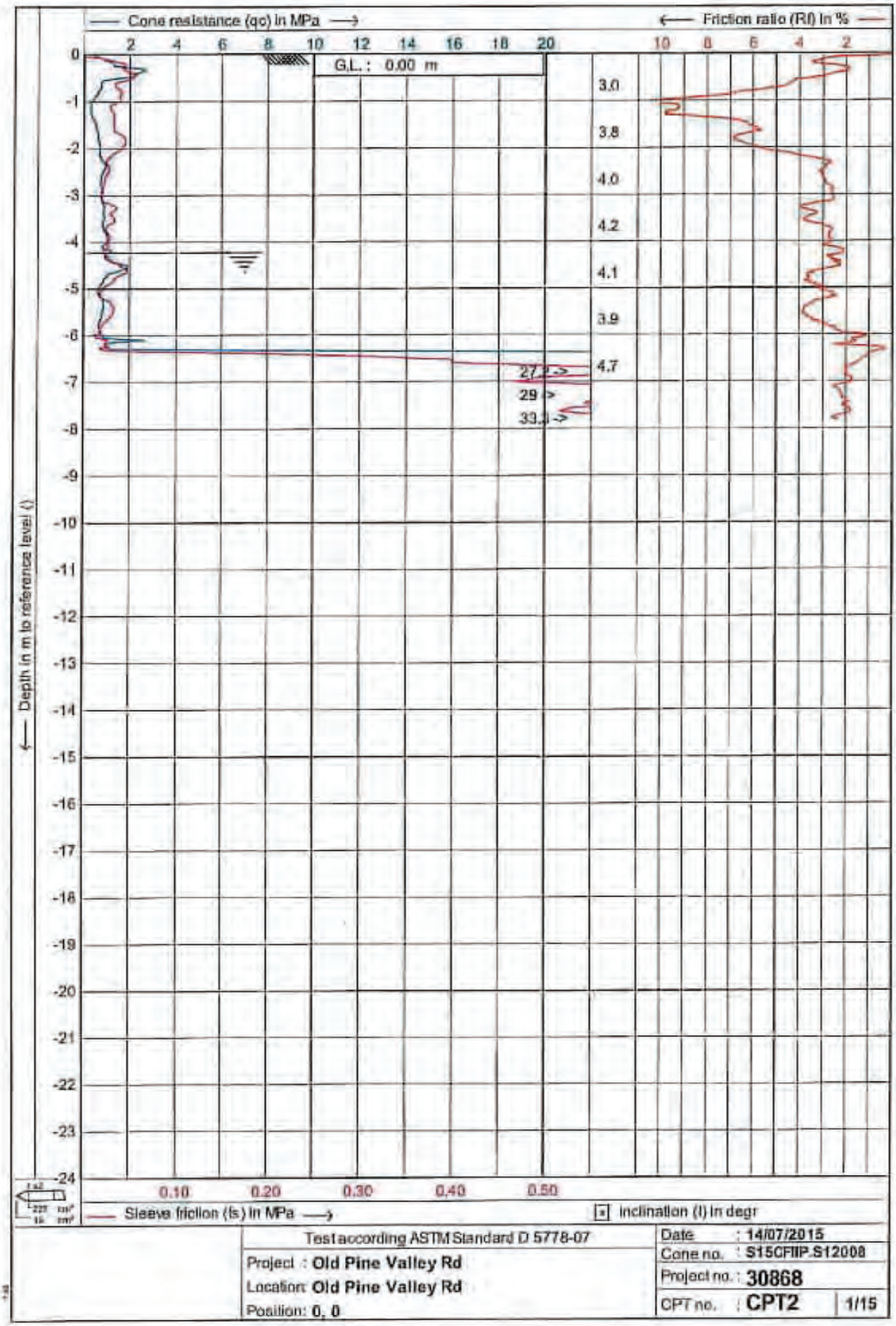
BH8_Box1 - 0 to 3m.jpg

BH8_Box2 - 3 to 6.27m.jpg

Core Photos Wainui East - BH8

BH8_Box3 - 6.27 to 7.74m.jpg


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Dry Hole
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location Old Pine Valley Rd
Position: 0, 0
Date : 14/07/2015
Cone no. : S15CFIP.S12008
Project no. : 30868
CPT no. : CPT1
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

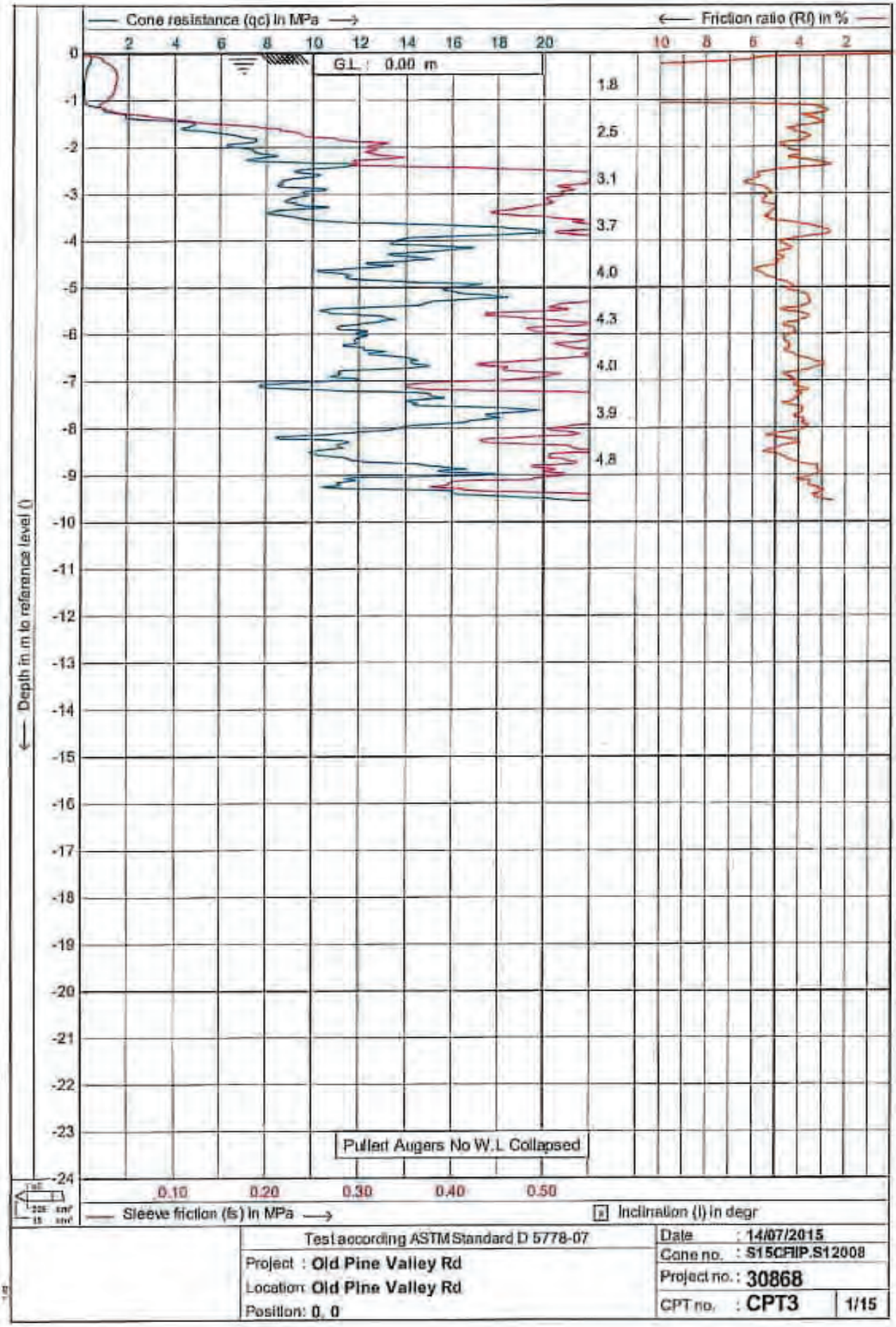
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT2** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

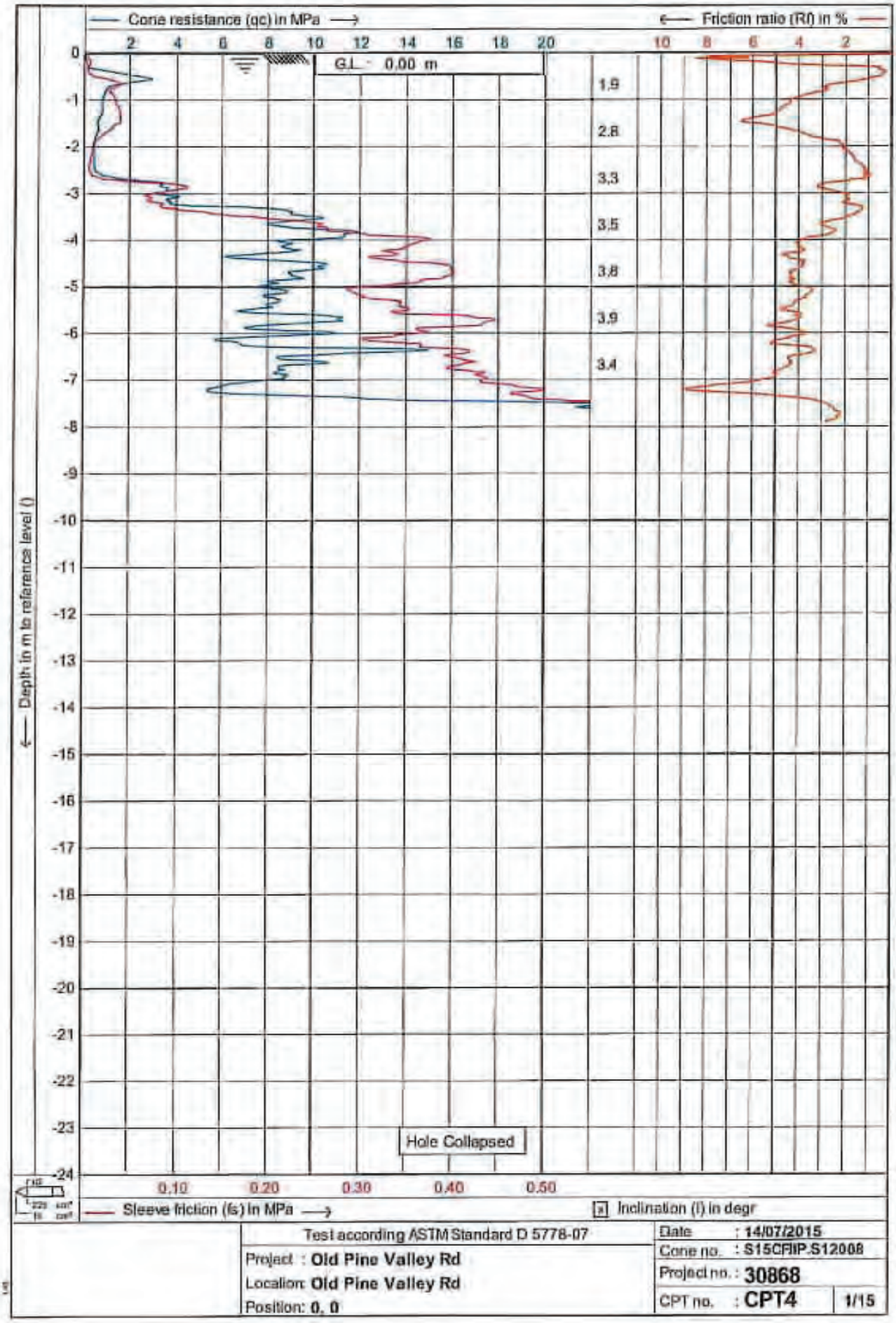
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT3** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

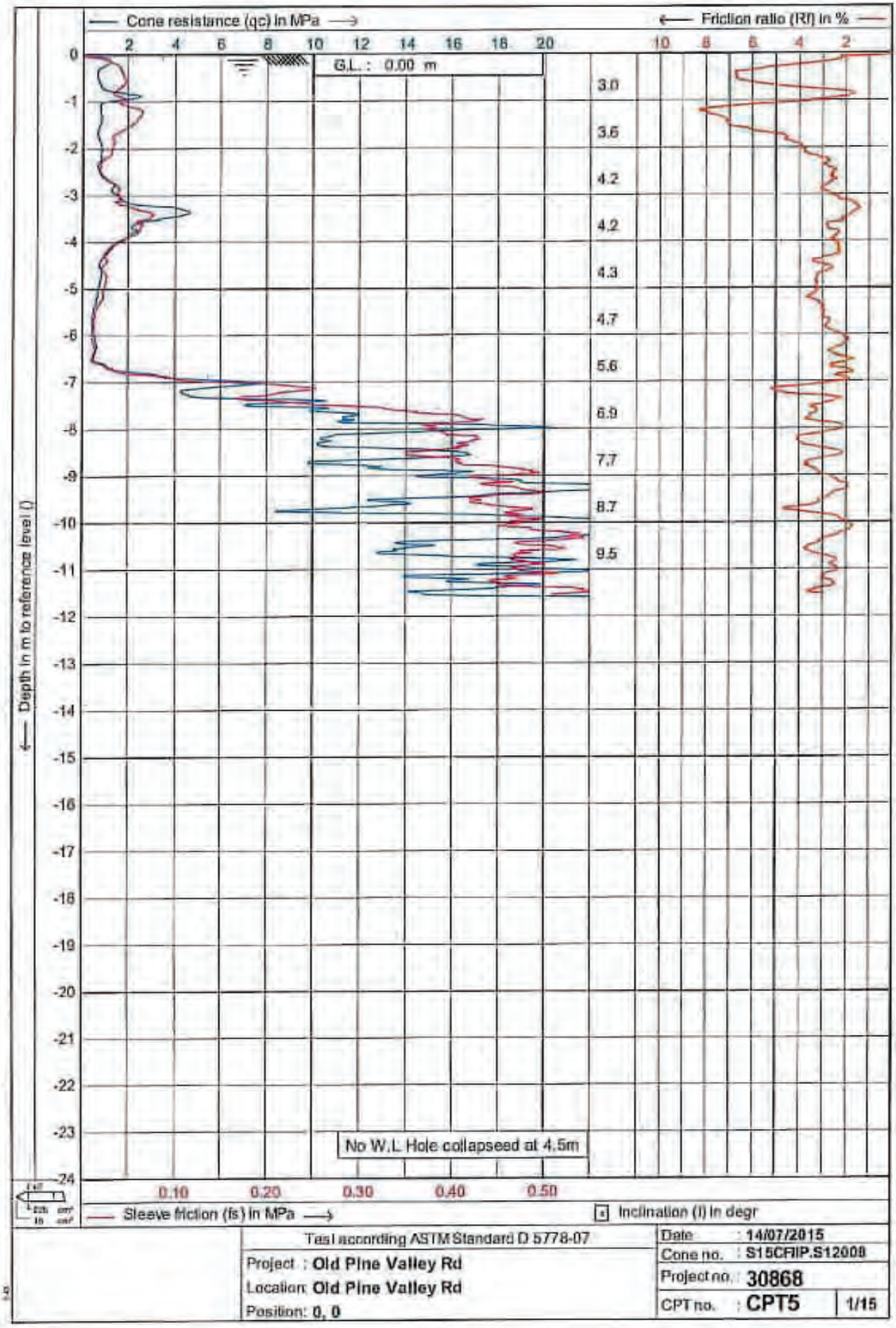
Position: **0, 0**

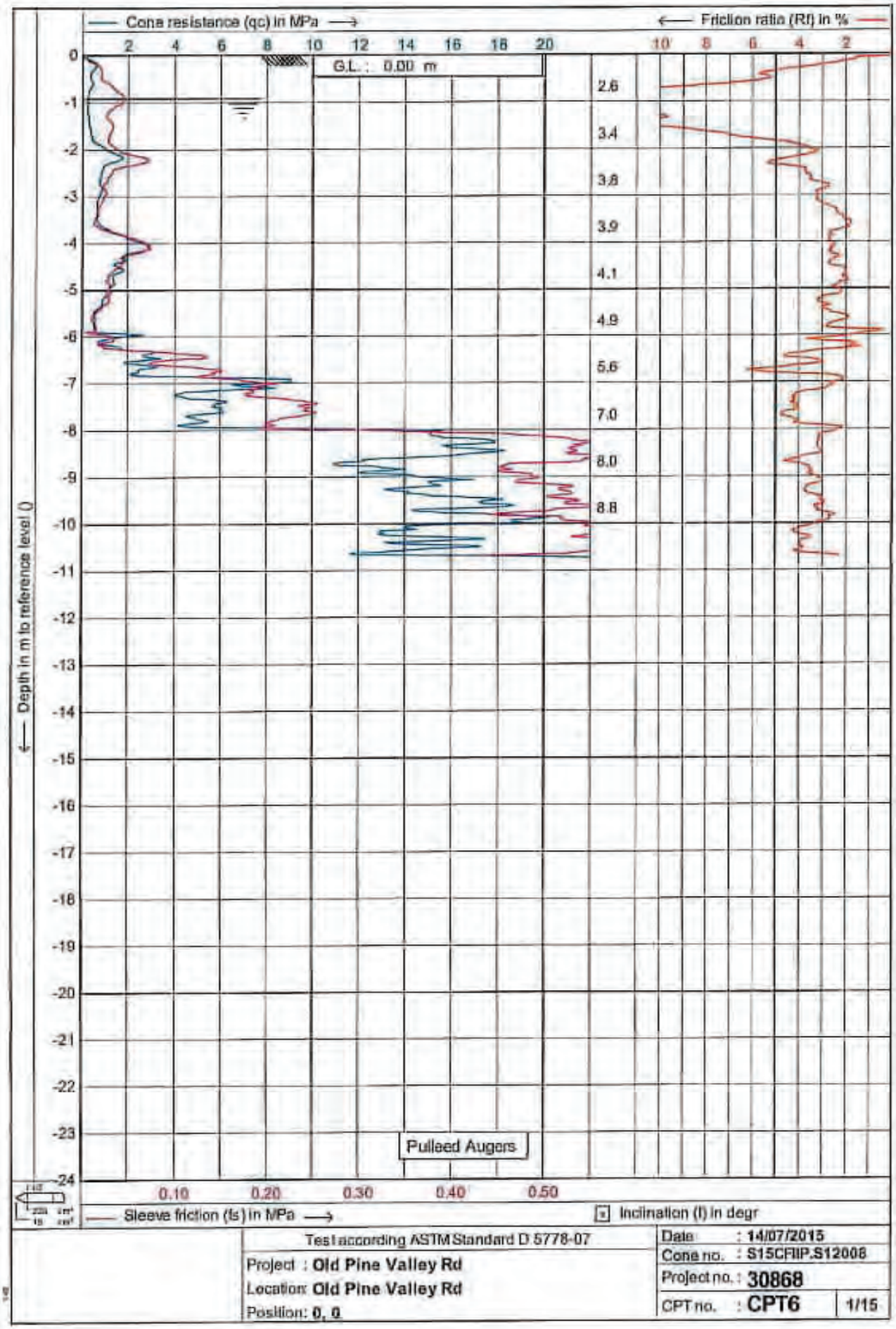
Date : **14/07/2015**

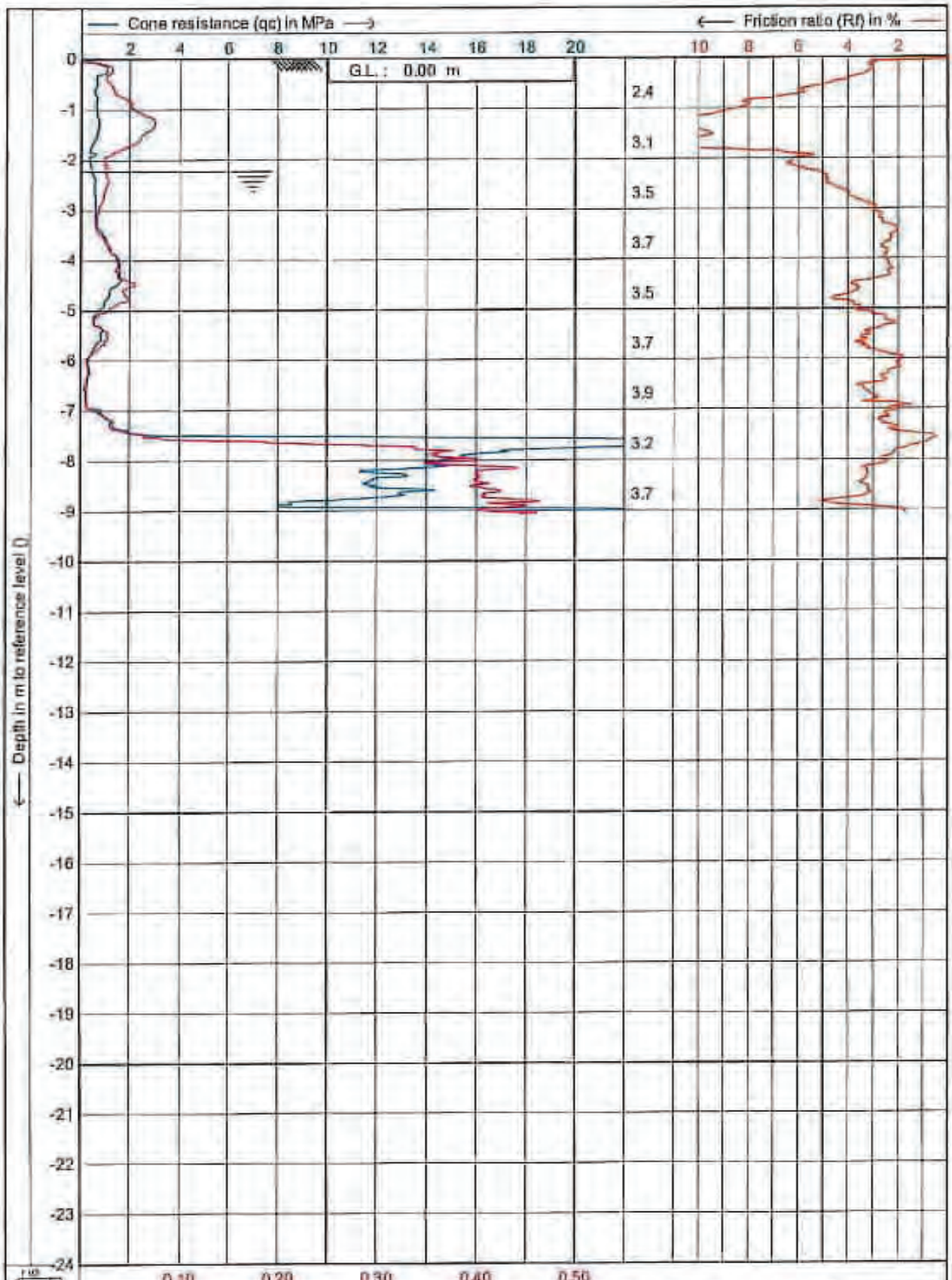
Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

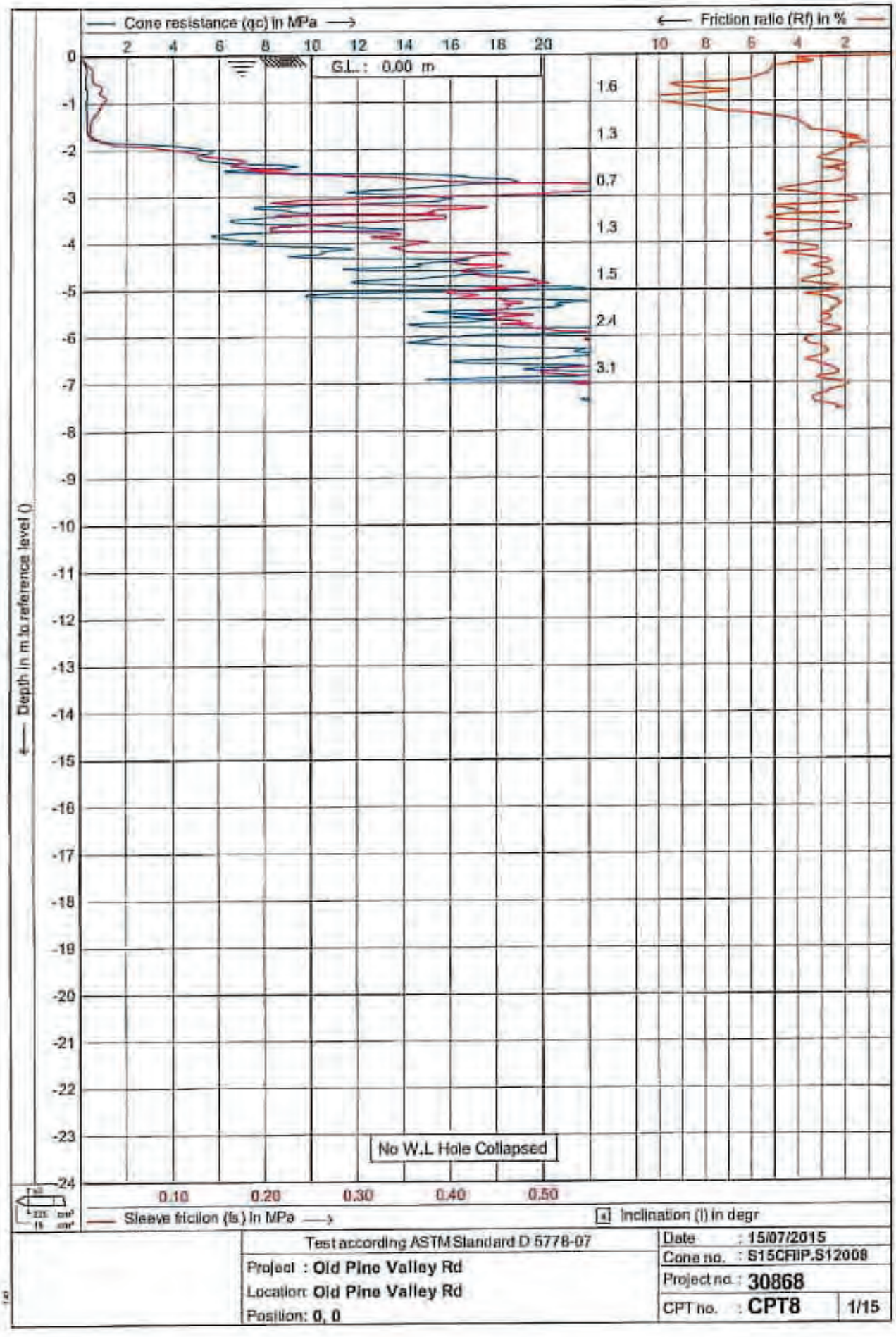
CPT no. : **CPT4** 1/15

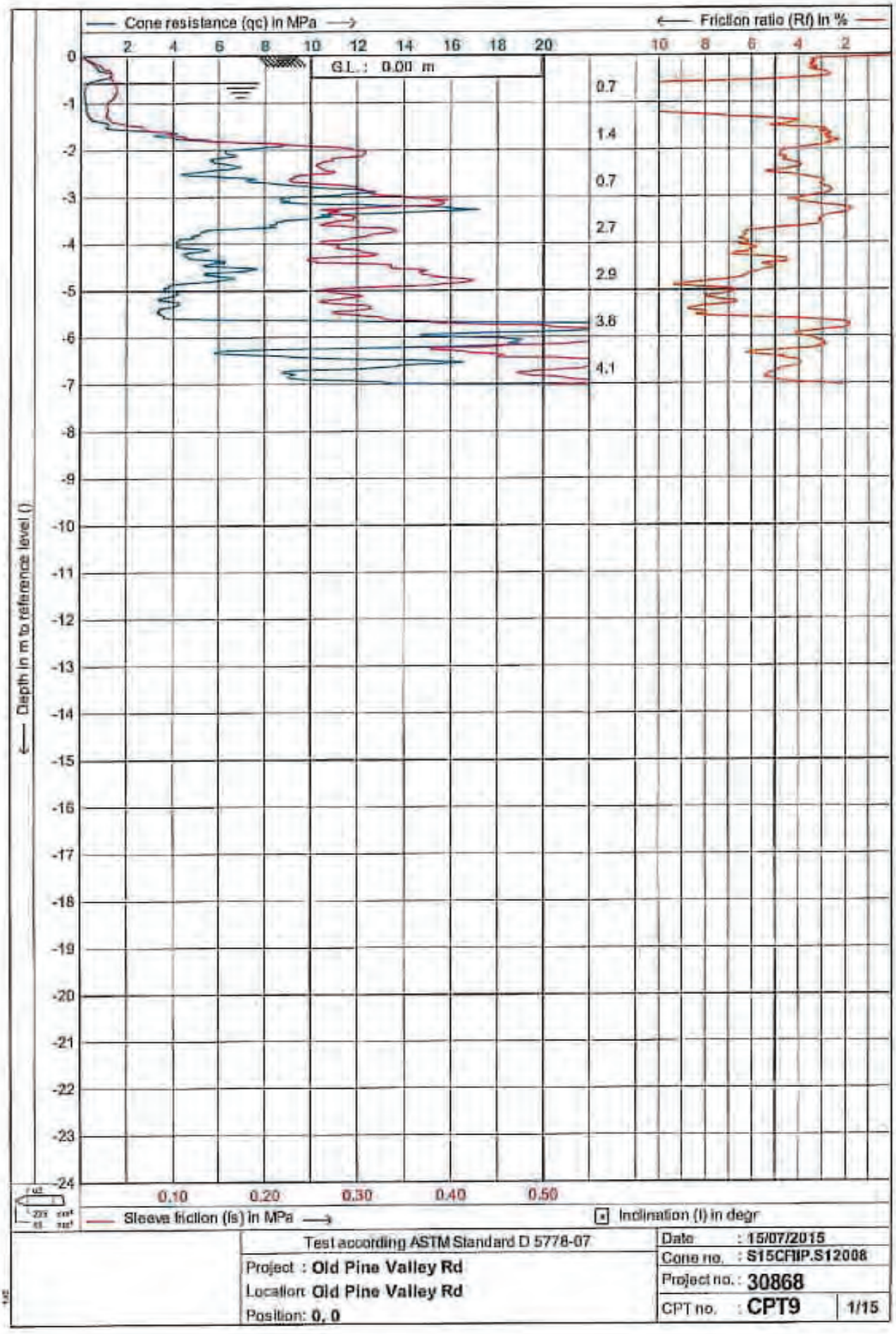

Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
3.0
3.6
4.2
4.2
4.3
4.7
5.6
6.9
7.7
8.7
9.5
Depth in m to reference level ()
No W.L Hole collapseed at 4.5m
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 14/07/2015
Cone no. : S15CFIP.S12009
Project no. : 30868
CPT no. : CPT5
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Pullaed Augers
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 14/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT6
1/15



Test according ASTM Standard D 5778-07	Date	: 14/07/2015
Project : **Old Pine Valley Rd**	Cone no.	: S15CFIP.S12008
Location: **Old Pine Valley Rd**	Project no.	: **30868**
Position: **0, 0**	CPT no.	: **CPT7** 1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L.: 0.00 m
1.6
1.3
0.7
1.3
1.5
2.4
3.1
Depth in m to reference level ()
No W.L Hole Collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT8
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

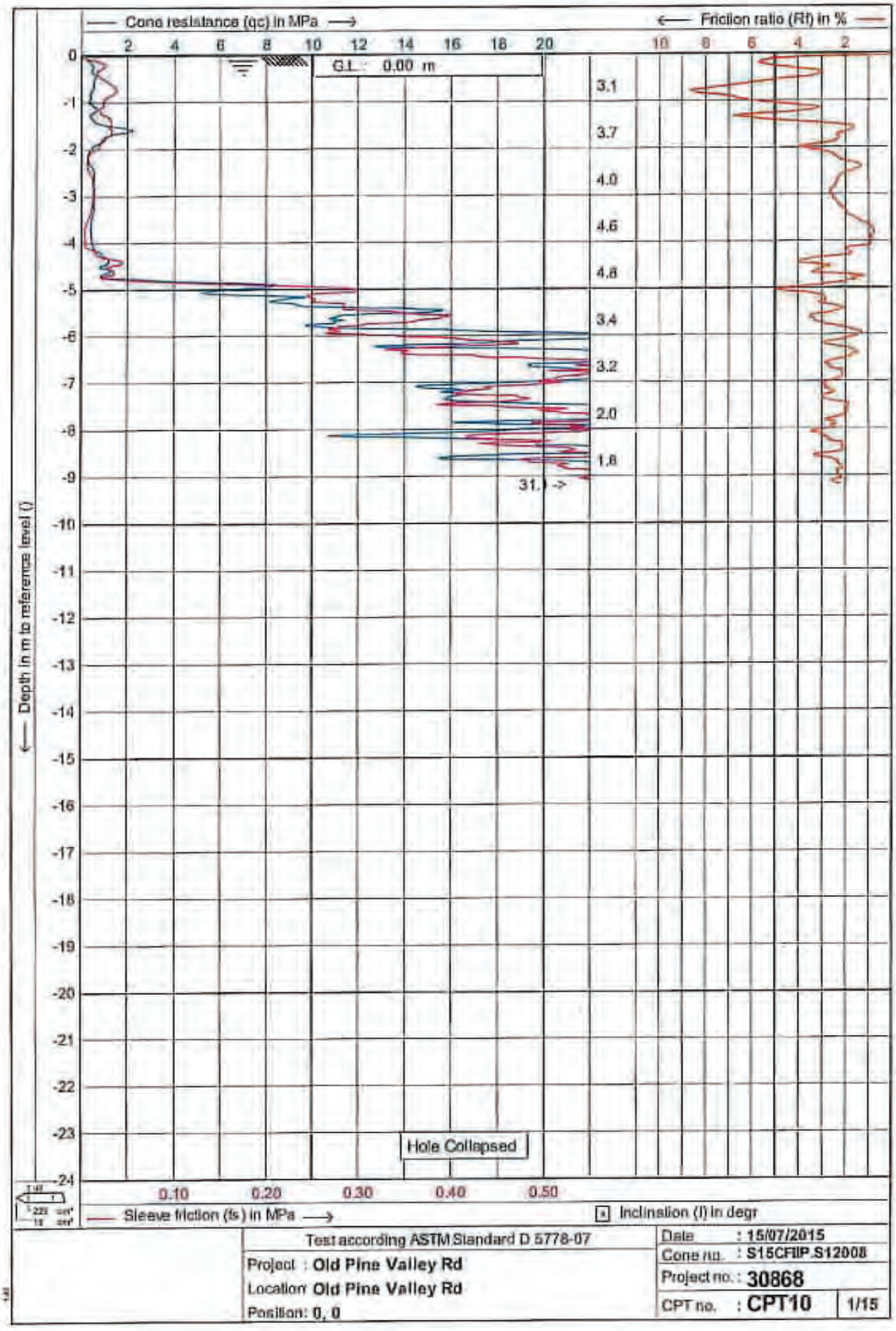
Position: **0, 0**

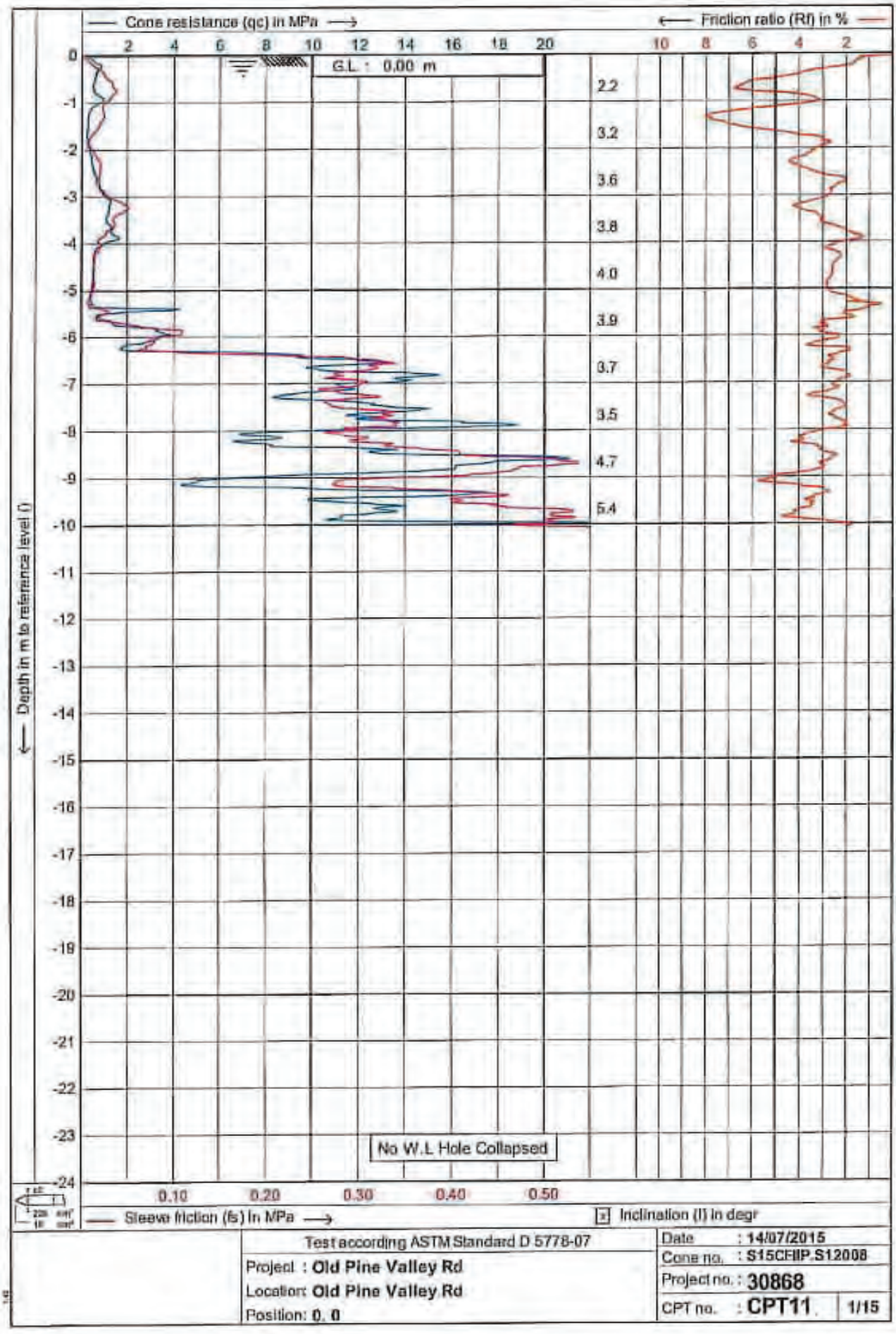
Date : **15/07/2015**

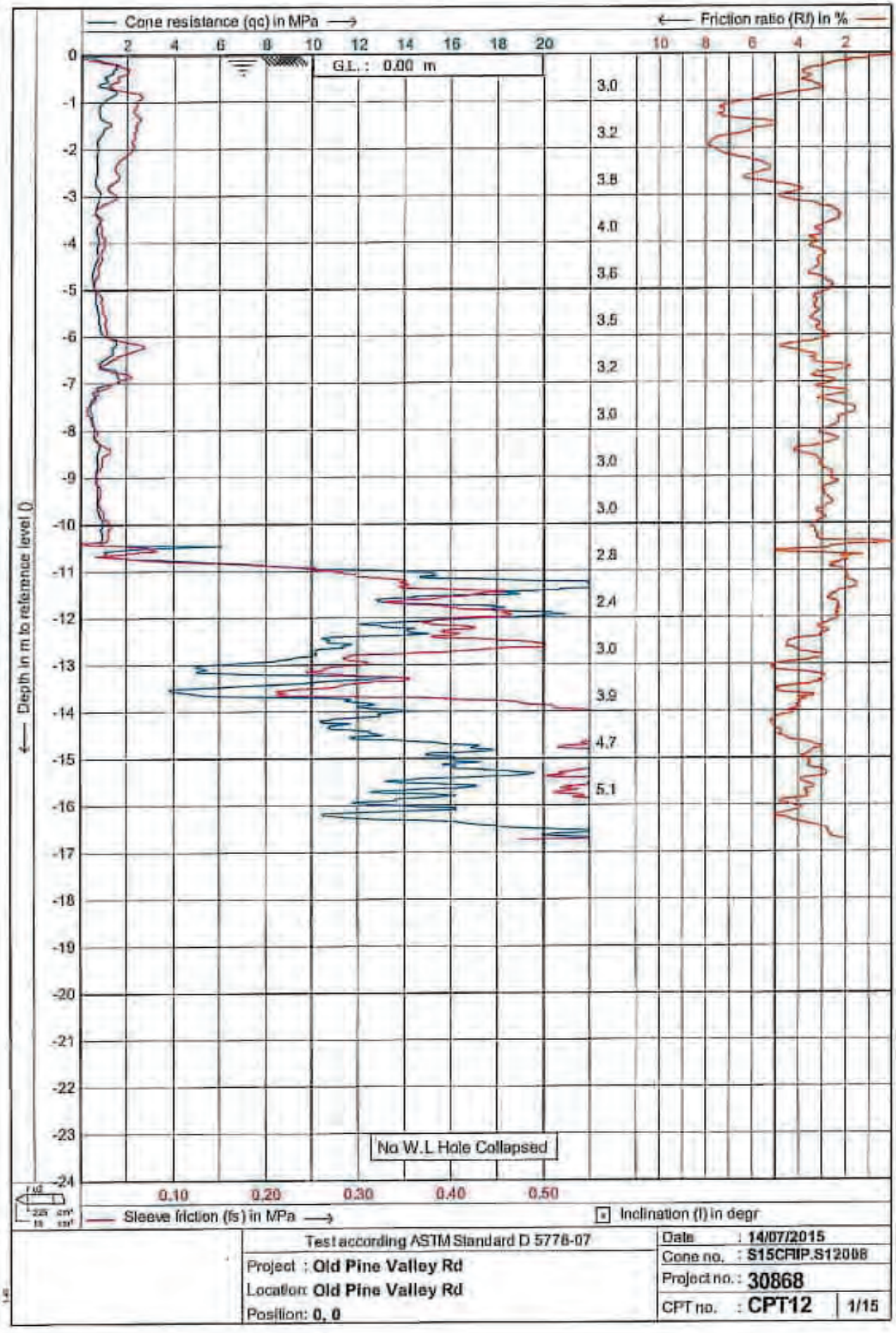
Cone no. : **S15CFIIP.S12008**

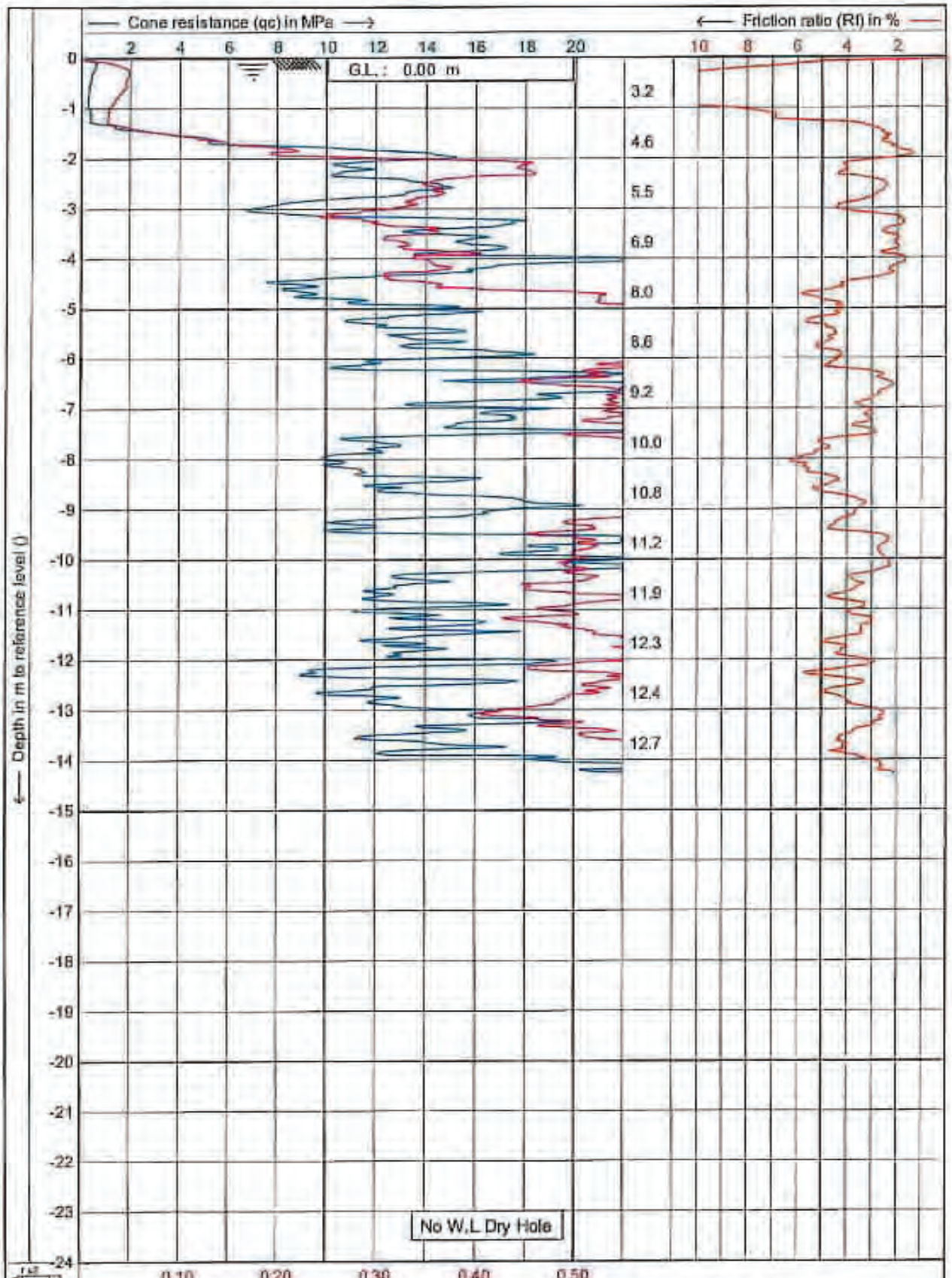
Project no.: **30868**

CPT no. : **CPT9** 1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. 0.00 m
3.1
3.7
4.0
4.6
4.8
3.4
3.2
2.0
1.8
31.1 ->
Hole Collapsed
Depth in m to reference level ()
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIIP.S12008
Project no.: 30868
CPT no. : CPT10
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L : 0.00 m
Depth in m to reference level (-)
2.2
3.2
3.6
3.8
4.0
3.9
3.7
3.5
4.7
5.4
No W.L Hole Collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 14/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT11
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
No W.L Hole Collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 14/07/2015
Cone no. : S15CFIP.S12008
Project no.: 30868
CPT no. : CPT12
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

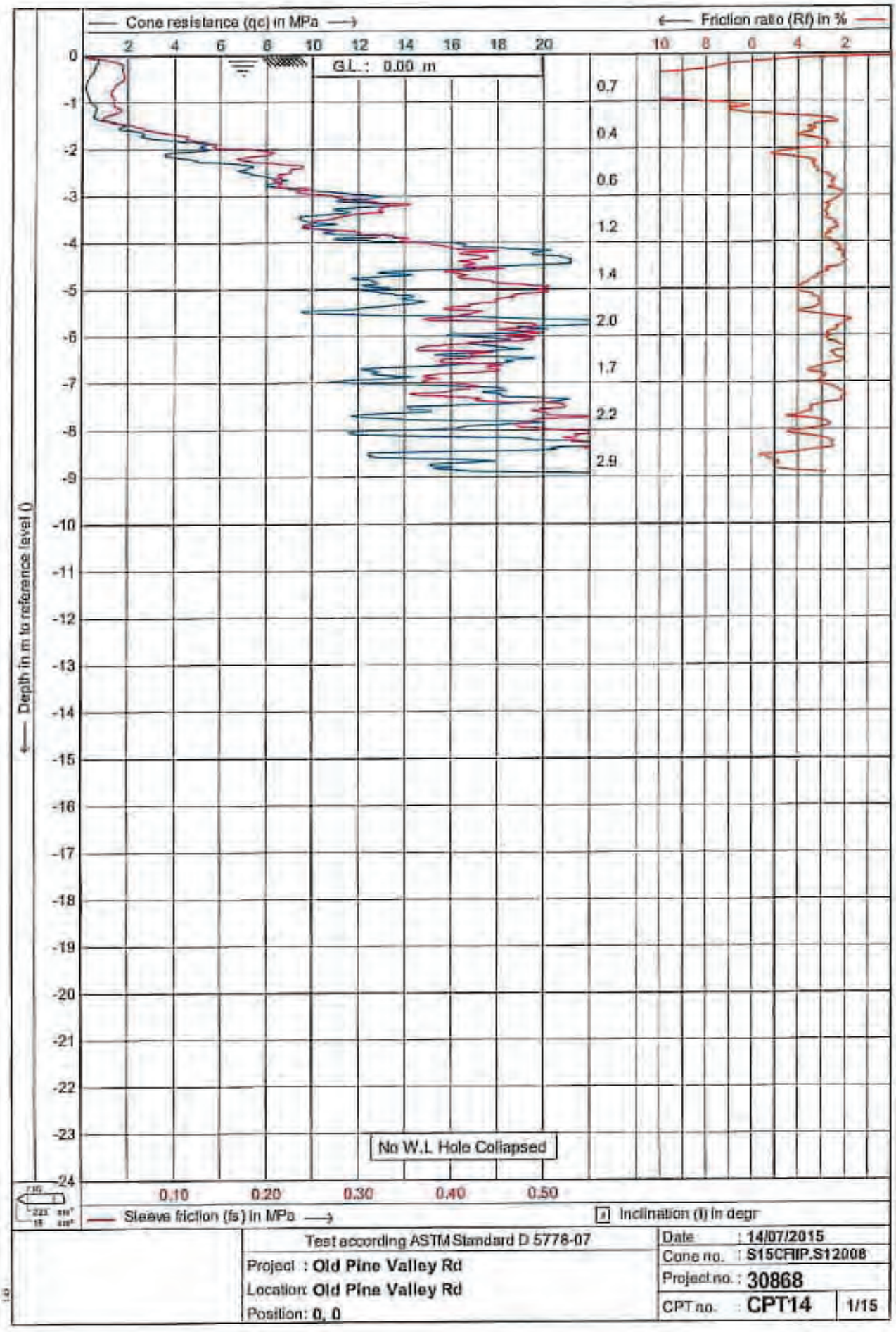
Position: **0, 0**

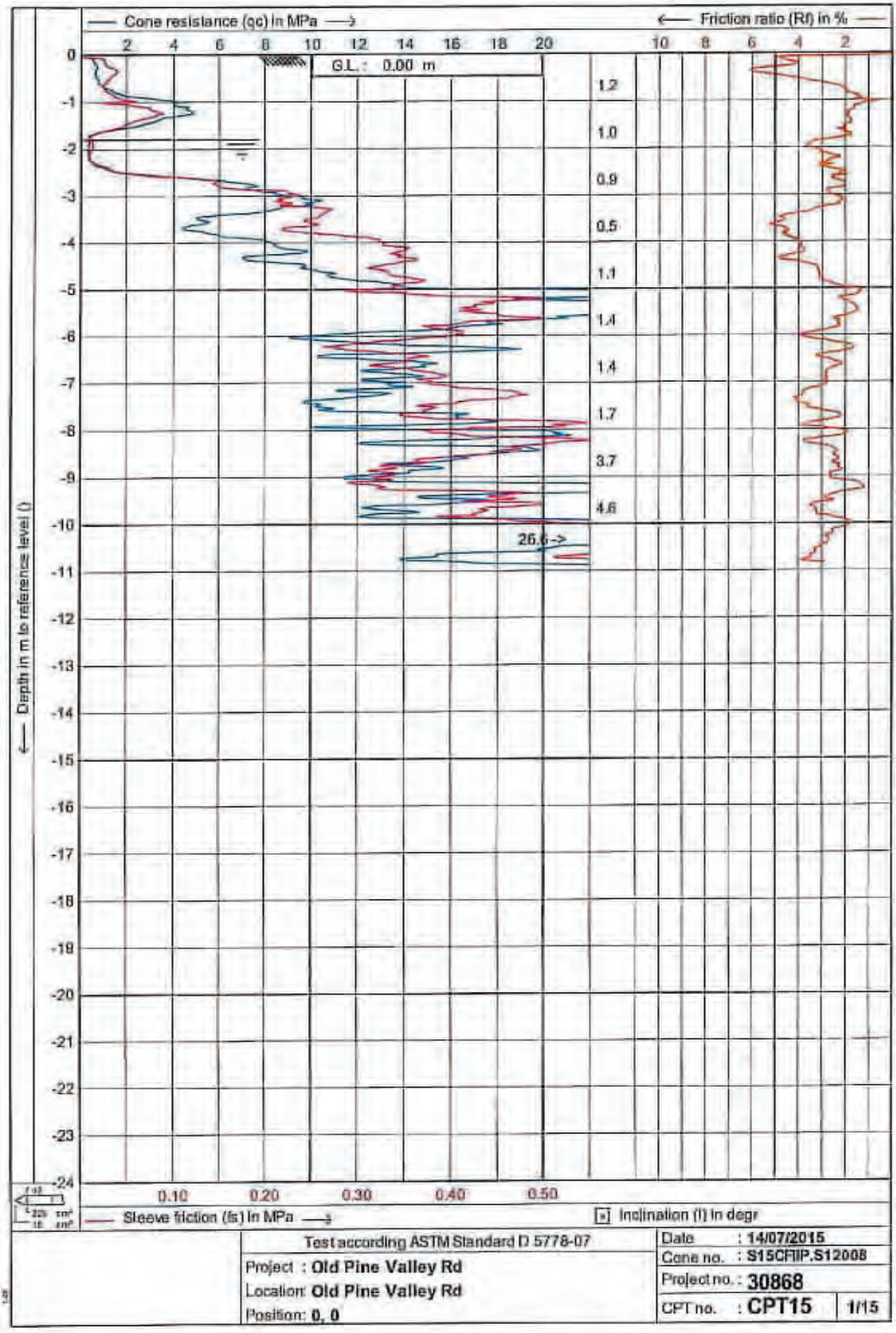
Date : **14/07/2015**

Cone no. : **S15CFIP.S12008**

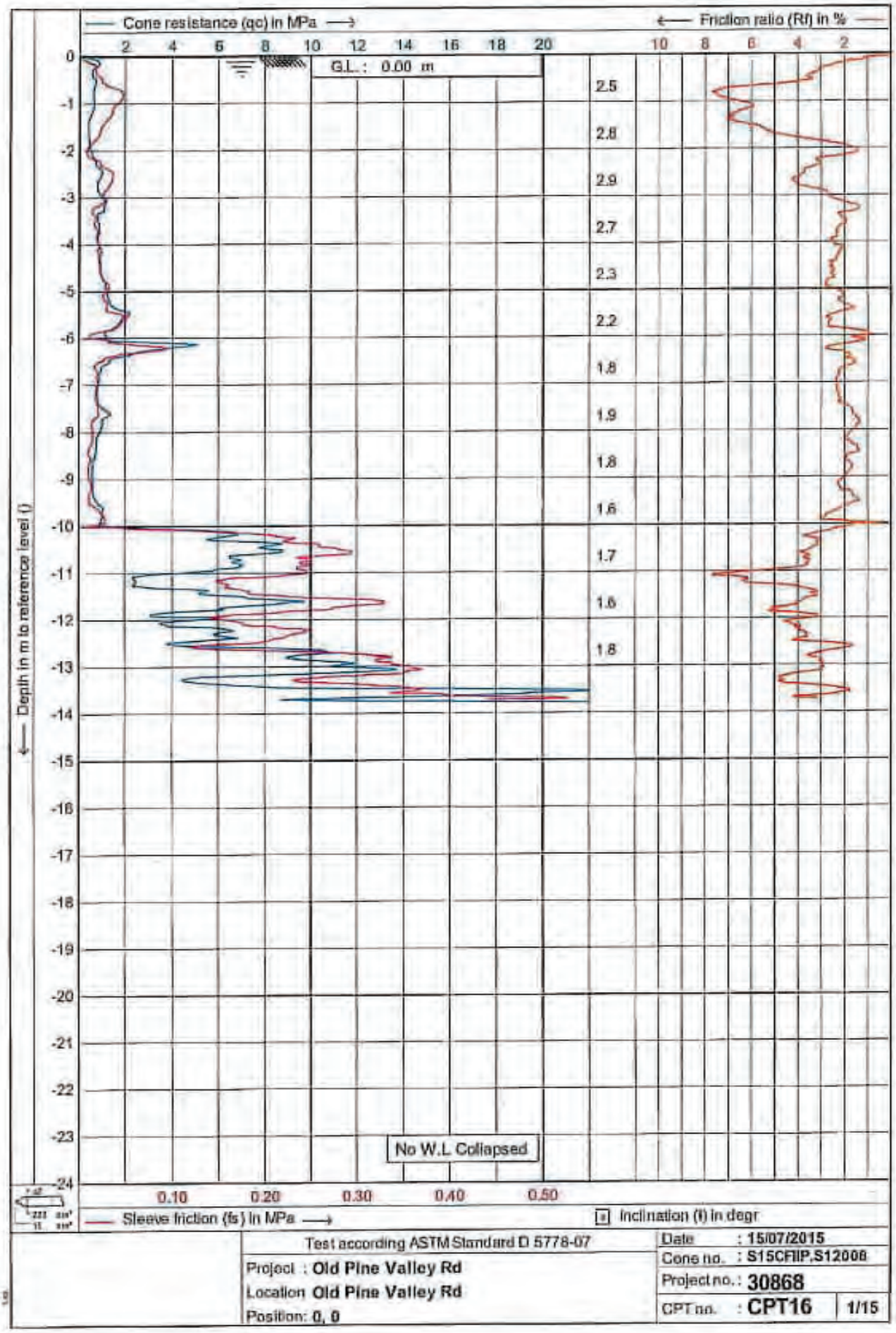
Project no. : **30868**

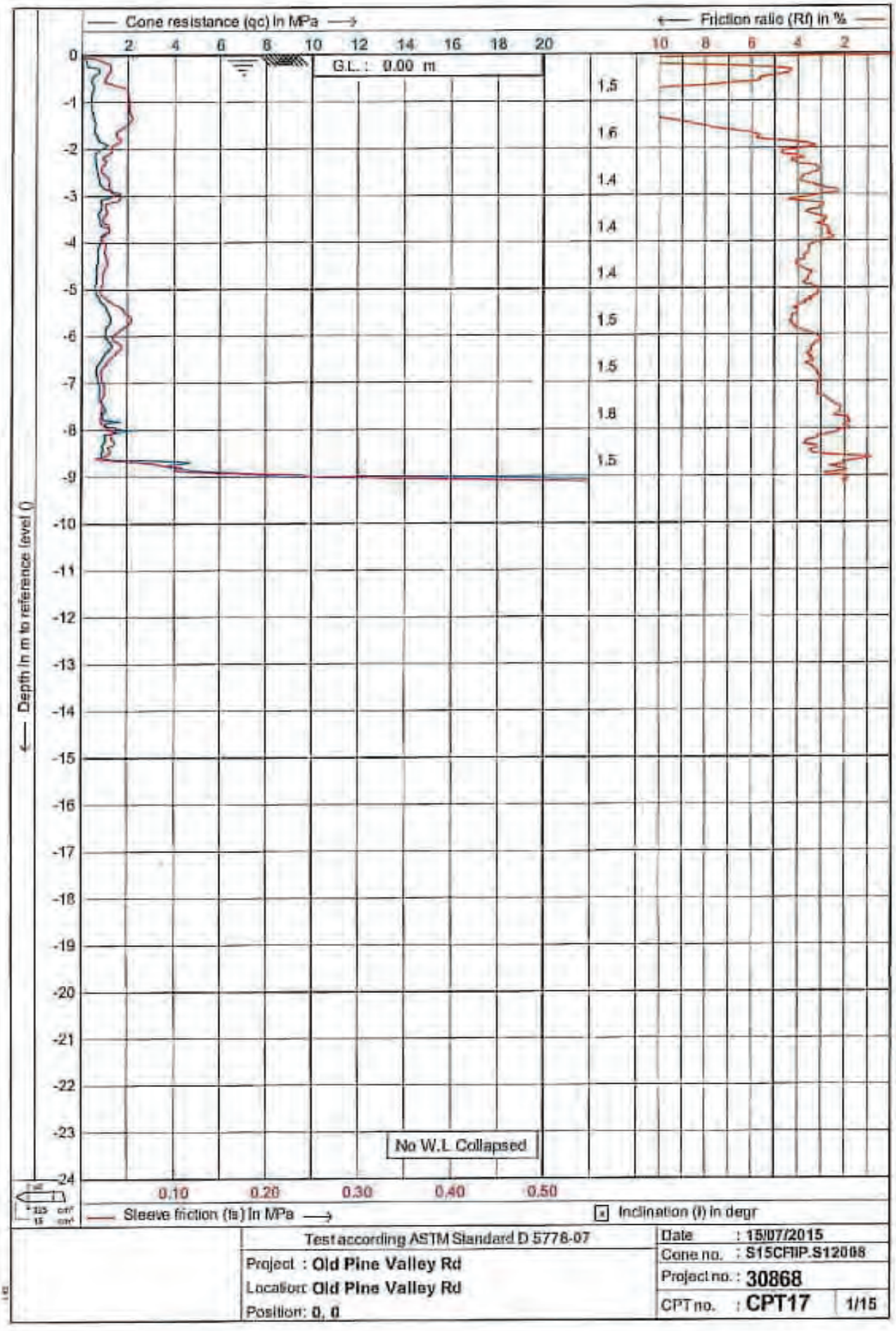
CPT no. : **CPT13** 1/15

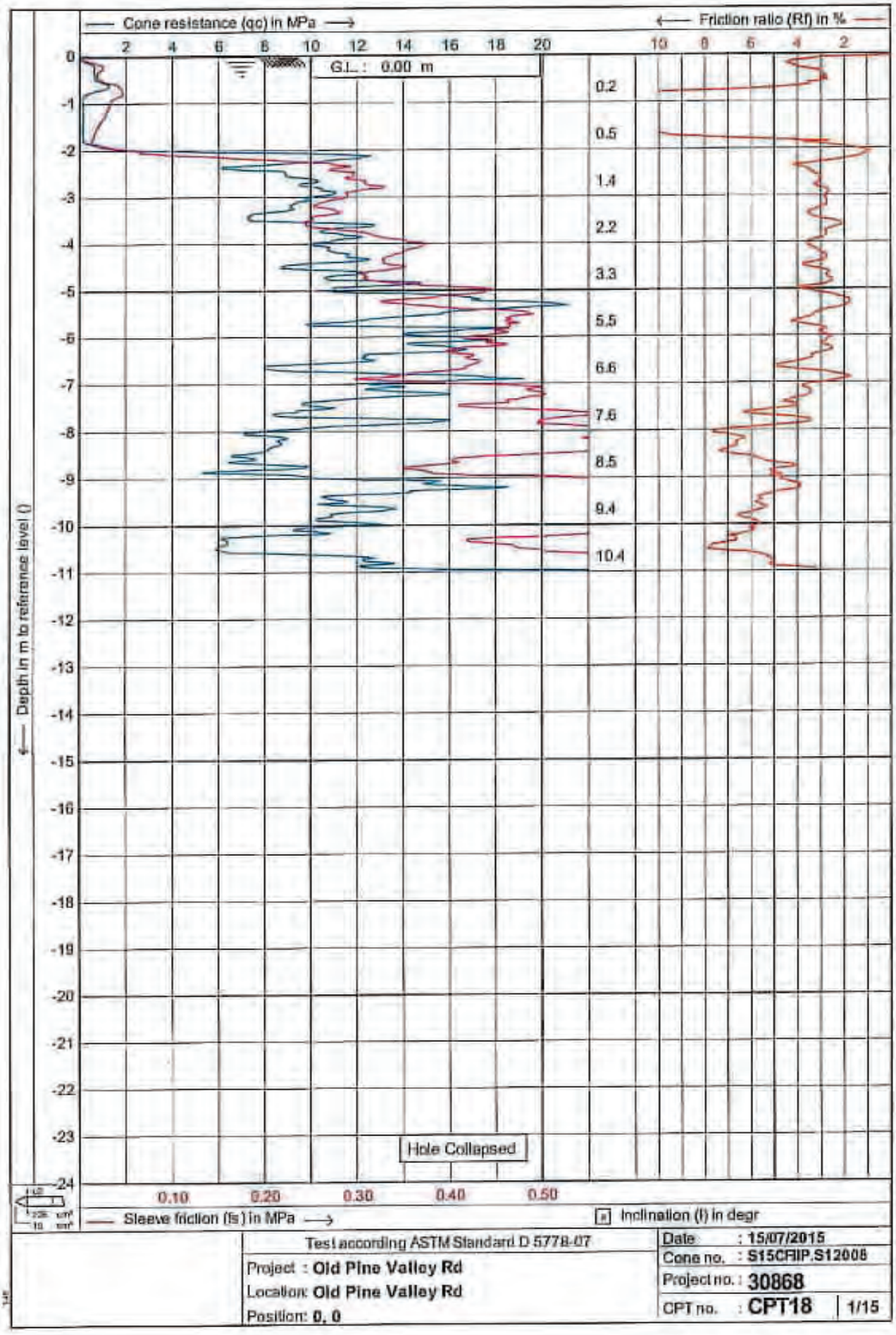

Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L.: 0.00 m
Depth in m to reference level ()
0.7
0.4
0.6
1.2
1.4
2.0
1.7
2.2
2.9
No W.L Hole Collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 14/07/2015
Cone no. : S15CRIP.S12008
Project no. : 30868
CPT no. : CPT14
1/15

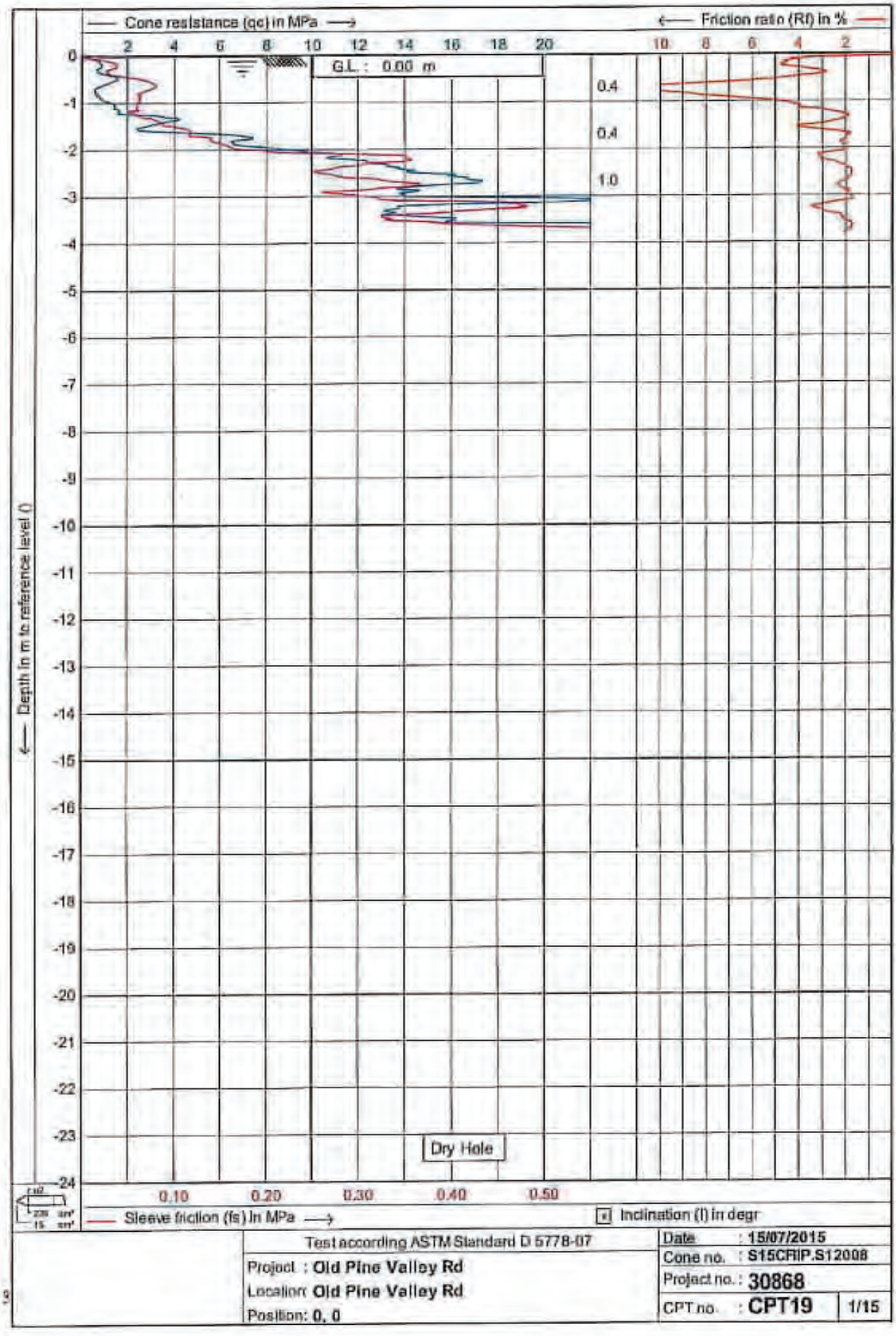


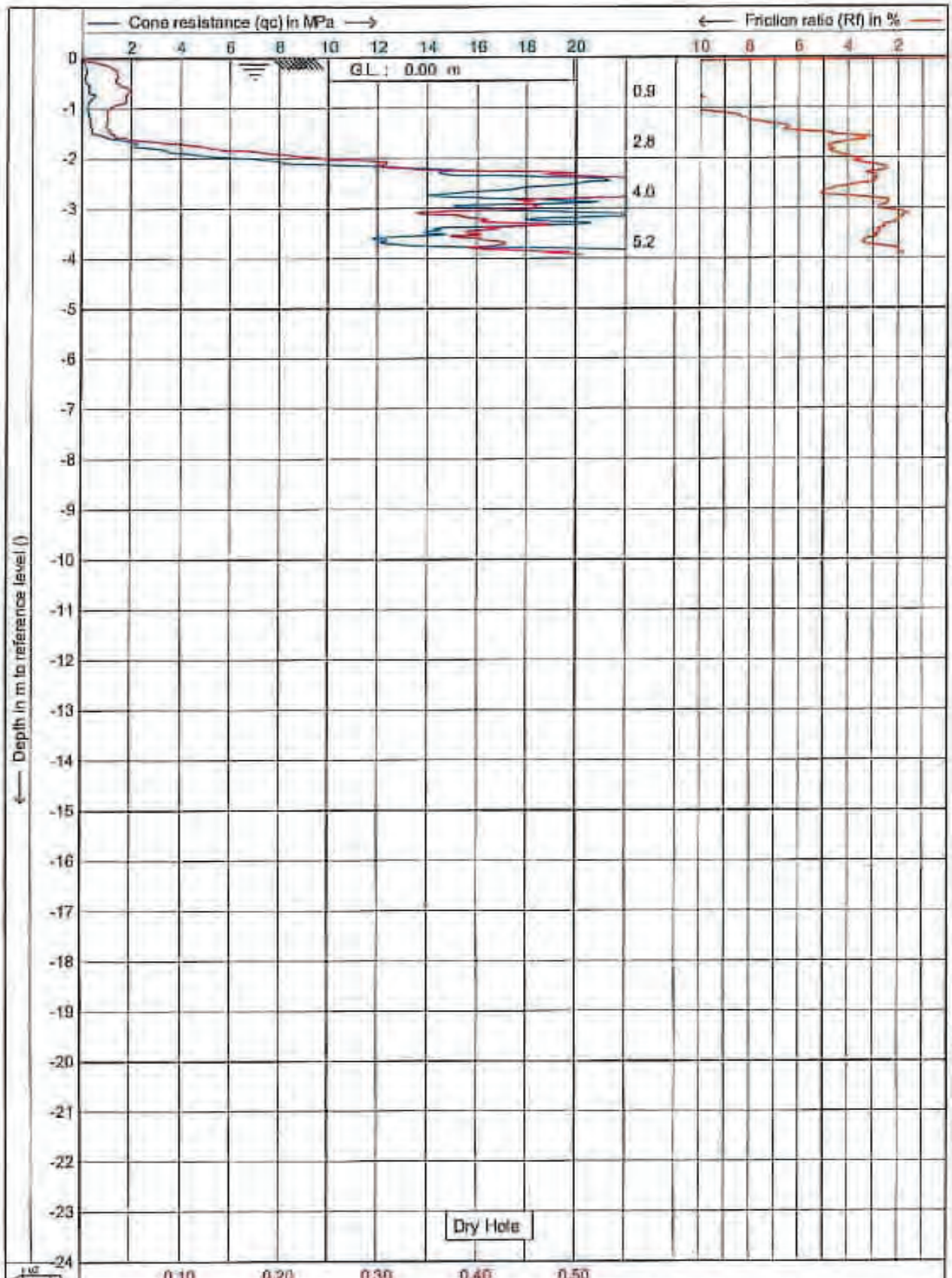
	Test according ASTM Standard D 5778-07	Date : 14/07/2015
	Project : **Old Pine Valley Rd**	Cone no. : **S15CFIIP,S12008**
	Location: **Old Pine Valley Rd**	Project no.: **30868**
	Position: **0, 0**	CPT no. : **CPT15** 1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L.: 0.00 m
Depth in m to reference level ()
No W.L Collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIIP,S12008
Project no.: 30868
CPT no. : CPT16
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L.: 0.00 m
Depth in m to reference level ()
No W.L Collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT17
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Hole Collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIP.S12008
Project no. : 30868
CPT no. : CPT18
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Dry Hole
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIP.S12008
Project no.: 30868
CPT no. : CPT19
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

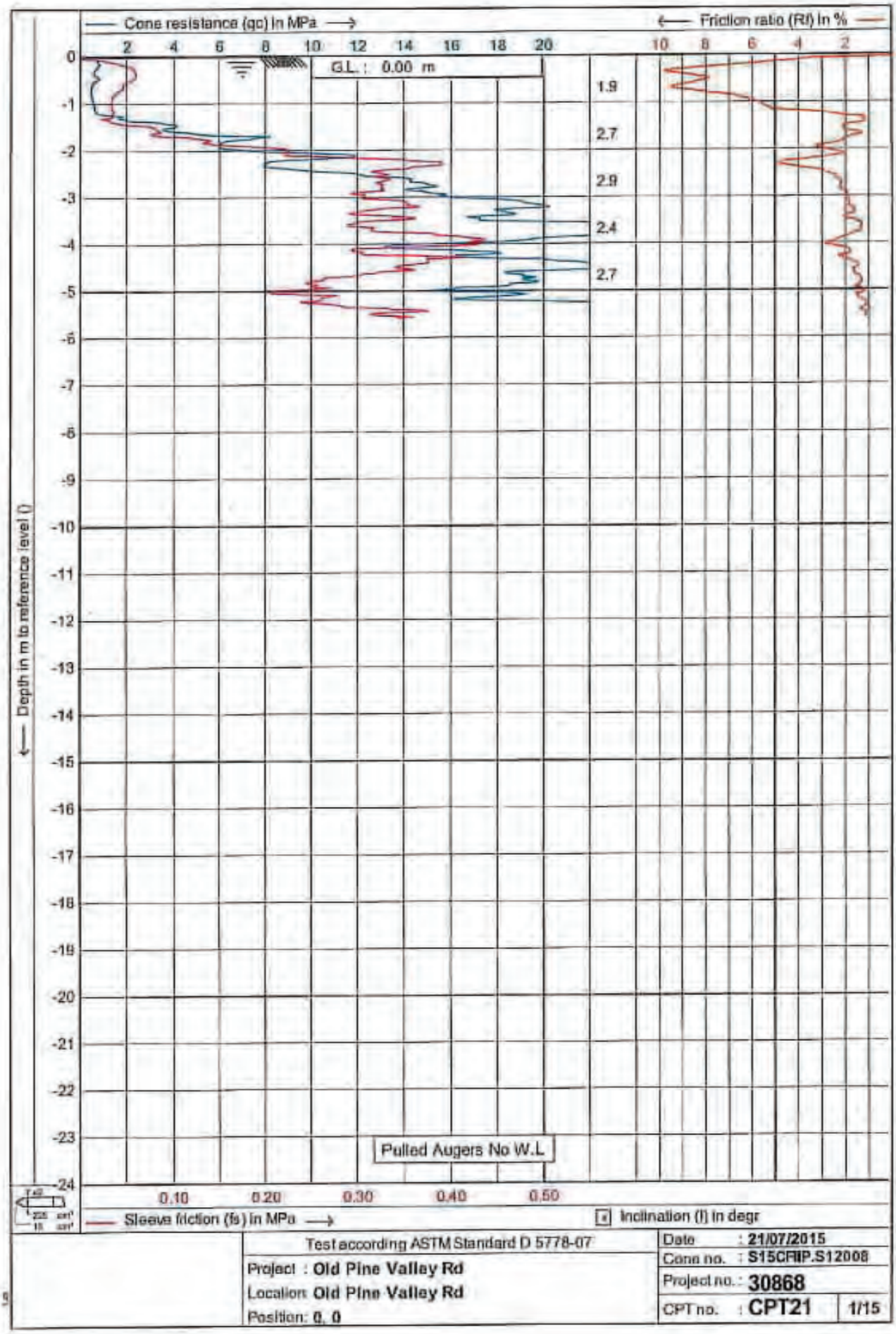
Position: **0, 0**

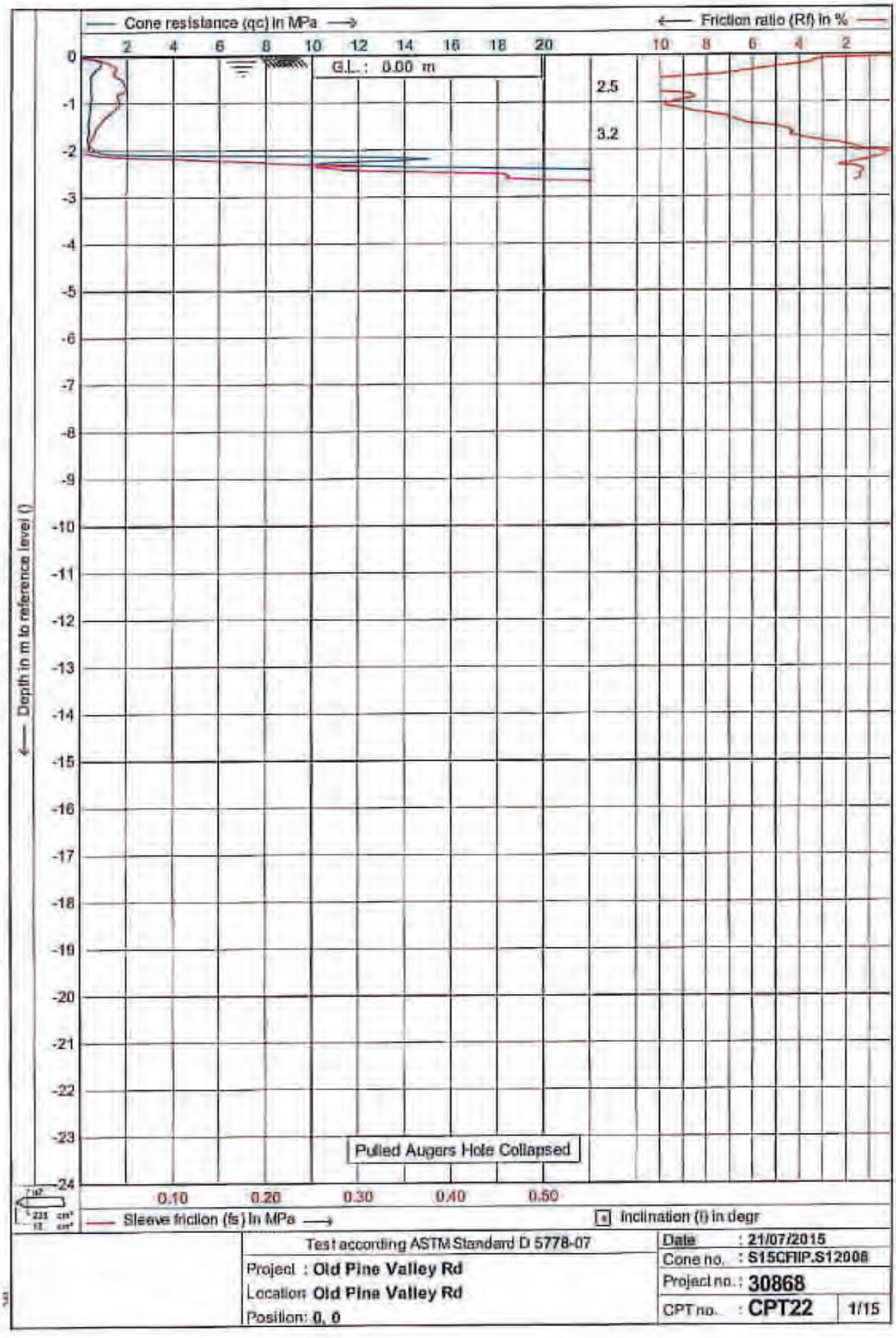
Date : 15/07/2015

Cone no. : S15CFIIP,S12008

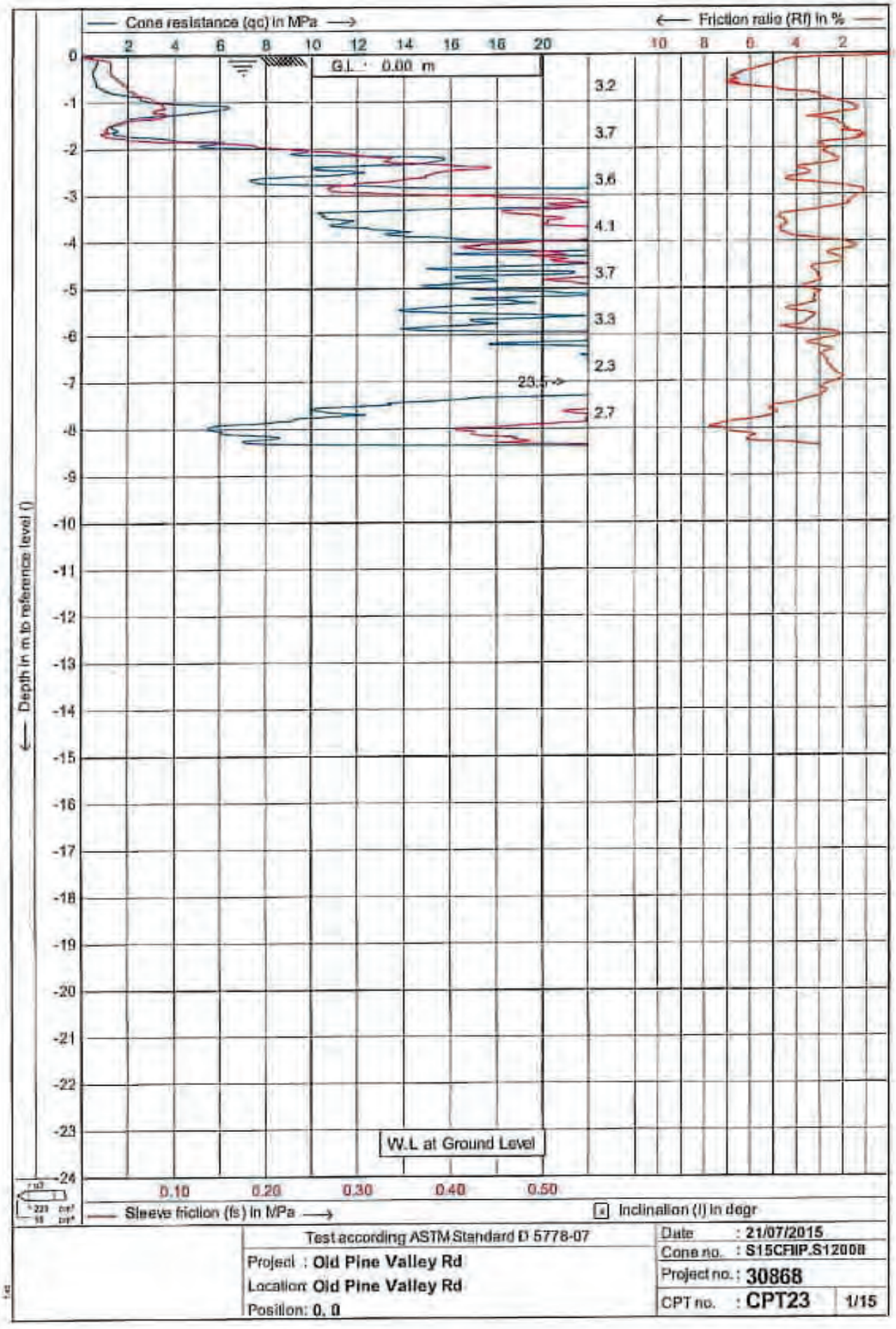
Project no. : **30868**

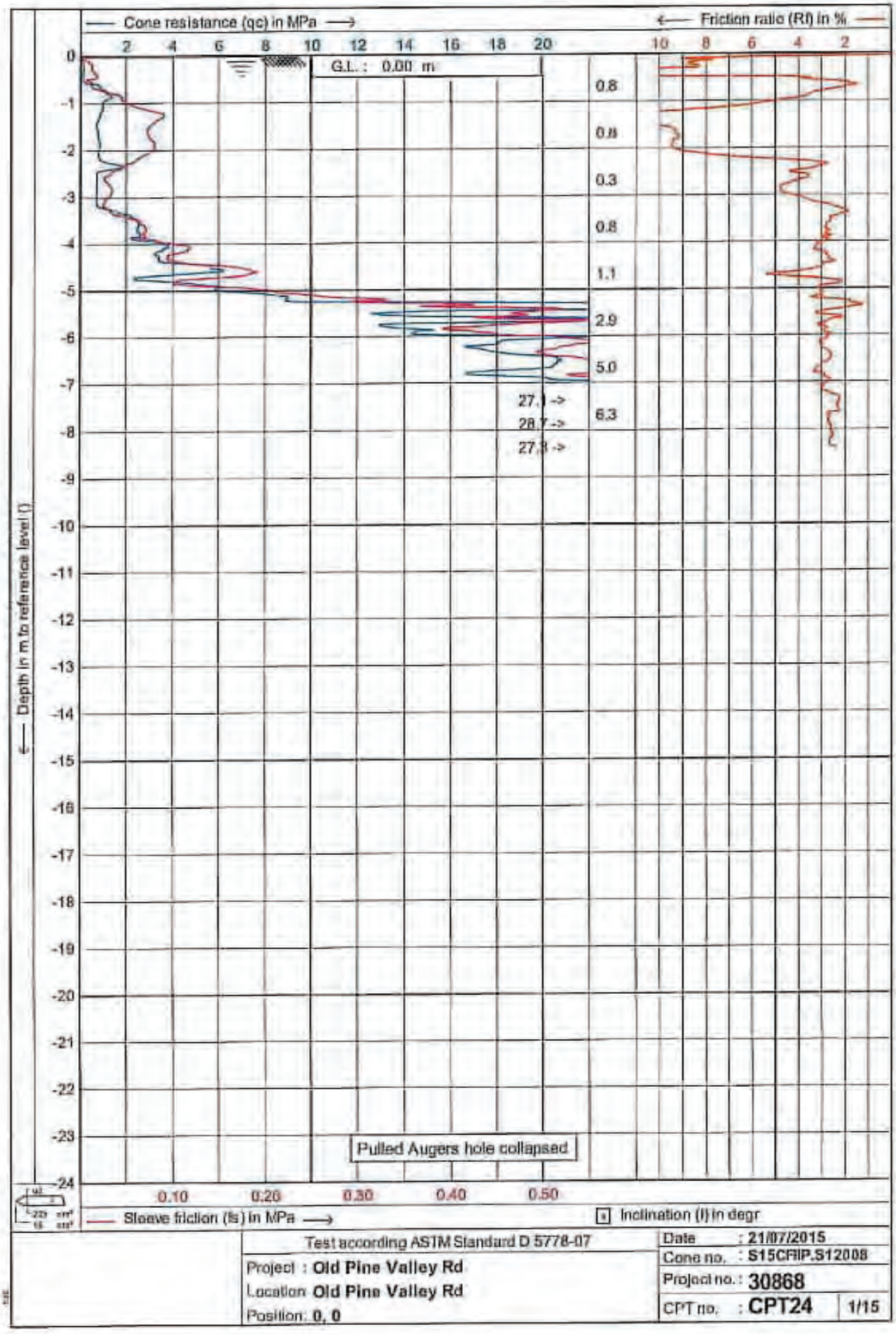
CPT no. : **CPT20** 1/15

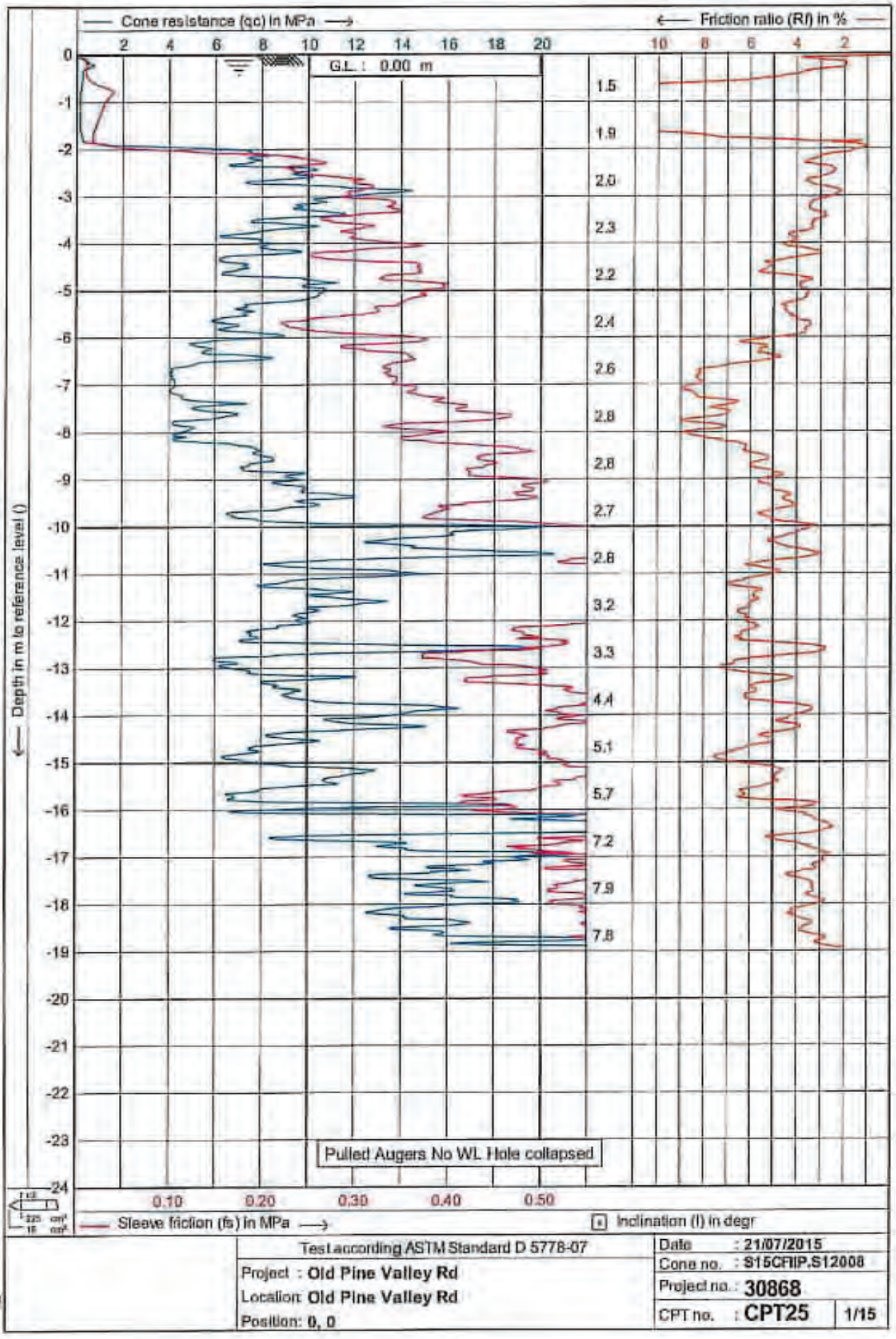

Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
1.9
2.7
2.9
2.4
2.7
Pulled Augers No W.L
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIP.S12008
Project no.: 30868
CPT no. : CPT21
1/15

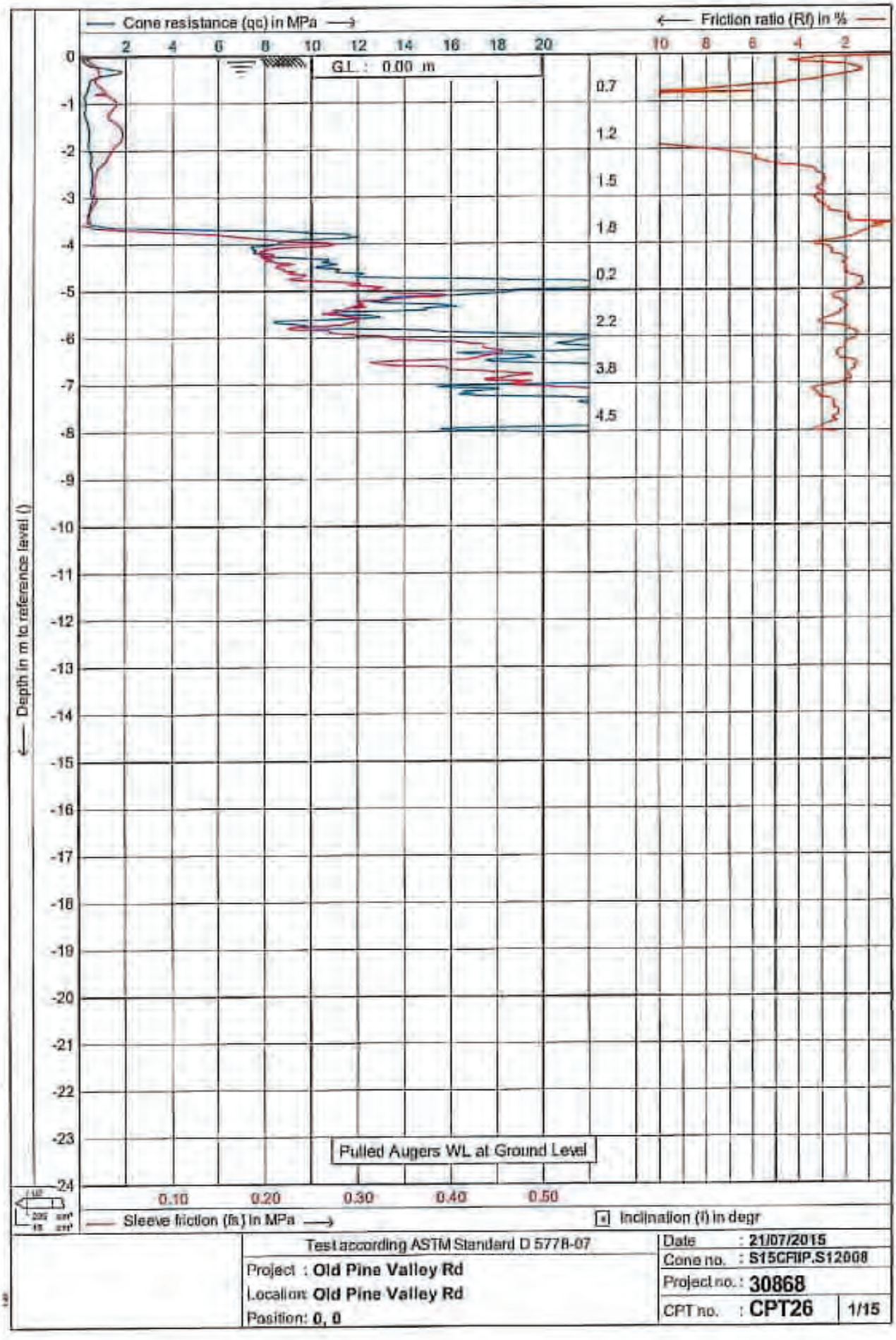


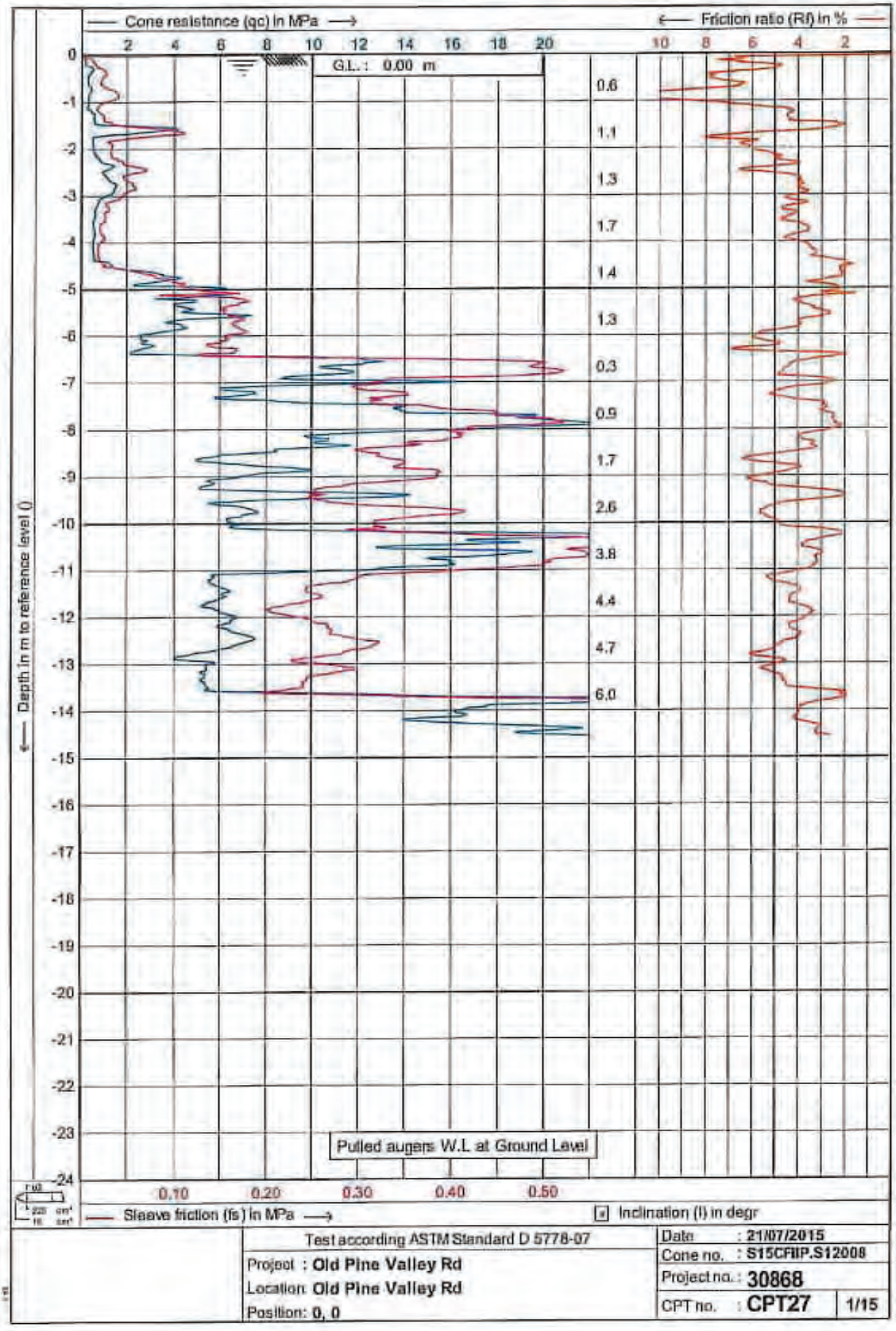
Test according ASTM Standard D 5778-07	Date	: 21/07/2015
Project : **Old Pine Valley Rd**	Cone no.	: S15CFIP.S12008
Location: **Old Pine Valley Rd**	Project no.:	**30868**
Position: **0, 0**	CPT no.	: **CPT22** 1/15

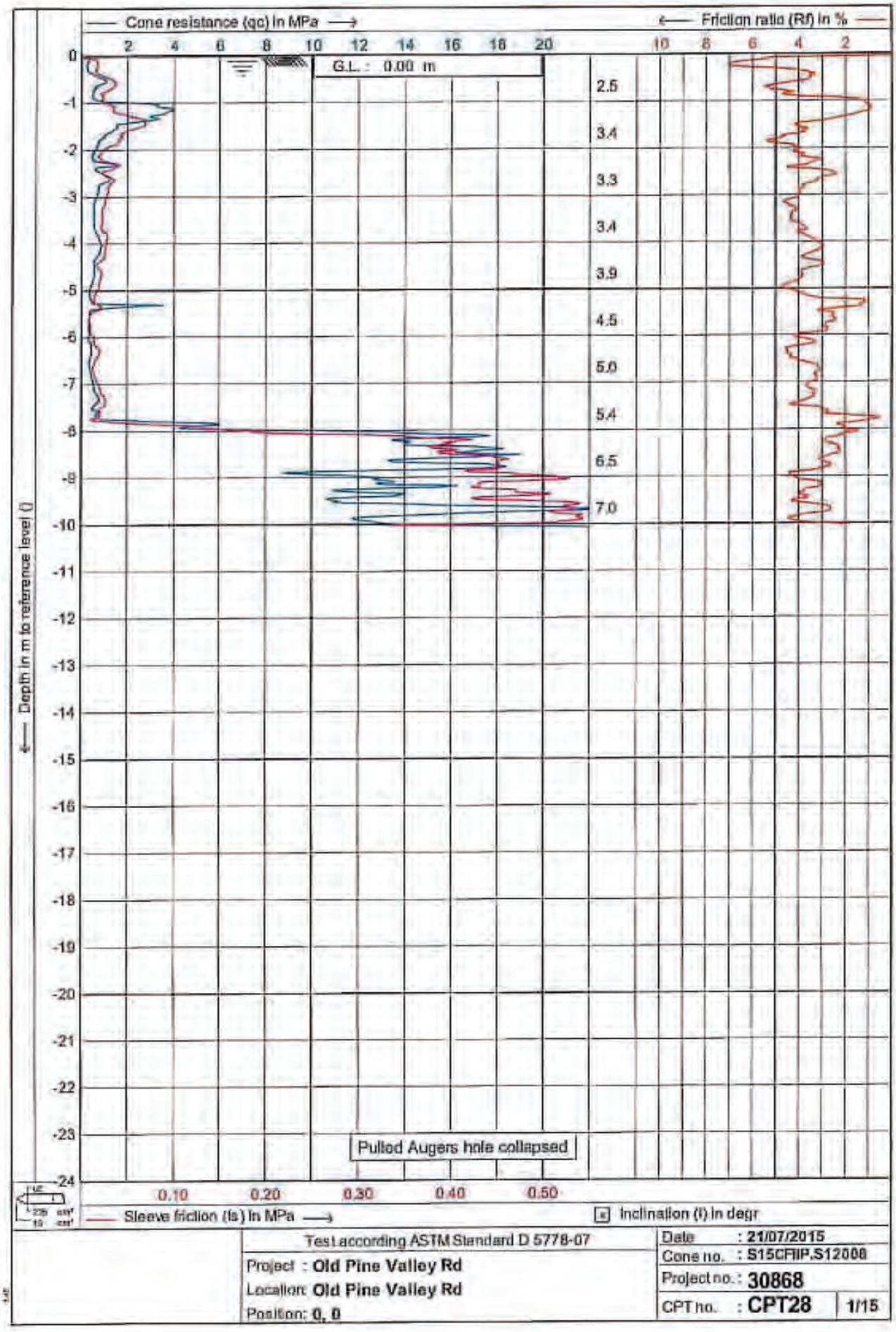

Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
3.2
3.7
3.6
4.1
3.7
3.3
2.3
2.7
23.5
Depth in m to reference level (-)
W.L at Ground Level
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIIP.S12008
Project no.: 30868
CPT no. : CPT23
1/15

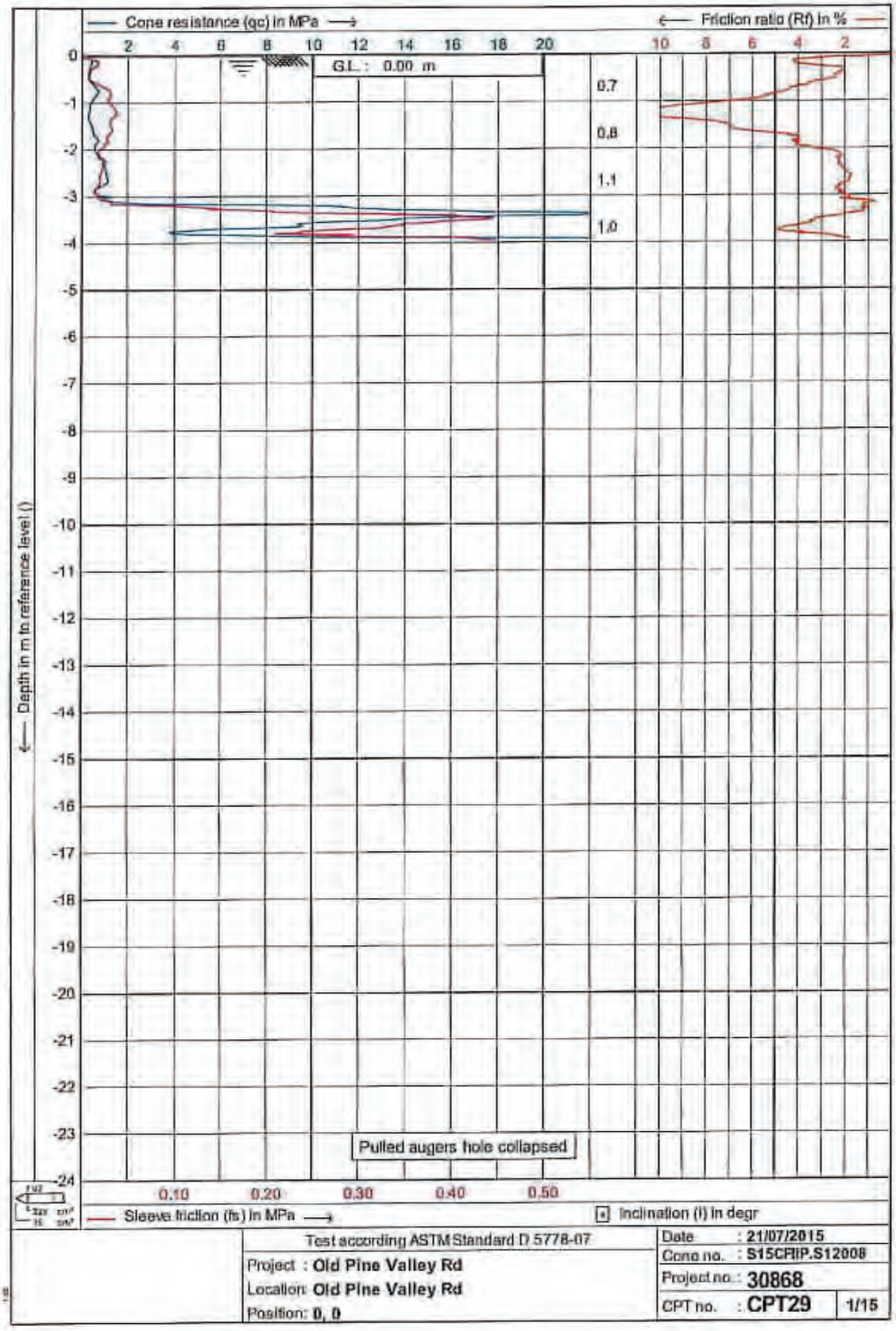

Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L.: 0.00 m
Depth in m to reference level ()
Pulled Augers hole collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIP.S12008
Project no.: 30868
CPT no. : CPT24
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Pulled Augers No WL Hole collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT25
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Pulled Augers WL at Ground Level
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIIP.S12008
Project no.: 30868
CPT no. : CPT26
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L.: 0.00 m
Depth in m to reference level ()
0.6
1.1
1.3
1.7
1.4
1.3
0.3
0.9
1.7
2.6
3.8
4.4
4.7
6.0
Pulled augers W.L at Ground Level
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIIP.S12008
Project no.: 30868
CPT no. : CPT27
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Pulled Augers hole collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIIP.S12008
Project no.: 30868
CPT no. : CPT28
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

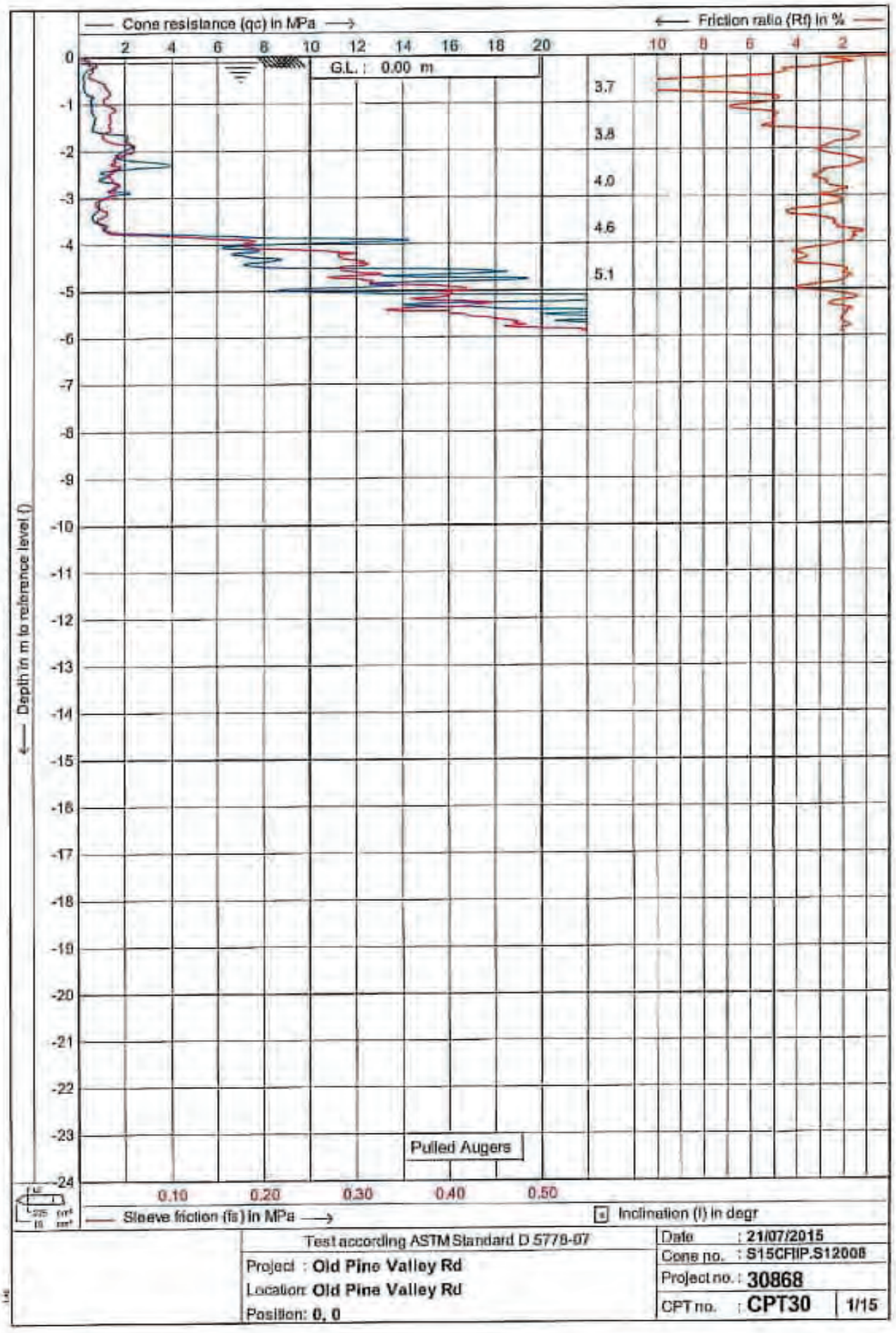
Date : **21/07/2015**

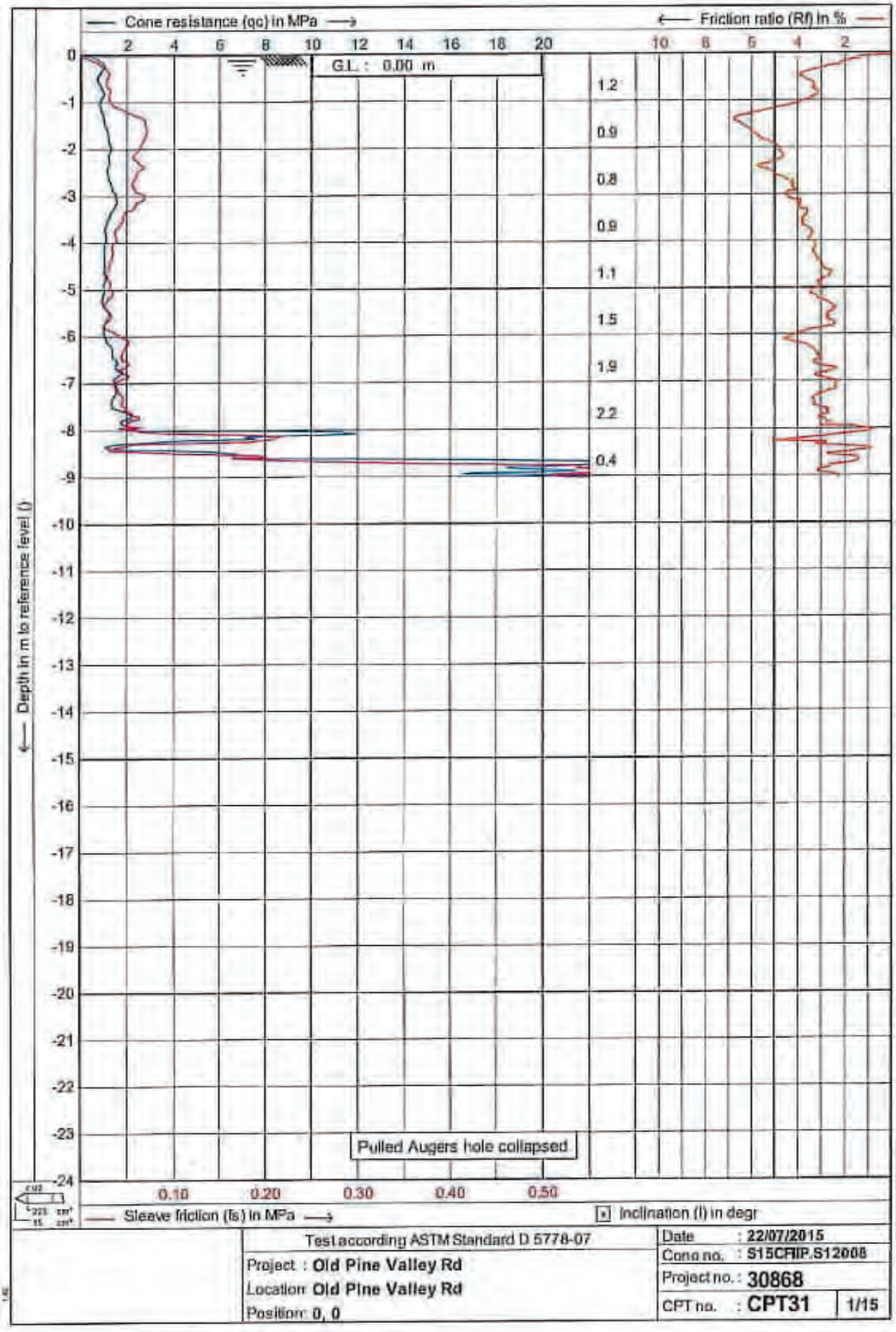
Cone no. : **S15CFIP.S12008**

Project no.: **30868**

CPT no. : **CPT29**

1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
3.7
3.8
4.0
4.6
5.1
Depth in m to reference level (-)
Pulled Augers
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 21/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT30
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location **Old Pine Valley Rd**

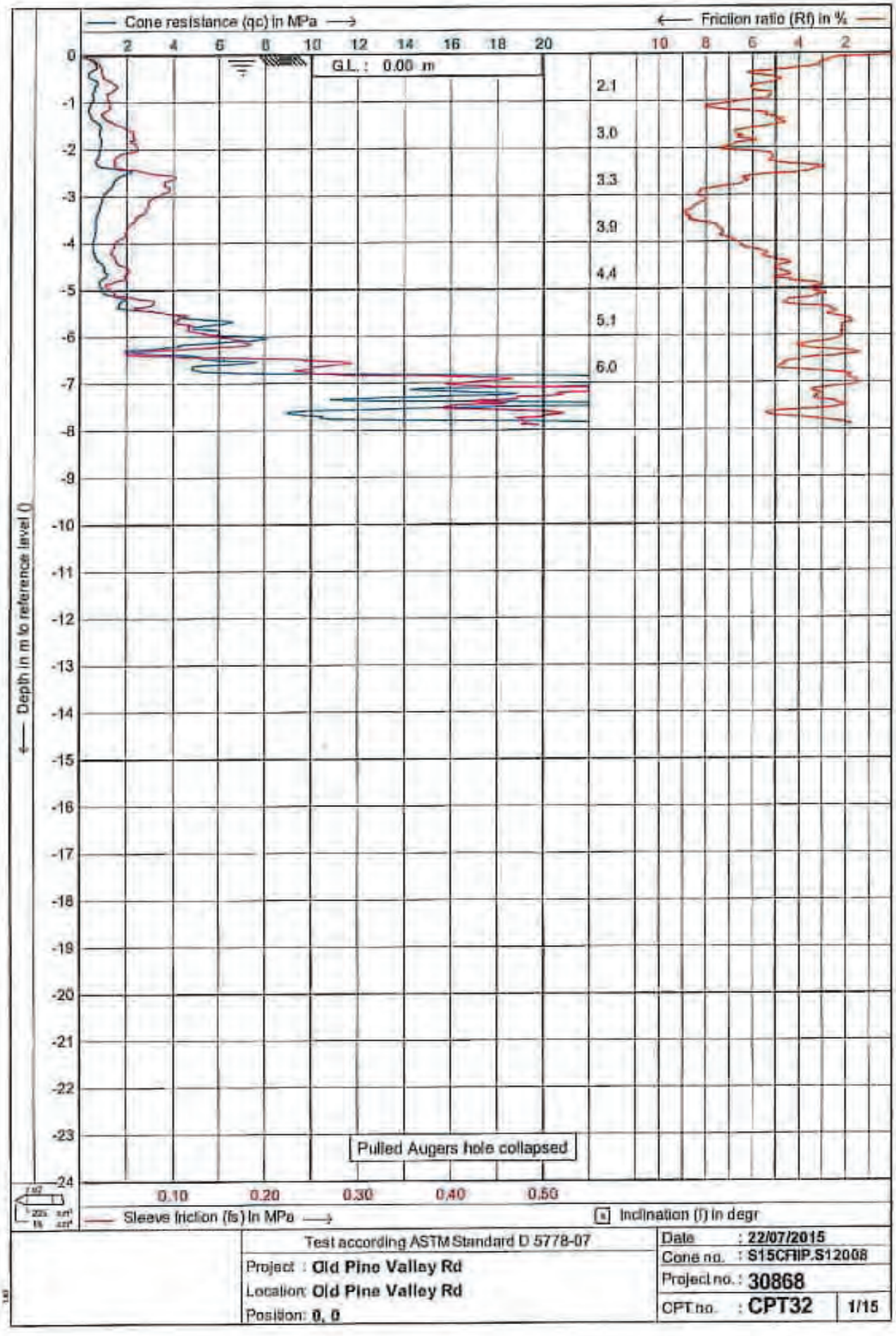
Position: **0, 0**

Date : **22/07/2015**

Cone no. : **S15CFIP.S12008**

Project no.: **30868**

CPT no. : **CPT31** 1/15



Test according ASTM Standard D 5778-07

Project : Old Pine Valley Rd

Location: Old Pine Valley Rd

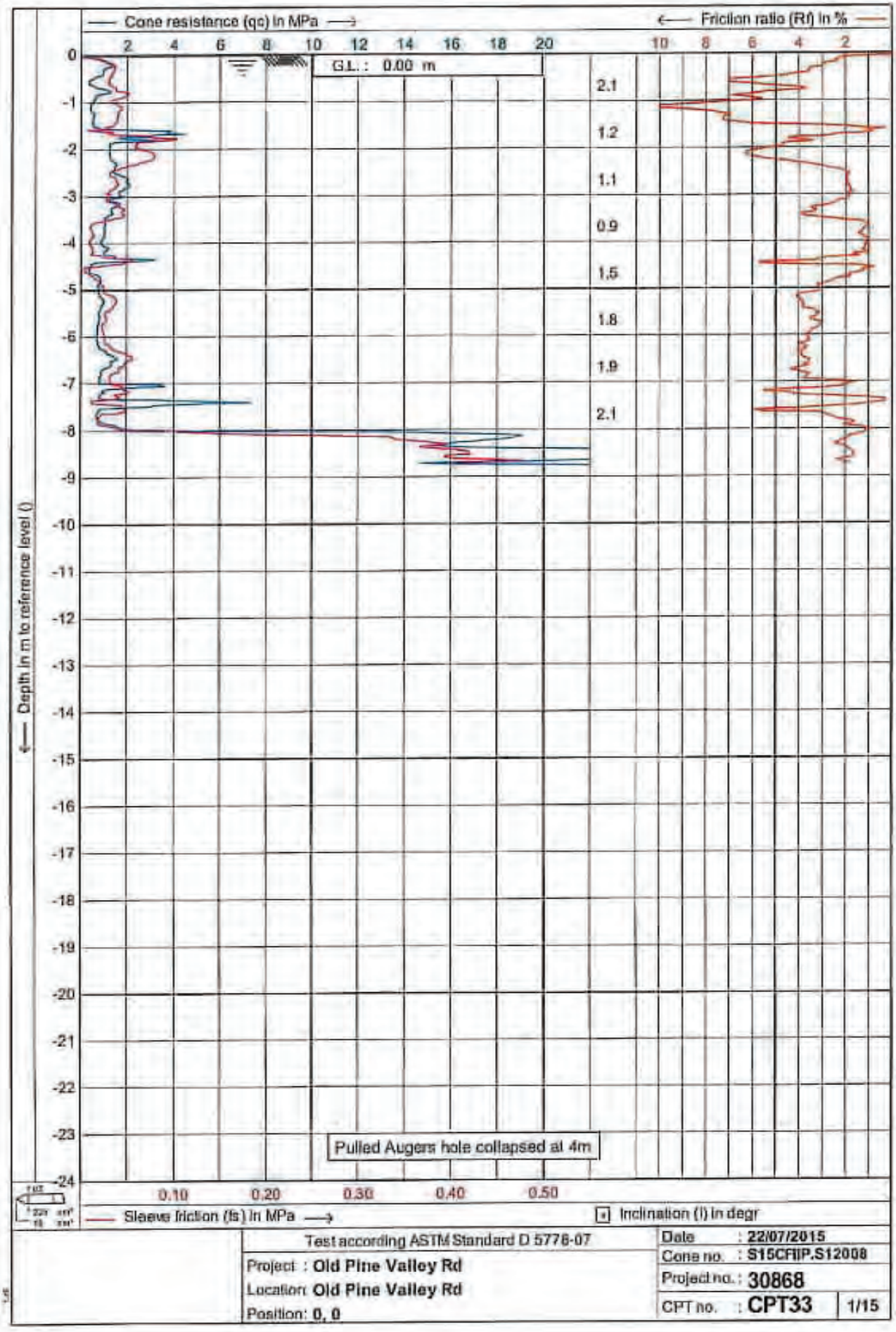
Position: 0, 0

Date : 22/07/2015

Cone no. : S15CFIP.S12008

Project no.: 30868

CPT no. : CPT32 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

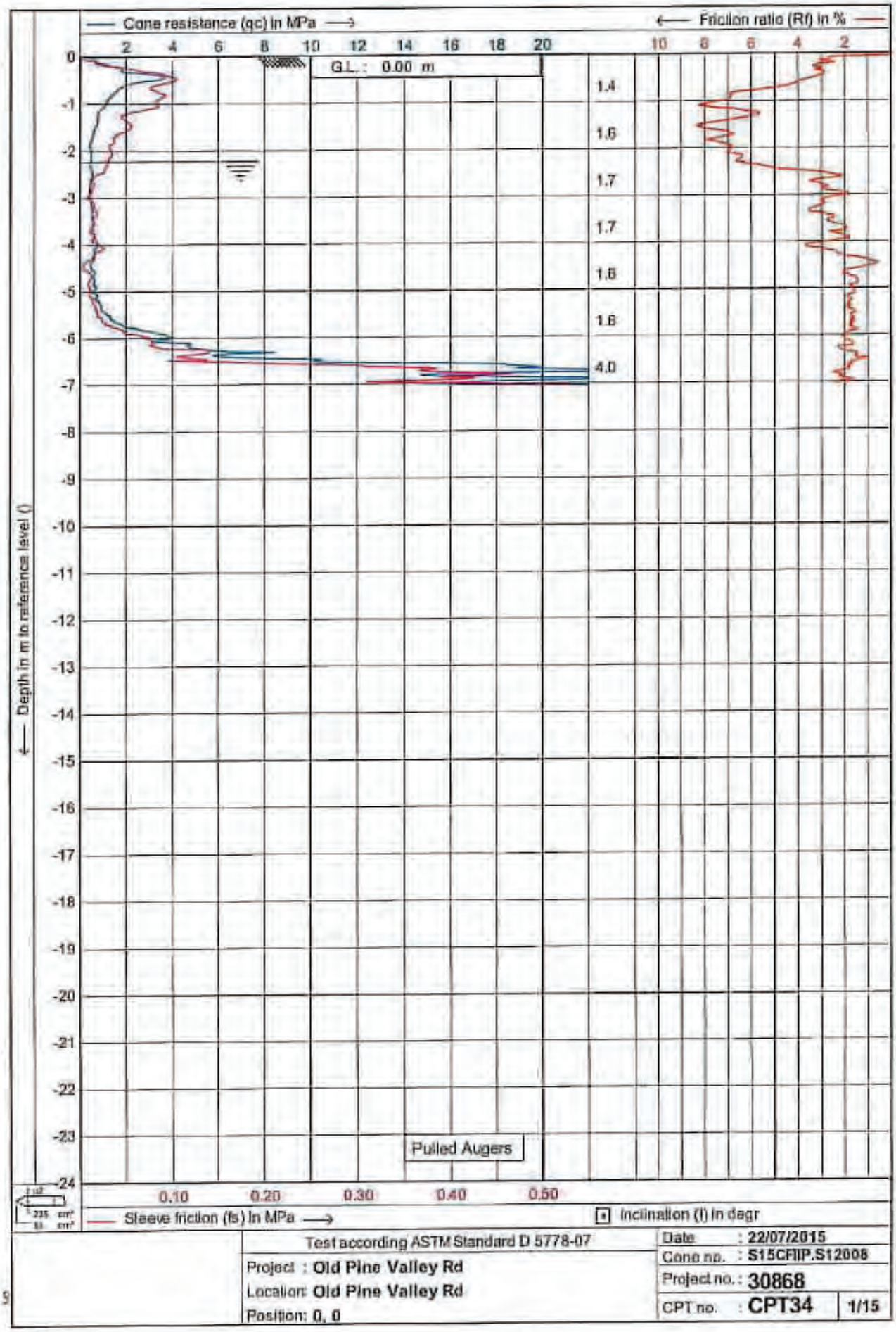
Position: **0, 0**

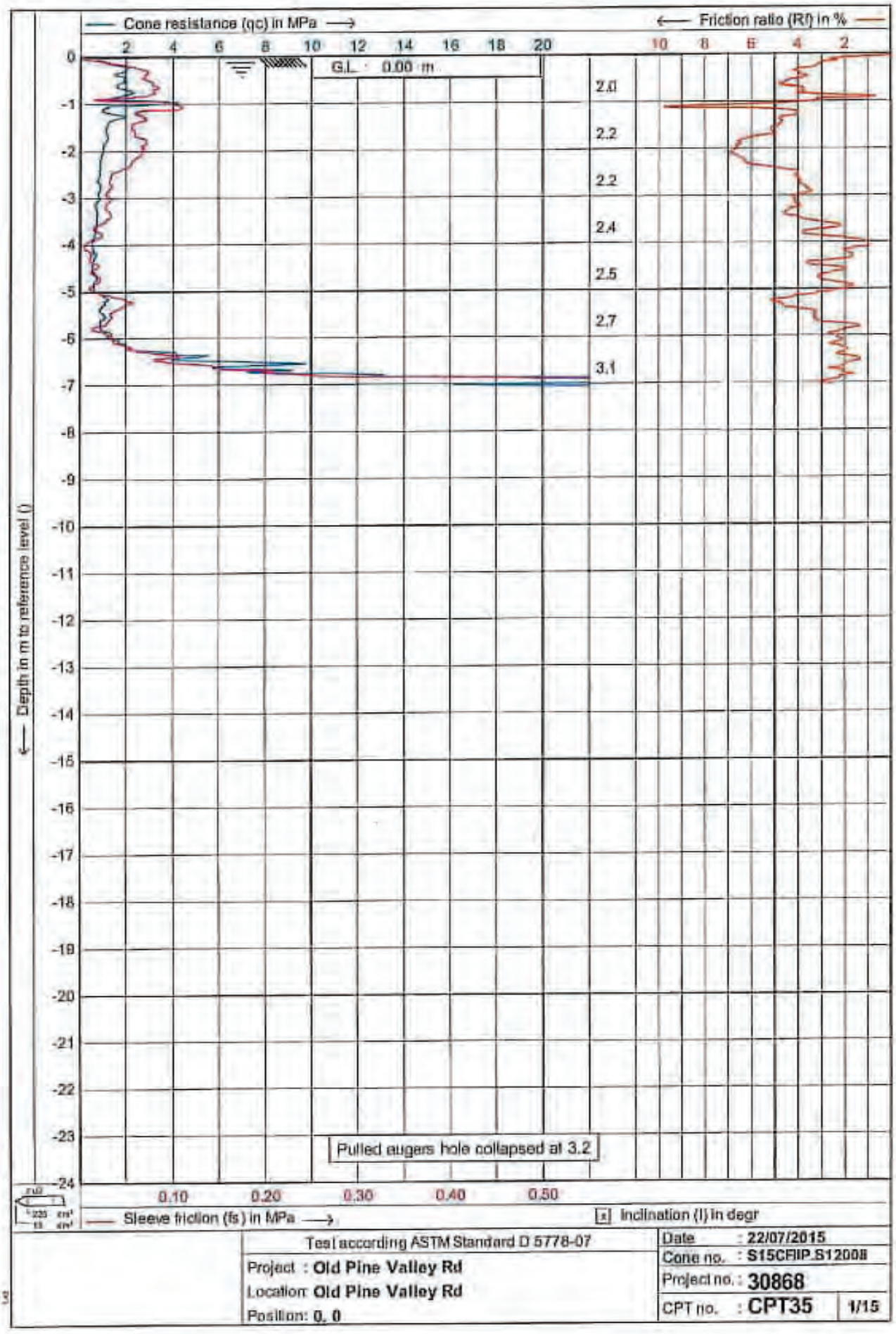
Date : **22/07/2015**

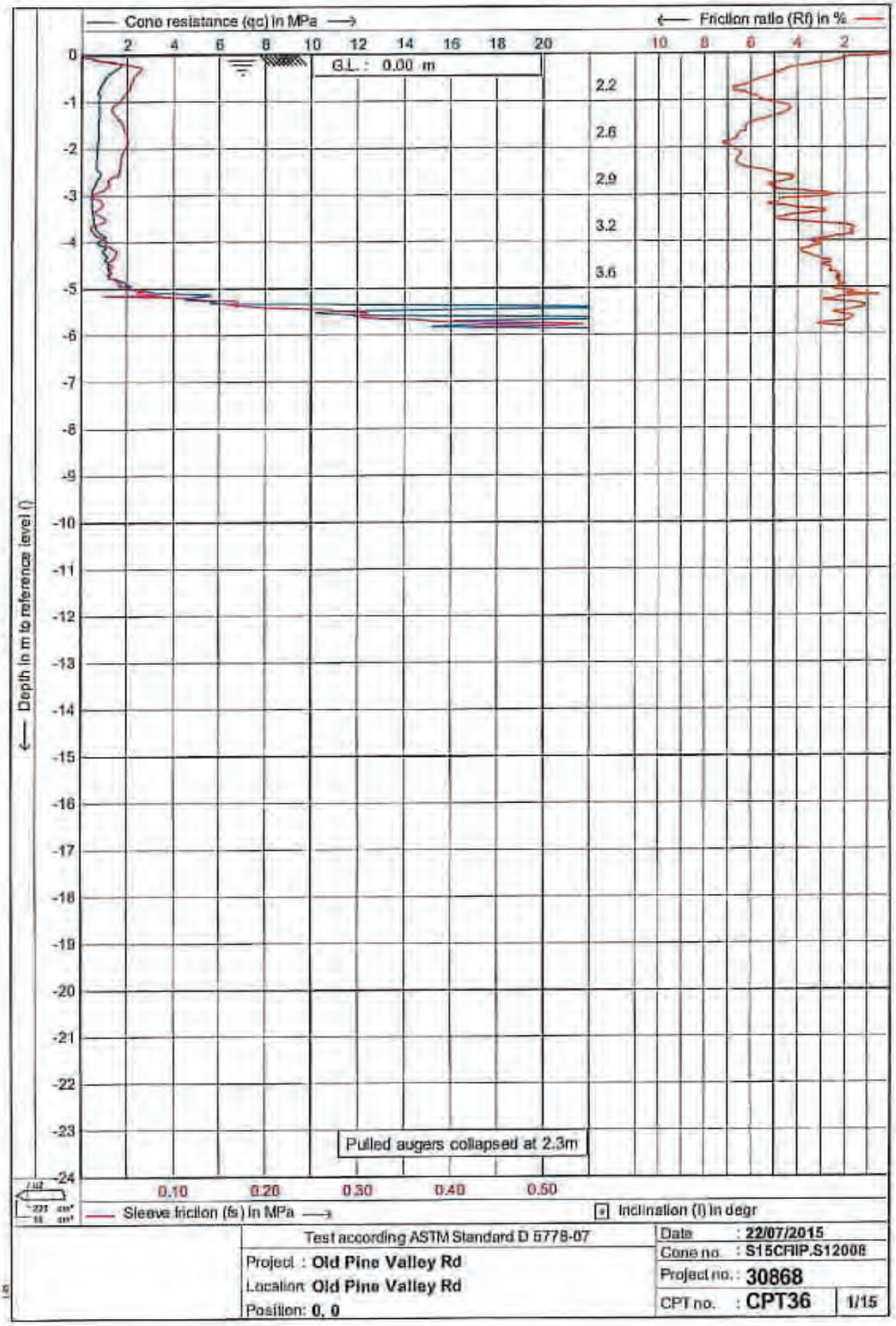
Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT33** 1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L.: 0.00 m
Depth in m to reference level ()
Pulled Augers
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 22/07/2015
Cone no. : S15CFIIP.S12006
Project no.: 30868
CPT no. : CPT34
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Pulled augers hole collapsed at 3.2
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 22/07/2015
Cone no. : S15CFIP.S12008
Project no. : 30868
CPT no. : CPT35
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

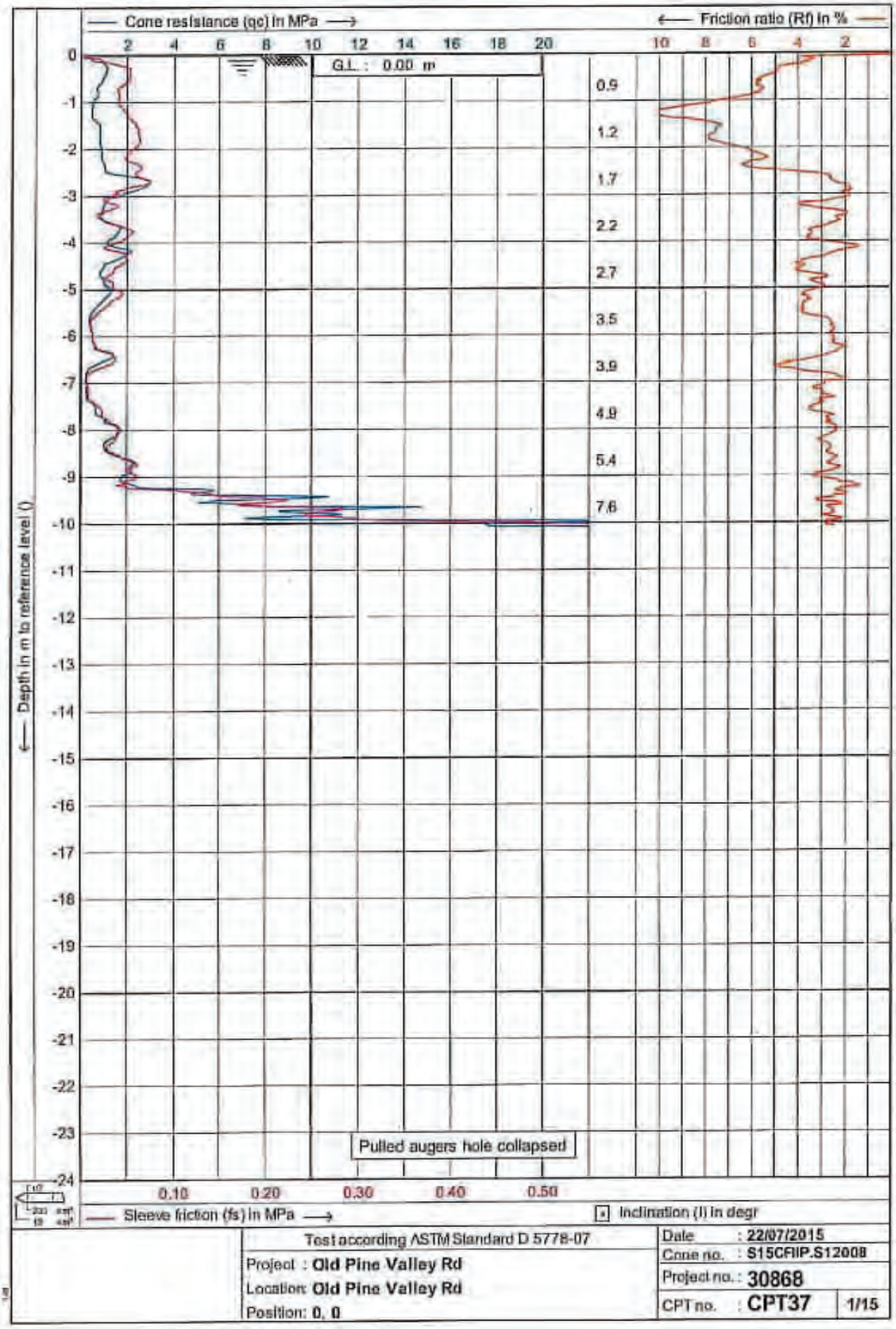
Date : **22/07/2015**

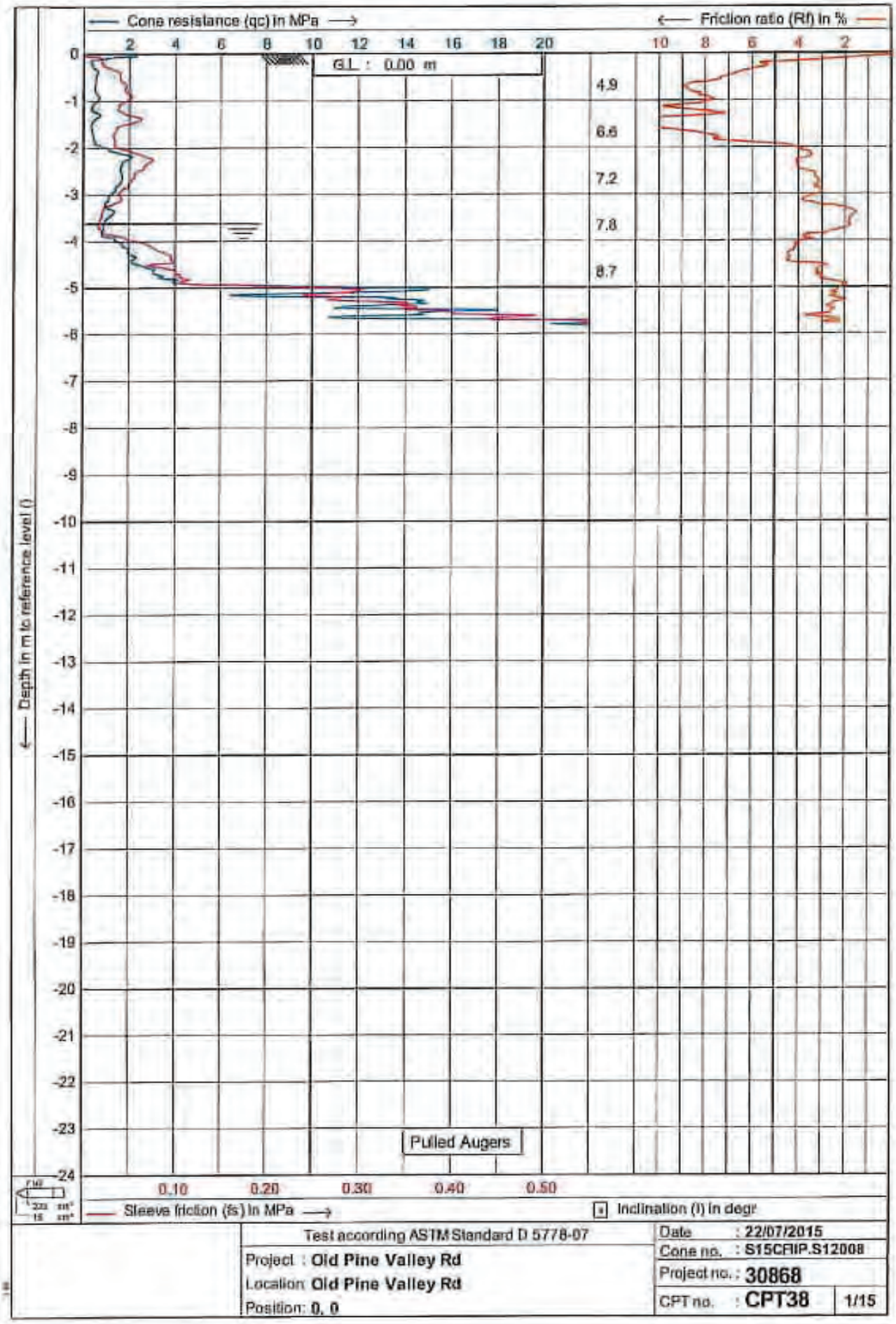
Cone no. : **S15CRIP.S12008**

Project no. : **30868**

CPT no. : **CPT36**

1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
Depth in m to reference level ()
Pulled augers hole collapsed
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 22/07/2015
Cone no. : S15CFIIP.S12008
Project no.: 30868
CPT no. : CPT37
1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L : 0.00 m
4.9
6.6
7.2
7.8
8.7
Depth in m to reference level ()
Pulled Augers
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 22/07/2015
Cone no. : S15CFIP.S12008
Project no. : 30868
CPT no. : CPT38
1/15

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA01
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdale west-soil	LOCATION: Old Pine Valley Road	JOB No: 30868
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 11/3/16
	DRILL METHOD: HA	HOLE FINISHED: 11/3/16
R.L.:		DRILLED BY: geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: KS/RBE CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, GRAIN, MINERAL COMPOSITION | FLUID LOSS | WATER | BORE RECOVERY (%) | METHOD | CASING | TESTS | ASSMBL | R.L. (m) | DEPTH (m) | GRAPHIC LOG | CLASSIFICATION SYMBOL | MOISTURE CONDITION / WEATHERING | STRENGTH/DENSITY CLASSIFICATION | SHEAR STRENGTH (kPa) | COMPRESSIVE STRENGTH (MPa) | DEFECT SPACING (mm) | SOIL DESCRIPTION (Soil type, minor components, moisture, plasticity or particle size, colour) / ROCK DESCRIPTION (Weathering: Rock type, particle size, colour, minor components; Defects: Type, inclination, thickness, roughness, infilling)

Hole dry on completion

SILT, friable, moist, dark brown

-non plastic, clayey

clayey SILT, low plasticity, moist, yellowish brown

0.5

gravelly SILT, moist, non plastic, yellowish brown, with black oxide gravel

0.5

clayey SILT, low plasticity, moist, yellowish brown

SILT, some clay, low plastic, moist, light brown mottled white, becoming dry at 0.8m

SILT, friable dry, brownish white, hard to auger

1.0

1.0

END OF BOREHOLE 1.15m (weathered limestone, unable to auger)

1.5

1.5

2

T+T_DATATEMPLATE.GDT.tde

Log Scale 1:10

BOREHOLE 616864.GPJ 14-Mar-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA02
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdale west soak	LOCATION: Old Pine Valley Road	JOB No: 30859
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 11/3/16
	DRILL METHOD: HA	HOLE FINISHED: 11/3/16
R.L.:		DRILLED BY: geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: KS/RBE CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	DRAWING LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION Substance: Rock type, particle size, colour, minor components. Defects: Type, orientation, thickness, roughness, shape.
		Hole dry on completion.							0.5 1.0 1.5								SILT, non plastic, moist, dark brown -non plastic, clayey clayey SILT, medium plasticity, moist, yellowish brown and light brown SILT, non plastic, dry to moist, brown mottled white END OF BOREHOLE 1.3m (weathered limestone, unable to auger)

T+T DATATEMPLATE.GDT 4/3/16

Log Scale 1:10

BOREHOLE LOG 30859.GPJ 14-Mar-2016

Tonkin + Taylor

BOREHOLE LOG

BOREHOLE No: HA03
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdale west-soak | LOCATION: Old Pine Valley Road | JOB No: 30868

CO-ORDINATES:
R.L.:
DATUM:

DRILL TYPE: 100mm hand auger
DRILL METHOD: HA
DRILL FLUID:

HOLE STARTED: 11/3/16
HOLE FINISHED: 11/3/16
DRILLED BY: geotechnics
LOGGED BY: KS/RBE CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENETIC NAME, ORIGIN, MINERAL CONSTITUENTS

FLUID LOSS | WATER | CORE RECOVERY (%) | METHOD | CASING | TESTS | SAMPLES | R.L. (m) | DEPTH (m) | GRAPHIC LOG | CLASSIFICATION SYMBOL | MOISTURE CONDITION / WEATHERING | STRENGTH/DENSITY CLASSIFICATION | SHEAR STRENGTH (kPa) | COMPRESSIVE STRENGTH (MPa) | DEFECT SPACING (mm)

SOIL DESCRIPTION
Soil type, minor components, plasticity or particle size, colour.
ROCK DESCRIPTION
Rock type, particle size, colour, minor components.
Defects: Type, inclination, thickness, roughness, filling.

Hole dry on completion

0.0 — SILT, non plastic, moist, dark brown

0.5 — SILT, some clay, low plasticity, moist, light brown

0.5 — clayey SILT, low plasticity, moist, light brown, light whitish brown mottled yellowish brown from 0.6m

1.0 — SILT, non plastic, dry to moist, light yellowish brown and light brown

1.0 — clayey SILT, low to no plasticity, moist, light yellowish brown and light whitish grey, light whitish grey from 1.2m

1.3 — END OF BOREHOLE 1.3m (alluvial clay)

1.5

2

T+T DATATEMPLATE.GDT 1.04

Log Scale 1:10

BOREHOLE 61030.GPJ 14-Mar-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA04
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdale west soak | LOCATION: Old Pine Valley Road | JOB No: 30868

CO-ORDINATES:
R.L.:
DATUM:

DRILL TYPE: 100mm hand auger
DRILL METHOD: HA
DRILL FLUID:

HOLE STARTED: 11/3/16
HOLE FINISHED: 11/3/16
DRILLED BY: geotechnics
LOGGED BY: KS/RBE CHECKED:

GEOLOGICAL

GEOLOGICAL UNIT, GEOLOGICAL NAME, ORIGIN, MINERAL COMPOSITION

FLUID LOSS | WATER | CORE RECOVERY (%) | METHOD | CASING | TESTS | SAMPLES | R.L. (m) | DEPTH (m)

ENGINEERING DESCRIPTION

GRAPHIC LOG | CLASSIFICATION SYMBOL | MOISTURE CONDITION / WEATHERING | STRENGTH/DENSITY CLASSIFICATION | SHEAR STRENGTH (kPa) | COMPRESSIVE STRENGTH (MPa) | DEFECT SPACING (mm)

SOIL DESCRIPTION
Soil type, minor components, plasticity or particle size, colour.

ROCK DESCRIPTION
Substance: Rock type, particle size, colour, minor components.
Defect: Type, inclination, thickness, roughness, filling.

DEPTH (m)	Description
0.0	SILT, friable, moist, dark brown (topsoil)
0.3	SILT, non plastic, moist, light greyish brown
0.5	clayey SILT, low plasticity, moist, light yellowish brown
1.0	-wkish grey
1.2	END OF BOREHOLE 1.2m (alluvial clay)
1.5	
2	

Hole dry on completion

T+T DATATEMPLATE GDT 4b

Log Scale 1:10

BORELOG 030864.GPJ 14-Mar-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA01
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest | LOCATION: Argent Lane, Walnut | JOB No: 30866

CO-ORDINATES:
R.L.:
DATUM:

DRILL TYPE: 100mm hand auger
DRILL METHOD: HA
DRILL FLUID:

HOLE STARTED: 19/5/16
HOLE FINISHED: 19/5/16
DRILLED BY: Geotechnics
LOGGED BY: rbe CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	(L - TH)	DEPTH (m)	DRILLING LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION / ROCK DESCRIPTION
TOPSOIL									0								SILT, non plastic, moist, dark brown
RESIDUAL SOILS		Hole dry on completion							0.5								clayey SILT, low to medium plasticity, moist, light yellowish brown, minor black gravelly layers (oxides)
									1.0								CLAY, medium to high plasticity, moist, light greyish white mottled yellowish brown
																	SILT, friable, moist, light whitish brown
									1.35								END OF BOREHOLE 1.35m (limestone, unable to auger)
									1.5								1.5
									2.0								2.0
									3								

T+T DATATEMPLATE.GDT.dtp

Log Scale 1:25

BOXELOG 616864-001.GPJ 23-May-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA02
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest	LOCATION: Argent Lane, Wainui	JOB No: 30888
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 20/5/16
	DRILL METHOD: HA	HOLE FINISHED: 20/5/16
R.L.:		DRILLED BY: Geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: rbe CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, GRADE, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE / WEATHERING CONDITION	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION / ROCK DESCRIPTION
TOPSOIL									0								SILT, non plastic, moist, dark brown
RESIDUAL SOILS																	fine sandy SILT, non plastic, moist, white
		Hole dry on completion							0.5								
																	-minor clay, moist, light brownish white
									1.0								silty CLAY, low plasticity, moist, light brownish white
																	-yellowish brown
									1.5								fine gravelly SILT, white, hard to auger
																	END OF BOREHOLE 1.61m (limestone)
									2.0								
									3								

T+T DATATEMPLATE.GDT rbe

Log Scale 1:12.5

BOREHOLE 30888-01.GPJ 23-May-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No: HA03
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest	LOCATION: Argent Lane, Walnut	JOB No: 30868
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 19/5/16
	DRILL METHOD: HA	HOLE FINISHED: 19/5/16
R.L.:		DRILLED BY: Geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: rbe CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DENSITY / SPACING (mm)	SOIL DESCRIPTION / ROCK DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
TOPSOIL																	SILT, friable, dry, brown
ALLUVIUM		Hole dry on completion							0.5								clayey SILT, low plasticity, moist, light grey
									1.0								-medium plasticity, moist to wet
									1.5								CLAY, medium to high plasticity, moist, light grey
									2.0								END OF BOREHOLE 2.01m (target depth)
									3								

T&T DATATEMPLATE.GDT 4/6/16

Log Scale 1:12.5

BOREHOLE 616304-001.GPJ 23-May-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No: HA04
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest	LOCATION: Argent Lane, Wainui	JOB No: 30880
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 19/5/16
	DRILL METHOD: HA	HOLE FINISHED: 19/5/16
R.L.:		DRILLED BY: Geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: rbe CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION / ROCK DESCRIPTION
TOPSOIL									0								SILT, non plastic, moist, dark brown
RESIDUAL SOILS									0.5								SILT, minor clay, non plastic, moist, orange brown clayey SILT, low plasticity, moist, orange brown -medium plasticity, light greyish white mottled yellowish brown -low to medium plasticity SILT, minor clay, low plasticity, light brown
		Hole dry on completion							1.0								
									1.5								
									2.0								END OF BOREHOLE 1.98m (target depth)
									3								

T&T DATA\DISPLATE.GDT rbe

Log Scale 1:025

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA05
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverlakeWest | LOCATION: Argyll Lane, Walnut | JOB No: 30868

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger

DRILL METHOD: HA

DRILL FLUID:

HOLE STARTED: 19/5/16

HOLE FINISHED: 19/5/16

DRILLED BY: Geotechnics

LOGGED BY: rbr CHECKED:

GEOLOGICAL										ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	RMT-100	CASING	LOSS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (kPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION Rock type, particle size, colour, minor components. Defects: Type, orientation, thickness, roughness, filling.
TOPSOIL									0								SILT, non plastic, dry to moist, dark brown
RESIDUAL SOILS																	SILT, minor clay, non plastic, moist, yellowish brown and brownish white
									0.5								clayey SILT, medium plasticity, moist, yellowish brown 0.5 -yellowish brown and light greyish white
									1.0								silty CLAY, medium plasticity, moist, light greyish white and yellowish brown 1.0
		Hole dry on completion							1.5								1.5 clayey SILT, medium plasticity, moist, light greyish white mottled yellowish brown
									2.0								2.0
																	END OF BOREHOLE 2.0m (target depth)
									3								

T+T DATATEMPLATE.GDT rbr

Log Scale 1:12.5

BOREHOLE 51686-001.GPJ 23-May-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA06
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest | LOCATION: Argent Lane, Walnut | JOB No: 30868

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger | HOLE STARTED: 18/5/16

DRILL METHOD: HA | HOLE FINISHED: 18/5/16

DRILLED BY: Geotechnics

DRILL FLUID: | LOGGED BY: rbe | CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, COLOUR, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	SAMPLES	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION Substance: Rock type, particle size, colour, minor components. Defects: Type, orientation, thickness, roughness, fill etc.
TOPSOIL																	SILT, friable, dry, brown
RESIDUAL SOILS		Hole dry on completion							0.5								SILT, non plastic, moist to dry, orange brown 0.5 SILT, sandy clay, low plasticity, moist, orange brown -light yellowish brown and light greyish white 1.0 1.5
									2.0								END OF BOREHOLE 1.98m (target depth) 2.0

T+T DATATEMPLATE.GDT rbe

Log Scale 1:12.5

BOREHOLE 030868-001.GPJ 23-May-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No: HA07
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: Silverdale/West | LOCATION: Argent Lane, Wainui | JOB No: 30959

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger | HOLE STARTED: 18/5/16

DRILL METHOD: HA | HOLE FINISHED: 18/5/16

DRILLED BY: Geotechnics

DRILL FLUID: | LOGGED BY: rhe | CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE / CONDITION	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION / ROCK DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
TOPSOIL																SILT, con plastic, moist to wet, dark brown
RESIDUAL SOILS								0.5								CLAY, medium to high plasticity, moist, light grey mottled light greyish brown
								1.0								
								1.5								END OF BOREHOLE 1.4m (limestone, unable to auger)
								2.0								
								3								

T+T DATATEMPLATE.GDT 1/6/

Log Scale 1:12.5

BOREHOLE 616864-001.GPJ 23-May-2016

Appendix C: Laboratory Testing Results

- Moisture Contents (47 samples)
- Atterberg Limits (4 samples)
- Consolidation tests (4 samples)

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Your Job No.: 30868

Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 516691.000

Test Method Used: NZS 4402:1986 Test 2.1 Determination of the Water Content

WATER CONTENT TEST RESULTS

Table 1: Water Content

BH No.:		3	3	4	4	4	4	4
Sample No.:		1	2	3	4	5	6	7
Depth	(m)	0.20 - 0.22	0.98 - 1.00	0.27 - 0.29	0.71 - 0.73	1.09 - 1.11	1.48 - 1.50	2.50 - 2.52
Water Content	(%)	56.1	19.6	67.3	83.1	102.0	26.1	23.5

Table 2: Water Content

BH No.:		2	2	2	1	1	1	1
Sample No.:		8	9	10	11	12	13	14
Depth	(m)	0.98 - 1.00	1.95 - 1.97	2.98 - 3.00	0.48 - 0.50	0.98 - 1.00	1.48 - 1.50	2.48 - 2.50
Water Content	(%)	28.5	36.4	21.9	47.8	65.7	49.6	18.9

Table 3: Water Content

BH No.:		5	5	5	5	5	5	5
Sample No.:		15	16	17	18	19	20	21
Depth	(m)	0.48 - 0.50	0.98 - 1.00	1.48 - 1.50	0.48 - 0.50	1.00 - 1.02	2.45 - 2.47	2.98 - 3.00
Water Content	(%)	33.7	57.4	23.1	35.5	37.4	53.5	59.1

Tested by: ST Date: 10.06.2015 Checked by: MP Date: 10.06.2015

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Your Job No.: 30868

Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616551.000

Test Method Used: NZS 4402:1986 Test 2.1 Determination of the Water Content

WATER CONTENT TEST RESULTS

Table 1: Water Content

BH No.:		5	5	6	6	6	6	6
Sample No.:		22	23	24	25	26	27	28
Depth	(m)	4.48 - 4.50	5.30 - 5.32	0.48 - 0.50	1.48 - 1.50	2.98 - 3.00	4.48 - 4.50	5.50 - 5.52
Water Content	(%)	49.8	35.9	38.6	84.7	29.1	51.6	40.2

Table 2: Water Content

BH No.:		6	6	7	7	7	7	7
Sample No.:		29	30	31	32	33	34	35
Depth	(m)	5.98 - 6.00	7.48 - 7.50	0.48 - 0.50	1.48 - 1.50	2.98 - 3.00	3.90 - 3.92	4.95 - 4.97
Water Content	(%)	43.1	28.5	40.1	54.3	51.4	46.2	55.1

Table 3: Water Content

BH No.:		7
Sample No.:		36
Depth	(m)	5.98 - 6.00
Water Content	(%)	40.2

Tested by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616691.000

Test Method Used: NZS 4402:1986 Test 2.1 Determination of the Water Content

WATER CONTENT TEST RESULTS

Table 1: Water Content

BH No.:		9	9	9	9	9	9
Sample No.:		42	43	44	45	46	47
Depth	(m)	0.48 - 0.50	1.20 - 1.22	1.70 - 1.74	2.98 - 3.00	3.42 - 3.45	5.40 - 5.42
Water Content	(%)	35.4	32.1	44.0	39.1	65.9	56.1

Tested by: MP Date: 03.09.2015 Checked by: ST Date: 03.09.2015

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Your Job No.: 30868

Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616691.000

Test Method Used: NZS 4402:1986 Test 2.2 Determination of the Liquid Limit

Test 2.3 Determination of the Plastic Limit

Test 2.4 Determination of the Plasticity Index

TEST RESULTS

Atterberg Limits Test Results Summary

BH No.:	6	7
Sample ID.:	38	39
Depth (m)	1.80-2.00	3.35-3.50
Liquid Limit	147	77
Plastic Limit	51	35
Plasticity Index	95	42

Remarks : Atterberg limits performed on material passing 0.425mm test sieve.

Tested by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616691.000

Test Method Used: NZS 4402:1986

Test 2.2 Determination of the Liquid Limit

Test 2.3 Determination of the Plastic Limit

Test 2.4 Determination of the Plasticity Index

ATTERBERG LIMITS TEST RESULTS

Table 1: Atterberg Limits

BH No.:		9	9
Sample No.:		40	41
Depth:	(m)	1.75 - 1.85	3.35 - 3.45
Liquid Limit	(%)	97	101
Plastic Limit	(%)	27	37
Plasticity Index	(%)	70	64

Remarks : The sample used for testing was natural, fraction passing 0.425mm test sieve.

Tested by: ST Date: 03.09.2015 Checked by: MP Date: 03.09.2015

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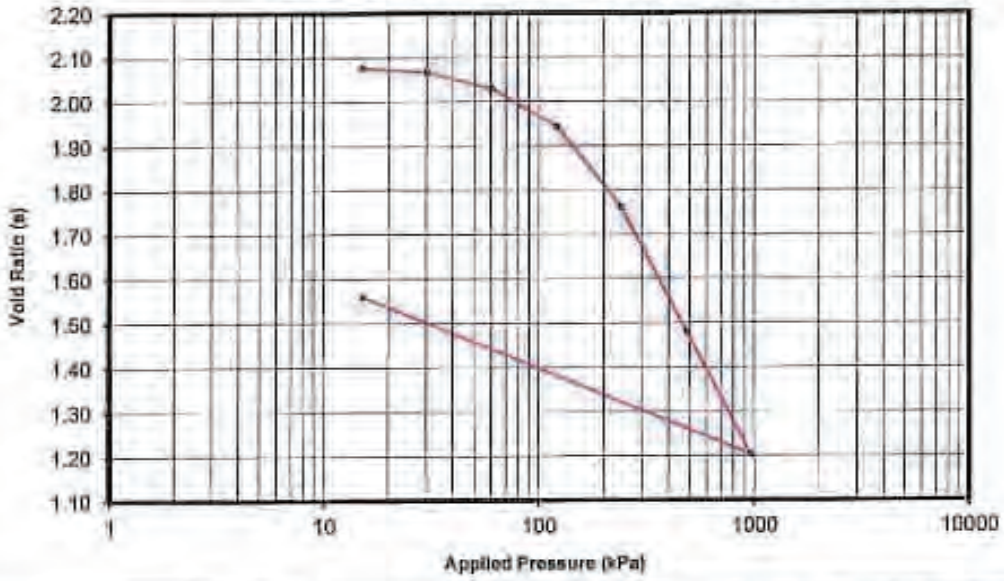
Your Job No.: **30868**
Our Job No.: **616691.000**

Site: **17 Old Pine Valley Road, Silverdale**
BH No.: **6**
Depth: **1.75-1.80 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	2.086			
Preload	15.1	2.076	0 to 15.1	NA	0.21
	30.2	2.067	15.1 to 30.2	2.5	0.19
	60.3	2.030	30.2 to 60.3	2.3	0.40
	121	1.944	60.3 to 121	1.5	0.47
	241	1.762	121 to 241	0.91	0.51
	483	1.481	241 to 483	0.79	0.42
	966	1.203	483 to 966	0.60	0.23
Unload	15.1	1.560	966 to 15.1	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor clay and trace of sand, trace to minor organics, firm, dark brown with light grey, mottled black, high plasticity.

Initial Dry Density (t/m^3): 0.87 Initial Water Content: 75.3%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 97%

Temperature During Testing: Max = 17 °C Min = 15 °C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.
Sample description is not IANZ accredited.

Entered by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Your Job No.: **30868**

Site: **17 Old Pine Valley Road, Silverdale**

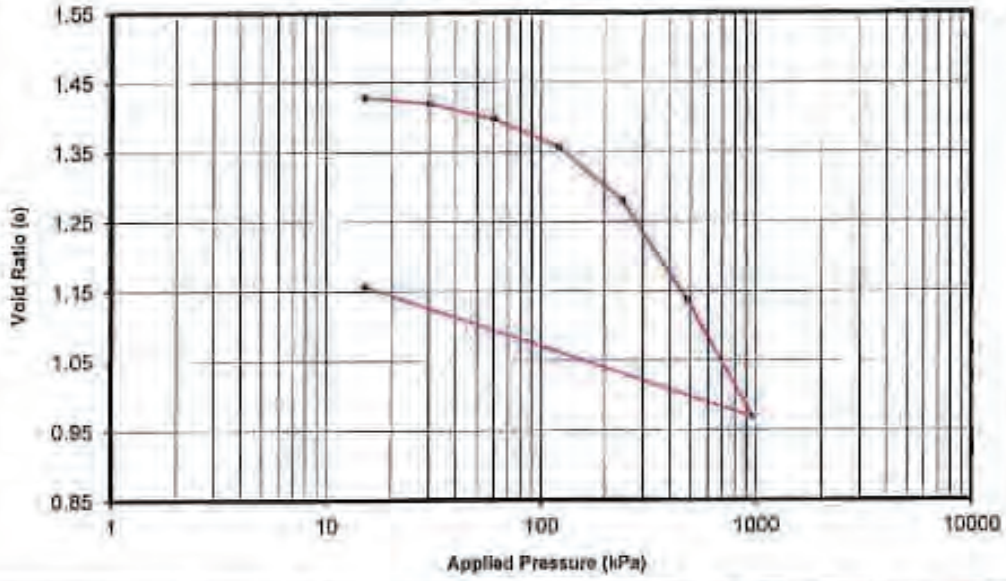
Our Job No.: **616691.000**

BH No.: **7**

Depth: **3.30-3.35 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	1.437			
Preload	15.1	1.428	0 to 15.1	NA	0.25
	30.2	1.420	15.1 to 30.2	7.9	0.23
	60.3	1.397	30.2 to 60.3	7.1	0.31
	121	1.357	60.3 to 121	5.9	0.28
	241	1.280	121 to 241	4.0	0.27
	483	1.137	241 to 483	2.9	0.26
	966	0.969	483 to 966	2.7	0.16
Unload	15.1	1.157	966 to 15.1	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor to some clay and trace of sand, firm, yellowish brown with light grey, mottled red, high plasticity.

Initial Dry Density (t/m^3): 1.10 Initial Water Content: 52.2%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 97%

Temperature During Testing: Max = 17 °C Min = 15 °C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.
Sample description is not IANZ accredited.

Entered by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Your Job No.: **30868**

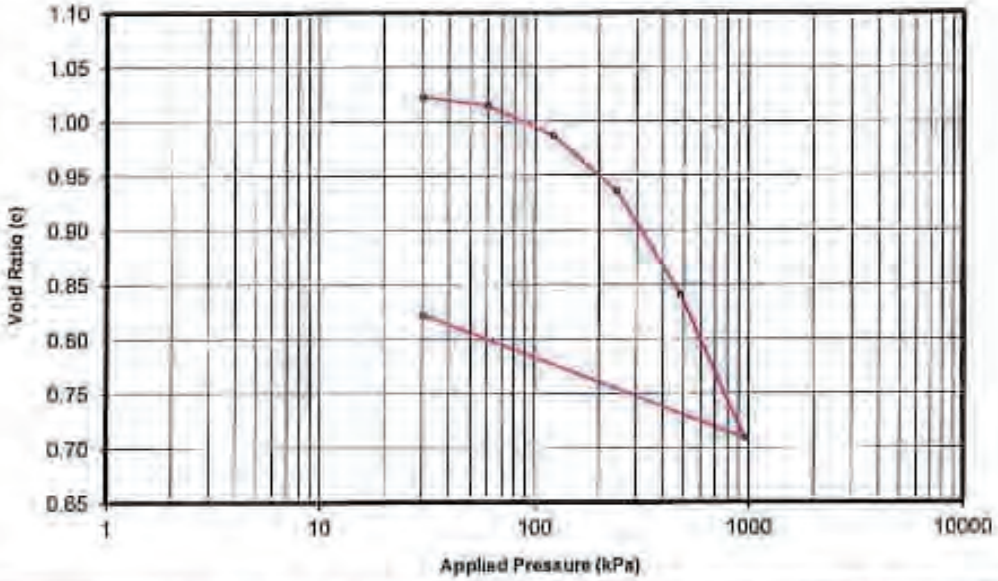
Site: **17 Old Pine Valley Road, Silverdale**

Our Job No.: **616691.000**

BH No.: **9** Sample No.: **40** Depth: **1.85-1.90 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	1.026			
Preload	30.2	1.023	0 to 30.2	NA	0.052
	60.3	1.015	30.2 to 60.3	1.3	0.13
	121	0.987	60.3 to 121	1.0	0.23
	241	0.936	121 to 241	0.90	0.21
	483	0.841	241 to 483	0.64	0.20
	966	0.709	483 to 966	0.58	0.15
Unload	30.2	0.822	966 to 30.2	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor clay and trace of sand, stiff, light greyish brown, mottled orange-black, high plasticity.

Initial Dry Density (t/m^3): 1.32 Initial Water Content: 36.7%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 98%

Temperature During Testing: Max = 17 ^{0}C Min = 15 ^{0}C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.

Sample description is not IANZ accredited.

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Your Job No.: **30868**

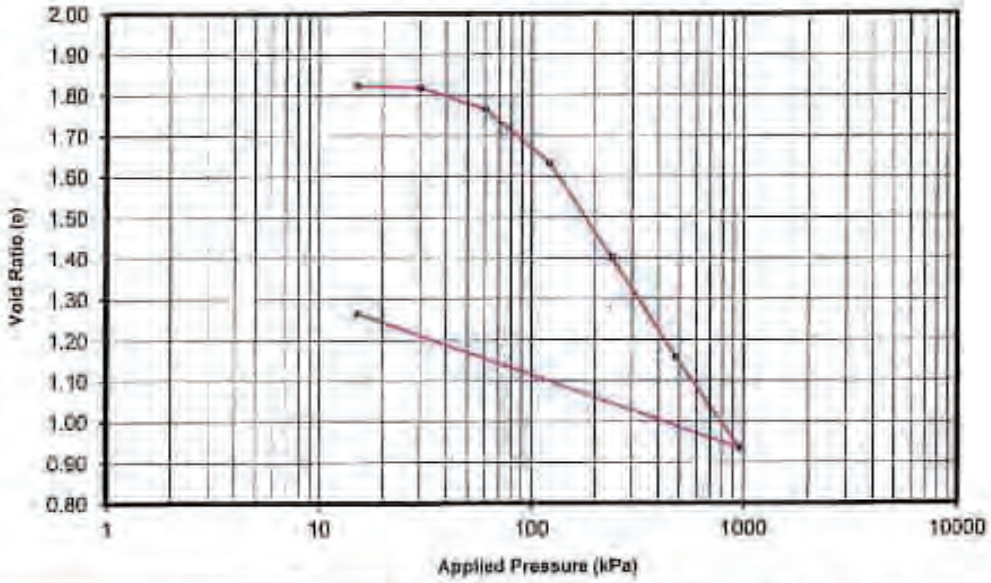
Site: **17 Old Pine Valley Road, Silverdale**

Our Job No.: **616691.000**

BH No.: **9** Sample No.: **41** Depth: **3.30-3.35 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	1.830			
Preload	15.1	1.823	0 to 15.1	NA	0.17
	30.2	1.818	15.1 to 30.2	1.2	0.13
	60.3	1.766	30.2 to 60.3	0.76	0.61
	121	1.633	60.3 to 121	0.52	0.79
	241	1.401	121 to 241	0.45	0.73
	483	1.157	241 to 483	0.28	0.42
	966	0.934	483 to 966	0.20	0.21
Unload	15.1	1.265	966 to 15.1	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor to some clay and trace of sand, firm, light bluish-greenish grey, mottled black, high plasticity.

Initial Dry Density (t/m^3): 0.95 Initial Water Content: 66.4%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 97%

Temperature During Testing: Max = 17 ^{0}C Min = 15 ^{0}C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.

Sample description is not IANZ accredited.

Entered by: ST Date: 03.09.2015 Checked by: MP Date: 03.09.2015

Appendix D: Percolation Test Results

- Percolation Tests 1 to 4 (March 2016)
- Percolation Tests 1 to 7 (May 2016)

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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA1 Sample No.: Depth: 1.15 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.150	--	--
1	25.000	0.900	1.025	0.250000
2	36.000	0.790	0.845	0.110000
3	44.000	0.710	0.750	0.080000
4	50.000	0.650	0.680	0.060000
5	54.000	0.610	0.630	0.040000
6	57.000	0.580	0.595	0.030000
7	59.000	0.560	0.570	0.020000
8	60.500	0.545	0.553	0.015000
9	61.500	0.535	0.540	0.010000
10	62.500	0.525	0.530	0.010000
15	64.500	0.505	0.515	0.004000
20	65.500	0.495	0.500	0.002000
25	66.500	0.485	0.490	0.002000
30	67.250	0.478	0.481	0.001500
35	68.000	0.470	0.474	0.001500
40	68.800	0.462	0.466	0.001600
45	69.600	0.454	0.458	0.001600
50	70.250	0.448	0.451	0.001300
55	71.000	0.440	0.444	0.001500
60	71.750	0.433	0.436	0.001500
70	73.100	0.419	0.426	0.001350
80	74.250	0.408	0.413	0.001150
110	77.000	0.380	0.394	0.000917
140	79.250	0.358	0.369	0.000750

Procedure

		Yes/No
Hole kept full for:	0.333 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.15	m

Calculate Minimum Gradient

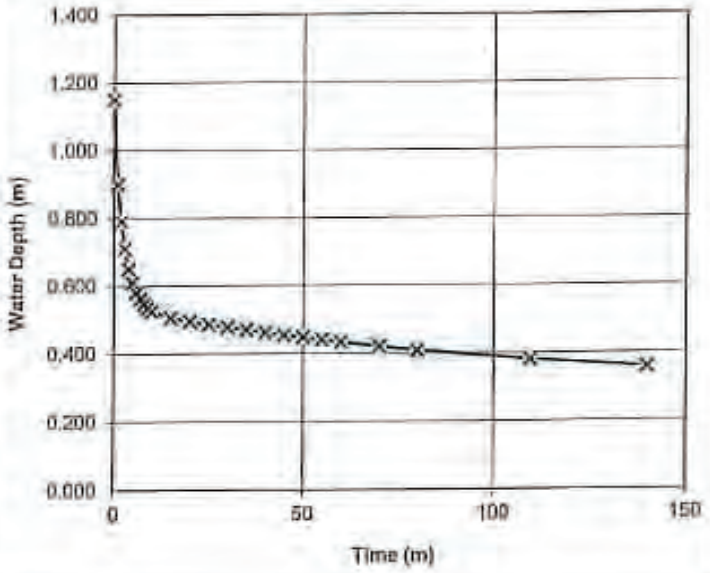
Minimum Gradient = y/x 0.000750 m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate 0.056 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA2 Sample No.: Depth: 1.3 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.300	–	–
15	13.000	1.170	1.235	0.008667
30	19.500	1.105	1.138	0.004333
60	27.500	1.025	1.065	0.002667
90	33.500	0.965	0.995	0.002000
120	37.500	0.925	0.945	0.001333

Procedure

		Yes/No
Hole kept full for:	0.5 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

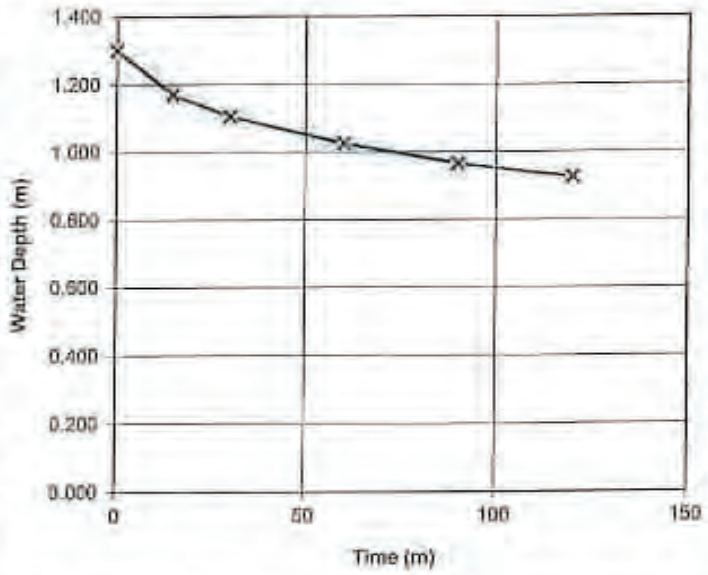
Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.30	m
Calculate Minimum Gradient		
Minimum Gradient = y/x	0.001333	m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate	0.039	L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA3 Sample No.: Depth: 1.3 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.300	–	–
30	12.500	1.175	1.238	0.004167
60	20.500	1.095	1.135	0.002667
90	25.500	1.045	1.070	0.001667
120	29.500	1.005	1.025	0.001333

Procedure

		Yes/No
Hole kept full for:	0.5 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.30	m

Calculate Minimum Gradient

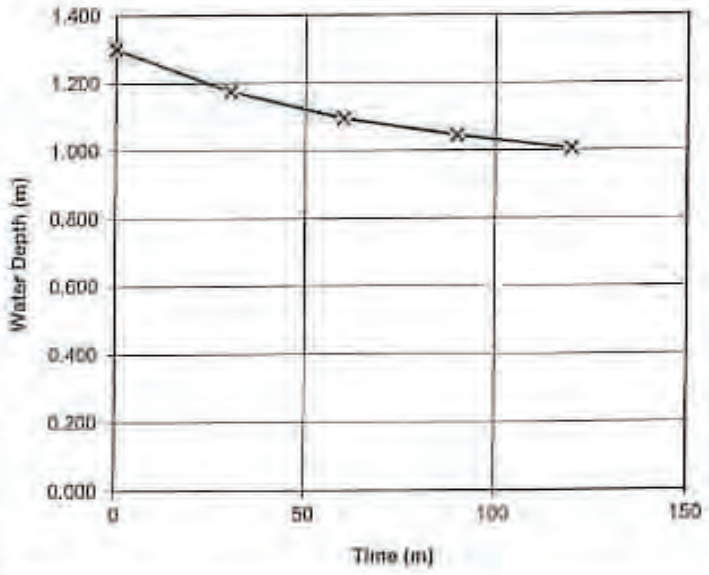
Minimum Gradient = y/x 0.001333 m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate 0.036 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA4 Sample No.: Depth: 1.28 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.280	–	–
6	20.000	1.080	1.180	0.033333
7	23.000	1.050	1.065	0.030000
8	26.000	1.020	1.035	0.030000
9	29.000	0.990	1.005	0.030000
10	30.000	0.980	0.985	0.010000
17.5	44.000	0.840	0.910	0.018667
20	47.000	0.810	0.825	0.012000
25	53.000	0.750	0.780	0.012000
30	58.000	0.700	0.725	0.010000
35	63.000	0.650	0.675	0.010000
42	67.000	0.610	0.630	0.005714
45	69.000	0.590	0.600	0.006667
50	71.500	0.565	0.578	0.005000
60	75.000	0.530	0.548	0.003500
70	78.000	0.500	0.515	0.003000
80	80.500	0.475	0.488	0.002500
100	83.750	0.443	0.459	0.001625
120	85.750	0.423	0.433	0.001000

Procedure

Hole kept full for:	0.5 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

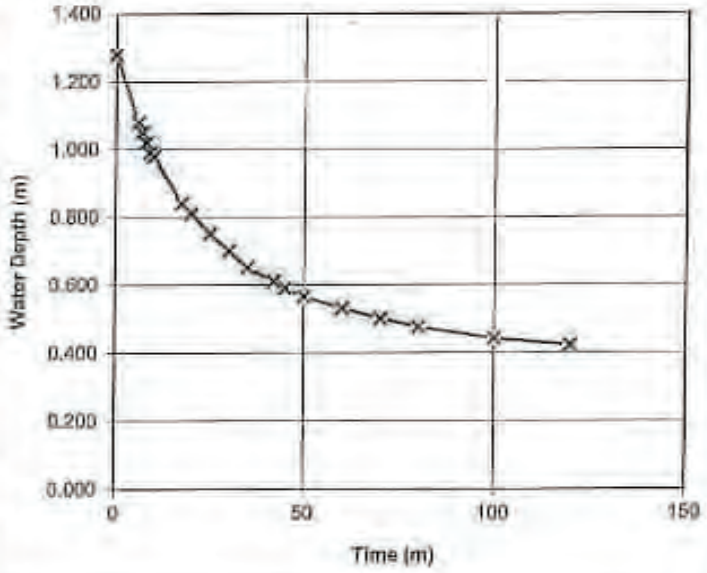
Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.28	m
Calculate Minimum Gradient		
Minimum Gradient = y/x	0.001000	m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate	0.064	L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 1 Sample No.: Depth: 1.35 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.350	–	–
15	2.500	1.325	1.338	0.001667
30	4.500	1.305	1.315	0.001333
60	8.000	1.270	1.288	0.001167
90	11.000	1.240	1.255	0.001000
120	13.500	1.215	1.228	0.000833
150	15.500	1.195	1.205	0.000667
180	18.000	1.170	1.183	0.000833

Procedure

		Yes/No
Hole kept full for:	0.25 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.35	m

Calculate Minimum Gradient

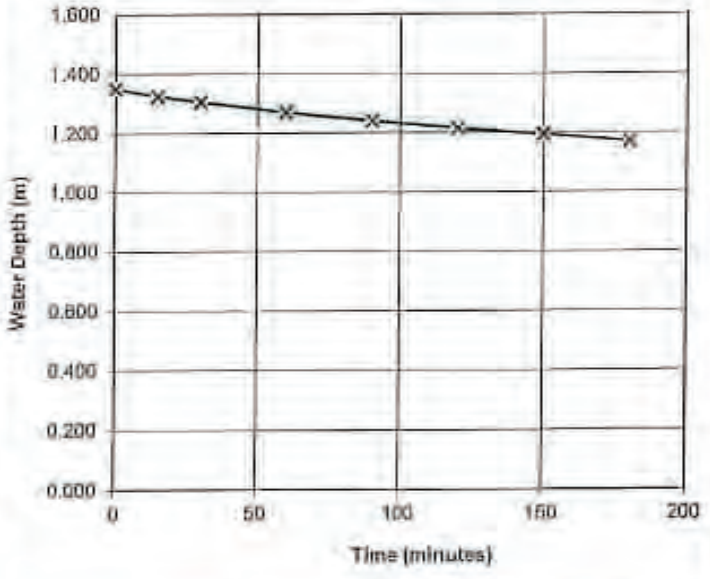
Minimum Gradient = y/x 0.000833 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.019 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30968

Borehole No: 2 Sample No.: Depth: 1.61 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.610	–	–
15	4.000	1.570	1.590	0.002667
30	5.500	1.555	1.563	0.001000
60	9.000	1.520	1.538	0.001167
90	11.500	1.495	1.508	0.000833
120	13.000	1.480	1.488	0.000500
150	14.000	1.470	1.475	0.000333
180	15.500	1.455	1.463	0.000500

Procedure

		Yes/No
Hole kept full for: 0.18 hours		
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.61	m

Calculate Minimum Gradient

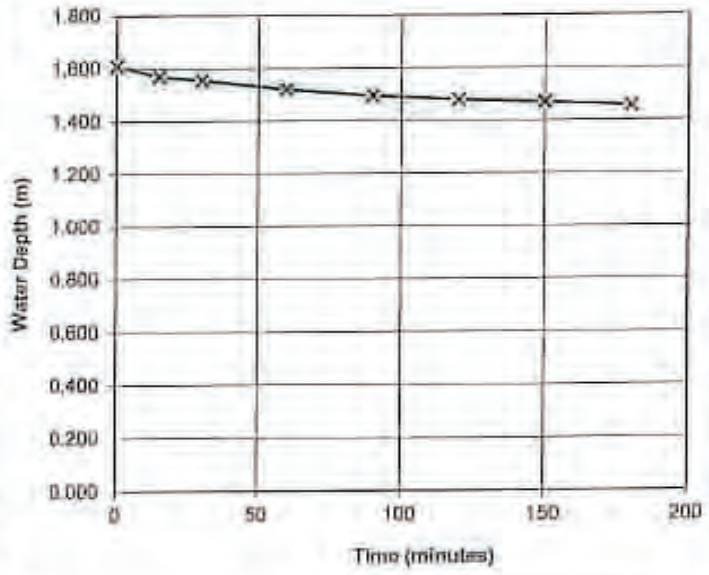
Minimum Gradient = y/x 0.000500 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.009 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 3 Sample No.: Depth: 2.01 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	2.010	--	--
5	7.000	1.940	1.975	0.014000
10	10.000	1.910	1.925	0.006000
15	11.500	1.895	1.903	0.003000
30	15.000	1.860	1.878	0.002333
60	18.000	1.830	1.845	0.001000
90	21.000	1.800	1.815	0.001000
120	23.000	1.780	1.790	0.000667
150	24.500	1.765	1.773	0.000500
180	26.000	1.750	1.758	0.000500

Procedure

		Yes/No
Hole kept full for:	0.33 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	2.01	m

Calculate Minimum Gradient

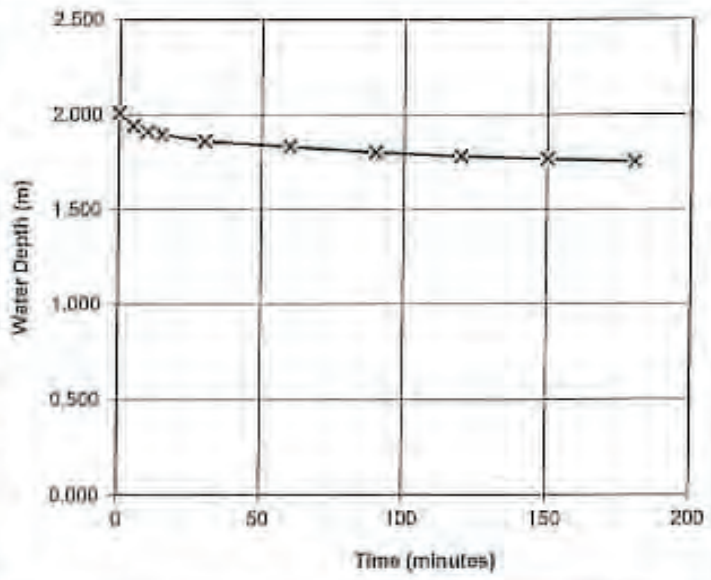
Minimum Gradient = y/x 0.000500 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.008 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 4 Sample No.: Depth: 1.98 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.980	–	–
15	9.000	1.890	1.935	0.006000
30	16.000	1.820	1.855	0.004667
45	20.500	1.775	1.798	0.003000
60	25.000	1.730	1.753	0.003000
75	29.500	1.685	1.708	0.003000
90	33.000	1.650	1.668	0.002333
105	37.000	1.610	1.630	0.002667
120	40.500	1.575	1.593	0.002333
150	46.500	1.515	1.545	0.002000
180	51.500	1.465	1.490	0.001667

Procedure

		Yes/No
Hole kept full for:	0.33 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.98	m

Calculate Minimum Gradient

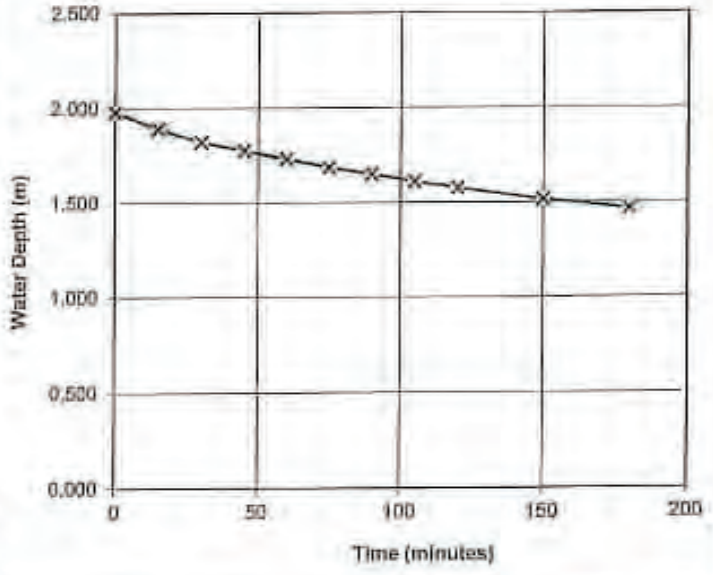
Minimum Gradient = y/x 0.001667 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.031 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 5 Sample No.: Depth: 2.04 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	2.040	–	–
15	9.000	1.950	1.995	0.006000
30	13.000	1.910	1.930	0.002667
60	18.500	1.855	1.883	0.001833
90	23.500	1.805	1.830	0.001667
120	27.500	1.765	1.785	0.001333
150	31.000	1.730	1.748	0.001167
180	34.500	1.695	1.713	0.001167

Procedure

		Yes/No
Hole kept full for:	0.25 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	2.04	m

Calculate Minimum Gradient

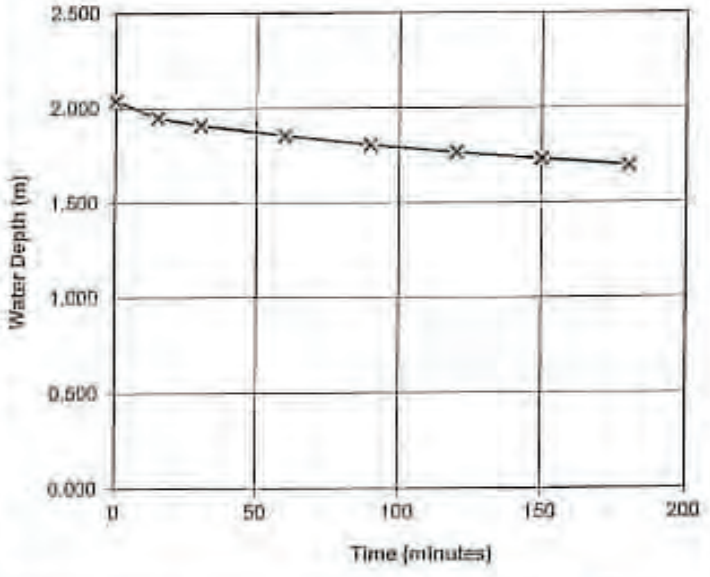
Minimum Gradient = y/x 0.001167 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.019 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 6 Sample No.: Depth: 1.98 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.980	–	--
5	21.500	1.765	1.873	0.043000
10	31.000	1.670	1.718	0.019000
15	39.500	1.585	1.628	0.017000
20	46.500	1.515	1.550	0.014000
25	53.000	1.450	1.483	0.013000
30	58.000	1.400	1.425	0.010000
35	63.000	1.350	1.375	0.010000
40	67.500	1.305	1.328	0.009000
45	72.000	1.260	1.283	0.009000
50	76.000	1.220	1.240	0.008000
55	79.500	1.185	1.203	0.007000
60	82.500	1.155	1.170	0.006000
65	85.500	1.125	1.140	0.006000
70	88.500	1.095	1.110	0.006000
75	91.000	1.070	1.083	0.005000
80	93.500	1.045	1.058	0.005000
85	96.000	1.020	1.033	0.005000
90	98.000	1.000	1.010	0.004000
100	101.500	0.965	0.983	0.003500
110	106.000	0.920	0.943	0.004500
120	109.500	0.885	0.903	0.003500
130	112.500	0.855	0.870	0.003000
140	115.500	0.825	0.840	0.003000
150	118.000	0.800	0.813	0.002500
160	120.500	0.775	0.788	0.002500
170	122.500	0.755	0.765	0.002000
180	124.500	0.735	0.745	0.002000
196	127.500	0.705	0.720	0.001875
210	130.500	0.675	0.690	0.002143
225	133.000	0.650	0.663	0.001667
240	135.500	0.625	0.638	0.001667

Procedure

		Yes/No
Hole kept full for:	0.33 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		4hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.98	m

Calculate Minimum Gradient

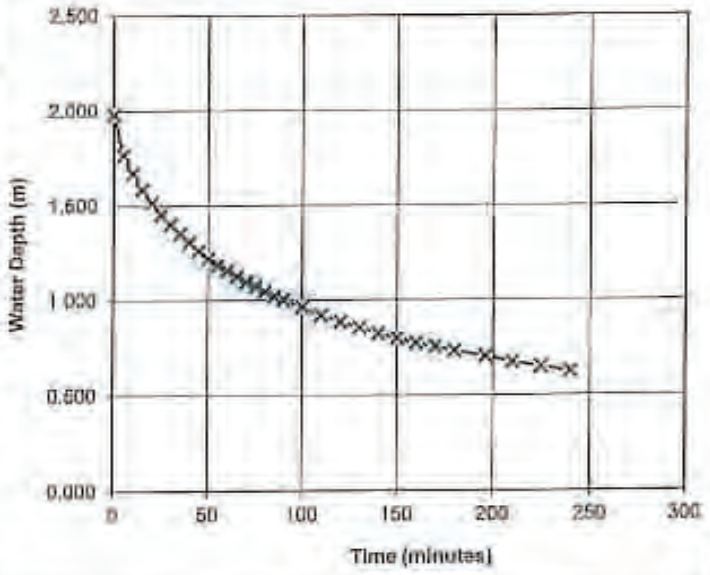
Minimum Gradient = y/x 0.001667 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.072 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 7 Sample No.: Depth: 1.4 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.400	–	–
10	6.500	1.335	1.368	0.006500
30	9.500	1.305	1.320	0.001500
60	12.000	1.280	1.293	0.000833
90	13.500	1.265	1.273	0.000500
120	15.250	1.248	1.256	0.000583
150	17.250	1.228	1.238	0.000667
180	19.500	1.205	1.216	0.000750
210	22.000	1.180	1.193	0.000833

Procedure

		Yes/No
Hole kept full for:	0.17 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3.5hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.40	m

Calculate Minimum Gradient

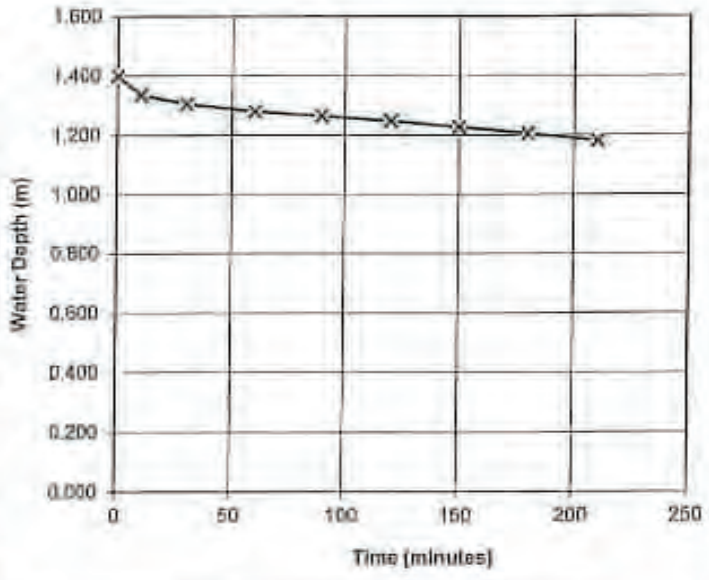
Minimum Gradient = y/x 0.000833 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.019 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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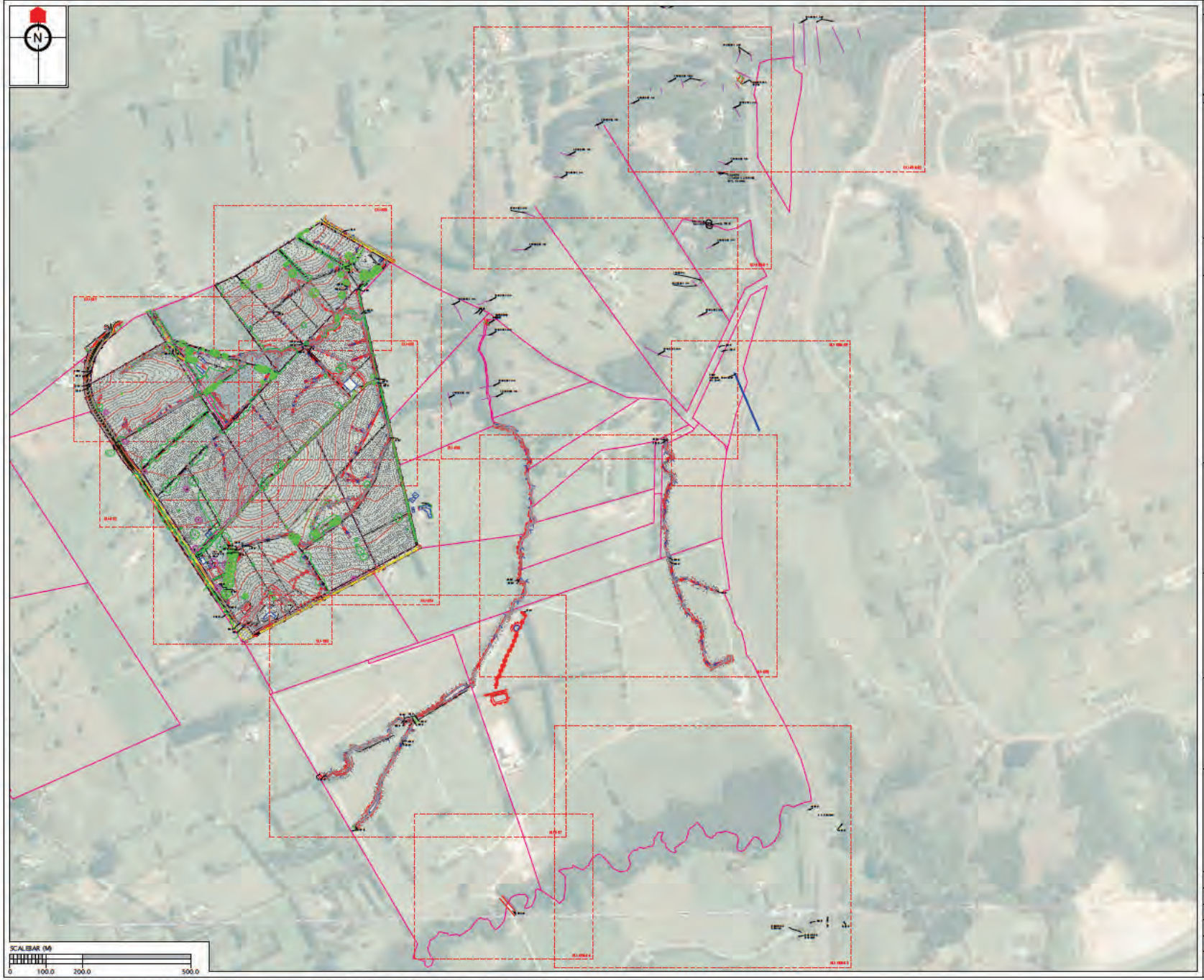
APPENDIX B

SURVEY PLANS



REVISION DETAILS	NAME	DATE
A. ADDED ADDITIONAL TOPO INFORMATION INCLUDING CULVERTS, CROSS SECTIONS AND INVERTS, PLUS AERIAL PHOTOS. ADDED HYDRO CROSS SECTIONS.	JB	28/06/2016
B. ADDED RICHGATE CULVERT AND FIXED SCALING ERROR	JB	25/07/2016
C. ADDED ADDITIONAL CULVERT INFORMATION	JB	29/07/2016

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 27S", 8 309 316.11mN, 391 419.730mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 27S", RL=90.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
5. NO EXCAVATION OF ANY KIND IS TO TAKE PLACE WITHOUT PERMISSION FROM THE RELEVANT SERVICE PROVIDER.
6. CONTRACTOR IS TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO COMMENCING ANY WORKS.
7. BOUNDARIES ARE SUBJECT TO FINAL SURVEY.

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KEY

+30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PUNTH		POWER POLE
	WALLS		DRAIN CENTER LINE

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WAINUI EAST

TOPOGRAPHICAL PLAN 1 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-050	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK275", 1830830.11mN, 5914119.790mE SOURCED FROM N HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
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KEY

30.84 SPOT HEIGHT	XML BOUNDARY
BUILDING	30.0 EXISTING CONTOURS
BUILDING EAVES	DRIPLINE
GATE	CESSPIT
FENCE	EDGE OF SEAL
TOP OF BANK	BOTTOM OF BANK
FLOOR LEVEL	UNKNOWN MANHOLE
FLOW DIRECTION	SIGNS
BENCH	SERVICE LID
SITE DATUM	FIRE HYDRANT
WATER METER	POST
DOWNPIPE	TREE
SEWER MANHOLE	STORM-WATER MANHOLE
STREET LIGHT	VALVE
TELECOM PLINTH	POWER POLE
WALLS	DRAIN CENTER LINE

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WAINUI EAST

TOPOGRAPHICAL PLAN
2 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG NO: 31720-SU-051	REV: C

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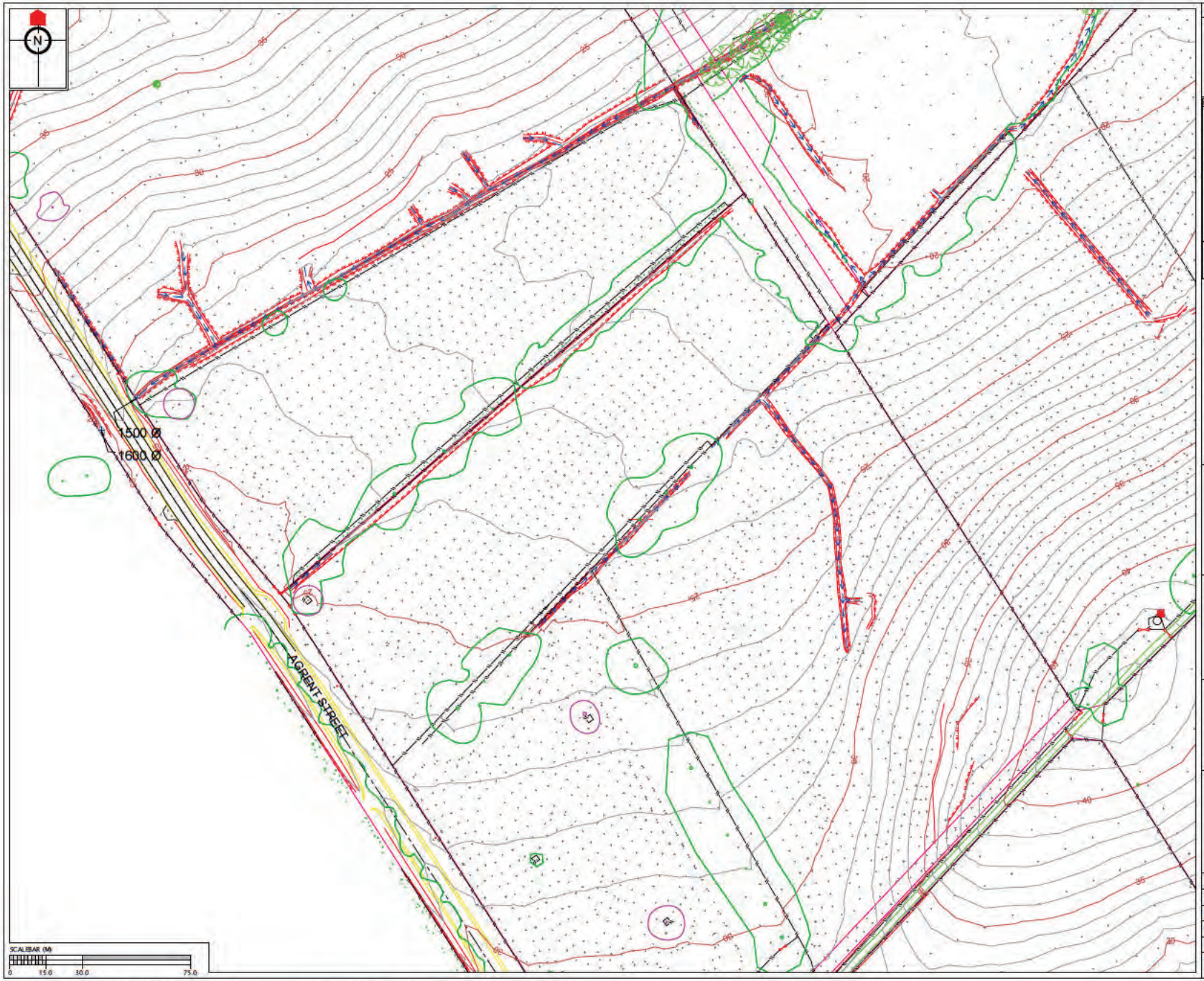

REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK27", 6 308 36.11mN, 361419.730mE. SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK27", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
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KEY

30.84 SPOT HEIGHT	XML BOUNDARY
BUILDING	30.0 EXISTING CONTOURS
BUILDING EAVES	DRIPLINE
GATE	CESSPIT
FENCE	EDGE OF SEAL
TOP OF BANK	BOTTOM OF BANK
FLOOR LEVEL	UNKNOWN MANHOLE
FLOW DIRECTION	SIGNS
BENCH	SERVICE LID
SITE DATUM	FIRE HYDRANT
WATER METER	POST
DOWNPIPE	TREE
SEWER MANHOLE	STORM-WATER MANHOLE
STREET LIGHT	VALVE
TELECOM PLINTH	POWER POLE
WALLS	DRAIN CENTER LINE

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TOPOGRAPHICAL PLAN
3 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
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APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-052	REV. C

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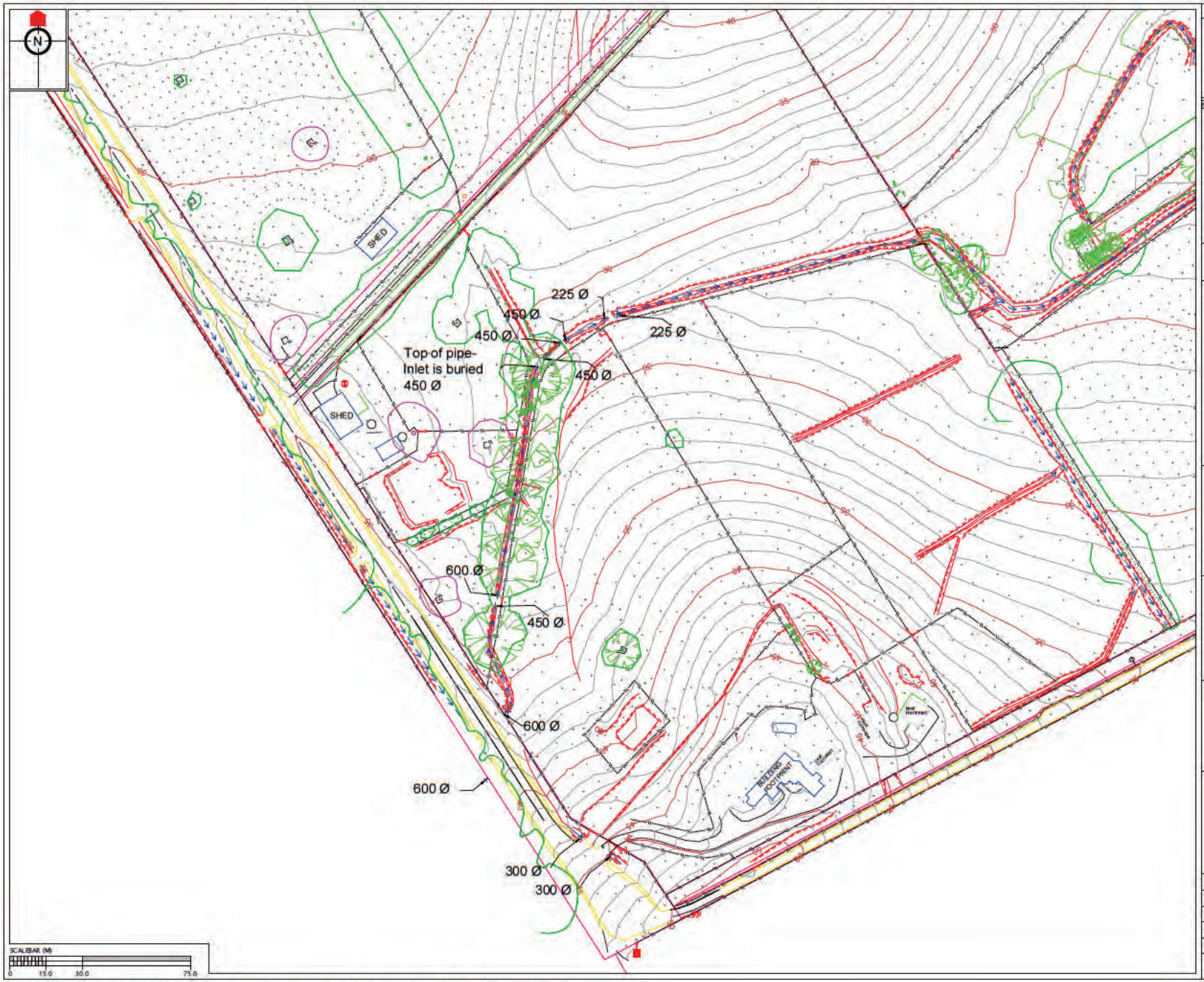

REVISION DETAILS	NAME	DATE

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK270", 830 839.11mN, 3 914 19.780mE SOURCED FROM N HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK270", RL=30.00. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
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KEY

+30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE		CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

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WAINUI EAST

TOPOGRAPHICAL PLAN
4 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-053	REV. C

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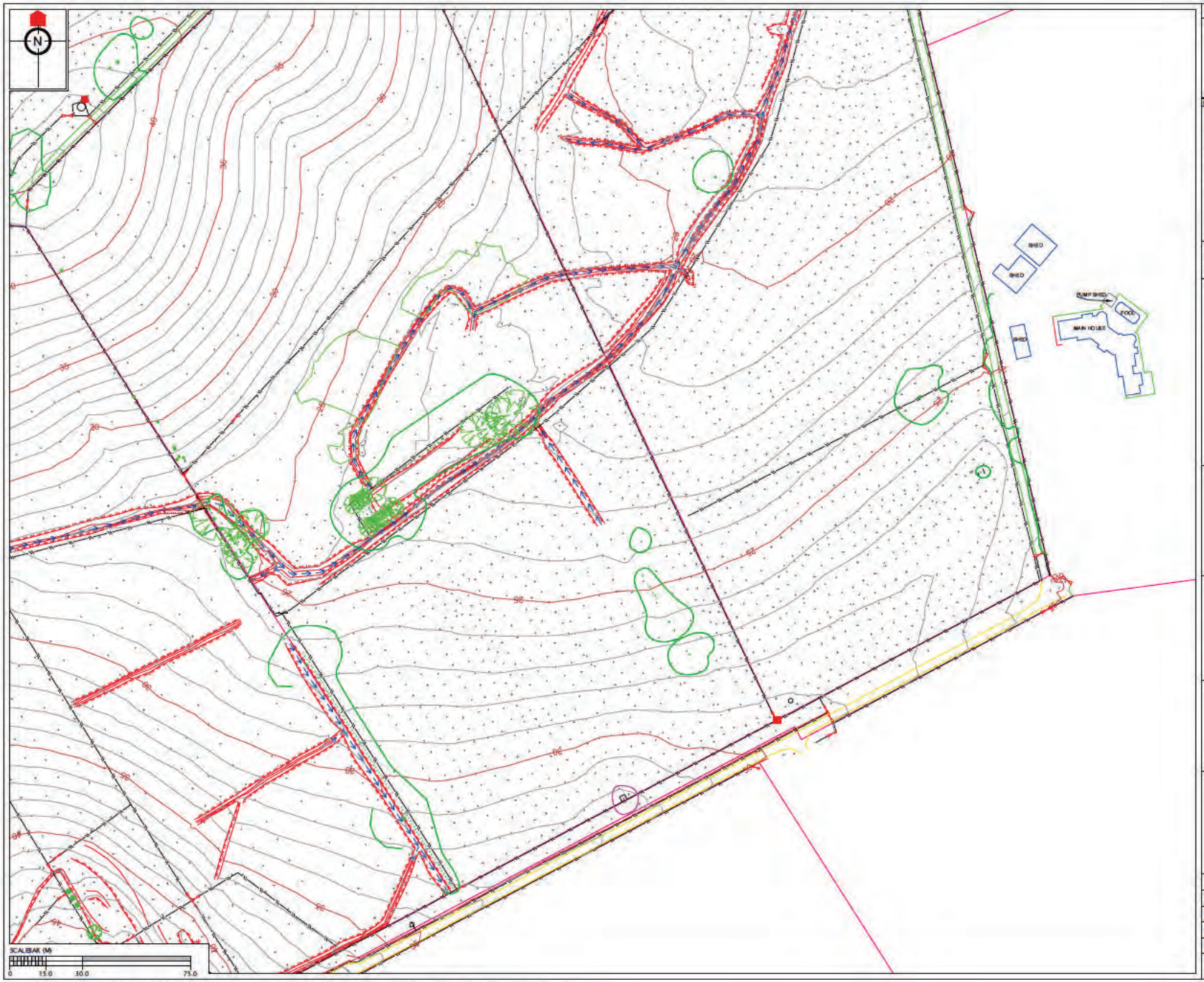

REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 1803816.11mN, 3614193.79mE SOURCED FROM N HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 275", RL=90.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
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KEY

+30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CWAY MARKER	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PUNTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

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WAINUI EAST

TOPOGRAPHICAL PLAN
5 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
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JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-054	REV. C

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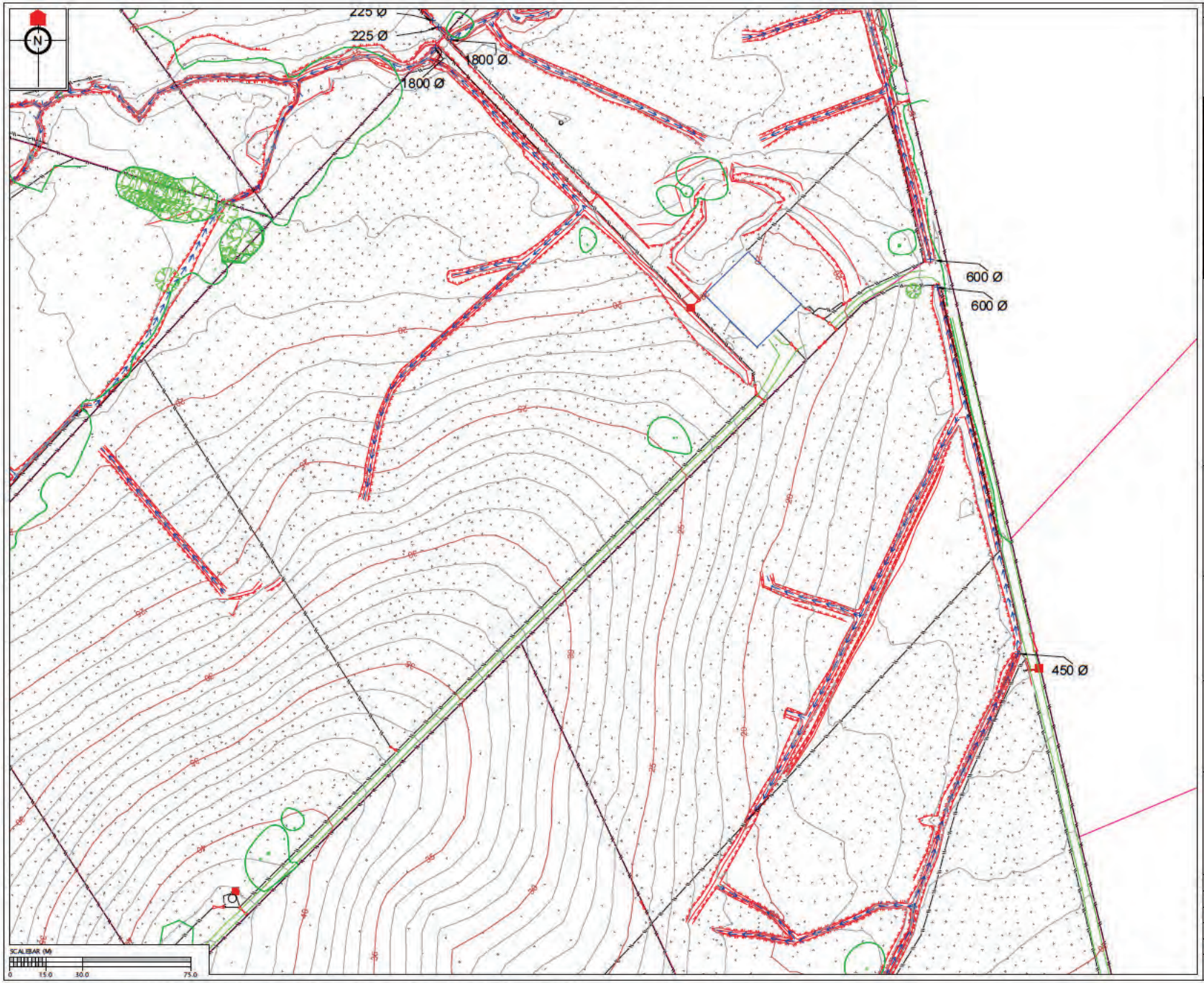

REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 27/5", 8 930816.11mN, 391 419.736mE. SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 27/5", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0 m INTERVALS.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIP LINE
	GATE	CBMH Manhole	CESS PIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
RL 30.84 Datum	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
DP	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PUNTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

WOODS
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WAINUI EAST

TOPOGRAPHICAL PLAN
6 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-055	REV. C

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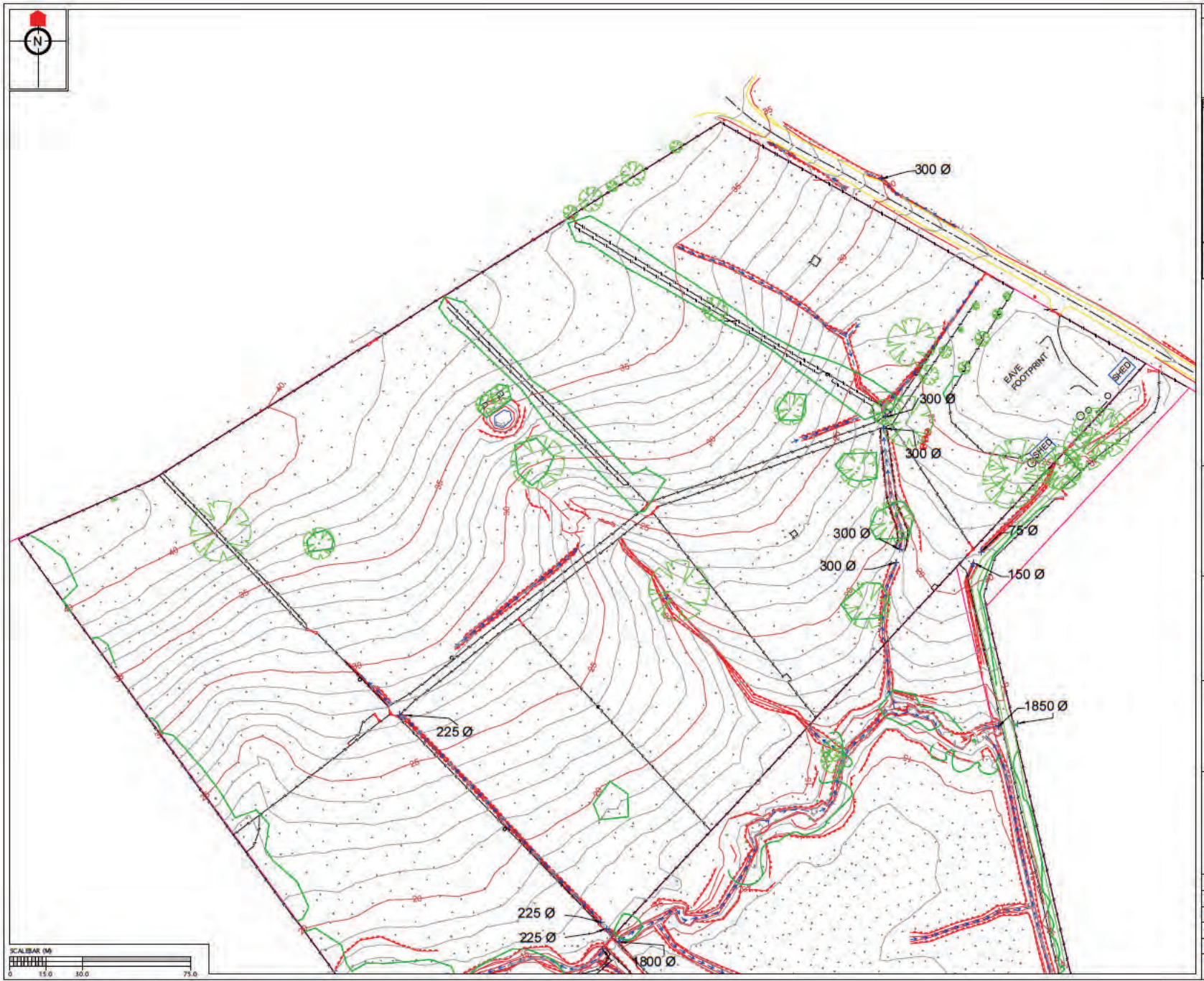

REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK27 5", 6,308,96.11mN, 361419.79mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK27 5", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
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KEY

10.84 SPOT HEIGHT	XML BOUNDARY
BUILDING	90.0 EXISTING CONTOURS
BUILDING EAVES	DRIPLINE
GATE	CESSPIT
FENCE	EDGE OF SEAL
TOP OF BANK	BOTTOM OF BANK
FLOOR LEVEL	UNKNOWN MANHOLE
FLOW DIRECTION	SIGNS
BENCH	SERVICE LID
SITE DATUM	FIRE HYDRANT
WATER METER	POST
DOWNPIPE	TREE
SEWER MANHOLE	STORM-WATER MANHOLE
STREET LIGHT	VALVE
TELECOM PLINTH	POWER POLE
WALLS	DRAIN CENTER LINE

CLIENT:

WOODS
Engineers, Surveyors, Planners.

WAINUI EAST

TOPOGRAPHICAL PLAN
7 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-056	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 1800836.11mN, 391419.790mE SOURCED FROM N HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 275", RL=90.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
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KEY

30.84 SPOT HEIGHT	XML BOUNDARY
BUILDING	30.0 EXISTING CONTOURS
BUILDING EAVES	DRIP LINE
GATE	CESSPIT
FENCE	EDGE OF SEAL
TOP OF BANK	BOTTOM OF BANK
FLOOR LEVEL	UNKNOWN MANHOLE
FLOW DIRECTION	SIGNS
BENCH	SERVICE LID
SITE DATUM	FIRE HYDRANT
WATER METER	POST
DOWNPIPE	TREE
SEWER MANHOLE	STORM-WATER MANHOLE
STREET LIGHT	VALVE
TELECOM PLINTH	POWER POLE
WALLS	DRAIN CENTER LINE

CLIENT:

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TOPOGRAPHICAL PLAN
8 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-057	REV: C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 1803816.11mN, 3614197.90mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
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KEY

30.84 SPOT HEIGHT	XML BOUNDARY
BUILDING	30.0 EXISTING CONTOURS
BUILDING EAVES	DRIPLINE
GATE	CESSPIT
FENCE	EDGE OF SEAL
TOP OF BANK	BOTTOM OF BANK
FLOOR LEVEL	UNKNOWN MANHOLE
FLOW DIRECTION	SIGNS
BENCH	SERVICE LID
SITE DATUM	FIRE HYDRANT
WATER METER	POST
DOWNPIPE	TREE
SEWER MANHOLE	STORM-WATER MANHOLE
STREET LIGHT	VALVE
TELECOM PLINTH	POWER POLE
WALLS	DRAIN CENTER LINE

CLIENT:

WOODS
Engineers. Surveyors. Planners.

WAINUI EAST

TOPOGRAPHICAL PLAN
9 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-058	REV: C

K:\31720- Wainui East\Project Data\Acad Drawings\Survey\Topographical\31720-SU-050 Wainui East Topo RV C.dwg, 29/07/2016 12:07:25 p.m.

REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK27", 6 308 36.11mN, 39 141.190mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK27", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE		CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

WOODS
Engineers. Surveyors. Planners.

WAINUI EAST

TOPOGRAPHICAL PLAN 10 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-059	REV. C

K:\31720- Wainui East\Project Data\Acad Drawings\Survey\Topographical\31720-SU-050 Wainui East Topo RV C.dwg, 29/07/2016 12:07:28 p.m.

REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 27/5", 8,309,816.11mN, 391,419.736mE. SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 27/5", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
5. NO EXCAVATION OF ANY KIND IS TO TAKE PLACE WITHOUT PERMISSION FROM THE RELEVANT SERVICE PROVIDER.
6. CONTRACTOR IS TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO COMMENCING ANY WORKS.
7. BOUNDARIES ARE SUBJECT TO FINAL SURVEY.

DISCLAIMER:
THIS CAD DRAWING IS INTENDED TO BE SOLELY USED AS THE BASE DATA FOR THE PURPOSES OF THE CLIENT. WOODS ACCEPT NO RESPONSIBILITY FOR ANY SUBSEQUENT CHANGES MADE TO THIS DRAWING FILE, THAT ARE DIFFERENT TO THOSE ATTACHED IN THE PDF FORMATTED VERSION SHOWN IN OUR ELECTRONIC CORRESPONDENCE.

KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT 1244.44	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

WOODS
Engineers. Surveyors. Planners.

WAINUI EAST

TOPOGRAPHICAL PLAN
11 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-059-01	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 27 9", 8,309,816.11mN, 391,419.736mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 27 9", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
5. NO EXCAVATION OF ANY KIND IS TO TAKE PLACE WITHOUT PERMISSION FROM THE RELEVANT SERVICE PROVIDER.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIP LINE
	GATE	CESSPIT 1234.5	CESS PIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
12.5 Pit Level	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PUNTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

WOODS
Engineers. Surveyors. Planners.

WAINUI EAST

TOPOGRAPHICAL PLAN
12 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-059-02	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 27 9", 8,309,836.11mN, 391,419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 27 9", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
5. NO EXCAVATION OF ANY KIND IS TO TAKE PLACE WITHOUT PERMISSION FROM THE RELEVANT SERVICE PROVIDER.
6. CONTRACTOR IS TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO COMMENCING ANY WORKS.
7. BOUNDARIES ARE SUBJECT TO FINAL SURVEY.

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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT	CESS PIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

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WAINUI EAST

TOPOGRAPHICAL PLAN
13 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
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APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-059-03	REV. C

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REVISION DETAILS	NAME	DATE

NOTES:
1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK275", 1930836.11mN, 3914 19.780mE SOURCED FROM N HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK275", RL=90.00. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
5. NO EXCAVATION OF ANY KIND IS TO TAKE PLACE WITHOUT PERMISSION FROM THE RELEVANT SERVICE PROVIDER.
6. CONTRACTOR IS TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO COMMENCING ANY WORKS.
7. BOUNDARIES ARE SUBJECT TO FINAL SURVEY.

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KEY

+30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	90.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE		CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

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WAINUI EAST

TOPOGRAPHICAL PLAN
14 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
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APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-059-04	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK27 0", 8,308,96.11mN, 39,1419.736mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK27 0", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

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WAINUI EAST

TOPOGRAPHICAL PLAN
15 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO: 31720-SU-059-05	REV. C

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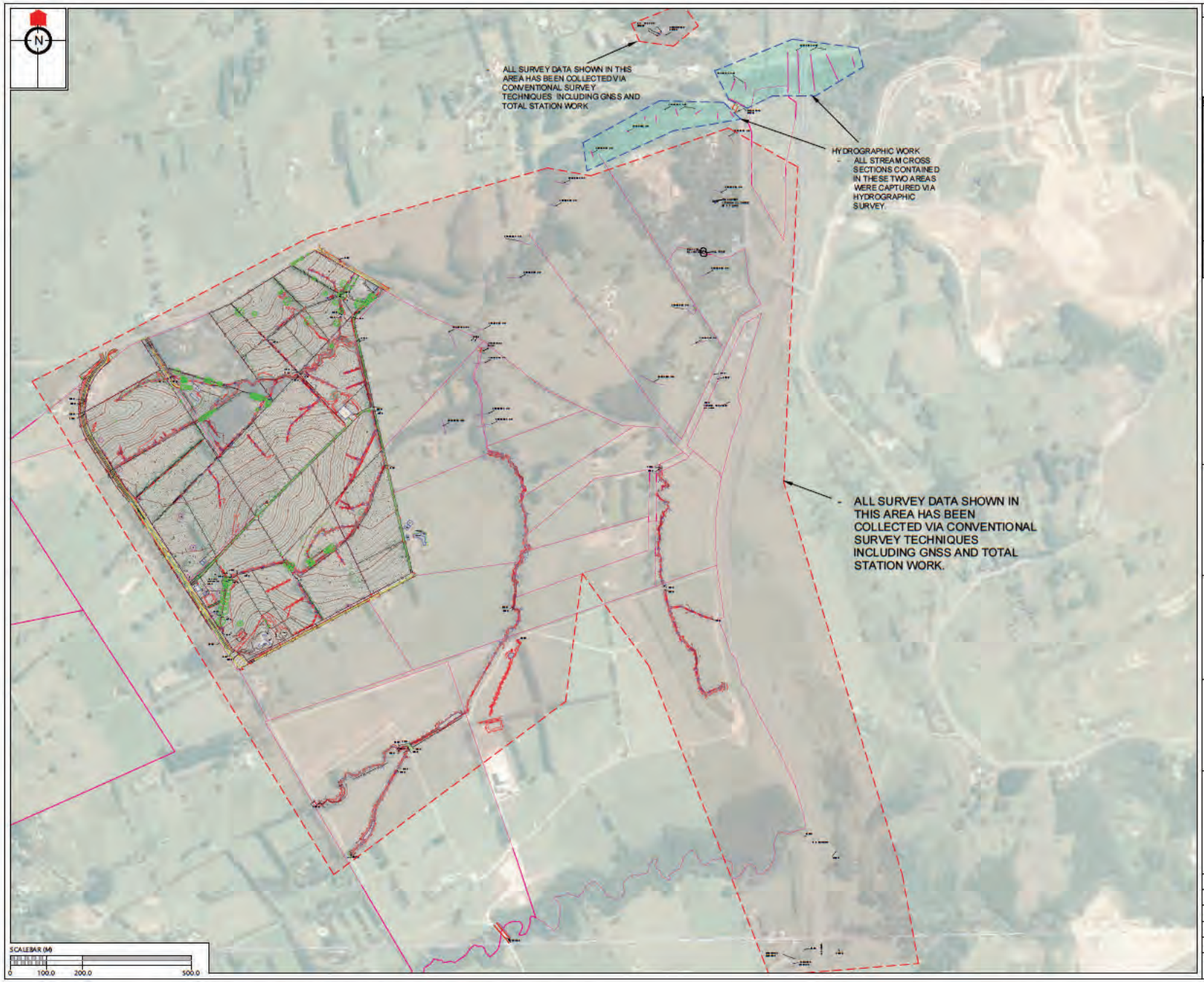

REVISION DETAILS	NAME	DATE
A		

NOTES:
1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK270", 8,306(E).11mN, 391,419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK270", RL +90.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE		CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

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Engineers. Surveyors. Planners.

WAINUI EAST

SURVEY METHODOLOGY PLAN
1 OF 1

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-090	REV.

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APPENDIX C

HIGHGATE TIME SERIES DATA

Highgate - 2yr - Time Series Inflow (Wetland)					
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s
1-Apr-08	0:00	0	0	28	0
1-Apr-08	0:01	0.0006	0	28	0
1-Apr-08	0:02	0.0023	0	28	0
1-Apr-08	0:03	0.0057	0	28	0
1-Apr-08	0:04	0.0113	0	28	0
1-Apr-08	0:05	0.0197	0	28	0
1-Apr-08	0:06	0.0302	0	28	0
1-Apr-08	0:07	0.0421	0.01	28	0.0001
1-Apr-08	0:08	0.0543	0.01	28	0.0001
1-Apr-08	0:09	0.0663	0.01	28	0.0002
1-Apr-08	0:10	0.0773	0.02	28	0.0002
1-Apr-08	0:11	0.0873	0.02	28	0.0003
1-Apr-08	0:12	0.0958	0.03	28	0.0003
1-Apr-08	0:13	0.1026	0.03	28	0.0004
1-Apr-08	0:14	0.108	0.04	28	0.0005
1-Apr-08	0:15	0.1124	0.05	28	0.0006
1-Apr-08	0:16	0.1159	0.05	28	0.0007
1-Apr-08	0:17	0.1189	0.06	28	0.0008
1-Apr-08	0:18	0.1214	0.07	28	0.0009
1-Apr-08	0:19	0.1234	0.07	28	0.001
1-Apr-08	0:20	0.125	0.08	28	0.0011
1-Apr-08	0:21	0.1263	0.09	28	0.0012
1-Apr-08	0:22	0.1274	0.1	28	0.0013
1-Apr-08	0:23	0.1283	0.1	28	0.0014
1-Apr-08	0:24	0.129	0.11	28	0.0015
1-Apr-08	0:25	0.1296	0.12	28	0.0016
1-Apr-08	0:26	0.1301	0.13	28	0.0017
1-Apr-08	0:27	0.1305	0.13	28	0.0018
1-Apr-08	0:28	0.1308	0.14	28	0.0019
1-Apr-08	0:29	0.1311	0.15	28	0.002
1-Apr-08	0:30	0.1313	0.16	28	0.0021
1-Apr-08	0:31	0.1315	0.17	28	0.0022
1-Apr-08	0:32	0.1316	0.17	28	0.0023
1-Apr-08	0:33	0.1317	0.18	28	0.0024
1-Apr-08	0:34	0.1318	0.19	28	0.0025
1-Apr-08	0:35	0.1319	0.2	28	0.0026
1-Apr-08	0:36	0.132	0.2	28	0.0027
1-Apr-08	0:37	0.1321	0.21	28	0.0028
1-Apr-08	0:38	0.1321	0.22	28	0.0029
1-Apr-08	0:39	0.1321	0.23	28	0.003
1-Apr-08	0:40	0.1321	0.24	28	0.0031
1-Apr-08	0:41	0.1321	0.24	28	0.0032
1-Apr-08	0:42	0.1321	0.25	28	0.0033
1-Apr-08	0:43	0.1321	0.26	28	0.0034
1-Apr-08	0:44	0.1321	0.27	28	0.0035
1-Apr-08	0:45	0.1321	0.27	28	0.0036
1-Apr-08	0:46	0.1321	0.28	28	0.0037

1-Apr-08	0:47	0.1321	0.29	28	0.0038
1-Apr-08	0:48	0.1321	0.3	28	0.0039
1-Apr-08	0:49	0.1321	0.3	28	0.004
1-Apr-08	0:50	0.1321	0.31	28	0.0041
1-Apr-08	0:51	0.1321	0.32	28	0.0041
1-Apr-08	0:52	0.1321	0.33	28	0.0042
1-Apr-08	0:53	0.1321	0.34	28	0.0043
1-Apr-08	0:54	0.1321	0.34	28	0.0044
1-Apr-08	0:55	0.1321	0.35	28	0.0044
1-Apr-08	0:56	0.1321	0.36	28	0.0045
1-Apr-08	0:57	0.1321	0.37	28	0.0046
1-Apr-08	0:58	0.1321	0.37	28	0.0047
1-Apr-08	0:59	0.1321	0.38	28	0.0048
1-Apr-08	1:00	0.1321	0.39	28	0.0048
1-Apr-08	1:01	0.1321	0.4	28	0.0049
1-Apr-08	1:02	0.1321	0.4	28	0.005
1-Apr-08	1:03	0.1321	0.41	28	0.0051
1-Apr-08	1:04	0.1321	0.42	28	0.0052
1-Apr-08	1:05	0.1321	0.43	28	0.0052
1-Apr-08	1:06	0.1321	0.43	28	0.0053
1-Apr-08	1:07	0.1321	0.44	28	0.0054
1-Apr-08	1:08	0.1321	0.45	28	0.0055
1-Apr-08	1:09	0.1321	0.46	28	0.0055
1-Apr-08	1:10	0.1321	0.47	28	0.0056
1-Apr-08	1:11	0.1321	0.47	28	0.0057
1-Apr-08	1:12	0.1321	0.48	28	0.0058
1-Apr-08	1:13	0.1321	0.49	28	0.0059
1-Apr-08	1:14	0.1321	0.5	28	0.0059
1-Apr-08	1:15	0.1321	0.5	28	0.006
1-Apr-08	1:16	0.1321	0.51	28	0.0061
1-Apr-08	1:17	0.1321	0.52	28	0.0062
1-Apr-08	1:18	0.1321	0.53	28	0.0062
1-Apr-08	1:19	0.1321	0.53	28	0.0063
1-Apr-08	1:20	0.1321	0.54	28	0.0064
1-Apr-08	1:21	0.1321	0.55	28	0.0065
1-Apr-08	1:22	0.1321	0.56	28	0.0066
1-Apr-08	1:23	0.1321	0.56	28	0.0066
1-Apr-08	1:24	0.1321	0.57	28	0.0067
1-Apr-08	1:25	0.1321	0.58	28	0.0068
1-Apr-08	1:26	0.1321	0.59	28	0.0069
1-Apr-08	1:27	0.1321	0.59	28	0.0069
1-Apr-08	1:28	0.1321	0.6	28	0.007
1-Apr-08	1:29	0.1321	0.61	28	0.0071
1-Apr-08	1:30	0.1321	0.62	28	0.0072
1-Apr-08	1:31	0.1321	0.62	28	0.0072
1-Apr-08	1:32	0.1321	0.63	28	0.0073
1-Apr-08	1:33	0.1321	0.64	28	0.0074
1-Apr-08	1:34	0.1321	0.65	28	0.0075
1-Apr-08	1:35	0.1321	0.65	28	0.0076
1-Apr-08	1:36	0.1321	0.66	28	0.0076

1-Apr-08	1:37	0.1321	0.67	28	0.0077
1-Apr-08	1:38	0.1321	0.68	28	0.0078
1-Apr-08	1:39	0.1321	0.68	28	0.0079
1-Apr-08	1:40	0.1321	0.69	28	0.0079
1-Apr-08	1:41	0.1321	0.7	28	0.008
1-Apr-08	1:42	0.1321	0.71	28	0.0081
1-Apr-08	1:43	0.1321	0.71	28	0.0082
1-Apr-08	1:44	0.1321	0.72	28	0.0082
1-Apr-08	1:45	0.1321	0.73	28	0.0083
1-Apr-08	1:46	0.1321	0.74	28	0.0084
1-Apr-08	1:47	0.1321	0.74	28	0.0085
1-Apr-08	1:48	0.1321	0.75	28	0.0086
1-Apr-08	1:49	0.1321	0.76	28	0.0086
1-Apr-08	1:50	0.1321	0.76	28	0.0087
1-Apr-08	1:51	0.1321	0.77	28	0.0088
1-Apr-08	1:52	0.1321	0.78	28	0.0089
1-Apr-08	1:53	0.1321	0.79	28	0.0089
1-Apr-08	1:54	0.1321	0.79	28	0.009
1-Apr-08	1:55	0.1321	0.8	28	0.0091
1-Apr-08	1:56	0.1321	0.81	28	0.0092
1-Apr-08	1:57	0.1321	0.82	28	0.0092
1-Apr-08	1:58	0.1321	0.82	28	0.0093
1-Apr-08	1:59	0.1321	0.83	28	0.0094
1-Apr-08	2:00	0.1321	0.84	28	0.0095
1-Apr-08	2:01	0.1321	0.85	28	0.0095
1-Apr-08	2:02	0.1321	0.85	28	0.0096
1-Apr-08	2:03	0.1321	0.86	28	0.0097
1-Apr-08	2:04	0.1321	0.87	28	0.0098
1-Apr-08	2:05	0.1321	0.88	28	0.0098
1-Apr-08	2:06	0.1321	0.88	28	0.0099
1-Apr-08	2:07	0.1321	0.89	28	0.01
1-Apr-08	2:08	0.1321	0.9	28	0.0101
1-Apr-08	2:09	0.1321	0.9	28	0.0101
1-Apr-08	2:10	0.1321	0.91	28	0.0102
1-Apr-08	2:11	0.1321	0.92	28	0.0103
1-Apr-08	2:12	0.1321	0.93	28	0.0104
1-Apr-08	2:13	0.1321	0.93	28	0.0104
1-Apr-08	2:14	0.1321	0.94	28	0.0105
1-Apr-08	2:15	0.1321	0.95	28	0.0106
1-Apr-08	2:16	0.1321	0.96	28	0.0107
1-Apr-08	2:17	0.1321	0.96	28	0.0107
1-Apr-08	2:18	0.1321	0.97	28	0.0108
1-Apr-08	2:19	0.1321	0.98	28	0.0109
1-Apr-08	2:20	0.1321	0.99	28	0.011
1-Apr-08	2:21	0.1321	0.99	28	0.011
1-Apr-08	2:22	0.1321	1	28	0.0111
1-Apr-08	2:23	0.1321	1.01	28	0.0112
1-Apr-08	2:24	0.1321	1.01	28	0.0113
1-Apr-08	2:25	0.1321	1.02	28	0.0113
1-Apr-08	2:26	0.1321	1.03	28	0.0114

1-Apr-08	2:27	0.1321	1.04	28	0.0115
1-Apr-08	2:28	0.1321	1.04	28	0.0116
1-Apr-08	2:29	0.1321	1.05	28	0.0116
1-Apr-08	2:30	0.1321	1.06	28	0.0117
1-Apr-08	2:31	0.1321	1.06	28	0.0118
1-Apr-08	2:32	0.1321	1.07	28	0.0119
1-Apr-08	2:33	0.1321	1.08	28	0.0119
1-Apr-08	2:34	0.1321	1.09	28	0.012
1-Apr-08	2:35	0.1321	1.09	28	0.0121
1-Apr-08	2:36	0.1321	1.1	28	0.0121
1-Apr-08	2:37	0.1321	1.11	28	0.0122
1-Apr-08	2:38	0.1321	1.12	28	0.0123
1-Apr-08	2:39	0.1321	1.12	28	0.0123
1-Apr-08	2:40	0.1321	1.13	28	0.0124
1-Apr-08	2:41	0.1321	1.14	28	0.0125
1-Apr-08	2:42	0.1321	1.14	28	0.0125
1-Apr-08	2:43	0.1321	1.15	28	0.0126
1-Apr-08	2:44	0.1321	1.16	28	0.0126
1-Apr-08	2:45	0.1321	1.17	28	0.0127
1-Apr-08	2:46	0.1321	1.17	28	0.0128
1-Apr-08	2:47	0.1321	1.18	28	0.0128
1-Apr-08	2:48	0.1321	1.19	28	0.0129
1-Apr-08	2:49	0.1321	1.19	28	0.013
1-Apr-08	2:50	0.1321	1.2	28	0.013
1-Apr-08	2:51	0.1321	1.21	28	0.0131
1-Apr-08	2:52	0.1321	1.22	28	0.0132
1-Apr-08	2:53	0.1321	1.22	28	0.0132
1-Apr-08	2:54	0.1321	1.23	28	0.0133
1-Apr-08	2:55	0.1321	1.24	28	0.0134
1-Apr-08	2:56	0.1321	1.24	28	0.0134
1-Apr-08	2:57	0.1321	1.25	28	0.0135
1-Apr-08	2:58	0.1321	1.26	28	0.0135
1-Apr-08	2:59	0.1321	1.27	28	0.0136
1-Apr-08	3:00	0.1321	1.27	28	0.0137
1-Apr-08	3:01	0.1321	1.28	28	0.0137
1-Apr-08	3:02	0.1321	1.29	28	0.0138
1-Apr-08	3:03	0.1321	1.29	28	0.0139
1-Apr-08	3:04	0.1321	1.3	28	0.0139
1-Apr-08	3:05	0.1321	1.31	28	0.014
1-Apr-08	3:06	0.1321	1.32	28	0.0141
1-Apr-08	3:07	0.1321	1.32	28	0.0141
1-Apr-08	3:08	0.1321	1.33	28	0.0142
1-Apr-08	3:09	0.1321	1.34	28	0.0142
1-Apr-08	3:10	0.1321	1.34	28	0.0143
1-Apr-08	3:11	0.1321	1.35	28	0.0144
1-Apr-08	3:12	0.1321	1.36	28	0.0144
1-Apr-08	3:13	0.1321	1.36	28	0.0145
1-Apr-08	3:14	0.1321	1.37	28	0.0146
1-Apr-08	3:15	0.1321	1.38	28	0.0146
1-Apr-08	3:16	0.1321	1.39	28	0.0147

1-Apr-08	3:17	0.1321	1.39	28	0.0148
1-Apr-08	3:18	0.1321	1.4	28	0.0148
1-Apr-08	3:19	0.1321	1.41	28	0.0149
1-Apr-08	3:20	0.1321	1.41	28	0.0149
1-Apr-08	3:21	0.1321	1.42	28	0.015
1-Apr-08	3:22	0.1321	1.43	28	0.0151
1-Apr-08	3:23	0.1321	1.43	28	0.0151
1-Apr-08	3:24	0.1321	1.44	28	0.0152
1-Apr-08	3:25	0.1321	1.45	28	0.0153
1-Apr-08	3:26	0.1321	1.46	28	0.0153
1-Apr-08	3:27	0.1321	1.46	28	0.0154
1-Apr-08	3:28	0.1321	1.47	28	0.0154
1-Apr-08	3:29	0.1321	1.48	28	0.0155
1-Apr-08	3:30	0.1321	1.48	28	0.0156
1-Apr-08	3:31	0.1321	1.49	28	0.0156
1-Apr-08	3:32	0.1321	1.5	28	0.0157
1-Apr-08	3:33	0.1321	1.5	28	0.0158
1-Apr-08	3:34	0.1321	1.51	28	0.0158
1-Apr-08	3:35	0.1321	1.52	28	0.0159
1-Apr-08	3:36	0.1321	1.53	28	0.0159
1-Apr-08	3:37	0.1321	1.53	28	0.016
1-Apr-08	3:38	0.1321	1.54	28	0.0161
1-Apr-08	3:39	0.1321	1.55	28	0.0161
1-Apr-08	3:40	0.1321	1.55	28	0.0162
1-Apr-08	3:41	0.1321	1.56	28	0.0163
1-Apr-08	3:42	0.1321	1.57	28	0.0163
1-Apr-08	3:43	0.1321	1.57	28	0.0164
1-Apr-08	3:44	0.1321	1.58	28	0.0164
1-Apr-08	3:45	0.1321	1.59	28	0.0165
1-Apr-08	3:46	0.1321	1.6	28	0.0166
1-Apr-08	3:47	0.1322	1.6	28	0.0166
1-Apr-08	3:48	0.1322	1.61	28	0.0167
1-Apr-08	3:49	0.1322	1.62	28	0.0168
1-Apr-08	3:50	0.1322	1.62	28	0.0168
1-Apr-08	3:51	0.1322	1.63	28	0.0169
1-Apr-08	3:52	0.1322	1.64	28	0.0169
1-Apr-08	3:53	0.1322	1.64	28	0.017
1-Apr-08	3:54	0.1322	1.65	28	0.0171
1-Apr-08	3:55	0.1322	1.66	28	0.0171
1-Apr-08	3:56	0.1322	1.66	28	0.0172
1-Apr-08	3:57	0.1322	1.67	28	0.0173
1-Apr-08	3:58	0.1323	1.68	28	0.0173
1-Apr-08	3:59	0.1323	1.69	28	0.0174
1-Apr-08	4:00	0.1323	1.69	28	0.0174
1-Apr-08	4:01	0.1323	1.7	28	0.0175
1-Apr-08	4:02	0.1323	1.71	28	0.0176
1-Apr-08	4:03	0.1323	1.71	28	0.0176
1-Apr-08	4:04	0.1323	1.72	28	0.0177
1-Apr-08	4:05	0.1323	1.73	28	0.0177
1-Apr-08	4:06	0.1323	1.73	28	0.0178

1-Apr-08	4:07	0.1324	1.74	28	0.0179
1-Apr-08	4:08	0.1324	1.75	28	0.0179
1-Apr-08	4:09	0.1324	1.75	28	0.018
1-Apr-08	4:10	0.1324	1.76	28	0.0181
1-Apr-08	4:11	0.1324	1.77	28	0.0181
1-Apr-08	4:12	0.1324	1.77	28	0.0182
1-Apr-08	4:13	0.1324	1.78	28	0.0182
1-Apr-08	4:14	0.1324	1.79	28	0.0183
1-Apr-08	4:15	0.1324	1.8	28	0.0184
1-Apr-08	4:16	0.1325	1.8	28	0.0184
1-Apr-08	4:17	0.1325	1.81	28	0.0185
1-Apr-08	4:18	0.1325	1.82	28	0.0185
1-Apr-08	4:19	0.1325	1.82	28	0.0186
1-Apr-08	4:20	0.1325	1.83	28	0.0187
1-Apr-08	4:21	0.1325	1.84	28	0.0187
1-Apr-08	4:22	0.1325	1.84	28	0.0188
1-Apr-08	4:23	0.1325	1.85	28	0.0189
1-Apr-08	4:24	0.1325	1.86	28	0.0189
1-Apr-08	4:25	0.1326	1.86	28	0.019
1-Apr-08	4:26	0.1326	1.87	28	0.019
1-Apr-08	4:27	0.1326	1.88	28	0.0191
1-Apr-08	4:28	0.1326	1.88	28	0.0192
1-Apr-08	4:29	0.1326	1.89	28	0.0192
1-Apr-08	4:30	0.1326	1.9	28	0.0193
1-Apr-08	4:31	0.1326	1.9	28	0.0193
1-Apr-08	4:32	0.1326	1.91	28	0.0194
1-Apr-08	4:33	0.1326	1.92	28	0.0195
1-Apr-08	4:34	0.1327	1.92	28	0.0195
1-Apr-08	4:35	0.1327	1.93	28	0.0196
1-Apr-08	4:36	0.1327	1.94	28	0.0196
1-Apr-08	4:37	0.1327	1.95	28	0.0197
1-Apr-08	4:38	0.1327	1.95	28	0.0198
1-Apr-08	4:39	0.1327	1.96	28	0.0198
1-Apr-08	4:40	0.1327	1.97	28	0.0199
1-Apr-08	4:41	0.1327	1.97	28	0.0199
1-Apr-08	4:42	0.1327	1.98	28	0.02
1-Apr-08	4:43	0.1327	1.99	28	0.02
1-Apr-08	4:44	0.1328	1.99	28	0.0201
1-Apr-08	4:45	0.1328	2	28	0.0201
1-Apr-08	4:46	0.1328	2.01	28	0.0201
1-Apr-08	4:47	0.1328	2.01	28	0.0202
1-Apr-08	4:48	0.1328	2.02	28	0.0202
1-Apr-08	4:49	0.1328	2.03	28	0.0202
1-Apr-08	4:50	0.1328	2.03	28	0.0203
1-Apr-08	4:51	0.1328	2.04	28	0.0203
1-Apr-08	4:52	0.1328	2.05	28	0.0203
1-Apr-08	4:53	0.1329	2.05	28	0.0204
1-Apr-08	4:54	0.1329	2.06	28	0.0204
1-Apr-08	4:55	0.1329	2.07	28	0.0204
1-Apr-08	4:56	0.1329	2.07	28	0.0204

1-Apr-08	4:57	0.1329	2.08	28	0.0205
1-Apr-08	4:58	0.1329	2.09	28	0.0205
1-Apr-08	4:59	0.1329	2.09	28	0.0205
1-Apr-08	5:00	0.1329	2.1	28	0.0206
1-Apr-08	5:01	0.1329	2.11	28	0.0206
1-Apr-08	5:02	0.1329	2.11	28	0.0206
1-Apr-08	5:03	0.133	2.12	28	0.0207
1-Apr-08	5:04	0.133	2.13	28	0.0207
1-Apr-08	5:05	0.133	2.13	28	0.0207
1-Apr-08	5:06	0.133	2.14	28	0.0208
1-Apr-08	5:07	0.133	2.15	28	0.0208
1-Apr-08	5:08	0.133	2.15	28	0.0208
1-Apr-08	5:09	0.133	2.16	28	0.0209
1-Apr-08	5:10	0.133	2.17	28	0.0209
1-Apr-08	5:11	0.133	2.17	28	0.0209
1-Apr-08	5:12	0.1331	2.18	28	0.0209
1-Apr-08	5:13	0.1331	2.19	28	0.021
1-Apr-08	5:14	0.1331	2.19	28	0.021
1-Apr-08	5:15	0.1331	2.2	28	0.021
1-Apr-08	5:16	0.1331	2.21	28	0.0211
1-Apr-08	5:17	0.1331	2.21	28	0.0211
1-Apr-08	5:18	0.1331	2.22	28	0.0211
1-Apr-08	5:19	0.1331	2.23	28	0.0212
1-Apr-08	5:20	0.1331	2.24	28	0.0212
1-Apr-08	5:21	0.1331	2.24	28	0.0212
1-Apr-08	5:22	0.1332	2.25	28	0.0213
1-Apr-08	5:23	0.1332	2.26	28	0.0213
1-Apr-08	5:24	0.1332	2.26	28	0.0213
1-Apr-08	5:25	0.1332	2.27	28	0.0214
1-Apr-08	5:26	0.1332	2.28	28	0.0214
1-Apr-08	5:27	0.1332	2.28	28	0.0214
1-Apr-08	5:28	0.1332	2.29	28	0.0215
1-Apr-08	5:29	0.1332	2.3	28	0.0215
1-Apr-08	5:30	0.1332	2.3	28	0.0215
1-Apr-08	5:31	0.1332	2.31	28	0.0215
1-Apr-08	5:32	0.1333	2.32	28	0.0216
1-Apr-08	5:33	0.1333	2.32	28	0.0216
1-Apr-08	5:34	0.1333	2.33	28	0.0216
1-Apr-08	5:35	0.1333	2.34	28	0.0217
1-Apr-08	5:36	0.1333	2.34	28	0.0217
1-Apr-08	5:37	0.1333	2.35	28	0.0217
1-Apr-08	5:38	0.1333	2.36	28	0.0218
1-Apr-08	5:39	0.1333	2.36	28	0.0218
1-Apr-08	5:40	0.1333	2.37	28	0.0218
1-Apr-08	5:41	0.1334	2.38	28	0.0219
1-Apr-08	5:42	0.1334	2.38	28	0.0219
1-Apr-08	5:43	0.1334	2.39	28	0.0219
1-Apr-08	5:44	0.1334	2.4	28	0.022
1-Apr-08	5:45	0.1334	2.4	28	0.022
1-Apr-08	5:46	0.1334	2.41	28	0.022

1-Apr-08	5:47	0.1334	2.42	28	0.022
1-Apr-08	5:48	0.1334	2.42	28	0.0221
1-Apr-08	5:49	0.1334	2.43	28	0.0221
1-Apr-08	5:50	0.1334	2.44	28	0.0221
1-Apr-08	5:51	0.1335	2.44	28	0.0222
1-Apr-08	5:52	0.1335	2.45	28	0.0222
1-Apr-08	5:53	0.1335	2.46	28	0.0222
1-Apr-08	5:54	0.1335	2.46	28	0.0223
1-Apr-08	5:55	0.1335	2.47	28	0.0223
1-Apr-08	5:56	0.1342	2.48	28	0.0223
1-Apr-08	5:57	0.1363	2.48	28	0.0224
1-Apr-08	5:58	0.1403	2.49	28	0.0224
1-Apr-08	5:59	0.147	2.5	28	0.0224
1-Apr-08	6:00	0.157	2.5	28	0.0225
1-Apr-08	6:01	0.1695	2.51	28	0.0225
1-Apr-08	6:02	0.1836	2.52	28	0.0225
1-Apr-08	6:03	0.1982	2.53	28	0.0226
1-Apr-08	6:04	0.2125	2.54	28	0.0226
1-Apr-08	6:05	0.2257	2.56	28	0.0227
1-Apr-08	6:06	0.2375	2.57	28	0.0228
1-Apr-08	6:07	0.2477	2.58	28	0.0228
1-Apr-08	6:08	0.2558	2.59	28	0.0229
1-Apr-08	6:09	0.2623	2.61	28	0.0229
1-Apr-08	6:10	0.2675	2.62	28	0.023
1-Apr-08	6:11	0.2718	2.64	28	0.0231
1-Apr-08	6:12	0.2754	2.65	28	0.0232
1-Apr-08	6:13	0.2783	2.67	28	0.0232
1-Apr-08	6:14	0.2808	2.68	28	0.0233
1-Apr-08	6:15	0.2827	2.7	28	0.0234
1-Apr-08	6:16	0.2844	2.71	28	0.0234
1-Apr-08	6:17	0.2857	2.73	28	0.0235
1-Apr-08	6:18	0.2868	2.75	28	0.0236
1-Apr-08	6:19	0.2877	2.76	28	0.0237
1-Apr-08	6:20	0.2885	2.78	28	0.0237
1-Apr-08	6:21	0.2891	2.79	28	0.0238
1-Apr-08	6:22	0.2896	2.81	28	0.0239
1-Apr-08	6:23	0.29	2.83	28	0.024
1-Apr-08	6:24	0.2904	2.84	28	0.024
1-Apr-08	6:25	0.2907	2.86	28	0.0241
1-Apr-08	6:26	0.291	2.87	28	0.0242
1-Apr-08	6:27	0.2912	2.89	28	0.0243
1-Apr-08	6:28	0.2914	2.91	28	0.0243
1-Apr-08	6:29	0.2915	2.92	28	0.0244
1-Apr-08	6:30	0.2917	2.94	28	0.0245
1-Apr-08	6:31	0.2918	2.95	28	0.0246
1-Apr-08	6:32	0.2919	2.97	28	0.0246
1-Apr-08	6:33	0.292	2.99	28	0.0247
1-Apr-08	6:34	0.2921	3	28	0.0248
1-Apr-08	6:35	0.2921	3.02	28	0.0249
1-Apr-08	6:36	0.2922	3.03	28	0.0249

1-Apr-08	6:37	0.2922	3.05	28	0.025
1-Apr-08	6:38	0.2923	3.07	28	0.0251
1-Apr-08	6:39	0.2923	3.08	28	0.0251
1-Apr-08	6:40	0.2924	3.1	28	0.0252
1-Apr-08	6:41	0.2924	3.11	28	0.0252
1-Apr-08	6:42	0.2925	3.13	28	0.0253
1-Apr-08	6:43	0.2925	3.15	28	0.0254
1-Apr-08	6:44	0.2926	3.16	28	0.0254
1-Apr-08	6:45	0.2926	3.18	28	0.0255
1-Apr-08	6:46	0.2926	3.19	28	0.0255
1-Apr-08	6:47	0.2927	3.21	28	0.0256
1-Apr-08	6:48	0.2927	3.23	28	0.0257
1-Apr-08	6:49	0.2928	3.24	28	0.0257
1-Apr-08	6:50	0.2928	3.26	28	0.0258
1-Apr-08	6:51	0.2929	3.27	28	0.0258
1-Apr-08	6:52	0.2929	3.29	28	0.0259
1-Apr-08	6:53	0.2929	3.31	28	0.0259
1-Apr-08	6:54	0.293	3.32	28	0.026
1-Apr-08	6:55	0.293	3.34	28	0.0261
1-Apr-08	6:56	0.2931	3.35	28	0.0261
1-Apr-08	6:57	0.2931	3.37	28	0.0262
1-Apr-08	6:58	0.2932	3.39	28	0.0262
1-Apr-08	6:59	0.2932	3.4	28	0.0263
1-Apr-08	7:00	0.2933	3.42	28	0.0264
1-Apr-08	7:01	0.2933	3.43	28	0.0264
1-Apr-08	7:02	0.2933	3.45	28	0.0265
1-Apr-08	7:03	0.2934	3.47	28	0.0265
1-Apr-08	7:04	0.2934	3.48	28	0.0266
1-Apr-08	7:05	0.2935	3.5	28	0.0267
1-Apr-08	7:06	0.2935	3.51	28	0.0267
1-Apr-08	7:07	0.2936	3.53	28	0.0268
1-Apr-08	7:08	0.2936	3.55	28	0.0268
1-Apr-08	7:09	0.2936	3.56	28	0.0269
1-Apr-08	7:10	0.2937	3.58	28	0.027
1-Apr-08	7:11	0.2937	3.59	28	0.027
1-Apr-08	7:12	0.2938	3.61	28	0.0271
1-Apr-08	7:13	0.2938	3.63	28	0.0271
1-Apr-08	7:14	0.2939	3.64	28	0.0272
1-Apr-08	7:15	0.2939	3.66	28	0.0272
1-Apr-08	7:16	0.2939	3.67	28	0.0273
1-Apr-08	7:17	0.294	3.69	28	0.0274
1-Apr-08	7:18	0.294	3.71	28	0.0274
1-Apr-08	7:19	0.2941	3.72	28	0.0275
1-Apr-08	7:20	0.2941	3.74	28	0.0275
1-Apr-08	7:21	0.2942	3.75	28	0.0276
1-Apr-08	7:22	0.2942	3.77	28	0.0277
1-Apr-08	7:23	0.2942	3.79	28	0.0277
1-Apr-08	7:24	0.2943	3.8	28	0.0278
1-Apr-08	7:25	0.2943	3.82	28	0.0278
1-Apr-08	7:26	0.2944	3.83	28	0.0279

1-Apr-08	7:27	0.2944	3.85	28	0.028
1-Apr-08	7:28	0.2944	3.87	28	0.028
1-Apr-08	7:29	0.2945	3.88	28	0.0281
1-Apr-08	7:30	0.2945	3.9	28	0.0281
1-Apr-08	7:31	0.2946	3.91	28	0.0282
1-Apr-08	7:32	0.2946	3.93	28	0.0282
1-Apr-08	7:33	0.2946	3.95	28	0.0283
1-Apr-08	7:34	0.2947	3.96	28	0.0284
1-Apr-08	7:35	0.2947	3.98	28	0.0284
1-Apr-08	7:36	0.2948	3.99	28	0.0285
1-Apr-08	7:37	0.2948	4.01	28	0.0285
1-Apr-08	7:38	0.2949	4.03	28	0.0286
1-Apr-08	7:39	0.2949	4.04	28	0.0287
1-Apr-08	7:40	0.2949	4.06	28	0.0287
1-Apr-08	7:41	0.295	4.07	28	0.0288
1-Apr-08	7:42	0.295	4.09	28	0.0288
1-Apr-08	7:43	0.2951	4.11	28	0.0289
1-Apr-08	7:44	0.2951	4.12	28	0.029
1-Apr-08	7:45	0.2951	4.14	28	0.029
1-Apr-08	7:46	0.2952	4.15	28	0.0291
1-Apr-08	7:47	0.2952	4.17	28	0.0291
1-Apr-08	7:48	0.2953	4.19	28	0.0292
1-Apr-08	7:49	0.2953	4.2	28	0.0292
1-Apr-08	7:50	0.2953	4.22	28	0.0293
1-Apr-08	7:51	0.2954	4.23	28	0.0294
1-Apr-08	7:52	0.2954	4.25	28	0.0294
1-Apr-08	7:53	0.2955	4.27	28	0.0295
1-Apr-08	7:54	0.2955	4.28	28	0.0295
1-Apr-08	7:55	0.2955	4.3	28	0.0296
1-Apr-08	7:56	0.2956	4.31	28	0.0297
1-Apr-08	7:57	0.2956	4.33	28	0.0297
1-Apr-08	7:58	0.2957	4.35	28	0.0298
1-Apr-08	7:59	0.2957	4.36	28	0.0298
1-Apr-08	8:00	0.2957	4.38	28	0.0299
1-Apr-08	8:01	0.2958	4.39	28	0.0299
1-Apr-08	8:02	0.2958	4.41	28	0.03
1-Apr-08	8:03	0.2959	4.43	28	0.0301
1-Apr-08	8:04	0.2959	4.44	28	0.0301
1-Apr-08	8:05	0.2959	4.46	28	0.0302
1-Apr-08	8:06	0.296	4.47	28	0.0302
1-Apr-08	8:07	0.296	4.49	28	0.0303
1-Apr-08	8:08	0.2961	4.51	28	0.0303
1-Apr-08	8:09	0.2961	4.52	28	0.0304
1-Apr-08	8:10	0.2961	4.54	28	0.0305
1-Apr-08	8:11	0.2962	4.55	28	0.0305
1-Apr-08	8:12	0.2962	4.57	28	0.0306
1-Apr-08	8:13	0.2962	4.59	28	0.0306
1-Apr-08	8:14	0.2963	4.6	28	0.0307
1-Apr-08	8:15	0.2963	4.62	28	0.0308
1-Apr-08	8:16	0.2964	4.63	28	0.0308

1-Apr-08	8:17	0.2964	4.65	28	0.0309
1-Apr-08	8:18	0.2964	4.66	28	0.0309
1-Apr-08	8:19	0.2965	4.68	28	0.031
1-Apr-08	8:20	0.2965	4.7	28	0.031
1-Apr-08	8:21	0.2966	4.71	28	0.0311
1-Apr-08	8:22	0.2966	4.73	28	0.0312
1-Apr-08	8:23	0.2966	4.74	28	0.0312
1-Apr-08	8:24	0.2967	4.76	28	0.0313
1-Apr-08	8:25	0.2967	4.78	28	0.0313
1-Apr-08	8:26	0.2967	4.79	28	0.0314
1-Apr-08	8:27	0.2968	4.81	28	0.0314
1-Apr-08	8:28	0.2968	4.82	28	0.0315
1-Apr-08	8:29	0.2969	4.84	28	0.0316
1-Apr-08	8:30	0.2969	4.86	28	0.0316
1-Apr-08	8:31	0.2969	4.87	28	0.0317
1-Apr-08	8:32	0.297	4.89	28	0.0317
1-Apr-08	8:33	0.297	4.9	28	0.0318
1-Apr-08	8:34	0.297	4.92	28	0.0318
1-Apr-08	8:35	0.2971	4.94	28	0.0319
1-Apr-08	8:36	0.2971	4.95	28	0.032
1-Apr-08	8:37	0.2972	4.97	28	0.032
1-Apr-08	8:38	0.2972	4.98	28	0.0321
1-Apr-08	8:39	0.2972	5	28	0.0321
1-Apr-08	8:40	0.2973	5.01	28	0.0322
1-Apr-08	8:41	0.2973	5.03	28	0.0323
1-Apr-08	8:42	0.2973	5.05	28	0.0323
1-Apr-08	8:43	0.2974	5.06	28	0.0324
1-Apr-08	8:44	0.2974	5.08	28	0.0324
1-Apr-08	8:45	0.2975	5.09	28	0.0325
1-Apr-08	8:46	0.2975	5.11	28	0.0325
1-Apr-08	8:47	0.2975	5.13	28	0.0326
1-Apr-08	8:48	0.2976	5.14	28	0.0327
1-Apr-08	8:49	0.2976	5.16	28	0.0327
1-Apr-08	8:50	0.2976	5.17	28	0.0328
1-Apr-08	8:51	0.2977	5.19	28	0.0328
1-Apr-08	8:52	0.2977	5.21	28	0.0329
1-Apr-08	8:53	0.2977	5.22	28	0.0329
1-Apr-08	8:54	0.2978	5.24	28	0.033
1-Apr-08	8:55	0.2978	5.25	28	0.033
1-Apr-08	8:56	0.2982	5.27	28	0.0331
1-Apr-08	8:57	0.2994	5.29	28	0.0331
1-Apr-08	8:58	0.3017	5.3	28	0.0332
1-Apr-08	8:59	0.3055	5.32	28	0.0332
1-Apr-08	9:00	0.3112	5.33	28	0.0333
1-Apr-08	9:01	0.3183	5.35	28	0.0333
1-Apr-08	9:02	0.3263	5.37	28	0.0334
1-Apr-08	9:03	0.3346	5.39	28	0.0334
1-Apr-08	9:04	0.3427	5.4	28	0.0335
1-Apr-08	9:05	0.3501	5.42	28	0.0335
1-Apr-08	9:06	0.3568	5.44	28	0.0336

1-Apr-08	9:07	0.3626	5.46	28	0.0336
1-Apr-08	9:08	0.3672	5.48	28	0.0337
1-Apr-08	9:09	0.3709	5.5	28	0.0337
1-Apr-08	9:10	0.3739	5.52	28	0.0338
1-Apr-08	9:11	0.3763	5.54	28	0.0338
1-Apr-08	9:12	0.3784	5.56	28	0.0339
1-Apr-08	9:13	0.3801	5.58	28	0.0339
1-Apr-08	9:14	0.3815	5.6	28	0.034
1-Apr-08	9:15	0.3826	5.63	28	0.034
1-Apr-08	9:16	0.3836	5.65	28	0.0341
1-Apr-08	9:17	0.3844	5.67	28	0.0342
1-Apr-08	9:18	0.385	5.69	28	0.0342
1-Apr-08	9:19	0.3856	5.71	28	0.0343
1-Apr-08	9:20	0.386	5.73	28	0.0343
1-Apr-08	9:21	0.3864	5.75	28	0.0344
1-Apr-08	9:22	0.3867	5.77	28	0.0344
1-Apr-08	9:23	0.387	5.79	28	0.0345
1-Apr-08	9:24	0.3873	5.82	28	0.0346
1-Apr-08	9:25	0.3875	5.84	28	0.0346
1-Apr-08	9:26	0.3876	5.86	28	0.0347
1-Apr-08	9:27	0.3878	5.88	28	0.0347
1-Apr-08	9:28	0.3879	5.9	28	0.0348
1-Apr-08	9:29	0.3881	5.92	28	0.0348
1-Apr-08	9:30	0.3882	5.94	28	0.0349
1-Apr-08	9:31	0.3883	5.96	28	0.035
1-Apr-08	9:32	0.3884	5.98	28	0.035
1-Apr-08	9:33	0.3885	6.01	28	0.0351
1-Apr-08	9:34	0.3885	6.03	28	0.0351
1-Apr-08	9:35	0.3886	6.05	28	0.0352
1-Apr-08	9:36	0.3886	6.07	28	0.0352
1-Apr-08	9:37	0.3887	6.09	28	0.0353
1-Apr-08	9:38	0.3888	6.11	28	0.0354
1-Apr-08	9:39	0.3888	6.13	28	0.0354
1-Apr-08	9:40	0.3889	6.15	28	0.0355
1-Apr-08	9:41	0.3889	6.18	28	0.0355
1-Apr-08	9:42	0.389	6.2	28	0.0356
1-Apr-08	9:43	0.389	6.22	28	0.0356
1-Apr-08	9:44	0.3891	6.24	28	0.0357
1-Apr-08	9:45	0.3892	6.26	28	0.0358
1-Apr-08	9:46	0.3892	6.28	28	0.0358
1-Apr-08	9:47	0.3893	6.3	28	0.0359
1-Apr-08	9:48	0.3893	6.32	28	0.0359
1-Apr-08	9:49	0.3894	6.35	28	0.036
1-Apr-08	9:50	0.3894	6.37	28	0.0361
1-Apr-08	9:51	0.3895	6.39	28	0.0361
1-Apr-08	9:52	0.3895	6.41	28	0.0362
1-Apr-08	9:53	0.3896	6.43	28	0.0363
1-Apr-08	9:54	0.3896	6.45	28	0.0364
1-Apr-08	9:55	0.3897	6.47	28	0.0364
1-Apr-08	9:56	0.3905	6.49	28	0.0365

1-Apr-08	9:57	0.3929	6.52	28	0.0366
1-Apr-08	9:58	0.3975	6.54	28	0.0367
1-Apr-08	9:59	0.4052	6.56	28	0.0367
1-Apr-08	10:00	0.4166	6.58	28	0.0368
1-Apr-08	10:01	0.431	6.6	28	0.0369
1-Apr-08	10:02	0.4471	6.63	28	0.037
1-Apr-08	10:03	0.4637	6.65	28	0.0371
1-Apr-08	10:04	0.48	6.68	28	0.0372
1-Apr-08	10:05	0.4951	6.71	28	0.0373
1-Apr-08	10:06	0.5086	6.73	28	0.0374
1-Apr-08	10:07	0.5203	6.76	28	0.0375
1-Apr-08	10:08	0.5295	6.79	28	0.0376
1-Apr-08	10:09	0.5369	6.82	28	0.0377
1-Apr-08	10:10	0.543	6.85	28	0.0378
1-Apr-08	10:11	0.5479	6.88	28	0.0379
1-Apr-08	10:12	0.552	6.91	28	0.038
1-Apr-08	10:13	0.5555	6.94	28	0.0381
1-Apr-08	10:14	0.5583	6.98	28	0.0382
1-Apr-08	10:15	0.5606	7.01	28	0.0383
1-Apr-08	10:16	0.5625	7.04	28	0.0384
1-Apr-08	10:17	0.5641	7.07	28	0.0385
1-Apr-08	10:18	0.5654	7.1	28	0.0386
1-Apr-08	10:19	0.5665	7.13	28	0.0388
1-Apr-08	10:20	0.5674	7.16	28	0.0389
1-Apr-08	10:21	0.5681	7.2	28	0.039
1-Apr-08	10:22	0.5688	7.23	28	0.0391
1-Apr-08	10:23	0.5693	7.26	28	0.0392
1-Apr-08	10:24	0.5698	7.29	28	0.0393
1-Apr-08	10:25	0.5702	7.32	28	0.0394
1-Apr-08	10:26	0.5706	7.36	28	0.0395
1-Apr-08	10:27	0.5709	7.39	28	0.0397
1-Apr-08	10:28	0.5711	7.42	28	0.0398
1-Apr-08	10:29	0.5714	7.45	28	0.0399
1-Apr-08	10:30	0.5716	7.48	28	0.04
1-Apr-08	10:31	0.5718	7.51	28	0.0401
1-Apr-08	10:32	0.572	7.55	28	0.0401
1-Apr-08	10:33	0.5722	7.58	28	0.0402
1-Apr-08	10:34	0.5723	7.61	28	0.0402
1-Apr-08	10:35	0.5724	7.64	28	0.0403
1-Apr-08	10:36	0.5725	7.67	28	0.0403
1-Apr-08	10:37	0.5726	7.71	28	0.0404
1-Apr-08	10:38	0.5727	7.74	28	0.0404
1-Apr-08	10:39	0.5728	7.77	28	0.0405
1-Apr-08	10:40	0.5729	7.8	28	0.0406
1-Apr-08	10:41	0.573	7.83	28	0.0406
1-Apr-08	10:42	0.5731	7.87	28	0.0407
1-Apr-08	10:43	0.5732	7.9	28	0.0407
1-Apr-08	10:44	0.5733	7.93	28	0.0408
1-Apr-08	10:45	0.5734	7.96	28	0.0408
1-Apr-08	10:46	0.5735	7.99	28	0.0409

1-Apr-08	10:47	0.5736	8.03	28	0.0409
1-Apr-08	10:48	0.5738	8.06	28	0.041
1-Apr-08	10:49	0.5739	8.09	28	0.0411
1-Apr-08	10:50	0.574	8.12	28	0.0411
1-Apr-08	10:51	0.5741	8.15	28	0.0412
1-Apr-08	10:52	0.5742	8.19	28	0.0412
1-Apr-08	10:53	0.5743	8.22	28	0.0413
1-Apr-08	10:54	0.5744	8.25	28	0.0413
1-Apr-08	10:55	0.5745	8.28	28	0.0414
1-Apr-08	10:56	0.576	8.31	28	0.0414
1-Apr-08	10:57	0.5804	8.35	28	0.0415
1-Apr-08	10:58	0.5888	8.38	28	0.0416
1-Apr-08	10:59	0.6029	8.41	28	0.0416
1-Apr-08	11:00	0.624	8.45	28	0.0417
1-Apr-08	11:01	0.6504	8.48	28	0.0417
1-Apr-08	11:02	0.68	8.52	28	0.0418
1-Apr-08	11:03	0.7105	8.56	28	0.0419
1-Apr-08	11:04	0.7405	8.6	28	0.0419
1-Apr-08	11:05	0.7682	8.64	28	0.0425
1-Apr-08	11:06	0.7932	8.69	28	0.0446
1-Apr-08	11:07	0.8146	8.73	28	0.0467
1-Apr-08	11:08	0.8317	8.78	28	0.0488
1-Apr-08	11:09	0.8453	8.83	28	0.051
1-Apr-08	11:10	0.8564	8.87	28	0.0533
1-Apr-08	11:11	0.8655	8.92	28	0.0555
1-Apr-08	11:12	0.8731	8.97	28	0.0578
1-Apr-08	11:13	0.8794	9.02	28	0.0601
1-Apr-08	11:14	0.8846	9.07	28	0.0623
1-Apr-08	11:15	0.8889	9.12	28	0.0646
1-Apr-08	11:16	0.8924	9.17	28	0.0669
1-Apr-08	11:17	0.8954	9.22	28	0.0692
1-Apr-08	11:18	0.8978	9.27	28	0.0715
1-Apr-08	11:19	0.8998	9.32	28	0.0738
1-Apr-08	11:20	0.9015	9.37	28	0.0761
1-Apr-08	11:21	0.9029	9.42	28	0.0784
1-Apr-08	11:22	0.9042	9.46	28	0.0807
1-Apr-08	11:23	0.9052	9.51	28	0.083
1-Apr-08	11:24	0.9061	9.56	28	0.0853
1-Apr-08	11:25	0.9068	9.61	28	0.0876
1-Apr-08	11:26	0.9103	9.66	28	0.0899
1-Apr-08	11:27	0.9196	9.71	28	0.0922
1-Apr-08	11:28	0.937	9.76	28	0.0945
1-Apr-08	11:29	0.9657	9.81	28	0.0976
1-Apr-08	11:30	1.0083	9.87	28	0.1019
1-Apr-08	11:31	1.0618	9.92	28	0.1065
1-Apr-08	11:32	1.1215	9.98	28	0.1113
1-Apr-08	11:33	1.1832	10.04	28	0.1164
1-Apr-08	11:34	1.2439	10.11	28	0.1217
1-Apr-08	11:35	1.2998	10.18	28	0.1274
1-Apr-08	11:36	1.3519	10.25	28	0.1332

1-Apr-08	11:37	1.4007	10.32	28	0.1393
1-Apr-08	11:38	1.4458	10.4	28	0.1456
1-Apr-08	11:39	1.491	10.48	28	0.152
1-Apr-08	11:40	1.54	10.56	28	0.1587
1-Apr-08	11:41	1.5918	10.65	28	0.1655
1-Apr-08	11:42	1.6446	10.73	28	0.1726
1-Apr-08	11:43	1.696	10.82	28	0.1799
1-Apr-08	11:44	1.7445	10.91	28	0.1875
1-Apr-08	11:45	1.7882	11.01	28	0.196
1-Apr-08	11:46	1.8339	11.11	28	0.206
1-Apr-08	11:47	1.8885	11.2	28	0.2162
1-Apr-08	11:48	1.9565	11.31	28	0.2267
1-Apr-08	11:49	2.0473	11.41	28	0.2376
1-Apr-08	11:50	2.1687	11.52	28	0.2492
1-Apr-08	11:51	2.3138	11.64	28	0.2615
1-Apr-08	11:52	2.4724	11.77	28	0.2746
1-Apr-08	11:53	2.6338	11.91	28	0.2887
1-Apr-08	11:54	2.7912	12.05	28	0.3036
1-Apr-08	11:55	2.9357	12.21	28	0.3201
1-Apr-08	11:56	3.0789	12.37	28	0.3396
1-Apr-08	11:57	3.2319	12.53	28	0.3599
1-Apr-08	11:58	3.4014	12.71	28	0.3813
1-Apr-08	11:59	3.6074	12.9	28	0.4038
1-Apr-08	12:00	3.8674	13.1	28	0.4279
1-Apr-08	12:01	4.1691	13.31	28	0.4539
1-Apr-08	12:02	4.4939	13.54	28	0.4843
1-Apr-08	12:03	4.8212	13.79	28	0.5179
1-Apr-08	12:04	5.1386	14.06	28	0.5538
1-Apr-08	12:05	5.4291	14.34	28	0.5919
1-Apr-08	12:06	5.6703	14.64	28	0.6324
1-Apr-08	12:07	5.8365	14.94	28	0.6771
1-Apr-08	12:08	5.9048	15.25	28	0.7224
1-Apr-08	12:09	5.8621	15.56	28.01	0.7674
1-Apr-08	12:10	5.7017	15.86	28.01	0.8115
1-Apr-08	12:11	5.4483	16.15	28.01	0.8564
1-Apr-08	12:12	5.1372	16.41	28.01	0.8983
1-Apr-08	12:13	4.7997	16.66	28.01	0.9366
1-Apr-08	12:14	4.4563	16.88	28.01	0.9715
1-Apr-08	12:15	4.1344	17.07	28.01	1.0028
1-Apr-08	12:16	3.8386	17.25	28.01	1.0323
1-Apr-08	12:17	3.5766	17.41	28.01	1.0588
1-Apr-08	12:18	3.3583	17.56	28.01	1.0827
1-Apr-08	12:19	3.1697	17.69	28.01	1.1043
1-Apr-08	12:20	2.9951	17.8	28.01	1.124
1-Apr-08	12:21	2.8326	17.91	28.01	1.1417
1-Apr-08	12:22	2.6803	18.01	28.01	1.1577
1-Apr-08	12:23	2.5416	18.09	28.01	1.1721
1-Apr-08	12:24	2.4172	18.17	28.01	1.1851
1-Apr-08	12:25	2.3087	18.24	28.01	1.1968
1-Apr-08	12:26	2.2129	18.31	28.01	1.2074

1-Apr-08	12:27	2.1267	18.36	28.01	1.2169
1-Apr-08	12:28	2.0495	18.42	28.01	1.2261
1-Apr-08	12:29	1.9755	18.46	28.01	1.2343
1-Apr-08	12:30	1.8991	18.5	28.01	1.2417
1-Apr-08	12:31	1.8212	18.54	28.01	1.2482
1-Apr-08	12:32	1.7435	18.57	28.01	1.2538
1-Apr-08	12:33	1.6692	18.6	28.01	1.2585
1-Apr-08	12:34	1.5998	18.62	28.01	1.2625
1-Apr-08	12:35	1.5376	18.64	28.01	1.2657
1-Apr-08	12:36	1.4829	18.66	28.01	1.2683
1-Apr-08	12:37	1.4364	18.67	28.01	1.2703
1-Apr-08	12:38	1.3992	18.68	28.01	1.2718
1-Apr-08	12:39	1.3693	18.68	28.01	1.273
1-Apr-08	12:40	1.345	18.69	28.01	1.2739
1-Apr-08	12:41	1.3252	18.69	28.01	1.2745
1-Apr-08	12:42	1.3089	18.69	28.01	1.275
1-Apr-08	12:43	1.2958	18.7	28.01	1.2753
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1-Apr-08	12:45	1.2773	18.7	28.01	1.2755
1-Apr-08	12:46	1.2709	18.7	28.01	1.2755
1-Apr-08	12:47	1.2657	18.7	28.01	1.2754
1-Apr-08	12:48	1.2615	18.7	28.01	1.2753
1-Apr-08	12:49	1.258	18.69	28.01	1.2751
1-Apr-08	12:50	1.2553	18.69	28.01	1.2749
1-Apr-08	12:51	1.253	18.69	28.01	1.2747
1-Apr-08	12:52	1.2512	18.69	28.01	1.2745
1-Apr-08	12:53	1.2498	18.69	28.01	1.2742
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1-Apr-08	12:55	1.248	18.69	28.01	1.2737
1-Apr-08	12:56	1.2452	18.68	28.01	1.2734
1-Apr-08	12:57	1.238	18.68	28.01	1.2731
1-Apr-08	12:58	1.2245	18.68	28.01	1.2726
1-Apr-08	12:59	1.2023	18.68	28.01	1.272
1-Apr-08	13:00	1.1693	18.67	28.01	1.2711
1-Apr-08	13:01	1.1279	18.66	28.01	1.2698
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1-Apr-08	13:03	1.034	18.64	28.01	1.2659
1-Apr-08	13:04	0.9872	18.63	28.01	1.2632
1-Apr-08	13:05	0.9441	18.61	28.01	1.2601
1-Apr-08	13:06	0.9054	18.59	28.01	1.2566
1-Apr-08	13:07	0.8722	18.57	28.01	1.2527
1-Apr-08	13:08	0.8458	18.54	28.01	1.2486
1-Apr-08	13:09	0.8249	18.52	28.01	1.2442
1-Apr-08	13:10	0.8079	18.49	28.01	1.2397
1-Apr-08	13:11	0.794	18.47	28.01	1.2351
1-Apr-08	13:12	0.7824	18.44	28.01	1.2305
1-Apr-08	13:13	0.7729	18.41	28.01	1.2257
1-Apr-08	13:14	0.7652	18.39	28.01	1.2209
1-Apr-08	13:15	0.7589	18.36	28.01	1.2161
1-Apr-08	13:16	0.7538	18.33	28.01	1.2115

1-Apr-08	13:17	0.7496	18.3	28.01	1.207
1-Apr-08	13:18	0.7462	18.28	28.01	1.2024
1-Apr-08	13:19	0.7435	18.25	28.01	1.1979
1-Apr-08	13:20	0.7412	18.22	28.01	1.1934
1-Apr-08	13:21	0.7394	18.19	28.01	1.1889
1-Apr-08	13:22	0.7379	18.17	28.01	1.1844
1-Apr-08	13:23	0.7367	18.14	28.01	1.18
1-Apr-08	13:24	0.7357	18.11	28.01	1.1756
1-Apr-08	13:25	0.7349	18.09	28.01	1.1712
1-Apr-08	13:26	0.7342	18.06	28.01	1.1669
1-Apr-08	13:27	0.7337	18.04	28.01	1.1626
1-Apr-08	13:28	0.7333	18.01	28.01	1.1583
1-Apr-08	13:29	0.7329	17.99	28.01	1.1541
1-Apr-08	13:30	0.7326	17.96	28.01	1.1499
1-Apr-08	13:31	0.7324	17.94	28.01	1.1458
1-Apr-08	13:32	0.7323	17.91	28.01	1.1417
1-Apr-08	13:33	0.7322	17.89	28.01	1.1376
1-Apr-08	13:34	0.7322	17.86	28.01	1.1336
1-Apr-08	13:35	0.7322	17.84	28.01	1.1296
1-Apr-08	13:36	0.7322	17.81	28.01	1.1257
1-Apr-08	13:37	0.7323	17.79	28.01	1.1218
1-Apr-08	13:38	0.7323	17.77	28.01	1.1179
1-Apr-08	13:39	0.7324	17.74	28.01	1.1141
1-Apr-08	13:40	0.7324	17.72	28.01	1.1103
1-Apr-08	13:41	0.7325	17.7	28.01	1.1066
1-Apr-08	13:42	0.7325	17.68	28.01	1.1028
1-Apr-08	13:43	0.7326	17.65	28.01	1.0992
1-Apr-08	13:44	0.7327	17.63	28.01	1.0955
1-Apr-08	13:45	0.7327	17.61	28.01	1.0919
1-Apr-08	13:46	0.7328	17.59	28.01	1.0884
1-Apr-08	13:47	0.7328	17.57	28.01	1.0848
1-Apr-08	13:48	0.7329	17.55	28.01	1.0814
1-Apr-08	13:49	0.7329	17.53	28.01	1.0779
1-Apr-08	13:50	0.733	17.51	28.01	1.0745
1-Apr-08	13:51	0.733	17.49	28.01	1.0711
1-Apr-08	13:52	0.7331	17.47	28.01	1.0677
1-Apr-08	13:53	0.7331	17.45	28.01	1.0644
1-Apr-08	13:54	0.7332	17.43	28.01	1.0611
1-Apr-08	13:55	0.7332	17.41	28.01	1.0579
1-Apr-08	13:56	0.7323	17.39	28.01	1.0547
1-Apr-08	13:57	0.7296	17.37	28.01	1.0514
1-Apr-08	13:58	0.7241	17.35	28.01	1.0482
1-Apr-08	13:59	0.715	17.33	28.01	1.045
1-Apr-08	14:00	0.7013	17.31	28.01	1.0416
1-Apr-08	14:01	0.6841	17.29	28.01	1.0382
1-Apr-08	14:02	0.6648	17.27	28.01	1.0346
1-Apr-08	14:03	0.645	17.24	28.01	1.0308
1-Apr-08	14:04	0.6254	17.22	28.01	1.0269
1-Apr-08	14:05	0.6073	17.2	28.01	1.0228
1-Apr-08	14:06	0.5911	17.17	28.01	1.0186

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1-Apr-08	14:08	0.5662	17.12	28.01	1.0099
1-Apr-08	14:09	0.5574	17.09	28.01	1.0054
1-Apr-08	14:10	0.5503	17.06	28.01	1.0012
1-Apr-08	14:11	0.5445	17.04	28.01	0.9969
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1-Apr-08	14:13	0.5357	16.98	28.01	0.9883
1-Apr-08	14:14	0.5325	16.96	28.01	0.984
1-Apr-08	14:15	0.5298	16.93	28.01	0.9798
1-Apr-08	14:16	0.5277	16.9	28.01	0.9755
1-Apr-08	14:17	0.5259	16.87	28.01	0.9713
1-Apr-08	14:18	0.5245	16.85	28.01	0.9671
1-Apr-08	14:19	0.5234	16.82	28.01	0.9629
1-Apr-08	14:20	0.5224	16.8	28.01	0.9587
1-Apr-08	14:21	0.5216	16.77	28.01	0.9546
1-Apr-08	14:22	0.521	16.74	28.01	0.9505
1-Apr-08	14:23	0.5205	16.72	28.01	0.9465
1-Apr-08	14:24	0.5201	16.69	28.01	0.9425
1-Apr-08	14:25	0.5198	16.67	28.01	0.9385
1-Apr-08	14:26	0.5195	16.64	28.01	0.9345
1-Apr-08	14:27	0.5193	16.62	28.01	0.9306
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1-Apr-08	14:29	0.519	16.57	28.01	0.9229
1-Apr-08	14:30	0.5188	16.54	28.01	0.9191
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1-Apr-08	14:32	0.5187	16.5	28.01	0.9116
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1-Apr-08	14:34	0.5186	16.45	28.01	0.9042
1-Apr-08	14:35	0.5187	16.43	28.01	0.9006
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1-Apr-08	14:37	0.5187	16.38	28.01	0.8934
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1-Apr-08	14:40	0.5188	16.31	28.01	0.8829
1-Apr-08	14:41	0.5188	16.29	28.01	0.8795
1-Apr-08	14:42	0.5188	16.27	28.01	0.8761
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1-Apr-08	14:48	0.519	16.15	28.01	0.8563
1-Apr-08	14:49	0.519	16.13	28.01	0.8531
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1-Apr-08	14:53	0.5191	16.05	28.01	0.8407
1-Apr-08	14:54	0.5191	16.03	28.01	0.8377
1-Apr-08	14:55	0.5191	16.01	28.01	0.8347
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1-Apr-08	14:58	0.5108	15.95	28.01	0.8258
1-Apr-08	14:59	0.5026	15.93	28.01	0.8228
1-Apr-08	15:00	0.4902	15.91	28.01	0.8197
1-Apr-08	15:01	0.4747	15.89	28.01	0.8165
1-Apr-08	15:02	0.4573	15.87	28.01	0.8132
1-Apr-08	15:03	0.4393	15.85	28.01	0.8098
1-Apr-08	15:04	0.4216	15.83	28.01	0.8062
1-Apr-08	15:05	0.4053	15.81	28.01	0.8028
1-Apr-08	15:06	0.3907	15.78	28.01	0.7993
1-Apr-08	15:07	0.3781	15.76	28.01	0.7957
1-Apr-08	15:08	0.3681	15.73	28.01	0.792
1-Apr-08	15:09	0.3602	15.71	28.01	0.7882
1-Apr-08	15:10	0.3538	15.68	28.01	0.7845
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1-Apr-08	15:12	0.3441	15.63	28.01	0.7769
1-Apr-08	15:13	0.3405	15.6	28.01	0.7731
1-Apr-08	15:14	0.3376	15.58	28.01	0.7693
1-Apr-08	15:15	0.3352	15.55	28.01	0.7655
1-Apr-08	15:16	0.3333	15.52	28.01	0.7618
1-Apr-08	15:17	0.3317	15.5	28.01	0.758
1-Apr-08	15:18	0.3304	15.47	28.01	0.7543
1-Apr-08	15:19	0.3293	15.45	28.01	0.7506
1-Apr-08	15:20	0.3284	15.42	28.01	0.7469
1-Apr-08	15:21	0.3277	15.4	28.01	0.7433
1-Apr-08	15:22	0.3272	15.37	28.01	0.7396
1-Apr-08	15:23	0.3267	15.35	28	0.736
1-Apr-08	15:24	0.3263	15.32	28	0.7325
1-Apr-08	15:25	0.326	15.3	28	0.7289
1-Apr-08	15:26	0.3257	15.28	28	0.7254
1-Apr-08	15:27	0.3255	15.25	28	0.7219
1-Apr-08	15:28	0.3254	15.23	28	0.7184
1-Apr-08	15:29	0.3252	15.2	28	0.715
1-Apr-08	15:30	0.3251	15.18	28	0.7116
1-Apr-08	15:31	0.325	15.16	28	0.7082
1-Apr-08	15:32	0.3249	15.14	28	0.7049
1-Apr-08	15:33	0.3249	15.11	28	0.7016
1-Apr-08	15:34	0.3249	15.09	28	0.6983
1-Apr-08	15:35	0.3249	15.07	28	0.695
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1-Apr-08	15:37	0.3249	15.02	28	0.6886
1-Apr-08	15:38	0.3249	15	28	0.6854
1-Apr-08	15:39	0.3249	14.98	28	0.6823
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1-Apr-08	15:50	0.325	14.76	28	0.6494
1-Apr-08	15:51	0.325	14.74	28	0.6466
1-Apr-08	15:52	0.325	14.72	28	0.6438
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1-Apr-08	15:54	0.325	14.68	28	0.6383
1-Apr-08	15:55	0.325	14.66	28	0.6355
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1-Apr-08	15:58	0.325	14.61	28	0.6275
1-Apr-08	15:59	0.3251	14.59	28	0.6249
1-Apr-08	16:00	0.3251	14.57	28	0.6225
1-Apr-08	16:01	0.3251	14.55	28	0.6201
1-Apr-08	16:02	0.3251	14.53	28	0.6177
1-Apr-08	16:03	0.3251	14.52	28	0.6154
1-Apr-08	16:04	0.3251	14.5	28	0.613
1-Apr-08	16:05	0.3251	14.48	28	0.6107
1-Apr-08	16:06	0.3251	14.46	28	0.6084
1-Apr-08	16:07	0.3251	14.45	28	0.6061
1-Apr-08	16:08	0.3251	14.43	28	0.6039
1-Apr-08	16:09	0.3251	14.41	28	0.6016
1-Apr-08	16:10	0.3252	14.4	28	0.5994
1-Apr-08	16:11	0.3252	14.38	28	0.5972
1-Apr-08	16:12	0.3252	14.36	28	0.595
1-Apr-08	16:13	0.3252	14.35	28	0.5928
1-Apr-08	16:14	0.3252	14.33	28	0.5907
1-Apr-08	16:15	0.3252	14.32	28	0.5885
1-Apr-08	16:16	0.3252	14.3	28	0.5864
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1-Apr-08	16:19	0.3252	14.25	28	0.5801
1-Apr-08	16:20	0.3252	14.24	28	0.5781
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1-Apr-08	16:23	0.3253	14.19	28	0.572
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1-Apr-08	16:25	0.3253	14.17	28	0.5681
1-Apr-08	16:26	0.3253	14.15	28	0.5661
1-Apr-08	16:27	0.3253	14.14	28	0.5642
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1-Apr-08	16:29	0.3253	14.11	28	0.5603
1-Apr-08	16:30	0.3253	14.09	28	0.5584
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1-Apr-08	16:32	0.3253	14.07	28	0.5547
1-Apr-08	16:33	0.3253	14.05	28	0.5529
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1-Apr-08	16:35	0.3254	14.03	28	0.5492
1-Apr-08	16:36	0.3254	14.01	28	0.5474

1-Apr-08	16:37	0.3254	14	28	0.5456
1-Apr-08	16:38	0.3254	13.99	28	0.5438
1-Apr-08	16:39	0.3254	13.97	28	0.5421
1-Apr-08	16:40	0.3254	13.96	28	0.5403
1-Apr-08	16:41	0.3254	13.95	28	0.5386
1-Apr-08	16:42	0.3254	13.93	28	0.5369
1-Apr-08	16:43	0.3254	13.92	28	0.5352
1-Apr-08	16:44	0.3254	13.91	28	0.5335
1-Apr-08	16:45	0.3254	13.9	28	0.5318
1-Apr-08	16:46	0.3254	13.88	28	0.5302
1-Apr-08	16:47	0.3255	13.87	28	0.5285
1-Apr-08	16:48	0.3255	13.86	28	0.5269
1-Apr-08	16:49	0.3255	13.85	28	0.5252
1-Apr-08	16:50	0.3255	13.84	28	0.5236
1-Apr-08	16:51	0.3255	13.82	28	0.522
1-Apr-08	16:52	0.3255	13.81	28	0.5205
1-Apr-08	16:53	0.3255	13.8	28	0.5189
1-Apr-08	16:54	0.3255	13.79	28	0.5173
1-Apr-08	16:55	0.3255	13.78	28	0.5158
1-Apr-08	16:56	0.3255	13.77	28	0.5143
1-Apr-08	16:57	0.3255	13.75	28	0.5127
1-Apr-08	16:58	0.3255	13.74	28	0.5112
1-Apr-08	16:59	0.3255	13.73	28	0.5097
1-Apr-08	17:00	0.3256	13.72	28	0.5082
1-Apr-08	17:01	0.3256	13.71	28	0.5068
1-Apr-08	17:02	0.3256	13.7	28	0.5053
1-Apr-08	17:03	0.3256	13.69	28	0.5039
1-Apr-08	17:04	0.3256	13.68	28	0.5024
1-Apr-08	17:05	0.3256	13.67	28	0.501
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1-Apr-08	17:10	0.3256	13.62	28	0.4941
1-Apr-08	17:11	0.3256	13.61	28	0.4927
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1-Apr-08	17:14	0.3257	13.58	28	0.4887
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1-Apr-08	17:16	0.3257	13.56	28	0.4861
1-Apr-08	17:17	0.3257	13.55	28	0.4848
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1-Apr-08	17:19	0.3257	13.53	28	0.4822
1-Apr-08	17:20	0.3257	13.52	28	0.481
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1-Apr-08	17:22	0.3257	13.5	28	0.4785
1-Apr-08	17:23	0.3257	13.49	28	0.4772
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1-Apr-08	17:55	0.326	13.23	28	0.4445
1-Apr-08	17:56	0.3253	13.23	28	0.4436
1-Apr-08	17:57	0.3233	13.22	28	0.4428
1-Apr-08	17:58	0.3195	13.21	28	0.4419
1-Apr-08	17:59	0.313	13.21	28	0.441
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1-Apr-08	18:02	0.2776	13.18	28	0.4379
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1-Apr-08	18:05	0.237	13.15	28	0.434
1-Apr-08	18:06	0.2255	13.14	28	0.4325
1-Apr-08	18:07	0.2157	13.12	28	0.431
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1-Apr-08	18:10	0.1967	13.08	28	0.4261
1-Apr-08	18:11	0.1926	13.07	28	0.4245
1-Apr-08	18:12	0.1891	13.05	28	0.4228
1-Apr-08	18:13	0.1863	13.04	28	0.4211
1-Apr-08	18:14	0.184	13.03	28	0.4194
1-Apr-08	18:15	0.1821	13.01	28	0.4177
1-Apr-08	18:16	0.1806	13	28	0.416

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1-Apr-08	18:19	0.1775	12.96	28	0.4109
1-Apr-08	18:20	0.1768	12.94	28	0.4092
1-Apr-08	18:21	0.1763	12.93	28	0.4075
1-Apr-08	18:22	0.1758	12.91	28	0.4058
1-Apr-08	18:23	0.1755	12.9	28	0.4041
1-Apr-08	18:24	0.1751	12.89	28	0.4025
1-Apr-08	18:25	0.1749	12.87	28	0.4009
1-Apr-08	18:26	0.1747	12.86	28	0.3992
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1-Apr-08	18:28	0.1744	12.83	28	0.396
1-Apr-08	18:29	0.1743	12.82	28	0.3944
1-Apr-08	18:30	0.1742	12.81	28	0.3928
1-Apr-08	18:31	0.1741	12.79	28	0.3912
1-Apr-08	18:32	0.174	12.78	28	0.3896
1-Apr-08	18:33	0.174	12.77	28	0.3881
1-Apr-08	18:34	0.174	12.75	28	0.3865
1-Apr-08	18:35	0.174	12.74	28	0.385
1-Apr-08	18:36	0.174	12.73	28	0.3835
1-Apr-08	18:37	0.174	12.72	28	0.382
1-Apr-08	18:38	0.174	12.7	28	0.3805
1-Apr-08	18:39	0.174	12.69	28	0.379
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1-Apr-08	19:03	0.174	12.42	28	0.3462
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1-Apr-08	19:06	0.174	12.39	28	0.3425

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1-Apr-08	21:47	0.1743	11.38	28	0.2348
1-Apr-08	21:48	0.1744	11.38	28	0.2344
1-Apr-08	21:49	0.1744	11.38	28	0.234
1-Apr-08	21:50	0.1744	11.37	28	0.2337
1-Apr-08	21:51	0.1744	11.37	28	0.2333
1-Apr-08	21:52	0.1744	11.37	28	0.2329
1-Apr-08	21:53	0.1744	11.36	28	0.2326
1-Apr-08	21:54	0.1744	11.36	28	0.2322
1-Apr-08	21:55	0.1744	11.36	28	0.2319
1-Apr-08	21:56	0.1744	11.35	28	0.2315
1-Apr-08	21:57	0.1744	11.35	28	0.2311
1-Apr-08	21:58	0.1744	11.35	28	0.2308
1-Apr-08	21:59	0.1744	11.34	28	0.2305
1-Apr-08	22:00	0.1744	11.34	28	0.2301
1-Apr-08	22:01	0.1744	11.34	28	0.2298
1-Apr-08	22:02	0.1744	11.33	28	0.2294
1-Apr-08	22:03	0.1744	11.33	28	0.2291
1-Apr-08	22:04	0.1744	11.33	28	0.2287
1-Apr-08	22:05	0.1744	11.32	28	0.2284
1-Apr-08	22:06	0.1744	11.32	28	0.2281
1-Apr-08	22:07	0.1744	11.32	28	0.2277
1-Apr-08	22:08	0.1744	11.31	28	0.2274
1-Apr-08	22:09	0.1744	11.31	28	0.2271
1-Apr-08	22:10	0.1744	11.31	28	0.2268
1-Apr-08	22:11	0.1744	11.3	28	0.2264
1-Apr-08	22:12	0.1744	11.3	28	0.2261
1-Apr-08	22:13	0.1744	11.3	28	0.2258
1-Apr-08	22:14	0.1744	11.29	28	0.2255
1-Apr-08	22:15	0.1744	11.29	28	0.2252
1-Apr-08	22:16	0.1744	11.29	28	0.2249
1-Apr-08	22:17	0.1744	11.29	28	0.2245
1-Apr-08	22:18	0.1744	11.28	28	0.2242
1-Apr-08	22:19	0.1744	11.28	28	0.2239
1-Apr-08	22:20	0.1744	11.28	28	0.2236
1-Apr-08	22:21	0.1744	11.27	28	0.2233
1-Apr-08	22:22	0.1744	11.27	28	0.223
1-Apr-08	22:23	0.1744	11.27	28	0.2227
1-Apr-08	22:24	0.1744	11.27	28	0.2224
1-Apr-08	22:25	0.1744	11.26	28	0.2221
1-Apr-08	22:26	0.1744	11.26	28	0.2218

1-Apr-08	22:27	0.1744	11.26	28	0.2215
1-Apr-08	22:28	0.1744	11.25	28	0.2212
1-Apr-08	22:29	0.1744	11.25	28	0.221
1-Apr-08	22:30	0.1744	11.25	28	0.2207
1-Apr-08	22:31	0.1744	11.25	28	0.2204
1-Apr-08	22:32	0.1744	11.24	28	0.2201
1-Apr-08	22:33	0.1744	11.24	28	0.2198
1-Apr-08	22:34	0.1744	11.24	28	0.2195
1-Apr-08	22:35	0.1744	11.23	28	0.2193
1-Apr-08	22:36	0.1744	11.23	28	0.219
1-Apr-08	22:37	0.1744	11.23	28	0.2187
1-Apr-08	22:38	0.1744	11.23	28	0.2184
1-Apr-08	22:39	0.1744	11.22	28	0.2182
1-Apr-08	22:40	0.1745	11.22	28	0.2179
1-Apr-08	22:41	0.1745	11.22	28	0.2176
1-Apr-08	22:42	0.1745	11.22	28	0.2174
1-Apr-08	22:43	0.1745	11.21	28	0.2171
1-Apr-08	22:44	0.1745	11.21	28	0.2168
1-Apr-08	22:45	0.1745	11.21	28	0.2166
1-Apr-08	22:46	0.1745	11.21	28	0.2163
1-Apr-08	22:47	0.1745	11.2	28	0.2161
1-Apr-08	22:48	0.1745	11.2	28	0.2158
1-Apr-08	22:49	0.1745	11.2	28	0.2155
1-Apr-08	22:50	0.1745	11.2	28	0.2153
1-Apr-08	22:51	0.1745	11.19	28	0.215
1-Apr-08	22:52	0.1745	11.19	28	0.2148
1-Apr-08	22:53	0.1745	11.19	28	0.2145
1-Apr-08	22:54	0.1745	11.19	28	0.2143
1-Apr-08	22:55	0.1745	11.18	28	0.214
1-Apr-08	22:56	0.1745	11.18	28	0.2138
1-Apr-08	22:57	0.1745	11.18	28	0.2136
1-Apr-08	22:58	0.1745	11.18	28	0.2133
1-Apr-08	22:59	0.1745	11.17	28	0.2131
1-Apr-08	23:00	0.1745	11.17	28	0.2128
1-Apr-08	23:01	0.1745	11.17	28	0.2126
1-Apr-08	23:02	0.1745	11.17	28	0.2124
1-Apr-08	23:03	0.1745	11.17	28	0.2121
1-Apr-08	23:04	0.1745	11.16	28	0.2119
1-Apr-08	23:05	0.1745	11.16	28	0.2117
1-Apr-08	23:06	0.1745	11.16	28	0.2114
1-Apr-08	23:07	0.1745	11.16	28	0.2112
1-Apr-08	23:08	0.1745	11.15	28	0.211
1-Apr-08	23:09	0.1745	11.15	28	0.2108
1-Apr-08	23:10	0.1745	11.15	28	0.2105
1-Apr-08	23:11	0.1745	11.15	28	0.2103
1-Apr-08	23:12	0.1745	11.15	28	0.2101
1-Apr-08	23:13	0.1745	11.14	28	0.2099
1-Apr-08	23:14	0.1745	11.14	28	0.2097
1-Apr-08	23:15	0.1745	11.14	28	0.2094
1-Apr-08	23:16	0.1745	11.14	28	0.2092

1-Apr-08	23:17	0.1745	11.14	28	0.209
1-Apr-08	23:18	0.1745	11.13	28	0.2088
1-Apr-08	23:19	0.1745	11.13	28	0.2086
1-Apr-08	23:20	0.1745	11.13	28	0.2084
1-Apr-08	23:21	0.1745	11.13	28	0.2082
1-Apr-08	23:22	0.1745	11.12	28	0.208
1-Apr-08	23:23	0.1745	11.12	28	0.2078
1-Apr-08	23:24	0.1745	11.12	28	0.2076
1-Apr-08	23:25	0.1745	11.12	28	0.2074
1-Apr-08	23:26	0.1745	11.12	28	0.2071
1-Apr-08	23:27	0.1745	11.11	28	0.2069
1-Apr-08	23:28	0.1745	11.11	28	0.2067
1-Apr-08	23:29	0.1745	11.11	28	0.2065
1-Apr-08	23:30	0.1745	11.11	28	0.2064
1-Apr-08	23:31	0.1745	11.11	28	0.2062
1-Apr-08	23:32	0.1745	11.11	28	0.206
1-Apr-08	23:33	0.1745	11.1	28	0.2058
1-Apr-08	23:34	0.1746	11.1	28	0.2056
1-Apr-08	23:35	0.1746	11.1	28	0.2054
1-Apr-08	23:36	0.1746	11.1	28	0.2052
1-Apr-08	23:37	0.1746	11.1	28	0.205
1-Apr-08	23:38	0.1746	11.09	28	0.2048
1-Apr-08	23:39	0.1746	11.09	28	0.2046
1-Apr-08	23:40	0.1746	11.09	28	0.2044
1-Apr-08	23:41	0.1746	11.09	28	0.2043
1-Apr-08	23:42	0.1746	11.09	28	0.2041
1-Apr-08	23:43	0.1746	11.09	28	0.2039
1-Apr-08	23:44	0.1746	11.08	28	0.2037
1-Apr-08	23:45	0.1746	11.08	28	0.2035
1-Apr-08	23:46	0.1746	11.08	28	0.2034
1-Apr-08	23:47	0.1746	11.08	28	0.2032
1-Apr-08	23:48	0.1746	11.08	28	0.203
1-Apr-08	23:49	0.1746	11.08	28	0.2028
1-Apr-08	23:50	0.1746	11.07	28	0.2027
1-Apr-08	23:51	0.1746	11.07	28	0.2025
1-Apr-08	23:52	0.1746	11.07	28	0.2023
1-Apr-08	23:53	0.1746	11.07	28	0.2021
1-Apr-08	23:54	0.1746	11.07	28	0.202
1-Apr-08	23:55	0.1746	11.07	28	0.2018
1-Apr-08	23:56	0.1738	11.06	28	0.2016
1-Apr-08	23:57	0.1715	11.06	28	0.2014
1-Apr-08	23:58	0.1671	11.06	28	0.2013
1-Apr-08	23:59	0.1597	11.06	28	0.201
2-Apr-08	24	0.1486	11.05	28	0.2007

Highgate - 5yr - Time Series Inflow (Wetland)					
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s
1-Apr-08	0:00	0	0	28	0
1-Apr-08	0:01	0.0008	0	28	0
1-Apr-08	0:02	0.0033	0	28	0
1-Apr-08	0:03	0.008	0	28	0
1-Apr-08	0:04	0.016	0	28	0
1-Apr-08	0:05	0.0279	0	28	0
1-Apr-08	0:06	0.0429	0	28	0.0001
1-Apr-08	0:07	0.0597	0.01	28	0.0001
1-Apr-08	0:08	0.077	0.01	28	0.0002
1-Apr-08	0:09	0.0941	0.02	28	0.0002
1-Apr-08	0:10	0.1098	0.02	28	0.0003
1-Apr-08	0:11	0.1239	0.03	28	0.0004
1-Apr-08	0:12	0.136	0.04	28	0.0005
1-Apr-08	0:13	0.1456	0.05	28	0.0006
1-Apr-08	0:14	0.1533	0.06	28	0.0007
1-Apr-08	0:15	0.1595	0.06	28	0.0008
1-Apr-08	0:16	0.1646	0.07	28	0.001
1-Apr-08	0:17	0.1688	0.08	28	0.0011
1-Apr-08	0:18	0.1723	0.09	28	0.0012
1-Apr-08	0:19	0.1751	0.1	28	0.0014
1-Apr-08	0:20	0.1774	0.12	28	0.0015
1-Apr-08	0:21	0.1793	0.13	28	0.0016
1-Apr-08	0:22	0.1808	0.14	28	0.0018
1-Apr-08	0:23	0.1821	0.15	28	0.0019
1-Apr-08	0:24	0.1831	0.16	28	0.0021
1-Apr-08	0:25	0.184	0.17	28	0.0022
1-Apr-08	0:26	0.1846	0.18	28	0.0023
1-Apr-08	0:27	0.1852	0.19	28	0.0025
1-Apr-08	0:28	0.1857	0.2	28	0.0026
1-Apr-08	0:29	0.186	0.21	28	0.0028
1-Apr-08	0:30	0.1864	0.22	28	0.0029
1-Apr-08	0:31	0.1866	0.23	28	0.0031
1-Apr-08	0:32	0.1868	0.25	28	0.0032
1-Apr-08	0:33	0.187	0.26	28	0.0033
1-Apr-08	0:34	0.1871	0.27	28	0.0035
1-Apr-08	0:35	0.1873	0.28	28	0.0036
1-Apr-08	0:36	0.1874	0.29	28	0.0038
1-Apr-08	0:37	0.1874	0.3	28	0.0039
1-Apr-08	0:38	0.1875	0.31	28	0.004
1-Apr-08	0:39	0.1875	0.32	28	0.0042
1-Apr-08	0:40	0.1875	0.33	28	0.0043
1-Apr-08	0:41	0.1875	0.34	28	0.0044
1-Apr-08	0:42	0.1875	0.36	28	0.0045
1-Apr-08	0:43	0.1875	0.37	28	0.0046
1-Apr-08	0:44	0.1875	0.38	28	0.0047
1-Apr-08	0:45	0.1875	0.39	28	0.0048
1-Apr-08	0:46	0.1875	0.4	28	0.005

1-Apr-08	0:47	0.1875	0.41	28	0.0051
1-Apr-08	0:48	0.1875	0.42	28	0.0052
1-Apr-08	0:49	0.1875	0.43	28	0.0053
1-Apr-08	0:50	0.1875	0.44	28	0.0054
1-Apr-08	0:51	0.1875	0.45	28	0.0055
1-Apr-08	0:52	0.1875	0.47	28	0.0056
1-Apr-08	0:53	0.1875	0.48	28	0.0057
1-Apr-08	0:54	0.1875	0.49	28	0.0058
1-Apr-08	0:55	0.1875	0.5	28	0.006
1-Apr-08	0:56	0.1875	0.51	28	0.0061
1-Apr-08	0:57	0.1875	0.52	28	0.0062
1-Apr-08	0:58	0.1875	0.53	28	0.0063
1-Apr-08	0:59	0.1875	0.54	28	0.0064
1-Apr-08	1:00	0.1875	0.55	28	0.0065
1-Apr-08	1:01	0.1875	0.56	28	0.0066
1-Apr-08	1:02	0.1875	0.57	28	0.0067
1-Apr-08	1:03	0.1875	0.58	28	0.0069
1-Apr-08	1:04	0.1875	0.6	28	0.007
1-Apr-08	1:05	0.1875	0.61	28	0.0071
1-Apr-08	1:06	0.1875	0.62	28	0.0072
1-Apr-08	1:07	0.1875	0.63	28	0.0073
1-Apr-08	1:08	0.1875	0.64	28	0.0074
1-Apr-08	1:09	0.1875	0.65	28	0.0075
1-Apr-08	1:10	0.1875	0.66	28	0.0076
1-Apr-08	1:11	0.1875	0.67	28	0.0077
1-Apr-08	1:12	0.1875	0.68	28	0.0079
1-Apr-08	1:13	0.1875	0.69	28	0.008
1-Apr-08	1:14	0.1875	0.7	28	0.0081
1-Apr-08	1:15	0.1875	0.71	28	0.0082
1-Apr-08	1:16	0.1875	0.73	28	0.0083
1-Apr-08	1:17	0.1875	0.74	28	0.0084
1-Apr-08	1:18	0.1875	0.75	28	0.0085
1-Apr-08	1:19	0.1875	0.76	28	0.0086
1-Apr-08	1:20	0.1875	0.77	28	0.0087
1-Apr-08	1:21	0.1875	0.78	28	0.0088
1-Apr-08	1:22	0.1875	0.79	28	0.009
1-Apr-08	1:23	0.1875	0.8	28	0.0091
1-Apr-08	1:24	0.1875	0.81	28	0.0092
1-Apr-08	1:25	0.1875	0.82	28	0.0093
1-Apr-08	1:26	0.1875	0.83	28	0.0094
1-Apr-08	1:27	0.1875	0.84	28	0.0095
1-Apr-08	1:28	0.1875	0.85	28	0.0096
1-Apr-08	1:29	0.1875	0.86	28	0.0097
1-Apr-08	1:30	0.1875	0.88	28	0.0098
1-Apr-08	1:31	0.1875	0.89	28	0.0099
1-Apr-08	1:32	0.1875	0.9	28	0.0101
1-Apr-08	1:33	0.1875	0.91	28	0.0102
1-Apr-08	1:34	0.1875	0.92	28	0.0103
1-Apr-08	1:35	0.1875	0.93	28	0.0104
1-Apr-08	1:36	0.1875	0.94	28	0.0105

1-Apr-08	1:37	0.1875	0.95	28	0.0106
1-Apr-08	1:38	0.1875	0.96	28	0.0107
1-Apr-08	1:39	0.1875	0.97	28	0.0108
1-Apr-08	1:40	0.1875	0.98	28	0.0109
1-Apr-08	1:41	0.1875	0.99	28	0.011
1-Apr-08	1:42	0.1875	1	28	0.0111
1-Apr-08	1:43	0.1875	1.01	28	0.0113
1-Apr-08	1:44	0.1875	1.02	28	0.0114
1-Apr-08	1:45	0.1875	1.03	28	0.0115
1-Apr-08	1:46	0.1875	1.04	28	0.0116
1-Apr-08	1:47	0.1875	1.06	28	0.0117
1-Apr-08	1:48	0.1875	1.07	28	0.0118
1-Apr-08	1:49	0.1875	1.08	28	0.0119
1-Apr-08	1:50	0.1875	1.09	28	0.012
1-Apr-08	1:51	0.1875	1.1	28	0.0121
1-Apr-08	1:52	0.1875	1.11	28	0.0122
1-Apr-08	1:53	0.1875	1.12	28	0.0123
1-Apr-08	1:54	0.1875	1.13	28	0.0124
1-Apr-08	1:55	0.1875	1.14	28	0.0125
1-Apr-08	1:56	0.1875	1.15	28	0.0126
1-Apr-08	1:57	0.1875	1.16	28	0.0127
1-Apr-08	1:58	0.1875	1.17	28	0.0128
1-Apr-08	1:59	0.1875	1.18	28	0.0129
1-Apr-08	2:00	0.1875	1.19	28	0.013
1-Apr-08	2:01	0.1875	1.2	28	0.013
1-Apr-08	2:02	0.1875	1.21	28	0.0131
1-Apr-08	2:03	0.1875	1.22	28	0.0132
1-Apr-08	2:04	0.1875	1.23	28	0.0133
1-Apr-08	2:05	0.1875	1.24	28	0.0134
1-Apr-08	2:06	0.1875	1.25	28	0.0135
1-Apr-08	2:07	0.1875	1.27	28	0.0136
1-Apr-08	2:08	0.1875	1.28	28	0.0137
1-Apr-08	2:09	0.1875	1.29	28	0.0138
1-Apr-08	2:10	0.1875	1.3	28	0.0139
1-Apr-08	2:11	0.1875	1.31	28	0.014
1-Apr-08	2:12	0.1875	1.32	28	0.0141
1-Apr-08	2:13	0.1875	1.33	28	0.0142
1-Apr-08	2:14	0.1875	1.34	28	0.0143
1-Apr-08	2:15	0.1875	1.35	28	0.0144
1-Apr-08	2:16	0.1875	1.36	28	0.0144
1-Apr-08	2:17	0.1875	1.37	28	0.0145
1-Apr-08	2:18	0.1875	1.38	28	0.0146
1-Apr-08	2:19	0.1875	1.39	28	0.0147
1-Apr-08	2:20	0.1875	1.4	28	0.0148
1-Apr-08	2:21	0.1875	1.41	28	0.0149
1-Apr-08	2:22	0.1875	1.42	28	0.015
1-Apr-08	2:23	0.1875	1.43	28	0.0151
1-Apr-08	2:24	0.1875	1.44	28	0.0152
1-Apr-08	2:25	0.1875	1.45	28	0.0153
1-Apr-08	2:26	0.1875	1.46	28	0.0154

1-Apr-08	2:27	0.1875	1.47	28	0.0155
1-Apr-08	2:28	0.1875	1.48	28	0.0156
1-Apr-08	2:29	0.1875	1.49	28	0.0157
1-Apr-08	2:30	0.1875	1.5	28	0.0157
1-Apr-08	2:31	0.1875	1.51	28	0.0158
1-Apr-08	2:32	0.1875	1.52	28	0.0159
1-Apr-08	2:33	0.1875	1.53	28	0.016
1-Apr-08	2:34	0.1875	1.55	28	0.0161
1-Apr-08	2:35	0.1875	1.56	28	0.0162
1-Apr-08	2:36	0.1875	1.57	28	0.0163
1-Apr-08	2:37	0.1875	1.58	28	0.0164
1-Apr-08	2:38	0.1875	1.59	28	0.0165
1-Apr-08	2:39	0.1875	1.6	28	0.0166
1-Apr-08	2:40	0.1876	1.61	28	0.0167
1-Apr-08	2:41	0.1876	1.62	28	0.0168
1-Apr-08	2:42	0.1876	1.63	28	0.0169
1-Apr-08	2:43	0.1876	1.64	28	0.0169
1-Apr-08	2:44	0.1876	1.65	28	0.017
1-Apr-08	2:45	0.1876	1.66	28	0.0171
1-Apr-08	2:46	0.1876	1.67	28	0.0172
1-Apr-08	2:47	0.1877	1.68	28	0.0173
1-Apr-08	2:48	0.1877	1.69	28	0.0174
1-Apr-08	2:49	0.1877	1.7	28	0.0175
1-Apr-08	2:50	0.1877	1.71	28	0.0176
1-Apr-08	2:51	0.1877	1.72	28	0.0177
1-Apr-08	2:52	0.1878	1.73	28	0.0178
1-Apr-08	2:53	0.1878	1.74	28	0.0179
1-Apr-08	2:54	0.1878	1.75	28	0.018
1-Apr-08	2:55	0.1878	1.76	28	0.018
1-Apr-08	2:56	0.1878	1.77	28	0.0181
1-Apr-08	2:57	0.1879	1.78	28	0.0182
1-Apr-08	2:58	0.1879	1.79	28	0.0183
1-Apr-08	2:59	0.1879	1.8	28	0.0184
1-Apr-08	3:00	0.1879	1.81	28	0.0185
1-Apr-08	3:01	0.188	1.82	28	0.0186
1-Apr-08	3:02	0.188	1.83	28	0.0187
1-Apr-08	3:03	0.188	1.84	28	0.0188
1-Apr-08	3:04	0.188	1.85	28	0.0189
1-Apr-08	3:05	0.188	1.86	28	0.019
1-Apr-08	3:06	0.1881	1.87	28	0.019
1-Apr-08	3:07	0.1881	1.88	28	0.0191
1-Apr-08	3:08	0.1881	1.89	28	0.0192
1-Apr-08	3:09	0.1881	1.9	28	0.0193
1-Apr-08	3:10	0.1882	1.91	28	0.0194
1-Apr-08	3:11	0.1882	1.92	28	0.0195
1-Apr-08	3:12	0.1882	1.93	28	0.0196
1-Apr-08	3:13	0.1882	1.94	28	0.0197
1-Apr-08	3:14	0.1882	1.95	28	0.0198
1-Apr-08	3:15	0.1883	1.96	28	0.0199
1-Apr-08	3:16	0.1883	1.97	28	0.02

1-Apr-08	3:17	0.1883	1.98	28	0.02
1-Apr-08	3:18	0.1883	1.99	28	0.0201
1-Apr-08	3:19	0.1883	2	28	0.0201
1-Apr-08	3:20	0.1884	2.01	28	0.0202
1-Apr-08	3:21	0.1884	2.02	28	0.0202
1-Apr-08	3:22	0.1884	2.03	28	0.0203
1-Apr-08	3:23	0.1884	2.04	28	0.0203
1-Apr-08	3:24	0.1885	2.05	28	0.0204
1-Apr-08	3:25	0.1885	2.06	28	0.0204
1-Apr-08	3:26	0.1885	2.07	28	0.0204
1-Apr-08	3:27	0.1885	2.08	28	0.0205
1-Apr-08	3:28	0.1885	2.09	28	0.0205
1-Apr-08	3:29	0.1886	2.1	28	0.0206
1-Apr-08	3:30	0.1886	2.11	28	0.0206
1-Apr-08	3:31	0.1886	2.12	28	0.0207
1-Apr-08	3:32	0.1886	2.13	28	0.0207
1-Apr-08	3:33	0.1886	2.14	28	0.0208
1-Apr-08	3:34	0.1887	2.15	28	0.0208
1-Apr-08	3:35	0.1887	2.16	28	0.0209
1-Apr-08	3:36	0.1887	2.17	28	0.0209
1-Apr-08	3:37	0.1887	2.18	28	0.021
1-Apr-08	3:38	0.1888	2.19	28	0.021
1-Apr-08	3:39	0.1888	2.2	28	0.0211
1-Apr-08	3:40	0.1888	2.21	28	0.0211
1-Apr-08	3:41	0.1888	2.22	28	0.0212
1-Apr-08	3:42	0.1888	2.24	28	0.0212
1-Apr-08	3:43	0.1889	2.25	28	0.0212
1-Apr-08	3:44	0.1889	2.26	28	0.0213
1-Apr-08	3:45	0.1889	2.27	28	0.0213
1-Apr-08	3:46	0.1889	2.28	28	0.0214
1-Apr-08	3:47	0.1889	2.29	28	0.0214
1-Apr-08	3:48	0.189	2.3	28	0.0215
1-Apr-08	3:49	0.189	2.31	28	0.0215
1-Apr-08	3:50	0.189	2.32	28	0.0216
1-Apr-08	3:51	0.189	2.33	28	0.0216
1-Apr-08	3:52	0.189	2.34	28	0.0217
1-Apr-08	3:53	0.1891	2.35	28	0.0217
1-Apr-08	3:54	0.1891	2.36	28	0.0218
1-Apr-08	3:55	0.1891	2.37	28	0.0218
1-Apr-08	3:56	0.1891	2.38	28	0.0219
1-Apr-08	3:57	0.1891	2.39	28	0.0219
1-Apr-08	3:58	0.1892	2.4	28	0.022
1-Apr-08	3:59	0.1892	2.41	28	0.022
1-Apr-08	4:00	0.1892	2.42	28	0.022
1-Apr-08	4:01	0.1892	2.43	28	0.0221
1-Apr-08	4:02	0.1893	2.44	28	0.0221
1-Apr-08	4:03	0.1893	2.45	28	0.0222
1-Apr-08	4:04	0.1893	2.46	28	0.0222
1-Apr-08	4:05	0.1893	2.47	28	0.0223
1-Apr-08	4:06	0.1893	2.48	28	0.0223

1-Apr-08	4:07	0.1894	2.49	28	0.0224
1-Apr-08	4:08	0.1894	2.5	28	0.0224
1-Apr-08	4:09	0.1894	2.51	28	0.0225
1-Apr-08	4:10	0.1894	2.52	28	0.0225
1-Apr-08	4:11	0.1894	2.53	28	0.0226
1-Apr-08	4:12	0.1895	2.54	28	0.0226
1-Apr-08	4:13	0.1895	2.55	28	0.0227
1-Apr-08	4:14	0.1895	2.56	28	0.0227
1-Apr-08	4:15	0.1895	2.57	28	0.0227
1-Apr-08	4:16	0.1895	2.58	28	0.0228
1-Apr-08	4:17	0.1896	2.59	28	0.0228
1-Apr-08	4:18	0.1896	2.6	28	0.0229
1-Apr-08	4:19	0.1896	2.61	28	0.0229
1-Apr-08	4:20	0.1896	2.62	28	0.023
1-Apr-08	4:21	0.1896	2.63	28	0.023
1-Apr-08	4:22	0.1897	2.64	28	0.0231
1-Apr-08	4:23	0.1897	2.65	28	0.0231
1-Apr-08	4:24	0.1897	2.66	28	0.0232
1-Apr-08	4:25	0.1897	2.67	28	0.0232
1-Apr-08	4:26	0.1897	2.68	28	0.0233
1-Apr-08	4:27	0.1898	2.69	28	0.0233
1-Apr-08	4:28	0.1898	2.7	28	0.0234
1-Apr-08	4:29	0.1898	2.71	28	0.0234
1-Apr-08	4:30	0.1898	2.72	28	0.0234
1-Apr-08	4:31	0.1898	2.73	28	0.0235
1-Apr-08	4:32	0.1899	2.74	28	0.0235
1-Apr-08	4:33	0.1899	2.75	28	0.0236
1-Apr-08	4:34	0.1899	2.76	28	0.0236
1-Apr-08	4:35	0.1899	2.77	28	0.0237
1-Apr-08	4:36	0.1899	2.78	28	0.0237
1-Apr-08	4:37	0.19	2.79	28	0.0238
1-Apr-08	4:38	0.19	2.8	28	0.0238
1-Apr-08	4:39	0.19	2.81	28	0.0239
1-Apr-08	4:40	0.19	2.82	28	0.0239
1-Apr-08	4:41	0.19	2.83	28	0.024
1-Apr-08	4:42	0.1901	2.84	28	0.024
1-Apr-08	4:43	0.1901	2.85	28	0.0241
1-Apr-08	4:44	0.1901	2.86	28	0.0241
1-Apr-08	4:45	0.1901	2.87	28	0.0241
1-Apr-08	4:46	0.1901	2.88	28	0.0242
1-Apr-08	4:47	0.1902	2.89	28	0.0242
1-Apr-08	4:48	0.1902	2.9	28	0.0243
1-Apr-08	4:49	0.1902	2.91	28	0.0243
1-Apr-08	4:50	0.1902	2.92	28	0.0244
1-Apr-08	4:51	0.1902	2.93	28	0.0244
1-Apr-08	4:52	0.1903	2.94	28	0.0245
1-Apr-08	4:53	0.1903	2.95	28	0.0245
1-Apr-08	4:54	0.1903	2.96	28	0.0246
1-Apr-08	4:55	0.1903	2.97	28	0.0246
1-Apr-08	4:56	0.1903	2.98	28	0.0247

1-Apr-08	4:57	0.1903	2.98	28	0.0247
1-Apr-08	4:58	0.1904	2.99	28	0.0247
1-Apr-08	4:59	0.1904	3	28	0.0248
1-Apr-08	5:00	0.1904	3.01	28	0.0248
1-Apr-08	5:01	0.1904	3.02	28	0.0249
1-Apr-08	5:02	0.1904	3.03	28	0.0249
1-Apr-08	5:03	0.1905	3.04	28	0.025
1-Apr-08	5:04	0.1905	3.05	28	0.025
1-Apr-08	5:05	0.1905	3.06	28	0.0251
1-Apr-08	5:06	0.1905	3.07	28	0.0251
1-Apr-08	5:07	0.1905	3.08	28	0.0251
1-Apr-08	5:08	0.1906	3.09	28	0.0252
1-Apr-08	5:09	0.1906	3.1	28	0.0252
1-Apr-08	5:10	0.1906	3.11	28	0.0252
1-Apr-08	5:11	0.1906	3.12	28	0.0253
1-Apr-08	5:12	0.1906	3.13	28	0.0253
1-Apr-08	5:13	0.1907	3.14	28	0.0253
1-Apr-08	5:14	0.1907	3.15	28	0.0254
1-Apr-08	5:15	0.1907	3.16	28	0.0254
1-Apr-08	5:16	0.1907	3.17	28	0.0255
1-Apr-08	5:17	0.1907	3.18	28	0.0255
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1-Apr-08	5:19	0.1908	3.2	28	0.0256
1-Apr-08	5:20	0.1908	3.21	28	0.0256
1-Apr-08	5:21	0.1908	3.22	28	0.0256
1-Apr-08	5:22	0.1908	3.23	28	0.0257
1-Apr-08	5:23	0.1908	3.24	28	0.0257
1-Apr-08	5:24	0.1909	3.25	28	0.0258
1-Apr-08	5:25	0.1909	3.26	28	0.0258
1-Apr-08	5:26	0.1909	3.27	28	0.0258
1-Apr-08	5:27	0.1909	3.28	28	0.0259
1-Apr-08	5:28	0.1909	3.29	28	0.0259
1-Apr-08	5:29	0.191	3.3	28	0.0259
1-Apr-08	5:30	0.191	3.31	28	0.026
1-Apr-08	5:31	0.191	3.32	28	0.026
1-Apr-08	5:32	0.191	3.33	28	0.026
1-Apr-08	5:33	0.191	3.34	28	0.0261
1-Apr-08	5:34	0.1911	3.35	28	0.0261
1-Apr-08	5:35	0.1911	3.36	28	0.0262
1-Apr-08	5:36	0.1911	3.37	28	0.0262
1-Apr-08	5:37	0.1911	3.38	28	0.0262
1-Apr-08	5:38	0.1911	3.39	28	0.0263
1-Apr-08	5:39	0.1911	3.4	28	0.0263
1-Apr-08	5:40	0.1912	3.41	28	0.0263
1-Apr-08	5:41	0.1912	3.42	28	0.0264
1-Apr-08	5:42	0.1912	3.43	28	0.0264
1-Apr-08	5:43	0.1912	3.44	28	0.0264
1-Apr-08	5:44	0.1912	3.45	28	0.0265
1-Apr-08	5:45	0.1913	3.46	28	0.0265
1-Apr-08	5:46	0.1913	3.47	28	0.0266

1-Apr-08	5:47	0.1913	3.48	28	0.0266
1-Apr-08	5:48	0.1913	3.49	28	0.0266
1-Apr-08	5:49	0.1913	3.5	28	0.0267
1-Apr-08	5:50	0.1913	3.51	28	0.0267
1-Apr-08	5:51	0.1914	3.52	28	0.0267
1-Apr-08	5:52	0.1914	3.53	28	0.0268
1-Apr-08	5:53	0.1914	3.54	28	0.0268
1-Apr-08	5:54	0.1914	3.55	28	0.0268
1-Apr-08	5:55	0.1914	3.56	28	0.0269
1-Apr-08	5:56	0.1924	3.57	28	0.0269
1-Apr-08	5:57	0.1954	3.58	28	0.027
1-Apr-08	5:58	0.2011	3.59	28	0.027
1-Apr-08	5:59	0.2108	3.6	28	0.027
1-Apr-08	6:00	0.2251	3.61	28	0.0271
1-Apr-08	6:01	0.2432	3.62	28	0.0271
1-Apr-08	6:02	0.2634	3.64	28	0.0272
1-Apr-08	6:03	0.2843	3.65	28	0.0272
1-Apr-08	6:04	0.3048	3.67	28	0.0273
1-Apr-08	6:05	0.3237	3.69	28	0.0273
1-Apr-08	6:06	0.3408	3.7	28	0.0274
1-Apr-08	6:07	0.3554	3.72	28	0.0275
1-Apr-08	6:08	0.367	3.74	28	0.0276
1-Apr-08	6:09	0.3763	3.76	28	0.0276
1-Apr-08	6:10	0.3838	3.79	28	0.0277
1-Apr-08	6:11	0.39	3.81	28	0.0278
1-Apr-08	6:12	0.3951	3.83	28	0.0279
1-Apr-08	6:13	0.3994	3.85	28	0.028
1-Apr-08	6:14	0.4029	3.87	28	0.028
1-Apr-08	6:15	0.4057	3.9	28	0.0281
1-Apr-08	6:16	0.4081	3.92	28	0.0282
1-Apr-08	6:17	0.41	3.94	28	0.0283
1-Apr-08	6:18	0.4116	3.96	28	0.0284
1-Apr-08	6:19	0.4129	3.99	28	0.0285
1-Apr-08	6:20	0.414	4.01	28	0.0285
1-Apr-08	6:21	0.4149	4.03	28	0.0286
1-Apr-08	6:22	0.4157	4.06	28	0.0287
1-Apr-08	6:23	0.4163	4.08	28	0.0288
1-Apr-08	6:24	0.4169	4.1	28	0.0289
1-Apr-08	6:25	0.4173	4.13	28	0.029
1-Apr-08	6:26	0.4177	4.15	28	0.0291
1-Apr-08	6:27	0.418	4.17	28	0.0291
1-Apr-08	6:28	0.4183	4.2	28	0.0292
1-Apr-08	6:29	0.4186	4.22	28	0.0293
1-Apr-08	6:30	0.4188	4.24	28	0.0294
1-Apr-08	6:31	0.419	4.27	28	0.0295
1-Apr-08	6:32	0.4192	4.29	28	0.0296
1-Apr-08	6:33	0.4193	4.31	28	0.0296
1-Apr-08	6:34	0.4194	4.34	28	0.0297
1-Apr-08	6:35	0.4195	4.36	28	0.0298
1-Apr-08	6:36	0.4196	4.38	28	0.0299

1-Apr-08	6:37	0.4197	4.41	28	0.03
1-Apr-08	6:38	0.4198	4.43	28	0.0301
1-Apr-08	6:39	0.4199	4.45	28	0.0302
1-Apr-08	6:40	0.4199	4.48	28	0.0302
1-Apr-08	6:41	0.42	4.5	28	0.0303
1-Apr-08	6:42	0.4201	4.52	28	0.0304
1-Apr-08	6:43	0.4202	4.55	28	0.0305
1-Apr-08	6:44	0.4203	4.57	28	0.0306
1-Apr-08	6:45	0.4203	4.59	28	0.0307
1-Apr-08	6:46	0.4204	4.62	28	0.0308
1-Apr-08	6:47	0.4205	4.64	28	0.0308
1-Apr-08	6:48	0.4206	4.66	28	0.0309
1-Apr-08	6:49	0.4206	4.69	28	0.031
1-Apr-08	6:50	0.4207	4.71	28	0.0311
1-Apr-08	6:51	0.4208	4.73	28	0.0312
1-Apr-08	6:52	0.4209	4.76	28	0.0313
1-Apr-08	6:53	0.421	4.78	28	0.0313
1-Apr-08	6:54	0.421	4.8	28	0.0314
1-Apr-08	6:55	0.4211	4.83	28	0.0315
1-Apr-08	6:56	0.4212	4.85	28	0.0316
1-Apr-08	6:57	0.4213	4.87	28	0.0317
1-Apr-08	6:58	0.4213	4.9	28	0.0318
1-Apr-08	6:59	0.4214	4.92	28	0.0319
1-Apr-08	7:00	0.4215	4.94	28	0.0319
1-Apr-08	7:01	0.4216	4.97	28	0.032
1-Apr-08	7:02	0.4216	4.99	28	0.0321
1-Apr-08	7:03	0.4217	5.01	28	0.0322
1-Apr-08	7:04	0.4218	5.04	28	0.0323
1-Apr-08	7:05	0.4219	5.06	28	0.0324
1-Apr-08	7:06	0.4219	5.08	28	0.0325
1-Apr-08	7:07	0.422	5.11	28	0.0325
1-Apr-08	7:08	0.4221	5.13	28	0.0326
1-Apr-08	7:09	0.4222	5.15	28	0.0327
1-Apr-08	7:10	0.4222	5.18	28	0.0328
1-Apr-08	7:11	0.4223	5.2	28	0.0329
1-Apr-08	7:12	0.4224	5.23	28	0.033
1-Apr-08	7:13	0.4225	5.25	28	0.033
1-Apr-08	7:14	0.4225	5.27	28	0.0331
1-Apr-08	7:15	0.4226	5.3	28	0.0332
1-Apr-08	7:16	0.4227	5.32	28	0.0332
1-Apr-08	7:17	0.4228	5.34	28	0.0333
1-Apr-08	7:18	0.4228	5.37	28	0.0333
1-Apr-08	7:19	0.4229	5.39	28	0.0334
1-Apr-08	7:20	0.423	5.41	28	0.0335
1-Apr-08	7:21	0.423	5.44	28	0.0335
1-Apr-08	7:22	0.4231	5.46	28	0.0336
1-Apr-08	7:23	0.4232	5.48	28	0.0337
1-Apr-08	7:24	0.4233	5.51	28	0.0337
1-Apr-08	7:25	0.4233	5.53	28	0.0338
1-Apr-08	7:26	0.4234	5.55	28	0.0339

1-Apr-08	7:27	0.4235	5.58	28	0.0339
1-Apr-08	7:28	0.4236	5.6	28	0.034
1-Apr-08	7:29	0.4236	5.62	28	0.034
1-Apr-08	7:30	0.4237	5.65	28	0.0341
1-Apr-08	7:31	0.4238	5.67	28	0.0342
1-Apr-08	7:32	0.4238	5.69	28	0.0342
1-Apr-08	7:33	0.4239	5.72	28	0.0343
1-Apr-08	7:34	0.424	5.74	28	0.0344
1-Apr-08	7:35	0.424	5.76	28	0.0344
1-Apr-08	7:36	0.4241	5.79	28	0.0345
1-Apr-08	7:37	0.4242	5.81	28	0.0345
1-Apr-08	7:38	0.4243	5.83	28	0.0346
1-Apr-08	7:39	0.4243	5.86	28	0.0347
1-Apr-08	7:40	0.4244	5.88	28	0.0347
1-Apr-08	7:41	0.4245	5.9	28	0.0348
1-Apr-08	7:42	0.4245	5.93	28	0.0349
1-Apr-08	7:43	0.4246	5.95	28	0.0349
1-Apr-08	7:44	0.4247	5.97	28	0.035
1-Apr-08	7:45	0.4247	6	28	0.035
1-Apr-08	7:46	0.4248	6.02	28	0.0351
1-Apr-08	7:47	0.4249	6.04	28	0.0352
1-Apr-08	7:48	0.4249	6.07	28	0.0352
1-Apr-08	7:49	0.425	6.09	28	0.0353
1-Apr-08	7:50	0.4251	6.11	28	0.0354
1-Apr-08	7:51	0.4252	6.14	28	0.0354
1-Apr-08	7:52	0.4252	6.16	28	0.0355
1-Apr-08	7:53	0.4253	6.18	28	0.0355
1-Apr-08	7:54	0.4254	6.21	28	0.0356
1-Apr-08	7:55	0.4254	6.23	28	0.0357
1-Apr-08	7:56	0.4255	6.25	28	0.0357
1-Apr-08	7:57	0.4256	6.28	28	0.0358
1-Apr-08	7:58	0.4256	6.3	28	0.0359
1-Apr-08	7:59	0.4257	6.32	28	0.0359
1-Apr-08	8:00	0.4258	6.35	28	0.036
1-Apr-08	8:01	0.4258	6.37	28	0.0361
1-Apr-08	8:02	0.4259	6.39	28	0.0361
1-Apr-08	8:03	0.426	6.42	28	0.0362
1-Apr-08	8:04	0.426	6.44	28	0.0363
1-Apr-08	8:05	0.4261	6.46	28	0.0364
1-Apr-08	8:06	0.4262	6.49	28	0.0365
1-Apr-08	8:07	0.4262	6.51	28	0.0366
1-Apr-08	8:08	0.4263	6.53	28	0.0366
1-Apr-08	8:09	0.4264	6.56	28	0.0367
1-Apr-08	8:10	0.4264	6.58	28	0.0368
1-Apr-08	8:11	0.4265	6.6	28	0.0369
1-Apr-08	8:12	0.4266	6.63	28	0.037
1-Apr-08	8:13	0.4266	6.65	28	0.0371
1-Apr-08	8:14	0.4267	6.67	28	0.0371
1-Apr-08	8:15	0.4267	6.7	28	0.0372
1-Apr-08	8:16	0.4268	6.72	28	0.0373

1-Apr-08	8:17	0.4269	6.74	28	0.0374
1-Apr-08	8:18	0.4269	6.77	28	0.0375
1-Apr-08	8:19	0.427	6.79	28	0.0376
1-Apr-08	8:20	0.4271	6.81	28	0.0376
1-Apr-08	8:21	0.4271	6.84	28	0.0377
1-Apr-08	8:22	0.4272	6.86	28	0.0378
1-Apr-08	8:23	0.4273	6.88	28	0.0379
1-Apr-08	8:24	0.4273	6.91	28	0.038
1-Apr-08	8:25	0.4274	6.93	28	0.038
1-Apr-08	8:26	0.4275	6.95	28	0.0381
1-Apr-08	8:27	0.4275	6.98	28	0.0382
1-Apr-08	8:28	0.4276	7	28	0.0383
1-Apr-08	8:29	0.4276	7.02	28	0.0384
1-Apr-08	8:30	0.4277	7.05	28	0.0385
1-Apr-08	8:31	0.4278	7.07	28	0.0385
1-Apr-08	8:32	0.4278	7.09	28	0.0386
1-Apr-08	8:33	0.4279	7.12	28	0.0387
1-Apr-08	8:34	0.428	7.14	28	0.0388
1-Apr-08	8:35	0.428	7.17	28	0.0389
1-Apr-08	8:36	0.4281	7.19	28	0.039
1-Apr-08	8:37	0.4281	7.21	28	0.039
1-Apr-08	8:38	0.4282	7.24	28	0.0391
1-Apr-08	8:39	0.4283	7.26	28	0.0392
1-Apr-08	8:40	0.4283	7.28	28	0.0393
1-Apr-08	8:41	0.4284	7.31	28	0.0394
1-Apr-08	8:42	0.4285	7.33	28	0.0395
1-Apr-08	8:43	0.4285	7.35	28	0.0395
1-Apr-08	8:44	0.4286	7.38	28	0.0396
1-Apr-08	8:45	0.4286	7.4	28	0.0397
1-Apr-08	8:46	0.4287	7.42	28	0.0398
1-Apr-08	8:47	0.4288	7.45	28	0.0399
1-Apr-08	8:48	0.4288	7.47	28	0.0399
1-Apr-08	8:49	0.4289	7.49	28	0.04
1-Apr-08	8:50	0.4289	7.52	28	0.0401
1-Apr-08	8:51	0.429	7.54	28	0.0401
1-Apr-08	8:52	0.4291	7.56	28	0.0401
1-Apr-08	8:53	0.4291	7.59	28	0.0402
1-Apr-08	8:54	0.4292	7.61	28	0.0402
1-Apr-08	8:55	0.4292	7.63	28	0.0403
1-Apr-08	8:56	0.4298	7.66	28	0.0403
1-Apr-08	8:57	0.4316	7.68	28	0.0403
1-Apr-08	8:58	0.4349	7.7	28	0.0404
1-Apr-08	8:59	0.4404	7.73	28	0.0404
1-Apr-08	9:00	0.4486	7.75	28	0.0405
1-Apr-08	9:01	0.4589	7.78	28	0.0405
1-Apr-08	9:02	0.4704	7.8	28	0.0406
1-Apr-08	9:03	0.4822	7.83	28	0.0406
1-Apr-08	9:04	0.4939	7.85	28	0.0406
1-Apr-08	9:05	0.5047	7.88	28	0.0407
1-Apr-08	9:06	0.5144	7.91	28	0.0407

1-Apr-08	9:07	0.5228	7.94	28	0.0408
1-Apr-08	9:08	0.5294	7.97	28	0.0408
1-Apr-08	9:09	0.5347	8	28	0.0409
1-Apr-08	9:10	0.539	8.03	28	0.0409
1-Apr-08	9:11	0.5426	8.06	28	0.041
1-Apr-08	9:12	0.5455	8.09	28	0.0411
1-Apr-08	9:13	0.548	8.12	28	0.0411
1-Apr-08	9:14	0.55	8.15	28	0.0412
1-Apr-08	9:15	0.5517	8.18	28	0.0412
1-Apr-08	9:16	0.5531	8.21	28	0.0413
1-Apr-08	9:17	0.5542	8.24	28	0.0413
1-Apr-08	9:18	0.5552	8.27	28	0.0414
1-Apr-08	9:19	0.556	8.3	28	0.0414
1-Apr-08	9:20	0.5566	8.33	28	0.0415
1-Apr-08	9:21	0.5572	8.36	28	0.0415
1-Apr-08	9:22	0.5577	8.39	28	0.0416
1-Apr-08	9:23	0.5581	8.42	28	0.0416
1-Apr-08	9:24	0.5584	8.46	28	0.0417
1-Apr-08	9:25	0.5587	8.49	28	0.0417
1-Apr-08	9:26	0.559	8.52	28	0.0418
1-Apr-08	9:27	0.5592	8.55	28	0.0419
1-Apr-08	9:28	0.5595	8.58	28	0.0419
1-Apr-08	9:29	0.5596	8.61	28	0.042
1-Apr-08	9:30	0.5598	8.64	28	0.0425
1-Apr-08	9:31	0.56	8.67	28	0.0439
1-Apr-08	9:32	0.5601	8.7	28	0.0454
1-Apr-08	9:33	0.5603	8.73	28	0.0468
1-Apr-08	9:34	0.5604	8.77	28	0.0482
1-Apr-08	9:35	0.5605	8.8	28	0.0497
1-Apr-08	9:36	0.5606	8.83	28	0.0511
1-Apr-08	9:37	0.5607	8.86	28	0.0525
1-Apr-08	9:38	0.5607	8.89	28	0.0539
1-Apr-08	9:39	0.5608	8.92	28	0.0553
1-Apr-08	9:40	0.5609	8.95	28	0.0567
1-Apr-08	9:41	0.561	8.98	28	0.0581
1-Apr-08	9:42	0.5611	9.01	28	0.0595
1-Apr-08	9:43	0.5612	9.04	28	0.0609
1-Apr-08	9:44	0.5613	9.07	28	0.0623
1-Apr-08	9:45	0.5614	9.1	28	0.0637
1-Apr-08	9:46	0.5615	9.13	28	0.0651
1-Apr-08	9:47	0.5615	9.16	28	0.0665
1-Apr-08	9:48	0.5616	9.19	28	0.0679
1-Apr-08	9:49	0.5617	9.22	28	0.0692
1-Apr-08	9:50	0.5618	9.25	28	0.0706
1-Apr-08	9:51	0.5619	9.28	28	0.072
1-Apr-08	9:52	0.562	9.31	28	0.0733
1-Apr-08	9:53	0.5621	9.33	28	0.0747
1-Apr-08	9:54	0.5622	9.36	28	0.0761
1-Apr-08	9:55	0.5623	9.39	28	0.0774
1-Apr-08	9:56	0.5634	9.42	28	0.0788

1-Apr-08	9:57	0.5669	9.45	28	0.0801
1-Apr-08	9:58	0.5736	9.48	28	0.0815
1-Apr-08	9:59	0.5846	9.51	28	0.0829
1-Apr-08	10:00	0.6011	9.54	28	0.0843
1-Apr-08	10:01	0.6219	9.57	28	0.0858
1-Apr-08	10:02	0.6451	9.61	28	0.0873
1-Apr-08	10:03	0.6691	9.64	28	0.0889
1-Apr-08	10:04	0.6927	9.68	28	0.0905
1-Apr-08	10:05	0.7144	9.71	28	0.0922
1-Apr-08	10:06	0.734	9.75	28	0.094
1-Apr-08	10:07	0.7508	9.79	28	0.0958
1-Apr-08	10:08	0.7642	9.83	28	0.0989
1-Apr-08	10:09	0.7748	9.87	28	0.1021
1-Apr-08	10:10	0.7836	9.91	28	0.1055
1-Apr-08	10:11	0.7907	9.95	28	0.1088
1-Apr-08	10:12	0.7967	9.99	28	0.1121
1-Apr-08	10:13	0.8016	10.03	28	0.1155
1-Apr-08	10:14	0.8057	10.07	28	0.1188
1-Apr-08	10:15	0.809	10.11	28	0.1222
1-Apr-08	10:16	0.8118	10.16	28	0.1256
1-Apr-08	10:17	0.8141	10.2	28	0.1289
1-Apr-08	10:18	0.816	10.24	28	0.1323
1-Apr-08	10:19	0.8176	10.28	28	0.1356
1-Apr-08	10:20	0.8189	10.32	28	0.1389
1-Apr-08	10:21	0.82	10.36	28	0.1423
1-Apr-08	10:22	0.821	10.4	28	0.1456
1-Apr-08	10:23	0.8218	10.44	28	0.1489
1-Apr-08	10:24	0.8225	10.48	28	0.1522
1-Apr-08	10:25	0.8231	10.52	28	0.1554
1-Apr-08	10:26	0.8236	10.56	28	0.1587
1-Apr-08	10:27	0.824	10.6	28	0.1619
1-Apr-08	10:28	0.8244	10.64	28	0.1652
1-Apr-08	10:29	0.8248	10.68	28	0.1684
1-Apr-08	10:30	0.8252	10.72	28	0.1716
1-Apr-08	10:31	0.8255	10.76	28	0.1748
1-Apr-08	10:32	0.8257	10.8	28	0.178
1-Apr-08	10:33	0.826	10.84	28	0.1811
1-Apr-08	10:34	0.8262	10.88	28	0.1843
1-Apr-08	10:35	0.8263	10.91	28	0.1874
1-Apr-08	10:36	0.8265	10.95	28	0.1905
1-Apr-08	10:37	0.8267	10.99	28	0.1941
1-Apr-08	10:38	0.8268	11.03	28	0.198
1-Apr-08	10:39	0.827	11.07	28	0.2018
1-Apr-08	10:40	0.8272	11.1	28	0.2057
1-Apr-08	10:41	0.8273	11.14	28	0.2095
1-Apr-08	10:42	0.8275	11.18	28	0.2133
1-Apr-08	10:43	0.8276	11.21	28	0.2171
1-Apr-08	10:44	0.8278	11.25	28	0.2209
1-Apr-08	10:45	0.8279	11.29	28	0.2246
1-Apr-08	10:46	0.8281	11.32	28	0.2284

1-Apr-08	10:47	0.8283	11.36	28	0.2321
1-Apr-08	10:48	0.8284	11.39	28	0.2357
1-Apr-08	10:49	0.8286	11.43	28	0.2394
1-Apr-08	10:50	0.8287	11.46	28	0.243
1-Apr-08	10:51	0.8289	11.5	28	0.2466
1-Apr-08	10:52	0.829	11.53	28	0.2502
1-Apr-08	10:53	0.8292	11.57	28	0.2538
1-Apr-08	10:54	0.8293	11.6	28	0.2574
1-Apr-08	10:55	0.8295	11.64	28	0.2609
1-Apr-08	10:56	0.8317	11.67	28	0.2644
1-Apr-08	10:57	0.8381	11.71	28	0.2679
1-Apr-08	10:58	0.8503	11.74	28	0.2715
1-Apr-08	10:59	0.8706	11.78	28	0.2751
1-Apr-08	11:00	0.901	11.81	28	0.2789
1-Apr-08	11:01	0.9392	11.85	28	0.2828
1-Apr-08	11:02	0.9819	11.89	28	0.287
1-Apr-08	11:03	1.026	11.93	28	0.2914
1-Apr-08	11:04	1.0694	11.98	28	0.2961
1-Apr-08	11:05	1.1094	12.03	28	0.301
1-Apr-08	11:06	1.1454	12.08	28	0.3061
1-Apr-08	11:07	1.1764	12.13	28	0.3113
1-Apr-08	11:08	1.201	12.18	28	0.3171
1-Apr-08	11:09	1.2207	12.23	28	0.3235
1-Apr-08	11:10	1.2367	12.29	28	0.3301
1-Apr-08	11:11	1.2499	12.34	28	0.3367
1-Apr-08	11:12	1.2609	12.4	28	0.3433
1-Apr-08	11:13	1.2701	12.45	28	0.35
1-Apr-08	11:14	1.2776	12.51	28	0.3566
1-Apr-08	11:15	1.2837	12.56	28	0.3633
1-Apr-08	11:16	1.2888	12.62	28	0.37
1-Apr-08	11:17	1.2931	12.67	28	0.3766
1-Apr-08	11:18	1.2966	12.73	28	0.3833
1-Apr-08	11:19	1.2996	12.78	28	0.3899
1-Apr-08	11:20	1.302	12.84	28	0.3965
1-Apr-08	11:21	1.3041	12.89	28	0.403
1-Apr-08	11:22	1.3058	12.95	28	0.4095
1-Apr-08	11:23	1.3073	13	28	0.416
1-Apr-08	11:24	1.3086	13.05	28	0.4225
1-Apr-08	11:25	1.3097	13.11	28	0.4289
1-Apr-08	11:26	1.3148	13.16	28	0.4352
1-Apr-08	11:27	1.3283	13.21	28	0.4416
1-Apr-08	11:28	1.3533	13.26	28	0.4481
1-Apr-08	11:29	1.3948	13.32	28	0.4548
1-Apr-08	11:30	1.4563	13.38	28	0.4619
1-Apr-08	11:31	1.5335	13.44	28	0.4703
1-Apr-08	11:32	1.6199	13.51	28	0.4792
1-Apr-08	11:33	1.7089	13.58	28	0.4887
1-Apr-08	11:34	1.7966	13.65	28	0.4989
1-Apr-08	11:35	1.8774	13.73	28	0.5097
1-Apr-08	11:36	1.9527	13.82	28	0.521

1-Apr-08	11:37	2.0231	13.9	28	0.5328
1-Apr-08	11:38	2.0882	13.99	28	0.5451
1-Apr-08	11:39	2.1535	14.09	28	0.5578
1-Apr-08	11:40	2.2243	14.19	28	0.5709
1-Apr-08	11:41	2.2991	14.29	28	0.5845
1-Apr-08	11:42	2.3754	14.39	28	0.5987
1-Apr-08	11:43	2.4496	14.5	28	0.6133
1-Apr-08	11:44	2.5196	14.61	28	0.6286
1-Apr-08	11:45	2.5828	14.73	28	0.6453
1-Apr-08	11:46	2.6488	14.85	28	0.6625
1-Apr-08	11:47	2.7276	14.97	28	0.6802
1-Apr-08	11:48	2.8258	15.09	28	0.6985
1-Apr-08	11:49	2.9569	15.22	28	0.7176
1-Apr-08	11:50	3.1322	15.36	28.01	0.7379
1-Apr-08	11:51	3.3417	15.51	28.01	0.7598
1-Apr-08	11:52	3.5708	15.67	28.01	0.7833
1-Apr-08	11:53	3.8037	15.85	28.01	0.8088
1-Apr-08	11:54	4.0309	16.03	28.01	0.8381
1-Apr-08	11:55	4.2395	16.23	28.01	0.8692
1-Apr-08	11:56	4.4462	16.44	28.01	0.9019
1-Apr-08	11:57	4.6671	16.65	28.01	0.9364
1-Apr-08	11:58	4.9117	16.88	28.01	0.9727
1-Apr-08	11:59	5.2089	17.13	28.01	1.0116
1-Apr-08	12:00	5.5841	17.39	28.01	1.0551
1-Apr-08	12:01	6.0194	17.67	28.01	1.1021
1-Apr-08	12:02	6.4879	17.98	28.01	1.1532
1-Apr-08	12:03	6.96	18.31	28.01	1.2085
1-Apr-08	12:04	7.4178	18.67	28.01	1.2708
1-Apr-08	12:05	7.8366	19.05	28.01	1.3375
1-Apr-08	12:06	8.1843	19.45	28.01	1.4075
1-Apr-08	12:07	8.4235	19.86	28.01	1.4812
1-Apr-08	12:08	8.5215	20.28	28.01	1.5572
1-Apr-08	12:09	8.4594	20.69	28.01	1.6325
1-Apr-08	12:10	8.2274	21.09	28.01	1.7066
1-Apr-08	12:11	7.8613	21.47	28.01	1.7784
1-Apr-08	12:12	7.4121	21.82	28.01	1.8447
1-Apr-08	12:13	6.9248	22.14	28.01	1.905
1-Apr-08	12:14	6.429	22.42	28.01	1.986
1-Apr-08	12:15	5.9643	22.67	28.01	2.0763
1-Apr-08	12:16	5.5372	22.89	28.01	2.1552
1-Apr-08	12:17	5.1591	23.08	28.01	2.2237
1-Apr-08	12:18	4.8439	23.24	28.01	2.2833
1-Apr-08	12:19	4.5716	23.39	28.01	2.3354
1-Apr-08	12:20	4.3196	23.51	28.01	2.3807
1-Apr-08	12:21	4.085	23.62	28.01	2.4231
1-Apr-08	12:22	3.8652	23.71	28.01	2.4689
1-Apr-08	12:23	3.665	23.79	28.01	2.5071
1-Apr-08	12:24	3.4854	23.85	28.01	2.5386
1-Apr-08	12:25	3.3289	23.9	28.01	2.5643
1-Apr-08	12:26	3.1906	23.94	28.01	2.5848

1-Apr-08	12:27	3.0661	23.98	28.01	2.6008
1-Apr-08	12:28	2.9548	24	28.01	2.6129
1-Apr-08	12:29	2.848	24.02	28.01	2.6214
1-Apr-08	12:30	2.7377	24.03	28.01	2.6265
1-Apr-08	12:31	2.6253	24.03	28.01	2.6281
1-Apr-08	12:32	2.5133	24.03	28.01	2.6264
1-Apr-08	12:33	2.4061	24.02	28.01	2.6215
1-Apr-08	12:34	2.3059	24	28.01	2.6136
1-Apr-08	12:35	2.2162	23.98	28.01	2.6032
1-Apr-08	12:36	2.1373	23.95	28.01	2.5906
1-Apr-08	12:37	2.0703	23.93	28.01	2.5763
1-Apr-08	12:38	2.0165	23.89	28.01	2.5605
1-Apr-08	12:39	1.9735	23.86	28.01	2.5439
1-Apr-08	12:40	1.9383	23.83	28.01	2.5265
1-Apr-08	12:41	1.9098	23.79	28.01	2.5087
1-Apr-08	12:42	1.8863	23.75	28.01	2.4907
1-Apr-08	12:43	1.8673	23.72	28.01	2.4726
1-Apr-08	12:44	1.8522	23.68	28.01	2.4545
1-Apr-08	12:45	1.8405	23.65	28.01	2.4365
1-Apr-08	12:46	1.8313	23.61	28.01	2.4188
1-Apr-08	12:47	1.8237	23.58	28.01	2.404
1-Apr-08	12:48	1.8176	23.54	28.01	2.3915
1-Apr-08	12:49	1.8126	23.51	28.01	2.3791
1-Apr-08	12:50	1.8085	23.47	28.01	2.3669
1-Apr-08	12:51	1.8053	23.44	28.01	2.3549
1-Apr-08	12:52	1.8027	23.41	28.01	2.3431
1-Apr-08	12:53	1.8006	23.37	28.01	2.3314
1-Apr-08	12:54	1.799	23.34	28.01	2.32
1-Apr-08	12:55	1.7979	23.31	28.01	2.3088
1-Apr-08	12:56	1.7938	23.28	28.01	2.2978
1-Apr-08	12:57	1.7834	23.25	28.01	2.2869
1-Apr-08	12:58	1.764	23.22	28.01	2.2759
1-Apr-08	12:59	1.7319	23.19	28.01	2.2645
1-Apr-08	13:00	1.6844	23.16	28.01	2.2526
1-Apr-08	13:01	1.6248	23.12	28.01	2.2398
1-Apr-08	13:02	1.5581	23.08	28.01	2.2259
1-Apr-08	13:03	1.4894	23.04	28.01	2.2108
1-Apr-08	13:04	1.4219	23	28.01	2.1946
1-Apr-08	13:05	1.3598	22.95	28.01	2.1773
1-Apr-08	13:06	1.3041	22.9	28.01	2.1592
1-Apr-08	13:07	1.2562	22.85	28.01	2.1403
1-Apr-08	13:08	1.2182	22.79	28.01	2.1209
1-Apr-08	13:09	1.1881	22.74	28.01	2.1012
1-Apr-08	13:10	1.1635	22.68	28.01	2.0814
1-Apr-08	13:11	1.1435	22.63	28.01	2.0615
1-Apr-08	13:12	1.1269	22.57	28.01	2.0416
1-Apr-08	13:13	1.1132	22.52	28.01	2.0218
1-Apr-08	13:14	1.102	22.46	28.01	2.0022
1-Apr-08	13:15	1.093	22.41	28.01	1.9828
1-Apr-08	13:16	1.0856	22.36	28.01	1.9636

1-Apr-08	13:17	1.0795	22.31	28.01	1.9447
1-Apr-08	13:18	1.0746	22.25	28.01	1.9274
1-Apr-08	13:19	1.0706	22.2	28.01	1.9178
1-Apr-08	13:20	1.0674	22.15	28.01	1.9082
1-Apr-08	13:21	1.0647	22.1	28.01	1.8986
1-Apr-08	13:22	1.0625	22.05	28.01	1.8892
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1-Apr-08	13:24	1.0593	21.95	28.01	1.8705
1-Apr-08	13:25	1.0582	21.91	28.01	1.8613
1-Apr-08	13:26	1.0573	21.86	28.01	1.8522
1-Apr-08	13:27	1.0565	21.81	28.01	1.8432
1-Apr-08	13:28	1.0559	21.76	28.01	1.8343
1-Apr-08	13:29	1.0553	21.72	28.01	1.8255
1-Apr-08	13:30	1.0549	21.67	28.01	1.8167
1-Apr-08	13:31	1.0546	21.63	28.01	1.8081
1-Apr-08	13:32	1.0544	21.58	28.01	1.7996
1-Apr-08	13:33	1.0542	21.54	28.01	1.7911
1-Apr-08	13:34	1.0541	21.49	28.01	1.7828
1-Apr-08	13:35	1.0542	21.45	28.01	1.7745
1-Apr-08	13:36	1.0542	21.41	28.01	1.7664
1-Apr-08	13:37	1.0543	21.36	28.01	1.7583
1-Apr-08	13:38	1.0544	21.32	28.01	1.7504
1-Apr-08	13:39	1.0544	21.28	28.01	1.7425
1-Apr-08	13:40	1.0545	21.24	28.01	1.7347
1-Apr-08	13:41	1.0545	21.2	28.01	1.727
1-Apr-08	13:42	1.0546	21.16	28.01	1.7194
1-Apr-08	13:43	1.0547	21.12	28.01	1.7118
1-Apr-08	13:44	1.0547	21.08	28.01	1.7044
1-Apr-08	13:45	1.0548	21.04	28.01	1.697
1-Apr-08	13:46	1.0549	21	28.01	1.6898
1-Apr-08	13:47	1.0549	20.96	28.01	1.6826
1-Apr-08	13:48	1.055	20.93	28.01	1.6756
1-Apr-08	13:49	1.055	20.89	28.01	1.6689
1-Apr-08	13:50	1.0551	20.85	28.01	1.6622
1-Apr-08	13:51	1.0552	20.82	28.01	1.6556
1-Apr-08	13:52	1.0552	20.78	28.01	1.6491
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1-Apr-08	13:55	1.0554	20.68	28.01	1.6299
1-Apr-08	13:56	1.0541	20.64	28.01	1.6237
1-Apr-08	13:57	1.0501	20.61	28.01	1.6174
1-Apr-08	13:58	1.0423	20.57	28.01	1.6112
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1-Apr-08	14:00	1.0094	20.5	28.01	1.5986
1-Apr-08	14:01	0.9847	20.47	28.01	1.5921
1-Apr-08	14:02	0.9569	20.43	28.01	1.5853
1-Apr-08	14:03	0.9283	20.39	28.01	1.5783
1-Apr-08	14:04	0.9001	20.35	28.01	1.5711
1-Apr-08	14:05	0.8741	20.31	28.01	1.5637
1-Apr-08	14:06	0.8508	20.27	28.01	1.556

1-Apr-08	14:07	0.8308	20.23	28.01	1.5483
1-Apr-08	14:08	0.8149	20.18	28.01	1.5404
1-Apr-08	14:09	0.8023	20.14	28.01	1.5324
1-Apr-08	14:10	0.792	20.1	28.01	1.5244
1-Apr-08	14:11	0.7836	20.05	28.01	1.5164
1-Apr-08	14:12	0.7767	20.01	28.01	1.5084
1-Apr-08	14:13	0.7709	19.96	28.01	1.5004
1-Apr-08	14:14	0.7663	19.92	28.01	1.4925
1-Apr-08	14:15	0.7625	19.88	28.01	1.4846
1-Apr-08	14:16	0.7594	19.83	28.01	1.4767
1-Apr-08	14:17	0.7569	19.79	28.01	1.4689
1-Apr-08	14:18	0.7548	19.75	28.01	1.4611
1-Apr-08	14:19	0.7531	19.71	28.01	1.4535
1-Apr-08	14:20	0.7518	19.67	28.01	1.4458
1-Apr-08	14:21	0.7507	19.62	28.01	1.4384
1-Apr-08	14:22	0.7498	19.58	28.01	1.4312
1-Apr-08	14:23	0.749	19.54	28.01	1.424
1-Apr-08	14:24	0.7484	19.5	28.01	1.417
1-Apr-08	14:25	0.7479	19.46	28.01	1.4099
1-Apr-08	14:26	0.7475	19.42	28.01	1.403
1-Apr-08	14:27	0.7472	19.38	28.01	1.3961
1-Apr-08	14:28	0.747	19.34	28.01	1.3893
1-Apr-08	14:29	0.7467	19.31	28.01	1.3826
1-Apr-08	14:30	0.7466	19.27	28.01	1.3759
1-Apr-08	14:31	0.7464	19.23	28.01	1.3693
1-Apr-08	14:32	0.7463	19.19	28.01	1.3628
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1-Apr-08	14:36	0.7463	19.05	28.01	1.3373
1-Apr-08	14:37	0.7463	19.01	28.01	1.3311
1-Apr-08	14:38	0.7463	18.98	28.01	1.325
1-Apr-08	14:39	0.7464	18.94	28.01	1.3189
1-Apr-08	14:40	0.7464	18.91	28.01	1.3129
1-Apr-08	14:41	0.7464	18.88	28.01	1.307
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1-Apr-08	14:43	0.7465	18.81	28.01	1.2953
1-Apr-08	14:44	0.7465	18.78	28.01	1.2895
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1-Apr-08	14:47	0.7466	18.68	28.01	1.2726
1-Apr-08	14:48	0.7466	18.65	28.01	1.2671
1-Apr-08	14:49	0.7466	18.62	28.01	1.2616
1-Apr-08	14:50	0.7467	18.59	28.01	1.2562
1-Apr-08	14:51	0.7467	18.56	28.01	1.2509
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1-Apr-08	14:53	0.7468	18.5	28.01	1.2404
1-Apr-08	14:54	0.7468	18.47	28.01	1.2352
1-Apr-08	14:55	0.7468	18.44	28.01	1.2301
1-Apr-08	14:56	0.7456	18.41	28.01	1.225

1-Apr-08	14:57	0.742	18.38	28.01	1.2199
1-Apr-08	14:58	0.7349	18.35	28.01	1.2149
1-Apr-08	14:59	0.723	18.32	28.01	1.2101
1-Apr-08	15:00	0.7052	18.29	28.01	1.2052
1-Apr-08	15:01	0.6828	18.26	28.01	1.2001
1-Apr-08	15:02	0.6578	18.23	28.01	1.1949
1-Apr-08	15:03	0.6319	18.2	28.01	1.1894
1-Apr-08	15:04	0.6065	18.16	28.01	1.1838
1-Apr-08	15:05	0.583	18.13	28.01	1.1779
1-Apr-08	15:06	0.562	18.09	28.01	1.1719
1-Apr-08	15:07	0.5439	18.06	28.01	1.1658
1-Apr-08	15:08	0.5295	18.02	28.01	1.1595
1-Apr-08	15:09	0.5181	17.98	28.01	1.1532
1-Apr-08	15:10	0.5089	17.94	28.01	1.1469
1-Apr-08	15:11	0.5013	17.9	28.01	1.1405
1-Apr-08	15:12	0.495	17.87	28.01	1.1342
1-Apr-08	15:13	0.4898	17.83	28.01	1.1278
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1-Apr-08	15:15	0.4822	17.75	28.01	1.1151
1-Apr-08	15:16	0.4794	17.71	28.01	1.1088
1-Apr-08	15:17	0.4771	17.68	28.01	1.1026
1-Apr-08	15:18	0.4752	17.64	28.01	1.0964
1-Apr-08	15:19	0.4737	17.6	28.01	1.0902
1-Apr-08	15:20	0.4724	17.56	28.01	1.0841
1-Apr-08	15:21	0.4714	17.53	28.01	1.078
1-Apr-08	15:22	0.4706	17.49	28.01	1.072
1-Apr-08	15:23	0.4699	17.46	28.01	1.066
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1-Apr-08	15:30	0.4676	17.21	28.01	1.0257
1-Apr-08	15:31	0.4674	17.18	28.01	1.0202
1-Apr-08	15:32	0.4673	17.15	28.01	1.0147
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1-Apr-08	15:34	0.4672	17.08	28.01	1.004
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1-Apr-08	16:09	0.4676	16.12	28.01	0.8525
1-Apr-08	16:10	0.4676	16.1	28.01	0.8489
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1-Apr-08	16:13	0.4676	16.03	28.01	0.8382
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1-Apr-08	16:19	0.4676	15.9	28.01	0.8177
1-Apr-08	16:20	0.4677	15.88	28.01	0.8144
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1-Apr-08	16:29	0.4677	15.7	28.01	0.7876
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1-Apr-08	16:39	0.4678	15.52	28.01	0.7608
1-Apr-08	16:40	0.4678	15.5	28.01	0.7582
1-Apr-08	16:41	0.4679	15.48	28.01	0.7557
1-Apr-08	16:42	0.4679	15.47	28.01	0.7532
1-Apr-08	16:43	0.4679	15.45	28.01	0.7507
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1-Apr-08	16:51	0.4679	15.32	28	0.7315
1-Apr-08	16:52	0.468	15.3	28	0.7292
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1-Apr-08	17:00	0.468	15.18	28	0.7115
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1-Apr-08	17:03	0.4681	15.14	28	0.7052
1-Apr-08	17:04	0.4681	15.12	28	0.7032
1-Apr-08	17:05	0.4681	15.11	28	0.7011
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1-Apr-08	17:16	0.4682	14.96	28	0.6797
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1-Apr-08	17:21	0.4682	14.9	28	0.6706
1-Apr-08	17:22	0.4682	14.89	28	0.6689
1-Apr-08	17:23	0.4682	14.88	28	0.6671
1-Apr-08	17:24	0.4682	14.86	28	0.6654
1-Apr-08	17:25	0.4683	14.85	28	0.6636
1-Apr-08	17:26	0.4683	14.84	28	0.6619

1-Apr-08	17:27	0.4683	14.83	28	0.6603
1-Apr-08	17:28	0.4683	14.82	28	0.6586
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1-Apr-08	17:30	0.4683	14.8	28	0.6553
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1-Apr-08	17:33	0.4683	14.76	28	0.6504
1-Apr-08	17:34	0.4683	14.75	28	0.6488
1-Apr-08	17:35	0.4683	14.74	28	0.6473
1-Apr-08	17:36	0.4683	14.73	28	0.6457
1-Apr-08	17:37	0.4684	14.72	28	0.6441
1-Apr-08	17:38	0.4684	14.71	28	0.6426
1-Apr-08	17:39	0.4684	14.7	28	0.6411
1-Apr-08	17:40	0.4684	14.69	28	0.6396
1-Apr-08	17:41	0.4684	14.68	28	0.6381
1-Apr-08	17:42	0.4684	14.67	28	0.6366
1-Apr-08	17:43	0.4684	14.66	28	0.6351
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1-Apr-08	17:46	0.4684	14.63	28	0.6308
1-Apr-08	17:47	0.4684	14.62	28	0.6294
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1-Apr-08	17:52	0.4685	14.57	28	0.6228
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1-Apr-08	17:56	0.4676	14.53	28	0.6178
1-Apr-08	17:57	0.4647	14.53	28	0.6166
1-Apr-08	17:58	0.4592	14.52	28	0.6154
1-Apr-08	17:59	0.4499	14.51	28	0.6141
1-Apr-08	18:00	0.436	14.5	28	0.6127
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1-Apr-08	18:02	0.3989	14.47	28	0.6096
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1-Apr-08	18:06	0.3241	14.41	28	0.6016
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1-Apr-08	18:08	0.2988	14.38	28	0.597
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1-Apr-08	22:40	0.2505	12.01	28	0.2987
1-Apr-08	22:41	0.2505	12	28	0.2984
1-Apr-08	22:42	0.2505	12	28	0.2981
1-Apr-08	22:43	0.2505	12	28	0.2978
1-Apr-08	22:44	0.2505	11.99	28	0.2975
1-Apr-08	22:45	0.2505	11.99	28	0.2973
1-Apr-08	22:46	0.2505	11.99	28	0.297
1-Apr-08	22:47	0.2505	11.99	28	0.2967
1-Apr-08	22:48	0.2505	11.98	28	0.2964
1-Apr-08	22:49	0.2506	11.98	28	0.2961
1-Apr-08	22:50	0.2506	11.98	28	0.2958
1-Apr-08	22:51	0.2506	11.97	28	0.2956
1-Apr-08	22:52	0.2506	11.97	28	0.2953
1-Apr-08	22:53	0.2506	11.97	28	0.295
1-Apr-08	22:54	0.2506	11.97	28	0.2947
1-Apr-08	22:55	0.2506	11.96	28	0.2945
1-Apr-08	22:56	0.2506	11.96	28	0.2942
1-Apr-08	22:57	0.2506	11.96	28	0.2939
1-Apr-08	22:58	0.2506	11.96	28	0.2936
1-Apr-08	22:59	0.2506	11.95	28	0.2934
1-Apr-08	23:00	0.2506	11.95	28	0.2931
1-Apr-08	23:01	0.2506	11.95	28	0.2929
1-Apr-08	23:02	0.2506	11.95	28	0.2926
1-Apr-08	23:03	0.2506	11.94	28	0.2923
1-Apr-08	23:04	0.2506	11.94	28	0.2921
1-Apr-08	23:05	0.2506	11.94	28	0.2918
1-Apr-08	23:06	0.2506	11.94	28	0.2916
1-Apr-08	23:07	0.2506	11.93	28	0.2913
1-Apr-08	23:08	0.2506	11.93	28	0.2911
1-Apr-08	23:09	0.2506	11.93	28	0.2908
1-Apr-08	23:10	0.2506	11.93	28	0.2906
1-Apr-08	23:11	0.2506	11.92	28	0.2903
1-Apr-08	23:12	0.2506	11.92	28	0.2901
1-Apr-08	23:13	0.2506	11.92	28	0.2898
1-Apr-08	23:14	0.2506	11.92	28	0.2896
1-Apr-08	23:15	0.2506	11.91	28	0.2893
1-Apr-08	23:16	0.2506	11.91	28	0.2891

1-Apr-08	23:17	0.2506	11.91	28	0.2889
1-Apr-08	23:18	0.2506	11.91	28	0.2886
1-Apr-08	23:19	0.2506	11.91	28	0.2884
1-Apr-08	23:20	0.2506	11.9	28	0.2882
1-Apr-08	23:21	0.2506	11.9	28	0.2879
1-Apr-08	23:22	0.2506	11.9	28	0.2877
1-Apr-08	23:23	0.2506	11.9	28	0.2875
1-Apr-08	23:24	0.2506	11.89	28	0.2873
1-Apr-08	23:25	0.2506	11.89	28	0.287
1-Apr-08	23:26	0.2506	11.89	28	0.2868
1-Apr-08	23:27	0.2506	11.89	28	0.2866
1-Apr-08	23:28	0.2506	11.89	28	0.2864
1-Apr-08	23:29	0.2506	11.88	28	0.2861
1-Apr-08	23:30	0.2506	11.88	28	0.2859
1-Apr-08	23:31	0.2506	11.88	28	0.2857
1-Apr-08	23:32	0.2506	11.88	28	0.2855
1-Apr-08	23:33	0.2506	11.87	28	0.2853
1-Apr-08	23:34	0.2506	11.87	28	0.2851
1-Apr-08	23:35	0.2506	11.87	28	0.2848
1-Apr-08	23:36	0.2506	11.87	28	0.2846
1-Apr-08	23:37	0.2506	11.87	28	0.2844
1-Apr-08	23:38	0.2507	11.86	28	0.2842
1-Apr-08	23:39	0.2507	11.86	28	0.284
1-Apr-08	23:40	0.2507	11.86	28	0.2838
1-Apr-08	23:41	0.2507	11.86	28	0.2836
1-Apr-08	23:42	0.2507	11.86	28	0.2834
1-Apr-08	23:43	0.2507	11.85	28	0.2832
1-Apr-08	23:44	0.2507	11.85	28	0.283
1-Apr-08	23:45	0.2507	11.85	28	0.2828
1-Apr-08	23:46	0.2507	11.85	28	0.2826
1-Apr-08	23:47	0.2507	11.85	28	0.2824
1-Apr-08	23:48	0.2507	11.84	28	0.2822
1-Apr-08	23:49	0.2507	11.84	28	0.282
1-Apr-08	23:50	0.2507	11.84	28	0.2818
1-Apr-08	23:51	0.2507	11.84	28	0.2816
1-Apr-08	23:52	0.2507	11.84	28	0.2814
1-Apr-08	23:53	0.2507	11.84	28	0.2812
1-Apr-08	23:54	0.2507	11.83	28	0.2811
1-Apr-08	23:55	0.2507	11.83	28	0.2809
1-Apr-08	23:56	0.2496	11.83	28	0.2807
1-Apr-08	23:57	0.2463	11.83	28	0.2805
1-Apr-08	23:58	0.24	11.83	28	0.2802
1-Apr-08	23:59	0.2293	11.82	28	0.28
2-Apr-08	0:00	0.2134	11.82	28	0.2796

Highgate - 10yr - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	4.185
1-Apr-08	0:00	0	0	28	0	
1-Apr-08	0:01	0.001	0	28	0	
1-Apr-08	0:02	0.004	0	28	0	
1-Apr-08	0:03	0.0098	0	28	0	
1-Apr-08	0:04	0.0195	0	28	0	
1-Apr-08	0:05	0.0341	0	28	0	
1-Apr-08	0:06	0.0524	0.01	28	0.0001	
1-Apr-08	0:07	0.0729	0.01	28	0.0001	
1-Apr-08	0:08	0.094	0.01	28	0.0002	
1-Apr-08	0:09	0.1148	0.02	28.01	0.0003	
1-Apr-08	0:10	0.134	0.03	28.01	0.0004	
1-Apr-08	0:11	0.1512	0.04	28.01	0.0005	
1-Apr-08	0:12	0.166	0.05	28.02	0.0006	
1-Apr-08	0:13	0.1778	0.06	28.02	0.0007	
1-Apr-08	0:14	0.1871	0.07	28.02	0.0009	
1-Apr-08	0:15	0.1947	0.08	28.03	0.001	
1-Apr-08	0:16	0.2009	0.09	28.03	0.0012	
1-Apr-08	0:17	0.206	0.1	28.03	0.0013	
1-Apr-08	0:18	0.2103	0.12	28.04	0.0015	
1-Apr-08	0:19	0.2137	0.13	28.04	0.0017	
1-Apr-08	0:20	0.2165	0.14	28.05	0.0018	
1-Apr-08	0:21	0.2188	0.15	28.05	0.002	
1-Apr-08	0:22	0.2207	0.17	28.05	0.0022	
1-Apr-08	0:23	0.2223	0.18	28.06	0.0023	
1-Apr-08	0:24	0.2235	0.19	28.06	0.0025	
1-Apr-08	0:25	0.2246	0.21	28.07	0.0027	
1-Apr-08	0:26	0.2254	0.22	28.07	0.0029	
1-Apr-08	0:27	0.2261	0.23	28.08	0.003	
1-Apr-08	0:28	0.2266	0.25	28.08	0.0032	
1-Apr-08	0:29	0.2271	0.26	28.08	0.0034	
1-Apr-08	0:30	0.2275	0.27	28.09	0.0036	
1-Apr-08	0:31	0.2278	0.29	28.09	0.0037	
1-Apr-08	0:32	0.228	0.3	28.1	0.0039	
1-Apr-08	0:33	0.2283	0.31	28.1	0.0041	
1-Apr-08	0:34	0.2284	0.33	28.1	0.0042	
1-Apr-08	0:35	0.2286	0.34	28.1	0.0044	
1-Apr-08	0:36	0.2287	0.35	28.11	0.0045	
1-Apr-08	0:37	0.2288	0.37	28.11	0.0046	
1-Apr-08	0:38	0.2289	0.38	28.11	0.0048	
1-Apr-08	0:39	0.2289	0.39	28.11	0.0049	
1-Apr-08	0:40	0.2289	0.41	28.11	0.0051	
1-Apr-08	0:41	0.2289	0.42	28.11	0.0052	
1-Apr-08	0:42	0.2289	0.43	28.12	0.0054	
1-Apr-08	0:43	0.2289	0.45	28.12	0.0055	
1-Apr-08	0:44	0.2289	0.46	28.12	0.0057	
1-Apr-08	0:45	0.2289	0.47	28.12	0.0058	
1-Apr-08	0:46	0.2289	0.49	28.12	0.006	

1-Apr-08	0:47	0.2289	0.5	28.12	0.0061
1-Apr-08	0:48	0.2289	0.51	28.13	0.0062
1-Apr-08	0:49	0.2289	0.53	28.13	0.0064
1-Apr-08	0:50	0.2289	0.54	28.13	0.0065
1-Apr-08	0:51	0.2289	0.55	28.13	0.0067
1-Apr-08	0:52	0.2289	0.57	28.13	0.0068
1-Apr-08	0:53	0.2289	0.58	28.14	0.007
1-Apr-08	0:54	0.2289	0.59	28.14	0.0071
1-Apr-08	0:55	0.2289	0.61	28.14	0.0072
1-Apr-08	0:56	0.2289	0.62	28.14	0.0074
1-Apr-08	0:57	0.2289	0.63	28.14	0.0075
1-Apr-08	0:58	0.2289	0.65	28.14	0.0077
1-Apr-08	0:59	0.2289	0.66	28.15	0.0078
1-Apr-08	1:00	0.2289	0.67	28.15	0.008
1-Apr-08	1:01	0.2289	0.69	28.15	0.0081
1-Apr-08	1:02	0.2289	0.7	28.15	0.0082
1-Apr-08	1:03	0.2289	0.71	28.15	0.0084
1-Apr-08	1:04	0.2289	0.73	28.15	0.0085
1-Apr-08	1:05	0.2289	0.74	28.16	0.0087
1-Apr-08	1:06	0.2289	0.75	28.16	0.0088
1-Apr-08	1:07	0.2289	0.77	28.16	0.009
1-Apr-08	1:08	0.2289	0.78	28.16	0.0091
1-Apr-08	1:09	0.2289	0.79	28.16	0.0092
1-Apr-08	1:10	0.2289	0.81	28.16	0.0094
1-Apr-08	1:11	0.2289	0.82	28.17	0.0095
1-Apr-08	1:12	0.2289	0.83	28.17	0.0097
1-Apr-08	1:13	0.2289	0.85	28.17	0.0098
1-Apr-08	1:14	0.2289	0.86	28.17	0.01
1-Apr-08	1:15	0.2289	0.87	28.17	0.0101
1-Apr-08	1:16	0.2289	0.89	28.17	0.0102
1-Apr-08	1:17	0.2289	0.9	28.18	0.0104
1-Apr-08	1:18	0.2289	0.91	28.18	0.0105
1-Apr-08	1:19	0.2289	0.92	28.18	0.0107
1-Apr-08	1:20	0.2289	0.94	28.18	0.0108
1-Apr-08	1:21	0.2289	0.95	28.18	0.0109
1-Apr-08	1:22	0.2289	0.96	28.18	0.0111
1-Apr-08	1:23	0.2289	0.98	28.19	0.0112
1-Apr-08	1:24	0.2289	0.99	28.19	0.0114
1-Apr-08	1:25	0.2289	1	28.19	0.0115
1-Apr-08	1:26	0.2289	1.02	28.19	0.0116
1-Apr-08	1:27	0.2289	1.03	28.19	0.0118
1-Apr-08	1:28	0.2289	1.04	28.19	0.0119
1-Apr-08	1:29	0.2289	1.06	28.2	0.0121
1-Apr-08	1:30	0.2289	1.07	28.2	0.0122
1-Apr-08	1:31	0.2289	1.08	28.2	0.0123
1-Apr-08	1:32	0.2289	1.09	28.2	0.0125
1-Apr-08	1:33	0.2289	1.11	28.2	0.0126
1-Apr-08	1:34	0.2289	1.12	28.2	0.0127
1-Apr-08	1:35	0.2289	1.13	28.21	0.0128
1-Apr-08	1:36	0.2289	1.15	28.21	0.0129

1-Apr-08	1:37	0.2289	1.16	28.21	0.013
1-Apr-08	1:38	0.2289	1.17	28.21	0.0131
1-Apr-08	1:39	0.2289	1.19	28.21	0.0132
1-Apr-08	1:40	0.2289	1.2	28.21	0.0133
1-Apr-08	1:41	0.2289	1.21	28.21	0.0134
1-Apr-08	1:42	0.2289	1.22	28.22	0.0135
1-Apr-08	1:43	0.2289	1.24	28.22	0.0136
1-Apr-08	1:44	0.2289	1.25	28.22	0.0137
1-Apr-08	1:45	0.2289	1.26	28.22	0.0138
1-Apr-08	1:46	0.2289	1.28	28.22	0.014
1-Apr-08	1:47	0.2289	1.29	28.22	0.0141
1-Apr-08	1:48	0.2289	1.3	28.22	0.0142
1-Apr-08	1:49	0.2289	1.31	28.23	0.0143
1-Apr-08	1:50	0.2289	1.33	28.23	0.0144
1-Apr-08	1:51	0.2289	1.34	28.23	0.0145
1-Apr-08	1:52	0.2289	1.35	28.23	0.0146
1-Apr-08	1:53	0.2289	1.37	28.23	0.0147
1-Apr-08	1:54	0.2289	1.38	28.23	0.0148
1-Apr-08	1:55	0.2289	1.39	28.23	0.0149
1-Apr-08	1:56	0.2289	1.4	28.24	0.015
1-Apr-08	1:57	0.2289	1.42	28.24	0.0151
1-Apr-08	1:58	0.2289	1.43	28.24	0.0152
1-Apr-08	1:59	0.2289	1.44	28.24	0.0153
1-Apr-08	2:00	0.2289	1.46	28.24	0.0154
1-Apr-08	2:01	0.2289	1.47	28.24	0.0155
1-Apr-08	2:02	0.2289	1.48	28.24	0.0156
1-Apr-08	2:03	0.2289	1.49	28.25	0.0157
1-Apr-08	2:04	0.2289	1.51	28.25	0.0158
1-Apr-08	2:05	0.2289	1.52	28.25	0.0159
1-Apr-08	2:06	0.2289	1.53	28.25	0.0161
1-Apr-08	2:07	0.2289	1.54	28.25	0.0162
1-Apr-08	2:08	0.2289	1.56	28.25	0.0163
1-Apr-08	2:09	0.2289	1.57	28.25	0.0164
1-Apr-08	2:10	0.2289	1.58	28.26	0.0165
1-Apr-08	2:11	0.2289	1.6	28.26	0.0166
1-Apr-08	2:12	0.229	1.61	28.26	0.0167
1-Apr-08	2:13	0.229	1.62	28.26	0.0168
1-Apr-08	2:14	0.229	1.63	28.26	0.0169
1-Apr-08	2:15	0.229	1.65	28.26	0.017
1-Apr-08	2:16	0.229	1.66	28.26	0.0171
1-Apr-08	2:17	0.229	1.67	28.27	0.0172
1-Apr-08	2:18	0.2291	1.69	28.27	0.0173
1-Apr-08	2:19	0.2291	1.7	28.27	0.0174
1-Apr-08	2:20	0.2291	1.71	28.27	0.0175
1-Apr-08	2:21	0.2292	1.72	28.27	0.0176
1-Apr-08	2:22	0.2292	1.74	28.27	0.0177
1-Apr-08	2:23	0.2292	1.75	28.27	0.0178
1-Apr-08	2:24	0.2292	1.76	28.28	0.0179
1-Apr-08	2:25	0.2293	1.77	28.28	0.018
1-Apr-08	2:26	0.2293	1.79	28.28	0.0181

1-Apr-08	2:27	0.2293	1.8	28.28	0.0182
1-Apr-08	2:28	0.2294	1.81	28.28	0.0183
1-Apr-08	2:29	0.2294	1.82	28.28	0.0184
1-Apr-08	2:30	0.2294	1.84	28.28	0.0185
1-Apr-08	2:31	0.2295	1.85	28.29	0.0187
1-Apr-08	2:32	0.2295	1.86	28.29	0.0188
1-Apr-08	2:33	0.2295	1.88	28.29	0.0189
1-Apr-08	2:34	0.2296	1.89	28.29	0.019
1-Apr-08	2:35	0.2296	1.9	28.29	0.0191
1-Apr-08	2:36	0.2296	1.91	28.29	0.0192
1-Apr-08	2:37	0.2297	1.93	28.29	0.0193
1-Apr-08	2:38	0.2297	1.94	28.3	0.0194
1-Apr-08	2:39	0.2297	1.95	28.3	0.0195
1-Apr-08	2:40	0.2298	1.96	28.3	0.0196
1-Apr-08	2:41	0.2298	1.98	28.3	0.0197
1-Apr-08	2:42	0.2298	1.99	28.3	0.0198
1-Apr-08	2:43	0.2299	2	28.3	0.0198
1-Apr-08	2:44	0.2299	2.01	28.3	0.0199
1-Apr-08	2:45	0.2299	2.03	28.3	0.0199
1-Apr-08	2:46	0.23	2.04	28.31	0.02
1-Apr-08	2:47	0.23	2.05	28.31	0.0201
1-Apr-08	2:48	0.23	2.06	28.31	0.0201
1-Apr-08	2:49	0.23	2.08	28.31	0.0202
1-Apr-08	2:50	0.2301	2.09	28.31	0.0203
1-Apr-08	2:51	0.2301	2.1	28.31	0.0203
1-Apr-08	2:52	0.2301	2.11	28.31	0.0204
1-Apr-08	2:53	0.2302	2.13	28.31	0.0204
1-Apr-08	2:54	0.2302	2.14	28.32	0.0205
1-Apr-08	2:55	0.2302	2.15	28.32	0.0206
1-Apr-08	2:56	0.2303	2.17	28.32	0.0206
1-Apr-08	2:57	0.2303	2.18	28.32	0.0207
1-Apr-08	2:58	0.2303	2.19	28.32	0.0208
1-Apr-08	2:59	0.2304	2.2	28.32	0.0208
1-Apr-08	3:00	0.2304	2.22	28.32	0.0209
1-Apr-08	3:01	0.2304	2.23	28.32	0.0209
1-Apr-08	3:02	0.2305	2.24	28.32	0.021
1-Apr-08	3:03	0.2305	2.25	28.33	0.0211
1-Apr-08	3:04	0.2305	2.27	28.33	0.0211
1-Apr-08	3:05	0.2306	2.28	28.33	0.0212
1-Apr-08	3:06	0.2306	2.29	28.33	0.0212
1-Apr-08	3:07	0.2306	2.3	28.33	0.0213
1-Apr-08	3:08	0.2306	2.32	28.33	0.0214
1-Apr-08	3:09	0.2307	2.33	28.33	0.0214
1-Apr-08	3:10	0.2307	2.34	28.33	0.0215
1-Apr-08	3:11	0.2307	2.35	28.34	0.0216
1-Apr-08	3:12	0.2308	2.37	28.34	0.0216
1-Apr-08	3:13	0.2308	2.38	28.34	0.0217
1-Apr-08	3:14	0.2308	2.39	28.34	0.0217
1-Apr-08	3:15	0.2309	2.4	28.34	0.0218
1-Apr-08	3:16	0.2309	2.42	28.34	0.0219

1-Apr-08	3:17	0.2309	2.43	28.34	0.0219
1-Apr-08	3:18	0.231	2.44	28.34	0.022
1-Apr-08	3:19	0.231	2.45	28.34	0.0221
1-Apr-08	3:20	0.231	2.47	28.35	0.0221
1-Apr-08	3:21	0.231	2.48	28.35	0.0222
1-Apr-08	3:22	0.2311	2.49	28.35	0.0222
1-Apr-08	3:23	0.2311	2.5	28.35	0.0223
1-Apr-08	3:24	0.2311	2.52	28.35	0.0224
1-Apr-08	3:25	0.2312	2.53	28.35	0.0224
1-Apr-08	3:26	0.2312	2.54	28.35	0.0225
1-Apr-08	3:27	0.2312	2.55	28.35	0.0226
1-Apr-08	3:28	0.2313	2.57	28.35	0.0226
1-Apr-08	3:29	0.2313	2.58	28.36	0.0227
1-Apr-08	3:30	0.2313	2.59	28.36	0.0227
1-Apr-08	3:31	0.2314	2.6	28.36	0.0228
1-Apr-08	3:32	0.2314	2.62	28.36	0.0229
1-Apr-08	3:33	0.2314	2.63	28.36	0.0229
1-Apr-08	3:34	0.2314	2.64	28.36	0.023
1-Apr-08	3:35	0.2315	2.65	28.36	0.023
1-Apr-08	3:36	0.2315	2.67	28.36	0.0231
1-Apr-08	3:37	0.2315	2.68	28.37	0.0232
1-Apr-08	3:38	0.2316	2.69	28.37	0.0232
1-Apr-08	3:39	0.2316	2.7	28.37	0.0233
1-Apr-08	3:40	0.2316	2.72	28.37	0.0234
1-Apr-08	3:41	0.2317	2.73	28.37	0.0234
1-Apr-08	3:42	0.2317	2.74	28.37	0.0235
1-Apr-08	3:43	0.2317	2.75	28.37	0.0235
1-Apr-08	3:44	0.2317	2.77	28.37	0.0236
1-Apr-08	3:45	0.2318	2.78	28.37	0.0237
1-Apr-08	3:46	0.2318	2.79	28.38	0.0237
1-Apr-08	3:47	0.2318	2.8	28.38	0.0238
1-Apr-08	3:48	0.2319	2.82	28.38	0.0238
1-Apr-08	3:49	0.2319	2.83	28.38	0.0239
1-Apr-08	3:50	0.2319	2.84	28.38	0.024
1-Apr-08	3:51	0.2319	2.85	28.38	0.024
1-Apr-08	3:52	0.232	2.87	28.38	0.0241
1-Apr-08	3:53	0.232	2.88	28.38	0.0242
1-Apr-08	3:54	0.232	2.89	28.39	0.0242
1-Apr-08	3:55	0.2321	2.9	28.39	0.0243
1-Apr-08	3:56	0.2321	2.92	28.39	0.0243
1-Apr-08	3:57	0.2321	2.93	28.39	0.0244
1-Apr-08	3:58	0.2322	2.94	28.39	0.0245
1-Apr-08	3:59	0.2322	2.95	28.39	0.0245
1-Apr-08	4:00	0.2322	2.97	28.39	0.0246
1-Apr-08	4:01	0.2322	2.98	28.39	0.0247
1-Apr-08	4:02	0.2323	2.99	28.39	0.0247
1-Apr-08	4:03	0.2323	3	28.4	0.0248
1-Apr-08	4:04	0.2323	3.02	28.4	0.0248
1-Apr-08	4:05	0.2324	3.03	28.4	0.0249
1-Apr-08	4:06	0.2324	3.04	28.4	0.025

1-Apr-08	4:07	0.2324	3.05	28.4	0.025
1-Apr-08	4:08	0.2324	3.07	28.4	0.0251
1-Apr-08	4:09	0.2325	3.08	28.4	0.0251
1-Apr-08	4:10	0.2325	3.09	28.4	0.0252
1-Apr-08	4:11	0.2325	3.1	28.4	0.0252
1-Apr-08	4:12	0.2326	3.12	28.41	0.0253
1-Apr-08	4:13	0.2326	3.13	28.41	0.0253
1-Apr-08	4:14	0.2326	3.14	28.41	0.0254
1-Apr-08	4:15	0.2326	3.15	28.41	0.0254
1-Apr-08	4:16	0.2327	3.17	28.41	0.0255
1-Apr-08	4:17	0.2327	3.18	28.41	0.0255
1-Apr-08	4:18	0.2327	3.19	28.41	0.0256
1-Apr-08	4:19	0.2328	3.2	28.41	0.0256
1-Apr-08	4:20	0.2328	3.22	28.42	0.0257
1-Apr-08	4:21	0.2328	3.23	28.42	0.0257
1-Apr-08	4:22	0.2328	3.24	28.42	0.0258
1-Apr-08	4:23	0.2329	3.25	28.42	0.0258
1-Apr-08	4:24	0.2329	3.26	28.42	0.0259
1-Apr-08	4:25	0.2329	3.28	28.42	0.0259
1-Apr-08	4:26	0.233	3.29	28.42	0.026
1-Apr-08	4:27	0.233	3.3	28.42	0.026
1-Apr-08	4:28	0.233	3.31	28.42	0.0261
1-Apr-08	4:29	0.233	3.33	28.43	0.0261
1-Apr-08	4:30	0.2331	3.34	28.43	0.0261
1-Apr-08	4:31	0.2331	3.35	28.43	0.0262
1-Apr-08	4:32	0.2331	3.36	28.43	0.0262
1-Apr-08	4:33	0.2332	3.38	28.43	0.0263
1-Apr-08	4:34	0.2332	3.39	28.43	0.0263
1-Apr-08	4:35	0.2332	3.4	28.43	0.0264
1-Apr-08	4:36	0.2332	3.41	28.43	0.0264
1-Apr-08	4:37	0.2333	3.43	28.43	0.0265
1-Apr-08	4:38	0.2333	3.44	28.44	0.0265
1-Apr-08	4:39	0.2333	3.45	28.44	0.0266
1-Apr-08	4:40	0.2333	3.46	28.44	0.0266
1-Apr-08	4:41	0.2334	3.48	28.44	0.0267
1-Apr-08	4:42	0.2334	3.49	28.44	0.0267
1-Apr-08	4:43	0.2334	3.5	28.44	0.0268
1-Apr-08	4:44	0.2335	3.51	28.44	0.0268
1-Apr-08	4:45	0.2335	3.53	28.44	0.0269
1-Apr-08	4:46	0.2335	3.54	28.45	0.0269
1-Apr-08	4:47	0.2335	3.55	28.45	0.027
1-Apr-08	4:48	0.2336	3.56	28.45	0.027
1-Apr-08	4:49	0.2336	3.57	28.45	0.0271
1-Apr-08	4:50	0.2336	3.59	28.45	0.0271
1-Apr-08	4:51	0.2336	3.6	28.45	0.0272
1-Apr-08	4:52	0.2337	3.61	28.45	0.0272
1-Apr-08	4:53	0.2337	3.62	28.45	0.0273
1-Apr-08	4:54	0.2337	3.64	28.45	0.0273
1-Apr-08	4:55	0.2338	3.65	28.46	0.0274
1-Apr-08	4:56	0.2338	3.66	28.46	0.0274

1-Apr-08	4:57	0.2338	3.67	28.46	0.0275
1-Apr-08	4:58	0.2338	3.69	28.46	0.0275
1-Apr-08	4:59	0.2339	3.7	28.46	0.0276
1-Apr-08	5:00	0.2339	3.71	28.46	0.0276
1-Apr-08	5:01	0.2339	3.72	28.46	0.0277
1-Apr-08	5:02	0.2339	3.74	28.46	0.0277
1-Apr-08	5:03	0.234	3.75	28.46	0.0278
1-Apr-08	5:04	0.234	3.76	28.47	0.0278
1-Apr-08	5:05	0.234	3.77	28.47	0.0279
1-Apr-08	5:06	0.2341	3.79	28.47	0.0279
1-Apr-08	5:07	0.2341	3.8	28.47	0.028
1-Apr-08	5:08	0.2341	3.81	28.47	0.028
1-Apr-08	5:09	0.2341	3.82	28.47	0.0281
1-Apr-08	5:10	0.2342	3.83	28.47	0.0281
1-Apr-08	5:11	0.2342	3.85	28.47	0.0282
1-Apr-08	5:12	0.2342	3.86	28.47	0.0282
1-Apr-08	5:13	0.2342	3.87	28.48	0.0283
1-Apr-08	5:14	0.2343	3.88	28.48	0.0283
1-Apr-08	5:15	0.2343	3.9	28.48	0.0284
1-Apr-08	5:16	0.2343	3.91	28.48	0.0284
1-Apr-08	5:17	0.2343	3.92	28.48	0.0285
1-Apr-08	5:18	0.2344	3.93	28.48	0.0285
1-Apr-08	5:19	0.2344	3.95	28.48	0.0286
1-Apr-08	5:20	0.2344	3.96	28.48	0.0286
1-Apr-08	5:21	0.2344	3.97	28.48	0.0286
1-Apr-08	5:22	0.2345	3.98	28.49	0.0287
1-Apr-08	5:23	0.2345	4	28.49	0.0287
1-Apr-08	5:24	0.2345	4.01	28.49	0.0288
1-Apr-08	5:25	0.2346	4.02	28.49	0.0288
1-Apr-08	5:26	0.2346	4.03	28.49	0.0289
1-Apr-08	5:27	0.2346	4.04	28.49	0.0289
1-Apr-08	5:28	0.2346	4.06	28.49	0.029
1-Apr-08	5:29	0.2347	4.07	28.49	0.029
1-Apr-08	5:30	0.2347	4.08	28.5	0.0291
1-Apr-08	5:31	0.2347	4.09	28.5	0.0291
1-Apr-08	5:32	0.2347	4.11	28.5	0.0292
1-Apr-08	5:33	0.2348	4.12	28.5	0.0292
1-Apr-08	5:34	0.2348	4.13	28.5	0.0293
1-Apr-08	5:35	0.2348	4.14	28.5	0.0293
1-Apr-08	5:36	0.2348	4.16	28.5	0.0294
1-Apr-08	5:37	0.2349	4.17	28.5	0.0294
1-Apr-08	5:38	0.2349	4.18	28.5	0.0295
1-Apr-08	5:39	0.2349	4.19	28.51	0.0295
1-Apr-08	5:40	0.2349	4.21	28.51	0.0295
1-Apr-08	5:41	0.235	4.22	28.51	0.0296
1-Apr-08	5:42	0.235	4.23	28.51	0.0296
1-Apr-08	5:43	0.235	4.24	28.51	0.0297
1-Apr-08	5:44	0.235	4.25	28.51	0.0297
1-Apr-08	5:45	0.2351	4.27	28.51	0.0298
1-Apr-08	5:46	0.2351	4.28	28.51	0.0298

1-Apr-08	5:47	0.2351	4.29	28.51	0.0298
1-Apr-08	5:48	0.2351	4.3	28.52	0.0299
1-Apr-08	5:49	0.2352	4.32	28.52	0.0299
1-Apr-08	5:50	0.2352	4.33	28.52	0.03
1-Apr-08	5:51	0.2352	4.34	28.52	0.03
1-Apr-08	5:52	0.2352	4.35	28.52	0.0301
1-Apr-08	5:53	0.2353	4.37	28.52	0.0301
1-Apr-08	5:54	0.2353	4.38	28.52	0.0301
1-Apr-08	5:55	0.2353	4.39	28.52	0.0302
1-Apr-08	5:56	0.2365	4.4	28.52	0.0302
1-Apr-08	5:57	0.2402	4.41	28.53	0.0303
1-Apr-08	5:58	0.2473	4.43	28.53	0.0303
1-Apr-08	5:59	0.2591	4.44	28.53	0.0304
1-Apr-08	6:00	0.2767	4.46	28.53	0.0304
1-Apr-08	6:01	0.2989	4.47	28.53	0.0305
1-Apr-08	6:02	0.3238	4.49	28.53	0.0305
1-Apr-08	6:03	0.3495	4.51	28.53	0.0306
1-Apr-08	6:04	0.3747	4.53	28.54	0.0306
1-Apr-08	6:05	0.398	4.55	28.54	0.0307
1-Apr-08	6:06	0.4189	4.57	28.54	0.0308
1-Apr-08	6:07	0.4369	4.59	28.54	0.0309
1-Apr-08	6:08	0.4512	4.62	28.54	0.031
1-Apr-08	6:09	0.4626	4.64	28.55	0.0311
1-Apr-08	6:10	0.4719	4.67	28.55	0.0311
1-Apr-08	6:11	0.4795	4.7	28.55	0.0312
1-Apr-08	6:12	0.4859	4.72	28.55	0.0313
1-Apr-08	6:13	0.4911	4.75	28.56	0.0314
1-Apr-08	6:14	0.4954	4.78	28.56	0.0315
1-Apr-08	6:15	0.4989	4.81	28.56	0.0316
1-Apr-08	6:16	0.5018	4.83	28.56	0.0317
1-Apr-08	6:17	0.5042	4.86	28.57	0.0318
1-Apr-08	6:18	0.5062	4.89	28.57	0.0319
1-Apr-08	6:19	0.5078	4.92	28.57	0.032
1-Apr-08	6:20	0.5092	4.95	28.57	0.0321
1-Apr-08	6:21	0.5103	4.98	28.58	0.0322
1-Apr-08	6:22	0.5112	5.01	28.58	0.0323
1-Apr-08	6:23	0.512	5.03	28.58	0.0324
1-Apr-08	6:24	0.5127	5.06	28.58	0.0325
1-Apr-08	6:25	0.5133	5.09	28.59	0.0326
1-Apr-08	6:26	0.5138	5.12	28.59	0.0327
1-Apr-08	6:27	0.5142	5.15	28.59	0.0328
1-Apr-08	6:28	0.5145	5.18	28.59	0.0329
1-Apr-08	6:29	0.5149	5.21	28.6	0.033
1-Apr-08	6:30	0.5152	5.24	28.6	0.0331
1-Apr-08	6:31	0.5154	5.27	28.6	0.0332
1-Apr-08	6:32	0.5156	5.29	28.61	0.0333
1-Apr-08	6:33	0.5158	5.32	28.61	0.0334
1-Apr-08	6:34	0.516	5.35	28.61	0.0335
1-Apr-08	6:35	0.5161	5.38	28.61	0.0335
1-Apr-08	6:36	0.5162	5.41	28.62	0.0336

1-Apr-08	6:37	0.5163	5.44	28.62	0.0337
1-Apr-08	6:38	0.5164	5.47	28.62	0.0338
1-Apr-08	6:39	0.5165	5.5	28.62	0.0339
1-Apr-08	6:40	0.5167	5.53	28.63	0.034
1-Apr-08	6:41	0.5168	5.56	28.63	0.0341
1-Apr-08	6:42	0.5169	5.58	28.63	0.0342
1-Apr-08	6:43	0.517	5.61	28.63	0.0342
1-Apr-08	6:44	0.5171	5.64	28.64	0.0343
1-Apr-08	6:45	0.5172	5.67	28.64	0.0344
1-Apr-08	6:46	0.5173	5.7	28.64	0.0345
1-Apr-08	6:47	0.5174	5.73	28.64	0.0346
1-Apr-08	6:48	0.5175	5.76	28.65	0.0347
1-Apr-08	6:49	0.5176	5.79	28.65	0.0348
1-Apr-08	6:50	0.5177	5.82	28.65	0.0349
1-Apr-08	6:51	0.5178	5.85	28.65	0.035
1-Apr-08	6:52	0.5179	5.87	28.66	0.035
1-Apr-08	6:53	0.518	5.9	28.66	0.0351
1-Apr-08	6:54	0.5181	5.93	28.66	0.0352
1-Apr-08	6:55	0.5182	5.96	28.66	0.0353
1-Apr-08	6:56	0.5183	5.99	28.67	0.0354
1-Apr-08	6:57	0.5184	6.02	28.67	0.0355
1-Apr-08	6:58	0.5185	6.05	28.67	0.0356
1-Apr-08	6:59	0.5186	6.08	28.68	0.0357
1-Apr-08	7:00	0.5187	6.11	28.68	0.0357
1-Apr-08	7:01	0.5189	6.13	28.68	0.0358
1-Apr-08	7:02	0.519	6.16	28.68	0.0359
1-Apr-08	7:03	0.5191	6.19	28.69	0.036
1-Apr-08	7:04	0.5192	6.22	28.69	0.0361
1-Apr-08	7:05	0.5193	6.25	28.69	0.0362
1-Apr-08	7:06	0.5194	6.28	28.69	0.0363
1-Apr-08	7:07	0.5195	6.31	28.7	0.0364
1-Apr-08	7:08	0.5196	6.34	28.7	0.0365
1-Apr-08	7:09	0.5197	6.37	28.7	0.0365
1-Apr-08	7:10	0.5198	6.4	28.7	0.0366
1-Apr-08	7:11	0.5199	6.42	28.71	0.0367
1-Apr-08	7:12	0.52	6.45	28.71	0.0368
1-Apr-08	7:13	0.5201	6.48	28.71	0.0369
1-Apr-08	7:14	0.5202	6.51	28.71	0.0369
1-Apr-08	7:15	0.5203	6.54	28.72	0.037
1-Apr-08	7:16	0.5203	6.57	28.72	0.0371
1-Apr-08	7:17	0.5204	6.6	28.72	0.0372
1-Apr-08	7:18	0.5205	6.63	28.72	0.0373
1-Apr-08	7:19	0.5206	6.66	28.73	0.0373
1-Apr-08	7:20	0.5207	6.69	28.73	0.0374
1-Apr-08	7:21	0.5208	6.71	28.73	0.0375
1-Apr-08	7:22	0.5209	6.74	28.73	0.0376
1-Apr-08	7:23	0.521	6.77	28.74	0.0377
1-Apr-08	7:24	0.5211	6.8	28.74	0.0377
1-Apr-08	7:25	0.5212	6.83	28.74	0.0378
1-Apr-08	7:26	0.5213	6.86	28.74	0.0379

1-Apr-08	7:27	0.5214	6.89	28.75	0.038
1-Apr-08	7:28	0.5215	6.92	28.75	0.038
1-Apr-08	7:29	0.5216	6.95	28.75	0.0381
1-Apr-08	7:30	0.5217	6.98	28.76	0.0382
1-Apr-08	7:31	0.5218	7	28.76	0.0383
1-Apr-08	7:32	0.5219	7.03	28.76	0.0384
1-Apr-08	7:33	0.522	7.06	28.76	0.0384
1-Apr-08	7:34	0.5221	7.09	28.77	0.0385
1-Apr-08	7:35	0.5222	7.12	28.77	0.0386
1-Apr-08	7:36	0.5223	7.15	28.77	0.0387
1-Apr-08	7:37	0.5224	7.18	28.77	0.0388
1-Apr-08	7:38	0.5224	7.21	28.78	0.0388
1-Apr-08	7:39	0.5225	7.24	28.78	0.0389
1-Apr-08	7:40	0.5226	7.27	28.78	0.039
1-Apr-08	7:41	0.5227	7.29	28.78	0.0391
1-Apr-08	7:42	0.5228	7.32	28.79	0.0392
1-Apr-08	7:43	0.5229	7.35	28.79	0.0392
1-Apr-08	7:44	0.523	7.38	28.79	0.0393
1-Apr-08	7:45	0.5231	7.41	28.79	0.0394
1-Apr-08	7:46	0.5232	7.44	28.8	0.0395
1-Apr-08	7:47	0.5233	7.47	28.8	0.0396
1-Apr-08	7:48	0.5234	7.5	28.8	0.0396
1-Apr-08	7:49	0.5235	7.53	28.8	0.0397
1-Apr-08	7:50	0.5235	7.56	28.81	0.0398
1-Apr-08	7:51	0.5236	7.59	28.81	0.0398
1-Apr-08	7:52	0.5237	7.61	28.81	0.0399
1-Apr-08	7:53	0.5238	7.64	28.81	0.04
1-Apr-08	7:54	0.5239	7.67	28.82	0.0401
1-Apr-08	7:55	0.524	7.7	28.82	0.0401
1-Apr-08	7:56	0.5241	7.73	28.82	0.0402
1-Apr-08	7:57	0.5242	7.76	28.82	0.0403
1-Apr-08	7:58	0.5243	7.79	28.83	0.0403
1-Apr-08	7:59	0.5243	7.82	28.83	0.0404
1-Apr-08	8:00	0.5244	7.85	28.83	0.0405
1-Apr-08	8:01	0.5245	7.88	28.83	0.0406
1-Apr-08	8:02	0.5246	7.9	28.84	0.0406
1-Apr-08	8:03	0.5247	7.93	28.84	0.0407
1-Apr-08	8:04	0.5248	7.96	28.84	0.0408
1-Apr-08	8:05	0.5249	7.99	28.84	0.0408
1-Apr-08	8:06	0.525	8.02	28.85	0.0409
1-Apr-08	8:07	0.525	8.05	28.85	0.041
1-Apr-08	8:08	0.5251	8.08	28.85	0.0411
1-Apr-08	8:09	0.5252	8.11	28.85	0.0411
1-Apr-08	8:10	0.5253	8.14	28.86	0.0412
1-Apr-08	8:11	0.5254	8.17	28.86	0.0413
1-Apr-08	8:12	0.5255	8.19	28.86	0.0413
1-Apr-08	8:13	0.5256	8.22	28.86	0.0414
1-Apr-08	8:14	0.5256	8.25	28.87	0.0415
1-Apr-08	8:15	0.5257	8.28	28.87	0.0415
1-Apr-08	8:16	0.5258	8.31	28.87	0.0416

1-Apr-08	8:17	0.5259	8.34	28.87	0.0417
1-Apr-08	8:18	0.526	8.37	28.88	0.0418
1-Apr-08	8:19	0.5261	8.4	28.88	0.0418
1-Apr-08	8:20	0.5262	8.43	28.88	0.0419
1-Apr-08	8:21	0.5262	8.46	28.88	0.042
1-Apr-08	8:22	0.5263	8.49	28.89	0.042
1-Apr-08	8:23	0.5264	8.51	28.89	0.0421
1-Apr-08	8:24	0.5265	8.54	28.89	0.0422
1-Apr-08	8:25	0.5266	8.57	28.89	0.0423
1-Apr-08	8:26	0.5267	8.6	28.9	0.0423
1-Apr-08	8:27	0.5267	8.63	28.9	0.0424
1-Apr-08	8:28	0.5268	8.66	28.9	0.0437
1-Apr-08	8:29	0.5269	8.69	28.9	0.0451
1-Apr-08	8:30	0.527	8.72	28.91	0.0464
1-Apr-08	8:31	0.5271	8.75	28.91	0.0477
1-Apr-08	8:32	0.5271	8.78	28.91	0.0491
1-Apr-08	8:33	0.5272	8.8	28.91	0.0504
1-Apr-08	8:34	0.5273	8.83	28.92	0.0517
1-Apr-08	8:35	0.5274	8.86	28.92	0.053
1-Apr-08	8:36	0.5275	8.89	28.92	0.0544
1-Apr-08	8:37	0.5276	8.92	28.92	0.0557
1-Apr-08	8:38	0.5276	8.95	28.93	0.057
1-Apr-08	8:39	0.5277	8.97	28.93	0.0583
1-Apr-08	8:40	0.5278	9	28.93	0.0596
1-Apr-08	8:41	0.5279	9.03	28.93	0.0609
1-Apr-08	8:42	0.528	9.06	28.94	0.0622
1-Apr-08	8:43	0.528	9.09	28.94	0.0635
1-Apr-08	8:44	0.5281	9.11	28.94	0.0648
1-Apr-08	8:45	0.5282	9.14	28.94	0.066
1-Apr-08	8:46	0.5283	9.17	28.95	0.0673
1-Apr-08	8:47	0.5283	9.2	28.95	0.0686
1-Apr-08	8:48	0.5284	9.22	28.95	0.0699
1-Apr-08	8:49	0.5285	9.25	28.95	0.0712
1-Apr-08	8:50	0.5286	9.28	28.96	0.0724
1-Apr-08	8:51	0.5287	9.31	28.96	0.0737
1-Apr-08	8:52	0.5287	9.33	28.96	0.0749
1-Apr-08	8:53	0.5288	9.36	28.96	0.0762
1-Apr-08	8:54	0.5289	9.39	28.97	0.0775
1-Apr-08	8:55	0.529	9.42	28.97	0.0787
1-Apr-08	8:56	0.5297	9.44	28.97	0.08
1-Apr-08	8:57	0.5319	9.47	28.97	0.0812
1-Apr-08	8:58	0.5359	9.5	28.97	0.0825
1-Apr-08	8:59	0.5427	9.52	28.98	0.0837
1-Apr-08	9:00	0.5528	9.55	28.98	0.085
1-Apr-08	9:01	0.5655	9.58	28.98	0.0863
1-Apr-08	9:02	0.5797	9.61	28.98	0.0877
1-Apr-08	9:03	0.5943	9.64	28.99	0.0891
1-Apr-08	9:04	0.6087	9.67	28.99	0.0905
1-Apr-08	9:05	0.622	9.7	28.99	0.092
1-Apr-08	9:06	0.634	9.73	28.99	0.0934

1-Apr-08	9:07	0.6443	9.77	29	0.095
1-Apr-08	9:08	0.6525	9.8	29	0.0967
1-Apr-08	9:09	0.659	9.83	29	0.0994
1-Apr-08	9:10	0.6643	9.87	29.01	0.1022
1-Apr-08	9:11	0.6687	9.9	29.01	0.1049
1-Apr-08	9:12	0.6724	9.93	29.01	0.1077
1-Apr-08	9:13	0.6754	9.97	29.01	0.1105
1-Apr-08	9:14	0.6779	10	29.02	0.1132
1-Apr-08	9:15	0.68	10.04	29.02	0.116
1-Apr-08	9:16	0.6817	10.07	29.02	0.1187
1-Apr-08	9:17	0.6831	10.1	29.03	0.1215
1-Apr-08	9:18	0.6843	10.14	29.03	0.1242
1-Apr-08	9:19	0.6853	10.17	29.03	0.127
1-Apr-08	9:20	0.6861	10.2	29.03	0.1297
1-Apr-08	9:21	0.6868	10.24	29.04	0.1324
1-Apr-08	9:22	0.6874	10.27	29.04	0.1351
1-Apr-08	9:23	0.6879	10.3	29.04	0.1378
1-Apr-08	9:24	0.6883	10.34	29.05	0.1405
1-Apr-08	9:25	0.6887	10.37	29.05	0.1431
1-Apr-08	9:26	0.689	10.4	29.05	0.1458
1-Apr-08	9:27	0.6893	10.43	29.05	0.1485
1-Apr-08	9:28	0.6896	10.47	29.06	0.1511
1-Apr-08	9:29	0.6898	10.5	29.06	0.1537
1-Apr-08	9:30	0.6901	10.53	29.06	0.1563
1-Apr-08	9:31	0.6903	10.56	29.07	0.1589
1-Apr-08	9:32	0.6904	10.59	29.07	0.1615
1-Apr-08	9:33	0.6906	10.63	29.07	0.1641
1-Apr-08	9:34	0.6907	10.66	29.07	0.1667
1-Apr-08	9:35	0.6909	10.69	29.08	0.1692
1-Apr-08	9:36	0.691	10.72	29.08	0.1718
1-Apr-08	9:37	0.6911	10.75	29.08	0.1743
1-Apr-08	9:38	0.6912	10.78	29.08	0.1768
1-Apr-08	9:39	0.6913	10.81	29.09	0.1793
1-Apr-08	9:40	0.6914	10.84	29.09	0.1818
1-Apr-08	9:41	0.6916	10.87	29.09	0.1843
1-Apr-08	9:42	0.6917	10.9	29.09	0.1868
1-Apr-08	9:43	0.6918	10.94	29.1	0.1893
1-Apr-08	9:44	0.6919	10.97	29.1	0.1917
1-Apr-08	9:45	0.692	11	29.1	0.1947
1-Apr-08	9:46	0.6921	11.02	29.1	0.1978
1-Apr-08	9:47	0.6922	11.05	29.11	0.2008
1-Apr-08	9:48	0.6924	11.08	29.11	0.2039
1-Apr-08	9:49	0.6925	11.11	29.11	0.2069
1-Apr-08	9:50	0.6926	11.14	29.11	0.2099
1-Apr-08	9:51	0.6927	11.17	29.12	0.2129
1-Apr-08	9:52	0.6928	11.2	29.12	0.2158
1-Apr-08	9:53	0.6929	11.23	29.12	0.2188
1-Apr-08	9:54	0.693	11.26	29.12	0.2217
1-Apr-08	9:55	0.6931	11.28	29.13	0.2246
1-Apr-08	9:56	0.6946	11.31	29.13	0.2275

1-Apr-08	9:57	0.6989	11.34	29.13	0.2304
1-Apr-08	9:58	0.7071	11.37	29.13	0.2334
1-Apr-08	9:59	0.7207	11.4	29.14	0.2363
1-Apr-08	10:00	0.7411	11.43	29.14	0.2394
1-Apr-08	10:01	0.7667	11.46	29.14	0.2426
1-Apr-08	10:02	0.7953	11.49	29.14	0.2459
1-Apr-08	10:03	0.8248	11.52	29.15	0.2494
1-Apr-08	10:04	0.8539	11.56	29.15	0.253
1-Apr-08	10:05	0.8807	11.6	29.15	0.2568
1-Apr-08	10:06	0.9048	11.63	29.16	0.2608
1-Apr-08	10:07	0.9256	11.67	29.16	0.2648
1-Apr-08	10:08	0.9421	11.71	29.16	0.2689
1-Apr-08	10:09	0.9553	11.75	29.17	0.2731
1-Apr-08	10:10	0.966	11.8	29.17	0.2774
1-Apr-08	10:11	0.9748	11.84	29.17	0.2817
1-Apr-08	10:12	0.9822	11.88	29.18	0.286
1-Apr-08	10:13	0.9883	11.92	29.18	0.2903
1-Apr-08	10:14	0.9933	11.96	29.18	0.2946
1-Apr-08	10:15	0.9974	12	29.19	0.299
1-Apr-08	10:16	1.0009	12.05	29.19	0.3033
1-Apr-08	10:17	1.0037	12.09	29.19	0.3076
1-Apr-08	10:18	1.006	12.13	29.2	0.3119
1-Apr-08	10:19	1.008	12.17	29.2	0.3164
1-Apr-08	10:20	1.0096	12.21	29.2	0.3214
1-Apr-08	10:21	1.011	12.25	29.21	0.3263
1-Apr-08	10:22	1.0122	12.29	29.21	0.3312
1-Apr-08	10:23	1.0132	12.34	29.21	0.3362
1-Apr-08	10:24	1.014	12.38	29.22	0.341
1-Apr-08	10:25	1.0148	12.42	29.22	0.3459
1-Apr-08	10:26	1.0154	12.46	29.22	0.3507
1-Apr-08	10:27	1.016	12.5	29.23	0.3555
1-Apr-08	10:28	1.0165	12.54	29.23	0.3602
1-Apr-08	10:29	1.0169	12.57	29.23	0.365
1-Apr-08	10:30	1.0173	12.61	29.24	0.3697
1-Apr-08	10:31	1.0177	12.65	29.24	0.3743
1-Apr-08	10:32	1.018	12.69	29.24	0.379
1-Apr-08	10:33	1.0183	12.73	29.25	0.3836
1-Apr-08	10:34	1.0186	12.77	29.25	0.3881
1-Apr-08	10:35	1.0188	12.8	29.25	0.3927
1-Apr-08	10:36	1.019	12.84	29.26	0.3972
1-Apr-08	10:37	1.0192	12.88	29.26	0.4017
1-Apr-08	10:38	1.0194	12.92	29.26	0.4061
1-Apr-08	10:39	1.0196	12.95	29.27	0.4105
1-Apr-08	10:40	1.0198	12.99	29.27	0.4149
1-Apr-08	10:41	1.02	13.03	29.27	0.4193
1-Apr-08	10:42	1.0202	13.06	29.27	0.4236
1-Apr-08	10:43	1.0204	13.1	29.28	0.4279
1-Apr-08	10:44	1.0206	13.13	29.28	0.4322
1-Apr-08	10:45	1.0208	13.17	29.28	0.4364
1-Apr-08	10:46	1.021	13.2	29.29	0.4406

1-Apr-08	10:47	1.0212	13.24	29.29	0.4448
1-Apr-08	10:48	1.0214	13.27	29.29	0.4489
1-Apr-08	10:49	1.0216	13.31	29.29	0.4531
1-Apr-08	10:50	1.0217	13.34	29.3	0.4572
1-Apr-08	10:51	1.0219	13.37	29.3	0.4613
1-Apr-08	10:52	1.0221	13.41	29.3	0.4658
1-Apr-08	10:53	1.0223	13.44	29.31	0.4703
1-Apr-08	10:54	1.0225	13.47	29.31	0.4747
1-Apr-08	10:55	1.0227	13.51	29.31	0.4791
1-Apr-08	10:56	1.0254	13.54	29.31	0.4835
1-Apr-08	10:57	1.0333	13.57	29.32	0.4879
1-Apr-08	10:58	1.0483	13.6	29.32	0.4923
1-Apr-08	10:59	1.0734	13.64	29.32	0.4969
1-Apr-08	11:00	1.1109	13.67	29.32	0.5017
1-Apr-08	11:01	1.1579	13.71	29.33	0.5068
1-Apr-08	11:02	1.2106	13.75	29.33	0.5122
1-Apr-08	11:03	1.2649	13.8	29.33	0.518
1-Apr-08	11:04	1.3184	13.84	29.34	0.5243
1-Apr-08	11:05	1.3678	13.89	29.34	0.5308
1-Apr-08	11:06	1.4122	13.94	29.35	0.5378
1-Apr-08	11:07	1.4503	14	29.35	0.5449
1-Apr-08	11:08	1.4807	14.05	29.36	0.5523
1-Apr-08	11:09	1.5049	14.11	29.36	0.5599
1-Apr-08	11:10	1.5247	14.16	29.36	0.5676
1-Apr-08	11:11	1.541	14.22	29.37	0.5753
1-Apr-08	11:12	1.5546	14.28	29.37	0.5832
1-Apr-08	11:13	1.5658	14.34	29.38	0.591
1-Apr-08	11:14	1.575	14.4	29.38	0.5989
1-Apr-08	11:15	1.5827	14.46	29.39	0.6068
1-Apr-08	11:16	1.5889	14.51	29.39	0.6147
1-Apr-08	11:17	1.5942	14.57	29.4	0.6225
1-Apr-08	11:18	1.5985	14.63	29.4	0.6308
1-Apr-08	11:19	1.6021	14.69	29.41	0.6393
1-Apr-08	11:20	1.6051	14.75	29.41	0.6477
1-Apr-08	11:21	1.6077	14.8	29.42	0.6561
1-Apr-08	11:22	1.6098	14.86	29.42	0.6644
1-Apr-08	11:23	1.6117	14.92	29.43	0.6727
1-Apr-08	11:24	1.6133	14.97	29.43	0.681
1-Apr-08	11:25	1.6146	15.03	29.43	0.6891
1-Apr-08	11:26	1.6209	15.08	29.44	0.6973
1-Apr-08	11:27	1.6374	15.14	29.44	0.7054
1-Apr-08	11:28	1.6683	15.2	29.45	0.7137
1-Apr-08	11:29	1.7194	15.25	29.45	0.7223
1-Apr-08	11:30	1.7953	15.32	29.46	0.7314
1-Apr-08	11:31	1.8904	15.38	29.46	0.7411
1-Apr-08	11:32	1.9969	15.45	29.47	0.7517
1-Apr-08	11:33	2.1066	15.53	29.48	0.7631
1-Apr-08	11:34	2.2147	15.62	29.48	0.7753
1-Apr-08	11:35	2.3143	15.7	29.49	0.7883
1-Apr-08	11:36	2.407	15.8	29.5	0.8021

1-Apr-08	11:37	2.4938	15.9	29.51	0.8172
1-Apr-08	11:38	2.574	16	29.51	0.8334
1-Apr-08	11:39	2.6545	16.11	29.52	0.8501
1-Apr-08	11:40	2.7417	16.22	29.53	0.8675
1-Apr-08	11:41	2.8338	16.33	29.54	0.8855
1-Apr-08	11:42	2.9278	16.45	29.55	0.9042
1-Apr-08	11:43	3.0192	16.57	29.56	0.9237
1-Apr-08	11:44	3.1055	16.7	29.57	0.9438
1-Apr-08	11:45	3.1833	16.83	29.58	0.9645
1-Apr-08	11:46	3.2645	16.97	29.59	0.9857
1-Apr-08	11:47	3.3616	17.11	29.6	1.0077
1-Apr-08	11:48	3.4826	17.25	29.61	1.0318
1-Apr-08	11:49	3.644	17.4	29.62	1.057
1-Apr-08	11:50	3.86	17.56	29.64	1.0838
1-Apr-08	11:51	4.1181	17.74	29.65	1.1127
1-Apr-08	11:52	4.4002	17.92	29.67	1.144
1-Apr-08	11:53	4.687	18.13	29.68	1.1778
1-Apr-08	11:54	4.9669	18.35	29.7	1.2141
1-Apr-08	11:55	5.2238	18.58	29.72	1.2546
1-Apr-08	11:56	5.4782	18.82	29.74	1.2974
1-Apr-08	11:57	5.7502	19.08	29.76	1.3425
1-Apr-08	11:58	6.0512	19.35	29.78	1.3902
1-Apr-08	11:59	6.4171	19.64	29.8	1.4408
1-Apr-08	12:00	6.8789	19.95	29.82	1.4976
1-Apr-08	12:01	7.4147	20.29	29.85	1.5593
1-Apr-08	12:02	7.9914	20.65	29.88	1.6264
1-Apr-08	12:03	8.5723	21.05	29.91	1.6997
1-Apr-08	12:04	9.1355	21.48	29.94	1.7808
1-Apr-08	12:05	9.6506	21.93	29.97	1.867
1-Apr-08	12:06	10.0781	22.41	30.01	1.9825
1-Apr-08	12:07	10.3721	22.9	30.05	2.1591
1-Apr-08	12:08	10.4921	23.39	30.08	2.3363
1-Apr-08	12:09	10.415	23.87	30.12	2.548
1-Apr-08	12:10	10.1289	24.33	30.15	2.7762
1-Apr-08	12:11	9.6778	24.75	30.19	2.9869
1-Apr-08	12:12	9.1243	25.13	30.21	3.1925
1-Apr-08	12:13	8.5241	25.46	30.24	3.3879
1-Apr-08	12:14	7.9135	25.74	30.26	3.5556
1-Apr-08	12:15	7.3411	25.98	30.28	3.6969
1-Apr-08	12:16	6.8151	26.18	30.29	3.8142
1-Apr-08	12:17	6.3494	26.35	30.3	3.9101
1-Apr-08	12:18	5.9613	26.48	30.31	3.9872
1-Apr-08	12:19	5.6259	26.58	30.32	4.0492
1-Apr-08	12:20	5.3156	26.67	30.32	4.0981
1-Apr-08	12:21	5.0267	26.73	30.33	4.1349
1-Apr-08	12:22	4.7561	26.78	30.33	4.1609
1-Apr-08	12:23	4.5096	26.8	30.33	4.1771
1-Apr-08	12:24	4.2884	26.82	30.33	4.1848
1-Apr-08	12:25	4.0957	26.82	30.33	4.185
1-Apr-08	12:26	3.9253	26.81	30.33	4.179

1-Apr-08	12:27	3.7721	26.79	30.33	4.1677
1-Apr-08	12:28	3.635	26.76	30.33	4.1517
1-Apr-08	12:29	3.5036	26.73	30.33	4.1317
1-Apr-08	12:30	3.3678	26.69	30.32	4.1078
1-Apr-08	12:31	3.2295	26.64	30.32	4.08
1-Apr-08	12:32	3.0915	26.58	30.32	4.0484
1-Apr-08	12:33	2.9596	26.52	30.31	4.0133
1-Apr-08	12:34	2.8364	26.46	30.31	3.975
1-Apr-08	12:35	2.7259	26.39	30.31	3.934
1-Apr-08	12:36	2.6289	26.31	30.3	3.8908
1-Apr-08	12:37	2.5463	26.24	30.29	3.8456
1-Apr-08	12:38	2.4801	26.16	30.29	3.7994
1-Apr-08	12:39	2.4271	26.08	30.28	3.7527
1-Apr-08	12:40	2.3838	26	30.28	3.7059
1-Apr-08	12:41	2.3487	25.92	30.27	3.6594
1-Apr-08	12:42	2.3198	25.84	30.27	3.6134
1-Apr-08	12:43	2.2964	25.76	30.26	3.5681
1-Apr-08	12:44	2.2778	25.69	30.25	3.5237
1-Apr-08	12:45	2.2634	25.62	30.25	3.4802
1-Apr-08	12:46	2.252	25.54	30.24	3.4377
1-Apr-08	12:47	2.2427	25.47	30.24	3.3964
1-Apr-08	12:48	2.2351	25.4	30.23	3.3563
1-Apr-08	12:49	2.2289	25.34	30.23	3.3172
1-Apr-08	12:50	2.2239	25.27	30.22	3.2794
1-Apr-08	12:51	2.2198	25.21	30.22	3.2427
1-Apr-08	12:52	2.2166	25.15	30.22	3.2071
1-Apr-08	12:53	2.214	25.09	30.21	3.1727
1-Apr-08	12:54	2.212	25.04	30.21	3.1394
1-Apr-08	12:55	2.2106	24.98	30.2	3.1072
1-Apr-08	12:56	2.2056	24.93	30.2	3.0772
1-Apr-08	12:57	2.1927	24.88	30.2	3.0513
1-Apr-08	12:58	2.1688	24.83	30.19	3.0256
1-Apr-08	12:59	2.1294	24.77	30.19	2.9997
1-Apr-08	13:00	2.0709	24.72	30.18	2.9731
1-Apr-08	13:01	1.9976	24.66	30.18	2.9453
1-Apr-08	13:02	1.9156	24.61	30.18	2.9161
1-Apr-08	13:03	1.8312	24.54	30.17	2.8853
1-Apr-08	13:04	1.7481	24.48	30.17	2.8529
1-Apr-08	13:05	1.6718	24.41	30.16	2.8191
1-Apr-08	13:06	1.6032	24.34	30.16	2.7842
1-Apr-08	13:07	1.5444	24.27	30.15	2.7484
1-Apr-08	13:08	1.4976	24.2	30.14	2.7122
1-Apr-08	13:09	1.4606	24.13	30.14	2.6757
1-Apr-08	13:10	1.4304	24.05	30.13	2.6394
1-Apr-08	13:11	1.4058	23.98	30.13	2.6033
1-Apr-08	13:12	1.3853	23.91	30.12	2.5676
1-Apr-08	13:13	1.3684	23.84	30.12	2.5324
1-Apr-08	13:14	1.3547	23.77	30.11	2.4978
1-Apr-08	13:15	1.3436	23.7	30.11	2.4639
1-Apr-08	13:16	1.3345	23.64	30.1	2.4306

1-Apr-08	13:17	1.327	23.57	30.1	2.4015
1-Apr-08	13:18	1.3209	23.51	30.09	2.3784
1-Apr-08	13:19	1.316	23.44	30.09	2.3557
1-Apr-08	13:20	1.312	23.38	30.08	2.3334
1-Apr-08	13:21	1.3088	23.32	30.08	2.3115
1-Apr-08	13:22	1.3061	23.26	30.07	2.29
1-Apr-08	13:23	1.3039	23.2	30.07	2.2689
1-Apr-08	13:24	1.3021	23.15	30.07	2.2482
1-Apr-08	13:25	1.3007	23.09	30.06	2.2279
1-Apr-08	13:26	1.2995	23.03	30.06	2.2081
1-Apr-08	13:27	1.2986	22.98	30.05	2.1886
1-Apr-08	13:28	1.2978	22.93	30.05	2.1695
1-Apr-08	13:29	1.2971	22.88	30.05	2.1508
1-Apr-08	13:30	1.2966	22.82	30.04	2.1326
1-Apr-08	13:31	1.2962	22.78	30.04	2.1146
1-Apr-08	13:32	1.2959	22.73	30.03	2.0971
1-Apr-08	13:33	1.2957	22.68	30.03	2.08
1-Apr-08	13:34	1.2956	22.63	30.03	2.0632
1-Apr-08	13:35	1.2956	22.59	30.02	2.0467
1-Apr-08	13:36	1.2957	22.54	30.02	2.0306
1-Apr-08	13:37	1.2958	22.5	30.02	2.0149
1-Apr-08	13:38	1.2958	22.46	30.01	1.9995
1-Apr-08	13:39	1.2959	22.41	30.01	1.9844
1-Apr-08	13:40	1.296	22.37	30.01	1.9697
1-Apr-08	13:41	1.296	22.33	30.01	1.9552
1-Apr-08	13:42	1.2961	22.29	30	1.9411
1-Apr-08	13:43	1.2962	22.26	30	1.9283
1-Apr-08	13:44	1.2962	22.22	30	1.9212
1-Apr-08	13:45	1.2963	22.18	29.99	1.9141
1-Apr-08	13:46	1.2964	22.14	29.99	1.9071
1-Apr-08	13:47	1.2964	22.11	29.99	1.9002
1-Apr-08	13:48	1.2965	22.07	29.99	1.8934
1-Apr-08	13:49	1.2966	22.04	29.98	1.8866
1-Apr-08	13:50	1.2966	22	29.98	1.8799
1-Apr-08	13:51	1.2967	21.97	29.98	1.8733
1-Apr-08	13:52	1.2968	21.93	29.97	1.8668
1-Apr-08	13:53	1.2968	21.9	29.97	1.8603
1-Apr-08	13:54	1.2969	21.86	29.97	1.8539
1-Apr-08	13:55	1.2969	21.83	29.97	1.8476
1-Apr-08	13:56	1.2954	21.8	29.96	1.8414
1-Apr-08	13:57	1.2904	21.77	29.96	1.8352
1-Apr-08	13:58	1.2808	21.73	29.96	1.829
1-Apr-08	13:59	1.2646	21.7	29.96	1.8227
1-Apr-08	14:00	1.2404	21.67	29.95	1.8162
1-Apr-08	14:01	1.21	21.63	29.95	1.8095
1-Apr-08	14:02	1.1758	21.59	29.95	1.8025
1-Apr-08	14:03	1.1406	21.55	29.95	1.7952
1-Apr-08	14:04	1.106	21.51	29.94	1.7876
1-Apr-08	14:05	1.0741	21.47	29.94	1.7797
1-Apr-08	14:06	1.0454	21.43	29.94	1.7716

1-Apr-08	14:07	1.0208	21.39	29.93	1.7632
1-Apr-08	14:08	1.0013	21.34	29.93	1.7547
1-Apr-08	14:09	0.9858	21.3	29.93	1.7461
1-Apr-08	14:10	0.9731	21.25	29.92	1.7374
1-Apr-08	14:11	0.9629	21.2	29.92	1.7287
1-Apr-08	14:12	0.9543	21.16	29.92	1.7199
1-Apr-08	14:13	0.9473	21.11	29.91	1.7112
1-Apr-08	14:14	0.9415	21.07	29.91	1.7025
1-Apr-08	14:15	0.9369	21.02	29.91	1.6939
1-Apr-08	14:16	0.9331	20.98	29.9	1.6853
1-Apr-08	14:17	0.9299	20.93	29.9	1.6769
1-Apr-08	14:18	0.9274	20.89	29.9	1.6687
1-Apr-08	14:19	0.9254	20.84	29.89	1.6606
1-Apr-08	14:20	0.9237	20.8	29.89	1.6526
1-Apr-08	14:21	0.9223	20.75	29.89	1.6446
1-Apr-08	14:22	0.9212	20.71	29.88	1.6367
1-Apr-08	14:23	0.9203	20.67	29.88	1.6289
1-Apr-08	14:24	0.9195	20.63	29.88	1.6212
1-Apr-08	14:25	0.9189	20.58	29.87	1.6135
1-Apr-08	14:26	0.9185	20.54	29.87	1.6059
1-Apr-08	14:27	0.9181	20.5	29.87	1.5984
1-Apr-08	14:28	0.9177	20.46	29.86	1.591
1-Apr-08	14:29	0.9175	20.42	29.86	1.5836
1-Apr-08	14:30	0.9172	20.38	29.86	1.5763
1-Apr-08	14:31	0.9171	20.34	29.85	1.5692
1-Apr-08	14:32	0.9169	20.3	29.85	1.562
1-Apr-08	14:33	0.9169	20.26	29.85	1.555
1-Apr-08	14:34	0.9168	20.23	29.84	1.548
1-Apr-08	14:35	0.9168	20.19	29.84	1.5411
1-Apr-08	14:36	0.9169	20.15	29.84	1.5343
1-Apr-08	14:37	0.9169	20.11	29.84	1.5276
1-Apr-08	14:38	0.9169	20.08	29.83	1.5209
1-Apr-08	14:39	0.9169	20.04	29.83	1.5143
1-Apr-08	14:40	0.917	20.01	29.83	1.5078
1-Apr-08	14:41	0.917	19.97	29.83	1.5013
1-Apr-08	14:42	0.917	19.94	29.82	1.495
1-Apr-08	14:43	0.9171	19.9	29.82	1.4887
1-Apr-08	14:44	0.9171	19.87	29.82	1.4824
1-Apr-08	14:45	0.9171	19.83	29.81	1.4763
1-Apr-08	14:46	0.9171	19.8	29.81	1.4701
1-Apr-08	14:47	0.9172	19.77	29.81	1.4641
1-Apr-08	14:48	0.9172	19.73	29.81	1.4581
1-Apr-08	14:49	0.9172	19.7	29.8	1.4522
1-Apr-08	14:50	0.9173	19.67	29.8	1.4464
1-Apr-08	14:51	0.9173	19.64	29.8	1.4407
1-Apr-08	14:52	0.9173	19.61	29.8	1.4352
1-Apr-08	14:53	0.9173	19.58	29.79	1.4298
1-Apr-08	14:54	0.9174	19.55	29.79	1.4244
1-Apr-08	14:55	0.9174	19.52	29.79	1.4191
1-Apr-08	14:56	0.916	19.49	29.79	1.4139

1-Apr-08	14:57	0.9115	19.46	29.79	1.4086
1-Apr-08	14:58	0.9028	19.43	29.78	1.4034
1-Apr-08	14:59	0.8881	19.4	29.78	1.3981
1-Apr-08	15:00	0.8663	19.37	29.78	1.3926
1-Apr-08	15:01	0.8388	19.33	29.78	1.387
1-Apr-08	15:02	0.808	19.3	29.77	1.3811
1-Apr-08	15:03	0.7762	19.26	29.77	1.375
1-Apr-08	15:04	0.745	19.23	29.77	1.3685
1-Apr-08	15:05	0.7162	19.19	29.76	1.3619
1-Apr-08	15:06	0.6903	19.15	29.76	1.355
1-Apr-08	15:07	0.6681	19.11	29.76	1.3479
1-Apr-08	15:08	0.6505	19.07	29.76	1.3407
1-Apr-08	15:09	0.6365	19.03	29.75	1.3334
1-Apr-08	15:10	0.6251	18.98	29.75	1.3261
1-Apr-08	15:11	0.6158	18.94	29.75	1.3187
1-Apr-08	15:12	0.608	18.9	29.74	1.3113
1-Apr-08	15:13	0.6017	18.86	29.74	1.3039
1-Apr-08	15:14	0.5965	18.82	29.74	1.2966
1-Apr-08	15:15	0.5923	18.77	29.73	1.2892
1-Apr-08	15:16	0.5888	18.73	29.73	1.2819
1-Apr-08	15:17	0.586	18.69	29.73	1.2747
1-Apr-08	15:18	0.5837	18.65	29.72	1.2675
1-Apr-08	15:19	0.5818	18.61	29.72	1.2603
1-Apr-08	15:20	0.5803	18.57	29.72	1.2532
1-Apr-08	15:21	0.579	18.53	29.71	1.2462
1-Apr-08	15:22	0.578	18.49	29.71	1.2392
1-Apr-08	15:23	0.5772	18.45	29.71	1.2323
1-Apr-08	15:24	0.5765	18.41	29.7	1.2254
1-Apr-08	15:25	0.5759	18.37	29.7	1.2186
1-Apr-08	15:26	0.5755	18.33	29.7	1.2121
1-Apr-08	15:27	0.5751	18.29	29.7	1.2058
1-Apr-08	15:28	0.5748	18.26	29.69	1.1995
1-Apr-08	15:29	0.5745	18.22	29.69	1.1933
1-Apr-08	15:30	0.5743	18.18	29.69	1.1871
1-Apr-08	15:31	0.5741	18.15	29.68	1.181
1-Apr-08	15:32	0.574	18.11	29.68	1.175
1-Apr-08	15:33	0.5739	18.07	29.68	1.169
1-Apr-08	15:34	0.5739	18.04	29.67	1.1631
1-Apr-08	15:35	0.5739	18	29.67	1.1572
1-Apr-08	15:36	0.5739	17.97	29.67	1.1514
1-Apr-08	15:37	0.5739	17.93	29.67	1.1457
1-Apr-08	15:38	0.5739	17.9	29.66	1.14
1-Apr-08	15:39	0.5739	17.87	29.66	1.1343
1-Apr-08	15:40	0.5739	17.83	29.66	1.1288
1-Apr-08	15:41	0.5739	17.8	29.66	1.1232
1-Apr-08	15:42	0.5739	17.77	29.65	1.1178
1-Apr-08	15:43	0.5739	17.73	29.65	1.1124
1-Apr-08	15:44	0.574	17.7	29.65	1.107
1-Apr-08	15:45	0.574	17.67	29.65	1.1017
1-Apr-08	15:46	0.574	17.64	29.64	1.0965

1-Apr-08	15:47	0.574	17.61	29.64	1.0913
1-Apr-08	15:48	0.574	17.58	29.64	1.0861
1-Apr-08	15:49	0.574	17.55	29.64	1.081
1-Apr-08	15:50	0.574	17.52	29.63	1.076
1-Apr-08	15:51	0.574	17.49	29.63	1.071
1-Apr-08	15:52	0.574	17.46	29.63	1.066
1-Apr-08	15:53	0.574	17.43	29.63	1.0611
1-Apr-08	15:54	0.5741	17.4	29.62	1.0563
1-Apr-08	15:55	0.5741	17.37	29.62	1.0515
1-Apr-08	15:56	0.5741	17.34	29.62	1.0467
1-Apr-08	15:57	0.5741	17.31	29.62	1.042
1-Apr-08	15:58	0.5741	17.28	29.62	1.0374
1-Apr-08	15:59	0.5741	17.26	29.61	1.0328
1-Apr-08	16:00	0.5741	17.23	29.61	1.0282
1-Apr-08	16:01	0.5741	17.2	29.61	1.0237
1-Apr-08	16:02	0.5741	17.18	29.61	1.0192
1-Apr-08	16:03	0.5741	17.15	29.6	1.0148
1-Apr-08	16:04	0.5742	17.12	29.6	1.0104
1-Apr-08	16:05	0.5742	17.1	29.6	1.006
1-Apr-08	16:06	0.5742	17.07	29.6	1.0019
1-Apr-08	16:07	0.5742	17.05	29.6	0.9979
1-Apr-08	16:08	0.5742	17.02	29.59	0.9939
1-Apr-08	16:09	0.5742	16.99	29.59	0.99
1-Apr-08	16:10	0.5742	16.97	29.59	0.9861
1-Apr-08	16:11	0.5742	16.95	29.59	0.9822
1-Apr-08	16:12	0.5742	16.92	29.59	0.9784
1-Apr-08	16:13	0.5742	16.9	29.58	0.9746
1-Apr-08	16:14	0.5743	16.87	29.58	0.9708
1-Apr-08	16:15	0.5743	16.85	29.58	0.9671
1-Apr-08	16:16	0.5743	16.83	29.58	0.9634
1-Apr-08	16:17	0.5743	16.8	29.58	0.9597
1-Apr-08	16:18	0.5743	16.78	29.58	0.9561
1-Apr-08	16:19	0.5743	16.76	29.57	0.9525
1-Apr-08	16:20	0.5743	16.73	29.57	0.949
1-Apr-08	16:21	0.5743	16.71	29.57	0.9454
1-Apr-08	16:22	0.5743	16.69	29.57	0.942
1-Apr-08	16:23	0.5743	16.67	29.57	0.9385
1-Apr-08	16:24	0.5744	16.65	29.56	0.9351
1-Apr-08	16:25	0.5744	16.62	29.56	0.9317
1-Apr-08	16:26	0.5744	16.6	29.56	0.9283
1-Apr-08	16:27	0.5744	16.58	29.56	0.925
1-Apr-08	16:28	0.5744	16.56	29.56	0.9217
1-Apr-08	16:29	0.5744	16.54	29.56	0.9185
1-Apr-08	16:30	0.5744	16.52	29.55	0.9152
1-Apr-08	16:31	0.5744	16.5	29.55	0.912
1-Apr-08	16:32	0.5744	16.48	29.55	0.9088
1-Apr-08	16:33	0.5744	16.46	29.55	0.9057
1-Apr-08	16:34	0.5745	16.44	29.55	0.9026
1-Apr-08	16:35	0.5745	16.42	29.55	0.8995
1-Apr-08	16:36	0.5745	16.4	29.55	0.8965

1-Apr-08	16:37	0.5745	16.38	29.54	0.8934
1-Apr-08	16:38	0.5745	16.36	29.54	0.8904
1-Apr-08	16:39	0.5745	16.34	29.54	0.8875
1-Apr-08	16:40	0.5745	16.32	29.54	0.8845
1-Apr-08	16:41	0.5745	16.31	29.54	0.8816
1-Apr-08	16:42	0.5745	16.29	29.54	0.8787
1-Apr-08	16:43	0.5745	16.27	29.53	0.8759
1-Apr-08	16:44	0.5745	16.25	29.53	0.873
1-Apr-08	16:45	0.5746	16.23	29.53	0.8702
1-Apr-08	16:46	0.5746	16.22	29.53	0.8675
1-Apr-08	16:47	0.5746	16.2	29.53	0.8647
1-Apr-08	16:48	0.5746	16.18	29.53	0.862
1-Apr-08	16:49	0.5746	16.16	29.53	0.8593
1-Apr-08	16:50	0.5746	16.15	29.52	0.8566
1-Apr-08	16:51	0.5746	16.13	29.52	0.8539
1-Apr-08	16:52	0.5746	16.11	29.52	0.8513
1-Apr-08	16:53	0.5746	16.1	29.52	0.8487
1-Apr-08	16:54	0.5746	16.08	29.52	0.8461
1-Apr-08	16:55	0.5747	16.06	29.52	0.8436
1-Apr-08	16:56	0.5747	16.05	29.52	0.8411
1-Apr-08	16:57	0.5747	16.03	29.52	0.8386
1-Apr-08	16:58	0.5747	16.02	29.51	0.8361
1-Apr-08	16:59	0.5747	16	29.51	0.8336
1-Apr-08	17:00	0.5747	15.99	29.51	0.8312
1-Apr-08	17:01	0.5747	15.97	29.51	0.8288
1-Apr-08	17:02	0.5747	15.96	29.51	0.8264
1-Apr-08	17:03	0.5747	15.94	29.51	0.824
1-Apr-08	17:04	0.5747	15.93	29.51	0.8217
1-Apr-08	17:05	0.5747	15.91	29.51	0.8194
1-Apr-08	17:06	0.5748	15.9	29.5	0.8171
1-Apr-08	17:07	0.5748	15.88	29.5	0.8148
1-Apr-08	17:08	0.5748	15.87	29.5	0.8125
1-Apr-08	17:09	0.5748	15.85	29.5	0.8103
1-Apr-08	17:10	0.5748	15.84	29.5	0.8081
1-Apr-08	17:11	0.5748	15.83	29.5	0.806
1-Apr-08	17:12	0.5748	15.81	29.5	0.804
1-Apr-08	17:13	0.5748	15.8	29.5	0.802
1-Apr-08	17:14	0.5748	15.78	29.5	0.8
1-Apr-08	17:15	0.5748	15.77	29.49	0.798
1-Apr-08	17:16	0.5748	15.76	29.49	0.796
1-Apr-08	17:17	0.5749	15.74	29.49	0.7941
1-Apr-08	17:18	0.5749	15.73	29.49	0.7922
1-Apr-08	17:19	0.5749	15.72	29.49	0.7903
1-Apr-08	17:20	0.5749	15.71	29.49	0.7884
1-Apr-08	17:21	0.5749	15.69	29.49	0.7865
1-Apr-08	17:22	0.5749	15.68	29.49	0.7847
1-Apr-08	17:23	0.5749	15.67	29.49	0.7828
1-Apr-08	17:24	0.5749	15.65	29.49	0.781
1-Apr-08	17:25	0.5749	15.64	29.48	0.7792
1-Apr-08	17:26	0.5749	15.63	29.48	0.7774

1-Apr-08	17:27	0.5749	15.62	29.48	0.7756
1-Apr-08	17:28	0.575	15.61	29.48	0.7739
1-Apr-08	17:29	0.575	15.59	29.48	0.7721
1-Apr-08	17:30	0.575	15.58	29.48	0.7704
1-Apr-08	17:31	0.575	15.57	29.48	0.7687
1-Apr-08	17:32	0.575	15.56	29.48	0.767
1-Apr-08	17:33	0.575	15.55	29.48	0.7653
1-Apr-08	17:34	0.575	15.54	29.48	0.7637
1-Apr-08	17:35	0.575	15.53	29.48	0.762
1-Apr-08	17:36	0.575	15.51	29.47	0.7604
1-Apr-08	17:37	0.575	15.5	29.47	0.7587
1-Apr-08	17:38	0.575	15.49	29.47	0.7571
1-Apr-08	17:39	0.5751	15.48	29.47	0.7555
1-Apr-08	17:40	0.5751	15.47	29.47	0.754
1-Apr-08	17:41	0.5751	15.46	29.47	0.7524
1-Apr-08	17:42	0.5751	15.45	29.47	0.7508
1-Apr-08	17:43	0.5751	15.44	29.47	0.7493
1-Apr-08	17:44	0.5751	15.43	29.47	0.7478
1-Apr-08	17:45	0.5751	15.42	29.47	0.7463
1-Apr-08	17:46	0.5751	15.41	29.47	0.7448
1-Apr-08	17:47	0.5751	15.4	29.46	0.7433
1-Apr-08	17:48	0.5751	15.39	29.46	0.7418
1-Apr-08	17:49	0.5751	15.38	29.46	0.7403
1-Apr-08	17:50	0.5752	15.37	29.46	0.7389
1-Apr-08	17:51	0.5752	15.36	29.46	0.7375
1-Apr-08	17:52	0.5752	15.35	29.46	0.736
1-Apr-08	17:53	0.5752	15.34	29.46	0.7346
1-Apr-08	17:54	0.5752	15.33	29.46	0.7332
1-Apr-08	17:55	0.5752	15.32	29.46	0.7318
1-Apr-08	17:56	0.5741	15.31	29.46	0.7305
1-Apr-08	17:57	0.5705	15.3	29.46	0.7291
1-Apr-08	17:58	0.5637	15.29	29.46	0.7277
1-Apr-08	17:59	0.5523	15.28	29.46	0.7262
1-Apr-08	18:00	0.5353	15.27	29.45	0.7246
1-Apr-08	18:01	0.5138	15.26	29.45	0.7228
1-Apr-08	18:02	0.4898	15.24	29.45	0.7209
1-Apr-08	18:03	0.465	15.23	29.45	0.7188
1-Apr-08	18:04	0.4406	15.21	29.45	0.7164
1-Apr-08	18:05	0.4181	15.2	29.45	0.7139
1-Apr-08	18:06	0.3979	15.18	29.45	0.7112
1-Apr-08	18:07	0.3806	15.16	29.45	0.7084
1-Apr-08	18:08	0.3668	15.14	29.44	0.7055
1-Apr-08	18:09	0.3559	15.12	29.44	0.7025
1-Apr-08	18:10	0.347	15.1	29.44	0.6994
1-Apr-08	18:11	0.3397	15.08	29.44	0.6963
1-Apr-08	18:12	0.3337	15.06	29.44	0.6931
1-Apr-08	18:13	0.3287	15.03	29.44	0.69
1-Apr-08	18:14	0.3247	15.01	29.43	0.6868
1-Apr-08	18:15	0.3214	14.99	29.43	0.6836
1-Apr-08	18:16	0.3187	14.97	29.43	0.6804

1-Apr-08	18:17	0.3164	14.95	29.43	0.6772
1-Apr-08	18:18	0.3146	14.93	29.43	0.6741
1-Apr-08	18:19	0.3132	14.9	29.42	0.6709
1-Apr-08	18:20	0.312	14.88	29.42	0.6678
1-Apr-08	18:21	0.311	14.86	29.42	0.6646
1-Apr-08	18:22	0.3102	14.84	29.42	0.6615
1-Apr-08	18:23	0.3095	14.82	29.42	0.6585
1-Apr-08	18:24	0.309	14.8	29.42	0.6554
1-Apr-08	18:25	0.3086	14.78	29.41	0.6524
1-Apr-08	18:26	0.3082	14.76	29.41	0.6493
1-Apr-08	18:27	0.3079	14.74	29.41	0.6464
1-Apr-08	18:28	0.3077	14.72	29.41	0.6434
1-Apr-08	18:29	0.3074	14.7	29.41	0.6404
1-Apr-08	18:30	0.3073	14.68	29.41	0.6375
1-Apr-08	18:31	0.3071	14.66	29.4	0.6346
1-Apr-08	18:32	0.307	14.64	29.4	0.6318
1-Apr-08	18:33	0.3069	14.62	29.4	0.6289
1-Apr-08	18:34	0.3069	14.6	29.4	0.6261
1-Apr-08	18:35	0.3069	14.58	29.4	0.6235
1-Apr-08	18:36	0.3069	14.56	29.4	0.6209
1-Apr-08	18:37	0.3069	14.54	29.4	0.6184
1-Apr-08	18:38	0.3069	14.52	29.39	0.6159
1-Apr-08	18:39	0.3069	14.5	29.39	0.6134
1-Apr-08	18:40	0.3069	14.49	29.39	0.611
1-Apr-08	18:41	0.3069	14.47	29.39	0.6085
1-Apr-08	18:42	0.3069	14.45	29.39	0.6061
1-Apr-08	18:43	0.3069	14.43	29.39	0.6037
1-Apr-08	18:44	0.3069	14.41	29.39	0.6013
1-Apr-08	18:45	0.3069	14.4	29.38	0.5989
1-Apr-08	18:46	0.3069	14.38	29.38	0.5966
1-Apr-08	18:47	0.3069	14.36	29.38	0.5943
1-Apr-08	18:48	0.3069	14.34	29.38	0.5919
1-Apr-08	18:49	0.3069	14.33	29.38	0.5897
1-Apr-08	18:50	0.3069	14.31	29.38	0.5874
1-Apr-08	18:51	0.3069	14.29	29.38	0.5851
1-Apr-08	18:52	0.3069	14.28	29.37	0.5829
1-Apr-08	18:53	0.3069	14.26	29.37	0.5807
1-Apr-08	18:54	0.3069	14.24	29.37	0.5785
1-Apr-08	18:55	0.3069	14.23	29.37	0.5763
1-Apr-08	18:56	0.3069	14.21	29.37	0.5741
1-Apr-08	18:57	0.3069	14.2	29.37	0.572
1-Apr-08	18:58	0.3069	14.18	29.37	0.5698
1-Apr-08	18:59	0.3069	14.16	29.36	0.5677
1-Apr-08	19:00	0.307	14.15	29.36	0.5656
1-Apr-08	19:01	0.307	14.13	29.36	0.5636
1-Apr-08	19:02	0.307	14.12	29.36	0.5615
1-Apr-08	19:03	0.307	14.1	29.36	0.5594
1-Apr-08	19:04	0.307	14.09	29.36	0.5574
1-Apr-08	19:05	0.307	14.07	29.36	0.5554
1-Apr-08	19:06	0.307	14.06	29.36	0.5534

1-Apr-08	19:07	0.307	14.04	29.35	0.5514
1-Apr-08	19:08	0.307	14.03	29.35	0.5495
1-Apr-08	19:09	0.307	14.01	29.35	0.5475
1-Apr-08	19:10	0.307	14	29.35	0.5456
1-Apr-08	19:11	0.307	13.99	29.35	0.5436
1-Apr-08	19:12	0.307	13.97	29.35	0.5417
1-Apr-08	19:13	0.307	13.96	29.35	0.5399
1-Apr-08	19:14	0.307	13.94	29.35	0.538
1-Apr-08	19:15	0.307	13.93	29.35	0.5361
1-Apr-08	19:16	0.307	13.92	29.34	0.5343
1-Apr-08	19:17	0.307	13.9	29.34	0.5325
1-Apr-08	19:18	0.307	13.89	29.34	0.5306
1-Apr-08	19:19	0.307	13.88	29.34	0.5288
1-Apr-08	19:20	0.307	13.86	29.34	0.5271
1-Apr-08	19:21	0.307	13.85	29.34	0.5253
1-Apr-08	19:22	0.307	13.84	29.34	0.5235
1-Apr-08	19:23	0.307	13.82	29.34	0.5218
1-Apr-08	19:24	0.307	13.81	29.34	0.5201
1-Apr-08	19:25	0.307	13.8	29.33	0.5184
1-Apr-08	19:26	0.307	13.79	29.33	0.5167
1-Apr-08	19:27	0.307	13.77	29.33	0.515
1-Apr-08	19:28	0.307	13.76	29.33	0.5133
1-Apr-08	19:29	0.307	13.75	29.33	0.5116
1-Apr-08	19:30	0.307	13.74	29.33	0.51
1-Apr-08	19:31	0.307	13.72	29.33	0.5084
1-Apr-08	19:32	0.307	13.71	29.33	0.5067
1-Apr-08	19:33	0.307	13.7	29.33	0.5051
1-Apr-08	19:34	0.307	13.69	29.33	0.5035
1-Apr-08	19:35	0.307	13.68	29.32	0.502
1-Apr-08	19:36	0.307	13.66	29.32	0.5004
1-Apr-08	19:37	0.307	13.65	29.32	0.4988
1-Apr-08	19:38	0.307	13.64	29.32	0.4973
1-Apr-08	19:39	0.307	13.63	29.32	0.4958
1-Apr-08	19:40	0.307	13.62	29.32	0.4943
1-Apr-08	19:41	0.307	13.61	29.32	0.4927
1-Apr-08	19:42	0.3071	13.6	29.32	0.4913
1-Apr-08	19:43	0.3071	13.59	29.32	0.4898
1-Apr-08	19:44	0.3071	13.57	29.32	0.4883
1-Apr-08	19:45	0.3071	13.56	29.32	0.4868
1-Apr-08	19:46	0.3071	13.55	29.31	0.4854
1-Apr-08	19:47	0.3071	13.54	29.31	0.484
1-Apr-08	19:48	0.3071	13.53	29.31	0.4825
1-Apr-08	19:49	0.3071	13.52	29.31	0.4811
1-Apr-08	19:50	0.3071	13.51	29.31	0.4797
1-Apr-08	19:51	0.3071	13.5	29.31	0.4783
1-Apr-08	19:52	0.3071	13.49	29.31	0.477
1-Apr-08	19:53	0.3071	13.48	29.31	0.4756
1-Apr-08	19:54	0.3071	13.47	29.31	0.4742
1-Apr-08	19:55	0.3071	13.46	29.31	0.4729
1-Apr-08	19:56	0.3071	13.45	29.31	0.4716

1-Apr-08	19:57	0.3071	13.44	29.31	0.4702
1-Apr-08	19:58	0.3071	13.43	29.3	0.4689
1-Apr-08	19:59	0.3071	13.42	29.3	0.4676
1-Apr-08	20:00	0.3071	13.41	29.3	0.4663
1-Apr-08	20:01	0.3071	13.4	29.3	0.4651
1-Apr-08	20:02	0.3071	13.39	29.3	0.4638
1-Apr-08	20:03	0.3071	13.38	29.3	0.4625
1-Apr-08	20:04	0.3071	13.37	29.3	0.4613
1-Apr-08	20:05	0.3071	13.36	29.3	0.4601
1-Apr-08	20:06	0.3071	13.36	29.3	0.459
1-Apr-08	20:07	0.3071	13.35	29.3	0.4579
1-Apr-08	20:08	0.3071	13.34	29.3	0.4569
1-Apr-08	20:09	0.3071	13.33	29.3	0.4558
1-Apr-08	20:10	0.3071	13.32	29.3	0.4547
1-Apr-08	20:11	0.3071	13.31	29.3	0.4536
1-Apr-08	20:12	0.3071	13.3	29.29	0.4526
1-Apr-08	20:13	0.3071	13.29	29.29	0.4515
1-Apr-08	20:14	0.3071	13.28	29.29	0.4505
1-Apr-08	20:15	0.3071	13.28	29.29	0.4495
1-Apr-08	20:16	0.3071	13.27	29.29	0.4484
1-Apr-08	20:17	0.3071	13.26	29.29	0.4474
1-Apr-08	20:18	0.3071	13.25	29.29	0.4464
1-Apr-08	20:19	0.3071	13.24	29.29	0.4454
1-Apr-08	20:20	0.3071	13.23	29.29	0.4444
1-Apr-08	20:21	0.3071	13.23	29.29	0.4434
1-Apr-08	20:22	0.3071	13.22	29.29	0.4424
1-Apr-08	20:23	0.3071	13.21	29.29	0.4415
1-Apr-08	20:24	0.3071	13.2	29.29	0.4405
1-Apr-08	20:25	0.3072	13.19	29.29	0.4395
1-Apr-08	20:26	0.3072	13.19	29.28	0.4386
1-Apr-08	20:27	0.3072	13.18	29.28	0.4376
1-Apr-08	20:28	0.3072	13.17	29.28	0.4367
1-Apr-08	20:29	0.3072	13.16	29.28	0.4358
1-Apr-08	20:30	0.3072	13.15	29.28	0.4348
1-Apr-08	20:31	0.3072	13.15	29.28	0.4339
1-Apr-08	20:32	0.3072	13.14	29.28	0.433
1-Apr-08	20:33	0.3072	13.13	29.28	0.4321
1-Apr-08	20:34	0.3072	13.12	29.28	0.4312
1-Apr-08	20:35	0.3072	13.12	29.28	0.4303
1-Apr-08	20:36	0.3072	13.11	29.28	0.4294
1-Apr-08	20:37	0.3072	13.1	29.28	0.4285
1-Apr-08	20:38	0.3072	13.1	29.28	0.4277
1-Apr-08	20:39	0.3072	13.09	29.28	0.4268
1-Apr-08	20:40	0.3072	13.08	29.28	0.4259
1-Apr-08	20:41	0.3072	13.07	29.28	0.4251
1-Apr-08	20:42	0.3072	13.07	29.27	0.4242
1-Apr-08	20:43	0.3072	13.06	29.27	0.4234
1-Apr-08	20:44	0.3072	13.05	29.27	0.4226
1-Apr-08	20:45	0.3072	13.05	29.27	0.4217
1-Apr-08	20:46	0.3072	13.04	29.27	0.4209

1-Apr-08	20:47	0.3072	13.03	29.27	0.4201
1-Apr-08	20:48	0.3072	13.03	29.27	0.4193
1-Apr-08	20:49	0.3072	13.02	29.27	0.4185
1-Apr-08	20:50	0.3072	13.01	29.27	0.4177
1-Apr-08	20:51	0.3072	13.01	29.27	0.4169
1-Apr-08	20:52	0.3072	13	29.27	0.4161
1-Apr-08	20:53	0.3072	12.99	29.27	0.4153
1-Apr-08	20:54	0.3072	12.99	29.27	0.4145
1-Apr-08	20:55	0.3072	12.98	29.27	0.4137
1-Apr-08	20:56	0.3072	12.97	29.27	0.413
1-Apr-08	20:57	0.3072	12.97	29.27	0.4122
1-Apr-08	20:58	0.3072	12.96	29.27	0.4115
1-Apr-08	20:59	0.3072	12.95	29.27	0.4107
1-Apr-08	21:00	0.3072	12.95	29.26	0.41
1-Apr-08	21:01	0.3072	12.94	29.26	0.4092
1-Apr-08	21:02	0.3072	12.94	29.26	0.4085
1-Apr-08	21:03	0.3072	12.93	29.26	0.4078
1-Apr-08	21:04	0.3072	12.92	29.26	0.407
1-Apr-08	21:05	0.3072	12.92	29.26	0.4063
1-Apr-08	21:06	0.3072	12.91	29.26	0.4056
1-Apr-08	21:07	0.3072	12.91	29.26	0.4049
1-Apr-08	21:08	0.3072	12.9	29.26	0.4042
1-Apr-08	21:09	0.3072	12.89	29.26	0.4035
1-Apr-08	21:10	0.3073	12.89	29.26	0.4028
1-Apr-08	21:11	0.3073	12.88	29.26	0.4021
1-Apr-08	21:12	0.3073	12.88	29.26	0.4014
1-Apr-08	21:13	0.3073	12.87	29.26	0.4008
1-Apr-08	21:14	0.3073	12.87	29.26	0.4001
1-Apr-08	21:15	0.3073	12.86	29.26	0.3994
1-Apr-08	21:16	0.3073	12.85	29.26	0.3987
1-Apr-08	21:17	0.3073	12.85	29.26	0.3981
1-Apr-08	21:18	0.3073	12.84	29.26	0.3974
1-Apr-08	21:19	0.3073	12.84	29.26	0.3968
1-Apr-08	21:20	0.3073	12.83	29.26	0.3961
1-Apr-08	21:21	0.3073	12.83	29.26	0.3955
1-Apr-08	21:22	0.3073	12.82	29.25	0.3949
1-Apr-08	21:23	0.3073	12.82	29.25	0.3942
1-Apr-08	21:24	0.3073	12.81	29.25	0.3936
1-Apr-08	21:25	0.3073	12.81	29.25	0.393
1-Apr-08	21:26	0.3073	12.8	29.25	0.3924
1-Apr-08	21:27	0.3073	12.8	29.25	0.3918
1-Apr-08	21:28	0.3073	12.79	29.25	0.3911
1-Apr-08	21:29	0.3073	12.79	29.25	0.3905
1-Apr-08	21:30	0.3073	12.78	29.25	0.3899
1-Apr-08	21:31	0.3073	12.78	29.25	0.3894
1-Apr-08	21:32	0.3073	12.77	29.25	0.3888
1-Apr-08	21:33	0.3073	12.77	29.25	0.3882
1-Apr-08	21:34	0.3073	12.76	29.25	0.3876
1-Apr-08	21:35	0.3073	12.76	29.25	0.387
1-Apr-08	21:36	0.3073	12.75	29.25	0.3864

1-Apr-08	21:37	0.3073	12.75	29.25	0.3859
1-Apr-08	21:38	0.3073	12.74	29.25	0.3853
1-Apr-08	21:39	0.3073	12.74	29.25	0.3847
1-Apr-08	21:40	0.3073	12.73	29.25	0.3842
1-Apr-08	21:41	0.3073	12.73	29.25	0.3836
1-Apr-08	21:42	0.3073	12.72	29.25	0.3831
1-Apr-08	21:43	0.3073	12.72	29.25	0.3825
1-Apr-08	21:44	0.3073	12.72	29.25	0.382
1-Apr-08	21:45	0.3073	12.71	29.25	0.3815
1-Apr-08	21:46	0.3073	12.71	29.25	0.3809
1-Apr-08	21:47	0.3073	12.7	29.24	0.3804
1-Apr-08	21:48	0.3073	12.7	29.24	0.3799
1-Apr-08	21:49	0.3073	12.69	29.24	0.3793
1-Apr-08	21:50	0.3073	12.69	29.24	0.3788
1-Apr-08	21:51	0.3073	12.69	29.24	0.3783
1-Apr-08	21:52	0.3073	12.68	29.24	0.3778
1-Apr-08	21:53	0.3073	12.68	29.24	0.3773
1-Apr-08	21:54	0.3073	12.67	29.24	0.3768
1-Apr-08	21:55	0.3073	12.67	29.24	0.3763
1-Apr-08	21:56	0.3074	12.66	29.24	0.3758
1-Apr-08	21:57	0.3074	12.66	29.24	0.3753
1-Apr-08	21:58	0.3074	12.66	29.24	0.3748
1-Apr-08	21:59	0.3074	12.65	29.24	0.3743
1-Apr-08	22:00	0.3074	12.65	29.24	0.3738
1-Apr-08	22:01	0.3074	12.64	29.24	0.3734
1-Apr-08	22:02	0.3074	12.64	29.24	0.3729
1-Apr-08	22:03	0.3074	12.64	29.24	0.3724
1-Apr-08	22:04	0.3074	12.63	29.24	0.3719
1-Apr-08	22:05	0.3074	12.63	29.24	0.3715
1-Apr-08	22:06	0.3074	12.62	29.24	0.371
1-Apr-08	22:07	0.3074	12.62	29.24	0.3706
1-Apr-08	22:08	0.3074	12.62	29.24	0.3701
1-Apr-08	22:09	0.3074	12.61	29.24	0.3697
1-Apr-08	22:10	0.3074	12.61	29.24	0.3692
1-Apr-08	22:11	0.3074	12.61	29.24	0.3688
1-Apr-08	22:12	0.3074	12.6	29.24	0.3683
1-Apr-08	22:13	0.3074	12.6	29.24	0.3679
1-Apr-08	22:14	0.3074	12.6	29.24	0.3674
1-Apr-08	22:15	0.3074	12.59	29.24	0.367
1-Apr-08	22:16	0.3074	12.59	29.24	0.3666
1-Apr-08	22:17	0.3074	12.58	29.23	0.3662
1-Apr-08	22:18	0.3074	12.58	29.23	0.3657
1-Apr-08	22:19	0.3074	12.58	29.23	0.3653
1-Apr-08	22:20	0.3074	12.57	29.23	0.3649
1-Apr-08	22:21	0.3074	12.57	29.23	0.3645
1-Apr-08	22:22	0.3074	12.57	29.23	0.3641
1-Apr-08	22:23	0.3074	12.56	29.23	0.3637
1-Apr-08	22:24	0.3074	12.56	29.23	0.3633
1-Apr-08	22:25	0.3074	12.56	29.23	0.3629
1-Apr-08	22:26	0.3074	12.55	29.23	0.3625

1-Apr-08	22:27	0.3074	12.55	29.23	0.3621
1-Apr-08	22:28	0.3074	12.55	29.23	0.3617
1-Apr-08	22:29	0.3074	12.54	29.23	0.3613
1-Apr-08	22:30	0.3074	12.54	29.23	0.3609
1-Apr-08	22:31	0.3074	12.54	29.23	0.3605
1-Apr-08	22:32	0.3074	12.53	29.23	0.3601
1-Apr-08	22:33	0.3074	12.53	29.23	0.3597
1-Apr-08	22:34	0.3074	12.53	29.23	0.3594
1-Apr-08	22:35	0.3074	12.52	29.23	0.359
1-Apr-08	22:36	0.3074	12.52	29.23	0.3586
1-Apr-08	22:37	0.3074	12.52	29.23	0.3583
1-Apr-08	22:38	0.3074	12.52	29.23	0.3579
1-Apr-08	22:39	0.3074	12.51	29.23	0.3575
1-Apr-08	22:40	0.3074	12.51	29.23	0.3572
1-Apr-08	22:41	0.3074	12.51	29.23	0.3568
1-Apr-08	22:42	0.3074	12.5	29.23	0.3565
1-Apr-08	22:43	0.3075	12.5	29.23	0.3561
1-Apr-08	22:44	0.3075	12.5	29.23	0.3557
1-Apr-08	22:45	0.3075	12.5	29.23	0.3554
1-Apr-08	22:46	0.3075	12.49	29.23	0.3551
1-Apr-08	22:47	0.3075	12.49	29.23	0.3547
1-Apr-08	22:48	0.3075	12.49	29.23	0.3544
1-Apr-08	22:49	0.3075	12.48	29.23	0.354
1-Apr-08	22:50	0.3075	12.48	29.23	0.3537
1-Apr-08	22:51	0.3075	12.48	29.23	0.3534
1-Apr-08	22:52	0.3075	12.48	29.23	0.353
1-Apr-08	22:53	0.3075	12.47	29.23	0.3527
1-Apr-08	22:54	0.3075	12.47	29.23	0.3524
1-Apr-08	22:55	0.3075	12.47	29.23	0.3521
1-Apr-08	22:56	0.3075	12.46	29.22	0.3517
1-Apr-08	22:57	0.3075	12.46	29.22	0.3514
1-Apr-08	22:58	0.3075	12.46	29.22	0.3511
1-Apr-08	22:59	0.3075	12.46	29.22	0.3508
1-Apr-08	23:00	0.3075	12.45	29.22	0.3505
1-Apr-08	23:01	0.3075	12.45	29.22	0.3502
1-Apr-08	23:02	0.3075	12.45	29.22	0.3499
1-Apr-08	23:03	0.3075	12.45	29.22	0.3496
1-Apr-08	23:04	0.3075	12.44	29.22	0.3493
1-Apr-08	23:05	0.3075	12.44	29.22	0.349
1-Apr-08	23:06	0.3075	12.44	29.22	0.3487
1-Apr-08	23:07	0.3075	12.44	29.22	0.3484
1-Apr-08	23:08	0.3075	12.43	29.22	0.3481
1-Apr-08	23:09	0.3075	12.43	29.22	0.3478
1-Apr-08	23:10	0.3075	12.43	29.22	0.3475
1-Apr-08	23:11	0.3075	12.43	29.22	0.3472
1-Apr-08	23:12	0.3075	12.42	29.22	0.3469
1-Apr-08	23:13	0.3075	12.42	29.22	0.3466
1-Apr-08	23:14	0.3075	12.42	29.22	0.3463
1-Apr-08	23:15	0.3075	12.42	29.22	0.3461
1-Apr-08	23:16	0.3075	12.42	29.22	0.3458

1-Apr-08	23:17	0.3075	12.41	29.22	0.3455
1-Apr-08	23:18	0.3075	12.41	29.22	0.3452
1-Apr-08	23:19	0.3075	12.41	29.22	0.345
1-Apr-08	23:20	0.3075	12.41	29.22	0.3447
1-Apr-08	23:21	0.3075	12.4	29.22	0.3444
1-Apr-08	23:22	0.3075	12.4	29.22	0.3442
1-Apr-08	23:23	0.3075	12.4	29.22	0.3439
1-Apr-08	23:24	0.3075	12.4	29.22	0.3436
1-Apr-08	23:25	0.3075	12.4	29.22	0.3434
1-Apr-08	23:26	0.3075	12.39	29.22	0.3431
1-Apr-08	23:27	0.3075	12.39	29.22	0.3429
1-Apr-08	23:28	0.3075	12.39	29.22	0.3426
1-Apr-08	23:29	0.3075	12.39	29.22	0.3424
1-Apr-08	23:30	0.3075	12.38	29.22	0.3421
1-Apr-08	23:31	0.3076	12.38	29.22	0.3419
1-Apr-08	23:32	0.3076	12.38	29.22	0.3416
1-Apr-08	23:33	0.3076	12.38	29.22	0.3414
1-Apr-08	23:34	0.3076	12.38	29.22	0.3411
1-Apr-08	23:35	0.3076	12.37	29.22	0.3409
1-Apr-08	23:36	0.3076	12.37	29.22	0.3406
1-Apr-08	23:37	0.3076	12.37	29.22	0.3404
1-Apr-08	23:38	0.3076	12.37	29.22	0.3402
1-Apr-08	23:39	0.3076	12.37	29.22	0.3399
1-Apr-08	23:40	0.3076	12.36	29.22	0.3397
1-Apr-08	23:41	0.3076	12.36	29.22	0.3395
1-Apr-08	23:42	0.3076	12.36	29.22	0.3392
1-Apr-08	23:43	0.3076	12.36	29.22	0.339
1-Apr-08	23:44	0.3076	12.36	29.22	0.3388
1-Apr-08	23:45	0.3076	12.36	29.22	0.3386
1-Apr-08	23:46	0.3076	12.35	29.22	0.3383
1-Apr-08	23:47	0.3076	12.35	29.22	0.3381
1-Apr-08	23:48	0.3076	12.35	29.22	0.3379
1-Apr-08	23:49	0.3076	12.35	29.22	0.3377
1-Apr-08	23:50	0.3076	12.35	29.22	0.3375
1-Apr-08	23:51	0.3076	12.34	29.22	0.3372
1-Apr-08	23:52	0.3076	12.34	29.21	0.337
1-Apr-08	23:53	0.3076	12.34	29.21	0.3368
1-Apr-08	23:54	0.3076	12.34	29.21	0.3366
1-Apr-08	23:55	0.3076	12.34	29.21	0.3364
1-Apr-08	23:56	0.3063	12.34	29.21	0.3362
1-Apr-08	23:57	0.3022	12.33	29.21	0.336
1-Apr-08	23:58	0.2944	12.33	29.21	0.3357
1-Apr-08	23:59	0.2814	12.33	29.21	0.3353
2-Apr-08	24	0.2618	12.32	29.21	0.3349

Highgate - 20yr CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	5.7565
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0011	0.00	28	0.0000	
1-Apr-08	0:02	0.0045	0.00	28	0.0000	
1-Apr-08	0:03	0.0110	0.00	28	0.0000	
1-Apr-08	0:04	0.0219	0.00	28	0.0000	
1-Apr-08	0:05	0.0381	0.00	28	0.0000	
1-Apr-08	0:06	0.0586	0.01	28	0.0001	
1-Apr-08	0:07	0.0815	0.01	28	0.0001	
1-Apr-08	0:08	0.1052	0.02	28	0.0002	
1-Apr-08	0:09	0.1284	0.02	28	0.0003	
1-Apr-08	0:10	0.1499	0.03	28	0.0004	
1-Apr-08	0:11	0.1691	0.04	28	0.0005	
1-Apr-08	0:12	0.1857	0.05	28	0.0007	
1-Apr-08	0:13	0.1988	0.06	28	0.0008	
1-Apr-08	0:14	0.2092	0.08	28	0.0010	
1-Apr-08	0:15	0.2177	0.09	28	0.0011	
1-Apr-08	0:16	0.2246	0.10	28	0.0013	
1-Apr-08	0:17	0.2304	0.11	28	0.0015	
1-Apr-08	0:18	0.2352	0.13	28	0.0017	
1-Apr-08	0:19	0.2390	0.14	28	0.0019	
1-Apr-08	0:20	0.2422	0.16	28	0.0020	
1-Apr-08	0:21	0.2448	0.17	28	0.0022	
1-Apr-08	0:22	0.2469	0.19	28	0.0024	
1-Apr-08	0:23	0.2486	0.20	28	0.0026	
1-Apr-08	0:24	0.2500	0.22	28	0.0028	
1-Apr-08	0:25	0.2511	0.23	28	0.0030	
1-Apr-08	0:26	0.2521	0.25	28	0.0032	
1-Apr-08	0:27	0.2528	0.26	28	0.0034	
1-Apr-08	0:28	0.2535	0.28	28	0.0036	
1-Apr-08	0:29	0.2540	0.29	28	0.0038	
1-Apr-08	0:30	0.2544	0.31	28	0.0040	
1-Apr-08	0:31	0.2548	0.32	28	0.0041	
1-Apr-08	0:32	0.2550	0.34	28	0.0043	
1-Apr-08	0:33	0.2553	0.35	28	0.0044	
1-Apr-08	0:34	0.2555	0.37	28	0.0046	
1-Apr-08	0:35	0.2557	0.38	28	0.0048	
1-Apr-08	0:36	0.2558	0.40	28	0.0049	
1-Apr-08	0:37	0.2559	0.41	28	0.0051	
1-Apr-08	0:38	0.2560	0.43	28	0.0052	
1-Apr-08	0:39	0.2560	0.44	28	0.0054	
1-Apr-08	0:40	0.2560	0.46	28	0.0055	
1-Apr-08	0:41	0.2560	0.47	28	0.0057	
1-Apr-08	0:42	0.2560	0.49	28	0.0058	
1-Apr-08	0:43	0.2560	0.50	28	0.0060	
1-Apr-08	0:44	0.2560	0.52	28	0.0061	
1-Apr-08	0:45	0.2560	0.53	28	0.0063	
1-Apr-08	0:46	0.2560	0.55	28	0.0065	

1-Apr-08	0:47	0.2560	0.56	28	0.0066
1-Apr-08	0:48	0.2560	0.58	28	0.0068
1-Apr-08	0:49	0.2560	0.59	28	0.0069
1-Apr-08	0:50	0.2560	0.61	28	0.0071
1-Apr-08	0:51	0.2560	0.62	28	0.0072
1-Apr-08	0:52	0.2560	0.64	28	0.0074
1-Apr-08	0:53	0.2560	0.65	28	0.0075
1-Apr-08	0:54	0.2560	0.67	28	0.0077
1-Apr-08	0:55	0.2560	0.68	28	0.0078
1-Apr-08	0:56	0.2560	0.70	28	0.0080
1-Apr-08	0:57	0.2560	0.71	28	0.0081
1-Apr-08	0:58	0.2560	0.72	28	0.0083
1-Apr-08	0:59	0.2560	0.74	28	0.0084
1-Apr-08	1:00	0.2560	0.75	28	0.0086
1-Apr-08	1:01	0.2560	0.77	28	0.0087
1-Apr-08	1:02	0.2560	0.78	28	0.0089
1-Apr-08	1:03	0.2560	0.80	28	0.0091
1-Apr-08	1:04	0.2560	0.81	28	0.0092
1-Apr-08	1:05	0.2560	0.83	28	0.0094
1-Apr-08	1:06	0.2560	0.84	28	0.0095
1-Apr-08	1:07	0.2560	0.86	28	0.0097
1-Apr-08	1:08	0.2560	0.87	28	0.0098
1-Apr-08	1:09	0.2560	0.89	28	0.0100
1-Apr-08	1:10	0.2560	0.90	28	0.0101
1-Apr-08	1:11	0.2560	0.92	28	0.0103
1-Apr-08	1:12	0.2560	0.93	28	0.0104
1-Apr-08	1:13	0.2560	0.95	28	0.0106
1-Apr-08	1:14	0.2560	0.96	28	0.0107
1-Apr-08	1:15	0.2560	0.98	28	0.0109
1-Apr-08	1:16	0.2560	0.99	28	0.0110
1-Apr-08	1:17	0.2560	1.01	28	0.0112
1-Apr-08	1:18	0.2560	1.02	28	0.0113
1-Apr-08	1:19	0.2560	1.04	28	0.0115
1-Apr-08	1:20	0.2560	1.05	28	0.0116
1-Apr-08	1:21	0.2560	1.06	28	0.0118
1-Apr-08	1:22	0.2560	1.08	28	0.0119
1-Apr-08	1:23	0.2560	1.09	28	0.0121
1-Apr-08	1:24	0.2560	1.11	28	0.0122
1-Apr-08	1:25	0.2560	1.12	28	0.0123
1-Apr-08	1:26	0.2560	1.14	28	0.0125
1-Apr-08	1:27	0.2560	1.15	28	0.0126
1-Apr-08	1:28	0.2560	1.17	28	0.0127
1-Apr-08	1:29	0.2560	1.18	28	0.0129
1-Apr-08	1:30	0.2560	1.20	28	0.0130
1-Apr-08	1:31	0.2560	1.21	28	0.0131
1-Apr-08	1:32	0.2560	1.23	28	0.0132
1-Apr-08	1:33	0.2560	1.24	28	0.0134
1-Apr-08	1:34	0.2560	1.25	28	0.0135
1-Apr-08	1:35	0.2560	1.27	28	0.0136
1-Apr-08	1:36	0.2560	1.28	28	0.0138

1-Apr-08	1:37	0.2560	1.30	28	0.0139
1-Apr-08	1:38	0.2560	1.31	28	0.0140
1-Apr-08	1:39	0.2560	1.33	28	0.0142
1-Apr-08	1:40	0.2560	1.34	28	0.0143
1-Apr-08	1:41	0.2560	1.36	28	0.0144
1-Apr-08	1:42	0.2560	1.37	28	0.0146
1-Apr-08	1:43	0.2560	1.38	28	0.0147
1-Apr-08	1:44	0.2560	1.40	28	0.0148
1-Apr-08	1:45	0.2560	1.41	28	0.0149
1-Apr-08	1:46	0.2560	1.43	28	0.0151
1-Apr-08	1:47	0.2560	1.44	28	0.0152
1-Apr-08	1:48	0.2560	1.46	28	0.0153
1-Apr-08	1:49	0.2560	1.47	28	0.0155
1-Apr-08	1:50	0.2560	1.49	28	0.0156
1-Apr-08	1:51	0.2560	1.50	28	0.0157
1-Apr-08	1:52	0.2560	1.51	28	0.0158
1-Apr-08	1:53	0.2560	1.53	28	0.0160
1-Apr-08	1:54	0.2560	1.54	28	0.0161
1-Apr-08	1:55	0.2560	1.56	28	0.0162
1-Apr-08	1:56	0.2560	1.57	28	0.0164
1-Apr-08	1:57	0.2560	1.59	28	0.0165
1-Apr-08	1:58	0.2560	1.60	28	0.0166
1-Apr-08	1:59	0.2561	1.62	28	0.0167
1-Apr-08	2:00	0.2561	1.63	28	0.0169
1-Apr-08	2:01	0.2561	1.64	28	0.0170
1-Apr-08	2:02	0.2561	1.66	28	0.0171
1-Apr-08	2:03	0.2562	1.67	28	0.0173
1-Apr-08	2:04	0.2562	1.69	28	0.0174
1-Apr-08	2:05	0.2562	1.70	28	0.0175
1-Apr-08	2:06	0.2563	1.72	28	0.0176
1-Apr-08	2:07	0.2563	1.73	28	0.0178
1-Apr-08	2:08	0.2563	1.74	28	0.0179
1-Apr-08	2:09	0.2564	1.76	28	0.0180
1-Apr-08	2:10	0.2564	1.77	28	0.0182
1-Apr-08	2:11	0.2564	1.79	28	0.0183
1-Apr-08	2:12	0.2565	1.80	28	0.0184
1-Apr-08	2:13	0.2565	1.82	28	0.0185
1-Apr-08	2:14	0.2566	1.83	28	0.0187
1-Apr-08	2:15	0.2566	1.84	28	0.0188
1-Apr-08	2:16	0.2566	1.86	28	0.0189
1-Apr-08	2:17	0.2567	1.87	28	0.0191
1-Apr-08	2:18	0.2567	1.89	28	0.0192
1-Apr-08	2:19	0.2568	1.90	28	0.0193
1-Apr-08	2:20	0.2568	1.92	28	0.0194
1-Apr-08	2:21	0.2568	1.93	28	0.0196
1-Apr-08	2:22	0.2569	1.94	28	0.0197
1-Apr-08	2:23	0.2569	1.96	28	0.0198
1-Apr-08	2:24	0.2570	1.97	28	0.0200
1-Apr-08	2:25	0.2570	1.99	28	0.0200
1-Apr-08	2:26	0.2570	2.00	28	0.0201

1-Apr-08	2:27	0.2571	2.02	28	0.0202
1-Apr-08	2:28	0.2571	2.03	28	0.0202
1-Apr-08	2:29	0.2572	2.04	28	0.0203
1-Apr-08	2:30	0.2572	2.06	28	0.0204
1-Apr-08	2:31	0.2572	2.07	28	0.0204
1-Apr-08	2:32	0.2573	2.09	28	0.0205
1-Apr-08	2:33	0.2573	2.10	28	0.0206
1-Apr-08	2:34	0.2574	2.11	28	0.0206
1-Apr-08	2:35	0.2574	2.13	28	0.0207
1-Apr-08	2:36	0.2574	2.14	28	0.0208
1-Apr-08	2:37	0.2575	2.16	28	0.0208
1-Apr-08	2:38	0.2575	2.17	28	0.0209
1-Apr-08	2:39	0.2576	2.19	28	0.0210
1-Apr-08	2:40	0.2576	2.20	28	0.0210
1-Apr-08	2:41	0.2576	2.21	28	0.0211
1-Apr-08	2:42	0.2577	2.23	28	0.0212
1-Apr-08	2:43	0.2577	2.24	28	0.0212
1-Apr-08	2:44	0.2578	2.26	28	0.0213
1-Apr-08	2:45	0.2578	2.27	28	0.0214
1-Apr-08	2:46	0.2578	2.29	28	0.0214
1-Apr-08	2:47	0.2579	2.30	28	0.0215
1-Apr-08	2:48	0.2579	2.31	28	0.0216
1-Apr-08	2:49	0.2579	2.33	28	0.0216
1-Apr-08	2:50	0.2580	2.34	28	0.0217
1-Apr-08	2:51	0.2580	2.36	28	0.0218
1-Apr-08	2:52	0.2581	2.37	28	0.0218
1-Apr-08	2:53	0.2581	2.38	28	0.0219
1-Apr-08	2:54	0.2581	2.40	28	0.0220
1-Apr-08	2:55	0.2582	2.41	28	0.0220
1-Apr-08	2:56	0.2582	2.43	28	0.0221
1-Apr-08	2:57	0.2583	2.44	28	0.0222
1-Apr-08	2:58	0.2583	2.46	28	0.0222
1-Apr-08	2:59	0.2583	2.47	28	0.0223
1-Apr-08	3:00	0.2584	2.48	28	0.0224
1-Apr-08	3:01	0.2584	2.50	28	0.0224
1-Apr-08	3:02	0.2584	2.51	28	0.0225
1-Apr-08	3:03	0.2585	2.53	28	0.0226
1-Apr-08	3:04	0.2585	2.54	28	0.0226
1-Apr-08	3:05	0.2586	2.55	28	0.0227
1-Apr-08	3:06	0.2586	2.57	28	0.0228
1-Apr-08	3:07	0.2586	2.58	28	0.0228
1-Apr-08	3:08	0.2587	2.60	28	0.0229
1-Apr-08	3:09	0.2587	2.61	28	0.0230
1-Apr-08	3:10	0.2588	2.63	28	0.0230
1-Apr-08	3:11	0.2588	2.64	28	0.0231
1-Apr-08	3:12	0.2588	2.65	28	0.0232
1-Apr-08	3:13	0.2589	2.67	28	0.0232
1-Apr-08	3:14	0.2589	2.68	28	0.0233
1-Apr-08	3:15	0.2589	2.70	28	0.0234
1-Apr-08	3:16	0.2590	2.71	28	0.0234

1-Apr-08	3:17	0.2590	2.72	28	0.0235
1-Apr-08	3:18	0.2591	2.74	28	0.0235
1-Apr-08	3:19	0.2591	2.75	28	0.0236
1-Apr-08	3:20	0.2591	2.77	28	0.0237
1-Apr-08	3:21	0.2592	2.78	28	0.0237
1-Apr-08	3:22	0.2592	2.79	28	0.0238
1-Apr-08	3:23	0.2592	2.81	28	0.0239
1-Apr-08	3:24	0.2593	2.82	28	0.0239
1-Apr-08	3:25	0.2593	2.84	28	0.0240
1-Apr-08	3:26	0.2593	2.85	28	0.0241
1-Apr-08	3:27	0.2594	2.87	28	0.0241
1-Apr-08	3:28	0.2594	2.88	28	0.0242
1-Apr-08	3:29	0.2595	2.89	28	0.0243
1-Apr-08	3:30	0.2595	2.91	28	0.0243
1-Apr-08	3:31	0.2595	2.92	28	0.0244
1-Apr-08	3:32	0.2596	2.94	28	0.0245
1-Apr-08	3:33	0.2596	2.95	28	0.0245
1-Apr-08	3:34	0.2596	2.96	28	0.0246
1-Apr-08	3:35	0.2597	2.98	28	0.0247
1-Apr-08	3:36	0.2597	2.99	28	0.0247
1-Apr-08	3:37	0.2598	3.01	28	0.0248
1-Apr-08	3:38	0.2598	3.02	28	0.0249
1-Apr-08	3:39	0.2598	3.03	28	0.0249
1-Apr-08	3:40	0.2599	3.05	28	0.0250
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1-Apr-08	3:42	0.2599	3.08	28	0.0251
1-Apr-08	3:43	0.2600	3.09	28	0.0252
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1-Apr-08	3:46	0.2601	3.13	28	0.0253
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1-Apr-08	3:49	0.2602	3.18	28	0.0255
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1-Apr-08	3:55	0.2604	3.26	28	0.0258
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1-Apr-08	3:57	0.2605	3.29	28	0.0259
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1-Apr-08	4:03	0.2607	3.37	28	0.0262
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1-Apr-08	4:35	0.2618	3.82	28	0.0278
1-Apr-08	4:36	0.2618	3.84	28	0.0279
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1-Apr-08	4:52	0.2623	4.06	28	0.0287
1-Apr-08	4:53	0.2624	4.07	28	0.0288
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1-Apr-08	4:55	0.2624	4.10	28	0.0289
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1-Apr-08	4:58	0.2625	4.14	28	0.0290
1-Apr-08	4:59	0.2626	4.16	28	0.0291
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1-Apr-08	5:02	0.2627	4.20	28	0.0292
1-Apr-08	5:03	0.2627	4.21	28	0.0293
1-Apr-08	5:04	0.2627	4.23	28	0.0293
1-Apr-08	5:05	0.2628	4.24	28	0.0294
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1-Apr-08	5:07	0.2628	4.27	28	0.0295
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1-Apr-08	5:09	0.2629	4.30	28	0.0296
1-Apr-08	5:10	0.2629	4.31	28	0.0296
1-Apr-08	5:11	0.2629	4.33	28	0.0297
1-Apr-08	5:12	0.2630	4.34	28	0.0297
1-Apr-08	5:13	0.2630	4.35	28	0.0298
1-Apr-08	5:14	0.2630	4.37	28	0.0298
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1-Apr-08	5:33	0.2636	4.63	28	0.0308
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1-Apr-08	5:35	0.2637	4.66	28	0.0309
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1-Apr-08	5:38	0.2638	4.70	28	0.0311
1-Apr-08	5:39	0.2638	4.72	28	0.0311
1-Apr-08	5:40	0.2638	4.73	28	0.0312
1-Apr-08	5:41	0.2639	4.75	28	0.0312
1-Apr-08	5:42	0.2639	4.76	28	0.0313
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1-Apr-08	5:45	0.2640	4.80	28	0.0314
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1-Apr-08	5:48	0.2641	4.84	28	0.0316
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1-Apr-08	5:50	0.2642	4.87	28	0.0317
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1-Apr-08	5:52	0.2698	4.90	28	0.0318
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1-Apr-08	5:57	0.3665	4.98	28	0.0321
1-Apr-08	5:58	0.3962	5.00	28	0.0322
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1-Apr-08	6:01	0.4766	5.08	28	0.0324
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1-Apr-08	6:20	0.5858	5.68	28	0.0342
1-Apr-08	6:21	0.5864	5.71	28	0.0343
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1-Apr-08	6:24	0.5877	5.81	28	0.0345
1-Apr-08	6:25	0.5880	5.84	28	0.0346
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1-Apr-08	6:27	0.5886	5.91	28	0.0348
1-Apr-08	6:28	0.5888	5.94	28	0.0349
1-Apr-08	6:29	0.5890	5.97	28	0.0350
1-Apr-08	6:30	0.5892	6.01	28	0.0351
1-Apr-08	6:31	0.5893	6.04	28	0.0352
1-Apr-08	6:32	0.5894	6.07	28	0.0353
1-Apr-08	6:33	0.5896	6.11	28	0.0353
1-Apr-08	6:34	0.5897	6.14	28	0.0354
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1-Apr-08	6:36	0.5900	6.21	28	0.0356

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1-Apr-08	6:39	0.5904	6.31	28	0.0359
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1-Apr-08	6:51	0.5919	6.71	28	0.0373
1-Apr-08	6:52	0.5920	6.74	28	0.0374
1-Apr-08	6:53	0.5921	6.77	28	0.0375
1-Apr-08	6:54	0.5923	6.81	28	0.0376
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1-Apr-08	6:57	0.5926	6.91	28	0.0380
1-Apr-08	6:58	0.5928	6.94	28	0.0381
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1-Apr-08	7:02	0.5933	7.07	28	0.0385
1-Apr-08	7:03	0.5934	7.11	28	0.0387
1-Apr-08	7:04	0.5935	7.14	28	0.0388
1-Apr-08	7:05	0.5936	7.17	28	0.0389
1-Apr-08	7:06	0.5937	7.21	28	0.0390
1-Apr-08	7:07	0.5939	7.24	28	0.0391
1-Apr-08	7:08	0.5940	7.27	28	0.0393
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1-Apr-08	7:12	0.5945	7.41	28	0.0397
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1-Apr-08	7:14	0.5947	7.47	28	0.0400
1-Apr-08	7:15	0.5948	7.51	28	0.0400
1-Apr-08	7:16	0.5949	7.54	28	0.0401
1-Apr-08	7:17	0.5950	7.57	28	0.0402
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1-Apr-08	7:19	0.5953	7.64	28	0.0403
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1-Apr-08	7:21	0.5955	7.70	28	0.0404
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1-Apr-08	7:24	0.5958	7.80	28	0.0406
1-Apr-08	7:25	0.5960	7.84	28	0.0406
1-Apr-08	7:26	0.5961	7.87	28	0.0407

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1-Apr-08	7:28	0.5963	7.94	28	0.0408
1-Apr-08	7:29	0.5964	7.97	28	0.0409
1-Apr-08	7:30	0.5965	8.00	28	0.0409
1-Apr-08	7:31	0.5966	8.04	28	0.0410
1-Apr-08	7:32	0.5968	8.07	28	0.0410
1-Apr-08	7:33	0.5969	8.10	28	0.0411
1-Apr-08	7:34	0.5970	8.14	28	0.0411
1-Apr-08	7:35	0.5971	8.17	28	0.0412
1-Apr-08	7:36	0.5972	8.20	28	0.0413
1-Apr-08	7:37	0.5973	8.24	28	0.0413
1-Apr-08	7:38	0.5974	8.27	28	0.0414
1-Apr-08	7:39	0.5975	8.31	28	0.0414
1-Apr-08	7:40	0.5976	8.34	28	0.0415
1-Apr-08	7:41	0.5978	8.37	28	0.0415
1-Apr-08	7:42	0.5979	8.41	28	0.0416
1-Apr-08	7:43	0.5980	8.44	28	0.0417
1-Apr-08	7:44	0.5981	8.47	28	0.0417
1-Apr-08	7:45	0.5982	8.51	28	0.0418
1-Apr-08	7:46	0.5983	8.54	28	0.0418
1-Apr-08	7:47	0.5984	8.57	28	0.0419
1-Apr-08	7:48	0.5985	8.61	28	0.0420
1-Apr-08	7:49	0.5986	8.64	28	0.0424
1-Apr-08	7:50	0.5987	8.67	28	0.0439
1-Apr-08	7:51	0.5988	8.71	28	0.0455
1-Apr-08	7:52	0.5989	8.74	28	0.0470
1-Apr-08	7:53	0.5990	8.77	28	0.0485
1-Apr-08	7:54	0.5991	8.80	28	0.0501
1-Apr-08	7:55	0.5993	8.84	28	0.0516
1-Apr-08	7:56	0.5994	8.87	28	0.0531
1-Apr-08	7:57	0.5995	8.90	28	0.0546
1-Apr-08	7:58	0.5996	8.94	28	0.0562
1-Apr-08	7:59	0.5997	8.97	28	0.0577
1-Apr-08	8:00	0.5998	9.00	28	0.0592
1-Apr-08	8:01	0.5999	9.03	28	0.0607
1-Apr-08	8:02	0.6000	9.07	28	0.0622
1-Apr-08	8:03	0.6001	9.10	28	0.0637
1-Apr-08	8:04	0.6002	9.13	28	0.0652
1-Apr-08	8:05	0.6003	9.16	28	0.0667
1-Apr-08	8:06	0.6004	9.19	28	0.0682
1-Apr-08	8:07	0.6005	9.23	28	0.0696
1-Apr-08	8:08	0.6006	9.26	28	0.0711
1-Apr-08	8:09	0.6007	9.29	28	0.0726
1-Apr-08	8:10	0.6008	9.32	28	0.0741
1-Apr-08	8:11	0.6009	9.35	28	0.0755
1-Apr-08	8:12	0.6010	9.38	28	0.0770
1-Apr-08	8:13	0.6011	9.42	28	0.0785
1-Apr-08	8:14	0.6012	9.45	28	0.0799
1-Apr-08	8:15	0.6013	9.48	28	0.0814
1-Apr-08	8:16	0.6014	9.51	28	0.0828

1-Apr-08	8:17	0.6015	9.54	28	0.0843
1-Apr-08	8:18	0.6016	9.57	28	0.0857
1-Apr-08	8:19	0.6017	9.60	28	0.0871
1-Apr-08	8:20	0.6018	9.63	28	0.0886
1-Apr-08	8:21	0.6019	9.66	28	0.0900
1-Apr-08	8:22	0.6020	9.69	28	0.0914
1-Apr-08	8:23	0.6021	9.72	28	0.0928
1-Apr-08	8:24	0.6022	9.76	28	0.0943
1-Apr-08	8:25	0.6023	9.79	28	0.0957
1-Apr-08	8:26	0.6024	9.82	28	0.0979
1-Apr-08	8:27	0.6025	9.85	28	0.1004
1-Apr-08	8:28	0.6026	9.88	28	0.1028
1-Apr-08	8:29	0.6027	9.91	28	0.1052
1-Apr-08	8:30	0.6028	9.94	28	0.1077
1-Apr-08	8:31	0.6029	9.97	28	0.1101
1-Apr-08	8:32	0.6030	10.00	28	0.1125
1-Apr-08	8:33	0.6031	10.02	28	0.1149
1-Apr-08	8:34	0.6032	10.05	28	0.1173
1-Apr-08	8:35	0.6032	10.08	28	0.1197
1-Apr-08	8:36	0.6033	10.11	28	0.1220
1-Apr-08	8:37	0.6034	10.14	28	0.1244
1-Apr-08	8:38	0.6035	10.17	28	0.1267
1-Apr-08	8:39	0.6036	10.20	28	0.1290
1-Apr-08	8:40	0.6037	10.23	28	0.1313
1-Apr-08	8:41	0.6038	10.25	28	0.1337
1-Apr-08	8:42	0.6039	10.28	28	0.1359
1-Apr-08	8:43	0.6040	10.31	28	0.1382
1-Apr-08	8:44	0.6041	10.34	28	0.1405
1-Apr-08	8:45	0.6042	10.37	28	0.1428
1-Apr-08	8:46	0.6043	10.39	28	0.1450
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1-Apr-08	8:50	0.6046	10.50	28	0.1539
1-Apr-08	8:51	0.6055	10.53	28	0.1561
1-Apr-08	8:52	0.6080	10.56	28	0.1583
1-Apr-08	8:53	0.6127	10.58	28	0.1605
1-Apr-08	8:54	0.6206	10.61	28	0.1628
1-Apr-08	8:55	0.6323	10.64	28	0.1650
1-Apr-08	8:56	0.6470	10.67	28	0.1673
1-Apr-08	8:57	0.6634	10.70	28	0.1697
1-Apr-08	8:58	0.6804	10.73	28	0.1722
1-Apr-08	8:59	0.6971	10.76	28	0.1747
1-Apr-08	9:00	0.7125	10.79	28	0.1773
1-Apr-08	9:01	0.7264	10.82	28	0.1799
1-Apr-08	9:02	0.7383	10.86	28	0.1826
1-Apr-08	9:03	0.7478	10.89	28	0.1854
1-Apr-08	9:04	0.7553	10.92	28	0.1881
1-Apr-08	9:05	0.7615	10.96	28	0.1909
1-Apr-08	9:06	0.7666	10.99	28	0.1942

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1-Apr-08	9:08	0.7744	11.06	28	0.2013
1-Apr-08	9:09	0.7773	11.09	28	0.2048
1-Apr-08	9:10	0.7797	11.13	28	0.2083
1-Apr-08	9:11	0.7816	11.16	28	0.2119
1-Apr-08	9:12	0.7833	11.20	28	0.2154
1-Apr-08	9:13	0.7847	11.23	28	0.2189
1-Apr-08	9:14	0.7858	11.26	28	0.2224
1-Apr-08	9:15	0.7868	11.30	28	0.2259
1-Apr-08	9:16	0.7876	11.33	28	0.2293
1-Apr-08	9:17	0.7883	11.37	28	0.2328
1-Apr-08	9:18	0.7888	11.40	28	0.2362
1-Apr-08	9:19	0.7894	11.43	28	0.2396
1-Apr-08	9:20	0.7898	11.46	28	0.2430
1-Apr-08	9:21	0.7902	11.50	28	0.2464
1-Apr-08	9:22	0.7905	11.53	28	0.2497
1-Apr-08	9:23	0.7908	11.56	28	0.2531
1-Apr-08	9:24	0.7911	11.59	28	0.2564
1-Apr-08	9:25	0.7914	11.63	28	0.2597
1-Apr-08	9:26	0.7916	11.66	28	0.2630
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1-Apr-08	9:29	0.7922	11.75	28	0.2727
1-Apr-08	9:30	0.7923	11.78	28	0.2759
1-Apr-08	9:31	0.7925	11.81	28	0.2791
1-Apr-08	9:32	0.7926	11.85	28	0.2822
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1-Apr-08	9:35	0.7930	11.94	28	0.2916
1-Apr-08	9:36	0.7931	11.97	28	0.2947
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1-Apr-08	9:38	0.7934	12.03	28	0.3008
1-Apr-08	9:39	0.7935	12.06	28	0.3039
1-Apr-08	9:40	0.7937	12.08	28	0.3069
1-Apr-08	9:41	0.7938	12.11	28	0.3099
1-Apr-08	9:42	0.7939	12.14	28	0.3129
1-Apr-08	9:43	0.7941	12.17	28	0.3160
1-Apr-08	9:44	0.7942	12.20	28	0.3195
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1-Apr-08	9:51	0.7967	12.39	28	0.3430
1-Apr-08	9:52	0.8018	12.42	28	0.3463
1-Apr-08	9:53	0.8115	12.45	28	0.3496
1-Apr-08	9:54	0.8277	12.48	28	0.3530
1-Apr-08	9:55	0.8518	12.51	28	0.3565
1-Apr-08	9:56	0.8821	12.54	28	0.3602

1-Apr-08	9:57	0.9161	12.57	28	0.3641
1-Apr-08	9:58	0.9511	12.60	28	0.3682
1-Apr-08	9:59	0.9855	12.64	28	0.3726
1-Apr-08	10:00	1.0173	12.68	28	0.3771
1-Apr-08	10:01	1.0459	12.72	28	0.3818
1-Apr-08	10:02	1.0705	12.76	28	0.3867
1-Apr-08	10:03	1.0901	12.80	28	0.3917
1-Apr-08	10:04	1.1057	12.84	28	0.3968
1-Apr-08	10:05	1.1184	12.88	28	0.4020
1-Apr-08	10:06	1.1289	12.93	28	0.4072
1-Apr-08	10:07	1.1376	12.97	28	0.4125
1-Apr-08	10:08	1.1448	13.01	28	0.4177
1-Apr-08	10:09	1.1508	13.06	28	0.4230
1-Apr-08	10:10	1.1557	13.10	28	0.4283
1-Apr-08	10:11	1.1597	13.14	28	0.4335
1-Apr-08	10:12	1.1631	13.19	28	0.4388
1-Apr-08	10:13	1.1659	13.23	28	0.4440
1-Apr-08	10:14	1.1682	13.27	28	0.4493
1-Apr-08	10:15	1.1701	13.32	28	0.4545
1-Apr-08	10:16	1.1718	13.36	28	0.4596
1-Apr-08	10:17	1.1731	13.40	28	0.4652
1-Apr-08	10:18	1.1743	13.44	28	0.4709
1-Apr-08	10:19	1.1753	13.49	28	0.4766
1-Apr-08	10:20	1.1762	13.53	28	0.4822
1-Apr-08	10:21	1.1769	13.57	28	0.4878
1-Apr-08	10:22	1.1776	13.61	28	0.4934
1-Apr-08	10:23	1.1782	13.65	28	0.4989
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1-Apr-08	10:25	1.1792	13.73	28	0.5098
1-Apr-08	10:26	1.1797	13.77	28	0.5152
1-Apr-08	10:27	1.1801	13.81	28	0.5206
1-Apr-08	10:28	1.1804	13.85	28	0.5259
1-Apr-08	10:29	1.1807	13.89	28	0.5312
1-Apr-08	10:30	1.1810	13.93	28	0.5364
1-Apr-08	10:31	1.1812	13.97	28	0.5416
1-Apr-08	10:32	1.1814	14.01	28	0.5467
1-Apr-08	10:33	1.1817	14.04	28	0.5518
1-Apr-08	10:34	1.1819	14.08	28	0.5569
1-Apr-08	10:35	1.1821	14.12	28	0.5620
1-Apr-08	10:36	1.1824	14.16	28	0.5670
1-Apr-08	10:37	1.1826	14.19	28	0.5719
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1-Apr-08	10:39	1.1831	14.27	28	0.5817
1-Apr-08	10:40	1.1833	14.30	28	0.5866
1-Apr-08	10:41	1.1835	14.34	28	0.5914
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1-Apr-08	10:46	1.1846	14.51	28	0.6149

1-Apr-08	10:47	1.1848	14.55	28	0.6195
1-Apr-08	10:48	1.1851	14.58	28	0.6240
1-Apr-08	10:49	1.1853	14.61	28	0.6287
1-Apr-08	10:50	1.1855	14.65	28	0.6336
1-Apr-08	10:51	1.1886	14.68	28	0.6384
1-Apr-08	10:52	1.1978	14.71	28	0.6433
1-Apr-08	10:53	1.2152	14.75	28	0.6482
1-Apr-08	10:54	1.2443	14.78	28	0.6533
1-Apr-08	10:55	1.2877	14.82	28	0.6586
1-Apr-08	10:56	1.3422	14.86	28	0.6643
1-Apr-08	10:57	1.4033	14.90	28	0.6705
1-Apr-08	10:58	1.4663	14.95	28	0.6772
1-Apr-08	10:59	1.5283	14.99	28	0.6843
1-Apr-08	11:00	1.5855	15.05	28	0.6920
1-Apr-08	11:01	1.6370	15.10	28	0.7000
1-Apr-08	11:02	1.6812	15.16	28	0.7084
1-Apr-08	11:03	1.7165	15.22	28	0.7170
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1-Apr-08	11:05	1.7675	15.34	28	0.7348
1-Apr-08	11:06	1.7863	15.40	28	0.7439
1-Apr-08	11:07	1.8020	15.46	28	0.7531
1-Apr-08	11:08	1.8151	15.53	28	0.7623
1-Apr-08	11:09	1.8258	15.59	28	0.7715
1-Apr-08	11:10	1.8346	15.65	28	0.7808
1-Apr-08	11:11	1.8419	15.72	28	0.7900
1-Apr-08	11:12	1.8480	15.78	28	0.7992
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1-Apr-08	11:15	1.8607	15.97	28	0.8282
1-Apr-08	11:16	1.8636	16.03	28	0.8379
1-Apr-08	11:17	1.8661	16.09	28	0.8476
1-Apr-08	11:18	1.8682	16.15	28	0.8572
1-Apr-08	11:19	1.8700	16.21	28	0.8668
1-Apr-08	11:20	1.8716	16.27	28	0.8762
1-Apr-08	11:21	1.8789	16.33	28	0.8856
1-Apr-08	11:22	1.8983	16.39	28	0.8951
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1-Apr-08	11:24	1.9945	16.52	28	0.9147
1-Apr-08	11:25	2.0835	16.58	28	0.9253
1-Apr-08	11:26	2.1952	16.66	28	0.9368
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1-Apr-08	11:28	2.4489	16.82	28	0.9628
1-Apr-08	11:29	2.5757	16.91	28	0.9774
1-Apr-08	11:30	2.6925	17.01	28	0.9930
1-Apr-08	11:31	2.8014	17.12	28	1.0098
1-Apr-08	11:32	2.9036	17.23	28	1.0280
1-Apr-08	11:33	2.9983	17.34	28	1.0471
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1-Apr-08	11:36	3.3075	17.71	28	1.1090

1-Apr-08	11:37	3.4199	17.85	28	1.1314
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1-Apr-08	11:39	3.6327	18.13	28	1.1787
1-Apr-08	11:40	3.7259	18.28	28	1.2035
1-Apr-08	11:41	3.8232	18.44	28	1.2298
1-Apr-08	11:42	3.9392	18.59	28	1.2576
1-Apr-08	11:43	4.0834	18.76	28	1.2865
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1-Apr-08	11:45	4.5327	19.12	28	1.3492
1-Apr-08	11:46	4.8396	19.32	28	1.3842
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1-Apr-08	11:48	5.5162	19.77	28	1.4641
1-Apr-08	11:49	5.8489	20.02	28	1.5100
1-Apr-08	11:50	6.1543	20.29	28	1.5588
1-Apr-08	11:51	6.4570	20.57	28	1.6104
1-Apr-08	11:52	6.7813	20.87	28	1.6649
1-Apr-08	11:53	7.1412	21.18	28	1.7242
1-Apr-08	11:54	7.5795	21.52	28	1.7881
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1-Apr-08	12:00	11.4632	24.17	28	2.6959
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1-Apr-08	12:04	12.3797	26.30	28	3.8843
1-Apr-08	12:05	12.0347	26.79	28	4.1703
1-Apr-08	12:06	11.4912	27.24	28	4.4312
1-Apr-08	12:07	10.8246	27.64	28	4.6623
1-Apr-08	12:08	10.1018	27.98	28	4.8880
1-Apr-08	12:09	9.3666	28.26	28	5.1216
1-Apr-08	12:10	8.6775	28.49	28	5.3096
1-Apr-08	12:11	8.0444	28.67	28	5.4567
1-Apr-08	12:12	7.4843	28.80	28	5.5679
1-Apr-08	12:13	7.0183	28.90	28	5.6491
1-Apr-08	12:14	6.6165	28.97	28	5.7054
1-Apr-08	12:15	6.2461	29.01	28	5.7404
1-Apr-08	12:16	5.9022	29.03	28	5.7565
1-Apr-08	12:17	5.5808	29.03	28	5.7557
1-Apr-08	12:18	5.2886	29.01	28	5.7403
1-Apr-08	12:19	5.0268	28.98	28	5.7122
1-Apr-08	12:20	4.7989	28.93	28	5.6737
1-Apr-08	12:21	4.5976	28.88	28	5.6266
1-Apr-08	12:22	4.4167	28.81	28	5.5727
1-Apr-08	12:23	4.2549	28.74	28	5.5131
1-Apr-08	12:24	4.0998	28.66	28	5.4487
1-Apr-08	12:25	3.9397	28.58	28	5.3798
1-Apr-08	12:26	3.7767	28.49	28	5.3065

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1-Apr-08	12:28	3.4588	28.29	28	5.1472
1-Apr-08	12:29	3.3137	28.19	28	5.0624
1-Apr-08	12:30	3.1836	28.08	28	4.9749
1-Apr-08	12:31	3.0693	27.98	28	4.8858
1-Apr-08	12:32	2.9721	27.87	28	4.7960
1-Apr-08	12:33	2.8942	27.76	28	4.7319
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1-Apr-08	12:35	2.7807	27.54	28	4.6038
1-Apr-08	12:36	2.7393	27.43	28	4.5404
1-Apr-08	12:37	2.7052	27.32	28	4.4779
1-Apr-08	12:38	2.6776	27.22	28	4.4165
1-Apr-08	12:39	2.6558	27.11	28	4.3564
1-Apr-08	12:40	2.6388	27.01	28	4.2977
1-Apr-08	12:41	2.6254	26.91	28	4.2405
1-Apr-08	12:42	2.6144	26.82	28	4.1848
1-Apr-08	12:43	2.6055	26.73	28	4.1307
1-Apr-08	12:44	2.5982	26.64	28	4.0781
1-Apr-08	12:45	2.5923	26.55	28	4.0272
1-Apr-08	12:46	2.5875	26.46	28	3.9778
1-Apr-08	12:47	2.5837	26.38	28	3.9300
1-Apr-08	12:48	2.5806	26.30	28	3.8836
1-Apr-08	12:49	2.5783	26.22	28	3.8383
1-Apr-08	12:50	2.5765	26.15	28	3.7946
1-Apr-08	12:51	2.5706	26.08	28	3.7522
1-Apr-08	12:52	2.5554	26.01	28	3.7109
1-Apr-08	12:53	2.5273	25.94	28	3.6703
1-Apr-08	12:54	2.4809	25.87	28	3.6298
1-Apr-08	12:55	2.4120	25.80	28	3.5888
1-Apr-08	12:56	2.3257	25.73	28	3.5464
1-Apr-08	12:57	2.2292	25.65	28	3.5024
1-Apr-08	12:58	2.1298	25.58	28	3.4565
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1-Apr-08	13:00	1.9422	25.41	28	3.3594
1-Apr-08	13:01	1.8616	25.32	28	3.3088
1-Apr-08	13:02	1.7923	25.24	28	3.2574
1-Apr-08	13:03	1.7373	25.15	28	3.2056
1-Apr-08	13:04	1.6936	25.06	28	3.1538
1-Apr-08	13:05	1.6581	24.97	28	3.1025
1-Apr-08	13:06	1.6292	24.89	28	3.0567
1-Apr-08	13:07	1.6050	24.80	28	3.0142
1-Apr-08	13:08	1.5852	24.72	28	2.9723
1-Apr-08	13:09	1.5691	24.64	28	2.9312
1-Apr-08	13:10	1.5559	24.56	28	2.8908
1-Apr-08	13:11	1.5452	24.48	28	2.8512
1-Apr-08	13:12	1.5364	24.40	28	2.8125
1-Apr-08	13:13	1.5293	24.32	28	2.7748
1-Apr-08	13:14	1.5235	24.25	28	2.7379
1-Apr-08	13:15	1.5187	24.18	28	2.7020
1-Apr-08	13:16	1.5149	24.11	28	2.6670

1-Apr-08	13:17	1.5117	24.04	28	2.6330
1-Apr-08	13:18	1.5091	23.97	28	2.5998
1-Apr-08	13:19	1.5070	23.91	28	2.5676
1-Apr-08	13:20	1.5053	23.85	28	2.5363
1-Apr-08	13:21	1.5040	23.78	28	2.5058
1-Apr-08	13:22	1.5029	23.73	28	2.4763
1-Apr-08	13:23	1.5019	23.67	28	2.4475
1-Apr-08	13:24	1.5011	23.61	28	2.4196
1-Apr-08	13:25	1.5005	23.56	28	2.3975
1-Apr-08	13:26	1.5000	23.50	28	2.3783
1-Apr-08	13:27	1.4996	23.45	28	2.3594
1-Apr-08	13:28	1.4994	23.40	28	2.3410
1-Apr-08	13:29	1.4993	23.35	28	2.3229
1-Apr-08	13:30	1.4993	23.30	28	2.3052
1-Apr-08	13:31	1.4994	23.25	28	2.2879
1-Apr-08	13:32	1.4994	23.21	28	2.2710
1-Apr-08	13:33	1.4995	23.16	28	2.2544
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1-Apr-08	13:35	1.4996	23.07	28	2.2224
1-Apr-08	13:36	1.4997	23.03	28	2.2069
1-Apr-08	13:37	1.4998	22.99	28	2.1917
1-Apr-08	13:38	1.4998	22.95	28	2.1769
1-Apr-08	13:39	1.4999	22.91	28	2.1623
1-Apr-08	13:40	1.5000	22.87	28	2.1481
1-Apr-08	13:41	1.5000	22.83	28	2.1342
1-Apr-08	13:42	1.5001	22.79	28	2.1206
1-Apr-08	13:43	1.5002	22.76	28	2.1073
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1-Apr-08	13:45	1.5003	22.68	28	2.0815
1-Apr-08	13:46	1.5004	22.65	28	2.0690
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1-Apr-08	13:48	1.5005	22.58	28	2.0449
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1-Apr-08	13:50	1.5006	22.52	28	2.0218
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1-Apr-08	13:52	1.4929	22.46	28	1.9995
1-Apr-08	13:53	1.4815	22.43	28	1.9885
1-Apr-08	13:54	1.4624	22.40	28	1.9774
1-Apr-08	13:55	1.4339	22.36	28	1.9661
1-Apr-08	13:56	1.3979	22.33	28	1.9543
1-Apr-08	13:57	1.3576	22.30	28	1.9419
1-Apr-08	13:58	1.3161	22.26	28	1.9289
1-Apr-08	13:59	1.2752	22.22	28	1.9218
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1-Apr-08	14:01	1.2037	22.14	28	1.9064
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1-Apr-08	14:03	1.1516	22.06	28	1.8899
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1-Apr-08	14:05	1.1184	21.97	28	1.8729
1-Apr-08	14:06	1.1063	21.92	28	1.8643

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1-Apr-08	14:36	1.0520	20.69	28	1.6332
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1-Apr-08	15:24	0.6645	18.90	28	1.3111
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1-Apr-08	18:01	0.4542	15.77	28	0.7978
1-Apr-08	18:02	0.4336	15.75	28	0.7947
1-Apr-08	18:03	0.4172	15.73	28	0.7915
1-Apr-08	18:04	0.4042	15.71	28	0.7882
1-Apr-08	18:05	0.3937	15.68	28	0.7848
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1-Apr-08	18:07	0.3778	15.63	28	0.7779
1-Apr-08	18:08	0.3719	15.61	28	0.7743
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1-Apr-08	18:13	0.3552	15.49	28	0.7567
1-Apr-08	18:14	0.3534	15.47	28	0.7532
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1-Apr-08	18:20	0.3479	15.32	28	0.7325
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1-Apr-08	23:12	0.3466	12.75	28	0.3864
1-Apr-08	23:13	0.3466	12.75	28	0.3862
1-Apr-08	23:14	0.3466	12.75	28	0.3859
1-Apr-08	23:15	0.3466	12.75	28	0.3856
1-Apr-08	23:16	0.3466	12.74	28	0.3853

1-Apr-08	23:17	0.3466	12.74	28	0.3850
1-Apr-08	23:18	0.3466	12.74	28	0.3847
1-Apr-08	23:19	0.3466	12.74	28	0.3845
1-Apr-08	23:20	0.3466	12.74	28	0.3842
1-Apr-08	23:21	0.3466	12.73	28	0.3839
1-Apr-08	23:22	0.3466	12.73	28	0.3837
1-Apr-08	23:23	0.3466	12.73	28	0.3834
1-Apr-08	23:24	0.3466	12.73	28	0.3831
1-Apr-08	23:25	0.3466	12.72	28	0.3829
1-Apr-08	23:26	0.3466	12.72	28	0.3826
1-Apr-08	23:27	0.3466	12.72	28	0.3823
1-Apr-08	23:28	0.3466	12.72	28	0.3821
1-Apr-08	23:29	0.3466	12.72	28	0.3818
1-Apr-08	23:30	0.3466	12.71	28	0.3816
1-Apr-08	23:31	0.3466	12.71	28	0.3813
1-Apr-08	23:32	0.3466	12.71	28	0.3811
1-Apr-08	23:33	0.3466	12.71	28	0.3808
1-Apr-08	23:34	0.3466	12.71	28	0.3806
1-Apr-08	23:35	0.3466	12.70	28	0.3803
1-Apr-08	23:36	0.3466	12.70	28	0.3801
1-Apr-08	23:37	0.3466	12.70	28	0.3798
1-Apr-08	23:38	0.3466	12.70	28	0.3796
1-Apr-08	23:39	0.3466	12.70	28	0.3794
1-Apr-08	23:40	0.3466	12.69	28	0.3791
1-Apr-08	23:41	0.3466	12.69	28	0.3789
1-Apr-08	23:42	0.3466	12.69	28	0.3787
1-Apr-08	23:43	0.3466	12.69	28	0.3784
1-Apr-08	23:44	0.3466	12.69	28	0.3782
1-Apr-08	23:45	0.3466	12.68	28	0.3780
1-Apr-08	23:46	0.3466	12.68	28	0.3777
1-Apr-08	23:47	0.3466	12.68	28	0.3775
1-Apr-08	23:48	0.3466	12.68	28	0.3773
1-Apr-08	23:49	0.3466	12.68	28	0.3771
1-Apr-08	23:50	0.3466	12.67	28	0.3768
1-Apr-08	23:51	0.3466	12.67	28	0.3766
1-Apr-08	23:52	0.3466	12.67	28	0.3764
1-Apr-08	23:53	0.3466	12.67	28	0.3762
1-Apr-08	23:54	0.3466	12.67	28	0.3760
1-Apr-08	23:55	0.3466	12.67	28	0.3758
1-Apr-08	23:56	0.3466	12.66	28	0.3756
1-Apr-08	23:57	0.3466	12.66	28	0.3754
1-Apr-08	23:58	0.3466	12.66	28	0.3751
1-Apr-08	23:59	0.3467	12.66	28	0.3749
2-Apr-08	0:00	0.3467	12.66	28	0.3747

Highgate - 20yr NO CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	4.1759
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0010	0.00	28	0.0000	
1-Apr-08	0:02	0.0040	0.00	28	0.0000	
1-Apr-08	0:03	0.0098	0.00	28	0.0000	
1-Apr-08	0:04	0.0195	0.00	28	0.0000	
1-Apr-08	0:05	0.0341	0.00	28	0.0000	
1-Apr-08	0:06	0.0524	0.01	28	0.0001	
1-Apr-08	0:07	0.0729	0.01	28	0.0001	
1-Apr-08	0:08	0.0940	0.01	28	0.0002	
1-Apr-08	0:09	0.1148	0.02	28	0.0003	
1-Apr-08	0:10	0.1340	0.03	28	0.0004	
1-Apr-08	0:11	0.1512	0.04	28	0.0005	
1-Apr-08	0:12	0.1660	0.05	28	0.0006	
1-Apr-08	0:13	0.1777	0.06	28	0.0007	
1-Apr-08	0:14	0.1870	0.07	28	0.0009	
1-Apr-08	0:15	0.1946	0.08	28	0.0010	
1-Apr-08	0:16	0.2008	0.09	28	0.0012	
1-Apr-08	0:17	0.2059	0.10	28	0.0013	
1-Apr-08	0:18	0.2102	0.11	28	0.0015	
1-Apr-08	0:19	0.2136	0.13	28	0.0017	
1-Apr-08	0:20	0.2165	0.14	28	0.0018	
1-Apr-08	0:21	0.2188	0.15	28	0.0020	
1-Apr-08	0:22	0.2206	0.17	28	0.0022	
1-Apr-08	0:23	0.2222	0.18	28	0.0023	
1-Apr-08	0:24	0.2234	0.19	28	0.0025	
1-Apr-08	0:25	0.2245	0.21	28	0.0027	
1-Apr-08	0:26	0.2253	0.22	28	0.0029	
1-Apr-08	0:27	0.2260	0.23	28	0.0030	
1-Apr-08	0:28	0.2266	0.25	28	0.0032	
1-Apr-08	0:29	0.2270	0.26	28	0.0034	
1-Apr-08	0:30	0.2274	0.27	28	0.0036	
1-Apr-08	0:31	0.2277	0.29	28	0.0037	
1-Apr-08	0:32	0.2280	0.30	28	0.0039	
1-Apr-08	0:33	0.2282	0.31	28	0.0041	
1-Apr-08	0:34	0.2283	0.33	28	0.0042	
1-Apr-08	0:35	0.2285	0.34	28	0.0043	
1-Apr-08	0:36	0.2286	0.35	28	0.0045	
1-Apr-08	0:37	0.2287	0.37	28	0.0046	
1-Apr-08	0:38	0.2288	0.38	28	0.0048	
1-Apr-08	0:39	0.2288	0.39	28	0.0049	
1-Apr-08	0:40	0.2288	0.41	28	0.0050	
1-Apr-08	0:41	0.2288	0.42	28	0.0052	
1-Apr-08	0:42	0.2288	0.43	28	0.0053	
1-Apr-08	0:43	0.2288	0.45	28	0.0054	
1-Apr-08	0:44	0.2288	0.46	28	0.0056	
1-Apr-08	0:45	0.2288	0.47	28	0.0057	
1-Apr-08	0:46	0.2288	0.49	28	0.0059	

1-Apr-08	0:47	0.2288	0.50	28	0.0060
1-Apr-08	0:48	0.2288	0.51	28	0.0061
1-Apr-08	0:49	0.2288	0.53	28	0.0063
1-Apr-08	0:50	0.2288	0.54	28	0.0064
1-Apr-08	0:51	0.2288	0.55	28	0.0065
1-Apr-08	0:52	0.2288	0.57	28	0.0067
1-Apr-08	0:53	0.2288	0.58	28	0.0068
1-Apr-08	0:54	0.2288	0.59	28	0.0070
1-Apr-08	0:55	0.2288	0.61	28	0.0071
1-Apr-08	0:56	0.2288	0.62	28	0.0072
1-Apr-08	0:57	0.2288	0.63	28	0.0074
1-Apr-08	0:58	0.2288	0.65	28	0.0075
1-Apr-08	0:59	0.2288	0.66	28	0.0076
1-Apr-08	1:00	0.2288	0.67	28	0.0078
1-Apr-08	1:01	0.2288	0.69	28	0.0079
1-Apr-08	1:02	0.2288	0.70	28	0.0080
1-Apr-08	1:03	0.2288	0.71	28	0.0082
1-Apr-08	1:04	0.2288	0.73	28	0.0083
1-Apr-08	1:05	0.2288	0.74	28	0.0085
1-Apr-08	1:06	0.2288	0.75	28	0.0086
1-Apr-08	1:07	0.2288	0.77	28	0.0087
1-Apr-08	1:08	0.2288	0.78	28	0.0089
1-Apr-08	1:09	0.2288	0.79	28	0.0090
1-Apr-08	1:10	0.2288	0.81	28	0.0091
1-Apr-08	1:11	0.2288	0.82	28	0.0093
1-Apr-08	1:12	0.2288	0.83	28	0.0094
1-Apr-08	1:13	0.2288	0.85	28	0.0095
1-Apr-08	1:14	0.2288	0.86	28	0.0097
1-Apr-08	1:15	0.2288	0.87	28	0.0098
1-Apr-08	1:16	0.2288	0.89	28	0.0099
1-Apr-08	1:17	0.2288	0.90	28	0.0101
1-Apr-08	1:18	0.2288	0.91	28	0.0102
1-Apr-08	1:19	0.2288	0.92	28	0.0103
1-Apr-08	1:20	0.2288	0.94	28	0.0105
1-Apr-08	1:21	0.2288	0.95	28	0.0106
1-Apr-08	1:22	0.2288	0.96	28	0.0107
1-Apr-08	1:23	0.2288	0.98	28	0.0109
1-Apr-08	1:24	0.2288	0.99	28	0.0110
1-Apr-08	1:25	0.2288	1.00	28	0.0112
1-Apr-08	1:26	0.2288	1.02	28	0.0113
1-Apr-08	1:27	0.2288	1.03	28	0.0114
1-Apr-08	1:28	0.2288	1.04	28	0.0116
1-Apr-08	1:29	0.2288	1.06	28	0.0117
1-Apr-08	1:30	0.2288	1.07	28	0.0118
1-Apr-08	1:31	0.2288	1.08	28	0.0120
1-Apr-08	1:32	0.2288	1.09	28	0.0121
1-Apr-08	1:33	0.2288	1.11	28	0.0122
1-Apr-08	1:34	0.2288	1.12	28	0.0123
1-Apr-08	1:35	0.2288	1.13	28	0.0124
1-Apr-08	1:36	0.2288	1.15	28	0.0125

1-Apr-08	1:37	0.2288	1.16	28	0.0127
1-Apr-08	1:38	0.2288	1.17	28	0.0128
1-Apr-08	1:39	0.2288	1.19	28	0.0129
1-Apr-08	1:40	0.2288	1.20	28	0.0130
1-Apr-08	1:41	0.2288	1.21	28	0.0131
1-Apr-08	1:42	0.2288	1.22	28	0.0132
1-Apr-08	1:43	0.2288	1.24	28	0.0134
1-Apr-08	1:44	0.2288	1.25	28	0.0135
1-Apr-08	1:45	0.2288	1.26	28	0.0136
1-Apr-08	1:46	0.2288	1.28	28	0.0137
1-Apr-08	1:47	0.2288	1.29	28	0.0138
1-Apr-08	1:48	0.2288	1.30	28	0.0139
1-Apr-08	1:49	0.2288	1.31	28	0.0141
1-Apr-08	1:50	0.2288	1.33	28	0.0142
1-Apr-08	1:51	0.2288	1.34	28	0.0143
1-Apr-08	1:52	0.2288	1.35	28	0.0144
1-Apr-08	1:53	0.2288	1.37	28	0.0145
1-Apr-08	1:54	0.2288	1.38	28	0.0146
1-Apr-08	1:55	0.2288	1.39	28	0.0147
1-Apr-08	1:56	0.2288	1.40	28	0.0149
1-Apr-08	1:57	0.2288	1.42	28	0.0150
1-Apr-08	1:58	0.2288	1.43	28	0.0151
1-Apr-08	1:59	0.2288	1.44	28	0.0152
1-Apr-08	2:00	0.2288	1.46	28	0.0153
1-Apr-08	2:01	0.2288	1.47	28	0.0154
1-Apr-08	2:02	0.2288	1.48	28	0.0155
1-Apr-08	2:03	0.2288	1.49	28	0.0157
1-Apr-08	2:04	0.2288	1.51	28	0.0158
1-Apr-08	2:05	0.2288	1.52	28	0.0159
1-Apr-08	2:06	0.2288	1.53	28	0.0160
1-Apr-08	2:07	0.2288	1.55	28	0.0161
1-Apr-08	2:08	0.2288	1.56	28	0.0162
1-Apr-08	2:09	0.2288	1.57	28	0.0163
1-Apr-08	2:10	0.2288	1.58	28	0.0165
1-Apr-08	2:11	0.2288	1.60	28	0.0166
1-Apr-08	2:12	0.2289	1.61	28	0.0167
1-Apr-08	2:13	0.2289	1.62	28	0.0168
1-Apr-08	2:14	0.2289	1.63	28	0.0169
1-Apr-08	2:15	0.2289	1.65	28	0.0170
1-Apr-08	2:16	0.2289	1.66	28	0.0171
1-Apr-08	2:17	0.2289	1.67	28	0.0173
1-Apr-08	2:18	0.2290	1.69	28	0.0174
1-Apr-08	2:19	0.2290	1.70	28	0.0175
1-Apr-08	2:20	0.2290	1.71	28	0.0176
1-Apr-08	2:21	0.2291	1.72	28	0.0177
1-Apr-08	2:22	0.2291	1.74	28	0.0178
1-Apr-08	2:23	0.2291	1.75	28	0.0179
1-Apr-08	2:24	0.2291	1.76	28	0.0181
1-Apr-08	2:25	0.2292	1.77	28	0.0182
1-Apr-08	2:26	0.2292	1.79	28	0.0183

1-Apr-08	2:27	0.2292	1.80	28	0.0184
1-Apr-08	2:28	0.2293	1.81	28	0.0185
1-Apr-08	2:29	0.2293	1.82	28	0.0186
1-Apr-08	2:30	0.2293	1.84	28	0.0187
1-Apr-08	2:31	0.2294	1.85	28	0.0189
1-Apr-08	2:32	0.2294	1.86	28	0.0190
1-Apr-08	2:33	0.2294	1.88	28	0.0191
1-Apr-08	2:34	0.2295	1.89	28	0.0192
1-Apr-08	2:35	0.2295	1.90	28	0.0193
1-Apr-08	2:36	0.2295	1.91	28	0.0194
1-Apr-08	2:37	0.2296	1.93	28	0.0195
1-Apr-08	2:38	0.2296	1.94	28	0.0196
1-Apr-08	2:39	0.2296	1.95	28	0.0198
1-Apr-08	2:40	0.2297	1.96	28	0.0199
1-Apr-08	2:41	0.2297	1.98	28	0.0200
1-Apr-08	2:42	0.2297	1.99	28	0.0201
1-Apr-08	2:43	0.2298	2.00	28	0.0201
1-Apr-08	2:44	0.2298	2.01	28	0.0202
1-Apr-08	2:45	0.2298	2.03	28	0.0202
1-Apr-08	2:46	0.2299	2.04	28	0.0203
1-Apr-08	2:47	0.2299	2.05	28	0.0203
1-Apr-08	2:48	0.2299	2.06	28	0.0204
1-Apr-08	2:49	0.2300	2.08	28	0.0205
1-Apr-08	2:50	0.2300	2.09	28	0.0205
1-Apr-08	2:51	0.2300	2.10	28	0.0206
1-Apr-08	2:52	0.2300	2.11	28	0.0206
1-Apr-08	2:53	0.2301	2.13	28	0.0207
1-Apr-08	2:54	0.2301	2.14	28	0.0208
1-Apr-08	2:55	0.2301	2.15	28	0.0208
1-Apr-08	2:56	0.2302	2.16	28	0.0209
1-Apr-08	2:57	0.2302	2.18	28	0.0209
1-Apr-08	2:58	0.2302	2.19	28	0.0210
1-Apr-08	2:59	0.2303	2.20	28	0.0210
1-Apr-08	3:00	0.2303	2.21	28	0.0211
1-Apr-08	3:01	0.2303	2.23	28	0.0212
1-Apr-08	3:02	0.2304	2.24	28	0.0212
1-Apr-08	3:03	0.2304	2.25	28	0.0213
1-Apr-08	3:04	0.2304	2.27	28	0.0213
1-Apr-08	3:05	0.2305	2.28	28	0.0214
1-Apr-08	3:06	0.2305	2.29	28	0.0215
1-Apr-08	3:07	0.2305	2.30	28	0.0215
1-Apr-08	3:08	0.2305	2.32	28	0.0216
1-Apr-08	3:09	0.2306	2.33	28	0.0216
1-Apr-08	3:10	0.2306	2.34	28	0.0217
1-Apr-08	3:11	0.2306	2.35	28	0.0218
1-Apr-08	3:12	0.2307	2.37	28	0.0218
1-Apr-08	3:13	0.2307	2.38	28	0.0219
1-Apr-08	3:14	0.2307	2.39	28	0.0219
1-Apr-08	3:15	0.2308	2.40	28	0.0220
1-Apr-08	3:16	0.2308	2.42	28	0.0220

1-Apr-08	3:17	0.2308	2.43	28	0.0221
1-Apr-08	3:18	0.2309	2.44	28	0.0222
1-Apr-08	3:19	0.2309	2.45	28	0.0222
1-Apr-08	3:20	0.2309	2.47	28	0.0223
1-Apr-08	3:21	0.2309	2.48	28	0.0223
1-Apr-08	3:22	0.2310	2.49	28	0.0224
1-Apr-08	3:23	0.2310	2.50	28	0.0225
1-Apr-08	3:24	0.2310	2.52	28	0.0225
1-Apr-08	3:25	0.2311	2.53	28	0.0226
1-Apr-08	3:26	0.2311	2.54	28	0.0226
1-Apr-08	3:27	0.2311	2.55	28	0.0227
1-Apr-08	3:28	0.2312	2.57	28	0.0227
1-Apr-08	3:29	0.2312	2.58	28	0.0228
1-Apr-08	3:30	0.2312	2.59	28	0.0229
1-Apr-08	3:31	0.2313	2.60	28	0.0229
1-Apr-08	3:32	0.2313	2.62	28	0.0230
1-Apr-08	3:33	0.2313	2.63	28	0.0230
1-Apr-08	3:34	0.2313	2.64	28	0.0231
1-Apr-08	3:35	0.2314	2.65	28	0.0232
1-Apr-08	3:36	0.2314	2.67	28	0.0232
1-Apr-08	3:37	0.2314	2.68	28	0.0233
1-Apr-08	3:38	0.2315	2.69	28	0.0233
1-Apr-08	3:39	0.2315	2.70	28	0.0234
1-Apr-08	3:40	0.2315	2.72	28	0.0234
1-Apr-08	3:41	0.2316	2.73	28	0.0235
1-Apr-08	3:42	0.2316	2.74	28	0.0236
1-Apr-08	3:43	0.2316	2.75	28	0.0236
1-Apr-08	3:44	0.2316	2.77	28	0.0237
1-Apr-08	3:45	0.2317	2.78	28	0.0237
1-Apr-08	3:46	0.2317	2.79	28	0.0238
1-Apr-08	3:47	0.2317	2.80	28	0.0239
1-Apr-08	3:48	0.2318	2.82	28	0.0239
1-Apr-08	3:49	0.2318	2.83	28	0.0240
1-Apr-08	3:50	0.2318	2.84	28	0.0240
1-Apr-08	3:51	0.2318	2.85	28	0.0241
1-Apr-08	3:52	0.2319	2.87	28	0.0241
1-Apr-08	3:53	0.2319	2.88	28	0.0242
1-Apr-08	3:54	0.2319	2.89	28	0.0243
1-Apr-08	3:55	0.2320	2.90	28	0.0243
1-Apr-08	3:56	0.2320	2.92	28	0.0244
1-Apr-08	3:57	0.2320	2.93	28	0.0244
1-Apr-08	3:58	0.2321	2.94	28	0.0245
1-Apr-08	3:59	0.2321	2.95	28	0.0245
1-Apr-08	4:00	0.2321	2.97	28	0.0246
1-Apr-08	4:01	0.2321	2.98	28	0.0247
1-Apr-08	4:02	0.2322	2.99	28	0.0247
1-Apr-08	4:03	0.2322	3.00	28	0.0248
1-Apr-08	4:04	0.2322	3.01	28	0.0248
1-Apr-08	4:05	0.2323	3.03	28	0.0249
1-Apr-08	4:06	0.2323	3.04	28	0.0250

1-Apr-08	4:07	0.2323	3.05	28	0.0250
1-Apr-08	4:08	0.2323	3.06	28	0.0251
1-Apr-08	4:09	0.2324	3.08	28	0.0251
1-Apr-08	4:10	0.2324	3.09	28	0.0251
1-Apr-08	4:11	0.2324	3.10	28	0.0252
1-Apr-08	4:12	0.2325	3.11	28	0.0252
1-Apr-08	4:13	0.2325	3.13	28	0.0253
1-Apr-08	4:14	0.2325	3.14	28	0.0253
1-Apr-08	4:15	0.2325	3.15	28	0.0254
1-Apr-08	4:16	0.2326	3.16	28	0.0254
1-Apr-08	4:17	0.2326	3.18	28	0.0255
1-Apr-08	4:18	0.2326	3.19	28	0.0255
1-Apr-08	4:19	0.2327	3.20	28	0.0256
1-Apr-08	4:20	0.2327	3.21	28	0.0256
1-Apr-08	4:21	0.2327	3.23	28	0.0257
1-Apr-08	4:22	0.2327	3.24	28	0.0257
1-Apr-08	4:23	0.2328	3.25	28	0.0257
1-Apr-08	4:24	0.2328	3.26	28	0.0258
1-Apr-08	4:25	0.2328	3.28	28	0.0258
1-Apr-08	4:26	0.2329	3.29	28	0.0259
1-Apr-08	4:27	0.2329	3.30	28	0.0259
1-Apr-08	4:28	0.2329	3.31	28	0.0260
1-Apr-08	4:29	0.2329	3.33	28	0.0260
1-Apr-08	4:30	0.2330	3.34	28	0.0261
1-Apr-08	4:31	0.2330	3.35	28	0.0261
1-Apr-08	4:32	0.2330	3.36	28	0.0262
1-Apr-08	4:33	0.2331	3.38	28	0.0262
1-Apr-08	4:34	0.2331	3.39	28	0.0262
1-Apr-08	4:35	0.2331	3.40	28	0.0263
1-Apr-08	4:36	0.2331	3.41	28	0.0263
1-Apr-08	4:37	0.2332	3.42	28	0.0264
1-Apr-08	4:38	0.2332	3.44	28	0.0264
1-Apr-08	4:39	0.2332	3.45	28	0.0265
1-Apr-08	4:40	0.2332	3.46	28	0.0265
1-Apr-08	4:41	0.2333	3.47	28	0.0266
1-Apr-08	4:42	0.2333	3.49	28	0.0266
1-Apr-08	4:43	0.2333	3.50	28	0.0267
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1-Apr-08	4:48	0.2335	3.56	28	0.0269
1-Apr-08	4:49	0.2335	3.57	28	0.0269
1-Apr-08	4:50	0.2335	3.59	28	0.0270
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1-Apr-08	4:52	0.2336	3.61	28	0.0271
1-Apr-08	4:53	0.2336	3.62	28	0.0271
1-Apr-08	4:54	0.2336	3.64	28	0.0272
1-Apr-08	4:55	0.2337	3.65	28	0.0272
1-Apr-08	4:56	0.2337	3.66	28	0.0273

1-Apr-08	4:57	0.2337	3.67	28	0.0273
1-Apr-08	4:58	0.2337	3.69	28	0.0273
1-Apr-08	4:59	0.2338	3.70	28	0.0274
1-Apr-08	5:00	0.2338	3.71	28	0.0274
1-Apr-08	5:01	0.2338	3.72	28	0.0275
1-Apr-08	5:02	0.2338	3.73	28	0.0275
1-Apr-08	5:03	0.2339	3.75	28	0.0276
1-Apr-08	5:04	0.2339	3.76	28	0.0276
1-Apr-08	5:05	0.2339	3.77	28	0.0277
1-Apr-08	5:06	0.2340	3.78	28	0.0277
1-Apr-08	5:07	0.2340	3.80	28	0.0278
1-Apr-08	5:08	0.2340	3.81	28	0.0278
1-Apr-08	5:09	0.2340	3.82	28	0.0278
1-Apr-08	5:10	0.2341	3.83	28	0.0279
1-Apr-08	5:11	0.2341	3.85	28	0.0279
1-Apr-08	5:12	0.2341	3.86	28	0.0280
1-Apr-08	5:13	0.2341	3.87	28	0.0280
1-Apr-08	5:14	0.2342	3.88	28	0.0281
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1-Apr-08	5:16	0.2342	3.91	28	0.0282
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1-Apr-08	5:18	0.2343	3.93	28	0.0283
1-Apr-08	5:19	0.2343	3.94	28	0.0283
1-Apr-08	5:20	0.2343	3.96	28	0.0283
1-Apr-08	5:21	0.2343	3.97	28	0.0284
1-Apr-08	5:22	0.2344	3.98	28	0.0284
1-Apr-08	5:23	0.2344	3.99	28	0.0285
1-Apr-08	5:24	0.2344	4.01	28	0.0285
1-Apr-08	5:25	0.2345	4.02	28	0.0286
1-Apr-08	5:26	0.2345	4.03	28	0.0286
1-Apr-08	5:27	0.2345	4.04	28	0.0287
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1-Apr-08	5:29	0.2346	4.07	28	0.0288
1-Apr-08	5:30	0.2346	4.08	28	0.0288
1-Apr-08	5:31	0.2346	4.09	28	0.0288
1-Apr-08	5:32	0.2346	4.11	28	0.0289
1-Apr-08	5:33	0.2347	4.12	28	0.0289
1-Apr-08	5:34	0.2347	4.13	28	0.0290
1-Apr-08	5:35	0.2347	4.14	28	0.0290
1-Apr-08	5:36	0.2347	4.15	28	0.0291
1-Apr-08	5:37	0.2348	4.17	28	0.0291
1-Apr-08	5:38	0.2348	4.18	28	0.0292
1-Apr-08	5:39	0.2348	4.19	28	0.0292
1-Apr-08	5:40	0.2348	4.20	28	0.0293
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1-Apr-08	5:42	0.2349	4.23	28	0.0293
1-Apr-08	5:43	0.2349	4.24	28	0.0294
1-Apr-08	5:44	0.2349	4.25	28	0.0294
1-Apr-08	5:45	0.2350	4.27	28	0.0295
1-Apr-08	5:46	0.2350	4.28	28	0.0295

1-Apr-08	5:47	0.2350	4.29	28	0.0296
1-Apr-08	5:48	0.2350	4.30	28	0.0296
1-Apr-08	5:49	0.2351	4.32	28	0.0297
1-Apr-08	5:50	0.2351	4.33	28	0.0297
1-Apr-08	5:51	0.2363	4.34	28	0.0297
1-Apr-08	5:52	0.2400	4.35	28	0.0298
1-Apr-08	5:53	0.2470	4.37	28	0.0298
1-Apr-08	5:54	0.2588	4.38	28	0.0299
1-Apr-08	5:55	0.2765	4.39	28	0.0299
1-Apr-08	5:56	0.2987	4.41	28	0.0300
1-Apr-08	5:57	0.3235	4.43	28	0.0301
1-Apr-08	5:58	0.3491	4.44	28	0.0301
1-Apr-08	5:59	0.3744	4.46	28	0.0302
1-Apr-08	6:00	0.3976	4.48	28	0.0303
1-Apr-08	6:01	0.4185	4.51	28	0.0304
1-Apr-08	6:02	0.4365	4.53	28	0.0304
1-Apr-08	6:03	0.4508	4.56	28	0.0305
1-Apr-08	6:04	0.4622	4.58	28	0.0306
1-Apr-08	6:05	0.4715	4.61	28	0.0307
1-Apr-08	6:06	0.4791	4.63	28	0.0308
1-Apr-08	6:07	0.4854	4.66	28	0.0309
1-Apr-08	6:08	0.4906	4.69	28	0.0310
1-Apr-08	6:09	0.4949	4.72	28	0.0311
1-Apr-08	6:10	0.4984	4.74	28	0.0312
1-Apr-08	6:11	0.5013	4.77	28	0.0313
1-Apr-08	6:12	0.5037	4.80	28	0.0314
1-Apr-08	6:13	0.5057	4.83	28	0.0315
1-Apr-08	6:14	0.5073	4.86	28	0.0316
1-Apr-08	6:15	0.5087	4.89	28	0.0317
1-Apr-08	6:16	0.5098	4.92	28	0.0318
1-Apr-08	6:17	0.5108	4.94	28	0.0319
1-Apr-08	6:18	0.5116	4.97	28	0.0320
1-Apr-08	6:19	0.5122	5.00	28	0.0321
1-Apr-08	6:20	0.5128	5.03	28	0.0323
1-Apr-08	6:21	0.5133	5.06	28	0.0324
1-Apr-08	6:22	0.5137	5.09	28	0.0325
1-Apr-08	6:23	0.5141	5.12	28	0.0326
1-Apr-08	6:24	0.5144	5.15	28	0.0327
1-Apr-08	6:25	0.5147	5.17	28	0.0328
1-Apr-08	6:26	0.5149	5.20	28	0.0329
1-Apr-08	6:27	0.5152	5.23	28	0.0330
1-Apr-08	6:28	0.5154	5.26	28	0.0331
1-Apr-08	6:29	0.5155	5.29	28	0.0331
1-Apr-08	6:30	0.5156	5.32	28	0.0332
1-Apr-08	6:31	0.5157	5.35	28	0.0333
1-Apr-08	6:32	0.5159	5.38	28	0.0334
1-Apr-08	6:33	0.5160	5.41	28	0.0335
1-Apr-08	6:34	0.5161	5.44	28	0.0335
1-Apr-08	6:35	0.5162	5.46	28	0.0336
1-Apr-08	6:36	0.5163	5.49	28	0.0337

1-Apr-08	6:37	0.5164	5.52	28	0.0338
1-Apr-08	6:38	0.5165	5.55	28	0.0338
1-Apr-08	6:39	0.5166	5.58	28	0.0339
1-Apr-08	6:40	0.5167	5.61	28	0.0340
1-Apr-08	6:41	0.5168	5.64	28	0.0341
1-Apr-08	6:42	0.5169	5.67	28	0.0342
1-Apr-08	6:43	0.5170	5.70	28	0.0342
1-Apr-08	6:44	0.5171	5.72	28	0.0343
1-Apr-08	6:45	0.5172	5.75	28	0.0344
1-Apr-08	6:46	0.5174	5.78	28	0.0345
1-Apr-08	6:47	0.5175	5.81	28	0.0345
1-Apr-08	6:48	0.5176	5.84	28	0.0346
1-Apr-08	6:49	0.5177	5.87	28	0.0347
1-Apr-08	6:50	0.5178	5.90	28	0.0348
1-Apr-08	6:51	0.5179	5.93	28	0.0349
1-Apr-08	6:52	0.5180	5.96	28	0.0349
1-Apr-08	6:53	0.5181	5.99	28	0.0350
1-Apr-08	6:54	0.5182	6.01	28	0.0351
1-Apr-08	6:55	0.5183	6.04	28	0.0352
1-Apr-08	6:56	0.5184	6.07	28	0.0352
1-Apr-08	6:57	0.5185	6.10	28	0.0353
1-Apr-08	6:58	0.5186	6.13	28	0.0354
1-Apr-08	6:59	0.5187	6.16	28	0.0355
1-Apr-08	7:00	0.5188	6.19	28	0.0356
1-Apr-08	7:01	0.5189	6.22	28	0.0356
1-Apr-08	7:02	0.5190	6.25	28	0.0357
1-Apr-08	7:03	0.5191	6.28	28	0.0358
1-Apr-08	7:04	0.5192	6.30	28	0.0359
1-Apr-08	7:05	0.5193	6.33	28	0.0359
1-Apr-08	7:06	0.5194	6.36	28	0.0360
1-Apr-08	7:07	0.5195	6.39	28	0.0361
1-Apr-08	7:08	0.5196	6.42	28	0.0362
1-Apr-08	7:09	0.5197	6.45	28	0.0363
1-Apr-08	7:10	0.5198	6.48	28	0.0364
1-Apr-08	7:11	0.5199	6.51	28	0.0365
1-Apr-08	7:12	0.5200	6.54	28	0.0367
1-Apr-08	7:13	0.5201	6.57	28	0.0368
1-Apr-08	7:14	0.5202	6.59	28	0.0369
1-Apr-08	7:15	0.5203	6.62	28	0.0370
1-Apr-08	7:16	0.5204	6.65	28	0.0371
1-Apr-08	7:17	0.5205	6.68	28	0.0372
1-Apr-08	7:18	0.5206	6.71	28	0.0373
1-Apr-08	7:19	0.5207	6.74	28	0.0374
1-Apr-08	7:20	0.5208	6.77	28	0.0375
1-Apr-08	7:21	0.5209	6.80	28	0.0376
1-Apr-08	7:22	0.5210	6.83	28	0.0377
1-Apr-08	7:23	0.5211	6.86	28	0.0378
1-Apr-08	7:24	0.5212	6.88	28	0.0379
1-Apr-08	7:25	0.5213	6.91	28	0.0380
1-Apr-08	7:26	0.5213	6.94	28	0.0381

1-Apr-08	7:27	0.5214	6.97	28	0.0382
1-Apr-08	7:28	0.5215	7.00	28	0.0383
1-Apr-08	7:29	0.5216	7.03	28	0.0384
1-Apr-08	7:30	0.5217	7.06	28	0.0385
1-Apr-08	7:31	0.5218	7.09	28	0.0386
1-Apr-08	7:32	0.5219	7.12	28	0.0387
1-Apr-08	7:33	0.5220	7.15	28	0.0388
1-Apr-08	7:34	0.5221	7.17	28	0.0389
1-Apr-08	7:35	0.5222	7.20	28	0.0390
1-Apr-08	7:36	0.5223	7.23	28	0.0391
1-Apr-08	7:37	0.5224	7.26	28	0.0392
1-Apr-08	7:38	0.5225	7.29	28	0.0393
1-Apr-08	7:39	0.5226	7.32	28	0.0394
1-Apr-08	7:40	0.5227	7.35	28	0.0395
1-Apr-08	7:41	0.5227	7.38	28	0.0396
1-Apr-08	7:42	0.5228	7.41	28	0.0397
1-Apr-08	7:43	0.5229	7.44	28	0.0398
1-Apr-08	7:44	0.5230	7.46	28	0.0399
1-Apr-08	7:45	0.5231	7.49	28	0.0400
1-Apr-08	7:46	0.5232	7.52	28	0.0401
1-Apr-08	7:47	0.5233	7.55	28	0.0401
1-Apr-08	7:48	0.5234	7.58	28	0.0402
1-Apr-08	7:49	0.5235	7.61	28	0.0402
1-Apr-08	7:50	0.5236	7.64	28	0.0403
1-Apr-08	7:51	0.5236	7.67	28	0.0403
1-Apr-08	7:52	0.5237	7.70	28	0.0404
1-Apr-08	7:53	0.5238	7.73	28	0.0404
1-Apr-08	7:54	0.5239	7.75	28	0.0405
1-Apr-08	7:55	0.5240	7.78	28	0.0405
1-Apr-08	7:56	0.5241	7.81	28	0.0406
1-Apr-08	7:57	0.5242	7.84	28	0.0406
1-Apr-08	7:58	0.5243	7.87	28	0.0407
1-Apr-08	7:59	0.5244	7.90	28	0.0407
1-Apr-08	8:00	0.5244	7.93	28	0.0408
1-Apr-08	8:01	0.5245	7.96	28	0.0408
1-Apr-08	8:02	0.5246	7.99	28	0.0409
1-Apr-08	8:03	0.5247	8.02	28	0.0409
1-Apr-08	8:04	0.5248	8.04	28	0.0410
1-Apr-08	8:05	0.5249	8.07	28	0.0410
1-Apr-08	8:06	0.5250	8.10	28	0.0411
1-Apr-08	8:07	0.5250	8.13	28	0.0411
1-Apr-08	8:08	0.5251	8.16	28	0.0412
1-Apr-08	8:09	0.5252	8.19	28	0.0412
1-Apr-08	8:10	0.5253	8.22	28	0.0413
1-Apr-08	8:11	0.5254	8.25	28	0.0413
1-Apr-08	8:12	0.5255	8.28	28	0.0414
1-Apr-08	8:13	0.5256	8.31	28	0.0414
1-Apr-08	8:14	0.5256	8.33	28	0.0415
1-Apr-08	8:15	0.5257	8.36	28	0.0415
1-Apr-08	8:16	0.5258	8.39	28	0.0416

1-Apr-08	8:17	0.5259	8.42	28	0.0416
1-Apr-08	8:18	0.5260	8.45	28	0.0417
1-Apr-08	8:19	0.5261	8.48	28	0.0417
1-Apr-08	8:20	0.5261	8.51	28	0.0418
1-Apr-08	8:21	0.5262	8.54	28	0.0418
1-Apr-08	8:22	0.5263	8.57	28	0.0419
1-Apr-08	8:23	0.5264	8.60	28	0.0419
1-Apr-08	8:24	0.5265	8.63	28	0.0420
1-Apr-08	8:25	0.5266	8.65	28	0.0431
1-Apr-08	8:26	0.5266	8.68	28	0.0444
1-Apr-08	8:27	0.5267	8.71	28	0.0458
1-Apr-08	8:28	0.5268	8.74	28	0.0471
1-Apr-08	8:29	0.5269	8.77	28	0.0484
1-Apr-08	8:30	0.5270	8.80	28	0.0498
1-Apr-08	8:31	0.5271	8.83	28	0.0511
1-Apr-08	8:32	0.5271	8.86	28	0.0524
1-Apr-08	8:33	0.5272	8.88	28	0.0538
1-Apr-08	8:34	0.5273	8.91	28	0.0551
1-Apr-08	8:35	0.5274	8.94	28	0.0564
1-Apr-08	8:36	0.5275	8.97	28	0.0577
1-Apr-08	8:37	0.5275	9.00	28	0.0590
1-Apr-08	8:38	0.5276	9.03	28	0.0603
1-Apr-08	8:39	0.5277	9.05	28	0.0616
1-Apr-08	8:40	0.5278	9.08	28	0.0629
1-Apr-08	8:41	0.5279	9.11	28	0.0642
1-Apr-08	8:42	0.5279	9.14	28	0.0655
1-Apr-08	8:43	0.5280	9.16	28	0.0668
1-Apr-08	8:44	0.5281	9.19	28	0.0681
1-Apr-08	8:45	0.5282	9.22	28	0.0694
1-Apr-08	8:46	0.5282	9.25	28	0.0706
1-Apr-08	8:47	0.5283	9.27	28	0.0719
1-Apr-08	8:48	0.5284	9.30	28	0.0732
1-Apr-08	8:49	0.5285	9.33	28	0.0744
1-Apr-08	8:50	0.5286	9.36	28	0.0757
1-Apr-08	8:51	0.5293	9.38	28	0.0770
1-Apr-08	8:52	0.5315	9.41	28	0.0782
1-Apr-08	8:53	0.5355	9.44	28	0.0795
1-Apr-08	8:54	0.5423	9.47	28	0.0808
1-Apr-08	8:55	0.5524	9.49	28	0.0821
1-Apr-08	8:56	0.5651	9.52	28	0.0834
1-Apr-08	8:57	0.5792	9.55	28	0.0848
1-Apr-08	8:58	0.5939	9.58	28	0.0862
1-Apr-08	8:59	0.6083	9.61	28	0.0876
1-Apr-08	9:00	0.6216	9.64	28	0.0891
1-Apr-08	9:01	0.6335	9.68	28	0.0906
1-Apr-08	9:02	0.6438	9.71	28	0.0921
1-Apr-08	9:03	0.6520	9.74	28	0.0936
1-Apr-08	9:04	0.6585	9.78	28	0.0952
1-Apr-08	9:05	0.6638	9.81	28	0.0974
1-Apr-08	9:06	0.6682	9.84	28	0.1001

1-Apr-08	9:07	0.6719	9.88	28	0.1029
1-Apr-08	9:08	0.6749	9.91	28	0.1057
1-Apr-08	9:09	0.6774	9.95	28	0.1085
1-Apr-08	9:10	0.6795	9.98	28	0.1113
1-Apr-08	9:11	0.6812	10.01	28	0.1141
1-Apr-08	9:12	0.6826	10.05	28	0.1168
1-Apr-08	9:13	0.6838	10.08	28	0.1196
1-Apr-08	9:14	0.6847	10.12	28	0.1223
1-Apr-08	9:15	0.6856	10.15	28	0.1251
1-Apr-08	9:16	0.6863	10.18	28	0.1278
1-Apr-08	9:17	0.6869	10.22	28	0.1306
1-Apr-08	9:18	0.6874	10.25	28	0.1333
1-Apr-08	9:19	0.6878	10.28	28	0.1360
1-Apr-08	9:20	0.6882	10.32	28	0.1387
1-Apr-08	9:21	0.6885	10.35	28	0.1414
1-Apr-08	9:22	0.6888	10.38	28	0.1440
1-Apr-08	9:23	0.6891	10.41	28	0.1467
1-Apr-08	9:24	0.6893	10.45	28	0.1493
1-Apr-08	9:25	0.6895	10.48	28	0.1520
1-Apr-08	9:26	0.6897	10.51	28	0.1546
1-Apr-08	9:27	0.6899	10.54	28	0.1572
1-Apr-08	9:28	0.6901	10.58	28	0.1598
1-Apr-08	9:29	0.6902	10.61	28	0.1624
1-Apr-08	9:30	0.6904	10.64	28	0.1650
1-Apr-08	9:31	0.6905	10.67	28	0.1675
1-Apr-08	9:32	0.6906	10.70	28	0.1701
1-Apr-08	9:33	0.6907	10.73	28	0.1726
1-Apr-08	9:34	0.6908	10.76	28	0.1752
1-Apr-08	9:35	0.6909	10.79	28	0.1777
1-Apr-08	9:36	0.6911	10.83	28	0.1802
1-Apr-08	9:37	0.6912	10.86	28	0.1827
1-Apr-08	9:38	0.6913	10.89	28	0.1852
1-Apr-08	9:39	0.6914	10.92	28	0.1876
1-Apr-08	9:40	0.6915	10.95	28	0.1901
1-Apr-08	9:41	0.6916	10.98	28	0.1927
1-Apr-08	9:42	0.6917	11.01	28	0.1958
1-Apr-08	9:43	0.6919	11.04	28	0.1988
1-Apr-08	9:44	0.6920	11.07	28	0.2019
1-Apr-08	9:45	0.6921	11.10	28	0.2049
1-Apr-08	9:46	0.6922	11.12	28	0.2079
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1-Apr-08	9:49	0.6925	11.21	28	0.2168
1-Apr-08	9:50	0.6926	11.24	28	0.2197
1-Apr-08	9:51	0.6941	11.27	28	0.2227
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1-Apr-08	9:53	0.7066	11.32	28	0.2285
1-Apr-08	9:54	0.7202	11.35	28	0.2315
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1-Apr-08	9:58	0.8242	11.48	28	0.2446
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1-Apr-08	10:02	0.9249	11.63	28	0.2601
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1-Apr-08	10:06	0.9741	11.79	28	0.2771
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1-Apr-08	10:12	1.0030	12.05	28	0.3031
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1-Apr-08	10:14	1.0073	12.13	28	0.3117
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1-Apr-08	10:16	1.0103	12.21	28	0.3212
1-Apr-08	10:17	1.0115	12.26	28	0.3262
1-Apr-08	10:18	1.0125	12.30	28	0.3311
1-Apr-08	10:19	1.0133	12.34	28	0.3361
1-Apr-08	10:20	1.0141	12.38	28	0.3410
1-Apr-08	10:21	1.0147	12.42	28	0.3458
1-Apr-08	10:22	1.0153	12.46	28	0.3507
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1-Apr-08	10:26	1.0170	12.62	28	0.3697
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1-Apr-08	10:29	1.0179	12.73	28	0.3836
1-Apr-08	10:30	1.0181	12.77	28	0.3882
1-Apr-08	10:31	1.0183	12.81	28	0.3928
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1-Apr-08	10:34	1.0189	12.92	28	0.4062
1-Apr-08	10:35	1.0191	12.95	28	0.4107
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1-Apr-08	10:37	1.0195	13.03	28	0.4194
1-Apr-08	10:38	1.0197	13.06	28	0.4238
1-Apr-08	10:39	1.0199	13.10	28	0.4281
1-Apr-08	10:40	1.0201	13.13	28	0.4323
1-Apr-08	10:41	1.0203	13.17	28	0.4366
1-Apr-08	10:42	1.0205	13.20	28	0.4408
1-Apr-08	10:43	1.0207	13.24	28	0.4450
1-Apr-08	10:44	1.0209	13.27	28	0.4492
1-Apr-08	10:45	1.0211	13.31	28	0.4533
1-Apr-08	10:46	1.0213	13.34	28	0.4574

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1-Apr-08	10:48	1.0216	13.41	28	0.4660
1-Apr-08	10:49	1.0218	13.44	28	0.4705
1-Apr-08	10:50	1.0220	13.47	28	0.4749
1-Apr-08	10:51	1.0247	13.51	28	0.4794
1-Apr-08	10:52	1.0326	13.54	28	0.4838
1-Apr-08	10:53	1.0476	13.57	28	0.4883
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1-Apr-08	10:56	1.1571	13.68	28	0.5028
1-Apr-08	10:57	1.2098	13.72	28	0.5083
1-Apr-08	10:58	1.2641	13.77	28	0.5142
1-Apr-08	10:59	1.3176	13.81	28	0.5204
1-Apr-08	11:00	1.3669	13.86	28	0.5271
1-Apr-08	11:01	1.4112	13.91	28	0.5340
1-Apr-08	11:02	1.4494	13.97	28	0.5412
1-Apr-08	11:03	1.4798	14.02	28	0.5487
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1-Apr-08	11:07	1.5536	14.25	28	0.5796
1-Apr-08	11:08	1.5648	14.31	28	0.5875
1-Apr-08	11:09	1.5740	14.37	28	0.5954
1-Apr-08	11:10	1.5816	14.43	28	0.6033
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1-Apr-08	11:13	1.5975	14.60	28	0.6271
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1-Apr-08	11:15	1.6041	14.72	28	0.6440
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1-Apr-08	11:19	1.6122	14.95	28	0.6772
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1-Apr-08	11:26	1.8892	15.36	28	0.7373
1-Apr-08	11:27	1.9956	15.43	28	0.7478
1-Apr-08	11:28	2.1053	15.51	28	0.7592
1-Apr-08	11:29	2.2133	15.59	28	0.7714
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1-Apr-08	11:31	2.4055	15.77	28	0.7982
1-Apr-08	11:32	2.4922	15.87	28	0.8130
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1-Apr-08	11:34	2.6528	16.08	28	0.8461
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1-Apr-08	11:36	2.8321	16.31	28	0.8816

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1-Apr-08	11:39	3.1036	16.68	28	0.9402
1-Apr-08	11:40	3.1814	16.81	28	0.9610
1-Apr-08	11:41	3.2626	16.94	28	0.9823
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1-Apr-08	11:46	4.1156	17.71	28	1.1089
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1-Apr-08	11:50	5.2208	18.55	28	1.2504
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1-Apr-08	12:40	2.2622	25.61	28	3.4748
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1-Apr-08	12:48	2.2129	25.09	28	3.1684
1-Apr-08	12:49	2.2109	25.03	28	3.1352
1-Apr-08	12:50	2.2095	24.98	28	3.1031
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1-Apr-08	13:42	1.2958	22.10	28	1.8991
1-Apr-08	13:43	1.2959	22.07	28	1.8923
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1-Apr-08	13:46	1.2961	21.96	28	1.8723
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1-Apr-08	13:48	1.2962	21.89	28	1.8593
1-Apr-08	13:49	1.2963	21.86	28	1.8529
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1-Apr-08	13:52	1.2898	21.76	28	1.8342
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1-Apr-08	14:02	1.0203	21.38	28	1.7622
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1-Apr-08	14:04	0.9853	21.29	28	1.7451
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1-Apr-08	14:06	0.9624	21.20	28	1.7277

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1-Apr-08	14:11	0.9326	20.97	28	1.6844
1-Apr-08	14:12	0.9295	20.93	28	1.6760
1-Apr-08	14:13	0.9270	20.88	28	1.6679
1-Apr-08	14:14	0.9249	20.84	28	1.6598
1-Apr-08	14:15	0.9232	20.80	28	1.6518
1-Apr-08	14:16	0.9219	20.75	28	1.6439
1-Apr-08	14:17	0.9207	20.71	28	1.6360
1-Apr-08	14:18	0.9198	20.67	28	1.6282
1-Apr-08	14:19	0.9191	20.62	28	1.6205
1-Apr-08	14:20	0.9185	20.58	28	1.6129
1-Apr-08	14:21	0.9180	20.54	28	1.6054
1-Apr-08	14:22	0.9176	20.50	28	1.5979
1-Apr-08	14:23	0.9173	20.46	28	1.5905
1-Apr-08	14:24	0.9170	20.42	28	1.5832
1-Apr-08	14:25	0.9168	20.38	28	1.5759
1-Apr-08	14:26	0.9166	20.34	28	1.5688
1-Apr-08	14:27	0.9165	20.30	28	1.5617
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1-Apr-08	14:30	0.9164	20.19	28	1.5409
1-Apr-08	14:31	0.9164	20.15	28	1.5341
1-Apr-08	14:32	0.9165	20.11	28	1.5273
1-Apr-08	14:33	0.9165	20.08	28	1.5207
1-Apr-08	14:34	0.9165	20.04	28	1.5141
1-Apr-08	14:35	0.9165	20.00	28	1.5076
1-Apr-08	14:36	0.9166	19.97	28	1.5012
1-Apr-08	14:37	0.9166	19.93	28	1.4949
1-Apr-08	14:38	0.9166	19.90	28	1.4886
1-Apr-08	14:39	0.9167	19.87	28	1.4824
1-Apr-08	14:40	0.9167	19.83	28	1.4762
1-Apr-08	14:41	0.9167	19.80	28	1.4701
1-Apr-08	14:42	0.9167	19.77	28	1.4641
1-Apr-08	14:43	0.9168	19.73	28	1.4582
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1-Apr-08	14:50	0.9170	19.51	28	1.4191
1-Apr-08	14:51	0.9155	19.48	28	1.4138
1-Apr-08	14:52	0.9110	19.45	28	1.4086
1-Apr-08	14:53	0.9023	19.42	28	1.4033
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1-Apr-08	15:07	0.6077	18.90	28	1.3109
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1-Apr-08	15:09	0.5962	18.81	28	1.2961
1-Apr-08	15:10	0.5920	18.77	28	1.2887
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1-Apr-08	15:12	0.5857	18.69	28	1.2741
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1-Apr-08	15:20	0.5756	18.37	28	1.2179
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1-Apr-08	15:22	0.5748	18.29	28	1.2051
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1-Apr-08	15:35	0.5736	17.83	28	1.1284
1-Apr-08	15:36	0.5737	17.80	28	1.1229
1-Apr-08	15:37	0.5737	17.76	28	1.1175
1-Apr-08	15:38	0.5737	17.73	28	1.1121
1-Apr-08	15:39	0.5737	17.70	28	1.1067
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1-Apr-08	18:07	0.3335	15.05	28	0.6930
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1-Apr-08	18:09	0.3245	15.01	28	0.6867
1-Apr-08	18:10	0.3212	14.99	28	0.6835
1-Apr-08	18:11	0.3185	14.97	28	0.6803
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1-Apr-08	18:14	0.3130	14.90	28	0.6709
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1-Apr-08	18:16	0.3109	14.86	28	0.6646

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1-Apr-08	18:22	0.3078	14.73	28	0.6464
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1-Apr-08	18:24	0.3073	14.69	28	0.6405
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1-Apr-08	18:30	0.3067	14.58	28	0.6236
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1-Apr-08	18:48	0.3068	14.26	28	0.5807
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1-Apr-08	19:01	0.3068	14.06	28	0.5534
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1-Apr-08	19:11	0.3068	13.91	28	0.5342
1-Apr-08	19:12	0.3068	13.90	28	0.5324
1-Apr-08	19:13	0.3069	13.89	28	0.5306
1-Apr-08	19:14	0.3069	13.87	28	0.5288
1-Apr-08	19:15	0.3069	13.86	28	0.5270
1-Apr-08	19:16	0.3069	13.85	28	0.5252
1-Apr-08	19:17	0.3069	13.83	28	0.5234
1-Apr-08	19:18	0.3069	13.82	28	0.5217
1-Apr-08	19:19	0.3069	13.81	28	0.5200
1-Apr-08	19:20	0.3069	13.80	28	0.5182
1-Apr-08	19:21	0.3069	13.78	28	0.5165
1-Apr-08	19:22	0.3069	13.77	28	0.5149
1-Apr-08	19:23	0.3069	13.76	28	0.5132
1-Apr-08	19:24	0.3069	13.75	28	0.5115
1-Apr-08	19:25	0.3069	13.73	28	0.5099
1-Apr-08	19:26	0.3069	13.72	28	0.5082
1-Apr-08	19:27	0.3069	13.71	28	0.5066
1-Apr-08	19:28	0.3069	13.70	28	0.5050
1-Apr-08	19:29	0.3069	13.69	28	0.5034
1-Apr-08	19:30	0.3069	13.67	28	0.5018
1-Apr-08	19:31	0.3069	13.66	28	0.5003
1-Apr-08	19:32	0.3069	13.65	28	0.4987
1-Apr-08	19:33	0.3069	13.64	28	0.4972
1-Apr-08	19:34	0.3069	13.63	28	0.4956
1-Apr-08	19:35	0.3069	13.62	28	0.4941
1-Apr-08	19:36	0.3069	13.61	28	0.4926
1-Apr-08	19:37	0.3069	13.59	28	0.4911
1-Apr-08	19:38	0.3069	13.58	28	0.4896
1-Apr-08	19:39	0.3069	13.57	28	0.4881
1-Apr-08	19:40	0.3069	13.56	28	0.4867
1-Apr-08	19:41	0.3069	13.55	28	0.4852
1-Apr-08	19:42	0.3069	13.54	28	0.4838
1-Apr-08	19:43	0.3069	13.53	28	0.4824
1-Apr-08	19:44	0.3069	13.52	28	0.4810
1-Apr-08	19:45	0.3069	13.51	28	0.4796
1-Apr-08	19:46	0.3069	13.50	28	0.4782
1-Apr-08	19:47	0.3069	13.49	28	0.4768
1-Apr-08	19:48	0.3069	13.48	28	0.4754
1-Apr-08	19:49	0.3069	13.47	28	0.4741
1-Apr-08	19:50	0.3069	13.46	28	0.4727
1-Apr-08	19:51	0.3069	13.45	28	0.4714
1-Apr-08	19:52	0.3069	13.44	28	0.4701
1-Apr-08	19:53	0.3069	13.43	28	0.4687
1-Apr-08	19:54	0.3069	13.42	28	0.4674
1-Apr-08	19:55	0.3070	13.41	28	0.4661
1-Apr-08	19:56	0.3070	13.40	28	0.4649

1-Apr-08	19:57	0.3070	13.39	28	0.4636
1-Apr-08	19:58	0.3070	13.38	28	0.4623
1-Apr-08	19:59	0.3070	13.37	28	0.4611
1-Apr-08	20:00	0.3070	13.36	28	0.4600
1-Apr-08	20:01	0.3070	13.35	28	0.4588
1-Apr-08	20:02	0.3070	13.34	28	0.4578
1-Apr-08	20:03	0.3070	13.34	28	0.4567
1-Apr-08	20:04	0.3070	13.33	28	0.4556
1-Apr-08	20:05	0.3070	13.32	28	0.4545
1-Apr-08	20:06	0.3070	13.31	28	0.4534
1-Apr-08	20:07	0.3070	13.30	28	0.4524
1-Apr-08	20:08	0.3070	13.29	28	0.4513
1-Apr-08	20:09	0.3070	13.28	28	0.4503
1-Apr-08	20:10	0.3070	13.27	28	0.4493
1-Apr-08	20:11	0.3070	13.27	28	0.4482
1-Apr-08	20:12	0.3070	13.26	28	0.4472
1-Apr-08	20:13	0.3070	13.25	28	0.4462
1-Apr-08	20:14	0.3070	13.24	28	0.4452
1-Apr-08	20:15	0.3070	13.23	28	0.4442
1-Apr-08	20:16	0.3070	13.22	28	0.4432
1-Apr-08	20:17	0.3070	13.22	28	0.4422
1-Apr-08	20:18	0.3070	13.21	28	0.4412
1-Apr-08	20:19	0.3070	13.20	28	0.4403
1-Apr-08	20:20	0.3070	13.19	28	0.4393
1-Apr-08	20:21	0.3070	13.18	28	0.4383
1-Apr-08	20:22	0.3070	13.18	28	0.4374
1-Apr-08	20:23	0.3070	13.17	28	0.4365
1-Apr-08	20:24	0.3070	13.16	28	0.4355
1-Apr-08	20:25	0.3070	13.15	28	0.4346
1-Apr-08	20:26	0.3070	13.14	28	0.4337
1-Apr-08	20:27	0.3070	13.14	28	0.4328
1-Apr-08	20:28	0.3070	13.13	28	0.4318
1-Apr-08	20:29	0.3070	13.12	28	0.4309
1-Apr-08	20:30	0.3070	13.11	28	0.4300
1-Apr-08	20:31	0.3070	13.11	28	0.4292
1-Apr-08	20:32	0.3070	13.10	28	0.4283
1-Apr-08	20:33	0.3070	13.09	28	0.4274
1-Apr-08	20:34	0.3070	13.09	28	0.4265
1-Apr-08	20:35	0.3070	13.08	28	0.4257
1-Apr-08	20:36	0.3070	13.07	28	0.4248
1-Apr-08	20:37	0.3070	13.06	28	0.4240
1-Apr-08	20:38	0.3070	13.06	28	0.4231
1-Apr-08	20:39	0.3071	13.05	28	0.4223
1-Apr-08	20:40	0.3071	13.04	28	0.4214
1-Apr-08	20:41	0.3071	13.04	28	0.4206
1-Apr-08	20:42	0.3071	13.03	28	0.4198
1-Apr-08	20:43	0.3071	13.02	28	0.4190
1-Apr-08	20:44	0.3071	13.02	28	0.4182
1-Apr-08	20:45	0.3071	13.01	28	0.4174
1-Apr-08	20:46	0.3071	13.00	28	0.4166

1-Apr-08	20:47	0.3071	13.00	28	0.4158
1-Apr-08	20:48	0.3071	12.99	28	0.4150
1-Apr-08	20:49	0.3071	12.98	28	0.4142
1-Apr-08	20:50	0.3071	12.98	28	0.4134
1-Apr-08	20:51	0.3071	12.97	28	0.4127
1-Apr-08	20:52	0.3071	12.96	28	0.4119
1-Apr-08	20:53	0.3071	12.96	28	0.4112
1-Apr-08	20:54	0.3071	12.95	28	0.4104
1-Apr-08	20:55	0.3071	12.95	28	0.4097
1-Apr-08	20:56	0.3071	12.94	28	0.4089
1-Apr-08	20:57	0.3071	12.93	28	0.4082
1-Apr-08	20:58	0.3071	12.93	28	0.4074
1-Apr-08	20:59	0.3071	12.92	28	0.4067
1-Apr-08	21:00	0.3071	12.92	28	0.4060
1-Apr-08	21:01	0.3071	12.91	28	0.4053
1-Apr-08	21:02	0.3071	12.90	28	0.4046
1-Apr-08	21:03	0.3071	12.90	28	0.4039
1-Apr-08	21:04	0.3071	12.89	28	0.4032
1-Apr-08	21:05	0.3071	12.89	28	0.4025
1-Apr-08	21:06	0.3071	12.88	28	0.4018
1-Apr-08	21:07	0.3071	12.88	28	0.4011
1-Apr-08	21:08	0.3071	12.87	28	0.4004
1-Apr-08	21:09	0.3071	12.86	28	0.3998
1-Apr-08	21:10	0.3071	12.86	28	0.3991
1-Apr-08	21:11	0.3071	12.85	28	0.3984
1-Apr-08	21:12	0.3071	12.85	28	0.3978
1-Apr-08	21:13	0.3071	12.84	28	0.3971
1-Apr-08	21:14	0.3071	12.84	28	0.3965
1-Apr-08	21:15	0.3071	12.83	28	0.3958
1-Apr-08	21:16	0.3071	12.83	28	0.3952
1-Apr-08	21:17	0.3071	12.82	28	0.3945
1-Apr-08	21:18	0.3071	12.82	28	0.3939
1-Apr-08	21:19	0.3071	12.81	28	0.3933
1-Apr-08	21:20	0.3071	12.81	28	0.3927
1-Apr-08	21:21	0.3071	12.80	28	0.3920
1-Apr-08	21:22	0.3071	12.80	28	0.3914
1-Apr-08	21:23	0.3071	12.79	28	0.3908
1-Apr-08	21:24	0.3072	12.79	28	0.3902
1-Apr-08	21:25	0.3072	12.78	28	0.3896
1-Apr-08	21:26	0.3072	12.78	28	0.3890
1-Apr-08	21:27	0.3072	12.77	28	0.3884
1-Apr-08	21:28	0.3072	12.77	28	0.3878
1-Apr-08	21:29	0.3072	12.76	28	0.3873
1-Apr-08	21:30	0.3072	12.76	28	0.3867
1-Apr-08	21:31	0.3072	12.75	28	0.3861
1-Apr-08	21:32	0.3072	12.75	28	0.3855
1-Apr-08	21:33	0.3072	12.74	28	0.3850
1-Apr-08	21:34	0.3072	12.74	28	0.3844
1-Apr-08	21:35	0.3072	12.73	28	0.3838
1-Apr-08	21:36	0.3072	12.73	28	0.3833

1-Apr-08	21:37	0.3072	12.72	28	0.3827
1-Apr-08	21:38	0.3072	12.72	28	0.3822
1-Apr-08	21:39	0.3072	12.71	28	0.3817
1-Apr-08	21:40	0.3072	12.71	28	0.3811
1-Apr-08	21:41	0.3072	12.71	28	0.3806
1-Apr-08	21:42	0.3072	12.70	28	0.3800
1-Apr-08	21:43	0.3072	12.70	28	0.3795
1-Apr-08	21:44	0.3072	12.69	28	0.3790
1-Apr-08	21:45	0.3072	12.69	28	0.3785
1-Apr-08	21:46	0.3072	12.68	28	0.3780
1-Apr-08	21:47	0.3072	12.68	28	0.3775
1-Apr-08	21:48	0.3072	12.68	28	0.3769
1-Apr-08	21:49	0.3072	12.67	28	0.3764
1-Apr-08	21:50	0.3072	12.67	28	0.3759
1-Apr-08	21:51	0.3072	12.66	28	0.3754
1-Apr-08	21:52	0.3072	12.66	28	0.3750
1-Apr-08	21:53	0.3072	12.65	28	0.3745
1-Apr-08	21:54	0.3072	12.65	28	0.3740
1-Apr-08	21:55	0.3072	12.65	28	0.3735
1-Apr-08	21:56	0.3072	12.64	28	0.3730
1-Apr-08	21:57	0.3072	12.64	28	0.3725
1-Apr-08	21:58	0.3072	12.64	28	0.3721
1-Apr-08	21:59	0.3072	12.63	28	0.3716
1-Apr-08	22:00	0.3072	12.63	28	0.3711
1-Apr-08	22:01	0.3072	12.62	28	0.3707
1-Apr-08	22:02	0.3072	12.62	28	0.3702
1-Apr-08	22:03	0.3072	12.62	28	0.3698
1-Apr-08	22:04	0.3072	12.61	28	0.3693
1-Apr-08	22:05	0.3072	12.61	28	0.3689
1-Apr-08	22:06	0.3072	12.60	28	0.3684
1-Apr-08	22:07	0.3072	12.60	28	0.3680
1-Apr-08	22:08	0.3072	12.60	28	0.3675
1-Apr-08	22:09	0.3072	12.59	28	0.3671
1-Apr-08	22:10	0.3073	12.59	28	0.3667
1-Apr-08	22:11	0.3073	12.59	28	0.3662
1-Apr-08	22:12	0.3073	12.58	28	0.3658
1-Apr-08	22:13	0.3073	12.58	28	0.3654
1-Apr-08	22:14	0.3073	12.58	28	0.3650
1-Apr-08	22:15	0.3073	12.57	28	0.3646
1-Apr-08	22:16	0.3073	12.57	28	0.3641
1-Apr-08	22:17	0.3073	12.57	28	0.3637
1-Apr-08	22:18	0.3073	12.56	28	0.3633
1-Apr-08	22:19	0.3073	12.56	28	0.3629
1-Apr-08	22:20	0.3073	12.56	28	0.3625
1-Apr-08	22:21	0.3073	12.55	28	0.3621
1-Apr-08	22:22	0.3073	12.55	28	0.3617
1-Apr-08	22:23	0.3073	12.55	28	0.3613
1-Apr-08	22:24	0.3073	12.54	28	0.3609
1-Apr-08	22:25	0.3073	12.54	28	0.3605
1-Apr-08	22:26	0.3073	12.54	28	0.3602

1-Apr-08	22:27	0.3073	12.53	28	0.3598
1-Apr-08	22:28	0.3073	12.53	28	0.3594
1-Apr-08	22:29	0.3073	12.53	28	0.3590
1-Apr-08	22:30	0.3073	12.52	28	0.3586
1-Apr-08	22:31	0.3073	12.52	28	0.3583
1-Apr-08	22:32	0.3073	12.52	28	0.3579
1-Apr-08	22:33	0.3073	12.51	28	0.3575
1-Apr-08	22:34	0.3073	12.51	28	0.3572
1-Apr-08	22:35	0.3073	12.51	28	0.3568
1-Apr-08	22:36	0.3073	12.51	28	0.3565
1-Apr-08	22:37	0.3073	12.50	28	0.3561
1-Apr-08	22:38	0.3073	12.50	28	0.3558
1-Apr-08	22:39	0.3073	12.50	28	0.3554
1-Apr-08	22:40	0.3073	12.49	28	0.3551
1-Apr-08	22:41	0.3073	12.49	28	0.3547
1-Apr-08	22:42	0.3073	12.49	28	0.3544
1-Apr-08	22:43	0.3073	12.49	28	0.3540
1-Apr-08	22:44	0.3073	12.48	28	0.3537
1-Apr-08	22:45	0.3073	12.48	28	0.3534
1-Apr-08	22:46	0.3073	12.48	28	0.3530
1-Apr-08	22:47	0.3073	12.47	28	0.3527
1-Apr-08	22:48	0.3073	12.47	28	0.3524
1-Apr-08	22:49	0.3073	12.47	28	0.3520
1-Apr-08	22:50	0.3073	12.47	28	0.3517
1-Apr-08	22:51	0.3073	12.46	28	0.3514
1-Apr-08	22:52	0.3073	12.46	28	0.3511
1-Apr-08	22:53	0.3073	12.46	28	0.3508
1-Apr-08	22:54	0.3073	12.46	28	0.3504
1-Apr-08	22:55	0.3073	12.45	28	0.3501
1-Apr-08	22:56	0.3073	12.45	28	0.3498
1-Apr-08	22:57	0.3074	12.45	28	0.3495
1-Apr-08	22:58	0.3074	12.45	28	0.3492
1-Apr-08	22:59	0.3074	12.44	28	0.3489
1-Apr-08	23:00	0.3074	12.44	28	0.3486
1-Apr-08	23:01	0.3074	12.44	28	0.3483
1-Apr-08	23:02	0.3074	12.44	28	0.3480
1-Apr-08	23:03	0.3074	12.43	28	0.3477
1-Apr-08	23:04	0.3074	12.43	28	0.3474
1-Apr-08	23:05	0.3074	12.43	28	0.3471
1-Apr-08	23:06	0.3074	12.43	28	0.3469
1-Apr-08	23:07	0.3074	12.42	28	0.3466
1-Apr-08	23:08	0.3074	12.42	28	0.3463
1-Apr-08	23:09	0.3074	12.42	28	0.3460
1-Apr-08	23:10	0.3074	12.42	28	0.3457
1-Apr-08	23:11	0.3074	12.41	28	0.3455
1-Apr-08	23:12	0.3074	12.41	28	0.3452
1-Apr-08	23:13	0.3074	12.41	28	0.3449
1-Apr-08	23:14	0.3074	12.41	28	0.3446
1-Apr-08	23:15	0.3074	12.41	28	0.3444
1-Apr-08	23:16	0.3074	12.40	28	0.3441

1-Apr-08	23:17	0.3074	12.40	28	0.3438
1-Apr-08	23:18	0.3074	12.40	28	0.3436
1-Apr-08	23:19	0.3074	12.40	28	0.3433
1-Apr-08	23:20	0.3074	12.40	28	0.3430
1-Apr-08	23:21	0.3074	12.39	28	0.3428
1-Apr-08	23:22	0.3074	12.39	28	0.3425
1-Apr-08	23:23	0.3074	12.39	28	0.3423
1-Apr-08	23:24	0.3074	12.39	28	0.3420
1-Apr-08	23:25	0.3074	12.38	28	0.3418
1-Apr-08	23:26	0.3074	12.38	28	0.3415
1-Apr-08	23:27	0.3074	12.38	28	0.3413
1-Apr-08	23:28	0.3074	12.38	28	0.3410
1-Apr-08	23:29	0.3074	12.38	28	0.3408
1-Apr-08	23:30	0.3074	12.37	28	0.3406
1-Apr-08	23:31	0.3074	12.37	28	0.3403
1-Apr-08	23:32	0.3074	12.37	28	0.3401
1-Apr-08	23:33	0.3074	12.37	28	0.3398
1-Apr-08	23:34	0.3074	12.37	28	0.3396
1-Apr-08	23:35	0.3074	12.36	28	0.3394
1-Apr-08	23:36	0.3074	12.36	28	0.3391
1-Apr-08	23:37	0.3074	12.36	28	0.3389
1-Apr-08	23:38	0.3074	12.36	28	0.3387
1-Apr-08	23:39	0.3074	12.36	28	0.3385
1-Apr-08	23:40	0.3074	12.36	28	0.3382
1-Apr-08	23:41	0.3074	12.35	28	0.3380
1-Apr-08	23:42	0.3074	12.35	28	0.3378
1-Apr-08	23:43	0.3074	12.35	28	0.3376
1-Apr-08	23:44	0.3074	12.35	28	0.3374
1-Apr-08	23:45	0.3074	12.35	28	0.3371
1-Apr-08	23:46	0.3075	12.34	28	0.3369
1-Apr-08	23:47	0.3075	12.34	28	0.3367
1-Apr-08	23:48	0.3075	12.34	28	0.3365
1-Apr-08	23:49	0.3075	12.34	28	0.3363
1-Apr-08	23:50	0.3075	12.34	28	0.3361
1-Apr-08	23:51	0.3075	12.34	28	0.3359
1-Apr-08	23:52	0.3075	12.33	28	0.3357
1-Apr-08	23:53	0.3075	12.33	28	0.3355
1-Apr-08	23:54	0.3075	12.33	28	0.3353
1-Apr-08	23:55	0.3075	12.33	28	0.3351
1-Apr-08	23:56	0.3075	12.33	28	0.3349
1-Apr-08	23:57	0.3075	12.33	28	0.3347
1-Apr-08	23:58	0.3075	12.32	28	0.3345
1-Apr-08	23:59	0.3075	12.32	28	0.3343
2-Apr-08	0:00	0.3075	12.32	28	0.3341

Highgate - 50yr CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	6.3195
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0013	0.00	28	0.0000	
1-Apr-08	0:02	0.0053	0.00	28	0.0000	
1-Apr-08	0:03	0.0131	0.00	28	0.0000	
1-Apr-08	0:04	0.0261	0.00	28	0.0000	
1-Apr-08	0:05	0.0455	0.00	28	0.0001	
1-Apr-08	0:06	0.0700	0.01	28	0.0001	
1-Apr-08	0:07	0.0973	0.01	28	0.0002	
1-Apr-08	0:08	0.1256	0.02	28	0.0003	
1-Apr-08	0:09	0.1533	0.03	28	0.0004	
1-Apr-08	0:10	0.1789	0.04	28	0.0005	
1-Apr-08	0:11	0.2019	0.05	28	0.0006	
1-Apr-08	0:12	0.2217	0.06	28	0.0008	
1-Apr-08	0:13	0.2374	0.08	28	0.0010	
1-Apr-08	0:14	0.2498	0.09	28	0.0012	
1-Apr-08	0:15	0.2599	0.11	28	0.0014	
1-Apr-08	0:16	0.2682	0.12	28	0.0016	
1-Apr-08	0:17	0.2751	0.14	28	0.0018	
1-Apr-08	0:18	0.2808	0.15	28	0.0020	
1-Apr-08	0:19	0.2854	0.17	28	0.0022	
1-Apr-08	0:20	0.2891	0.19	28	0.0024	
1-Apr-08	0:21	0.2922	0.20	28	0.0027	
1-Apr-08	0:22	0.2947	0.22	28	0.0029	
1-Apr-08	0:23	0.2968	0.24	28	0.0031	
1-Apr-08	0:24	0.2984	0.26	28	0.0034	
1-Apr-08	0:25	0.2998	0.28	28	0.0036	
1-Apr-08	0:26	0.3009	0.29	28	0.0038	
1-Apr-08	0:27	0.3019	0.31	28	0.0040	
1-Apr-08	0:28	0.3026	0.33	28	0.0042	
1-Apr-08	0:29	0.3032	0.35	28	0.0044	
1-Apr-08	0:30	0.3037	0.36	28	0.0046	
1-Apr-08	0:31	0.3041	0.38	28	0.0048	
1-Apr-08	0:32	0.3045	0.40	28	0.0050	
1-Apr-08	0:33	0.3048	0.42	28	0.0051	
1-Apr-08	0:34	0.3050	0.44	28	0.0053	
1-Apr-08	0:35	0.3052	0.45	28	0.0055	
1-Apr-08	0:36	0.3054	0.47	28	0.0057	
1-Apr-08	0:37	0.3055	0.49	28	0.0059	
1-Apr-08	0:38	0.3056	0.51	28	0.0061	
1-Apr-08	0:39	0.3056	0.53	28	0.0063	
1-Apr-08	0:40	0.3057	0.54	28	0.0064	
1-Apr-08	0:41	0.3057	0.56	28	0.0066	
1-Apr-08	0:42	0.3057	0.58	28	0.0068	
1-Apr-08	0:43	0.3057	0.60	28	0.0070	
1-Apr-08	0:44	0.3057	0.62	28	0.0072	
1-Apr-08	0:45	0.3057	0.63	28	0.0074	
1-Apr-08	0:46	0.3057	0.65	28	0.0075	

1-Apr-08	0:47	0.3057	0.67	28	0.0077
1-Apr-08	0:48	0.3057	0.69	28	0.0079
1-Apr-08	0:49	0.3057	0.71	28	0.0081
1-Apr-08	0:50	0.3057	0.72	28	0.0083
1-Apr-08	0:51	0.3057	0.74	28	0.0085
1-Apr-08	0:52	0.3057	0.76	28	0.0086
1-Apr-08	0:53	0.3057	0.78	28	0.0088
1-Apr-08	0:54	0.3057	0.79	28	0.0090
1-Apr-08	0:55	0.3057	0.81	28	0.0092
1-Apr-08	0:56	0.3057	0.83	28	0.0094
1-Apr-08	0:57	0.3057	0.85	28	0.0096
1-Apr-08	0:58	0.3057	0.87	28	0.0097
1-Apr-08	0:59	0.3057	0.88	28	0.0099
1-Apr-08	1:00	0.3057	0.90	28	0.0101
1-Apr-08	1:01	0.3057	0.92	28	0.0103
1-Apr-08	1:02	0.3057	0.94	28	0.0105
1-Apr-08	1:03	0.3057	0.95	28	0.0106
1-Apr-08	1:04	0.3057	0.97	28	0.0108
1-Apr-08	1:05	0.3057	0.99	28	0.0110
1-Apr-08	1:06	0.3057	1.01	28	0.0112
1-Apr-08	1:07	0.3057	1.03	28	0.0114
1-Apr-08	1:08	0.3057	1.04	28	0.0116
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1-Apr-08	1:15	0.3057	1.17	28	0.0127
1-Apr-08	1:16	0.3057	1.18	28	0.0129
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1-Apr-08	1:19	0.3057	1.24	28	0.0133
1-Apr-08	1:20	0.3057	1.25	28	0.0135
1-Apr-08	1:21	0.3057	1.27	28	0.0137
1-Apr-08	1:22	0.3057	1.29	28	0.0138
1-Apr-08	1:23	0.3057	1.31	28	0.0140
1-Apr-08	1:24	0.3057	1.32	28	0.0141
1-Apr-08	1:25	0.3057	1.34	28	0.0143
1-Apr-08	1:26	0.3057	1.36	28	0.0144
1-Apr-08	1:27	0.3057	1.38	28	0.0146
1-Apr-08	1:28	0.3057	1.39	28	0.0148
1-Apr-08	1:29	0.3057	1.41	28	0.0149
1-Apr-08	1:30	0.3057	1.43	28	0.0151
1-Apr-08	1:31	0.3057	1.45	28	0.0152
1-Apr-08	1:32	0.3057	1.46	28	0.0154
1-Apr-08	1:33	0.3057	1.48	28	0.0155
1-Apr-08	1:34	0.3057	1.50	28	0.0157
1-Apr-08	1:35	0.3057	1.52	28	0.0159
1-Apr-08	1:36	0.3057	1.53	28	0.0160

1-Apr-08	1:37	0.3057	1.55	28	0.0162
1-Apr-08	1:38	0.3057	1.57	28	0.0163
1-Apr-08	1:39	0.3057	1.59	28	0.0165
1-Apr-08	1:40	0.3057	1.60	28	0.0166
1-Apr-08	1:41	0.3057	1.62	28	0.0168
1-Apr-08	1:42	0.3057	1.64	28	0.0169
1-Apr-08	1:43	0.3058	1.65	28	0.0171
1-Apr-08	1:44	0.3058	1.67	28	0.0173
1-Apr-08	1:45	0.3058	1.69	28	0.0174
1-Apr-08	1:46	0.3059	1.71	28	0.0176
1-Apr-08	1:47	0.3059	1.72	28	0.0177
1-Apr-08	1:48	0.3060	1.74	28	0.0179
1-Apr-08	1:49	0.3060	1.76	28	0.0180
1-Apr-08	1:50	0.3061	1.78	28	0.0182
1-Apr-08	1:51	0.3061	1.79	28	0.0183
1-Apr-08	1:52	0.3062	1.81	28	0.0185
1-Apr-08	1:53	0.3062	1.83	28	0.0186
1-Apr-08	1:54	0.3063	1.84	28	0.0188
1-Apr-08	1:55	0.3064	1.86	28	0.0190
1-Apr-08	1:56	0.3064	1.88	28	0.0191
1-Apr-08	1:57	0.3065	1.90	28	0.0193
1-Apr-08	1:58	0.3065	1.91	28	0.0194
1-Apr-08	1:59	0.3066	1.93	28	0.0196
1-Apr-08	2:00	0.3066	1.95	28	0.0197
1-Apr-08	2:01	0.3067	1.97	28	0.0199
1-Apr-08	2:02	0.3068	1.98	28	0.0200
1-Apr-08	2:03	0.3068	2.00	28	0.0201
1-Apr-08	2:04	0.3069	2.02	28	0.0202
1-Apr-08	2:05	0.3069	2.03	28	0.0203
1-Apr-08	2:06	0.3070	2.05	28	0.0203
1-Apr-08	2:07	0.3070	2.07	28	0.0204
1-Apr-08	2:08	0.3071	2.09	28	0.0205
1-Apr-08	2:09	0.3072	2.10	28	0.0206
1-Apr-08	2:10	0.3072	2.12	28	0.0207
1-Apr-08	2:11	0.3073	2.14	28	0.0207
1-Apr-08	2:12	0.3073	2.15	28	0.0208
1-Apr-08	2:13	0.3074	2.17	28	0.0209
1-Apr-08	2:14	0.3074	2.19	28	0.0210
1-Apr-08	2:15	0.3075	2.21	28	0.0211
1-Apr-08	2:16	0.3075	2.22	28	0.0211
1-Apr-08	2:17	0.3076	2.24	28	0.0212
1-Apr-08	2:18	0.3077	2.26	28	0.0213
1-Apr-08	2:19	0.3077	2.27	28	0.0214
1-Apr-08	2:20	0.3078	2.29	28	0.0215
1-Apr-08	2:21	0.3078	2.31	28	0.0215
1-Apr-08	2:22	0.3079	2.33	28	0.0216
1-Apr-08	2:23	0.3079	2.34	28	0.0217
1-Apr-08	2:24	0.3080	2.36	28	0.0218
1-Apr-08	2:25	0.3080	2.38	28	0.0219
1-Apr-08	2:26	0.3081	2.39	28	0.0219

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1-Apr-08	2:28	0.3082	2.43	28	0.0221
1-Apr-08	2:29	0.3083	2.45	28	0.0222
1-Apr-08	2:30	0.3083	2.46	28	0.0223
1-Apr-08	2:31	0.3084	2.48	28	0.0223
1-Apr-08	2:32	0.3084	2.50	28	0.0224
1-Apr-08	2:33	0.3085	2.52	28	0.0225
1-Apr-08	2:34	0.3085	2.53	28	0.0226
1-Apr-08	2:35	0.3086	2.55	28	0.0227
1-Apr-08	2:36	0.3087	2.57	28	0.0227
1-Apr-08	2:37	0.3087	2.58	28	0.0228
1-Apr-08	2:38	0.3088	2.60	28	0.0229
1-Apr-08	2:39	0.3088	2.62	28	0.0230
1-Apr-08	2:40	0.3089	2.64	28	0.0231
1-Apr-08	2:41	0.3089	2.65	28	0.0231
1-Apr-08	2:42	0.3090	2.67	28	0.0232
1-Apr-08	2:43	0.3090	2.69	28	0.0233
1-Apr-08	2:44	0.3091	2.70	28	0.0234
1-Apr-08	2:45	0.3091	2.72	28	0.0235
1-Apr-08	2:46	0.3092	2.74	28	0.0235
1-Apr-08	2:47	0.3092	2.76	28	0.0236
1-Apr-08	2:48	0.3093	2.77	28	0.0237
1-Apr-08	2:49	0.3093	2.79	28	0.0238
1-Apr-08	2:50	0.3094	2.81	28	0.0239
1-Apr-08	2:51	0.3095	2.82	28	0.0239
1-Apr-08	2:52	0.3095	2.84	28	0.0240
1-Apr-08	2:53	0.3096	2.86	28	0.0241
1-Apr-08	2:54	0.3096	2.88	28	0.0242
1-Apr-08	2:55	0.3097	2.89	28	0.0243
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1-Apr-08	2:57	0.3098	2.93	28	0.0244
1-Apr-08	2:58	0.3098	2.94	28	0.0245
1-Apr-08	2:59	0.3099	2.96	28	0.0246
1-Apr-08	3:00	0.3099	2.98	28	0.0247
1-Apr-08	3:01	0.3100	2.99	28	0.0247
1-Apr-08	3:02	0.3100	3.01	28	0.0248
1-Apr-08	3:03	0.3101	3.03	28	0.0249
1-Apr-08	3:04	0.3101	3.05	28	0.0250
1-Apr-08	3:05	0.3102	3.06	28	0.0251
1-Apr-08	3:06	0.3102	3.08	28	0.0251
1-Apr-08	3:07	0.3103	3.10	28	0.0252
1-Apr-08	3:08	0.3103	3.11	28	0.0252
1-Apr-08	3:09	0.3104	3.13	28	0.0253
1-Apr-08	3:10	0.3104	3.15	28	0.0254
1-Apr-08	3:11	0.3105	3.17	28	0.0254
1-Apr-08	3:12	0.3105	3.18	28	0.0255
1-Apr-08	3:13	0.3106	3.20	28	0.0256
1-Apr-08	3:14	0.3106	3.22	28	0.0256
1-Apr-08	3:15	0.3107	3.23	28	0.0257
1-Apr-08	3:16	0.3107	3.25	28	0.0257

1-Apr-08	3:17	0.3108	3.27	28	0.0258
1-Apr-08	3:18	0.3108	3.29	28	0.0259
1-Apr-08	3:19	0.3109	3.30	28	0.0259
1-Apr-08	3:20	0.3110	3.32	28	0.0260
1-Apr-08	3:21	0.3110	3.34	28	0.0261
1-Apr-08	3:22	0.3111	3.35	28	0.0261
1-Apr-08	3:23	0.3111	3.37	28	0.0262
1-Apr-08	3:24	0.3112	3.39	28	0.0262
1-Apr-08	3:25	0.3112	3.41	28	0.0263
1-Apr-08	3:26	0.3113	3.42	28	0.0264
1-Apr-08	3:27	0.3113	3.44	28	0.0264
1-Apr-08	3:28	0.3114	3.46	28	0.0265
1-Apr-08	3:29	0.3114	3.47	28	0.0266
1-Apr-08	3:30	0.3114	3.49	28	0.0266
1-Apr-08	3:31	0.3115	3.51	28	0.0267
1-Apr-08	3:32	0.3115	3.52	28	0.0268
1-Apr-08	3:33	0.3116	3.54	28	0.0268
1-Apr-08	3:34	0.3116	3.56	28	0.0269
1-Apr-08	3:35	0.3117	3.58	28	0.0269
1-Apr-08	3:36	0.3117	3.59	28	0.0270
1-Apr-08	3:37	0.3118	3.61	28	0.0271
1-Apr-08	3:38	0.3118	3.63	28	0.0271
1-Apr-08	3:39	0.3119	3.64	28	0.0272
1-Apr-08	3:40	0.3119	3.66	28	0.0273
1-Apr-08	3:41	0.3120	3.68	28	0.0273
1-Apr-08	3:42	0.3120	3.70	28	0.0274
1-Apr-08	3:43	0.3121	3.71	28	0.0274
1-Apr-08	3:44	0.3121	3.73	28	0.0275
1-Apr-08	3:45	0.3122	3.75	28	0.0276
1-Apr-08	3:46	0.3122	3.76	28	0.0276
1-Apr-08	3:47	0.3123	3.78	28	0.0277
1-Apr-08	3:48	0.3123	3.80	28	0.0278
1-Apr-08	3:49	0.3124	3.82	28	0.0278
1-Apr-08	3:50	0.3124	3.83	28	0.0279
1-Apr-08	3:51	0.3125	3.85	28	0.0279
1-Apr-08	3:52	0.3125	3.87	28	0.0280
1-Apr-08	3:53	0.3126	3.88	28	0.0281
1-Apr-08	3:54	0.3126	3.90	28	0.0281
1-Apr-08	3:55	0.3127	3.92	28	0.0282
1-Apr-08	3:56	0.3127	3.93	28	0.0283
1-Apr-08	3:57	0.3128	3.95	28	0.0283
1-Apr-08	3:58	0.3128	3.97	28	0.0284
1-Apr-08	3:59	0.3128	3.99	28	0.0285
1-Apr-08	4:00	0.3129	4.00	28	0.0285
1-Apr-08	4:01	0.3129	4.02	28	0.0286
1-Apr-08	4:02	0.3130	4.04	28	0.0286
1-Apr-08	4:03	0.3130	4.05	28	0.0287
1-Apr-08	4:04	0.3131	4.07	28	0.0288
1-Apr-08	4:05	0.3131	4.09	28	0.0288
1-Apr-08	4:06	0.3132	4.11	28	0.0289

1-Apr-08	4:07	0.3132	4.12	28	0.0290
1-Apr-08	4:08	0.3133	4.14	28	0.0290
1-Apr-08	4:09	0.3133	4.16	28	0.0291
1-Apr-08	4:10	0.3134	4.17	28	0.0291
1-Apr-08	4:11	0.3134	4.19	28	0.0292
1-Apr-08	4:12	0.3135	4.21	28	0.0293
1-Apr-08	4:13	0.3135	4.22	28	0.0293
1-Apr-08	4:14	0.3135	4.24	28	0.0294
1-Apr-08	4:15	0.3136	4.26	28	0.0295
1-Apr-08	4:16	0.3136	4.28	28	0.0295
1-Apr-08	4:17	0.3137	4.29	28	0.0296
1-Apr-08	4:18	0.3137	4.31	28	0.0296
1-Apr-08	4:19	0.3138	4.33	28	0.0297
1-Apr-08	4:20	0.3138	4.34	28	0.0298
1-Apr-08	4:21	0.3139	4.36	28	0.0298
1-Apr-08	4:22	0.3139	4.38	28	0.0299
1-Apr-08	4:23	0.3140	4.40	28	0.0299
1-Apr-08	4:24	0.3140	4.41	28	0.0300
1-Apr-08	4:25	0.3140	4.43	28	0.0301
1-Apr-08	4:26	0.3141	4.45	28	0.0301
1-Apr-08	4:27	0.3141	4.46	28	0.0302
1-Apr-08	4:28	0.3142	4.48	28	0.0303
1-Apr-08	4:29	0.3142	4.50	28	0.0303
1-Apr-08	4:30	0.3143	4.51	28	0.0304
1-Apr-08	4:31	0.3143	4.53	28	0.0304
1-Apr-08	4:32	0.3144	4.55	28	0.0305
1-Apr-08	4:33	0.3144	4.57	28	0.0306
1-Apr-08	4:34	0.3144	4.58	28	0.0306
1-Apr-08	4:35	0.3145	4.60	28	0.0307
1-Apr-08	4:36	0.3145	4.62	28	0.0308
1-Apr-08	4:37	0.3146	4.63	28	0.0308
1-Apr-08	4:38	0.3146	4.65	28	0.0309
1-Apr-08	4:39	0.3147	4.67	28	0.0309
1-Apr-08	4:40	0.3147	4.68	28	0.0310
1-Apr-08	4:41	0.3148	4.70	28	0.0311
1-Apr-08	4:42	0.3148	4.72	28	0.0311
1-Apr-08	4:43	0.3148	4.74	28	0.0312
1-Apr-08	4:44	0.3149	4.75	28	0.0312
1-Apr-08	4:45	0.3149	4.77	28	0.0313
1-Apr-08	4:46	0.3150	4.79	28	0.0314
1-Apr-08	4:47	0.3150	4.80	28	0.0314
1-Apr-08	4:48	0.3151	4.82	28	0.0315
1-Apr-08	4:49	0.3151	4.84	28	0.0316
1-Apr-08	4:50	0.3152	4.85	28	0.0316
1-Apr-08	4:51	0.3152	4.87	28	0.0317
1-Apr-08	4:52	0.3152	4.89	28	0.0317
1-Apr-08	4:53	0.3153	4.91	28	0.0318
1-Apr-08	4:54	0.3153	4.92	28	0.0319
1-Apr-08	4:55	0.3154	4.94	28	0.0319
1-Apr-08	4:56	0.3154	4.96	28	0.0320

1-Apr-08	4:57	0.3155	4.97	28	0.0320
1-Apr-08	4:58	0.3155	4.99	28	0.0321
1-Apr-08	4:59	0.3155	5.01	28	0.0322
1-Apr-08	5:00	0.3156	5.03	28	0.0322
1-Apr-08	5:01	0.3156	5.04	28	0.0323
1-Apr-08	5:02	0.3157	5.06	28	0.0324
1-Apr-08	5:03	0.3157	5.08	28	0.0324
1-Apr-08	5:04	0.3158	5.09	28	0.0325
1-Apr-08	5:05	0.3158	5.11	28	0.0325
1-Apr-08	5:06	0.3158	5.13	28	0.0326
1-Apr-08	5:07	0.3159	5.14	28	0.0327
1-Apr-08	5:08	0.3159	5.16	28	0.0327
1-Apr-08	5:09	0.3160	5.18	28	0.0328
1-Apr-08	5:10	0.3160	5.19	28	0.0329
1-Apr-08	5:11	0.3160	5.21	28	0.0329
1-Apr-08	5:12	0.3161	5.23	28	0.0330
1-Apr-08	5:13	0.3161	5.25	28	0.0330
1-Apr-08	5:14	0.3162	5.26	28	0.0331
1-Apr-08	5:15	0.3162	5.28	28	0.0331
1-Apr-08	5:16	0.3163	5.30	28	0.0332
1-Apr-08	5:17	0.3163	5.31	28	0.0332
1-Apr-08	5:18	0.3163	5.33	28	0.0333
1-Apr-08	5:19	0.3164	5.35	28	0.0333
1-Apr-08	5:20	0.3164	5.36	28	0.0333
1-Apr-08	5:21	0.3165	5.38	28	0.0334
1-Apr-08	5:22	0.3165	5.40	28	0.0334
1-Apr-08	5:23	0.3165	5.42	28	0.0335
1-Apr-08	5:24	0.3166	5.43	28	0.0335
1-Apr-08	5:25	0.3166	5.45	28	0.0336
1-Apr-08	5:26	0.3167	5.47	28	0.0336
1-Apr-08	5:27	0.3167	5.48	28	0.0337
1-Apr-08	5:28	0.3167	5.50	28	0.0337
1-Apr-08	5:29	0.3168	5.52	28	0.0338
1-Apr-08	5:30	0.3168	5.53	28	0.0338
1-Apr-08	5:31	0.3169	5.55	28	0.0338
1-Apr-08	5:32	0.3169	5.57	28	0.0339
1-Apr-08	5:33	0.3170	5.59	28	0.0339
1-Apr-08	5:34	0.3170	5.60	28	0.0340
1-Apr-08	5:35	0.3170	5.62	28	0.0340
1-Apr-08	5:36	0.3171	5.64	28	0.0341
1-Apr-08	5:37	0.3171	5.65	28	0.0341
1-Apr-08	5:38	0.3172	5.67	28	0.0342
1-Apr-08	5:39	0.3172	5.69	28	0.0342
1-Apr-08	5:40	0.3172	5.70	28	0.0343
1-Apr-08	5:41	0.3173	5.72	28	0.0343
1-Apr-08	5:42	0.3173	5.74	28	0.0344
1-Apr-08	5:43	0.3174	5.76	28	0.0344
1-Apr-08	5:44	0.3174	5.77	28	0.0344
1-Apr-08	5:45	0.3174	5.79	28	0.0345
1-Apr-08	5:46	0.3175	5.81	28	0.0345

1-Apr-08	5:47	0.3175	5.82	28	0.0346
1-Apr-08	5:48	0.3176	5.84	28	0.0346
1-Apr-08	5:49	0.3176	5.86	28	0.0347
1-Apr-08	5:50	0.3176	5.87	28	0.0347
1-Apr-08	5:51	0.3193	5.89	28	0.0348
1-Apr-08	5:52	0.3244	5.91	28	0.0348
1-Apr-08	5:53	0.3343	5.93	28	0.0349
1-Apr-08	5:54	0.3507	5.94	28	0.0349
1-Apr-08	5:55	0.3753	5.96	28	0.0350
1-Apr-08	5:56	0.4062	5.99	28	0.0350
1-Apr-08	5:57	0.4408	6.01	28	0.0351
1-Apr-08	5:58	0.4764	6.03	28	0.0351
1-Apr-08	5:59	0.5116	6.06	28	0.0352
1-Apr-08	6:00	0.5440	6.09	28	0.0353
1-Apr-08	6:01	0.5731	6.12	28	0.0354
1-Apr-08	6:02	0.5982	6.16	28	0.0355
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1-Apr-08	6:05	0.6469	6.26	28	0.0358
1-Apr-08	6:06	0.6575	6.30	28	0.0359
1-Apr-08	6:07	0.6663	6.34	28	0.0360
1-Apr-08	6:08	0.6736	6.37	28	0.0361
1-Apr-08	6:09	0.6796	6.41	28	0.0362
1-Apr-08	6:10	0.6846	6.45	28	0.0364
1-Apr-08	6:11	0.6886	6.49	28	0.0365
1-Apr-08	6:12	0.6920	6.53	28	0.0366
1-Apr-08	6:13	0.6947	6.57	28	0.0368
1-Apr-08	6:14	0.6970	6.61	28	0.0369
1-Apr-08	6:15	0.6989	6.65	28	0.0370
1-Apr-08	6:16	0.7005	6.69	28	0.0372
1-Apr-08	6:17	0.7018	6.73	28	0.0373
1-Apr-08	6:18	0.7030	6.77	28	0.0375
1-Apr-08	6:19	0.7039	6.81	28	0.0376
1-Apr-08	6:20	0.7047	6.85	28	0.0378
1-Apr-08	6:21	0.7054	6.89	28	0.0379
1-Apr-08	6:22	0.7060	6.93	28	0.0380
1-Apr-08	6:23	0.7066	6.97	28	0.0382
1-Apr-08	6:24	0.7071	7.01	28	0.0383
1-Apr-08	6:25	0.7075	7.05	28	0.0385
1-Apr-08	6:26	0.7079	7.09	28	0.0386
1-Apr-08	6:27	0.7082	7.13	28	0.0387
1-Apr-08	6:28	0.7085	7.17	28	0.0389
1-Apr-08	6:29	0.7087	7.21	28	0.0390
1-Apr-08	6:30	0.7089	7.25	28	0.0392
1-Apr-08	6:31	0.7091	7.29	28	0.0393
1-Apr-08	6:32	0.7092	7.33	28	0.0395
1-Apr-08	6:33	0.7094	7.37	28	0.0396
1-Apr-08	6:34	0.7096	7.41	28	0.0397
1-Apr-08	6:35	0.7097	7.45	28	0.0399
1-Apr-08	6:36	0.7099	7.49	28	0.0400

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1-Apr-08	6:38	0.7103	7.57	28	0.0402
1-Apr-08	6:39	0.7104	7.61	28	0.0402
1-Apr-08	6:40	0.7106	7.65	28	0.0403
1-Apr-08	6:41	0.7107	7.69	28	0.0404
1-Apr-08	6:42	0.7109	7.73	28	0.0404
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1-Apr-08	6:45	0.7114	7.85	28	0.0406
1-Apr-08	6:46	0.7116	7.89	28	0.0407
1-Apr-08	6:47	0.7117	7.93	28	0.0408
1-Apr-08	6:48	0.7119	7.97	28	0.0409
1-Apr-08	6:49	0.7121	8.01	28	0.0409
1-Apr-08	6:50	0.7122	8.05	28	0.0410
1-Apr-08	6:51	0.7124	8.09	28	0.0411
1-Apr-08	6:52	0.7125	8.13	28	0.0411
1-Apr-08	6:53	0.7127	8.17	28	0.0412
1-Apr-08	6:54	0.7129	8.21	28	0.0413
1-Apr-08	6:55	0.7130	8.26	28	0.0413
1-Apr-08	6:56	0.7132	8.30	28	0.0414
1-Apr-08	6:57	0.7133	8.34	28	0.0415
1-Apr-08	6:58	0.7135	8.38	28	0.0416
1-Apr-08	6:59	0.7136	8.42	28	0.0416
1-Apr-08	7:00	0.7138	8.46	28	0.0417
1-Apr-08	7:01	0.7139	8.50	28	0.0418
1-Apr-08	7:02	0.7141	8.54	28	0.0418
1-Apr-08	7:03	0.7143	8.58	28	0.0419
1-Apr-08	7:04	0.7144	8.62	28	0.0420
1-Apr-08	7:05	0.7146	8.66	28	0.0433
1-Apr-08	7:06	0.7147	8.70	28	0.0451
1-Apr-08	7:07	0.7149	8.74	28	0.0470
1-Apr-08	7:08	0.7150	8.78	28	0.0489
1-Apr-08	7:09	0.7152	8.82	28	0.0507
1-Apr-08	7:10	0.7153	8.86	28	0.0526
1-Apr-08	7:11	0.7155	8.90	28	0.0544
1-Apr-08	7:12	0.7156	8.94	28	0.0563
1-Apr-08	7:13	0.7158	8.98	28	0.0581
1-Apr-08	7:14	0.7159	9.02	28	0.0599
1-Apr-08	7:15	0.7161	9.06	28	0.0617
1-Apr-08	7:16	0.7162	9.10	28	0.0636
1-Apr-08	7:17	0.7164	9.13	28	0.0654
1-Apr-08	7:18	0.7165	9.17	28	0.0672
1-Apr-08	7:19	0.7167	9.21	28	0.0690
1-Apr-08	7:20	0.7168	9.25	28	0.0708
1-Apr-08	7:21	0.7169	9.29	28	0.0726
1-Apr-08	7:22	0.7171	9.33	28	0.0744
1-Apr-08	7:23	0.7172	9.37	28	0.0762
1-Apr-08	7:24	0.7174	9.41	28	0.0780
1-Apr-08	7:25	0.7175	9.44	28	0.0798
1-Apr-08	7:26	0.7177	9.48	28	0.0815

1-Apr-08	7:27	0.7178	9.52	28	0.0833
1-Apr-08	7:28	0.7179	9.56	28	0.0851
1-Apr-08	7:29	0.7181	9.60	28	0.0868
1-Apr-08	7:30	0.7182	9.63	28	0.0886
1-Apr-08	7:31	0.7184	9.67	28	0.0903
1-Apr-08	7:32	0.7185	9.71	28	0.0921
1-Apr-08	7:33	0.7187	9.75	28	0.0938
1-Apr-08	7:34	0.7188	9.78	28	0.0956
1-Apr-08	7:35	0.7189	9.82	28	0.0983
1-Apr-08	7:36	0.7191	9.86	28	0.1013
1-Apr-08	7:37	0.7192	9.90	28	0.1044
1-Apr-08	7:38	0.7193	9.93	28	0.1074
1-Apr-08	7:39	0.7195	9.97	28	0.1103
1-Apr-08	7:40	0.7196	10.01	28	0.1133
1-Apr-08	7:41	0.7198	10.04	28	0.1163
1-Apr-08	7:42	0.7199	10.08	28	0.1192
1-Apr-08	7:43	0.7200	10.11	28	0.1222
1-Apr-08	7:44	0.7202	10.15	28	0.1251
1-Apr-08	7:45	0.7203	10.19	28	0.1280
1-Apr-08	7:46	0.7204	10.22	28	0.1309
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1-Apr-08	7:48	0.7207	10.29	28	0.1366
1-Apr-08	7:49	0.7208	10.33	28	0.1395
1-Apr-08	7:50	0.7210	10.36	28	0.1423
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1-Apr-08	7:52	0.7212	10.43	28	0.1479
1-Apr-08	7:53	0.7214	10.46	28	0.1507
1-Apr-08	7:54	0.7215	10.50	28	0.1535
1-Apr-08	7:55	0.7216	10.53	28	0.1563
1-Apr-08	7:56	0.7218	10.57	28	0.1591
1-Apr-08	7:57	0.7219	10.60	28	0.1618
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1-Apr-08	7:59	0.7221	10.67	28	0.1673
1-Apr-08	8:00	0.7223	10.70	28	0.1700
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1-Apr-08	8:02	0.7225	10.77	28	0.1754
1-Apr-08	8:03	0.7227	10.80	28	0.1780
1-Apr-08	8:04	0.7228	10.83	28	0.1807
1-Apr-08	8:05	0.7229	10.86	28	0.1833
1-Apr-08	8:06	0.7230	10.90	28	0.1860
1-Apr-08	8:07	0.7232	10.93	28	0.1886
1-Apr-08	8:08	0.7233	10.96	28	0.1912
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1-Apr-08	8:11	0.7237	11.06	28	0.2008
1-Apr-08	8:12	0.7238	11.09	28	0.2040
1-Apr-08	8:13	0.7239	11.12	28	0.2072
1-Apr-08	8:14	0.7240	11.15	28	0.2104
1-Apr-08	8:15	0.7242	11.18	28	0.2136
1-Apr-08	8:16	0.7243	11.21	28	0.2167

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1-Apr-08	8:18	0.7245	11.27	28	0.2230
1-Apr-08	8:19	0.7246	11.30	28	0.2261
1-Apr-08	8:20	0.7248	11.33	28	0.2291
1-Apr-08	8:21	0.7249	11.36	28	0.2322
1-Apr-08	8:22	0.7250	11.39	28	0.2352
1-Apr-08	8:23	0.7251	11.42	28	0.2382
1-Apr-08	8:24	0.7252	11.45	28	0.2412
1-Apr-08	8:25	0.7254	11.48	28	0.2442
1-Apr-08	8:26	0.7255	11.51	28	0.2472
1-Apr-08	8:27	0.7256	11.53	28	0.2502
1-Apr-08	8:28	0.7257	11.56	28	0.2531
1-Apr-08	8:29	0.7258	11.59	28	0.2560
1-Apr-08	8:30	0.7260	11.62	28	0.2589
1-Apr-08	8:31	0.7261	11.65	28	0.2618
1-Apr-08	8:32	0.7262	11.67	28	0.2646
1-Apr-08	8:33	0.7263	11.70	28	0.2675
1-Apr-08	8:34	0.7264	11.73	28	0.2703
1-Apr-08	8:35	0.7265	11.76	28	0.2731
1-Apr-08	8:36	0.7267	11.78	28	0.2759
1-Apr-08	8:37	0.7268	11.81	28	0.2787
1-Apr-08	8:38	0.7269	11.84	28	0.2815
1-Apr-08	8:39	0.7270	11.86	28	0.2842
1-Apr-08	8:40	0.7271	11.89	28	0.2869
1-Apr-08	8:41	0.7272	11.92	28	0.2897
1-Apr-08	8:42	0.7273	11.94	28	0.2924
1-Apr-08	8:43	0.7275	11.97	28	0.2950
1-Apr-08	8:44	0.7276	12.00	28	0.2977
1-Apr-08	8:45	0.7277	12.02	28	0.3004
1-Apr-08	8:46	0.7278	12.05	28	0.3030
1-Apr-08	8:47	0.7279	12.07	28	0.3056
1-Apr-08	8:48	0.7280	12.10	28	0.3082
1-Apr-08	8:49	0.7281	12.12	28	0.3108
1-Apr-08	8:50	0.7282	12.15	28	0.3134
1-Apr-08	8:51	0.7293	12.17	28	0.3161
1-Apr-08	8:52	0.7323	12.20	28	0.3191
1-Apr-08	8:53	0.7380	12.22	28	0.3221
1-Apr-08	8:54	0.7475	12.25	28	0.3252
1-Apr-08	8:55	0.7615	12.27	28	0.3283
1-Apr-08	8:56	0.7792	12.30	28	0.3314
1-Apr-08	8:57	0.7991	12.33	28	0.3348
1-Apr-08	8:58	0.8195	12.35	28	0.3382
1-Apr-08	8:59	0.8396	12.38	28	0.3417
1-Apr-08	9:00	0.8582	12.41	28	0.3454
1-Apr-08	9:01	0.8749	12.45	28	0.3492
1-Apr-08	9:02	0.8892	12.48	28	0.3530
1-Apr-08	9:03	0.9006	12.51	28	0.3569
1-Apr-08	9:04	0.9098	12.54	28	0.3609
1-Apr-08	9:05	0.9172	12.58	28	0.3649
1-Apr-08	9:06	0.9233	12.61	28	0.3689

1-Apr-08	9:07	0.9285	12.64	28	0.3729
1-Apr-08	9:08	0.9327	12.68	28	0.3770
1-Apr-08	9:09	0.9362	12.71	28	0.3810
1-Apr-08	9:10	0.9391	12.74	28	0.3850
1-Apr-08	9:11	0.9414	12.78	28	0.3890
1-Apr-08	9:12	0.9434	12.81	28	0.3930
1-Apr-08	9:13	0.9451	12.84	28	0.3970
1-Apr-08	9:14	0.9465	12.87	28	0.4010
1-Apr-08	9:15	0.9476	12.91	28	0.4049
1-Apr-08	9:16	0.9486	12.94	28	0.4088
1-Apr-08	9:17	0.9494	12.97	28	0.4127
1-Apr-08	9:18	0.9501	13.00	28	0.4166
1-Apr-08	9:19	0.9507	13.04	28	0.4205
1-Apr-08	9:20	0.9513	13.07	28	0.4243
1-Apr-08	9:21	0.9517	13.10	28	0.4281
1-Apr-08	9:22	0.9522	13.13	28	0.4319
1-Apr-08	9:23	0.9525	13.16	28	0.4357
1-Apr-08	9:24	0.9529	13.19	28	0.4394
1-Apr-08	9:25	0.9532	13.22	28	0.4431
1-Apr-08	9:26	0.9535	13.25	28	0.4468
1-Apr-08	9:27	0.9537	13.28	28	0.4505
1-Apr-08	9:28	0.9539	13.31	28	0.4541
1-Apr-08	9:29	0.9541	13.34	28	0.4577
1-Apr-08	9:30	0.9543	13.37	28	0.4613
1-Apr-08	9:31	0.9545	13.40	28	0.4653
1-Apr-08	9:32	0.9546	13.43	28	0.4692
1-Apr-08	9:33	0.9548	13.46	28	0.4732
1-Apr-08	9:34	0.9550	13.49	28	0.4770
1-Apr-08	9:35	0.9551	13.52	28	0.4809
1-Apr-08	9:36	0.9553	13.55	28	0.4847
1-Apr-08	9:37	0.9555	13.57	28	0.4885
1-Apr-08	9:38	0.9556	13.60	28	0.4923
1-Apr-08	9:39	0.9558	13.63	28	0.4960
1-Apr-08	9:40	0.9559	13.66	28	0.4997
1-Apr-08	9:41	0.9561	13.69	28	0.5034
1-Apr-08	9:42	0.9562	13.71	28	0.5070
1-Apr-08	9:43	0.9564	13.74	28	0.5106
1-Apr-08	9:44	0.9566	13.77	28	0.5142
1-Apr-08	9:45	0.9567	13.79	28	0.5178
1-Apr-08	9:46	0.9569	13.82	28	0.5213
1-Apr-08	9:47	0.9570	13.84	28	0.5248
1-Apr-08	9:48	0.9572	13.87	28	0.5283
1-Apr-08	9:49	0.9573	13.90	28	0.5318
1-Apr-08	9:50	0.9575	13.92	28	0.5352
1-Apr-08	9:51	0.9596	13.95	28	0.5386
1-Apr-08	9:52	0.9657	13.97	28	0.5420
1-Apr-08	9:53	0.9774	14.00	28	0.5455
1-Apr-08	9:54	0.9969	14.02	28	0.5490
1-Apr-08	9:55	1.0259	14.05	28	0.5528
1-Apr-08	9:56	1.0624	14.08	28	0.5567

1-Apr-08	9:57	1.1033	14.11	28	0.5610
1-Apr-08	9:58	1.1455	14.15	28	0.5655
1-Apr-08	9:59	1.1870	14.18	28	0.5703
1-Apr-08	10:00	1.2253	14.22	28	0.5755
1-Apr-08	10:01	1.2597	14.26	28	0.5808
1-Apr-08	10:02	1.2893	14.30	28	0.5864
1-Apr-08	10:03	1.3129	14.34	28	0.5922
1-Apr-08	10:04	1.3316	14.39	28	0.5981
1-Apr-08	10:05	1.3470	14.43	28	0.6040
1-Apr-08	10:06	1.3595	14.48	28	0.6101
1-Apr-08	10:07	1.3701	14.52	28	0.6162
1-Apr-08	10:08	1.3788	14.57	28	0.6223
1-Apr-08	10:09	1.3859	14.61	28	0.6286
1-Apr-08	10:10	1.3918	14.66	28	0.6352
1-Apr-08	10:11	1.3967	14.70	28	0.6418
1-Apr-08	10:12	1.4007	14.75	28	0.6484
1-Apr-08	10:13	1.4041	14.79	28	0.6550
1-Apr-08	10:14	1.4068	14.84	28	0.6616
1-Apr-08	10:15	1.4092	14.88	28	0.6681
1-Apr-08	10:16	1.4111	14.93	28	0.6746
1-Apr-08	10:17	1.4128	14.97	28	0.6810
1-Apr-08	10:18	1.4142	15.02	28	0.6874
1-Apr-08	10:19	1.4154	15.06	28	0.6937
1-Apr-08	10:20	1.4164	15.10	28	0.7000
1-Apr-08	10:21	1.4173	15.14	28	0.7063
1-Apr-08	10:22	1.4181	15.19	28	0.7125
1-Apr-08	10:23	1.4188	15.23	28	0.7187
1-Apr-08	10:24	1.4195	15.27	28	0.7248
1-Apr-08	10:25	1.4201	15.31	28	0.7308
1-Apr-08	10:26	1.4206	15.35	28	0.7369
1-Apr-08	10:27	1.4211	15.39	28	0.7428
1-Apr-08	10:28	1.4215	15.44	28	0.7488
1-Apr-08	10:29	1.4218	15.48	28	0.7546
1-Apr-08	10:30	1.4221	15.52	28	0.7605
1-Apr-08	10:31	1.4224	15.55	28	0.7662
1-Apr-08	10:32	1.4227	15.59	28	0.7720
1-Apr-08	10:33	1.4229	15.63	28	0.7776
1-Apr-08	10:34	1.4232	15.67	28	0.7833
1-Apr-08	10:35	1.4235	15.71	28	0.7889
1-Apr-08	10:36	1.4237	15.75	28	0.7944
1-Apr-08	10:37	1.4240	15.79	28	0.7999
1-Apr-08	10:38	1.4243	15.82	28	0.8053
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1-Apr-08	10:40	1.4248	15.90	28	0.8168
1-Apr-08	10:41	1.4251	15.93	28	0.8226
1-Apr-08	10:42	1.4253	15.97	28	0.8282
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1-Apr-08	10:46	1.4264	16.11	28	0.8505

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1-Apr-08	10:48	1.4269	16.18	28	0.8613
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1-Apr-08	10:50	1.4274	16.24	28	0.8719
1-Apr-08	10:51	1.4311	16.28	28	0.8771
1-Apr-08	10:52	1.4421	16.31	28	0.8824
1-Apr-08	10:53	1.4631	16.35	28	0.8878
1-Apr-08	10:54	1.4981	16.38	28	0.8934
1-Apr-08	10:55	1.5504	16.42	28	0.8993
1-Apr-08	10:56	1.6160	16.46	28	0.9058
1-Apr-08	10:57	1.6895	16.50	28	0.9128
1-Apr-08	10:58	1.7653	16.55	28	0.9205
1-Apr-08	10:59	1.8400	16.61	28	0.9288
1-Apr-08	11:00	1.9088	16.66	28	0.9377
1-Apr-08	11:01	1.9707	16.72	28	0.9472
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1-Apr-08	11:08	2.1850	17.19	28	1.0222
1-Apr-08	11:09	2.1978	17.26	28	1.0338
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1-Apr-08	11:31	3.3711	18.96	28	1.3217
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1-Apr-08	11:33	3.6078	19.22	28	1.3670
1-Apr-08	11:34	3.7225	19.35	28	1.3911
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1-Apr-08	11:36	3.9796	19.65	28	1.4424

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1-Apr-08	11:39	4.3705	20.13	28	1.5307
1-Apr-08	11:40	4.4825	20.30	28	1.5622
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1-Apr-08	11:42	4.7388	20.67	28	1.6280
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1-Apr-08	11:45	5.4521	21.27	28	1.7409
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1-Apr-08	11:54	9.1128	24.05	28	2.6364
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1-Apr-08	11:56	10.5508	24.88	28	3.0537
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1-Apr-08	12:30	3.8208	31.55	28	6.2680
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1-Apr-08	13:16	1.8170	25.37	28	3.3336

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1-Apr-08	15:16	0.8026	20.16	28	1.5351
1-Apr-08	15:17	0.8012	20.11	28	1.5271
1-Apr-08	15:18	0.8001	20.07	28	1.5193
1-Apr-08	15:19	0.7992	20.03	28	1.5114
1-Apr-08	15:20	0.7984	19.98	28	1.5037
1-Apr-08	15:21	0.7978	19.94	28	1.4960
1-Apr-08	15:22	0.7973	19.90	28	1.4884
1-Apr-08	15:23	0.7969	19.86	28	1.4809
1-Apr-08	15:24	0.7965	19.82	28	1.4735
1-Apr-08	15:25	0.7962	19.78	28	1.4661
1-Apr-08	15:26	0.7960	19.74	28	1.4588
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1-Apr-08	15:33	0.7956	19.47	28	1.4111
1-Apr-08	15:34	0.7956	19.43	28	1.4046
1-Apr-08	15:35	0.7956	19.39	28	1.3982
1-Apr-08	15:36	0.7957	19.36	28	1.3919
1-Apr-08	15:37	0.7957	19.32	28	1.3857
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1-Apr-08	15:39	0.7957	19.25	28	1.3733
1-Apr-08	15:40	0.7957	19.22	28	1.3673
1-Apr-08	15:41	0.7957	19.18	28	1.3613
1-Apr-08	15:42	0.7957	19.15	28	1.3554
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1-Apr-08	20:04	0.4147	14.33	28	0.5903
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1-Apr-08	20:06	0.4147	14.31	28	0.5875
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1-Apr-08	20:12	0.4147	14.25	28	0.5793
1-Apr-08	20:13	0.4147	14.24	28	0.5780
1-Apr-08	20:14	0.4147	14.23	28	0.5767
1-Apr-08	20:15	0.4147	14.22	28	0.5754
1-Apr-08	20:16	0.4147	14.21	28	0.5741
1-Apr-08	20:17	0.4147	14.20	28	0.5728
1-Apr-08	20:18	0.4148	14.19	28	0.5715
1-Apr-08	20:19	0.4148	14.18	28	0.5702
1-Apr-08	20:20	0.4148	14.17	28	0.5690
1-Apr-08	20:21	0.4148	14.16	28	0.5677
1-Apr-08	20:22	0.4148	14.15	28	0.5665
1-Apr-08	20:23	0.4148	14.14	28	0.5653
1-Apr-08	20:24	0.4148	14.14	28	0.5641
1-Apr-08	20:25	0.4148	14.13	28	0.5629
1-Apr-08	20:26	0.4148	14.12	28	0.5617
1-Apr-08	20:27	0.4148	14.11	28	0.5605
1-Apr-08	20:28	0.4148	14.10	28	0.5593
1-Apr-08	20:29	0.4148	14.09	28	0.5582
1-Apr-08	20:30	0.4148	14.08	28	0.5570
1-Apr-08	20:31	0.4148	14.07	28	0.5559
1-Apr-08	20:32	0.4148	14.07	28	0.5547
1-Apr-08	20:33	0.4148	14.06	28	0.5536
1-Apr-08	20:34	0.4148	14.05	28	0.5525
1-Apr-08	20:35	0.4148	14.04	28	0.5514
1-Apr-08	20:36	0.4148	14.03	28	0.5503
1-Apr-08	20:37	0.4148	14.03	28	0.5492
1-Apr-08	20:38	0.4148	14.02	28	0.5481
1-Apr-08	20:39	0.4148	14.01	28	0.5470
1-Apr-08	20:40	0.4148	14.00	28	0.5460
1-Apr-08	20:41	0.4148	13.99	28	0.5449
1-Apr-08	20:42	0.4148	13.99	28	0.5439
1-Apr-08	20:43	0.4148	13.98	28	0.5428
1-Apr-08	20:44	0.4148	13.97	28	0.5418
1-Apr-08	20:45	0.4148	13.96	28	0.5408
1-Apr-08	20:46	0.4148	13.96	28	0.5397

1-Apr-08	20:47	0.4148	13.95	28	0.5387
1-Apr-08	20:48	0.4148	13.94	28	0.5377
1-Apr-08	20:49	0.4148	13.93	28	0.5367
1-Apr-08	20:50	0.4148	13.93	28	0.5358
1-Apr-08	20:51	0.4148	13.92	28	0.5348
1-Apr-08	20:52	0.4148	13.91	28	0.5338
1-Apr-08	20:53	0.4148	13.90	28	0.5329
1-Apr-08	20:54	0.4148	13.90	28	0.5319
1-Apr-08	20:55	0.4148	13.89	28	0.5310
1-Apr-08	20:56	0.4148	13.88	28	0.5300
1-Apr-08	20:57	0.4148	13.88	28	0.5291
1-Apr-08	20:58	0.4148	13.87	28	0.5282
1-Apr-08	20:59	0.4148	13.86	28	0.5273
1-Apr-08	21:00	0.4148	13.86	28	0.5264
1-Apr-08	21:01	0.4148	13.85	28	0.5255
1-Apr-08	21:02	0.4148	13.84	28	0.5246
1-Apr-08	21:03	0.4148	13.84	28	0.5237
1-Apr-08	21:04	0.4148	13.83	28	0.5228
1-Apr-08	21:05	0.4148	13.82	28	0.5219
1-Apr-08	21:06	0.4149	13.82	28	0.5211
1-Apr-08	21:07	0.4149	13.81	28	0.5202
1-Apr-08	21:08	0.4149	13.80	28	0.5194
1-Apr-08	21:09	0.4149	13.80	28	0.5185
1-Apr-08	21:10	0.4149	13.79	28	0.5177
1-Apr-08	21:11	0.4149	13.79	28	0.5169
1-Apr-08	21:12	0.4149	13.78	28	0.5161
1-Apr-08	21:13	0.4149	13.77	28	0.5152
1-Apr-08	21:14	0.4149	13.77	28	0.5144
1-Apr-08	21:15	0.4149	13.76	28	0.5136
1-Apr-08	21:16	0.4149	13.76	28	0.5128
1-Apr-08	21:17	0.4149	13.75	28	0.5120
1-Apr-08	21:18	0.4149	13.74	28	0.5113
1-Apr-08	21:19	0.4149	13.74	28	0.5105
1-Apr-08	21:20	0.4149	13.73	28	0.5097
1-Apr-08	21:21	0.4149	13.73	28	0.5090
1-Apr-08	21:22	0.4149	13.72	28	0.5082
1-Apr-08	21:23	0.4149	13.72	28	0.5074
1-Apr-08	21:24	0.4149	13.71	28	0.5067
1-Apr-08	21:25	0.4149	13.70	28	0.5060
1-Apr-08	21:26	0.4149	13.70	28	0.5052
1-Apr-08	21:27	0.4149	13.69	28	0.5045
1-Apr-08	21:28	0.4149	13.69	28	0.5038
1-Apr-08	21:29	0.4149	13.68	28	0.5031
1-Apr-08	21:30	0.4149	13.68	28	0.5023
1-Apr-08	21:31	0.4149	13.67	28	0.5016
1-Apr-08	21:32	0.4149	13.67	28	0.5009
1-Apr-08	21:33	0.4149	13.66	28	0.5003
1-Apr-08	21:34	0.4149	13.66	28	0.4996
1-Apr-08	21:35	0.4149	13.65	28	0.4989
1-Apr-08	21:36	0.4149	13.65	28	0.4982

1-Apr-08	21:37	0.4149	13.64	28	0.4975
1-Apr-08	21:38	0.4149	13.64	28	0.4969
1-Apr-08	21:39	0.4149	13.63	28	0.4962
1-Apr-08	21:40	0.4149	13.63	28	0.4956
1-Apr-08	21:41	0.4149	13.62	28	0.4949
1-Apr-08	21:42	0.4149	13.62	28	0.4943
1-Apr-08	21:43	0.4149	13.61	28	0.4936
1-Apr-08	21:44	0.4149	13.61	28	0.4930
1-Apr-08	21:45	0.4149	13.60	28	0.4924
1-Apr-08	21:46	0.4149	13.60	28	0.4917
1-Apr-08	21:47	0.4149	13.59	28	0.4911
1-Apr-08	21:48	0.4149	13.59	28	0.4905
1-Apr-08	21:49	0.4149	13.59	28	0.4899
1-Apr-08	21:50	0.4149	13.58	28	0.4893
1-Apr-08	21:51	0.4149	13.58	28	0.4887
1-Apr-08	21:52	0.4149	13.57	28	0.4881
1-Apr-08	21:53	0.4149	13.57	28	0.4875
1-Apr-08	21:54	0.4149	13.56	28	0.4869
1-Apr-08	21:55	0.4150	13.56	28	0.4863
1-Apr-08	21:56	0.4150	13.55	28	0.4858
1-Apr-08	21:57	0.4150	13.55	28	0.4852
1-Apr-08	21:58	0.4150	13.55	28	0.4846
1-Apr-08	21:59	0.4150	13.54	28	0.4841
1-Apr-08	22:00	0.4150	13.54	28	0.4835
1-Apr-08	22:01	0.4150	13.53	28	0.4830
1-Apr-08	22:02	0.4150	13.53	28	0.4824
1-Apr-08	22:03	0.4150	13.53	28	0.4819
1-Apr-08	22:04	0.4150	13.52	28	0.4813
1-Apr-08	22:05	0.4150	13.52	28	0.4808
1-Apr-08	22:06	0.4150	13.51	28	0.4803
1-Apr-08	22:07	0.4150	13.51	28	0.4797
1-Apr-08	22:08	0.4150	13.51	28	0.4792
1-Apr-08	22:09	0.4150	13.50	28	0.4787
1-Apr-08	22:10	0.4150	13.50	28	0.4782
1-Apr-08	22:11	0.4150	13.49	28	0.4777
1-Apr-08	22:12	0.4150	13.49	28	0.4772
1-Apr-08	22:13	0.4150	13.49	28	0.4767
1-Apr-08	22:14	0.4150	13.48	28	0.4762
1-Apr-08	22:15	0.4150	13.48	28	0.4757
1-Apr-08	22:16	0.4150	13.48	28	0.4752
1-Apr-08	22:17	0.4150	13.47	28	0.4747
1-Apr-08	22:18	0.4150	13.47	28	0.4742
1-Apr-08	22:19	0.4150	13.47	28	0.4738
1-Apr-08	22:20	0.4150	13.46	28	0.4733
1-Apr-08	22:21	0.4150	13.46	28	0.4728
1-Apr-08	22:22	0.4150	13.46	28	0.4723
1-Apr-08	22:23	0.4150	13.45	28	0.4719
1-Apr-08	22:24	0.4150	13.45	28	0.4714
1-Apr-08	22:25	0.4150	13.44	28	0.4710
1-Apr-08	22:26	0.4150	13.44	28	0.4705

1-Apr-08	22:27	0.4150	13.44	28	0.4701
1-Apr-08	22:28	0.4150	13.43	28	0.4696
1-Apr-08	22:29	0.4150	13.43	28	0.4692
1-Apr-08	22:30	0.4150	13.43	28	0.4688
1-Apr-08	22:31	0.4150	13.43	28	0.4683
1-Apr-08	22:32	0.4150	13.42	28	0.4679
1-Apr-08	22:33	0.4150	13.42	28	0.4675
1-Apr-08	22:34	0.4150	13.42	28	0.4670
1-Apr-08	22:35	0.4150	13.41	28	0.4666
1-Apr-08	22:36	0.4150	13.41	28	0.4662
1-Apr-08	22:37	0.4150	13.41	28	0.4658
1-Apr-08	22:38	0.4150	13.40	28	0.4654
1-Apr-08	22:39	0.4150	13.40	28	0.4650
1-Apr-08	22:40	0.4150	13.40	28	0.4646
1-Apr-08	22:41	0.4150	13.39	28	0.4642
1-Apr-08	22:42	0.4150	13.39	28	0.4638
1-Apr-08	22:43	0.4150	13.39	28	0.4634
1-Apr-08	22:44	0.4150	13.39	28	0.4630
1-Apr-08	22:45	0.4150	13.38	28	0.4626
1-Apr-08	22:46	0.4151	13.38	28	0.4622
1-Apr-08	22:47	0.4151	13.38	28	0.4619
1-Apr-08	22:48	0.4151	13.37	28	0.4615
1-Apr-08	22:49	0.4151	13.37	28	0.4611
1-Apr-08	22:50	0.4151	13.37	28	0.4608
1-Apr-08	22:51	0.4151	13.37	28	0.4604
1-Apr-08	22:52	0.4151	13.36	28	0.4601
1-Apr-08	22:53	0.4151	13.36	28	0.4598
1-Apr-08	22:54	0.4151	13.36	28	0.4594
1-Apr-08	22:55	0.4151	13.36	28	0.4591
1-Apr-08	22:56	0.4151	13.35	28	0.4588
1-Apr-08	22:57	0.4151	13.35	28	0.4585
1-Apr-08	22:58	0.4151	13.35	28	0.4582
1-Apr-08	22:59	0.4151	13.35	28	0.4579
1-Apr-08	23:00	0.4151	13.34	28	0.4576
1-Apr-08	23:01	0.4151	13.34	28	0.4573
1-Apr-08	23:02	0.4151	13.34	28	0.4569
1-Apr-08	23:03	0.4151	13.33	28	0.4566
1-Apr-08	23:04	0.4151	13.33	28	0.4563
1-Apr-08	23:05	0.4151	13.33	28	0.4560
1-Apr-08	23:06	0.4151	13.33	28	0.4558
1-Apr-08	23:07	0.4151	13.33	28	0.4555
1-Apr-08	23:08	0.4151	13.32	28	0.4552
1-Apr-08	23:09	0.4151	13.32	28	0.4549
1-Apr-08	23:10	0.4151	13.32	28	0.4546
1-Apr-08	23:11	0.4151	13.32	28	0.4543
1-Apr-08	23:12	0.4151	13.31	28	0.4540
1-Apr-08	23:13	0.4151	13.31	28	0.4537
1-Apr-08	23:14	0.4151	13.31	28	0.4535
1-Apr-08	23:15	0.4151	13.31	28	0.4532
1-Apr-08	23:16	0.4151	13.30	28	0.4529

1-Apr-08	23:17	0.4151	13.30	28	0.4526
1-Apr-08	23:18	0.4151	13.30	28	0.4524
1-Apr-08	23:19	0.4151	13.30	28	0.4521
1-Apr-08	23:20	0.4151	13.30	28	0.4518
1-Apr-08	23:21	0.4151	13.29	28	0.4516
1-Apr-08	23:22	0.4151	13.29	28	0.4513
1-Apr-08	23:23	0.4151	13.29	28	0.4510
1-Apr-08	23:24	0.4151	13.29	28	0.4508
1-Apr-08	23:25	0.4151	13.28	28	0.4505
1-Apr-08	23:26	0.4151	13.28	28	0.4503
1-Apr-08	23:27	0.4151	13.28	28	0.4500
1-Apr-08	23:28	0.4151	13.28	28	0.4498
1-Apr-08	23:29	0.4151	13.28	28	0.4495
1-Apr-08	23:30	0.4151	13.27	28	0.4493
1-Apr-08	23:31	0.4151	13.27	28	0.4490
1-Apr-08	23:32	0.4151	13.27	28	0.4488
1-Apr-08	23:33	0.4151	13.27	28	0.4485
1-Apr-08	23:34	0.4151	13.27	28	0.4483
1-Apr-08	23:35	0.4151	13.26	28	0.4480
1-Apr-08	23:36	0.4151	13.26	28	0.4478
1-Apr-08	23:37	0.4151	13.26	28	0.4476
1-Apr-08	23:38	0.4152	13.26	28	0.4473
1-Apr-08	23:39	0.4152	13.26	28	0.4471
1-Apr-08	23:40	0.4152	13.25	28	0.4469
1-Apr-08	23:41	0.4152	13.25	28	0.4466
1-Apr-08	23:42	0.4152	13.25	28	0.4464
1-Apr-08	23:43	0.4152	13.25	28	0.4462
1-Apr-08	23:44	0.4152	13.25	28	0.4460
1-Apr-08	23:45	0.4152	13.24	28	0.4457
1-Apr-08	23:46	0.4152	13.24	28	0.4455
1-Apr-08	23:47	0.4152	13.24	28	0.4453
1-Apr-08	23:48	0.4152	13.24	28	0.4451
1-Apr-08	23:49	0.4152	13.24	28	0.4449
1-Apr-08	23:50	0.4152	13.24	28	0.4447
1-Apr-08	23:51	0.4152	13.23	28	0.4444
1-Apr-08	23:52	0.4152	13.23	28	0.4442
1-Apr-08	23:53	0.4152	13.23	28	0.4440
1-Apr-08	23:54	0.4152	13.23	28	0.4438
1-Apr-08	23:55	0.4152	13.23	28	0.4436
1-Apr-08	23:56	0.4152	13.23	28	0.4434
1-Apr-08	23:57	0.4152	13.22	28	0.4432
1-Apr-08	23:58	0.4152	13.22	28	0.4430
1-Apr-08	23:59	0.4152	13.22	28	0.4428
2-Apr-08	0:00	0.4152	13.22	28	0.4426

Highgate - 50yr NO CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	5.8174
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0012	0.00	28	0.0000	
1-Apr-08	0:02	0.0047	0.00	28	0.0000	
1-Apr-08	0:03	0.0115	0.00	28	0.0000	
1-Apr-08	0:04	0.0230	0.00	28	0.0000	
1-Apr-08	0:05	0.0401	0.00	28	0.0000	
1-Apr-08	0:06	0.0616	0.01	28	0.0001	
1-Apr-08	0:07	0.0857	0.01	28	0.0001	
1-Apr-08	0:08	0.1106	0.02	28	0.0002	
1-Apr-08	0:09	0.1351	0.02	28	0.0003	
1-Apr-08	0:10	0.1576	0.03	28	0.0004	
1-Apr-08	0:11	0.1779	0.04	28	0.0006	
1-Apr-08	0:12	0.1952	0.05	28	0.0007	
1-Apr-08	0:13	0.2091	0.07	28	0.0009	
1-Apr-08	0:14	0.2200	0.08	28	0.0010	
1-Apr-08	0:15	0.2289	0.09	28	0.0012	
1-Apr-08	0:16	0.2362	0.11	28	0.0014	
1-Apr-08	0:17	0.2423	0.12	28	0.0016	
1-Apr-08	0:18	0.2473	0.14	28	0.0018	
1-Apr-08	0:19	0.2513	0.15	28	0.0020	
1-Apr-08	0:20	0.2547	0.17	28	0.0022	
1-Apr-08	0:21	0.2574	0.18	28	0.0024	
1-Apr-08	0:22	0.2596	0.20	28	0.0026	
1-Apr-08	0:23	0.2614	0.21	28	0.0028	
1-Apr-08	0:24	0.2629	0.23	28	0.0030	
1-Apr-08	0:25	0.2641	0.24	28	0.0032	
1-Apr-08	0:26	0.2651	0.26	28	0.0034	
1-Apr-08	0:27	0.2659	0.27	28	0.0036	
1-Apr-08	0:28	0.2665	0.29	28	0.0038	
1-Apr-08	0:29	0.2671	0.31	28	0.0040	
1-Apr-08	0:30	0.2675	0.32	28	0.0041	
1-Apr-08	0:31	0.2679	0.34	28	0.0043	
1-Apr-08	0:32	0.2682	0.35	28	0.0045	
1-Apr-08	0:33	0.2684	0.37	28	0.0046	
1-Apr-08	0:34	0.2686	0.38	28	0.0048	
1-Apr-08	0:35	0.2688	0.40	28	0.0050	
1-Apr-08	0:36	0.2690	0.42	28	0.0051	
1-Apr-08	0:37	0.2691	0.43	28	0.0053	
1-Apr-08	0:38	0.2691	0.45	28	0.0054	
1-Apr-08	0:39	0.2692	0.46	28	0.0056	
1-Apr-08	0:40	0.2692	0.48	28	0.0058	
1-Apr-08	0:41	0.2692	0.50	28	0.0059	
1-Apr-08	0:42	0.2692	0.51	28	0.0061	
1-Apr-08	0:43	0.2692	0.53	28	0.0063	
1-Apr-08	0:44	0.2692	0.54	28	0.0064	
1-Apr-08	0:45	0.2692	0.56	28	0.0066	
1-Apr-08	0:46	0.2692	0.57	28	0.0067	

1-Apr-08	0:47	0.2692	0.59	28	0.0069
1-Apr-08	0:48	0.2692	0.61	28	0.0071
1-Apr-08	0:49	0.2692	0.62	28	0.0072
1-Apr-08	0:50	0.2692	0.64	28	0.0074
1-Apr-08	0:51	0.2692	0.65	28	0.0075
1-Apr-08	0:52	0.2692	0.67	28	0.0077
1-Apr-08	0:53	0.2692	0.68	28	0.0079
1-Apr-08	0:54	0.2692	0.70	28	0.0080
1-Apr-08	0:55	0.2692	0.72	28	0.0082
1-Apr-08	0:56	0.2692	0.73	28	0.0084
1-Apr-08	0:57	0.2692	0.75	28	0.0085
1-Apr-08	0:58	0.2692	0.76	28	0.0087
1-Apr-08	0:59	0.2692	0.78	28	0.0088
1-Apr-08	1:00	0.2692	0.79	28	0.0090
1-Apr-08	1:01	0.2692	0.81	28	0.0092
1-Apr-08	1:02	0.2692	0.82	28	0.0093
1-Apr-08	1:03	0.2692	0.84	28	0.0095
1-Apr-08	1:04	0.2692	0.86	28	0.0096
1-Apr-08	1:05	0.2692	0.87	28	0.0098
1-Apr-08	1:06	0.2692	0.89	28	0.0100
1-Apr-08	1:07	0.2692	0.90	28	0.0101
1-Apr-08	1:08	0.2692	0.92	28	0.0103
1-Apr-08	1:09	0.2692	0.93	28	0.0104
1-Apr-08	1:10	0.2692	0.95	28	0.0106
1-Apr-08	1:11	0.2692	0.96	28	0.0108
1-Apr-08	1:12	0.2692	0.98	28	0.0109
1-Apr-08	1:13	0.2692	1.00	28	0.0111
1-Apr-08	1:14	0.2692	1.01	28	0.0112
1-Apr-08	1:15	0.2692	1.03	28	0.0114
1-Apr-08	1:16	0.2692	1.04	28	0.0115
1-Apr-08	1:17	0.2692	1.06	28	0.0117
1-Apr-08	1:18	0.2692	1.07	28	0.0119
1-Apr-08	1:19	0.2692	1.09	28	0.0120
1-Apr-08	1:20	0.2692	1.10	28	0.0122
1-Apr-08	1:21	0.2692	1.12	28	0.0123
1-Apr-08	1:22	0.2692	1.13	28	0.0124
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1-Apr-08	1:27	0.2692	1.21	28	0.0131
1-Apr-08	1:28	0.2692	1.23	28	0.0133
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1-Apr-08	1:31	0.2692	1.27	28	0.0137
1-Apr-08	1:32	0.2692	1.29	28	0.0138
1-Apr-08	1:33	0.2692	1.30	28	0.0140
1-Apr-08	1:34	0.2692	1.32	28	0.0141
1-Apr-08	1:35	0.2692	1.33	28	0.0142
1-Apr-08	1:36	0.2692	1.35	28	0.0144

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1-Apr-08	1:38	0.2692	1.38	28	0.0146
1-Apr-08	1:39	0.2692	1.40	28	0.0148
1-Apr-08	1:40	0.2692	1.41	28	0.0149
1-Apr-08	1:41	0.2692	1.43	28	0.0150
1-Apr-08	1:42	0.2692	1.44	28	0.0152
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1-Apr-08	1:44	0.2692	1.47	28	0.0155
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1-Apr-08	2:37	0.2710	2.27	28	0.0214
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1-Apr-08	2:39	0.2711	2.30	28	0.0215
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1-Apr-08	2:41	0.2712	2.33	28	0.0216
1-Apr-08	2:42	0.2713	2.35	28	0.0217
1-Apr-08	2:43	0.2713	2.36	28	0.0218
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1-Apr-08	3:09	0.2724	2.75	28	0.0236
1-Apr-08	3:10	0.2724	2.76	28	0.0237
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1-Apr-08	5:02	0.2767	4.43	28	0.0301
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1-Apr-08	5:08	0.2769	4.52	28	0.0304
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1-Apr-08	5:12	0.2770	4.58	28	0.0306
1-Apr-08	5:13	0.2771	4.59	28	0.0307
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1-Apr-08	5:15	0.2771	4.62	28	0.0308
1-Apr-08	5:16	0.2772	4.63	28	0.0308
1-Apr-08	5:17	0.2772	4.65	28	0.0309
1-Apr-08	5:18	0.2772	4.66	28	0.0309
1-Apr-08	5:19	0.2773	4.68	28	0.0310
1-Apr-08	5:20	0.2773	4.69	28	0.0310
1-Apr-08	5:21	0.2773	4.71	28	0.0311
1-Apr-08	5:22	0.2774	4.72	28	0.0311
1-Apr-08	5:23	0.2774	4.74	28	0.0312
1-Apr-08	5:24	0.2774	4.75	28	0.0312
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1-Apr-08	5:28	0.2776	4.81	28	0.0315
1-Apr-08	5:29	0.2776	4.83	28	0.0315
1-Apr-08	5:30	0.2776	4.84	28	0.0316
1-Apr-08	5:31	0.2777	4.86	28	0.0316
1-Apr-08	5:32	0.2777	4.87	28	0.0317
1-Apr-08	5:33	0.2777	4.89	28	0.0317
1-Apr-08	5:34	0.2778	4.90	28	0.0318
1-Apr-08	5:35	0.2778	4.92	28	0.0318
1-Apr-08	5:36	0.2778	4.93	28	0.0319
1-Apr-08	5:37	0.2779	4.94	28	0.0319
1-Apr-08	5:38	0.2779	4.96	28	0.0320
1-Apr-08	5:39	0.2779	4.97	28	0.0320
1-Apr-08	5:40	0.2780	4.99	28	0.0321
1-Apr-08	5:41	0.2780	5.00	28	0.0322
1-Apr-08	5:42	0.2780	5.02	28	0.0322
1-Apr-08	5:43	0.2781	5.03	28	0.0323
1-Apr-08	5:44	0.2781	5.05	28	0.0323
1-Apr-08	5:45	0.2781	5.06	28	0.0324
1-Apr-08	5:46	0.2782	5.08	28	0.0324

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1-Apr-08	5:48	0.2782	5.11	28	0.0325
1-Apr-08	5:49	0.2783	5.12	28	0.0326
1-Apr-08	5:50	0.2783	5.14	28	0.0326
1-Apr-08	5:51	0.2797	5.15	28	0.0327
1-Apr-08	5:52	0.2841	5.17	28	0.0327
1-Apr-08	5:53	0.2924	5.18	28	0.0328
1-Apr-08	5:54	0.3064	5.20	28	0.0329
1-Apr-08	5:55	0.3273	5.21	28	0.0329
1-Apr-08	5:56	0.3536	5.23	28	0.0330
1-Apr-08	5:57	0.3830	5.25	28	0.0330
1-Apr-08	5:58	0.4133	5.28	28	0.0331
1-Apr-08	5:59	0.4432	5.30	28	0.0332
1-Apr-08	6:00	0.4708	5.32	28	0.0332
1-Apr-08	6:01	0.4955	5.35	28	0.0333
1-Apr-08	6:02	0.5168	5.38	28	0.0334
1-Apr-08	6:03	0.5338	5.41	28	0.0335
1-Apr-08	6:04	0.5472	5.44	28	0.0335
1-Apr-08	6:05	0.5582	5.47	28	0.0336
1-Apr-08	6:06	0.5672	5.50	28	0.0337
1-Apr-08	6:07	0.5748	5.53	28	0.0338
1-Apr-08	6:08	0.5810	5.57	28	0.0339
1-Apr-08	6:09	0.5861	5.60	28	0.0340
1-Apr-08	6:10	0.5902	5.63	28	0.0341
1-Apr-08	6:11	0.5937	5.67	28	0.0342
1-Apr-08	6:12	0.5965	5.70	28	0.0342
1-Apr-08	6:13	0.5989	5.73	28	0.0343
1-Apr-08	6:14	0.6008	5.77	28	0.0344
1-Apr-08	6:15	0.6024	5.80	28	0.0345
1-Apr-08	6:16	0.6037	5.84	28	0.0346
1-Apr-08	6:17	0.6049	5.87	28	0.0347
1-Apr-08	6:18	0.6058	5.91	28	0.0348
1-Apr-08	6:19	0.6066	5.94	28	0.0349
1-Apr-08	6:20	0.6073	5.97	28	0.0350
1-Apr-08	6:21	0.6079	6.01	28	0.0351
1-Apr-08	6:22	0.6084	6.04	28	0.0352
1-Apr-08	6:23	0.6089	6.08	28	0.0353
1-Apr-08	6:24	0.6093	6.11	28	0.0354
1-Apr-08	6:25	0.6096	6.15	28	0.0354
1-Apr-08	6:26	0.6099	6.18	28	0.0355
1-Apr-08	6:27	0.6102	6.21	28	0.0356
1-Apr-08	6:28	0.6104	6.25	28	0.0357
1-Apr-08	6:29	0.6106	6.28	28	0.0358
1-Apr-08	6:30	0.6108	6.32	28	0.0359
1-Apr-08	6:31	0.6109	6.35	28	0.0360
1-Apr-08	6:32	0.6111	6.39	28	0.0361
1-Apr-08	6:33	0.6112	6.42	28	0.0362
1-Apr-08	6:34	0.6113	6.46	28	0.0364
1-Apr-08	6:35	0.6115	6.49	28	0.0365
1-Apr-08	6:36	0.6116	6.53	28	0.0366

1-Apr-08	6:37	0.6117	6.56	28	0.0367
1-Apr-08	6:38	0.6119	6.59	28	0.0369
1-Apr-08	6:39	0.6120	6.63	28	0.0370
1-Apr-08	6:40	0.6122	6.66	28	0.0371
1-Apr-08	6:41	0.6123	6.70	28	0.0372
1-Apr-08	6:42	0.6124	6.73	28	0.0373
1-Apr-08	6:43	0.6126	6.77	28	0.0375
1-Apr-08	6:44	0.6127	6.80	28	0.0376
1-Apr-08	6:45	0.6128	6.84	28	0.0377
1-Apr-08	6:46	0.6130	6.87	28	0.0378
1-Apr-08	6:47	0.6131	6.90	28	0.0380
1-Apr-08	6:48	0.6132	6.94	28	0.0381
1-Apr-08	6:49	0.6133	6.97	28	0.0382
1-Apr-08	6:50	0.6135	7.01	28	0.0383
1-Apr-08	6:51	0.6136	7.04	28	0.0384
1-Apr-08	6:52	0.6137	7.08	28	0.0386
1-Apr-08	6:53	0.6139	7.11	28	0.0387
1-Apr-08	6:54	0.6140	7.15	28	0.0388
1-Apr-08	6:55	0.6141	7.18	28	0.0389
1-Apr-08	6:56	0.6143	7.22	28	0.0391
1-Apr-08	6:57	0.6144	7.25	28	0.0392
1-Apr-08	6:58	0.6145	7.28	28	0.0393
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1-Apr-08	7:00	0.6148	7.35	28	0.0395
1-Apr-08	7:01	0.6149	7.39	28	0.0397
1-Apr-08	7:02	0.6150	7.42	28	0.0398
1-Apr-08	7:03	0.6152	7.46	28	0.0399
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1-Apr-08	7:05	0.6154	7.53	28	0.0401
1-Apr-08	7:06	0.6155	7.56	28	0.0401
1-Apr-08	7:07	0.6157	7.59	28	0.0402
1-Apr-08	7:08	0.6158	7.63	28	0.0403
1-Apr-08	7:09	0.6159	7.66	28	0.0403
1-Apr-08	7:10	0.6160	7.70	28	0.0404
1-Apr-08	7:11	0.6162	7.73	28	0.0404
1-Apr-08	7:12	0.6163	7.77	28	0.0405
1-Apr-08	7:13	0.6164	7.80	28	0.0406
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1-Apr-08	7:15	0.6166	7.87	28	0.0407
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1-Apr-08	7:17	0.6169	7.94	28	0.0408
1-Apr-08	7:18	0.6170	7.97	28	0.0409
1-Apr-08	7:19	0.6171	8.01	28	0.0409
1-Apr-08	7:20	0.6172	8.04	28	0.0410
1-Apr-08	7:21	0.6174	8.08	28	0.0410
1-Apr-08	7:22	0.6175	8.11	28	0.0411
1-Apr-08	7:23	0.6176	8.15	28	0.0412
1-Apr-08	7:24	0.6177	8.18	28	0.0412
1-Apr-08	7:25	0.6178	8.22	28	0.0413
1-Apr-08	7:26	0.6180	8.25	28	0.0413

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1-Apr-08	7:28	0.6182	8.32	28	0.0415
1-Apr-08	7:29	0.6183	8.36	28	0.0415
1-Apr-08	7:30	0.6184	8.39	28	0.0416
1-Apr-08	7:31	0.6185	8.42	28	0.0416
1-Apr-08	7:32	0.6187	8.46	28	0.0417
1-Apr-08	7:33	0.6188	8.49	28	0.0418
1-Apr-08	7:34	0.6189	8.53	28	0.0418
1-Apr-08	7:35	0.6190	8.56	28	0.0419
1-Apr-08	7:36	0.6191	8.60	28	0.0419
1-Apr-08	7:37	0.6192	8.63	28	0.0421
1-Apr-08	7:38	0.6194	8.67	28	0.0437
1-Apr-08	7:39	0.6195	8.70	28	0.0453
1-Apr-08	7:40	0.6196	8.74	28	0.0469
1-Apr-08	7:41	0.6197	8.77	28	0.0485
1-Apr-08	7:42	0.6198	8.80	28	0.0501
1-Apr-08	7:43	0.6199	8.84	28	0.0516
1-Apr-08	7:44	0.6200	8.87	28	0.0532
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1-Apr-08	7:46	0.6203	8.94	28	0.0564
1-Apr-08	7:47	0.6204	8.97	28	0.0580
1-Apr-08	7:48	0.6205	9.01	28	0.0595
1-Apr-08	7:49	0.6206	9.04	28	0.0611
1-Apr-08	7:50	0.6207	9.08	28	0.0626
1-Apr-08	7:51	0.6208	9.11	28	0.0642
1-Apr-08	7:52	0.6209	9.14	28	0.0657
1-Apr-08	7:53	0.6210	9.18	28	0.0673
1-Apr-08	7:54	0.6211	9.21	28	0.0688
1-Apr-08	7:55	0.6213	9.24	28	0.0704
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1-Apr-08	7:57	0.6215	9.31	28	0.0734
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1-Apr-08	7:59	0.6217	9.37	28	0.0765
1-Apr-08	8:00	0.6218	9.41	28	0.0780
1-Apr-08	8:01	0.6219	9.44	28	0.0795
1-Apr-08	8:02	0.6220	9.47	28	0.0810
1-Apr-08	8:03	0.6221	9.50	28	0.0825
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1-Apr-08	8:05	0.6223	9.57	28	0.0855
1-Apr-08	8:06	0.6224	9.60	28	0.0870
1-Apr-08	8:07	0.6225	9.63	28	0.0885
1-Apr-08	8:08	0.6226	9.66	28	0.0900
1-Apr-08	8:09	0.6228	9.70	28	0.0915
1-Apr-08	8:10	0.6229	9.73	28	0.0930
1-Apr-08	8:11	0.6230	9.76	28	0.0944
1-Apr-08	8:12	0.6231	9.79	28	0.0959
1-Apr-08	8:13	0.6232	9.82	28	0.0984
1-Apr-08	8:14	0.6233	9.85	28	0.1010
1-Apr-08	8:15	0.6234	9.89	28	0.1035
1-Apr-08	8:16	0.6235	9.92	28	0.1061

1-Apr-08	8:17	0.6236	9.95	28	0.1086
1-Apr-08	8:18	0.6237	9.98	28	0.1111
1-Apr-08	8:19	0.6238	10.01	28	0.1136
1-Apr-08	8:20	0.6239	10.04	28	0.1161
1-Apr-08	8:21	0.6240	10.07	28	0.1186
1-Apr-08	8:22	0.6241	10.10	28	0.1211
1-Apr-08	8:23	0.6242	10.13	28	0.1235
1-Apr-08	8:24	0.6243	10.16	28	0.1260
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1-Apr-08	8:26	0.6245	10.22	28	0.1308
1-Apr-08	8:27	0.6246	10.25	28	0.1332
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1-Apr-08	8:29	0.6248	10.31	28	0.1380
1-Apr-08	8:30	0.6249	10.34	28	0.1404
1-Apr-08	8:31	0.6250	10.37	28	0.1427
1-Apr-08	8:32	0.6251	10.40	28	0.1451
1-Apr-08	8:33	0.6252	10.42	28	0.1474
1-Apr-08	8:34	0.6253	10.45	28	0.1498
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1-Apr-08	8:36	0.6255	10.51	28	0.1544
1-Apr-08	8:37	0.6256	10.54	28	0.1567
1-Apr-08	8:38	0.6257	10.57	28	0.1590
1-Apr-08	8:39	0.6258	10.59	28	0.1613
1-Apr-08	8:40	0.6259	10.62	28	0.1635
1-Apr-08	8:41	0.6260	10.65	28	0.1658
1-Apr-08	8:42	0.6261	10.68	28	0.1680
1-Apr-08	8:43	0.6262	10.70	28	0.1703
1-Apr-08	8:44	0.6263	10.73	28	0.1725
1-Apr-08	8:45	0.6264	10.76	28	0.1747
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1-Apr-08	8:47	0.6265	10.81	28	0.1791
1-Apr-08	8:48	0.6266	10.84	28	0.1813
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1-Apr-08	8:50	0.6268	10.89	28	0.1856
1-Apr-08	8:51	0.6277	10.92	28	0.1878
1-Apr-08	8:52	0.6303	10.94	28	0.1900
1-Apr-08	8:53	0.6351	10.97	28	0.1922
1-Apr-08	8:54	0.6431	11.00	28	0.1949
1-Apr-08	8:55	0.6551	11.03	28	0.1977
1-Apr-08	8:56	0.6701	11.05	28	0.2006
1-Apr-08	8:57	0.6870	11.08	28	0.2035
1-Apr-08	8:58	0.7043	11.11	28	0.2066
1-Apr-08	8:59	0.7214	11.14	28	0.2097
1-Apr-08	9:00	0.7371	11.17	28	0.2129
1-Apr-08	9:01	0.7513	11.20	28	0.2162
1-Apr-08	9:02	0.7635	11.24	28	0.2195
1-Apr-08	9:03	0.7732	11.27	28	0.2229
1-Apr-08	9:04	0.7809	11.30	28	0.2263
1-Apr-08	9:05	0.7873	11.34	28	0.2297
1-Apr-08	9:06	0.7925	11.37	28	0.2332

1-Apr-08	9:07	0.7968	11.40	28	0.2367
1-Apr-08	9:08	0.8004	11.44	28	0.2401
1-Apr-08	9:09	0.8034	11.47	28	0.2436
1-Apr-08	9:10	0.8058	11.50	28	0.2470
1-Apr-08	9:11	0.8078	11.54	28	0.2505
1-Apr-08	9:12	0.8095	11.57	28	0.2539
1-Apr-08	9:13	0.8109	11.60	28	0.2574
1-Apr-08	9:14	0.8121	11.64	28	0.2608
1-Apr-08	9:15	0.8131	11.67	28	0.2642
1-Apr-08	9:16	0.8139	11.70	28	0.2676
1-Apr-08	9:17	0.8146	11.74	28	0.2710
1-Apr-08	9:18	0.8152	11.77	28	0.2743
1-Apr-08	9:19	0.8157	11.80	28	0.2776
1-Apr-08	9:20	0.8162	11.83	28	0.2810
1-Apr-08	9:21	0.8166	11.86	28	0.2843
1-Apr-08	9:22	0.8169	11.90	28	0.2876
1-Apr-08	9:23	0.8173	11.93	28	0.2908
1-Apr-08	9:24	0.8176	11.96	28	0.2941
1-Apr-08	9:25	0.8178	11.99	28	0.2973
1-Apr-08	9:26	0.8181	12.02	28	0.3005
1-Apr-08	9:27	0.8183	12.05	28	0.3037
1-Apr-08	9:28	0.8185	12.08	28	0.3069
1-Apr-08	9:29	0.8186	12.11	28	0.3100
1-Apr-08	9:30	0.8188	12.15	28	0.3132
1-Apr-08	9:31	0.8189	12.18	28	0.3165
1-Apr-08	9:32	0.8191	12.21	28	0.3201
1-Apr-08	9:33	0.8192	12.24	28	0.3237
1-Apr-08	9:34	0.8193	12.26	28	0.3273
1-Apr-08	9:35	0.8195	12.29	28	0.3309
1-Apr-08	9:36	0.8196	12.32	28	0.3344
1-Apr-08	9:37	0.8198	12.35	28	0.3379
1-Apr-08	9:38	0.8199	12.38	28	0.3414
1-Apr-08	9:39	0.8200	12.41	28	0.3449
1-Apr-08	9:40	0.8202	12.44	28	0.3483
1-Apr-08	9:41	0.8203	12.47	28	0.3517
1-Apr-08	9:42	0.8204	12.49	28	0.3551
1-Apr-08	9:43	0.8206	12.52	28	0.3584
1-Apr-08	9:44	0.8207	12.55	28	0.3618
1-Apr-08	9:45	0.8208	12.58	28	0.3651
1-Apr-08	9:46	0.8210	12.60	28	0.3684
1-Apr-08	9:47	0.8211	12.63	28	0.3717
1-Apr-08	9:48	0.8212	12.66	28	0.3749
1-Apr-08	9:49	0.8214	12.69	28	0.3781
1-Apr-08	9:50	0.8215	12.71	28	0.3813
1-Apr-08	9:51	0.8233	12.74	28	0.3845
1-Apr-08	9:52	0.8283	12.76	28	0.3877
1-Apr-08	9:53	0.8380	12.79	28	0.3909
1-Apr-08	9:54	0.8542	12.82	28	0.3942
1-Apr-08	9:55	0.8783	12.85	28	0.3976
1-Apr-08	9:56	0.9087	12.88	28	0.4012

1-Apr-08	9:57	0.9426	12.91	28	0.4050
1-Apr-08	9:58	0.9776	12.94	28	0.4090
1-Apr-08	9:59	1.0121	12.98	28	0.4133
1-Apr-08	10:00	1.0439	13.01	28	0.4177
1-Apr-08	10:01	1.0724	13.05	28	0.4223
1-Apr-08	10:02	1.0970	13.09	28	0.4271
1-Apr-08	10:03	1.1166	13.13	28	0.4320
1-Apr-08	10:04	1.1322	13.17	28	0.4370
1-Apr-08	10:05	1.1449	13.21	28	0.4421
1-Apr-08	10:06	1.1554	13.26	28	0.4472
1-Apr-08	10:07	1.1641	13.30	28	0.4524
1-Apr-08	10:08	1.1714	13.34	28	0.4575
1-Apr-08	10:09	1.1773	13.39	28	0.4629
1-Apr-08	10:10	1.1822	13.43	28	0.4687
1-Apr-08	10:11	1.1862	13.47	28	0.4744
1-Apr-08	10:12	1.1896	13.51	28	0.4802
1-Apr-08	10:13	1.1924	13.56	28	0.4859
1-Apr-08	10:14	1.1947	13.60	28	0.4916
1-Apr-08	10:15	1.1966	13.64	28	0.4973
1-Apr-08	10:16	1.1983	13.68	28	0.5029
1-Apr-08	10:17	1.1996	13.72	28	0.5085
1-Apr-08	10:18	1.2008	13.76	28	0.5141
1-Apr-08	10:19	1.2018	13.81	28	0.5196
1-Apr-08	10:20	1.2027	13.85	28	0.5251
1-Apr-08	10:21	1.2035	13.89	28	0.5306
1-Apr-08	10:22	1.2041	13.93	28	0.5360
1-Apr-08	10:23	1.2047	13.97	28	0.5414
1-Apr-08	10:24	1.2053	14.01	28	0.5468
1-Apr-08	10:25	1.2057	14.05	28	0.5521
1-Apr-08	10:26	1.2062	14.09	28	0.5573
1-Apr-08	10:27	1.2066	14.12	28	0.5626
1-Apr-08	10:28	1.2069	14.16	28	0.5677
1-Apr-08	10:29	1.2072	14.20	28	0.5729
1-Apr-08	10:30	1.2075	14.24	28	0.5780
1-Apr-08	10:31	1.2077	14.28	28	0.5831
1-Apr-08	10:32	1.2080	14.31	28	0.5881
1-Apr-08	10:33	1.2082	14.35	28	0.5931
1-Apr-08	10:34	1.2084	14.39	28	0.5981
1-Apr-08	10:35	1.2086	14.42	28	0.6030
1-Apr-08	10:36	1.2089	14.46	28	0.6079
1-Apr-08	10:37	1.2091	14.50	28	0.6127
1-Apr-08	10:38	1.2093	14.53	28	0.6175
1-Apr-08	10:39	1.2096	14.57	28	0.6223
1-Apr-08	10:40	1.2098	14.60	28	0.6271
1-Apr-08	10:41	1.2100	14.64	28	0.6322
1-Apr-08	10:42	1.2102	14.67	28	0.6372
1-Apr-08	10:43	1.2105	14.71	28	0.6422
1-Apr-08	10:44	1.2107	14.74	28	0.6472
1-Apr-08	10:45	1.2109	14.77	28	0.6521
1-Apr-08	10:46	1.2111	14.81	28	0.6570

1-Apr-08	10:47	1.2114	14.84	28	0.6618
1-Apr-08	10:48	1.2116	14.87	28	0.6666
1-Apr-08	10:49	1.2118	14.91	28	0.6714
1-Apr-08	10:50	1.2120	14.94	28	0.6761
1-Apr-08	10:51	1.2152	14.97	28	0.6808
1-Apr-08	10:52	1.2245	15.00	28	0.6855
1-Apr-08	10:53	1.2424	15.03	28	0.6903
1-Apr-08	10:54	1.2721	15.07	28	0.6952
1-Apr-08	10:55	1.3165	15.10	28	0.7004
1-Apr-08	10:56	1.3722	15.14	28	0.7061
1-Apr-08	10:57	1.4346	15.18	28	0.7121
1-Apr-08	10:58	1.4990	15.23	28	0.7187
1-Apr-08	10:59	1.5624	15.28	28	0.7258
1-Apr-08	11:00	1.6209	15.33	28	0.7334
1-Apr-08	11:01	1.6735	15.38	28	0.7413
1-Apr-08	11:02	1.7187	15.44	28	0.7497
1-Apr-08	11:03	1.7547	15.50	28	0.7583
1-Apr-08	11:04	1.7834	15.56	28	0.7671
1-Apr-08	11:05	1.8069	15.62	28	0.7761
1-Apr-08	11:06	1.8261	15.68	28	0.7852
1-Apr-08	11:07	1.8422	15.75	28	0.7943
1-Apr-08	11:08	1.8555	15.81	28	0.8035
1-Apr-08	11:09	1.8664	15.87	28	0.8132
1-Apr-08	11:10	1.8754	15.94	28	0.8232
1-Apr-08	11:11	1.8829	16.00	28	0.8331
1-Apr-08	11:12	1.8891	16.06	28	0.8431
1-Apr-08	11:13	1.8942	16.13	28	0.8530
1-Apr-08	11:14	1.8984	16.19	28	0.8628
1-Apr-08	11:15	1.9020	16.25	28	0.8726
1-Apr-08	11:16	1.9050	16.31	28	0.8823
1-Apr-08	11:17	1.9075	16.37	28	0.8920
1-Apr-08	11:18	1.9097	16.43	28	0.9015
1-Apr-08	11:19	1.9116	16.49	28	0.9111
1-Apr-08	11:20	1.9132	16.55	28	0.9205
1-Apr-08	11:21	1.9205	16.61	28	0.9299
1-Apr-08	11:22	1.9401	16.67	28	0.9393
1-Apr-08	11:23	1.9767	16.73	28	0.9489
1-Apr-08	11:24	2.0372	16.80	28	0.9589
1-Apr-08	11:25	2.1271	16.86	28	0.9695
1-Apr-08	11:26	2.2398	16.94	28	0.9809
1-Apr-08	11:27	2.3659	17.01	28	0.9934
1-Apr-08	11:28	2.4959	17.10	28	1.0071
1-Apr-08	11:29	2.6239	17.19	28	1.0225
1-Apr-08	11:30	2.7418	17.29	28	1.0389
1-Apr-08	11:31	2.8517	17.40	28	1.0564
1-Apr-08	11:32	2.9544	17.51	28	1.0747
1-Apr-08	11:33	3.0495	17.62	28	1.0938
1-Apr-08	11:34	3.1447	17.74	28	1.1137
1-Apr-08	11:35	3.2480	17.87	28	1.1343
1-Apr-08	11:36	3.3570	18.00	28	1.1558

1-Apr-08	11:37	3.4683	18.13	28	1.1782
1-Apr-08	11:38	3.5765	18.27	28	1.2015
1-Apr-08	11:39	3.6787	18.42	28	1.2261
1-Apr-08	11:40	3.7708	18.56	28	1.2523
1-Apr-08	11:41	3.8670	18.72	28	1.2792
1-Apr-08	11:42	3.9819	18.88	28	1.3070
1-Apr-08	11:43	4.1250	19.04	28	1.3358
1-Apr-08	11:44	4.3162	19.21	28	1.3660
1-Apr-08	11:45	4.5718	19.40	28	1.3983
1-Apr-08	11:46	4.8773	19.59	28	1.4332
1-Apr-08	11:47	5.2113	19.81	28	1.4721
1-Apr-08	11:48	5.5508	20.04	28	1.5146
1-Apr-08	11:49	5.8821	20.29	28	1.5603
1-Apr-08	11:50	6.1861	20.56	28	1.6089
1-Apr-08	11:51	6.4872	20.84	28	1.6603
1-Apr-08	11:52	6.8089	21.14	28	1.7160
1-Apr-08	11:53	7.1651	21.45	28	1.7757
1-Apr-08	11:54	7.5980	21.79	28	1.8392
1-Apr-08	11:55	8.1443	22.15	28	1.9075
1-Apr-08	11:56	8.7781	22.54	28	2.0290
1-Apr-08	11:57	9.4602	22.96	28	2.1812
1-Apr-08	11:58	10.1473	23.41	28	2.3448
1-Apr-08	11:59	10.8134	23.89	28	2.5600
1-Apr-08	12:00	11.4224	24.40	28	2.8126
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1-Apr-08	12:02	12.2749	25.46	28	3.3857
1-Apr-08	12:03	12.4162	25.98	28	3.6967
1-Apr-08	12:04	12.3243	26.50	28	3.9967
1-Apr-08	12:05	11.9852	26.98	28	4.2770
1-Apr-08	12:06	11.4509	27.42	28	4.5327
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1-Apr-08	12:17	5.6251	29.15	28	5.8168
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1-Apr-08	12:19	5.0717	29.09	28	5.8003
1-Apr-08	12:20	4.8436	29.04	28	5.7656
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1-Apr-08	12:23	4.2984	28.84	28	5.5984
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1-Apr-08	12:30	3.2229	28.17	28	5.0474
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1-Apr-08	12:37	2.7424	27.40	28	4.5249
1-Apr-08	12:38	2.7147	27.30	28	4.4631
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1-Apr-08	12:41	2.6621	26.99	28	4.2861
1-Apr-08	12:42	2.6510	26.90	28	4.2301
1-Apr-08	12:43	2.6420	26.80	28	4.1757
1-Apr-08	12:44	2.6347	26.71	28	4.1229
1-Apr-08	12:45	2.6287	26.62	28	4.0716
1-Apr-08	12:46	2.6239	26.54	28	4.0220
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1-Apr-08	12:49	2.6146	26.30	28	3.8822
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1-Apr-08	12:51	2.6069	26.15	28	3.7955
1-Apr-08	12:52	2.5916	26.08	28	3.7540
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1-Apr-08	12:57	2.2640	25.72	28	3.5442
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1-Apr-08	13:02	1.8252	25.31	28	3.2979
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1-Apr-08	13:29	1.5309	23.42	28	2.3473
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1-Apr-08	13:38	1.5314	23.02	28	2.2025
1-Apr-08	13:39	1.5315	22.98	28	2.1881
1-Apr-08	13:40	1.5316	22.94	28	2.1740
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1-Apr-08	13:43	1.5318	22.83	28	2.1335
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1-Apr-08	16:10	0.6781	17.58	28	1.0864
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1-Apr-08	16:12	0.6781	17.53	28	1.0783
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1-Apr-08	21:17	0.3627	13.30	28	0.4526
1-Apr-08	21:18	0.3627	13.30	28	0.4519
1-Apr-08	21:19	0.3627	13.29	28	0.4513
1-Apr-08	21:20	0.3627	13.29	28	0.4506
1-Apr-08	21:21	0.3627	13.28	28	0.4500
1-Apr-08	21:22	0.3627	13.27	28	0.4494
1-Apr-08	21:23	0.3627	13.27	28	0.4487
1-Apr-08	21:24	0.3627	13.26	28	0.4481
1-Apr-08	21:25	0.3627	13.26	28	0.4475
1-Apr-08	21:26	0.3627	13.25	28	0.4469
1-Apr-08	21:27	0.3627	13.25	28	0.4463
1-Apr-08	21:28	0.3627	13.24	28	0.4457
1-Apr-08	21:29	0.3627	13.24	28	0.4451
1-Apr-08	21:30	0.3627	13.23	28	0.4445
1-Apr-08	21:31	0.3627	13.23	28	0.4439
1-Apr-08	21:32	0.3627	13.22	28	0.4433
1-Apr-08	21:33	0.3627	13.22	28	0.4427
1-Apr-08	21:34	0.3627	13.21	28	0.4421
1-Apr-08	21:35	0.3627	13.21	28	0.4416
1-Apr-08	21:36	0.3627	13.21	28	0.4410

1-Apr-08	21:37	0.3627	13.20	28	0.4404
1-Apr-08	21:38	0.3627	13.20	28	0.4399
1-Apr-08	21:39	0.3627	13.19	28	0.4393
1-Apr-08	21:40	0.3627	13.19	28	0.4388
1-Apr-08	21:41	0.3627	13.18	28	0.4382
1-Apr-08	21:42	0.3627	13.18	28	0.4377
1-Apr-08	21:43	0.3627	13.17	28	0.4371
1-Apr-08	21:44	0.3627	13.17	28	0.4366
1-Apr-08	21:45	0.3627	13.16	28	0.4360
1-Apr-08	21:46	0.3627	13.16	28	0.4355
1-Apr-08	21:47	0.3627	13.16	28	0.4350
1-Apr-08	21:48	0.3627	13.15	28	0.4345
1-Apr-08	21:49	0.3627	13.15	28	0.4340
1-Apr-08	21:50	0.3627	13.14	28	0.4334
1-Apr-08	21:51	0.3627	13.14	28	0.4329
1-Apr-08	21:52	0.3627	13.13	28	0.4324
1-Apr-08	21:53	0.3627	13.13	28	0.4319
1-Apr-08	21:54	0.3627	13.13	28	0.4314
1-Apr-08	21:55	0.3628	13.12	28	0.4309
1-Apr-08	21:56	0.3628	13.12	28	0.4304
1-Apr-08	21:57	0.3628	13.11	28	0.4299
1-Apr-08	21:58	0.3628	13.11	28	0.4295
1-Apr-08	21:59	0.3628	13.11	28	0.4290
1-Apr-08	22:00	0.3628	13.10	28	0.4285
1-Apr-08	22:01	0.3628	13.10	28	0.4280
1-Apr-08	22:02	0.3628	13.09	28	0.4275
1-Apr-08	22:03	0.3628	13.09	28	0.4271
1-Apr-08	22:04	0.3628	13.09	28	0.4266
1-Apr-08	22:05	0.3628	13.08	28	0.4262
1-Apr-08	22:06	0.3628	13.08	28	0.4257
1-Apr-08	22:07	0.3628	13.08	28	0.4252
1-Apr-08	22:08	0.3628	13.07	28	0.4248
1-Apr-08	22:09	0.3628	13.07	28	0.4243
1-Apr-08	22:10	0.3628	13.06	28	0.4239
1-Apr-08	22:11	0.3628	13.06	28	0.4235
1-Apr-08	22:12	0.3628	13.06	28	0.4230
1-Apr-08	22:13	0.3628	13.05	28	0.4226
1-Apr-08	22:14	0.3628	13.05	28	0.4221
1-Apr-08	22:15	0.3628	13.05	28	0.4217
1-Apr-08	22:16	0.3628	13.04	28	0.4213
1-Apr-08	22:17	0.3628	13.04	28	0.4209
1-Apr-08	22:18	0.3628	13.04	28	0.4205
1-Apr-08	22:19	0.3628	13.03	28	0.4200
1-Apr-08	22:20	0.3628	13.03	28	0.4196
1-Apr-08	22:21	0.3628	13.03	28	0.4192
1-Apr-08	22:22	0.3628	13.02	28	0.4188
1-Apr-08	22:23	0.3628	13.02	28	0.4184
1-Apr-08	22:24	0.3628	13.02	28	0.4180
1-Apr-08	22:25	0.3628	13.01	28	0.4176
1-Apr-08	22:26	0.3628	13.01	28	0.4172

1-Apr-08	22:27	0.3628	13.01	28	0.4168
1-Apr-08	22:28	0.3628	13.00	28	0.4164
1-Apr-08	22:29	0.3628	13.00	28	0.4160
1-Apr-08	22:30	0.3628	13.00	28	0.4156
1-Apr-08	22:31	0.3628	12.99	28	0.4153
1-Apr-08	22:32	0.3628	12.99	28	0.4149
1-Apr-08	22:33	0.3628	12.99	28	0.4145
1-Apr-08	22:34	0.3628	12.98	28	0.4141
1-Apr-08	22:35	0.3628	12.98	28	0.4138
1-Apr-08	22:36	0.3628	12.98	28	0.4134
1-Apr-08	22:37	0.3628	12.97	28	0.4130
1-Apr-08	22:38	0.3628	12.97	28	0.4127
1-Apr-08	22:39	0.3628	12.97	28	0.4123
1-Apr-08	22:40	0.3628	12.97	28	0.4120
1-Apr-08	22:41	0.3628	12.96	28	0.4116
1-Apr-08	22:42	0.3629	12.96	28	0.4112
1-Apr-08	22:43	0.3629	12.96	28	0.4109
1-Apr-08	22:44	0.3629	12.95	28	0.4105
1-Apr-08	22:45	0.3629	12.95	28	0.4102
1-Apr-08	22:46	0.3629	12.95	28	0.4099
1-Apr-08	22:47	0.3629	12.95	28	0.4095
1-Apr-08	22:48	0.3629	12.94	28	0.4092
1-Apr-08	22:49	0.3629	12.94	28	0.4089
1-Apr-08	22:50	0.3629	12.94	28	0.4085
1-Apr-08	22:51	0.3629	12.93	28	0.4082
1-Apr-08	22:52	0.3629	12.93	28	0.4079
1-Apr-08	22:53	0.3629	12.93	28	0.4075
1-Apr-08	22:54	0.3629	12.93	28	0.4072
1-Apr-08	22:55	0.3629	12.92	28	0.4069
1-Apr-08	22:56	0.3629	12.92	28	0.4066
1-Apr-08	22:57	0.3629	12.92	28	0.4063
1-Apr-08	22:58	0.3629	12.92	28	0.4059
1-Apr-08	22:59	0.3629	12.91	28	0.4056
1-Apr-08	23:00	0.3629	12.91	28	0.4053
1-Apr-08	23:01	0.3629	12.91	28	0.4050
1-Apr-08	23:02	0.3629	12.91	28	0.4047
1-Apr-08	23:03	0.3629	12.90	28	0.4044
1-Apr-08	23:04	0.3629	12.90	28	0.4041
1-Apr-08	23:05	0.3629	12.90	28	0.4038
1-Apr-08	23:06	0.3629	12.90	28	0.4035
1-Apr-08	23:07	0.3629	12.89	28	0.4032
1-Apr-08	23:08	0.3629	12.89	28	0.4029
1-Apr-08	23:09	0.3629	12.89	28	0.4026
1-Apr-08	23:10	0.3629	12.89	28	0.4024
1-Apr-08	23:11	0.3629	12.88	28	0.4021
1-Apr-08	23:12	0.3629	12.88	28	0.4018
1-Apr-08	23:13	0.3629	12.88	28	0.4015
1-Apr-08	23:14	0.3629	12.88	28	0.4012
1-Apr-08	23:15	0.3629	12.87	28	0.4010
1-Apr-08	23:16	0.3629	12.87	28	0.4007

1-Apr-08	23:17	0.3629	12.87	28	0.4004
1-Apr-08	23:18	0.3629	12.87	28	0.4001
1-Apr-08	23:19	0.3629	12.87	28	0.3999
1-Apr-08	23:20	0.3629	12.86	28	0.3996
1-Apr-08	23:21	0.3629	12.86	28	0.3993
1-Apr-08	23:22	0.3629	12.86	28	0.3991
1-Apr-08	23:23	0.3629	12.86	28	0.3988
1-Apr-08	23:24	0.3629	12.85	28	0.3986
1-Apr-08	23:25	0.3629	12.85	28	0.3983
1-Apr-08	23:26	0.3629	12.85	28	0.3980
1-Apr-08	23:27	0.3629	12.85	28	0.3978
1-Apr-08	23:28	0.3629	12.85	28	0.3975
1-Apr-08	23:29	0.3629	12.84	28	0.3973
1-Apr-08	23:30	0.3629	12.84	28	0.3970
1-Apr-08	23:31	0.3630	12.84	28	0.3968
1-Apr-08	23:32	0.3630	12.84	28	0.3965
1-Apr-08	23:33	0.3630	12.84	28	0.3963
1-Apr-08	23:34	0.3630	12.83	28	0.3961
1-Apr-08	23:35	0.3630	12.83	28	0.3958
1-Apr-08	23:36	0.3630	12.83	28	0.3956
1-Apr-08	23:37	0.3630	12.83	28	0.3953
1-Apr-08	23:38	0.3630	12.83	28	0.3951
1-Apr-08	23:39	0.3630	12.82	28	0.3949
1-Apr-08	23:40	0.3630	12.82	28	0.3947
1-Apr-08	23:41	0.3630	12.82	28	0.3944
1-Apr-08	23:42	0.3630	12.82	28	0.3942
1-Apr-08	23:43	0.3630	12.82	28	0.3940
1-Apr-08	23:44	0.3630	12.81	28	0.3937
1-Apr-08	23:45	0.3630	12.81	28	0.3935
1-Apr-08	23:46	0.3630	12.81	28	0.3933
1-Apr-08	23:47	0.3630	12.81	28	0.3931
1-Apr-08	23:48	0.3630	12.81	28	0.3929
1-Apr-08	23:49	0.3630	12.81	28	0.3927
1-Apr-08	23:50	0.3630	12.80	28	0.3924
1-Apr-08	23:51	0.3630	12.80	28	0.3922
1-Apr-08	23:52	0.3630	12.80	28	0.3920
1-Apr-08	23:53	0.3630	12.80	28	0.3918
1-Apr-08	23:54	0.3630	12.80	28	0.3916
1-Apr-08	23:55	0.3630	12.80	28	0.3914
1-Apr-08	23:56	0.3630	12.79	28	0.3912
1-Apr-08	23:57	0.3630	12.79	28	0.3910
1-Apr-08	23:58	0.3630	12.79	28	0.3908
1-Apr-08	23:59	0.3630	12.79	28	0.3906
2-Apr-08	0:00	0.3630	12.79	28	0.3904

Highgate - 100yr - Time Series Inflow (Wetland)					
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s
1-Apr-08	0:00	0	0	28	0
1-Apr-08	0:01	0.0015	0	28	0
1-Apr-08	0:02	0.0062	0	28	0
1-Apr-08	0:03	0.0151	0	28	0
1-Apr-08	0:04	0.0302	0	28	0
1-Apr-08	0:05	0.0526	0	28	0.0001
1-Apr-08	0:06	0.0809	0.01	28	0.0001
1-Apr-08	0:07	0.1126	0.01	28	0.0002
1-Apr-08	0:08	0.1452	0.02	28	0.0003
1-Apr-08	0:09	0.1773	0.03	28	0.0004
1-Apr-08	0:10	0.2069	0.04	28	0.0006
1-Apr-08	0:11	0.2335	0.06	28	0.0007
1-Apr-08	0:12	0.2564	0.07	28	0.0009
1-Apr-08	0:13	0.2745	0.09	28	0.0011
1-Apr-08	0:14	0.2889	0.1	28	0.0014
1-Apr-08	0:15	0.3006	0.12	28	0.0016
1-Apr-08	0:16	0.3102	0.14	28	0.0018
1-Apr-08	0:17	0.3181	0.16	28	0.0021
1-Apr-08	0:18	0.3247	0.18	28	0.0023
1-Apr-08	0:19	0.33	0.2	28	0.0026
1-Apr-08	0:20	0.3344	0.22	28	0.0028
1-Apr-08	0:21	0.3379	0.24	28	0.0031
1-Apr-08	0:22	0.3409	0.26	28	0.0033
1-Apr-08	0:23	0.3432	0.28	28	0.0036
1-Apr-08	0:24	0.3452	0.3	28	0.0039
1-Apr-08	0:25	0.3468	0.32	28	0.0041
1-Apr-08	0:26	0.348	0.34	28	0.0043
1-Apr-08	0:27	0.3491	0.36	28	0.0045
1-Apr-08	0:28	0.35	0.38	28	0.0048
1-Apr-08	0:29	0.3507	0.4	28	0.005
1-Apr-08	0:30	0.3513	0.42	28	0.0052
1-Apr-08	0:31	0.3518	0.44	28	0.0054
1-Apr-08	0:32	0.3521	0.46	28	0.0056
1-Apr-08	0:33	0.3525	0.48	28	0.0058
1-Apr-08	0:34	0.3528	0.5	28	0.006
1-Apr-08	0:35	0.353	0.53	28	0.0062
1-Apr-08	0:36	0.3532	0.55	28	0.0065
1-Apr-08	0:37	0.3533	0.57	28	0.0067
1-Apr-08	0:38	0.3534	0.59	28	0.0069
1-Apr-08	0:39	0.3535	0.61	28	0.0071
1-Apr-08	0:40	0.3535	0.63	28	0.0073
1-Apr-08	0:41	0.3535	0.65	28	0.0075
1-Apr-08	0:42	0.3535	0.67	28	0.0077
1-Apr-08	0:43	0.3535	0.69	28	0.008
1-Apr-08	0:44	0.3535	0.71	28	0.0082
1-Apr-08	0:45	0.3535	0.73	28	0.0084
1-Apr-08	0:46	0.3535	0.75	28	0.0086

1-Apr-08	0:47	0.3535	0.77	28	0.0088
1-Apr-08	0:48	0.3535	0.8	28	0.009
1-Apr-08	0:49	0.3535	0.82	28	0.0092
1-Apr-08	0:50	0.3535	0.84	28	0.0094
1-Apr-08	0:51	0.3535	0.86	28	0.0097
1-Apr-08	0:52	0.3535	0.88	28	0.0099
1-Apr-08	0:53	0.3535	0.9	28	0.0101
1-Apr-08	0:54	0.3535	0.92	28	0.0103
1-Apr-08	0:55	0.3535	0.94	28	0.0105
1-Apr-08	0:56	0.3535	0.96	28	0.0107
1-Apr-08	0:57	0.3535	0.98	28	0.0109
1-Apr-08	0:58	0.3535	1	28	0.0111
1-Apr-08	0:59	0.3535	1.02	28	0.0113
1-Apr-08	1:00	0.3535	1.04	28	0.0116
1-Apr-08	1:01	0.3535	1.06	28	0.0118
1-Apr-08	1:02	0.3535	1.08	28	0.012
1-Apr-08	1:03	0.3535	1.1	28	0.0122
1-Apr-08	1:04	0.3535	1.12	28	0.0123
1-Apr-08	1:05	0.3535	1.14	28	0.0125
1-Apr-08	1:06	0.3535	1.17	28	0.0127
1-Apr-08	1:07	0.3535	1.19	28	0.0129
1-Apr-08	1:08	0.3535	1.21	28	0.0131
1-Apr-08	1:09	0.3535	1.23	28	0.0133
1-Apr-08	1:10	0.3535	1.25	28	0.0134
1-Apr-08	1:11	0.3535	1.27	28	0.0136
1-Apr-08	1:12	0.3535	1.29	28	0.0138
1-Apr-08	1:13	0.3535	1.31	28	0.014
1-Apr-08	1:14	0.3535	1.33	28	0.0142
1-Apr-08	1:15	0.3535	1.35	28	0.0144
1-Apr-08	1:16	0.3535	1.37	28	0.0145
1-Apr-08	1:17	0.3535	1.39	28	0.0147
1-Apr-08	1:18	0.3535	1.41	28	0.0149
1-Apr-08	1:19	0.3535	1.43	28	0.0151
1-Apr-08	1:20	0.3535	1.45	28	0.0153
1-Apr-08	1:21	0.3535	1.47	28	0.0155
1-Apr-08	1:22	0.3535	1.49	28	0.0156
1-Apr-08	1:23	0.3535	1.51	28	0.0158
1-Apr-08	1:24	0.3535	1.53	28	0.016
1-Apr-08	1:25	0.3535	1.55	28	0.0162
1-Apr-08	1:26	0.3535	1.57	28	0.0164
1-Apr-08	1:27	0.3535	1.59	28	0.0165
1-Apr-08	1:28	0.3536	1.61	28	0.0167
1-Apr-08	1:29	0.3536	1.63	28	0.0169
1-Apr-08	1:30	0.3536	1.65	28	0.0171
1-Apr-08	1:31	0.3537	1.67	28	0.0173
1-Apr-08	1:32	0.3537	1.69	28	0.0174
1-Apr-08	1:33	0.3538	1.71	28	0.0176
1-Apr-08	1:34	0.3538	1.73	28	0.0178
1-Apr-08	1:35	0.3539	1.75	28	0.018
1-Apr-08	1:36	0.354	1.77	28	0.0182

1-Apr-08	1:37	0.354	1.79	28	0.0184
1-Apr-08	1:38	0.3541	1.81	28	0.0185
1-Apr-08	1:39	0.3542	1.83	28	0.0187
1-Apr-08	1:40	0.3543	1.85	28	0.0189
1-Apr-08	1:41	0.3543	1.87	28	0.0191
1-Apr-08	1:42	0.3544	1.89	28	0.0193
1-Apr-08	1:43	0.3545	1.91	28	0.0194
1-Apr-08	1:44	0.3546	1.94	28	0.0196
1-Apr-08	1:45	0.3546	1.96	28	0.0198
1-Apr-08	1:46	0.3547	1.98	28	0.02
1-Apr-08	1:47	0.3548	2	28	0.0201
1-Apr-08	1:48	0.3549	2.02	28	0.0202
1-Apr-08	1:49	0.3549	2.04	28	0.0203
1-Apr-08	1:50	0.355	2.06	28	0.0204
1-Apr-08	1:51	0.3551	2.08	28	0.0205
1-Apr-08	1:52	0.3552	2.1	28	0.0205
1-Apr-08	1:53	0.3552	2.12	28	0.0206
1-Apr-08	1:54	0.3553	2.14	28	0.0207
1-Apr-08	1:55	0.3554	2.16	28	0.0208
1-Apr-08	1:56	0.3555	2.18	28	0.0209
1-Apr-08	1:57	0.3555	2.2	28	0.021
1-Apr-08	1:58	0.3556	2.22	28	0.0211
1-Apr-08	1:59	0.3557	2.24	28	0.0212
1-Apr-08	2:00	0.3558	2.26	28	0.0213
1-Apr-08	2:01	0.3558	2.28	28	0.0214
1-Apr-08	2:02	0.3559	2.3	28	0.0215
1-Apr-08	2:03	0.356	2.32	28	0.0216
1-Apr-08	2:04	0.3561	2.34	28	0.0217
1-Apr-08	2:05	0.3561	2.36	28	0.0218
1-Apr-08	2:06	0.3562	2.38	28	0.0219
1-Apr-08	2:07	0.3563	2.4	28	0.022
1-Apr-08	2:08	0.3564	2.42	28	0.022
1-Apr-08	2:09	0.3564	2.44	28	0.0221
1-Apr-08	2:10	0.3565	2.46	28	0.0222
1-Apr-08	2:11	0.3566	2.48	28	0.0223
1-Apr-08	2:12	0.3567	2.5	28	0.0224
1-Apr-08	2:13	0.3567	2.52	28	0.0225
1-Apr-08	2:14	0.3568	2.54	28	0.0226
1-Apr-08	2:15	0.3569	2.56	28	0.0227
1-Apr-08	2:16	0.3569	2.58	28	0.0228
1-Apr-08	2:17	0.357	2.6	28	0.0229
1-Apr-08	2:18	0.3571	2.62	28	0.023
1-Apr-08	2:19	0.3572	2.64	28	0.0231
1-Apr-08	2:20	0.3572	2.66	28	0.0232
1-Apr-08	2:21	0.3573	2.68	28	0.0233
1-Apr-08	2:22	0.3574	2.7	28	0.0234
1-Apr-08	2:23	0.3575	2.72	28	0.0235
1-Apr-08	2:24	0.3575	2.74	28	0.0235
1-Apr-08	2:25	0.3576	2.76	28	0.0236
1-Apr-08	2:26	0.3577	2.78	28	0.0237

1-Apr-08	2:27	0.3577	2.8	28	0.0238
1-Apr-08	2:28	0.3578	2.82	28	0.0239
1-Apr-08	2:29	0.3579	2.84	28	0.024
1-Apr-08	2:30	0.3579	2.86	28	0.0241
1-Apr-08	2:31	0.358	2.88	28	0.0242
1-Apr-08	2:32	0.3581	2.9	28	0.0243
1-Apr-08	2:33	0.3582	2.92	28	0.0244
1-Apr-08	2:34	0.3582	2.94	28	0.0245
1-Apr-08	2:35	0.3583	2.96	28	0.0246
1-Apr-08	2:36	0.3584	2.98	28	0.0247
1-Apr-08	2:37	0.3584	3	28	0.0248
1-Apr-08	2:38	0.3585	3.02	28	0.0249
1-Apr-08	2:39	0.3586	3.04	28	0.0249
1-Apr-08	2:40	0.3586	3.06	28	0.025
1-Apr-08	2:41	0.3587	3.08	28	0.0251
1-Apr-08	2:42	0.3588	3.1	28	0.0252
1-Apr-08	2:43	0.3589	3.12	28	0.0253
1-Apr-08	2:44	0.3589	3.14	28	0.0253
1-Apr-08	2:45	0.359	3.16	28	0.0254
1-Apr-08	2:46	0.3591	3.18	28	0.0255
1-Apr-08	2:47	0.3591	3.2	28	0.0255
1-Apr-08	2:48	0.3592	3.22	28	0.0256
1-Apr-08	2:49	0.3593	3.24	28	0.0257
1-Apr-08	2:50	0.3593	3.26	28	0.0258
1-Apr-08	2:51	0.3594	3.28	28	0.0258
1-Apr-08	2:52	0.3595	3.3	28	0.0259
1-Apr-08	2:53	0.3595	3.32	28	0.026
1-Apr-08	2:54	0.3596	3.34	28	0.0261
1-Apr-08	2:55	0.3597	3.36	28	0.0261
1-Apr-08	2:56	0.3597	3.38	28	0.0262
1-Apr-08	2:57	0.3598	3.4	28	0.0263
1-Apr-08	2:58	0.3599	3.42	28	0.0264
1-Apr-08	2:59	0.3599	3.44	28	0.0264
1-Apr-08	3:00	0.36	3.46	28	0.0265
1-Apr-08	3:01	0.3601	3.48	28	0.0266
1-Apr-08	3:02	0.3601	3.5	28	0.0267
1-Apr-08	3:03	0.3602	3.52	28	0.0267
1-Apr-08	3:04	0.3603	3.54	28	0.0268
1-Apr-08	3:05	0.3603	3.56	28	0.0269
1-Apr-08	3:06	0.3604	3.58	28	0.0269
1-Apr-08	3:07	0.3605	3.6	28	0.027
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1-Apr-08	3:10	0.3607	3.66	28	0.0272
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1-Apr-08	3:14	0.3609	3.74	28	0.0275
1-Apr-08	3:15	0.361	3.76	28	0.0276
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1-Apr-08	3:18	0.3612	3.82	28	0.0278
1-Apr-08	3:19	0.3612	3.84	28	0.0279
1-Apr-08	3:20	0.3613	3.86	28	0.028
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1-Apr-08	3:24	0.3616	3.94	28	0.0283
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1-Apr-08	3:26	0.3617	3.98	28	0.0284
1-Apr-08	3:27	0.3618	4	28	0.0285
1-Apr-08	3:28	0.3618	4.02	28	0.0286
1-Apr-08	3:29	0.3619	4.04	28	0.0286
1-Apr-08	3:30	0.3619	4.06	28	0.0287
1-Apr-08	3:31	0.362	4.08	28	0.0288
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1-Apr-08	3:33	0.3621	4.12	28	0.0289
1-Apr-08	3:34	0.3622	4.14	28	0.029
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1-Apr-08	3:36	0.3623	4.18	28	0.0292
1-Apr-08	3:37	0.3624	4.2	28	0.0292
1-Apr-08	3:38	0.3624	4.22	28	0.0293
1-Apr-08	3:39	0.3625	4.24	28	0.0294
1-Apr-08	3:40	0.3626	4.26	28	0.0294
1-Apr-08	3:41	0.3626	4.28	28	0.0295
1-Apr-08	3:42	0.3627	4.3	28	0.0296
1-Apr-08	3:43	0.3627	4.32	28	0.0297
1-Apr-08	3:44	0.3628	4.34	28	0.0297
1-Apr-08	3:45	0.3629	4.36	28	0.0298
1-Apr-08	3:46	0.3629	4.38	28	0.0299
1-Apr-08	3:47	0.363	4.4	28	0.03
1-Apr-08	3:48	0.3631	4.42	28	0.03
1-Apr-08	3:49	0.3631	4.44	28	0.0301
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1-Apr-08	3:52	0.3633	4.5	28	0.0303
1-Apr-08	3:53	0.3634	4.52	28	0.0304
1-Apr-08	3:54	0.3634	4.54	28	0.0305
1-Apr-08	3:55	0.3635	4.56	28	0.0305
1-Apr-08	3:56	0.3635	4.58	28	0.0306
1-Apr-08	3:57	0.3636	4.6	28	0.0307
1-Apr-08	3:58	0.3637	4.62	28	0.0308
1-Apr-08	3:59	0.3637	4.64	28	0.0308
1-Apr-08	4:00	0.3638	4.66	28	0.0309
1-Apr-08	4:01	0.3638	4.68	28	0.031
1-Apr-08	4:02	0.3639	4.7	28	0.031
1-Apr-08	4:03	0.3639	4.72	28	0.0311
1-Apr-08	4:04	0.364	4.74	28	0.0312
1-Apr-08	4:05	0.3641	4.76	28	0.0313
1-Apr-08	4:06	0.3641	4.78	28	0.0313

1-Apr-08	4:07	0.3642	4.8	28	0.0314
1-Apr-08	4:08	0.3642	4.82	28	0.0315
1-Apr-08	4:09	0.3643	4.84	28	0.0316
1-Apr-08	4:10	0.3644	4.86	28	0.0316
1-Apr-08	4:11	0.3644	4.88	28	0.0317
1-Apr-08	4:12	0.3645	4.9	28	0.0318
1-Apr-08	4:13	0.3645	4.92	28	0.0318
1-Apr-08	4:14	0.3646	4.94	28	0.0319
1-Apr-08	4:15	0.3646	4.96	28	0.032
1-Apr-08	4:16	0.3647	4.98	28	0.0321
1-Apr-08	4:17	0.3648	5	28	0.0321
1-Apr-08	4:18	0.3648	5.02	28	0.0322
1-Apr-08	4:19	0.3649	5.04	28	0.0323
1-Apr-08	4:20	0.3649	5.06	28	0.0324
1-Apr-08	4:21	0.365	5.08	28	0.0324
1-Apr-08	4:22	0.365	5.1	28	0.0325
1-Apr-08	4:23	0.3651	5.12	28	0.0326
1-Apr-08	4:24	0.3652	5.14	28	0.0326
1-Apr-08	4:25	0.3652	5.16	28	0.0327
1-Apr-08	4:26	0.3653	5.18	28	0.0328
1-Apr-08	4:27	0.3653	5.2	28	0.0329
1-Apr-08	4:28	0.3654	5.22	28	0.0329
1-Apr-08	4:29	0.3654	5.24	28	0.033
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1-Apr-08	4:38	0.3659	5.42	28	0.0335
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1-Apr-08	4:51	0.3667	5.68	28	0.0342
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1-Apr-08	4:53	0.3668	5.72	28	0.0343
1-Apr-08	4:54	0.3668	5.74	28	0.0343
1-Apr-08	4:55	0.3669	5.76	28	0.0344
1-Apr-08	4:56	0.3669	5.78	28	0.0344

1-Apr-08	4:57	0.367	5.8	28	0.0345
1-Apr-08	4:58	0.367	5.82	28	0.0346
1-Apr-08	4:59	0.3671	5.84	28	0.0346
1-Apr-08	5:00	0.3671	5.86	28	0.0347
1-Apr-08	5:01	0.3672	5.87	28	0.0347
1-Apr-08	5:02	0.3672	5.89	28	0.0348
1-Apr-08	5:03	0.3673	5.91	28	0.0348
1-Apr-08	5:04	0.3673	5.93	28	0.0349
1-Apr-08	5:05	0.3674	5.95	28	0.0349
1-Apr-08	5:06	0.3675	5.97	28	0.035
1-Apr-08	5:07	0.3675	5.99	28	0.035
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1-Apr-08	5:09	0.3676	6.03	28	0.0351
1-Apr-08	5:10	0.3677	6.05	28	0.0352
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1-Apr-08	5:12	0.3678	6.09	28	0.0353
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1-Apr-08	5:15	0.3679	6.15	28	0.0355
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1-Apr-08	5:17	0.368	6.19	28	0.0356
1-Apr-08	5:18	0.3681	6.21	28	0.0356
1-Apr-08	5:19	0.3681	6.23	28	0.0357
1-Apr-08	5:20	0.3682	6.25	28	0.0357
1-Apr-08	5:21	0.3682	6.27	28	0.0358
1-Apr-08	5:22	0.3683	6.29	28	0.0358
1-Apr-08	5:23	0.3683	6.31	28	0.0359
1-Apr-08	5:24	0.3684	6.33	28	0.036
1-Apr-08	5:25	0.3684	6.35	28	0.036
1-Apr-08	5:26	0.3685	6.37	28	0.0361
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1-Apr-08	5:28	0.3686	6.41	28	0.0362
1-Apr-08	5:29	0.3686	6.43	28	0.0363
1-Apr-08	5:30	0.3687	6.45	28	0.0364
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1-Apr-08	5:32	0.3688	6.49	28	0.0365
1-Apr-08	5:33	0.3688	6.51	28	0.0366
1-Apr-08	5:34	0.3689	6.53	28	0.0366
1-Apr-08	5:35	0.3689	6.55	28	0.0367
1-Apr-08	5:36	0.369	6.57	28	0.0368
1-Apr-08	5:37	0.369	6.59	28	0.0369
1-Apr-08	5:38	0.3691	6.61	28	0.0369
1-Apr-08	5:39	0.3691	6.63	28	0.037
1-Apr-08	5:40	0.3692	6.65	28	0.0371
1-Apr-08	5:41	0.3692	6.67	28	0.0371
1-Apr-08	5:42	0.3693	6.69	28	0.0372
1-Apr-08	5:43	0.3693	6.71	28	0.0373
1-Apr-08	5:44	0.3694	6.73	28	0.0373
1-Apr-08	5:45	0.3694	6.75	28	0.0374
1-Apr-08	5:46	0.3695	6.77	28	0.0375

1-Apr-08	5:47	0.3695	6.79	28	0.0376
1-Apr-08	5:48	0.3696	6.81	28	0.0376
1-Apr-08	5:49	0.3696	6.83	28	0.0377
1-Apr-08	5:50	0.3697	6.85	28	0.0378
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1-Apr-08	5:52	0.3698	6.89	28	0.0379
1-Apr-08	5:53	0.3698	6.91	28	0.038
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1-Apr-08	5:57	0.3776	6.99	28	0.0383
1-Apr-08	5:58	0.3887	7.01	28	0.0383
1-Apr-08	5:59	0.4073	7.03	28	0.0384
1-Apr-08	6:00	0.4351	7.06	28	0.0385
1-Apr-08	6:01	0.47	7.08	28	0.0386
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1-Apr-08	6:03	0.5495	7.14	28	0.0388
1-Apr-08	6:04	0.5892	7.17	28	0.0389
1-Apr-08	6:05	0.6258	7.2	28	0.039
1-Apr-08	6:06	0.6588	7.24	28	0.0391
1-Apr-08	6:07	0.6871	7.28	28	0.0393
1-Apr-08	6:08	0.7096	7.32	28	0.0394
1-Apr-08	6:09	0.7275	7.36	28	0.0396
1-Apr-08	6:10	0.7422	7.4	28	0.0397
1-Apr-08	6:11	0.7542	7.44	28	0.0399
1-Apr-08	6:12	0.7642	7.49	28	0.04
1-Apr-08	6:13	0.7725	7.53	28	0.0401
1-Apr-08	6:14	0.7792	7.57	28	0.0402
1-Apr-08	6:15	0.7848	7.62	28	0.0402
1-Apr-08	6:16	0.7894	7.66	28	0.0403
1-Apr-08	6:17	0.7932	7.71	28	0.0404
1-Apr-08	6:18	0.7963	7.75	28	0.0405
1-Apr-08	6:19	0.7989	7.8	28	0.0405
1-Apr-08	6:20	0.8011	7.84	28	0.0406
1-Apr-08	6:21	0.8029	7.89	28	0.0407
1-Apr-08	6:22	0.8044	7.94	28	0.0408
1-Apr-08	6:23	0.8057	7.98	28	0.0409
1-Apr-08	6:24	0.8068	8.03	28	0.0409
1-Apr-08	6:25	0.8077	8.07	28	0.041
1-Apr-08	6:26	0.8085	8.12	28	0.0411
1-Apr-08	6:27	0.8092	8.17	28	0.0412
1-Apr-08	6:28	0.8098	8.21	28	0.0413
1-Apr-08	6:29	0.8104	8.26	28	0.0413
1-Apr-08	6:30	0.8108	8.3	28	0.0414
1-Apr-08	6:31	0.8113	8.35	28	0.0415
1-Apr-08	6:32	0.8117	8.4	28	0.0416
1-Apr-08	6:33	0.812	8.44	28	0.0417
1-Apr-08	6:34	0.8123	8.49	28	0.0418
1-Apr-08	6:35	0.8125	8.54	28	0.0418
1-Apr-08	6:36	0.8127	8.58	28	0.0419

1-Apr-08	6:37	0.8129	8.63	28	0.042
1-Apr-08	6:38	0.8131	8.67	28	0.044
1-Apr-08	6:39	0.8133	8.72	28	0.0461
1-Apr-08	6:40	0.8135	8.77	28	0.0483
1-Apr-08	6:41	0.8137	8.81	28	0.0504
1-Apr-08	6:42	0.8139	8.86	28	0.0525
1-Apr-08	6:43	0.8141	8.9	28	0.0546
1-Apr-08	6:44	0.8142	8.95	28	0.0568
1-Apr-08	6:45	0.8144	8.99	28	0.0589
1-Apr-08	6:46	0.8146	9.04	28	0.061
1-Apr-08	6:47	0.8148	9.08	28	0.0631
1-Apr-08	6:48	0.815	9.13	28	0.0652
1-Apr-08	6:49	0.8152	9.17	28	0.0673
1-Apr-08	6:50	0.8154	9.22	28	0.0693
1-Apr-08	6:51	0.8156	9.26	28	0.0714
1-Apr-08	6:52	0.8158	9.31	28	0.0735
1-Apr-08	6:53	0.816	9.35	28	0.0756
1-Apr-08	6:54	0.8161	9.4	28	0.0776
1-Apr-08	6:55	0.8163	9.44	28	0.0797
1-Apr-08	6:56	0.8165	9.49	28	0.0817
1-Apr-08	6:57	0.8167	9.53	28	0.0838
1-Apr-08	6:58	0.8169	9.57	28	0.0858
1-Apr-08	6:59	0.8171	9.62	28	0.0879
1-Apr-08	7:00	0.8173	9.66	28	0.0899
1-Apr-08	7:01	0.8174	9.7	28	0.0919
1-Apr-08	7:02	0.8176	9.75	28	0.0939
1-Apr-08	7:03	0.8178	9.79	28	0.0959
1-Apr-08	7:04	0.818	9.83	28	0.0994
1-Apr-08	7:05	0.8182	9.88	28	0.1029
1-Apr-08	7:06	0.8183	9.92	28	0.1064
1-Apr-08	7:07	0.8185	9.96	28	0.1099
1-Apr-08	7:08	0.8187	10.01	28	0.1134
1-Apr-08	7:09	0.8189	10.05	28	0.1168
1-Apr-08	7:10	0.8191	10.09	28	0.1202
1-Apr-08	7:11	0.8192	10.13	28	0.1236
1-Apr-08	7:12	0.8194	10.17	28	0.127
1-Apr-08	7:13	0.8196	10.22	28	0.1304
1-Apr-08	7:14	0.8198	10.26	28	0.1338
1-Apr-08	7:15	0.8199	10.3	28	0.1371
1-Apr-08	7:16	0.8201	10.34	28	0.1405
1-Apr-08	7:17	0.8203	10.38	28	0.1438
1-Apr-08	7:18	0.8204	10.42	28	0.1471
1-Apr-08	7:19	0.8206	10.46	28	0.1504
1-Apr-08	7:20	0.8208	10.5	28	0.1537
1-Apr-08	7:21	0.821	10.54	28	0.1569
1-Apr-08	7:22	0.8211	10.58	28	0.1601
1-Apr-08	7:23	0.8213	10.62	28	0.1634
1-Apr-08	7:24	0.8215	10.66	28	0.1666
1-Apr-08	7:25	0.8216	10.7	28	0.1698
1-Apr-08	7:26	0.8218	10.74	28	0.173

1-Apr-08	7:27	0.822	10.78	28	0.1761
1-Apr-08	7:28	0.8221	10.81	28	0.1793
1-Apr-08	7:29	0.8223	10.85	28	0.1824
1-Apr-08	7:30	0.8225	10.89	28	0.1856
1-Apr-08	7:31	0.8226	10.93	28	0.1887
1-Apr-08	7:32	0.8228	10.97	28	0.1918
1-Apr-08	7:33	0.8229	11	28	0.1956
1-Apr-08	7:34	0.8231	11.04	28	0.1995
1-Apr-08	7:35	0.8233	11.08	28	0.2033
1-Apr-08	7:36	0.8234	11.12	28	0.2071
1-Apr-08	7:37	0.8236	11.15	28	0.2109
1-Apr-08	7:38	0.8238	11.19	28	0.2147
1-Apr-08	7:39	0.8239	11.23	28	0.2185
1-Apr-08	7:40	0.8241	11.26	28	0.2222
1-Apr-08	7:41	0.8242	11.3	28	0.2259
1-Apr-08	7:42	0.8244	11.33	28	0.2296
1-Apr-08	7:43	0.8245	11.37	28	0.2333
1-Apr-08	7:44	0.8247	11.41	28	0.2369
1-Apr-08	7:45	0.8249	11.44	28	0.2405
1-Apr-08	7:46	0.825	11.48	28	0.2441
1-Apr-08	7:47	0.8252	11.51	28	0.2477
1-Apr-08	7:48	0.8253	11.55	28	0.2513
1-Apr-08	7:49	0.8255	11.58	28	0.2548
1-Apr-08	7:50	0.8256	11.61	28	0.2583
1-Apr-08	7:51	0.8258	11.65	28	0.2618
1-Apr-08	7:52	0.8259	11.68	28	0.2653
1-Apr-08	7:53	0.8261	11.71	28	0.2688
1-Apr-08	7:54	0.8262	11.75	28	0.2722
1-Apr-08	7:55	0.8264	11.78	28	0.2756
1-Apr-08	7:56	0.8265	11.81	28	0.279
1-Apr-08	7:57	0.8267	11.85	28	0.2824
1-Apr-08	7:58	0.8268	11.88	28	0.2858
1-Apr-08	7:59	0.827	11.91	28	0.2891
1-Apr-08	8:00	0.8271	11.94	28	0.2924
1-Apr-08	8:01	0.8273	11.98	28	0.2957
1-Apr-08	8:02	0.8274	12.01	28	0.299
1-Apr-08	8:03	0.8276	12.04	28	0.3023
1-Apr-08	8:04	0.8277	12.07	28	0.3055
1-Apr-08	8:05	0.8279	12.1	28	0.3087
1-Apr-08	8:06	0.828	12.13	28	0.3119
1-Apr-08	8:07	0.8282	12.16	28	0.3151
1-Apr-08	8:08	0.8283	12.19	28	0.3188
1-Apr-08	8:09	0.8285	12.23	28	0.3225
1-Apr-08	8:10	0.8286	12.26	28	0.3262
1-Apr-08	8:11	0.8288	12.29	28	0.3298
1-Apr-08	8:12	0.8289	12.32	28	0.3334
1-Apr-08	8:13	0.829	12.34	28	0.337
1-Apr-08	8:14	0.8292	12.37	28	0.3405
1-Apr-08	8:15	0.8293	12.4	28	0.3441
1-Apr-08	8:16	0.8295	12.43	28	0.3476

1-Apr-08	8:17	0.8296	12.46	28	0.3511
1-Apr-08	8:18	0.8297	12.49	28	0.3545
1-Apr-08	8:19	0.8299	12.52	28	0.358
1-Apr-08	8:20	0.83	12.55	28	0.3614
1-Apr-08	8:21	0.8302	12.57	28	0.3648
1-Apr-08	8:22	0.8303	12.6	28	0.3681
1-Apr-08	8:23	0.8304	12.63	28	0.3715
1-Apr-08	8:24	0.8306	12.66	28	0.3748
1-Apr-08	8:25	0.8307	12.68	28	0.3781
1-Apr-08	8:26	0.8309	12.71	28	0.3813
1-Apr-08	8:27	0.831	12.74	28	0.3846
1-Apr-08	8:28	0.8311	12.77	28	0.3878
1-Apr-08	8:29	0.8313	12.79	28	0.391
1-Apr-08	8:30	0.8314	12.82	28	0.3942
1-Apr-08	8:31	0.8315	12.84	28	0.3974
1-Apr-08	8:32	0.8317	12.87	28	0.4005
1-Apr-08	8:33	0.8318	12.9	28	0.4036
1-Apr-08	8:34	0.8319	12.92	28	0.4067
1-Apr-08	8:35	0.8321	12.95	28	0.4098
1-Apr-08	8:36	0.8322	12.97	28	0.4128
1-Apr-08	8:37	0.8323	13	28	0.4159
1-Apr-08	8:38	0.8325	13.02	28	0.4189
1-Apr-08	8:39	0.8326	13.05	28	0.4219
1-Apr-08	8:40	0.8327	13.07	28	0.4248
1-Apr-08	8:41	0.8328	13.1	28	0.4278
1-Apr-08	8:42	0.833	13.12	28	0.4307
1-Apr-08	8:43	0.8331	13.14	28	0.4336
1-Apr-08	8:44	0.8332	13.17	28	0.4365
1-Apr-08	8:45	0.8334	13.19	28	0.4394
1-Apr-08	8:46	0.8335	13.22	28	0.4422
1-Apr-08	8:47	0.8336	13.24	28	0.445
1-Apr-08	8:48	0.8337	13.26	28	0.4478
1-Apr-08	8:49	0.8339	13.29	28	0.4506
1-Apr-08	8:50	0.834	13.31	28	0.4534
1-Apr-08	8:51	0.8341	13.33	28	0.4562
1-Apr-08	8:52	0.8343	13.35	28	0.4589
1-Apr-08	8:53	0.8344	13.38	28	0.4617
1-Apr-08	8:54	0.8345	13.4	28	0.4647
1-Apr-08	8:55	0.8346	13.42	28	0.4677
1-Apr-08	8:56	0.8358	13.44	28	0.4706
1-Apr-08	8:57	0.8392	13.46	28	0.4736
1-Apr-08	8:58	0.8456	13.49	28	0.4765
1-Apr-08	8:59	0.8563	13.51	28	0.4796
1-Apr-08	9:00	0.8723	13.53	28	0.4827
1-Apr-08	9:01	0.8923	13.56	28	0.4859
1-Apr-08	9:02	0.9147	13.58	28	0.4892
1-Apr-08	9:03	0.9378	13.61	28	0.4928
1-Apr-08	9:04	0.9605	13.63	28	0.4964
1-Apr-08	9:05	0.9815	13.66	28	0.5003
1-Apr-08	9:06	1.0004	13.69	28	0.5042

1-Apr-08	9:07	1.0166	13.72	28	0.5083
1-Apr-08	9:08	1.0295	13.75	28	0.5124
1-Apr-08	9:09	1.0398	13.78	28	0.5166
1-Apr-08	9:10	1.0482	13.82	28	0.5209
1-Apr-08	9:11	1.0551	13.85	28	0.5252
1-Apr-08	9:12	1.0609	13.88	28	0.5294
1-Apr-08	9:13	1.0657	13.91	28	0.5337
1-Apr-08	9:14	1.0697	13.94	28	0.538
1-Apr-08	9:15	1.0729	13.97	28	0.5423
1-Apr-08	9:16	1.0756	14.01	28	0.5466
1-Apr-08	9:17	1.0779	14.04	28	0.5509
1-Apr-08	9:18	1.0797	14.07	28	0.5552
1-Apr-08	9:19	1.0813	14.1	28	0.5594
1-Apr-08	9:20	1.0826	14.13	28	0.5636
1-Apr-08	9:21	1.0837	14.16	28	0.5678
1-Apr-08	9:22	1.0846	14.19	28	0.5719
1-Apr-08	9:23	1.0854	14.22	28	0.5761
1-Apr-08	9:24	1.0861	14.26	28	0.5802
1-Apr-08	9:25	1.0867	14.29	28	0.5843
1-Apr-08	9:26	1.0872	14.32	28	0.5883
1-Apr-08	9:27	1.0877	14.35	28	0.5923
1-Apr-08	9:28	1.0881	14.37	28	0.5963
1-Apr-08	9:29	1.0885	14.4	28	0.6003
1-Apr-08	9:30	1.0888	14.43	28	0.6042
1-Apr-08	9:31	1.0891	14.46	28	0.6081
1-Apr-08	9:32	1.0894	14.49	28	0.612
1-Apr-08	9:33	1.0897	14.52	28	0.6158
1-Apr-08	9:34	1.0899	14.55	28	0.6197
1-Apr-08	9:35	1.0901	14.58	28	0.6234
1-Apr-08	9:36	1.0903	14.6	28	0.6273
1-Apr-08	9:37	1.0904	14.63	28	0.6313
1-Apr-08	9:38	1.0906	14.66	28	0.6354
1-Apr-08	9:39	1.0908	14.69	28	0.6393
1-Apr-08	9:40	1.091	14.71	28	0.6433
1-Apr-08	9:41	1.0912	14.74	28	0.6472
1-Apr-08	9:42	1.0913	14.77	28	0.6511
1-Apr-08	9:43	1.0915	14.79	28	0.6549
1-Apr-08	9:44	1.0917	14.82	28	0.6587
1-Apr-08	9:45	1.0919	14.84	28	0.6625
1-Apr-08	9:46	1.092	14.87	28	0.6662
1-Apr-08	9:47	1.0922	14.9	28	0.67
1-Apr-08	9:48	1.0924	14.92	28	0.6736
1-Apr-08	9:49	1.0925	14.95	28	0.6773
1-Apr-08	9:50	1.0927	14.97	28	0.6809
1-Apr-08	9:51	1.0929	15	28	0.6845
1-Apr-08	9:52	1.0931	15.02	28	0.6881
1-Apr-08	9:53	1.0932	15.04	28	0.6916
1-Apr-08	9:54	1.0934	15.07	28	0.6951
1-Apr-08	9:55	1.0936	15.09	28	0.6986
1-Apr-08	9:56	1.0959	15.12	28	0.7021

1-Apr-08	9:57	1.1027	15.14	28	0.7055
1-Apr-08	9:58	1.1156	15.16	28	0.709
1-Apr-08	9:59	1.1371	15.19	28	0.7127
1-Apr-08	10:00	1.1692	15.21	28	0.7165
1-Apr-08	10:01	1.2095	15.24	28	0.7207
1-Apr-08	10:02	1.2547	15.27	28	0.7251
1-Apr-08	10:03	1.3013	15.31	28	0.7299
1-Apr-08	10:04	1.3471	15.34	28	0.7351
1-Apr-08	10:05	1.3894	15.38	28.01	0.7407
1-Apr-08	10:06	1.4275	15.42	28.01	0.7465
1-Apr-08	10:07	1.4602	15.46	28.01	0.7526
1-Apr-08	10:08	1.4862	15.5	28.01	0.7589
1-Apr-08	10:09	1.5069	15.55	28.01	0.7653
1-Apr-08	10:10	1.5239	15.59	28.01	0.7718
1-Apr-08	10:11	1.5378	15.64	28.01	0.7785
1-Apr-08	10:12	1.5494	15.68	28.01	0.7851
1-Apr-08	10:13	1.559	15.73	28.01	0.7919
1-Apr-08	10:14	1.5669	15.78	28.01	0.7986
1-Apr-08	10:15	1.5734	15.82	28.01	0.8053
1-Apr-08	10:16	1.5787	15.87	28.01	0.8124
1-Apr-08	10:17	1.5832	15.91	28.01	0.8197
1-Apr-08	10:18	1.5869	15.96	28.01	0.8269
1-Apr-08	10:19	1.59	16.01	28.01	0.8341
1-Apr-08	10:20	1.5925	16.05	28.01	0.8412
1-Apr-08	10:21	1.5947	16.1	28.01	0.8483
1-Apr-08	10:22	1.5965	16.14	28.01	0.8554
1-Apr-08	10:23	1.598	16.18	28.01	0.8624
1-Apr-08	10:24	1.5994	16.23	28.01	0.8693
1-Apr-08	10:25	1.6005	16.27	28.01	0.8762
1-Apr-08	10:26	1.6015	16.32	28.01	0.883
1-Apr-08	10:27	1.6023	16.36	28.01	0.8898
1-Apr-08	10:28	1.6031	16.4	28.01	0.8965
1-Apr-08	10:29	1.6038	16.44	28.01	0.9032
1-Apr-08	10:30	1.6044	16.49	28.01	0.9098
1-Apr-08	10:31	1.605	16.53	28.01	0.9164
1-Apr-08	10:32	1.6055	16.57	28.01	0.9229
1-Apr-08	10:33	1.6059	16.61	28.01	0.9293
1-Apr-08	10:34	1.6063	16.65	28.01	0.9357
1-Apr-08	10:35	1.6066	16.69	28.01	0.942
1-Apr-08	10:36	1.6069	16.73	28.01	0.9483
1-Apr-08	10:37	1.6072	16.77	28.01	0.9545
1-Apr-08	10:38	1.6075	16.81	28.01	0.9606
1-Apr-08	10:39	1.6078	16.85	28.01	0.9667
1-Apr-08	10:40	1.6081	16.88	28.01	0.9728
1-Apr-08	10:41	1.6084	16.92	28.01	0.9788
1-Apr-08	10:42	1.6087	16.96	28.01	0.9847
1-Apr-08	10:43	1.6089	17	28.01	0.9906
1-Apr-08	10:44	1.6092	17.03	28.01	0.9964
1-Apr-08	10:45	1.6095	17.07	28.01	1.0022
1-Apr-08	10:46	1.6098	17.11	28.01	1.0081

1-Apr-08	10:47	1.6101	17.14	28.01	1.0141
1-Apr-08	10:48	1.6103	17.18	28.01	1.02
1-Apr-08	10:49	1.6106	17.21	28.01	1.0258
1-Apr-08	10:50	1.6109	17.25	28.01	1.0316
1-Apr-08	10:51	1.6111	17.28	28.01	1.0374
1-Apr-08	10:52	1.6114	17.32	28.01	1.0431
1-Apr-08	10:53	1.6117	17.35	28.01	1.0487
1-Apr-08	10:54	1.6119	17.38	28.01	1.0543
1-Apr-08	10:55	1.6122	17.42	28.01	1.0598
1-Apr-08	10:56	1.6164	17.45	28.01	1.0653
1-Apr-08	10:57	1.6288	17.48	28.01	1.0709
1-Apr-08	10:58	1.6525	17.52	28.01	1.0765
1-Apr-08	10:59	1.692	17.55	28.01	1.0824
1-Apr-08	11:00	1.751	17.59	28.01	1.0888
1-Apr-08	11:01	1.8251	17.63	28.01	1.0957
1-Apr-08	11:02	1.9081	17.68	28.01	1.1033
1-Apr-08	11:03	1.9937	17.73	28.01	1.1117
1-Apr-08	11:04	2.078	17.79	28.01	1.1209
1-Apr-08	11:05	2.1557	17.85	28.01	1.1308
1-Apr-08	11:06	2.2256	17.91	28.01	1.1413
1-Apr-08	11:07	2.2857	17.97	28.01	1.1524
1-Apr-08	11:08	2.3336	18.04	28.01	1.1638
1-Apr-08	11:09	2.3716	18.11	28.01	1.1756
1-Apr-08	11:10	2.4028	18.19	28.01	1.1876
1-Apr-08	11:11	2.4283	18.26	28.01	1.1998
1-Apr-08	11:12	2.4496	18.33	28.01	1.2121
1-Apr-08	11:13	2.4673	18.41	28.01	1.225
1-Apr-08	11:14	2.4817	18.48	28.01	1.2381
1-Apr-08	11:15	2.4937	18.56	28.01	1.2512
1-Apr-08	11:16	2.5035	18.63	28.01	1.2643
1-Apr-08	11:17	2.5117	18.71	28.01	1.2773
1-Apr-08	11:18	2.5184	18.78	28.01	1.2903
1-Apr-08	11:19	2.524	18.85	28.01	1.3032
1-Apr-08	11:20	2.5287	18.93	28.01	1.316
1-Apr-08	11:21	2.5326	19	28.01	1.3288
1-Apr-08	11:22	2.5359	19.07	28.01	1.3414
1-Apr-08	11:23	2.5388	19.14	28.01	1.354
1-Apr-08	11:24	2.5412	19.21	28.01	1.3664
1-Apr-08	11:25	2.5432	19.28	28.01	1.3787
1-Apr-08	11:26	2.553	19.35	28.01	1.391
1-Apr-08	11:27	2.5789	19.42	28.01	1.4033
1-Apr-08	11:28	2.6275	19.5	28.01	1.4159
1-Apr-08	11:29	2.7078	19.57	28.01	1.429
1-Apr-08	11:30	2.8272	19.65	28.01	1.4431
1-Apr-08	11:31	2.9769	19.74	28.01	1.459
1-Apr-08	11:32	3.1443	19.83	28.01	1.4764
1-Apr-08	11:33	3.317	19.94	28.01	1.4955
1-Apr-08	11:34	3.487	20.05	28.01	1.5162
1-Apr-08	11:35	3.6436	20.17	28.01	1.5385
1-Apr-08	11:36	3.7894	20.3	28.01	1.5621

1-Apr-08	11:37	3.9258	20.44	28.01	1.5871
1-Apr-08	11:38	4.0519	20.58	28.01	1.6132
1-Apr-08	11:39	4.1783	20.73	28.01	1.6404
1-Apr-08	11:40	4.3153	20.89	28.01	1.6687
1-Apr-08	11:41	4.46	21.05	28.01	1.6991
1-Apr-08	11:42	4.6077	21.22	28.01	1.7312
1-Apr-08	11:43	4.7511	21.4	28.01	1.7646
1-Apr-08	11:44	4.8867	21.58	28.01	1.7992
1-Apr-08	11:45	5.0087	21.77	28.01	1.8348
1-Apr-08	11:46	5.1362	21.96	28.01	1.8715
1-Apr-08	11:47	5.2886	22.16	28.01	1.9093
1-Apr-08	11:48	5.4784	22.37	28.01	1.9663
1-Apr-08	11:49	5.7319	22.58	28.01	2.0444
1-Apr-08	11:50	6.0709	22.81	28.01	2.1272
1-Apr-08	11:51	6.4761	23.06	28.01	2.2162
1-Apr-08	11:52	6.919	23.32	28.01	2.3123
1-Apr-08	11:53	7.3693	23.61	28.01	2.4179
1-Apr-08	11:54	7.8085	23.91	28.01	2.5705
1-Apr-08	11:55	8.2114	24.24	28.01	2.7311
1-Apr-08	11:56	8.6103	24.57	28.01	2.8987
1-Apr-08	11:57	9.0366	24.92	28.01	3.0736
1-Apr-08	11:58	9.5084	25.29	28.01	3.2869
1-Apr-08	11:59	10.0817	25.67	28.01	3.5128
1-Apr-08	12:00	10.8054	26.08	28.01	3.7534
1-Apr-08	12:01	11.6448	26.52	28.01	4.0114
1-Apr-08	12:02	12.5482	27	28.01	4.2892
1-Apr-08	12:03	13.4579	27.51	28.01	4.5887
1-Apr-08	12:04	14.3394	28.06	28.01	4.9539
1-Apr-08	12:05	15.1452	28.63	28.01	5.4257
1-Apr-08	12:06	15.8132	29.22	28.01	5.838
1-Apr-08	12:07	16.2717	29.83	28.01	6.0159
1-Apr-08	12:08	16.4571	30.45	28.01	6.1964
1-Apr-08	12:09	16.3337	31.06	28.01	6.2413
1-Apr-08	12:10	15.8828	31.65	28.01	6.2732
1-Apr-08	12:11	15.1735	32.2	28.01	6.3027
1-Apr-08	12:12	14.304	32.71	28.01	6.3293
1-Apr-08	12:13	13.3615	33.16	28.01	6.353
1-Apr-08	12:14	12.403	33.54	28.01	6.4606
1-Apr-08	12:15	11.5046	33.87	28.01	6.6358
1-Apr-08	12:16	10.6791	34.13	28.01	6.778
1-Apr-08	12:17	9.9482	34.34	28.01	6.8908
1-Apr-08	12:18	9.3391	34.5	28.01	6.9787
1-Apr-08	12:19	8.8127	34.63	28.01	7.0456
1-Apr-08	12:20	8.3258	34.72	28.01	7.0942
1-Apr-08	12:21	7.8724	34.78	28.01	7.1263
1-Apr-08	12:22	7.4479	34.81	28.01	7.1433
1-Apr-08	12:23	7.0612	34.81	28.01	7.1468
1-Apr-08	12:24	6.7144	34.8	28.01	7.1386
1-Apr-08	12:25	6.412	34.77	28.01	7.1202
1-Apr-08	12:26	6.1448	34.72	28.01	7.0934

1-Apr-08	12:27	5.9045	34.65	28.01	7.0593
1-Apr-08	12:28	5.6894	34.58	28.01	7.019
1-Apr-08	12:29	5.4833	34.49	28.01	6.9733
1-Apr-08	12:30	5.2705	34.4	28.01	6.9223
1-Apr-08	12:31	5.0537	34.3	28.01	6.8662
1-Apr-08	12:32	4.8376	34.18	28.01	6.8049
1-Apr-08	12:33	4.6309	34.06	28.01	6.7388
1-Apr-08	12:34	4.4378	33.93	28.01	6.6685
1-Apr-08	12:35	4.2647	33.79	28.01	6.5945
1-Apr-08	12:36	4.1126	33.65	28.01	6.5178
1-Apr-08	12:37	3.9833	33.5	28.01	6.439
1-Apr-08	12:38	3.8796	33.36	28.01	6.3635
1-Apr-08	12:39	3.7965	33.21	28.01	6.3555
1-Apr-08	12:40	3.7286	33.05	28.01	6.3474
1-Apr-08	12:41	3.6735	32.89	28.01	6.339
1-Apr-08	12:42	3.628	32.73	28.01	6.3305
1-Apr-08	12:43	3.5913	32.57	28.01	6.322
1-Apr-08	12:44	3.5622	32.4	28.01	6.3133
1-Apr-08	12:45	3.5394	32.24	28.01	6.3046
1-Apr-08	12:46	3.5215	32.07	28.01	6.2959
1-Apr-08	12:47	3.5068	31.9	28.01	6.2871
1-Apr-08	12:48	3.4948	31.74	28.01	6.2781
1-Apr-08	12:49	3.485	31.57	28.01	6.269
1-Apr-08	12:50	3.477	31.4	28.01	6.26
1-Apr-08	12:51	3.4706	31.24	28.01	6.251
1-Apr-08	12:52	3.4654	31.07	28.01	6.242
1-Apr-08	12:53	3.4612	30.9	28.01	6.233
1-Apr-08	12:54	3.458	30.74	28.01	6.2241
1-Apr-08	12:55	3.4556	30.57	28.01	6.2151
1-Apr-08	12:56	3.4477	30.41	28.01	6.1851
1-Apr-08	12:57	3.4274	30.24	28.01	6.1372
1-Apr-08	12:58	3.39	30.08	28.01	6.0896
1-Apr-08	12:59	3.3283	29.92	28.01	6.042
1-Apr-08	13:00	3.2368	29.75	28.01	5.9939
1-Apr-08	13:01	3.1221	29.59	28.01	5.9448
1-Apr-08	13:02	2.9939	29.42	28.01	5.8945
1-Apr-08	13:03	2.8619	29.24	28.01	5.8427
1-Apr-08	13:04	2.7321	29.06	28.01	5.7766
1-Apr-08	13:05	2.6126	28.88	28.01	5.627
1-Apr-08	13:06	2.5054	28.7	28.01	5.4791
1-Apr-08	13:07	2.4134	28.52	28.01	5.3336
1-Apr-08	13:08	2.3403	28.35	28.01	5.1911
1-Apr-08	13:09	2.2823	28.18	28.01	5.0522
1-Apr-08	13:10	2.2351	28.01	28.01	4.9176
1-Apr-08	13:11	2.1966	27.86	28.01	4.7898
1-Apr-08	13:12	2.1645	27.7	28.01	4.7002
1-Apr-08	13:13	2.1382	27.55	28.01	4.6126
1-Apr-08	13:14	2.1167	27.41	28.01	4.5272
1-Apr-08	13:15	2.0993	27.26	28.01	4.4441
1-Apr-08	13:16	2.085	27.12	28.01	4.3633

1-Apr-08	13:17	2.0733	26.99	28.01	4.2848
1-Apr-08	13:18	2.0638	26.86	28.01	4.2086
1-Apr-08	13:19	2.0561	26.73	28.01	4.1348
1-Apr-08	13:20	2.0497	26.61	28.01	4.0633
1-Apr-08	13:21	2.0446	26.49	28.01	3.994
1-Apr-08	13:22	2.0404	26.38	28.01	3.9269
1-Apr-08	13:23	2.0369	26.26	28.01	3.8618
1-Apr-08	13:24	2.0341	26.16	28.01	3.7984
1-Apr-08	13:25	2.0318	26.05	28.01	3.7371
1-Apr-08	13:26	2.03	25.95	28.01	3.6779
1-Apr-08	13:27	2.0285	25.85	28.01	3.6207
1-Apr-08	13:28	2.0272	25.76	28.01	3.5654
1-Apr-08	13:29	2.0262	25.67	28.01	3.512
1-Apr-08	13:30	2.0253	25.58	28.01	3.4604
1-Apr-08	13:31	2.0246	25.5	28.01	3.4106
1-Apr-08	13:32	2.0241	25.42	28.01	3.3625
1-Apr-08	13:33	2.0238	25.34	28.01	3.316
1-Apr-08	13:34	2.0236	25.26	28.01	3.2712
1-Apr-08	13:35	2.0236	25.19	28.01	3.2279
1-Apr-08	13:36	2.0237	25.12	28.01	3.1861
1-Apr-08	13:37	2.0237	25.05	28.01	3.1457
1-Apr-08	13:38	2.0238	24.98	28.01	3.1068
1-Apr-08	13:39	2.0239	24.92	28.01	3.0714
1-Apr-08	13:40	2.0239	24.86	28.01	3.0405
1-Apr-08	13:41	2.024	24.8	28.01	3.0105
1-Apr-08	13:42	2.0241	24.74	28.01	2.9814
1-Apr-08	13:43	2.0241	24.68	28.01	2.9531
1-Apr-08	13:44	2.0242	24.63	28.01	2.9257
1-Apr-08	13:45	2.0243	24.57	28.01	2.8991
1-Apr-08	13:46	2.0243	24.52	28.01	2.8733
1-Apr-08	13:47	2.0244	24.47	28.01	2.8482
1-Apr-08	13:48	2.0245	24.42	28.01	2.8239
1-Apr-08	13:49	2.0245	24.37	28.01	2.8003
1-Apr-08	13:50	2.0246	24.33	28.01	2.7774
1-Apr-08	13:51	2.0247	24.28	28.01	2.7552
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1-Apr-08	13:53	2.0248	24.2	28.01	2.7127
1-Apr-08	13:54	2.0249	24.16	28.01	2.6924
1-Apr-08	13:55	2.0249	24.12	28.01	2.6727
1-Apr-08	13:56	2.0224	24.08	28.01	2.6536
1-Apr-08	13:57	2.0147	24.04	28.01	2.6348
1-Apr-08	13:58	1.9996	24.01	28.01	2.6163
1-Apr-08	13:59	1.9743	23.97	28.01	2.5977
1-Apr-08	14:00	1.9365	23.93	28.01	2.5788
1-Apr-08	14:01	1.889	23.89	28.01	2.5591
1-Apr-08	14:02	1.8357	23.85	28.01	2.5386
1-Apr-08	14:03	1.7807	23.81	28.01	2.517
1-Apr-08	14:04	1.7266	23.76	28.01	2.4945
1-Apr-08	14:05	1.6767	23.72	28.01	2.4711
1-Apr-08	14:06	1.632	23.67	28.01	2.447

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1-Apr-08	14:08	1.563	23.57	28.01	2.4011
1-Apr-08	14:09	1.5388	23.52	28.01	2.3829
1-Apr-08	14:10	1.5191	23.47	28.01	2.3646
1-Apr-08	14:11	1.503	23.42	28.01	2.3462
1-Apr-08	14:12	1.4896	23.37	28.01	2.328
1-Apr-08	14:13	1.4786	23.32	28.01	2.3099
1-Apr-08	14:14	1.4696	23.27	28.01	2.2919
1-Apr-08	14:15	1.4623	23.22	28.01	2.2742
1-Apr-08	14:16	1.4564	23.17	28.01	2.2567
1-Apr-08	14:17	1.4515	23.12	28.01	2.2395
1-Apr-08	14:18	1.4475	23.07	28.01	2.2225
1-Apr-08	14:19	1.4443	23.03	28.01	2.2059
1-Apr-08	14:20	1.4417	22.98	28.01	2.1895
1-Apr-08	14:21	1.4395	22.94	28.01	2.1734
1-Apr-08	14:22	1.4377	22.89	28.01	2.1577
1-Apr-08	14:23	1.4363	22.85	28.01	2.1422
1-Apr-08	14:24	1.4351	22.81	28.01	2.127
1-Apr-08	14:25	1.4342	22.77	28.01	2.1122
1-Apr-08	14:26	1.4334	22.73	28.01	2.0976
1-Apr-08	14:27	1.4328	22.69	28.01	2.0833
1-Apr-08	14:28	1.4322	22.65	28.01	2.0694
1-Apr-08	14:29	1.4318	22.61	28.01	2.0557
1-Apr-08	14:30	1.4314	22.58	28.01	2.0423
1-Apr-08	14:31	1.4312	22.54	28.01	2.0292
1-Apr-08	14:32	1.4309	22.5	28.01	2.0164
1-Apr-08	14:33	1.4308	22.47	28.01	2.0038
1-Apr-08	14:34	1.4307	22.43	28.01	1.9915
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1-Apr-08	14:36	1.4308	22.37	28.01	1.9677
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1-Apr-08	14:38	1.4308	22.31	28.01	1.9449
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1-Apr-08	14:40	1.4309	22.25	28.01	1.9259
1-Apr-08	14:41	1.4309	22.22	28.01	1.9203
1-Apr-08	14:42	1.4309	22.19	28.01	1.9147
1-Apr-08	14:43	1.431	22.16	28.01	1.9092
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1-Apr-08	14:47	1.4311	22.05	28.01	1.8879
1-Apr-08	14:48	1.4311	22.02	28.01	1.8828
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1-Apr-08	14:57	1.422	21.79	28.01	1.8387
1-Apr-08	14:58	1.4084	21.76	28.01	1.8339
1-Apr-08	14:59	1.3856	21.73	28.01	1.8289
1-Apr-08	15:00	1.3515	21.71	28.01	1.8237
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1-Apr-08	15:04	1.1622	21.57	28.01	1.7986
1-Apr-08	15:05	1.1173	21.54	28.01	1.7911
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1-Apr-08	15:08	1.0147	21.41	28.01	1.7666
1-Apr-08	15:09	0.9929	21.36	28.01	1.758
1-Apr-08	15:10	0.9751	21.31	28.01	1.7492
1-Apr-08	15:11	0.9606	21.27	28.01	1.7403
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1-Apr-08	15:13	0.9386	21.17	28.01	1.7225
1-Apr-08	15:14	0.9305	21.13	28.01	1.7136
1-Apr-08	15:15	0.9239	21.08	28.01	1.7047
1-Apr-08	15:16	0.9185	21.03	28.01	1.6958
1-Apr-08	15:17	0.9141	20.99	28.01	1.687
1-Apr-08	15:18	0.9105	20.94	28.01	1.6782
1-Apr-08	15:19	0.9075	20.89	28.01	1.6699
1-Apr-08	15:20	0.9051	20.85	28.01	1.6616
1-Apr-08	15:21	0.9032	20.8	28.01	1.6533
1-Apr-08	15:22	0.9016	20.76	28.01	1.6452
1-Apr-08	15:23	0.9003	20.71	28.01	1.6371
1-Apr-08	15:24	0.8992	20.67	28.01	1.6291
1-Apr-08	15:25	0.8983	20.63	28.01	1.6211
1-Apr-08	15:26	0.8976	20.58	28.01	1.6133
1-Apr-08	15:27	0.897	20.54	28.01	1.6055
1-Apr-08	15:28	0.8965	20.5	28.01	1.5978
1-Apr-08	15:29	0.8961	20.46	28.01	1.5902
1-Apr-08	15:30	0.8958	20.42	28.01	1.5826
1-Apr-08	15:31	0.8955	20.37	28.01	1.5751
1-Apr-08	15:32	0.8953	20.33	28.01	1.5678
1-Apr-08	15:33	0.8952	20.29	28.01	1.5604
1-Apr-08	15:34	0.8951	20.25	28.01	1.5532
1-Apr-08	15:35	0.8951	20.22	28.01	1.5461
1-Apr-08	15:36	0.8951	20.18	28.01	1.539
1-Apr-08	15:37	0.8951	20.14	28.01	1.532
1-Apr-08	15:38	0.8951	20.1	28.01	1.5251
1-Apr-08	15:39	0.8951	20.06	28.01	1.5182
1-Apr-08	15:40	0.8951	20.03	28.01	1.5114
1-Apr-08	15:41	0.8951	19.99	28.01	1.5047
1-Apr-08	15:42	0.8951	19.95	28.01	1.4981
1-Apr-08	15:43	0.8951	19.92	28.01	1.4916
1-Apr-08	15:44	0.8951	19.88	28.01	1.4851
1-Apr-08	15:45	0.8952	19.85	28.01	1.4787
1-Apr-08	15:46	0.8952	19.81	28.01	1.4723

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1-Apr-08	15:48	0.8952	19.74	28.01	1.4598
1-Apr-08	15:49	0.8952	19.71	28.01	1.4537
1-Apr-08	15:50	0.8952	19.67	28.01	1.4476
1-Apr-08	15:51	0.8952	19.64	28.01	1.4416
1-Apr-08	15:52	0.8952	19.61	28.01	1.4359
1-Apr-08	15:53	0.8952	19.58	28.01	1.4302
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1-Apr-08	15:56	0.8953	19.48	28.01	1.4136
1-Apr-08	15:57	0.8953	19.45	28.01	1.4081
1-Apr-08	15:58	0.8953	19.42	28.01	1.4028
1-Apr-08	15:59	0.8953	19.39	28.01	1.3974
1-Apr-08	16:00	0.8953	19.36	28.01	1.3922
1-Apr-08	16:01	0.8953	19.33	28.01	1.387
1-Apr-08	16:02	0.8953	19.3	28.01	1.3818
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1-Apr-08	16:07	0.8954	19.16	28.01	1.3568
1-Apr-08	16:08	0.8954	19.13	28.01	1.352
1-Apr-08	16:09	0.8954	19.1	28.01	1.3472
1-Apr-08	16:10	0.8954	19.08	28.01	1.3425
1-Apr-08	16:11	0.8954	19.05	28.01	1.3378
1-Apr-08	16:12	0.8954	19.02	28.01	1.3331
1-Apr-08	16:13	0.8954	19	28.01	1.3285
1-Apr-08	16:14	0.8954	18.97	28.01	1.324
1-Apr-08	16:15	0.8955	18.95	28.01	1.3195
1-Apr-08	16:16	0.8955	18.92	28.01	1.315
1-Apr-08	16:17	0.8955	18.9	28.01	1.3106
1-Apr-08	16:18	0.8955	18.87	28.01	1.3063
1-Apr-08	16:19	0.8955	18.85	28.01	1.302
1-Apr-08	16:20	0.8955	18.82	28.01	1.2977
1-Apr-08	16:21	0.8955	18.8	28.01	1.2935
1-Apr-08	16:22	0.8955	18.78	28.01	1.2893
1-Apr-08	16:23	0.8955	18.75	28.01	1.2852
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1-Apr-08	16:25	0.8955	18.71	28.01	1.2771
1-Apr-08	16:26	0.8956	18.68	28.01	1.2731
1-Apr-08	16:27	0.8956	18.66	28.01	1.2691
1-Apr-08	16:28	0.8956	18.64	28.01	1.2652
1-Apr-08	16:29	0.8956	18.62	28.01	1.2613
1-Apr-08	16:30	0.8956	18.59	28.01	1.2575
1-Apr-08	16:31	0.8956	18.57	28.01	1.2537
1-Apr-08	16:32	0.8956	18.55	28.01	1.2499
1-Apr-08	16:33	0.8956	18.53	28.01	1.2462
1-Apr-08	16:34	0.8956	18.51	28.01	1.2425
1-Apr-08	16:35	0.8956	18.49	28.01	1.2389
1-Apr-08	16:36	0.8957	18.47	28.01	1.2353

1-Apr-08	16:37	0.8957	18.45	28.01	1.2317
1-Apr-08	16:38	0.8957	18.43	28.01	1.2282
1-Apr-08	16:39	0.8957	18.41	28.01	1.2247
1-Apr-08	16:40	0.8957	18.39	28.01	1.2213
1-Apr-08	16:41	0.8957	18.37	28.01	1.2178
1-Apr-08	16:42	0.8957	18.35	28.01	1.2145
1-Apr-08	16:43	0.8957	18.33	28.01	1.2114
1-Apr-08	16:44	0.8957	18.31	28.01	1.2083
1-Apr-08	16:45	0.8957	18.29	28.01	1.2052
1-Apr-08	16:46	0.8957	18.27	28.01	1.2021
1-Apr-08	16:47	0.8958	18.26	28.01	1.199
1-Apr-08	16:48	0.8958	18.24	28.01	1.196
1-Apr-08	16:49	0.8958	18.22	28.01	1.1931
1-Apr-08	16:50	0.8958	18.2	28.01	1.1901
1-Apr-08	16:51	0.8958	18.18	28.01	1.1872
1-Apr-08	16:52	0.8958	18.17	28.01	1.1843
1-Apr-08	16:53	0.8958	18.15	28.01	1.1814
1-Apr-08	16:54	0.8958	18.13	28.01	1.1786
1-Apr-08	16:55	0.8958	18.12	28.01	1.1758
1-Apr-08	16:56	0.8958	18.1	28.01	1.173
1-Apr-08	16:57	0.8958	18.08	28.01	1.1703
1-Apr-08	16:58	0.8959	18.07	28.01	1.1676
1-Apr-08	16:59	0.8959	18.05	28.01	1.1649
1-Apr-08	17:00	0.8959	18.03	28.01	1.1622
1-Apr-08	17:01	0.8959	18.02	28.01	1.1595
1-Apr-08	17:02	0.8959	18	28.01	1.1569
1-Apr-08	17:03	0.8959	17.99	28.01	1.1543
1-Apr-08	17:04	0.8959	17.97	28.01	1.1518
1-Apr-08	17:05	0.8959	17.96	28.01	1.1492
1-Apr-08	17:06	0.8959	17.94	28.01	1.1467
1-Apr-08	17:07	0.8959	17.93	28.01	1.1442
1-Apr-08	17:08	0.8959	17.91	28.01	1.1418
1-Apr-08	17:09	0.896	17.9	28.01	1.1393
1-Apr-08	17:10	0.896	17.88	28.01	1.1369
1-Apr-08	17:11	0.896	17.87	28.01	1.1345
1-Apr-08	17:12	0.896	17.85	28.01	1.1322
1-Apr-08	17:13	0.896	17.84	28.01	1.1298
1-Apr-08	17:14	0.896	17.83	28.01	1.1275
1-Apr-08	17:15	0.896	17.81	28.01	1.1252
1-Apr-08	17:16	0.896	17.8	28.01	1.1229
1-Apr-08	17:17	0.896	17.78	28.01	1.1207
1-Apr-08	17:18	0.896	17.77	28.01	1.1185
1-Apr-08	17:19	0.896	17.76	28.01	1.1163
1-Apr-08	17:20	0.8961	17.74	28.01	1.1141
1-Apr-08	17:21	0.8961	17.73	28.01	1.1119
1-Apr-08	17:22	0.8961	17.72	28.01	1.1098
1-Apr-08	17:23	0.8961	17.71	28.01	1.1076
1-Apr-08	17:24	0.8961	17.69	28.01	1.1055
1-Apr-08	17:25	0.8961	17.68	28.01	1.1035
1-Apr-08	17:26	0.8961	17.67	28.01	1.1014

1-Apr-08	17:27	0.8961	17.66	28.01	1.0994
1-Apr-08	17:28	0.8961	17.64	28.01	1.0974
1-Apr-08	17:29	0.8961	17.63	28.01	1.0954
1-Apr-08	17:30	0.8961	17.62	28.01	1.0934
1-Apr-08	17:31	0.8962	17.61	28.01	1.0914
1-Apr-08	17:32	0.8962	17.6	28.01	1.0895
1-Apr-08	17:33	0.8962	17.59	28.01	1.0876
1-Apr-08	17:34	0.8962	17.57	28.01	1.0857
1-Apr-08	17:35	0.8962	17.56	28.01	1.0838
1-Apr-08	17:36	0.8962	17.55	28.01	1.0819
1-Apr-08	17:37	0.8962	17.54	28.01	1.0801
1-Apr-08	17:38	0.8962	17.53	28.01	1.0783
1-Apr-08	17:39	0.8962	17.52	28.01	1.0765
1-Apr-08	17:40	0.8962	17.51	28.01	1.0747
1-Apr-08	17:41	0.8962	17.5	28.01	1.0729
1-Apr-08	17:42	0.8962	17.49	28.01	1.0712
1-Apr-08	17:43	0.8963	17.48	28.01	1.0694
1-Apr-08	17:44	0.8963	17.47	28.01	1.0677
1-Apr-08	17:45	0.8963	17.46	28.01	1.066
1-Apr-08	17:46	0.8963	17.45	28.01	1.0643
1-Apr-08	17:47	0.8963	17.44	28.01	1.0627
1-Apr-08	17:48	0.8963	17.43	28.01	1.061
1-Apr-08	17:49	0.8963	17.42	28.01	1.0594
1-Apr-08	17:50	0.8963	17.41	28.01	1.0578
1-Apr-08	17:51	0.8963	17.4	28.01	1.0562
1-Apr-08	17:52	0.8963	17.39	28.01	1.0546
1-Apr-08	17:53	0.8963	17.38	28.01	1.053
1-Apr-08	17:54	0.8964	17.37	28.01	1.0514
1-Apr-08	17:55	0.8964	17.36	28.01	1.0499
1-Apr-08	17:56	0.8946	17.35	28.01	1.0484
1-Apr-08	17:57	0.8891	17.34	28.01	1.0468
1-Apr-08	17:58	0.8785	17.33	28.01	1.0452
1-Apr-08	17:59	0.8607	17.32	28.01	1.0435
1-Apr-08	18:00	0.8341	17.31	28.01	1.0415
1-Apr-08	18:01	0.8007	17.29	28.01	1.0393
1-Apr-08	18:02	0.7632	17.28	28.01	1.0367
1-Apr-08	18:03	0.7246	17.26	28.01	1.0338
1-Apr-08	18:04	0.6866	17.24	28.01	1.0306
1-Apr-08	18:05	0.6515	17.22	28.01	1.027
1-Apr-08	18:06	0.6201	17.2	28.01	1.0231
1-Apr-08	18:07	0.593	17.17	28.01	1.019
1-Apr-08	18:08	0.5716	17.15	28.01	1.0146
1-Apr-08	18:09	0.5546	17.12	28.01	1.0102
1-Apr-08	18:10	0.5407	17.09	28.01	1.0056
1-Apr-08	18:11	0.5294	17.06	28.01	1.0011
1-Apr-08	18:12	0.5199	17.03	28.01	0.9966
1-Apr-08	18:13	0.5122	17.01	28.01	0.9921
1-Apr-08	18:14	0.5059	16.98	28.01	0.9875
1-Apr-08	18:15	0.5007	16.95	28.01	0.983
1-Apr-08	18:16	0.4965	16.92	28.01	0.9784

1-Apr-08	18:17	0.4931	16.89	28.01	0.9738
1-Apr-08	18:18	0.4903	16.86	28.01	0.9693
1-Apr-08	18:19	0.488	16.83	28.01	0.9648
1-Apr-08	18:20	0.4861	16.8	28.01	0.9603
1-Apr-08	18:21	0.4846	16.78	28.01	0.9558
1-Apr-08	18:22	0.4833	16.75	28.01	0.9513
1-Apr-08	18:23	0.4823	16.72	28.01	0.9469
1-Apr-08	18:24	0.4815	16.69	28.01	0.9425
1-Apr-08	18:25	0.4808	16.66	28.01	0.9382
1-Apr-08	18:26	0.4802	16.64	28.01	0.9339
1-Apr-08	18:27	0.4798	16.61	28.01	0.9296
1-Apr-08	18:28	0.4794	16.58	28.01	0.9253
1-Apr-08	18:29	0.479	16.56	28.01	0.9211
1-Apr-08	18:30	0.4788	16.53	28.01	0.917
1-Apr-08	18:31	0.4785	16.5	28.01	0.9128
1-Apr-08	18:32	0.4784	16.48	28.01	0.9087
1-Apr-08	18:33	0.4783	16.45	28.01	0.9047
1-Apr-08	18:34	0.4782	16.43	28.01	0.9007
1-Apr-08	18:35	0.4782	16.4	28.01	0.8967
1-Apr-08	18:36	0.4782	16.38	28.01	0.8927
1-Apr-08	18:37	0.4782	16.35	28.01	0.8888
1-Apr-08	18:38	0.4782	16.33	28.01	0.885
1-Apr-08	18:39	0.4782	16.3	28.01	0.8811
1-Apr-08	18:40	0.4782	16.28	28.01	0.8773
1-Apr-08	18:41	0.4782	16.26	28.01	0.8736
1-Apr-08	18:42	0.4782	16.23	28.01	0.8698
1-Apr-08	18:43	0.4782	16.21	28.01	0.8661
1-Apr-08	18:44	0.4782	16.19	28.01	0.8625
1-Apr-08	18:45	0.4782	16.16	28.01	0.8589
1-Apr-08	18:46	0.4782	16.14	28.01	0.8553
1-Apr-08	18:47	0.4782	16.12	28.01	0.8517
1-Apr-08	18:48	0.4782	16.09	28.01	0.8482
1-Apr-08	18:49	0.4782	16.07	28.01	0.8447
1-Apr-08	18:50	0.4782	16.05	28.01	0.8412
1-Apr-08	18:51	0.4782	16.03	28.01	0.8378
1-Apr-08	18:52	0.4782	16.01	28.01	0.8344
1-Apr-08	18:53	0.4782	15.99	28.01	0.8311
1-Apr-08	18:54	0.4782	15.97	28.01	0.8277
1-Apr-08	18:55	0.4782	15.94	28.01	0.8244
1-Apr-08	18:56	0.4782	15.92	28.01	0.8212
1-Apr-08	18:57	0.4782	15.9	28.01	0.8179
1-Apr-08	18:58	0.4782	15.88	28.01	0.8147
1-Apr-08	18:59	0.4782	15.86	28.01	0.8116
1-Apr-08	19:00	0.4782	15.84	28.01	0.8084
1-Apr-08	19:01	0.4782	15.82	28.01	0.8054
1-Apr-08	19:02	0.4782	15.8	28.01	0.8026
1-Apr-08	19:03	0.4782	15.78	28.01	0.7998
1-Apr-08	19:04	0.4782	15.77	28.01	0.797
1-Apr-08	19:05	0.4782	15.75	28.01	0.7942
1-Apr-08	19:06	0.4782	15.73	28.01	0.7914

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1-Apr-08	19:08	0.4783	15.69	28.01	0.786
1-Apr-08	19:09	0.4783	15.67	28.01	0.7833
1-Apr-08	19:10	0.4783	15.65	28.01	0.7806
1-Apr-08	19:11	0.4783	15.64	28.01	0.778
1-Apr-08	19:12	0.4783	15.62	28.01	0.7754
1-Apr-08	19:13	0.4783	15.6	28.01	0.7728
1-Apr-08	19:14	0.4783	15.58	28.01	0.7702
1-Apr-08	19:15	0.4783	15.56	28.01	0.7677
1-Apr-08	19:16	0.4783	15.55	28.01	0.7651
1-Apr-08	19:17	0.4783	15.53	28.01	0.7626
1-Apr-08	19:18	0.4783	15.51	28.01	0.7601
1-Apr-08	19:19	0.4783	15.5	28.01	0.7577
1-Apr-08	19:20	0.4783	15.48	28.01	0.7552
1-Apr-08	19:21	0.4783	15.46	28.01	0.7528
1-Apr-08	19:22	0.4783	15.45	28.01	0.7504
1-Apr-08	19:23	0.4783	15.43	28.01	0.7481
1-Apr-08	19:24	0.4783	15.41	28.01	0.7457
1-Apr-08	19:25	0.4783	15.4	28.01	0.7434
1-Apr-08	19:26	0.4783	15.38	28.01	0.7411
1-Apr-08	19:27	0.4783	15.37	28.01	0.7388
1-Apr-08	19:28	0.4783	15.35	28.01	0.7365
1-Apr-08	19:29	0.4783	15.34	28	0.7342
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1-Apr-08	19:31	0.4783	15.31	28	0.7298
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1-Apr-08	19:40	0.4783	15.17	28	0.7107
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1-Apr-08	19:43	0.4783	15.13	28	0.7047
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1-Apr-08	19:53	0.4784	15	28	0.6857
1-Apr-08	19:54	0.4784	14.99	28	0.6839
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1-Apr-08	19:56	0.4784	14.97	28	0.6803

1-Apr-08	19:57	0.4784	14.95	28	0.6785
1-Apr-08	19:58	0.4784	14.94	28	0.6768
1-Apr-08	19:59	0.4784	14.93	28	0.6751
1-Apr-08	20:00	0.4784	14.92	28	0.6734
1-Apr-08	20:01	0.4784	14.91	28	0.6716
1-Apr-08	20:02	0.4784	14.9	28	0.67
1-Apr-08	20:03	0.4784	14.88	28	0.6683
1-Apr-08	20:04	0.4784	14.87	28	0.6666
1-Apr-08	20:05	0.4784	14.86	28	0.665
1-Apr-08	20:06	0.4784	14.85	28	0.6634
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1-Apr-08	20:09	0.4784	14.82	28	0.6586
1-Apr-08	20:10	0.4784	14.81	28	0.657
1-Apr-08	20:11	0.4784	14.8	28	0.6554
1-Apr-08	20:12	0.4784	14.79	28	0.6539
1-Apr-08	20:13	0.4784	14.78	28	0.6524
1-Apr-08	20:14	0.4784	14.77	28	0.6508
1-Apr-08	20:15	0.4784	14.75	28	0.6493
1-Apr-08	20:16	0.4784	14.74	28	0.6478
1-Apr-08	20:17	0.4784	14.73	28	0.6464
1-Apr-08	20:18	0.4784	14.72	28	0.6449
1-Apr-08	20:19	0.4784	14.71	28	0.6434
1-Apr-08	20:20	0.4784	14.7	28	0.642
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1-Apr-08	20:22	0.4784	14.69	28	0.6392
1-Apr-08	20:23	0.4784	14.68	28	0.6378
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1-Apr-08	20:26	0.4784	14.65	28	0.6336
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1-Apr-08	20:28	0.4784	14.63	28	0.6309
1-Apr-08	20:29	0.4784	14.62	28	0.6296
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1-Apr-08	20:31	0.4784	14.6	28	0.627
1-Apr-08	20:32	0.4784	14.59	28	0.6257
1-Apr-08	20:33	0.4784	14.58	28	0.6245
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1-Apr-08	20:35	0.4784	14.57	28	0.6222
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1-Apr-08	20:40	0.4785	14.52	28	0.6165
1-Apr-08	20:41	0.4785	14.52	28	0.6154
1-Apr-08	20:42	0.4785	14.51	28	0.6143
1-Apr-08	20:43	0.4785	14.5	28	0.6132
1-Apr-08	20:44	0.4785	14.49	28	0.6121
1-Apr-08	20:45	0.4785	14.48	28	0.611
1-Apr-08	20:46	0.4785	14.48	28	0.6099

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1-Apr-08	21:00	0.4785	14.37	28	0.5959
1-Apr-08	21:01	0.4785	14.36	28	0.5949
1-Apr-08	21:02	0.4785	14.36	28	0.594
1-Apr-08	21:03	0.4785	14.35	28	0.593
1-Apr-08	21:04	0.4785	14.34	28	0.5921
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1-Apr-08	21:06	0.4785	14.33	28	0.5903
1-Apr-08	21:07	0.4785	14.32	28	0.5894
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1-Apr-08	21:09	0.4785	14.31	28	0.5876
1-Apr-08	21:10	0.4785	14.3	28	0.5867
1-Apr-08	21:11	0.4785	14.3	28	0.5859
1-Apr-08	21:12	0.4785	14.29	28	0.585
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1-Apr-08	21:14	0.4785	14.28	28	0.5833
1-Apr-08	21:15	0.4785	14.27	28	0.5825
1-Apr-08	21:16	0.4785	14.27	28	0.5816
1-Apr-08	21:17	0.4785	14.26	28	0.5808
1-Apr-08	21:18	0.4785	14.25	28	0.58
1-Apr-08	21:19	0.4785	14.25	28	0.5791
1-Apr-08	21:20	0.4785	14.24	28	0.5783
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1-Apr-08	21:22	0.4785	14.23	28	0.5767
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1-Apr-08	21:25	0.4786	14.21	28	0.5744
1-Apr-08	21:26	0.4786	14.21	28	0.5736
1-Apr-08	21:27	0.4786	14.2	28	0.5728
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1-Apr-08	21:29	0.4786	14.19	28	0.5713
1-Apr-08	21:30	0.4786	14.18	28	0.5706
1-Apr-08	21:31	0.4786	14.18	28	0.5698
1-Apr-08	21:32	0.4786	14.17	28	0.5691
1-Apr-08	21:33	0.4786	14.17	28	0.5684
1-Apr-08	21:34	0.4786	14.16	28	0.5677
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1-Apr-08	21:36	0.4786	14.15	28	0.5662

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1-Apr-08	21:39	0.4786	14.14	28	0.5641
1-Apr-08	21:40	0.4786	14.13	28	0.5634
1-Apr-08	21:41	0.4786	14.13	28	0.5627
1-Apr-08	21:42	0.4786	14.12	28	0.5621
1-Apr-08	21:43	0.4786	14.12	28	0.5614
1-Apr-08	21:44	0.4786	14.11	28	0.5607
1-Apr-08	21:45	0.4786	14.11	28	0.5601
1-Apr-08	21:46	0.4786	14.1	28	0.5594
1-Apr-08	21:47	0.4786	14.1	28	0.5588
1-Apr-08	21:48	0.4786	14.09	28	0.5581
1-Apr-08	21:49	0.4786	14.09	28	0.5575
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1-Apr-08	21:53	0.4786	14.07	28	0.555
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1-Apr-08	21:55	0.4786	14.06	28	0.5537
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1-Apr-08	21:58	0.4786	14.05	28	0.5519
1-Apr-08	21:59	0.4786	14.04	28	0.5513
1-Apr-08	22:00	0.4786	14.04	28	0.5508
1-Apr-08	22:01	0.4786	14.03	28	0.5502
1-Apr-08	22:02	0.4786	14.03	28	0.5496
1-Apr-08	22:03	0.4786	14.02	28	0.549
1-Apr-08	22:04	0.4786	14.02	28	0.5485
1-Apr-08	22:05	0.4786	14.02	28	0.5479
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1-Apr-08	22:07	0.4786	14.01	28	0.5468
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1-Apr-08	22:09	0.4786	14	28	0.5457
1-Apr-08	22:10	0.4786	14	28	0.5452
1-Apr-08	22:11	0.4786	13.99	28	0.5446
1-Apr-08	22:12	0.4786	13.99	28	0.5441
1-Apr-08	22:13	0.4786	13.98	28	0.5436
1-Apr-08	22:14	0.4787	13.98	28	0.543
1-Apr-08	22:15	0.4787	13.98	28	0.5425
1-Apr-08	22:16	0.4787	13.97	28	0.542
1-Apr-08	22:17	0.4787	13.97	28	0.5415
1-Apr-08	22:18	0.4787	13.96	28	0.541
1-Apr-08	22:19	0.4787	13.96	28	0.5405
1-Apr-08	22:20	0.4787	13.96	28	0.54
1-Apr-08	22:21	0.4787	13.95	28	0.5395
1-Apr-08	22:22	0.4787	13.95	28	0.539
1-Apr-08	22:23	0.4787	13.95	28	0.5385
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1-Apr-08	22:25	0.4787	13.94	28	0.5376
1-Apr-08	22:26	0.4787	13.94	28	0.5371

1-Apr-08	22:27	0.4787	13.93	28	0.5366
1-Apr-08	22:28	0.4787	13.93	28	0.5361
1-Apr-08	22:29	0.4787	13.93	28	0.5357
1-Apr-08	22:30	0.4787	13.92	28	0.5352
1-Apr-08	22:31	0.4787	13.92	28	0.5348
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1-Apr-08	22:33	0.4787	13.91	28	0.5339
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1-Apr-08	22:36	0.4787	13.9	28	0.5325
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1-Apr-08	22:40	0.4787	13.89	28	0.5308
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1-Apr-08	22:42	0.4787	13.88	28	0.53
1-Apr-08	22:43	0.4787	13.88	28	0.5296
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1-Apr-08	22:45	0.4787	13.87	28	0.5288
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1-Apr-08	22:48	0.4787	13.86	28	0.5276
1-Apr-08	22:49	0.4787	13.86	28	0.5272
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1-Apr-08	22:56	0.4787	13.84	28	0.5245
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1-Apr-08	22:58	0.4787	13.84	28	0.5238
1-Apr-08	22:59	0.4787	13.83	28	0.5234
1-Apr-08	23:00	0.4787	13.83	28	0.5231
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1-Apr-08	23:02	0.4787	13.83	28	0.5223
1-Apr-08	23:03	0.4787	13.82	28	0.522
1-Apr-08	23:04	0.4788	13.82	28	0.5216
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1-Apr-08	23:07	0.4788	13.81	28	0.5206
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1-Apr-08	23:09	0.4788	13.81	28	0.5199
1-Apr-08	23:10	0.4788	13.81	28	0.5196
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1-Apr-08	23:13	0.4788	13.8	28	0.5186
1-Apr-08	23:14	0.4788	13.8	28	0.5183
1-Apr-08	23:15	0.4788	13.79	28	0.518
1-Apr-08	23:16	0.4788	13.79	28	0.5177

1-Apr-08	23:17	0.4788	13.79	28	0.5174
1-Apr-08	23:18	0.4788	13.79	28	0.517
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1-Apr-08	23:29	0.4788	13.76	28	0.5138
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1-Apr-08	23:37	0.4788	13.75	28	0.5116
1-Apr-08	23:38	0.4788	13.74	28	0.5113
1-Apr-08	23:39	0.4788	13.74	28	0.5111
1-Apr-08	23:40	0.4788	13.74	28	0.5108
1-Apr-08	23:41	0.4788	13.74	28	0.5106
1-Apr-08	23:42	0.4788	13.74	28	0.5103
1-Apr-08	23:43	0.4788	13.73	28	0.51
1-Apr-08	23:44	0.4788	13.73	28	0.5098
1-Apr-08	23:45	0.4788	13.73	28	0.5095
1-Apr-08	23:46	0.4788	13.73	28	0.5093
1-Apr-08	23:47	0.4788	13.73	28	0.5091
1-Apr-08	23:48	0.4788	13.73	28	0.5088
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1-Apr-08	23:50	0.4788	13.72	28	0.5083
1-Apr-08	23:51	0.4788	13.72	28	0.5081
1-Apr-08	23:52	0.4788	13.72	28	0.5079
1-Apr-08	23:53	0.4788	13.72	28	0.5076
1-Apr-08	23:54	0.4788	13.72	28	0.5074
1-Apr-08	23:55	0.4788	13.71	28	0.5072
1-Apr-08	23:56	0.4768	13.71	28	0.5069
1-Apr-08	23:57	0.4705	13.71	28	0.5067
1-Apr-08	23:58	0.4584	13.71	28	0.5063
1-Apr-08	23:59	0.438	13.7	28	0.5058
2-Apr-08	0:00	0.4075	13.7	28	0.5052

APPENDIX D

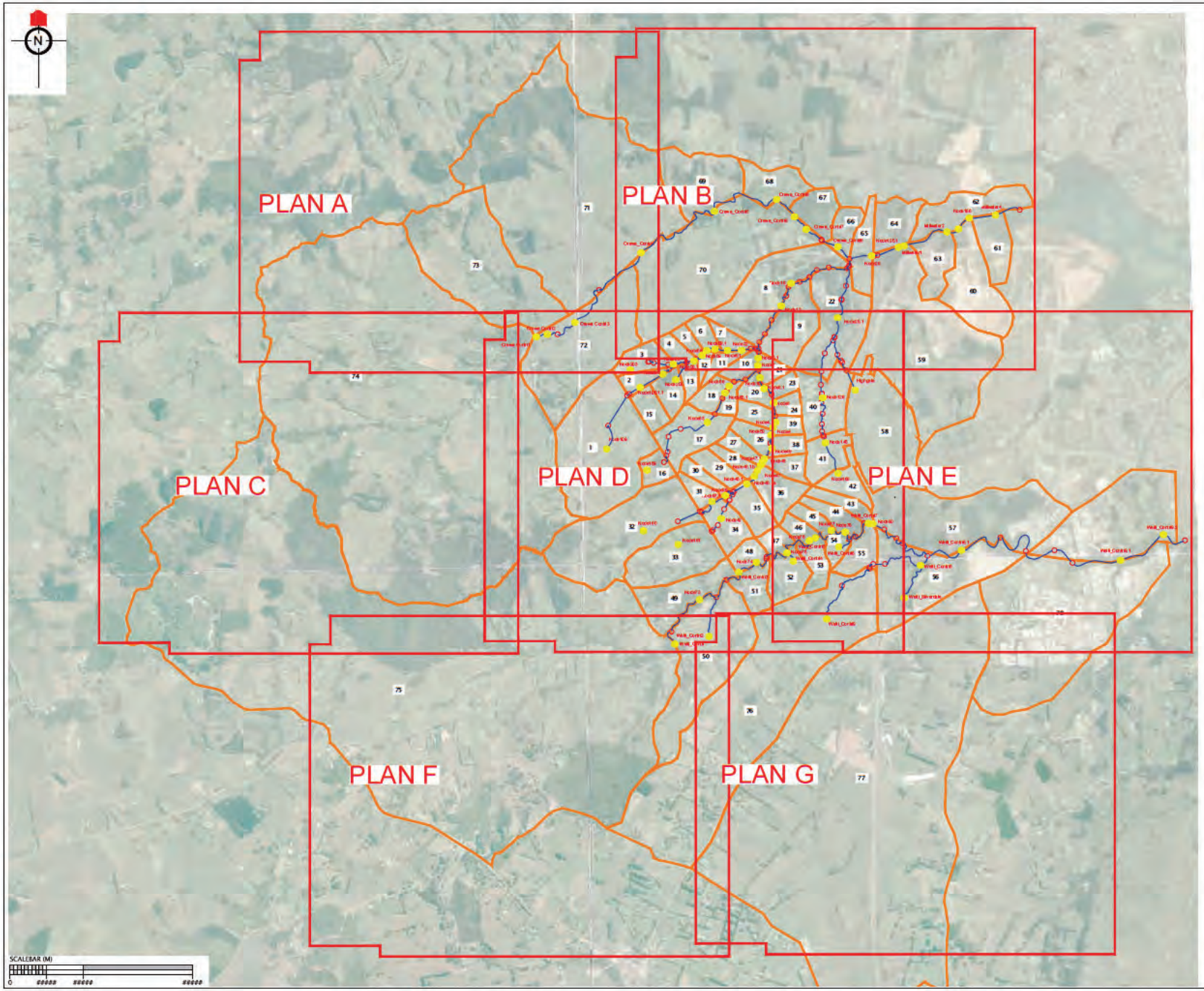
CATCHMENT & XP STORM MODEL PLANS

Catchment Number with Corresponding XP Storm Loading Node

Catchment No	Loading Nodes
1	Node 109
2	Node 54
3	Node 203
4	Node 56
5	Node 58
6	Node 59.1
7	Node 22
8	Node 16
9	Node 13
10	Node 8.1
11	Node 61
12	Node 59
13	Node 56.1
14	Node 206
15	Node 109.1.1
16	Node 159
17	Node 83
18	Node 86
19	Node 85.1
20	Node 108
21	Node 8
22	Node 25.1
23	Node 6.1
24	Node 6
25	Node 4.1
26	Node 50
27	Node 47.1
28	Node 46.1b
29	Node 46.1
30	Node 95
31	Node 97.1
32	Node 160
33	Node 161
34	Node 42
35	Node 46.1a
36	Node 47
37	Node 48
38	Node 49
39	Node 4

Catchment No	Loading Nodes
40	Node 126
41	Node 143
42	Node 168
43	Node 80
44	Node 78
45	Node 77
46	Node 76
47	Node 75
48	Node 74
49	Node 73
50	Weiti_Contri 2
51	Weiti_Contri 3
52	Weiti_Contri 4
53	Weiti_Contri 5
54	Weiti_Contri 6
55	Weiti_Contri 7
56	Weiti_Contri 8
57	Weiti_Contri8.1
58	Highgate
59	Millwater 1
60	Millwater 3
61	Millwater 4
62	Node 186
63	Millwater 2
64	Node 105.1
65	Node 28
66	Orewa-Contri 8
67	Orewa-Contri 7
68	Orewa-Contri 6
69	Orewa-Contri 5
70	Orewa-Contri 9
71	Orewa-Contri 4
72	Orewa-Contri 3
73	Orewa-Contri 2
74	Orewa-Contri 1
75	Weiti_Contri
76	Weiti_Contri 9
77	Weiti_Silverdale

XP CATCHMENT PLANS



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

CLIENT:

Fulton Hogan

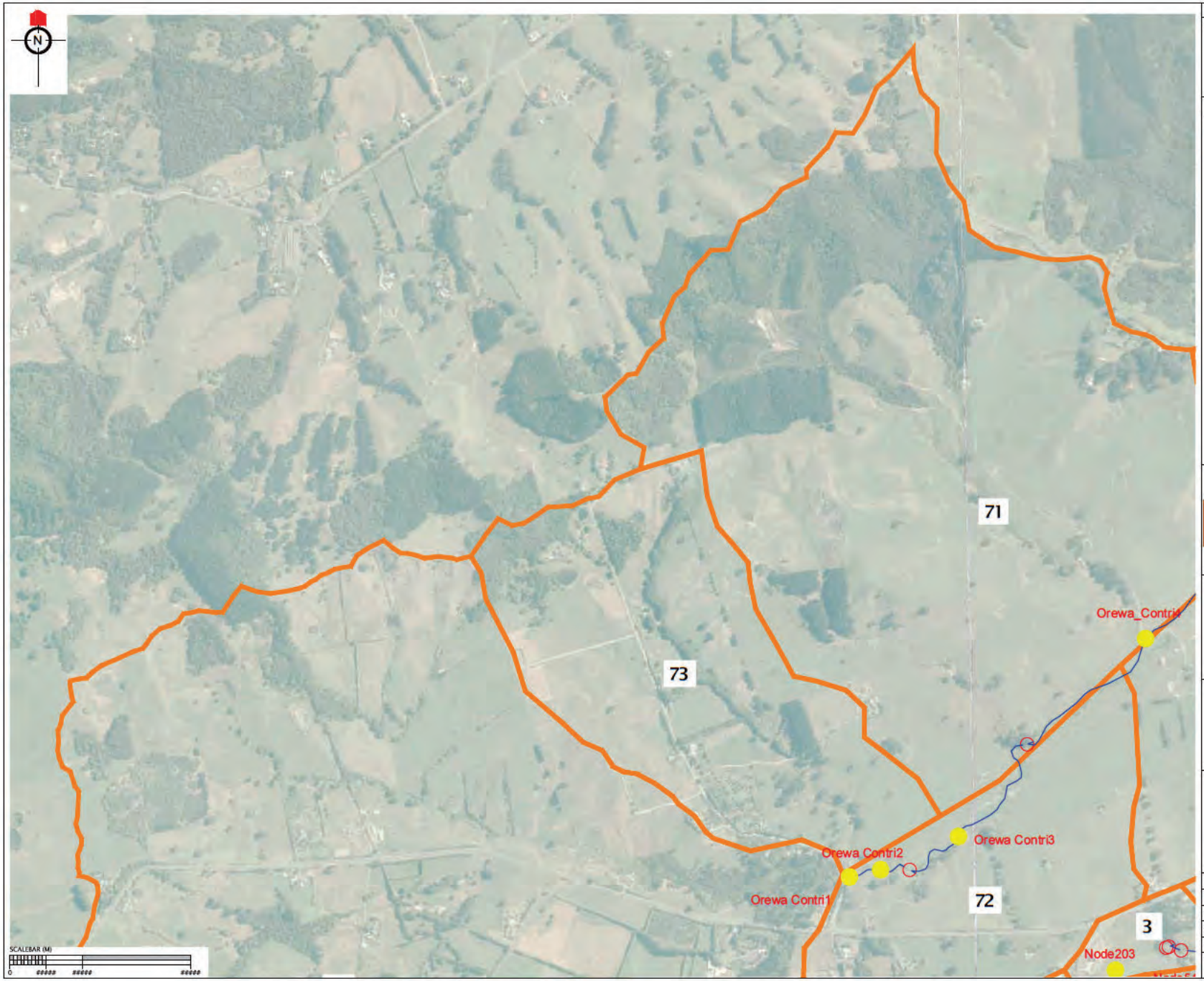
WOODS
Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: NOT TO SCALE
ISSUED: JULY 2016	
DWG. NO. 31720 - SW Overview	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

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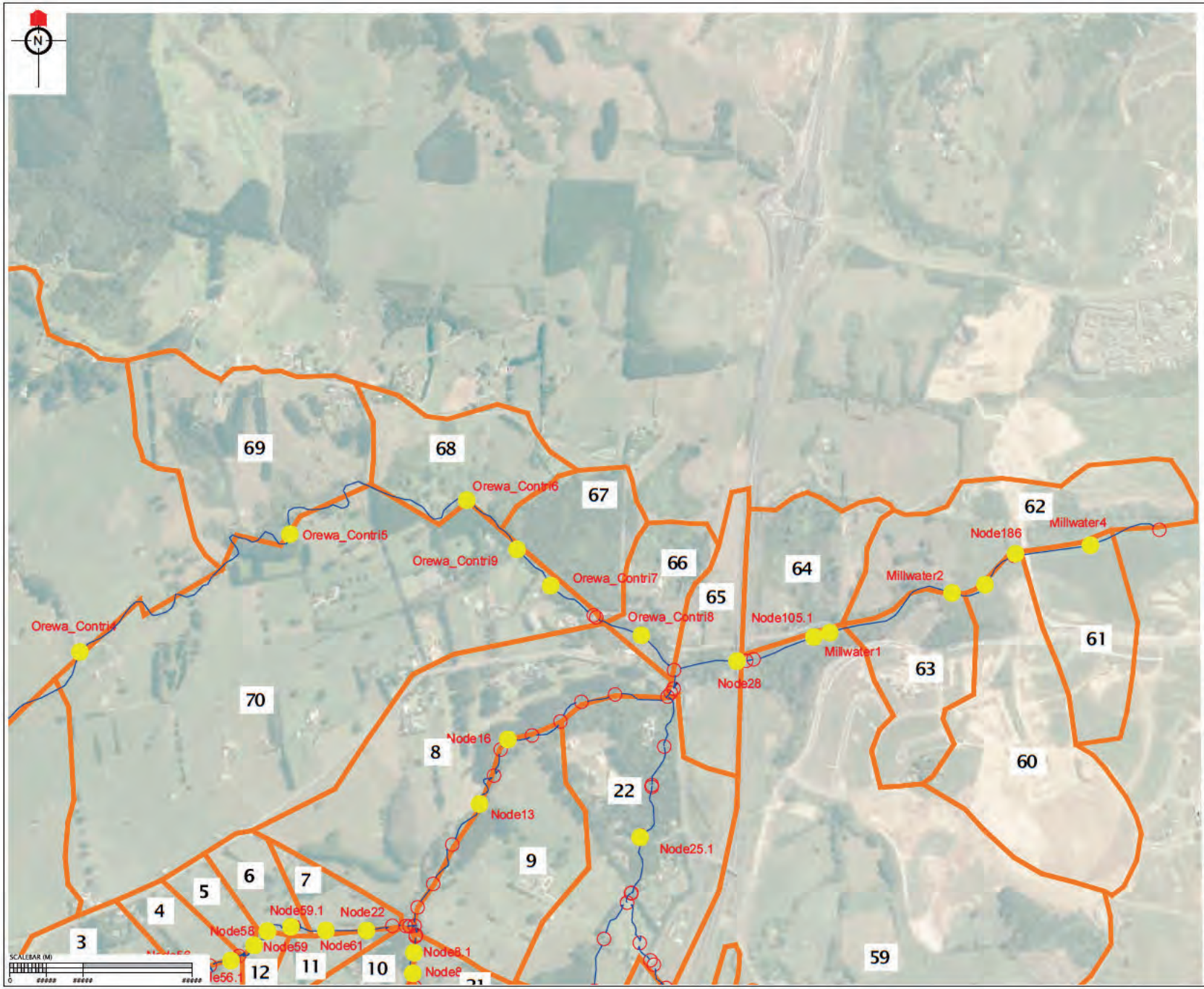
ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan A	REV. 1



REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

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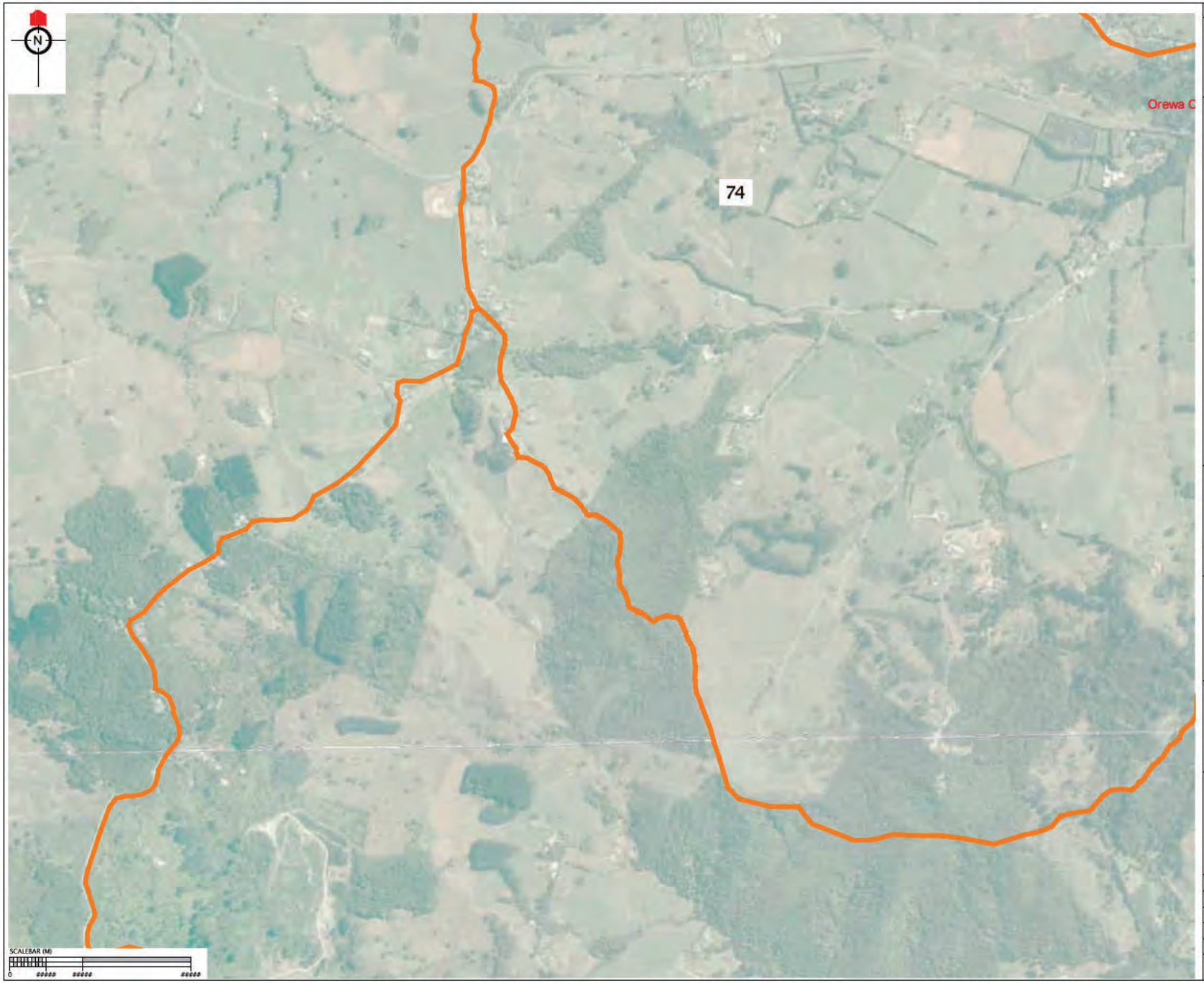
ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan B	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

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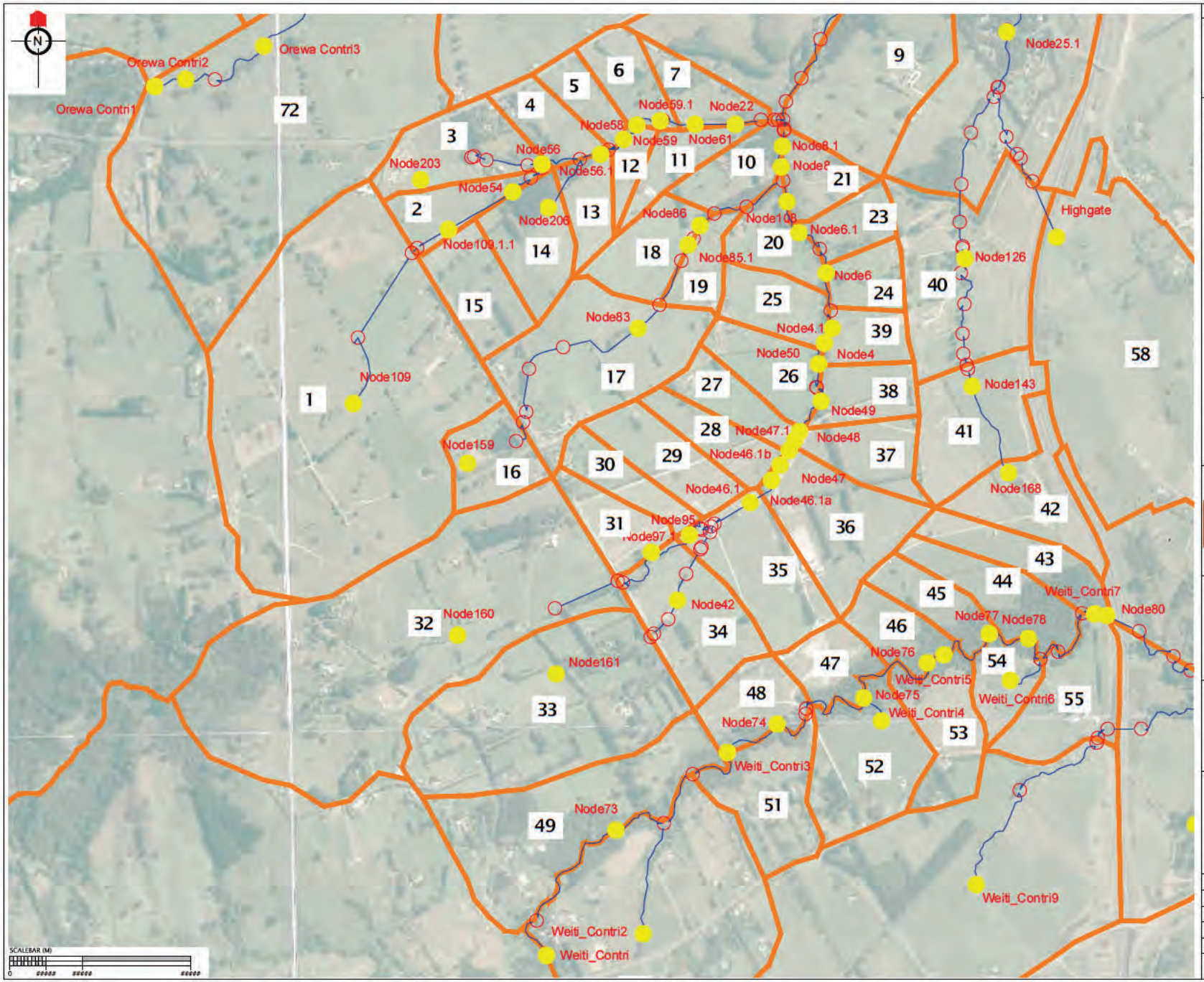
ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan C	REV. 1



REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

CLIENT:

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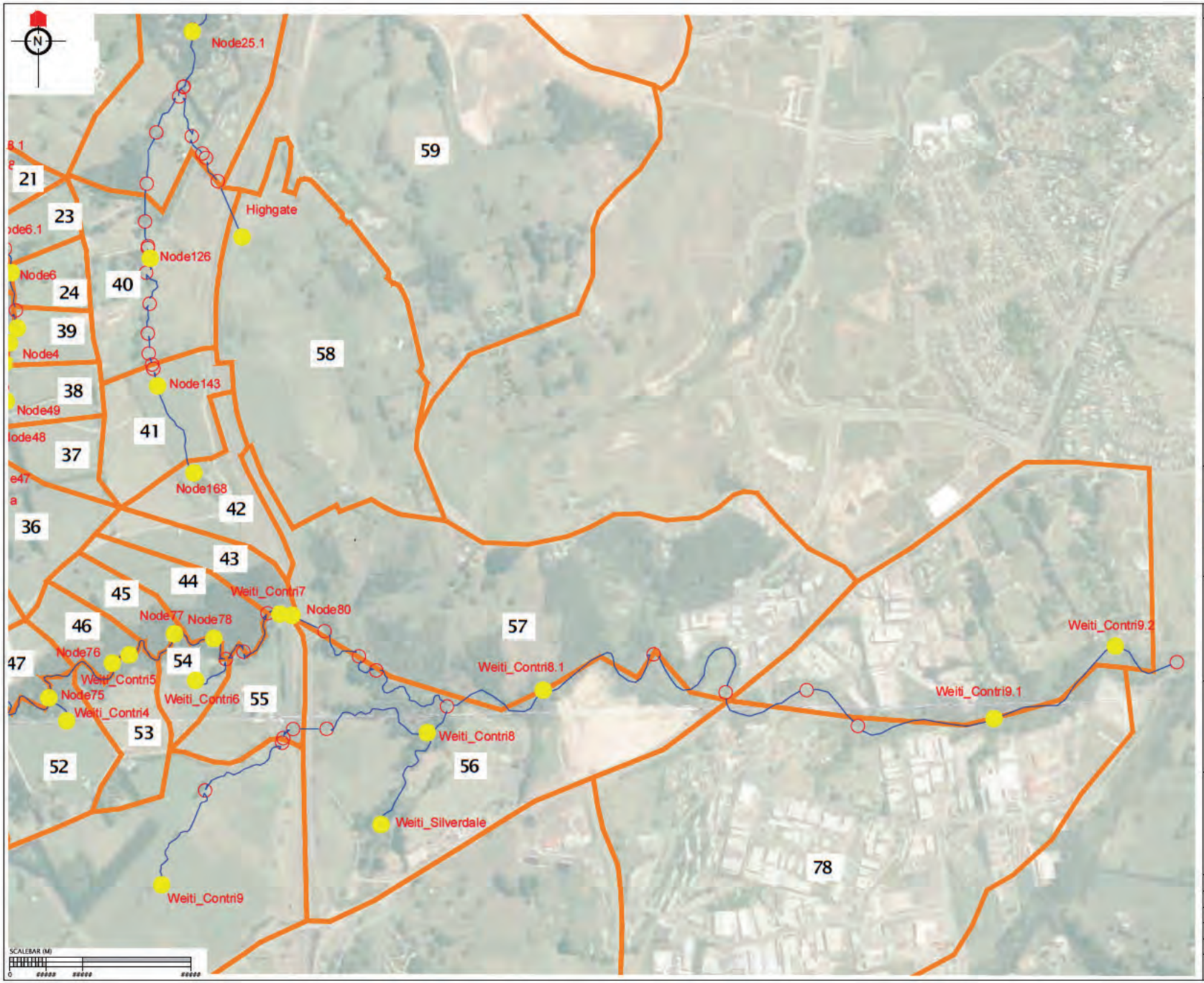
ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan D	REV. 1



REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

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ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan E	REV. 1

REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

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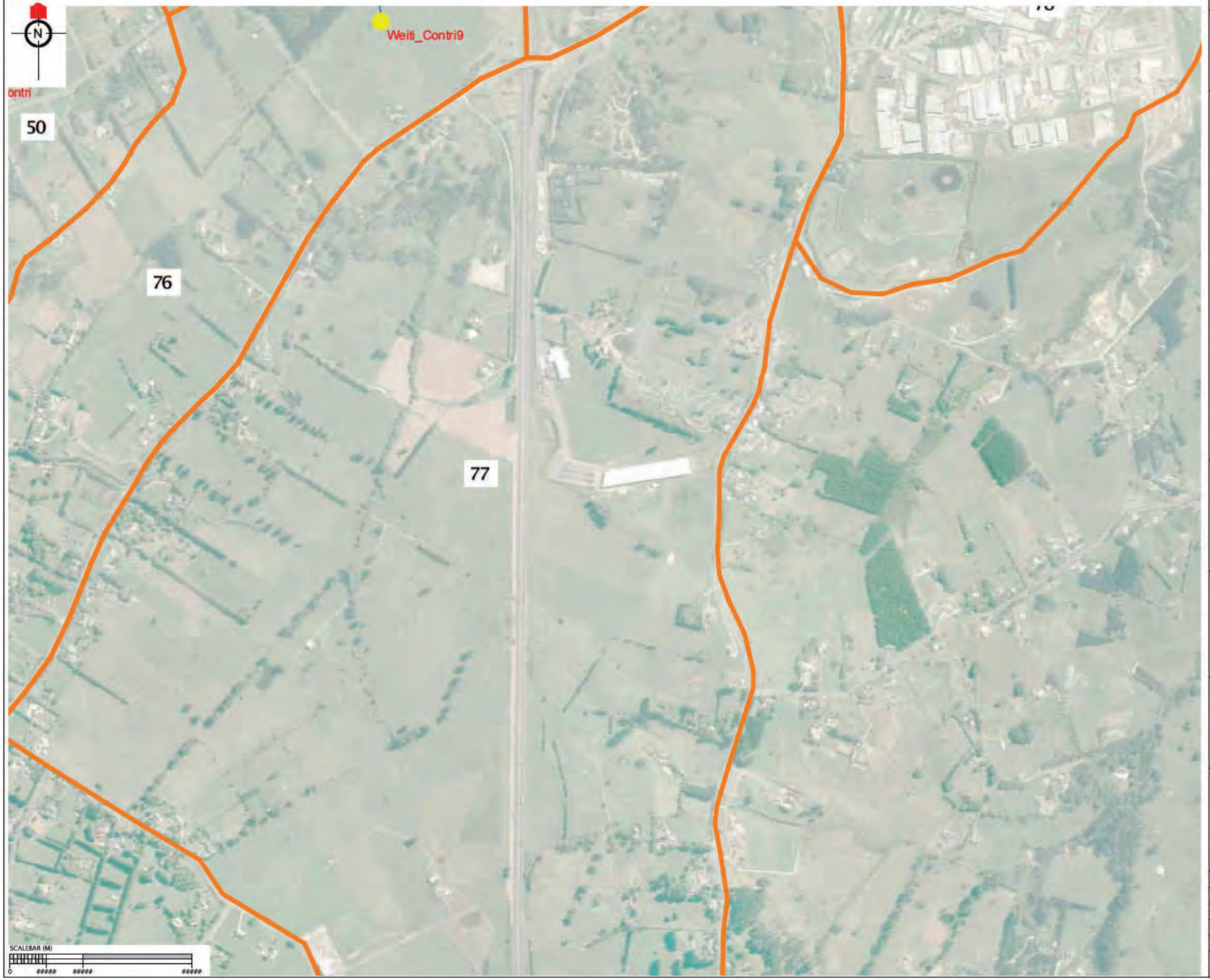
ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan F	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

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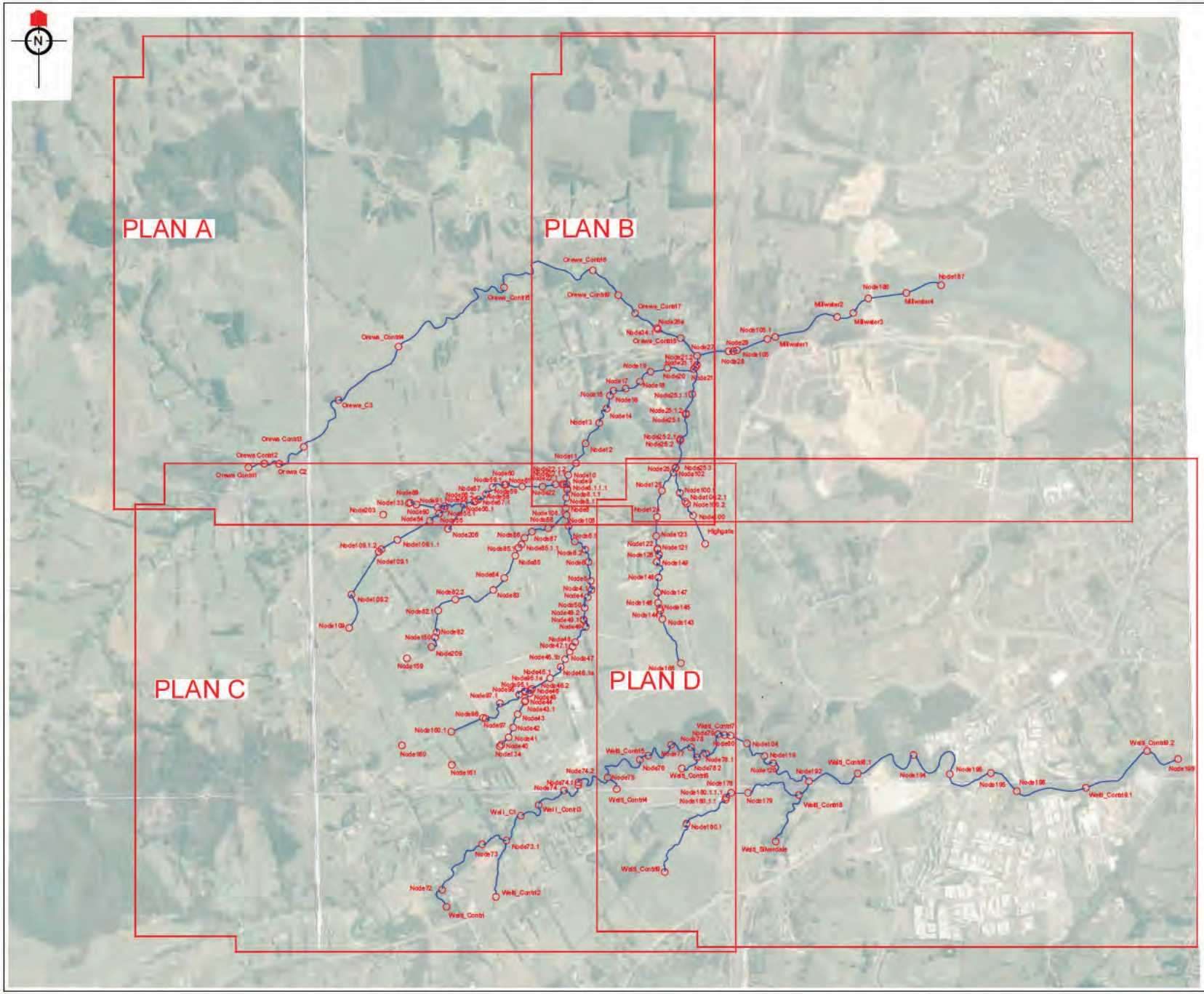
ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan G	REV. 1

XP NODE LOCATION PLANS



REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- XP STORM MODELLED LINK
- XP STORM MODELLED NODE
- PLAN BOUNDARY

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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: NOT TO SCALE
ISSUED: JULY 2016	
DWG. NO. 31720 - SW Overview	REV. 1

REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

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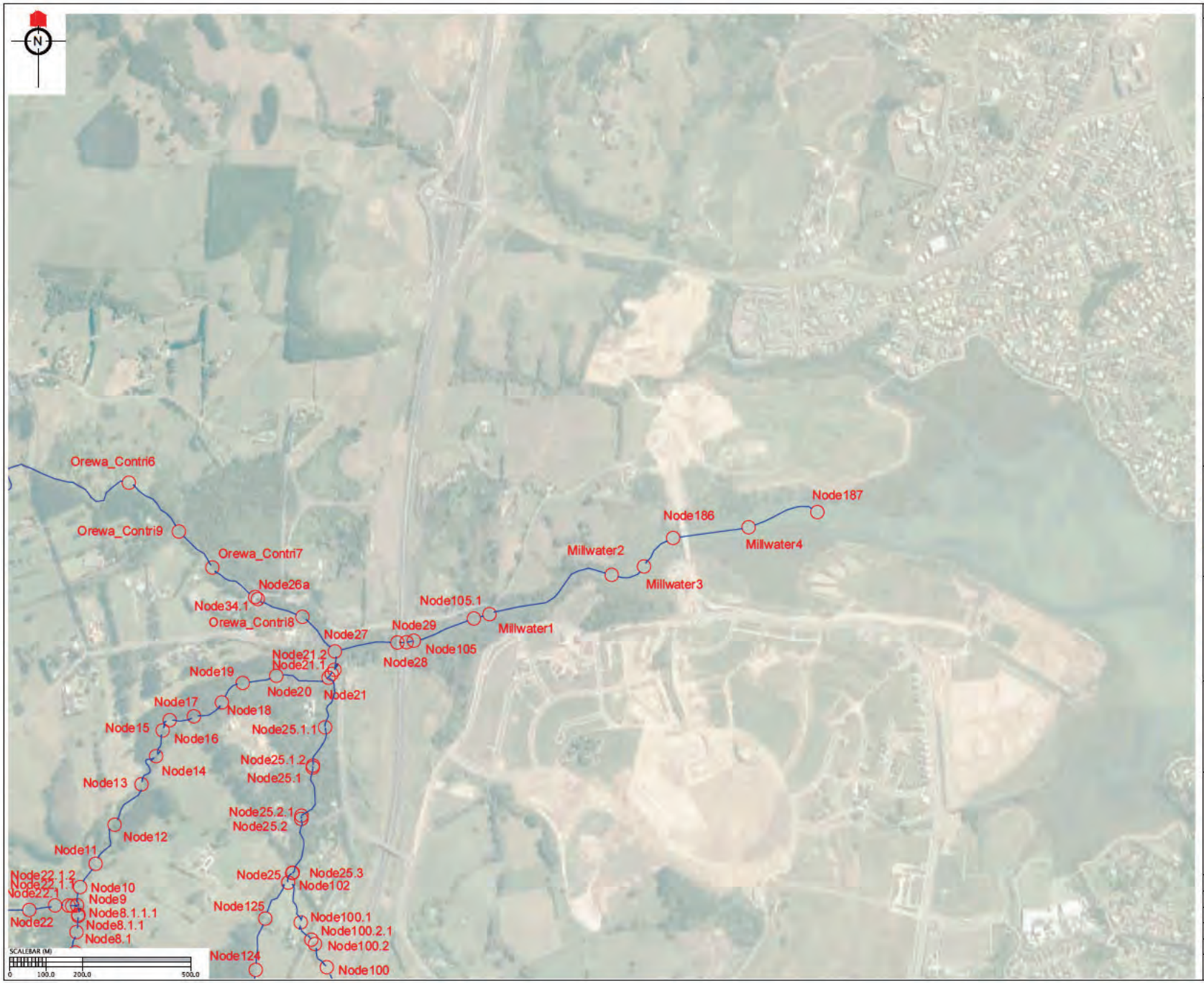
WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan A	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan B	REV. 1

REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- XP STORM MODELLED LINK
- XP STORM MODELLED NODE

CLIENT: Fulton Hogan

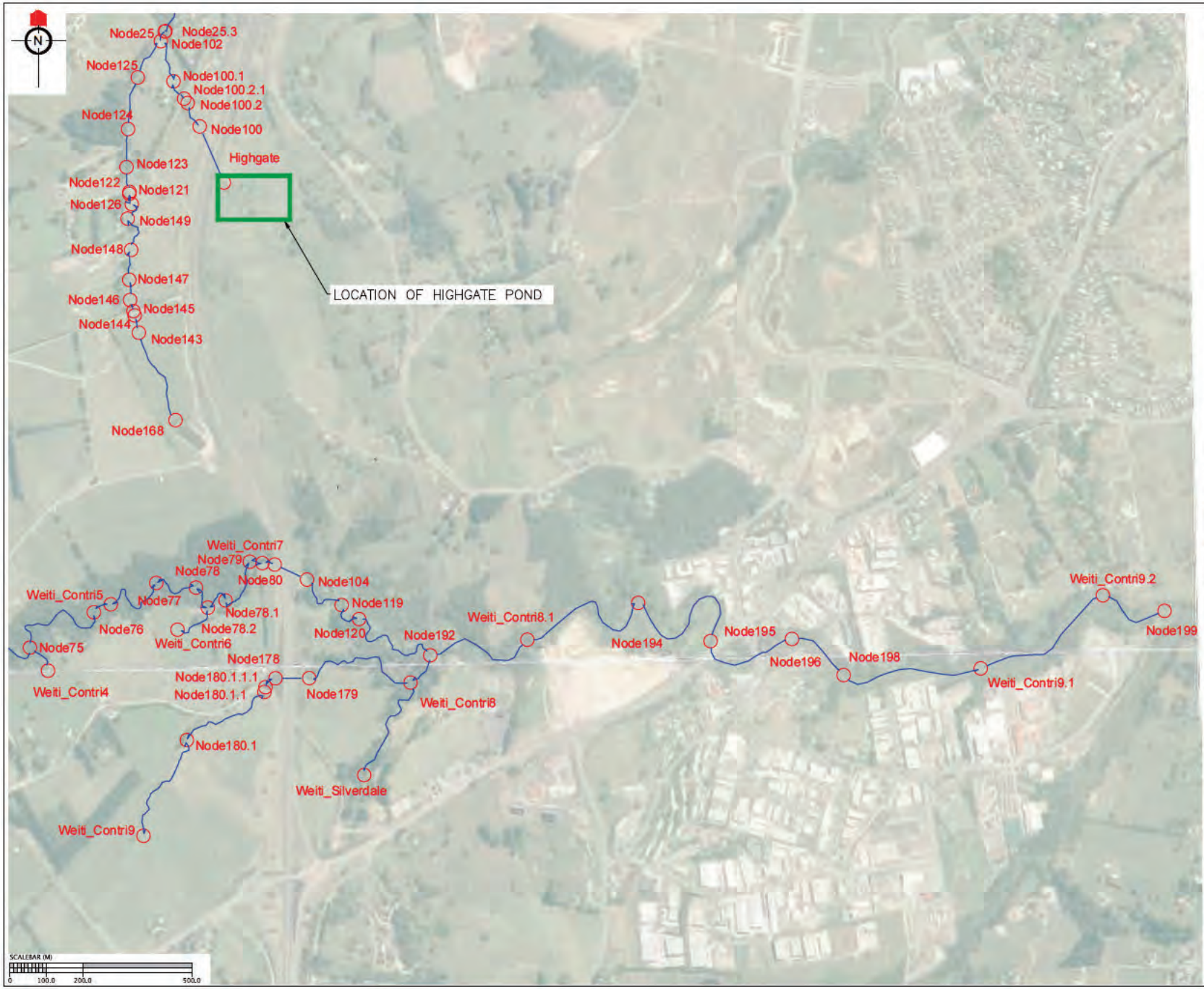
WOODS Engineers. Surveyors. Planners.

WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan C	REV. 1



REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

CLIENT:

Fulton Hogan

WOODS
Engineers. Surveyors. Planners.

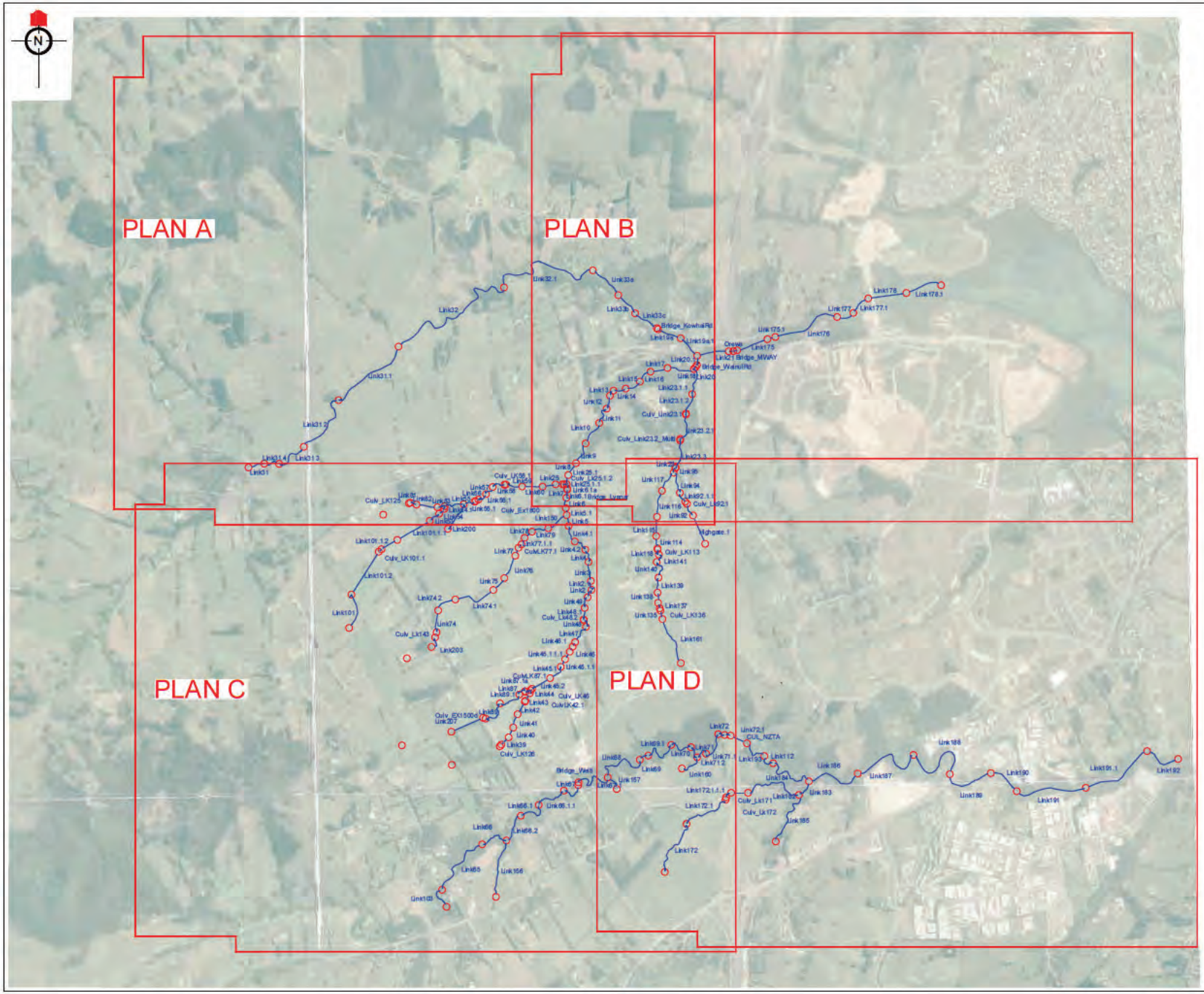
WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan D	REV. 1

XP LINK LOCATION PLANS



REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- XP STORM MODELLED LINK
- XP STORM MODELLED NODE
- PLAN BOUNDARY

CLIENT:

Fulton Hogan

WOODS
Engineers. Surveyors. Planners.

WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

AUCKLAND COUNCIL

DESIGNED:	ZY	ISSUED FOR INFORMATION	
CHECKED:		DRAWN:	ZY
APPROVED:		SURVEYED:	WOODS
JOB NUMBER:	31720	SCALE:	NOT TO SCALE
ISSUED:	JULY 2016		
DWG. NO.	31720 - SW Overview	REV.	1

REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

CLIENT:

Fulton Hogan

WOODS
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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan A	REV. 1

REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

CLIENT:

Fulton Hogan

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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan B	REV. 1

REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- XP STORM MODELLED LINK
- XP STORM MODELLED NODE

CLIENT: Fulton Hogan

WOODS Engineers. Surveyors. Planners.

WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan C	REV. 1

REVISION DETAILS	NAME	DATE
1, ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

CLIENT:

Fulton Hogan

WOODS
Engineers. Surveyors. Planners.

WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan D	REV. 1

APPENDIX E

WAINUI 1 PRECINCT ZONING PLAN

WOODS
Engineers. Surveyors. Planners.

ROAD AND STREET TYPOLOGIES

PROJECT NUMBER: 31720
ADDRESS: Wainui East
BY: ZY
DATE: 24/05/2016

Result Summary

Road/street	Total area (m2)	Impervious area (m2)	%IMP
Wainui Road Upgrade 22.6m	23.90	18.15	75.94%
Argent Lane Road	30.00	22.42	74.73%
Argent Lane - Interim	30.00	20.42	68.07%
Collector Road 24.0m	24.00	20.00	83.33%
Collector Road (Town Centre Edge) From 24.0m	24.00	18.71	77.96%
Local Road (Urban Area) 14.8m	15.20	11.40	75.00%
Local Road (Suburban Area) 16.6m	16.60	12.90	77.71%
Green Street 30.2m	30.40	16.80	55.26%
Reserve Edge Road 2 From 13.0m	17.50	12.30	70.29%

Total area (m2)	211.60
Total impervious area (m2)	153.10
Impervious percentage (%)	**72.35%**

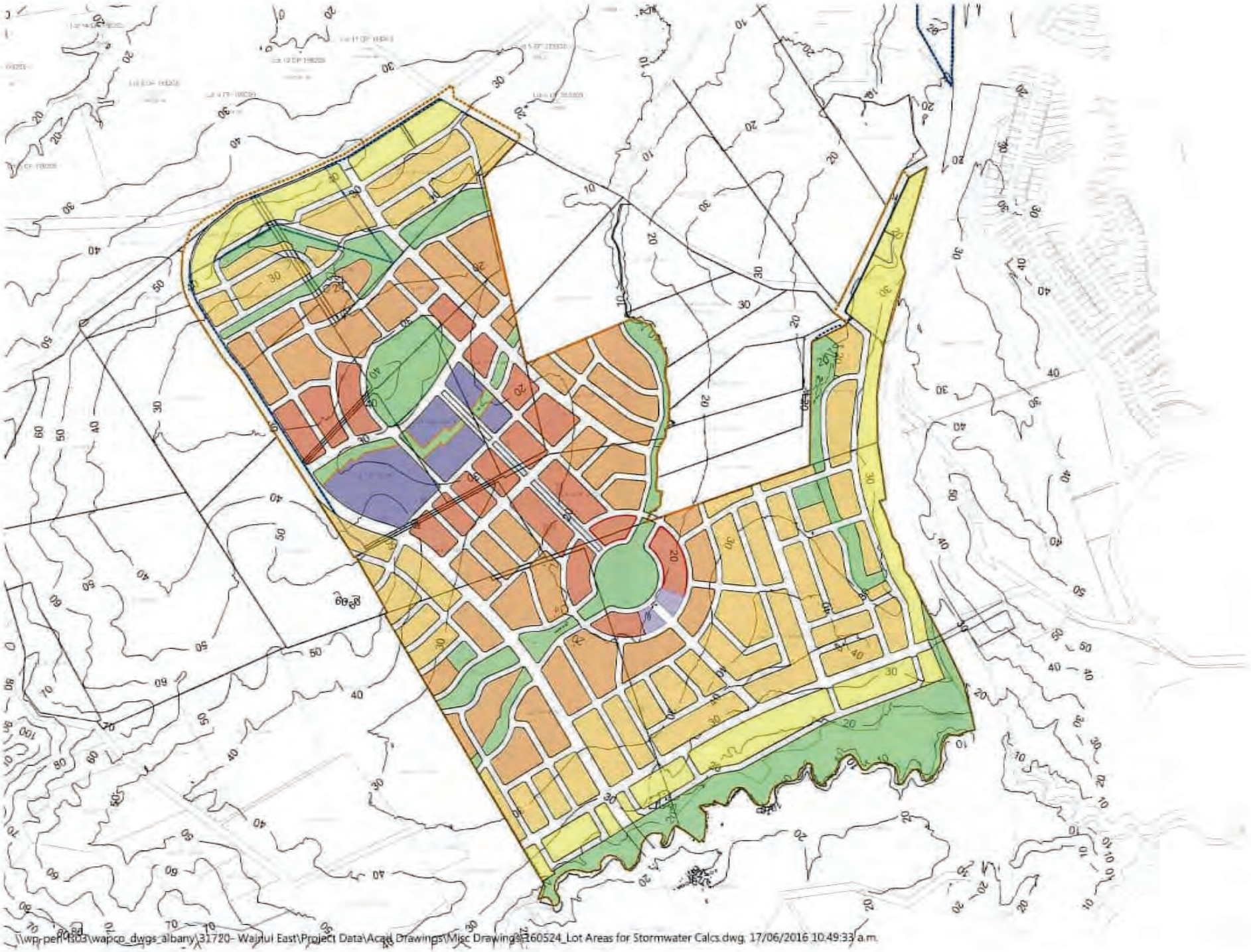
ARGENT LANE SHA: MAXIMUM IMPREVIOUS COVERAGES

27% Road to total SHA Area (inclusive parks)
48% Road to Development Blocks

OVERALL SITE

ZONE	TYPE	COVERAGE	AREA		IMPERVIOUS AREA
SINGLE HOUSE ZONE	DETACHED	60%	193083		115849.8
MIXED HOUSING SUBURBAN	> 300m² DETACHED	60%	188728	ASSUMES 50% DETACHED / 50% ATTACHED	113236.8
	< 300m² ATTACHED / DETACHED	70%	188728		132109.6
MIXED HOUSING URBAN	> 300m² DETACHED	60%	158856	ASSUMES 50% DETACHED / 50% ATTACHED	95313.6
	< 300m² ATTACHED / DETACHED	70%	158856		111199.2
MIXED HOUSING URBAN SUB PRECINCT	> 300m² DETACHED	60%		ASSUMES ALL ATTACHED	0
	< 300m² DETACHED	70%			0
	< 300m² ATTACHED	75%	148845		111633.75
NEIGHBOURHOOD CENTRE		100%	5427		5427
LOCAL CENTRE		100%	67738		67738
PARKS, STREAMS		40%	193423		77369.2
WEITI COVENANT AREA		40%	122380		48952
ROADS		73%	534466		390160.18
TOTAL SHA AREA			**1960530**		
AVERAGE IMPREVIOUS %					**65%**

1042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APPENDIX F

MODELLING INPUTS

APPLIED IMPERVIOUS PERCENTAGE

Zone Type	IMP %
Millwater (Single House)	65
Single Hose	60
Large Lot	10
Future Urban	65
Mixed Rural	10
Rural Production	10
Countryside Living	10
Heavy Industry	80
Light Industry	80
General Business	80
Town Centre	100
Public Open Space (Conservation/ Community/ Information Recreation)	Lesser of 10% or 5000 m2

APPLIED IMPERVIOUS PERCENTAGE COMMENTS

XPNode	Comment
Millwater1	Applied Millwater 65% IMP
Millwater2	Applied Millwater 65% IMP
Millwater3	Applied Millwater 65% IMP
Millwater4	Applied Millwater 65% IMP
Node105.1	Applied Open Space (2.0234 ha) 10% IMP and Single House (10.0936 ha) 60% IMP
Node108	Applied Future Urban 65% IMP
Node109	Applied Future Urban 65% IMP
Node109.1.1	Applied Future Urban 65% IMP
Node126	Applied Future Urban 65% IMP
Node13	Applied Future Urban 65% IMP
Node143	Applied Future Urban 65% IMP
Node159	Applied Future Urban 65% IMP
Node16	Applied Future Urban 65% IMP
Node160	Applied Future urban (40.7363 ha) 65% IMP and Mixed Rural (11.2907 ha) 10% IMP
Node161	Applied Future Urban 65% IMP
Node168	Applied Future Urban 65% IMP
Node186	Applied Single House 60% IMP
Node203	Applied Future Urban 65% IMP
Node206	Applied Future Urban 65% IMP
Node22	Applied Future Urban 65% IMP
Node25.1	Applied Future Urban 65% IMP
Node28	Applied Rural Production 10% IMP
Node4	Applied Future Urban 65% IMP
Node4.1	Applied Future Urban 65% IMP
Node42	Applied Future Urban 65% IMP
Node46.1	Applied Future Urban 65% IMP
Node46.1a	Applied Future Urban 65% IMP
Node46.1b	Applied Future Urban 65% IMP
Node47	Applied Future Urban 65% IMP
Node47.1	Applied Future Urban 65% IMP
Node48	Applied Future Urban 65% IMP
Node49	Applied Future Urban 65% IMP
Node50	Applied Future Urban 65% IMP
Node54	Applied Future Urban 65% IMP
Node56	Applied Future Urban 65% IMP
Node56.1	Applied Future Urban 65% IMP
Node58	Applied Future Urban 65% IMP
Node59	Applied Future Urban 65% IMP
Node59.1	Applied Future Urban 65% IMP
Node6	Applied Future Urban 65% IMP
Node6.1	Applied Future Urban 65% IMP
Node61	Applied Future Urban 65% IMP
Node73	Applied Future Urban 65% IMP
Node74	Applied Future Urban 65% IMP
Node75	Applied Future Urban 65% IMP
Node76	Applied Future Urban 65% IMP
Node77	Applied Future Urban 65% IMP
Node78	Applied Future Urban 65% IMP
Node8	Applied Future Urban 65% IMP
Node8.1	Applied Future Urban 65% IMP
Node80	Applied Future Urban 65% IMP
Node83	Applied Future Urban 65% IMP
Node85.1	Applied Future Urban 65% IMP
Node86	Applied Future Urban 65% IMP
Node95	Applied Future Urban 65% IMP
Node97.1	Applied Future Urban 65% IMP

Orewa Contri1	Applied Rural Production and Mixed Rural (Area of Cemetery is considered negligible) 10%IMP
Orewa Contri2	Applied Rural Production 10% IMP
Orewa Contri3	Applied Future urban (53.1231 ha) 65% IMP and Rural production (5.2539ha) 10% IMP
Orewa_Contri4	Applied Rural Production 10% IMP
Orewa_Contri5	Applied Rural Production 10% IMP
Orewa_Contri6	Applied Rural Production 10% IMP
Orewa_Contri7	Applied Rural Production + Public Open Space 10%IMP
Orewa_Contri8	Applied Rural Production 10% IMP
Orewa_Contri9	Applied Future Urban 65% IMP
Weiti_Contri	Applied Future urban (40.8810 ha) 65% IMP and Rural Mixed/Production (673.613ha) 10% IMP
Weiti_Contri2	Applied Mixed Rural 10%IMP
Weiti_Contri3	Applied Mixed Rural 10%IMP
Weiti_Contri4	Applied Mixed Rural 10%IMP
Weiti_Contri5	Applied Mixed Rural 10%IMP
Weiti_Contri6	Applied Mixed Rural 10%IMP
Weiti_Contri7	Applied Mixed Rural 10%IMP
Weiti_Contri8	Applied Public Open Space (11.12 ha) at max 0.5ha IMP, General Business 80%IMP
Weiti_Contri8.1	Applied General Business (9.08 ha) 80% IMP, Large lot (7.97 ha) 10% IMP, Single house (24.8 ha) 60% IMP, Public Open Space Conservation/Community/Information Recreation (8.23 ha) at max 0.5ha IMP, Town Centre (13.5 ha)100 %IMP
Weiti_Contri9	Applied Mixed Rural 10%IMP
Weiti_Contri9.1	Applied General Business (12.01 ha) 80% IMP, Light Industry (69.03 ha) 80% IMP, Heavy Industry (21.29 ha) 80% IMP, Future Urban (14.41 ha) 65% IMP
Weiti_Contri9.2	Applied Large Lot (33.56 ha) 10% IMP, Light Industry (15.15 ha) 80% IMP, General Business (3.9 ha) 80%IMP
Weiti_Silverdale	Applied General Business (54.94 ha) 80%IMP, Countryside Living (54.88 ha) 10% IMP, Future Urban (329.66 ha) 65%

ED SCENARIO INPUTS

ED SCENARIO LOADING NODES (EXISTING TOPO)

	Pervious	Impervious
Channelisation Factor	1.00	0.60
CN	74.00	98.00
Impervious Coverage Pre Dev	95%	5%
Impervious - Millwater	35%	65%
Impervious - Weiti Industry	Varies	Varies

						Separated Tc	
XPNode	**Total Area (Ha)**	**Catchment Length (km)**	**Slope (m/m)**	**Pre Pervious (Ha)**	**Pre Impervious (Ha)**	**Tc - Pervious (Min)**	**Tc - Impervious (Min)**
Highgate	User Inflow Hydrograph						
Millwater1	93.7290	1.711	0.0378	32.8052	60.9239	42.8650	19.6193
Millwater2	12.2820	0.541	0.0588	4.2987	7.9833	17.5591	10.0000
Millwater3	27.1560	0.94	0.058	9.5046	17.6514	25.3888	11.6204
Millwater4	11.9340	0.556	0.0546	4.1769	7.7571	18.2809	10.0000
Node105.1	12.1170	0.4050	0.1330	11.5112	0.6059	11.3546	10.0000
Node108	4.6420	0.2480	0.0456	4.4099	0.2321	11.3254	10.0000
Node109	61.5170	0.6310	0.0573	58.4412	3.0759	19.5875	10.0000
Node109.1.1	6.3650	0.3570	0.0264	6.0468	0.3183	16.9701	10.0000
Node126	18.5870	0.303	0.0526	17.6577	0.9294	12.3840	10.0000
Node13	19.0690	0.4960	0.0745	18.1156	0.9535	15.4446	10.0000
Node143	10.6510	0.552	0.0332	10.1185	0.5326	21.1224	10.0000
Node159	5.4660	0.12	0.0847	5.1927	0.2733	10.0000	10.0000
Node16	34.1710	0.712	0.0438	32.4625	1.7086	22.9932	10.5240
Node160	52.0270	0.752	0.186	49.4257	2.6014	15.4474	10.0000
Node161	26.3860	0.432	0.0847	25.0667	1.3193	13.5663	10.0000
Node168	8.0340	0.385	0.0193	7.6323	0.4017	19.5949	10.0000
Node186	19.3610	0.261	0.185	18.3930	0.9681	10.0000	10.0000
Node203	7.8210	0.129	0.109	7.4300	0.3911	10.0000	10.0000
Node206	6.6800	0.347	0.0675	6.3460	0.3340	12.5670	10.0000
Node22	4.1070	0.348	0.0637	3.9017	0.2054	12.8117	10.0000
Node25.1	32.1000	0.7140	0.0422	30.4950	1.6050	23.2945	10.6619
Node28	10.4370	0.4580	0.0585	9.9152	0.5219	15.7554	10.0000
Node4	3.4580	0.245	0.0488	3.2851	0.1729	11.0085	10.0000
Node4.1	4.8800	0.206	0.018	4.6360	0.2440	13.2427	10.0000

Node42	9.9990	0.295	0.0432	9.4991	0.5000	12.9075	10.0000
Node46.1	6.1040	0.3900	0.03	5.7988	0.3052	17.3130	10.0000
Node46.1a	9.6020	0.35	0.0314	9.1219	0.4801	15.9005	10.0000
Node46.1b	4.2720	0.3420	0.0264	4.0584	0.2136	16.4961	10.0000
Node47	10.6520	0.3840	0.065	10.1194	0.5326	13.5891	10.0000
Node47.1	4.1700	0.29	0.02	3.9615	0.2085	16.0798	10.0000
Node48	5.2420	0.395	0.06	4.9799	0.2621	14.1812	10.0000
Node49	4.4280	0.29	0.0452	4.2066	0.2214	12.5906	10.0000
Node50	5.5340	0.252	0.0175	5.2573	0.2767	15.2552	10.0000
Node54	4.3030	0.4040	0.0528	4.0879	0.2152	14.9564	10.0000
Node56	4.0730	0.29	0.07	3.8694	0.2037	11.0423	10.0000
Node56.1	3.6410	0.328	0.0786	3.4590	0.1821	11.5679	10.0000
Node58	3.0630	0.29	0.07	2.9099	0.1532	11.0423	10.0000
Node59	1.9300	0.223	0.043	1.8335	0.0965	10.7460	10.0000
Node59.1	4.3900	0.3300	0.0716	4.1705	0.2195	11.9440	10.0000
Node6	3.4410	0.1930	0.0708	3.2690	0.1721	10.0000	10.0000
Node6.1	3.5370	0.2450	0.104	3.3602	0.1769	10.0000	10.0000
Node61	3.8430	0.3600	0.043	3.6509	0.1922	14.7409	10.0000
Node73	19.0230	0.8000	0.0564	18.0719	0.9512	23.0177	10.5352
Node74	5.4370	0.2610	0.0835	5.1652	0.2719	10.0000	10.0000
Node75	4.4090	0.2800	0.075	4.1886	0.2205	10.5685	10.0000
Node76	4.1190	0.2830	0.06	3.9131	0.2060	11.3799	10.0000
Node77	4.2630	0.3070	0.0844	4.0499	0.2132	10.8396	10.0000
Node78	6.7550	0.4780	0.073	6.4173	0.3378	15.1646	10.0000
Node8	3.9020	0.228	0.114	3.7069	0.1951	10.0000	10.0000
Node8.1	4.4750	0.3700	0.0329	4.2513	0.2238	16.2682	10.0000
Node80	5.6990	0.494	0.0711	5.4141	0.2850	15.6208	10.0000
Node83	16.9450	0.666	0.0538	16.0978	0.8473	20.6854	10.0000
Node85.1	3.1860	0.1950	0.0386	3.0267	0.1593	10.1590	10.0000
Node86	5.7380	0.3760	0.0694	5.4511	0.2869	13.1408	10.0000
Node95	4.0010	0.3550	0.0682	3.8010	0.2001	12.7181	10.0000
Node97.1	4.3830	0.5150	0.057	4.1639	0.2192	17.1568	10.0000
Orewa Contri1	505.5340	2.6420	0.04339	480.2573	25.2767	54.7853	25.0752
Orewa Contri2	72.5880	1.4450	0.0476	68.9586	3.6294	35.7797	16.3763
Orewa Contri3	58.3770	0.9210	0.0615	55.4582	2.9189	24.6124	11.2651
Orewa_Contri4	195.0410	1.9330	0.0375	185.2890	9.7521	46.5703	21.3152

Orewa_Contri5	25.7030	0.8120	0.0785	24.4179	1.2852	21.0500	10.0000
Orewa_Contri6	13.4230	0.2880	0.1090	12.7519	0.6712	10.0000	10.0000
Orewa_Contri7	10.0020	0.4180	0.1354	9.5019	0.5001	11.5318	10.0000
Orewa_Contri8	7.2650	0.3490	0.1554	6.9018	0.3633	10.0000	10.0000
Orewa_Contri9	83.7540	1.609	0.0251	79.5663	4.1877	46.5404	21.3015
Weiti_Contri	714.4940	4.65	0.0147	678.7693	35.7247	110.0853	50.3860
Weiti_Contri2	52.9940	1.6130	0.0401	50.3443	2.6497	40.5043	18.5388
Weiti_Contri3	8.6100	0.3650	0.0438	8.1795	0.4305	14.7937	10.0000
Weiti_Contri4	10.7970	0.4590	0.0393	10.2572	0.5399	17.7781	10.0000
Weiti_Contri5	7.3340	0.4710	0.031	6.9673	0.3667	19.4174	10.0000
Weiti_Contri6	4.0060	0.2350	0.0368	3.8057	0.2003	11.6562	10.0000
Weiti_Contri7	8.4490	0.5170	0.0317	8.0266	0.4225	20.5112	10.0000
Weiti_Contri8	45.9140	0.311	0.0713	43.6183	2.2957	11.5001	10.0000
Weiti_Contri8.1	63.5770	0.713	0.0956	53.7861	9.7909	18.2099	10.0000
Weiti_Contri9	161.2220	2.282	0.0257	153.1609	8.0611	58.1988	26.6376
Weiti_Contri9.1	116.7390	1.619	0.0393	53.1162	63.6228	40.8499	18.6970
Weiti_Contri9.2	52.6110	0.65	0.0968	36.4594	16.1516	17.0673	10.0000
Weiti_Silverdale	439.4640	3.101	0.0097	417.4908	21.9732	95.4477	43.6864
Total	3335.4340			3003.6829	331.7511		

MPD SCENARIO INPUTS

MPD SCENARIO LOADING NODES (FUTURE TOPO)

	Pervious	Impervious
Channelisation Factor	1.00	0.60
CN	74.00	98.00
Impervious Coverage Future Urban Post Dev	35%	65%

						Separated Tc					
XPNode	Total Area (Ha)	Catchment Length (km)	Slope (m/m)	Post Pervious (Ha)	Post Impervious (Ha)	Tc - Pervious (Min)	Tc - Impervious (Mi	Percentage within FU	Area Inside FU (Ha)	Zone Types	IMP%
Highgate	User Inflow Hydrograph										
Millwater1	93.7290	1.711	0.0378	32.8052	60.9239	42.8650	19.6193	N/A	N/A	Single House	65%
Millwater2	12.2820	0.541	0.0588	4.2987	7.9833	17.5591	10.0000	N/A	N/A	Single House	65%
Millwater3	27.1560	0.94	0.058	9.5046	17.6514	25.3888	11.6204	N/A	N/A	Single House	65%
Millwater4	11.9340	0.556	0.0546	4.1769	7.7571	18.2809	10.0000	N/A	N/A	Single House	65%
Node105.1	12.1170	0.4050	0.1330	5.8585	6.2585	11.3546	10.0000	N/A	N/A	Single House + Public Open Space	N/A
Node108	4.6420	0.3800	0.0203	1.6247	3.0173	19.1485	10.0000	100%	4.6420	Future Urban	65%
Node109	61.5170	0.6310	0.0573	21.5310	39.9861	19.5875	10.0000	100%	61.5170	Future Urban	65%
Node109.1.1	6.3650	0.3470	0.0254	2.2278	4.1373	16.8490	10.0000	100%	6.3650	Future Urban	65%
Node126	18.5870	0.342	0.0526	6.5055	12.0816	13.4143	10.0000	100%	18.5870	Future Urban	65%
Node13	19.0690	0.4960	0.0745	6.6742	12.3949	15.4446	10.0000	100%	19.0690	Future Urban	65%
Node143	10.6510	0.313	0.0548	3.7279	6.9232	12.4977	10.0000	100%	10.6510	Future Urban	65%
Node159	5.4660	0.12	0.0847	1.9131	3.5529	10.0000	10.0000	100%	5.4660	Future Urban	65%
Node16	34.1710	0.712	0.0438	11.9599	22.2112	22.9932	10.5240	100%	34.1710	Future Urban	65%
Node160	52.0270	0.752	0.186	24.4193	27.6077	15.4474	10.0000	78%	40.7363	Future urban + Mixed Rural	N/A
Node161	26.3860	0.432	0.0847	9.2351	17.1509	13.5663	10.0000	100%	26.3860	Future Urban	65%
Node168	8.0340	0.39	0.00468	2.8119	5.2221	30.2297	13.8361	100%	8.0340	Future Urban	65%
Node186	19.3610	0.261	0.185	7.7444	11.6166	10.0000	10.0000	N/A	N/A	Single House	60%
Node203	7.8210	0.136	0.0793	2.7374	5.0837	10.0000	10.0000	100%	7.8210	Future Urban	65%
Node206	6.6800	0.26	0.058	2.3380	4.3420	10.8708	10.0000	100%	6.6800	Future Urban	65%
Node22	4.1070	0.348	0.0637	1.4375	2.6696	12.8117	10.0000	100%	4.1070	Future Urban	65%
Node25.1	32.1000	0.7140	0.0422	11.2350	20.8650	23.2945	10.6619	100%	32.1000	Future Urban	65%
Node28	10.4370	0.4580	0.0585	9.3933	1.0437	15.7554	10.0000	N/A	N/A	Rural Production	10%
Node4	3.4580	0.245	0.0488	1.2103	2.2477	11.0085	10.0000	100%	3.4580	Future Urban	65%
Node4.1	4.8800	0.206	0.018	1.7080	3.1720	13.2427	10.0000	100%	4.8800	Future Urban	65%
Node42	9.9990	0.314	0.0358	3.4997	6.4994	14.2303	10.0000	100%	9.9990	Future Urban	65%
Node46.1	6.1040	0.5250	0.0328	2.1364	3.9676	20.5092	10.0000	100%	6.1040	Future Urban	65%
Node46.1a	9.6020	0.587	0.008	3.3607	6.2413	33.7116	15.4298	100%	9.6020	Future Urban	65%
Node46.1b	4.2720	0.4190	0.026	1.4952	2.7768	18.9485	10.0000	100%	4.2720	Future Urban	65%
Node47	10.6520	0.3980	0.0401	3.7282	6.9238	16.0837	10.0000	100%	10.6520	Future Urban	65%
Node47.1	4.1700	0.384	0.01711	1.4595	2.7105	20.2810	10.0000	100%	4.1700	Future Urban	65%
Node48	5.2420	0.387	0.0365	1.8347	3.4073	16.2408	10.0000	100%	5.2420	Future Urban	65%
Node49	4.4280	0.377	0.039	1.5498	2.8782	15.6485	10.0000	100%	4.4280	Future Urban	65%
Node50	5.5340	0.389	0.0211	1.9369	3.5971	19.2082	10.0000	100%	5.5340	Future Urban	65%
Node54	4.3030	0.3230	0.0582	1.5061	2.7970	12.5328	10.0000	100%	4.3030	Future Urban	65%
Node56	4.0730	0.253	0.0972	1.4256	2.6475	10.0000	10.0000	100%	4.0730	Future Urban	65%
Node56.1	3.6410	0.369	0.0611	1.2744	2.3667	13.4844	10.0000	100%	3.6410	Future Urban	65%
Node58	3.0630	0.288	0.094	1.0721	1.9910	10.0616	10.0000	100%	3.0630	Future Urban	65%
Node59	1.9300	0.292	0.0409	0.6755	1.2545	13.0329	10.0000	100%	1.9300	Future Urban	65%
Node59.1	4.3900	0.3050	0.0792	1.5365	2.8535	11.0008	10.0000	100%	4.3900	Future Urban	65%
Node6	3.4410	0.1930	0.0708	1.2044	2.2367	10.0000	10.0000	100%	3.4410	Future Urban	65%
Node6.1	3.5370	0.2450	0.104	1.2380	2.2991	10.0000	10.0000	100%	3.5370	Future Urban	65%
Node61	3.8430	0.3510	0.036	1.3451	2.4980	15.2904	10.0000	100%	3.8430	Future Urban	65%
Node73	19.0230	0.8000	0.0564	6.6581	12.3650	23.0177	10.5352	100%	19.0230	Future Urban	65%
Node74	5.4370	0.2120	0.0771	1.9030	3.5341	10.0000	10.0000	100%	5.4370	Future Urban	65%
Node75	4.4090	0.3780	0.0438	1.5432	2.8659	15.1394	10.0000	100%	4.4090	Future Urban	65%
Node76	4.1190	0.2850	0.0746	1.4417	2.6774	10.7098	10.0000	100%	4.1190	Future Urban	65%

Node77	4.2630	0.3510	0.0719	1.4921	2.7710	12.4248	10.0000	100%	4.2630	Future Urban	65%
Node78	6.7550	0.4780	0.0678	2.3643	4.3908	15.5045	10.0000	100%	6.7550	Future Urban	65%
Node8	3.9020	0.228	0.114	1.3657	2.5363	10.0000	10.0000	100%	3.9020	Future Urban	65%
Node8.1	4.4750	0.3700	0.0329	1.5663	2.9088	16.2682	10.0000	100%	4.4750	Future Urban	65%
Node80	5.6990	0.506	0.0672	1.9947	3.7044	16.1411	10.0000	100%	5.6990	Future Urban	65%
Node83	16.9450	0.581	0.0602	5.9308	11.0143	18.2761	10.0000	100%	16.9450	Future Urban	65%
Node85.1	3.1860	0.1970	0.0299	1.1151	2.0709	11.0443	10.0000	100%	3.1860	Future Urban	65%
Node86	5.7380	0.3200	0.0732	2.0083	3.7297	11.6266	10.0000	100%	5.7380	Future Urban	65%
Node95	4.0010	0.4140	0.0739	1.4004	2.6007	13.7414	10.0000	100%	4.0010	Future Urban	65%
Node97.1	4.3830	0.3360	0.102	1.5341	2.8490	10.8695	10.0000	100%	4.3830	Future Urban	65%
Orewa Contri1	505.5340	2.6420	0.04339	454.9806	50.5534	54.7853	25.0752	N/A	N/A	Rural Production+Mixed Rural	10%
Orewa Contri2	72.5880	1.4450	0.0476	65.3292	7.2588	35.7797	16.3763	N/A	N/A	Rural Production	10%
Orewa Contri3	58.3770	0.9210	0.0615	23.3216	35.0554	24.6124	11.2651	91%	53.1231	Future urban + Rural Production	N/A
Orewa_Contri4	195.0410	1.9330	0.0375	175.5369	19.5041	46.5703	21.3152	N/A	N/A	Rural Production	10%
Orewa_Contri5	25.7030	0.8120	0.0785	23.1327	2.5703	21.0500	10.0000	N/A	N/A	Rural Production	10%
Orewa_Contri6	13.4230	0.2880	0.1090	12.0807	1.3423	10.0000	10.0000	N/A	N/A	Rural Production	10%
Orewa_Contri7	10.0020	0.4180	0.1354	9.0018	1.0002	11.5318	10.0000	N/A	N/A	Rural Production+Public Open Space	10%
Orewa_Contri8	7.2650	0.3490	0.1554	6.5385	0.7265	10.0000	10.0000	N/A	N/A	Rural Production	10%
Orewa_Contri9	83.7540	1.609	0.0251	29.3139	54.4401	46.5404	21.3015	100%	83.7540	Future Urban	65%
Weiti_Contri	714.4940	4.65	0.0147	620.5601	93.9340	110.0853	50.3860	6%	40.8810	Future urban + Rural Mixed+Rural Production	N/A
Weiti_Contri2	52.9940	1.6130	0.0401	47.6946	5.2994	40.5043	18.5388	N/A	N/A	Mixed Rural	10%
Weiti_Contri3	8.6100	0.3650	0.0438	7.7490	0.8610	14.7937	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri4	10.7970	0.4590	0.0393	9.7173	1.0797	17.7781	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri5	7.3340	0.4710	0.031	6.6006	0.7334	19.4174	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri6	4.0060	0.2350	0.0368	3.6054	0.4006	11.6562	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri7	8.4490	0.5170	0.0317	7.6041	0.8449	20.5112	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri8	45.9140	0.311	0.0713	17.5788	28.3352	11.5001	10.0000	N/A	N/A	Public Open Space + General Business	N/A
Weiti_Contri8.1	63.5770	0.713	0.0956	26.6360	36.9410	18.2099	10.0000	N/A	N/A	General Business + Large Lot+ Single House + Public Open Space + Town Centre	N/A
Weiti_Contri9	161.2220	2.282	0.0257	145.0998	16.1222	58.1988	26.6376	N/A	N/A	Mixed Rural	10%
Weiti_Contri9.1	116.7390	1.619	0.0393	25.5301	91.2089	40.8499	18.6970	N/A	N/A	General Business + Light Industry +Heavy Industry +Future Urban	N/A
Weiti_Contri9.2	52.6110	0.65	0.0968	34.0150	18.5960	17.0673	10.0000	N/A	N/A	Large Lot + Light Industry + General Business	N/A
Weiti_Silverdale	439.4640	3.101	0.0097	175.7450	263.7190	95.4477	43.6864	N/A	N/A	Future Urban + General Business + Countryside Living	N/A
Total	3335.4340			2179.0451	1156.3889						

ARGENT LANE SHA

SCENARIO INPUTS

ARGENT LANE SHA SCENARIO LOADING NODES (FUTURE TOPO)

	Pervious	Impervious
Channelisation Factor	1.00	0.60
CN	74.00	98.00
Impervious Coverage Post Dev	95%	5%
Impervious - Millwater	35%	65%
Impervious SHA Coverage Post Dev	35%	65%
Impervious - Weiti Industry	Varies	Varies

						Seperated Tc			
XPNode	**Total Area (Ha)**	**Catchment Length (km)**	**Slope (m/m)**	**Post Pervious (Ha)**	**Post Impervious (Ha)**	**Tc - Pervious (Min)**	**Tc - Impervious (Min)**	**Percentage within SHA**	**Area Inside SHA (Ha)**
Highgate	User Inflow Hydrograph								
Millwater1	93.7290	1.711	0.0378	32.8052	60.9239	42.8650	19.6193	0%	93.729
Millwater2	12.2820	0.541	0.0588	4.2987	7.9833	17.5591	10.0000	0%	12.282
Millwater3	27.1560	0.94	0.058	9.5046	17.6514	25.3888	11.6204	0%	27.156
Millwater4	11.9340	0.556	0.0546	4.1769	7.7571	18.2809	10.0000	0%	11.934
Node105.1	12.1170	0.4050	0.1330	11.5112	0.6059	11.3546	10.0000	0%	12.117
Node108	4.6420	0.3800	0.0203	3.0359	1.6061	19.1485	10.0000	49%	2.2900
Node109	61.5170	0.6310	0.0573	58.4412	3.0759	19.5875	10.0000	0%	61.517
Node109.1.1	6.3650	0.3470	0.0254	2.2278	4.1373	16.8490	10.0000	100%	6.3650
Node126	18.5870	0.342	0.0526	12.5026	6.0844	13.4143	10.0000	46%	8.5917
Node13	19.0690	0.4960	0.0745	18.1156	0.9535	15.4446	10.0000	0%	19.069
Node143	10.6510	0.313	0.0548	4.1437	6.5074	12.4977	10.0000	93%	9.9580
Node159	5.4660	0.12	0.0847	5.1927	0.2733	10.0000	10.0000	0%	5.466
Node16	34.1710	0.712	0.0438	32.4625	1.7086	22.9932	10.5240	0%	34.171
Node160	52.0270	0.752	0.186	49.4257	2.6014	15.4474	10.0000	0%	52.027
Node161	26.3860	0.432	0.0847	25.0667	1.3193	13.5663	10.0000	0%	26.386
Node168	8.0340	0.39	0.00468	4.1103	3.9237	30.2297	13.8361	73%	5.8700
Node186	19.3610	0.261	0.185	18.3930	0.9681	10.0000	10.0000	0%	19.361
Node203	7.8210	0.136	0.0793	2.7374	5.0837	10.0000	10.0000	100%	7.8210
Node206	6.6800	0.26	0.058	2.3380	4.3420	10.8708	10.0000	100%	6.6800
Node22	4.1070	0.348	0.0637	3.5037	0.6033	12.8117	10.0000	16%	0.6632
Node25.1	32.1000	0.7140	0.0422	11.9439	20.1561	23.2945	10.6619	4%	30.9185
Node28	10.4370	0.4580	0.0585	9.9152	0.5219	15.7554	10.0000	0%	10.437
Node4	3.4580	0.245	0.0488	3.2851	0.1729	11.0085	10.0000	0%	3.458
Node4.1	4.8800	0.206	0.018	1.7080	3.1720	13.2427	10.0000	100%	4.8800
Node42	9.9990	0.314	0.0358	3.4997	6.4994	14.2303	10.0000	100%	9.9990
Node46.1	6.1040	0.5250	0.0328	2.1364	3.9676	20.5092	10.0000	100%	6.1040
Node46.1a	9.6020	0.587	0.008	3.3607	6.2413	33.7116	15.4298	100%	9.6020
Node46.1b	4.2720	0.4190	0.026	1.4952	2.7768	18.9485	10.0000	100%	4.2720
Node47	10.6520	0.3980	0.0401	3.7282	6.9238	16.0837	10.0000	100%	10.6520
Node47.1	4.1700	0.384	0.01711	1.4595	2.7105	20.2810	10.0000	100%	4.1700
Node48	5.2420	0.387	0.0365	1.8347	3.4073	16.2408	10.0000	100%	5.2420
Node49	4.4280	0.377	0.039	2.9838	1.4442	15.6485	10.0000	46%	2.0380
Node50	5.5340	0.389	0.0211	1.9369	3.5971	19.2082	10.0000	100%	5.5340
Node54	4.3030	0.3230	0.0582	1.5061	2.7970	12.5328	10.0000	100%	4.3030

Node56	4.0730	0.253	0.0972	1.4256	2.6475	10.0000	10.0000	100%	4.0730
Node56.1	3.6410	0.369	0.0611	1.2744	2.3667	13.4844	10.0000	100%	3.6410
Node58	3.0630	0.288	0.094	1.0721	1.9910	10.0616	10.0000	100%	3.0630
Node59	1.9300	0.292	0.0409	0.6755	1.2545	13.0329	10.0000	100%	1.9300
Node59.1	4.3900	0.3050	0.0792	3.9682	0.4218	11.0008	10.0000	92%	0.3372
Node6	3.4410	0.1930	0.0708	3.2690	0.1721	10.0000	10.0000	0%	3.441
Node6.1	3.5370	0.2450	0.104	3.3602	0.1769	10.0000	10.0000	0%	3.537
Node61	3.8430	0.3510	0.036	2.4344	1.4086	15.2904	10.0000	53%	2.0274
Node73	19.0230	0.8000	0.0564	18.0719	0.9512	23.0177	10.5352	0%	19.023
Node74	5.4370	0.2120	0.0771	1.9030	3.5341	10.0000	10.0000	100%	5.4370
Node75	4.4090	0.3780	0.0438	1.5432	2.8659	15.1394	10.0000	100%	4.4090
Node76	4.1190	0.2850	0.0746	1.4417	2.6774	10.7098	10.0000	100%	4.1190
Node77	4.2630	0.3510	0.0719	1.4921	2.7710	12.4248	10.0000	100%	4.2630
Node78	6.7550	0.4780	0.0678	2.3643	4.3908	15.5045	10.0000	100%	6.7550
Node8	3.9020	0.228	0.114	3.7069	0.1951	10.0000	10.0000	0%	3.902
Node8.1	4.4750	0.3700	0.0329	4.2513	0.2238	16.2682	10.0000	0%	4.475
Node80	5.6990	0.506	0.0672	1.9947	3.7044	16.1411	10.0000	100%	5.6990
Node83	16.9450	0.581	0.0602	5.9308	11.0143	18.2761	10.0000	100%	16.9450
Node85.1	3.1860	0.1970	0.0299	2.2511	0.9349	11.0443	10.0000	59%	1.2927
Node86	5.7380	0.3200	0.0732	5.1540	0.5840	11.6266	10.0000	9%	0.4952
Node95	4.0010	0.4140	0.0739	1.4004	2.6007	13.7414	10.0000	100%	4.0010
Node97.1	4.3830	0.3360	0.102	1.5341	2.8490	10.8695	10.0000	100%	4.3830
Orewa Contri1	505.5340	2.6420	0.04339	480.2573	25.2767	54.7853	25.0752	0%	505.534
Orewa Contri2	72.5880	1.4450	0.0476	68.9586	3.6294	35.7797	16.3763	0%	72.588
Orewa Contri3	58.3770	0.9210	0.0615	55.4582	2.9189	24.6124	11.2651	0%	58.377
Orewa_Contri4	195.0410	1.9330	0.0375	185.2890	9.7521	46.5703	21.3152	0%	195.041
Orewa_Contri5	25.7030	0.8120	0.0785	24.4179	1.2852	21.0500	10.0000	0%	25.703
Orewa_Contri6	13.4230	0.2880	0.1090	12.7519	0.6712	10.0000	10.0000	0%	13.423
Orewa_Contri7	10.0020	0.4180	0.1354	9.5019	0.5001	11.5318	10.0000	0%	10.002
Orewa_Contri8	7.2650	0.3490	0.1554	6.9018	0.3633	10.0000	10.0000	0%	7.265
Orewa_Contri9	83.7540	1.609	0.0251	79.5663	4.1877	46.5404	21.3015	0%	83.754
Weiti_Contri	714.4940	4.65	0.0147	678.7693	35.7247	110.0853	50.3860	0%	714.494
Weiti_Contri2	52.9940	1.6130	0.0401	50.3443	2.6497	40.5043	18.5388	0%	52.994
Weiti_Contri3	8.6100	0.3650	0.0438	8.1795	0.4305	14.7937	10.0000	0%	8.61
Weiti_Contri4	10.7970	0.4590	0.0393	10.2572	0.5399	17.7781	10.0000	0%	10.797
Weiti_Contri5	7.3340	0.4710	0.031	6.9673	0.3667	19.4174	10.0000	0%	7.334
Weiti_Contri6	4.0060	0.2350	0.0368	3.8057	0.2003	11.6562	10.0000	0%	4.006
Weiti_Contri7	8.4490	0.5170	0.0317	8.0266	0.4225	20.5112	10.0000	0%	8.449
Weiti_Contri8	45.9140	0.311	0.0713	43.6183	2.2957	11.5001	10.0000	0%	45.914
Weiti_Contri8.1	63.5770	0.713	0.0956	53.7861	9.7909	18.2099	10.0000	0%	63.577
Weiti_Contri9	161.2220	2.282	0.0257	153.1609	8.0611	58.1988	26.6376	0%	161.222
Weiti_Contri9.1	116.7390	1.619	0.0393	53.1162	63.6228	40.8499	18.6970	0%	116.739
Weiti_Contri9.2	52.6110	0.65	0.0968	36.4594	16.1516	17.0673	10.0000	0%	52.611
Weiti_Silverdale	439.4640	3.101	0.0097	417.4908	21.9732	95.4477	43.6864	0%	439.464
Total	3335.4340			2872.3885	463.0455				

APPENDIX G

TP108 VALIDATION

TP 108 Validation ED (Existing Rainfall)

Rainfall 100 Yr ARI No CC
Rainfall Depth 225 mm

Pervious Area	Impervious Area
CN = 74	CN = 98
C = 1	C = 0.6

(0.6 piped; 0.8 engineered grass channel; 1.0 Natural)

	Area	Catchment Length	Catchment Slope	Weighted Curve Number	Weighted Initial Abstraction	24hr Rainfall depth	Time of concentration	Soil storage parameter	Runoff depth	Runoff index	Column reference from TP108 table	Specific Peak flow	Peak flow rate	Peak flow rate in XP Storm	Variance	Variance (%)
TP108 notation	A	L	Sc	CN	IA	P_{24}	Tc	S	Q_{24}	c*		q*	q_p			
Units	ha	km	m/m		mm	mm	Hrs	mm	mm			$m^3/s/(km^2\ mm)$	m^3/s	m3/s		
Millwater1	32.805	1.711	0.038	74	5	225	0.71	89.24	156.51	0.55	51.00	0.08	5.596	5.633	0.037	0.65%
Millwater1	60.924	1.711	0.038	98	1	225	0.33	5.18	218.93	0.96	92.00	0.14	18.999	18.968	-0.031	-0.17%
Millwater2	4.299	0.541	0.059	74	5	225	0.29	89.24	156.51	0.55	51.00	0.11	1.089	1.096	0.007	0.61%
Millwater2	7.983	0.541	0.059	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	2.988	3.088	0.100	3.36%
Millwater3	9.505	0.94	0.058	74	5	225	0.42	89.24	156.51	0.55	51.00	0.10	2.069	2.083	0.014	0.69%
Millwater3	17.651	0.94	0.058	98	1	225	0.19	5.18	218.93	0.96	92.00	0.16	6.383	6.571	0.188	2.94%
Millwater4	4.177	0.556	0.055	74	5	225	0.30	89.24	156.51	0.55	51.00	0.11	1.045	1.049	0.004	0.35%
Millwater4	7.757	0.556	0.055	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	2.903	3.001	0.098	3.38%
Node105.1	11.511	0.4050	0.133	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	3.333	3.407	0.074	2.22%
Node105.1	0.606	0.4050	0.133	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.227	0.234	0.007	3.18%
Node108	4.41	0.2480	0.046	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	1.277	1.306	0.029	2.28%
Node108	0.232	0.2480	0.046	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.087	0.09	0.003	3.66%
Node109	58.441	0.6310	0.057	74	5	225	0.33	89.24	156.51	0.55	51.00	0.11	14.271	14.279	0.008	0.06%
Node109	3.076	0.6310	0.057	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	1.151	1.19	0.039	3.38%
Node109.1.1	6.047	0.3570	0.026	74	5	225	0.28	89.24	156.51	0.55	51.00	0.11	1.552	1.562	0.010	0.67%
Node109.1.1	0.318	0.3570	0.026	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.119	0.123	0.004	3.36%
Node126	17.658	0.303	0.053	74	5	225	0.21	89.24	156.51	0.55	51.00	0.13	4.989	5.082	0.093	1.87%
Node126	0.929	0.303	0.053	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.348	0.359	0.011	3.26%
Node13	18.116	0.4960	0.074	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	4.822	4.846	0.024	0.50%
Node13	0.954	0.4960	0.074	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.357	0.369	0.012	3.36%
Node143	10.118	0.552	0.033	74	5	225	0.35	89.24	156.51	0.55	51.00	0.10	2.383	2.397	0.014	0.59%
Node143	0.533	0.552	0.033	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.199	0.206	0.007	3.28%
Node159	5.193	0.12	0.085	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	1.542	1.589	0.047	3.02%
Node159	0.273	0.12	0.085	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.102	0.106	0.004	3.75%
Node16	32.462	0.712	0.044	74	5	225	0.38	89.24	156.51	0.55	51.00	0.10	7.384	7.422	0.038	0.51%
Node16	1.709	0.712	0.044	98	1	225	0.18	5.18	218.93	0.96	92.00	0.16	0.632	0.652	0.020	3.15%
Node160	49.426	0.752	0.186	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	13.155	13.221	0.066	0.50%
Node160	2.601	0.752	0.186	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.973	1.006	0.033	3.35%
Node161	25.067	0.432	0.085	74	5	225	0.23	89.24	156.51	0.55	51.00	0.12	6.913	7.017	0.104	1.51%
Node161	1.319	0.432	0.085	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.494	0.51	0.016	3.32%
Node168	7.632	0.385	0.019	74	5	225	0.33	89.24	156.51	0.55	51.00	0.11	1.864	1.864	0.000	0.02%
Node168	0.402	0.385	0.019	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.150	0.156	0.006	3.69%
Node186	18.393	0.261	0.185	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	5.463	5.627	0.164	3.01%
Node186	0.968	0.261	0.185	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.362	0.374	0.012	3.24%
Node203	7.43	0.129	0.109	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	2.207	2.273	0.066	3.00%
Node203	0.391	0.129	0.109	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.146	0.151	0.005	3.19%
Node206	6.346	0.347	0.068	74	5	225	0.21	89.24	156.51	0.55	51.00	0.13	1.793	1.82	0.027	1.52%
Node206	0.334	0.347	1	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.125	0.129	0.004	3.20%
Node22	3.902	0.348	0.064	74	5	225	0.21	89.24	156.51	0.55	51.00	0.12	1.089	1.113	0.024	2.20%

Node22	0.205	0.348	0.064	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.077	0.079	0.002	2.97%
Node25.1	30.495	0.7140	0.042	74	5	225	0.39	89.24	156.51	0.55	51.00	0.10	6.937	6.931	-0.006	-0.08%
Node25.1	1.605	0.7140	0.042	98	1	225	0.18	5.18	218.93	0.96	92.00	0.16	0.594	0.61	0.016	2.76%
Node28	9.915	0.4580	0.059	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	2.608	2.63	0.022	0.86%
Node28	0.522	0.4580	0.059	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.195	0.202	0.007	3.40%
Node4	3.285	0.245	0.049	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	0.951	0.98	0.029	3.03%
Node4	0.173	0.245	0.049	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.065	0.067	0.002	3.49%
Node4.1	4.636	0.206	0.018	74	5	225	0.22	89.24	156.51	0.55	51.00	0.12	1.278	1.309	0.031	2.39%
Node4.1	0.244	0.206	0.018	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.091	0.094	0.003	2.94%
Node42	9.499	0.295	0.043	74	5	225	0.22	89.24	156.51	0.55	51.00	0.12	2.651	2.703	0.052	1.95%
Node42	0.5	0.295	0.043	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.187	0.193	0.006	3.14%
Node46.1	5.799	0.3900	0.03	74	5	225	0.29	89.24	156.51	0.55	51.00	0.11	1.488	1.486	-0.002	-0.13%
Node46.1	0.305	0.3900	0.03	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.114	0.118	0.004	3.38%
Node46.1a	9.122	0.35	0.031	74	5	225	0.27	89.24	156.51	0.55	51.00	0.12	2.399	2.413	0.014	0.58%
Node46.1a	0.48	0.35	0.031	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.180	0.186	0.006	3.54%
Node46.1b	4.058	0.3420	0.026	74	5	225	0.28	89.24	156.51	0.55	51.00	0.12	1.054	1.06	0.006	0.55%
Node46.1b	0.214	0.3420	0.026	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.080	0.083	0.003	3.64%
Node47	10.119	0.3840	0.065	74	5	225	0.23	89.24	156.51	0.55	51.00	0.12	2.791	2.831	0.040	1.45%
Node47	0.533	0.3840	0.065	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.199	0.206	0.007	3.28%
Node47.1	3.962	0.29	0.02	74	5	225	0.27	89.24	156.51	0.55	51.00	0.12	1.042	1.044	0.002	0.19%
Node47.1	0.208	0.29	0.02	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.078	0.08	0.002	2.77%
Node48	4.98	0.395	0.06	74	5	225	0.24	89.24	156.51	0.55	51.00	0.12	1.357	1.372	0.015	1.10%
Node48	0.262	0.395	0.06	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.098	0.101	0.003	3.01%
Node49	4.207	0.29	0.045	74	5	225	0.21	89.24	156.51	0.55	51.00	0.12	1.174	1.206	0.032	2.71%
Node49	0.221	0.29	0.045	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.083	0.085	0.002	2.77%
Node50	5.257	0.252	0.018	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	1.399	1.413	0.014	0.99%
Node50	0.277	0.252	0.018	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.104	0.107	0.003	3.22%
Node54	4.088	0.4040	0.053	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	1.101	1.107	0.006	0.55%
Node54	0.215	0.4040	0.053	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.080	0.083	0.003	3.16%
Node56	3.869	0.29	0.07	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	1.120	1.154	0.034	3.01%
Node56	0.204	0.29	0.07	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.076	0.079	0.003	3.48%
Node56.1	3.459	0.328	0.079	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	0.989	1.018	0.029	2.90%
Node56.1	0.182	0.328	0.079	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.068	0.07	0.002	2.77%
Node58	2.91	0.29	0.07	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	0.843	0.868	0.025	3.02%
Node58	0.153	0.29	0.07	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.057	0.059	0.002	3.04%
Node59	1.833	0.223	0.043	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	0.537	0.55	0.013	2.34%
Node59	0.097	0.223	0.043	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.036	0.038	0.002	4.68%
Node59.1	4.17	0.3300	0.072	74	5	225	0.20	89.24	156.51	0.55	51.00	0.13	1.193	1.215	0.022	1.88%
Node59.1	0.22	0.3300	0.072	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.082	0.085	0.003	3.24%
Node6	3.269	0.1930	0.071	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	0.971	1	0.029	3.00%
Node6	0.172	0.1930	0.071	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.064	0.067	0.003	4.09%
Node6.1	3.36	0.2450	0.104	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	0.998	1.028	0.030	3.01%
Node6.1	0.177	0.2450	0.104	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.066	0.068	0.002	2.66%
Node61	3.651	0.3600	0.043	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	0.983	0.994	0.011	1.09%
Node61	0.192	0.3600	0.043	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.072	0.074	0.002	2.99%
Node73	18.072	0.8000	0.056	74	5	225	0.38	89.24	156.51	0.55	51.00	0.10	4.111	4.13	0.019	0.47%
Node73	0.951	0.8000	0.056	98	1	225	0.18	5.18	218.93	0.96	92.00	0.16	0.352	0.363	0.011	3.20%
Node74	5.165	0.2610	0.084	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	1.534	1.58	0.046	3.00%
Node74	0.272	0.2610	0.084	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.102	0.105	0.003	3.15%
Node75	4.189	0.2800	0.075	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	1.228	1.262	0.034	2.76%
Node75	0.221	0.2800	0.075	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.083	0.085	0.002	2.77%
Node76	3.913	0.2830	0.06	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	1.133	1.158	0.025	2.21%

Node76	0.206	0.2830	0.06	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.077	0.08	0.003	3.77%
Node77	4.05	0.3070	0.084	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	1.173	1.213	0.040	3.44%
Node77	0.213	0.3070	0.084	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.080	0.082	0.002	2.87%
Node78	6.417	0.4780	0.073	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	1.708	1.729	0.021	1.23%
Node78	0.338	0.4780	0.073	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.126	0.131	0.005	3.56%
Node8	3.707	0.228	0.114	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	1.101	1.134	0.033	3.00%
Node8	0.195	0.228	0.114	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.073	0.075	0.002	2.77%
Node8.1	4.251	0.3700	0.033	74	5	225	0.27	89.24	156.51	0.55	51.00	0.12	1.104	1.116	0.012	1.05%
Node8.1	0.224	0.3700	0.033	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.084	0.087	0.003	3.78%
Node80	5.414	0.494	0.071	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	1.424	1.442	0.018	1.27%
Node80	0.285	0.494	0.071	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.107	0.11	0.003	3.13%
Node83	16.098	0.666	0.054	74	5	225	0.34	89.24	156.51	0.55	51.00	0.11	3.837	3.845	0.008	0.21%
Node83	0.847	0.666	0.054	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.317	0.328	0.011	3.48%
Node85.1	3.027	0.1950	0.039	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	0.899	0.922	0.023	2.55%
Node85.1	0.159	0.1950	0.039	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.060	0.062	0.002	4.20%
Node86	5.451	0.3760	0.069	74	5	225	0.22	89.24	156.51	0.55	51.00	0.12	1.521	1.543	0.022	1.42%
Node86	0.287	0.3760	0.069	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.107	0.111	0.004	3.35%
Node95	3.801	0.3550	0.068	74	5	225	0.21	89.24	156.51	0.55	51.00	0.12	1.061	1.086	0.025	2.37%
Node95	0.2	0.3550	0.068	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.075	0.077	0.002	2.88%
Node97.1	4.164	0.5150	0.057	74	5	225	0.29	89.24	156.51	0.55	51.00	0.11	1.068	1.071	0.003	0.24%
Node97.1	0.219	0.5150	0.057	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.082	0.085	0.003	3.71%
Orewa Contri1	480.257	2.6420	0.043	74	5	225	0.92	89.24	156.51	0.55	51.00	0.07	72.360	72.703	0.343	0.47%
Orewa Contri1	25.277	2.6420	0.043	98	1	225	0.42	5.18	218.93	0.96	92.00	0.13	7.115	7.129	0.014	0.19%
Orewa Contri2	68.959	1.4450	0.048	74	5	225	0.59	89.24	156.51	0.55	51.00	0.08	12.896	12.93	0.034	0.27%
Orewa Contri2	3.629	1.4450	0.048	98	1	225	0.27	5.18	218.93	0.96	92.00	0.15	1.201	1.209	0.008	0.65%
Orewa Contri3	55.458	0.9210	0.061	74	5	225	0.41	89.24	156.51	0.55	51.00	0.10	12.202	12.315	0.113	0.93%
Orewa Contri3	2.919	0.9210	0.061	98	1	225	0.19	5.18	218.93	0.96	92.00	0.16	1.068	1.095	0.027	2.57%
Orewa_Contri4	185.289	1.9330	0.037	74	5	225	0.78	89.24	156.51	0.55	51.00	0.07	30.403	30.519	0.116	0.38%
Orewa_Contri4	9.752	1.9330	0.037	98	1	225	0.36	5.18	218.93	0.96	92.00	0.13	2.933	2.939	0.006	0.20%
Orewa_Contri5	24.418	0.8120	0.079	74	5	225	0.35	89.24	156.51	0.55	51.00	0.10	5.751	5.793	0.042	0.73%
Orewa_Contri5	1.285	0.8120	0.079	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.481	0.497	0.016	3.35%
Orewa_Contri6	12.752	0.2880	0.109	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	3.787	3.901	0.114	3.00%
Orewa_Contri6	0.671	0.2880	0.109	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.251	0.26	0.009	3.54%
Orewa_Contri7	9.502	0.4180	0.135	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	2.718	2.8	0.082	3.03%
Orewa_Contri7	0.5	0.4180	0.135	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.187	0.193	0.006	3.14%
Orewa_Contri8	6.902	0.3490	0.155	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	2.050	2.112	0.062	3.03%
Orewa_Contri8	0.363	0.3490	0.155	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.136	0.14	0.004	3.06%
Orewa_Contri9	79.566	1.609	0.025	74	5	225	0.78	89.24	156.51	0.55	51.00	0.07	13.055	13.11	0.055	0.42%
Orewa_Contri9	4.188	1.609	0.025	98	1	225	0.36	5.18	218.93	0.96	92.00	0.13	1.260	1.262	0.002	0.19%
Weiti_Contri	678.769	4.65	0.015	74	5	225	1.82	89.24	156.51	0.55	51.00	0.05	69.345	69.815	0.470	0.68%
Weiti_Contri	35.725	4.65	0.015	98	1	225	0.83	5.18	218.93	0.96	92.00	0.09	7.248	7.28	0.032	0.44%
Weiti_Contri2	50.344	1.6130	0.04	74	5	225	0.68	89.24	156.51	0.55	51.00	0.08	8.835	8.889	0.054	0.61%
Weiti_Contri2	2.65	1.6130	0.04	98	1	225	0.31	5.18	218.93	0.96	92.00	0.14	0.847	0.844	-0.003	-0.30%
Weiti_Contri3	8.18	0.3650	0.044	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	2.203	2.224	0.021	0.95%
Weiti_Contri3	0.43	0.3650	0.044	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.161	0.166	0.005	3.16%
Weiti_Contri4	10.257	0.4590	0.039	74	5	225	0.30	89.24	156.51	0.55	51.00	0.11	2.599	2.603	0.004	0.15%
Weiti_Contri4	0.54	0.4590	0.039	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.202	0.209	0.007	3.42%
Weiti_Contri5	6.967	0.4710	0.031	74	5	225	0.32	89.24	156.51	0.55	51.00	0.11	1.701	1.708	0.007	0.39%
Weiti_Contri5	0.367	0.4710	0.031	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.137	0.142	0.005	3.39%
Weiti_Contri6	3.806	0.2350	0.037	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	1.089	1.118	0.029	2.71%
Weiti_Contri6	0.2	0.2350	0.037	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.075	0.077	0.002	2.88%
Weiti_Contri7	8.027	0.5170	0.032	74	5	225	0.34	89.24	156.51	0.55	51.00	0.11	1.913	1.923	0.010	0.51%

Weiti_Contri7	0.422	0.5170	0.032	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.158	0.163	0.005	3.21%
Weiti_Contri8	43.618	0.311	0.071	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	12.475	12.863	0.388	3.11%
Weiti_Contri8	2.296	0.311	0.071	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.859	0.888	0.029	3.35%
Weiti_Contri8.1	53.786	0.713	0.096	74	5	225	0.30	89.24	156.51	0.55	51.00	0.11	13.460	13.529	0.069	0.51%
Weiti_Contri8.1	9.791	0.713	0.096	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	3.664	3.787	0.123	3.35%
Weiti_Contri9	153.161	2.282	0.026	74	5	225	0.97	89.24	156.51	0.55	51.00	0.07	22.426	22.449	0.023	0.10%
Weiti_Contri9	8.061	2.282	0.026	98	1	225	0.44	5.18	218.93	0.96	92.00	0.12	2.201	2.216	0.015	0.69%
Weiti_Contri9.1	53.116	1.619	0.039	74	5	225	0.68	89.24	156.51	0.55	51.00	0.08	9.254	9.341	0.087	0.94%
Weiti_Contri9.1	63.623	1.619	0.039	98	1	225	0.31	5.18	218.93	0.96	92.00	0.14	20.083	20.2	0.117	0.58%
Weiti_Contri9.2	36.459	0.65	0.097	74	5	225	0.28	89.24	156.51	0.55	51.00	0.11	9.355	9.399	0.044	0.47%
Weiti_Contri9.2	16.152	0.65	0.097	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	6.045	6.248	0.203	3.36%
Weiti_Silverdale	417.491	3.101	0.01	74	5	225	1.58	89.24	156.51	0.55	51.00	0.05	46.441	46.568	0.127	0.27%
Weiti_Silverdale	21.973	3.101	0.01	98	1	225	0.72	5.18	218.93	0.96	92.00	0.10	4.789	4.809	0.020	0.42%

*Note: Tc = 0.167 hrs has been adopted if it is less than 0.167 hrs.

Sum of TP 108 Peak Flow Rate (m3/s)	601.236	Maximum Positive Variance	0.470	Sum of Total Variance	5.256
Sum of XP Storm Peak Flow Rate (m3/s)	606.492	Maximum Negative Variance	-0.031	Sum of Total Variance (%)	0.87%

APPENDIX H

LINZ SECONDARY PORT TABLES

Pranil Wadan

From: Rowan Hallam
Sent: Friday, 10 June 2016 9:50 a.m.
To: Pranil Wadan
Subject: Millwater MHWS

Hi Pranil,

The source of the MHWS was by way of LINZ secondary port tables
http://www.linz.govt.nz/sea/tides/tide-predictions
http://www.linz.govt.nz/docs/hydro/tidal-info/tide-tables/sec-ports/auckland.pdf

Weiti is the closest secondary port table to Millwater. Tiritiri Matangi is the next closest and provides a good check.

Tiritiri Matangi Island is a secondary port and has a MHWS of 1.258
Weiti River Entrance is a secondary port and has a MHWS of 1.258 also

The tide charts are in "Chart Datum" so these have been converted to "Auckland Vertical Datum 1946" using the Primary Auckland port datum offsets.

Cheers

Check out our laser scanning service at www.woodslaserscanning.co.nz

WOODS

ENGINEERS. SURVEYORS. PLANNERS

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SECONDARY PORTS TABLE

No.	Port	Lat. °	S. ′	Long. °	E. ′	Time Differences High Water Mean	Time Differences High Water Range	Time Differences Low Water Mean	Time Differences Low Water Range	Mean Spring, Neap and Sea Level Heights (metres) MHWS	MHWN	MLWN	MLWS	MSL	Range Ratio	
6400	**AUCKLAND**	**36**	**51**	**174**	**46**	**hhmm**	**hhmm to hhmm**	**hhmm**	**hhmm to hhmm**	**3.3**	**2.8**	**0.9**	**0.4**	**1.89**		
6399b	Devonport Naval Base	36	50	174	47	0000	-0007 to +0003	0000	-0007 to +0004	3.2	2.7	0.9	0.4	1.8	0.97	
6402	Maraetai	36	52	175	03	-0015	-	-0015	-	-	-	-	-	-	-	*
6399c	Onetaunga Bay	36	49	174	42	+0004	-	-0007	-	3.4	2.9	0.9	0.5	2.0	1.00	*
	Coromandel Peninsula						-		-							
6405	Coromandel Harbour - Whanganui Island	36	47	175	27	-0021	-0044 to +0011	-0015	-0048 to +0011	2.9	2.5	0.7	0.2	1.6	0.93	
6404	Thames - Rocky Point	37	06	175	31	-0017	-0027 to -0009	-0010	-0017 to +0003	4.0	3.1	1.2	0.3	2.2	1.28	
	Hauraki Gulf / Tīkapa Moana															
6398	Mahurangi Harbour	36	29	174	43	+0002	-	+0012	-	-	-	-	-	-	-	*
6396a	Mangawhai Heads	36	05	174	36	+0005	-	+0005	-	-	-	-	-	-	-	*
6397a	Matakana River - Sandspit	36	24	174	44	+0005	-	+0005	-	2.7	2.4	0.9	0.5	1.6	0.76	*
6399a	Murrays Bay	36	44	174	45	-0025	-	-0003	-	2.9	2.6	0.7	0.5	1.7	0.83	*
6396b	Omaha Cove	36	17	174	48	-0008	-0016 to +0001	+0003	-0005 to +0011	2.6	2.2	0.7	0.3	1.4	0.79	
6398a	Tiritiri Matangi Island	36	36	174	53	+0010	-0011 to +0042	-0003	-0029 to +0029	3.0	2.5	0.8	0.3	1.6	0.93	
6399	Weiti River Entrance	36	39	174	44	+0001	-0020 to +0022	+0007	-0023 to +0025	3.0	2.5	0.8	0.2	1.7	0.97	
6396c	Whangateau Harbour	36	19	174	47	-	-	-	-	2.7	2.3	0.6	0.2	1.5	0.86	*
	Kawau Island															
6397	Bon Accord Harbour – Mansion House Bay	36	26	174	49	-0015	-0035 to +0036	-0004	-0023 to +0043	2.7	2.3	0.8	0.3	1.5	0.83	
	Waiheke Island															
6401	Man o'War Bay	36	47	175	09	-0018	-0035 to -0002	-0008	-0025 to +0006	3.0	2.5	0.7	0.2	1.6	0.97	
6401a	Matiatia Bay	36	47	174	59	0000	-0024 to +0032	+0010	-0016 to +0039	2.9	2.4	0.7	0.2	1.5	0.93	
6504	**BLUFF**	**46**	**36**	**168**	**21**	**hhmm**	**hhmm to hhmm**	**hhmm**	**hhmm to hhmm**	**2.8**	**2.4**	**0.9**	**0.5**	**1.74**		
6506	Colac Bay / Ōraka	46	22	167	54	-	-	-	-	2.3	1.8	0.9	0.4	1.3	0.83	*
6503a	Dog Island	46	39	168	25	-0017	-0028 to -0002	-0035	-0047 to -0015	2.8	2.3	1.0	0.5	1.7	1.00	
6506a	Kawakaputa Bay	46	23	167	49	-0115	-0148 to -0035	-0119	-0148 to -0048	2.8	2.3	0.9	0.4	1.6	1.04	
6505	New River Entrance	46	32	168	15	-0022	-	-0022	-	2.8	2.5	0.7	0.4	1.6	1.04	*
6500	Nugget Point	46	27	169	49	+0107	+0012 to +0213	+0108	+0019 to +0200	2.4	2.1	1.0	0.5	1.5	0.83	*
6510c	Port Craig	46	13	167	22	-0203	-0236 to -0138	-0205	-0230 to -0142	3.1	2.6	1.3	0.7	1.9	1.04	
6505a	Riverton / Aparima	46	22	168	01	-0054	-0135 to -0033	-0052	-0114 to -0034	2.9	2.4	1.2	0.7	1.8	0.96	
6503	Ruapuke Island	46	47	168	30	-0011	-0035 to +0018	-0019	-0040 to +0009	2.7	2.3	0.9	0.5	1.6	0.96	
6501	Waikawa Harbour	46	39	169	10	+0122	+0057 to +0138	+0114	+0057 to +0128	2.5	2.2	0.9	0.5	1.5	0.87	
6502	Waipapa Point	46	39	168	51	-	-	-	-	2.7	2.5	0.9	0.6	1.7	0.91	*

* Data Approximate - No Data

APPENDIX I

HYDROLOGICAL CALIBRATION MEMO

Memorandum

WOODS

TO: Jon Rix, Mark Iszard

FROM: Sakti Gounder

DATE: 07 July 2016

FILE REF# 31720

PAGES: 11

RE: Wainui East – Orewa River Flow Gauge Calibration

Introduction

This memo summarises the calibration undertaken against the flow gauge located under the Kowhai Ave Bridge. The calibration has been carried out on the request of Auckland Council to determine whether the curve numbers have been accurately used to represent the catchments in the Wainui East XPStorm model.

Woods have been provided with rainfall data from the rain gauge located at the Orewa Treatment Ponds, which has been used in conjunction with the flow gauge data at the Kowhai Ave bridge.

As the work undertaken is for hydrological calibration purposes, a HEC-HMS model was set up to compare outflow hydrographs from the catchments discharging to the Orewa River against the Kowhai Ave flow gauge hydrograph.

Site description

The catchments discharging to the Orewa River are predominantly rural and comprises significant amounts of grassed area. The catchments slope steeply towards the stream, which discharges to the Hauraki Gulf. This can be seen in Figure 1.

Figure 1: Orewa River and contributing catchments

In order to quantify flows, the total contributing catchment area to the Kowhai Ave bridge was extracted from the XPStorm model. This was a total of approximately 964 hectares.

A schematic of the HEC-HMS model set up can be seen in Figure 2.

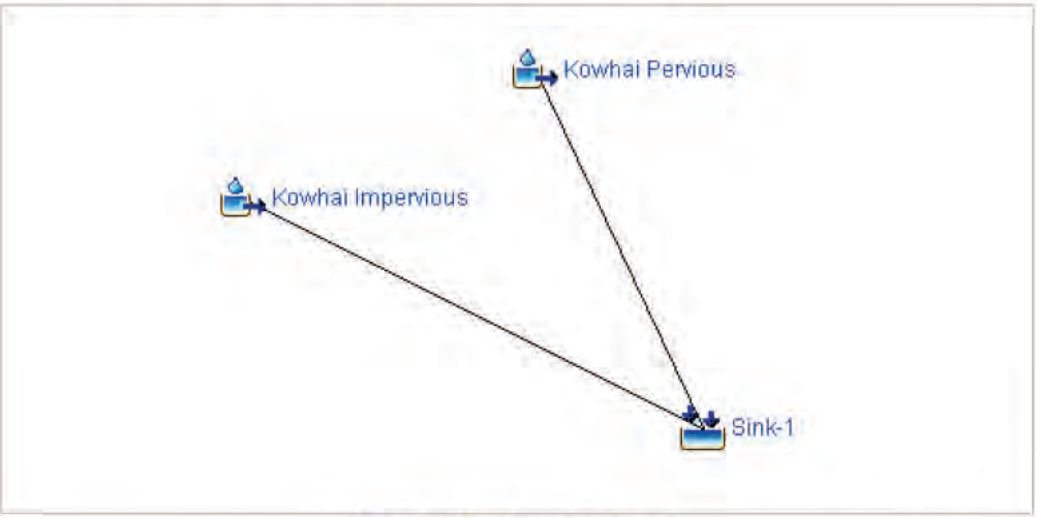

Figure 2: HEC-HMS model schematic

The basin model was set up with the contributing catchment at 5% impervious. The default curve numbers used were 74 and 98. The times of concentration were calculated separately for the pervious and impervious components at 73.73 minutes and 33.75 minutes respectively. These parameters have been summarised in Table 1.

Table 1: HEC-HMS Model Initial Inputs

	5% Impervious Basin Model	10% Impervious Basin Models
Pervious Area (km²)	9.16	8.68
Impervious Area (km²)	0.48	0.96
Pervious lag time (mins)	73.73	73.73
Impervious lag time (mins)	33.75	33.75
Pervious curve number	74	74
Impervious curve number	98	98

It should be noted that SCS curve number loss method (curve numbers and initial abstraction) and the SCS unit hydrograph transform method (lag time) were used to simulate the pervious and impervious catchments.

The lag times used for calibrating runoff from pervious areas have been summarised in Table 2.

Table 2: Lag time

Curve Number	Time of Concentration (mins)	Lag time (mins)
85	97.46	64.97
90	92.16	61.44
98	84.37	56.24

Flow Gauge Data – Higher Flows

Three sets of flow gauge and corresponding rainfall data have been provided. These can be seen in Figures 3 – 4.

It can be seen that there is good agreement with the rainfall data overlaid on top of the flow data for Flow Gauges 1 and 2.

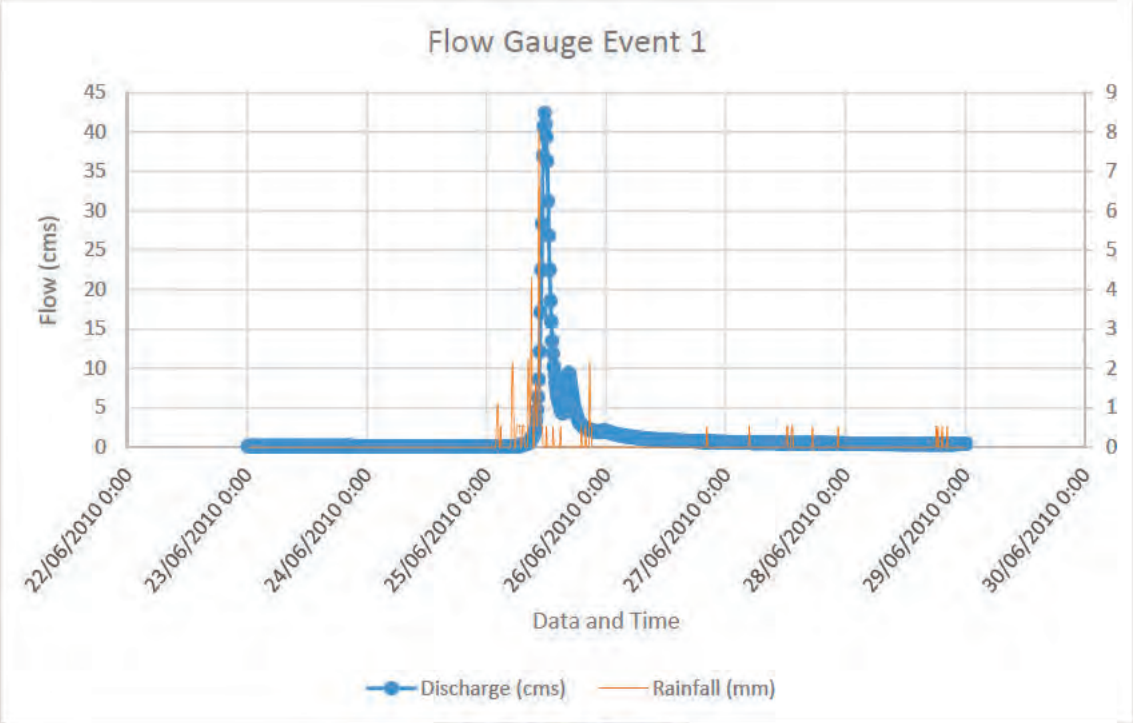

Figure 3: Flow Gauge 1

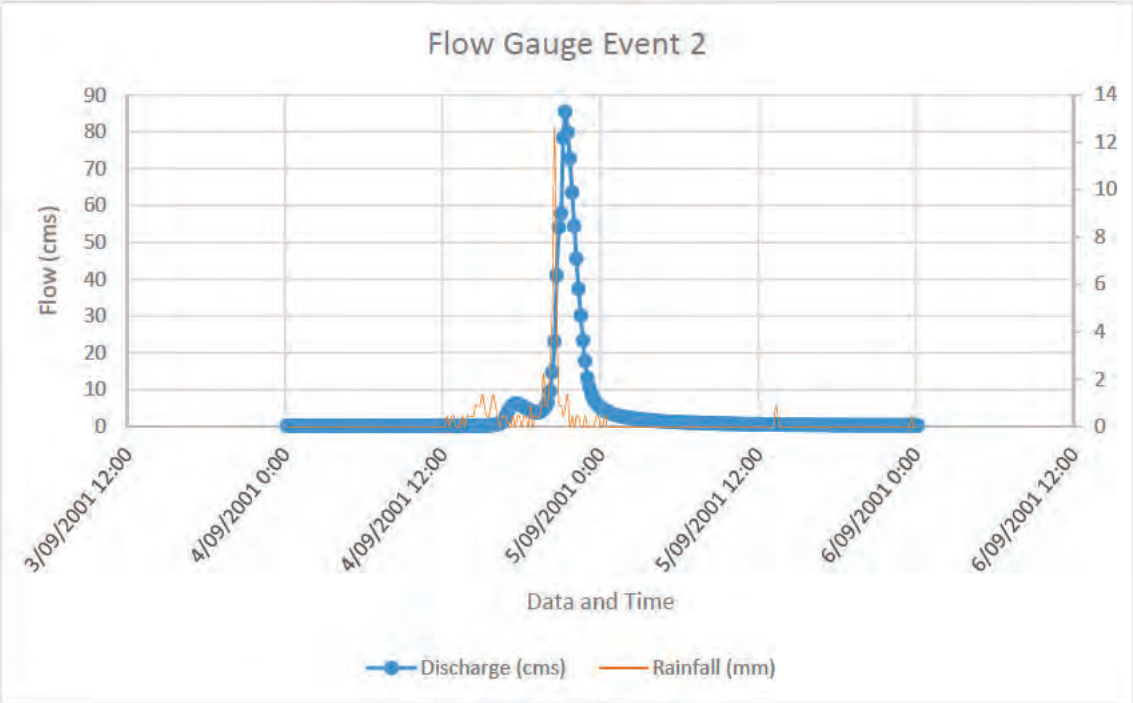

Figure 4: Flow Gauge 2

The following curve numbers were trialled during the calibration process for pervious areas for the high flow gauges:

- 74,
- 90, and
- 98.

It was found that for Flow Gauges 1 and 2, there was generally good agreement with the time to peak and shape of the flow hydrographs. This is as a result of using the separately calculated times of concentration for the pervious and impervious components of each catchment. The flow hydrographs for the different trial runs can be seen in Figures 5 – 6.

The figures show that the peak flows predicted in the HEC-HMS model were significantly lower than those in the flow gauge data across the range of curve numbers tested. The final run simulated the pervious areas with a CN = 90 and Ia =0 (time of concentration calculated using the appropriate CN and channelization factors). These runs still could not reach the peak flows predicted by Flow Gauges 1 and 3.

The curve number would have to be greater than 98 for the peak flows to align with the flow gauge data. Given this result, it is likely that one of two scenarios exist:

- The flow gauge readings are predicting higher flows than normal (we note that there is good correlation between the flows and rainfall graph shapes for Flow Gauges 1 and 3); or
- There are unknown sources of flows contributing to the stream which haven't been accounted for in the calibration.

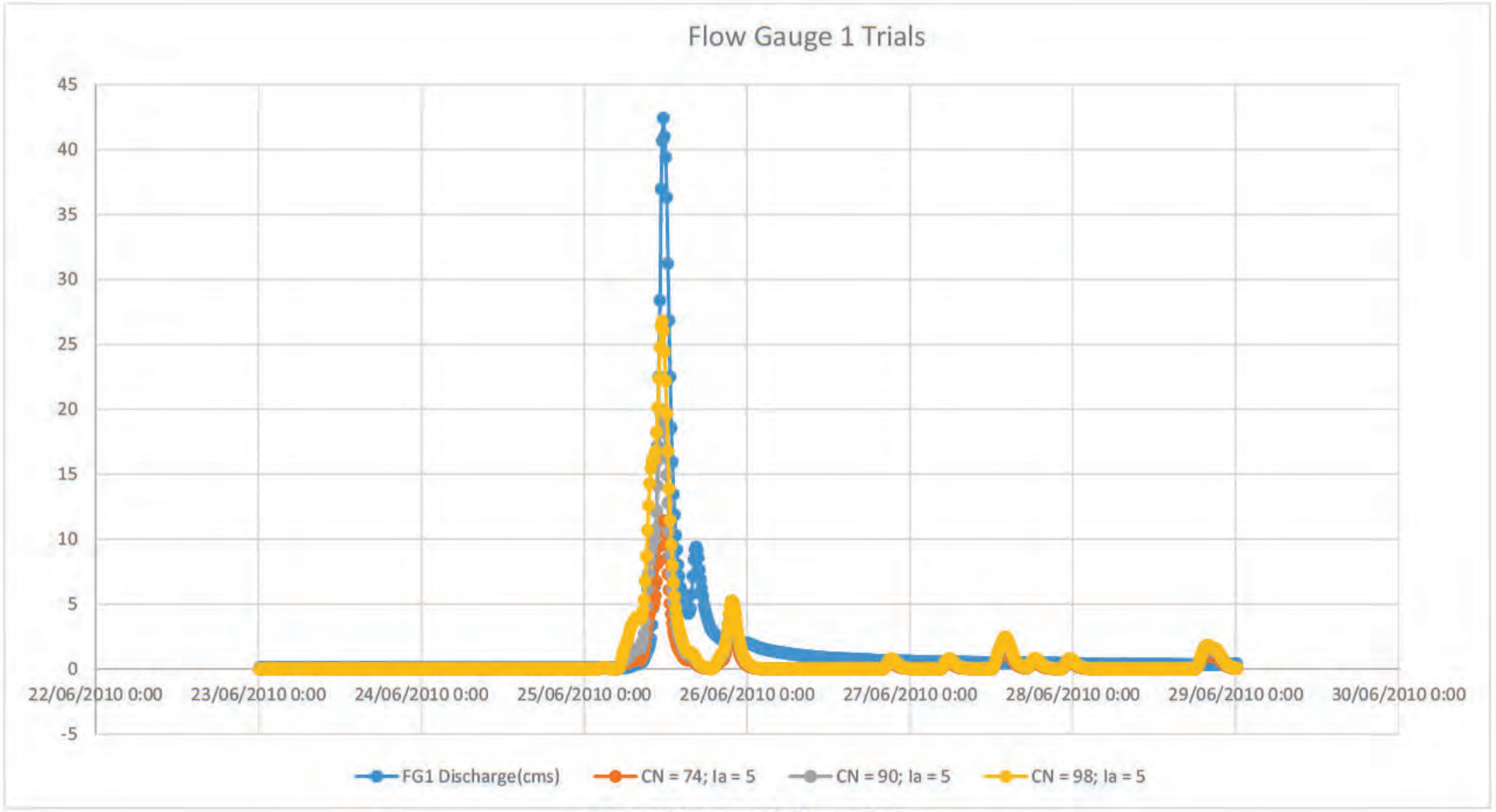

Figure 5: Flow Gauge 1 Calibration Trials

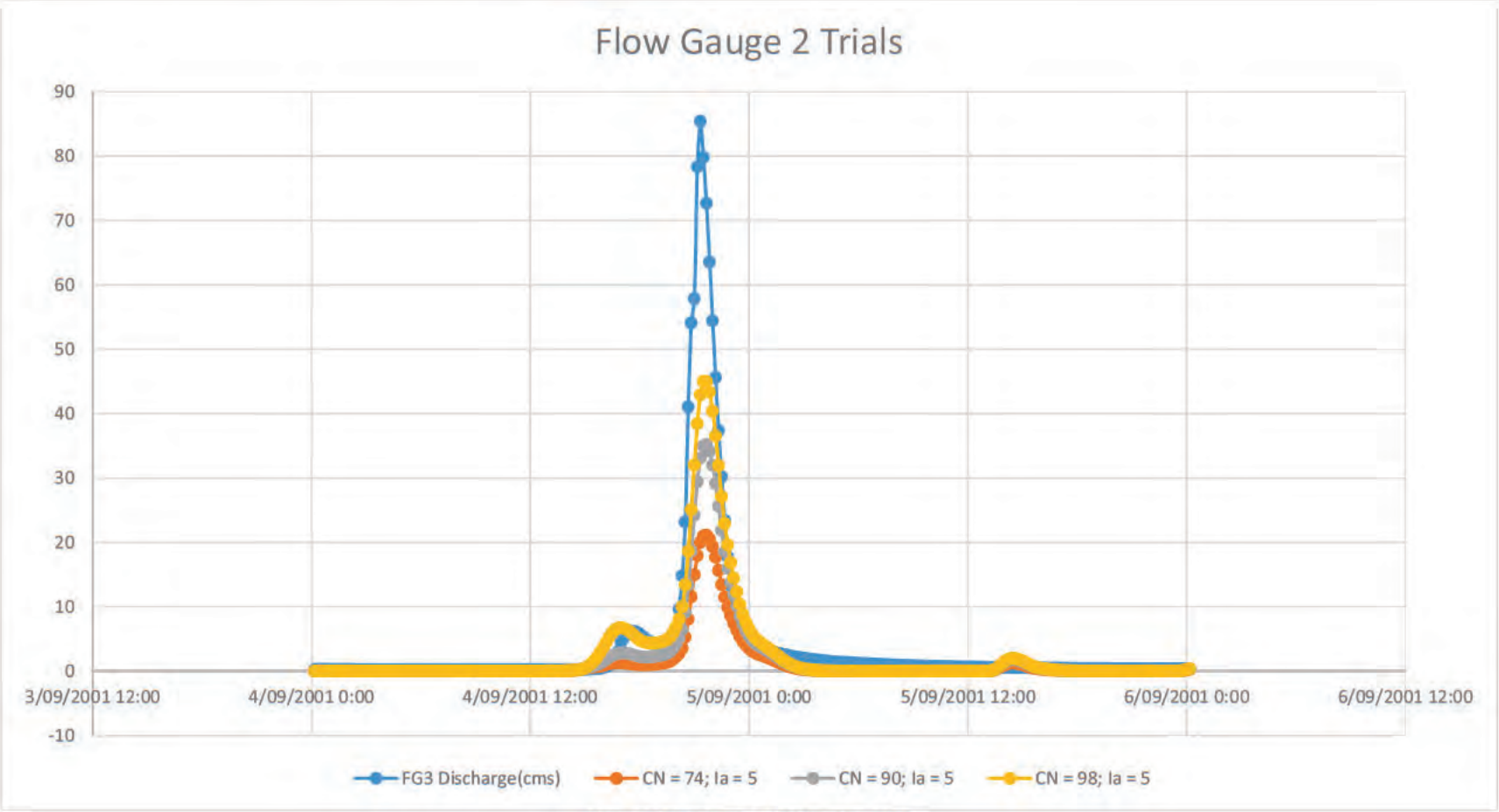

Figure 6: Flow Gauge 2 Calibration Trials

Flow Gauge Data – Lower Flows

Discussions with Auckland Council found that the flow gauge in the Orewa River is not calibrated for flows at a high stage. The highest calibrated flow is approximately 15 m^3/s. Consequently, three further events with a peak gauged flow between 10 – 20 m^3/s were used to attempt calibration.

The following curve numbers were trialled during the calibration process for pervious areas for the high flow gauges:

- 74,
- 85, and
- 90.

The flow hydrographs from the calibration process can be seen in Figures 9 - 11. The discrepancies between the peak flows and volumes have been summarised in Table 3-5.

Table 3: Flow Gauge 3 Results Summary

	Runoff Volume (m^3)	% Discrepancy	Peak Flow (m^3/s)	% Discrepancy
Flow Gauge	**158,927**	-	**16.51**	-
CN = 74	53,062	-67%	3.95	-76%
CN = 85	85,095	-46%	6.22	-62%
CN = 90	110,772	-30%	8.19	-50%
CN = 98	193,078	+21%	13.58	-18%

Table 4: Flow Gauge 4 Results Summary

	Runoff Volume (m^3)	% Discrepancy	Peak Flow (m^3/s)	% Discrepancy
Flow Gauge	**183,782**	-	**8.26**	-
CN = 74	87,044	-53%	6.80	-18%
CN = 85	134,091	-27%	11.14	+35%
CN = 90	169,129	-8%	14.28	+73%
CN = 98	267,902	+46%	21.19	+156%

Table 5: Flow Gauge 5 Results Summary

	Runoff Volume (m^3)	% Discrepancy	Peak Flow (m^3/s)	% Discrepancy
Flow Gauge	**264,912**	-	**21.06**	-
CN = 74	109,152	-59%	11.00	-48%
CN = 85	164,806	-38%	17.15	-19%
CN = 90	204,789	-23%	21.09	0%
CN = 98	311,280	18%	29.01	+38%

The best fit for volume seen is in Flow Gauge 4 with a CN of 90, however there still remains a large discrepancy in peak flows. Overall, the calibration results are inconclusive, as shown in Tables 3 - 5.

Recommendations

It should be noted that while meeting the peak is possible, the amount of volume generated in the storm events do not generally match the volume associated with the flow gauge data. This may be attributed to the following:

- Spatial variance in the rainfall data provided with the flow gauge data. The rain gauge from which rainfall data has been used is located at the Orewa Treatment Ponds, which is approximately 7km away from the top of the catchment. Wind direction may also have an influence.
- High flows haven't been calibrated so the flow gauge over predicts peaks and volumes for events with flows greater than 15 m^3/s.
- Low flows can be calibrated using CNs in the range of 85 – 90 for the peak; meeting the volumes requires a CN of 98, which is unrealistic for representing a catchment with very little impervious coverage.

Based on the above, it is noted that the CN is likely to be higher than 74.

While there are no conclusive results from the calibration to support what the CN should be, it has been discussed with Council that a CN of 74 will be appropriate for those models that are used for assessment of effects (refer Appendix A – Correspondence).

It is recommended that rainfall data be collected located in the midpoint of the catchment in order to remove spatial variance as a potential reason for calibration not being successful. It is also recommended that the flow gauge at Kowhai Ave be calibrated for high flow events so that more events can be examined in the calibration process.

Council have advised that they are looking into the rating curve for the Kowhai Avenue Bridge flow gauge, which will further advise the curve number being used in the modelling.

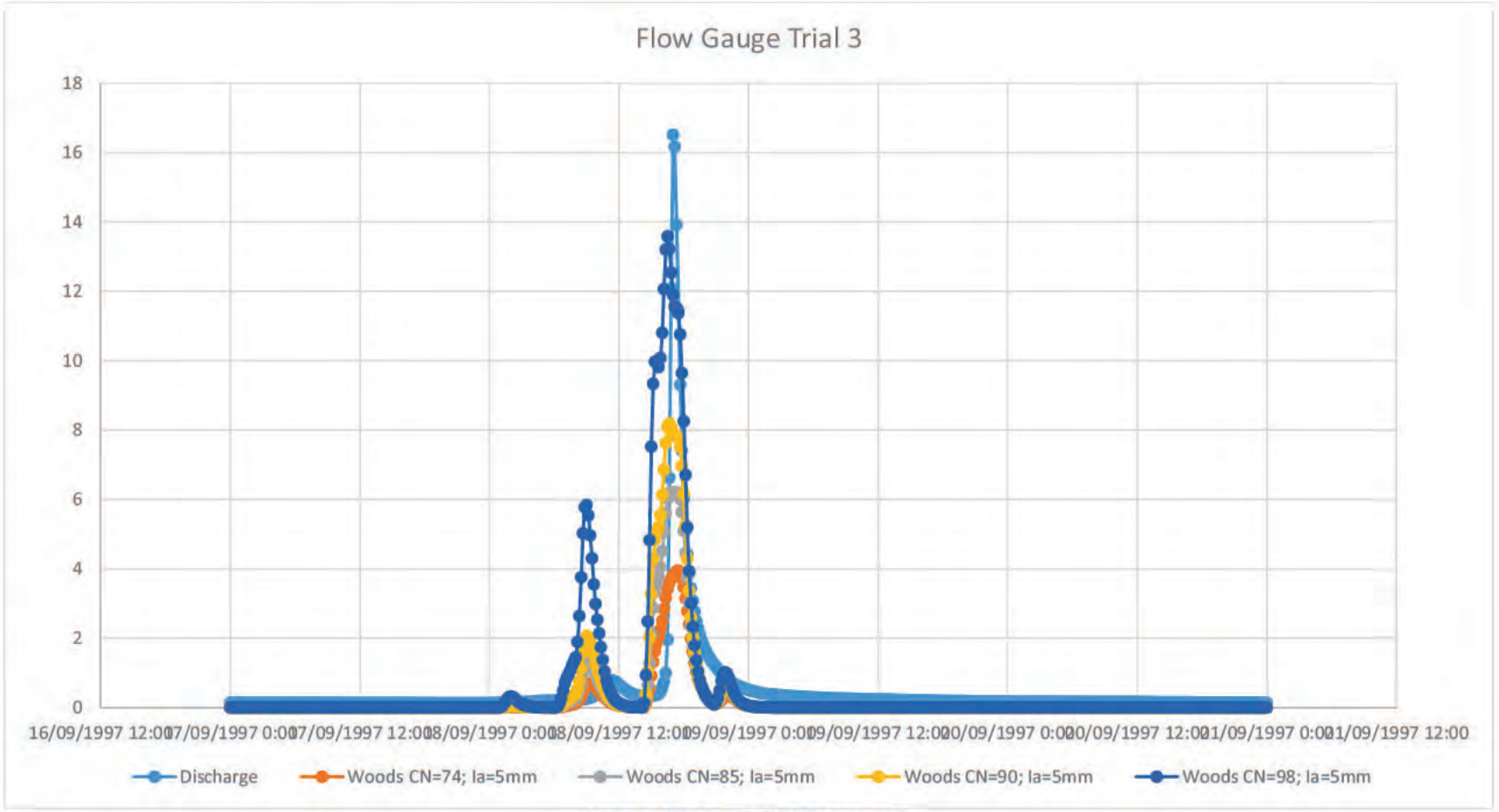

Figure 7: Flow Gauge 3 Calibration Trials

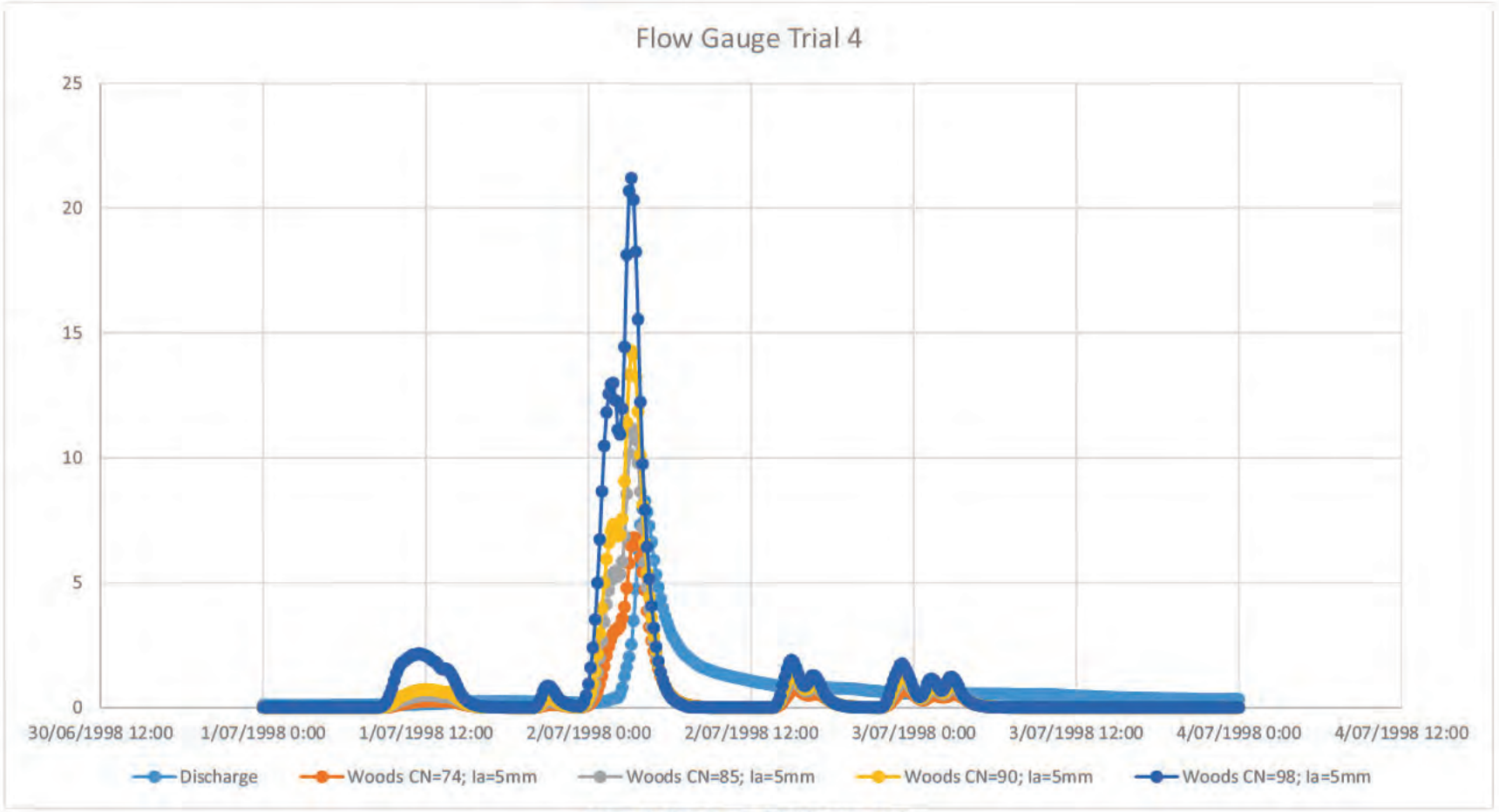

Figure 8: Flow Gauge 4 Calibration Trials

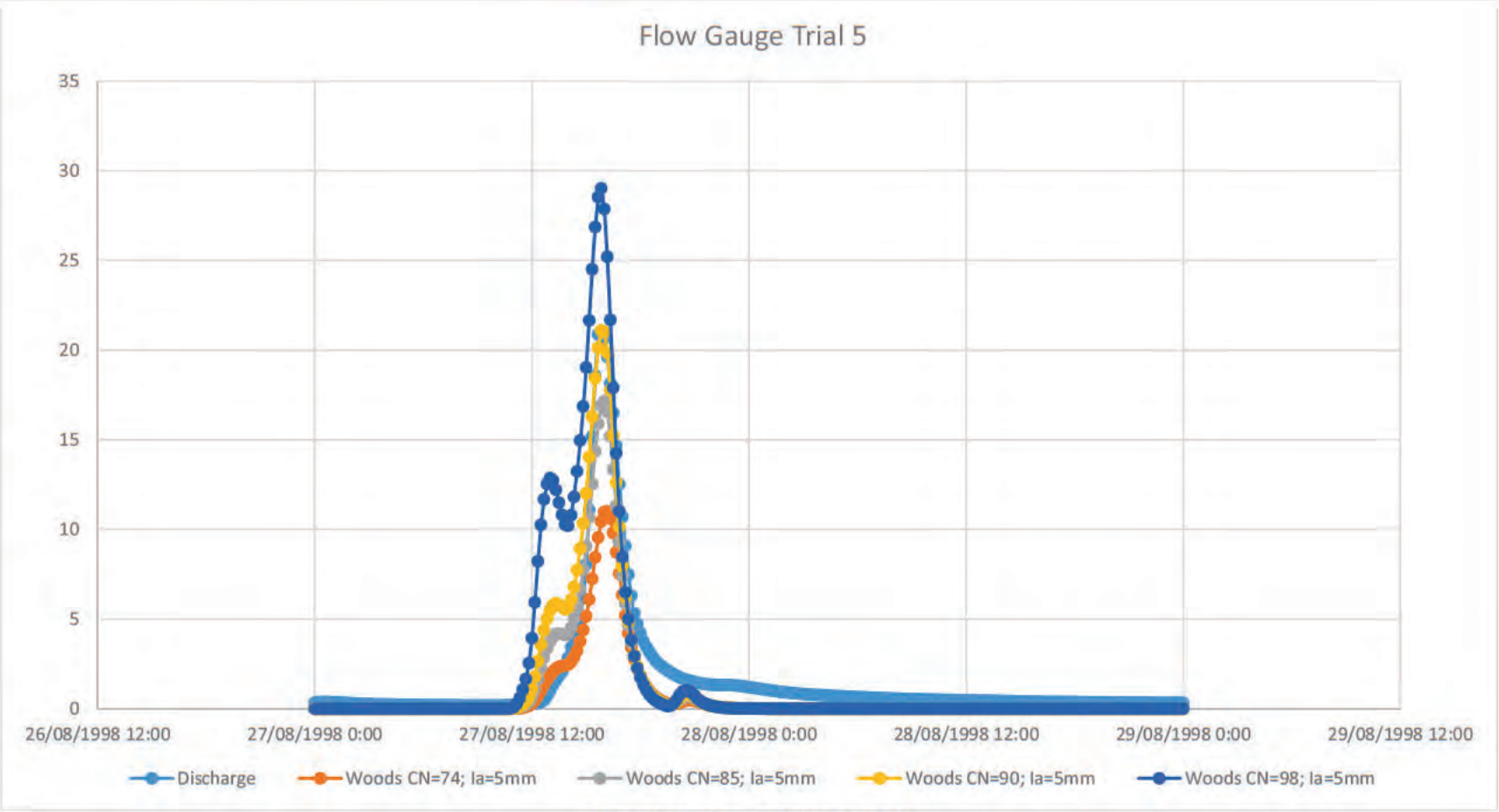

Figure 9: Flow Gauge 5 Calibration Trial

APPENDIX A
CORRESPONDENCE

From: Jon Rix
To: Pranil Wadan; Jon Rix
Cc: Mark Iszard; Jamie Whyte; Sakti Gounder; Kris Fordham; Nick Brown
Subject: RE: Wainui East SHA - Flow Gauge and Rainfall data
Date: Thursday, 7 July 2016 4:17:09 p.m.
Attachments: image002.png
image006.png

Hi Pranil,

Thanks for sending through your hydrological calibration of the Kowhai Avenue Bridge flow gauge.

As you have identified, the results highlight a potentially significant uncertainty relating to the catchment rainfall runoff response. Thanks for liaising with Council on this - to have continued without getting this agreed could lead to potential disagreement later - we appreciate the discussion.

We will look into the rating curve issue further which may be used at a later stage to improve the hydrological calibration. However we are aware that this may not meet your timelines so there is an alternative approach which we would be satisfied with for the purposes of your assessment of effects. The suggestion is detailed below:

1. Proceed with the land use effects based on a pervious CN from your TP108 calculation (i.e. 74). Continue to separate out your pervious and impervious catchment, so that the ratio of pervious to impervious changes from ED to MPD based on your impervious land use assumptions.
2. Where you are proposing to elevate ground levels above the 100 year ARI floodplain, use the MPD scenario and a CN no less than 85 to establish the 100 year ARI level (i.e. not the 74!).

We consider that this approach is precautionary for the effects assessment of land use and landform changes. The precautionary approach is appropriate given the uncertainty highlighted by your calibration.

This approach is not currently approved for setting floor levels or ground levels. When we have looked into the rating curve for Kowhai Avenue Bridge flow gauge further, we will update you with the results.

If you have any queries, please feel free to call.

Regards

Jon

From: Pranil Wadan [mailto:pranil.wadan@woods.co.nz]
Sent: Wednesday, 6 July 2016 6:20 p.m.
To: Jon Rix; Kris Fordham
Cc: Mark Iszard; Jon Rix; Jamie Whyte; Sakti Gounder
Subject: RE: Wainui East SHA - Flow Gauge and Rainfall data

Hi Jon

Updated memo attached for the calibration, Overall the results still remain inconclusive.

The findings do however suggest that the CN should likely be increased from 74 to a higher value. We were unable with confidence to ascertain what the CN should be through calibration, but are recommending a CN of 85.

Could you please review and get back us, Will give you a call in the morning to discuss.

Kind Regards

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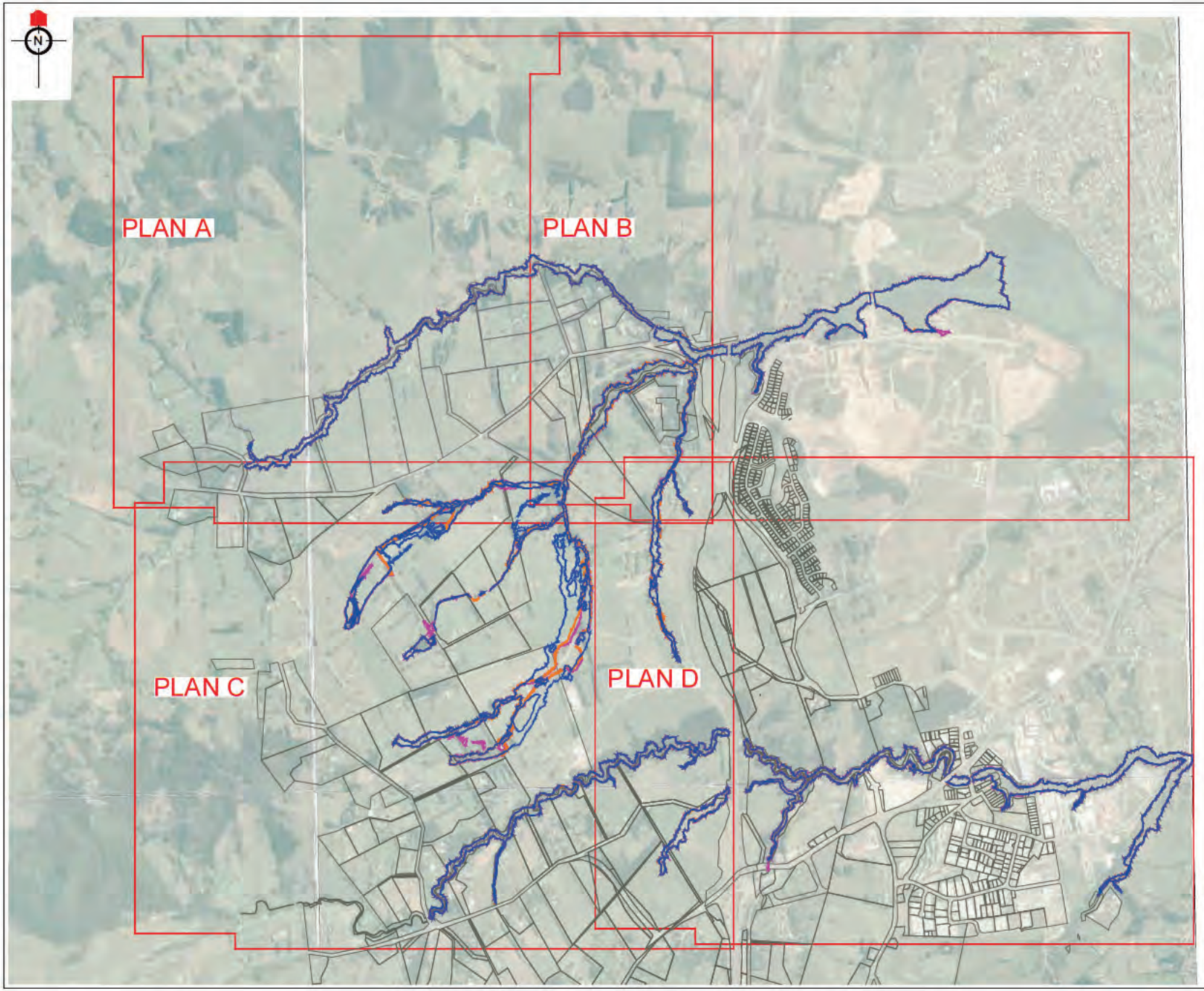
APPENDIX J

FLOOD MAPS

FLOOD MAPS

10YR EXISTING RAINFALL



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LEGEND:

- ED (SCENARIO 2)
- MPD (SCENARIO 30)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 14)
- PLAN BOUNDARY

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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAPS SET 1 – 10 YEAR NO CC

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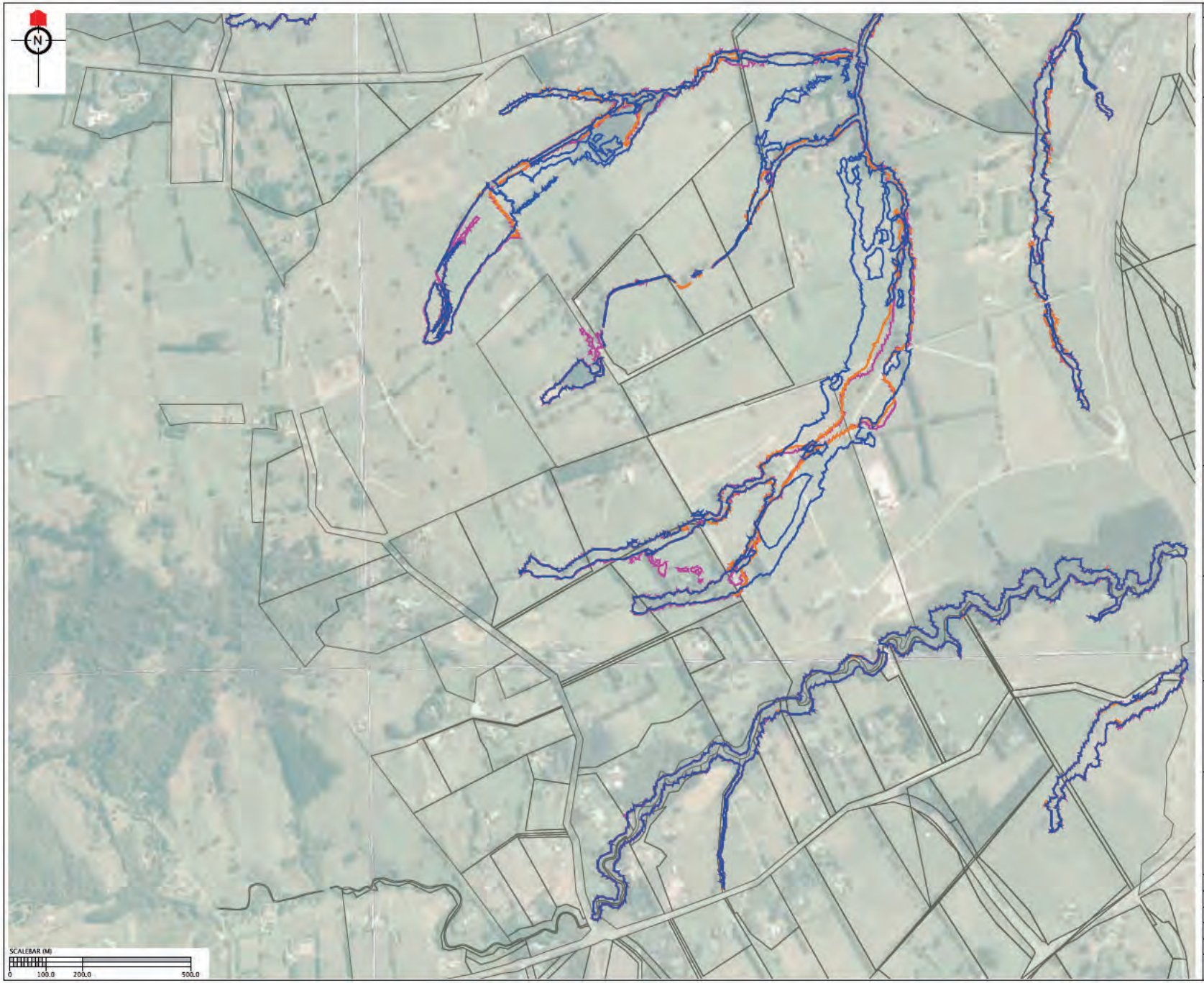

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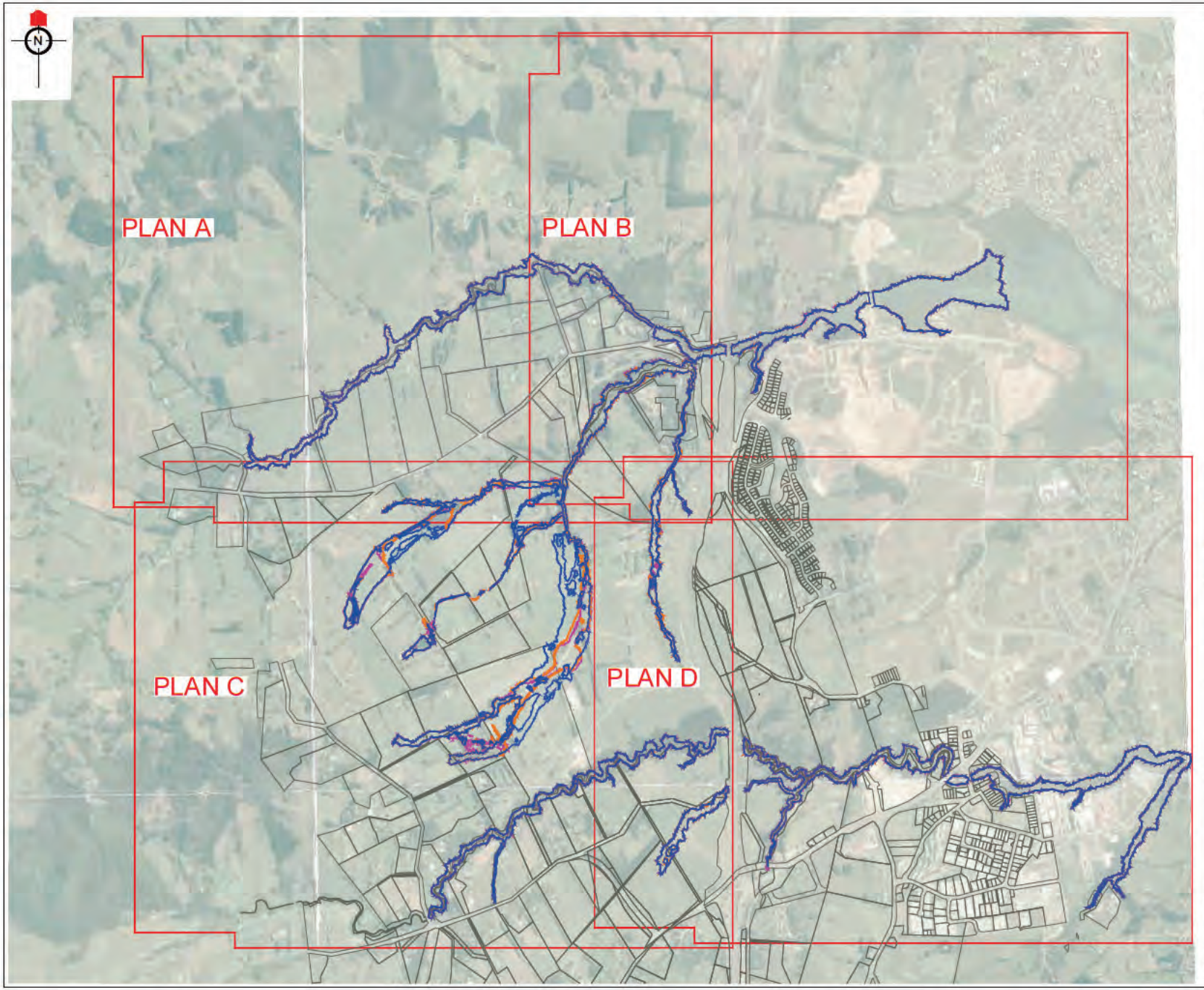
FLOOD MAPS

10YR FUTURE RAINFALL



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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAPS
SET 2 – 10 YEAR + CC

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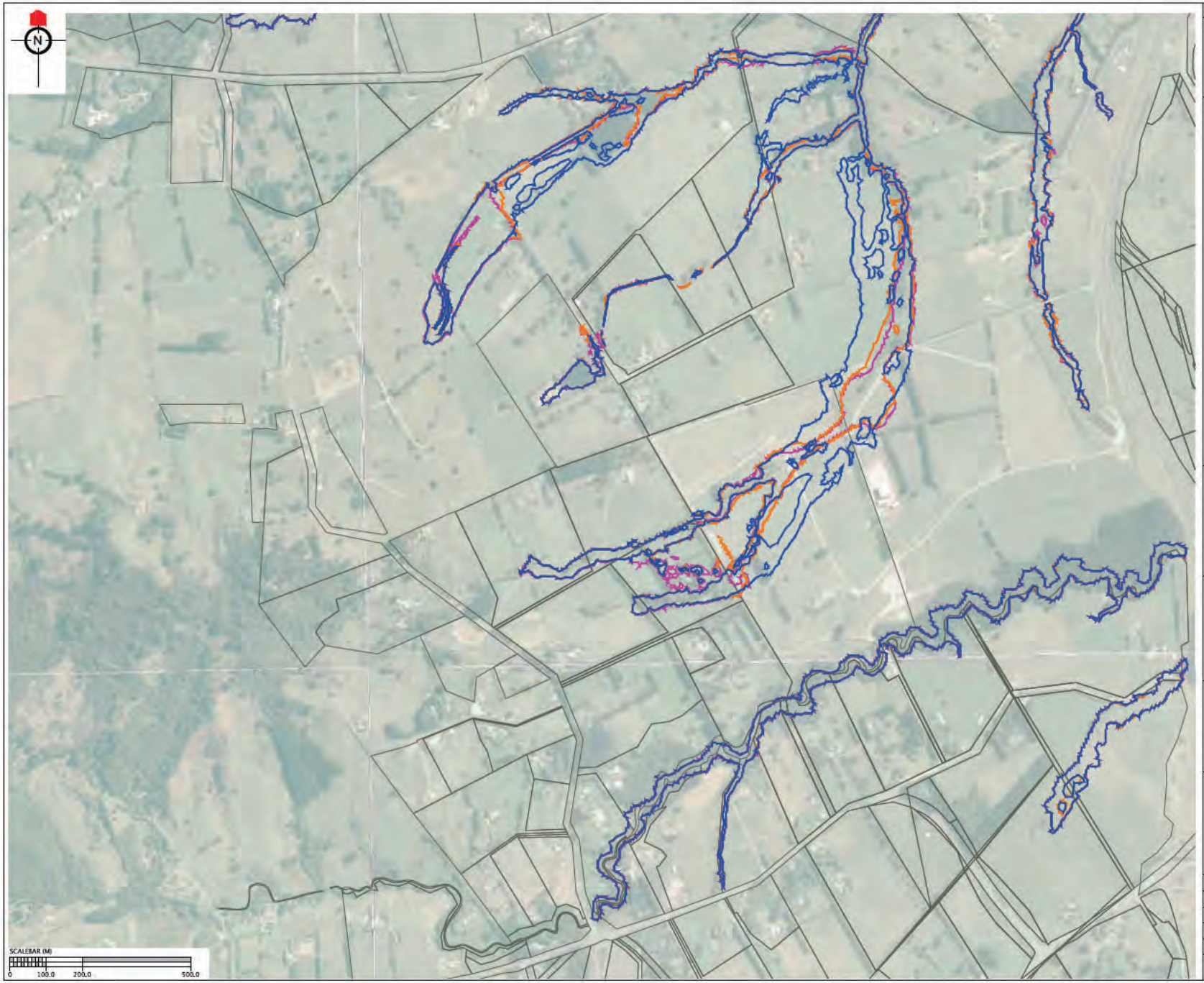

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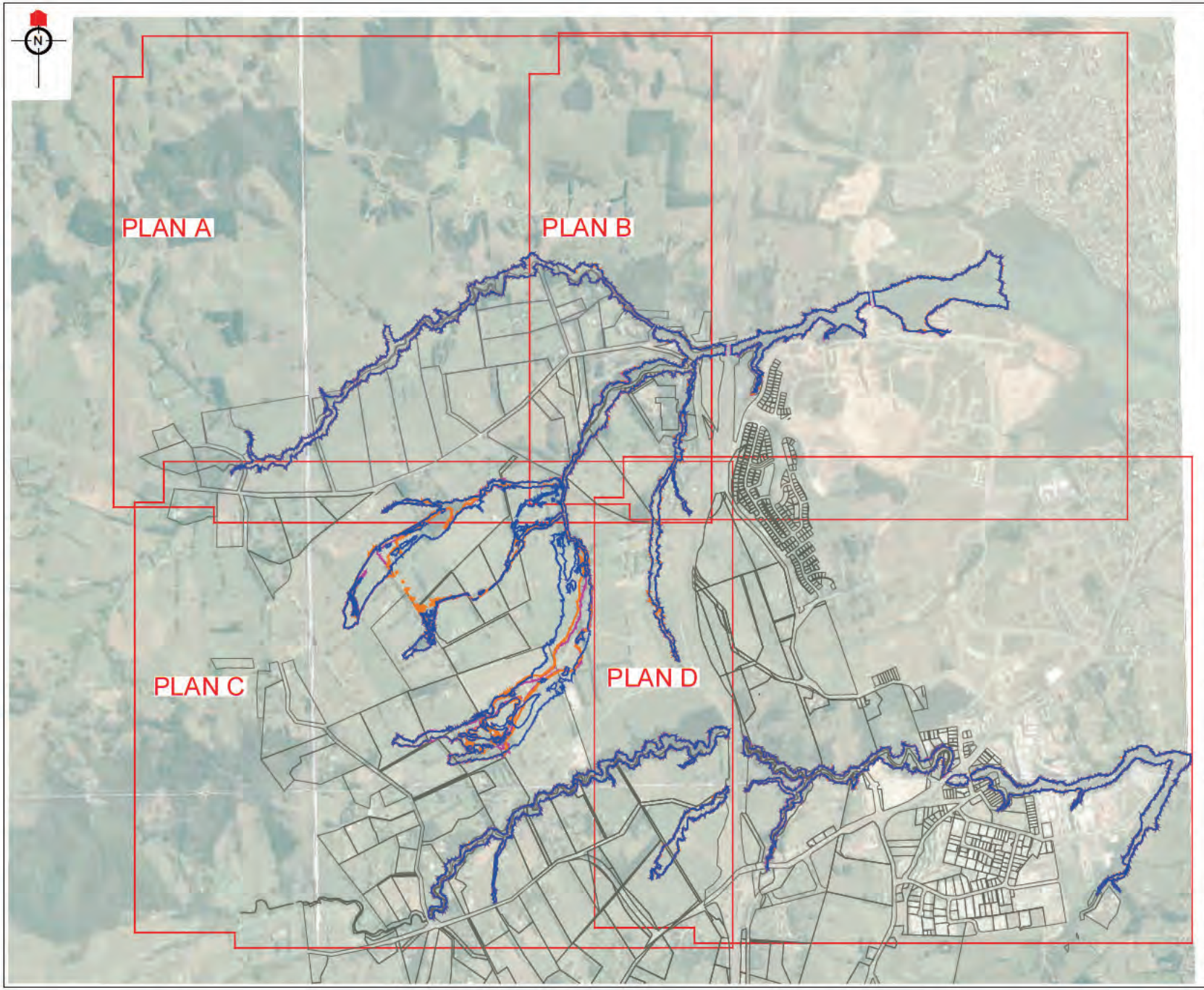
FLOOD MAPS

100YR EXISTING RAINFALL



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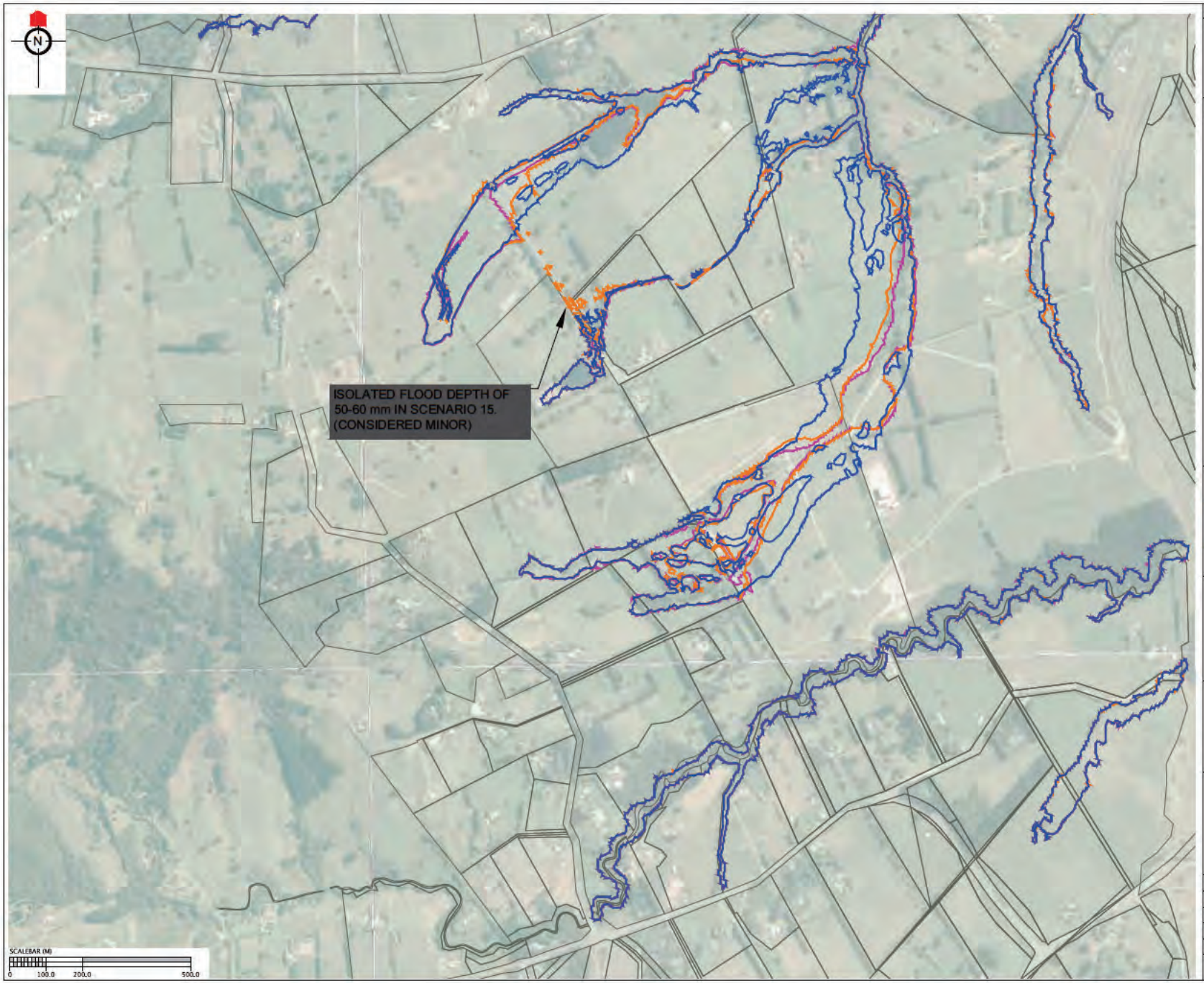

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FLOOD MAP
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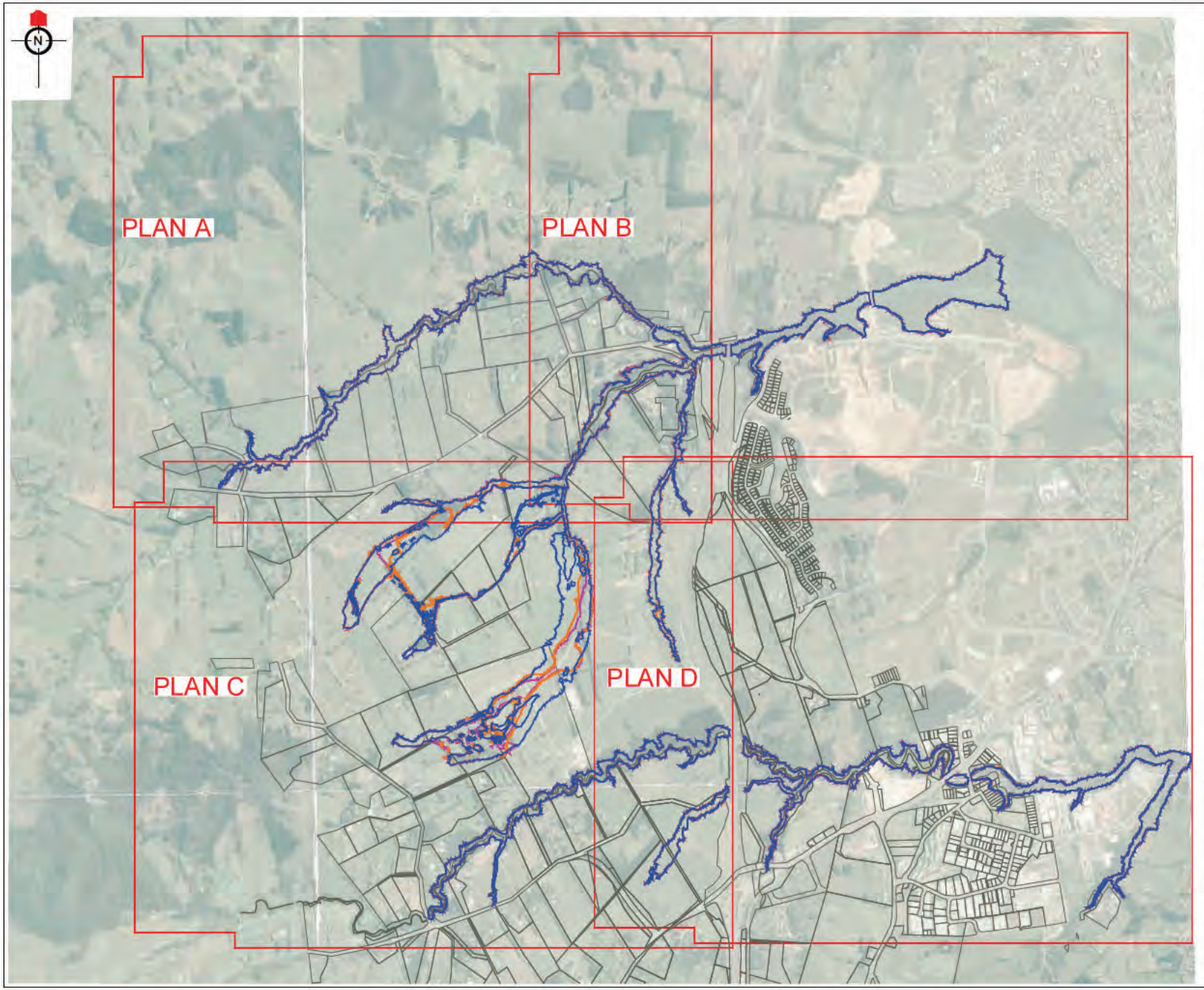
FLOOD MAPS

100YR FUTURE RAINFALL



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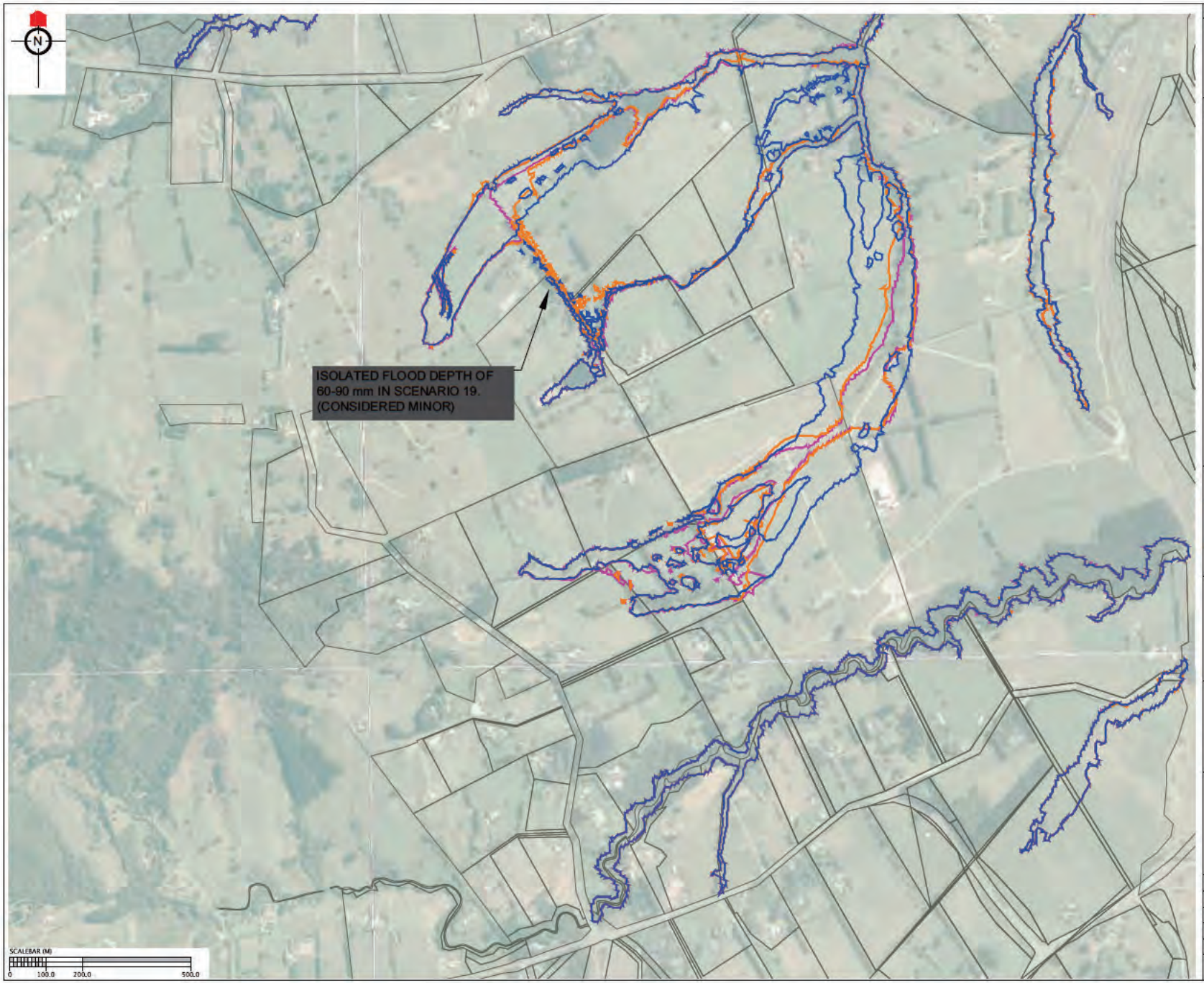

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APPENDIX K

XP STORM MODEL OUTPUTS

SCENARIO 2 – ED

10YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 2)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.062	14.306
Millwater1	2	60.924	100	12.189	
Millwater2	1	4.299	0	0.598	2.513
Millwater2	2	7.983	100	1.985	
Millwater3	1	9.505	0	1.134	5.094
Millwater3	2	17.651	100	4.223	
Millwater4	1	4.177	0	0.572	2.426
Millwater4	2	7.757	100	1.928	
Node105.1	1	11.511	0	1.863	2.012
Node105.1	2	0.606	100	0.151	
Node108	1	4.41	0	0.714	0.771
Node108	2	0.232	100	0.058	
Node109	1	58.441	0	7.78	8.318
Node109	2	3.076	100	0.765	
Node109.1.1	1	6.047	0	0.852	0.917
Node109.1.1	2	0.318	100	0.079	
Node126	1	17.658	0	2.779	3
Node126	2	0.929	100	0.231	
Node13	1	18.116	0	2.642	2.855
Node13	2	0.954	100	0.237	
Node143	1	10.118	0	1.306	1.39
Node143	2	0.533	100	0.133	
Node159	1	5.193	0	0.869	0.937
Node159	2	0.273	100	0.068	
Node16	1	32.462	0	4.039	4.294
Node16	2	1.709	100	0.419	
Node160	1	49.426	0	7.208	7.788
Node160	2	2.601	100	0.647	
Node161	1	25.067	0	3.83	4.143
Node161	2	1.319	100	0.328	
Node168	1	7.632	0	1.016	1.086
Node168	2	0.402	100	0.1	
Node186	1	18.393	0	3.077	3.318
Node186	2	0.968	100	0.241	
Node203	1	7.43	0	1.243	1.34
Node203	2	0.391	100	0.097	
Node206	1	6.346	0	0.995	1.074
Node206	2	0.334	100	0.083	
Node22	1	3.902	0	0.608	0.657
Node22	2	0.205	100	0.051	
Node25.1	1	30.495	0	3.774	4.013
Node25.1	2	1.605	100	0.392	
Node28	1	9.915	0	1.436	1.55
Node28	2	0.522	100	0.13	
Node4	1	3.285	0	0.536	0.579

Node4	2	0.173	100	0.043	
Node4.1	1	4.636	0	0.715	0.773
Node4.1	2	0.244	100	0.061	
Node42	1	9.499	0	1.477	1.596
Node42	2	0.5	100	0.124	
Node46.1	1	5.799	0	0.81	0.872
Node46.1	2	0.305	100	0.076	
Node46.1a	1	9.122	0	1.317	1.42
Node46.1a	2	0.48	100	0.119	
Node46.1b	1	4.058	0	0.578	0.622
Node46.1b	2	0.214	100	0.053	
Node47	1	10.119	0	1.545	1.671
Node47	2	0.533	100	0.133	
Node47.1	1	3.962	0	0.57	0.614
Node47.1	2	0.208	100	0.052	
Node48	1	4.98	0	0.749	0.809
Node48	2	0.262	100	0.065	
Node49	1	4.207	0	0.659	0.712
Node49	2	0.221	100	0.055	
Node50	1	5.257	0	0.771	0.832
Node50	2	0.277	100	0.069	
Node54	1	4.088	0	0.604	0.652
Node54	2	0.215	100	0.053	
Node56	1	3.869	0	0.631	0.681
Node56	2	0.204	100	0.051	
Node56.1	1	3.459	0	0.556	0.601
Node56.1	2	0.182	100	0.045	
Node58	1	2.91	0	0.475	0.512
Node58	2	0.153	100	0.038	
Node59	1	1.833	0	0.301	0.325
Node59	2	0.097	100	0.024	
Node59.1	1	4.17	0	0.664	0.718
Node59.1	2	0.22	100	0.055	
Node6	1	3.269	0	0.547	0.59
Node6	2	0.172	100	0.043	
Node6.1	1	3.36	0	0.562	0.606
Node6.1	2	0.177	100	0.044	
Node61	1	3.651	0	0.542	0.585
Node61	2	0.192	100	0.048	
Node73	1	18.072	0	2.248	2.389
Node73	2	0.951	100	0.233	
Node74	1	5.165	0	0.864	0.932
Node74	2	0.272	100	0.068	
Node75	1	4.189	0	0.691	0.745
Node75	2	0.221	100	0.055	
Node76	1	3.913	0	0.633	0.684
Node76	2	0.206	100	0.051	
Node77	1	4.05	0	0.664	0.716
Node77	2	0.213	100	0.053	
Node78	1	6.417	0	0.943	1.018

Node78	2	0.338	100	0.084	
Node8	1	3.707	0	0.62	0.669
Node8	2	0.195	100	0.048	
Node8.1	1	4.251	0	0.609	0.655
Node8.1	2	0.224	100	0.056	
Node80	1	5.414	0	0.786	0.849
Node80	2	0.285	100	0.071	
Node83	1	16.098	0	2.095	2.235
Node83	2	0.847	100	0.211	
Node85.1	1	3.027	0	0.504	0.543
Node85.1	2	0.159	100	0.04	
Node86	1	5.451	0	0.843	0.911
Node86	2	0.287	100	0.071	
Node95	1	3.801	0	0.594	0.641
Node95	2	0.2	100	0.05	
Node97.1	1	4.164	0	0.584	0.629
Node97.1	2	0.219	100	0.054	
Orewa Contri1	1	480.257	0	39.494	41.83
Orewa Contri1	2	25.277	100	4.58	
Orewa Contri2	1	68.959	0	7.03	7.46
Orewa Contri2	2	3.629	100	0.777	
Orewa Contri3	1	55.458	0	6.703	7.125
Orewa Contri3	2	2.919	100	0.704	
Orewa_Contri4	1	185.289	0	16.584	17.582
Orewa_Contri4	2	9.752	100	1.889	
Orewa_Contri5	1	24.418	0	3.156	3.361
Orewa_Contri5	2	1.285	100	0.319	
Orewa_Contri6	1	12.752	0	2.133	2.3
Orewa_Contri6	2	0.671	100	0.167	
Orewa_Contri7	1	9.502	0	1.53	1.653
Orewa_Contri7	2	0.5	100	0.124	
Orewa_Contri8	1	6.902	0	1.155	1.245
Orewa_Contri8	2	0.363	100	0.09	
Orewa_Contri9	1	79.566	0	7.124	7.552
Orewa_Contri9	2	4.188	100	0.811	
Weiti_Contri	1	678.769	0	37.928	40.077
Weiti_Contri	2	35.725	100	4.676	
Weiti_Contri2	1	50.344	0	4.833	5.125
Weiti_Contri2	2	2.65	100	0.542	
Weiti_Contri3	1	8.18	0	1.214	1.309
Weiti_Contri3	2	0.43	100	0.107	
Weiti_Contri4	1	10.257	0	1.42	1.525
Weiti_Contri4	2	0.54	100	0.134	
Weiti_Contri5	1	6.967	0	0.931	0.996
Weiti_Contri5	2	0.367	100	0.091	
Weiti_Contri6	1	3.806	0	0.611	0.66
Weiti_Contri6	2	0.2	100	0.05	
Weiti_Contri7	1	8.027	0	1.048	1.119
Weiti_Contri7	2	0.422	100	0.105	
Weiti_Contri8	1	43.618	0	7.031	7.596

Weiti_Contri8	2	2.296	100	0.571	
Weiti_Contri8.1	1	53.786	0	7.373	9.368
Weiti_Contri8.1	2	9.791	100	2.434	
Weiti_Contri9	1	153.161	0	12.196	12.912
Weiti_Contri9	2	8.061	100	1.424	
Weiti_Contri9.1	1	53.116	0	5.077	16.56
Weiti_Contri9.1	2	63.623	100	12.98	
Weiti_Contri9.2	1	36.459	0	5.121	8.768
Weiti_Contri9.2	2	16.152	100	4.015	
Weiti_Silverdale	1	417.491	0	25.3	26.748
Weiti_Silverdale	2	21.973	100	3.089	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 2)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Mult	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Mult	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Mult	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926

Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575

Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91

Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.62	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 2)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 2)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 2)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 3 – ED

100YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 3)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Millwater1	1	32.805	0	5.633	22.976
Millwater1	2	60.924	100	18.968	
Millwater2	1	4.299	0	1.096	4.071
Millwater2	2	7.983	100	3.088	
Millwater3	1	9.505	0	2.083	8.206
Millwater3	2	17.651	100	6.571	
Millwater4	1	4.177	0	1.049	3.926
Millwater4	2	7.757	100	3.001	
Node105.1	1	11.511	0	3.407	3.639
Node105.1	2	0.606	100	0.234	
Node108	1	4.41	0	1.306	1.395
Node108	2	0.232	100	0.09	
Node109	1	58.441	0	14.279	15.127
Node109	2	3.076	100	1.19	
Node109.1.1	1	6.047	0	1.562	1.664
Node109.1.1	2	0.318	100	0.123	
Node126	1	17.658	0	5.082	5.433
Node126	2	0.929	100	0.359	
Node13	1	18.116	0	4.846	5.177
Node13	2	0.954	100	0.369	
Node143	1	10.118	0	2.397	2.531
Node143	2	0.533	100	0.206	
Node159	1	5.193	0	1.589	1.694
Node159	2	0.273	100	0.106	
Node16	1	32.462	0	7.422	7.82
Node16	2	1.709	100	0.652	
Node160	1	49.426	0	13.221	14.123
Node160	2	2.601	100	1.006	
Node161	1	25.067	0	7.017	7.504
Node161	2	1.319	100	0.51	
Node168	1	7.632	0	1.864	1.975
Node168	2	0.402	100	0.156	
Node186	1	18.393	0	5.627	6.001
Node186	2	0.968	100	0.374	
Node203	1	7.43	0	2.273	2.424
Node203	2	0.391	100	0.151	
Node206	1	6.346	0	1.82	1.943
Node206	2	0.334	100	0.129	
Node22	1	3.902	0	1.113	1.188
Node22	2	0.205	100	0.079	
Node25.1	1	30.495	0	6.931	7.307
Node25.1	2	1.605	100	0.61	
Node28	1	9.915	0	2.63	2.812
Node28	2	0.522	100	0.202	
Node4	1	3.285	0	0.98	1.047
Node4	2	0.173	100	0.067	

Node4.1	1	4.636	0	1.309	1.399
Node4.1	2	0.244	100	0.094	
Node42	1	9.499	0	2.703	2.888
Node42	2	0.5	100	0.193	
Node46.1	1	5.799	0	1.486	1.584
Node46.1	2	0.305	100	0.118	
Node46.1a	1	9.122	0	2.413	2.577
Node46.1a	2	0.48	100	0.186	
Node46.1b	1	4.058	0	1.06	1.129
Node46.1b	2	0.214	100	0.083	
Node47	1	10.119	0	2.831	3.028
Node47	2	0.533	100	0.206	
Node47.1	1	3.962	0	1.044	1.114
Node47.1	2	0.208	100	0.08	
Node48	1	4.98	0	1.372	1.467
Node48	2	0.262	100	0.101	
Node49	1	4.207	0	1.206	1.287
Node49	2	0.221	100	0.085	
Node50	1	5.257	0	1.413	1.509
Node50	2	0.277	100	0.107	
Node54	1	4.088	0	1.107	1.182
Node54	2	0.215	100	0.083	
Node56	1	3.869	0	1.154	1.232
Node56	2	0.204	100	0.079	
Node56.1	1	3.459	0	1.018	1.088
Node56.1	2	0.182	100	0.07	
Node58	1	2.91	0	0.868	0.926
Node58	2	0.153	100	0.059	
Node59	1	1.833	0	0.55	0.587
Node59	2	0.097	100	0.038	
Node59.1	1	4.17	0	1.215	1.299
Node59.1	2	0.22	100	0.085	
Node6	1	3.269	0	1	1.067
Node6	2	0.172	100	0.067	
Node6.1	1	3.36	0	1.028	1.096
Node6.1	2	0.177	100	0.068	
Node61	1	3.651	0	0.994	1.06
Node61	2	0.192	100	0.074	
Node73	1	18.072	0	4.13	4.351
Node73	2	0.951	100	0.363	
Node74	1	5.165	0	1.58	1.685
Node74	2	0.272	100	0.105	
Node75	1	4.189	0	1.262	1.346
Node75	2	0.221	100	0.085	
Node76	1	3.913	0	1.158	1.236
Node76	2	0.206	100	0.08	
Node77	1	4.05	0	1.213	1.295
Node77	2	0.213	100	0.082	
Node78	1	6.417	0	1.729	1.846
Node78	2	0.338	100	0.131	

Node8	1	3.707	0	1.134	1.21
Node8	2	0.195	100	0.075	
Node8.1	1	4.251	0	1.116	1.189
Node8.1	2	0.224	100	0.087	
Node80	1	5.414	0	1.442	1.54
Node80	2	0.285	100	0.11	
Node83	1	16.098	0	3.845	4.066
Node83	2	0.847	100	0.328	
Node85.1	1	3.027	0	0.922	0.983
Node85.1	2	0.159	100	0.062	
Node86	1	5.451	0	1.543	1.648
Node86	2	0.287	100	0.111	
Node95	1	3.801	0	1.086	1.16
Node95	2	0.2	100	0.077	
Node97.1	1	4.164	0	1.071	1.141
Node97.1	2	0.219	100	0.085	
Orewa Contri1	1	480.257	0	72.703	76.408
Orewa Contri1	2	25.277	100	7.129	
Orewa Contri2	1	68.959	0	12.93	13.611
Orewa Contri2	2	3.629	100	1.209	
Orewa Contri3	1	55.458	0	12.315	12.976
Orewa Contri3	2	2.919	100	1.095	
Orewa_Contri4	1	185.289	0	30.519	32.093
Orewa_Contri4	2	9.752	100	2.939	
Orewa_Contri5	1	24.418	0	5.793	6.118
Orewa_Contri5	2	1.285	100	0.497	
Orewa_Contri6	1	12.752	0	3.901	4.161
Orewa_Contri6	2	0.671	100	0.26	
Orewa_Contri7	1	9.502	0	2.8	2.991
Orewa_Contri7	2	0.5	100	0.193	
Orewa_Contri8	1	6.902	0	2.112	2.252
Orewa_Contri8	2	0.363	100	0.14	
Orewa_Contri9	1	79.566	0	13.11	13.786
Orewa_Contri9	2	4.188	100	1.262	
Weiti_Contri	1	678.769	0	69.815	73.252
Weiti_Contri	2	35.725	100	7.28	
Weiti_Contri2	1	50.344	0	8.889	9.352
Weiti_Contri2	2	2.65	100	0.844	
Weiti_Contri3	1	8.18	0	2.224	2.373
Weiti_Contri3	2	0.43	100	0.166	
Weiti_Contri4	1	10.257	0	2.603	2.769
Weiti_Contri4	2	0.54	100	0.209	
Weiti_Contri5	1	6.967	0	1.708	1.811
Weiti_Contri5	2	0.367	100	0.142	
Weiti_Contri6	1	3.806	0	1.118	1.194
Weiti_Contri6	2	0.2	100	0.077	
Weiti_Contri7	1	8.027	0	1.923	2.035
Weiti_Contri7	2	0.422	100	0.163	
Weiti_Contri8	1	43.618	0	12.863	13.742
Weiti_Contri8	2	2.296	100	0.888	

Weiti_Contri8.1	1	53.786	0	13.529	16.629
Weiti_Contri8.1	2	9.791	100	3.787	
Weiti_Contri9	1	153.161	0	22.449	23.587
Weiti_Contri9	2	8.061	100	2.216	
Weiti_Contri9.1	1	53.116	0	9.341	26.967
Weiti_Contri9.1	2	63.623	100	20.2	
Weiti_Contri9.2	1	36.459	0	9.399	15.057
Weiti_Contri9.2	2	16.152	100	6.248	
Weiti_Silverdale	1	417.491	0	46.568	48.878
Weiti_Silverdale	2	21.973	100	4.809	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 3)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756

Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51

Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895

Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 3)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 3)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08

Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08

Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08

Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 3)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5

Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1
Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5

Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5

SCENARIO 5 – ED

10YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 5)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.734	16.756
Millwater1	2	60.924	100	14.165	
Millwater2	1	4.299	0	0.732	2.961
Millwater2	2	7.983	100	2.312	
Millwater3	1	9.505	0	1.387	5.985
Millwater3	2	17.651	100	4.918	
Millwater4	1	4.177	0	0.7	2.857
Millwater4	2	7.757	100	2.247	
Node105.1	1	11.511	0	2.284	2.457
Node105.1	2	0.606	100	0.176	
Node108	1	4.41	0	0.876	0.942
Node108	2	0.232	100	0.067	
Node109	1	58.441	0	9.525	10.15
Node109	2	3.076	100	0.891	
Node109.1.1	1	6.047	0	1.043	1.119
Node109.1.1	2	0.318	100	0.092	
Node126	1	17.658	0	3.406	3.664
Node126	2	0.929	100	0.269	
Node13	1	18.116	0	3.238	3.485
Node13	2	0.954	100	0.276	
Node143	1	10.118	0	1.598	1.697
Node143	2	0.533	100	0.154	
Node159	1	5.193	0	1.065	1.145
Node159	2	0.273	100	0.079	
Node16	1	32.462	0	4.943	5.237
Node16	2	1.709	100	0.488	
Node160	1	49.426	0	8.833	9.508
Node160	2	2.601	100	0.753	
Node161	1	25.067	0	4.695	5.058
Node161	2	1.319	100	0.382	
Node168	1	7.632	0	1.244	1.325
Node168	2	0.402	100	0.116	
Node186	1	18.393	0	3.774	4.054
Node186	2	0.968	100	0.28	
Node203	1	7.43	0	1.524	1.638
Node203	2	0.391	100	0.113	
Node206	1	6.346	0	1.219	1.311
Node206	2	0.334	100	0.097	
Node22	1	3.902	0	0.745	0.802
Node22	2	0.205	100	0.059	
Node25.1	1	30.495	0	4.616	4.894
Node25.1	2	1.605	100	0.457	
Node28	1	9.915	0	1.759	1.892
Node28	2	0.522	100	0.151	
Node4	1	3.285	0	0.658	0.707

Node4	2	0.173	100	0.05	
Node4.1	1	4.636	0	0.876	0.943
Node4.1	2	0.244	100	0.071	
Node42	1	9.499	0	1.81	1.948
Node42	2	0.5	100	0.145	
Node46.1	1	5.799	0	0.992	1.064
Node46.1	2	0.305	100	0.088	
Node46.1a	1	9.122	0	1.613	1.734
Node46.1a	2	0.48	100	0.139	
Node46.1b	1	4.058	0	0.708	0.759
Node46.1b	2	0.214	100	0.062	
Node47	1	10.119	0	1.894	2.041
Node47	2	0.533	100	0.154	
Node47.1	1	3.962	0	0.698	0.749
Node47.1	2	0.208	100	0.06	
Node48	1	4.98	0	0.918	0.988
Node48	2	0.262	100	0.076	
Node49	1	4.207	0	0.808	0.869
Node49	2	0.221	100	0.064	
Node50	1	5.257	0	0.944	1.016
Node50	2	0.277	100	0.08	
Node54	1	4.088	0	0.74	0.796
Node54	2	0.215	100	0.062	
Node56	1	3.869	0	0.774	0.832
Node56	2	0.204	100	0.059	
Node56.1	1	3.459	0	0.682	0.734
Node56.1	2	0.182	100	0.053	
Node58	1	2.91	0	0.582	0.626
Node58	2	0.153	100	0.044	
Node59	1	1.833	0	0.369	0.397
Node59	2	0.097	100	0.028	
Node59.1	1	4.17	0	0.814	0.877
Node59.1	2	0.22	100	0.064	
Node6	1	3.269	0	0.671	0.721
Node6	2	0.172	100	0.05	
Node6.1	1	3.36	0	0.689	0.741
Node6.1	2	0.177	100	0.051	
Node61	1	3.651	0	0.665	0.714
Node61	2	0.192	100	0.056	
Node73	1	18.072	0	2.75	2.914
Node73	2	0.951	100	0.272	
Node74	1	5.165	0	1.06	1.139
Node74	2	0.272	100	0.079	
Node75	1	4.189	0	0.847	0.91
Node75	2	0.221	100	0.064	
Node76	1	3.913	0	0.776	0.835
Node76	2	0.206	100	0.06	
Node77	1	4.05	0	0.814	0.875
Node77	2	0.213	100	0.062	
Node78	1	6.417	0	1.156	1.243

Node78	2	0.338	100	0.098	
Node8	1	3.707	0	0.761	0.817
Node8	2	0.195	100	0.056	
Node8.1	1	4.251	0	0.746	0.8
Node8.1	2	0.224	100	0.065	
Node80	1	5.414	0	0.963	1.037
Node80	2	0.285	100	0.083	
Node83	1	16.098	0	2.564	2.727
Node83	2	0.847	100	0.245	
Node85.1	1	3.027	0	0.618	0.664
Node85.1	2	0.159	100	0.046	
Node86	1	5.451	0	1.033	1.112
Node86	2	0.287	100	0.083	
Node95	1	3.801	0	0.728	0.783
Node95	2	0.2	100	0.058	
Node97.1	1	4.164	0	0.715	0.767
Node97.1	2	0.219	100	0.063	
Orewa Contri1	1	480.257	0	48.117	50.813
Orewa Contri1	2	25.277	100	5.317	
Orewa Contri2	1	68.959	0	8.581	9.081
Orewa Contri2	2	3.629	100	0.904	
Orewa Contri3	1	55.458	0	8.196	8.687
Orewa Contri3	2	2.919	100	0.82	
Orewa_Contri4	1	185.289	0	20.22	21.374
Orewa_Contri4	2	9.752	100	2.194	
Orewa_Contri5	1	24.418	0	3.862	4.101
Orewa_Contri5	2	1.285	100	0.372	
Orewa_Contri6	1	12.752	0	2.616	2.811
Orewa_Contri6	2	0.671	100	0.194	
Orewa_Contri7	1	9.502	0	1.876	2.019
Orewa_Contri7	2	0.5	100	0.145	
Orewa_Contri8	1	6.902	0	1.416	1.521
Orewa_Contri8	2	0.363	100	0.105	
Orewa_Contri9	1	79.566	0	8.686	9.181
Orewa_Contri9	2	4.188	100	0.942	
Weiti_Contri	1	678.769	0	46.038	48.524
Weiti_Contri	2	35.725	100	5.409	
Weiti_Contri2	1	50.344	0	5.897	6.235
Weiti_Contri2	2	2.65	100	0.63	
Weiti_Contri3	1	8.18	0	1.487	1.598
Weiti_Contri3	2	0.43	100	0.125	
Weiti_Contri4	1	10.257	0	1.738	1.861
Weiti_Contri4	2	0.54	100	0.156	
Weiti_Contri5	1	6.967	0	1.14	1.215
Weiti_Contri5	2	0.367	100	0.106	
Weiti_Contri6	1	3.806	0	0.749	0.806
Weiti_Contri6	2	0.2	100	0.058	
Weiti_Contri7	1	8.027	0	1.283	1.365
Weiti_Contri7	2	0.422	100	0.122	
Weiti_Contri8	1	43.618	0	8.62	9.278

Weiti_Contri8	2	2.296	100	0.665	
Weiti_Contri8.1	1	53.786	0	9.029	11.345
Weiti_Contri8.1	2	9.791	100	2.836	
Weiti_Contri9	1	153.161	0	14.852	15.681
Weiti_Contri9	2	8.061	100	1.652	
Weiti_Contri9.1	1	53.116	0	6.195	19.47
Weiti_Contri9.1	2	63.623	100	15.089	
Weiti_Contri9.2	1	36.459	0	6.274	10.512
Weiti_Contri9.2	2	16.152	100	4.678	
Weiti_Silverdale	1	417.491	0	30.732	32.406
Weiti_Silverdale	2	21.973	100	3.576	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 5)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756

Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51

Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895

Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 5)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 5)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08

Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08

Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08

Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 5)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 6 – ED

100YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 6)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	7.029	27.761
Millwater1	2	60.924	100	22.74	
Millwater2	1	4.299	0	1.372	4.944
Millwater2	2	7.983	100	3.711	
Millwater3	1	9.505	0	2.605	9.946
Millwater3	2	17.651	100	7.894	
Millwater4	1	4.177	0	1.314	4.768
Millwater4	2	7.757	100	3.606	
Node105.1	1	11.511	0	4.271	4.55
Node105.1	2	0.606	100	0.282	
Node108	1	4.41	0	1.637	1.744
Node108	2	0.232	100	0.108	
Node109	1	58.441	0	17.875	18.897
Node109	2	3.076	100	1.43	
Node109.1.1	1	6.047	0	1.957	2.079
Node109.1.1	2	0.318	100	0.148	
Node126	1	17.658	0	6.368	6.793
Node126	2	0.929	100	0.432	
Node13	1	18.116	0	6.072	6.469
Node13	2	0.954	100	0.443	
Node143	1	10.118	0	3	3.162
Node143	2	0.533	100	0.248	
Node159	1	5.193	0	1.992	2.119
Node159	2	0.273	100	0.127	
Node16	1	32.462	0	9.287	9.765
Node16	2	1.709	100	0.784	
Node160	1	49.426	0	16.566	17.649
Node160	2	2.601	100	1.209	
Node161	1	25.067	0	8.795	9.379
Node161	2	1.319	100	0.613	
Node168	1	7.632	0	2.334	2.467
Node168	2	0.402	100	0.187	
Node186	1	18.393	0	7.056	7.506
Node186	2	0.968	100	0.45	
Node203	1	7.43	0	2.85	3.032
Node203	2	0.391	100	0.182	
Node206	1	6.346	0	2.28	2.428
Node206	2	0.334	100	0.155	
Node22	1	3.902	0	1.395	1.485
Node22	2	0.205	100	0.095	
Node25.1	1	30.495	0	8.674	9.122
Node25.1	2	1.605	100	0.733	
Node28	1	9.915	0	3.296	3.514
Node28	2	0.522	100	0.243	
Node4	1	3.285	0	1.229	1.308

Node4	2	0.173	100	0.08	
Node4.1	1	4.636	0	1.64	1.748
Node4.1	2	0.244	100	0.113	
Node42	1	9.499	0	3.388	3.609
Node42	2	0.5	100	0.232	
Node46.1	1	5.799	0	1.861	1.978
Node46.1	2	0.305	100	0.142	
Node46.1a	1	9.122	0	3.022	3.22
Node46.1a	2	0.48	100	0.223	
Node46.1b	1	4.058	0	1.328	1.41
Node46.1b	2	0.214	100	0.099	
Node47	1	10.119	0	3.548	3.784
Node47	2	0.533	100	0.248	
Node47.1	1	3.962	0	1.308	1.392
Node47.1	2	0.208	100	0.097	
Node48	1	4.98	0	1.718	1.834
Node48	2	0.262	100	0.122	
Node49	1	4.207	0	1.511	1.609
Node49	2	0.221	100	0.103	
Node50	1	5.257	0	1.771	1.886
Node50	2	0.277	100	0.129	
Node54	1	4.088	0	1.387	1.476
Node54	2	0.215	100	0.1	
Node56	1	3.869	0	1.446	1.54
Node56	2	0.204	100	0.095	
Node56.1	1	3.459	0	1.276	1.36
Node56.1	2	0.182	100	0.085	
Node58	1	2.91	0	1.088	1.158
Node58	2	0.153	100	0.071	
Node59	1	1.833	0	0.69	0.734
Node59	2	0.097	100	0.045	
Node59.1	1	4.17	0	1.523	1.624
Node59.1	2	0.22	100	0.102	
Node6	1	3.269	0	1.254	1.334
Node6	2	0.172	100	0.08	
Node6.1	1	3.36	0	1.289	1.371
Node6.1	2	0.177	100	0.082	
Node61	1	3.651	0	1.245	1.325
Node61	2	0.192	100	0.089	
Node73	1	18.072	0	5.168	5.433
Node73	2	0.951	100	0.436	
Node74	1	5.165	0	1.981	2.108
Node74	2	0.272	100	0.126	
Node75	1	4.189	0	1.581	1.683
Node75	2	0.221	100	0.103	
Node76	1	3.913	0	1.451	1.546
Node76	2	0.206	100	0.096	
Node77	1	4.05	0	1.521	1.619
Node77	2	0.213	100	0.099	
Node78	1	6.417	0	2.166	2.307

Node78	2	0.338	100	0.157	
Node8	1	3.707	0	1.422	1.513
Node8	2	0.195	100	0.091	
Node8.1	1	4.251	0	1.398	1.486
Node8.1	2	0.224	100	0.104	
Node80	1	5.414	0	1.806	1.925
Node80	2	0.285	100	0.132	
Node83	1	16.098	0	4.812	5.079
Node83	2	0.847	100	0.394	
Node85.1	1	3.027	0	1.156	1.23
Node85.1	2	0.159	100	0.074	
Node86	1	5.451	0	1.933	2.06
Node86	2	0.287	100	0.133	
Node95	1	3.801	0	1.361	1.45
Node95	2	0.2	100	0.093	
Node97.1	1	4.164	0	1.342	1.426
Node97.1	2	0.219	100	0.102	
Orewa Contri1	1	480.257	0	90.611	95.052
Orewa Contri1	2	25.277	100	8.536	
Orewa Contri2	1	68.959	0	16.148	16.963
Orewa Contri2	2	3.629	100	1.45	
Orewa Contri3	1	55.458	0	15.407	16.195
Orewa Contri3	2	2.919	100	1.316	
Orewa_Contri4	1	185.289	0	38.065	39.945
Orewa_Contri4	2	9.752	100	3.522	
Orewa_Contri5	1	24.418	0	7.25	7.642
Orewa_Contri5	2	1.285	100	0.597	
Orewa_Contri6	1	12.752	0	4.892	5.204
Orewa_Contri6	2	0.671	100	0.312	
Orewa_Contri7	1	9.502	0	3.51	3.74
Orewa_Contri7	2	0.5	100	0.232	
Orewa_Contri8	1	6.902	0	2.648	2.816
Orewa_Contri8	2	0.363	100	0.169	
Orewa_Contri9	1	79.566	0	16.351	17.159
Orewa_Contri9	2	4.188	100	1.513	
Weiti_Contri	1	678.769	0	86.74	90.845
Weiti_Contri	2	35.725	100	8.686	
Weiti_Contri2	1	50.344	0	11.093	11.649
Weiti_Contri2	2	2.65	100	1.012	
Weiti_Contri3	1	8.18	0	2.786	2.965
Weiti_Contri3	2	0.43	100	0.2	
Weiti_Contri4	1	10.257	0	3.26	3.46
Weiti_Contri4	2	0.54	100	0.251	
Weiti_Contri5	1	6.967	0	2.138	2.262
Weiti_Contri5	2	0.367	100	0.171	
Weiti_Contri6	1	3.806	0	1.401	1.493
Weiti_Contri6	2	0.2	100	0.093	
Weiti_Contri7	1	8.027	0	2.408	2.542
Weiti_Contri7	2	0.422	100	0.196	
Weiti_Contri8	1	43.618	0	16.124	17.18

Weiti_Contri8	2	2.296	100	1.067	
Weiti_Contri8.1	1	53.786	0	16.941	20.661
Weiti_Contri8.1	2	9.791	100	4.552	
Weiti_Contri9	1	153.161	0	27.975	29.333
Weiti_Contri9	2	8.061	100	2.652	
Weiti_Contri9.1	1	53.116	0	11.656	32.706
Weiti_Contri9.1	2	63.623	100	24.222	
Weiti_Contri9.2	1	36.459	0	11.773	18.564
Weiti_Contri9.2	2	16.152	100	7.509	
Weiti_Silverdale	1	417.491	0	57.896	60.652
Weiti_Silverdale	2	21.973	100	5.742	

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 6)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 6)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926

Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575

Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91

Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.62	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 6)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 6

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

SCENARIO 14 – ARGENT LANE SHA

10YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 14)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.062	14.306
Millwater1	2	60.924	100	12.189	
Millwater2	1	4.299	0	0.598	2.513
Millwater2	2	7.983	100	1.985	
Millwater3	1	9.505	0	1.134	5.094
Millwater3	2	17.651	100	4.223	
Millwater4	1	4.177	0	0.572	2.426
Millwater4	2	7.757	100	1.928	
Node105.1	1	11.511	0	1.863	2.012
Node105.1	2	0.606	100	0.151	
Node108	1	3.036	0	0.408	0.76
Node108	2	1.606	100	0.399	
Node109	1	58.441	0	7.78	8.317
Node109	2	3.076	100	0.765	
Node109.1.1	1	2.228	0	0.315	1.311
Node109.1.1	2	4.137	100	1.029	
Node126	1	12.503	0	1.918	3.389
Node126	2	6.084	100	1.513	
Node13	1	18.116	0	2.642	2.855
Node13	2	0.954	100	0.237	
Node143	1	4.144	0	0.651	2.25
Node143	2	6.507	100	1.618	
Node159	1	5.193	0	0.869	0.937
Node159	2	0.273	100	0.068	
Node16	1	32.462	0	4.039	4.294
Node16	2	1.709	100	0.419	
Node160	1	49.426	0	7.208	7.788
Node160	2	2.601	100	0.647	
Node161	1	25.067	0	3.83	4.143
Node161	2	1.319	100	0.328	
Node168	1	4.11	0	0.453	1.234
Node168	2	3.924	100	0.891	
Node186	1	18.393	0	3.077	3.318
Node186	2	0.968	100	0.241	
Node203	1	2.737	0	0.458	1.722
Node203	2	5.084	100	1.264	
Node206	1	2.338	0	0.383	1.459
Node206	2	4.342	100	1.079	
Node22	1	3.504	0	0.546	0.69
Node22	2	0.603	100	0.15	
Node25.1	1	11.944	0	1.478	6.108
Node25.1	2	20.156	100	4.923	
Node28	1	9.915	0	1.436	1.55
Node28	2	0.522	100	0.13	
Node4	1	3.285	0	0.536	0.579

Node4	2	0.173	100	0.043	
Node4.1	1	1.708	0	0.263	1.041
Node4.1	2	3.172	100	0.789	
Node42	1	3.5	0	0.526	2.112
Node42	2	6.499	100	1.616	
Node46.1	1	2.136	0	0.279	1.216
Node46.1	2	3.968	100	0.986	
Node46.1a	1	3.361	0	0.353	1.622
Node46.1a	2	6.241	100	1.366	
Node46.1b	1	1.495	0	0.202	0.863
Node46.1b	2	2.777	100	0.69	
Node47	1	3.728	0	0.536	2.211
Node47	2	6.924	100	1.721	
Node47.1	1	1.46	0	0.191	0.833
Node47.1	2	2.711	100	0.674	
Node48	1	1.835	0	0.263	1.086
Node48	2	3.407	100	0.847	
Node49	1	2.984	0	0.433	0.769
Node49	2	1.444	100	0.359	
Node50	1	1.937	0	0.26	1.115
Node50	2	3.597	100	0.894	
Node54	1	1.506	0	0.236	0.925
Node54	2	2.797	100	0.695	
Node56	1	1.426	0	0.239	0.897
Node56	2	2.648	100	0.658	
Node56.1	1	1.274	0	0.195	0.775
Node56.1	2	2.367	100	0.588	
Node58	1	1.072	0	0.179	0.674
Node58	2	1.991	100	0.495	
Node59	1	0.675	0	0.105	0.413
Node59	2	1.254	100	0.312	
Node59.1	1	3.968	0	0.648	0.752
Node59.1	2	0.422	100	0.105	
Node6	1	3.269	0	0.547	0.59
Node6	2	0.172	100	0.043	
Node6.1	1	3.36	0	0.562	0.606
Node6.1	2	0.177	100	0.044	
Node61	1	2.434	0	0.357	0.689
Node61	2	1.409	100	0.35	
Node73	1	18.072	0	2.248	2.39
Node73	2	0.951	100	0.233	
Node74	1	1.903	0	0.318	1.197
Node74	2	3.534	100	0.879	
Node75	1	1.543	0	0.227	0.923
Node75	2	2.866	100	0.712	
Node76	1	1.442	0	0.237	0.901
Node76	2	2.677	100	0.666	
Node77	1	1.492	0	0.235	0.917
Node77	2	2.771	100	0.689	
Node78	1	2.364	0	0.344	1.41

Node78	2	4.391	100	1.092	
Node8	1	3.707	0	0.62	0.669
Node8	2	0.195	100	0.049	
Node8.1	1	4.251	0	0.609	0.655
Node8.1	2	0.224	100	0.056	
Node80	1	1.995	0	0.287	1.182
Node80	2	3.704	100	0.921	
Node83	1	5.931	0	0.812	3.444
Node83	2	11.014	100	2.738	
Node85.1	1	2.251	0	0.367	0.597
Node85.1	2	0.935	100	0.232	
Node86	1	5.154	0	0.828	0.971
Node86	2	0.584	100	0.145	
Node95	1	1.4	0	0.213	0.849
Node95	2	2.601	100	0.647	
Node97.1	1	1.534	0	0.251	0.958
Node97.1	2	2.849	100	0.708	
Orewa Contri1	1	480.257	0	39.494	41.83
Orewa Contri1	2	25.277	100	4.58	
Orewa Contri2	1	68.959	0	7.03	7.46
Orewa Contri2	2	3.629	100	0.777	
Orewa Contri3	1	55.458	0	6.703	7.125
Orewa Contri3	2	2.919	100	0.704	
Orewa_Contri4	1	185.289	0	16.584	17.582
Orewa_Contri4	2	9.752	100	1.889	
Orewa_Contri5	1	24.418	0	3.156	3.361
Orewa_Contri5	2	1.285	100	0.32	
Orewa_Contri6	1	12.752	0	2.133	2.3
Orewa_Contri6	2	0.671	100	0.167	
Orewa_Contri7	1	9.502	0	1.53	1.653
Orewa_Contri7	2	0.5	100	0.124	
Orewa_Contri8	1	6.902	0	1.155	1.245
Orewa_Contri8	2	0.363	100	0.09	
Orewa_Contri9	1	79.566	0	7.124	7.552
Orewa_Contri9	2	4.188	100	0.811	
Weiti_Contri	1	678.769	0	37.928	40.077
Weiti_Contri	2	35.725	100	4.676	
Weiti_Contri2	1	50.344	0	4.833	5.125
Weiti_Contri2	2	2.65	100	0.542	
Weiti_Contri3	1	8.18	0	1.214	1.31
Weiti_Contri3	2	0.43	100	0.107	
Weiti_Contri4	1	10.257	0	1.42	1.525
Weiti_Contri4	2	0.54	100	0.134	
Weiti_Contri5	1	6.967	0	0.931	0.996
Weiti_Contri5	2	0.367	100	0.091	
Weiti_Contri6	1	3.806	0	0.611	0.66
Weiti_Contri6	2	0.2	100	0.05	
Weiti_Contri7	1	8.027	0	1.048	1.119
Weiti_Contri7	2	0.422	100	0.105	
Weiti_Contri8	1	43.618	0	7.031	7.596

Weiti_Contri8	2	2.296	100	0.571	
Weiti_Contri8.1	1	53.786	0	7.373	9.368
Weiti_Contri8.1	2	9.791	100	2.434	
Weiti_Contri9	1	153.161	0	12.196	12.912
Weiti_Contri9	2	8.061	100	1.424	
Weiti_Contri9.1	1	53.116	0	5.077	16.56
Weiti_Contri9.1	2	63.623	100	12.98	
Weiti_Contri9.2	1	36.459	0	5.121	8.768
Weiti_Contri9.2	2	16.152	100	4.015	
Weiti_Silverdale	1	417.491	0	25.3	26.748
Weiti_Silverdale	2	21.973	100	3.089	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 14)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	0	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 14)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 14

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 14)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	Highgate	1	SCS Hydrology	0	0	Depth	5
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 15 – ARGENT LANE SHA

100YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 15)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	5.633	22.976
Millwater1	2	60.924	100	18.968	
Millwater2	1	4.299	0	1.096	4.071
Millwater2	2	7.983	100	3.088	
Millwater3	1	9.505	0	2.083	8.206
Millwater3	2	17.651	100	6.571	
Millwater4	1	4.177	0	1.049	3.926
Millwater4	2	7.757	100	3.001	
Node105.1	1	11.511	0	3.407	3.639
Node105.1	2	0.606	100	0.234	
Node108	1	3.036	0	0.748	1.292
Node108	2	1.606	100	0.621	
Node109	1	58.441	0	14.279	15.127
Node109	2	3.076	100	1.19	
Node109.1.1	1	2.228	0	0.577	2.125
Node109.1.1	2	4.137	100	1.6	
Node126	1	12.503	0	3.514	5.803
Node126	2	6.084	100	2.353	
Node13	1	18.116	0	4.846	5.177
Node13	2	0.954	100	0.369	
Node143	1	4.144	0	1.19	3.679
Node143	2	6.507	100	2.517	
Node159	1	5.193	0	1.589	1.694
Node159	2	0.273	100	0.106	
Node16	1	32.462	0	7.422	7.82
Node16	2	1.709	100	0.652	
Node160	1	49.426	0	13.221	14.123
Node160	2	2.601	100	1.006	
Node161	1	25.067	0	7.017	7.504
Node161	2	1.319	100	0.51	
Node168	1	4.11	0	0.834	2.031
Node168	2	3.924	100	1.386	
Node186	1	18.393	0	5.627	6.001
Node186	2	0.968	100	0.374	
Node203	1	2.737	0	0.837	2.804
Node203	2	5.084	100	1.967	
Node206	1	2.338	0	0.7	2.376
Node206	2	4.342	100	1.68	
Node22	1	3.504	0	0.999	1.225
Node22	2	0.603	100	0.233	
Node25.1	1	11.944	0	2.715	9.871
Node25.1	2	20.156	100	7.661	
Node28	1	9.915	0	2.63	2.812
Node28	2	0.522	100	0.202	
Node4	1	3.285	0	0.98	1.047

Node4	2	0.173	100	0.067	
Node4.1	1	1.708	0	0.482	1.691
Node4.1	2	3.172	100	1.227	
Node42	1	3.5	0	0.963	3.432
Node42	2	6.499	100	2.514	
Node46.1	1	2.136	0	0.512	1.965
Node46.1	2	3.968	100	1.535	
Node46.1a	1	3.361	0	0.648	2.608
Node46.1a	2	6.241	100	2.126	
Node46.1b	1	1.495	0	0.37	1.396
Node46.1b	2	2.777	100	1.074	
Node47	1	3.728	0	0.983	3.585
Node47	2	6.924	100	2.678	
Node47.1	1	1.46	0	0.352	1.345
Node47.1	2	2.711	100	1.049	
Node48	1	1.835	0	0.482	1.761
Node48	2	3.407	100	1.318	
Node49	1	2.984	0	0.794	1.316
Node49	2	1.444	100	0.559	
Node50	1	1.937	0	0.477	1.804
Node50	2	3.597	100	1.391	
Node54	1	1.506	0	0.432	1.503
Node54	2	2.797	100	1.082	
Node56	1	1.426	0	0.436	1.461
Node56	2	2.648	100	1.024	
Node56.1	1	1.274	0	0.357	1.259
Node56.1	2	2.367	100	0.916	
Node58	1	1.072	0	0.327	1.098
Node58	2	1.991	100	0.77	
Node59	1	0.675	0	0.192	0.67
Node59	2	1.254	100	0.485	
Node59.1	1	3.968	0	1.185	1.346
Node59.1	2	0.422	100	0.163	
Node6	1	3.269	0	1	1.067
Node6	2	0.172	100	0.067	
Node6.1	1	3.36	0	1.028	1.096
Node6.1	2	0.177	100	0.068	
Node61	1	2.434	0	0.654	1.17
Node61	2	1.409	100	0.545	
Node73	1	18.072	0	4.13	4.351
Node73	2	0.951	100	0.363	
Node74	1	1.903	0	0.582	1.949
Node74	2	3.534	100	1.367	
Node75	1	1.543	0	0.416	1.499
Node75	2	2.866	100	1.109	
Node76	1	1.442	0	0.433	1.467
Node76	2	2.677	100	1.036	
Node77	1	1.492	0	0.429	1.491
Node77	2	2.771	100	1.072	
Node78	1	2.364	0	0.631	2.288

Node78	2	4.391	100	1.699	
Node8	1	3.707	0	1.134	1.21
Node8	2	0.195	100	0.075	
Node8.1	1	4.251	0	1.116	1.189
Node8.1	2	0.224	100	0.087	
Node80	1	1.995	0	0.525	1.917
Node80	2	3.704	100	1.433	
Node83	1	5.931	0	1.49	5.575
Node83	2	11.014	100	4.261	
Node85.1	1	2.251	0	0.671	1.029
Node85.1	2	0.935	100	0.362	
Node86	1	5.154	0	1.515	1.738
Node86	2	0.584	100	0.226	
Node95	1	1.4	0	0.39	1.38
Node95	2	2.601	100	1.006	
Node97.1	1	1.534	0	0.459	1.559
Node97.1	2	2.849	100	1.102	
Orewa Contri1	1	480.257	0	72.703	76.408
Orewa Contri1	2	25.277	100	7.128	
Orewa Contri2	1	68.959	0	12.93	13.611
Orewa Contri2	2	3.629	100	1.209	
Orewa Contri3	1	55.458	0	12.315	12.976
Orewa Contri3	2	2.919	100	1.095	
Orewa_Contri4	1	185.289	0	30.519	32.093
Orewa_Contri4	2	9.752	100	2.939	
Orewa_Contri5	1	24.418	0	5.793	6.118
Orewa_Contri5	2	1.285	100	0.497	
Orewa_Contri6	1	12.752	0	3.901	4.161
Orewa_Contri6	2	0.671	100	0.26	
Orewa_Contri7	1	9.502	0	2.8	2.991
Orewa_Contri7	2	0.5	100	0.193	
Orewa_Contri8	1	6.902	0	2.112	2.252
Orewa_Contri8	2	0.363	100	0.14	
Orewa_Contri9	1	79.566	0	13.11	13.786
Orewa_Contri9	2	4.188	100	1.263	
Weiti_Contri	1	678.769	0	69.815	73.252
Weiti_Contri	2	35.725	100	7.28	
Weiti_Contri2	1	50.344	0	8.889	9.352
Weiti_Contri2	2	2.65	100	0.844	
Weiti_Contri3	1	8.18	0	2.224	2.373
Weiti_Contri3	2	0.43	100	0.166	
Weiti_Contri4	1	10.257	0	2.603	2.769
Weiti_Contri4	2	0.54	100	0.209	
Weiti_Contri5	1	6.967	0	1.708	1.811
Weiti_Contri5	2	0.367	100	0.142	
Weiti_Contri6	1	3.806	0	1.118	1.194
Weiti_Contri6	2	0.2	100	0.077	
Weiti_Contri7	1	8.027	0	1.923	2.035
Weiti_Contri7	2	0.422	100	0.163	
Weiti_Contri8	1	43.618	0	12.863	13.742

Weiti_Contri8	2	2.296	100	0.888	
Weiti_Contri8.1	1	53.786	0	13.529	16.629
Weiti_Contri8.1	2	9.791	100	3.787	
Weiti_Contri9	1	153.161	0	22.449	23.587
Weiti_Contri9	2	8.061	100	2.216	
Weiti_Contri9.1	1	53.116	0	9.341	26.967
Weiti_Contri9.1	2	63.623	100	20.2	
Weiti_Contri9.2	1	36.459	0	9.399	15.057
Weiti_Contri9.2	2	16.152	100	6.248	
Weiti_Silverdale	1	417.491	0	46.568	48.878
Weiti_Silverdale	2	21.973	100	4.809	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 15)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Mult	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Mult	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Mult	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 15)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 15

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 15)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 18 – ARGENT LANE SHA

10YR FUTURE RAINFALL

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 18)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1

Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1
Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1

Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 18)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.736	16.76
Millwater1	2	60.924	100	14.169	
Millwater2	1	4.299	0	0.732	2.962
Millwater2	2	7.983	100	2.313	
Millwater3	1	9.505	0	1.387	5.987
Millwater3	2	17.651	100	4.919	
Millwater4	1	4.177	0	0.7	2.858
Millwater4	2	7.757	100	2.247	
Node105.1	1	11.511	0	2.285	2.458
Node105.1	2	0.606	100	0.176	
Node108	1	3.036	0	0.499	0.908
Node108	2	1.606	100	0.465	
Node109	1	58.441	0	9.528	10.153
Node109	2	3.076	100	0.891	
Node109.1.1	1	2.228	0	0.386	1.546
Node109.1.1	2	4.137	100	1.198	
Node126	1	12.503	0	2.352	4.065
Node126	2	6.084	100	1.763	
Node13	1	18.116	0	3.239	3.486
Node13	2	0.954	100	0.276	
Node143	1	4.144	0	0.798	2.661
Node143	2	6.507	100	1.885	
Node159	1	5.193	0	1.066	1.145
Node159	2	0.273	100	0.079	
Node16	1	32.462	0	4.944	5.239
Node16	2	1.709	100	0.488	
Node160	1	49.426	0	8.836	9.511
Node160	2	2.601	100	0.754	
Node161	1	25.067	0	4.696	5.06
Node161	2	1.319	100	0.382	
Node168	1	4.11	0	0.554	1.457
Node168	2	3.924	100	1.037	
Node186	1	18.393	0	3.775	4.055
Node186	2	0.968	100	0.28	
Node203	1	2.737	0	0.562	2.035
Node203	2	5.084	100	1.473	
Node206	1	2.338	0	0.47	1.724
Node206	2	4.342	100	1.258	
Node22	1	3.504	0	0.67	0.838
Node22	2	0.603	100	0.175	
Node25.1	1	11.944	0	1.809	7.189
Node25.1	2	20.156	100	5.736	
Node28	1	9.915	0	1.76	1.893
Node28	2	0.522	100	0.151	
Node4	1	3.285	0	0.658	0.707

Node4	2	0.173	100	0.05	
Node4.1	1	1.708	0	0.323	1.229
Node4.1	2	3.172	100	0.919	
Node42	1	3.5	0	0.645	2.493
Node42	2	6.499	100	1.883	
Node46.1	1	2.136	0	0.342	1.432
Node46.1	2	3.968	100	1.15	
Node46.1a	1	3.361	0	0.431	1.903
Node46.1a	2	6.241	100	1.59	
Node46.1b	1	1.495	0	0.247	1.017
Node46.1b	2	2.777	100	0.804	
Node47	1	3.728	0	0.657	2.607
Node47	2	6.924	100	2.006	
Node47.1	1	1.46	0	0.234	0.98
Node47.1	2	2.711	100	0.785	
Node48	1	1.835	0	0.322	1.281
Node48	2	3.407	100	0.987	
Node49	1	2.984	0	0.531	0.921
Node49	2	1.444	100	0.418	
Node50	1	1.937	0	0.318	1.314
Node50	2	3.597	100	1.042	
Node54	1	1.506	0	0.29	1.092
Node54	2	2.797	100	0.81	
Node56	1	1.426	0	0.293	1.06
Node56	2	2.648	100	0.767	
Node56.1	1	1.274	0	0.239	0.914
Node56.1	2	2.367	100	0.686	
Node58	1	1.072	0	0.22	0.796
Node58	2	1.991	100	0.577	
Node59	1	0.675	0	0.128	0.487
Node59	2	1.254	100	0.363	
Node59.1	1	3.968	0	0.795	0.916
Node59.1	2	0.422	100	0.122	
Node6	1	3.269	0	0.671	0.721
Node6	2	0.172	100	0.05	
Node6.1	1	3.36	0	0.69	0.741
Node6.1	2	0.177	100	0.051	
Node61	1	2.434	0	0.437	0.824
Node61	2	1.409	100	0.408	
Node73	1	18.072	0	2.751	2.915
Node73	2	0.951	100	0.272	
Node74	1	1.903	0	0.391	1.414
Node74	2	3.534	100	1.024	
Node75	1	1.543	0	0.278	1.089
Node75	2	2.866	100	0.83	
Node76	1	1.442	0	0.291	1.065
Node76	2	2.677	100	0.776	
Node77	1	1.492	0	0.288	1.083
Node77	2	2.771	100	0.803	
Node78	1	2.364	0	0.422	1.663

Node78	2	4.391	100	1.272	
Node8	1	3.707	0	0.761	0.817
Node8	2	0.195	100	0.056	
Node8.1	1	4.251	0	0.746	0.8
Node8.1	2	0.224	100	0.065	
Node80	1	1.995	0	0.351	1.394
Node80	2	3.704	100	1.073	
Node83	1	5.931	0	0.994	4.058
Node83	2	11.014	100	3.191	
Node85.1	1	2.251	0	0.45	0.718
Node85.1	2	0.935	100	0.271	
Node86	1	5.154	0	1.015	1.183
Node86	2	0.584	100	0.169	
Node95	1	1.4	0	0.261	1.002
Node95	2	2.601	100	0.754	
Node97.1	1	1.534	0	0.308	1.131
Node97.1	2	2.849	100	0.825	
Orewa Contri1	1	480.257	0	48.133	50.831
Orewa Contri1	2	25.277	100	5.318	
Orewa Contri2	1	68.959	0	8.584	9.084
Orewa Contri2	2	3.629	100	0.904	
Orewa Contri3	1	55.458	0	8.199	8.69
Orewa Contri3	2	2.919	100	0.82	
Orewa_Contri4	1	185.289	0	20.227	21.381
Orewa_Contri4	2	9.752	100	2.195	
Orewa_Contri5	1	24.418	0	3.863	4.102
Orewa_Contri5	2	1.285	100	0.372	
Orewa_Contri6	1	12.752	0	2.617	2.812
Orewa_Contri6	2	0.671	100	0.194	
Orewa_Contri7	1	9.502	0	1.877	2.02
Orewa_Contri7	2	0.5	100	0.145	
Orewa_Contri8	1	6.902	0	1.417	1.522
Orewa_Contri8	2	0.363	100	0.105	
Orewa_Contri9	1	79.566	0	8.689	9.184
Orewa_Contri9	2	4.188	100	0.943	
Weiti_Contri	1	678.769	0	46.053	48.541
Weiti_Contri	2	35.725	100	5.411	
Weiti_Contri2	1	50.344	0	5.899	6.237
Weiti_Contri2	2	2.65	100	0.631	
Weiti_Contri3	1	8.18	0	1.487	1.599
Weiti_Contri3	2	0.43	100	0.125	
Weiti_Contri4	1	10.257	0	1.739	1.861
Weiti_Contri4	2	0.54	100	0.156	
Weiti_Contri5	1	6.967	0	1.14	1.216
Weiti_Contri5	2	0.367	100	0.106	
Weiti_Contri6	1	3.806	0	0.749	0.806
Weiti_Contri6	2	0.2	100	0.058	
Weiti_Contri7	1	8.027	0	1.283	1.365
Weiti_Contri7	2	0.422	100	0.122	
Weiti_Contri8	1	43.618	0	8.623	9.281

Weiti_Contri8	2	2.296	100	0.665	
Weiti_Contri8.1	1	53.786	0	9.032	11.349
Weiti_Contri8.1	2	9.791	100	2.836	
Weiti_Contri9	1	153.161	0	14.857	15.687
Weiti_Contri9	2	8.061	100	1.652	
Weiti_Contri9.1	1	53.116	0	6.197	19.475
Weiti_Contri9.1	2	63.623	100	15.092	
Weiti_Contri9.2	1	36.459	0	6.276	10.516
Weiti_Contri9.2	2	16.152	100	4.679	
Weiti_Silverdale	1	417.491	0	30.743	32.417
Weiti_Silverdale	2	21.973	100	3.577	

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 18)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 18)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86

Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78

Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74

Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 18)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

SCENARIO 19 – ARGENT LANE SHA

100YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 19)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	7.029	27.76
Millwater1	2	60.924	100	22.74	
Millwater2	1	4.299	0	1.372	4.944
Millwater2	2	7.983	100	3.711	
Millwater3	1	9.505	0	2.605	9.945
Millwater3	2	17.651	100	7.894	
Millwater4	1	4.177	0	1.314	4.768
Millwater4	2	7.757	100	3.606	
Node105.1	1	11.511	0	4.271	4.55
Node105.1	2	0.606	100	0.282	
Node108	1	3.036	0	0.936	1.589
Node108	2	1.606	100	0.747	
Node109	1	58.441	0	17.875	18.897
Node109	2	3.076	100	1.43	
Node109.1.1	1	2.228	0	0.723	2.582
Node109.1.1	2	4.137	100	1.923	
Node126	1	12.503	0	4.404	7.155
Node126	2	6.084	100	2.828	
Node13	1	18.116	0	6.072	6.469
Node13	2	0.954	100	0.443	
Node143	1	4.144	0	1.491	4.482
Node143	2	6.507	100	3.025	
Node159	1	5.193	0	1.992	2.119
Node159	2	0.273	100	0.127	
Node16	1	32.462	0	9.287	9.765
Node16	2	1.709	100	0.784	
Node160	1	49.426	0	16.566	17.649
Node160	2	2.601	100	1.209	
Node161	1	25.067	0	8.795	9.379
Node161	2	1.319	100	0.613	
Node168	1	4.11	0	1.042	2.473
Node168	2	3.924	100	1.664	
Node186	1	18.393	0	7.056	7.506
Node186	2	0.968	100	0.45	
Node203	1	2.737	0	1.05	3.413
Node203	2	5.084	100	2.363	
Node206	1	2.338	0	0.877	2.891
Node206	2	4.342	100	2.019	
Node22	1	3.504	0	1.252	1.523
Node22	2	0.603	100	0.28	
Node25.1	1	11.944	0	3.397	11.976
Node25.1	2	20.156	100	9.205	
Node28	1	9.915	0	3.296	3.513
Node28	2	0.522	100	0.243	
Node4	1	3.285	0	1.229	1.308

Node4	2	0.173	100	0.08	
Node4.1	1	1.708	0	0.604	2.057
Node4.1	2	3.172	100	1.475	
Node42	1	3.5	0	1.207	4.173
Node42	2	6.499	100	3.021	
Node46.1	1	2.136	0	0.641	2.384
Node46.1	2	3.968	100	1.845	
Node46.1a	1	3.361	0	0.81	3.156
Node46.1a	2	6.241	100	2.551	
Node46.1b	1	1.495	0	0.463	1.695
Node46.1b	2	2.777	100	1.291	
Node47	1	3.728	0	1.231	4.357
Node47	2	6.924	100	3.219	
Node47.1	1	1.46	0	0.44	1.633
Node47.1	2	2.711	100	1.26	
Node48	1	1.835	0	0.604	2.141
Node48	2	3.407	100	1.584	
Node49	1	2.984	0	0.995	1.622
Node49	2	1.444	100	0.671	
Node50	1	1.937	0	0.597	2.19
Node50	2	3.597	100	1.672	
Node54	1	1.506	0	0.541	1.829
Node54	2	2.797	100	1.3	
Node56	1	1.426	0	0.547	1.778
Node56	2	2.648	100	1.231	
Node56.1	1	1.274	0	0.448	1.531
Node56.1	2	2.367	100	1.1	
Node58	1	1.072	0	0.41	1.336
Node58	2	1.991	100	0.926	
Node59	1	0.675	0	0.24	0.815
Node59	2	1.254	100	0.583	
Node59.1	1	3.968	0	1.485	1.679
Node59.1	2	0.422	100	0.196	
Node6	1	3.269	0	1.254	1.334
Node6	2	0.172	100	0.08	
Node6.1	1	3.36	0	1.289	1.371
Node6.1	2	0.177	100	0.082	
Node61	1	2.434	0	0.819	1.439
Node61	2	1.409	100	0.655	
Node73	1	18.072	0	5.168	5.433
Node73	2	0.951	100	0.436	
Node74	1	1.903	0	0.73	2.373
Node74	2	3.534	100	1.643	
Node75	1	1.543	0	0.521	1.822
Node75	2	2.866	100	1.332	
Node76	1	1.442	0	0.543	1.786
Node76	2	2.677	100	1.244	
Node77	1	1.492	0	0.538	1.814
Node77	2	2.771	100	1.288	
Node78	1	2.364	0	0.791	2.781

Node78	2	4.391	100	2.041	
Node8	1	3.707	0	1.422	1.513
Node8	2	0.195	100	0.091	
Node8.1	1	4.251	0	1.398	1.486
Node8.1	2	0.224	100	0.104	
Node80	1	1.995	0	0.658	2.33
Node80	2	3.704	100	1.722	
Node83	1	5.931	0	1.865	6.77
Node83	2	11.014	100	5.12	
Node85.1	1	2.251	0	0.841	1.271
Node85.1	2	0.935	100	0.435	
Node86	1	5.154	0	1.899	2.168
Node86	2	0.584	100	0.271	
Node95	1	1.4	0	0.489	1.678
Node95	2	2.601	100	1.209	
Node97.1	1	1.534	0	0.576	1.897
Node97.1	2	2.849	100	1.324	
Orewa Contri1	1	480.257	0	90.61	95.052
Orewa Contri1	2	25.277	100	8.536	
Orewa Contri2	1	68.959	0	16.148	16.963
Orewa Contri2	2	3.629	100	1.45	
Orewa Contri3	1	55.458	0	15.407	16.195
Orewa Contri3	2	2.919	100	1.316	
Orewa_Contri4	1	185.289	0	38.065	39.945
Orewa_Contri4	2	9.752	100	3.522	
Orewa_Contri5	1	24.418	0	7.25	7.642
Orewa_Contri5	2	1.285	100	0.597	
Orewa_Contri6	1	12.752	0	4.892	5.204
Orewa_Contri6	2	0.671	100	0.312	
Orewa_Contri7	1	9.502	0	3.51	3.74
Orewa_Contri7	2	0.5	100	0.232	
Orewa_Contri8	1	6.902	0	2.648	2.816
Orewa_Contri8	2	0.363	100	0.169	
Orewa_Contri9	1	79.566	0	16.351	17.159
Orewa_Contri9	2	4.188	100	1.513	
Weiti_Contri	1	678.769	0	86.74	90.845
Weiti_Contri	2	35.725	100	8.686	
Weiti_Contri2	1	50.344	0	11.093	11.649
Weiti_Contri2	2	2.65	100	1.012	
Weiti_Contri3	1	8.18	0	2.786	2.965
Weiti_Contri3	2	0.43	100	0.2	
Weiti_Contri4	1	10.257	0	3.26	3.46
Weiti_Contri4	2	0.54	100	0.251	
Weiti_Contri5	1	6.967	0	2.138	2.262
Weiti_Contri5	2	0.367	100	0.171	
Weiti_Contri6	1	3.806	0	1.401	1.493
Weiti_Contri6	2	0.2	100	0.093	
Weiti_Contri7	1	8.027	0	2.408	2.542
Weiti_Contri7	2	0.422	100	0.196	
Weiti_Contri8	1	43.618	0	16.124	17.18

Weiti_Contri8	2	2.296	100	1.067	
Weiti_Contri8.1	1	53.786	0	16.941	20.662
Weiti_Contri8.1	2	9.791	100	4.552	
Weiti_Contri9	1	153.161	0	27.975	29.333
Weiti_Contri9	2	8.061	100	2.652	
Weiti_Contri9.1	1	53.116	0	11.656	32.706
Weiti_Contri9.1	2	63.623	100	24.223	
Weiti_Contri9.2	1	36.459	0	11.773	18.564
Weiti_Contri9.2	2	16.152	100	7.509	
Weiti_Silverdale	1	417.491	0	57.896	60.652
Weiti_Silverdale	2	21.973	100	5.742	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 19)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Mult	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Mult	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Mult	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	0	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 19)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 19

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 19)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 30– MPD

10YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 30)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.062	14.306
Millwater1	2	60.924	100	12.189	
Millwater2	1	4.299	0	0.598	2.513
Millwater2	2	7.983	100	1.985	
Millwater3	1	9.505	0	1.134	5.094
Millwater3	2	17.651	100	4.223	
Millwater4	1	4.177	0	0.572	2.426
Millwater4	2	7.757	100	1.928	
Node105.1	1	5.859	0	0.948	2.491
Node105.1	2	6.258	100	1.556	
Node108	1	1.625	0	0.218	0.936
Node108	2	3.017	100	0.75	
Node109	1	21.531	0	2.866	12.356
Node109	2	39.986	100	9.941	
Node109.1.1	1	2.228	0	0.315	1.311
Node109.1.1	2	4.137	100	1.029	
Node126	1	6.505	0	0.998	3.958
Node126	2	12.082	100	3.004	
Node13	1	6.674	0	0.973	3.982
Node13	2	12.395	100	3.082	
Node143	1	3.728	0	0.585	2.29
Node143	2	6.923	100	1.721	
Node159	1	1.913	0	0.32	1.203
Node159	2	3.553	100	0.883	
Node16	1	11.96	0	1.488	6.638
Node16	2	22.211	100	5.446	
Node160	1	24.419	0	3.561	10.204
Node160	2	27.608	100	6.864	
Node161	1	9.235	0	1.411	5.61
Node161	2	17.151	100	4.264	
Node168	1	2.812	0	0.31	1.417
Node168	2	5.222	100	1.185	
Node186	1	7.744	0	1.296	4.184
Node186	2	11.617	100	2.888	
Node203	1	2.737	0	0.458	1.722
Node203	2	5.084	100	1.264	
Node206	1	2.338	0	0.383	1.459
Node206	2	4.342	100	1.079	
Node22	1	1.438	0	0.224	0.88
Node22	2	2.67	100	0.664	
Node25.1	1	11.235	0	1.391	6.21
Node25.1	2	20.865	100	5.096	
Node28	1	9.393	0	1.361	1.591
Node28	2	1.044	100	0.259	
Node4	1	1.21	0	0.198	0.755

Node4	2	2.248	100	0.559	
Node4.1	1	1.708	0	0.263	1.041
Node4.1	2	3.172	100	0.789	
Node42	1	3.5	0	0.526	2.112
Node42	2	6.499	100	1.616	
Node46.1	1	2.136	0	0.279	1.216
Node46.1	2	3.968	100	0.986	
Node46.1a	1	3.361	0	0.353	1.622
Node46.1a	2	6.241	100	1.366	
Node46.1b	1	1.495	0	0.202	0.863
Node46.1b	2	2.777	100	0.69	
Node47	1	3.728	0	0.536	2.211
Node47	2	6.924	100	1.721	
Node47.1	1	1.46	0	0.191	0.833
Node47.1	2	2.711	100	0.674	
Node48	1	1.835	0	0.263	1.086
Node48	2	3.407	100	0.847	
Node49	1	1.55	0	0.225	0.923
Node49	2	2.878	100	0.716	
Node50	1	1.937	0	0.26	1.115
Node50	2	3.597	100	0.894	
Node54	1	1.506	0	0.236	0.925
Node54	2	2.797	100	0.695	
Node56	1	1.426	0	0.239	0.897
Node56	2	2.648	100	0.658	
Node56.1	1	1.274	0	0.195	0.775
Node56.1	2	2.367	100	0.588	
Node58	1	1.072	0	0.179	0.674
Node58	2	1.991	100	0.495	
Node59	1	0.675	0	0.105	0.413
Node59	2	1.254	100	0.312	
Node59.1	1	1.537	0	0.251	0.958
Node59.1	2	2.853	100	0.709	
Node6	1	1.204	0	0.202	0.758
Node6	2	2.237	100	0.556	
Node6.1	1	1.238	0	0.207	0.779
Node6.1	2	2.299	100	0.572	
Node61	1	1.345	0	0.197	0.804
Node61	2	2.498	100	0.621	
Node73	1	6.658	0	0.828	3.694
Node73	2	12.365	100	3.031	
Node74	1	1.903	0	0.318	1.197
Node74	2	3.534	100	0.879	
Node75	1	1.543	0	0.227	0.923
Node75	2	2.866	100	0.712	
Node76	1	1.442	0	0.237	0.901
Node76	2	2.677	100	0.666	
Node77	1	1.492	0	0.235	0.917
Node77	2	2.771	100	0.689	
Node78	1	2.364	0	0.344	1.41

Node78	2	4.391	100	1.092	
Node8	1	1.366	0	0.228	0.859
Node8	2	2.536	100	0.631	
Node8.1	1	1.566	0	0.224	0.927
Node8.1	2	2.909	100	0.723	
Node80	1	1.995	0	0.287	1.182
Node80	2	3.704	100	0.921	
Node83	1	5.931	0	0.812	3.444
Node83	2	11.014	100	2.738	
Node85.1	1	1.115	0	0.182	0.695
Node85.1	2	2.071	100	0.515	
Node86	1	2.008	0	0.323	1.245
Node86	2	3.73	100	0.927	
Node95	1	1.4	0	0.213	0.849
Node95	2	2.601	100	0.647	
Node97.1	1	1.534	0	0.251	0.958
Node97.1	2	2.849	100	0.708	
Orewa Contri1	1	454.981	0	37.415	42.312
Orewa Contri1	2	50.553	100	9.16	
Orewa Contri2	1	65.329	0	6.66	7.559
Orewa Contri2	2	7.259	100	1.554	
Orewa Contri3	1	23.322	0	2.819	10.659
Orewa Contri3	2	35.055	100	8.453	
Orewa_Contri4	1	175.537	0	15.711	17.791
Orewa_Contri4	2	19.504	100	3.777	
Orewa_Contri5	1	23.133	0	2.989	3.421
Orewa_Contri5	2	2.57	100	0.639	
Orewa_Contri6	1	12.081	0	2.021	2.355
Orewa_Contri6	2	1.342	100	0.334	
Orewa_Contri7	1	9.002	0	1.45	1.696
Orewa_Contri7	2	1	100	0.249	
Orewa_Contri8	1	6.539	0	1.094	1.275
Orewa_Contri8	2	0.727	100	0.181	
Orewa_Contri9	1	29.314	0	2.625	12.334
Orewa_Contri9	2	54.44	100	10.545	
Weiti_Contri	1	620.56	0	34.676	40.788
Weiti_Contri	2	93.934	100	12.296	
Weiti_Contri2	1	47.695	0	4.579	5.189
Weiti_Contri2	2	5.299	100	1.085	
Weiti_Contri3	1	7.749	0	1.15	1.344
Weiti_Contri3	2	0.861	100	0.214	
Weiti_Contri4	1	9.717	0	1.345	1.561
Weiti_Contri4	2	1.08	100	0.268	
Weiti_Contri5	1	6.601	0	0.882	1.017
Weiti_Contri5	2	0.733	100	0.182	
Weiti_Contri6	1	3.605	0	0.579	0.677
Weiti_Contri6	2	0.401	100	0.1	
Weiti_Contri7	1	7.604	0	0.993	1.14
Weiti_Contri7	2	0.845	100	0.21	
Weiti_Contri8	1	17.579	0	2.834	9.836

Weiti_Contri8	2	28.335	100	7.044	
Weiti_Contri8.1	1	26.636	0	3.651	12.397
Weiti_Contri8.1	2	36.941	100	9.184	
Weiti_Contri9	1	145.1	0	11.554	13.055
Weiti_Contri9	2	16.122	100	2.847	
Weiti_Contri9.1	1	25.53	0	2.44	20.28
Weiti_Contri9.1	2	91.209	100	18.608	
Weiti_Contri9.2	1	34.015	0	4.778	9.016
Weiti_Contri9.2	2	18.596	100	4.623	
Weiti_Silverdale	1	175.745	0	10.65	43.588
Weiti_Silverdale	2	263.719	100	37.079	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 30)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MU	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MU	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MU	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_LK172	Culv_LK172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 30)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 30

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.07	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 30)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Input Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	0	Depth	5
Node105.1		2	SCS Hydrology	10	0	Depth	5
Node108	Node108	1	SCS Hydrology	19.148	0	Depth	5
Node108		2	SCS Hydrology	10	0	Depth	5
Node109	Node109	1	SCS Hydrology	19.587	0	Depth	5
Node109		2	SCS Hydrology	10	0	Depth	5
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	0	Depth	5
Node109.1.1		2	SCS Hydrology	10	0	Depth	5
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	0	Depth	5
Node143		2	SCS Hydrology	10	74	Depth	5
Node159	Node159	1	SCS Hydrology	10	98	Depth	1
Node159		2	SCS Hydrology	10	0	Depth	5
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	0	Depth	5
Node160		2	SCS Hydrology	10	0	Depth	5
Node161	Node161	1	SCS Hydrology	13.566	0	Depth	5
Node161		2	SCS Hydrology	10	0	Depth	5
Node168	Node168	1	SCS Hydrology	30.23	0	Depth	5
Node168		2	SCS Hydrology	13.836	0	Depth	5
Node186	Node186	1	SCS Hydrology	10	0	Depth	5
Node186		2	SCS Hydrology	10	0	Depth	5
Node203	Node203	1	SCS Hydrology	10	0	Depth	5
Node203		2	SCS Hydrology	10	0	Depth	5
Node206	Node206	1	SCS Hydrology	10.871	0	Depth	5
Node206		2	SCS Hydrology	10	74	Depth	5
Node22	Node22	1	SCS Hydrology	12.812	98	Depth	1
Node22		2	SCS Hydrology	10	74	Depth	5
Node25.1	Node25.1	1	SCS Hydrology	23.294	98	Depth	1
Node25.1		2	SCS Hydrology	10.662	74	Depth	5
Node28	Node28	1	SCS Hydrology	15.755	0	Depth	5
Node28		2	SCS Hydrology	10	74	Depth	5
Node4	Node4	1	SCS Hydrology	11.009	98	Depth	1
Node4		2	SCS Hydrology	10	0	Depth	5
Node4.1	Node4.1	1	SCS Hydrology	13.243	0	Depth	5
Node4.1		2	SCS Hydrology	10	0	Depth	5
Node42	Node42	1	SCS Hydrology	14.23	0	Depth	5
Node42		2	SCS Hydrology	10	0	Depth	5
Node46.1	Node46.1	1	SCS Hydrology	20.509	0	Depth	5
Node46.1		2	SCS Hydrology	10	0	Depth	5
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	0	Depth	5
Node46.1a		2	SCS Hydrology	15.43	74	Depth	5
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	98	Depth	1
Node46.1b		2	SCS Hydrology	10	74	Depth	5
Node47	Node47	1	SCS Hydrology	16.084	98	Depth	1
Node47		2	SCS Hydrology	10	74	Depth	5
Node47.1	Node47.1	1	SCS Hydrology	20.281	98	Depth	1
Node47.1		2	SCS Hydrology	10	0	Depth	5
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	0	Depth	5
Node50		2	SCS Hydrology	10	0	Depth	5
Node54	Node54	1	SCS Hydrology	12.533	0	Depth	5
Node54		2	SCS Hydrology	10	0	Depth	5

Node56	Node56	1	SCS Hydrology	10	0	Depth	5
Node56		2	SCS Hydrology	10	0	Depth	5
Node56.1	Node56.1	1	SCS Hydrology	13.484	0	Depth	5
Node56.1		2	SCS Hydrology	10	74	Depth	5
Node58	Node58	1	SCS Hydrology	10.062	98	Depth	1
Node58		2	SCS Hydrology	10	0	Depth	5
Node59	Node59	1	SCS Hydrology	13.033	0	Depth	5
Node59		2	SCS Hydrology	10	0	Depth	5
Node59.1	Node59.1	1	SCS Hydrology	11.001	0	Depth	5
Node59.1		2	SCS Hydrology	10	0	Depth	5
Node6	Node6	1	SCS Hydrology	10	0	Depth	5
Node6		2	SCS Hydrology	10	0	Depth	5
Node6.1	Node6.1	1	SCS Hydrology	10	0	Depth	5
Node6.1		2	SCS Hydrology	10	0	Depth	5
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	0	Depth	5
Node74		2	SCS Hydrology	10	74	Depth	5
Node75	Node75	1	SCS Hydrology	15.139	0	Depth	5
Node75		2	SCS Hydrology	10	0	Depth	5
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	0	Depth	5
Node77		2	SCS Hydrology	10	0	Depth	5
Node78	Node78	1	SCS Hydrology	15.505	0	Depth	5
Node78		2	SCS Hydrology	10	74	Depth	5
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	0	Depth	5
Node8.1		2	SCS Hydrology	10	0	Depth	5
Node80	Node80	1	SCS Hydrology	16.141	0	Depth	5
Node80		2	SCS Hydrology	10	74	Depth	5
Node83	Node83	1	SCS Hydrology	18.276	98	Depth	1
Node83		2	SCS Hydrology	10	0	Depth	5
Node85.1	Node85.1	1	SCS Hydrology	11.044	0	Depth	5
Node85.1		2	SCS Hydrology	10	74	Depth	5
Node86	Node86	1	SCS Hydrology	11.627	98	Depth	1
Node86		2	SCS Hydrology	10	74	Depth	5
Node95	Node95	1	SCS Hydrology	13.741	98	Depth	1
Node95		2	SCS Hydrology	10	74	Depth	5
Node97.1	Node97.1	1	SCS Hydrology	10.87	0	Depth	5
Node97.1		2	SCS Hydrology	10	74	Depth	5
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	98	Depth	1
Orewa Contri1		2	SCS Hydrology	25.075	74	Depth	5
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	0	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	74	Depth	5
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	0	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	74	Depth	5
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	0	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	74	Depth	5
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	98	Depth	1
Orewa_Contri8		2	SCS Hydrology	10	74	Depth	5
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	98	Depth	1
Orewa_Contri9		2	SCS Hydrology	21.302	74	Depth	5
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	98	Depth	1
Weiti_Contri		2	SCS Hydrology	50.386	74	Depth	5
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	98	Depth	1
Weiti_Contri2		2	SCS Hydrology	18.539	0	Depth	5
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	0	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	0	Depth	5
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	74	Depth	5

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	0	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	74	Depth	5
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	0	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	74	Depth	5
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	98	Depth	1
Weiti_Contri9.1		2	SCS Hydrology	18.697	74	Depth	5
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	98	Depth	1
Weiti_Contri9.2		2	SCS Hydrology	10	74	Depth	5
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	98	Depth	1
Weiti_Silverdale		2	SCS Hydrology	43.686	74	Depth	5

SCENARIO 31 – MPD

100YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 31)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	Hydrograph				
Millwater1	1	32.805	0	5.633	22.976
Millwater1	2	60.924	100	18.968	
Millwater2	1	4.299	0	1.096	4.071
Millwater2	2	7.983	100	3.088	
Millwater3	1	9.505	0	2.083	8.206
Millwater3	2	17.651	100	6.572	
Millwater4	1	4.177	0	1.049	3.926
Millwater4	2	7.757	100	3.001	
Node105.1	1	5.859	0	1.734	4.136
Node105.1	2	6.258	100	2.421	
Node108	1	1.625	0	0.4	1.514
Node108	2	3.017	100	1.167	
Node109	1	21.531	0	5.26	19.975
Node109	2	39.986	100	15.468	
Node109.1.1	1	2.228	0	0.577	2.125
Node109.1.1	2	4.137	100	1.6	
Node126	1	6.505	0	1.828	6.432
Node126	2	12.082	100	4.673	
Node13	1	6.674	0	1.785	6.462
Node13	2	12.395	100	4.795	
Node143	1	3.728	0	1.07	3.723
Node143	2	6.923	100	2.678	
Node159	1	1.913	0	0.585	1.96
Node159	2	3.553	100	1.374	
Node16	1	11.96	0	2.734	10.699
Node16	2	22.211	100	8.475	
Node160	1	24.419	0	6.532	16.852
Node160	2	27.608	100	10.679	
Node161	1	9.235	0	2.585	9.117
Node161	2	17.151	100	6.634	
Node168	1	2.812	0	0.57	2.279
Node168	2	5.222	100	1.845	
Node186	1	7.744	0	2.369	6.863
Node186	2	11.617	100	4.494	
Node203	1	2.737	0	0.837	2.804
Node203	2	5.084	100	1.967	
Node206	1	2.338	0	0.7	2.376
Node206	2	4.342	100	1.68	
Node22	1	1.438	0	0.41	1.431
Node22	2	2.67	100	1.033	
Node25.1	1	11.235	0	2.554	10.008
Node25.1	2	20.865	100	7.93	
Node28	1	9.393	0	2.492	2.854
Node28	2	1.044	100	0.404	
Node4	1	1.21	0	0.361	1.228

Node4	2	2.248	100	0.869	
Node4.1	1	1.708	0	0.482	1.691
Node4.1	2	3.172	100	1.227	
Node42	1	3.5	0	0.963	3.432
Node42	2	6.499	100	2.514	
Node46.1	1	2.136	0	0.512	1.964
Node46.1	2	3.968	100	1.535	
Node46.1a	1	3.361	0	0.648	2.608
Node46.1a	2	6.241	100	2.126	
Node46.1b	1	1.495	0	0.37	1.396
Node46.1b	2	2.777	100	1.074	
Node47	1	3.728	0	0.983	3.585
Node47	2	6.924	100	2.678	
Node47.1	1	1.46	0	0.351	1.345
Node47.1	2	2.711	100	1.048	
Node48	1	1.835	0	0.482	1.762
Node48	2	3.407	100	1.318	
Node49	1	1.55	0	0.412	1.497
Node49	2	2.878	100	1.113	
Node50	1	1.937	0	0.477	1.804
Node50	2	3.597	100	1.391	
Node54	1	1.506	0	0.432	1.504
Node54	2	2.797	100	1.082	
Node56	1	1.426	0	0.436	1.46
Node56	2	2.648	100	1.024	
Node56.1	1	1.274	0	0.358	1.259
Node56.1	2	2.367	100	0.916	
Node58	1	1.072	0	0.327	1.098
Node58	2	1.991	100	0.77	
Node59	1	0.675	0	0.192	0.671
Node59	2	1.254	100	0.485	
Node59.1	1	1.537	0	0.459	1.559
Node59.1	2	2.853	100	1.104	
Node6	1	1.204	0	0.368	1.234
Node6	2	2.237	100	0.865	
Node6.1	1	1.238	0	0.379	1.268
Node6.1	2	2.299	100	0.889	
Node61	1	1.345	0	0.361	1.304
Node61	2	2.498	100	0.966	
Node73	1	6.658	0	1.522	5.954
Node73	2	12.365	100	4.716	
Node74	1	1.903	0	0.582	1.949
Node74	2	3.534	100	1.367	
Node75	1	1.543	0	0.416	1.499
Node75	2	2.866	100	1.109	
Node76	1	1.442	0	0.433	1.467
Node76	2	2.677	100	1.036	
Node77	1	1.492	0	0.429	1.491
Node77	2	2.771	100	1.072	
Node78	1	2.364	0	0.631	2.288

Node78	2	4.391	100	1.698	
Node8	1	1.366	0	0.418	1.399
Node8	2	2.536	100	0.981	
Node8.1	1	1.566	0	0.411	1.503
Node8.1	2	2.909	100	1.125	
Node80	1	1.995	0	0.525	1.917
Node80	2	3.704	100	1.433	
Node83	1	5.931	0	1.49	5.575
Node83	2	11.014	100	4.261	
Node85.1	1	1.115	0	0.333	1.131
Node85.1	2	2.071	100	0.801	
Node86	1	2.008	0	0.59	2.025
Node86	2	3.73	100	1.443	
Node95	1	1.4	0	0.39	1.38
Node95	2	2.601	100	1.006	
Node97.1	1	1.534	0	0.459	1.559
Node97.1	2	2.849	100	1.102	
Orewa Contri1	1	454.981	0	68.876	76.59
Orewa Contri1	2	50.553	100	14.257	
Orewa Contri2	1	65.329	0	12.249	13.661
Orewa Contri2	2	7.259	100	2.418	
Orewa Contri3	1	23.322	0	5.179	17.271
Orewa Contri3	2	35.055	100	13.153	
Orewa_Contri4	1	175.537	0	28.913	32.185
Orewa_Contri4	2	19.504	100	5.878	
Orewa_Contri5	1	23.133	0	5.488	6.163
Orewa_Contri5	2	2.57	100	0.994	
Orewa_Contri6	1	12.081	0	3.696	4.215
Orewa_Contri6	2	1.342	100	0.519	
Orewa_Contri7	1	9.002	0	2.652	3.035
Orewa_Contri7	2	1	100	0.387	
Orewa_Contri8	1	6.539	0	2	2.281
Orewa_Contri8	2	0.727	100	0.281	
Orewa_Contri9	1	29.314	0	4.83	19.8
Orewa_Contri9	2	54.44	100	16.411	
Weiti_Contri	1	620.56	0	63.828	73.482
Weiti_Contri	2	93.934	100	19.141	
Weiti_Contri2	1	47.695	0	8.421	9.383
Weiti_Contri2	2	5.299	100	1.688	
Weiti_Contri3	1	7.749	0	2.106	2.41
Weiti_Contri3	2	0.861	100	0.333	
Weiti_Contri4	1	9.717	0	2.466	2.806
Weiti_Contri4	2	1.08	100	0.418	
Weiti_Contri5	1	6.601	0	1.618	1.829
Weiti_Contri5	2	0.733	100	0.284	
Weiti_Contri6	1	3.605	0	1.059	1.212
Weiti_Contri6	2	0.401	100	0.155	
Weiti_Contri7	1	7.604	0	1.822	2.053
Weiti_Contri7	2	0.845	100	0.327	
Weiti_Contri8	1	17.579	0	5.184	16.08

Weiti_Contri8	2	28.335	100	10.961	
Weiti_Contri8.1	1	26.636	0	6.7	20.261
Weiti_Contri8.1	2	36.941	100	14.29	
Weiti_Contri9	1	145.1	0	21.268	23.637
Weiti_Contri9	2	16.122	100	4.431	
Weiti_Contri9.1	1	25.53	0	4.489	32.107
Weiti_Contri9.1	2	91.209	100	28.959	
Weiti_Contri9.2	1	34.015	0	8.768	15.348
Weiti_Contri9.2	2	18.596	100	7.193	
Weiti_Silverdale	1	175.745	0	19.603	70.191
Weiti_Silverdale	2	263.719	100	57.715	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 31)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MULTI	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MULTI	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MULTI	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837

Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97

Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 31)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 31

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 31)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 27 – MPD

10YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 27)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.734	16.756
Millwater1	2	60.924	100	14.165	
Millwater2	1	4.299	0	0.732	2.961
Millwater2	2	7.983	100	2.312	
Millwater3	1	9.505	0	1.387	5.985
Millwater3	2	17.651	100	4.918	
Millwater4	1	4.177	0	0.7	2.857
Millwater4	2	7.757	100	2.247	
Node105.1	1	5.859	0	1.162	2.96
Node105.1	2	6.258	100	1.813	
Node108	1	1.625	0	0.267	1.102
Node108	2	3.017	100	0.874	
Node109	1	21.531	0	3.509	14.546
Node109	2	39.986	100	11.581	
Node109.1.1	1	2.228	0	0.385	1.545
Node109.1.1	2	4.137	100	1.198	
Node126	1	6.505	0	1.224	4.67
Node126	2	12.082	100	3.499	
Node13	1	6.674	0	1.193	4.695
Node13	2	12.395	100	3.59	
Node143	1	3.728	0	0.717	2.703
Node143	2	6.923	100	2.005	
Node159	1	1.913	0	0.393	1.422
Node159	2	3.553	100	1.029	
Node16	1	11.96	0	1.821	7.805
Node16	2	22.211	100	6.344	
Node160	1	24.419	0	4.364	12.095
Node160	2	27.608	100	7.996	
Node161	1	9.235	0	1.73	6.619
Node161	2	17.151	100	4.967	
Node168	1	2.812	0	0.379	1.663
Node168	2	5.222	100	1.38	
Node186	1	7.744	0	1.589	4.953
Node186	2	11.617	100	3.365	
Node203	1	2.737	0	0.562	2.034
Node203	2	5.084	100	1.472	
Node206	1	2.338	0	0.47	1.724
Node206	2	4.342	100	1.258	
Node22	1	1.438	0	0.275	1.039
Node22	2	2.67	100	0.773	
Node25.1	1	11.235	0	1.701	7.301
Node25.1	2	20.865	100	5.936	
Node28	1	9.393	0	1.666	1.935
Node28	2	1.044	100	0.302	
Node4	1	1.21	0	0.242	0.891

Node4	2	2.248	100	0.651	
Node4.1	1	1.708	0	0.323	1.228
Node4.1	2	3.172	100	0.919	
Node42	1	3.5	0	0.645	2.492
Node42	2	6.499	100	1.882	
Node46.1	1	2.136	0	0.341	1.431
Node46.1	2	3.968	100	1.149	
Node46.1a	1	3.361	0	0.43	1.903
Node46.1a	2	6.241	100	1.589	
Node46.1b	1	1.495	0	0.247	1.016
Node46.1b	2	2.777	100	0.804	
Node47	1	3.728	0	0.657	2.606
Node47	2	6.924	100	2.005	
Node47.1	1	1.46	0	0.234	0.98
Node47.1	2	2.711	100	0.785	
Node48	1	1.835	0	0.322	1.28
Node48	2	3.407	100	0.987	
Node49	1	1.55	0	0.276	1.088
Node49	2	2.878	100	0.834	
Node50	1	1.937	0	0.318	1.313
Node50	2	3.597	100	1.042	
Node54	1	1.506	0	0.29	1.092
Node54	2	2.797	100	0.81	
Node56	1	1.426	0	0.292	1.059
Node56	2	2.648	100	0.767	
Node56.1	1	1.274	0	0.239	0.914
Node56.1	2	2.367	100	0.685	
Node58	1	1.072	0	0.22	0.796
Node58	2	1.991	100	0.577	
Node59	1	0.675	0	0.128	0.487
Node59	2	1.254	100	0.363	
Node59.1	1	1.537	0	0.308	1.131
Node59.1	2	2.853	100	0.826	
Node6	1	1.204	0	0.247	0.895
Node6	2	2.237	100	0.648	
Node6.1	1	1.238	0	0.254	0.92
Node6.1	2	2.299	100	0.666	
Node61	1	1.345	0	0.241	0.948
Node61	2	2.498	100	0.723	
Node73	1	6.658	0	1.013	4.343
Node73	2	12.365	100	3.531	
Node74	1	1.903	0	0.39	1.414
Node74	2	3.534	100	1.024	
Node75	1	1.543	0	0.278	1.089
Node75	2	2.866	100	0.83	
Node76	1	1.442	0	0.291	1.064
Node76	2	2.677	100	0.775	
Node77	1	1.492	0	0.288	1.083
Node77	2	2.771	100	0.803	
Node78	1	2.364	0	0.422	1.662

Node78	2	4.391	100	1.272	
Node8	1	1.366	0	0.28	1.015
Node8	2	2.536	100	0.735	
Node8.1	1	1.566	0	0.275	1.093
Node8.1	2	2.909	100	0.842	
Node80	1	1.995	0	0.351	1.393
Node80	2	3.704	100	1.073	
Node83	1	5.931	0	0.994	4.057
Node83	2	11.014	100	3.19	
Node85.1	1	1.115	0	0.223	0.821
Node85.1	2	2.071	100	0.6	
Node86	1	2.008	0	0.395	1.469
Node86	2	3.73	100	1.08	
Node95	1	1.4	0	0.261	1.002
Node95	2	2.601	100	0.753	
Node97.1	1	1.534	0	0.308	1.131
Node97.1	2	2.849	100	0.825	
Orewa Contri1	1	454.981	0	45.584	51.237
Orewa Contri1	2	50.553	100	10.634	
Orewa Contri2	1	65.329	0	8.129	9.17
Orewa Contri2	2	7.259	100	1.807	
Orewa Contri3	1	23.322	0	3.447	12.547
Orewa Contri3	2	35.055	100	9.844	
Orewa_Contri4	1	175.537	0	19.156	21.559
Orewa_Contri4	2	19.504	100	4.388	
Orewa_Contri5	1	23.133	0	3.659	4.16
Orewa_Contri5	2	2.57	100	0.744	
Orewa_Contri6	1	12.081	0	2.479	2.867
Orewa_Contri6	2	1.342	100	0.389	
Orewa_Contri7	1	9.002	0	1.777	2.064
Orewa_Contri7	2	1	100	0.29	
Orewa_Contri8	1	6.539	0	1.342	1.552
Orewa_Contri8	2	0.727	100	0.21	
Orewa_Contri9	1	29.314	0	3.2	14.44
Orewa_Contri9	2	54.44	100	12.251	
Weiti_Contri	1	620.56	0	42.09	49.135
Weiti_Contri	2	93.934	100	14.223	
Weiti_Contri2	1	47.695	0	5.586	6.292
Weiti_Contri2	2	5.299	100	1.261	
Weiti_Contri3	1	7.749	0	1.409	1.635
Weiti_Contri3	2	0.861	100	0.249	
Weiti_Contri4	1	9.717	0	1.647	1.899
Weiti_Contri4	2	1.08	100	0.313	
Weiti_Contri5	1	6.601	0	1.08	1.236
Weiti_Contri5	2	0.733	100	0.212	
Weiti_Contri6	1	3.605	0	0.709	0.824
Weiti_Contri6	2	0.401	100	0.116	
Weiti_Contri7	1	7.604	0	1.215	1.386
Weiti_Contri7	2	0.845	100	0.245	
Weiti_Contri8	1	17.579	0	3.474	11.63

Weiti_Contri8	2	28.335	100	8.207	
Weiti_Contri8.1	1	26.636	0	4.471	14.642
Weiti_Contri8.1	2	36.941	100	10.699	
Weiti_Contri9	1	145.1	0	14.071	15.805
Weiti_Contri9	2	16.122	100	3.304	
Weiti_Contri9.1	1	25.53	0	2.977	23.675
Weiti_Contri9.1	2	91.209	100	21.631	
Weiti_Contri9.2	1	34.015	0	5.853	10.781
Weiti_Contri9.2	2	18.596	100	5.386	
Weiti_Silverdale	1	175.745	0	12.937	50.866
Weiti_Silverdale	2	263.719	100	42.92	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 27)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MU	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MU	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MU	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 27)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 27

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.07	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 27)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 28 – MPD

100YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 28)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	7.029	27.761
Millwater1	2	60.924	100	22.74	
Millwater2	1	4.299	0	1.372	4.944
Millwater2	2	7.983	100	3.711	
Millwater3	1	9.505	0	2.605	9.946
Millwater3	2	17.651	100	7.894	
Millwater4	1	4.177	0	1.314	4.768
Millwater4	2	7.757	100	3.606	
Node105.1	1	5.859	0	2.174	5.06
Node105.1	2	6.258	100	2.909	
Node108	1	1.625	0	0.501	1.838
Node108	2	3.017	100	1.403	
Node109	1	21.531	0	6.586	24.246
Node109	2	39.986	100	18.589	
Node109.1.1	1	2.228	0	0.723	2.582
Node109.1.1	2	4.137	100	1.923	
Node126	1	6.505	0	2.292	7.823
Node126	2	12.082	100	5.617	
Node13	1	6.674	0	2.237	7.855
Node13	2	12.395	100	5.762	
Node143	1	3.728	0	1.341	4.529
Node143	2	6.923	100	3.218	
Node159	1	1.913	0	0.734	2.386
Node159	2	3.553	100	1.652	
Node16	1	11.96	0	3.422	12.972
Node16	2	22.211	100	10.183	
Node160	1	24.419	0	8.185	20.58
Node160	2	27.608	100	12.834	
Node161	1	9.235	0	3.24	11.088
Node161	2	17.151	100	7.973	
Node168	1	2.812	0	0.713	2.759
Node168	2	5.222	100	2.215	
Node186	1	7.744	0	2.971	8.371
Node186	2	11.617	100	5.4	
Node203	1	2.737	0	1.05	3.413
Node203	2	5.084	100	2.363	
Node206	1	2.338	0	0.877	2.891
Node206	2	4.342	100	2.019	
Node22	1	1.438	0	0.514	1.74
Node22	2	2.67	100	1.241	
Node25.1	1	11.235	0	3.196	12.133
Node25.1	2	20.865	100	9.529	
Node28	1	9.393	0	3.123	3.557
Node28	2	1.044	100	0.485	
Node4	1	1.21	0	0.453	1.495

Node4	2	2.248	100	1.045	
Node4.1	1	1.708	0	0.604	2.057
Node4.1	2	3.172	100	1.475	
Node42	1	3.5	0	1.206	4.173
Node42	2	6.499	100	3.021	
Node46.1	1	2.136	0	0.641	2.384
Node46.1	2	3.968	100	1.844	
Node46.1a	1	3.361	0	0.809	3.156
Node46.1a	2	6.241	100	2.551	
Node46.1b	1	1.495	0	0.463	1.695
Node46.1b	2	2.777	100	1.291	
Node47	1	3.728	0	1.231	4.357
Node47	2	6.924	100	3.219	
Node47.1	1	1.46	0	0.44	1.632
Node47.1	2	2.711	100	1.26	
Node48	1	1.835	0	0.604	2.141
Node48	2	3.407	100	1.584	
Node49	1	1.55	0	0.517	1.82
Node49	2	2.878	100	1.338	
Node50	1	1.937	0	0.597	2.19
Node50	2	3.597	100	1.672	
Node54	1	1.506	0	0.542	1.829
Node54	2	2.797	100	1.3	
Node56	1	1.426	0	0.547	1.778
Node56	2	2.648	100	1.231	
Node56.1	1	1.274	0	0.448	1.531
Node56.1	2	2.367	100	1.1	
Node58	1	1.072	0	0.411	1.336
Node58	2	1.991	100	0.926	
Node59	1	0.675	0	0.24	0.816
Node59	2	1.254	100	0.583	
Node59.1	1	1.537	0	0.575	1.898
Node59.1	2	2.853	100	1.327	
Node6	1	1.204	0	0.462	1.502
Node6	2	2.237	100	1.04	
Node6.1	1	1.238	0	0.475	1.544
Node6.1	2	2.299	100	1.069	
Node61	1	1.345	0	0.453	1.586
Node61	2	2.498	100	1.161	
Node73	1	6.658	0	1.904	7.219
Node73	2	12.365	100	5.667	
Node74	1	1.903	0	0.73	2.373
Node74	2	3.534	100	1.643	
Node75	1	1.543	0	0.521	1.822
Node75	2	2.866	100	1.332	
Node76	1	1.442	0	0.543	1.786
Node76	2	2.677	100	1.245	
Node77	1	1.492	0	0.538	1.814
Node77	2	2.771	100	1.288	
Node78	1	2.364	0	0.791	2.781

Node78	2	4.391	100	2.041	
Node8	1	1.366	0	0.524	1.703
Node8	2	2.536	100	1.179	
Node8.1	1	1.566	0	0.515	1.827
Node8.1	2	2.909	100	1.352	
Node80	1	1.995	0	0.658	2.33
Node80	2	3.704	100	1.722	
Node83	1	5.931	0	1.865	6.77
Node83	2	11.014	100	5.12	
Node85.1	1	1.115	0	0.417	1.377
Node85.1	2	2.071	100	0.963	
Node86	1	2.008	0	0.74	2.464
Node86	2	3.73	100	1.734	
Node95	1	1.4	0	0.489	1.678
Node95	2	2.601	100	1.209	
Node97.1	1	1.534	0	0.576	1.897
Node97.1	2	2.849	100	1.324	
Orewa Contri1	1	454.981	0	85.842	95.063
Orewa Contri1	2	50.553	100	17.073	
Orewa Contri2	1	65.329	0	15.298	16.986
Orewa Contri2	2	7.259	100	2.901	
Orewa Contri3	1	23.322	0	6.479	20.967
Orewa Contri3	2	35.055	100	15.801	
Orewa_Contri4	1	175.537	0	36.061	39.973
Orewa_Contri4	2	19.504	100	7.044	
Orewa_Contri5	1	23.133	0	6.869	7.679
Orewa_Contri5	2	2.57	100	1.195	
Orewa_Contri6	1	12.081	0	4.634	5.258
Orewa_Contri6	2	1.342	100	0.624	
Orewa_Contri7	1	9.002	0	3.325	3.785
Orewa_Contri7	2	1	100	0.465	
Orewa_Contri8	1	6.539	0	2.508	2.846
Orewa_Contri8	2	0.727	100	0.338	
Orewa_Contri9	1	29.314	0	6.024	23.91
Orewa_Contri9	2	54.44	100	19.667	
Weiti_Contri	1	620.56	0	79.301	90.805
Weiti_Contri	2	93.934	100	22.839	
Weiti_Contri2	1	47.695	0	10.51	11.661
Weiti_Contri2	2	5.299	100	2.024	
Weiti_Contri3	1	7.749	0	2.639	3.004
Weiti_Contri3	2	0.861	100	0.4	
Weiti_Contri4	1	9.717	0	3.088	3.497
Weiti_Contri4	2	1.08	100	0.502	
Weiti_Contri5	1	6.601	0	2.026	2.279
Weiti_Contri5	2	0.733	100	0.341	
Weiti_Contri6	1	3.605	0	1.327	1.512
Weiti_Contri6	2	0.401	100	0.186	
Weiti_Contri7	1	7.604	0	2.281	2.558
Weiti_Contri7	2	0.845	100	0.393	
Weiti_Contri8	1	17.579	0	6.498	19.593

Weiti_Contri8	2	28.335	100	13.173	
Weiti_Contri8.1	1	26.636	0	8.39	24.666
Weiti_Contri8.1	2	36.941	100	17.173	
Weiti_Contri9	1	145.1	0	26.503	29.331
Weiti_Contri9	2	16.122	100	5.305	
Weiti_Contri9.1	1	25.53	0	5.603	38.667
Weiti_Contri9.1	2	91.209	100	34.725	
Weiti_Contri9.2	1	34.015	0	10.984	18.881
Weiti_Contri9.2	2	18.596	100	8.645	
Weiti_Silverdale	1	175.745	0	24.372	84.515
Weiti_Silverdale	2	263.719	100	68.914	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 28)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MU	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MU	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MU	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_LK172	Culv_LK172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 28)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 28

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.07	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 28)

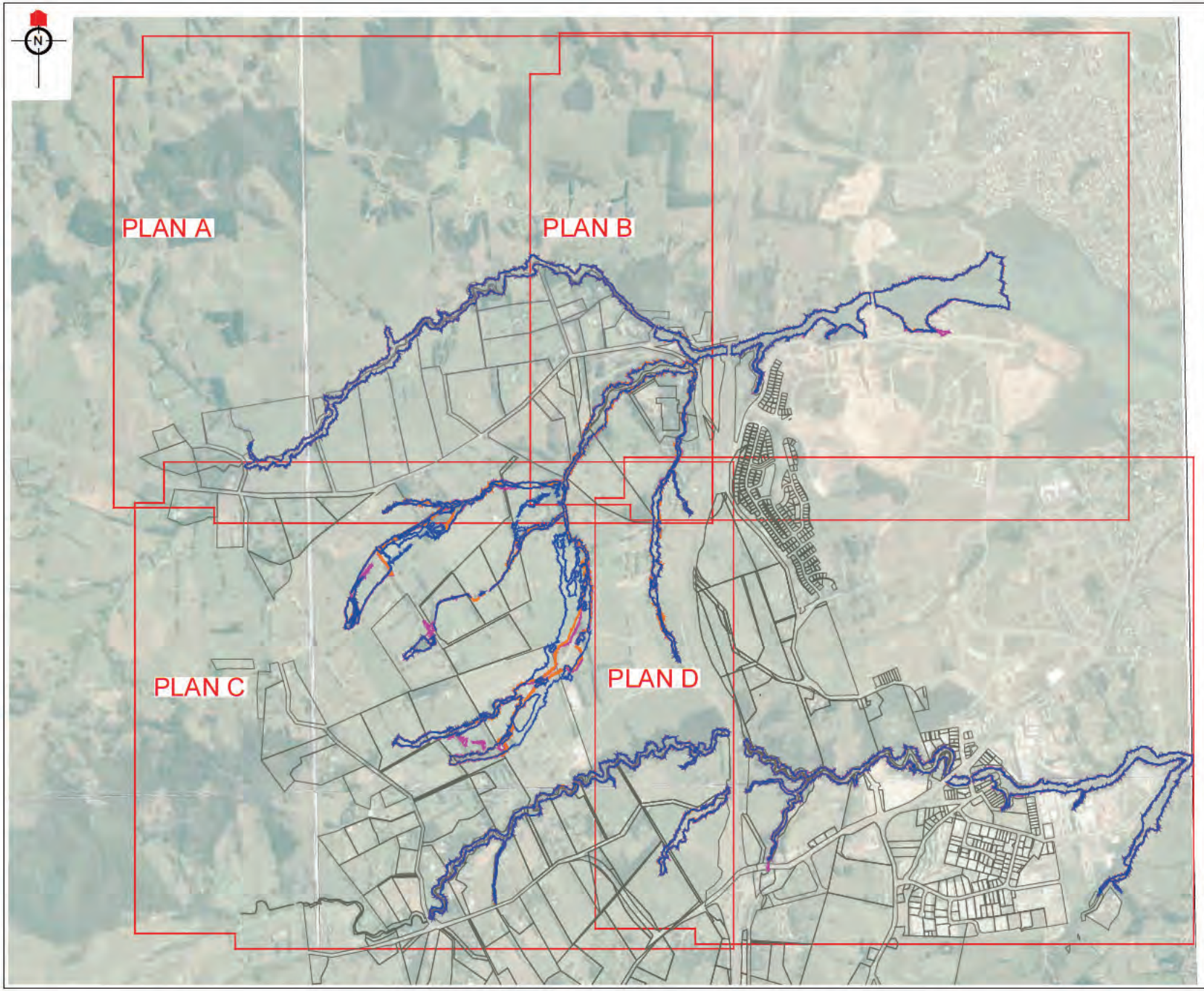
Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Input Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	5
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	5
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	5
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	5
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	5
Node159	Node159	1	SCS Hydrology	10	74	Depth	1
Node159		2	SCS Hydrology	10	98	Depth	5
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	5
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	5
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	5
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	5
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	5
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	5
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	1
Node22		2	SCS Hydrology	10	98	Depth	5
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	1
Node25.1		2	SCS Hydrology	10.662	98	Depth	5
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	5
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	1
Node4		2	SCS Hydrology	10	98	Depth	5
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	5
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	5
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	5
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	5
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	1
Node46.1b		2	SCS Hydrology	10	98	Depth	5
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	1
Node47		2	SCS Hydrology	10	98	Depth	5
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	1
Node47.1		2	SCS Hydrology	10	98	Depth	5
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	5
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	5

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	5
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	5
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	1
Node58		2	SCS Hydrology	10	98	Depth	5
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	5
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	5
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	5
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	5
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	5
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	5
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	5
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	5
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	5
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	5
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	1
Node83		2	SCS Hydrology	10	98	Depth	5
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	5
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	1
Node86		2	SCS Hydrology	10	98	Depth	5
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	1
Node95		2	SCS Hydrology	10	98	Depth	5
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	5
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	1
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	5
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	5
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	5
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	5
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	1
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	5
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	1
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	5
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	1
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	5
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	1
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	5
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	5
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	5

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	5
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	5
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	1
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	5
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	1
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	5
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	1
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	5

APPENDIX C

FLOOD MAPS



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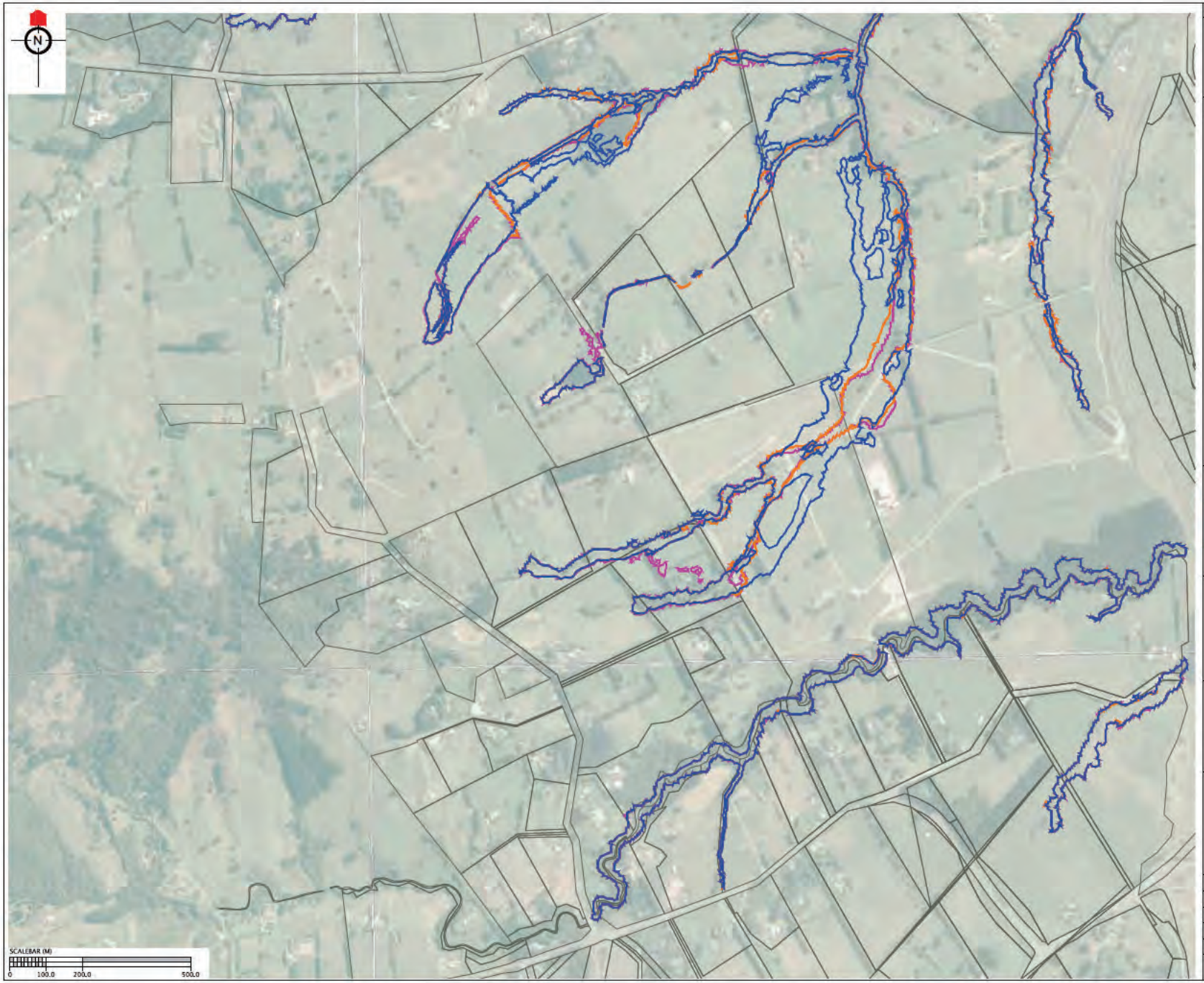

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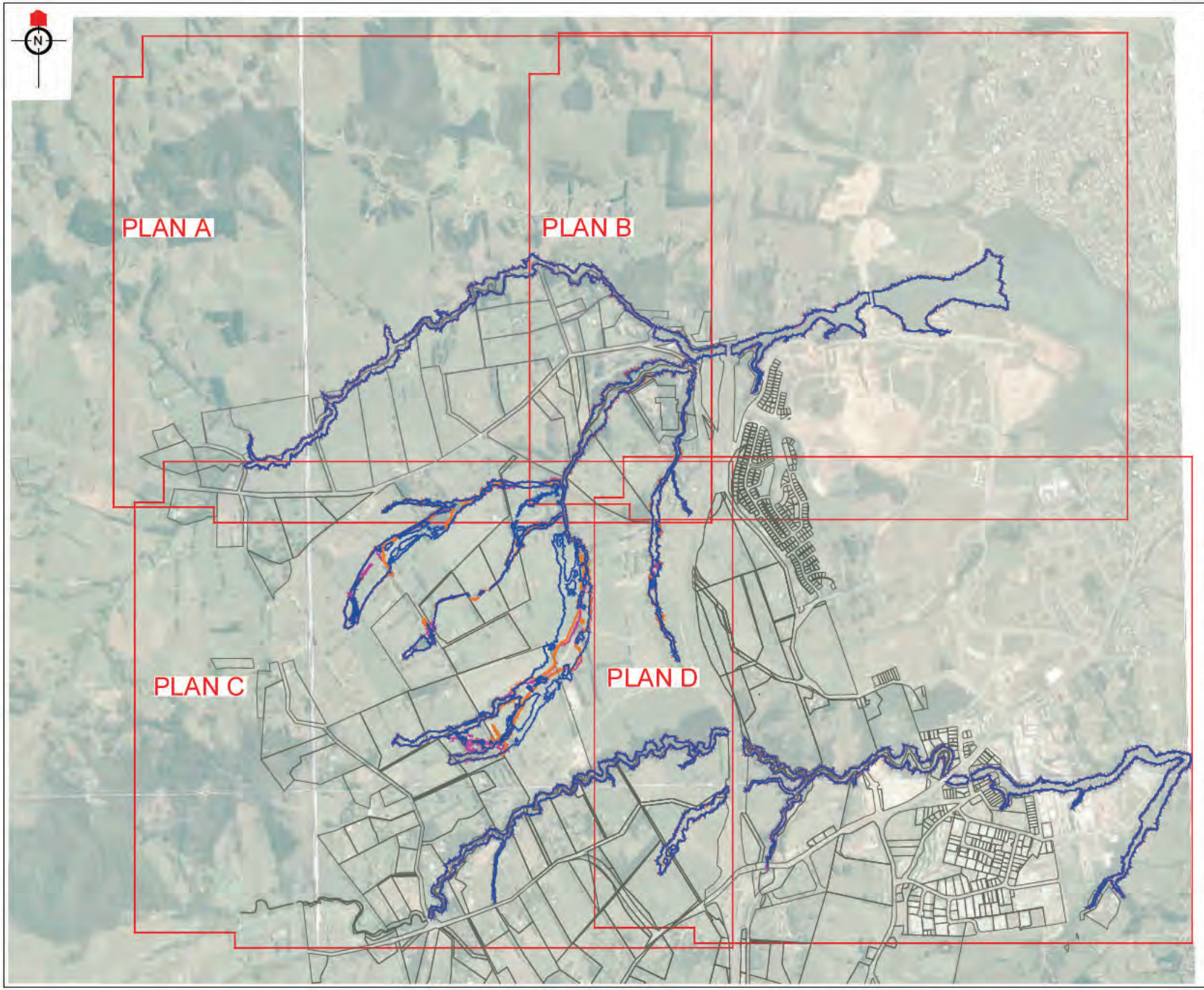

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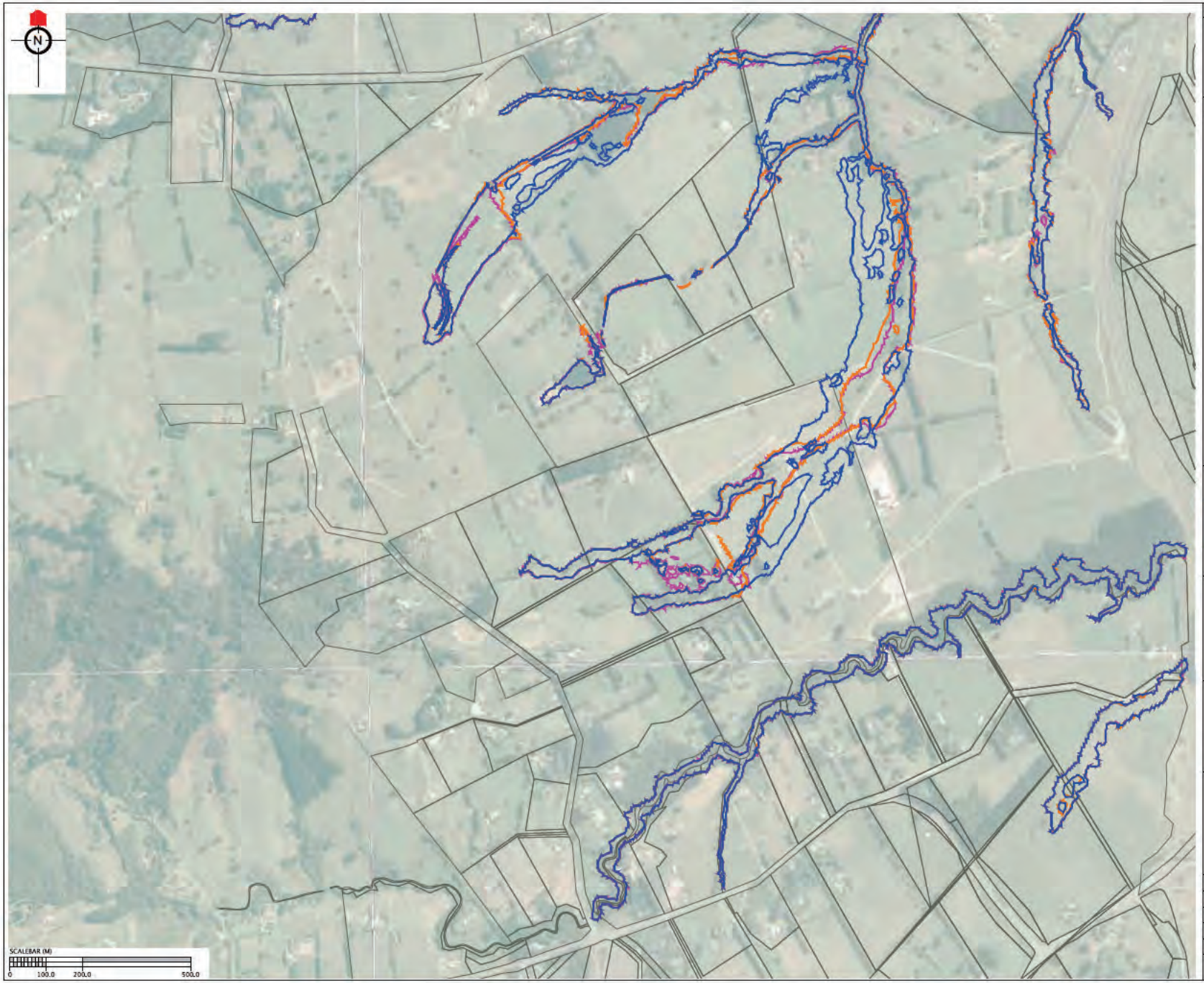

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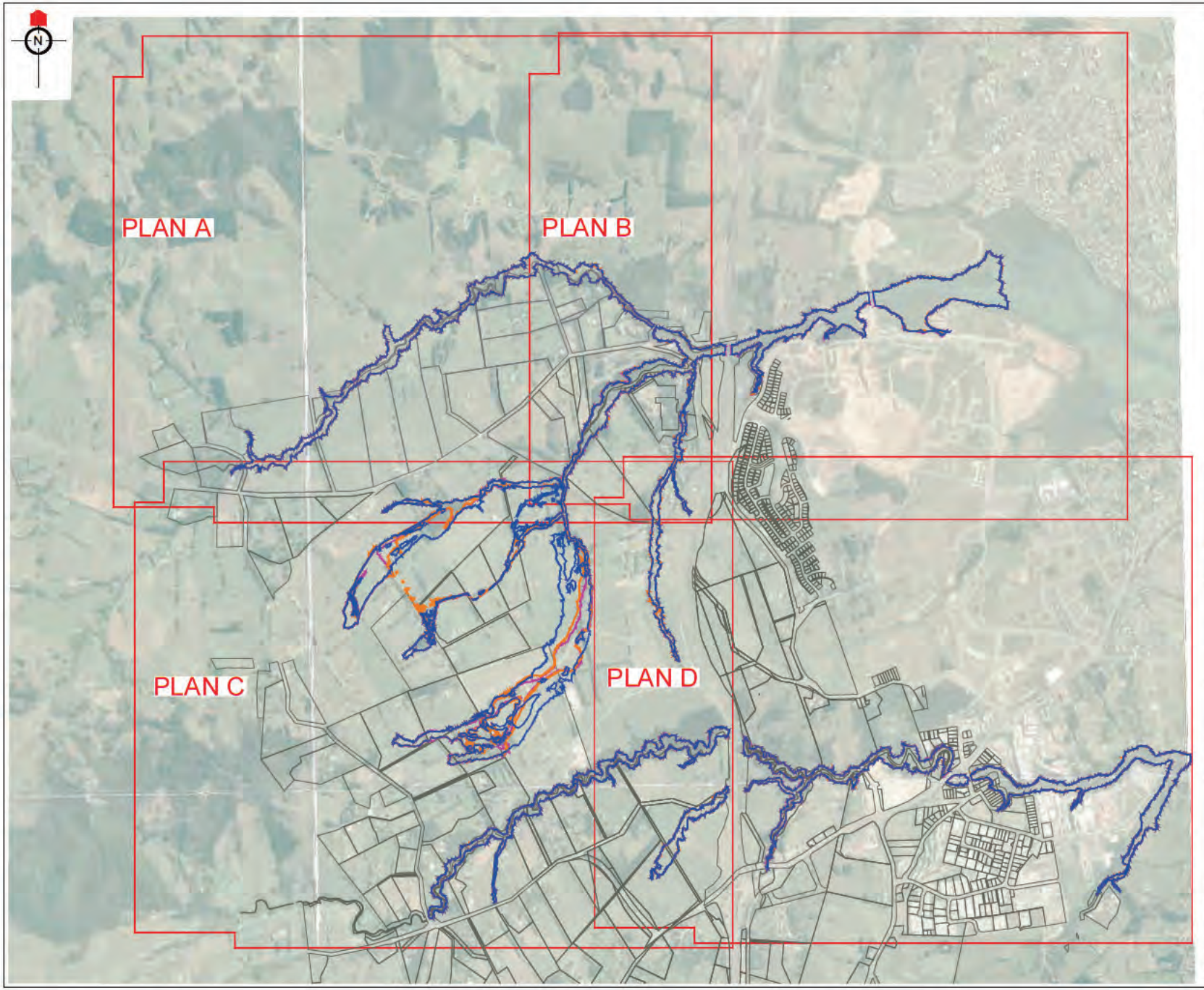

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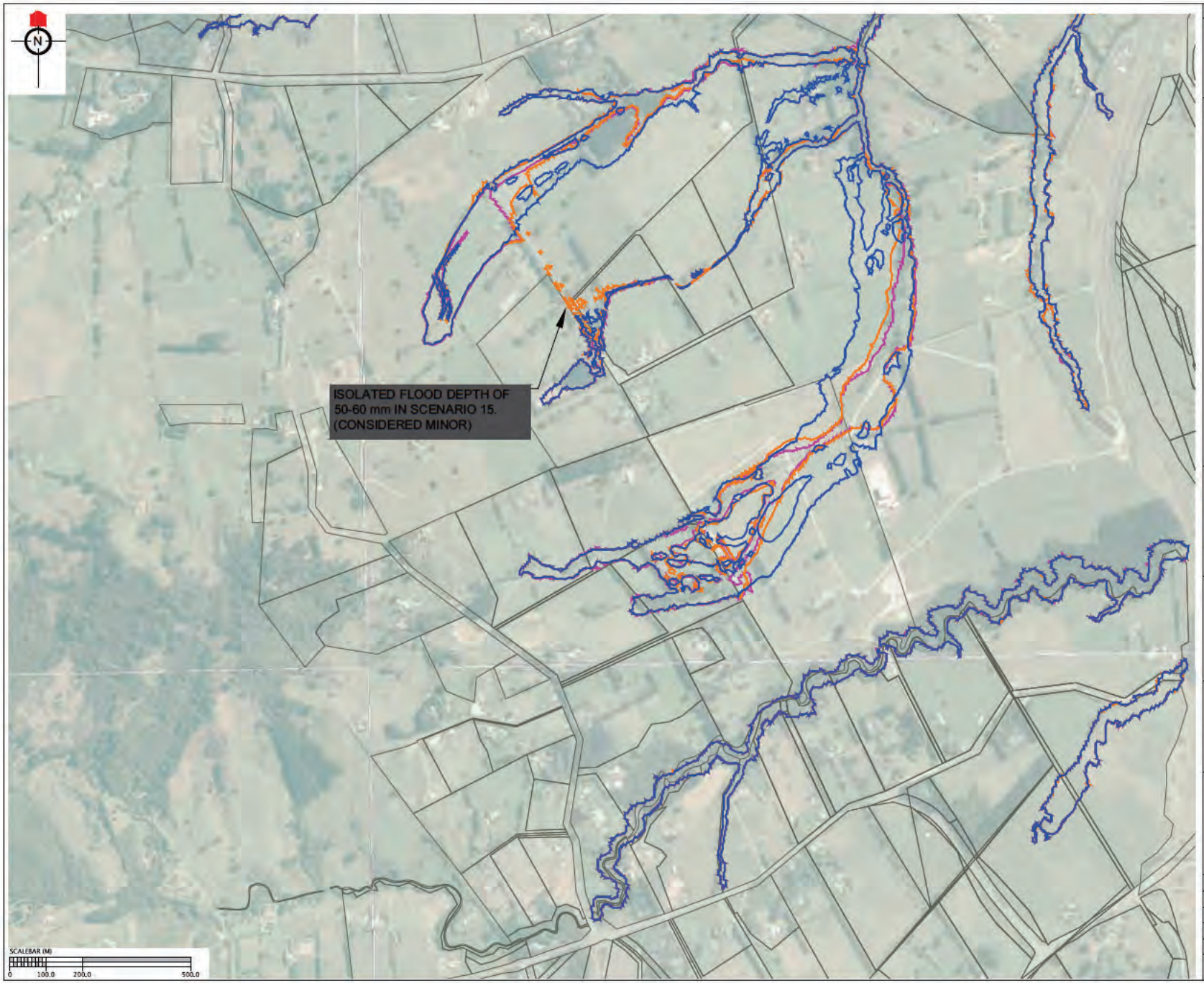

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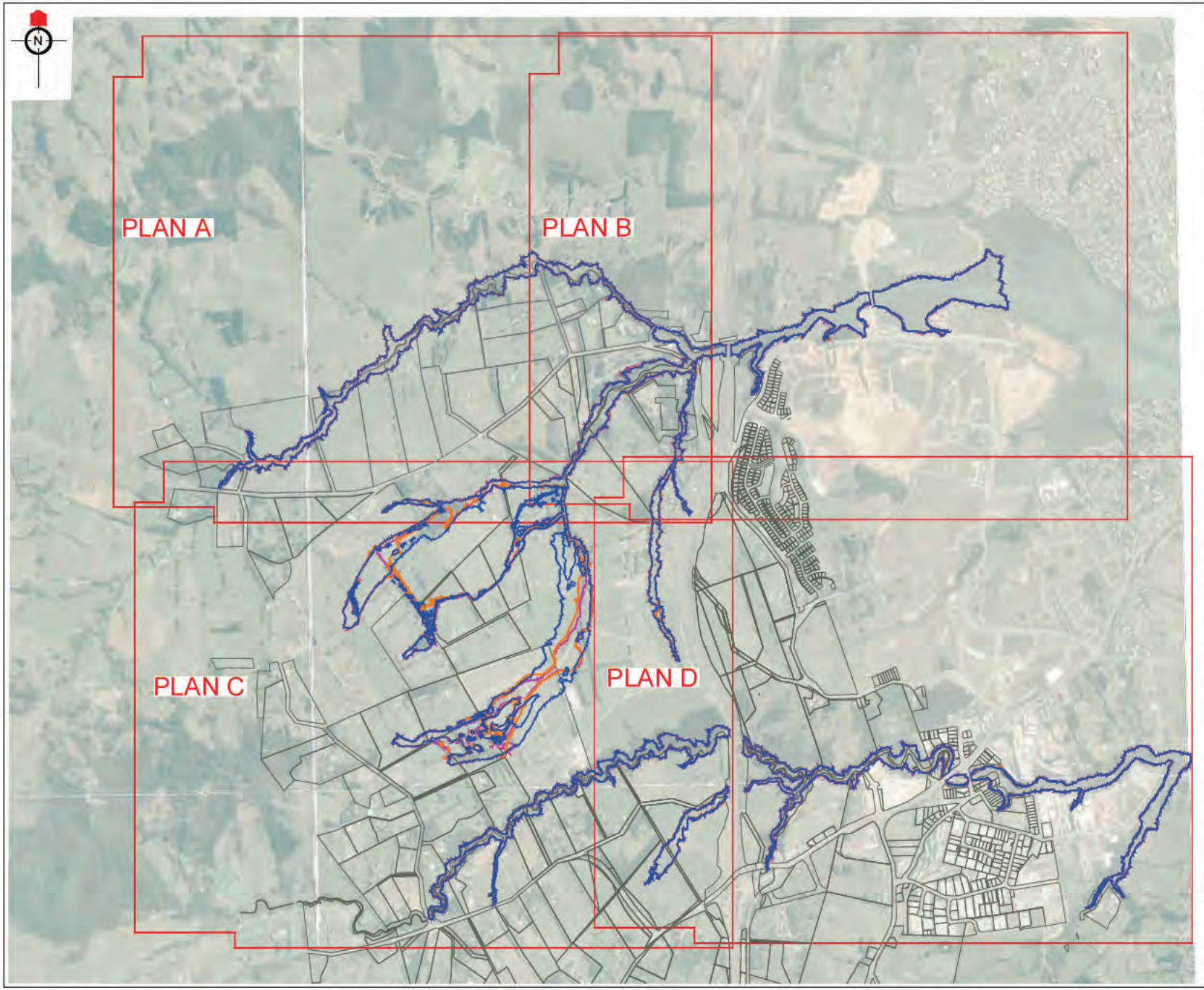

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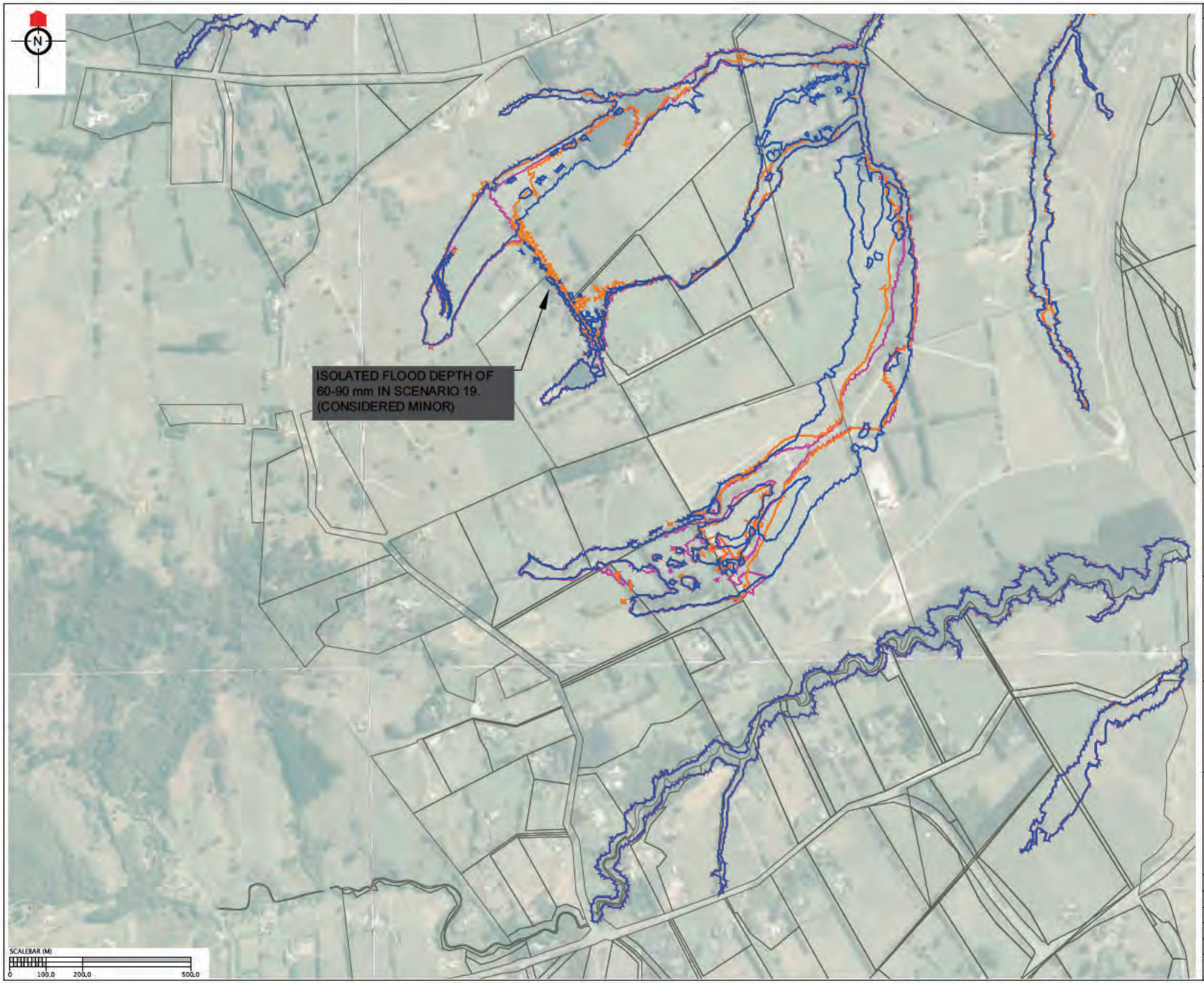

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APPENDIX D

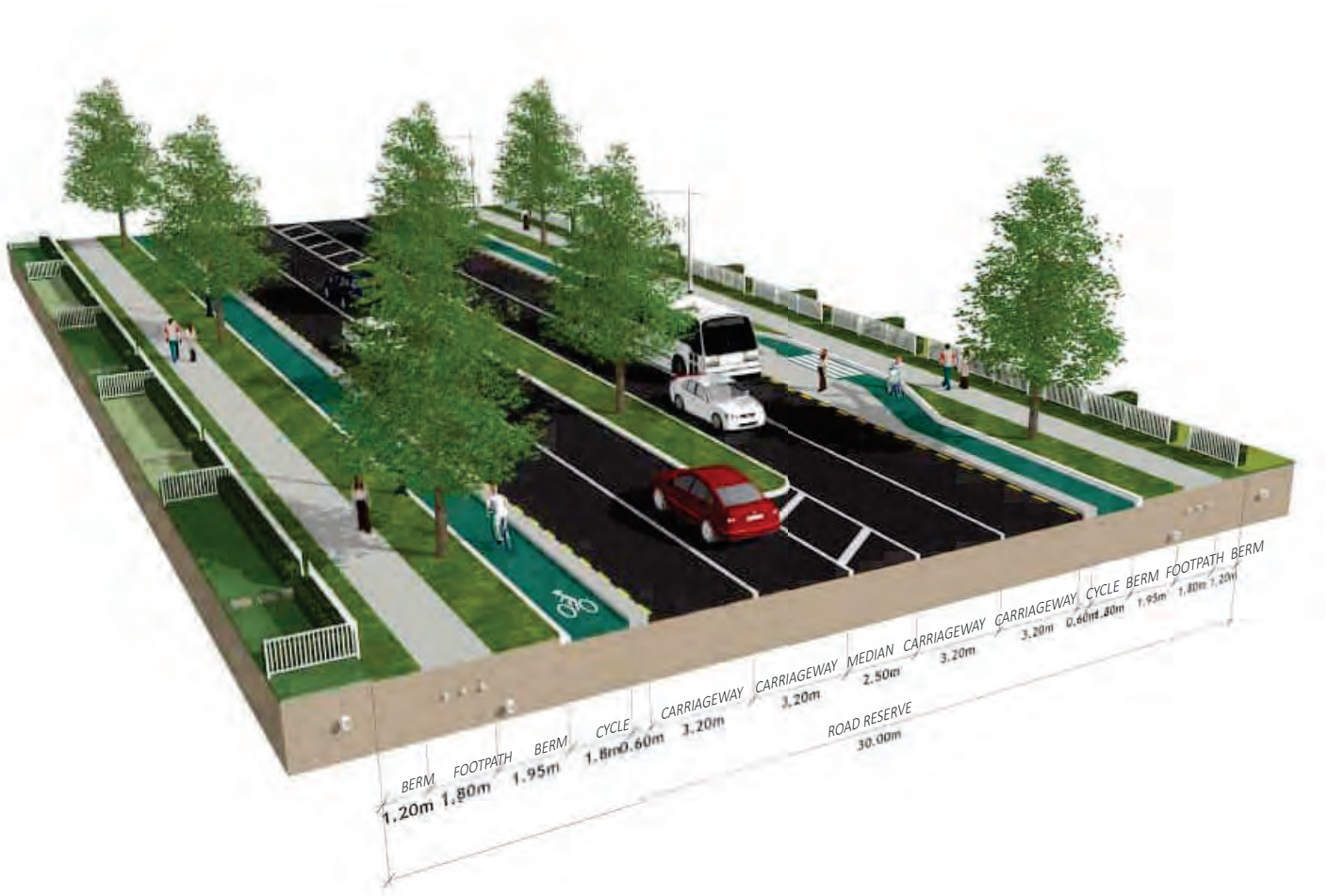
MULTI CRITERIA ANALYSIS

Stormwater Management Options	Roof Areas	Impervious Areas on Lots	Impervious Areas in Public Spaces	Commentary
1. Do nothing				
a. Retention	×	×	×	Not consistent with PAUP objectives. This has not been pursued.
b. Detention	×	×	×	
c. Treatment	×	×	×	
d. Flood attenuation	×	×	×	
2. Use of inert roofing material				
a. Retention	×	×	×	To be incorporated through existing PAUP provisions.
b. Detention	×	×	×	
c. Treatment	✓	×	×	
d. Flood attenuation	×	×	×	
3. Rain tanks				Rain tanks to be used to meet SMAF hydrology requirements for roof surfaces. Underground storage tanks could be used to meet SMAF requirements for impervious areas in conjunction with roof areas on lots.
a. Retention	✓	✓	×	
b. Detention	✓	✓	×	
c. Treatment	×	×	×	
d. Flood attenuation	×	×	×	
4. Green roofs				
a. Retention	✓	×	×	Option for buildings; subject to the owner's discretion.
b. Detention	✓	×	×	
c. Treatment	✓	×	×	
d. Flood attenuation	×	×	×	
5. Raingardens				
a. Retention	×	✓	✓	To be used for meeting SMAF hydrology requirements on private and public areas.
b. Detention	×	✓	✓	
c. Treatment	×	✓	✓	
d. Flood attenuation	×	×	×	
6. Permeable paving				Use of permeable paving is to be considered for parking areas and footpaths in public areas and in lieu of conventional hardstand surfaces on private areas. Permeable paving to be treated "as grass".
a. Retention	×	✓	✓	
b. Detention	×	✓	✓	
c. Treatment	×	×	×	
d. Flood attenuation	×	×	×	
7. Swales (standard)				To be used for conveyance and treatment. Use is subject to the SMAF hydrology requirements - can be adopted for high use roads where the treatment aspect must be met.
a. Retention	×	×	×	
b. Detention	×	×	×	
c. Treatment	×	✓	✓	
d. Flood attenuation	×	×	×	
8. Swales (planted)				This option is essentially a linear raingarden. Can be adopted on high use roads to meet SMAF hydrology and treatment requirements.
a. Retention	×	✓	✓	
b. Detention	×	✓	✓	
c. Treatment	×	✓	✓	
d. Flood attenuation	×	×	×	
9. Riparian revegetation				Facilitates effective retention along the riparian margin but does not provide detention or attenuation.
a. Retention	×	✓	✓	
b. Detention	×	×	×	
c. Treatment	×	×	×	
d. Flood attenuation	×	×	×	
10. Wetlands (offline)				To be constructed alongside stream or green corridors through the development, subject to space constraints.
a. Retention	×	×	×	
b. Detention	✓	✓	✓	
c. Treatment	✓	✓	✓	
d. Flood attenuation	✓	✓	✓	
12. Dry basin (offline)				To be constructed alongside stream or green corridors through the development, subject to space constraints. Note that dry basins do not provide treatment.
a. Retention	×	×	×	
b. Detention	×	×	×	
c. Treatment	×	×	×	
d. Flood attenuation	✓	✓	✓	
13. Online flood storage				Discuss with DPO. Not a favourable option in intermittent and permanent streams.
a. Retention	×	×	×	
b. Detention	×	×	×	
c. Treatment	×	×	×	
d. Flood attenuation	✓	✓	✓	
14. Stormfilter (proprietary device)				Use is only suggested if no other practical solution for treatment is available.
a. Retention	×	×	×	
b. Detention	×	×	×	
c. Treatment	✓	✓	✓	
d. Flood attenuation	×	×	×	
14. Cellular storage (proprietary device)				Use is only suggested if no other practical 'Low Impact Device' solution is available.
a. Retention	×	×	×	
b. Detention	×	×	×	
c. Treatment	✓	✓	✓	
d. Flood attenuation	×	×	×	

APPENDIX E

PROPOSED ROAD TYPOLOGIES

FUTURE ARGENT LANE / WAINUI ROAD



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Auckland, New Zealand

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WAINUI EAST 1 PRECINCT
Auckland

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Issued	05.07.2016
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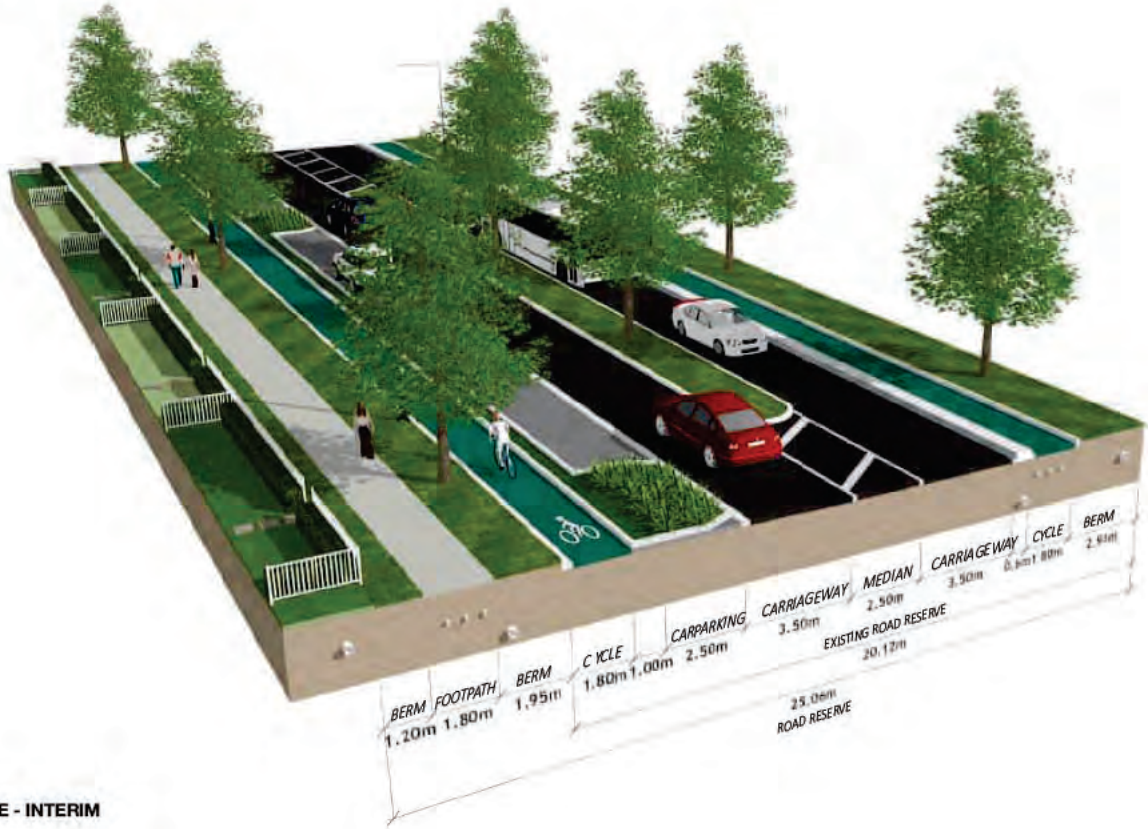
Author	AZ
Approved by	

ROAD CROSS SECTIONS

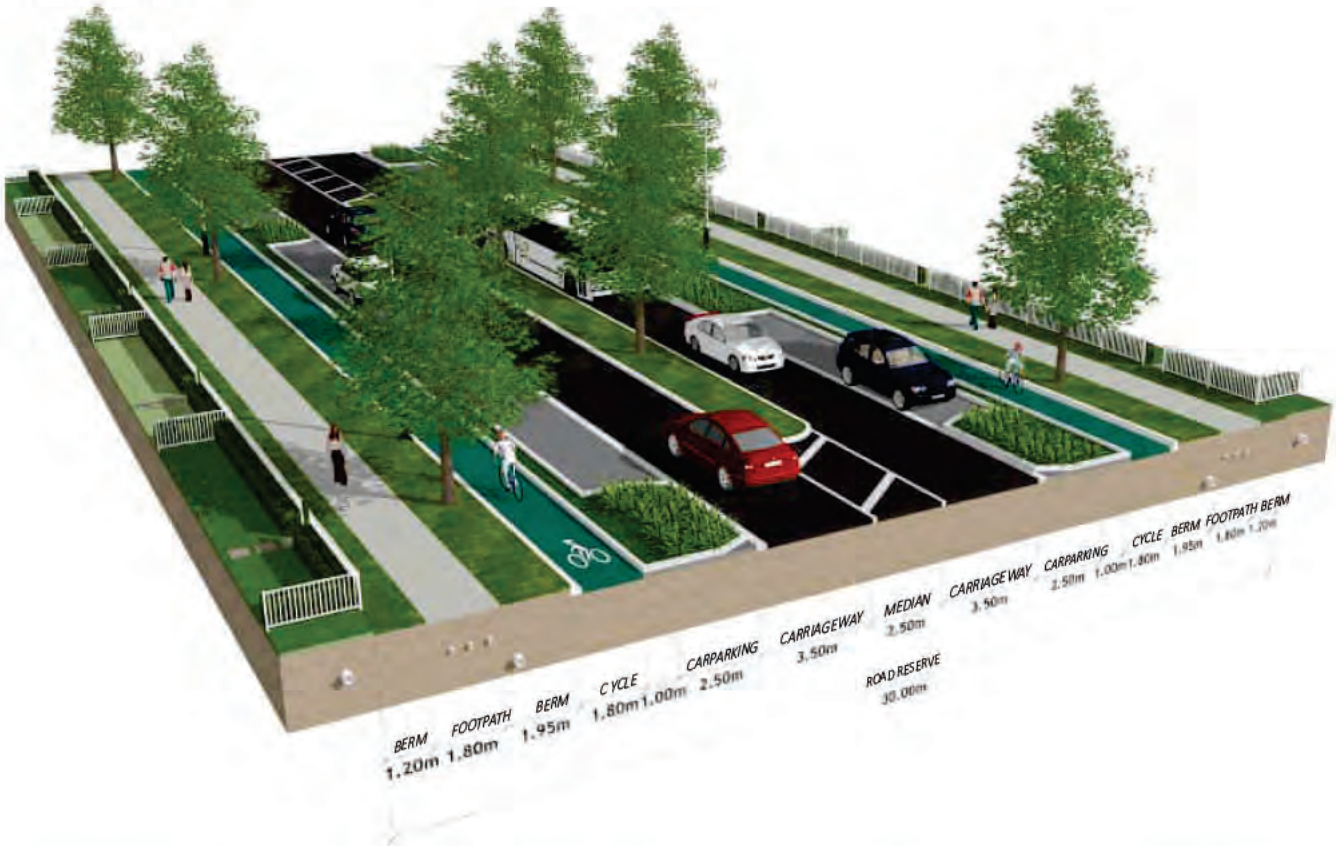
CP-UD-109-A

ROAD CROSS SECTIONS

WAINUI ROAD - INTERIM



ARGENT LANE - INTERIM



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Project Number	31720
Scale	NOT TO SCALE
Issued	05.07.2016
Issue Status	**ISSUE**
Author	AZ
Approved by	

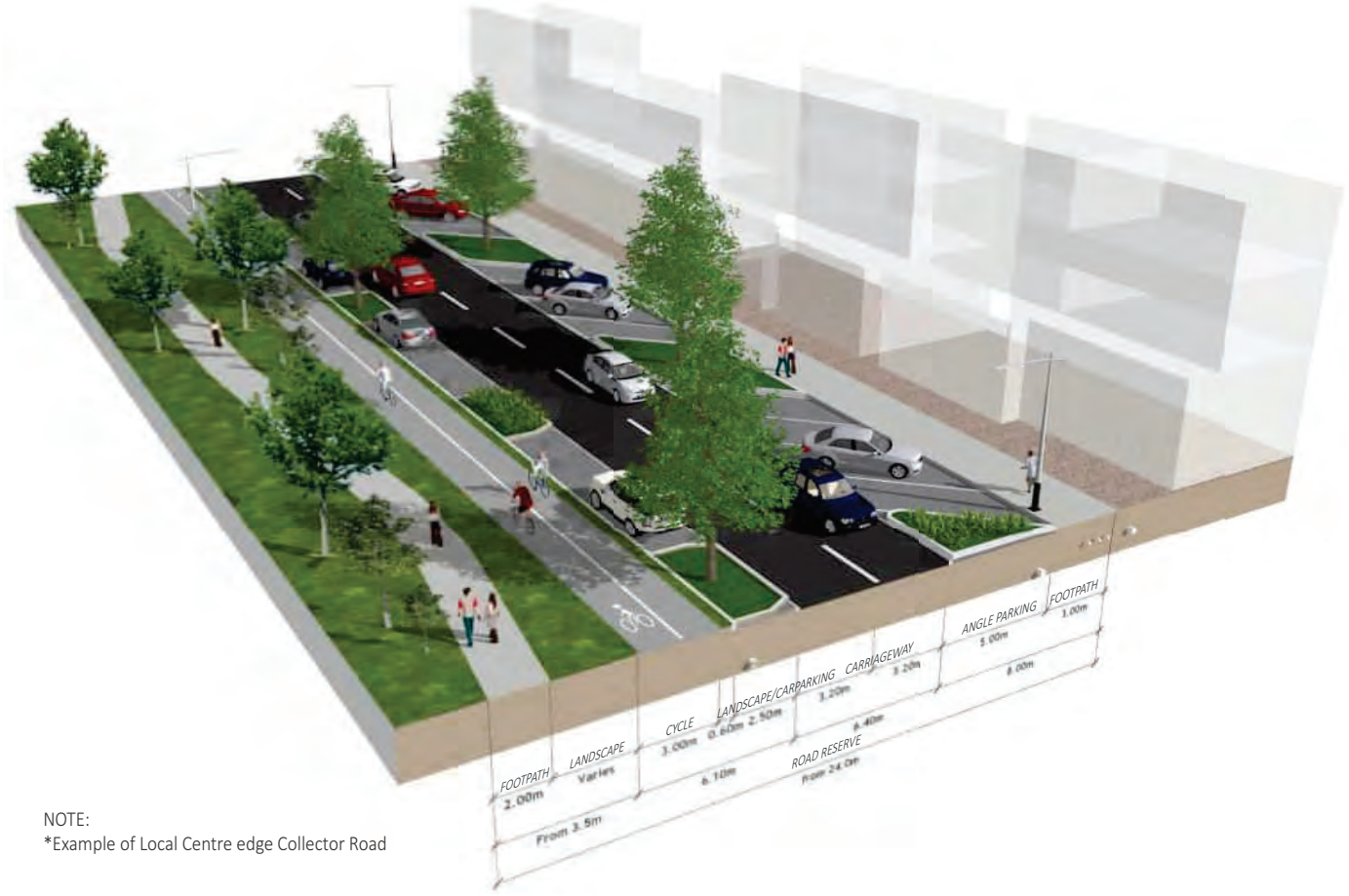
ROAD CROSS SECTIONS

CP-UD-1010-A

STREET TYPOLOGIES

COLLECTOR ROAD 24.0m

COLLECTOR ROAD (TOWN CENTRE EDGE) FROM 24.0m



NOTE:
*Example of Local Centre edge Collector Road

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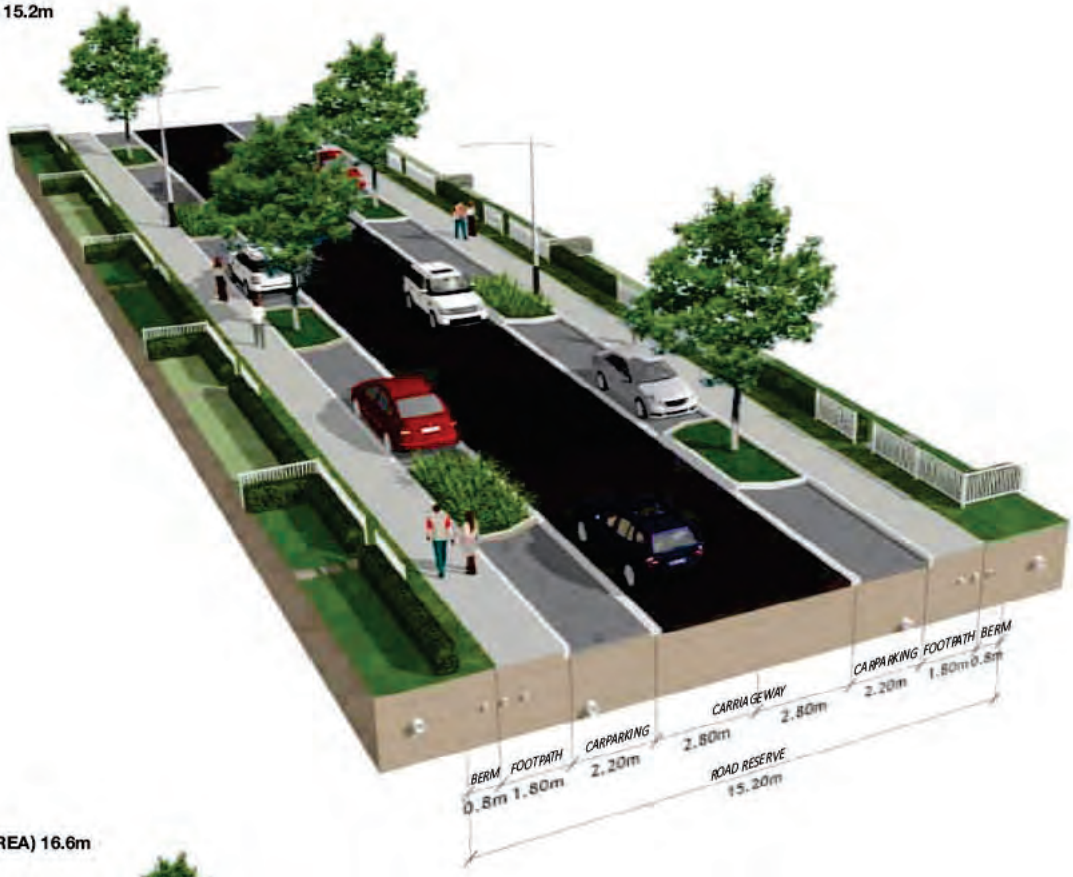
ROAD CROSS SECTIONS

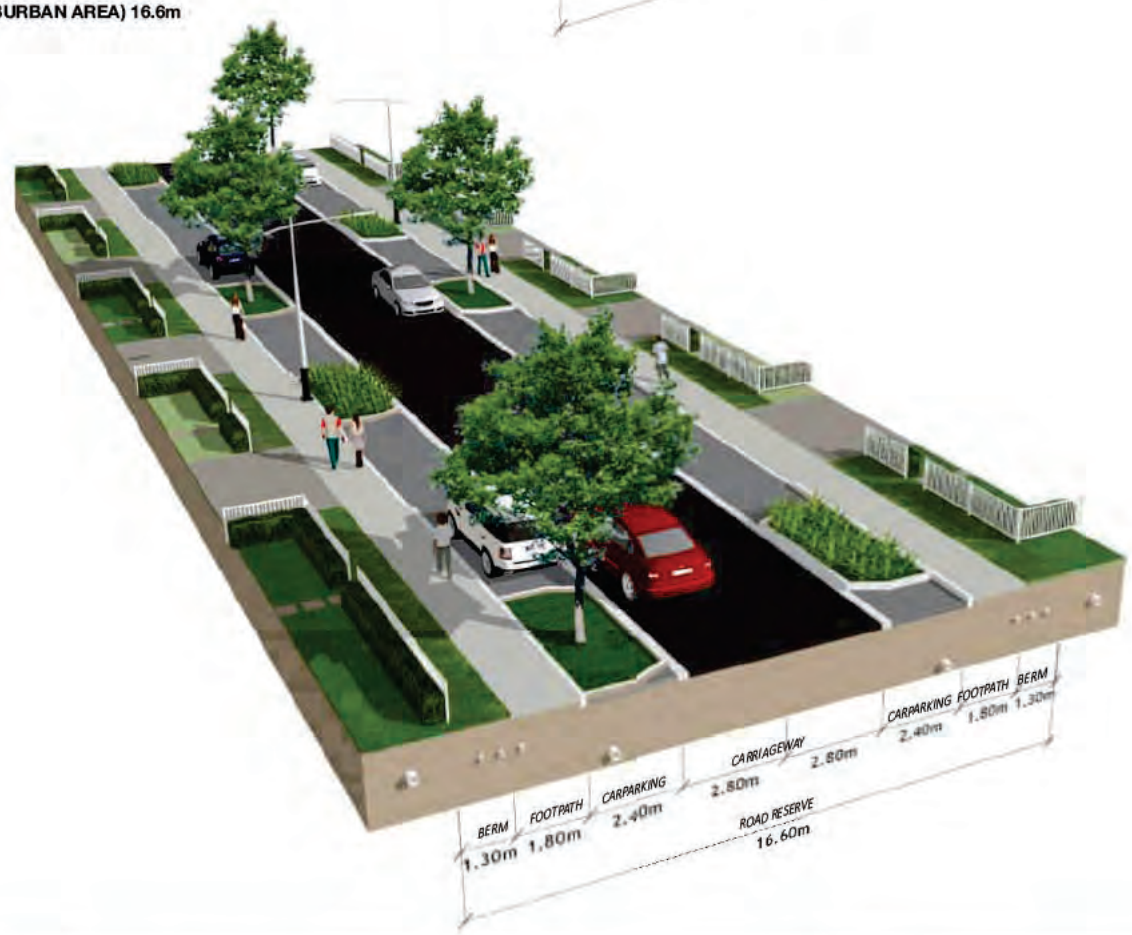
CP-UD-1011-A

STREET TYPOLOGIES

LOCAL ROAD (URBAN AREA) 15.2m



LOCAL ROAD (SUBURBAN AREA) 16.6m



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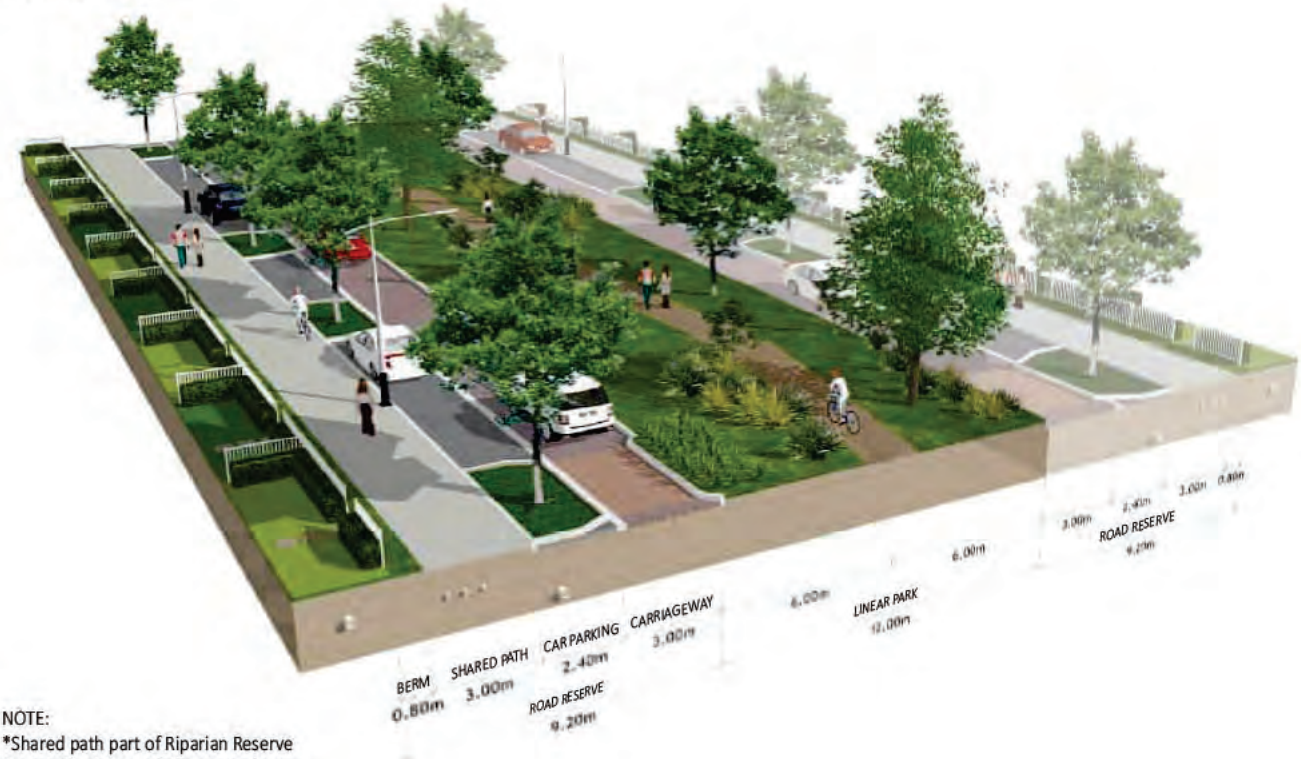
ROAD CROSS SECTIONS

CP-UD-1012-A

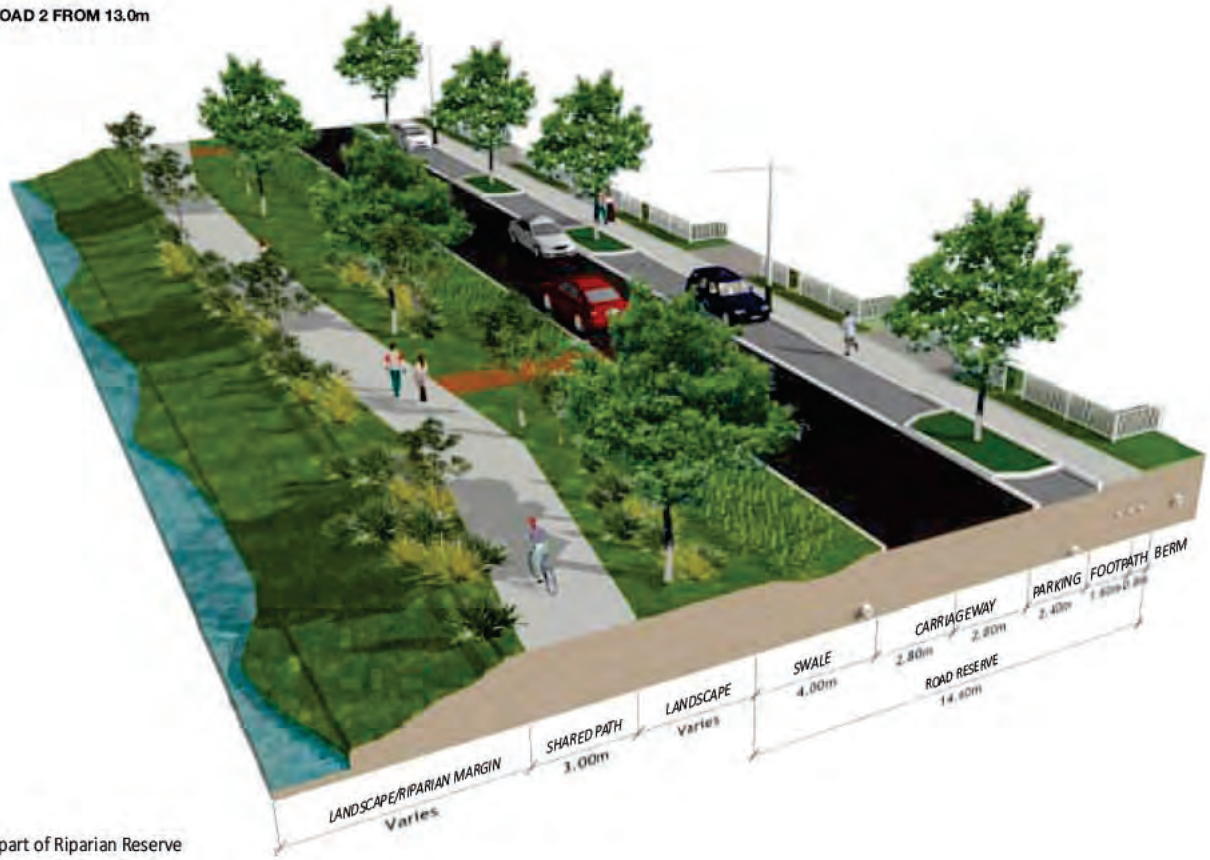
STREET TYPOLOGIES

GREEN STREET 30.4m



NOTE:
*Shared path part of Riparian Reserve
*Road Single cross fall to central green reserve

RESERVE EDGE ROAD 2 FROM 13.0m



NOTE:
*Shared path part of Riparian Reserve
*Road Single cross fall to swale along riparian reserve

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Issue Status	**ISSUE**
Author	AZ
Approved by	

ROAD CROSS SECTIONS

CP-UD-1013-A

Appendix B – Query List and Correspondence (Healthy Waters)

Shakti Singh

From: Juan Alvarez De Lugo
Sent: Thursday, 30 November 2023 4:21 pm
To: Shakti Singh
Subject: FW: SW Model Review & SMP Addendum - Milldale
Attachments: HW Milldale Queries List - Woods Reponse.xlsx

Follow Up Flag: Follow up
Flag Status: Flagged

Juan Alvarez De Lugo
Associate Engineer
CMEngNZ, CPEng IntPE(NZ)
[redacted] | [redacted]
[redacted]
woods.co.nz

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From: Kedan Li <kedan.li@aucklandcouncil.govt.nz>
Sent: Friday, May 27, 2022 5:15 PM
To: Juan Alvarez De Lugo <Juan.AlvarezDeLugo@woods.co.nz>
Cc: Pranil Wadan <pranil.wadan@woods.co.nz>; Dali Suljic <dali.suljic@AucklandCouncil.govt.nz>
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for your effort, I have checked the model, I agree on our most recent modelling queries list (as attached) which has closed off our previous queries.

Cheers,
Kedan

Kedan Li | Senior Healthy Waters Specialist
Healthy Waters | Infrastructure & Environmental Services
Auckland Council, Level 17, Auckland House, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Kedan Li
Sent: Wednesday, 25 May 2022 9:13 am
To: Juan Alvarez De Lugo [redacted] >
Cc: Pranil Wadan [redacted] ; Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thank you. I am writing to acknowledge that I have received your email, but I am fully booked this week, hopefully I can get back to you by end of the week.

Thanks again.

Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Friday, 20 May 2022 5:40 pm
To: Kedan Li [redacted] >
Cc: Pranil Wadan < [redacted] ; Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Hope you have been well.

I have updated the models based on our latest conversation and uploaded them to the OneDrive link.

As agreed, those areas near the estuary have been assigned a stream bed roughness of 0.03 and the rest of the areas retained a stream bed roughness of 0.06 (considered conservative).

I am keen to lock-in the models so I can return to the reports.

Any concerns please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Tuesday, 10 May 2022 4:28 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic <[redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for checking. The roughness should really based on the site topography, I do not have concern for Site 2, but the low roughness for all other site have been applied are too wide and too low.

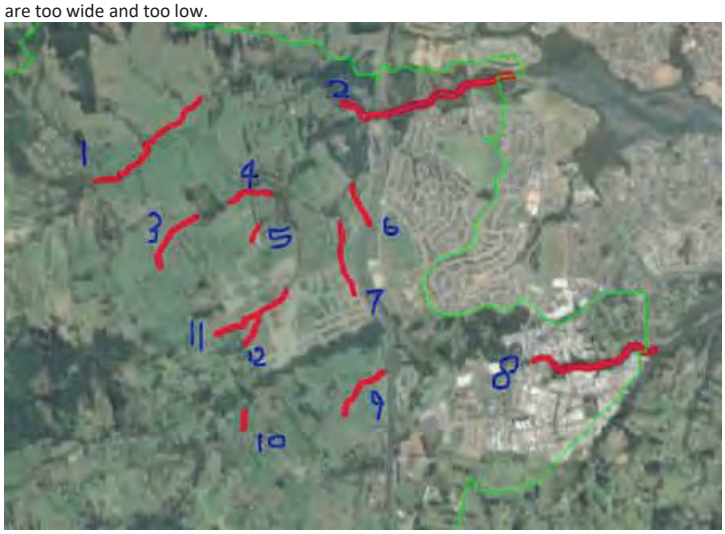
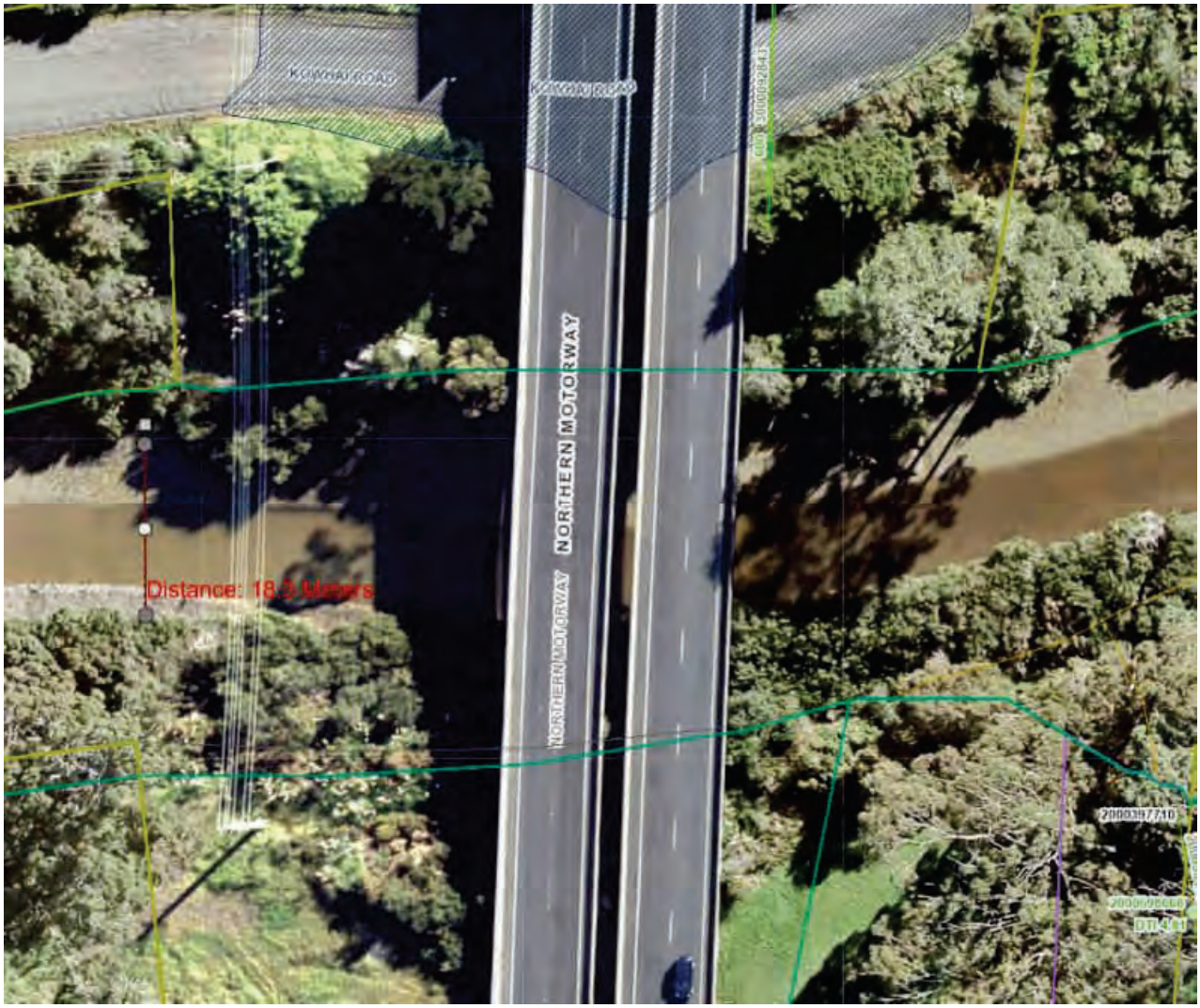


Photo of Site 2 is shown as below. As I mentioned previously, due to it is close to the sea estuary, and the stream bed is mostly clay without much vegetation, hence a low roughness of 0.03 should be applied.



Whereas other sites, for example, site 1, Link 31.2, the screen shot below shows the low roughness extend is less than 4m in cross section, whereas our current model implies more than 20m.

Please refer to the table below for roughness detail.

Table 5.2 Manning's n Roughness values for Channel, Bank & Floodplain Vegetation (DEFRA, 2004)

Channel, Bank, Floodplain Vegetation	Manning's n Roughness Values		
	Unit Roughness	Lower Roughness	Upper Roughness
Free-floating plants	0.034	0.035	0.065
Filamentous algae	0.015	0	0.05
Mosses	0.015	0	0.03
Trailing bank-side plants	0.05	0	0.1
Emergent reeds	0.15	0.02	0.2
Floating-leaved rooted plants	0.10	0.03	0.14
Emergent broad-leaved rooted plants	0.15	0.05	0.5
Submerged broad-leaved plants	0.10	0.02	0.2
Submerged fine-leaved plants (shallow)	0.3	0.02	0.45
Submerged fine-leaved plants (medium)	0.10	0.021	0.249
Submerged fine-leaved plants (deep)	0.08	0.01	0.13
Height-varying grass	0.041	0.02	0.08
Tall grass 1-1.8m	0.09	0.07	0.11
Medium grass 0.35-1m	0.08	0.07	0.09
Turf	0.021	0.018	0.024
Clean hedges (Separation distance < 50m)	0.053	0.035	0.07
Dirty hedges (Separation distance < 50m)	0.091	0.052	0.12
Corn (parallel to flow)	0.11	0.036	0.24
Cotton (parallel to flow)	0.06	0.008	0.14
Sorghum (parallel to flow)	0.12	0.019	0.26
Soybeans (parallel to flow)	0.095	0.05	0.21
Sunflowers (parallel to flow)	0.115	0.046	0.134
Wheat (parallel to flow)	0.057	0.041	0.065
Corn (perpendicular to flow)	0.05	0.012	0.134
Cotton (perpendicular to flow)	0.045	0.017	0.082
Sorghum (perpendicular to flow)	0.047	0.015	0.093
Soybeans (perpendicular to flow)	0.08	0.037	0.149
Sunflowers (perpendicular to flow)	0.07	0.012	0.12
Wheat (perpendicular to flow)	0.075	0.015	0.13
Wheat stems	0.028	0.022	0.031
Small supple trees saplings e.g willow	0.005	0.0001	0.05
Scattered brush and heavy weeds	0.05	0.035	0.07
Light brush and trees (winter)	0.05	0.035	0.06
Light brush and trees (summer)	0.06	0.04	0.08
Medium brush and trees (winter)	0.07	0.045	0.11
Medium brush and trees (summer)	0.10	0.07	0.16
Dense willows (summer)	0.15	0.11	0.2
Cleared land - tree stumps	0.04	0.03	0.05
Cleared land - tree stumps & heavy sprouts	0.06	0.05	0.08
Moderate to dense brush (depth below branches)	0.080	0.05	0.1
Heavy stand of trees with some downed (depth below branches)	0.10	0.08	0.12
Heavy stand of trees with some downed (depth above branches)	0.15	0.1	0.2
Coniferous trees (sparse coverage)	0.15	0.1	0.2
Coniferous trees (medium density coverage)	0.25	0.25	0.34
Coniferous trees (high density coverage)	0.28	0.2	0.4

I understand where you are coming from, but I hope we can address those issues before we finalise the modelling task and proceed on reporting.

Thank you.

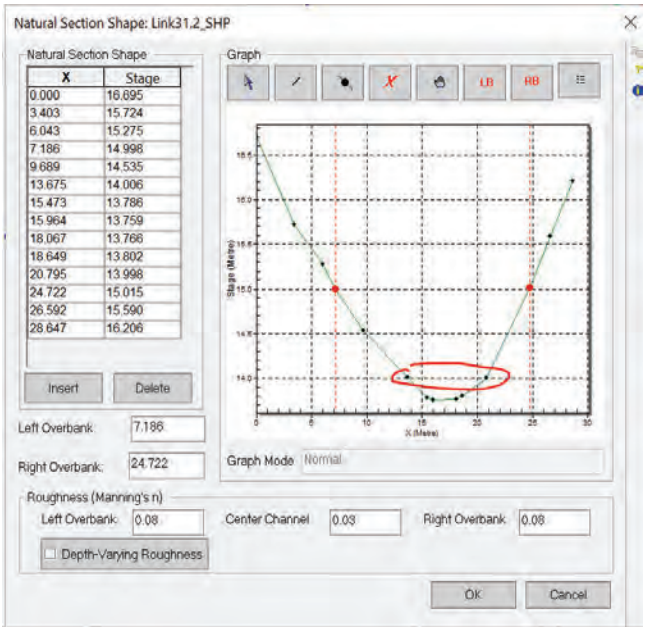
Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Monday, 9 May 2022 6:08 pm
To: Kedan Li <[redacted]
Cc: Pranil Wadan [redacted] ; Dali Suljic <[redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

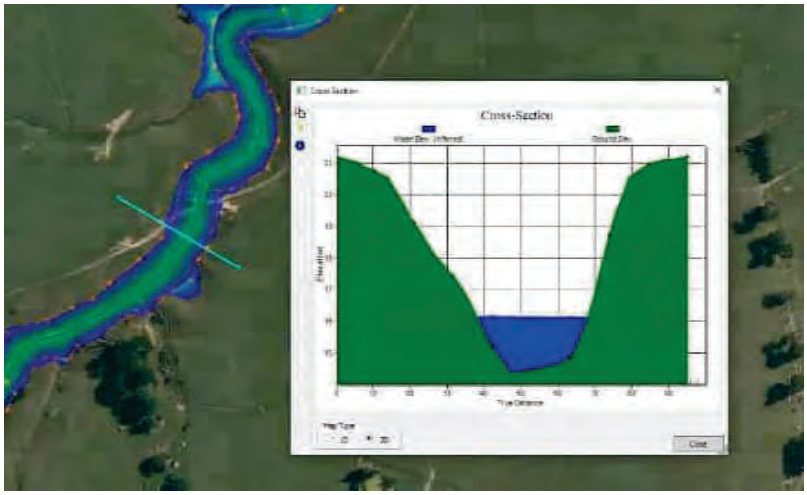
Hello Kedan,

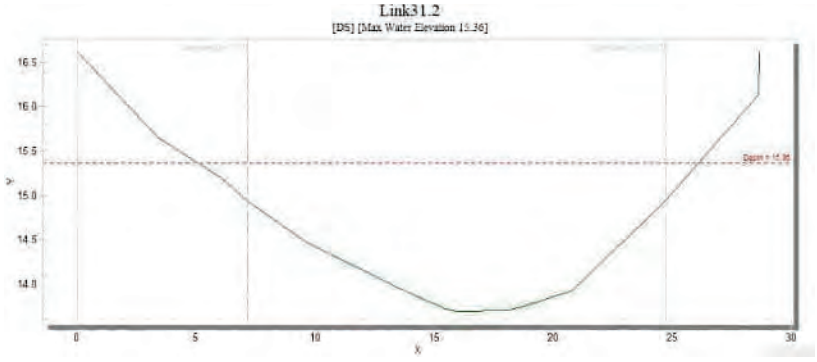
Thanks for your email.

I have performed a check using 'Link 31.2' as a reference.
Based on your suggestion the 1D cross-section below should have the bank markers updated to better represent the low flows.



However, when the cross-section is expanded to also represent the 2D area, I could see that the channel is wider and the current markers are representative of the low flow channel already. Furthermore, I have also compared extracted the water levels of a previous run simulating the 2yr + CC storm event, and the water level fairly matched the bank markers shown in the 1D cross section. Please refer to the screenshots below:





I do not consider that making these adjustments to the bank markers in the 1D cross sections will result in any considerable difference in the models results overall and based on my findings I think they can remain as they are.

Nevertheless, I am happy to set up a meeting this week if you would like to discuss further.

Kind Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Friday, 6 May 2022 3:23 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted]; Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for your quick response, I have some comments regarding the stream/ cross section roughness.

Thanks for your effort for changing the roughness on the previous discussed locations, however, I was anticipating that the low roughness should only apply to the low flow channel, should not include to the high stream banks. Please refer to the attached excel, tab 'Updated 1D roughness zones', I have spot checked some and was wondering if you could get them corrected and rerun the model please?

Happy to discuss as always.

Thank you.

Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Tuesday, 3 May 2022 12:10 pm
To: Kedan Li [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Please find attached a log with the model descriptions (also uploaded to OneDrive).

You should be able to open the models in XP-Viewer now.

Any problems or questions please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Monday, 2 May 2022 5:24 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] ; Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for sending them through. I have had a look on the "20210901 Stage 5 MPD 100YR CC MHWS10", looks like it is the 2.1cc results. I couldn't open the model of "20220426 Stage 5 MPD 10YR CC MHWS10" as shown in the screen shot below.

Would you be able to send me a model description so that would be able to help me to understand what is each model scenario stands for and also help me to repair the 10YR scenario?

Thanks!

Kind Regards,

Kedan Li | Senior Healthy Waters Specialist
Healthy Waters | Infrastructure & Environmental Services
Auckland Council, Level 17, Auckland House, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Juan Alvarez De Lugo [redacted]
Sent: Sunday, 1 May 2022 6:04 pm
To: Kedan Li [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Please find attached the updated "HW Milldale Queries List - Woods Response" spreadsheet.

I have also uploaded it to the OneDrive link along with the MPD and ED updated models based on our latest discussion.

Once you are ready please let me know if you would like to discuss further or you are happy for me to continue working in the Model Build Report and SMP.

Any issues or questions please let me know.

Regards,

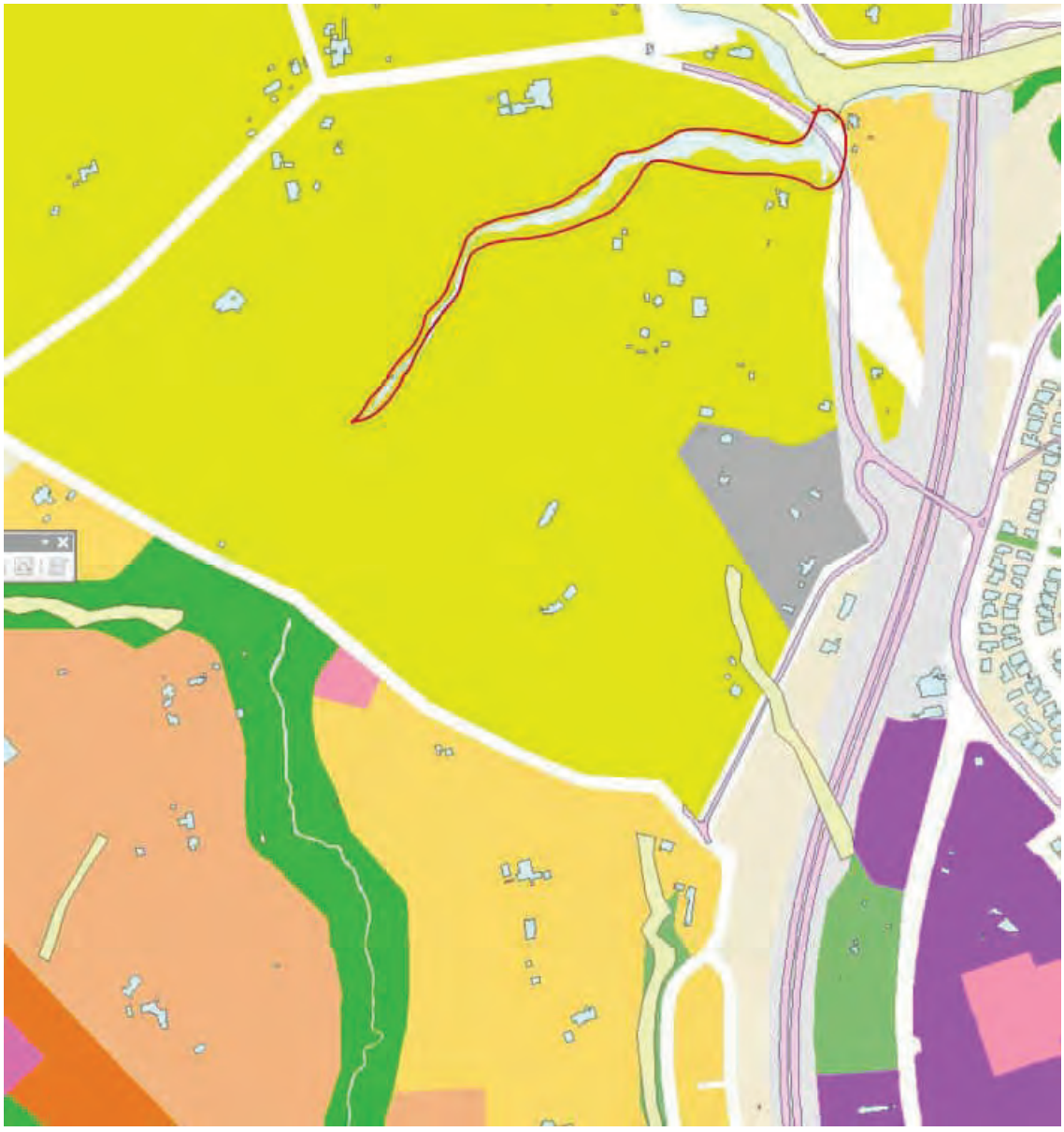
From: Kedan Li [redacted]
Sent: Tuesday, 19 April 2022 4:27 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Juan,

Thanks for coming back to me so quickly.

Please see below, would you be able to edit the riverbed roughness for the area highlighted in the below as well?

Thanks!

Kedan 

Kedan Li | Senior Healthy Waters Specialist
Healthy Waters | Infrastructure & Environmental Services
Auckland Council, Level 17, Auckland House, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Juan Alvarez De Lugo [redacted]
Sent: Tuesday, 19 April 2022 12:33 pm
To: Kedan Li [redacted]
Cc: Pranil Wadar [redacted] ; Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Hope you had a good Easter break.

I have updated the imperviousness in the subcatchments you pointed out and the roughness at the arch culverts.

Please find attached a shapefile outlining the areas where the channel roughness is proposed to be updated as per your suggestion.
Let me know if you would like to see more areas included or excluded.
I will proceed and update the stream roughness once you confirm the extent.

Kind Regards

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Thursday, 14 April 2022 5:34 pm
To: Juan Alvarez De Lugo [redacted]>
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan and Pranil,

Thank you for your time this afternoon, please find the spreadsheet as attached.

Have a lovely Easter.

Thank you!

Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Wednesday, 13 April 2022 1:32 pm
To: Dali Suljic [redacted] Kedan Li [redacted]
Cc: Pranil Wadar [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Dali,

Tomorrow at 2 pm or next week is fine with me.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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From: Dali [redacted]
Sent: Wednesday, 13 April 2022 1:26 pm
To: Juan Alvarez De Lugo [redacted]nz>; Kedan Li [redacted]
Cc: Pranil Wadar [redacted]>
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Juan and Pranil,

Trust all is well.

Kedan is working through the review but has a few additional queries that may be better to discuss over Teams. Any chance for a catchup tomorrow either 12pm or 2pm? Otherwise, can always do start of next week.

Cheers

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

Auckland Council I Bledisloe House I Level 3, 24 Wellesley Street Auckland

Private Bag 92300 I Auckland 1142

Visit our website www.aucklandcouncil.govt.nz

From: Juan Alvarez De Lugo [redacted]
Sent: Monday, April 4, 2022 4:33 PM
To: Kedan L [redacted] >
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Following our phone call today, please find below the information you requested:

1. WSEL

   Maximum Water Surface Elevation. Please refers to attachment for further explanation.

2. Motorway Bridge

   The motorway bridge over SH1 has been modelled as a natural channel as the bridge levels are well clear of any potential flood risk. Refer to section **3.2.4.2 Bridges** of the Wainui Flood Model Build Report and **Table 3: Modelled Bridges.**

3. CoP v3 rainfall (3.8 °C climate change) model runs

   I have run and extracted results for the 10 year including climate change (3.8 °C CoP v3) MPD scenario and 100 year including climate change (3.8 °C CoP v3) MPD scenario.

   At this point I have only looked at the Wainui bridge location to determine if there is overtopping occurring because of the climate change factor increase. There results show that there is no overtopping for the 10-year including climate change (3.8 °C CoP v3) MPD scenario, however there is overtopping for the 100-year including climate change (3.8 °C CoP v3) MPD scenario. Please refer to attachments.

   An effects assessment has not been performed at this point under CoP V3 as it has not yet come into effect.

4. Model Reviews

   I have checked with Pranil and there has been a couple of HW reviews between now and since the SMP and Model Build Report were issued.

Any further questions please let me know.

Kind Regards,

WOODS
Est.1970

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Tuesday, 29 March 2022 11:07 am
To: Juan Alvarez De Lugo [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks! It opens fine now.

Cheers,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Tuesday, 29 March 2022 1:45 am
To: Kedan Li [redacted] Dali Suljic [redacted] >
Cc: Pranil Wadan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

XPSWMM Viewer 2021.3 has been uploaded to the OneDrive Link.

Please note that the background image and the surfaces have also been uploaded, in case you need to link them.

ED Surface: 20170908 - Revised Flood Analysisi tin - Existing ground.xptin

MPD Surface: Milldale Master Design Surface Combined.xptin

You can probably ignore the CAD files and the Shapefiles.

If you have any problems or you need anything else please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Monday, 28 March 2022 4:35 pm
To: Juan Alvarez De Lugo [redacted] Dali Suljic [redacted]
Cc: Pranil Wadan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Would it be possible for you to upload the XPSWMM Viewer 2021.3 to the OneDrive link please? The one I have is 2021.2, and looks like you have updated it. 😉
And by the way, the current model report is searchable now. Thanks!
Kedan

From: Kedan Li
Sent: Tuesday, 22 March 2022 9:42 am
To: Juan Alvarez De Lugo [redacted] Dali Suljic [redacted]
Cc: Pranil Wadan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,
Received with thanks, I will get in touch if I have any questions.
Thanks!
Kedan

From: Juan Alvarez De Lugo [redacted]>
Sent: Tuesday, 22 March 2022 8:51 am
To: Kedan Li [redacted] Dali Suljic <[redacted]
Cc: Pranil Wadan [redacted]
Subject: FW: SW Model Review & SMP Addendum - Milldale

Hello Kedan and Dali,

Please find attached the updated "HW Milldale Queries List – Woods response" document.

I have also uploaded it to the OneDrive link.

Any problems please let me know.

Regards,

WOODS
Est.1970

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
woods.co.nz

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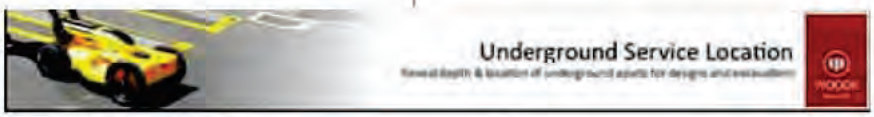

From: Juan Alvarez De Lugo [redacted]
Sent: Monday, 21 March 2022 1:20 pm
To: Kedan Li [redacted]>; Pranil Wadan <[redacted] Dali Suljic [redacted]>
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan and Dali,

Thanks for your time earlier today. As agreed in the meeting I have uploaded the following models:

Scenario	*Landuse*	*Landform*	*Rainfall*	*Climate Change*	*MHWS*
5	*ED*	*Existing*	*10*	*Yes*	*As per MHWS recently provided*
6	*ED*	*Existing*	*100*	*Yes*	
7	*MPD*	*Future*	*10*	*Yes*	
8	*MPD*	*Future*	*100*	*Yes*	

Please follow the OneDrive Link:

[redacted]

In the folder "2022-03-21 Updated Model Issue" you will find the models along with a copy of a previous S92 response we issued regarding the different grid sizes initially used in the model.

I will update and send in the upcoming days the "HW Milldale Queries List – Woods response" document to reflect what was discussed in the meeting.

Any problems please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
t [redacted]
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Monday, 21 March 2022 10:35 am
To: Pranil Wadan [redacted] Dali Suljic [redacted]; Juan Alvarez De Lugo [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi all,
Can we please jump back to the meeting, just got a quick question, sorry, forgot asking it earlier..
Kedan.

From: Pranil Wadan [redacted]
Sent: Tuesday, 15 March 2022 3:32 pm
To: Dali Suljic [redacted]; Emily Afoa [redacted]; Juan Alvarez De Lugo < [redacted]; Kevin Fan [redacted]
Cc: Kedan Li [redacted] >; Euan [redacted] Tim Rickards [redacted] Jamie Whyte [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Dali,

Monday 10am should work for us

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
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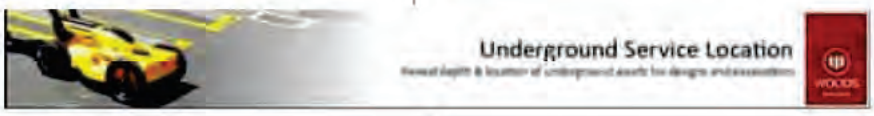

From: Dali Suljic [redacted]
Sent: Tuesday, 15 March 2022 2:32 pm
To: Pranil Wadan [redacted]; Emily Afoa [redacted] Juan Alvarez De Lugo < [redacted] Kevin Fan [redacted]
Cc: Kedan Li [redacted]; Euan Williams < [redacted] Tim Rickards < [redacted]; Jamie Whyte [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Thanks for your email. We won't be able to do Friday, how about Monday/Tuesday next week say 9am?

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

Auckland Council I Bledisloe House I Level 3, 24 Wellesley Street Auckland

Private Bag 92300 I Auckland 1142

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From: Pranil Wadan [redacted]
Sent: Tuesday, March 15, 2022 11:37 AM
To: Dali Suljic [redacted]; Emily Afoa [redacted]; Juan Alvarez De Lugo [redacted]; Kevin Fan [redacted]>
Cc: Kedan Li <[redacted] Euan Williams [redacted]; Tim Rickards [redacted]; Jamie Whyte [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Dali,

The modelling is more or less closed out – We are just waiting on the post processing of results, Apologies for the delay, but there was a bit of back and forth with Innovyze to confirm the approach to modelling the bridge structures and losses as suggested by Healthy Waters.

How are you and Kedan placed this Friday to go over the changes and updated results ? Myself and Juan are free from 11am? – This session would be to close out the changes that have been made. Once this is done then we can commence reporting and we are wanting to avoid any rework.

WOODS
Est.1970

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
[redacted]
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From: Dali Suljic [redacted]>
Sent: Friday, 11 March 2022 6:03 am
To: Pranil Wadan [redacted]>; Emily Afoa <[redacted] Juan Alvarez De Lugo [redacted]; Kevin Fan [redacted]
Cc: Kedan Li [redacted]; Euan Williams [redacted] Tim Rickards [redacted] Jamie Whyte [redacted]>
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Just following up to see how you are getting on with the modelling and SMP updates as per your email below.

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

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Private Bag 92300 I Auckland 1142

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From: Pranil Wadan
Sent: Wednesday, February 16, 2022 10:29 AM
To: Dali Suljic Emily Afoa Juan Alvarez De Lugo Kevin Fan >
Cc: Kedan Li nz>; Euan Williams Tim Rickards ; Jamie Whyte
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Dali and Kedan,

Apologies again for my late response, Juan had sent this to me last week so this had been sitting with me.

Key points from our session as follows:

- Whilst the review is being undertaken for the wider Milldale model, focus on Stage 5.
- Run a sensitivity assessment with the model boundary conditions to be updated with the latest MHWS data as per the "Coastal Marine Area Boundary for the Auckland Region" document provided.
- Bridges exit and entry losses parameters to be updated in the model
- Weir overflow representation to be updated in the model when not coupled to the 2D domain.

At this stage we are proposing of running the model for the following Climate Change Scenarios (as per current SWCoP 2.1°c):

Scenario	*Landuse*	*Landform*	*Rainfall*	*Climate Change*	*MHWS*
1	*ED*	*Existing*	*10*	*Yes*	*As per Current SMP*
2	*ED*	*Existing*	*100*	*Yes*	
3	*MPD*	*Future*	*10*	*Yes*	
4	*MPD*	*Future*	*100*	*Yes*	
5	*ED*	*Existing*	*10*	*Yes*	*As per MHWS recently provided*
6	*ED*	*Existing*	*100*	*Yes*	
7	*MPD*	*Future*	*10*	*Yes*	
8	*MPD*	*Future*	*100*	*Yes*	

Depending on the model results we can then look to simulate the 2yr scenario, please confirm this is correct and if I have missed anything here.

Furthermore, attached is our response table addressing the queries that were initially raised. Kedan, Juan has uploaded the documents and files requested onto one drive already (including a PDF version of the SMP – Please let me know if this version is searchable)

We will need to have a follow-up discussion once the updated model results are available. At this stage Juans still away for another week so will likely be later this month.

At this point we are looking to update the SMP and model build reports to reflect all stages up to Stage 5, we note that currently stage reports need to be read in conjunction with the different development stages reports to understand the various changes and updates.
The update of the SMP document aims to provide clarity and represent all the Milldale stages that have been consented to date.

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Est.1970

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
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From: Dali Suljic
Sent: Friday, 11 February 2022 11:32 am
To: Pranil Wadan ; Emily Afoa Juan Alvarez De Lugo ; Kevin Fan <
Cc: Kedan Li >; Euan Williams < Tim Rickards ; Jamie Whyte >
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Thanks again for your time and meeting on Wednesday. Was good to discuss things together.

Just following up to see whether you are still sending through a summary email with the queries tracking spreadsheet?

Have a good weekend.

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

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Private Bag 92300 I Auckland 1142

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From: Dali Suljic [redacted]
Sent: Friday, January 28, 2022 10:52 AM
To: Pranil Wadan [redacted]z>; Emily Afoa <[redacted] Alvarez De Lugo [redacted] Kevin Fan [redacted]
Cc: Kedan Li [redacted]; Euan Williams [redacted]; Tim Rickards [redacted]; Jamie Whyte <[redacted]>
Subject: Re: SW Model Review & SMP Addendum - Milldale

Thanks Pranil,

Will send out a meeting invite for Wednesday 9th February at 9am. In the interim, Kedan will formulate and send through a list of queries, likely next week.

Enjoy your break next week!

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

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From: Pranil Wadan <[redacted]
Sent: Friday, January 28, 2022 9:49 AM
To: Dali Suljic [redacted]; Emily Afoa [redacted] Juan Alvarez De Lugo <[redacted]; Kevin Fan [redacted]
Cc: Kedan Li <[redacted]>; Euan Williams [redacted]; Tim Rickards <[redacted] Jamie Whyte [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Dali,

Apologies for the late reply, I'm working on and off until after Waitangi.

Happy to set up a meeting, however prior to this can we please get Kedan to send through a list of the questions and queries that he has, this will assist in making sure that we have what we need prepared to ensure a productive meeting.

Unfortunately I'm away all of next week – However depending on the questions Juan can attend without me, Note that I was involved in the original model build which at the time was reviewed by Healthy Waters, If questions relate to earlier work then it is best that I attend, however if they relate to earlier revisions then Juan should be able to assist.

I'm back on the 8th Feb, so we can arrange a meeting that week, ideally if we could have this around 9am that work best for us as Juan is currently working from Spain.

Kind Regards

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
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From: Dali Suljic [redacted]
Sent: Tuesday, 25 January 2022 6:39 am
To: Pranil Wadan [redacted] Emily Afoa [redacted]; Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Cc: Kedan Li [redacted] Euan Williams [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Thanks again for sending this through.

Would you and your team be available either this Wednesday 10am - 11am or Thursday/Friday 10am - 12pm to meet with Kedan to do a model brief and go through the changes made.

Please let us know.

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

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From: Pranil Wadan [redacted]
Sent: Wednesday, January 19, 2022 4:46 PM
To: Emily Afoa [redacted]; Juan Alvarez De Lugo [redacted] >; Kevin Fan [redacted]
Cc: Kedan L [redacted] >; Dali Suljic [redacted]; Euan Williams [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi All,

Hope you've all had a nice break, In Juans absence please find attached a copy of the meta data table and extents shapefiles as requested. The model build report is attached as an appendix to the SMP which Healthy Waters have a copy of already. Please let me know if I need to resend this.

Apologies for the delay, Juan had completed this before xmas, however I was unable to review it as I was away on leave.

@Kevin Fan let me know if you would like to arrange a teams meeting to go over any questions or queries you may have.

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
woods.co.nz

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From: Emily Afoa [redacted]
Sent: Monday, 29 November 2021 2:42 pm
To: Juan Alvarez De Lugo [redacted]>
Cc: Kedan Li [redacted] nz>; Kevin Fan <[redacted] Dali Suljic <[redacted]; Pranil Wadan <[redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Juan,

Can you please also provide the model built report and metadata (as shown below), to enable our review of the model. Any questions, please ensure Kevin is copied in the request as he will provide the clarification, if needed.

Model Files and Documentation	
File directory for model deliverables (MUST COMPLETE):	
Is model report supplied (must have, but can be draft):	
Is model extent polygon supplied (must have):	
Is model schematisation map supplied (must have):	
Is model data flag file supplied:	
Are model results supplied:	
List out all scenarios modelled (design storm events, validation events, sensitivity analysis runs, etc.)	
List relevant input/calculation files supplied:	
Is WaterRIDE file supplied (only at FINAL delivery):	
Model Metadata	
Hydrology Method	
LiDAR Source (2016, 2013, 2006-2010, etc.)	
Any DEM modifications? If yes, describe in more detail.	
Mesh Type	
Mesh Size	
Soakage representation	
Pipe network modelled (e.g. all pipes >=300mm, etc.)	
Key structures modelled? Describe type and number	
Open channel / stream representation description	
MPD representation (Unitary Plan, District Plan, etc.)	
Climate change allowances	
Tide Boundary Level (current and future)	
Simulation Duration (24hrs, etc.)	
Simulation Timesteps	
Model Run Time (How long did it take to run)	

Nāku noa, nā
Emily Afoa | Growth & Development
Healthy Waters | Infrastructure & Environmental Services
Phone 09 301 0101 I Mobile 021 2888 276
Auckland Council I Bledisloe House I Level 3, 24 Wellesley Street Auckland
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From: Juan Alvarez De Lugo [redacted]>
Date: Tuesday, 23 November 2021 at 12:46 PM
To: Emily Afoa [redacted]>, Pranil Wadan [redacted]>, Jamie Whyte [redacted]>

Cc: Mark Iszard <[redacted]>, Kedan Li <[redacted], Kevin Fan <[redacted] Dali Suljic [redacted], Masato Nakamura [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hello Emily,

I have uploaded the models to One Drive for you to access, please follow this link:

[redacted]

As mentioned in our previous response to Section 5A (BUN60375453) query, the Milldale stormwater models have been refined with a 3m grid only.

The provision of the models for Healthy Waters review is on the basis that they will be used only to inform evaluations of current consents (as sought most recently through PRR00037660 Waterloo Reserve and BUN60382567 Stg 5B EW)

It was discussed and agreed that the SMP will be updated to reflect the changes at the Wainui Crossing as a result of the mesh refinement.

Thanks for your patience, any questions or problems accessing the link please let me know.

Kind Regards,

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Est.1970

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
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From: Emily Afoa [redacted]
Sent: Tuesday, 16 November 2021 9:59 am
To: Juan Alvarez De Lugo [redacted]>; Pranil Wadan [redacted]; Jamie Whyte [redacted]
Cc: Mark Iszard <[redacted] Kedan Li [redacted] Kevin Fan [redacted]; Masato Nakamura [redacted]nz>; Dali Suljic [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Juan,

Thanks for the update, will hear from you in due course once you resolve the challenges.

Nāku noa, nā
Emily Afoa | Growth & Development
Healthy Waters | Infrastructure & Environmental Services
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From: Juan Alvarez De Lugo [redacted]
Date: Monday, 15 November 2021 at 5:11 PM
To: Emily Afoa [redacted] Pranil Wadan [redacted], Jamie Whyte [redacted]
Cc: Mark Iszard [redacted], Kedan Li [redacted], Kevin Fan [redacted]
Masato Nakamura [redacted], Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hello Emily,

I acknowledge it has taken longer than expected to deliver the model to you for review.

The reason for the delay has been because the model was run in the latest XPStorm version and the software license we currently have for some reason does not allow for the model to be encrypted. In addition I was only able to download the latest XPViewer software version recently, which I will need to attach along with the encrypted model so you can access them and review them.

I have been in contact with the software provider in order to fix the encrypting issue but I am still waiting for them to send me the updated file. In their last correspondence they said they would get back to me at some point this week.

I will arrange to get the model overt to you as soon as I hear back from the software provider.

Once again apologies for the delay.

Kind Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
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From: Emily Afoa [redacted]
Sent: Monday, 15 November 2021 3:27 pm
To: Pranil Wadan [redacted] Jamie Whyte <[redacted]
Cc: Juan Alvarez De Lugo [redacted]; Mark Iszard [redacted]; Kedan Li <[redacted]; Kevin Fan <[redacted]; Masato Nakamura [redacted]>; Dali Suljic <[redacted]>
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Pranil,

Just checking in on progress re provision of the model for review. As noted prior, we are experiencing significant workloads, and so it would be good to be able to programme this review sooner rather than later so it does not become the critical path for future consents.

Nāku noa, nā
Emily Afoa | Growth & Development
Healthy Waters | Infrastructure & Environmental Services
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Private Bag 92300 I Auckland 1142
Visit our website www.aucklandcouncil.govt.nz

From: Emily Afoa [redacted]
Date: Thursday, 14 October 2021 at 4:46 PM
To: Pranil Wadan <[redacted] Jamie Whyte <[redacted]
Cc: Juan Alvarez De Lugo [redacted] Mark Iszard [redacted], Kedan Li [redacted]>, Kevin Fan [redacted], Masato Nakamura [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale
Thanks Pranil – happy with a OneDrive link if that is easiest.

Nāku noa, nā
Emily Afoa | Growth & Development
Healthy Waters | Infrastructure & Environmental Services
Phone 09 301 0101 I Mobile 021 2888 276
Auckland Council I Bledisloe House I Level 3, 24 Wellesley Street Auckland
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From: Pranil Wadan [redacted]
Date: Thursday, 14 October 2021 at 4:41 PM
To: Emily Afoa [redacted], Jamie [redacted]
Cc: Juan Alvarez De Lugo <[redacted]nz>, Mark Iszard [redacted]>, Kedan Li [redacted]z>, Kevin Fan <[redacted], Masato Nakamura [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hi Emily,

Apologies for the delayed response, but yes I will arrange to get this model over to you, The model files are large and with lockdown makes it a bit harder, but we could transfer them over onto OneDrive if your ok with that.

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
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From: Emily Afoa [redacted]>
Sent: Sunday, 10 October 2021 3:03 pm
To: Pranil Wadan [redacted] Jamie Whyte <[redacted]
Cc: Juan Alvarez De Lugo [redacted]>; Mark Iszard [redacted]>; Kedan Li [redacted] Kevin Fan <[redacted]nz>; Masato Nakamura [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Brilliant – thanks Pranil.

I have also sought provision of the model for HW review (most recently through PRR00037660 Waterloo Reserve and BUN60382567 Stg 5B EW), with Woods agreement on the basis that model review will be used solely to inform Healthy Waters evaluation of the current consents. This is the purpose of the request, so I see no further barrier.

Are you able to provide the model for us? I am conscious the review will take time, so it would be good to get this underway.

Nāku noa, nā
Emily Afoa | Growth & Development
Healthy Waters | Infrastructure & Environmental Services
Phone 09 301 0101 I Mobile 021 2888 276
Auckland Council I Bledisloe House I Level 3, 24 Wellesley Street Auckland
Private Bag 92300 I Auckland 1142
Visit our website www.aucklandcouncil.govt.nz

From: Pranil Wadan [redacted]
Date: Wednesday, 6 October 2021 at 9:59 AM
To: Emily Afoa [redacted], Jamie Whyte [redacted]
Cc: Juan Alvarez De Lugo [redacted]>, Mark Iszard [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Thanks Emily,

Great, I think updating the SMP is the right thing to do in this instance, I'll provide you with a tracked changed version so you can verify/review the changes made.

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
[redacted]
woods.co.nz

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From: Emily Afoa [redacted]
Sent: Tuesday, 5 October 2021 6:51 pm
To: Pranil Wadan [redacted]>; Jamie Whyte [redacted]>
Cc: Juan Alvarez De Lugo [redacted]>; Mark Iszard [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Pranil,

I agree entirely – update to the SMP would certainly be cleaner. We actually thought the memo may be less onerous a request, but if you are happy to update the SMP then that is also our preference and we would be happy for you to proceed on that basis.

If possible, can you please provide a "tracked changes" version with the final "clean" version, so we have a clear record of the amendments made?

Happy to talk through if you prefer.

Nāku noa, nā
Emily Afoa | Growth & Development
Healthy Waters | Infrastructure & Environmental Services
Phone 09 301 0101 I Mobile 021 2888 276
Auckland Council I Bledisloe House I Level 3, 24 Wellesley Street Auckland
Private Bag 92300 I Auckland 1142
Visit our website www.aucklandcouncil.govt.nz

From: Pranil Wadan [redacted]
Date: Tuesday, 5 October 2021 at 12:32 PM
To: Jamie Whyte <[redacted], Emily Afoa [redacted]
Cc: Juan Alvarez De Lugo [redacted] Mark Iszard [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hi Emily,

Jamie forward this through to me, just reading through your comments and am wondering if instead of an addendum memo to address the Wainui Rd Bridge we just do an update to the SMP. I think going forward it would be much cleaner than having a separate addendum memo, however keen to hear your thoughts on this and how you would like us to proceed.

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
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From: Emily Afoa [redacted]>
Sent: Tuesday, September 28, 2021 6:41 PM
To: Jamie Whyte
Cc: Mark Iszard
Subject: SW Model Review & SMP Addendum - Milldale

Kia ora Jamie,

Thanks for the confirmation below – please provide the model for RC review.

Mark and I have discussed the implications of the model error correction. In particular, the updated water levels and the key amendment that predicted flood flows do not overtop the Wainui Road Bridge, in both existing and proposed conditions, and therefore it is appropriate to pass flood flows forward.

We request a memo summarising the model updates, the revised results, and the conclusions drawn. This will form an addendum to the adopted SMP to amend the now incorrect values in Section 6.3 of the SMP, and in particular 6.3.2 Wainui Road Bridge (Waterloo Creek Crossing).

I anticipate this addendum would reflect the responses previously provided and directly reference the elements requiring update within the SMP. Previous correspondence attached for reference for Stage 5B. Refer Item 11 of the Woods s92 response, corresponding to Item 5 in HW table.

Nāku noa, nā
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From: Jamie Whyte [redacted]
Date: Thursday, 16 September 2021 at 1:59 PM
To: Emily Afoa [redacted]
Cc: Mark Iszard [redacted]>
Subject: RE: PRR00037660 Waterloo Reserve - Healthy Waters pre-application notes
Hi Emily,
We have said the model will be made available for purposes of processing the consent. No concerns here.

Happy to talk anytime. Tuesday works.

Cheers

Jamie Whyte
Engineer - Senior Associate
B.Surv, RPSurv, MNZIS, AMEngNZ
[redacted] | [redacted]
[redacted]
woods.co.nz

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From: Emily Afoa <[redacted]
Sent: Thursday, 16 September 2021 11:45 am
To: Jamie Whyte [redacted]
Cc: Mark Iszard [redacted]
Subject: Re: PRR00037660 Waterloo Reserve - Healthy Waters pre-application notes

Kia ora Jamie,

Can we please book a time to chat briefly about the request below that 'the model will be reviewed solely for the purpose of the evaluation of the resource consent application'. It would be good to have clarity on your concerns here.

Are you available for a half hour within the window of Tues 21 12.30-2pm. Both Mark and I are free (unless there is anything not in Mark's calendar!).

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From: Jessica Rainford [redacted]
Sent: Monday, 6 September 2021 12:29 pm
To: Masato Nakamura [redacted]
Cc: Jamie Whyte [redacted]; Tim Rickards [redacted]>; Euan Williams [redacted] Juan Alvarez De Lugo <[redacted]
Subject: RE: PRR00037660 Waterloo Reserve - Healthy Waters pre-application notes

Hi Masato,

Please see below (in blue) interim responses to the points raised Healthy Waters.

Feel free to give me a call back to discuss when it suits.

Kind regards,

Jessica Rainford
Intermediate Planner and Urban Designer
BSc(Hons), MUrbPlan(Hons), MUrbDes, Int. NZPI
[redacted]
woods.co.nz

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From: Masato Nakamura [redacted]
Sent: Friday, 25 June 2021 1:00 pm
To: Euan Williams [redacted]
Cc: Jamie Whyte [redacted]; CONNOLLY, Sean [redacted]; Junitta Fretton [redacted]; Jessica Rainford [redacted] Samuel Holmes [redacted]; Emily Afoa [redacted]
Subject: RE: PRR00037660 Waterloo Reserve - Notes

Good Afternoon Euan,

Further to the notes below, please see some high level feedback from Healthy Waters in relation to Waterloo Reserve.

- Primary element will be confidence in the hydrologic modelling informing the proposed design. To this effect HW has reached out to Woods, to have the ability to review the model and streamline the review process of future resource consents. Woods' hydrologic model may be provided for review following written confirmation from Healthy Waters hat the model will be reviewed solely for the purpose of the evaluation of the resource consent application.
- The Landscape concept plan refers to "Wetland / riparian area". From the perspective of Healthy Waters, these provide quite different functions (and form), which should be clarified through the application material. The proposed design will not include stormwater management devices. The resource consent application will confirm this.
- It is requested that clear cross-sections are provided in the application material for the stream corridor, including riparian margins with bank grades labelled, and depicting baseflows, 10-yr, and 100-yr flows to demonstrate the operation of the system and to enable consideration of risk / O&M access etc. These should include sections where the boardwalks / stream crossings are proposed, similar to those provided in Sheet E. This information will be provided as part of the resource consent application.
- It is noted that achieving the water quality / hydrology mitigation expectations of the SMP using devices that are mutually agreeable to Healthy Waters and Auckland Transport requires changes to the approach to stormwater management applied in previous stages of the development. It is recommended that the applicant team look to minimise in road raingardens and consider potential for distributed communal systems within the future scheme plans. Noted.
- It is acknowledged that SW management of the wider development is not part of this application, but Waterloo Reserve may provide part of this opportunity hence raising this now. Optioneering to reach the proposed recommended SW solution should be included within future application material. Recognising the importance of the reserve's recreational function, and the fact the stormwater management in this catchment is already designed and accounted for (in Stages 4B and 4D), the management of stormwater flows from the wider development will not be addressed as part of this resource consent application.
- Please confirm the proposed land title, and whether this is it intended to vest as recreation reserve, or something else. The first position of Healthy Waters is that we only consider land that has a specific SW function that cannot be carried out in private ownership i.e. communal SW Management devices. The resource consent application will confirm this.

Kind Regards,

Masato Nakamura | Principal Project Lead | Int.NZPI
Premium Resource Consents
Ph: (09) 353 9352 | Mob: (+64) 021 985 272
Auckland Council, Level 6, 135 Albert Street, Auckland
Visit our website: aucklandcouncil.govt.nz

From: Masato Nakamura
Sent: Tuesday, 22 June 2021 2:55 pm
To: Euan Williams [redacted]
Cc: Jamie Whyte [redacted] CONNOLLY, Sean [redacted] Junitta Fretton <[redacted]; CONNOLLY, Sean [redacted] Graham Ussher [redacted] Tommo Cooper-Cuthbert [redacted]; Jessica Rainford <[redacted] Samuel Holmes [redacted]
Subject: RE: PRR00037660 Waterloo Reserve - Notes

Good Afternoon Euan,

Please see below the notes from the meeting for Waterloo Reserve.

Any questions, please let me know.

Cheers,
Masato Nakamura

Proposal and background

- The proposed reserve sits within Stage 4, to the south of this overall area. The reserve is one of the key features of this overall development in Milldale, as well as being a key feature within the Wainui Precinct.
- The reserve will be divided into two sections by the stream and its landscaped banks.
- The stream is proposed to be naturalisation by adding bends and landscaped banks.
- This will technically be considered a diversion of the stream, although its benefits are acknowledged.
- Landscaping, paths, bridges and other structures for recreation and amenity is proposed across the reserve.

Parks

- Parks generally support the proposal. A key question raised in relation to the design rationale to provide three bridges in close proximity to each other.
- The proposal will involve some changes in the drainage easement. There will need to be clarity over the difference in the quantum as existing and proposed. This is expected to be the same or similar in terms of quantum.
- A meeting will be held between Parks and FHLDL team. There will be further presentations to the Local Board.
- It is noted here that Parks specialist Jeff Lyford has been in discussion with the applicant team and is familiar with the park design.
- FHLDL will need to initiate IFA discussions in relation to this reserve.
- As information requirements, it is recommended that the application includes cross sections, planting schedules, fencing and retaining wall location and details. Generally, it is expected that fencing and retaining walls remain low, allowing for visual permeability across the park. Any details developed in relation to the playground is also welcomed to be provided.

Ecology

- Naturalisation may result in an SEV score that still require additional offset / mitigation. Further assessment and detail to be provided so that there is a level of agreement between the specialists.
- The officers welcome any seasonal wetlands to be included in the proposal. Examples can be shared and circulated to the FH team.
- The proposal is generally supported, subject to the details being provided.
- It was highlighted that there is a presence of some wetlands downstream of the works area. Clearance distances to these features will need to be clarified in the application documents.

Planning and Other

- Interface with stage 4 requirements in terms of landscaping must be considered. Whilst we are open to changes, we should be mindful of any requirements to for a variation as necessary.
- In terms consenting strategy, stage 4 did not involve stream works. Preference is that there is a fresh resource consent noting scope issues if this was a variation.
- Whilst it is accepted that some of the information will be high level, noting that details are to be refined with Parks and the Local Board, the application documents should have sufficient detail for any relevant consenting matters under the underlying zone and other Auckland Wide Rules.
- Lodgement uncertain, but expected to be some weeks away.

Healthy Waters

- Comments are being sought to identify whether there are any high level concerns over maintenance, flooding and stormwater management.

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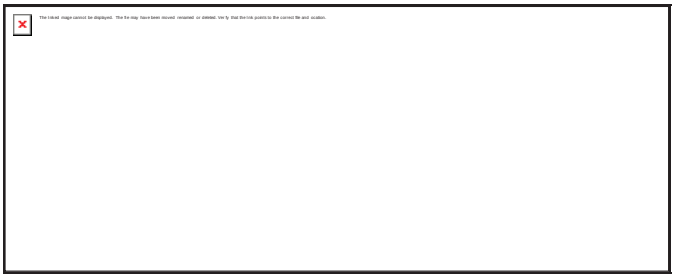

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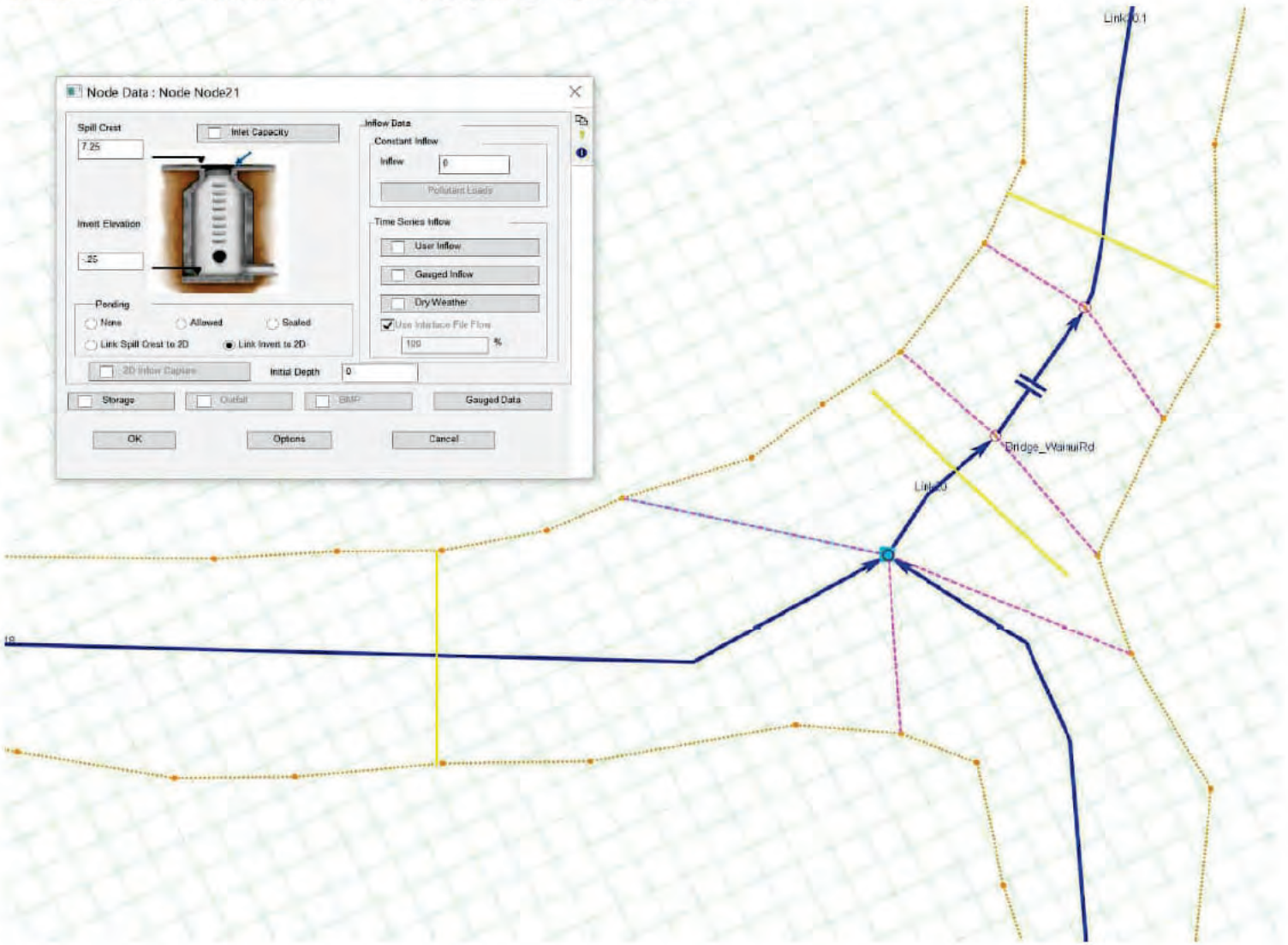
Model Metadata		HW List of questions
Hydrology Method	SCS Unit Hydrograph method - 'Flood Model Build Report Wainui East' Section 3.3	Ok
LiDAR Source (2016, 2013, 2006-2010, etc.)	Auckland Council LiDAR 2013 - 'Flood Model Build Report Wainui East' Section 3.2.1 , note this has been updated to LiDAR 2016 and model design surfaces for more recent development stages	Ok
Any DEM modifications? If yes, describe in more detail.	The Flood Model Build Report Wainui East Section 3.2.1 and Section 3.2.2 refer to using multiple terrain sets and grids, however this was corrected in later models and will be updated in the next Waiunui East - Stormwater Management Plan version.	Does it mean there is no DEM modification applied in MPD scenario? In the report sent in Dec Future scenario has 12D design surface, please explain. No legend on Figure 3, please add in.
Mesh Type	Grid	Ok
Mesh Size	3m grid size	Ok
Soakage representation	N/A	Ok
Pipe network modelled (e.g. all pipes >=300mm, etc.)	No existing public stormwater network.	Ok
Key structures modelled? Describe type and number	22 Culverts and 7 Bridges. Further details in Section 3.2.4 and Appendix B of the 'Flood Model Build Report Wainui East'	
Open channel / stream representation description	Open channels were represented as 1D links using full topographical survey, hydrographic survey and LiDAR data. 'Flood Model Build Report Wainui East' Section 3.2.3 and Appendix B, D and K.	Could you please provide surveyed cross sections for spot checks please?
MPD representation (Unitary Plan, District Plan, etc.)	Proposed Auckland Unitary Plan (PAUP). Rural Urban Boundary (RUB) zoned future urban at 65% impervious coverage. 'Flood Model Build Report Wainui East' Section	Ok
Climate change allowances	Yes, 2.1 °C	Ok
Tide Boundary Level (current and future)	MHWS of 1.258 (Existing) + 0.5 sea level rise allowance (Future) - 'Flood Model Build Report Wainui East' Section 3.5.2 and Appendix H	MHWS10,NIWA (July 2012) for Hibiscus Coast is 1.42 (Existing) and dur to the current climate change +1m should be used as the best practice. Please see the attached PDF, Orewa site should be using 1.44 as existing and 2.44 for future scenarios.
Simulation Duration (24hrs, etc.)	24 Hours	Ok
Simulation Timesteps	1 second	Ok
Model Run Time (How long did it take to run)	Approx 8 hours	Ok
		Other queries
		Please send modelling report in PDF
		Please refer footnote (2) in Table 8
		Page 30 Figure 8 please add overview map for location reference
		What is the consideration of 50% blockage scenario assessment?
		Modelling conclusion draw based on Argent Lane SHA, what is the difference between MPD and Argent Lane while modelling? Any surface changes?
		Could not load the rainfall values and profiles, please show me during meeting.
		How does the contraction and expansion losses been modelled in bridges?
		What is the consideration for the initial or permanent water levels and overtopping arrangements for Highgate SW Pond?

		Any use of weir /Orifice units in the model. Comment on the their representation and coefficients used if any.

Wood's Reponse 16/02/2022	Wood's Response 22/03/2022	Additional HW Comments 05/04/22	Wood's Response 02/05/2022
Closed			
Closed			
DEM Modifications have been applied depending on the stage being accessed. These have all be provided to council with each resource consent.	Closed		
Closed			
Closed			
Closed			
Closed			
Attached - Note that the survey data inclusion was reviewed as part of the model build process with HWs and survey locations agreed at the time. The data was incorporated in the DEM surface. Survey files have been uploaded to One Drive link.	Closed		
Discussed and closed			
Discussed and closed		Please provide3.8 °C results	3.8 C results provided. Closed
Tailwater level used was agreed with Healthy Waters at the time, 0.50m was best practice at the time. Models to be re run with updated MHWS boundary conditions. Results to be discussed once available.	Models updated and run including the newly provided MHWS boundary condition (2.44 m future scenarios). No effects observed at the development site or the Wainui Bridge (No overtopping). Results presented and discussed in the meeting. Closed		
Closed			
Closed			
Closed			
The 'Flood Model Build Report Wainui East' has been uploaded to the One Drive link.	Closed		
Footnote 2 refers to - "Future Rainfall expected year 2100" aligned with MfE CC Change allowance 2.1°C Reference will be added in the body of the report when updated.	Closed		
Referring to the location of the Wainui Road crossings. Figure to be updated in the Model Build Report	Closed		
Blockage assessments are undertaken on a stage by stage assessment basis - These have been previously supplied for the development stages to understand secondary flow paths.	Closed		
MPD allowed for FUZ whist the SHA only related to the area being sought for rezoning at the time. These scenarios were agreed and disucssed with HWs at the time, to ensure that effects of having Argent Lane SHA were understood.	Closed		
Rainfall values and profiles shown and accepted during the meeting.	Closed		
Models to be updated to allow for losses in bridges. Entry loss = 0.5 Exit loss = 1.0 Results to be discussed once available after models are re run.	Models updated and run including entry/exit losses at Bridges. Water levels checked upstream of Wainui Bridge, slight increase due to losses applied but still no overtopping (Refer to table in separate sheet). Closed		
Please refer to Section 3.2.4.3 - Inflows from highgate pond were taken from the HEC HMS Time Series. This was discussed and agreed with the technical specialists at the time. No updates in the model required.	Closed		

Model to be updated to represent weirs in structures to represent overflows where not coupled to 2D. Results to be discussed once available after models are re run.	Models updated and run including weirs represented in either 1D or 2D. 1D/2D interce layers included at relevant structures. Model results and weir representation discussed in the meeting. Closed		
		Subcatchment Orewa_Contri6;Orewa_Contri7; Orewa_Contri8; Node 28 did not model future urban imperviousness	Subcatchment imperviousness increased to 65%. Closed
		Please provide survey photo for Wainui Bridge. Does Wainui bridge has any piers in the stream - non modelled	There are no piers at the Wainui bridge and therefore not included in the model. The bridge has been surveyed and it was confirmed during initial site walkover. Closed
		Roughness: 1D - river bed roughness 0.06 too high (do you have survey photos?). The river bed is mainly clay and earth, should consider a lower roughness. 2D - Road is 0.014, a bit low consider rural road mostly. (recommending 0.02-0.03) but impervious left as zero, please correct. 2D-pasture-0.08, ok.	1D roughness in river bed channels updated to 0.03 along agreed areas. 2D roughness to remain unchanged as the areas will be developed at MPD. Closed
		Culvert mannings too high, please correct.	Arch culverts along P9 roughness updated to 0.03, Closed

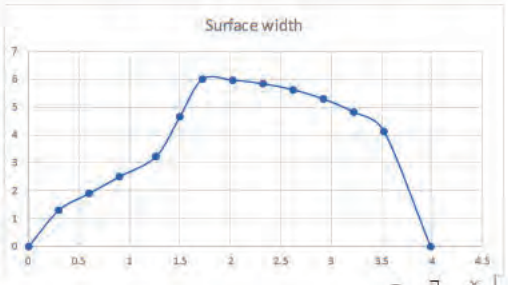
please explain - link to invert. Wouldn't it doube counting the flow? Why not link Spill crest to 2D? Spill crest too high as well.

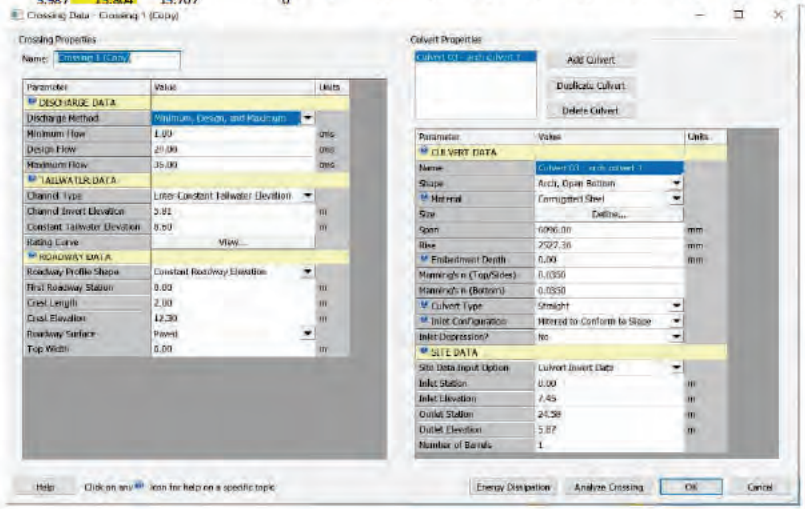


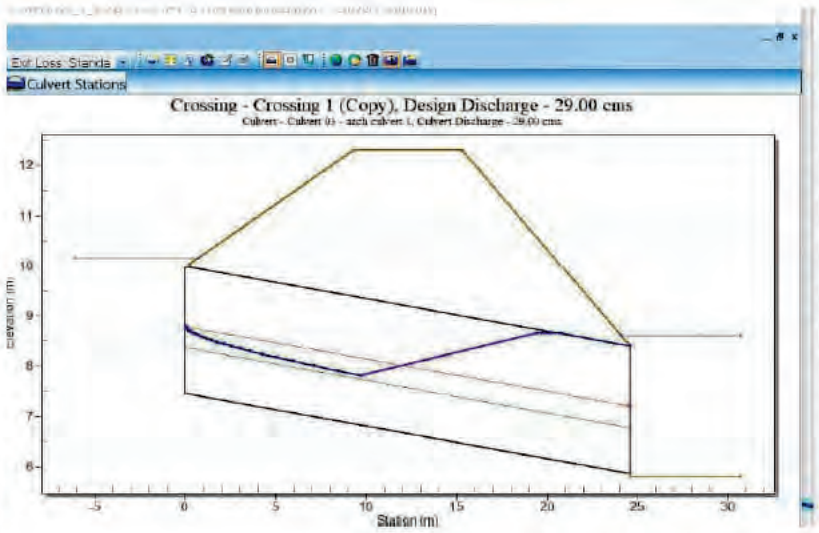
Flow checks via HY-8

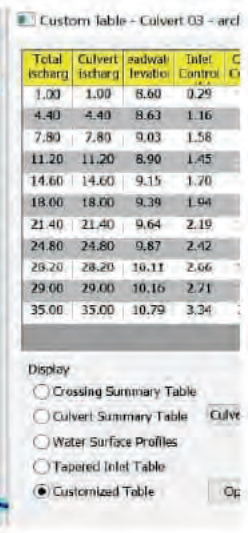
Link60.1	Arch culvert - 6m span and 2.26m max height			
Arch Culvert 1)	us	7.45	length	24.58
	ds	5.87	n	0.06 too high
	us	10		
peak water level	ds	8.6		
Flow		29.2447	the head water is sensitive to inlet configuration, the modelled level is slightly lower than HY-8 simulation	
velocity		3.1		

Depth	area	WP	Surface width
0	0	0	0
0.3	0.3	1.55	1.301
0.6	0.781	2.398	1.902
0.9	1.441	3.247	2.502
1.262	2.478	4.271	3.226
1.5	3.415	5.775	4.653
1.724	4.61	7.193	5.997
2.024	6.404	7.793	5.959
2.324	8.175	8.407	5.833
2.624	9.895	9.046	5.615
2.924	11.533	9.731	5.287
3.224	13.053	10.494	4.817
3.524	14.401	11.411	4.125
3.987	15.804	15.707	0





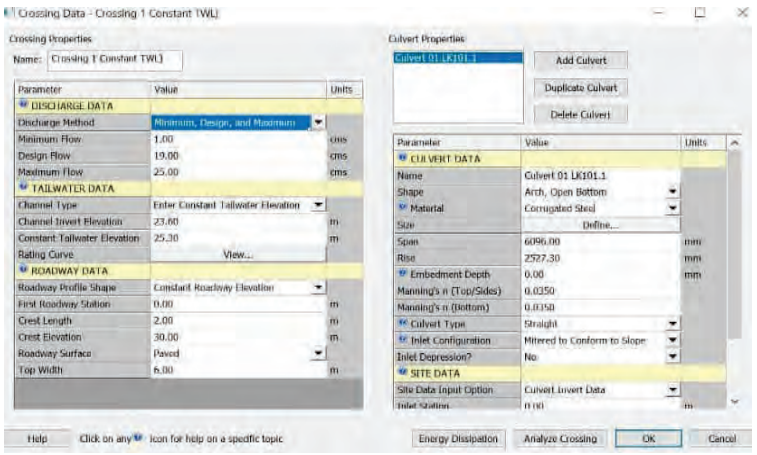


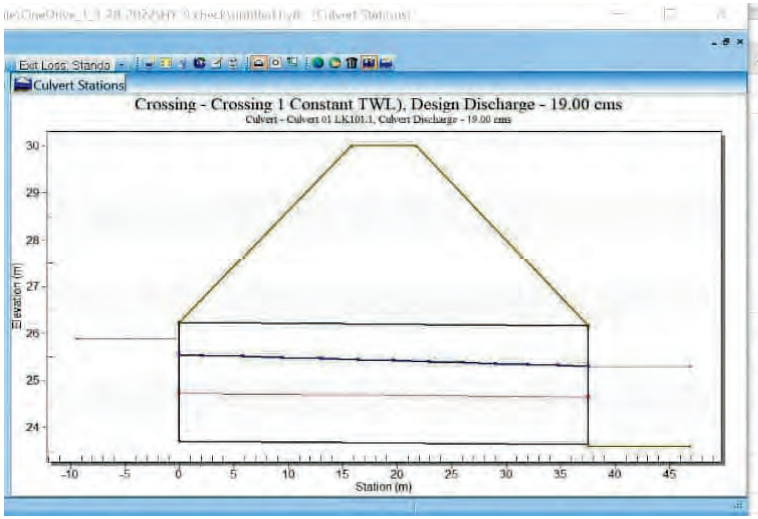


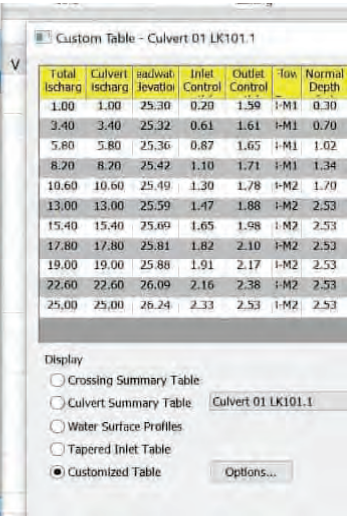
LK101.1	Arch culvert - 6m span and 2.26m max height			
	us	23.712	length	37.53
	ds	23.64	n	0.06 too high
peak water level	us	26.3		
	ds	25.3		
Flow		18.8	with same HW, HY predict flow of more than 25cms	

Depth	area	WP	Surface width
0	0	0	0
0.3	0.294	1.519	1.257
0.7	0.945	2.611	2
0.9	1.465	4.886	3.2
1.2	2.695	5.773	5
1.365	3.602	6.833	5.99
1.665	5.398	7.422	5.959

1.965	7.169	8.036	5.834
2.265	8.889	8.675	5.616
2.565	10.527	9.359	5.289
2.865	12.047	10.122	4.819
3.165	13.397	12.318	4.129
3.629	14.806	16.616	0

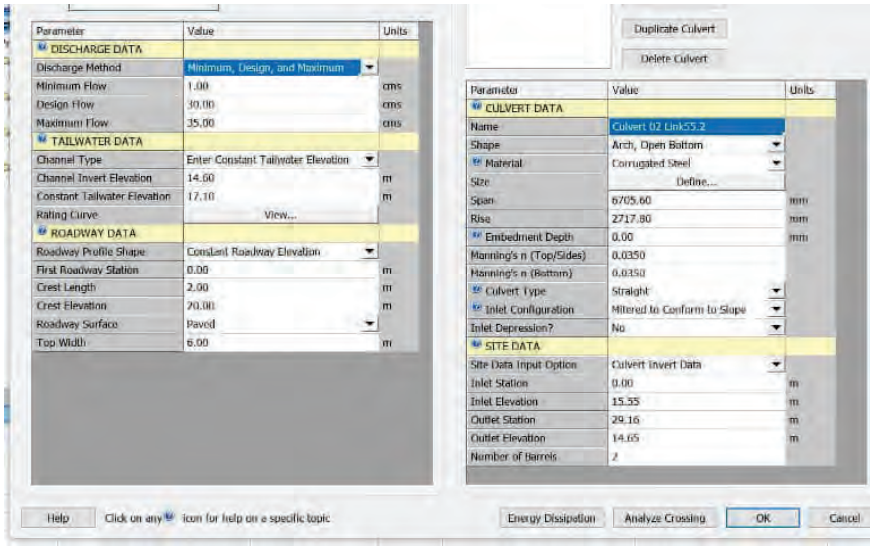






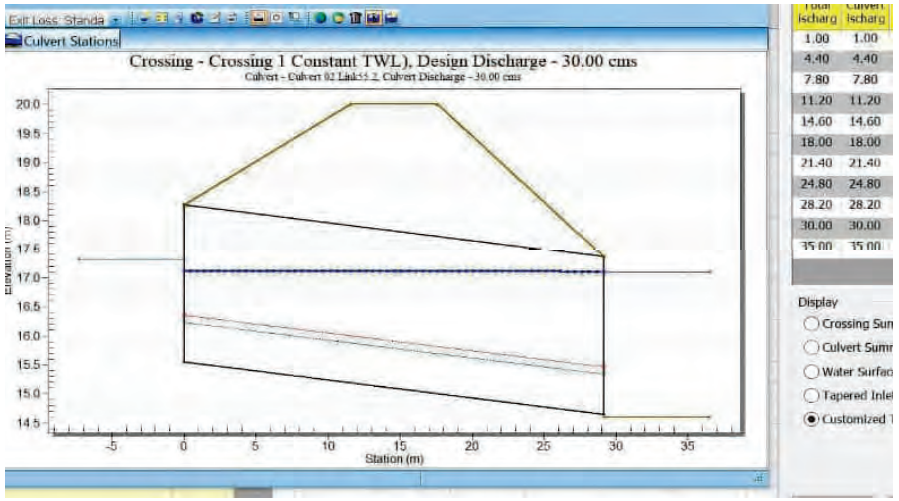
LINK55.2	Arch culvert - 14.5m span and 3.26m max height		
	us	15.55	length 29.16
	ds	14.65	n 0.06 too high
peak water level	us	18.1	
	ds	17.1	
Flow		25	oversized culvert
velocity		2	

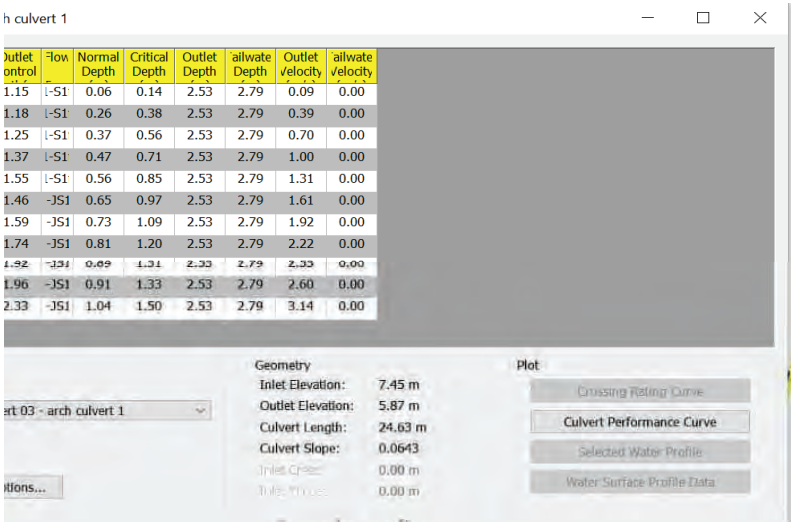
0	0	0	0
0.343	0.169	1.283	0.985
0.368	0.195	1.394	1.075
0.4	0.23	1.475	1.121
0.412	0.243	1.552	1.193
0.537	0.405	1.878	1.399
1.052	1.394	3.344	2.441
1.184	1.73	3.677	2.636
1.895	5.101	8.253	6.845
2.119	6.86	10.363	8.907
2.436	10.263	14.046	12.456
2.596	12.337	15.244	13.468
3.447	23.466	17.125	12.67
4.094	31.292	19.414	10.898
4.725	35.075	30.39	0

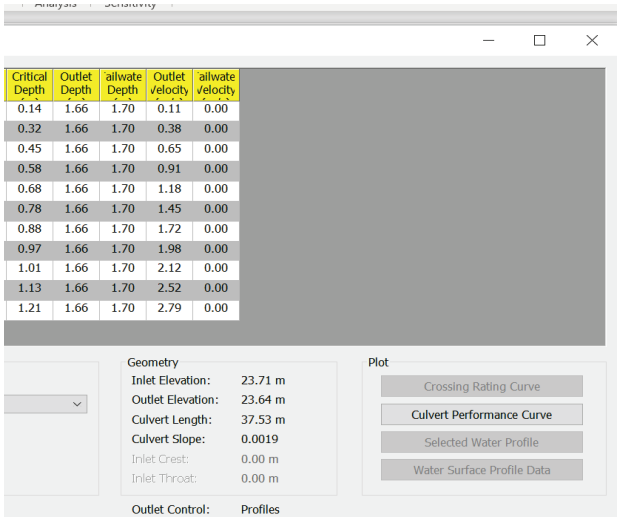


Parameter	Value	Units
DISCHARGE DATA		
Discharge Method	Minimum, Design, and Maximum	
Minimum Flow	1.00	cms
Design Flow	30.00	cms
Maximum Flow	35.00	cms
TAILWATER DATA		
Channel Type	Enter Constant Tailwater Elevation	
Channel Invert Elevation	14.60	m
Constant Tailwater Elevation	17.10	m
Rating Curve	View...	
ROADWAY DATA		
Roadway Profile Shape	Constant Roadway Elevation	
First Roadway Station	0.00	m
Crest Length	2.00	m
Crest Elevation	20.00	m
Roadway Surface	Paved	
Top Width	6.00	m

Parameter	Value	Units
CULVERT DATA		
Name	Culvert 02 Link55.2	
Shape	Arch, Open Bottom	
Material	Corrugated Steel	
Size	Define...	
Span	6705.60	mm
Rise	2717.80	mm
Embedment Depth	0.00	mm
Manning's n (Top/Sides)	0.0350	
Manning's n (Bottom)	0.0350	
Culvert Type	Straight	
Inlet Configuration	Mitered to Conform to Slope	
Inlet Depression?	No	
SITE DATA		
Site Data Input Option	Culvert Invert Data	
Inlet Station	0.00	m
Inlet Elevation	15.55	m
Outlet Station	29.16	m
Outlet Elevation	14.65	m
Number of Barrels	2	




h culvert 1
Outlet Control
Flow
Normal Depth
Critical Depth
Outlet Depth
Tailwater Depth
Outlet Velocity
Tailwater Velocity
1.15 I-S1 0.06 0.14 2.53 2.79 0.09 0.00
1.18 I-S1 0.26 0.38 2.53 2.79 0.39 0.00
1.25 I-S1 0.37 0.56 2.53 2.79 0.70 0.00
1.37 I-S1 0.47 0.71 2.53 2.79 1.00 0.00
1.55 I-S1 0.56 0.85 2.53 2.79 1.31 0.00
1.46 -JS1 0.65 0.97 2.53 2.79 1.61 0.00
1.59 -JS1 0.73 1.09 2.53 2.79 1.92 0.00
1.74 -JS1 0.81 1.20 2.53 2.79 2.22 0.00
1.96 -JS1 0.91 1.33 2.53 2.79 2.60 0.00
2.33 -JS1 1.04 1.50 2.53 2.79 3.14 0.00
ert 03 - arch culvert 1
tions...
Geometry
Inlet Elevation: 7.45 m
Outlet Elevation: 5.87 m
Culvert Length: 24.63 m
Culvert Slope: 0.0643
Inlet Crest: 0.00 m
Inlet Throat: 0.00 m
Plot
Crossing Rating Curve
Culvert Performance Curve
Selected Water Profile
Water Surface Profile Data



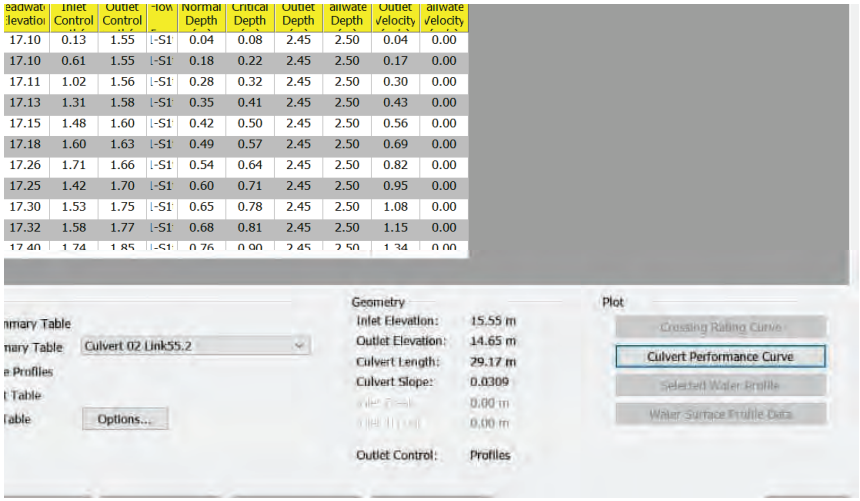
Critical Depth	Outlet Depth	ailwate Depth	Outlet velocity	ailwate velocity
0.14	1.66	1.70	0.11	0.00
0.32	1.66	1.70	0.38	0.00
0.45	1.66	1.70	0.65	0.00
0.58	1.66	1.70	0.91	0.00
0.68	1.66	1.70	1.18	0.00
0.78	1.66	1.70	1.45	0.00
0.88	1.66	1.70	1.72	0.00
0.97	1.66	1.70	1.98	0.00
1.01	1.66	1.70	2.12	0.00
1.13	1.66	1.70	2.52	0.00
1.21	1.66	1.70	2.79	0.00

Geometry

Inlet Elevation:	23.71 m
Outlet Elevation:	23.64 m
Culvert Length:	37.53 m
Culvert Slope:	0.0019
Inlet Crest:	0.00 m
Inlet Throat:	0.00 m
Outlet Control:	Profiles

Plot

- Crossing Rating Curve
- Culvert Performance Curve
- Selected Water Profile
- Water Surface Profile Data



eadwat levatio	Inlet Control	Outlet Control	low	Normal Depth	Critical Depth	Outlet Depth	allwate Depth	Outlet Velocity	allwate Velocity
17.10	0.13	1.55	-S1	0.04	0.08	2.45	2.50	0.04	0.00
17.10	0.61	1.55	-S1	0.18	0.22	2.45	2.50	0.17	0.00
17.11	1.02	1.56	-S1	0.28	0.32	2.45	2.50	0.30	0.00
17.13	1.31	1.58	-S1	0.35	0.41	2.45	2.50	0.43	0.00
17.15	1.48	1.60	-S1	0.42	0.50	2.45	2.50	0.56	0.00
17.18	1.60	1.63	-S1	0.49	0.57	2.45	2.50	0.69	0.00
17.26	1.71	1.66	-S1	0.54	0.64	2.45	2.50	0.82	0.00
17.25	1.42	1.70	-S1	0.60	0.71	2.45	2.50	0.95	0.00
17.30	1.53	1.75	-S1	0.65	0.78	2.45	2.50	1.08	0.00
17.32	1.58	1.77	-S1	0.68	0.81	2.45	2.50	1.15	0.00
17.40	1.74	1.85	-S1	0.76	0.90	2.45	2.50	1.34	0.00

Figure 3: Existing Contours

Figure 8: Wainui Road Crossings

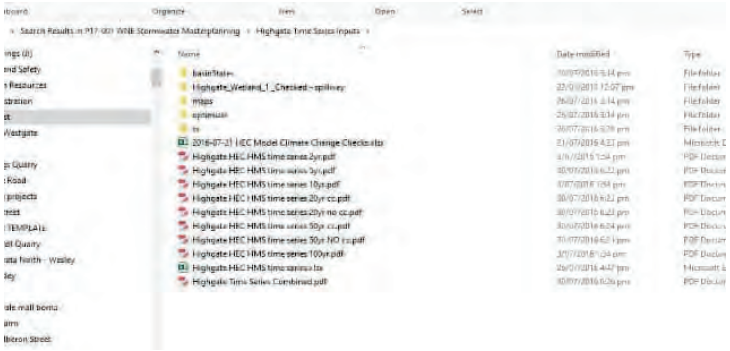
3.2.4.3 Highgate Stormwater Pond

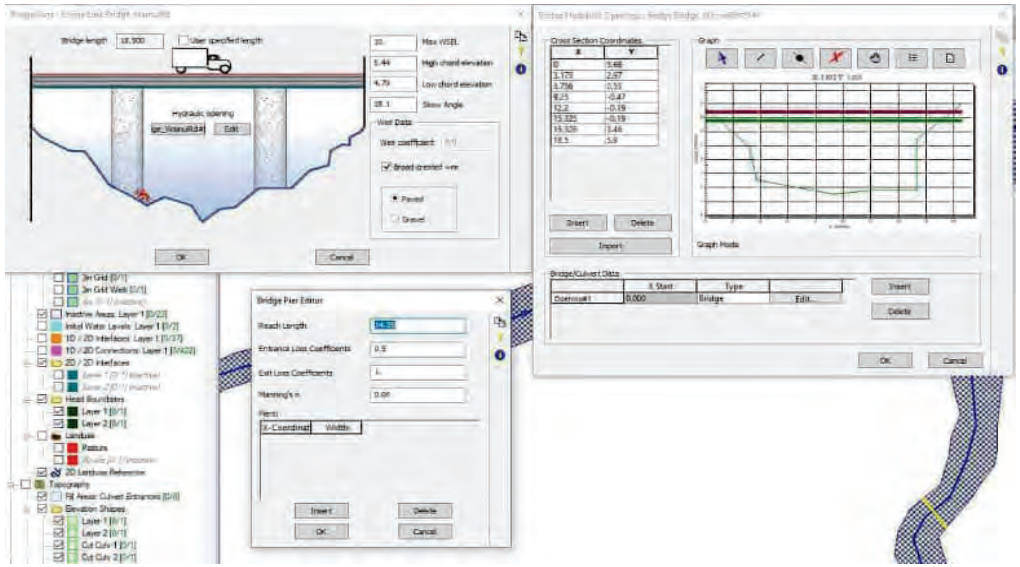
User inflows from the neighbouring Highgate Stormwater pond was included in the model, The Highgate development included the construction of a stormwater pond that discharges flows via a culvert into a watercourse within the Argent Lane SHA. The culvert is located under the Northern Motorway and has been surveyed as a 1600mm diameter circular culvert.

The stormwater pond has been modelled based on the information outlined in the Highgate Stormwater Pond Design report (Highgate catchment One - Stormwater Design Report, December 2014) along with updated design information provided by the project engineers who undertook the design at Woods. The report states that rainfall depths with allowance for climate change have been applied to a TP108 rain profile. The Highgate report modelled the 2, 10, 100 and 1000 year ARI events. The XP Storm model inputs the time series data as a user inflow hydrograph for the applicable ARI event for the ED, MPD and Argent Lane SHA scenarios.

The XP Storm model inputs this information as a user inflow hydrograph. The HEC-HMS model was re-simulated for the 5, 20 and 50 year ARI event as these events were not considered as part of the Highgate design. The 20 year and 50 year ARI events were inputted with the appropriate existing and future rainfall profiles.

Figure 4 shows the location of the stormwater pond. A copy of the time series data used in the model can be found in Appendix C.



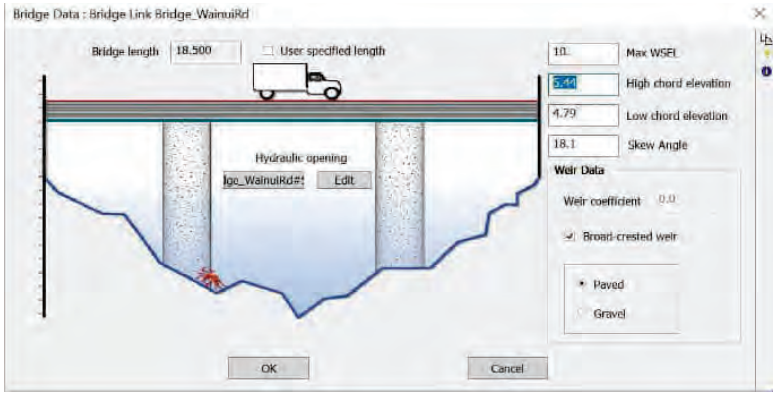

Bridge length
User specified length
Max Width
High chord elevation
Low chord elevation
Skew Angle
Hydraulic Modelling
Edit
Weir Data
Weir coefficient
Broad crested weir
Paved
Gravel
OK
Cancel
Cross Section Coordinates
Graph
Insert
Delete
Import
Graph Mode
Bridge/Culvert Data
Type
Bridge
Edit
Bridge Pier Editor
Reach Length
Entrance Loss Coefficients
Exit Loss Coefficients
Manning's n
Piers
X-Coordinate
Width

2.1cc

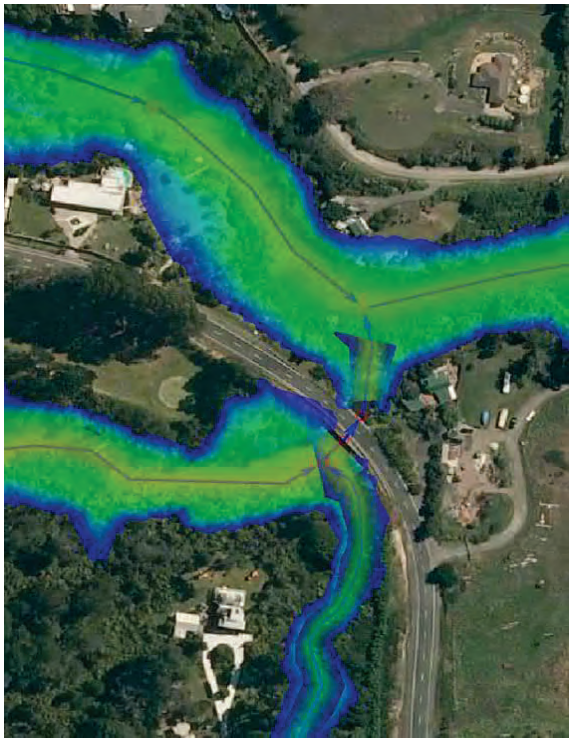
Wainui Bridge US Water Levels	SMP Model	Updated Model	
	SMP MHWS (1.758 m)	SMP MHWS (1.758 m)	Updated MHWS (2.44 m)
10 yrs	3.91 m	4.05 m	4.16 m
10 yrs (Updated)			3.82 m
100yrs	5.03 m	5.23 m	5.28 m
100yrs (Updated)			4.83 m

3.8cc

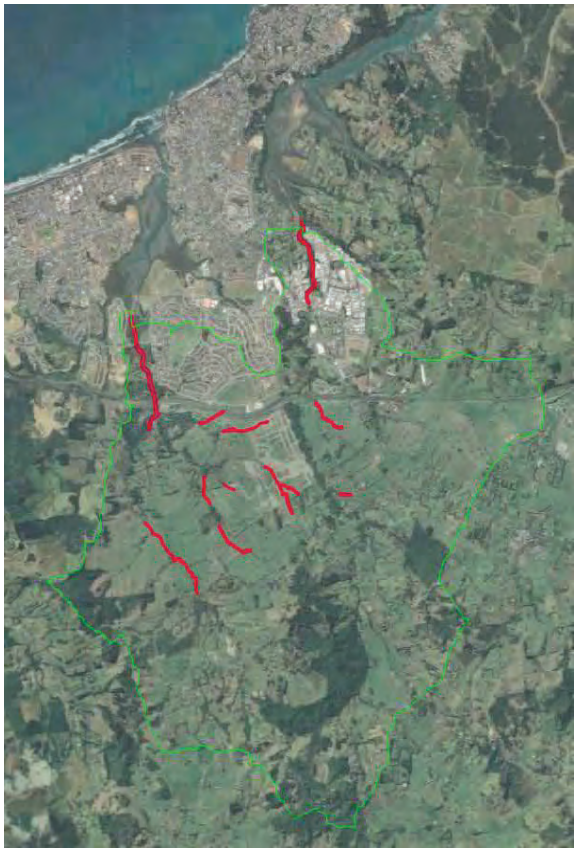
Wainui Bridge US Water Levels	SMP Model	Updated Model	
	SMP MHWS (1.758 m)	SMP MHWS (1.758 m)	Updated MHWS (2.44 m)
10 yrs (Updated)	N/A	N/A	4.25 m
100yrs (Updated)	N/A	N/A	5.36 m



Not enough freeboard



3.8 C 100 yrs model results



Bridge Link roadway overtopping can be represented as a Broad-crested weir with the following coefficient attributes based on the **FHWA Design Manual.**

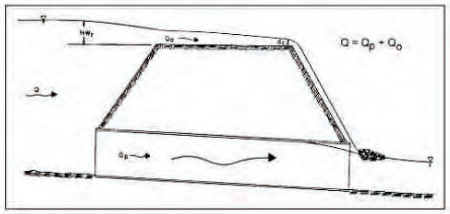


Figure 1: Roadway overtopping

Roadway overtopping will begin when the headwater rises to the elevation of the roadway (Figure 1). The overtopping will usually occur at the low point of a sag vertical curve on the roadway. The flow will be similar to flow over a broad crested weir. Flow coefficients for flow overtopping roadway embankments are found in HDS No. 1, Hydraulics of Bridge Waterways, as well as in documentation of HY-7, the Bridge Waterways Analysis Model. Curves from the Bridge Waterways Analysis Model reference are shown in Figure 2 below. Figure 2-A is for deep ovetopping, Figure 2-B is for shallow overtopping, and Figure 2-C is a correction factor for downstream submergence. The equation below defines the flow across the roadway.

$Q_O = C_d L H W_r^{1.5}$

Where:

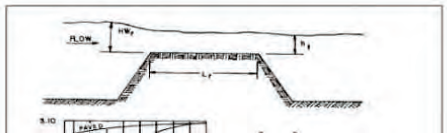
Q_O = the overtopping flow rate in m^3/s (ft^3/s)

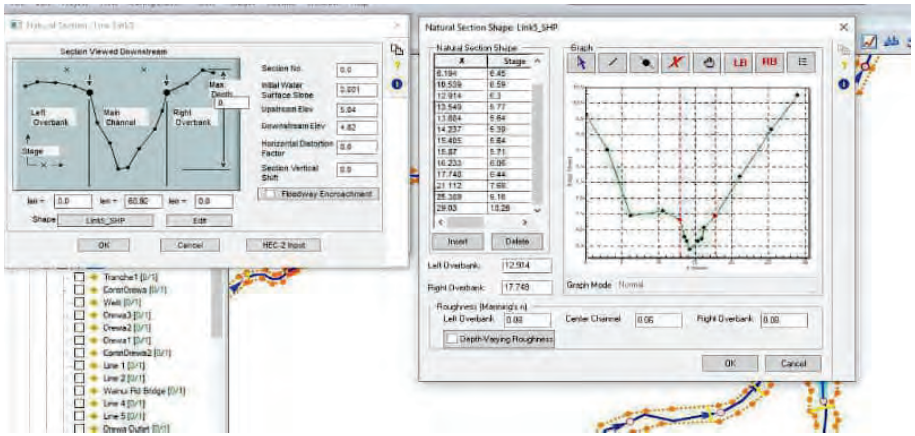
C_d = the overtopping discharge coefficient (for use in SI units, see note below)

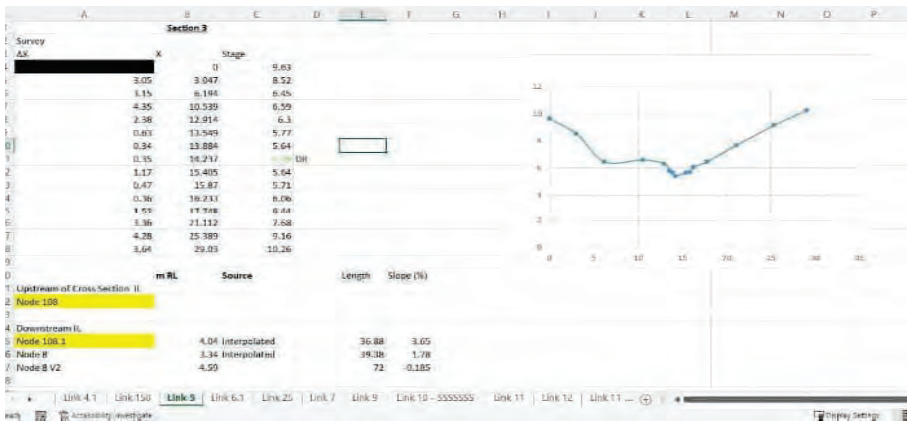
L = the length of the roadway crest, in m or ft

HW_r = the upstream depth, measured from the roadway crest to the water surface upstream of the weir drawdown, in m or ft.

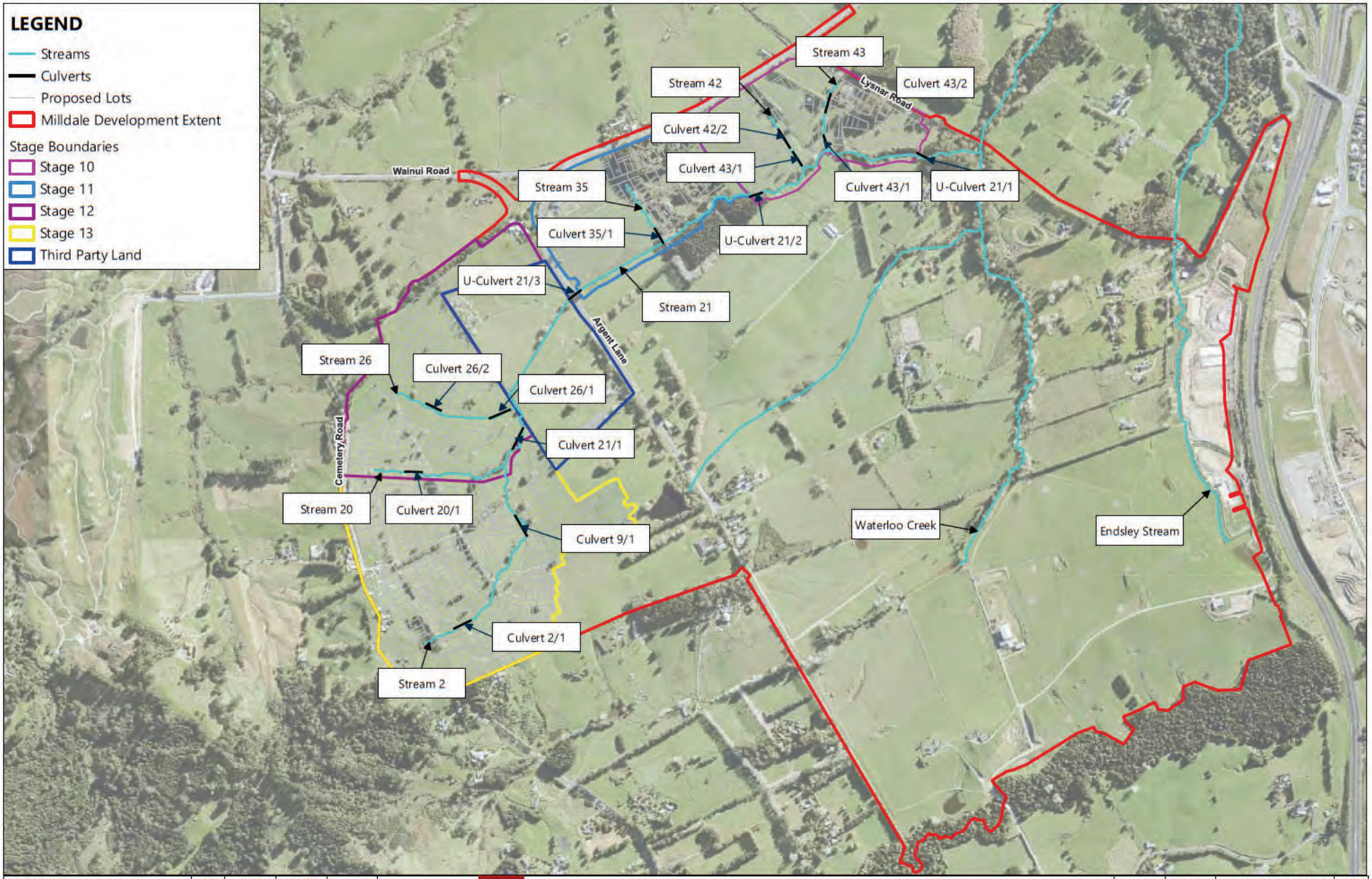
⚠ C_d is determined from Figure 2, and other English unit research must be corrected by a factor of 0.552 [C_d (SI) = 0.552 (C_d English)]




Natural Section Shape: Link5_SHP
Section Viewed Downstream
Left Overbank
Main Channel
Right Overbank
Stage
Section No.
Initial Water Surface Slope
Upstream Elev
Downstream Elev
Horizontal Distortion Factor
Section Vertical Shift
Floodway Encroachment
Shape
Link5_SHP
Edit
OK
Cancel
HEC-2 Input
Natural Section Shape
Insert
Delete
Left Overbank:
12.914
Right Overbank:
17.748
Graph
Graph Mode
Normal
Roughness (Manning's n)
Left Overbank
0.03
Center Channel
0.05
Right Overbank
0.03
Depth-Varying Roughness
OK
Cancel


Section 3
Survey
ΔX
X
Stage
0 9.63
3.05 3.047 8.52
3.15 6.194 6.45
4.35 10.539 6.59
2.38 12.914 6.3
0.83 13.549 5.77
0.34 13.884 5.64
0.35 14.217 DR
1.17 15.405 5.64
0.47 15.87 5.71
0.36 16.231 6.06
1.65 17.748 6.44
3.36 21.112 7.68
4.28 25.389 9.16
3.64 29.03 10.26
m RL
Source
Length
Slope (%)
Upstream of Cross Section II
Node 108
Downstream IL
Node 108.1 4.04 Interpolated 36.88 3.65
Node 8 3.34 Interpolated 39.38 1.78
Node 8 V2 4.59 72 -0.185
Link 4.1
Link 158
Link 5
Link 6.1
Link 25
Link 7
Link 9
Link 10 - SSSSSSS
Link 11
Link 12
Link 13

Appendix C – Overall Site Plan and U-Culvert Sections



REVISION DETAILS		INT	DATE	SURVEYED	-
1.0	For Information	-	05/02/2025	DESIGNED	-
-	-	-	-	DRAWN	RK
-	-	-	-	CHECKED	
				APPROVED	-

8 NUGENT STREET, GRAFTIN, AUCKLAND

WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Site Plan
Stages 10-13

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 1 OF 1	

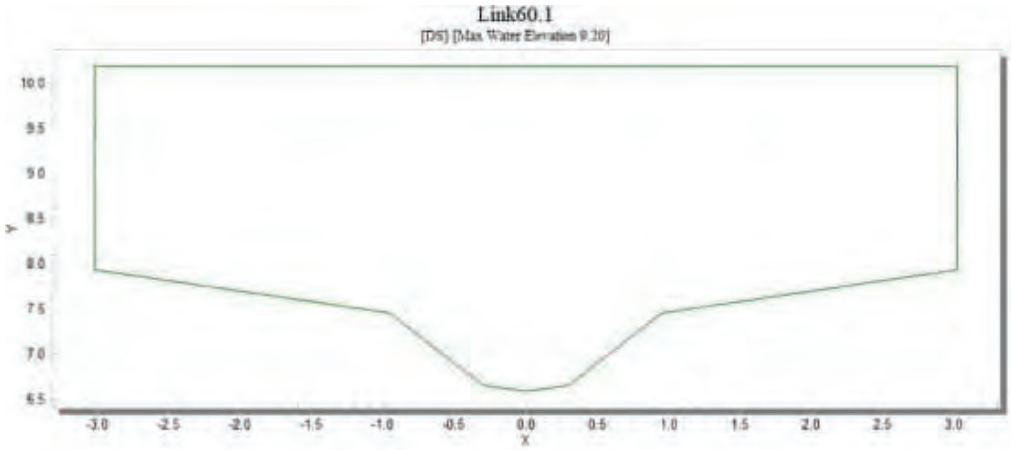


Figure 1. U-Culvert 21/1 cross-section

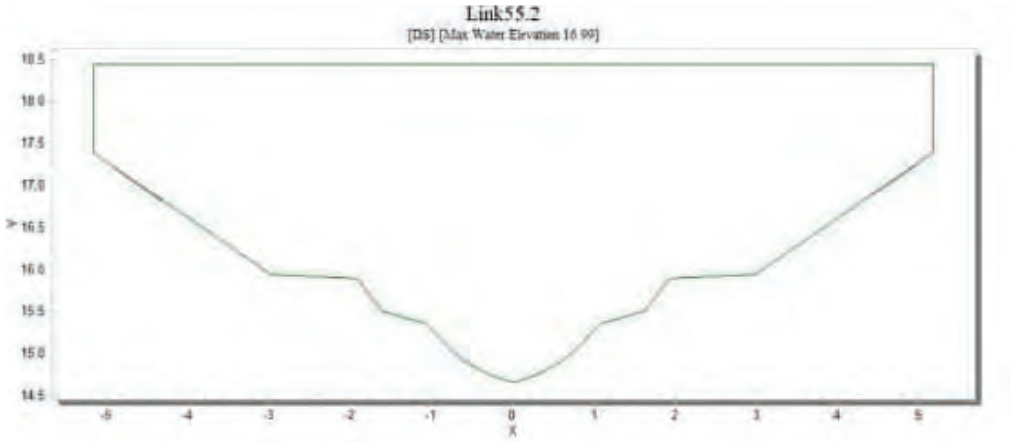


Figure 2. U-Culvert 21/2 cross-section

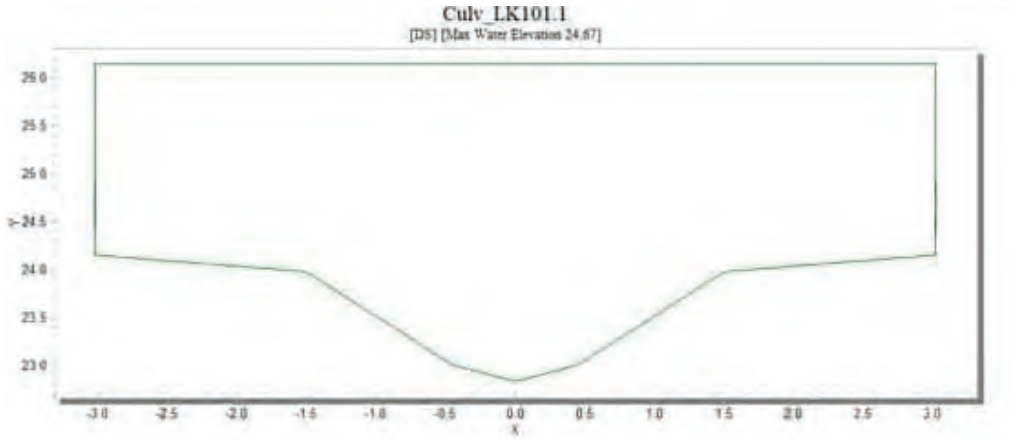


Figure 3. U-Culvert 21/3 cross-section

Appendix D – Argent Lane Overland Flow Path Assessment

To

Auckland Council
Auckland Transport

From

Woods
Boniface Kinnear – Senior Associate Engineer

W-REF: P23-086
21 March 2024
Reviewer – Tony Wang Engineer 3 Waters

Overland Flow Path Assessment – Memorandum

1. Introduction and Background

This memorandum has been prepared to support Engineering Plan Approval application for the construction of roads in Stages 6D, 6G, and Local Centre of the Milldale development with respect to the management of overland flows along the proposed roads. The memo is used to determine whether vehicular and pedestrian safety requirements in accordance with the Auckland Transport – Transport Design Manual (AT TDM) are met.

Stages 6D, 6G, and Local Centre form part of the wider Milldale development that comprises of numerous civil and stormwater infrastructure for residential, commercial and public entities. The extent of the stage is shown on Figure 1.1 covering approximately 14.3ha.

Figure 1.1: Development Extent

2. Modelling and Assessment

Hydrological and hydraulic modelling was undertaken to assess the flooding on the roads and determine the depths and velocities across the development and establish the associated hazards. A 100-year Annual Recurrence Interval (ARI) design storm with an allowance for 3.8°C climate change (CC) was adopted for the assessment. This is considered a resilience check (over and above the current design standard of 2.1°C) to confirm that the roads adequately convey flood waters even in extreme conditions.

2.1. Hydrology

The project extent was delineated into numerous subcatchments with varying impervious to pervious ratios based on the future usage. These are summarised on Table 2.1.

Table 2.1: Land-use summary

Areas	% Impervious
Roads catchments (RC)	73
Residential lot catchments with internal roads (SLC-LR)	65
Residential lot catchments no internal roads (SLC-L)	60
Residential townhouses catchments (THC)	70
Commercial (Local centre) catchment (LCC)	100

Using the USACE Hydrologic Engineering Center-Hydrologic Modelling System (HEC-HMS), the rainfall-runoff generated by the catchment was calculated based on parameters as shown on Table 2.2. The basic model summary is provided in Attachment 1.

Table 2.2: Hydrology Modelling Parameters

Parameter	Value
100-year rainfall depth (mm)[1]	294
Loss Method	SCS Curve Number
Transform Method	SCS Unit hydrograph
Lag time (min)	6.7
Curve Numbers	Pervious: 61 Impervious: 98
Initial abstraction	Pervious: 5mm Impervious: 0

Note:

1. Based on 221mm with 3.8°C climate change uplift factor

The hydrographs from the various catchments generated by the HEC-HMS model were used as upstream inputs to introduce flows into the hydraulic model as discussed in the next section. Model results summary for peak flows are provided in Attachment 1.

2.2. Hydraulic Model

To build the terrain model, the design surface for the proposed road construction merged with the survey of the surrounding area was utilised. To perform the analysis and determine flow behaviour, USACE Hydrologic Engineering Center-River Analysis System (HEC-RAS) version 6.5 was used. It was resolved to utilise a 2D method and a study area was developed within the terrain model for a boundary condition line loading approach. The study area was set up in a 2m x 2m grid format within the area. The grid was further modified to apply breaklines along the road kerblines for a more refined hydraulic assessment.

For the lot parcels, a Manning's 'n' value of 0.1 was used while for the roads a value of 0.02 was adopted in accordance with the Auckland Council Stormwater Code of Practice. For grassed areas n = 0.035 was used.

It was assumed that the primary stomwater pipe network is 100% blocked. It is noted that in this part of the Milldale Development there is a 1650mm diameter culvert under Argent Lane and for modelling purposes, a 25% blockage was applied to the culvert.

As noted above, the hydrographs calculated in the HEC-HMS model were used as upstream inputs (loaded as flow lines) to the HEC-RAS model while a normal depth boundary condition line was applied along the downstream edge of the study area to appropriately remove runoff from the surface.

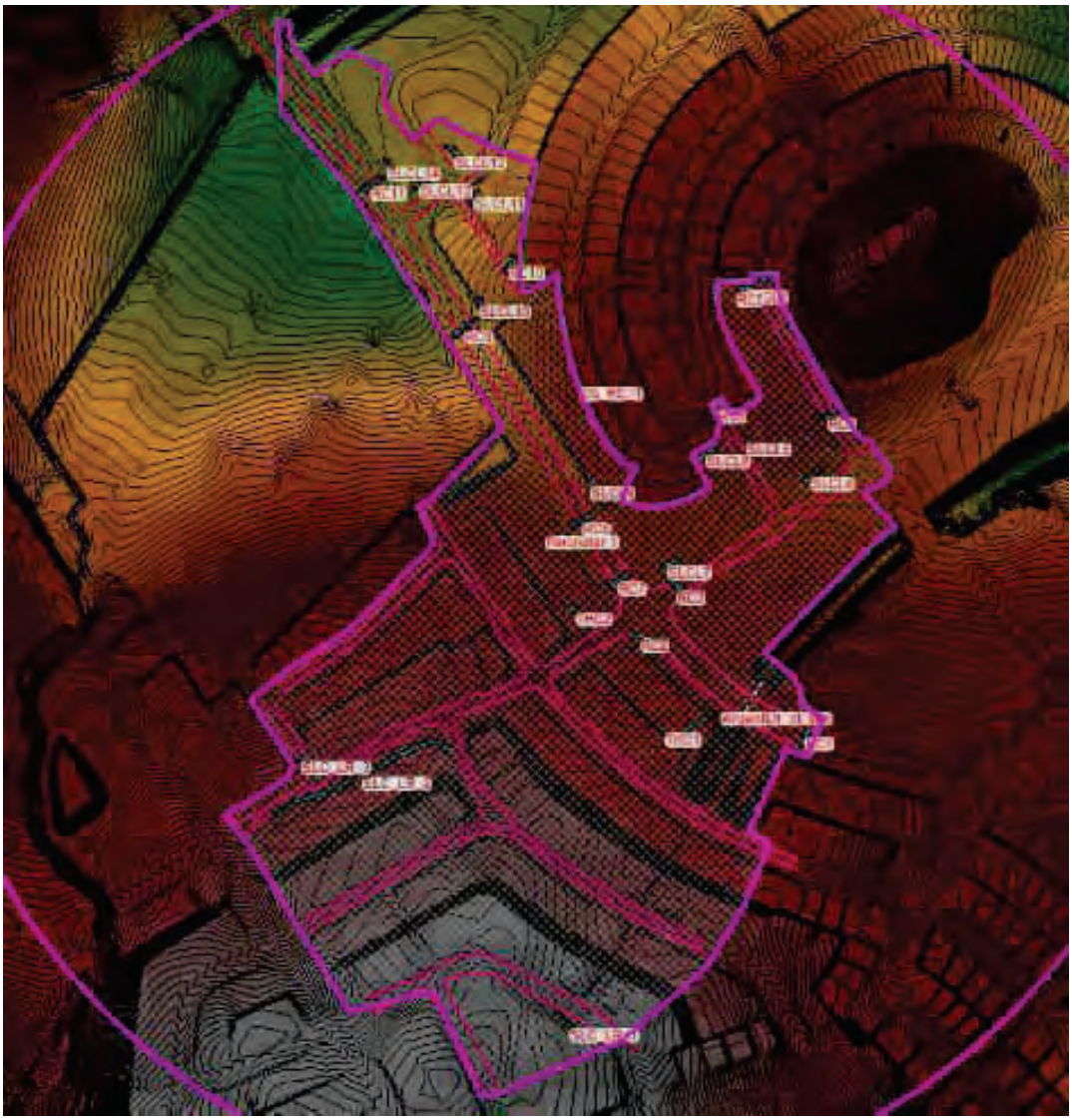


Figure 2.1: HEC-RAS Model Build Summary

2.3. Results Analysis and Assessment

The model was run for a 24-hour period at computational intervals of 1s output at the 1-minute interval. Modelling results indicate that overland flows will be mainly contained within the road corridors. Figure 2.2 and 2.3 shows the flood depths and velocities respectively across the study area. The depths of flow at peak have been noted to be mainly below 0.2m along the roads with only minor exceedances in some areas while the velocities were belows 2m/s.

Figure 2.2: Model Results – Depths

Figure 2.3: Model Results – Velocities

Several areas of interest were identified for closer inspection and assessment. This includes sections along Argent Lane, Collector Road 03 and the two roundabouts shown below in Figure 2.4.

Local Centre
Collector Road 3 and Argent Lane

Collector Road 3, as shown on Figure 2.4, intersects Argent Lane and other local roads. Speed tables are proposed at these intersections to enable safe crosssing points for pedestrians and cyclists.

Cross sections were extracted in order to determine flow characteristics at those locations. Figures 2.5 and 2.6 indicate the depths and velocities respectively at the locations. Using these results, depth x velocity (d x v) values were calculated in order to determine pedestrain and vehicle safety as outlined in the AT TDM Table 3 (extract shown on Figure 2.7). The results are shown on Figure 2.8 with a summary given in Table 2.3.

The results indicate that the safety thresholds as outlined in the AT TDM are not exceeded at any of the areas of interest thus the vehicle and pedestrian safety requirements are met for this part of the development.

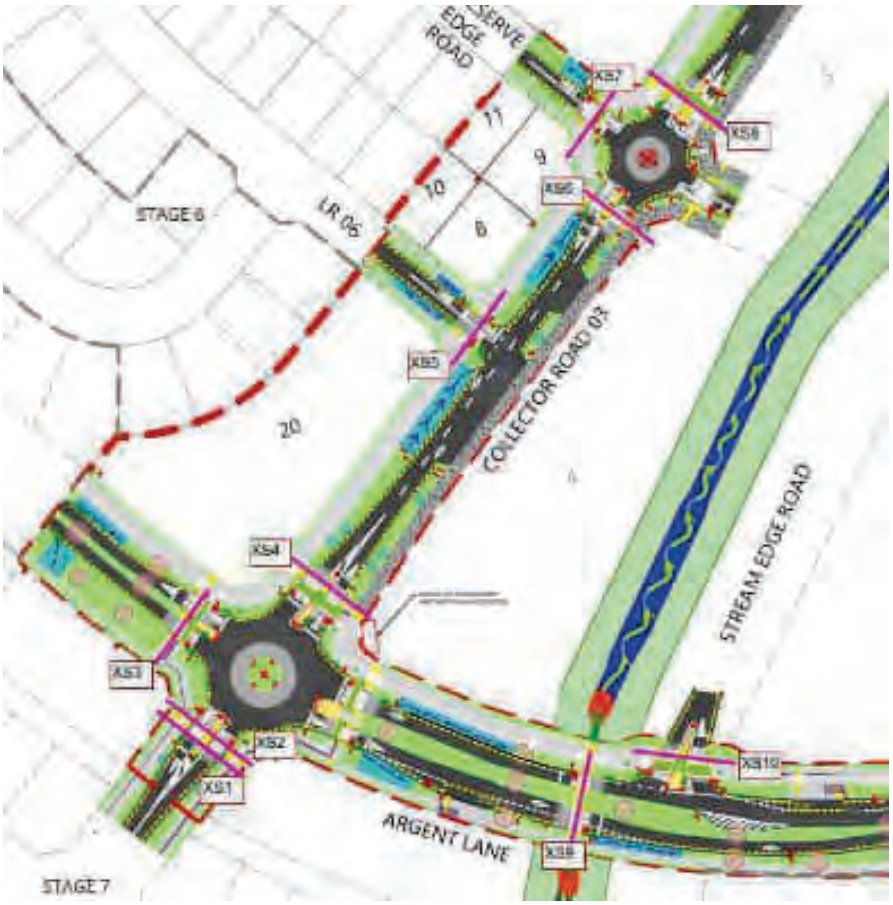


Figure 2.4: Locations of interest – Collector Road 3 – Argent Lane

Figure 2.5: Depths Collector Road 3 – Argent Lane

Figure 2.6: Velocities Collector Road 3 and Argent Lane

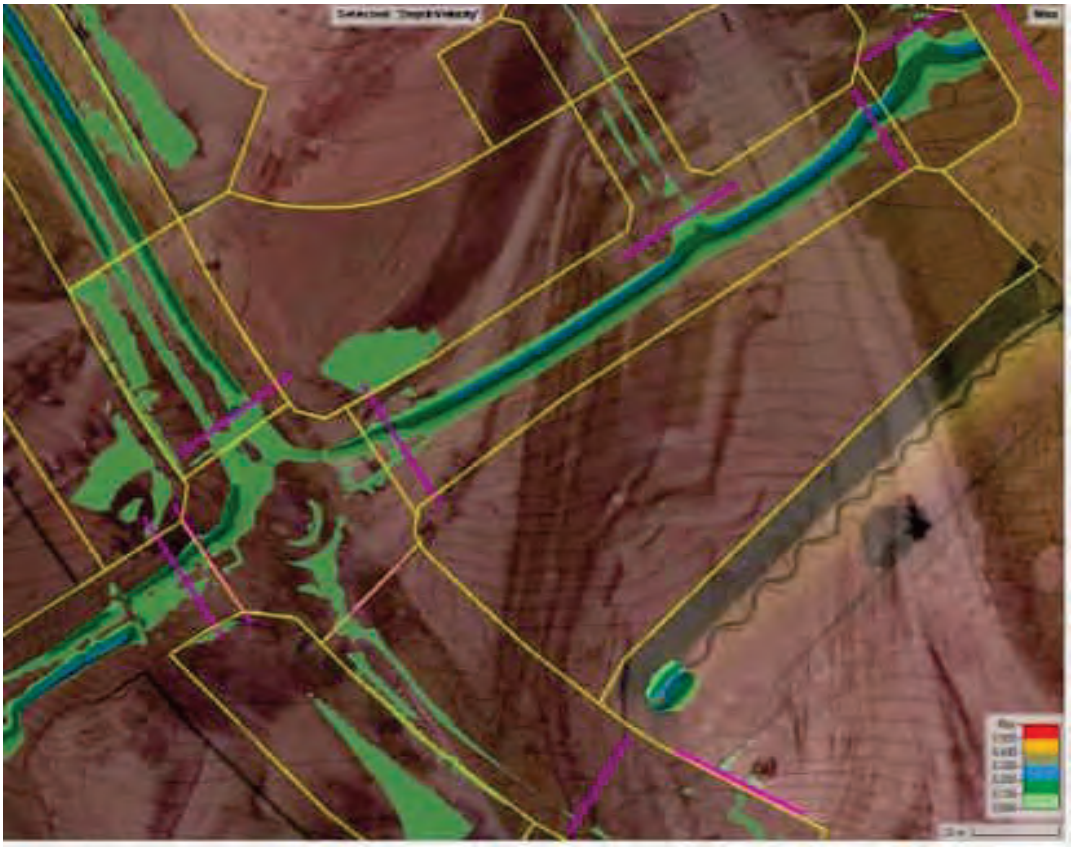


Figure 2.7: D x V Collector Road 3 and Argent Lane

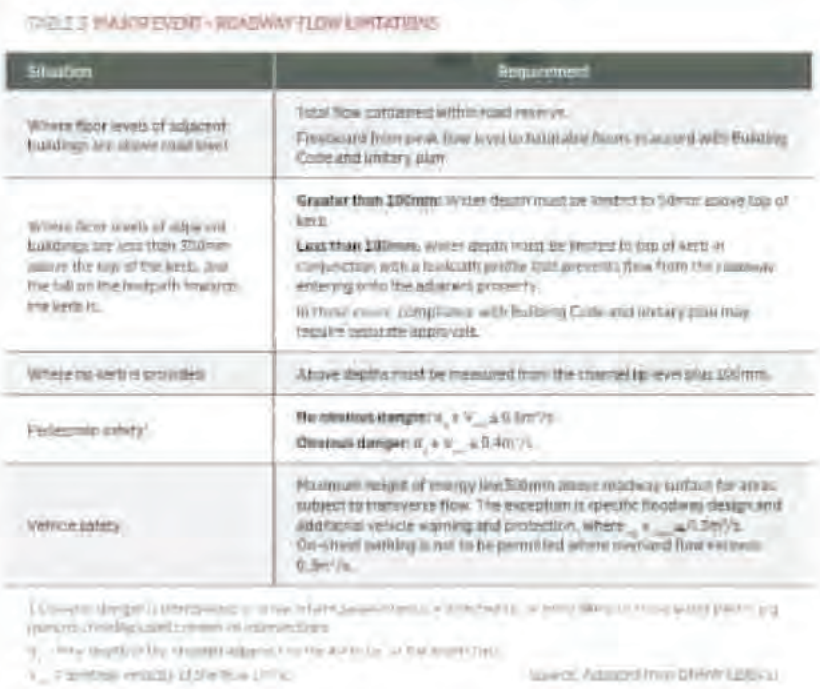


Figure 2.8: AT TDM Table 3 - d x v summary

Table 2.3: Cross Section Summary

Section	Max depth (m)	Maximum velocity (m/s)	Max d x v (m^2/s)
XS1	0.088	1.47	0.22
XS2	0.083	1.75	0.17
XS3	0.068	1.32	0.12
XS4	0.091	1.39	0.06
XS5	0.083	0.36	0.03
XS6	0.115	1.7	0.23
XS7	0.034	0.61	0.02
XS8	n/a	n/a	n/a
XS9	0.02	0.47	0
XS10	0.01	0.4	0

Note: The depths, velocities and d x v figures correspond to the maximum values along the section within the 2m x 2m computation grid used in the modelling. In all cases the d x v are well below the threshold.

Stage 6
Argent Lane/Local Road 4 Intersection

At the Argent Lane/Local Road 4 intersection (Figure 2.9), it was observed that runoff builds up, at the deepest points the depths exceed 0.3m (Figure 2.10). The velocities at this location were however noted to be relatively low at less than 0.5m/s, while along Argent Lane were less than 2m/s. The d x v values were calculated and determined to be less $0.3m^2/s$. As per the AT DTM, the values do not exceed the safety thresholds for vehicles and pedestrians thus the requirements are satisfied.

Figure 2.9: Location of interest - Argent Lane/Local Road 4 Intersection

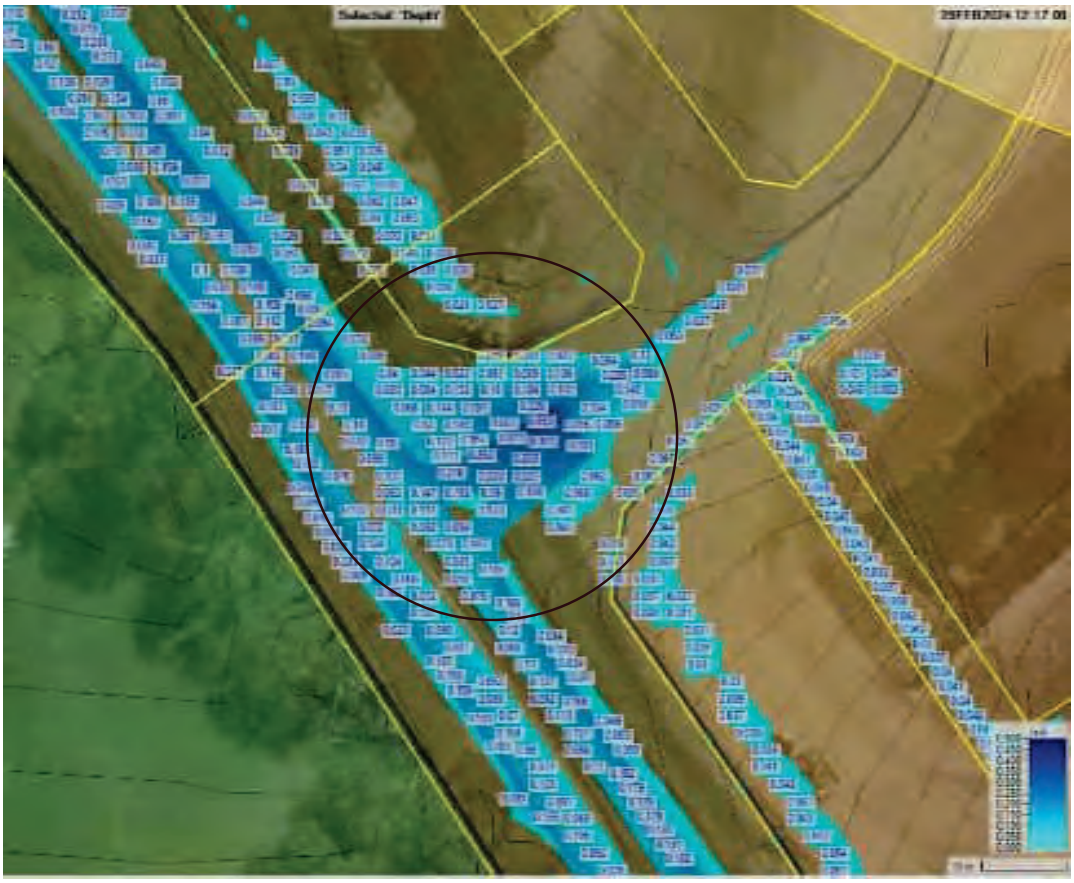


Figure 2.10: Depths Argent Lane/Local Road 4 Intersection

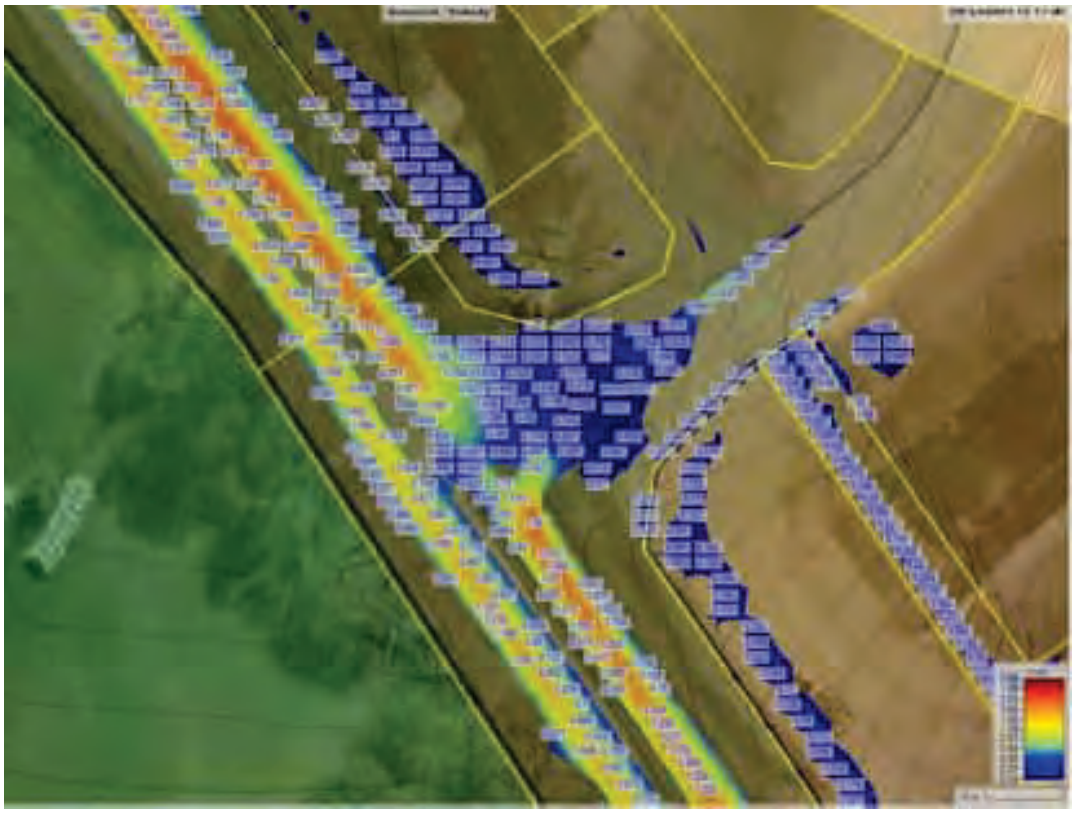


Figure 2.11: Velocities Argent Lane/Local Road 4 Intersection

Figure 2.11: D x V Argent Lane/Local Road 4 Intersection

3. Conclusion

The information presented in this memo confirms that the 100-year ARI flows (with 3.8°C climate change uplift) can be adequtely conveyed along the road corridors. The information further confirms that pedestrian and vehicle safety requirements as outlined in the AT TDM have been met i.e., the safety thresholds have not been exceeded thus the proposed road network design in considered appropriate.

Attachment A
HEC HMS Model Outputs

WOODS
Engineers. Surveyors. Planners.

MODEL RESULTS

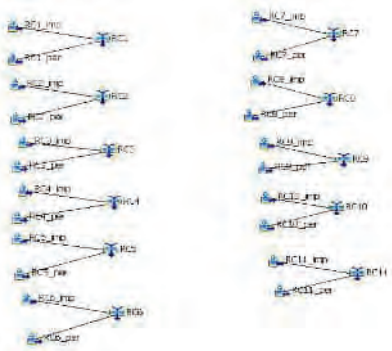
PROJECT NUMBER:	P23-086
ADDRESS:	Milldale
BY:	B Kinnear
DATE:	21/03/2024

Basin Models

Overall catchment

Residential/commercial catchment

Road Catchments



Residential/commercial catchment

Project: OLFP_CatchmentA Simulation Run: 100yr_3.8Ccc_upstream

Start of Run: 01Jan2000, 00:00 Basin Model: UpstreamCatchments
End of Run: 02Jan2000, 00:00 Meteorologic Model: 100yr_hyeto
Compute Time: 22Mar2024, 10:22:32 Control Specifications: 24Hr_1min

Show Elements: Initial Selection Volume Units: ○ MM ◉ 1000 M3 Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (1000 M3)
SingleLotsCatch2	0.03153	1.58651	1 January 2000, 12:12	7.9154
SingleLotsCatch1	0.02955	1.47817	1 January 2000, 12:12	7.3634
SingleLotsCatch3	0.01954	0.98179	1 January 2000, 12:12	4.8961
SLC14	0.00277	0.13736	1 January 2000, 12:12	0.6825
SLC15	0.00077	0.03821	1 January 2000, 12:12	0.1899
SLC16	0.00161	0.07963	1 January 2000, 12:12	0.3966
SLC17	0.00361	0.17883	1 January 2000, 12:12	0.8883
SLC18	0.00050	0.02493	1 January 2000, 12:12	0.1239
SLC19	0.00482	0.23883	1 January 2000, 12:12	1.1866
SLC110	0.00194	0.09630	1 January 2000, 12:12	0.4785
SLC111	0.00199	0.09857	1 January 2000, 12:12	0.4897
SLC112	0.00051	0.02535	1 January 2000, 12:12	0.1259
SLC113	0.00046	0.02282	1 January 2000, 12:12	0.1134
SLC114	0.00263	0.13009	1 January 2000, 12:12	0.6463
THC1	0.00227	0.11594	1 January 2000, 12:12	0.5810
THC2	0.00313	0.15996	1 January 2000, 12:12	0.8016
LCC1	0.00675	0.37857	1 January 2000, 12:12	1.9402

Road Catchments

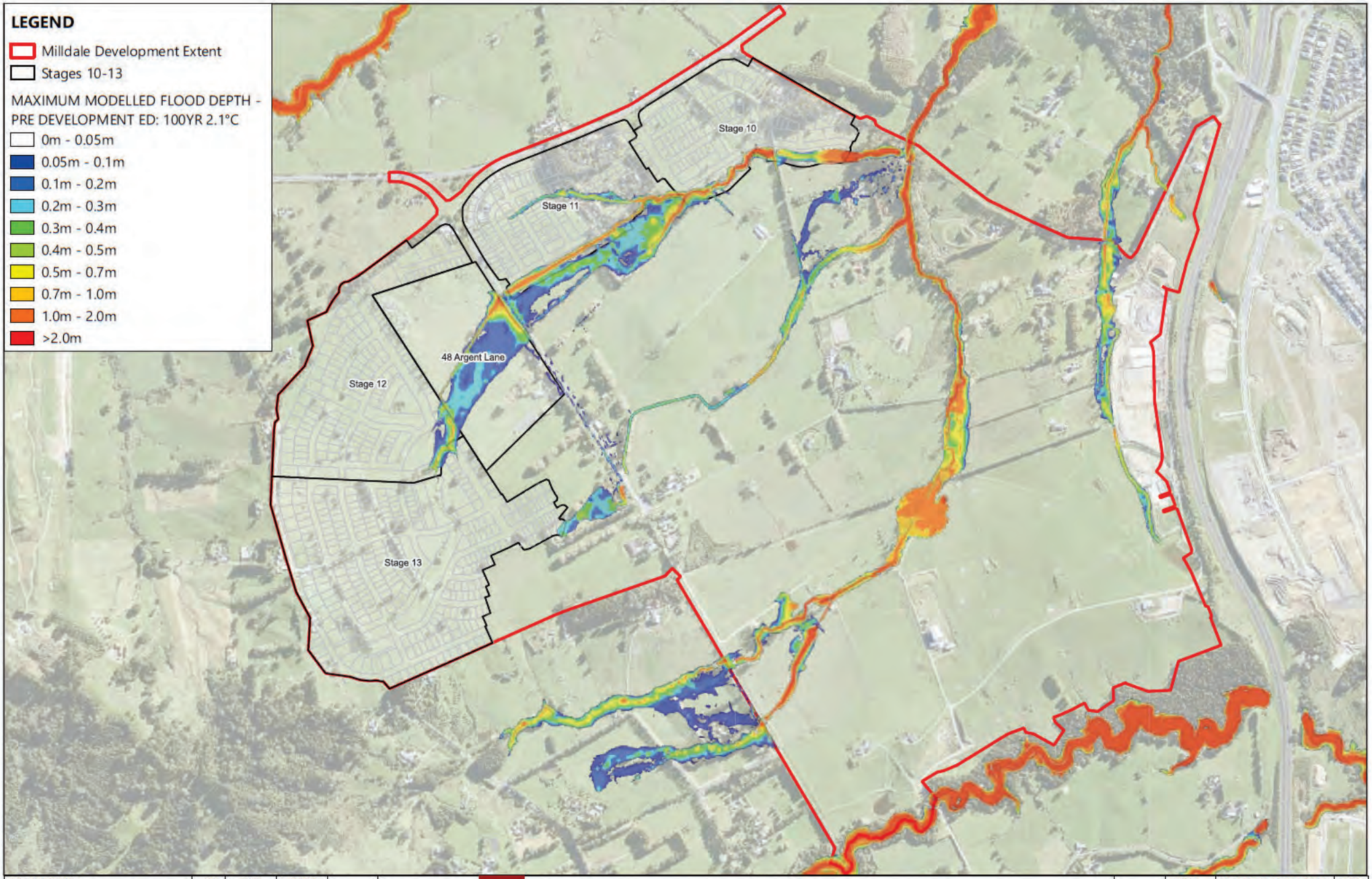
Project: OLFP_CatchmentA Simulation Run: Roads100yr_3.8Ccc

Start of Run: 01Jan2000, 00:00 Basin Model: RoadCatchments
End of Run: 02Jan2000, 00:00 Meteorologic Model: 100yr_hyeto
Compute Time: 22Mar2024, 10:23:35 Control Specifications: 24Hr_1min

Show Elements: Initial Selection Volume Units: ○ MM ◉ 1000 M3 Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (1000 M3)
RC1	0.00366	0.18930	1 January 2000, 12:12	0.9510
RC2	0.00190	0.09818	1 January 2000, 12:12	0.4932
RC3	0.00395	0.20424	1 January 2000, 12:12	1.0260
RC4	0.00128	0.06620	1 January 2000, 12:12	0.3326
RC5	0.00160	0.08245	1 January 2000, 12:12	0.4142
RC6	0.00062	0.03208	1 January 2000, 12:12	0.1611
RC7	0.00149	0.07693	1 January 2000, 12:12	0.3865
RC8	0.00454	0.23467	1 January 2000, 12:12	1.1789
RC9	0.00505	0.26102	1 January 2000, 12:12	1.3113
RC10	0.00071	0.03675	1 January 2000, 12:12	0.1846
RC11	0.00416	0.21516	1 January 2000, 12:12	1.0809

Appendix E – Flood Depth and Afflux Plots



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1.0	For Information	-	03/02/2025	DESIGNED	-
-	-	-	-	DRAWN	RK
-	-	-	-	CHECKED	SS
				APPROVED	JA

8 NUGENT STREET, GRAFTON, AUCKLAND
WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Pre Development Flood Depth 100YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
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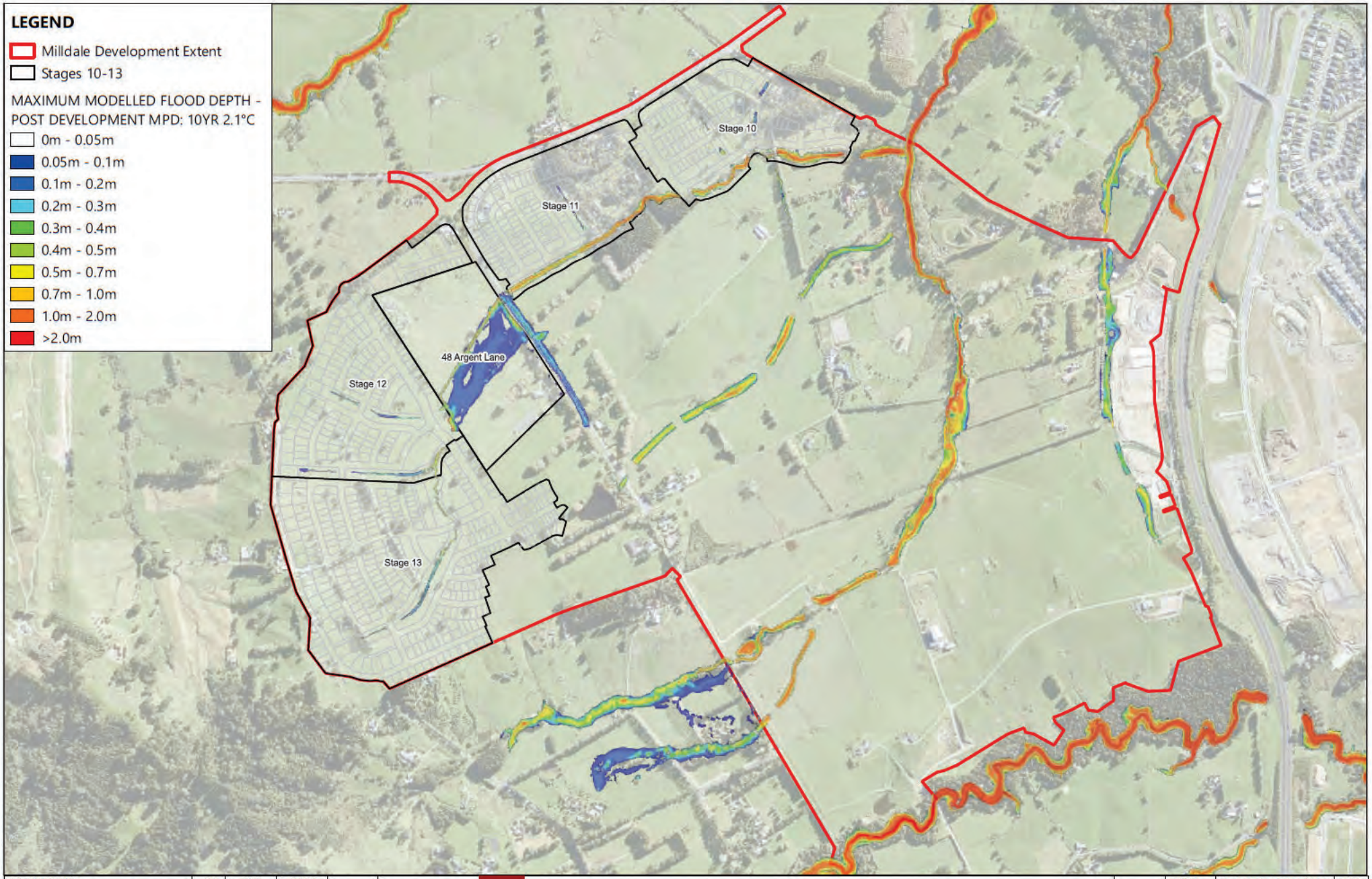
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 1 OF 5	



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-	-	-	-	DRAWN	RK
-	-	-	-	CHECKED	SS
				APPROVED	JA

8 NUGENT STREET, GRAFTON, AUCKLAND

WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Post Development Flood Depth 10YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
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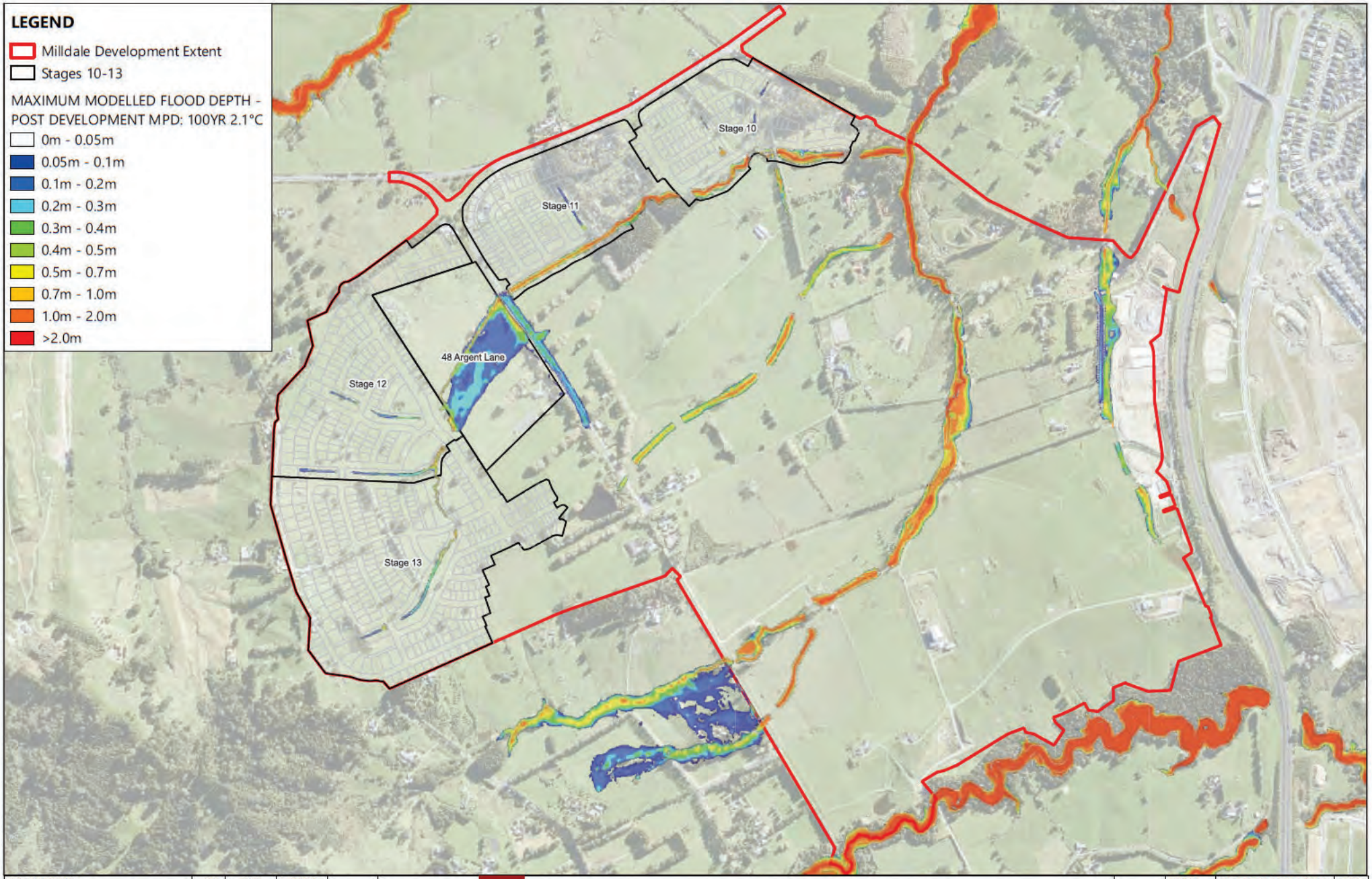

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-	-	-	-	CHECKED	SS
				APPROVED	JA

8 NUGENT STREET, GRAFTON, AUCKLAND
WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Post Development Flood Depth 100YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
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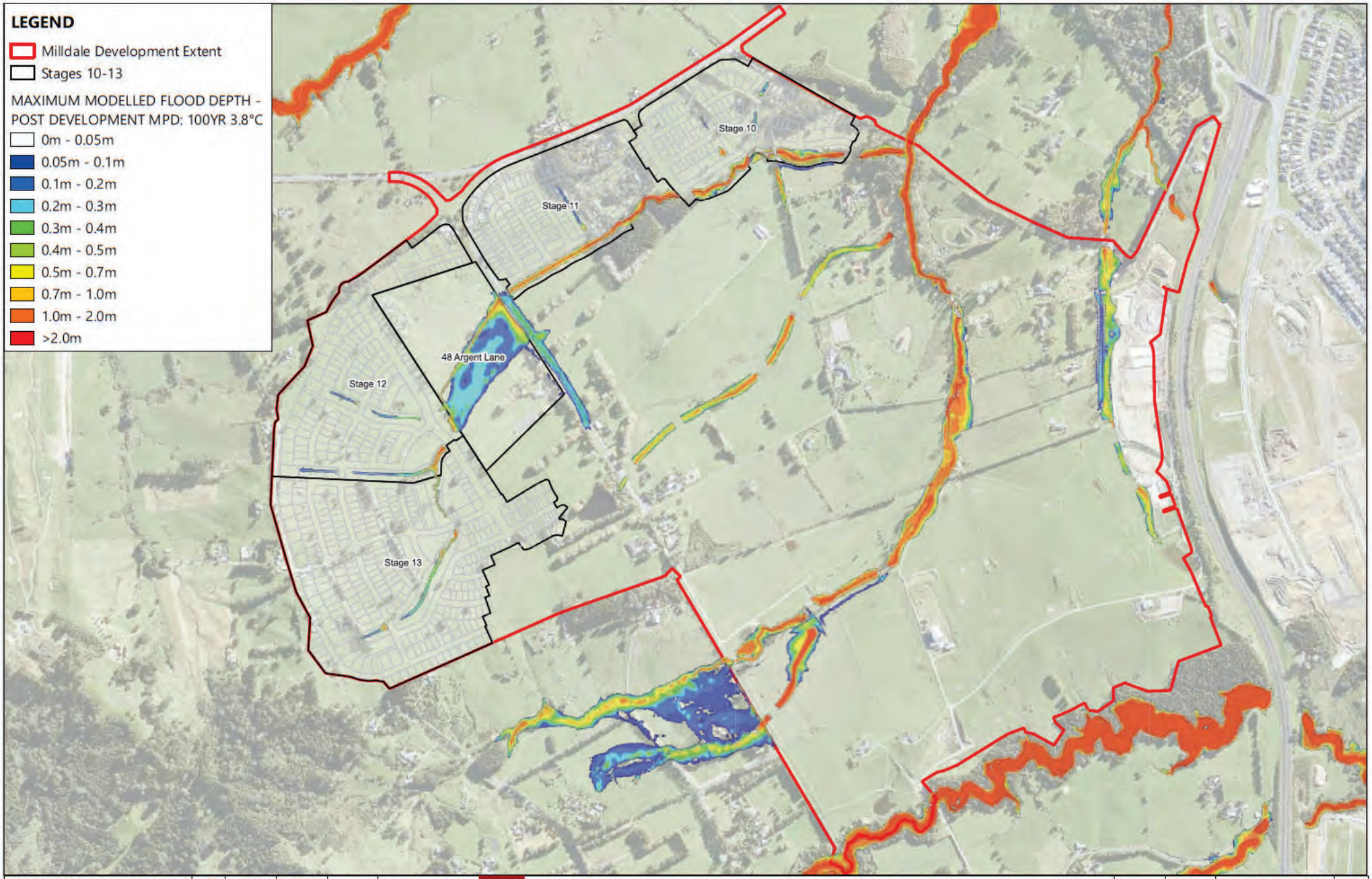

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-	-	-	-	DRAWN	RK
-	-	-	-	CHECKED	SS
				APPROVED	JA

8 NUGENT STREET, GRAFTON, AUCKLAND

WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Post Development Flood Depth 100YR 3.8°C

STATUS	ISSUED FOR INFORMATION	REV
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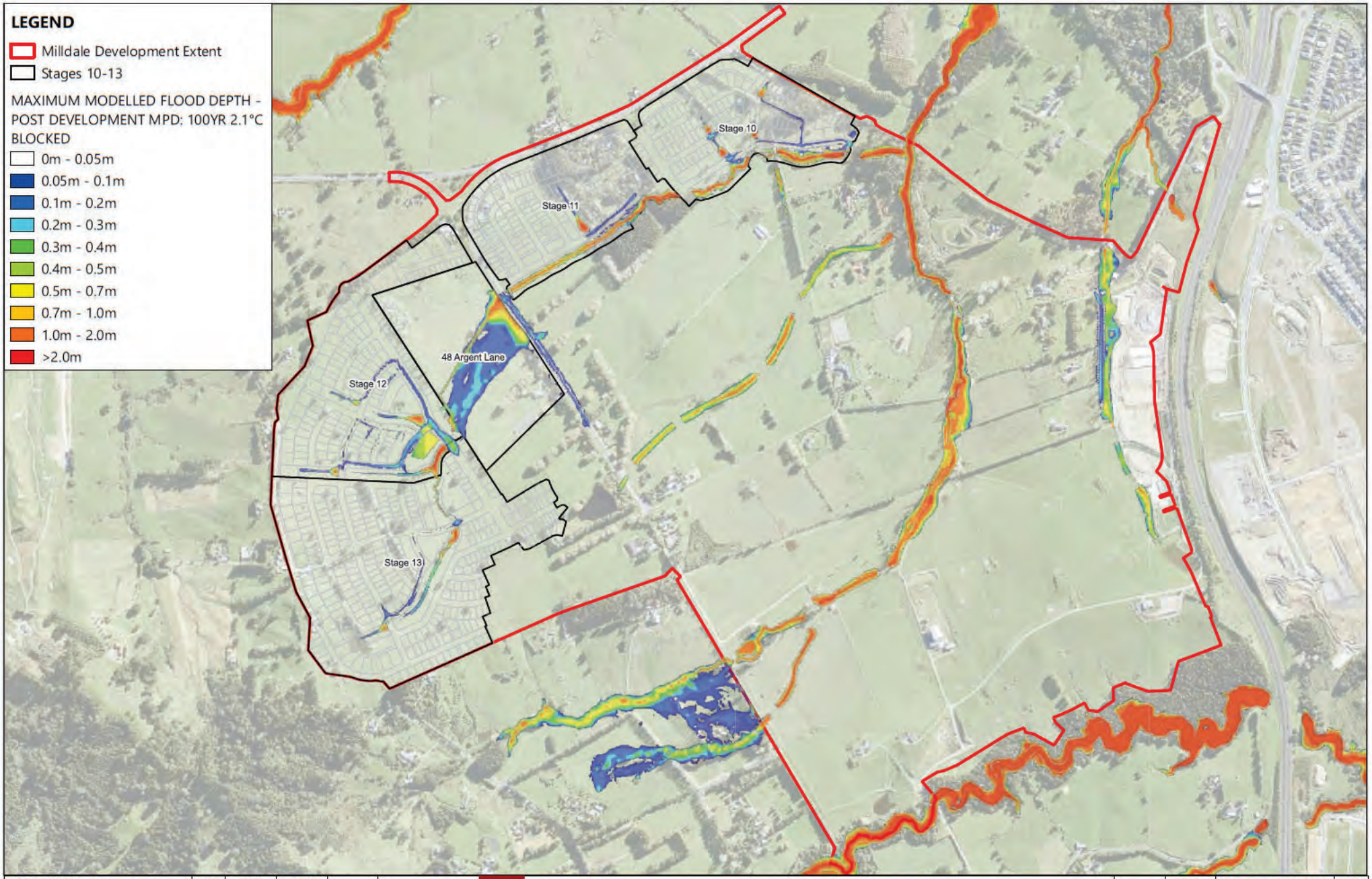

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-	-	-	-	CHECKED	SS
				APPROVED	JA

8 NUGENT STREET, GRAFTON, AUCKLAND
WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Post Development Flood Depth 100YR 2.1°C BLOCKED

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 5 OF 5	

REVISION DETAILS		INT	DATE		
1.0	For Information	-	03/02/2025	DESIGNED	-
-	-	-	-	DRAWN	RK
-	-	-	-	CHECKED	SS
				APPROVED	JA

8 NUGENT STREET, GRAFTON, AUCKLAND

WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Flood Depth Afflux
Post Dev vs Pre Dev 100YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 1 OF 1	