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Our Ref: 890815/L03/GXA

18th December 2025

Nicola Pettifer
Development Control
Albery House
Springfield Road
Horsham
RH12 2GB

Dear Planning Officer

RE: DC/24/1676 – New Place Nurseries, London Road, Pulborough, West Sussex, RH20 1AT
Please find attached the information and responses for the LLFA queries raised in letter.
LLFA Comments

1. *As described in the report, and shown on drawings there are several watercourses and culverted watercourses within the site. In multiple locations, it appears that it is proposed to build houses over a stretch of open watercourse. As it could increase flood risk elsewhere, it is not appropriate to infill watercourses. All watercourses, including culverted watercourses, shall have a 3m easement from the top of both banks, for maintenance purposes.*

   The layout design will ensure that all watercourses are cleared and maintained to an approved / acceptable standard via the OWC process. Culverts will be introduced to continue the watercourse through the development when the watercourse is constrained / obstructed by the development's road layout.
   There are 2 ditches that the layout would require the existing watercourse to be abandoned or relocated which will be submitted to the Ordinary Watercourse Consent Team for comment / OWC Approval. The Ditch locations are shown on Drawing 890815_ZZ_XX_DR_CE_8500 P01 Photographic Locations

   Ditch 1 (Southern entrance Photos 1 and 2).
   The existing ditch is 700mm deep and has a high point at the point of termination where the ditch follows the existing topography and falls to both the west and east. The overland flow catchment area to the north will be unaffected by the ditch removal. Any overland flows from the northern catchment area through the development will be diverted along the road network into the ditch network along the southern boundary. The layout requires 12m of ditch length to be removed. A culvert under the road was considered at this location but will be redundant as its located at the ditches current high point. Any ditch to the east of the entrance road will remain untouched. All ditches will be cleared and maintained to improve the ditches performance.

Ditch 2 – (Eastern area Photos 3 and 4)
The existing ditch is 400mm deep and the ditch is at the head of the ditch alignment. It is proposed to abandon 50m of existing ditch that overlies the housing development footprint at the eastern end. (House, garage and driveway). Any overland flows from the northern catchment area through the development will be diverted along the road network into the ditch network to the west and eventually to the southern boundary. A secondary ditch replacement will be installed 10m south (opposite side of the tree line) to mitigate against any loss of ditch performance when the ditch is abandoned. The information will be issued to the OWC Team for comment, along with all the other road culvert work requirements across the site.

Where there is opportunity to remove any existing culverts within the site, we would be supportive of this.
Noted – there are no culverted section to be removed.

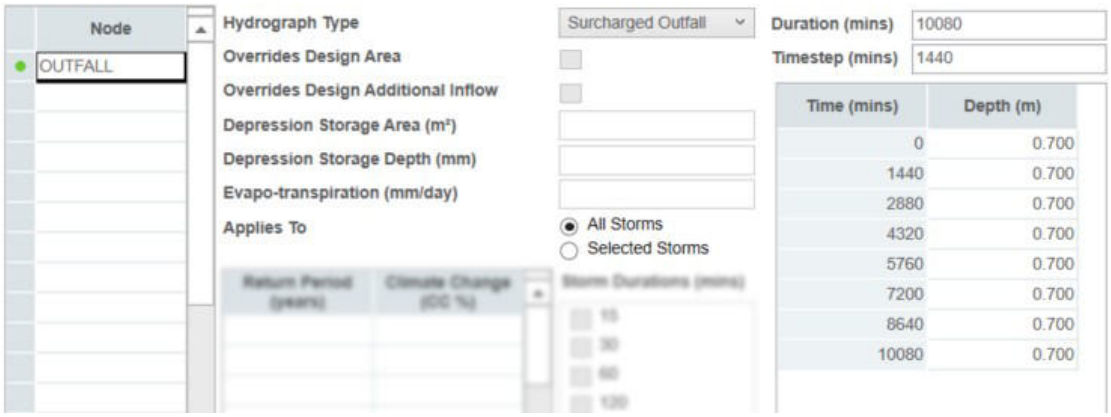
If it is proposed to culvert ordinary watercourses for access purposes or make any other alterations to watercourses which would alter the flow within watercourses, we'd suggest using our OWC pre-application advice service: Ordinary watercourse land drainage consent - West Sussex County Council. This link also includes details on how to apply for consent, and our culvert policy, which has a presumption against culverting ordinary watercourses.
Noted – the relevant Ordinary watercourse land drainage consent application will be submitted before commencement of any ditch works.

2. *We require a map showing the location where each of the photographs from the site visit were taken.*
Drawing 890815_ZZ_XX_DR_CE_8500 P01 indicates the location of the ditches and the photographs taken along all the New Place Farm, Pulborough ditches. Appendix A shows the photographs and locations.

3. *The infiltration testing results show that infiltration may be a viable method of draining the site in some locations. Where infiltration is viable, the site must be drained via infiltration. Any areas that cannot be drained via infiltration, should then be discharged to the watercourses, as this is next in the hierarchy, as demonstrated by the applicant.*
As per the SUD's hierarchy for discharging surface drainage, the surface water will initially infiltrate. Any hardstanding overland flows will enter the positive drainage network before discharging into the ditch network, as per the agreed outline planning discharges rates into the southern ditch.

4. *Calculations for a surcharged outfall are required.*
There is no flood map level data in this area, so the following assumption has been made of the surcharged outfall. The surcharged depth is calculated as the level difference between outfall pipe invert and top of bank.
Outfall East – Pipe IL 36.60m AOD, Top of bank=37.50mAOD = Depth 900mm
Outfall Central– Pipe IL 33.10m AOD, Top of bank=33.80mAOD = Depth 700mm
Outfall West – Pipe IL 30.80m AOD, Top of bank=31.30mAOD = Depth 500mm

There is no flood map levels data for this area. The surcharged Outfall calculation is based on the level difference between outfall pipe invert and top of bank. The attached calculations have the surcharged outfalls added and included in Appendix B.



Node
OUTFALL

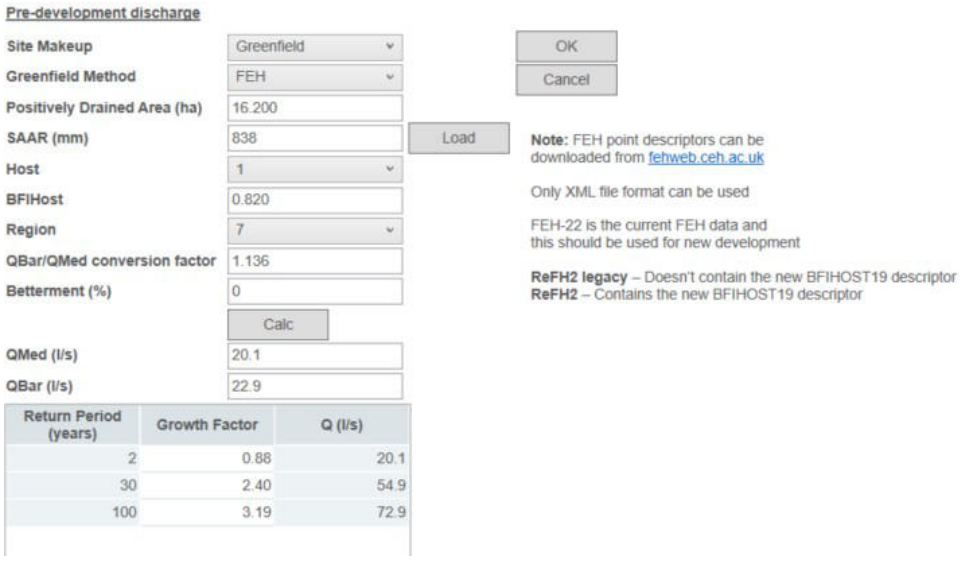
Hydrograph Type	Surcharged Outfall
Overrides Design Area	
Overrides Design Additional Inflow	
Depression Storage Area (m²)	
Depression Storage Depth (mm)	
Evapo-transpiration (mm/day)	
Applies To	All Storms / Selected Storms

Duration (mins)	10080
Timestep (mins)	1440

Time (mins)	Depth (m)
0	0.700
1440	0.700
2880	0.700
4320	0.700
5760	0.700
7200	0.700
8640	0.700
10080	0.700

5. *In the calculations, the pre-development discharge rate and volume calculations appear to be in a different location to Pulborough as Region 1 is not in West Sussex. As this is a reserved matters application, the greenfield runoff rates and volumes calculated previously should be used (unless it is found that these were also not site-specific). If there are any further alterations, we recommend ensuring that the calculations match the drainage layout, as this is commonly where issues arise.*

   The drainage calculations have been revised with the predevelopment calculations based on Region 7 (Pulborough West Sussex). The revised drainage calculations are included in Appendix B.



Pre-development discharge

Site Makeup	Greenfield
Greenfield Method	FEH
Positively Drained Area (ha)	16.200
SAAR (mm)	838
Host	1
BFIHost	0.820
Region	7
QBar/QMed conversion factor	1.136
Betterment (%)	0
QMed (l/s)	20.1
QBar (l/s)	22.9

OK | Cancel | Load | Calc

Note: FEH point descriptors can be downloaded from fehweb.ceh.ac.uk

Only XML file format can be used

FEH-22 is the current FEH data and this should be used for new development

ReFH2 legacy – Doesn't contain the new BFIHOST19 descriptor
ReFH2 – Contains the new BFIHOST19 descriptor

Return Period (years)	Growth Factor	Q (l/s)
2	0.88	20.1
30	2.40	54.9
100	3.19	72.9

6. *It is noted that no winter groundwater monitoring has been completed. As this is likely to be required for detailed design for the surface water drainage conditions, we would suggest this begins very soon, given the time of year.*
   Groundwater monitoring wells were installed in April 2024 (WS301, WS315) and a further 6 monitoring wells were undertaken in October 2024 specifically for Winter water level monitoring (WS401-WS406). The Groundwater monitoring report is located in Appendix C.

7. *Please note that the previous Policy for the Management of Surface Water has been superseded by the updated National Standards for SuDS.*
   Noted

8. *We would like to take this opportunity to remind the applicant that watercourses and culverted watercourses within their land ownership must be adequately maintained, to allow water to be free flowing. This falls under the Land Drainage Act.*
   Noted – The watercourses will be maintained during construction by the client / groundworkers. Post construction will be maintained by a private management company would monitor and clear any detritus material.

Yours sincerely,

G Ashworth

Gran Ashworth
Senior Infrastructure Engineer

APPENDIX A
890815_ZZ_XX_DR_CE_8500 P01 Photographic Locations

Photo 1
Photo 2
Photo 3
Photo 4
Photo 5
Photo 6
Photo 7
Photo 8
Photo 9
Photo 10
Photo 11
Photo 12
Ditch 1
Ditch 2
Ditch 2
Ditch 2

GLEBELANDS
El Sub Sta
Sales Area
's C of E
Primary School

119300 N
119250 N
119200 N
119150 N
119100 N
119050 N

CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:–

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing.
Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type.

Notes:

1. This drawing is to be read in conjunction with all relevant Architects and Engineers drawings and specifications.
2. Topographical Survey and Levels from NJC Survey Ltd, Drawing Number S1572 Dated 18th March 2019.
3. Layout based on Geoff Perry Associates Drawing Layout Rev E dated June 2025.
4. Do not scale this drawing.
5. This drawing is to be read in conjunction with all other relevant engineers, architects and specialist design drawings and details.
6. All dimensions are in meters unless noted otherwise.

Legend:

- Planning Application Boundary
- Photograph Location
- Ditch Location
- OWC Culverts under road

Rev.	Date	Amendment	Drawn	Chkd.	Appd.
P01	18.12.2025	Preliminary Issue	GXA	GXA	RD

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Client
BARRATT DAVID WILSON (SOUTHERN COUNTIES)

Project Title
NEW PLACE FARM, PULBOROUGH, WEST SUSSEX

Status
PLANNING

Drawing Title
DITCH PHOTOGRAPHS

Drawn	Date	Checked	Date	Approved	Date
GXA	18.12.2025	GXA	18.12.2025	RD	18.12.2025

Scale	Orig Size	Dimensions
1:500	A0	m

Project No.: 890815
Drawing File: 890815-RSK-ZZ-XX-DR-C-8500 Ditch Photographs.dwg

Drawing No.: 890815 | RSK | ZZ | XX | DR | C | 8500 | Rev. P01
(Project | Org. | Vol./Sys. | Lev./Loc. | Type | Role | Draw. No.)

Scale 1:500
0 5 10 15 20 25m

APPENDIX B
Drainage Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	30	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	5.000
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	999.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
2	0.063	5.00	45.100	1350	505876.700	119266.258	1.500
3	0.000		43.000	1350	505821.069	119264.749	1.425
basin b	0.000		43.000		505804.787	119255.274	2.000
5	0.117	5.00	42.136	1350	505797.314	119235.979	1.781
6	0.097	5.00	42.008	1350	505810.127	119222.001	3.308
15	0.091	5.00	43.790	1200	505876.413	119216.709	1.425
17	0.070	5.00	43.223	1200	505876.274	119192.802	1.500
16	0.000		43.473	1200	505876.200	119203.479	1.930
7	0.105	5.00	41.623	1500	505818.124	119204.022	3.148
8	0.131	5.00	40.909	1500	505817.984	119158.342	3.359
9	0.077	5.00	39.512	1500	505782.161	119158.385	2.512
18	0.089	5.00	41.488	1200	505854.114	119126.026	1.588
19	0.071	5.00	40.808	1200	505820.858	119126.268	2.308
20	0.050	5.00	40.149	1200	505820.221	119105.449	2.349
23	0.149	5.00	39.400	1350	505812.236	119076.028	1.950
21	0.000		38.950	1200	505803.833	119100.425	1.870
basin	0.000		38.900		505781.158	119140.144	2.200
FCC	0.000		38.900	1800	505765.828	119123.658	2.250
OUTFALL	0.000		37.500	1800	505744.646	119124.699	0.900

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.001	2.505	99.6	34.0	1.275	1.200	0.063	0.0	90	2.269
1.002	2.293	91.2	34.0	1.200	1.775	0.063	0.0	95	2.134
1.003	2.776	196.2	33.3	1.700	1.481	0.063	0.0	83	2.083
1.004	5.719	404.3	94.7	1.481	2.933	0.180	0.0	98	4.695
1.005	1.406	155.3	143.0	2.933	2.698	0.277	0.0	285	1.586
4.000	3.123	124.2	50.4	1.200	1.630	0.091	0.0	100	2.966
5.000	2.045	144.5	38.7	1.200	1.630	0.070	0.0	106	1.742
4.001	3.539	250.2	86.9	1.630	2.698	0.161	0.0	122	3.228
1.006	3.004	477.7	270.8	2.698	2.834	0.543	0.0	243	3.094
1.007	2.778	601.4	333.5	2.834	1.987	0.674	0.0	280	2.847
1.008	2.874	622.1	370.2	1.987	1.675	0.751	0.0	292	2.991
6.000	3.239	228.9	48.6	1.288	2.008	0.089	0.0	93	2.591
6.001	2.562	181.1	86.6	2.008	1.899	0.160	0.0	146	2.536
6.002	3.955	629.1	112.9	1.899	1.345	0.210	0.0	128	3.024
7.001	1.175	83.1	78.8	1.650	1.345	0.149	0.0	234	1.330
6.003	1.986	429.8	180.9	1.345	1.655	0.359	0.0	237	1.903
6.004	1.312	579.6	535.5	1.450	1.500	1.110	0.0	573	1.478

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.010	1.352	597.3	523.5	1.500	0.150	1.110	0.0	547	1.514

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.001	55.651	27.5	225	Circular_Default Sewer Type	45.100	43.600	1.275	43.000	41.575	1.200
1.002	18.838	32.8	225	Circular_Default Sewer Type	43.000	41.575	1.200	43.000	41.000	1.775
1.003	20.827	32.3	300	Circular_Default Sewer Type	43.000	41.000	1.700	42.136	40.355	1.481
1.004	12.079	7.6	300	Circular_Default Sewer Type	42.136	40.355	1.481	42.008	38.775	2.933
1.005	24.796	165.3	375	Circular_Default Sewer Type	42.008	38.700	2.933	41.623	38.550	2.698
4.000	13.232	17.7	225	Circular_Default Sewer Type	43.790	42.365	1.200	43.473	41.618	1.630
5.000	10.677	59.3	300	Circular_Default Sewer Type	43.223	41.723	1.200	43.473	41.543	1.630
4.001	58.079	19.9	300	Circular_Default Sewer Type	43.473	41.543	1.630	41.623	38.625	2.698
1.006	39.085	46.0	450	Circular_Default Sewer Type	41.623	38.475	2.698	40.909	37.625	2.834
1.007	35.823	65.1	525	Circular_Default Sewer Type	40.909	37.550	2.834	39.512	37.000	1.987
1.008	18.269	60.9	525	Circular_Default Sewer Type	39.512	37.000	1.987	38.900	36.700	1.675
6.000	33.257	23.8	300	Circular_Default Sewer Type	41.488	39.900	1.288	40.808	38.500	2.008
6.001	20.829	37.9	300	Circular_Default Sewer Type	40.808	38.500	2.008	40.149	37.950	1.899
6.002	17.141	26.6	450	Circular_Default Sewer Type	40.149	37.800	1.899	38.950	37.155	1.345
7.001	25.804	178.0	300	Circular_Default Sewer Type	39.400	37.450	1.650	38.950	37.305	1.345
6.003	45.736	127.0	525	Circular_Default Sewer Type	38.950	37.080	1.345	38.900	36.720	1.655
6.004	22.512	450.2	750	Circular_Default Sewer Type	38.900	36.700	1.450	38.900	36.650	1.500
1.010	21.208	424.2	750	Circular_Default Sewer Type	38.900	36.650	1.500	37.500	36.600	0.150

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.001	2	1350	Manhole	Adoptable	3	1350	Manhole	Adoptable
1.002	3	1350	Manhole	Adoptable	basin b		Junction	
1.003	basin b		Junction		5	1350	Manhole	Adoptable
1.004	5	1350	Manhole	Adoptable	6	1350	Manhole	Adoptable
1.005	6	1350	Manhole	Adoptable	7	1500	Manhole	Adoptable
4.000	15	1200	Manhole	Adoptable	16	1200	Manhole	Adoptable
5.000	17	1200	Manhole	Adoptable	16	1200	Manhole	Adoptable
4.001	16	1200	Manhole	Adoptable	7	1500	Manhole	Adoptable
1.006	7	1500	Manhole	Adoptable	8	1500	Manhole	Adoptable
1.007	8	1500	Manhole	Adoptable	9	1500	Manhole	Adoptable
1.008	9	1500	Manhole	Adoptable	basin		Junction	
6.000	18	1200	Manhole	Adoptable	19	1200	Manhole	Adoptable
6.001	19	1200	Manhole	Adoptable	20	1200	Manhole	Adoptable
6.002	20	1200	Manhole	Adoptable	21	1200	Manhole	Adoptable
7.001	23	1350	Manhole	Adoptable	21	1200	Manhole	Adoptable
6.003	21	1200	Manhole	Adoptable	basin		Junction	
6.004	basin		Junction		FCC	1800	Manhole	Adoptable
1.010	FCC	1800	Manhole	Adoptable	OUTFALL	1800	Manhole	Adoptable

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	✓	2 year (l/s)	20.1
Rainfall Events	Singular	Drain Down Time (mins)	240	30 year (l/s)	54.9
Summer CV	1.000	Additional Storage (m³/ha)	0.0	100 year (l/s)	72.9
Winter CV	1.000	Starting Level (m)		Check Discharge Volume	✓
Analysis Speed	Normal	Check Discharge Rate(s)	✓	100 year 360 minute (m³)	

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	45	0	0
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	2.40
Greenfield Method	FEH	Growth Factor 100 year	3.19
Positively Drained Area (ha)	16.200	Betterment (%)	0
SAAR (mm)	838	QMed	20.1
Host	1	QBar	22.9
BFIHost	0.820	Q 2 year (l/s)	20.1
Region	7	Q 30 year (l/s)	54.9
QBar/QMed conversion factor	1.136	Q 100 year (l/s)	72.9
Growth Factor 2 year	0.88		

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)	16.200	Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	
CWI		Runoff Volume (m³)	

Node OUTFALL Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to All storms

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	0.900	2880	0.900	5760	0.900	8640	0.900
1440	0.900	4320	0.900	7200	0.900	10080	0.900

Node FCC Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	36.650	Product Number	CTL-SHE-0092-4900-1900-4900
Design Depth (m)	1.900	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	4.9	Min Node Diameter (mm)	1200

Node basin Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	36.700
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	187.0	0.0	2.200	1220.0	0.0

Node basin b Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	41.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	49.7	0.0	2.000	154.5	0.0

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	122.104	34.551	30 year 240 minute summer	55.940	14.783
2 year 15 minute winter	85.687	34.551	30 year 240 minute winter	37.165	14.783
2 year 30 minute summer	79.868	22.600	30 year 360 minute summer	41.781	10.752
2 year 30 minute winter	56.048	22.600	30 year 360 minute winter	27.159	10.752
2 year 60 minute summer	54.111	14.300	30 year 480 minute summer	32.245	8.521
2 year 60 minute winter	35.950	14.300	30 year 480 minute winter	21.423	8.521
2 year 120 minute summer	39.164	10.350	30 year 600 minute summer	25.940	7.095
2 year 120 minute winter	26.020	10.350	30 year 600 minute winter	17.724	7.095
2 year 180 minute summer	31.832	8.192	30 year 720 minute summer	22.757	6.099
2 year 180 minute winter	20.692	8.192	30 year 720 minute winter	15.294	6.099
2 year 240 minute summer	25.805	6.820	30 year 960 minute summer	18.200	4.792
2 year 240 minute winter	17.144	6.820	30 year 960 minute winter	12.056	4.792
2 year 360 minute summer	19.988	5.144	30 year 1440 minute summer	12.697	3.403
2 year 360 minute winter	12.993	5.144	30 year 1440 minute winter	8.533	3.403
2 year 480 minute summer	15.721	4.155	30 year +45% CC 15 minute summer	476.689	134.887
2 year 480 minute winter	10.445	4.155	30 year +45% CC 15 minute winter	334.519	134.887
2 year 600 minute summer	12.813	3.505	30 year +45% CC 30 minute summer	317.053	89.715
2 year 600 minute winter	8.755	3.505	30 year +45% CC 30 minute winter	222.494	89.715
2 year 720 minute summer	11.357	3.044	30 year +45% CC 60 minute summer	215.978	57.077
2 year 720 minute winter	7.632	3.044	30 year +45% CC 60 minute winter	143.491	57.077
2 year 960 minute summer	9.236	2.432	30 year +45% CC 120 minute summer	135.112	35.706
2 year 960 minute winter	6.118	2.432	30 year +45% CC 120 minute winter	89.765	35.706
2 year 1440 minute summer	6.617	1.773	30 year +45% CC 180 minute summer	103.469	26.626
2 year 1440 minute winter	4.447	1.773	30 year +45% CC 180 minute winter	67.257	26.626
30 year 15 minute summer	328.751	93.025	30 year +45% CC 240 minute summer	81.113	21.436
30 year 15 minute winter	230.702	93.025	30 year +45% CC 240 minute winter	53.890	21.436
30 year 30 minute summer	218.657	61.873	30 year +45% CC 360 minute summer	60.582	15.590
30 year 30 minute winter	153.444	61.873	30 year +45% CC 360 minute winter	39.380	15.590
30 year 60 minute summer	148.950	39.363	30 year +45% CC 480 minute summer	46.756	12.356
30 year 60 minute winter	98.959	39.363	30 year +45% CC 480 minute winter	31.063	12.356
30 year 120 minute summer	93.180	24.625	30 year +45% CC 600 minute summer	37.613	10.288
30 year 120 minute winter	61.907	24.625	30 year +45% CC 600 minute winter	25.699	10.288
30 year 180 minute summer	71.358	18.363	30 year +45% CC 720 minute summer	32.998	8.844
30 year 180 minute winter	46.384	18.363	30 year +45% CC 720 minute winter	22.176	8.844

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year +45% CC 960 minute summer	26.389	6.949	100 year +45% CC 240 minute summer	100.100	26.454
30 year +45% CC 960 minute winter	17.481	6.949	100 year +45% CC 240 minute winter	66.504	26.454
30 year +45% CC 1440 minute summer	18.411	4.934	100 year +45% CC 360 minute summer	74.695	19.222
30 year +45% CC 1440 minute winter	12.373	4.934	100 year +45% CC 360 minute winter	48.554	19.222
100 year +45% CC 15 minute summer	598.854	169.455	100 year +45% CC 480 minute summer	57.635	15.231
100 year +45% CC 15 minute winter	420.249	169.455	100 year +45% CC 480 minute winter	38.291	15.231
100 year +45% CC 30 minute summer	401.276	113.547	100 year +45% CC 600 minute summer	46.363	12.681
100 year +45% CC 30 minute winter	281.597	113.547	100 year +45% CC 600 minute winter	31.678	12.681
100 year +45% CC 60 minute summer	275.735	72.869	100 year +45% CC 720 minute summer	40.675	10.901
100 year +45% CC 60 minute winter	183.192	72.869	100 year +45% CC 720 minute winter	27.336	10.901
100 year +45% CC 120 minute summer	168.540	44.540	100 year +45% CC 960 minute summer	32.537	8.568
100 year +45% CC 120 minute winter	111.974	44.540	100 year +45% CC 960 minute winter	21.553	8.568
100 year +45% CC 180 minute summer	128.076	32.958	100 year +45% CC 1440 minute summer	22.674	6.077
100 year +45% CC 180 minute winter	83.253	32.958	100 year +45% CC 1440 minute winter	15.238	6.077

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	2	10	43.654	0.054	12.6	0.0767	0.0000	OK
15 minute summer	3	10	41.637	0.062	12.5	0.0881	0.0000	OK
30 minute summer	basin b	20	41.044	0.044	11.4	2.2529	0.0000	OK
15 minute summer	5	11	40.409	0.054	29.5	0.0778	0.0000	OK
15 minute summer	6	11	38.850	0.150	47.9	0.2145	0.0000	OK
15 minute summer	15	10	42.426	0.061	18.1	0.0687	0.0000	OK
15 minute summer	17	10	41.789	0.066	14.0	0.0743	0.0000	OK
15 minute summer	16	10	41.616	0.073	31.9	0.0821	0.0000	OK
15 minute summer	7	11	38.619	0.144	98.9	0.2550	0.0000	OK
15 minute summer	8	11	37.718	0.168	124.2	0.2962	0.0000	OK
1440 minute winter	9	1140	37.604	0.604	22.1	1.0667	0.0000	SURCHARGED
15 minute summer	18	10	39.956	0.056	17.7	0.0633	0.0000	OK
15 minute summer	19	10	38.588	0.088	31.8	0.1000	0.0000	OK
15 minute summer	20	10	37.882	0.082	41.4	0.0924	0.0000	OK
1440 minute winter	23	1140	37.604	0.154	1.8	0.2199	0.0000	OK
1440 minute winter	21	1140	37.604	0.524	4.4	0.5922	0.0000	OK
1440 minute winter	basin	1140	37.604	0.904	19.5	360.6899	0.0000	SURCHARGED
1440 minute winter	FCC	1140	37.604	0.954	3.0	2.4270	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	37.500	0.900	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	2	1.001	3	12.5	1.558	0.125	0.4455	
15 minute summer	3	1.002	basin b	12.5	2.163	0.137	0.1237	
30 minute summer	basin b	1.003	5	9.3	1.351	0.048	0.1511	
15 minute summer	5	1.004	6	29.4	2.922	0.073	0.1353	
15 minute summer	6	1.005	7	47.7	1.212	0.307	0.9757	
15 minute summer	15	4.000	16	18.0	2.164	0.145	0.1102	
15 minute summer	17	5.000	16	13.9	1.138	0.096	0.1308	
15 minute summer	16	4.001	7	31.4	2.425	0.125	0.7518	
15 minute summer	7	1.006	8	99.3	2.348	0.208	1.6534	
15 minute summer	8	1.007	9	124.5	2.031	0.207	2.1971	
1440 minute winter	9	1.008	basin	16.2	0.768	0.026	3.9467	
15 minute summer	18	6.000	19	17.6	1.352	0.077	0.4384	
15 minute summer	19	6.001	20	31.4	1.880	0.173	0.3477	
15 minute summer	20	6.002	21	41.1	2.192	0.065	0.3219	
1440 minute winter	23	7.001	21	1.8	0.481	0.022	1.3761	
1440 minute winter	21	6.003	basin	3.9	0.428	0.009	9.8757	
1440 minute winter	basin	6.004	FCC	3.0	0.073	0.005	9.9080	
1440 minute winter	FCC	Hydro-Brake®	OUTFALL	3.0				110.3

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	2	10	43.690	0.090	33.8	0.1281	0.0000	OK
15 minute summer	3	10	41.676	0.101	33.5	0.1442	0.0000	OK
15 minute summer	basin b	12	41.079	0.079	33.4	4.0838	0.0000	OK
15 minute summer	5	11	40.449	0.094	88.4	0.1352	0.0000	OK
15 minute summer	6	11	39.003	0.303	138.0	0.4339	0.0000	OK
15 minute summer	15	10	42.472	0.107	48.8	0.1211	0.0000	OK
15 minute summer	17	10	41.838	0.115	37.6	0.1300	0.0000	OK
15 minute summer	16	10	41.667	0.123	86.1	0.1397	0.0000	OK
15 minute summer	7	11	38.741	0.266	276.0	0.4704	0.0000	OK
960 minute winter	8	930	38.051	0.501	22.4	0.8859	0.0000	OK
960 minute winter	9	930	38.051	1.051	34.4	1.8578	0.0000	SURCHARGED
15 minute summer	18	10	39.992	0.092	47.8	0.1042	0.0000	OK
15 minute summer	19	10	38.657	0.157	85.7	0.1780	0.0000	OK
960 minute winter	20	930	38.051	0.251	7.1	0.2843	0.0000	OK
960 minute winter	23	930	38.051	0.601	5.0	0.8605	0.0000	SURCHARGED
960 minute winter	21	930	38.051	0.971	11.9	1.0986	0.0000	SURCHARGED
960 minute winter	basin	930	38.051	1.351	49.2	681.4346	0.0000	SURCHARGED
960 minute winter	FCC	930	38.051	1.401	4.2	3.5664	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	37.500	0.900	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	2	1.001	3	33.5	2.102	0.337	0.8882	
15 minute summer	3	1.002	basin b	33.4	2.524	0.366	0.2703	
15 minute summer	basin b	1.003	5	30.1	1.934	0.154	0.3457	
15 minute summer	5	1.004	6	88.3	3.050	0.219	0.4619	
15 minute summer	6	1.005	7	138.3	1.534	0.891	2.2325	
15 minute summer	15	4.000	16	48.7	2.778	0.392	0.2319	
15 minute summer	17	5.000	16	37.5	1.437	0.259	0.2784	
15 minute summer	16	4.001	7	85.1	3.181	0.340	1.5533	
15 minute summer	7	1.006	8	277.6	3.012	0.581	3.6021	
960 minute winter	8	1.007	9	22.4	0.912	0.037	7.6764	
960 minute winter	9	1.008	basin	42.2	1.031	0.068	3.9467	
15 minute summer	18	6.000	19	47.6	1.718	0.208	0.9271	
15 minute summer	19	6.001	20	84.8	2.405	0.468	0.7342	
960 minute winter	20	6.002	21	7.1	1.051	0.011	2.1381	
960 minute winter	23	7.001	21	4.8	0.590	0.057	1.8171	
960 minute winter	21	6.003	basin	11.7	0.483	0.027	9.8805	
960 minute winter	basin	6.004	FCC	4.2	0.107	0.007	9.9080	
960 minute winter	FCC	Hydro-Brake®	OUTFALL	4.2				179.2

Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 99.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	2	10	43.711	0.111	49.0	0.1583	0.0000	OK
15 minute summer	3	10	41.700	0.125	48.6	0.1785	0.0000	OK
15 minute summer	basin b	12	41.097	0.097	48.3	5.0523	0.0000	OK
15 minute summer	5	11	40.471	0.116	130.7	0.1663	0.0000	OK
15 minute summer	6	11	39.213	0.513	203.1	0.7345	0.0000	SURCHARGED
15 minute summer	15	10	42.502	0.137	70.8	0.1544	0.0000	OK
15 minute summer	17	10	41.868	0.145	54.5	0.1635	0.0000	OK
15 minute summer	16	10	41.691	0.148	124.8	0.1673	0.0000	OK
15 minute summer	7	10	38.829	0.354	405.1	0.6256	0.0000	OK
1440 minute summer	8	1440	38.475	0.925	34.6	1.6349	0.0000	SURCHARGED
1440 minute summer	9	1440	38.475	1.475	37.5	2.6067	0.0000	SURCHARGED
15 minute summer	18	10	40.012	0.112	69.3	0.1267	0.0000	OK
15 minute summer	19	10	38.703	0.203	124.3	0.2298	0.0000	OK
1440 minute summer	20	1440	38.475	0.675	10.8	0.7636	0.0000	SURCHARGED
1440 minute summer	23	1440	38.474	1.024	7.6	1.4660	0.0000	SURCHARGED
1440 minute summer	21	1440	38.474	1.394	18.0	1.5762	0.0000	SURCHARGED
1440 minute summer	basin	1440	38.475	1.775	55.1	1071.8430	0.0000	SURCHARGED
1440 minute summer	FCC	1440	38.475	1.825	4.3	4.6452	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	37.500	0.900	1.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	2	1.001	3	48.6	2.314	0.488	1.1683	
15 minute summer	3	1.002	basin b	48.3	2.689	0.530	0.3590	
15 minute summer	basin b	1.003	5	44.4	2.142	0.226	0.4635	
15 minute summer	5	1.004	6	130.7	3.044	0.323	0.5774	
15 minute summer	6	1.005	7	203.4	1.850	1.309	2.6310	
15 minute summer	15	4.000	16	70.5	3.008	0.568	0.3101	
15 minute summer	17	5.000	16	54.3	1.593	0.376	0.3641	
15 minute summer	16	4.001	7	124.1	3.143	0.496	2.4866	
15 minute summer	7	1.006	8	404.7	3.049	0.847	5.2895	
1440 minute summer	8	1.007	9	33.6	0.794	0.056	7.7389	
1440 minute summer	9	1.008	basin	37.3	0.631	0.060	3.9467	
15 minute summer	18	6.000	19	69.0	1.841	0.302	1.2434	
15 minute summer	19	6.001	20	122.9	2.596	0.679	0.9859	
1440 minute summer	20	6.002	21	10.5	0.874	0.017	2.7159	
1440 minute summer	23	7.001	21	7.5	0.510	0.090	1.8171	
1440 minute summer	21	6.003	basin	17.8	0.486	0.041	9.8805	
1440 minute summer	basin	6.004	FCC	4.3	0.042	0.007	9.9080	
1440 minute summer	FCC	Hydro-Brake®	OUTFALL	4.1				226.3

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	2	10	43.727	0.127	61.6	0.1824	0.0000	OK
15 minute summer	3	10	41.719	0.144	61.1	0.2064	0.0000	OK
15 minute summer	basin b	12	41.109	0.109	60.7	5.7495	0.0000	OK
15 minute summer	5	11	40.582	0.227	165.5	0.3245	0.0000	OK
15 minute summer	6	11	40.160	1.460	251.8	2.0897	0.0000	SURCHARGED
15 minute summer	15	10	42.527	0.162	88.9	0.1835	0.0000	OK
15 minute summer	17	10	41.891	0.168	68.5	0.1903	0.0000	OK
15 minute summer	16	10	41.713	0.170	156.9	0.1922	0.0000	OK
15 minute summer	7	11	39.655	1.180	492.6	2.0851	0.0000	SURCHARGED
1440 minute summer	8	1440	38.729	1.179	42.5	2.0828	0.0000	SURCHARGED
1440 minute summer	9	1440	38.729	1.729	46.9	3.0546	0.0000	SURCHARGED
15 minute summer	18	10	40.027	0.127	86.9	0.1435	0.0000	OK
15 minute summer	19	10	38.747	0.247	156.0	0.2792	0.0000	OK
1440 minute summer	20	1440	38.729	0.929	13.2	1.0511	0.0000	SURCHARGED
1440 minute summer	23	1440	38.729	1.279	9.4	1.8306	0.0000	SURCHARGED
1440 minute summer	21	1440	38.728	1.648	22.0	1.8643	0.0000	FLOOD RISK
1440 minute summer	basin	1440	38.729	2.029	68.6	1345.5510	0.0000	FLOOD RISK
1440 minute summer	FCC	1440	38.729	2.079	4.3	5.2902	0.0000	FLOOD RISK
15 minute summer	OUTFALL	1	37.500	0.900	3.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	2	1.001	3	61.1	2.439	0.613	1.3933	
15 minute summer	3	1.002	basin b	60.7	2.796	0.666	0.4276	
15 minute summer	basin b	1.003	5	56.7	2.270	0.289	0.8362	
15 minute summer	5	1.004	6	160.3	2.971	0.397	0.7703	
15 minute summer	6	1.005	7	244.1	2.213	1.572	2.7349	
15 minute summer	15	4.000	16	88.6	3.131	0.713	0.3739	
15 minute summer	17	5.000	16	68.3	1.669	0.472	0.4367	
15 minute summer	16	4.001	7	156.0	3.204	0.624	3.2403	
15 minute summer	7	1.006	8	476.8	3.010	0.998	6.1928	
1440 minute summer	8	1.007	9	42.1	0.842	0.070	7.7389	
1440 minute summer	9	1.008	basin	46.7	0.608	0.075	3.9467	
15 minute summer	18	6.000	19	86.7	1.900	0.379	1.5024	
15 minute summer	19	6.001	20	154.0	2.686	0.850	1.1937	
1440 minute summer	20	6.002	21	12.7	0.888	0.020	2.7159	
1440 minute summer	23	7.001	21	9.3	0.488	0.112	1.8171	
1440 minute summer	21	6.003	basin	21.9	0.517	0.051	9.8805	
1440 minute summer	basin	6.004	FCC	4.3	0.043	0.007	9.9080	
1440 minute summer	FCC	Hydro-Brake®	OUTFALL	4.2				253.1

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	OUTFALL	1	31.300	0.500	4.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	30	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	5.000
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	999.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
71	0.111	5.00	48.889	1200	505840.220	119377.458	1.628
88	0.114	5.00	48.460	1200	505813.741	119377.684	2.365
72	0.000	5.00	48.680	1350	505827.257	119377.462	2.683
73	0.026	5.00	47.076	1350	505825.677	119345.259	1.516
89	0.037	5.00	47.841	1200	505878.484	119327.636	1.426
90	0.013	5.00	47.318	1200	505878.281	119315.881	1.508
74	0.115	5.00	45.727	1500	505825.744	119316.789	1.682
75	0.072	5.00	44.688	1500	505825.876	119289.897	1.653
76	0.009	5.00	44.363	1500	505815.671	119284.629	1.653
91	0.042	5.00	45.256	1200	505766.502	119323.880	1.574
92	0.013	5.00	43.578	1200	505766.949	119294.755	1.652
77	0.094	5.00	42.967	1500	505771.142	119284.315	1.667
78	0.025	5.00	41.725	1500	505758.990	119268.955	1.735
93	0.045	5.00	43.315	1200	505745.681	119313.897	1.445
94	0.005	5.00	42.777	1200	505740.599	119305.850	1.427
79	0.112	5.00	41.448	1800	505731.354	119282.373	1.783
80	0.067	5.00	41.472	1800	505701.306	119290.942	2.768
81	0.033	5.00	39.790	1800	505694.943	119261.756	1.950
82	0.084	5.00	38.060	1800	505686.523	119231.583	2.025
102	0.089	5.00	37.902	1800	505715.252	119222.081	2.552
103	0.000	5.00	37.380	1800	505706.250	119193.808	2.930
Basin3A	0.000	5.00	35.700	1800	505675.683	119188.198	1.500
99	0.047	5.00	39.807	1200	505630.324	119272.150	1.421
100	0.066	5.00	38.596	1200	505624.727	119247.585	1.426
83	0.022	5.00	37.973	1800	505623.263	119236.173	2.088
101	0.103	5.00	37.569	1200	505565.423	119245.029	1.584
84	0.055	5.00	37.787	1800	505604.601	119238.736	2.487
84A	0.000	5.00	35.700	1500	505603.166	119228.310	1.575
Basin3	0.000	5.00	34.800	1800	505601.126	119218.174	1.650
fcc	0.000	5.00	34.850	1800	505579.032	119206.030	1.724
OUTFALL	0.000		34.600	1500	505577.244	119198.521	1.500

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	71	72	12.963	0.600	47.261	46.072	1.189	10.9	225	5.05	153.2
2.000	88	72	13.518	0.600	46.095	45.997	0.098	137.9	300	5.17	151.9
1.001	72	73	32.242	0.600	45.997	45.560	0.437	73.8	300	5.46	147.3
1.002	73	74	28.470	0.600	45.560	44.120	1.440	19.8	300	5.60	146.3
3.000	89	90	11.757	0.600	46.415	45.885	0.530	22.2	225	5.07	152.9
3.001	90	74	52.545	0.600	45.810	44.120	1.690	31.1	300	5.38	148.0
1.003	74	75	26.892	0.600	44.045	43.110	0.935	28.8	375	5.73	142.1
1.004	75	76	11.485	0.600	43.035	42.710	0.325	35.3	450	5.78	141.5
1.005	76	77	44.530	0.600	42.710	41.300	1.410	31.6	450	5.99	140.1
4.000	91	92	29.128	0.600	43.682	42.001	1.681	17.3	225	5.15	151.2
4.001	92	77	11.251	0.600	41.926	41.450	0.476	23.6	300	5.21	150.3
1.006	77	78	19.586	0.600	41.300	40.065	1.235	15.9	450	6.05	137.3
1.007	78	79	30.721	0.600	39.990	39.665	0.325	94.5	525	6.27	136.6
5.000	93	94	9.517	0.600	41.870	41.350	0.520	18.3	225	5.05	152.5
5.001	94	79	25.232	0.600	41.350	39.965	1.385	18.2	225	5.19	151.0
1.008	79	80	31.246	0.600	39.665	38.704	0.961	32.5	525	6.41	134.8
1.009	80	81	29.872	0.600	38.704	37.840	0.864	34.6	525	6.54	135.0
1.010	81	82	31.326	0.600	37.840	36.110	1.730	18.1	525	6.64	131.0
1.011	82	102	33.885	0.600	36.035	35.350	0.685	49.5	600	6.80	126.8
1.012	102	103	29.652	0.600	35.350	34.450	0.900	32.9	600	6.91	123.5
1.013	103	Basin3A	33.158	0.600	34.450	34.200	0.250	132.6	600	7.18	119.9
1.014	Basin3A	Basin3	80.357	0.600	34.200	33.225	0.975	82.4	525	7.72	112.2
7.000	99	100	23.146	0.600	38.386	37.170	1.216	19.0	225	5.13	152.2
7.001	100	83	13.564	0.600	37.170	35.960	1.210	11.2	225	5.19	151.2

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	3.985	158.4	61.5	1.403	2.383	0.111	0.0	97	3.739
2.000	1.337	94.5	62.6	2.065	2.383	0.114	0.0	178	1.425
1.001	1.832	129.5	119.8	2.383	1.216	0.225	0.0	229	2.069
1.002	3.551	251.0	132.7	1.216	1.307	0.251	0.0	155	3.598
3.000	2.790	110.9	20.4	1.201	1.208	0.037	0.0	65	2.147
3.001	2.829	200.0	26.7	1.208	1.307	0.050	0.0	74	1.987
1.003	3.389	374.3	213.6	1.307	1.203	0.416	0.0	203	3.496
1.004	3.428	545.2	249.6	1.203	1.203	0.488	0.0	213	3.353
1.005	3.627	576.9	251.6	1.203	1.217	0.497	0.0	208	3.510
4.000	3.158	125.6	23.0	1.349	1.352	0.042	0.0	65	2.414
4.001	3.247	229.5	29.9	1.352	1.217	0.055	0.0	72	2.261
1.006	5.124	814.9	320.5	1.217	1.210	0.646	0.0	196	4.829
1.007	2.304	498.7	331.3	1.210	1.258	0.671	0.0	314	2.457
5.000	3.073	122.2	24.8	1.220	1.202	0.045	0.0	68	2.416
5.001	3.080	122.5	27.3	1.202	1.258	0.050	0.0	72	2.487
1.008	3.937	852.4	405.8	1.258	2.243	0.833	0.0	255	3.892
1.009	3.818	826.5	439.1	2.243	1.425	0.900	0.0	272	3.874
1.010	5.281	1143.1	441.7	1.425	1.425	0.933	0.0	226	4.955
1.011	3.467	980.4	466.0	1.425	1.952	1.017	0.0	291	3.425
1.012	4.252	1202.1	493.6	1.952	2.330	1.106	0.0	267	4.053
1.013	2.113	597.3	479.3	2.330	0.900	1.106	0.0	409	2.335
1.014	2.468	534.3	448.5	0.975	1.050	1.106	0.0	370	2.749
7.000	3.013	119.8	25.9	1.196	1.201	0.047	0.0	71	2.417
7.001	3.930	156.2	61.7	1.201	1.788	0.113	0.0	98	3.703

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
7.002	83	84	18.161	0.600	35.885	35.300	0.585	31.0	300	5.29	118.2
8.000	101	84	19.614	0.600	35.985	35.450	0.535	36.7	225	5.15	152.5
7.003	84	84A	20.870	0.600	35.300	34.125	1.175	17.8	375	5.37	116.1
7.004	84A	Basin3	10.339	0.600	34.125	33.200	0.925	11.2	375	5.40	149.6
1.015	Basin3	fcc	9.700	0.600	33.150	33.126	0.024	404.2	825	7.83	120.3
1.016	fcc	OUTFALL	7.719	0.600	33.126	33.100	0.026	296.9	825	7.90	120.2

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
7.002	2.831	200.1	57.7	1.788	2.187	0.135	0.0	110	2.459
8.000	2.167	86.2	56.8	1.359	2.112	0.103	0.0	133	2.307
7.003	4.316	476.7	122.9	2.112	1.200	0.293	0.0	129	3.642
7.004	5.444	601.3	158.4	1.200	1.225	0.293	0.0	131	4.620
1.015	1.470	785.9	608.2	0.825	0.899	1.399	0.0	547	1.614
1.016	1.718	918.1	607.7	0.899	0.675	1.399	0.0	492	1.829

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	12.963	10.9	225	Circular_Default Sewer Type	48.889	47.261	1.403	48.680	46.072	2.383
2.000	13.518	137.9	300	Circular_Default Sewer Type	48.460	46.095	2.065	48.680	45.997	2.383
1.001	32.242	73.8	300	Circular_Default Sewer Type	48.680	45.997	2.383	47.076	45.560	1.216
1.002	28.470	19.8	300	Circular_Default Sewer Type	47.076	45.560	1.216	45.727	44.120	1.307
3.000	11.757	22.2	225	Circular_Default Sewer Type	47.841	46.415	1.201	47.318	45.885	1.208
3.001	52.545	31.1	300	Circular_Default Sewer Type	47.318	45.810	1.208	45.727	44.120	1.307
1.003	26.892	28.8	375	Circular_Default Sewer Type	45.727	44.045	1.307	44.688	43.110	1.203
1.004	11.485	35.3	450	Circular_Default Sewer Type	44.688	43.035	1.203	44.363	42.710	1.203
1.005	44.530	31.6	450	Circular_Default Sewer Type	44.363	42.710	1.203	42.967	41.300	1.217
4.000	29.128	17.3	225	Circular_Default Sewer Type	45.256	43.682	1.349	43.578	42.001	1.352
4.001	11.251	23.6	300	Circular_Default Sewer Type	43.578	41.926	1.352	42.967	41.450	1.217
1.006	19.586	15.9	450	Circular_Default Sewer Type	42.967	41.300	1.217	41.725	40.065	1.210
1.007	30.721	94.5	525	Circular_Default Sewer Type	41.725	39.990	1.210	41.448	39.665	1.258
5.000	9.517	18.3	225	Circular_Default Sewer Type	43.315	41.870	1.220	42.777	41.350	1.202

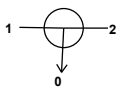
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	71	1200	Manhole	Adoptable	72	1350	Manhole	Adoptable
2.000	88	1200	Manhole	Adoptable	72	1350	Manhole	Adoptable
1.001	72	1350	Manhole	Adoptable	73	1350	Manhole	Adoptable
1.002	73	1350	Manhole	Adoptable	74	1500	Manhole	Adoptable
3.000	89	1200	Manhole	Adoptable	90	1200	Manhole	Adoptable
3.001	90	1200	Manhole	Adoptable	74	1500	Manhole	Adoptable
1.003	74	1500	Manhole	Adoptable	75	1500	Manhole	Adoptable
1.004	75	1500	Manhole	Adoptable	76	1500	Manhole	Adoptable
1.005	76	1500	Manhole	Adoptable	77	1500	Manhole	Adoptable
4.000	91	1200	Manhole	Adoptable	92	1200	Manhole	Adoptable
4.001	92	1200	Manhole	Adoptable	77	1500	Manhole	Adoptable
1.006	77	1500	Manhole	Adoptable	78	1500	Manhole	Adoptable
1.007	78	1500	Manhole	Adoptable	79	1800	Manhole	Adoptable
5.000	93	1200	Manhole	Adoptable	94	1200	Manhole	Adoptable

Pipeline Schedule

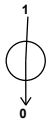
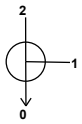
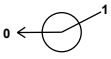
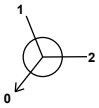
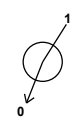
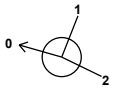
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
5.001	25.232	18.2	225	Circular_Default Sewer Type	42.777	41.350	1.202	41.448	39.965	1.258
1.008	31.246	32.5	525	Circular_Default Sewer Type	41.448	39.665	1.258	41.472	38.704	2.243
1.009	29.872	34.6	525	Circular_Default Sewer Type	41.472	38.704	2.243	39.790	37.840	1.425
1.010	31.326	18.1	525	Circular_Default Sewer Type	39.790	37.840	1.425	38.060	36.110	1.425
1.011	33.885	49.5	600	Circular_Default Sewer Type	38.060	36.035	1.425	37.902	35.350	1.952
1.012	29.652	32.9	600	Circular_Default Sewer Type	37.902	35.350	1.952	37.380	34.450	2.330
1.013	33.158	132.6	600	Circular_Default Sewer Type	37.380	34.450	2.330	35.700	34.200	0.900
1.014	80.357	82.4	525	Circular_Default Sewer Type	35.700	34.200	0.975	34.800	33.225	1.050
7.000	23.146	19.0	225	Circular_Default Sewer Type	39.807	38.386	1.196	38.596	37.170	1.201
7.001	13.564	11.2	225	Circular_Default Sewer Type	38.596	37.170	1.201	37.973	35.960	1.788
7.002	18.161	31.0	300	Circular_Default Sewer Type	37.973	35.885	1.788	37.787	35.300	2.187
8.000	19.614	36.7	225	Circular_Default Sewer Type	37.569	35.985	1.359	37.787	35.450	2.112
7.003	20.870	17.8	375	Circular_Default Sewer Type	37.787	35.300	2.112	35.700	34.125	1.200
7.004	10.339	11.2	375	Circular_Default Sewer Type	35.700	34.125	1.200	34.800	33.200	1.225
1.015	9.700	404.2	825	Circular_Default Sewer Type	34.800	33.150	0.825	34.850	33.126	0.899
1.016	7.719	296.9	825	Circular_Default Sewer Type	34.850	33.126	0.899	34.600	33.100	0.675

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
5.001	94	1200	Manhole	Adoptable	79	1800	Manhole	Adoptable
1.008	79	1800	Manhole	Adoptable	80	1800	Manhole	Adoptable
1.009	80	1800	Manhole	Adoptable	81	1800	Manhole	Adoptable
1.010	81	1800	Manhole	Adoptable	82	1800	Manhole	Adoptable
1.011	82	1800	Manhole	Adoptable	102	1800	Manhole	Adoptable
1.012	102	1800	Manhole	Adoptable	103	1800	Manhole	Adoptable
1.013	103	1800	Manhole	Adoptable	Basin3A	1800	Manhole	Adoptable
1.014	Basin3A	1800	Manhole	Adoptable	Basin3	1800	Manhole	Adoptable
7.000	99	1200	Manhole	Adoptable	100	1200	Manhole	Adoptable
7.001	100	1200	Manhole	Adoptable	83	1800	Manhole	Adoptable
7.002	83	1800	Manhole	Adoptable	84	1800	Manhole	Adoptable
8.000	101	1200	Manhole	Adoptable	84	1800	Manhole	Adoptable
7.003	84	1800	Manhole	Adoptable	84A	1500	Manhole	Adoptable
7.004	84A	1500	Manhole	Adoptable	Basin3	1800	Manhole	Adoptable
1.015	Basin3	1800	Manhole	Adoptable	fcc	1800	Manhole	Adoptable
1.016	fcc	1800	Manhole	Adoptable	OUTFALL	1500	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
71	505840.220	119377.458	48.889	1.628	1200				
						0	1.000	47.261	225
88	505813.741	119377.684	48.460	2.365	1200				
						0	2.000	46.095	300
72	505827.257	119377.462	48.680	2.683	1350		1	2.000	45.997	300
							2	1.000	46.072	225
						0	1.001	45.997	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
73	505825.677	119345.259	47.076	1.516	1350	 1	1.001	45.560	300
						0	1.002	45.560	300
89	505878.484	119327.636	47.841	1.426	1200	 0	3.000	46.415	225
90	505878.281	119315.881	47.318	1.508	1200	 1	3.000	45.885	225
						0	3.001	45.810	300
74	505825.744	119316.789	45.727	1.682	1500	 1	3.001	44.120	300
						2	1.002	44.120	300
						0	1.003	44.045	375
75	505825.876	119289.897	44.688	1.653	1500	 1	1.003	43.110	375
						0	1.004	43.035	450
76	505815.671	119284.629	44.363	1.653	1500	 1	1.004	42.710	450
						0	1.005	42.710	450
91	505766.502	119323.880	45.256	1.574	1200	 0	4.000	43.682	225
92	505766.949	119294.755	43.578	1.652	1200	 1	4.000	42.001	225
						0	4.001	41.926	300
77	505771.142	119284.315	42.967	1.667	1500	 1	4.001	41.450	300
						2	1.005	41.300	450
						0	1.006	41.300	450
78	505758.990	119268.955	41.725	1.735	1500	 1	1.006	40.065	450
						0	1.007	39.990	525
93	505745.681	119313.897	43.315	1.445	1200	 0	5.000	41.870	225
94	505740.599	119305.850	42.777	1.427	1200	 1	5.000	41.350	225
						0	5.001	41.350	225
79	505731.354	119282.373	41.448	1.783	1800	 1	5.001	39.965	225
						2	1.007	39.665	525
						0	1.008	39.665	525

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
80	505701.306	119290.942	41.472	2.768	1800	1	1.008	38.704	525
						0	1.009	38.704	525
81	505694.943	119261.756	39.790	1.950	1800	1	1.009	37.840	525
						0	1.010	37.840	525
82	505686.523	119231.583	38.060	2.025	1800	1	1.010	36.110	525
						0	1.011	36.035	600
102	505715.252	119222.081	37.902	2.552	1800	1	1.011	35.350	600
						0	1.012	35.350	600
103	505706.250	119193.808	37.380	2.930	1800	1	1.012	34.450	600
						0	1.013	34.450	600
Basin3A	505675.683	119188.198	35.700	1.500	1800	1	1.013	34.200	600
						0	1.014	34.200	525
99	505630.324	119272.150	39.807	1.421	1200	0	7.000	38.386	225
100	505624.727	119247.585	38.596	1.426	1200	1	7.000	37.170	225
						0	7.001	37.170	225
83	505623.263	119236.173	37.973	2.088	1800	1	7.001	35.960	225
						0	7.002	35.885	300
101	505565.423	119245.029	37.569	1.584	1200	0	8.000	35.985	225
84	505604.601	119238.736	37.787	2.487	1800	1	8.000	35.450	225
						2	7.002	35.300	300
						0	7.003	35.300	375
84A	505603.166	119228.310	35.700	1.575	1500	1	7.003	34.125	375
						0	7.004	34.125	375
Basin3	505601.126	119218.174	34.800	1.650	1800	1	7.004	33.200	375
						2	1.014	33.225	525
						0	1.015	33.150	825

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
fcc	505579.032	119206.030	34.850	1.724	1800	1	1.015	33.126	825
						0	1.016	33.126	825
OUTFALL	505577.244	119198.521	34.600	1.500	1500	1	1.016	33.100	825

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	✓	2 year (l/s)	20.1
Rainfall Events	Singular	Drain Down Time (mins)	1440	30 year (l/s)	54.9
Summer CV	1.000	Additional Storage (m³/ha)	0.0	100 year (l/s)	72.9
Winter CV	1.000	Starting Level (m)		Check Discharge Volume	✓
Analysis Speed	Normal	Check Discharge Rate(s)	✓	100 year 360 minute (m³)	

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	45	0	0
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	2.40
Greenfield Method	FEH	Growth Factor 100 year	3.19
Positively Drained Area (ha)	16.200	Betterment (%)	0
SAAR (mm)	838	QMed	20.1
Host	1	QBar	22.9
BFIHost	0.820	Q 2 year (l/s)	20.1
Region	7	Q 30 year (l/s)	54.9
QBar/QMed conversion factor	1.136	Q 100 year (l/s)	72.9
Growth Factor 2 year	0.88		

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)	16.200	Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	
CWI		Runoff Volume (m³)	

Node OUTFALL Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to All storms

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	0.700	2880	0.700	5760	0.700	8640	0.700
1440	0.700	4320	0.700	7200	0.700	10080	0.700

Node fcc Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	33.126	Product Number	CTL-SHE-0157-1250-1300-1250
Design Depth (m)	1.300	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	12.5	Min Node Diameter (mm)	1500

Node Basin3 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00003	Safety Factor	2.0	Invert Level (m)	33.150
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	1005

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	662.0	662.0	1.650	1981.0	662.0

Node Basin3A Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	34.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	296.0	0.0	1.500	1031.0	0.0

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Approval Settings

Node Size	✓	Minimum Full Bore Velocity (m/s)	
Node Losses	✓	Maximum Full Bore Velocity (m/s)	3.000
Link Size	✓	Proportional Velocity	✓
Minimum Diameter (mm)	150	Return Period (years)	
Link Length	✓	Minimum Proportional Velocity (m/s)	0.750
Maximum Length (m)	100.000	Maximum Proportional Velocity (m/s)	3.000
Coordinates	✓	Surcharged Depth	✓
Accuracy (m)	1.000	Return Period (years)	
Crossings	✓	Maximum Surcharged Depth (m)	0.100
Cover Depth	✓	Flooding	✓
Minimum Cover Depth (m)		Return Period (years)	30
Maximum Cover Depth (m)	3.000	Time to Half Empty	x
Backdrops	✓	Discharge Rates	✓
Minimum Backdrop Height (m)		Discharge Volume	✓
Maximum Backdrop Height (m)	1.500	100 year 360 minute (m³)	
Full Bore Velocity	✓		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	122.104	34.551	30 year +45% CC 15 minute summer	476.689	134.887
2 year 15 minute winter	85.687	34.551	30 year +45% CC 15 minute winter	334.519	134.887
2 year 30 minute summer	79.868	22.600	30 year +45% CC 30 minute summer	317.053	89.715
2 year 30 minute winter	56.048	22.600	30 year +45% CC 30 minute winter	222.494	89.715
2 year 60 minute summer	54.111	14.300	30 year +45% CC 60 minute summer	215.978	57.077
2 year 60 minute winter	35.950	14.300	30 year +45% CC 60 minute winter	143.491	57.077
2 year 120 minute summer	39.164	10.350	30 year +45% CC 120 minute summer	135.112	35.706
2 year 120 minute winter	26.020	10.350	30 year +45% CC 120 minute winter	89.765	35.706
2 year 180 minute summer	31.832	8.192	30 year +45% CC 180 minute summer	103.469	26.626
2 year 180 minute winter	20.692	8.192	30 year +45% CC 180 minute winter	67.257	26.626
2 year 240 minute summer	25.805	6.820	30 year +45% CC 240 minute summer	81.113	21.436
2 year 240 minute winter	17.144	6.820	30 year +45% CC 240 minute winter	53.890	21.436
2 year 360 minute summer	19.988	5.144	30 year +45% CC 360 minute summer	60.582	15.590
2 year 360 minute winter	12.993	5.144	30 year +45% CC 360 minute winter	39.380	15.590
2 year 480 minute summer	15.721	4.155	30 year +45% CC 480 minute summer	46.756	12.356
2 year 480 minute winter	10.445	4.155	30 year +45% CC 480 minute winter	31.063	12.356
2 year 600 minute summer	12.813	3.505	30 year +45% CC 600 minute summer	37.613	10.288
2 year 600 minute winter	8.755	3.505	30 year +45% CC 600 minute winter	25.699	10.288
2 year 720 minute summer	11.357	3.044	30 year +45% CC 720 minute summer	32.998	8.844
2 year 720 minute winter	7.632	3.044	30 year +45% CC 720 minute winter	22.176	8.844
2 year 960 minute summer	9.236	2.432	30 year +45% CC 960 minute summer	26.389	6.949
2 year 960 minute winter	6.118	2.432	30 year +45% CC 960 minute winter	17.481	6.949
2 year 1440 minute summer	6.617	1.773	30 year +45% CC 1440 minute summer	18.411	4.934
2 year 1440 minute winter	4.447	1.773	30 year +45% CC 1440 minute winter	12.373	4.934
30 year 15 minute summer	328.751	93.025	100 year +45% CC 15 minute summer	598.854	169.455
30 year 15 minute winter	230.702	93.025	100 year +45% CC 15 minute winter	420.249	169.455
30 year 30 minute summer	218.657	61.873	100 year +45% CC 30 minute summer	401.276	113.547
30 year 30 minute winter	153.444	61.873	100 year +45% CC 30 minute winter	281.597	113.547
30 year 60 minute summer	148.950	39.363	100 year +45% CC 60 minute summer	275.735	72.869
30 year 60 minute winter	98.959	39.363	100 year +45% CC 60 minute winter	183.192	72.869
30 year 120 minute summer	93.180	24.625	100 year +45% CC 120 minute summer	168.540	44.540
30 year 120 minute winter	61.907	24.625	100 year +45% CC 120 minute winter	111.974	44.540
30 year 180 minute summer	71.358	18.363	100 year +45% CC 180 minute summer	128.076	32.958
30 year 180 minute winter	46.384	18.363	100 year +45% CC 180 minute winter	83.253	32.958
30 year 240 minute summer	55.940	14.783	100 year +45% CC 240 minute summer	100.100	26.454
30 year 240 minute winter	37.165	14.783	100 year +45% CC 240 minute winter	66.504	26.454
30 year 360 minute summer	41.781	10.752	100 year +45% CC 360 minute summer	74.695	19.222
30 year 360 minute winter	27.159	10.752	100 year +45% CC 360 minute winter	48.554	19.222
30 year 480 minute summer	32.245	8.521	100 year +45% CC 480 minute summer	57.635	15.231
30 year 480 minute winter	21.423	8.521	100 year +45% CC 480 minute winter	38.291	15.231
30 year 600 minute summer	25.940	7.095	100 year +45% CC 600 minute summer	46.363	12.681
30 year 600 minute winter	17.724	7.095	100 year +45% CC 600 minute winter	31.678	12.681
30 year 720 minute summer	22.757	6.099	100 year +45% CC 720 minute summer	40.675	10.901
30 year 720 minute winter	15.294	6.099	100 year +45% CC 720 minute winter	27.336	10.901
30 year 960 minute summer	18.200	4.792	100 year +45% CC 960 minute summer	32.537	8.568
30 year 960 minute winter	12.056	4.792	100 year +45% CC 960 minute winter	21.553	8.568
30 year 1440 minute summer	12.697	3.403	100 year +45% CC 1440 minute summer	22.674	6.077
30 year 1440 minute winter	8.533	3.403	100 year +45% CC 1440 minute winter	15.238	6.077

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	71	10	47.320	0.059	22.1	0.0673	0.0000	OK
15 minute summer	88	10	46.204	0.109	22.7	0.1231	0.0000	OK
15 minute summer	72	10	46.127	0.130	44.6	0.1861	0.0000	OK
15 minute summer	73	10	45.653	0.093	49.4	0.1331	0.0000	OK
15 minute summer	89	10	46.456	0.041	7.4	0.0459	0.0000	OK
15 minute summer	90	10	45.855	0.045	9.9	0.0509	0.0000	OK
15 minute summer	74	11	44.170	0.125	81.6	0.2200	0.0000	OK
15 minute summer	75	10	43.179	0.144	95.0	0.2537	0.0000	OK
15 minute summer	76	11	42.837	0.127	96.9	0.2251	0.0000	OK
15 minute summer	91	10	43.722	0.040	8.4	0.0450	0.0000	OK
15 minute summer	92	10	41.972	0.046	10.9	0.0522	0.0000	OK
15 minute summer	77	11	41.428	0.128	125.9	0.2258	0.0000	OK
15 minute summer	78	11	40.187	0.197	131.0	0.3473	0.0000	OK
15 minute summer	93	10	41.913	0.043	9.0	0.0482	0.0000	OK
15 minute summer	94	10	41.394	0.044	10.0	0.0497	0.0000	OK
15 minute summer	79	11	39.825	0.160	162.7	0.4083	0.0000	OK
15 minute summer	80	11	38.882	0.178	176.0	0.4524	0.0000	OK
15 minute summer	81	11	37.989	0.149	182.6	0.3795	0.0000	OK
15 minute summer	82	11	36.231	0.196	198.1	0.4983	0.0000	OK
15 minute summer	102	11	35.519	0.169	214.6	0.4309	0.0000	OK
15 minute summer	103	10	34.738	0.288	213.4	0.7341	0.0000	OK
30 minute summer	Basin3A	23	34.363	0.163	196.5	55.3586	0.0000	OK
15 minute summer	99	10	38.428	0.042	9.4	0.0480	0.0000	OK
15 minute summer	100	10	37.230	0.060	22.5	0.0682	0.0000	OK
15 minute summer	83	10	35.959	0.074	26.8	0.1885	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	71	1.000	72	22.0	2.726	0.139	0.1047	
15 minute summer	88	2.000	72	22.5	0.863	0.239	0.3536	
15 minute summer	72	1.001	73	44.2	1.854	0.341	0.7712	
15 minute summer	73	1.002	74	49.0	2.717	0.195	0.5133	
15 minute summer	89	3.000	90	7.3	1.553	0.066	0.0556	
15 minute summer	90	3.001	74	9.8	1.408	0.049	0.3721	
15 minute summer	74	1.003	75	81.3	2.651	0.217	0.8249	
15 minute summer	75	1.004	76	95.2	2.375	0.175	0.4609	
15 minute summer	76	1.005	77	97.3	2.638	0.169	1.6435	
15 minute summer	91	4.000	92	8.3	1.783	0.066	0.1356	
15 minute summer	92	4.001	77	10.8	1.636	0.047	0.0745	
15 minute summer	77	1.006	78	126.2	3.533	0.155	0.7000	
15 minute summer	78	1.007	79	131.7	2.037	0.264	1.9893	
15 minute summer	93	5.000	94	9.0	1.685	0.073	0.0507	
15 minute summer	94	5.001	79	9.9	1.839	0.081	0.1355	
15 minute summer	79	1.008	80	163.3	2.722	0.192	1.8762	
15 minute summer	80	1.009	81	176.3	3.080	0.213	1.7129	
15 minute summer	81	1.010	82	182.1	3.789	0.159	1.5058	
15 minute summer	82	1.011	102	197.7	2.731	0.202	2.4561	
15 minute summer	102	1.012	103	213.4	2.225	0.178	2.9389	
15 minute summer	103	1.013	Basin3A	217.2	2.835	0.364	2.7256	
30 minute summer	Basin3A	1.014	Basin3	110.2	1.964	0.206	4.5088	
15 minute summer	99	7.000	100	9.3	1.373	0.078	0.1588	
15 minute summer	100	7.001	83	22.4	2.714	0.143	0.1119	
15 minute summer	83	7.002	84	26.6	1.669	0.133	0.2904	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	101	10	36.063	0.078	20.5	0.0878	0.0000	OK
15 minute summer	84	10	35.393	0.093	58.0	0.2358	0.0000	OK
15 minute summer	84A	10	34.210	0.085	57.6	0.1505	0.0000	OK
1440 minute summer	Basin3	2880	33.778	0.628	25.5	574.4288	0.0000	OK
1440 minute summer	fcc	2880	33.778	0.652	0.2	1.6582	0.0000	OK
15 minute summer	OUTFALL	1	33.800	0.700	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	101	8.000	84	20.3	1.732	0.236	0.2303	
15 minute summer	84	7.003	84A	57.6	2.891	0.121	0.4163	
15 minute summer	84A	7.004	Basin3	57.3	3.269	0.095	0.1815	
1440 minute summer	Basin3	1.015	fcc	0.2	0.049	0.000	4.3006	
1440 minute summer	Basin3	Infiltration		0.0				
1440 minute summer	fcc	Hydro-Brake®	OUTFALL	0.0				0.0

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	71	10	47.356	0.095	59.6	0.1075	0.0000	OK
15 minute summer	88	10	46.312	0.217	61.2	0.2449	0.0000	OK
15 minute summer	72	10	46.251	0.254	120.3	0.3635	0.0000	OK
15 minute summer	73	10	45.726	0.166	132.8	0.2375	0.0000	OK
15 minute summer	89	10	46.483	0.068	19.9	0.0773	0.0000	OK
15 minute summer	90	10	45.883	0.073	26.8	0.0829	0.0000	OK
15 minute summer	74	10	44.273	0.228	219.8	0.4022	0.0000	OK
15 minute summer	75	10	43.302	0.267	255.9	0.4714	0.0000	OK
15 minute summer	76	11	42.934	0.224	260.9	0.3950	0.0000	OK
15 minute summer	91	10	43.748	0.066	22.6	0.0746	0.0000	OK
15 minute summer	92	10	42.004	0.078	29.4	0.0878	0.0000	OK
15 minute summer	77	11	41.519	0.219	338.7	0.3872	0.0000	OK
15 minute summer	78	11	40.351	0.361	352.5	0.6387	0.0000	OK
15 minute summer	93	10	41.942	0.072	24.2	0.0818	0.0000	OK
15 minute summer	94	10	41.424	0.074	26.8	0.0832	0.0000	OK
15 minute summer	79	11	39.956	0.291	437.1	0.7404	0.0000	OK
15 minute summer	80	11	39.031	0.327	473.4	0.8321	0.0000	OK
15 minute summer	81	11	38.099	0.259	492.2	0.6599	0.0000	OK
15 minute summer	82	11	36.390	0.355	535.7	0.9026	0.0000	OK
15 minute summer	102	11	35.677	0.327	581.1	0.8324	0.0000	OK
15 minute winter	103	7	35.037	0.587	543.2	1.4935	0.0000	OK
30 minute summer	Basin3A	22	34.527	0.327	535.6	123.9022	0.0000	OK
15 minute summer	99	10	38.456	0.070	25.2	0.0788	0.0000	OK
15 minute summer	100	10	37.276	0.106	60.5	0.1198	0.0000	OK
15 minute summer	83	10	36.015	0.130	72.0	0.3306	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	71	1.000	72	59.5	2.773	0.376	0.3229	
15 minute summer	88	2.000	72	60.8	1.026	0.643	0.7981	
15 minute summer	72	1.001	73	118.8	2.266	0.917	1.6701	
15 minute summer	73	1.002	74	131.6	3.470	0.524	1.0825	
15 minute summer	89	3.000	90	19.8	2.033	0.178	0.1145	
15 minute summer	90	3.001	74	26.5	1.430	0.133	1.2953	
15 minute summer	74	1.003	75	218.9	3.348	0.585	1.7576	
15 minute summer	75	1.004	76	256.3	2.908	0.470	1.0121	
15 minute summer	76	1.005	77	262.1	3.378	0.454	3.4551	
15 minute summer	91	4.000	92	22.4	2.362	0.178	0.2763	
15 minute summer	92	4.001	77	29.3	2.139	0.127	0.1540	
15 minute summer	77	1.006	78	339.7	3.712	0.417	1.7926	
15 minute summer	78	1.007	79	353.8	2.510	0.709	4.3210	
15 minute summer	93	5.000	94	24.1	2.168	0.197	0.1059	
15 minute summer	94	5.001	79	26.6	2.421	0.217	0.2772	
15 minute summer	79	1.008	80	439.1	3.324	0.515	4.1264	
15 minute summer	80	1.009	81	475.3	3.836	0.575	3.6978	
15 minute summer	81	1.010	82	492.7	4.431	0.431	3.4948	
15 minute summer	82	1.011	102	535.5	3.254	0.546	5.5980	
15 minute summer	102	1.012	103	582.1	2.783	0.484	6.1113	
15 minute winter	103	1.013	Basin3A	544.2	3.224	0.911	5.8981	
30 minute summer	Basin3A	1.014	Basin3	357.7	2.628	0.669	10.9374	
15 minute summer	99	7.000	100	25.1	1.753	0.210	0.3333	
15 minute summer	100	7.001	83	60.2	3.482	0.385	0.2345	
15 minute summer	83	7.002	84	71.7	2.127	0.358	0.6123	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	101	10	36.127	0.142	55.3	0.1604	0.0000	OK
15 minute summer	84	10	35.460	0.160	156.0	0.4072	0.0000	OK
15 minute summer	84A	10	34.277	0.152	155.4	0.2681	0.0000	OK
960 minute winter	Basin3	750	33.983	0.833	46.5	830.8654	0.0000	SURCHARGED
960 minute winter	fcc	750	33.984	0.858	13.5	2.1826	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	33.800	0.700	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	101	8.000	84	54.9	2.195	0.637	0.4904	
15 minute summer	84	7.003	84A	155.4	3.590	0.326	0.9034	
15 minute summer	84A	7.004	Basin3	154.7	4.131	0.257	0.5378	
960 minute winter	Basin3	1.015	fcc	13.5	0.083	0.017	5.1709	
960 minute winter	Basin3	Infiltration		0.0				
960 minute winter	fcc	Hydro-Brake®	OUTFALL	11.4				430.1

Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	71	11	47.403	0.142	86.4	0.1605	0.0000	OK
15 minute summer	88	11	46.880	0.785	88.8	0.8877	0.0000	SURCHARGED
15 minute summer	72	11	46.761	0.764	171.3	1.0926	0.0000	SURCHARGED
15 minute summer	73	11	45.767	0.207	188.1	0.2968	0.0000	OK
15 minute summer	89	10	46.499	0.084	28.8	0.0952	0.0000	OK
15 minute summer	90	10	45.899	0.089	38.8	0.1001	0.0000	OK
15 minute summer	74	11	44.346	0.301	311.2	0.5314	0.0000	OK
15 minute summer	75	11	43.384	0.349	365.7	0.6170	0.0000	OK
15 minute summer	76	11	42.992	0.282	373.0	0.4977	0.0000	OK
15 minute summer	91	10	43.762	0.080	32.7	0.0910	0.0000	OK
15 minute summer	92	10	42.016	0.090	42.5	0.1020	0.0000	OK
15 minute summer	77	11	41.581	0.281	484.6	0.4972	0.0000	OK
15 minute summer	78	11	40.510	0.520	504.0	0.9187	0.0000	OK
15 minute summer	93	10	41.959	0.089	35.0	0.1011	0.0000	OK
15 minute summer	94	10	41.440	0.090	38.8	0.1021	0.0000	OK
15 minute summer	79	11	40.046	0.381	622.9	0.9700	0.0000	OK
15 minute summer	80	11	39.139	0.435	673.9	1.1070	0.0000	OK
15 minute summer	81	11	38.164	0.324	699.5	0.8244	0.0000	OK
15 minute summer	82	11	36.510	0.475	762.3	1.2083	0.0000	OK
15 minute summer	102	11	35.876	0.526	826.3	1.3384	0.0000	OK
15 minute summer	103	11	35.356	0.906	816.6	2.3047	0.0000	SURCHARGED
30 minute summer	Basin3A	22	34.632	0.432	764.8	174.8097	0.0000	OK
15 minute summer	99	10	38.471	0.085	36.6	0.0959	0.0000	OK
15 minute summer	100	10	37.305	0.135	87.8	0.1529	0.0000	OK
15 minute summer	83	10	36.051	0.166	104.5	0.4212	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	71	1.000	72	85.6	2.774	0.540	0.4288	
15 minute summer	88	2.000	72	85.7	1.217	0.907	0.9519	
15 minute summer	72	1.001	73	168.8	2.536	1.303	1.9729	
15 minute summer	73	1.002	74	188.2	3.536	0.750	1.5493	
15 minute summer	89	3.000	90	28.7	2.234	0.258	0.1509	
15 minute summer	90	3.001	74	38.5	1.411	0.192	1.9422	
15 minute summer	74	1.003	75	312.3	3.488	0.834	2.4350	
15 minute summer	75	1.004	76	366.3	3.086	0.672	1.3574	
15 minute summer	76	1.005	77	373.5	3.600	0.647	4.6453	
15 minute summer	91	4.000	92	32.4	2.609	0.258	0.3623	
15 minute summer	92	4.001	77	42.5	2.144	0.185	0.2631	
15 minute summer	77	1.006	78	485.4	3.768	0.596	2.5698	
15 minute summer	78	1.007	79	502.2	2.651	1.007	5.8927	
15 minute summer	93	5.000	94	34.9	2.362	0.286	0.1407	
15 minute summer	94	5.001	79	38.5	2.668	0.314	0.3642	
15 minute summer	79	1.008	80	624.1	3.478	0.732	5.6125	
15 minute summer	80	1.009	81	675.0	4.056	0.817	4.9456	
15 minute summer	81	1.010	82	699.9	4.556	0.612	4.9536	
15 minute summer	82	1.011	102	760.2	3.252	0.775	8.4887	
15 minute summer	102	1.012	103	816.6	2.913	0.679	8.0581	
15 minute summer	103	1.013	Basin3A	816.0	3.338	1.366	7.9921	
30 minute summer	Basin3A	1.014	Basin3	503.2	2.775	0.942	14.5722	
15 minute summer	99	7.000	100	36.5	1.893	0.304	0.4464	
15 minute summer	100	7.001	83	87.4	3.772	0.559	0.3141	
15 minute summer	83	7.002	84	104.0	2.306	0.520	0.8180	

Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	101	10	36.181	0.196	80.2	0.2211	0.0000	OK
15 minute summer	84	10	35.501	0.201	226.1	0.5121	0.0000	OK
15 minute summer	84A	10	34.318	0.193	225.2	0.3413	0.0000	OK
720 minute winter	Basin3	705	34.235	1.085	86.1	1192.1990	0.0000	SURCHARGED
720 minute winter	fcc	705	34.236	1.110	14.3	2.8239	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	33.800	0.700	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	101	8.000	84	79.4	2.317	0.921	0.6720	
15 minute summer	84	7.003	84A	225.2	3.837	0.472	1.2251	
15 minute summer	84A	7.004	Basin3	224.2	4.457	0.373	0.5837	
720 minute winter	Basin3	1.015	fcc	14.3	0.084	0.018	5.1714	
720 minute winter	Basin3	Infiltration		0.0				
720 minute winter	fcc	Hydro-Brake®	OUTFALL	12.5				826.7

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	71	11	48.022	0.761	108.6	0.8605	0.0000	SURCHARGED
15 minute summer	88	11	47.530	1.435	111.5	1.6227	0.0000	SURCHARGED
15 minute summer	72	11	47.355	1.358	209.0	1.9429	0.0000	SURCHARGED
15 minute summer	73	11	46.073	0.513	224.8	0.7339	0.0000	SURCHARGED
15 minute summer	89	10	46.511	0.096	36.2	0.1089	0.0000	OK
15 minute summer	90	10	45.910	0.100	48.7	0.1128	0.0000	OK
15 minute summer	74	11	44.658	0.613	378.4	1.0826	0.0000	SURCHARGED
15 minute summer	75	11	43.450	0.415	435.9	0.7332	0.0000	OK
15 minute summer	76	12	43.030	0.320	444.8	0.5654	0.0000	OK
15 minute summer	91	10	43.773	0.091	41.1	0.1035	0.0000	OK
15 minute summer	92	10	42.026	0.100	53.5	0.1129	0.0000	OK
15 minute summer	77	12	41.916	0.616	580.9	1.0890	0.0000	SURCHARGED
15 minute summer	78	12	40.988	0.998	588.4	1.7639	0.0000	SURCHARGED
15 minute summer	93	10	41.974	0.104	44.0	0.1172	0.0000	OK
15 minute summer	94	9	41.449	0.099	48.8	0.1124	0.0000	OK
15 minute summer	79	11	40.355	0.690	742.7	1.7565	0.0000	SURCHARGED
15 minute summer	80	11	39.402	0.698	785.0	1.7773	0.0000	SURCHARGED
15 minute summer	81	12	38.296	0.456	806.8	1.1617	0.0000	OK
15 minute summer	82	12	37.249	1.214	872.9	3.0888	0.0000	SURCHARGED
15 minute summer	102	12	36.459	1.109	943.9	2.8232	0.0000	SURCHARGED
15 minute summer	103	12	35.617	1.167	946.8	2.9702	0.0000	SURCHARGED
30 minute summer	Basin3A	23	34.734	0.534	914.1	229.0593	0.0000	SURCHARGED
15 minute summer	99	10	38.482	0.096	46.0	0.1087	0.0000	OK
15 minute summer	100	10	37.331	0.161	110.4	0.1816	0.0000	OK
15 minute summer	83	10	36.081	0.196	131.3	0.4984	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	71	1.000	72	102.4	2.766	0.646	0.5156	
15 minute summer	88	2.000	72	106.6	1.514	1.129	0.9519	
15 minute summer	72	1.001	73	199.4	2.879	1.540	2.2705	
15 minute summer	73	1.002	74	221.4	3.511	0.882	2.0048	
15 minute summer	89	3.000	90	36.0	2.361	0.325	0.1795	
15 minute summer	90	3.001	74	48.4	1.418	0.242	2.3875	
15 minute summer	74	1.003	75	368.7	3.432	0.985	2.9660	
15 minute summer	75	1.004	76	436.4	3.178	0.800	1.5532	
15 minute summer	76	1.005	77	441.6	3.496	0.765	6.2123	
15 minute summer	91	4.000	92	40.8	2.769	0.325	0.4292	
15 minute summer	92	4.001	77	53.4	2.197	0.232	0.5054	
15 minute summer	77	1.006	78	564.0	3.769	0.692	3.1033	
15 minute summer	78	1.007	79	586.7	2.716	1.176	6.6367	
15 minute summer	93	5.000	94	43.9	2.550	0.359	0.1638	
15 minute summer	94	5.001	79	48.6	2.750	0.397	0.7059	
15 minute summer	79	1.008	80	719.6	3.439	0.844	6.7502	
15 minute summer	80	1.009	81	776.1	4.096	0.939	6.2043	
15 minute summer	81	1.010	82	805.6	4.364	0.705	6.5063	
15 minute summer	82	1.011	102	875.8	3.166	0.893	9.5446	
15 minute summer	102	1.012	103	946.8	3.362	0.788	8.3523	
15 minute summer	103	1.013	Basin3A	949.6	3.671	1.590	8.7876	
30 minute summer	Basin3A	1.014	Basin3	545.8	2.747	1.021	16.9628	
15 minute summer	99	7.000	100	45.8	1.961	0.383	0.5378	
15 minute summer	100	7.001	83	109.8	3.925	0.703	0.3788	
15 minute summer	83	7.002	84	130.7	2.415	0.653	0.9793	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	101	10	36.542	0.557	100.7	0.6296	0.0000	SURCHARGED
15 minute summer	84	10	35.535	0.235	283.5	0.5974	0.0000	OK
960 minute winter	84A	915	34.403	0.278	24.4	0.4917	0.0000	OK
720 minute winter	Basin3	705	34.402	1.252	106.3	1457.7150	0.0000	SURCHARGED
720 minute winter	fcc	705	34.402	1.276	13.1	3.2465	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	33.800	0.700	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	101	8.000	84	99.1	2.491	1.150	0.7800	
15 minute summer	84	7.003	84A	282.3	3.972	0.592	1.4832	
960 minute winter	84A	7.004	Basin3	32.2	1.429	0.054	1.0235	
720 minute winter	Basin3	1.015	fcc	13.1	0.116	0.017	5.1714	
720 minute winter	Basin3	Infiltration		0.0				
720 minute winter	fcc	Hydro-Brake®	OUTFALL	12.5				1143.6

APPENDIX C

Winter Groundwater Monitoring Report

leap environmental
part of RSK Geosciences

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03 APRIL 2025

Our reference: SH/25/3750782/GW

Mr Matt Winning
BDW Southern Counties

By email

Re: 3750782 New Place Farm, Pulborough RH20 1AT Groundwater Monitoring

Dear Matt,

1. INTRODUCTION

RSK Environment Ltd trading as Leap Environmental (hereafter referred to as LEAP) has been appointed by BDW Southern Counties a trading name of BDW Trading Ltd (hereafter referred to as 'the Client') to undertake Winter Groundwater Monitoring at a site referred to as New Place Farm, Pulborough. The groundwater monitoring was undertaken between October 2024 to March 2025.

This report summarises the groundwater monitoring results following the monitoring completion in March 2025.

The site is proposed to be redeveloped with up to 170 low rise residential dwellings, public open space areas, and associated infrastructure, as per the client-supplied drawing (edp3037_d043e and edp303_d042f), **Appendix B**.

LEAP and others have previously conducted investigations as detailed in the following reports. The following previous reports should be read in conjunction with this letter report.

- GRM 'Phase I Site Appraisal (Desk Study)' Dated January 2016 (ref: GRM/P7298/DS.1).
- GRM 'Soakaway Testing at Drovers Lane, Pulborough' Dated 10 March 2016 (ref P7298 – SA1).
- TSA Asbestos 'Asbestos Survey Report at New Place Nursery' Dated 9th March 2016.
- GRM 'Phase II Site Appraisal' Dated April 2016 (ref: GRM/P7298/F.1).
- GRM 'Gas Addendum Letter for Land north east of Glebelands, Pulborough' Dated 26th July 2016 (ref: P7298\GAL).
- GRM 'Phase I Site Appraisal (Desk Study)' Dated August 2020 (ref: GRM/P7298/DS.1/RevA) NOTE: This desk study provides an update of the previous desk study undertaken in 2016 following expansion of the site boundary to include the northern portion of the site.
- GRM 'Soakaway Testing Letter Report' ref P7298 SA.2 - April 2021.
- GRM 'Land Off Drovers Lane, Pulborough: Phase II Site Appraisal report' Dated August 2022 (ref: GRM/P7298/F.2).
- LEAP 'Technical Appraisal Form' Dated 26 January 2024 (ref: LPTA3601).

- LEAP Phase III Site Investigation ref: 3750605/PIII/1 dated 10 July 2024

2. BACKGROUND SUMMARY

2.1 Geology

The geology of the site has been ascertained by reference to the 1:50,000 British Geological Survey sheet 317/332 ‘Chichester and Bognor’, solid and drift edition, the BGS Geoindex Onshore web viewer and the previous ground investigations for the site. The site is mapped as being underlain by Hythe Formation (Sandstone) with superficial Head Deposits shown overlying this in the southernmost corner. The Head Deposits to the south are shown to extend approximately east to west in a 270m wide band, then cutting to the north of the site following the railway track. No superficial deposits are mapped across the rest of the site.

2.1.1 Head Deposits

Head Deposits accumulated largely by solifluction (the slow downslope movement of soil in response to the seasonal freezing and thawing of ground) and hillwash, mainly under periglacial conditions during the Quaternary glaciations. In general it occurs beneath concave slopes on the flanks and floors of valleys. It is locally derived and its content reflects the base geology, in this instance it comprises of variable deposits of impure clays, silts and sands, locally gravelly.

2.1.2 Hythe Formation

The Hythe Formation consists mainly of glauconitic fine to coarse grained sands and sandstones with some interbedded more strongly cemented sandstones and doggers with either calcareous or siliceous cement. Beds of clay or sandy clay, and thin seams of Fuller’s earth also occur. In Kent and eastern Sussex the formation comprises alternating sandy limestones ("Ragstone") and glauconitic sandy mudstones (Hassock).

2.1.3 BGS Boreholes

The online BGS Geoindex Map Viewer has been reviewed for detailed local geological and hydrogeological information. Two boreholes have been identified within 350 m of the site. Borehole reference TQ01NE16, located 350 m southeast of the site, indicates ground conditions comprise Hythe beds to 33.50 mBGL over Atherfield Clay to 38.40 mBGL. Groundwater was reported at 9 foot 6 inches (2.85 m) below ground level (BGL). Borehole reference TQ01NE91, located 315 m north of the site, indicates ground conditions comprise topsoil to 0.50 mBGL over yellow and brown clay to 7.50 mBGL over dark Weald Clay to 57.00 m over Weald Clay with red interbedded mudstone to 74 mBGL. No comments relating to groundwater are recorded.

2.2 Hydrology

The site's hydrogeology has been ascertained from the Groundsure data report prepared for the site. The data source is reported to be the Environment Agency Groundwater Vulnerability Mapping and Natural Resources Wales.

The superficial Head Deposits soils mapped beneath the southernmost corner of the site are classified as a Secondary A aquifer whilst the underlying Hythe Formation is classed as a Principal aquifer.

The site is not situated within a groundwater Source Protection Zone.

2.3 Flooding

The site was mapped by Groundsure at a negligible risk from groundwater flooding.

3. FIELDWORK

3.1 Intrusive investigations by Leap

Intrusive investigations to install groundwater monitoring wells were completed in two phases by Leap. The first phase of work was undertaken between 22 April and 25 April 2024, with 2 wells installed to monitor groundwater levels (WS301, WS315). A further six wells were installed in October 2024 to provide improved coverage for winter water level monitoring (WS401-WS406).

A site investigation location plan is provided in **Appendix B**.

3.2 Monitoring Well Installation

The monitoring wells were constructed of 50.00 mm slotted and plain 50.00 mm pipe, all of high-density polyethylene (HDPE) material. The response zone was surrounded by washed filter gravel and the plain zone was surrounded by bentonite to provide a seal. The monitoring wells were finished with bungs and gas taps. All monitoring wells were finished with a raised cover.

Monitoring installations are shown on the borehole logs in the previous reports and attached in **Appendix C** for the positions installed in October 2024 phase of work. Installation details are summarised in **Table 1** below.

Table 1: Windowless Installation Details

Borehole	Targeted Medium	Installed Depth (m bgl)	Response Zone (m bgl)	Bentonite Seal (m bgl)
WS7	Gas / SAND	2.56	1.0 – 2.56	0 – 1.0
WS201	Gas / SAND	2.01	1.0 – 2.01	0 – 1.0
WS202	Gas / MADE GROUND	1.46	0.5 - 1.46	0 – 0.5
WS203	Gas / SAND	1.58	0.6 – 1.58	0 – 0.6
WS204	Gas / SAND	1.92	1.0 – 1.92	0 – 1.0
WS207	Gas / SAND	1.56	0.45 – 1.56	0 – 0.45

Borehole	Targeted Medium	Installed Depth (m bgl)	Response Zone (m bgl)	Bentonite Seal (m bgl)
WS301	Gas / SAND	0.80	0.3 – 0.8	0.2 - 0.8
WS315	Gas / SAND	2.0	1.0 – 2.0	0.2 – 1.0
WS401	Groundwater / CLAY	2.0	0.8- 2.0	0.0 – 0.8
WS402	Groundwater / CLAY and SAND	3.0	0.6 – 3.0	0.0 – 0.6
WS403	Groundwater / CLAY, SAND and SANDSTONE	2.8	0.8 – 2.8	0.0 – 0.8
WS404	Groundwater / CLAY and SAND	1.7	0.7 – 1.7	0.0 – 0.7
WS405	Groundwater / CLAY and SAND/SILT STONE	1.7	0.7 – 1.7	0.0 – 0.7
WS406	Groundwater / GRAVEL, CLAY and SANDSTONE	1.8	0.8 – 1.8	0.0 – 0.8

3.3 Weather Conditions

At the time of the investigations, the weather was generally dry and sunny.

The Met Office Climate Summaries[1] have been reviewed for rainfall information for the three months preceding the April 2024 site works. All were wetter than average with England recording 102%, 239% and 108% of average rainfall in January, February and March 2024 respectively. Southern England experienced the wettest February on record in 2024.

The monitoring visits to record groundwater levels in the wells were carried out from October 2024 to March 2025. The Met Office Climate Summaries[2] have been reviewed for the months during which

[1] Met Office Climate Summaries: https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index
[2] Met Office Climate Summaries: https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index

monitoring took place, from October 2024 to March 2025. October 2024 to November 2024 were drier than average, with the UK having 90% of the 1991 to 2020 average for seasonal rainfall. December 2024 was slightly warmer and drier, with only 50-75% of long term average 1991-2020 rainfall. January 2025 was slightly cooler than the 1991-2020 long term average, with the south east receiving 125-150% more rainfall over the month. February 2025 showed little to no deviation from the anticipated values for temperature and rainfall. The Met Office climate summary for March 2025 was not published at the time of issue.

4. GROUNDWATER MONITORING RESULTS

3 rounds of monitoring were completed in between May 2024 and June 2024 at 8 locations, of which 6 locations were dry (WS7, WS201, WS202, WS203, WS204, WS315). Groundwater levels where encountered in WS207 and WS301 during the monitoring period and were recorded at levels of between 0.32 m and 1.30 m below ground level as summarised in **Table 2**. A further six rounds of groundwater monitoring were completed between October 2024 and March 2025, as presented in **Table 3**.

The majority of wells were found to be dry over the course of the monitoring period between October 2024 and March 2025. WS315 was found to contain water at ground level on three of the six monitoring visits completed in November, December and January. WS315 was recorded as dry in Feb and March. These results appear discordant to the groundwater trends at other locations at the site. WS315 is located 13.00 m downgradient from the central pond. On the 27 March 2025, WS315 was found to be dry and the neighbouring pond water level was recorded (as shown Plate 1 of **Appendix D**). The pond water level was low, estimated to have fallen to 2.00 m below the high fill mark. The pond liner has been colonised by vegetation, which implies the pond water level has been low for a sustained period. Inspection of the pond level was not part of the groundwater monitoring program. A photo of the pond was included within the site investigation in June 2024 (LP3646), which shows the pond to be at the high fill mark (Plate 2, **Appendix D**). It is considered possible that the groundwater reported within WS315 may be influenced by the fall in water levels of the nearby pond.

In addition, the engineer during the March 2025 visit noted that headworks of WS405 located next to a pile of felled conifer trees had been damaged and would no longer prevent rain water ingress. This is not considered to have affected the quality of this groundwater monitoring programme but the well may not be suitable for future monitoring.

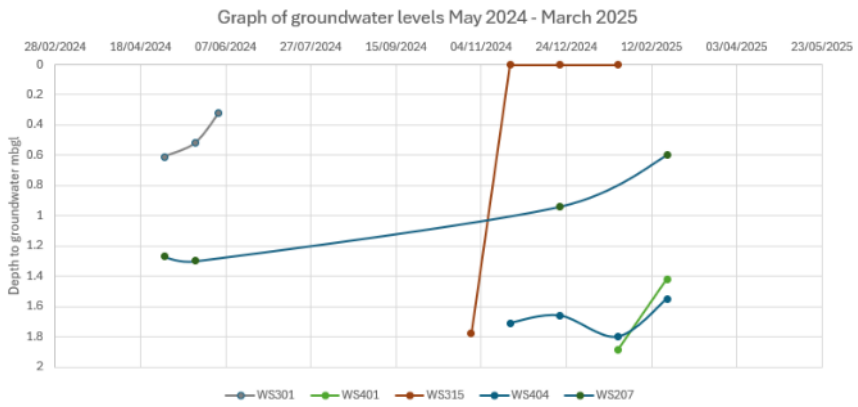
Table 2: Groundwater monitoring results – May to June 2024

Monitoring well	Depth to groundwater (m bgl)		
	02/05/2024	20/05/2024	03/06/2024
WS207	1.27	1.3	Dry
WS301	0.61	0.52	0.32

Table 3: Groundwater monitoring results – October 2024 to March 2025

Monitoring Well	Depth to Base (m bgl)	Depth to Groundwater (m bgl)					
		29/10/24	21/11/24	20/12/24	23/01/25	21/02/25	19/03/25
WS7	2.6	DRY	DRY	DRY	DRY	DRY	DRY
WS201	2.1	DRY	DRY	DRY	DRY	DRY	DRY
WS202	1.6	DRY	DRY	DRY	DRY	DRY	DRY
WS203	*	*	*	*	*	*	*
WS204	2.0	DRY	DRY	DRY	DRY	DRY	*
WS207	1.7	DRY	DRY	0.94	DRY	0.6	DRY
WS301	0.8	DRY	DRY	DRY	DRY	DRY	DRY
WS315	1.9	1.78	0	0	0	DRY	DRY**
WS401	2	DRY	DRY	DRY	1.89	1.42	DRY
WS402	2.8	DRY	DRY	DRY	DRY	DRY	DRY
WS403	2.8	DRY	DRY	DRY	DRY	DRY	DRY
WS404	1.7	DRY	1.71	1.66	1.8	1.55	DRY
WS405	1.7	DRY	DRY	DRY	DRY	DRY	DRY
WS406	1.8	DRY	DRY	DRY	DRY	*	DRY

Notes to table 2:
* No data recorded, well damaged or unable to be accessed and unable to be monitored
**WS315 was monitored on 27 March 2025.



Graph 1 Groundwater levels (where encountered) May – June 2024 and Oct 2024 – Mar 2025

If you have any questions, please do not hesitate to contact the undersigned.

Yours sincerely
For RSK Environment Limited

Susie Haynes
Project Engineer

Darren Beesley
Director

Enclosed:

Appendix A – Service Constraints
Appendix B - Figures
Appendix C – Borehole Logs
Appendix D - Photographs

APPENDIX A
SERVICE CONSTRAINTS

APPENDIX A
SERVICE CONSTRAINTS

1. Service Constraints for all Reports

1.1. This Report (the “Report”) and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as Carbon Zero Consulting, Leap Environmental or RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the “Appointment”) between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.

b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.

c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.

d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

2. Service Constraints where the Report provides an intrusive assessment of ground conditions:

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together

with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

3. Service Constraints where the Report relates to Surface Water Management:

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not

been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibly for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

4. Service Constraints where the Report relates to Waste Management:

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK's assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

5. Service Constraints for Construction Environmental Management Plan Reports:

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

6. Service Constraints where the Report relates to Ground Gas Membrane Verification:

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/ radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

7. Service Constraints for Environmental Due Diligence (EDD)Reports:

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided

by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

8. Service Constraints for Ground source heat energy Reports:

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

9. Service Constraints for Water Abstraction Borehole Reports:

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.

APPENDIX B
FIGURES

DO NOT SCALE FROM THIS DRAWING

N

WS301
WS204
WS207
WS406
WS405
WS404
WS203
WS202
WS315
WS403
WS201
WS402
WS7
WS401

LEGEND

Site Boundary

Site Investigation Locations

Window Sample Location (WS)

Notes:

Rev	Date	Amendment	Drawn	Chkd	Appd
C01	22.10.24	First Issue	MW	AL	AL

leap environmental
part of RSK Geosciences
1 Forest Park Way, Pease Pottage,
West Sussex, RH11 9ZG

Client
BDW Southern Counties

Project Name
New Place Farm

Description
Monitoring Well Location Plan

Project ID	Drawing no.	Revision
LP3824	22201	C01

File name
LP3824-LS-222-XX-D-G-22201-C01

Dimensions	Scale	Size
m	1:2,000	A3

0 20 40 60 80 100 m

Site Boundary

Main Streets

Secondary/Tertiary Streets

Potential Emergency Vehicle Access

Existing Bridleway

Existing PRoW

Existing trees within proposed Country Park

Formal Children's Play Area

Primary Site Access

Emergency Vehicle Access

1. New country park including existing woodland
2. Network of east-west and north-south Green Links
3. Opportunity for long distance views
4. All PRoW retained within green corridors
5. Development structure follows the contour of the land (maximum site gradient 1:14)
6. Development divided into a series of 'character areas', separated by generous landscape infrastructure
7. Undulating eastern edge provides informal interface with wider countryside

client
Catesby Estates Ltd

project title
Land north of Glebelands, Pulborough

drawing title
Concept Masterplan

date	18 JUNE 2019	**drawn by**	JGo
drawing number	edp3037_d042f	**checked**	CG
scale	Refer to scale bar	**QA**	GY

the environmental dimension partnership

info@edp-uk.co.uk www.edp-uk.co.uk

Cirencester 01285 740427 Cardiff 02921 671900 Shrewsbury 01939 211190

Application Boundary	16.29ha
Residential Development	5.10ha
Infrastructure Area	0.46ha
Multi-Functional Green Space Neighbourhood (to also include Equipped Play provision of 400 sqm)	0.62ha
Multi-Functional Green Space Strategic	5.46ha
Naturalistic Open Space Area	3.52ha
Surface Water Attenuation Area	1.13ha
Vehicle Access	
Pedestrian Access	

the environmental dimension partnership

Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk

date	**28 SEPTEMBER 2021**
drawing number	**edp3037_d043e**
scale	**1:2,500 @ A3**
drawn by	**RA**
checked	**PW**
QA	**JTF**

client
Catesby Strategic Land Ltd

project title
Land at New Place Farm, Pulborough

drawing title
Development Framework and Land Budget

APPENDIX C
BOREHOLE LOGS

Leap Environmental Ltd
The Atrium, Curtis Road
Dorking, Surrey RH4 1XA
Tel: 01306 646510
www.leapenvironmental.com

Borehole Log

Borehole No.
WS401
Sheet 1 of 1

Project Name: New Place Farm	Project No. 3750782	Co-ords: 505589 - 119260	Hole Type WS
Location: Pulborough		Level: 42.47	Scale 1:20
Client: BDW Southern Counties		Dates: 24/10/2024 - 24/10/2024	Logged By PM/RP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.01	42.46		Artificial surface of compacted type 1 MOT. Light brown sandy gravelly CLAY.
		1.20		N=13	1.20	41.27		Firm brown sandy CLAY.
					1.50	40.97		Firm orange grey brown mottled CLAY
					1.90	40.57		Very stiff light brown sandy CLAY.
		2.00		N=>50	2.00	40.47		End of borehole at 2.00 m

Remarks
1) Borehole remained dry and stable. 2) No groundwater was observed. 3) GW monitoring install with raised cover; depth of response zone 0.8 to 2.0m.

AGS

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Borehole Log

Borehole No.
WS402
Sheet 1 of 1

Project Name:	New Place Farm	Project No. 3750782	Co-ords:	505849 - 119429	Hole Type WS
Location:	Pulborough		Level:	35.71	Scale 1:20
Client:	BDW Southern Counties		Dates:	24/10/2024 - 24/10/2024	Logged By PM/RP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30	35.41		TOPSOIL: Grass over brown sandy gravelly CLAY. Gravels of fine to coarse angular to subangular flints.
		1.20		N=5				Soft brown sandy gravelly CLAY.
					1.50	34.21		Brown orange sandy CLAY.
					1.80	33.91		Loose yellow brown clayey SAND.
		2.00		N=5	2.00	33.71		Soft brown sandy CLAY.
					2.20	33.51		Brown orange grey mottled sandy slightly gravelly CLAY. Gravels of flint.
					2.70	33.01		Firm grey brown sandy gravelly CLAY.
		3.00		N=10	3.00	32.71		End of borehole at 3.00 m

Remarks
1) Borehole remained dry and stable. 2) No groundwater was observed. 3) GW monitoring install with raised cover; depth of response zone 0.6 to 3.0m.

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Borehole Log

Borehole No.
WS403
Sheet 1 of 1

Project Name: New Place Farm	Project No. 3750782	Co-ords: 505579 - 119399	Hole Type WS
Location: Pulborough		Level: 54.28	Scale 1:20
Client: BDW Southern Counties		Dates: 24/10/2024 - 24/10/2024	Logged By PM/RP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								TOPSOIL: Grass over brown sandy slightly gravelly CLAY. Gravels of fine to coarse angular to subangular sandstone.
					0.60	53.68		Medium dense light brown grey SANDSTONE.
					0.70	53.58		Loose orange very clayey SAND. Sand is medium to coarse.
		1.00		N=7				
					1.20	53.08		Soft light orange brown very sandy CLAY.
		2.00		N=4				
					2.40	51.88		Dense orange SANDSTONE.
		3.00		N=>50	3.00	51.28		End of borehole at 3.00 m

Remarks
1) Borehole remained dry and stable. 2) No groundwater was observed. 3) GW monitoring install with raised cover; depth of response zone 0.8 to 3.0m.

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Borehole Log

Borehole No.
WS404
Sheet 1 of 1

Project Name:	New Place Farm	Project No. 3750782	Co-ords:	505843 - 119158	Hole Type WS
Location:	Pulborough		Level:	38.75	Scale 1:20
Client:	BDW Southern Counties		Dates:	24/10/2024 - 24/10/2024	Logged By PM/RP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30	38.45		TOPSOIL: Grass over brown gravelly sandy CLAY with rootlets.
								Soft orange brown grey sandy CLAY with rare gravels of flint.
		1.40		N=5	1.40	37.35		Soft orange brown sandy CLAY.
		2.00		N=>50				
					2.10	36.65		Very dense grey orange clayey gravelly SAND with flints
					2.40	36.35		End of borehole at 2.40 m

Remarks
1) Borehole remained dry and stable. 2) No groundwater was observed. 3) GW monitoring install with raised cover; depth of response zone 0.7 to 2.40m. 4) Refusal at 2.40m.

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Borehole Log

Borehole No.
WS405
Sheet 1 of 1

Project Name:	New Place Farm	Project No. 3750782	Co-ords:	505498 - 119200	Hole Type WS
Location:	Pulborough		Level:	45.12	Scale 1:20
Client:	BDW Southern Counties		Dates:	24/10/2024 - 24/10/2024	Logged By PM/RP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	44.92		Artificial surface of compacted medium to coarse angular to sub angular gravels of flint.
								Soft orange brown slightly gravelly very sandy CLAY. Gravels of fine to coarse angular to subangular sandstone.
		1.00		N=7	1.00	44.12		Dense light yellow brown SILTSTONE/ SANDSTONE interbedded with weakly cemented siltstone/sandstone.
		2.00		N=>50	2.00	43.12		End of borehole at 2.00 m

Remarks
1) Borehole remained dry and stable. 2) No groundwater was observed. 3) GW monitoring install with raised cover; depth of response zone 0.7 to 2.0m. 4) Refusal at 2.0m.

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Borehole Log

Borehole No.
WS406
Sheet 1 of 1

Project Name: New Place Farm	Project No. 3750782	Co-ords: 505680 - 119206	Hole Type WS
Location: Pulborough		Level: 32.34	Scale 1:20
Client: BDW Southern Counties		Dates: 24/10/2024 - 24/10/2024	Logged By PM/RP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10	32.24		Artificial surface of Type 1 MOT gravel.
								Grey brown SANDSTONE, recovered as gravels and cobbles.
								Gravels becoming more coarse with depth
					0.40	31.94		Brown yellow clayey gravelly SANDSTONE. Gravels of fine to coarse angular to subangular flints.
					0.80	31.54		Grey brown clayey sandy GRAVEL. Gravels of fine to coarse angular to subangular sandstones and flints.
		1.40		N=12	1.30	31.04		Firm grey brown sandy gravelly CLAY
					1.50	30.84		Dense orange brown sandy CLAY
					1.70	30.64		Dense, weakly cemented grey yellow SANDSTONE.
		1.80		N=>50	1.80	30.54		End of borehole at 1.80 m

Remarks
1) Borehole remained dry and stable. 2) No groundwater was observed. 3) GW monitoring install with raised cover; depth of response zone 0.7 to 2.0m. 4) Refusal at 1.8m.

AGS

APPENDIX D
PHOTOGRAPHS

Plate 1: Pond in the center of the site on 27th March 2025. Note the high water line mark is approximately 2m above the current water level and the pond banks are vegetated.

Plate 2 – The central pond in June 2024.